					·	
DATE	Z\$08 SUSPENSE	W JONUS ENGINEER	7 29 08	SWD TYPE	PKVRO82113	2715
		A	BOVE THIS LINE FOR DIVISION USE ON	Y		<del></del>
	NE	W MEXICO OIL C	ONSERVATION	DIVISION	280-1013-222	
Ø		- Engined	ering Bureau -			
		1220 South St. Francis	Drive, Santa Fe, NM	87505	A CLO A	
	AD	DMINISTRATIV	E APPLICAT	ION CHE	CKLIST	
Т	HIS CHECKLIST IS MAND		TIVE APPLICATIONS FOR CESSING AT THE DIVISIO			ILATIONS
Appli	ication Acronyms:					
	-	rd Location] [NSP-Non le Commingling] [CT	-Standard Proration B-Lease Commingli		nuitaneous Dedication ol/Lease Commingling	
			Off-Lease Storage]			
	[w	FX-Waterflood Expansion			Expansion]	
	[EOR-Qualifie	[SWD-Salt Water Disp d Enhanced Oil Recove			crease Production Response]	
(1)				-	$\mathcal{C}$	Rever Y with
[1]		ICATION - Check Thos ocation - Spacing Unit -			$(\mathcal{T})$	5
	[]	] NSL [] NSP [	] SD		$\langle \cap \rangle$	S VV
	Cheele Or				(V)	X
		e Only for [B] or [C] Commingling - Storage - I	Measurement		$\bigcup$ $\bigcirc$	)
	[	DHC CTB		🗌 OLS 🗌		
	(C) T					2008
	[C] հ Г	njection - Disposal - Pres	sure increase - Enhan	EOR EOR	ry V I PPR	
	L				_ · · · ·	NO
		ther Specify				CO program <sup>1</sup> 2

[D] Other: Specify \_\_\_\_\_

[2]

- NOTIFICATION REQUIRED TO: Check Those Which Apply, or 
   Does Not Apply
   [A] Working, Royalty or Overriding Royalty Interest Owners
  - [B] Offset Operators, Leaseholders or Surface Owner
  - [C] Application is One Which Requires Published Legal Notice
  - [D] Notification and/or Concurrent Approval by BLM or SLO U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office
  - [E] For all of the above, Proof of Notification or Publication is Attached, and/or,

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[F] Waivers are Attached

# [3] SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED ABOVE.

[4] **CERTIFICATION:** I hereby certify that the information submitted with this application for administrative approval is **accurate** and **complete** to the best of my knowledge. I also understand that **no action** will be taken on this application until the required information and notifications are submitted to the Division.

Note: Statement must be completed by an individual with managerial and/or supervisory capacity.

Eddie W. Seay	Elin wel	1900-	Agent	7/16/08
Print or Type Name	Signature		Title	Date
		•	_seay04@leaco.net	
			e-mail Address	

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

# **APPLICATION FOR AUTHORIZATION TO INJECT**

	PURPOSE:       Secondary Recovery       Pressure Maintenance       X_Disposal       Storage         Application qualifies for administrative approval?       Yes       No
II.	OPERATOR: COG Operating, LLC (Concho Resources)
	ADDRESS: 550 W. Texas Ave., Ste. 1300 Midland, TX 79701
	CONTACT PARTY: Mark A. FirchildPHONE: 432-686-3021
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?YesNo If yes, give the Division order number authorizing the project:
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:
)	<ol> <li>Proposed average and maximum daily rate and volume of fluids to be injected;</li> <li>Whether the system is open or closed;</li> <li>Proposed average and maximum injection pressure;</li> <li>Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,</li> <li>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.).</li> </ol>
*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:Eddie W. SeayTITLE:Agent
	SIGNATURE: Eddie W Seen DATE: 7/16/08
*	E-MAIL ADDRESS: seay04@leaco.net

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## **ATTACHMENT TO APPLICATION C-108**

Loco Hills SWD #1 Unit P, Sect. 36, Tws. 17 S., Rng. 30 E. Eddy Co., NM

## III. WELL DATA

- A. 1) See injection well data sheets and attached schematics.
  - 2) See injection well data sheets and attached schematics.
  - 3) 3 1/2" Fusion bonded powder coating.
  - 4) Arrowset II Type.
- B. 1) Injection formation is the Wolfcamp.
  - 2) Injection interval 8810' to 9162' into deviated interval.
  - 3) Well was drilled as a producer, then P & A.
  - 4) The next higher producing zone is the Bone Springs at approximately 4956'. The next lower producing zone is the Penn at approximately 9703'.
- IV. NO.
- V. MAP ATTACHED.

## VI. LIST OF WELLS AND DATA ATTACHED.

- VII. COG proposes to re-enter P & A well, drill out plugs, run in hole with 9500 ft. of 26#-7" casing, set on top of cement plug, cement 7" casing with 1000 sx cement, and tie back to 9 5/8" casing, run temperature survey to check top of cement. Go in hole and selectively perforate the 7" casing from 8810' to 9162'. Acidize well, run 3 1/2" coated tubing and packer in 7" and set at approximately 8710'. Pressure test well as OCD requires.
  - 1) Plan to inject approximately 10,000 bpd of produced water from COG's own operation in offset production.
  - 2) Closed system.
  - 3) Average injection pressure should be approximately 800# to 1250# or whatever limit OCD allows.
  - 4) Analysis attached, only produced water.
  - 5) Water from offset production from San Andres, Queen and 7 Rivers.

## VIII. Wolfcamp Formation.

This disposal well is located in the transitional zone between the shelf environment and the basin environment of the Delaware Basin. In this area the Wolfcamp is approximately 3500 feet thick. In the disposal well, the Wolfcamp occurs from 6258' to 9703'. The Wolfcamp consists of limestone with interbedded dolomites and shales. The limestones and shale have little porosity and act as confining intervals for the interbedded dolomites. The disposal intervals will be the pores dolomites exposed in the open hole interval.

## IX. ACID AS NEEDED, FRAC IF NECESSARY.

## X. PREVIOUSLY SUBMITTED TO OCD OR WILL RUN.

- 1) Compensated Density/Neutron
- 2) Gamma Ray
- 3) Bond Log

# XI. NO FRESH WATER FOUND OR RECORDED BY STATE ENGINEER OR OCD.

**XII.** I, Eddie W. Seay, have examined all available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zones and any underground source of drinking water pertaining to this well.

## XIII. ATTACHED.

Stel     INJECTION WELL BATA SHEET       OPERATOR:     CG C Darading LLC       OPERATOR:     CG C Darading LLC       WELL LOCATION:     LOC C Darading LLC       WELL LOCATION:     LOC C D DARAGELOCATION       WELL LOCATION:     LOC C D DARAGELOCATION       WELL LOCATION:     LOC C D DARAGELOCATION       WELL LOCATION:     LADIS       WELL LOCATION:     LILE       WELL LEAL     RELEACE       WELL LEAL     RELEACE       MERCEORER     MERCEORER       MERCEORER     MERCEORER
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Side 2

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0 40 \$ 40 32 3 40.42 \$ 40.44 1	40.43 41 40.39 31 40.37 21 40.33 .1	46 28 6 40 20 3 40 12 2 40 24 1	3: 63, 39 99 39 98 7/ 39 97 139 97 139 97 30 97 30 97 139 30 - 3 40 01 - 1 07
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DISPOSAL WE	ELL										
API #	PROPERTY NAME #	OPERATOR	TD TYPE STATICO	ESTAT	co I	LAND U/L SEC TWN	I/L SE(	C TWN	RNG		N/S
30-015-31635 LO	LOCO HILLS SWD	1 COG OPERATING LLC	11700 D&A	A P&A	EDDY S		P 36	5 17 S	S 3	30 E	660 S

660 S 860 E

EW .

Wells within 1/2	Wells within 1/2 mile which do not penatrate proposed disposal interval	oosed disposal interval							5280	5280		
API#	PROPERTY NAME	# OPERATOR	TD TYPE STATICO LAND U/L SEC TWN RNG N/S*	(co	LAND	J/L SE	C TWN	RNG	N/S	E.W	Distance	Distance < 1/2 mile
30-015-25824 CAL-MON	CAL-MON	I FRED POOL DRILLING INC.	3550 D&A P&A EDDY S	EDDY	s II		36 17 S	S 30 E	660 S	660 E 200.	200	1/2 mile
30-015-25961	30-015-25961 AMOCO STATE 36	I ANADARKO PETROLEUM CORP	3565 O P&A	P&A EDDY S	S		36 17 S	S 30 E	660 S	1980 W 2440	/ 2440	1/2 mile
30-015-20451	30-015-20451 ALLIED FEDERAL A	I EASTLAND OIL CO	3564 D&A P&A EDDY F	EDDY	F I	л   Г	31 17	17 S 31 E	330 S		660 W 1555	1/2 mile
30-015-20449	30-015-20449 POWER GRAYGURG UNIT	I EASTLAND OIL CO	3512O A	EDDY F	F /	1	1 18 S	S 30E	660 N		660 E 1335	1/2 mile
30-015-20484	30-015-20484 POWER GRAYGURG UNIT	2 EASTLAND OIL CO	3472 O A	EDDY F	F I	H I	1 18	18 S 30 E	30 E 1650 N		330 E 2370	1/2 mile

1/2 mile 1/2 mile

660 N

30 E 31 E

18 S 18 S

660 N

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ЕDDY ABL EDDY

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3478 O

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1 EOG RESOURCES INC

3 EASTLAND OIL CO

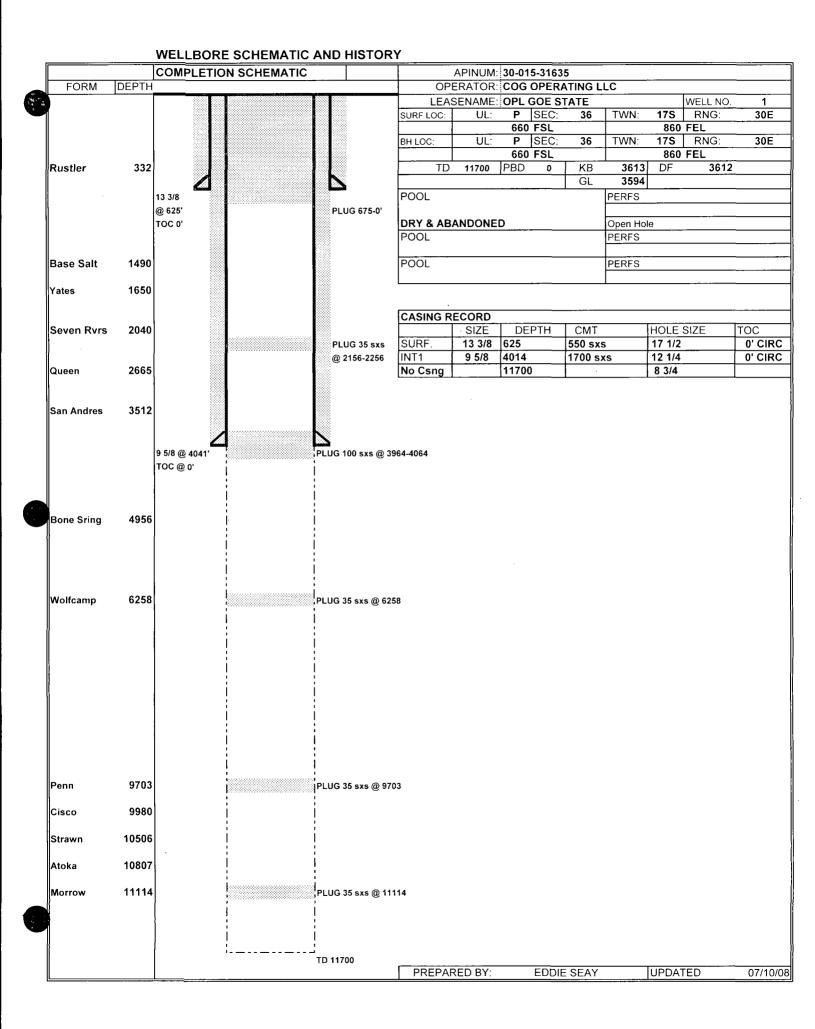
POWER GRAYGURG UNIT

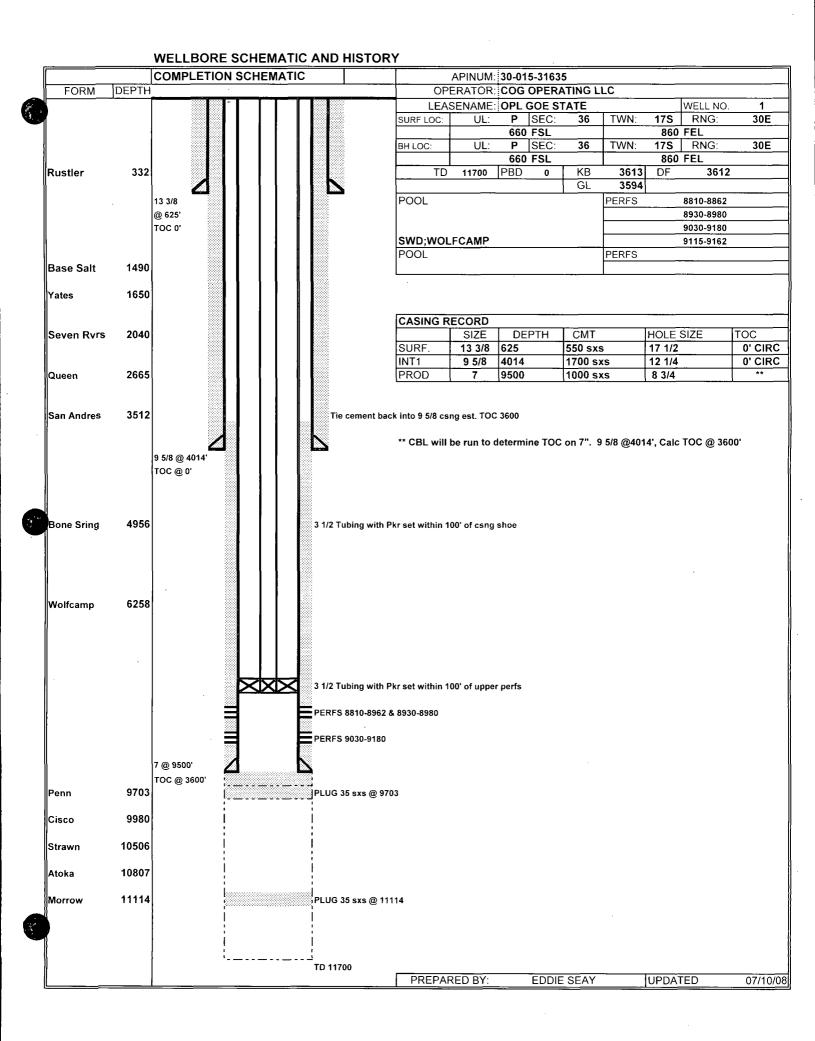
SIBYL 1 FEDERAL

30-015-30346 30-015-20399 Wells within 1/2 mile which penatrate proposed disposal interval

mile			
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Distance < 1/2 mile			•
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#### 12/29/2001 CMIC:BOWKER

RU .LOGGERS. RAN COMP. Z-DENSIOLG, COMP. NEUTRON, GR-CALIPER, DLL AND MLL. POOH AND R.D. LOGGERS. TIH WITH BIT AND SLICK BHA. WASHED 30' TO BOTTOM WITH 15' FILL. CIRCULATING WOO AT REPORT TIME.

#### 12/30/2001 CMIC:REX GLENN

CIRCULATED 3 HOURS WOO. TOOH WITH BIT AND L.D. D.C'S. TIH WITH O.E. D.P. TO 11,114'. RU B.J. SPOTTED 35 SX CLASS H FROM 11,114-11,014'. POOH TO 9703'. SPOTTED 35 SX CLASS H FROM 9703-9603'. POOH TO 6258' SPOTTED 35 SX CLASS H FROM 6258-6158'. POOH L.D. D.P. AT REPORT TIME. RECEIVED PLUGGING ORDERS FROM VAN BARTON WITH NMOCD. WAS NOTIFIED BUT DID NOT WITNESS. DAYLIGHT DRILLER CROWNED OUT WHILE TOOH TO L.D. DC'S. NO PHYSICAL DAMAGE DONE.

#### 12/31/2001 CMIC:REX GLENN

POOH WITH D.P. TO 4064'. SPOTTED 100 SX CLASS C WITH 2% CACL2 FROM 4064-3964'. POOH WITH D.P. TO 3000'. WOC 4 HOURS. RBIH AND TAGGED CEMENT AT 3832'. POOH TO 2256'. SPOTTED 35 CLASS C FROM 2256-2156'. POOH TO 675'. CIRCULATED CEMENT TO SURFACE WITH CLASS C NEAT. POOH WITH D.P. R.D. B.J. ND BOP. CUT OFF CASING AND WELLHEAD. WELDED ON 1/4" STEEL PLATE WITH 1" VALVE IN TOP. INSTALLED DRY HOLE MARKER. JETTED AND CLEANED PITS. RELEASED RIG AT 2400 HOURS MST 12-30-01. FINAL REPORT- WELL P&A. NMOCD NOTIFIED BUT DID NOT WITNESS

# XI

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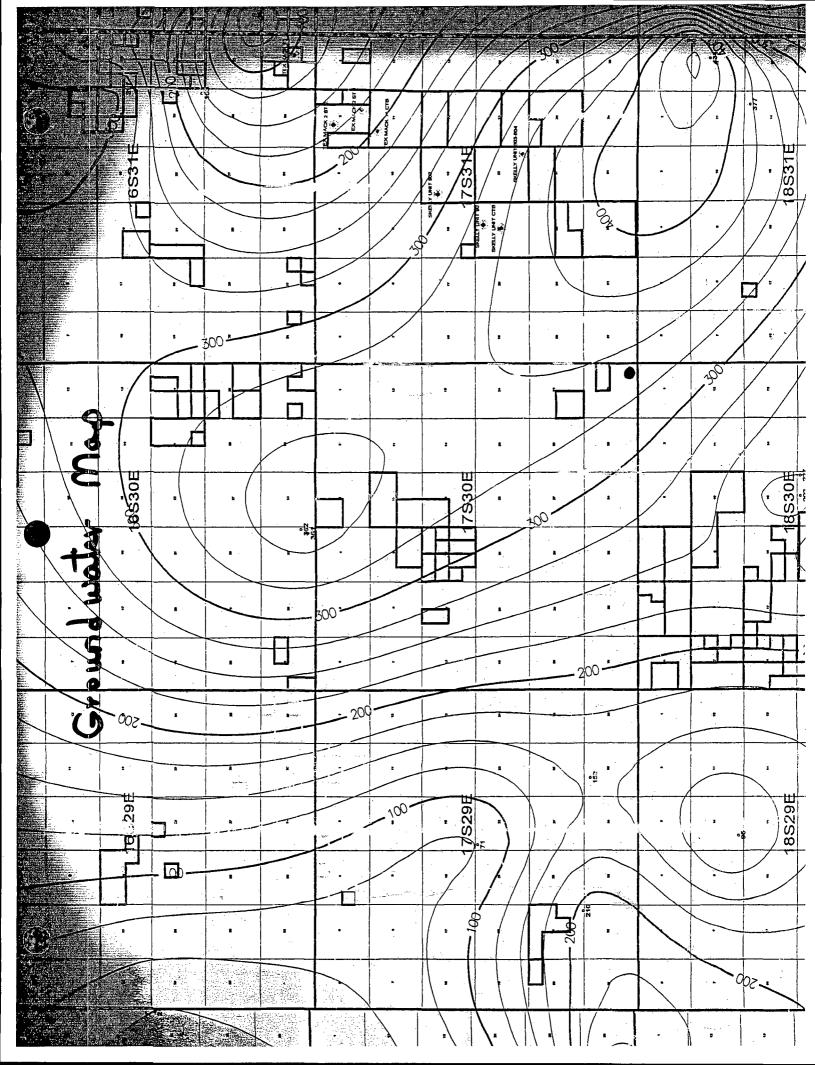
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New Mexico Office of the State Engineer

ŋ	ownship: 1	7S Range:	30E Sections	s:		
NAD	27 X:	Y:	Zone:	S	earch Radius:	
County		Basin:		N	umber:	Suffix:
Owner Nan	e: (First)		(Last) @ All	0	Non-Domestic	⊖ Domest
POD	Surface Data	Report	Avg Depth to Wa	ter Report	Water Colum	n Report
		Clear For	m	Menu Hel	P	

AVERAGE DEPTH OF WATER REPORT 07/09/2008 (Depth Water in Feet) Bsn Tws Rng Sec Zone х Y Wells Min Max Avg No Records found, try again

# £ .1. Cland



# VII 4

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Produced Waters OCD

	POOL			CHLORIDES
				44,730
	Dean Permo Pennsylvanian			19,525
	Dean Devonian			37,275
	Denton Wolfcamp	:		37,062
ġ	Denton Devonian	1	. ·	54,315
·	South Denton Wolfcamp			34,080
	South Denton Devonian			.39,760
	Medicine Rock Devonian			23,288
	Little Lucky Lake Devonian		:	
	Wantz Abo	1	1	132,770
	Crosby Devonian			58,220
	Scarborough Yates Seven Rivers			3,443 (Reef)
	Teague Simpson	N. N.		114,665
	Teague Ellenburger		`٥	120,345
	Rhodes Yates Seven Rivers		X.	144,485
	House San Andres	· .	1 .	93,365
	House Drinkard			49,700
	South Leonard Queen	·		115,375
	Elliott Abo			55,380
	Scharb Bone Springs			30,601
	EK Queen			41,890
	East EK Queen			179,630
	Maljamar Grayburg San Andres	0		46,079
	Maljamar Paddock			115,375
	Maljamar Devonian			25,418
	Salt Lake Yates			6,781 (Reef)
	Teas Yates Seven Rivers			22,152 (Reef?)

د ور این ا**م**ر دور د



Company:	COG Operating LLC		Sample #:	10028	
Area:	Artesia		Analysis ID #:	836	
Lease:	SKELLY UNIT				
Location:	971	0			
Sample Point:	Wellhead				

Sampling Date:	4/2/08	Anions	mg/l	meq/l	Cations	mg/ł	meq/l
Analysis Date:	4/16/08	Chloride:	134147.4	3783.81	Sodium:	54176.1	2356.53
Analyst:	Mitchell	Bicarbonate:	366.6	6.01	Magnesium:	3752.7	308.71
TDS (mail or alm?)	217250.3	Carbonate:			Całcium:	23195.4	1157.46
TDS (mg/l or g/m3):	1.151	Sulfate:	1600.0	33.31	Strontium:		
Density (g/cm3):	1.151				Barium:		
					Iron:	11.1	0.4
Hydrogen Sulfide:					Manganese:	1.010	0.04
Carbon Dioxide:	60						
_		pH at time of samp	ling:	5.6			
Comments:		pH at time of analys	sis:				
		pH used in Calcula	ation:	5.6			
		Temperature @ lab conditions (F):		75	Conductivity (mie Resistivity (ohm	•	210300 .0476

		Values Calculated at the Given Conditions - Amounts of Scale in Ib/1000 bbl											
Temp °F	Calcite CaCO <sub>3</sub>		Gypsum CaSO <sub>4</sub> *2H <sub>2</sub> 0		Anhydrite CaSO <sub>4</sub>		Celestite SrSO <sub>4</sub>		Barite BaSO <sub>4</sub>				
	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount			
80	0.15	11.37	0.36	491.92	0.39	407.19	0.00	0.00	0.00	0.00			
100	0.23	17.35	0.30	432.21	0.39	408.61	0.00	0.00	0.00	0.00			
120	0.31	23.03	0.25	378.18	0.42	426.52	0.00	0.00	0.00	0.00			
140	0.40	28.72	0.21	331.55	0.47	456.10	0.00	0.00	0.00	0.00			



Company:	COG Operating LLC		Sample #:	9768	
Area:	Artesia	,	Analysis ID #:	793	
Lease:	WICHITA STATE				
Location:	3	0			
Sample Point:	Wellhead				

Sampling Date:	3/13/08	Anions	mg/l	meq/l	Cations	mg/l	meq/l
Analysis Date:	3/20/08	Chloride:	124136.4	3501.44	Sodium:	73193.4	3183.74
Analyst:	Mitchell Labs	Bicarbonate:	415.5	6.81	Magnesium:	897.9	73.87
TDS (mg/l or g/m3): Density (g/cm3):	205863.5 1.143	Carbonate: Sulfate:	1550.0	32.27	Calcium: Strontium:	5668.2	282.84
					Barium: Iron: Manganese:	1.4 0.660	0.05 0.02
Hydrogen Sulfide:	68				manganeee		0.02
Carbon Dioxide:							
		pH at time of sampl	ing:	6.4			
Comments:		pH at time of analys	is:				
		pH used in Calcula	ation:	6.4	0		040000
		Temperature @ lai	o conditions (F):	75	Conductivity (mid Resistivity (ohm	•	219900 .0455

		values Calculated at the Given Conditions - Amounts of Scale in 10/1000 bbi											
Temp		Calcite CaCO <sub>3</sub>		Gypsum CaSO₄*2H₂ 0		Anhydrite CaSO <sub>4</sub>		Celestite SrSO <sub>4</sub>		Barite BaSO <sub>4</sub>			
۰F	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount			
80	0.57	31.61	-0.12	0.00	-0.09	0.00	0.00	0.00	0.00	0.00			
100	0.64	35.92	-0.20	0.00	-0.11	0.00	0.00	0.00	0.00	0.00			
120	0.72	40.52	-0.27	0.00	-0.10	0.00	0.00	0.00	0.00	0.00			
140	0.79	45.41	-0.33	0.00	-0.07	0.00	0.00	0.00	0.00	0.00			



Company:	pany: COG Operating LLC		Sample #:	9769	
Area:	Artesia		Analysis ID #:	792	
Lease:	JUNIPER STATE				
Location:	5	0			
Sample Point:	Wellhead				

Sampling Date:	3/13/08	Anions	mg/l	meq/l	Cations	mg/l	meq/l
Analysis Date:	3/20/08	Chloride:	120132.0	3388.49	Sodium:	58436.2	2541.83
Analyst:	Mitchell Labs	Bicarbonate:	659.9	10.81	Magnesium:	2815.8	231.64
TDS (mg/l or g/m3):	195826.8	Carbonate:			Calcium:	12904.2	643.92
	1.136	Sulfate:	875.0	18.22	Strontium:		
Density (g/cm3):	1.150				Barium:		
					lron:	2.6	0.09
Hydrogen Sulfide:					Manganese:	1.090	0.04
Carbon Dioxide:							
		pH at time of sampl	ing:	5.8			
Comments:		pH at time of analys	sis:				
		pH used in Calcula	ation:	5.8	Conductivity (mi		211600
		Temperature @ lal	b conditions (F):	75	Conductivity (mid Resistivity (ohm	-	.0473

		Values Calculated at the Given Conditions - Amounts of Scale in Ib/1000 bbl										
Temp °F	Calcite CaCO <sub>3</sub>		Gypsum CaSO <sub>4</sub> 2H <sub>2</sub> 0		Anhydrite CaSO <sub>4</sub>		Celestite SrSO <sub>4</sub>		Barite BaSO <sub>4</sub>			
	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount		
80	0.41	51.64	-0.08	0.00	-0.06	0.00	0.00	0.00	0.00	0.00		
100	0.49	60.63	-0.15	0.00	-0.06	0.00	0.00	0.00	0.00	0.00		
120	0.58	69.62	-0.20	0.00	-0.04	0.00	0.00	0.00	0.00	0.00		
140	0.67	78.32	-0.25	0.00	0.01	8.70	0.00	0.00	0.00	0.00		



Company:	COG Operating LLC		Sample #:	10024	
Area:	Artesia		Analysis ID #:	840	
Lease:	GJ WEST COOP UNIT				
Location:	171	0			
Sample Point:	Wellhead				

Sampling Date:	4/2/08	Anions	mg/l	meq/l	Cations	mg/l	meq/
Analysis Date:	4/16/08	Chloride:	92101.2	2597.84	Sodium:	52461.8	2281.96
Analyst:	Mitchell	Bicarbonate:			Magnesium:	976.0	80.29
TDS (mg/l or g/m3):	151113.3	Carbonate:			Calcium:	4968.7	247.94
Density (g/cm3):	1.105	Sulfate:	601.0	12.51	Strontium:		
Senarty (gronio).	1.100				Barium:		
					Iron:	3.6	0.13
Hydrogen Sulfide:	51				Manganese:	0.970	0.04
Carbon Dioxide:	16						
		pH at time of samplin	g:	6.2			
Comments:		pH at time of analysis	:				
		pH used in Calculati	ion:	6.2			
		Temperature @ lab	conditions (F):	75	Conductivity (micro-ohms/cm): Resistivity (ohm meter):		( 1666.6667

		Values Calculated at the Given Conditions - Amounts of Scale in Ib/1000 bbl											
Temp °F		Calcite CaCO <sub>3</sub>		Gypsum CaSO <sub>4</sub> *2H <sub>2</sub> 0		Anhydrite CaSO <sub>4</sub>		Celestite SrSO <sub>4</sub>		Barite BaSO <sub>4</sub>			
	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount			
80	-5.09	0.00	-0.56	0.00	-0.56	0.00	0.00	0.00	0.00	0.00			
100	-5.02	0.00	-0.62	0.00	-0.55	0.00	0.00	0.00	0.00	0.00			
120	-4.99	0.00	-0.68	0.00	-0.53	0.00	0.00	0.00	0.00	0.00			
140	-4.98	0.00	-0.72	0.00	-0.48	0.00	0.00	0.00	0.00	0.00			





100

120

140

0.11

0.21

0.32

2.28

4.57

7.50

-0.31

-0.34

-0.35

0.00

0.00

0.00

-0.28

-0.23

-0.15

0.00

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0.00

0.00

Company:	со	G Operating	g LLC			Sample #		9701				
Area:	Arte	osia				Analysis I	D #:	7	52			-
Lease:	FR	ESH WATE		È				_				
Location:	Sec	tion-28-1-75	3		0							
Sample Point:	We	llhead	1	·								
<b>-</b>			< 									
Complian Data		3/10/08	B Anions	<u></u>	m	ng/l	meq/l	Catio				meg/i
Sampling Date: Analysis Date:		3/10/06			4404	<u> </u>	12.44	Sodiu				1004.96
Analyst:		Mitchell Labs				8.4 124 6.6	+2.44 2.4		esium:	2310		93.94
TDS (mg/l or g/m Density (g/cm3):		73069.6	Carbon	ate:	120		24.98	Calcin Stron Bariu Iron:	um: tium:	341		0.39
									anese:	-	)60	0.04
Hydrogen Sulfide:								-				
Carbon Dioxide:												
Comments:				ne of sampling ne of analysis	-		6.64					
			1.	d in Calculati			6.64					
									uctivity (mi		cm):	73000
L			Temper	ature @ lab @		s (F):	75	Resis	tivity (ohm	meter):		.1370
		Values C	Calculated	at the Give	n Condi	tions - Amo	ounts	of Sca	le in Ib/10	00 bbl		
Temp		alcite aCO <sub>3</sub>		sum 04 <sup>*2H</sup> 2 0		hydrite CaSO <sub>4</sub>		Cele: Sr:	stite SO <sub>4</sub>		arite aSO 4	
°F	Index	Amount	Index	Amount	index	Amount	1	ndex	Amount	Index	Amount	
80	0.00	0.00	-0.27	0.00	-0.31	0.00		0.00	0.00	0.00	0.00	1



Company:	ny: COG Operating LLC		Sample #:	10031		
Area:	Artesia		Analysis ID #:	831		
Lease:	GJ WEST COOP UNIT					
Location:	179	0				
Sample Point:	Wellhead					

Sampling Date:	4/2/08	Anions	mg/l	meq/l	Cations	mg/l	meq/l
Analysis Date:	4/16/08	Chloride:	93102.3	2626.08	Sodium:	50211.2	2184.06
Analyst:	Mitchell	Bicarbonate:	598.8	9.81	Magnesium:	1805.6	148. <b>5</b> 4
TDS (mg/l or g/m3):	154560	Carbonate:			Calcium:	6890.3	343.83
Density (g/cm3):	1.107	Sulfate:	1950.0	40.6	Strontium:		
Denary (greino).	1.107				Barium:		
					Iron:	0.9	0.03
Hydrogen Sulfide:	30				Manganese:	0.920	0.03
Carbon Dioxide:	40						
Comments:		pH at time of sampling: pH at time of analysis:		5.8			
		pH used in Calculation: Temperature @ lab conditions (F):		5.8	Conductivity (micro-ohms/cm): Resistivity (ohm meter):		40.4000
				75			184300 .0543

Temp °F		Values Calculated at the Given Conditions - Amounts of Scale in Ib/1000 bbl									
		Calcite CaCO <sub>3</sub>		Gypsum CaSO <sub>4</sub> *2H <sub>2</sub> 0		Anhydrite CaSO <sub>4</sub>		Celestite SrSO <sub>4</sub>		Barite BaSO <sub>4</sub>	
	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	
80	0.09	11.76	0.06	124.85	0.06	103.74	0.00	0.00	0.00	0.00	***
100	0.18	24.13	-0.01	0.00	0.06	110.98	0.00	0.00	0.00	0.00	
120	0.28	35.89	-0.06	0.00	0.09	158.63	0.00	0.00	0.00	0.00	
140	0.38	47.65	-0.09	0.00	0.15	234.32	0.00	0.00	0.00	0.00	





# COG OPERATING LLC

July 14, 2008

RE: Loco Hills SWD #1 (was GOE State #1) Unit P, Sect. 36, T. 17 S., R. 30 E. API #30-015-31635 Eddy Co., NM

Dear Sir:

In accordance with the Rules and Regulations of the Oil Conservation Division of the State of New Mexico, you are being provided a copy of the C-108, Application for Authorization to Inject in to the above captioned well.

Any questions about the permit can be directed to Eddie W. Seay, (575)392-2236. Any objections or request for hearing must be filed with the Oil Conservation Division within fifteen (15) days from the date received. The OCD address is 1220 S. Saint Francis Drive, Santa Fe, NM 87504, (505)476-3440.

Thank you,

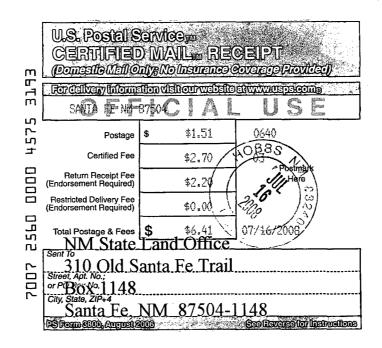
Eddin when

Eddie W. Seay, Agent 601 W. Illinois Hobbs, NM 88242 (575)392-2236 seay04@leaco.net

# LEASE OWNERS AND OFFSETS

NM State Land Office 310 Old Santa Fe Trail Box 1148 Santa Fe, NM 87504-1148

No Offset Wells Penetrate the Injection Zone.



# LEGAL NOTICE

Pursuant to the rules and regulations of the Oil Conservation Division of the State of New Mexico, COG Operating, LLC (Concho Resources), 550 W. Texas Ave., Ste 1300, Midland, Texas 79701, is filing a C-108, Application for Salt Water Disposal. The well being applied for is the Loco Hills SWD #1, API 30-015-31635, located in Unit P, Section 36, Township 17 South, Range 30 East, Eddy Co., NM. The injection formation is the Wolfcamp from 6258' to 9703' below surface. Expected maximum injection rate is 10,000 bpd., and the expected maximum injection pressure is 1250 psi or what the OCD allows. Any questions about the application can be directed to Eddie W. Seay, (575)392-2236, or any objection or request for hearing must be directed to the Oil Conservation Division, (505)476-3440, 1220 South Saint Francis Drive, Santa Fe, NM 87504, within fifteen (15) days.

# Affidavit of Publication

20308

TATE OF NEW MEXICO

County of Eddy:

GARY D. SCOTT

sworn, says: That he is the

PUBLISHER of The

being duly

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 week/days on the same

day as follows:

First Publication

July 15, 2008

Second Publication

Third Publication

Fourth Publication

Fifth Publication

Subscribed and sworn to before me this

16 Day July 2008 OFFICIAL SEAL Jo Morgan NOTARY PUBLIC-STATE OF NEW MEXICO My commission expires: 36 4012 Motary Public, Edge County, New Mexico **Copy of Publication:** 

Pursuant to the rules and regulations of the Oil Conservation Division of the State of New Mexico, COG Operating, LLC (Concho Resources), 550 W Texas Ave., Ste 1300, Midland, Texas 79701, is filing a C-108, Application for Salt Water Disposal. The well being applied for is the Loco Hills SWD #1. API 30-015-31635, located in Unit P, Section 36, Township 17 South, Range 30 East, Eddy Co., NM. The injection formation is the Wolfcamp from 6258' to 9703' below surface. Expected maximum injection reate is 10,000 bpd., and the expected maximum injection pressure is 1250 psi or what the OCD allows. Any questions about the application ca be directed to Eddie W. Seay, (575)392-2236, or any objection or request for hearing must be directed to the Oil Conservation Division, (505)476-3440, 1220 South Saint Francis Drive, Santa Fe, NM 87504, within fifteen (15) days. Published in the Artesia

Daily Press, Artesia, NM July 15, 2008 Legal 20308

Releve 10/9/08

# Jones, William V., EMNRD

From: Jones, William V., EMNRD

Sent: Thursday, September 18, 2008 3:08 PM

To: 'Eddie Seay'

Cc: Ezeanyim, Richard, EMNRD; Gum, Tim, EMNRD; Phillips, Dorothy, EMNRD

Subject: SWD APPLICATION FROM COG OPERATING LLC: Loco Hills SWD#1 30-015-31635 Wolfcamp

Hello Eddie:

Concerning this application:

1) Please have a COG Landman sign a statement that Rule 701B(2) has been covered as to required notice. Send a list of the "affected" parties for the various tracts in the 1/2 mile AOR. We have begun to ask applicants for "lists" of tracts with affected parties on SWD and NSL applications. It appears that Eastland Oil operates shallow wells in this area and would therefore control the minerals in the Wolfcamp unless there is a depth severance. OXY and Chevron also seem to have something in this area - unless the Midland Map you sent is not up to date. (I did not see where your application said that COG had control of all minerals in this 1/2 mile AOR.) If additional parties need to be noticed, please send proof of notice.

2) Please have an engineer or geologist talk about the productivity of the Wolfcamp in this well and the nearest Wolfcamp production to this location.

3) Your application says this well is deviated - is this the case? If so, what are the TVDs to correspond to the MDs of the top and bottom of the injection interval? If deviated, please send a plat showing what the well looks like from a Side view.

4) COG has a well that needs additional bonding: Red Raider State #2. Please ask COG to correct this with Dorothy Phillips and verify that all financial assurances are up to date. Here is a link to the OCD site showing recorded bonds:

http://www.emnrd.state.nm.us/OCD/OCDPermitting/Report/Stats/InactiveWellFinancialAssuranceReport.aspx?Operator=229137

5) Where did you get the Groundwater Map? Is there no windmills in this area either?

Thank You,

William V. Jones PE New Mexico Oil Conservation Division 1220 South St. Francis Santa Fe, NM 87505 505-476-3448 September 25, 2008

NMOCD Engineering ATTN: Will Jones 1220 S. Saint Francis Dr. Santa Fe, NM 87504

RE: COG Operating LLC Loco Hills SWD #1 API 30-015-31635 Supplement to C-108 Application

Mr. Jones:

Please find answers to SWD application:

- 1) Since we or COG could not exactly determine which persons have mineral interest in the Wolfcamp, all interest owners within the AOR were noticed. Find attached a list of mineral owners and certified receipts for each.
- 2) Answer to Wolfcamp productivity, see attached Engineers comments and map.
- Concerning the deviation of the subject well, the comment concerning the well being deviated was an incorrect statement. In re-looking at the well information, the well is only deviated 3 degrees.
- 4) COG has been in contact with Dorothy Phillips, and is working on additional bonding.
- 5) Groundwater.

The groundwater map you asked about was taken from the OCD office. In the area of concern, the water that is used for cattle is from dirt tanks, or is piped in from off of the Caprock. No water wells or windmills were found for this area.

Should you need anything further, please call.

Thanks,

Lein W -

Eddie W. Seay, Agent Eddie Seay Consulting 601 W. Illinois Hobbs, NM 88242 (575)392-2236

NECEIVE **®** 2008 SEP 29 PM 2 58

# Eddie W. Seay

From:	"Jones, William V., EMNRD" <william.v.jones@state.nm.us></william.v.jones@state.nm.us>
To:	"Eddie Seay" <seay04@leaco.net></seay04@leaco.net>
Cc:	"Ezeanyim, Richard, EMNRD" <richard.ezeanyim@state.nm.us>; "Gum, Tim, EMNRD"</richard.ezeanyim@state.nm.us>
	<tim.gum@state.nm.us>; "Phillips, Dorothy, EMNRD" <dorothy.phillips@state.nm.us></dorothy.phillips@state.nm.us></tim.gum@state.nm.us>
Sent:	Thursday, September 18, 2008 3:07 PM
Subject:	SWD APPLICATION FROM COG OPERATING LLC: Loco Hills SWD#1 30-015-31635 Wolfcamp

Hello Eddie:

Concerning this application:

1) Please have a COG Landman sign a statement that Rule 701B(2) has been covered as to required notice. Send a list of the "affected" parties for the various tracts in the 1/2 mile AOR. We have begun to ask applicants for "lists" of tracts with affected parties on SWD and NSL applications. It appears that Eastland Oil operates shallow wells in this area and would therefore control the minerals in the Wolfcamp unless there is a depth severance. OXY and Chevron also seem to have something in this area - unless the Midland Map you sent is not up to date. (I did not see where your application said that COG had control of all minerals in this 1/2 mile AOR.) If additional parties need to be noticed, please send proof of notice.

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http://www.emnrd.state.nm.us/OCD/OCDPermitting/Report/Stats/InactiveWellFinancialAssuranceReport.aspx? Operator=229137

5) Where did you get the Groundwater Map? Is there no windmills in this area either?

Thank You,

William V. Jones PE New Mexico Oil Conservation Division 1220 South St. Francis Santa Fe, NM 87505 505-476-3448

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# Parties to Notice for SWD Permit Application OPL GOE State #1, SE/4 SE/4 Sec. 36, T17S-R30E, Eddy Co., NM

The Eastland Oil Company P.O. Box 3488 Midland, TX 79702

EOG Resources, Inc. P.O. Box 2267 Midland, TX 79702

Canadian Kenwood Company 1910 IDS Center 80 South Eighth Minneapolis, MN 55402

William G. Parker, Sylvia Voorhies and Nancy Halsell, Trustees of the T.R. Parker Estate P.O. Box 1281 Medford, OR 97504

Read & Stevens, Inc. P.O. Box 1518 Roswell, NM 88202

Westall Oil & Gas LLC P.O. Box 4 Loco Hills, NM 88255

Harvey E. Yates Company P.O. Box 1933 Roswell, NM 88202

Yates-McMinn Drilling Venture 1984-2 P.O. Box 1608 Albuquerque, NM 87103

Yates Energy Corporation P.O. Box 2323 Roswell, NM 88202 Laurelind Corporation P.O. Box 2143 Roswell, NM 88202

Oxy USA WTP Ltd. P.O. Box 4294 Houston, TX 77210

Jalapeno Corporation P.O. Box 1608 Albuquerque, NM 87103

Warfield Associates P.O. Box 6366 Midland, TX 79701

Jimmie R. Parker, Jr. P.O. Box 2000 Midland, TX 79702

Spiral, Inc. P.O. Box 1933 Roswell, NM 88202

Nadel & Gussman Capitan, LLC 15 East 5<sup>th</sup> Street, Suite 3200 Tulsa, OK 74103

Explorers Petroleum Corp. P.O. Box 1933 Roswell, NM 88202

Occidental Permian LTD. P.O. Box 4294 Houston, TX 77210

Texas Reexploration LTD 1 3025 Maxroy Street Houston, TX 77008

Camtera Resources Partners LTD P.O. Box 2069 Marshall, TX 75671 Chevron U.S.A. Inc. 11111 South Wilcrest Houston, TX 77099

Yates Petroleum Corporation 105 South Fourth Street Artesia, NM 88210

Yates Drilling Corporation 105 South Fourth Street Artesia, NM 88210

ABO Petroleum Corporation 105 South Fourth Street Artesia, NM 88210

MYCO Industries, Inc. 105 South Fourth Street Artesia, NM 88210

BP America Production Company P.O. Box 3092 Houston, TX 77253

Marbob Energy Corporation P.O. Box 217 Artesia, NM 88210

Pitch Energy Corporation P.O. Box 304 Artesia, NM 88211

Bureau of Land Management Carlsbad Field Office 620 East Greene Street Carlsbad, NM 88220

### GEOLOGY

#### Wolfcamp Formation

This disposal well is located in the transitional zone between the shelf environment and the basin environment of the Delaware Basin. In this area the Wolfcamp is approximately 3500 feet thick. In the Disposal well the Wolfcamp occurs from 6258 to 9703 feet. The Wolfcamp consists limestone with interbedded dolomites and shales. The limestones and shale have little porosity and act as confining intervals for the interbedded dolomites. The disposal intervals will be the pores dolomites exposed in the open hole interval.

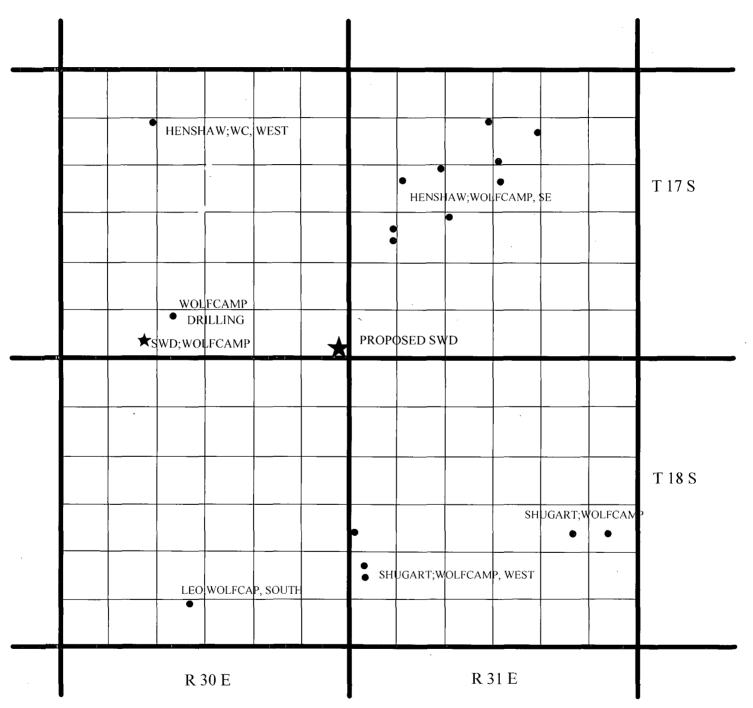
#### Wolfcamp Production

The nearest production is 2.5 to 4.5 to the northeast in the Henshaw; Wolfcamp, Southeast oil pool (see attached map). Also there is production in the Wolfcamp approximately 3.5 to 4.5 to the south in the Shugart; Wolfcamp, West oil pool.

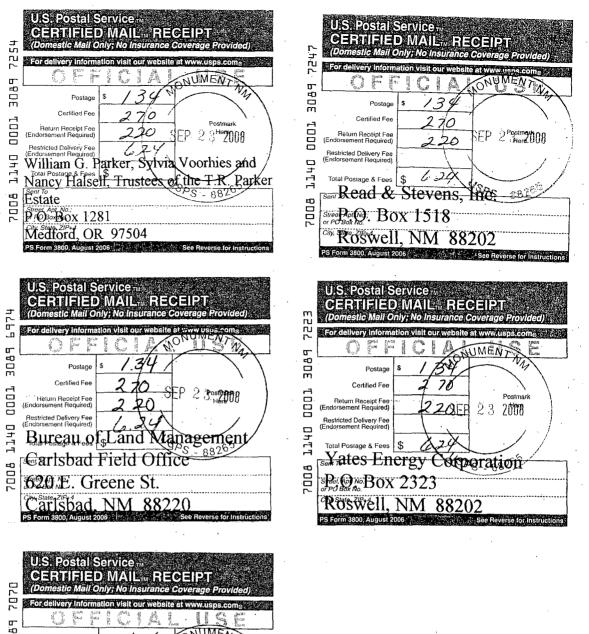
<u>Henshaw; Wolfcamp, Southeast oil pool</u>: This pool is a stratigraphic trap along a structural nose. Porosity developed in carbonates on the shelf above the slope into the basin.

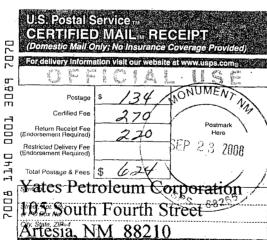
Shugart; Wolfcamp, West oil pool: This pool is a stratigraphic trap. Porosity developed in detrital carbonates which were shed off shelf and foreslope areas and deposited downslope in a deeper marine environment.

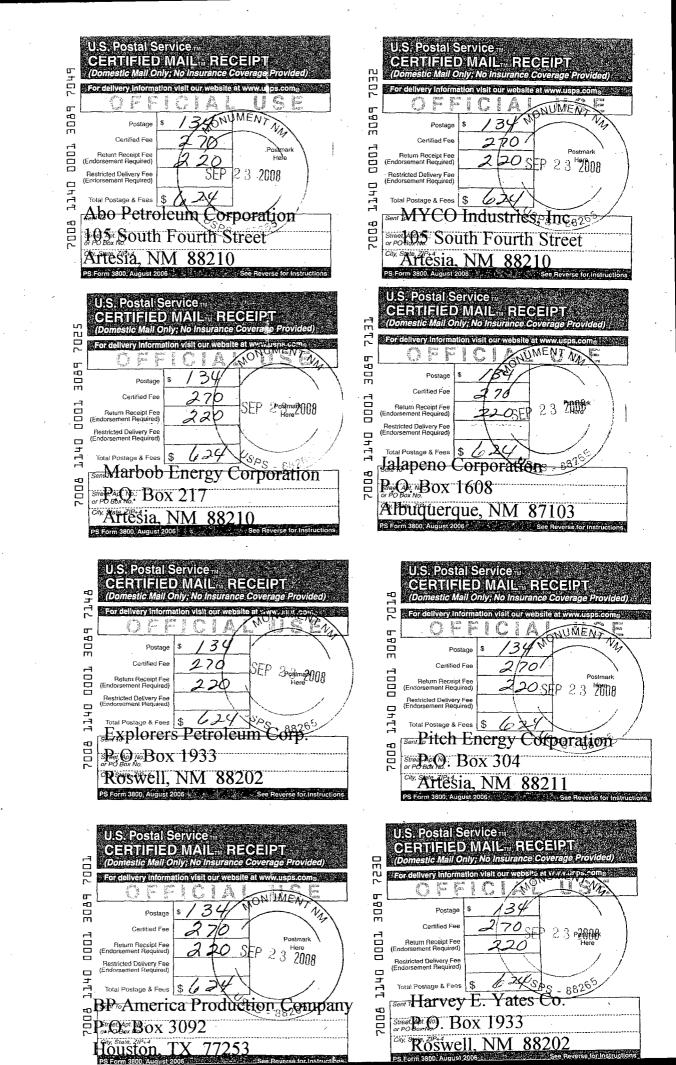
<u>Area around proposed disposal well</u>: Production from the Wolfcamp in the 6 mile radius around the proposed disposal well occur as stratigraphic traps controlled by structure. Around this well there are no structures which would have aided in the trapping of oil and gas.

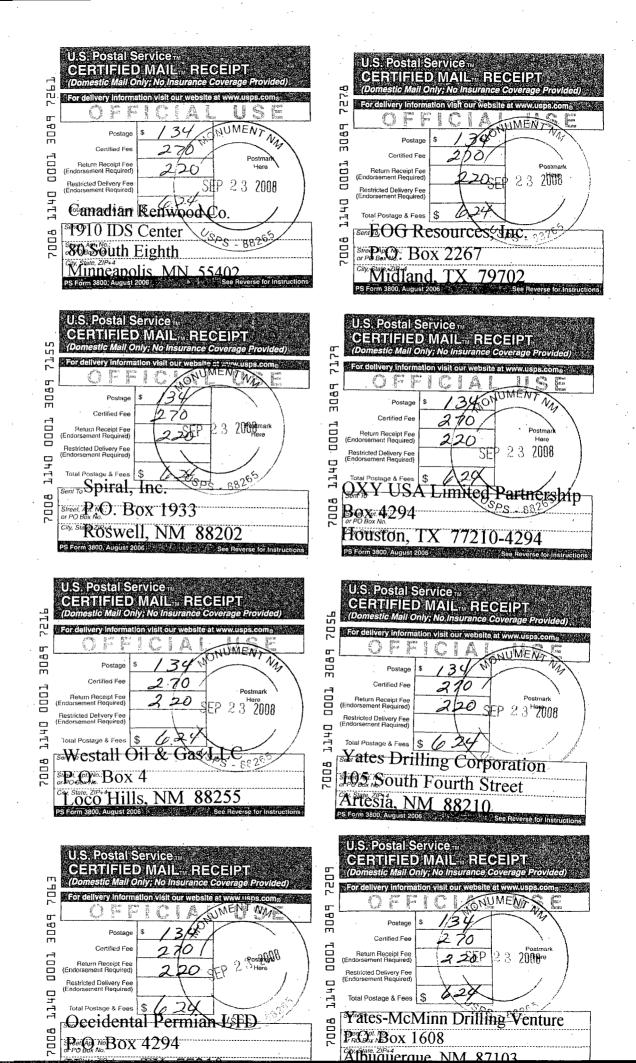


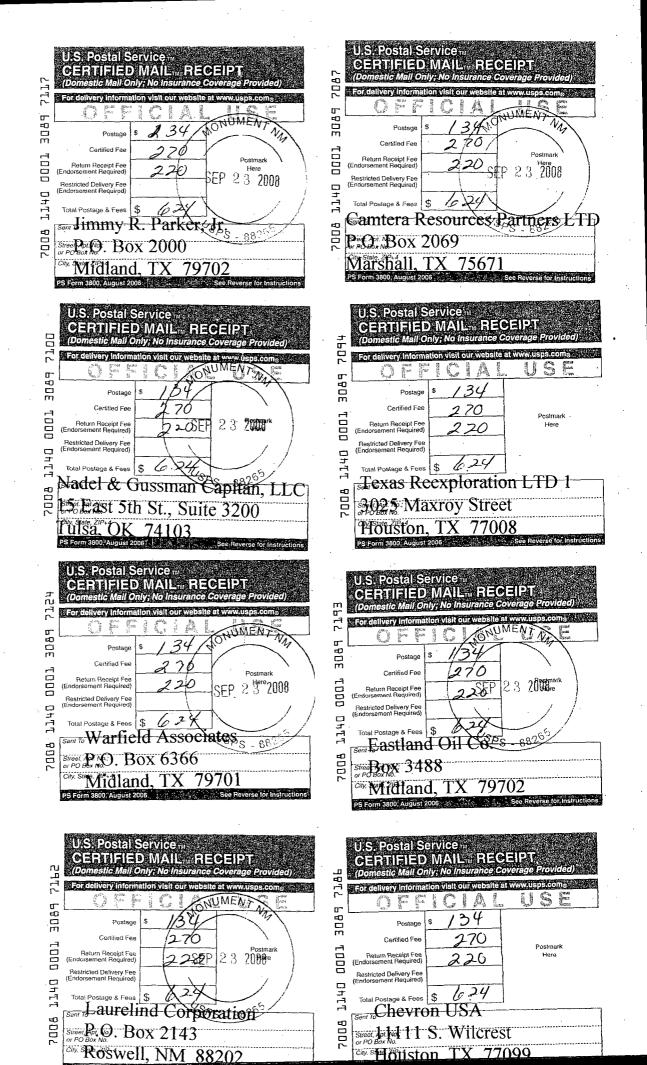
# WOLFCAMP SWD WELLS AND OIL PRODUCERS











	<u></u>	Inje	ction Permit Ch	ecklist (7/8/08)					
	Case R	SWD 144WFX	PMX	_IPI Permit Date	e UIC Qtr				
	# Wells _ Well Name: Loco HILL'S Swy #1 ( Was GOE STOCH )								
	API Num: (30-) 015-3	API Num: (30-) 015-31635 Spud Date: 11/15/01 New/Old: N_(UIC primacy March 7, 1982)							
		Footages 660 FSL/860 FEL Unit Psec 36 Tsp 175 Rge 30 Ecounty EDDY							
		OPERATING L		Contact	Mont A: FIRCHILD	>			
	OGRB: 29(37_RULE 40 Compliance (Wells) 7/1255(Finan Assur)Red Roda St #2								
	Operator Address: 550 FEXAS AVE SUITE 1300 MIDLAND TX 7970								
	Current Status of Well:	N N		ai	rand	1			
	Planned Work to Well:	e-nita-Ren-	7 1, 9500	Planned Ti	ubing Size/Depth: 3/20	8710			
		Sizes HolePipe	Setting Depths	Cement Sx or Cf	Cement Top and Determinatio Method	n			
	Existing V Surface	1 -3 6		550	CiRC				
=10Be -	Existing Intermediate	V. EW	401	1700	CIRC				
will be New	· · · · · · · · · · · · · · · · · · ·	21. 11	9500	1000	TS (TIE BACK)				
New		8-11			Total Depth 1709BTD 950	(2itter THIS)			
			Open-Hol		Total Depth <u>119</u> PBTD <u>2</u>				
	Well File Reviewed								
	Diagrams: Before Convers	sionAfter Conversio	Elogs in Ima	ging File:					
	Intervals	Depths	Formation	Producing (Yes/No)					
	Above (Name and Top								
	Above (Name and Top		B.S 0						
	Injection	6258-	Factor		17/2				
	Interval TOP	8810	ليري		1762 PSI Max. WHIP				
	Interval BOTTOM	9162	inc		Open Hole (Y/N)	1			
	Below (Name and Top	9703	Pern		Deviated Hole?				
	Sensitive Areas: "Gapitar	-Reof	Chiff House	Salt Depths	FD-1490	-			
	Potash Area (R-111-P)	<u> </u>	Potash Les	see	Naticed?				
88102	Fresh Water: Depths:	Not all	(Y/N)	is Included ()(/N);	Affirmative Statement	and the second se			
1020	Salt Water: Injection Water				Analysis?				
<b>(</b> (*		· · · ·	1	7	Analysis?				
	Injection IntervalWate	er Analysis:	Hydrocarbon P	otential <u>(</u>					
		./	SID						
	Notice: Newspaper(Y/N)_	Surface Owner	SLU	Mineral Ov	wner(s)	0.			
	RULE 701B(2) Affected	artlestE	istler o	IL i Cha	an i ned La	dom and gois			
	Area of Review: Adequa	te Map (Y/N)	Well List (Y/N)						
	Active Wells O Num			rval in AOR እን	;				
	P&A Wells Num	Repairs All We	Ilbore Diagrams Inc	uded?					
	Questions to be Answer		•	0					
	Run	CBL To	verify T	oP					
			WJ T			-			
	Dequired Months - This is				Dogwood Sort	-			
	Required Work on This V				Request Sent Reply:				
	AOR Repairs Needed:				Request SentReply:				
					Request SentReply:				