1/11/12		WVJ	1.11.12	TYPE SWD	1201149362

Released 2/26/12

NEW MEXICO OIL CONSERVATION DIVISION
- Engineering Bureau -
1220 South St. Francis Drive, Santa Fe, NM 87505

1320

162383 Cimarex

RECEIVED OCD

ABOVE THIS LINE FOR DIVISION USE ONLY Pearsall-Ed 12 SWD # 6

ADMINISTRATIVE APPLICATION CHECKLIST

THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

Application Acronyms:

[NSL-Non-Standard Location] [NSP-Non-Standard Proration Unit] [SD-Simultaneous Dedication]
[DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]
[PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]
[WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]
[SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]
[EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]

[1] **TYPE OF APPLICATION** - Check Those Which Apply for [A]

[A] Location - Spacing Unit - Simultaneous Dedication
☐ NSL ☐ NSP ☐ SD

E-28-17S-32E Lea

Check One Only for [B] or [C]

[B] Commingling - Storage - Measurement
☐ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM

[C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery
☐ WFX ☐ PMX **X** SWD ☐ IPI ☐ EOR ☐ PPR

9300'-10,150'
1060 PSI

[D] Other: Specify _____

[2] **NOTIFICATION REQUIRED TO:** - Check Those Which Apply, or ☐ Does Not Apply

[A] ☐ Working, Royalty or Overriding Royalty Interest Owners

[B] **X** Offset Operators, Leaseholders or Surface Owner

W. Lfcomp.

[C] **X** Application is One Which Requires Published Legal Notice

[D] **X** 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,

[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.

Kay Havenor	Kay C Havenor	Consultant	1/5/2012
Print or Type Name	Signature	Title	Date

KHavenor@georesources.com
e-mail Address

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 ____X____Disposal _____Storage
Application qualifies for administrative approval? ____X____Yes _____No

II. OPERATOR: Cimarex Energy Co. of Colorado

ADDRESS: 600 N. Marienfeld St. Suite 600; Midland, TX 79702

CONTACT PARTY: Kay Havenor PHONE: 575-626-4518

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 ____X____No
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:

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: Kay Havenor TITLE: Agent

SIGNATURE: Kay C Havenor DATE: January 2, 2012

E-MAIL ADDRESS: KHavenor@georesources.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

III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

(1) Lease name; Well No.; Location by Section, Township and Range; and footage location within the section.

(2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.

(3) A description of the tubing to be used including its size, lining material, and setting depth.

(4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District Offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

(1) The name of the injection formation and, if applicable, the field or pool name.

(2) The injection interval and whether it is perforated or open-hole.

(3) State if the well was drilled for injection or, if not, the original purpose of the well.

(4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.

(5) Give the depth to and the name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

(1) The name, address, phone number, and contact party for the applicant;

(2) The intended purpose of the injection well; with the exact location of single wells or the Section, Township, and Range location of multiple wells;

(3) The formation name and depth with expected maximum injection rates and pressures; and,

(4) A notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505, within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

Side 1

INJECTION WELL DATA SHEET

OPERATOR: Cimarex Energy Co. of Colorado (OGRID 162383)

WELL NAME & NUMBER: Pearsall Federal SWD #1 30-025-NA (New Drill)

WELL LOCATION: 2303' FNL & 1260' FWL | E | 28 | 17S | 32E

FOOTAGE LOCATION | UNIT LETTER | SECTION | TOWNSHIP | RANGE

WELLBORE SCHEMATIC

See attached diagram

WELL CONSTRUCTION DATA

Surface Casing

Hole Size: 17-½" Casing Size: 13-3/8" 48# H-40

Cemented with: 800 sx. *or* _____ ft³

Top of Cement: Surface Method Determined: Opr

Intermediate Casing

Hole Size: 12-¼"" Casing Size: 9-⅝" 36/40# J-55/N-80

Cemented with: 1350 sx. *or* _____ ft³

Top of Cement: Surface Method Determined: Opr

Production Casing

Hole Size: 7-7/8" Casing Size: 5-1/2" 17# L-80 to 10,500'

Cemented with: 1725 sxs sx. or _____ ft³

Top of Cement: Calc 3700' Method Determined: _____

Total Depth: 10,500'

Injection Interval

9590 ~~9,300'±~~ To 10200 ~~10,150'±~~

(Perforated or Open Hole; indicate which) Perforations

INJECTION WELL DATA SHEET

Tubing Size: 3-1/2" 9.3# N-80 Lining Material: Fiberglass coated

Type of Packer: Lok-Set or equivalent

Packer Setting Depth: Approx 9,250 ft

Other Type of Tubing/Casing Seal (if applicable): _____

Additional Data

1. Is this a new well drilled for injection? X Yes ____ No

   If no, for what purpose was the well originally drilled? _____

2. Name of the Injection Formation: Wolfcamp

3. Name of Field or Pool (if applicable): _____

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i.e. sacks of cement or plug(s) used. NA

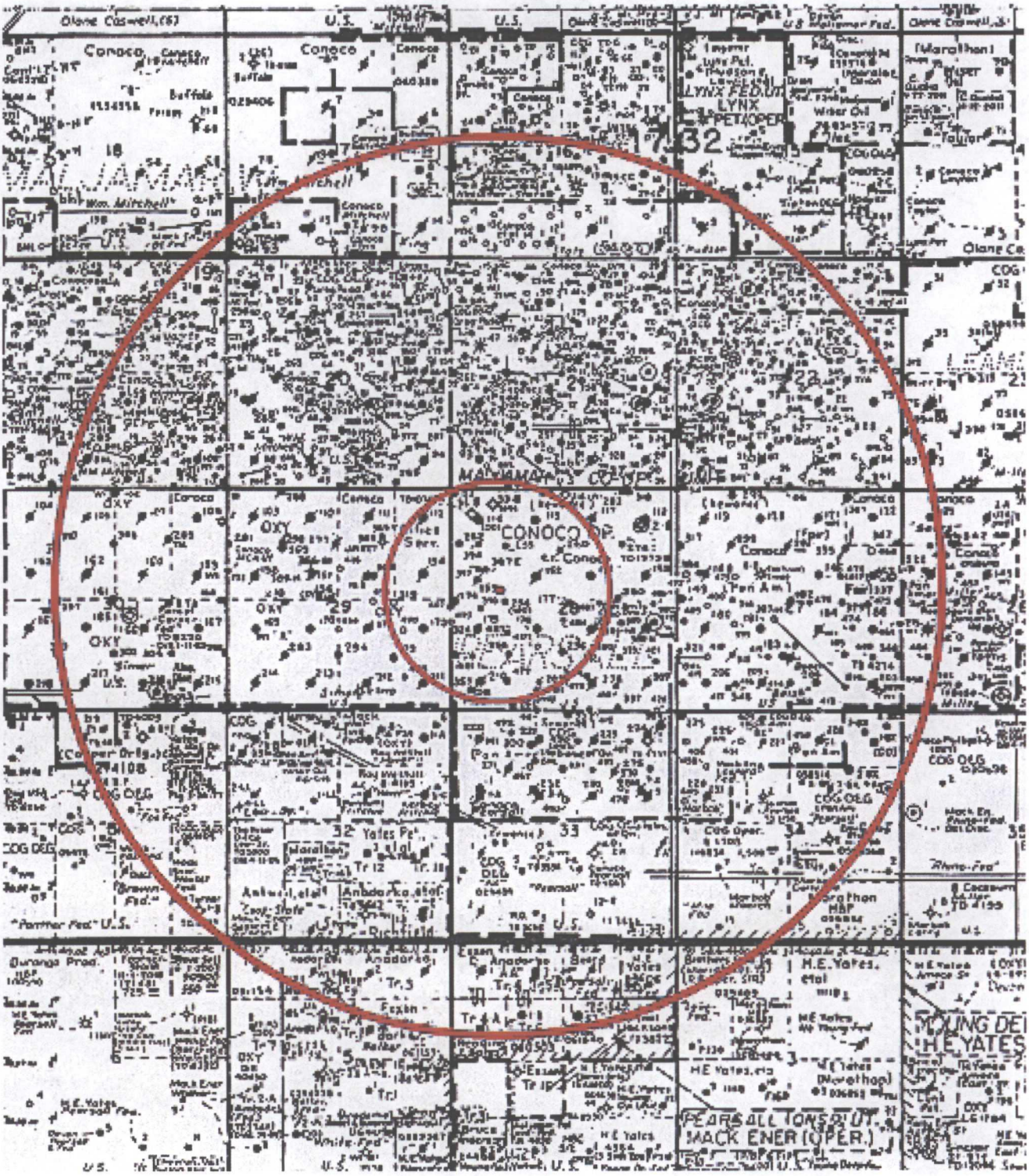
5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area: Est Tops: T/Rustler 90', Salado 1,015', Tansill 2,250', Queen 3,160. San Andres 3,920', Paddock 5,780', Bone Springs 6,270', Tubb 7,410', Drinkard 7,470', Abo 7,750, Upper Wolfcamp 9,225', Cisco 10,700', Strawn 11,400'

Cimarex Energy Company
Pearsall Federal SWD #1
2303' FNL & 1260' FWL
Sec. 28, T17S-R32E Lea Co. NM

API 30-025-NA

Item V:

Area of Review
½ Mile AOR and 2 Mile Radius



Cimarex Energy Company
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2303' FNL & 1260' FWL
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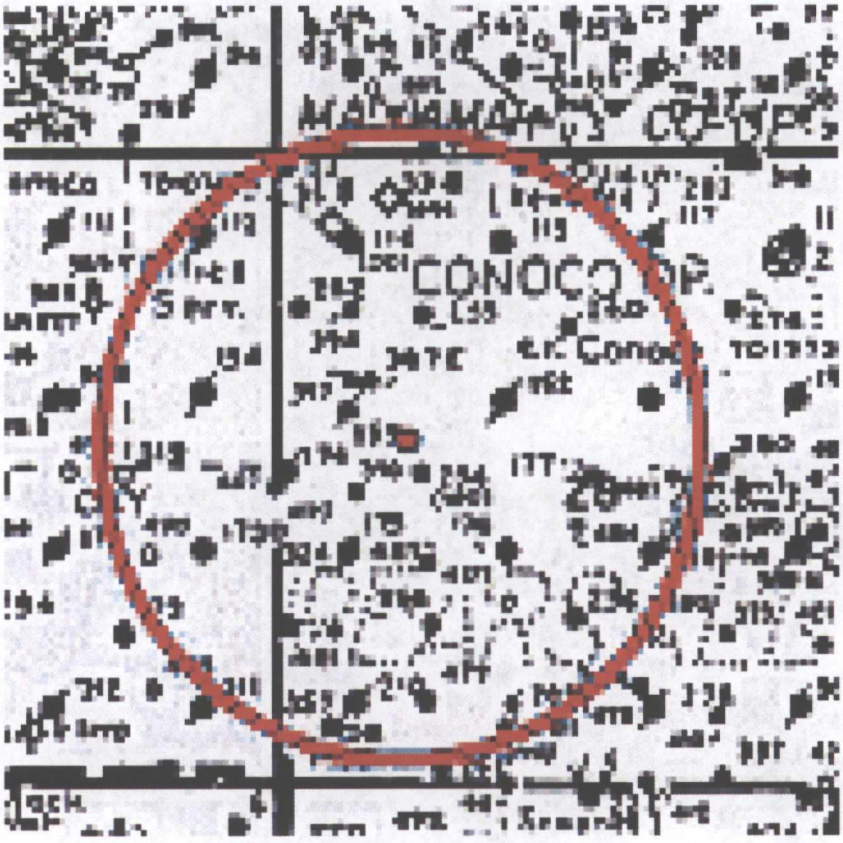
API 30-025-NA

Item V (a):

Area of Review
½ Mile AOR



Cimarex Energy Company
Pearsall Federal SWD #1
2303' FNL & 1260' FWL
Sec. 28, T17S-R32E Lea Co. NM

API 30-025-NA

Item VI: Data on wells in AOR:
Item VI(a): Construction of wells in the AOR that penetrate into the proposed Wolfcamp injection interval:

Wells penetrating SWD interval:

API	WELL_NAME	STATUS	SEC	TWNSP	RANGE	FTG	NS	FTG	EW	OCD	OPERATOR	LAND	WELL	PLUG DATE	SPUD_DATE	ELEVGL	TVD
3002500751	QUEEN B 036	Plugged	28	17.0S	32E	554	N	554	W	D	CONOCOPHILLIPS	P	O	17-Sep-2004	20-Sep-1948	3985	10747
3002527068	FEDERAL BI 001	Active	28	17.0S	32E	480	S	1980	W	N	COG OPERATING LLC	F	S		14-Oct-1980	3941	12992

1. 3002500751 ConocoPhillips Company Queen B No. 36. Unit D, Sec. 28, T17S-R32E. 554' FNL & 554' FWL. Elev 3985 GL. Spud 9/20/1948. Bit size NR 13" 50# @825' w/175 sx, circulated. 11" hole set 8-⅝"4,235' w/200 sx, TOC 3,391' TS. 7-⅞" hole to TD 10,747' set 5-½" J-55 & N-80 @10,745' w/1100 sx, TOC 5,890' TS. Extensive perforating, treating and squeezing was accomplished between TD 2/15/1949 and official TA on 4/12/1949 (see diagram below). A SWD application was submitted and approved as SWD-241 on 3/31/1982 for disposal into lower Wolfcamp 9,965'-10,040', although it was never implemented . A comprehensive tabulation of perf, treatment, squeezing, and plugging was assembled into the plugging diagram in the well file and is reproduced below with the required well diagrams. Much of this information cannot be derived from the filed reports.

2.* 3002527068 COG Operating, LLC Federal BI No. 1. OCD Unit N, Sec. 28, T17S-32E 480' FSL & 1980' FWL. Elev 3941 GL. Spud 10/14/1980. 17½" hole set 13-⅜" 54.5# @723' w/700 sxs cmt. Circ175 sx to surface. 9-⅝" 40/43.5# @4,500' w/375 sx "C" +900 sxs Lite. Circ 152 sx. Drilled to TD 12,925'. PBTD 12,265' Ran 5½" 17/20 N-80, 23# S-95 12,967" w/1400 sx Lite +800 sx "H" cmt. TOC 1,345' TS. Perf 12,668-672', 12,676-680' w/4 JSPF. Acid 3500 gal 7-½% MS. Swb no O/G 3 days. CIBP @12,650. Perf 12,516-524, 12,536-540' w/2 JSPF. Acid 2500 gal 7½% MS. Swb no O/G 2 days. CIBP 12,300' w/35' cmt. Perf Strawn 11,634-648' w/4 JSPF (Strawn). Well P&A ConocoPhillips 12/19/2003. Well re-entered by COG 1/9/2011 re-completed w/extensive casing repairs as SWD-1093 in Wolfcamp.

*Note: This well is slightly outside the AOR, but is included for information.

Cimarex Energy Company
Pearsall Federal SWD #1
2303' FNL & 1260' FWL
Sec. 28, T17S-R32E Lea Co. NM

API 30-025-NA

Item VI(b): The following are wells located within the AOR.

API	WELL_NAME	STATUS	SEC	TWNSP	RANGE	FTG	NS	FTG	EW	OCD	OPERATOR	LAND	WELL	PLUG DATE	SPUD_DATE	ELEVGL	TVD
3002500734	MCA UNIT 115	Active	28	17.0S	32E	660	N	1980	W	C	CONOCOPHILLIPS	F	O		16-May-1940	3997	4086
3002500733	MCA UNIT 114	Active	28	17.0S	32E	660	N	660	W	D	CONOCOPHILLIPS	F	O		8-Sep-1939	3986	4071
3002500750	BAISH B 033	Plugged	28	17.0S	32E	330	N	990	W	D	KEWANEE OIL CO	F	O	30-Dec-1947	3-Nov-1947	3998	2494
3002500751	QUEEN B 036	Plugged	28	17.0S	32E	554	N	554	W	D	CONOCOPHILLIPS	P	O	17-Sep-2004	20-Sep-1948	3985	10747
3002512804	MCA UNIT 113	Active	28	17.0S	32E	80	N	25	W	D	CONOCOPHILLIPS	F	O		May-63	3979 DF	4050
3002523482	MCA UNIT 252	Active	28	17.0S	32E	1250	N	200	W	D	CONOCOPHILLIPS	F	O		11-Apr-1970	3978 DF	4080
3002537931	MCA UNIT 394	Active	28	17.0S	32E	1295	N	675	W	D	CONOCOPHILLIPS	F	O		16-Oct-2006	3974	4445
3002500735	MCA UNIT 153	Plugged	28	17.0S	32E	1980	N	660	W	E	CONOCO INC	F	O	12-Apr-1993	27-May-1940	3975	3815
3002523744	MCA UNIT 284	Active	28	17.0S	32E	2615	N	1295	W	E	CONOCOPHILLIPS	F	O		9-Jun-1971	3965	4150
3002537900	MCA UNIT 395	Active	28	17.0S	32E	1880	N	1220	W	E	CONOCOPHILLIPS	F	O		25-Sep-2006	3974	4488
3002537939	MCA UNIT 397	Active	28	17.0S	32E	1890	N	660	W	E	CONOCOPHILLIPS	F	O		28-Oct-2006	3973	4460
3002500736	MCA UNIT 152	Active	28	17.0S	32E	1980	N	1980	W	F	CONOCOPHILLIPS	F	I		17-Apr-1940	3981	4128
3002520496	MCA UNIT 235	Active	28	17.0S	32E	1325	N	1325	W	F	CONOCOPHILLIPS	F	O		27-Jun-1963	3995 DF	4182
3002523569	MCA UNIT 260	Active	28	17.0S	32E	1410	N	2550	W	F	CONOCOPHILLIPS	F	O		5-Aug-1970	3994	4110
3002500739	MCA UNIT 151	Active	28	17.0S	32E	1980	N	1980	E	G	CONOCOPHILLIPS	F	O		31-Jul-1940	3990 topo	3806
3002537940	MCA UNIT 403	Expired	28	17.0S	32E	2540	N	1420	E	G	CONOCOPHILLIPS	F	O			3975	0
3002500743	MCA UNIT 178	Plugged	28	17.0S	32E	1980	S	1980	E	J	CONOCO INC	F	I	2-Oct-1987	17-Oct-1940	3963 topo	3925
3002521489	MCA UNIT 177	Active	28	17.0S	32E	2600	S	2470	E	J	CONOCOPHILLIPS	F	O		Pre-Sept 1961	3974 DF	4157
3002524226	MCA UNIT 301	Active	28	17.0S	32E	1980	S	1780	E	J	CONOCOPHILLIPS	F	I		22-Aug-1972	3967 DF	4220
3002539356	MCA UNIT 487	Active	28	17.0S	32E	2630	S	1830	E	J	CONOCOPHILLIPS	F	O		2-Jul-2009	3970	4170
3002500742	MCA UNIT 176	Active	28	17.0S	32E	1980	S	1980	W	K	CONOCOPHILLIPS	F	O		19-Sep-1940	3954 DF	4100
3002523705	MCA UNIT 268	Active	28	17.0S	32E	1345	S	1345	W	K	CONOCOPHILLIPS	F	O		15-Mar-1971	3942	4155
3002523790	MCA UNIT 296	Active	28	17.0S	32E	1400	S	2615	W	K	CONOCOPHILLIPS	F	O		16-Jun-1971	3958	4180
3002539354	MCA UNIT 484	Active	28	17.0S	32E	2160	S	2603	W	K	CONOCOPHILLIPS	F	O		7-Jul-2009	3959	4142
3002539403	MCA UNIT 485	Active	28	17.0S	32E	1860	S	1330	W	K	CONOCOPHILLIPS	F	I		26-Jul-2009	3949	4124
3002539767	MCA UNIT 482	New (Not	28	17.0S	32E	1510	S	2010	W	K	CONOCOPHILLIPS	F	O		28-Aug-2010	3946	4134
3002500741	MCA UNIT 175	Plugged	28	17.0S	32E	1980	S	660	W	L	CONOCOPHILLIPS	F	I	28-Feb-2005	28-Aug-1940	3949	4125
3002512794	MCA UNIT 174	Plugged	28	17.0S	32E	2590	S	25	W	L	CONOCO INC	F	O	19-Sep-2001	Pre-Jan 1960	3955 DF	4055
3002524235	MCA UNIT 324	Active	28	17.0S	32E	1345	S	25	W	L	CONOCOPHILLIPS	F	O		28-Sep-1972	3945	4170
3002537976	MCA UNIT 396	Active	28	17.0S	32E	2543	S	474	W	L	CONOCOPHILLIPS	F	O		9-Nov-2006	3966	4450
3002538038	MCA UNIT 407	Active	28	17.0S	32E	2469	S	10	W	L	CONOCOPHILLIPS	F	O		8-Oct-2006	3956	4550
3002539790	MCA UNIT 495	New (Not	28	17.0S	32E	2130	S	10	W	L	CONOCOPHILLIPS	F	O			3954	0
3002500749	MCA UNIT 210	Plugged	28	17.0S	32E	660	S	660	W	M	CONOCO INC	F	O	24-Oct-1985	9-Nov-1940	3939	3980
3002539402	MCA UNIT 481	Active	28	17.0S	32E	1310	S	510	W	M	CONOCOPHILLIPS	F	I		21-Jul-2009	3942	4153
3002500748	MCA UNIT 209	Plugged	28	17.0S	32E	660	S	1980	W	N	CONOCO INC	F	I	9-Apr-2001	5-Dec-1940	3942 DF	4026
3002527068	FEDERAL BI 001	Active	28	17.0S	32E	480	S	1980	W	N	COG OPERATING LLC	F	S		14-Oct-1980	3941	12992
3002539352	MCA UNIT 479	Active	28	17.0S	32E	746	S	1270	W	N	CONOCOPHILLIPS	F	O		14-Jul-2009	3935	4150
3002524349	MCA UNIT 332	Active	28	17.0S	32E	25	S	1345	E	O	CONOCOPHILLIPS	F	O		19-Jan-1973	3940	4225
3002539351	MCA UNIT 478	Active	28	17.0S	32E	760	S	2630	E	O	CONOCOPHILLIPS	F	I		9-Jun-2009	3941	4200
3002539766	MCA UNIT 480	New (Not	28	17.0S	32E	1310	S	1995	E	O	CONOCOPHILLIPS	F	O		12-Sep-2010	3945	4084
3002500752	MCA UNIT 112	Plugged	29	17.0S	32E	660	N	660	E	A	CONOCO INC	F	O	14-Aug-1996	28-Jun-1959	4085 KB	4078
3002524213	MCA UNIT 319	Active	29	17.0S	32E	2615	N	1345	E	G	CONOCOPHILLIPS	F	O		30-Jul-1972	3941	4125
3002500753	MCA UNIT 154	Active	29	17.0S	32E	1980	N	660	E	H	CONOCOPHILLIPS	F	I		8-Jun-1940	3984 DF	3810
3002537879	MCA UNIT 393	Active	29	17.0S	32E	1892	N	1	E	H	CONOCOPHILLIPS	F	O		6-Sep-2006	3960	4450
3002500762	MCA UNIT 173	Active	29	17.0S	32E	1980	S	660	E	I	CONOCOPHILLIPS	F	O		2-Dec-1940	3947 DF	4250
3002539792	MCA UNIT 498	New (Not	29	17.0S	32E	1980	S	1135	E	I	CONOCOPHILLIPS	F	O			3939	0

Cimarex Energy Company
Pearsall Federal SWD #1
2303' FNL & 1260' FWL
Sec. 28, T17S-R32E Lea Co. NM

API 30-025-NA

Item VII:

1. The maximum injected volume anticipated is 5,000 BWPD. Average anticipated is 3,500 BWPD.
2. Injection will be through a closed system.
3. Maximum injection pressure is expected to be 1,860 psi, or as allowed by depth of top perforation.
4. Sources will be produced water. These will be compatible with waters in the disposal zone.
5. Water sample analysis from the ConocoPhillip Company Elvis #2, Unit O, Sec. 17, T17S-R32E, Lea Co., NM, API 30-025-33854, West Maljamar Devonian. Wolfcamp water analysis:

NM WAIDS

DATA | MAPS | HOME | SCALE | CORROSION

Water Samples for Well ELVIS 002
API = 3002533854
Formation = WOLF
Field = null
Current Water Production Information

Instructions:

Click — For general information about this sample.

Click — For scale calculation pages (Stiff-Davis or Oddo Tomson methods).

Click — To select **this water sample** for water mixing. It will lead to the main page, and add the sample ID to the mixing table.

Click 664 — Click the hyperlinked sample number to make a .csv for that sample, or select several check boxes and click Submit for multiple samples

The ions are in (mg/L) units.

	SampleID	T	R	S	SO4	CL	CO3	HCO3	K	Na	Ca	Mg
☐	3509	17S	32E	17	1368	78216	0	172	307	44579	4415	817
☐	3281	17S	32E	17	1151	73312	0	380	951	34886	8865	1330

☐ SELECT/DESELECT ALL

Submit

New Mexico Tech | PRRC

Cimarex Energy Company
Pearsall Federal SWD #1
2303' FNL & 1260' FWL
Sec. 28, T17S-R32E Lea Co. NM

API 30-025-NA

Item VIII:

The lower Wolfcamp carbonates in this area are dolomitized. Such carbonate alteration often results in enhanced porosity as is shown on the porosity log portion inclosed with the original SWD application for SWD-241, 30-025-00751, ConocoPhillips Co., Queen B No. 36, Unit D, Sec. 28, T17S-R32E. The logs confirm the lower Wolfcamp in the proposed interval is unproductive of commercial oil/gas, but does have water wet porosity.

One water well is reported present in the NW/4 NE/4 Sec. 29, T17S-R32S in the records of the New Mexico State Engineer. The well was drilled in Feburary 2002 to a depth of 158' by Flo CO2, Inc for sanitary facility. Depth to water, or its quality, was not reported. The driller's report suggests the probable top of water about 116', and the top of redbeds about 124'. It would be expected that the Triassic/Permian redbeds was be the base of any potable water. The 158' well depth would act as a sump to collect larger volumes and permit better use of pump equipment. It does not imply water was being derived from that deeper depth.

The surface geology of the greater area, including the 2-mile radius as shown in Item V above, is Quaternary eolian and piedmont deposits of Holocene to middle Pleistocene age. These are underlain by the Triassic deposits, Permian Rustler Formation and evaporites.

New Mexico Office of the State Engineer

Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.) (R=POD has been replaced, O=orphaned, C=the file is closed) (quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest) (NAD83 UTM in meters) (In feet)

POD Number	POD Code	Subbasin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
RA 10175			LE	2	1	28	17S	32E		614814	3631005*	725	158		
											Average Depth to Water:			–	
											Minimum Depth:			–	
											Maximum Depth:			–	

Record Count: 1

UTMNAD83 Radius Search (in meters):

Easting (X): 614651 Northing (Y): 3630298 Radius: 1700

***UTM location was derived from PLSS - see Help**

12/19/11 3:17 PM

WATER COLUMN/ AVERAGE DEPTH TO WATER

Cimarex Energy Company
Pearsall Federal SWD #1
2303' FNL & 1260' FWL
Sec. 28, T17S-R32E Lea Co. NM

API 30-025-NA

Item IX:

Acidize perforations in the lower Wolfcamp between 9,300' to 10,150' in 5-1/2" casing with approximately 10,000 gal of 15% HCl.

Item X:

Logs will be run on the new well and submitted to the OCD.

Item XI:

One industrial water well is known in the 1-mile area. Please note Item VIII discussion above.

Item XII:

There is no geological evidence of open faults nor hydrologic connection between the disposal zone and any possible underground sources of protectable water.

Extensive testing in the ConocoPhillips Queen B #1, below, demonstrates the lack of oil/gas commercial production potential in the proposed Wolfcamp disposal interval.

Cimarex Energy Company
Pearsall Federal SWD #1
2303' FNL & 1260' FWL
Sec. 28, T17S-R32E Lea Co. NM

API 30-025-NA

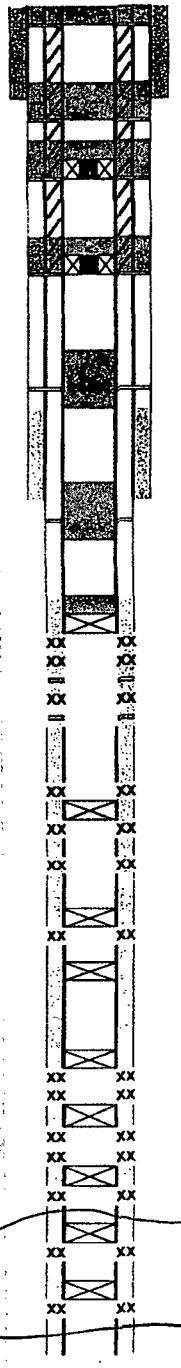
P&A of ConocoPhillips Company Baish B #36
AKA: Queen B #36 API: 30-025-00751

PLUGGED WELLBORE SKETCH

ConocoPhillips Company -- Permian Basin Business Unit

Date: September 26, 2004

RKB @ _____
DF @ _____
GL @ 3985.3'



30 sx C cmt sqz'd 50' - surface

12-1/4" Hole

13" 50# @ 825' w/ 175 sx, circ.
80 sx C cmt sqz'd 875 - 732' TAGGED

Top of Salt @ 1060'
65 sx C cmt sqz'd 1,060 - 960' - CICR w/ 30'
Csg Lks 90'-2699'

Base of Salt @ 1910'
70 sx C cmt sqz'd 1,910 - 1,800' - CICR w/ 30'

25 sx C cmt 3,850 - 3,586' TAGGED
unable to establish rate at 1,500 psi

11" Hole

8-5/8" @ 4198' w/ 200 sx, TOC 3391' TS
25 sx C cmt 4,316 - 4,067' TAGGED
unable to establish rate at 1,500 psi

25 sx C cmt on CIBP 5,278 - 5,024'
CIBP @ 5,278'
5335'-5353' - Sqz'd
5372'-5384' - Sqz'd
5378'-5384' 5394'-5400'
5394'-5400' Sqz'd w/75 sx
5410'-5422' 5422'-5428' - 120 shots

5460'-5478' - 72 shots - Sqz'd w/150 sx
Cmt Retainer @ +/- 5485'
5502' - 6 shots - Sqz'd w/75 sx (3/49)

5825' - 3 shots - Sqz'd w/275 sx; TOC @ 5765'

Cmt Retainer @ +/- 6648' (3/49)
6653'-6665' 6678'-6690' - 96 shots - Sqz'd w/50 sx

LaneWells Type 'D' Bridge Plug @ +/- 6900' (3/49)

Cmt Retainer @ +/- 8834'
8914'-8920' 8954'-8960'
8972'-8978' - 72 shots - Sqz'd w/50 sx
Retainer @ 8996'
9020'-9026' 9042'-9048'
9070'-9076' - 72 shots - Sqz'd w/100 sx (3/49)
Cmt Retainer @ +/- 9080'
9098'-9110' - 48 shots - Sqz'd w/75 sx (3/49)

Cmt Retainer @ +/- 9170'
9330'-9350' - 72 shots - Sqz'd w/100 sx (3/49)

Cmt Retainer @ +/- 9911'
9974-9980 - 24 shots - Sqz'd w/75 sx (2/49)

W.C.

PBTD: 5485'
TD: 10747'

7-7/8" Hole
5-1/2" 17# N-80 & J-55 @ 10745'
Cmt w/1100 sx
TOC @ 5890' (T.S.)

3996' N-80 on btm
4021' J-55
2717' N-80 on top

Subarea : Maljamar
Lease & Well No. : Queen-B No. 36
Legal Description : 554' FNL & 554' FWL, NW/4 NW/4 Section 28, T-17-S, R-32-E N.M.P.M. Meridian
County : Lea State : New Mexico
Field : Baish, Wolfcamp
Date Spudded : 9/20/48 IPP:
API Number : 30-025-00751
Status: PLUGGED
Drilled as Baish "B" No. 36

Stimulation History:

Interval	Date	Type	Gals	Lbs. Sand	Max Press	ISIP	Max Rate	Down
	2/25/49	Perf 4 JSPF 9974'-9980' - 24 shots - Sqz w/75 sx						
	3/1/49	Perf 9330'-9350' w/72 shots						
9330-9350	3/2/49	Mud Acid (MA)	500		2400		0.7	
9330-9350	3/3/49	20% Low Tension Acid	1,000		2600		1.2	
	3/5/49	Sqz pkr @ 9170'; sqz w/100 sx						
	3/6/49	Perf 9098-9110 - 48 shots						
	3/7/49	Sqz pkr @ 9080'; sqz w/75 sx						
	3/9/49	Perf 9070-9076 - 24 shots						
	3/10/49	Perf 9020-9026 (24 shots) and 9042-9048 (24 shots)						
9020-9026	3/13/49	Mud Acid (MA)	500		2700		0.6	
	3/13/49	Set Retainer @ 8996'; sqz w/100 sx						
	3/14/49	Perf 8914-8920 (24 shots) and 8954-8960 (24 shots)						
8914-8960	3/16/49	20% Low Tension Acid	1,000		3,000			
	3/18/49	Perf 8972-8978 (24 shots)						
8914-8978	3/19/49	20% Low Tension Acid	500					
	3/20/49	Bridging pkr @ 8834'; sqz w/50 sx						
	3/22/49	Bridging plug @ 6900' perf 6653-6665 (48 shots) & 6678-6690 (48 shots)						
6653-6690	3/22/49	20% Low Tension Acid	500		3,000		1.2	
	3/23/49	Ratrievable pkr @ 6548'; sqz w/50 sx; perf 5825' sqz w/275 sx						
	3/27/49	Perf 5335-5353 (72 shots), 5372-5384 (48 shots) and 5394-5400 (24 shots)						
	3/29/49	Sqz 5335-5400 w/75 sx						
	3/31/49	5502' shoot 6 holes and sqz w/75 sx						
	4/2/49	Perf 5460-5478 (72 shots)						
	4/4/49	Sqz 5460-5478 w/150 sx						
	4/9/49	Perf 540-5422 (48 shots)						
5410-5422	4/9/49	20% Low Tension Acid	500	Unable to inject acid				
	4/10/49	Perf 5378-5384 (24 shots, 5394-5400 (24 shots) and 5422-5428 (24 shots)						
5378-5428	4/10/49	20% Low Tension Acid	500		2700			
	4/11/49	Mix 58 sacks Aquagel, pmp hole full of mud						
	4/12/49	Cap well - Temporarily Abandoned						
	4/28/61	Change name to Queen-B No. 36						
	9/19/81	Run csg insp log - numerous csg lks 90'-2699'						
	10/81	Recommended to convert to water disposal in Lower Wolfcamp (9965'-10040')						
	3/31/82	Administrative Order # SWD-241						
	3/13/92	Run Temp Survey 4200'-2000'. CPNL 2700'-4200' - 3 passes						
	2/23/93	Sundry Notice - Being used as CO2 observation well to evaluate CO2 advance in Stage 1 Area.						
	7/6/04	BLM advised that well is to be put into operations or submit P&A plans for approval by 8/29/04.						
	8/9/04	Prepare Application for Abandonment of Well						

TRIPLE N SERVICES INC.
MIDLAND, TX

ACTUAL PLUGGING PROCEDURE

1) set CIBP @ 5,278'
2) 25 sx C cmt on CIBP 5,278 - 5,024'
3) 25 sx C cmt 4,316 - 4,067' TAGGED
4) 25 sx C cmt 3,850 - 3,586' TAGGED
5) 70 sx C cmt sqz'd 1,910 - 1,800' - CICR w/ 30'
6) 65 sx C cmt sqz'd 1,060 - 960' - CICR w/ 30'
7) 80 sx C cmt sqz'd 875 - 732' TAGGED
8) 30 sx C cmt sqz'd 50' - surface

Formation Tops:

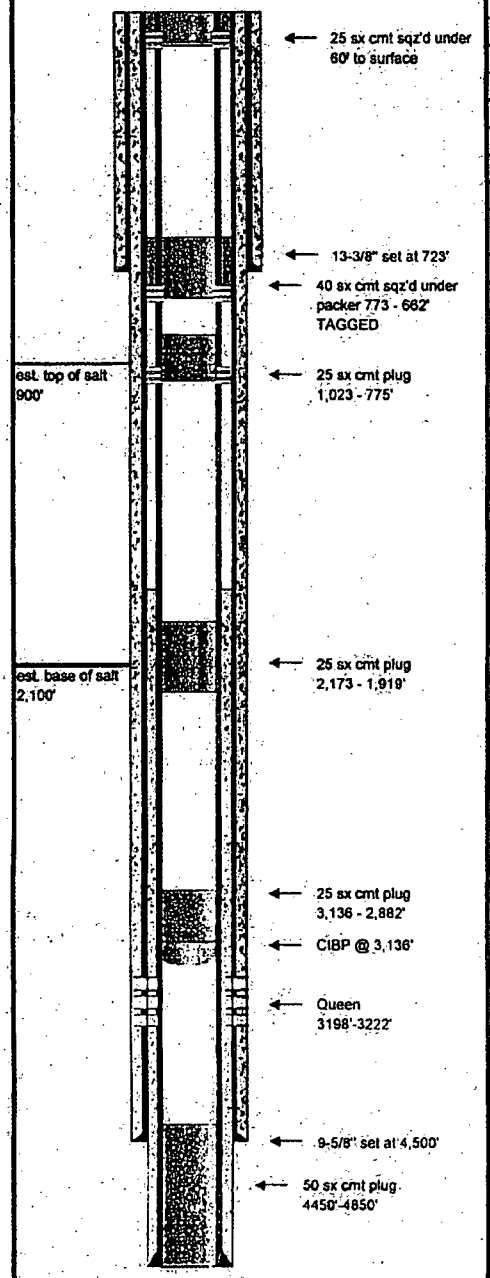
San Andres	3800'
8th Zone	3948'
9th Zone	3975' +/-
9th M Zone	4080' +/-

Cimarex Energy Company
Pearsall Federal SWD #1
2303' FNL & 1260' FWL
Sec. 28, T17S-R32E Lea Co. NM

API 30-025-NA

P&A of ConocoPhillips Federal BI #1 API 30-025-27068

ConocoPhillips Inc. — ***Plugged Wellbore*** — **Federal BI #1**



Field Name:	Pearsall Queen		
County:	Lea	Well Type:	gas
State:	New Mexico	PBTD:	4,850
RRC District:		Drilling Commenced:	October 14, 1980
Section:	28	Drilling Completed:	March 18, 1981
Block:		Date Well Plugged:	December 19, 2003
Survey:	T-17-S; R-32-E	Longitude:	
		Latitude:	
		Freshwater Depths:	
API #:	42-025-27068		
Lease or ID:	LC 057210		

Casing

Description	Size (inches)	Depth (feet)	TOC (feet)	Cement (sacks)	Hole Size (inches)
Surface:	13-3/8"	723	Surface	700	17-1/2"
Intermediate:	9-5/8"	4,500	Surface	1475	11"
Production:	5-1/2"	12,967	1,345	2200	8-1/2"

Existing Plugs

	Description	Top (feet)	Depth (feet)	Volume (sacks)	Volume (cu ft)
1	Cement-Class C - Balanced	4,450	4,850	50	66
2	CIBP	3,136	3,138		
3	Cement-Class C - Balanced	2,882	3,136	25	33
4	Cement-Class C - Balanced	1,919	2,173	25	33
5	Cement-Class C - Balanced	775	1,023	25	33
6	Cement-Class C - perf & sqz'd	662 (tag'd)	773	40	53
7	Cement-Class C - perf & sqz'd	surface	60	25	33

Perforations

Formation	Top (feet)	Depth (feet)	
Queen	3,198	3,222	

Formations

Name	Top of Formation	
est. top of salt	900	
est. base of salt	2,100	

Comments

Perforated at 950' for plug #5, unable to squeeze at 1,500 psi, pumped balanced plug.

Plugs #6 and #7 perforated and squeezed under packer.

Prepared By:	Jim Newman
Date:	December 22, 2003

TRIPLE N SERVICES INC. MIDLAND, TX

Cimarex Energy Company
Pearsall Federal SWD #1
2303' FNL & 1260' FWL
Sec. 28, T17S-R32E Lea Co. NM

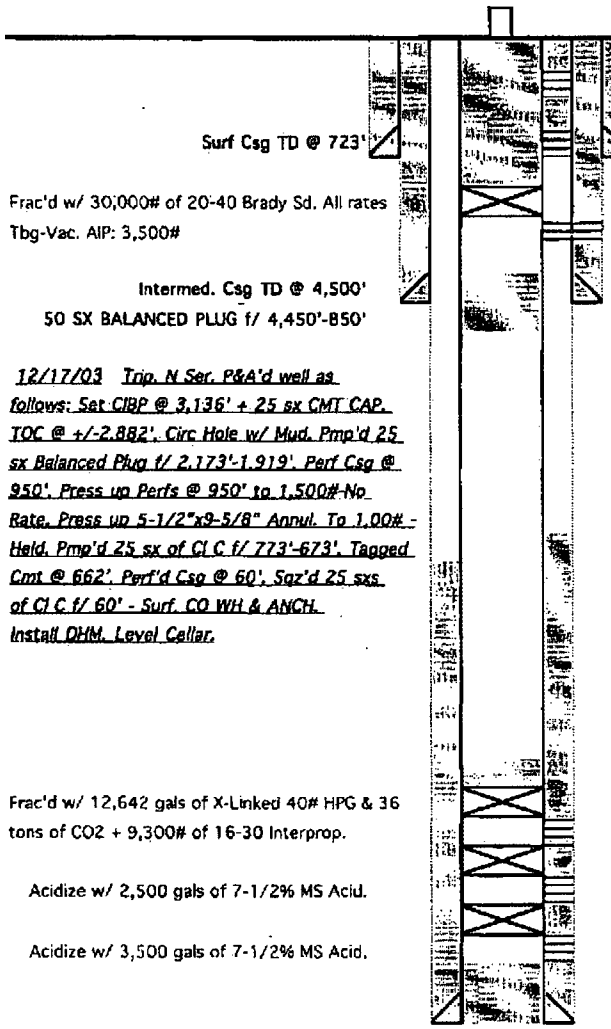
API 30-025-NA

P&A of COG Federal BI #1 API 30-025-27068
Well re-entered by COG and re-completed to active SWD-1093
Note: This well is slightly outside the AOR, but is included for information.

P&A'd **FEDERAL BI #1** **P&A'd**

WELL BORE DIAGRAM

LEGAL: 480' FSL & 1980' FWL, Unit N, Sec. 28, T-17-S,R-32-E, Lea County, NM, NMPM
API#: 30-025-27068 **FED. LSE #:** LC-057210
ELEV: 3,941' - GL
SPUD DATE: 10/14/80
COMPL. DATE: 03/18/81



17-1/2" Hole

Ran 723' of 13-3/8", 54.5#, J-55 Csg. CSA 723'.
Cmt'd w/ 700 sxs of Cl "C" + Add. Circ 175 sxs to Surf.

Surf Csg TD @ 723'

12-1/4" Hole

CIBP @ 3,136' w/ 25' CMT CAP
3,198'-3,206', 214'-222' - QUEEN

Frac'd w/ 30,000# of 20-40 Brady Sd. All rates Tbg-Vac. AIP: 3,500#

Ran 1,685' of 9-5/8", 43.5#, S-95 & 2,815' of 9-5/8", 40#, S-95 Csg. CSA 4,500'.
Cmt'd in 3 Stg's: 1st Stg: Cmt'd w/ 375 sxs of Cl "C" + Add. 2nd Stg: Cmt'd w/ 900 sxs of Lite Cmt + add. 3rd Stg: Cmt'd w/ 200 sxs of Cl "C" Neat. Circ 152 sxs to Surf.

Intermed. Csg TD @ 4,500'
50 SX BALANCED PLUG f/ 4,450'-850'

12/17/03 Trip. N Ser. P&A'd well as follows: Set CIBP @ 3,136' + 25 sx CMT CAP. TOC @ +/-2,882'. Circ Hole w/ Mud. Pmp'd 25 sx Balanced Plug f/ 2,173'-1,919'. Perf Csg @ 950'. Press up Perfs @ 950' to 1,500# No Rate. Press up 5-1/2"x9-5/8" Annul. To 1,00# - Held. Pmp'd 25 sx of Cl C f/ 773'-673'. Tagged Cmt @ 662'. Perf'd Csg @ 60'. Sqz'd 25 sxs of Cl C f/ 60' - Surf. CO WH & ANCH. Install DHM. Level Cellar.

8-1/2" Hole

TOC @ ?

Frac'd w/ 12,642 gals of X-Linked 40# HPG & 36 tons of CO2 + 9,300# of 16-30 Interprop.

CIBP @ 11,590' w/ 35' CMT CAP
11,634'-648' w/ 4-JSPF - STRAWN
CIBP @ 12,300' W/ 35' CMT CAP
12,516'-524', 536'-540' - 2-JSPF - MORROW

Acidize w/ 2,500 gals of 7-1/2% MS Acid.

CIBP @ 12,650'
12,668'-672', 676'-680',693'-702'- 2-JSPF - MORROW

Acidize w/ 3,500 gals of 7-1/2% MS Acid.

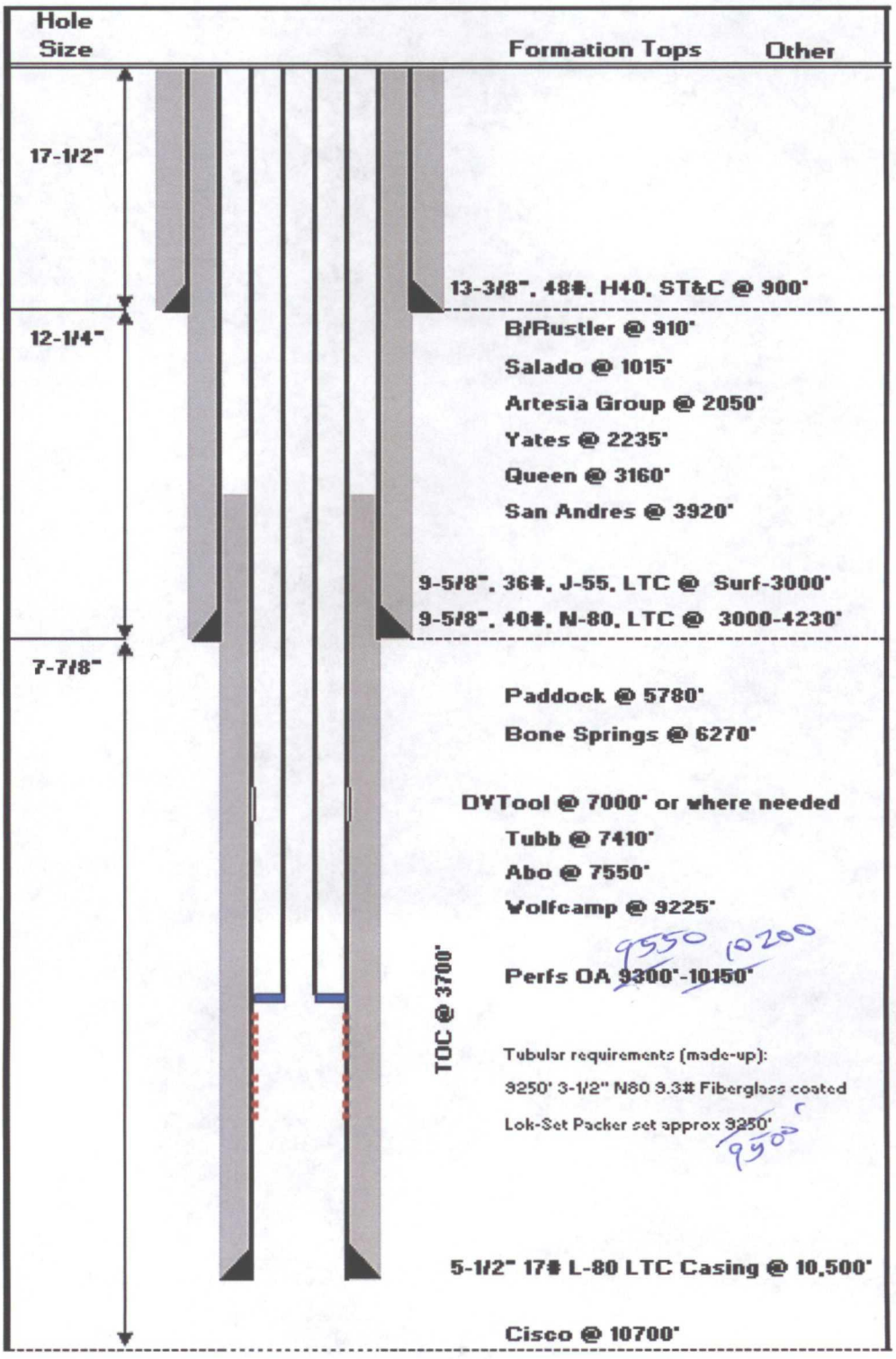
Ran 690' of 5-1/2", 23#, S-95 & 448' of 5-1/2", 23#, N-80 & 5,260' of 5-1/2, 20#, N-80 & 6,569' of 5-1/2", 17#, N-80 Csg. CSA 12,967'.
Cmt'd in 2 Stgs: 1st. Stg: Cmt'd w/ 1,400 sxs of Hall. Lite cmt + Add. 2nd Stg: Cmt'd of 800 sxs of Cl "H" + Add. **CMT DID NOT CIRC. TOC: ?**

PBTD @ 12,265'
Prod. Csg TD @ 12,967'

Cimarex Energy Company
Pearsall Federal SWD #1
2303' FNL & 1260' FWL
Sec. 28, T17S-R32E Lea Co. NM

API 30-025-NA

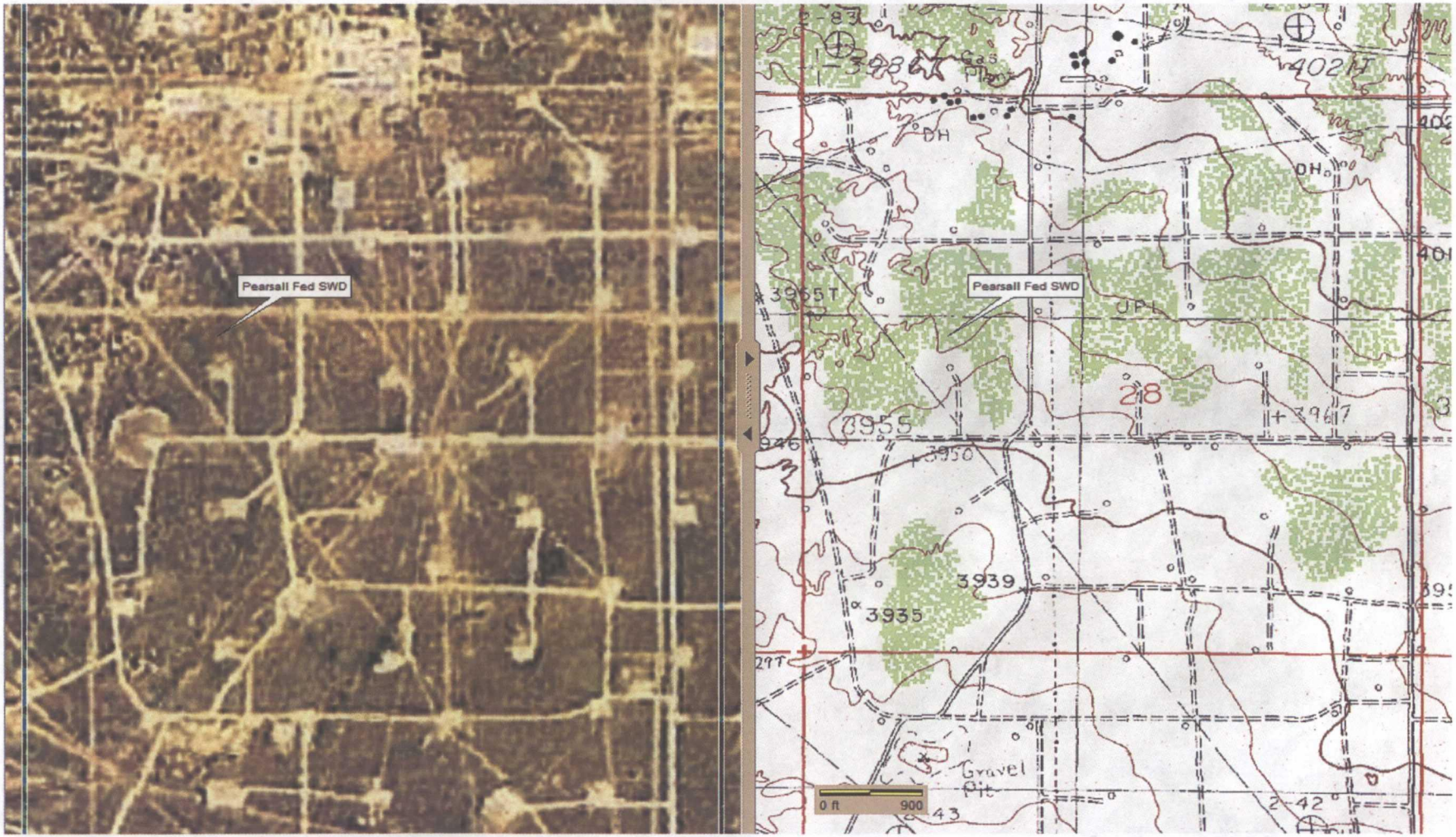
Proposed SWD Completion
Cimarex Energy Co. Pearsall Federal SWD #1



Cimarex Energy Company
Pearsall Federal SWD #1
2303' FNL & 1260' FWL
Sec. 28, T17S-R32E Lea Co. NM

API 30-025-NA

SPOT10 Satellite and Matching Topographic Map



Delorme Xmap 6.2
Proposed well site is located approximately 3.6 miles south-southwest of Maljamar, NM.

Cimarex Energy Company
Pearsall Federal SWD #1
2303' FNL & 1260' FWL
Sec. 28, T17S-R32E Lea Co. NM

API 30-025-NA

Item XIII: Proof of Notice

Minerals Owner:

Bureau of Land Management
c/o Carlsbad Field Office
620 E. Greene Street
Carlsbad, NM 88220

BLM Lease: NMLC 0057210

Operators:

Acerage

COG Operating, LLC
550 W. Texas St. Ste. 1300
Midland, TX 79701

Sec. 28 SWD Unit N

ConocoPhillips Company
3401 E. 30th St.
Farmington, NM 87402

Sec. 21 All, Sec. 28 All.
Sec. 29 E/2 ConocoPhillips unit operator

OXY Permian Occidental Permian, Ltd
P.O. Box 27570
Houston, TX 77210

Sec. 29 E/2 ConocoPhillips unit operator

Surface Lessee:

Caswell Ranches
1702 Gilham Drive
Brownfield, TX 79316

Cimarex Energy Company
Pearsall Federal SWD #1
2303' FNL & 1260' FWL
Sec. 28, T17S-R32E Lea Co. NM

API 30-025-NA

Item XIII: Legal Publication

Affidavit of Publication

STATE OF NEW MEXICO)
) ss.
COUNTY OF LEA)

Joyce Clemens being first duly sworn on oath deposes and says that she is Advertisting Director of THE LOVINGTON LEADER, a thrice a week newspaper of general paid circulation published in the English language at Lovington, Lea County, New Mexico; that said newspaper has been so published in such county continuously and uninterruptedly for a period in excess of Twenty-six (26) consecutive weeks next prior to the first publication of the notice hereto attached as hereinafter shown; and that said newspaper is in all things duly qualified to publish legal notices within the meaning of Chapter 167 of the 1937 Session Laws of the State of New Mexico.

That the notice which is hereto attached, entitled Legal Notice was published in a regular and entire issue of THE LOVINGTON LEADER and not in any supplement thereof, for one (1) day(s), beginning with the issue of January 5, 2012 and ending with the issue of January 5, 2012.

And that the cost of publishing said notice is the sum of $ 34.34 which sum has been (Paid) as Court Costs.

Joyce Clemens

Joyce Clemens, Advertising Manager
Subscribed and sworn to before me this 9th day of January, 2012.

Gina Fort

Gina Fort
Notary Public, Lea County, New Mexico
My Commission Expires June 30, 2014

OFFICIAL SEAL
GINA FORT
Notary Public
State of New Mexico
My Comm. Expires 6/30/14

Legal Notice

Cimarex Energy Company of Colorado, 600 N. Marienfeld St., Ste 600, Midland, Texas, 432-571-7800, is seeking approval from the New Mexico Oil Conservation Division to drill and complete the Cimarex Energy Company Pearsall Federal SWD #1 located 2303 feet from the north line and 1260 feet from the west line of Section 28, T17S, R32E, Lea County, NM, 3.6 miles south-southwest of Maljamar, NM, and complete for non-commercial produced water disposal as the Cimarex Energy Company Pearsall Federal SWD #1. The proposed disposal interval is the Wolfcamp formation through 5-1/2" casing perforations approximately 9,300 feet to10,150 feet with total casing depth at 10,500 feet. Cimarex Energy Company plans to dispose of a maximum of 5,000 BWPD at a maximum pressure of 1,860 psi, or as allowed by depth. Parties with questions regarding this proposal are urged to contact Cimarex at the address or phone number above. Interested parties must file objections or requests for hearing within 15 days to the New Mexico Oil Conservation Division, 1220 S. St. Francis Dr., Santa Fe, NM 87505.

Published in the Lovington Leader January 5, 2012.

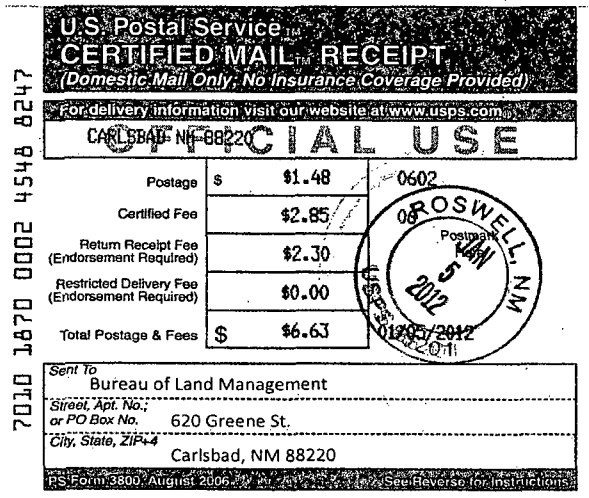
See Revised Depths

Cimarex Energy Company
Pearsall Federal SWD #1
2303' FNL & 1260' FWL
Sec. 28, T17S-R32E Lea Co. NM

API 30-025-NA

Item XIII:

Certified Mail Receipts



U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)
For delivery information visit our website at www.usps.com
CARLSBAD NM 88220
OFFICIAL USE

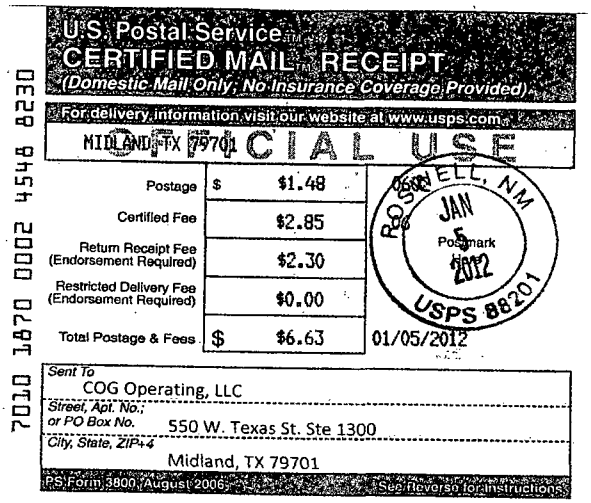
Postage	$ $1.48
Certified Fee	$2.85
Return Receipt Fee (Endorsement Required)	$2.30
Restricted Delivery Fee (Endorsement Required)	$0.00
Total Postage & Fees	$ $6.63

0602
ROSWELL, NM JAN 5 2012 Postmark Here
USPS 88201
01/05/2012

7010 1870 0002 4548 8247

Sent To: Bureau of Land Management
Street, Apt. No.; or PO Box No.: 620 Greene St.
City, State, ZIP+4: Carlsbad, NM 88220

PS Form 3800, August 2006 See Reverse for Instructions



U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)
For delivery information visit our website at www.usps.com
MIDLAND TX 79701
OFFICIAL USE

Postage	$ $1.48
Certified Fee	$2.85
Return Receipt Fee (Endorsement Required)	$2.30
Restricted Delivery Fee (Endorsement Required)	$0.00
Total Postage & Fees	$ $6.63

0602
ROSWELL, NM JAN 5 2012 Postmark Here
USPS 88201
01/05/2012

7010 1870 0002 4548 8230

Sent To: COG Operating, LLC
Street, Apt. No.; or PO Box No.: 550 W. Texas St. Ste 1300
City, State, ZIP+4: Midland, TX 79701

PS Form 3800, August 2006 See Reverse for Instructions

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)
For delivery information visit our website at www.usps.com
FARMINGTON NM 87402
OFFICIAL USE

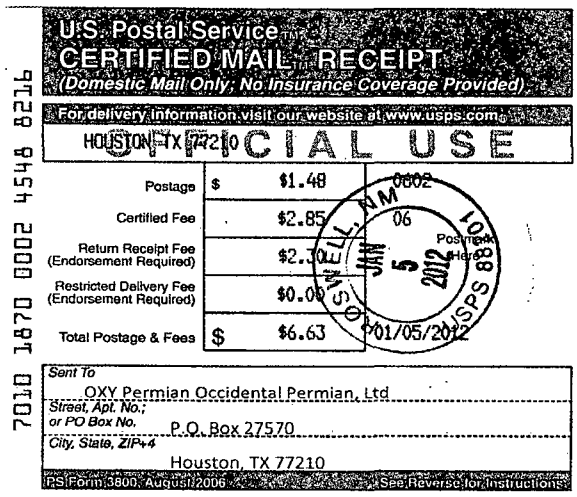
Postage	$ $1.48
Certified Fee	$2.85
Return Receipt Fee (Endorsement Required)	$2.30
Restricted Delivery Fee (Endorsement Required)	$0.00
Total Postage & Fees	$ $6.63

0602
ROSWELL, NM JAN 5 2012 Postmark Here
USPS 88201
01/05/2012

7010 1870 0002 4548 8223

Sent To: ConocoPhillips Company
Street, Apt. No.; or PO Box No.: 3401 E. 30th St.
City, State, ZIP+4: Farmington, NM 87402

PS Form 3800, August 2006 See Reverse for Instructions



U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)
For delivery information visit our website at www.usps.com
HOUSTON TX 77210
OFFICIAL USE

Postage	$ $1.48
Certified Fee	$2.85
Return Receipt Fee (Endorsement Required)	$2.30
Restricted Delivery Fee (Endorsement Required)	$0.00
Total Postage & Fees	$ $6.63

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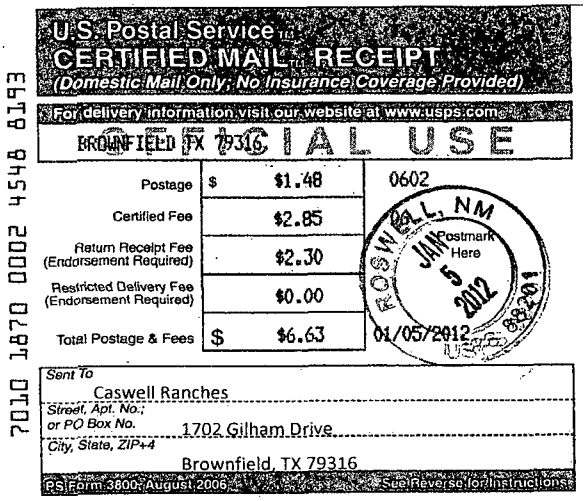

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Total Postage & Fees	$ $6.63

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7010 1870 0002 4548 8193

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Restricted Delivery Fee (Endorsement Required)	$0.00	
Total Postage & Fees	$ $6.80	02/11/2012

FEB 10 2012 USPS 88201

Sent To Frontier Field Services, LLC

Street, Apt. No.; or PO Box No. 4200 E. Skelly Dr., Ste. 700

City, State, ZIP+4 Tulsa, OK 74135

PS Form 3800, August 2006 See Reverse for Instructions

Miss	Row	C-108	C-108 disposal application submittals... CHECKLIST to ensure all items are supplied or considered.
	1		***Operator, Well, and Contact info:***
	2	II	Name of person submitting the application: Kay Havenor Other Contact?
	3	II	Did you Include a contact Email in the application? Yes and Mailing Address? Yes and Phone? Yes
	4	II	Operator Name: ~~Cimarex Energy Company of Colorado~~ OGRID Num: 162683
	5		RULE 5.9 Compliance..... Number of Inactive Wells 0 vs Total Wells Operated 1262 .... Is financial assurance required on any well? ~~Yes 2 wells~~
	6		Is there any hearing order finding this operator out of compliance with Division Rule 19.15.5.9 NMAC?
	7		Are all Rule 5.9 issues OK to allow the Division to issue Disposal Permits?
	8	III	Well Name: ~~Pearsall Federal SWD #1~~
	9	III	API Num: 30-025-XXXXX Spud Date: New Drill
	10		Have you included API numbers on all wellbore diagrams and well list(s) in this application? Yes
	11	III	Proposed well...Footages Unit E Sec 28 Tsp 17S Rge 32E County Lea
	12		General Location (i.e. Y miles NW of Z): approximately 3.6 miles south-southwest of Maljamar, NM
	13		Current Well Status: New Drill
	14	I	General Summary of Planned Work to Well: New drill to TD 10,500', run 5-1/2" csg, cmt into intermediate, Perf and acidize.
	15		***INTERVAL TOP and BOTTOM:***
	16	IIIB.(2)	Proposed disposal Top Depth: approx ~~9,300'~~ 9,900 Formation Name: Wolfcamp
	17	IIIB.(2)	Proposed disposal Bottom Depth: approx ~~10,150'~~ 10,250 Formation Name: Wolfcamp
	18	IIIB.(2)	Is the disposal interval OpenHole? or Perfed? X or Both?
	19	IIIB.(2)	What will be the disposal tubing size OD? 3-1/2" Packer Seat, Feet: approx 9,250'

Miss	Row	C-108	C-108 disposal application submittals... CHECKLIST to ensure all items are supplied or considered.
	20	VII	What max surf inj. psi are you proposing? __1,860_____ If differing from 0.2 psi/ft surf. Grad., is supporting data attached such as a Step Rate Test?_____
	21		***FRESH WATERS:***
	22	VIII	Depth to bottom of Fresh Waters:___est less than 116"_____Formation Name(s)?____Quaternary alluvium_____
	23	XI	Any Fresh Water Wells Within 1 Mile? __One sanitation well_____ If so, did you attach an analysis from these Wells? __None available____
	24		Are all "Fresh" waters isolated with Casing and Cement? __Yes_____ ("Fresh" water is defined as less than 10,000 mg/l of TDS)
	25	XII	Included "Affirmative Statement" concerning any Connection from Disposal Depths to existing Fresh Waters?___Yes Item XII_____
	26		***WASTE WATERS:***
	27	XIV	Will this be a Lease Only disposal well? _____ or only used for the Operator's own waste needs? ___X_____or Commercial Disposal? _____
	28	VII	Which formations will supply the waste waters to be disposed into this well... List most common...? Yeso-Blinebry
	29	VII	Are Waste waters compatible with proposed disposal interval waters?__Yes_____ Did you include waste water analysis? ____No_____
	30		***AT PROPOSED WELL....INSITU WATERS AND HYDROCARBON POTENTIAL:***
	31		Is a discussion included of the potential for future OIL/GAS recovery from the proposed disposal interval?____Yes_____
	32		If your proposed well for disposal is a depleted producer (within the proposed interval); do you know what was the cumulative oil/gas/water?_____ and did you include a Rate-Time plot of this depleted interval?_____
	33	VII	Insitu water analysis Included?___Yes____ Is the salinity within the disposal interval more than 10,000 mg/l of TDS?_____or how will you determine this insitu water salinity?
	34	VIII	Does the application include a list of Formation tops down to and including the bottom of the target formation? ____Yes_____
	35		What is the top __1015'_____and bottom __2050'_____ of the Salado Salt (....If this well is in the Southeast and the Salt is present)
	36	X	Are all existing Logs (including any CBL over the disposal interval) are on the OCD Web Site? __New Drill__If logs not there, please send_____
	37	IIIA.	Are the wellbore diagrams for this well included in the Application.....Before Conversion? New Drill___ and After Conversion?__Yes__

Miss	Row	C-108	C-108 disposal application submittals... CHECKLIST to ensure all items are supplied or considered.
	38		Are the top and bottom footage of the proposed disposal interval marked on the "after" diagram? Yes
	39		***NOTICE:***
	40	XIV	Date of the Newspaper Notice in the County: 1/5/2012 Lea Co.
	41	V	Within 1/2 mile, did you clearly identify (either on a map or by legal description) all separately owned tracts of lands within the disposal interval? Yes
	42	XIII	Did you identify the owner(s) of each of these separately owned tracts? Yes, in Were they all formally noticed? Yes
	43	XIII	If reentering a P&Aed well, are there depth divisions of ownership within that well? .....If so, have you also noticed all the shallower interests of the intent to use the well for disposal?
	44	XIII	Is the proposed well within the R-111-P defined Potash Area or the BLM Secretaries Potash Area? No ..... If so, did you send notice to the nearest Potash lessee?
	45	XIV	Who owns the surface lands at the disposal well site (BLM, SLO, or who)? BLM - Surface leased Was that party formally noticed? Yes
	46		***Area of Review:***
	47	V	Did you include a map identifying all wells within 2 miles? Yes
	48	VI	Did you include a list of all AOR wells? Yes Is the list available to be emailed (if requested) in spreadsheet format? Yes - Included in Item VI list
	49	VI	Does this list identify all wells penetrating (at least the top of) the disposal interval within 1/2 mile of the proposed well? Yes
	50	VI	Did you include wellbore diagrams for all P&Aed wells that exist within the 1/2 mile AOR that penetrate the disposal interval? Yes
	51	VI	How many wells exist within the 1/2 mile AOR that penetrate the disposal interval? 1 How many of these are Plugged/Dry and Abandoned? 1 P&A
	52	VI	Are details included on cement coverage of the proposed disposal interval for all wells penetrating the disposal interval within 1/2 mile of the roposedwell? Yes
	53	VI	Do all reported cement tops describe how that "top" was determined? If Available If you calculated any tops, what fillup efficiency factor did you use?
	54	VI	Did you identify the presence and depth of all Cement Stage Tools (DV) in the subject well and in the AOR wells? Yes, when info was available
	55	VIII	For the target formation, is there significant formation structural depth changes within the 1/2 mile AOR? No

Miss	Row	C-108	C-108 disposal application submittals... CHECKLIST to ensure all items are supplied or considered.
	56	VIII	Is there any Karst or Massive Limestone in this target formation? No ...or in the formations directly above or below? No
	57		***Administrative or Hearing:***
	58	VI	How many wells within the 1/2 mile AOR currently are producing (or still have open perforations) within the disposal interval? is it "gas" or "oil"?
	59		.... NOTE: If the proposed disposal interval is a "Gas" interval or if any AOR wells are producing or have open perforations within this interval then this application may not be properly classified as a "disposal". These types of applications must be processed at an examiner hearing.
	60		Any other Issues..?

Jones, William V., EMNRD

From: Jones, William V., EMNRD
Sent: Wednesday, February 08, 2012 10:51 AM
To: 'Kay Havenor'
Cc: Ezeanyim, Richard, EMNRD; 'Wesley_Ingram@blm.gov'; 'Gary Larson'; Kautz, Paul, EMNRD; Gonzales, Elidio L, EMNRD
Subject: Disposal application from Cimarex Oil Co of Colorado: proposed Pearsall Federal SWD #1 30-025-NA Wolfcamp from 9300 to 10150 feet

Hello Kay,
You prepared this on behalf of Cimarex. I reviewed it and sending comments/questions below.

You probably know that this well is exactly 1 km (about 0.63 miles) from the newly permitted Acid Gas disposal well from Frontier for its Maljamar Gas Plant – so it is inside the 1 mile Area of Review for that Acid Gas well. The acid gas well (30-025-40420) is permitted over almost exactly that same disposal depth interval.

As support for that application, they ran and processed some seismic and put the interpretations for several layers in their exhibits to Case File 14664. Instead of you searching through the Case file, I have attached these interpretations. It seems the Wolfcamp may be dipping to the south, dropping off into the basin? From that Seismic it seems to me the upper portion of your proposed interval could possibly be connected to that Acid Gas well. The Lower Wolfcamp maybe not connected.

Also from the logs on the nearby Queen B #36 30-025-00751 which was once permitted for disposal into the LOWER wolfcamp, it looks like a reef or something down there – that would be a great disposal interval. Also the upper Wolfcamp/lower Abo has been a potential production target (to the north), not very successfully, but it was teaser enough for several attempts – vertically only so far. And that potential production seems to have been a factor in the application to convert the nearby Queen B #36 to disposal only in the lower Wolfcamp.

For those reasons, I would urge (only a suggestion) Cimarex to consider limiting its application to that lower Wolfcamp interval – let me know what you think?

Also, I am copying Gary Larson with this email a attorney for Frontier,
Please send a copy of this application (C-108) to the operator/attorney for that Acid Gas Well and we must wait another 15 days (or you could get a signed waiver from them):

Frontier Field Services, LLC
C/o Gary Larson, Esq.
Hinkle, Hensley, Shanor, & Martin, LLP
PO Box 2068
Santa Fe, NM 87504-2068

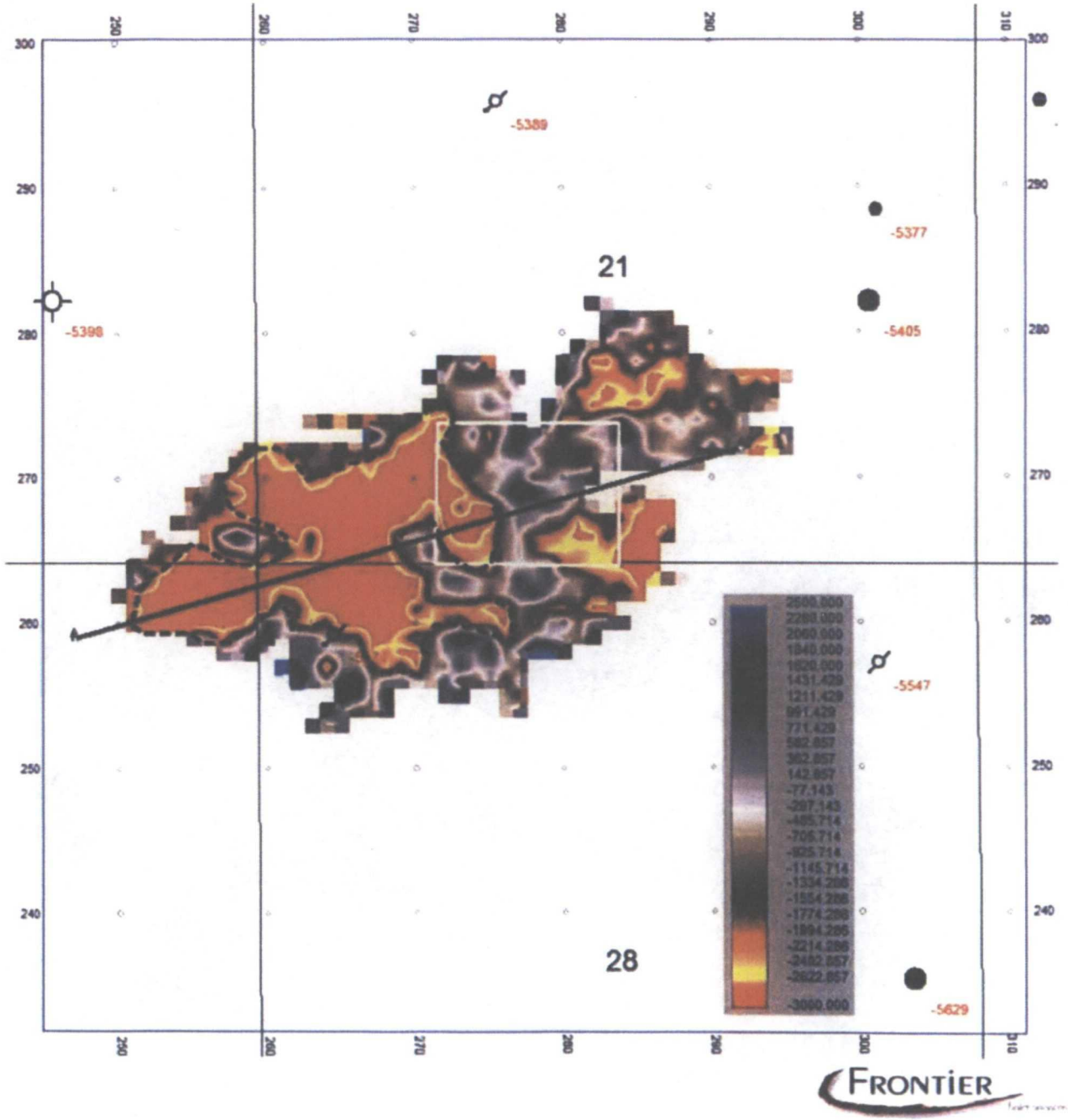
All else is OK.

FIGURE 13: AREAL EXTENT OF SECONDARY INJECTION TARGET (LOWER LEONARD ZONE 1)

Amplitude map along the upper Lower Leonard porosity zone horizon, approximately 225 feet above the top of the Wolfcamp. The white outline shows the plant site. The black dashed outline shows a coherent porosity trend that is underlain by a sharply contrasted, high amplitude event, and it covers 64 acres.

The limits of this map represent the limits of Zone 1. The geometry of this zone suggests a possible debris apron or a lowstand carbonate mound.

A vertical seismic section, whose trace is shown in black, is presented in the next slide.



GEOLEX INCORPORATED

FIGURE 14: AREAL EXTENT OF SECONDARY INJECTION TARGET (LOWER LEONARD ZONE 2)

Amplitude map along the lower Lower Leonard porosity zone horizon, approximately 85 feet above the top of the Wolfcamp.

The white outline shows the plant site. The black dashed outline shows a coherent porosity trend that is underlain by a sharply contrasted, high amplitude event, and it covers 53 acres.

The limits of this map represent the limits of the contiguous portion of Zone 2. The geometry of this zone suggests a composite channelized debris flow. The porosity zone is cut off to the south by the fault that transects the Lower Leonard section.

A vertical seismic section, whose trace is shown in black, is presented in the next slide.

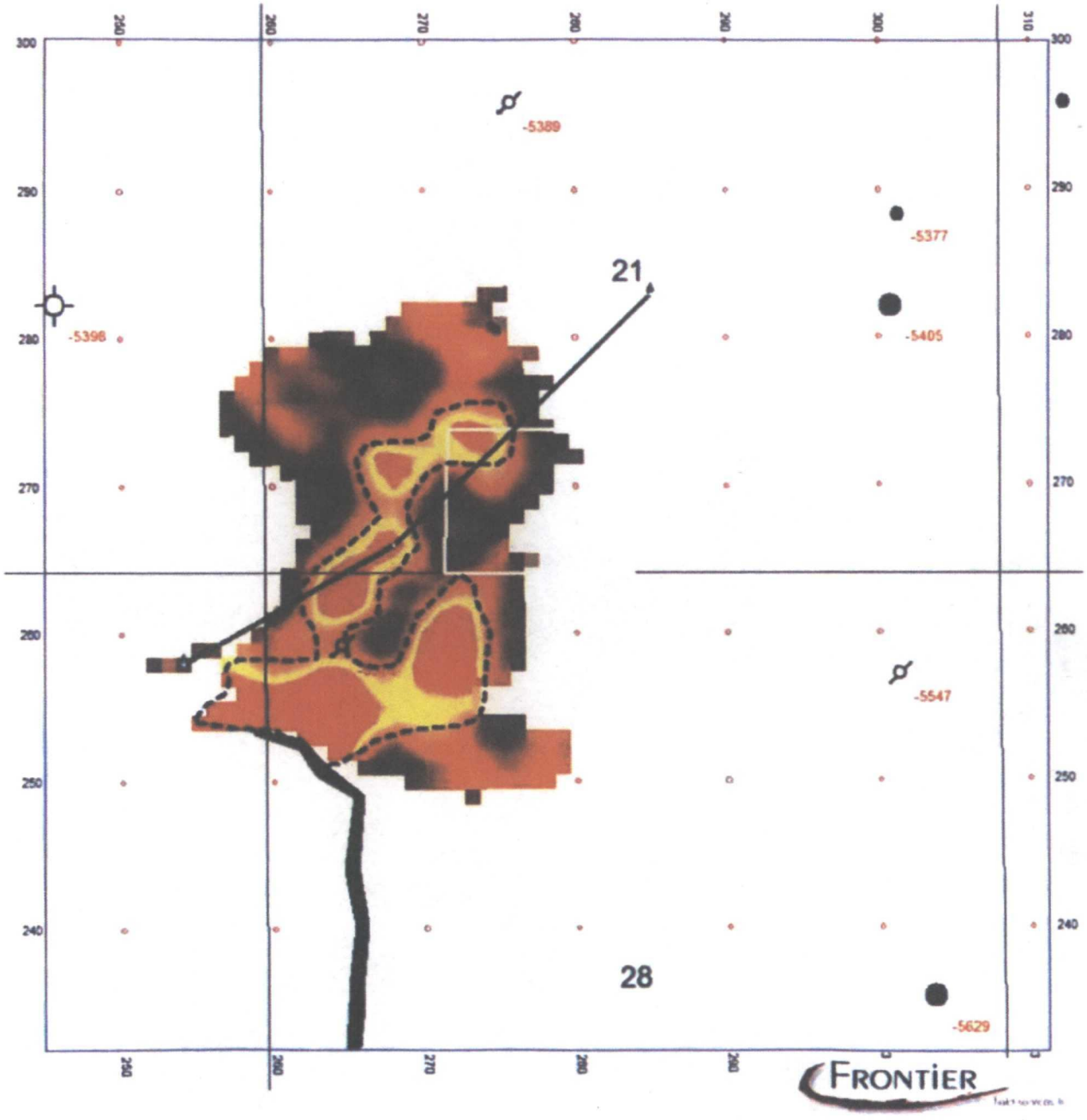


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FIGURE 11: AREAL EXTENT OF LOWER WOLFCAMP (Proposed Primary Injection Zone)

Amplitude map along the lower Wolfcamp porosity zone horizon, approximately 410 feet below the top of the Wolfcamp. The black dashed outline shows a coherent porosity trend that is underlain by a sharply contrasted, high amplitude event, and it covers 189 acres. The limits of this map represent the limits of Zone 3, except for that portion that goes off-survey to the east.

This zone is not laterally connected to the wells to the south that inject saltwater into the Wolfcamp.

The geometry of this zone suggests a possible debris apron fed by a narrow channel on its northeast boundary.

A vertical seismic section, whose trace is shown in black, is presented in the next slide.

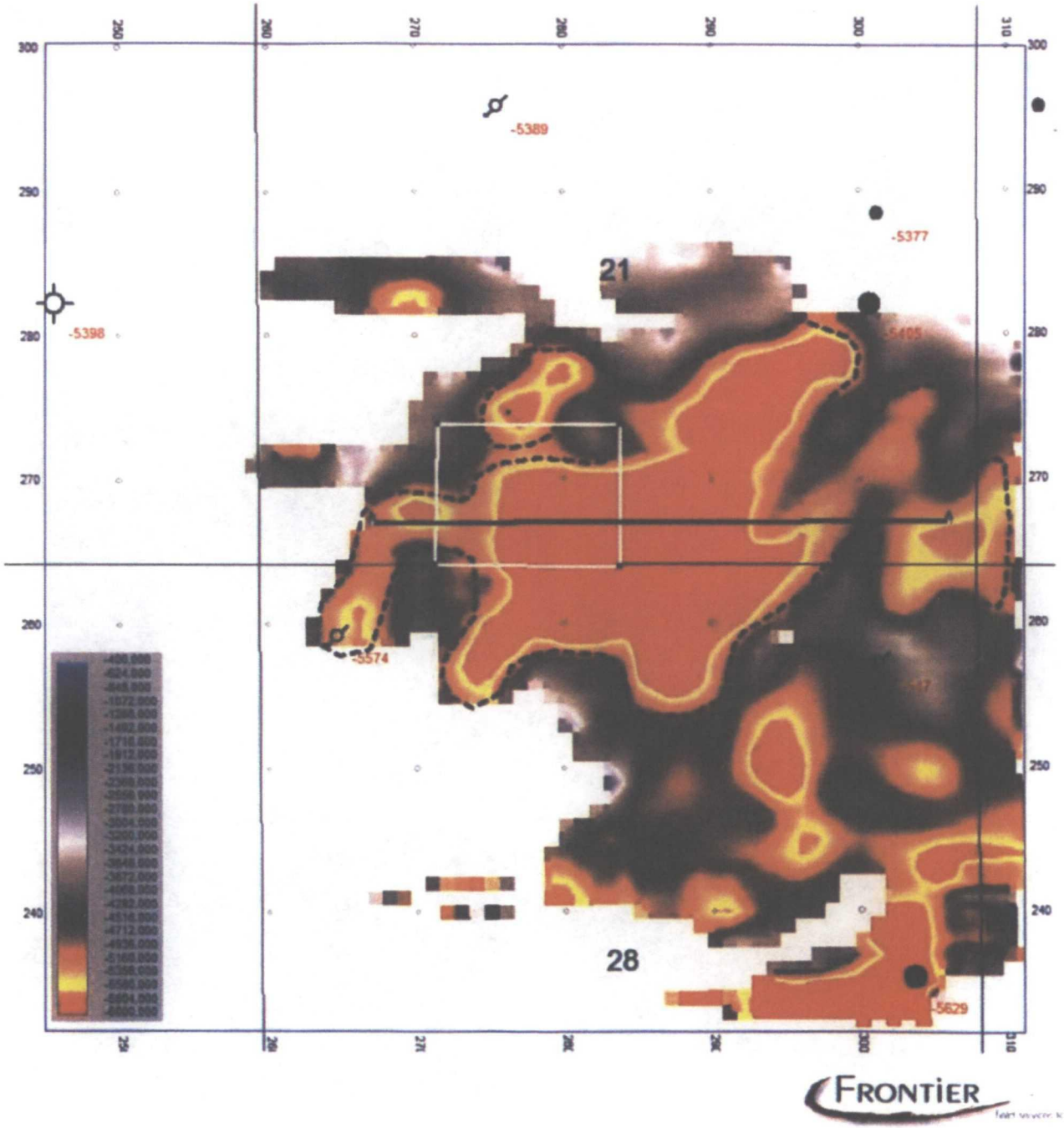

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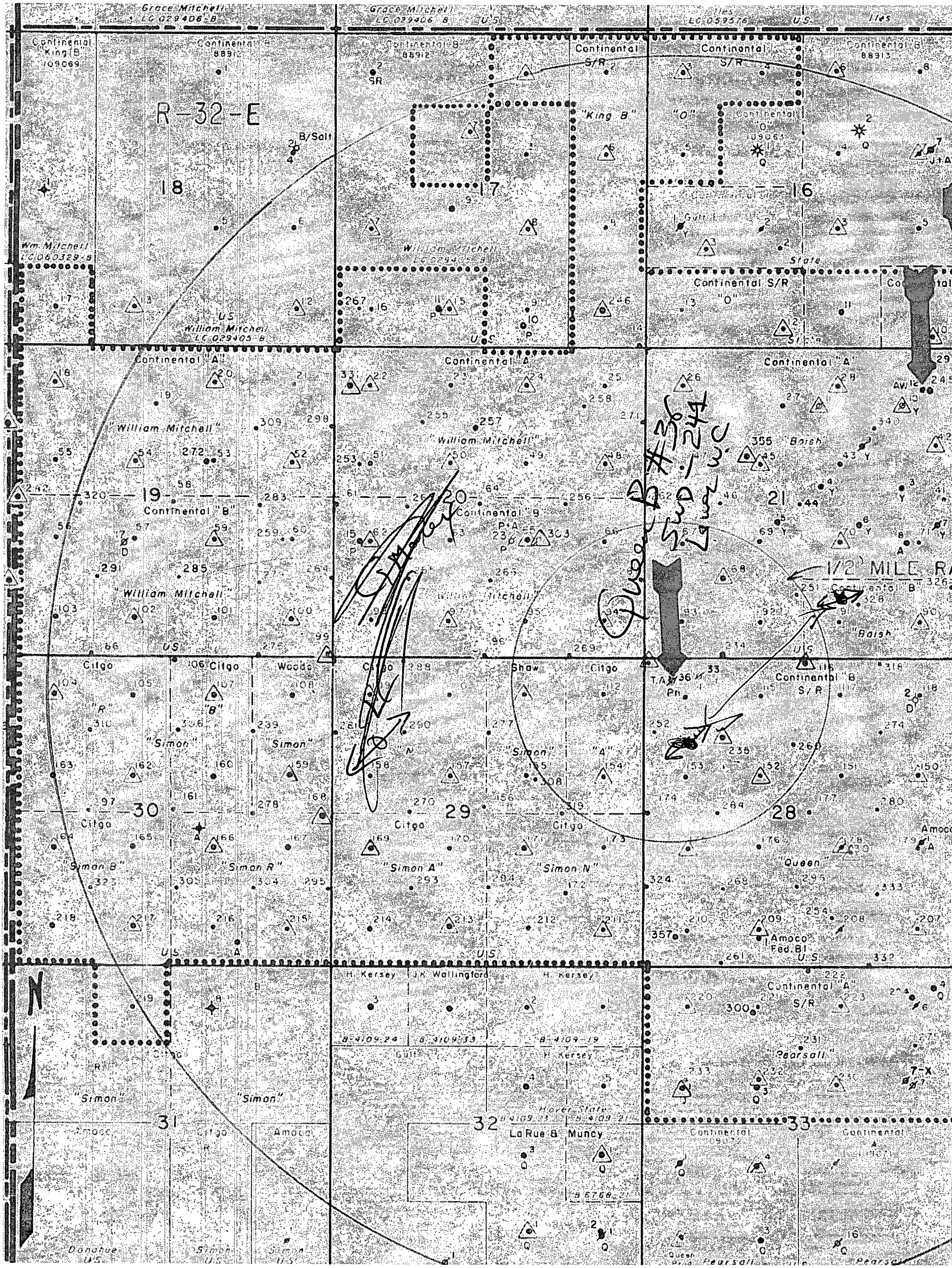
Table 3: Summary of Wells Penetrating Wolfcamp within One Mile of Frontier Gas Plant

API #	OPERATOR	SPUD DATE	PLUG DATE	TOTAL DEPTH	WELL NAME	WELL TYPE	STATUS	Producing/Target/ Injection Zone	Miles From Plant
3002500751 P	CONOCOPHILLIPS COMPANY	9/20/1948 Spud-24 in Deep WC 1982	9/17/2004	10,005	QUEEN B 036 (Baish B 36)	Oil	Plugged	Wolfcamp (Dry Hole) 9965-10,040	0.37
3002521951 P	PAN AMERICAN PETROLEUM CORP	12/20/1966	1/2/1900	13,735	BAISH B FEDERAL 002	Oil	Plugged	Wolfcamp (Dry Hole)	0.40
3002500622 P	CONOCO INC	11/12/1958	1/2/1900	13,670	BAISH A 008 (Dry in WC)	Oil	Plugged	Cisco/Abo (plugged back)	0.57
3002535252	COG OPERATING LLC	11/17/2000	na	15,026	MC FEDERAL 006	Gas	Active	Devonian	0.68
3002500745	CONOCOPHILLIPS COMPANY	8/8/1961	na	9,680	MCA UNIT 382	Oil	Active	San Andres (plugged back)	0.70
3002500614 P	CONOCO INC	11/1/1993	3/3/1993	12,778	MCA UNIT 355	Injection	Plugged	Abo/Grayburg (plugged back)	0.73
3002500634 P	CONOCO INC	4/26/1951	1/2/1900	13,573	BAISH B 005	Oil	Plugged	Devonian	0.81
3002527068	COG OPERATING LLC	10/14/1980	na	12,992	FEDERAL BI 001	Salt Water Disposal	Active	Wolfcamp (plugged back)	0.86
3002508053 P	CONOCO INC	10/28/1959	9/5/1996	13,965	MCA UNIT 303	Injection	Plugged	Grayburg (plugged back)	0.92
3002520647	COG OPERATING LLC	10/25/1964	na	9,958	MC FEDERAL 007	Oil	Active	Paddock (plugged back)	0.94
3002534647	COG OPERATING LLC	6/16/1999	na	14,912	MC FEDERAL COM 001	Gas	Active	McKee	0.99
3002520568	CONOCOPHILLIPS COMPANY	11/22/1963	na	13,717	BAISH A 012	Oil	Active	Abo (plugged back) To 9000 Deep. W.C. 9700-9882	0.99

3002530363 Conoco D/22 — Baish A #14 OIL ACT. ABO/WC

3002500619 Conoco K/21 — Baish A 5 ACT. Yates .47



Grace Mitchell LC 029406-B
Grace Mitchell LC 029406 B
U.S.
Iles LC 059576
Iles
Continental King B 109069
Continental B 88912
Continental B 88913
Continental S/R
R-32-E
B/Salt
"King B"
"O"
Continental "O" 109063
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Wm. Mitchell LC 060329-B
William Mitchell LC 0294..-B
Gulf
State
Continental S/R "O"
U.S. William Mitchell LC 029405-B
Continental "A"
"William Mitchell"
Baish
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Continental "B"
1/2 MILE RA
Citgo
Woods
Shaw
T.A.
"R"
"B"
"Simon"
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"Simon R"
"Simon N"
"A"
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Amoco
"Queen"
Amoco Fed. Bl
H. Kersey
J.K. Wallingford
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B-4109-19
Continental "A" S/R
"Pearsall"
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Amoco
LaRue & Muncy
Continental 109072
Continental A
Donahue
Pearsall
N
Queen B #36
SWD-244
Lwr W.C

5.2 CEMENTING, COMPLETION AND PLUGGING

The details of the completion and/or plugging design and construction of these 12 wells are summarized in the diagrams included in Appendix C. Also included are the complete NMOCD files for these wells, in electronic form, in the accompanying CD entitled "NMOCD Files for Wolfcamp-Penetrating Wells within One Mile of the Frontier Gas Plant". Table 4 below summarizes the casing and cementing information for the plugged deep wells.

Table 4: Casing and Cement Details for Plugged Deep Wells within One Mile of Frontier Gas Plant

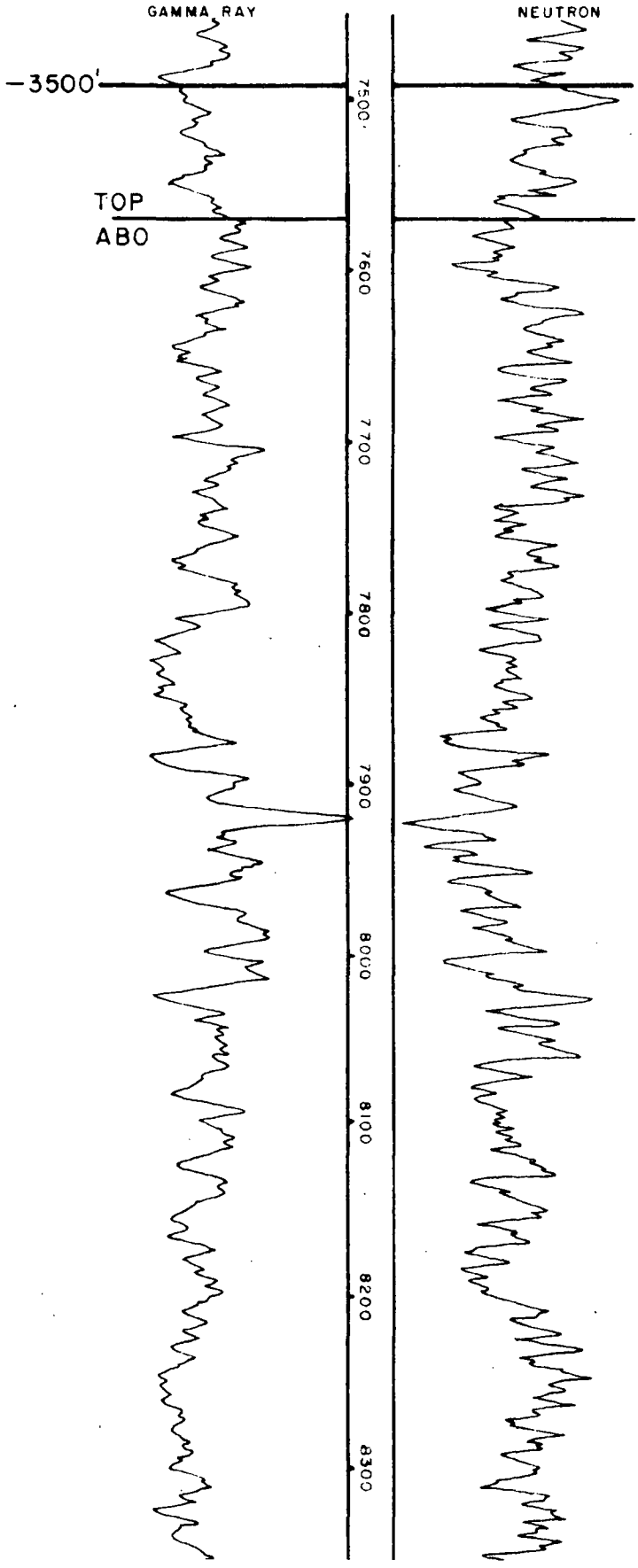
API #	3002500614	3002500622	3002500634	3002500751	3002508053	3002521951
Well Name	MCA UNIT 355	BAISH A 008	BAISH B 005	QUEEN B 036 (Baish B 036)	MCA UNIT 303 *	BAISH B FEDERAL 002
Distance From Plant (miles)	0.73	0.57	0.81	0.37	0.92	0.40
Status	P&A	P&A	P&A	P&A	P&A	P&A
Total Depth (feet)	12,778	13,670	13,939	10,747	13,965	13,735
Conductor Depth (feet)	178	428	100	825	444	390
Intermediate Casing Depth (feet)	4,181	5,052	2,700	4,198	4,740	4,660
Long StringCasing Depth (feet)	11,813	13,642	13,562	10,745	Dry, not cased	10,301
Conductor TOC (feet)	Surface (NMOCD Files)	Surface (NMOCD Files)	Surface (NMOCD Files)	Surface (NMOCD Files)	Surface (NMOCD Files)	Surface (NMOCD Files)
Intermediate Casing TOC (feet)	Surface (NMOCD Files)	Surface (Calculated)	Surface (NMOCD Files)	3391 feet (NMOCD Files)	Surface (NMOCD Files)	Surface (NMOCD Files)
Long String Casing TOC (feet)	4,860 feet (NMOCD Files)	5,300 feet (Calculated)	3,000 feet (NMOCD Files)	5,890 feet (NMOCD Files)	Dry Hole, not cased	6,300 feet (Calculated)
Producing/Target/ Zone	Grayburg	Cisco/Abo	Devonian	San Andres	Wolfcamp (Dry Hole)	Grayburg
Top Wolfcamp (Depth)	**9,200**	**9,118**	**9,090**	**9,320**	**9,079**	**9,105**

In the cases of Baish A 008 and Baish B Federal 002, documentation was missing for the tops of cement (TOC) of either the intermediate or long string. In these cases, the TOC was calculated using the annular volumes provided in the Halliburton "Red Book" and the amounts (sacks) of cement provided in the NMOCD files. The length of the annulus filled with the cement was calculated using a very conservative cement yield of 1.0 cubic feet per sack. This indicates that all of the plugged wells' "long string" is effectively isolated from the lower Leonard and Wolfcamp injection zones. Similarly, Table 5 below summarizes the casing and cementing for the six active deep wells within one mile of the Plant. Only well MCA Unit 383 lacked details on the long string top of cement, and a calculated TOC of 7,700 feet was developed using the method described above. This also indicates that all of the active wells' "long string" is effectively isolated from the lower Leonard and Wolfcamp injection zones.

CONOCO INC.

QUEEN B NO. 36

ELEV 3994' D.F.



Jones, William V., EMNRD

From: Kay Havenor [khavenor@georesources.com]
Sent: Friday, February 10, 2012 5:08 PM
To: Jones, William V., EMNRD
Cc: Jesse Parkison; David Pearcy
Subject: Cimarex Pearsall C-108

Mr. Jones,

Thank you for your comments on the C-108 for Cimarex Pearsall SWD proposed disposal interval. Cimarex will lower the top of the proposed interval from approximately 9,300 to approximately 9,550'. The well TD will remain at 10,500', but Cimarex would appreciate extenting the initially proposed lowermost perforation from approximately 10,150' to approximately 10,200'. The "approximate" depths are proposed due to this being a new-drill and, of course, logs are not yet available.

A copy of the original C-108 will be served to Frontier with a cover letter indicating our request to your office to lower the uppermost perfs.

Your assistance is appreciated.

Kay Havenor

Release 2/26/12

Kay C. Havenor, Ph.D., PG. CPG
GeoScience Technologies
904 Moore Ave
Roswell, NM 88201-1144
(575) 626-4518

Jones, William V., EMNRD

From: Alberto A. Gutierrez, RG [aag@geolex.com]
Sent: Wednesday, February 29, 2012 5:17 PM
To: Gerholt, Gabrielle, EMNRD; Jones, William V., EMNRD
Cc: Hicks, Mike; PE CHIP BURKETT; bwickman@akaenergy.com; KHavenor@GeoResources.com; JOHN PRENTISS; GARY W. LARSON ESQ.
Subject: Cimarex Pearsall Fed SWD#1, Comments on Pending C-108 Application Sec.28,T17S,R32E, Lea County NM from Frontier Field Services LLC
Attachments: Gerholt001.ltr.pdf; Attachment 1 HavenorLetter.pdf; Attachment 2 Cimarex Pearsall Fed SWD #1 Geolex Analysis.pdf

Importance: High

Dear Gabrielle and Will,
Please see the attached letter and analysis which responds to the letter which Frontier received from Cimarex's consultant, Kay Havenor on February 15, 2012. Frontier has some concerns as you will see regarding the placement of this well relative to a fault zone noted in our seismic analysis and we will ask Cimarex to consider moving the well a short distance to the southwest. Please note that we are trying to work out our concerns with Cimarex and are not filing a formal protest at this time; however, we would like OCD to take formal notice of our concerns and for this reason we have prepared the attached.

Please contact me if you have any questions regarding the attached and we will keep you posted on our discussions with Cimarex.

Sincerely,
Alberto

Alberto A. Gutiérrez, RG
Geolex, Incorporated®
500 Marquette Avenue, NW Suite 1350
Albuquerque, NM 87102
505-842-8000 Ext. 105
505-842-7380 Fax

Attachment 2

SEISMIC EVALUATION OF THE IMPACT OF THE CIMAREX PEARSALL FEDERAL SWD #1 ON FRONTIER GAS PLANT AGI PROJECT,

SEC. 21-TWP. 17S-32E
Lea County, New Mexico

Prepared for:

Aka Energy/Frontier Field Services, LLC
Tulsa, OK

by
Geolex, Inc.®
500 Marquette Ave. NW
Albuquerque, NM 87107

February 24, 2012

GEOLEX INCORPORATED

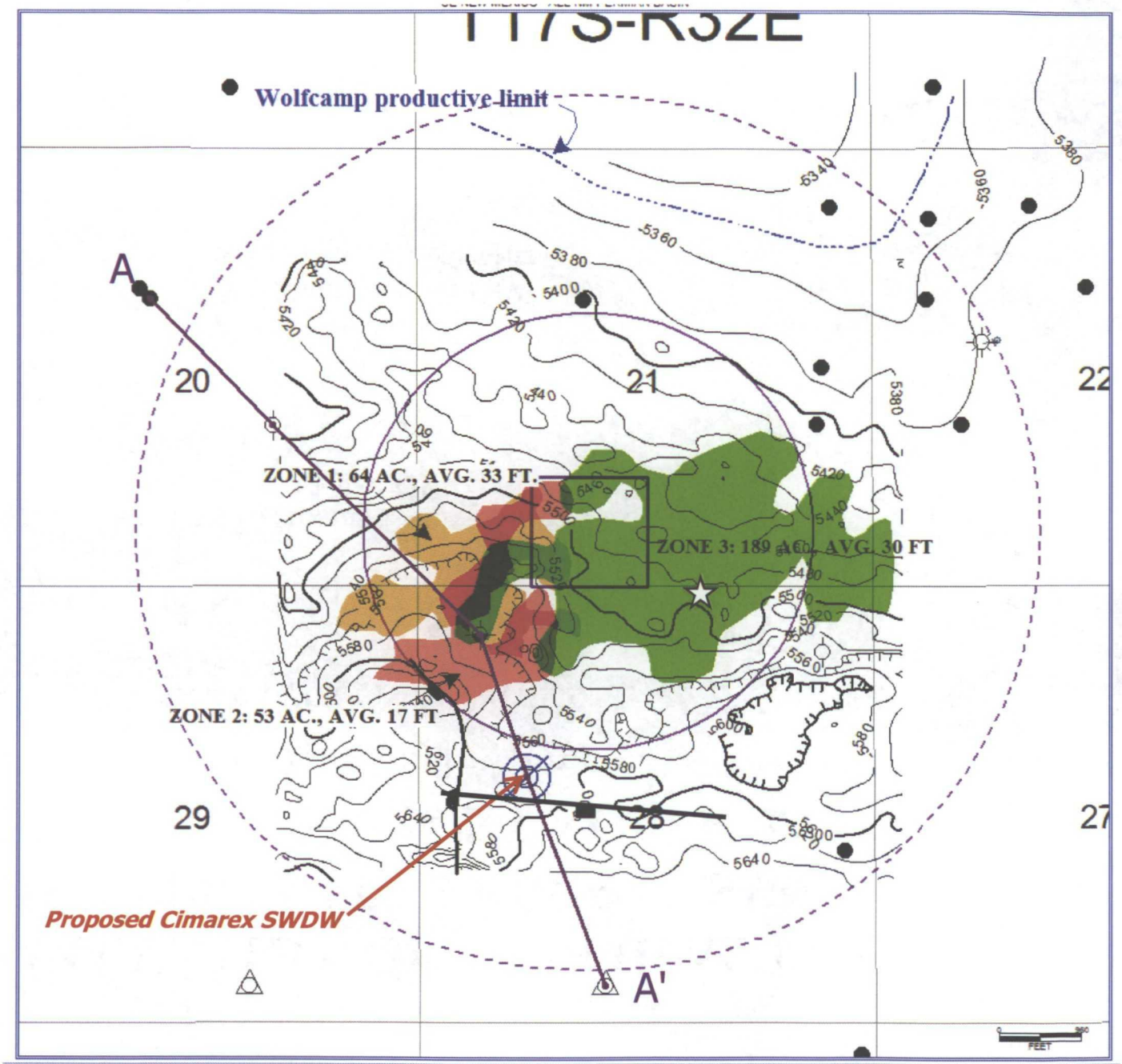
FRONTIER

SEISMIC STRUCTURE, TOP OF WOLFCAMP
C. I. = 20 FEET

Only wells deeper than 8,500 feet are shown

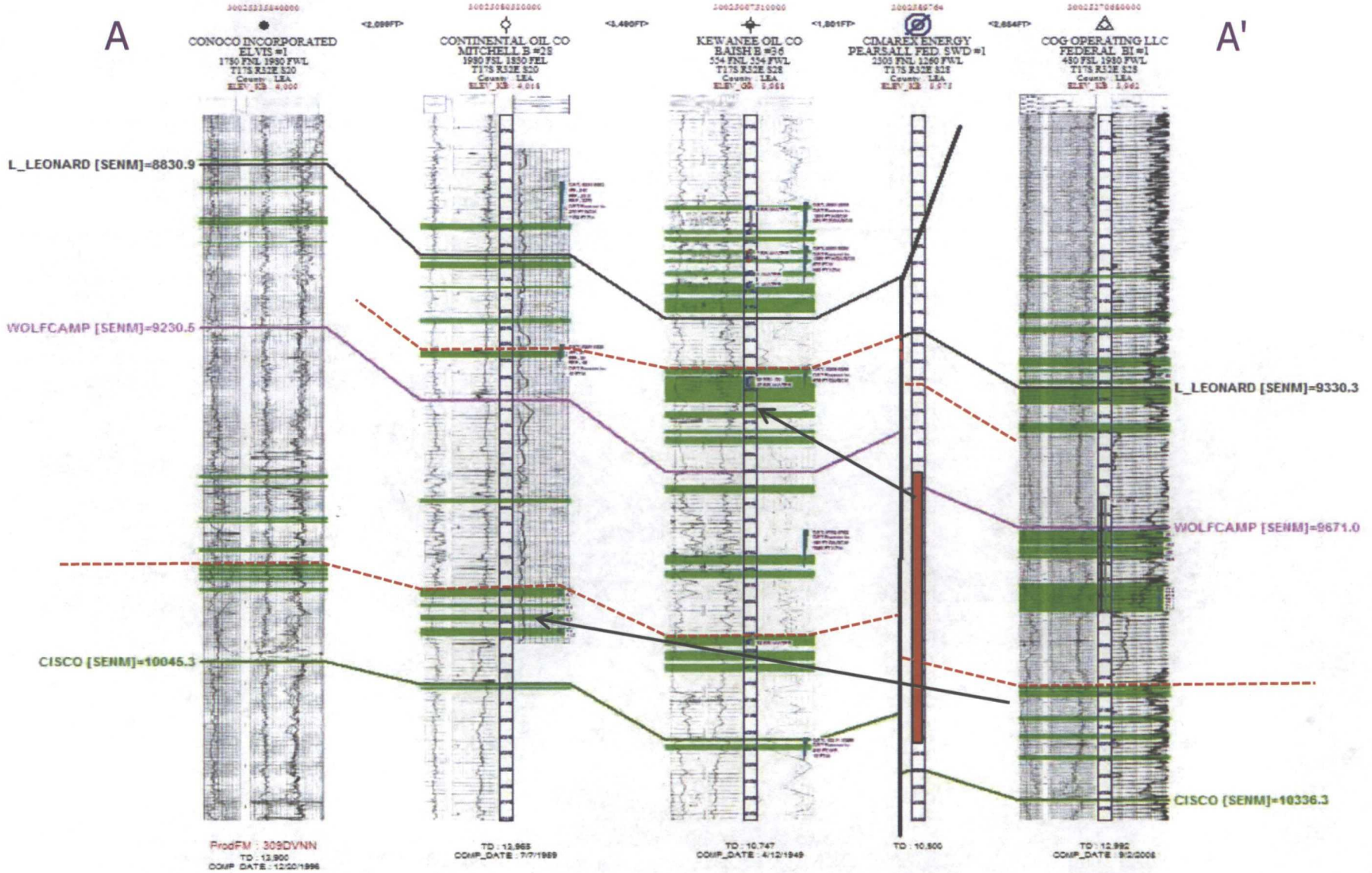
Structure contours imported to Petra base map, and smoothed from raw seismic map. The plant site (purple outline) lies on a moderately-dipping ramp that declines into a partially fault-impacted trough to the southwest. The Cimarex location appears to be outside the best-developed portions of three major fairways identified as potential AGI zones from this map; however, Zone 3 actually picks up close to the proposed SWDW, and, although it may not be as thick as it is under the plant site, it is never the less present almost everywhere to one degree or another. I added another down-to-south fault that actually intersects the SWDW location, which may figure prominently into the discussion.

The line of cross-section in the next slide is shown here in purple.



GEOLEX INCORPORATED

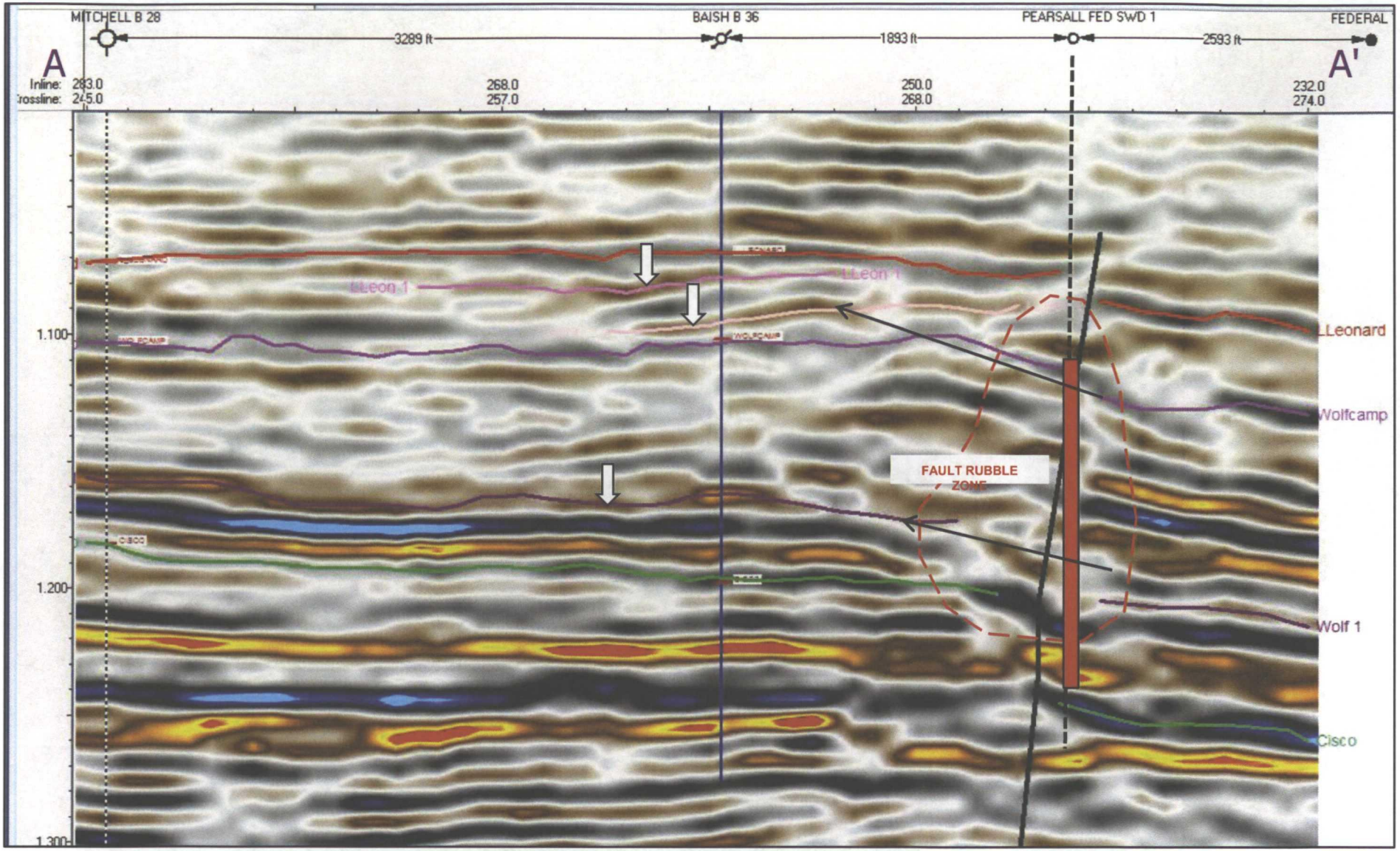
FRONTIER field services, llc



Structure section through Cimarex's proposed SWDW, showing their revised proposed perfs in red. Although their injection interval will be largely on the downthrown side of the fault zone shown, it does include the lower Wolfcamp interval that is our Zone 3 proposed injection interval, which is the most widespread of the zones I proposed for injection. The concern is for migration up the fault plane an into either or both of the favored AGI zones (black arrows), the tops of which are shown here by the red dashed lines.

GEOLEX INCORPORATED

FRONTIER field services, llc



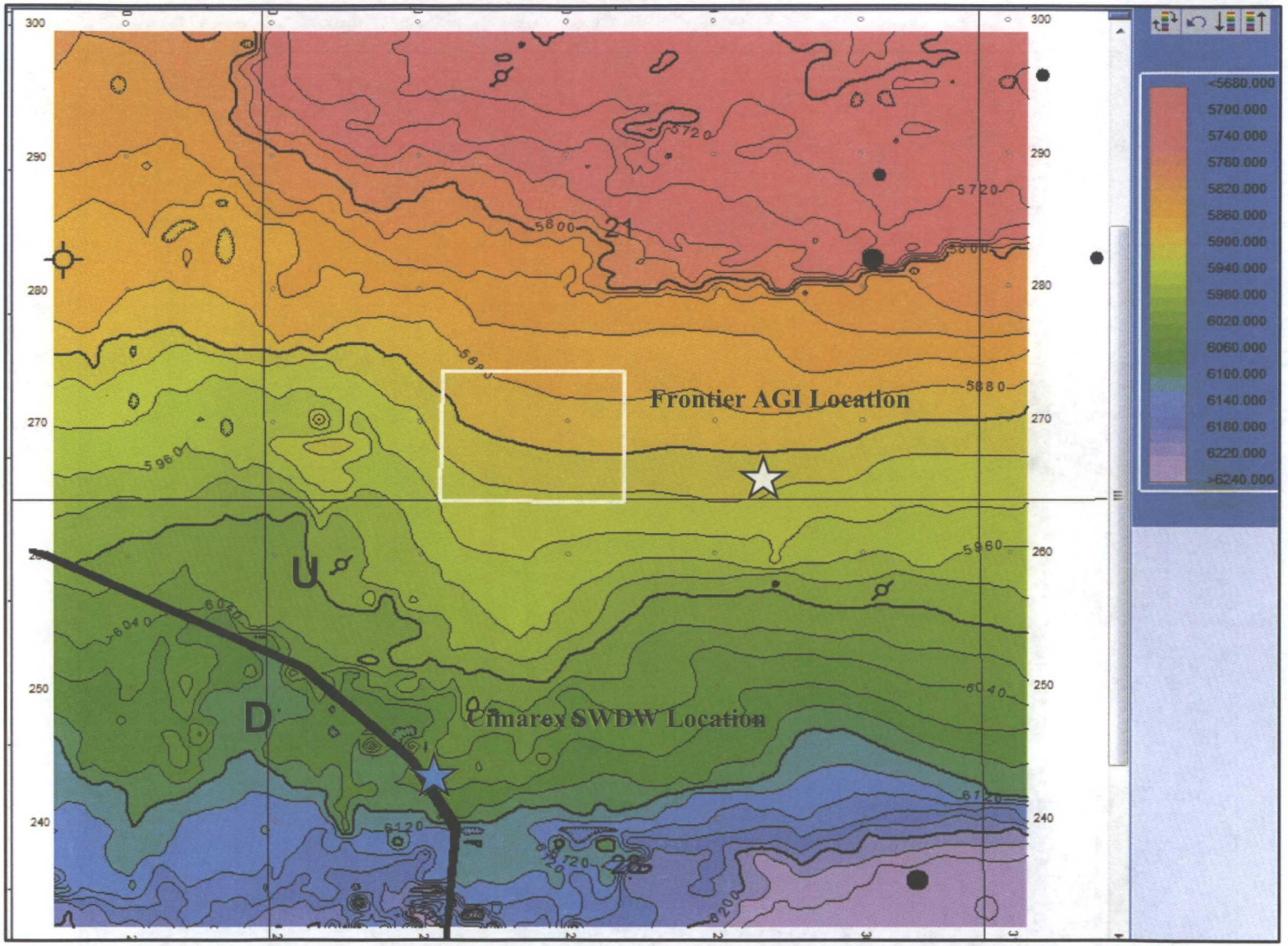
Parallel seismic slice, showing Cimarex's proposed perfs in red, and our proposed AGI injection zone tops by the white arrows. Injection by Cimarex as proposed runs the risk of migration through the fault rubble zone and into one or more of our injection zones. Although the event reflectors for the Lower Leonard zones are not as strong as they are closer to the AGI site, we may not be seeing thinner parts of those zones (resolution not as good below about 25 feet thick) in the area of the Cimarex well. The lower Wolfcamp zone, however, is more widespread than the Lower Leonard zones, and is our best injection target.

GEOLEX INCORPORATED

FRONTIER field services, llc

Map Showing Approximate Location and Trace of Fault From Seismic Analysis

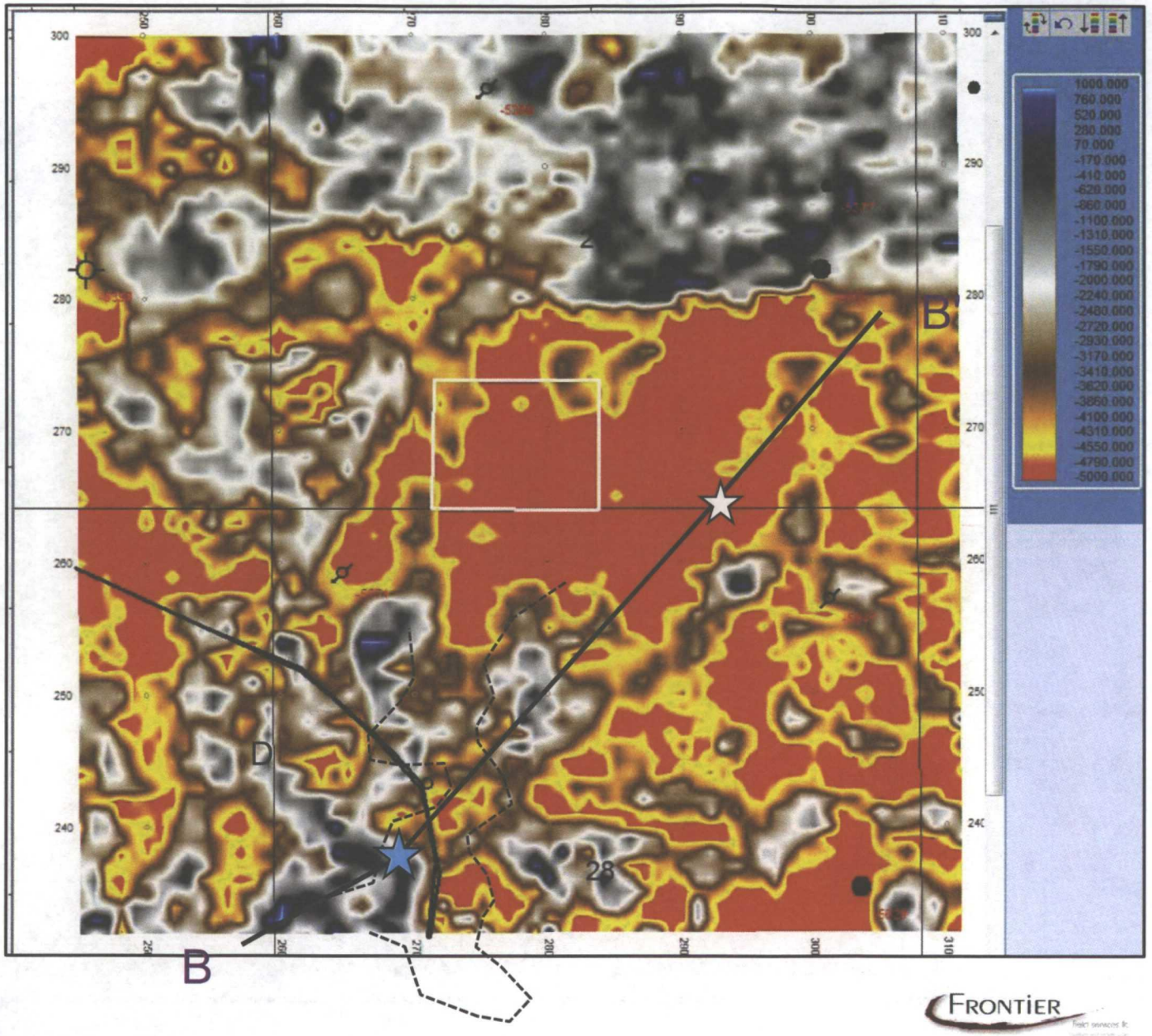
Seismic depth, top of Wolfcamp Zone 3, C. I. = 20 feet.



GEOLEX INCORPORATED

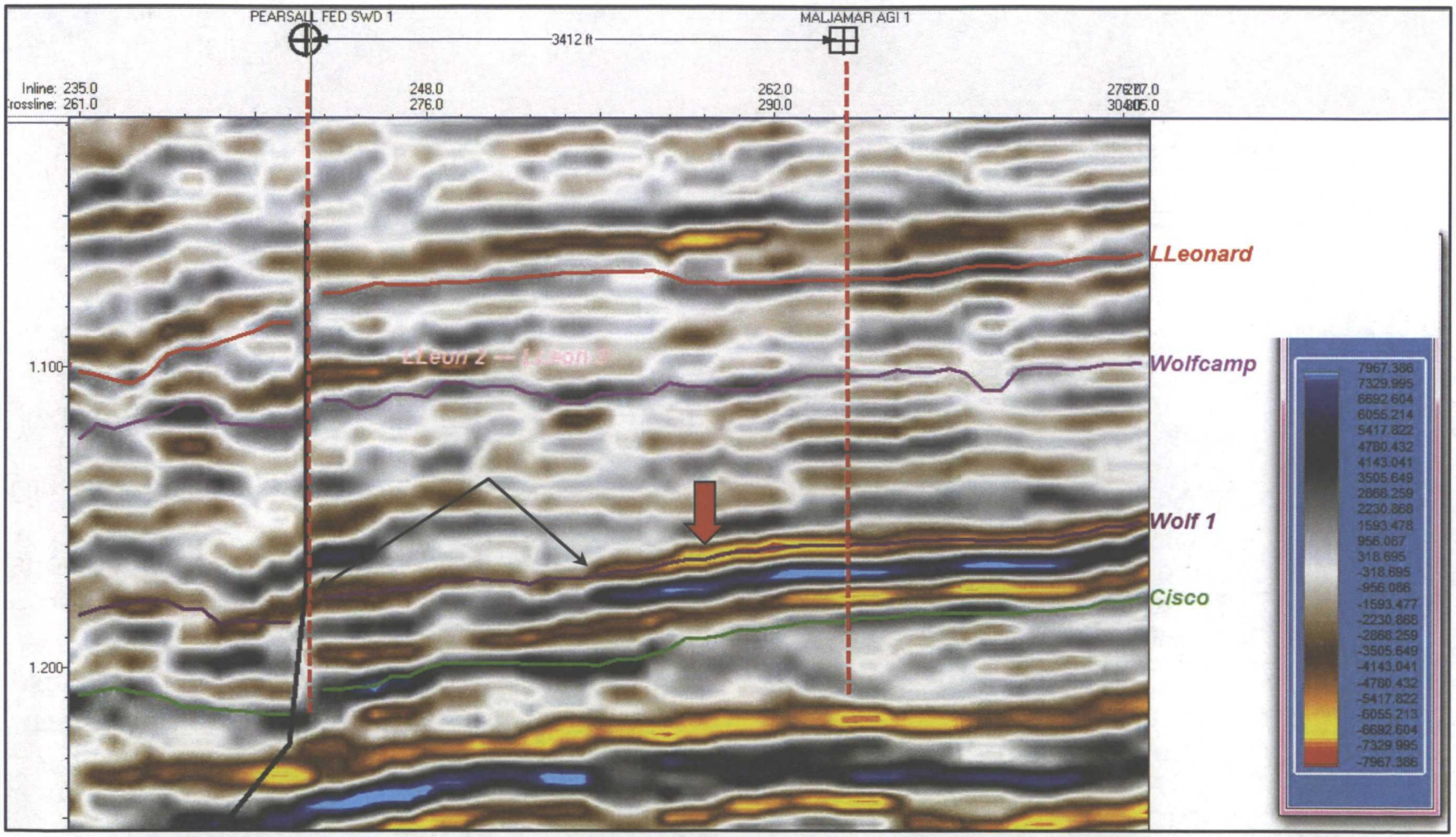
FRONTIER

Flattened Amplitude slice on top of the proposed Wolfcamp Zone 3 AGI interval. The location of the proposed Cimarex SWDW is shown by the blue star, and the proposed Frontier AGI well by the white star.. Lower amplitude rock is denoted by the warmer colors. The plant site is within the white outline. It is conceivable that water injected into the Wolfcamp in the SWDW could migrate up the fault that cuts that well bore, and updip towards the AGI well site. The trace of the seismic section in the next slide is shown here in black.



GEOLEX INCORPORATED

FRONTIER



The low amplitude anomaly associated with the Wolfcamp Zone 3 porosity is indicated by the red arrow. The previous map is an amplitude slice along this horizon. The gaps between brighter (warmer) amplitudes are either tighter rock, or porosity that is thinner than can be resolved by the signal, but there is still some low amplitude trace between the SWDW site and the edge of the more effective porosity associated with the bright anomaly closer to the AGI well site.

GEOLEX INCORPORATED

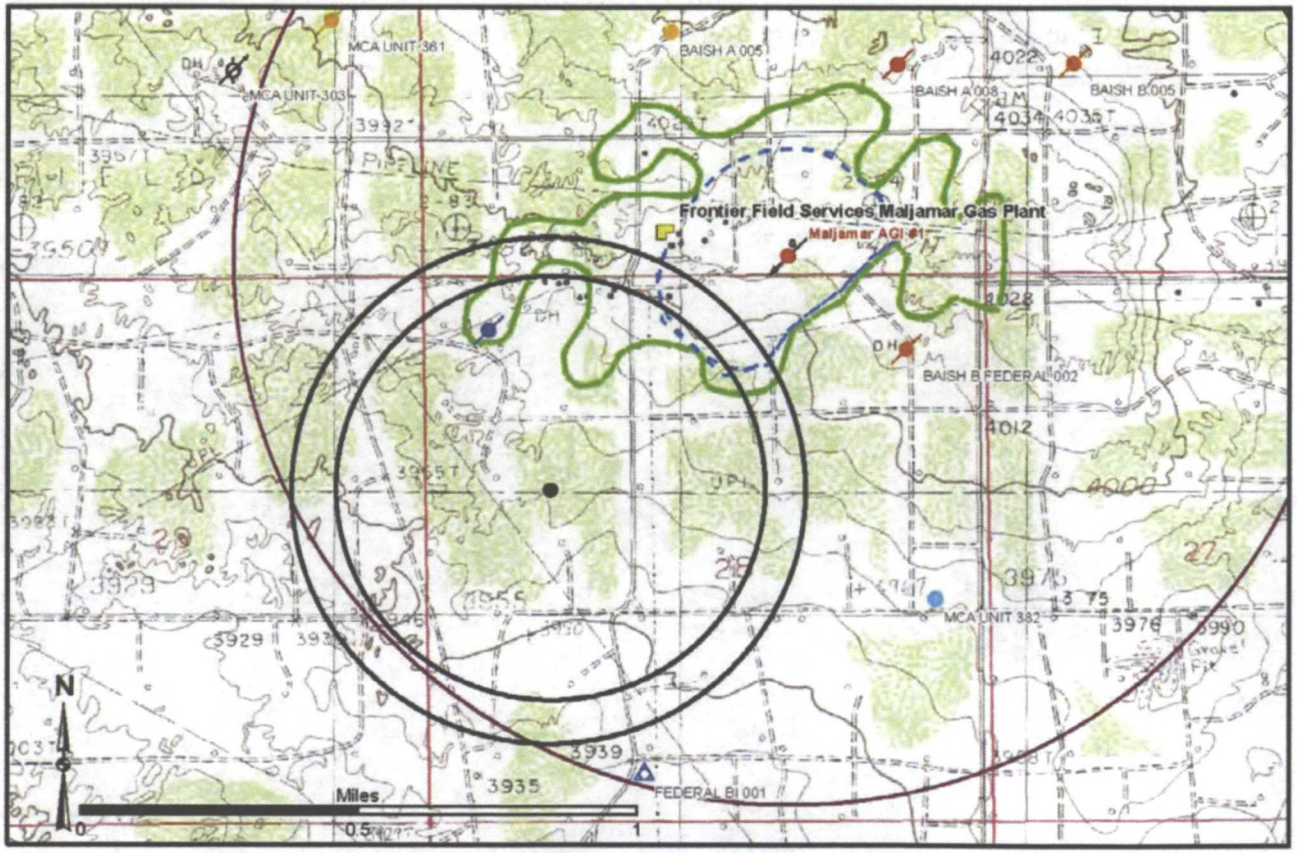
FRONTIER field services, llc

Reservoir Areas Affected after 30 Years of Injection

Areas of Injection projected after 30 years

Frontier Maljamar AGI#1 is shown by dashed blue line

Cimarex SWD injection radii for both injection rates shown in concentric black circles



Calculated Area of Injection for 30 Years at 2.0 MMSCFD Cimarex Proposed SWD at 3500 and 5000 BWD

GEOLEX INCORPORATED

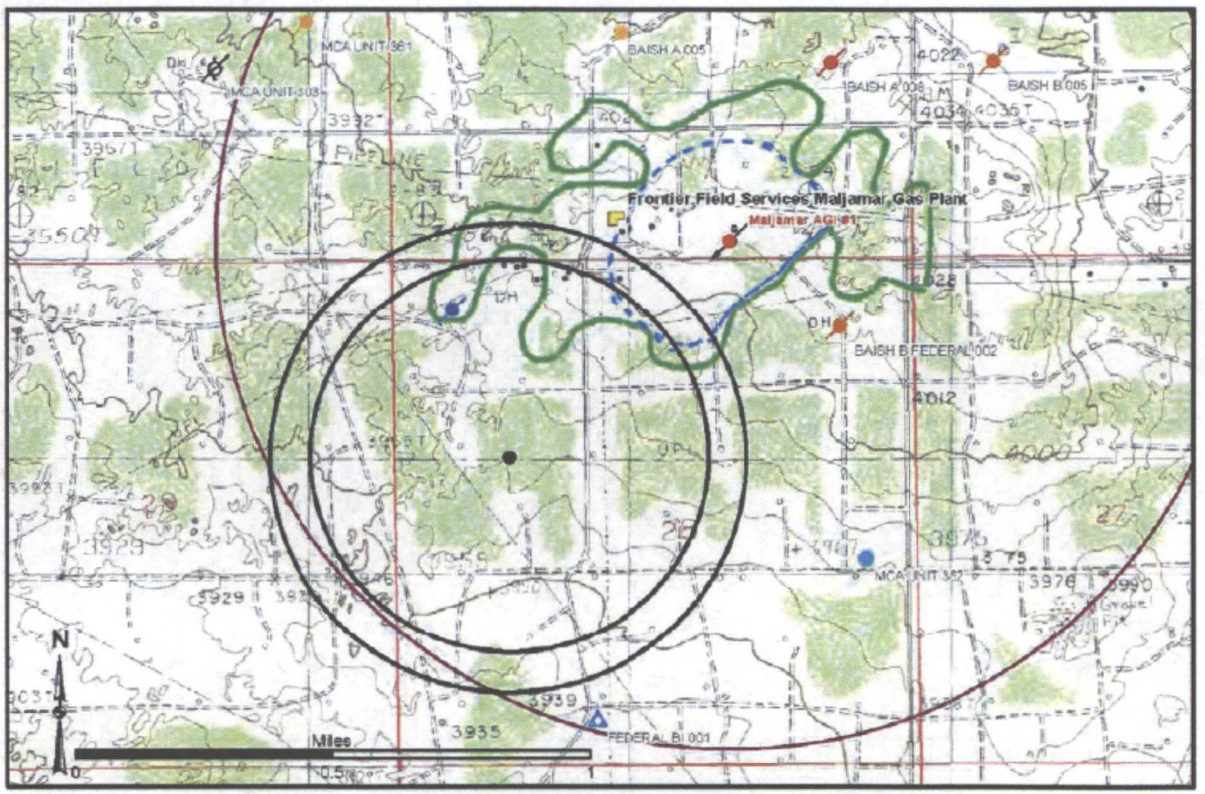
FRONTIER field services, llc

Reservoir Areas Affected after 30 Years of Injection

Areas of Injection projected after 30 years

Frontier Maljamar AGI#1 is shown by dashed blue line

Cimarex SWD injection radii for both injection rates shown in concentric black circles



Calculated Area of Injection for 30 Years at 2.0 MMSCFD
Cimarex Proposed SWD at 3500 and 5000 BWD

GEOLEX INCORPORATED

FRONTIER Field Services, llc

Pearsall Injection Radius -Log Calculations, Adjustments

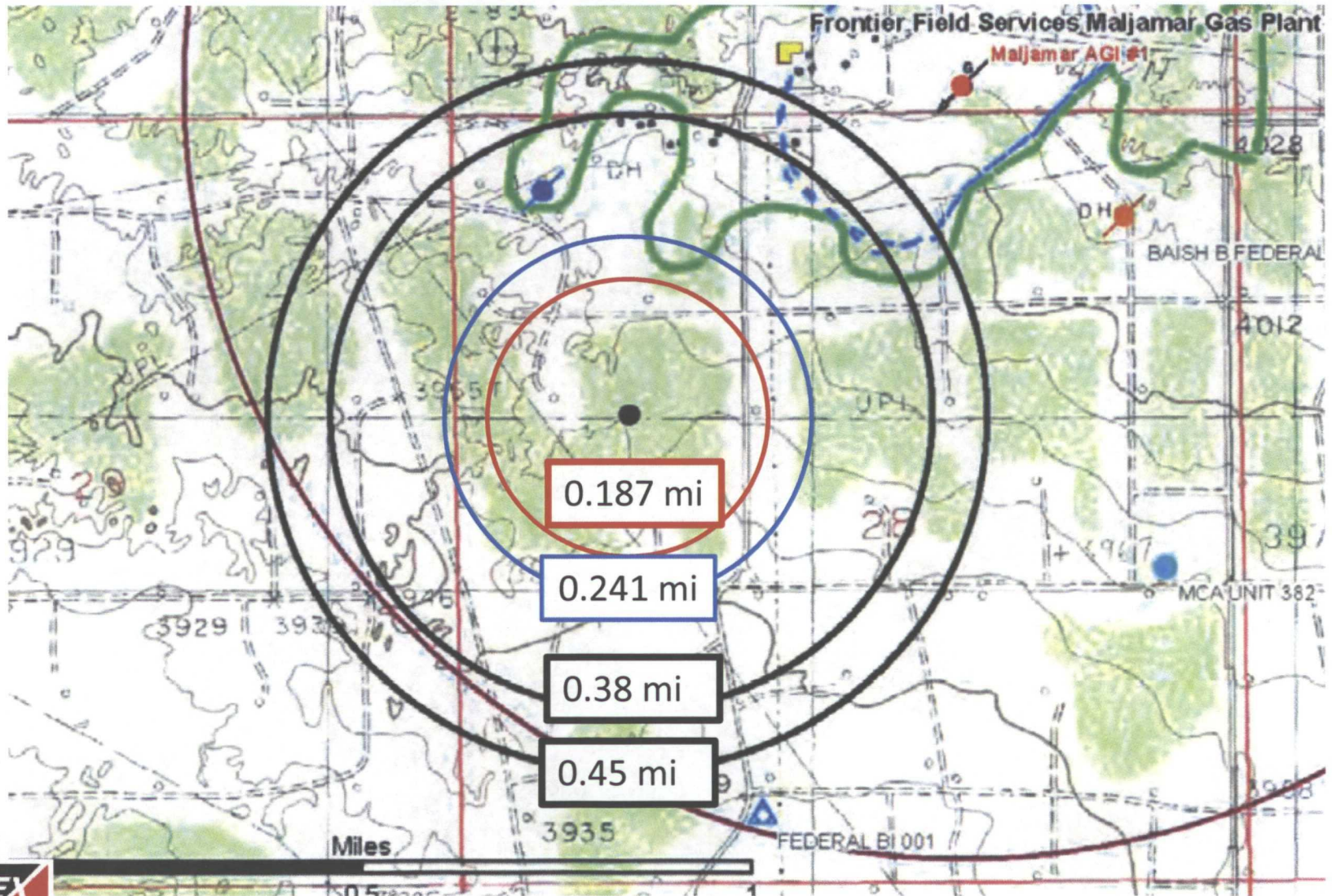
	GEOLEX Adjusted Calculation		GEOLEX Adjusted Calculation		XEC calculation		XEC calculation	
Rate	5,000	bbl/d	3,500	bbl/d	"decline rate"	bbl/d	injection max	bbl/d
Time	28	yrs	28	yrs	28	yrs	28	yrs
EUR	51,100,000	bbls	35,770,000	bbls	9,000,000	bbls	15,000,000	bbls
EUR	281,050,000	cuft	196,735,000	cuft	49,500,000	cuft	82,500,000	cuft
Phi	10.80	%	10.80	%	10.80	%	10.80	%
H	150.00	ft	150.00	ft	150.00	ft	150.00	ft
Phi*H	16.20	ft	16.20	ft	16.20	ft	16.20	ft
Area	17,348,765	sq ft	12,144,136	sq ft	3,055,556	sq ft	5,092,593	sq ft
Radius	2,350	ft	1,966	ft	986	ft	1,273	ft
Radius	**0.445**	**mi**	**0.372**	**mi**	**0.187**	**mi**	**0.241**	**mi**

Our proposed gross injection interval is 9550'-10200' in the Pearsall SWD. This is equivalent to 9650'-10100' in the COG Fed BI #1 in 28N. COG's well has net h=150' and PhiH of 16.2' using FDC=-2 as 5% dolomite cutoff. COP's Baish B36 GNT log suggests 165' of net dolomite as a confirmation.

– Dave Pearcy, Geologist

CIMAREX

Pearsall Injection Radius
-Map of Radius



March 20, 2012

Gabrielle A. Gerholt, Esq.
1220 South Saint Francis Drive
Santa Fe NM 87505

VIA E-MAIL & 1ST CLASS MAIL

RE: RESOLUTION OF FRONTIER FIELD SERVICES, LLC CONCERNS REGARDING PENDING C-108 FOR CIMAREX PEARSALL FED SWD #1, SEC. 28, T17S, R32E, LEA COUNTY, NEW MEXICO

Dear Ms. Gerholt:

On February 29, 2012, we wrote to you regarding our concerns about the above proposed SWD for Cimarex. As I mentioned we would do in that letter, Frontier approached Cimarex to share with them our concerns and to exchange technical information and analyses in an attempt to arrive at a mutually acceptable solution. I am pleased to inform you that Cimarex and Frontier have arrived at a compromise, that if agreeable to NMOCD and if included in the order approving Cimarex's Pearsall Fed. SWD #1, would adequately resolve our concerns and we could support Cimarex's request for administrative approval of the pending application.

Frontier's initial concern was in large measure based on the combination of the location of the well and the injection rates requested by Cimarex. Based on our analyses and the maximum rates originally requested by Cimarex we were concerned about possible long term effects on the reservoir and how that would affect our AGI operations. When we exchanged technical data we were pleased that our assumptions about the reservoir in terms of porosity and permeability generally matched Cimarex's with the one difference being that they do not intend to inject at the maximum requested rate for the full life of the well. Cimarex has assured us that the well will not be a commercial SWD but rather designed only to serve the needs of their field as it develops. Based on the decline curve for their field they will only inject approximately 9 million barrels over the next 30 years. This significantly reduces the area impacted by their injection to the point that it does not cause us concern. For this reason the proposed solution would be that Cimarex would agree to having NMOCD add as conditions to their approved order the following:

- a total volume limitation of 15 million barrels over the entire life of the well,
- maximum rate of 5000BWPD and pressure of 1860 psig as requested by Cimarex,
- a condition that the well not be converted to a commercial SWD, and
- Cimarex may petition the NMOCD for an increase in the total volume limitation should it become necessary in the future after appropriate notice to Frontier.

Frontier has prepared this letter in conjunction with Cimarex such that we are both requesting that these conditions be added to their request for approval of the C-108 to assure that the potential for interfering with the reservoir which we have been approved to inject into will be minimized. Nothing in this letter is to be construed as a waiver of any rights or remedies available to any party regarding this matter or matters arising from either Frontier's or Cimarex's operations.

Cimarex has also reviewed our data and concurs that there is no indication that our injected AGI plume, even after 30 years, would in any way affect the Cimarex Well. With the above-requested volume limitation our concerns regarding the migration of their injected fluids would be resolved.

Please consider this letter as an expression of support for the administrative approval of Cimarex's application provided the requested conditions are incorporated in the approved order. Please let us know if you need additional information or have any questions regarding the proposed resolution of this issue.

Sincerely,
Geolex, Inc.

Alberto A. Gutierrez CPG
President
Consultant to Frontier Field Services, LLC.

AAG/lh

Enclosures

E-mail cc: Will Jones, NMOCD
Barbara Wickman, AKA Energy
Chip Burkett, AKA Energy
Mike Hicks, Frontier Field Services
John Prentiss, Frontier Field Services
David Pearcy, Cimarex
Jesse Parkison, Cimarex

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March 22, 2012

Gabrielle A. Gerholt, Esq.
1220 South Saint Francis Drive
Santa Fe NM 87505

VIA E-MAIL & 1ST CLASS MAIL

RE: RESOLUTION OF FRONTIER FIELD SERVICES, LLC CONCERNS REGARDING PENDING C-108 FOR CIMAREX PEARSALL FED SWD #1, SEC. 28, T17S, R32E, LEA COUNTY, NEW MEXICO

Dear Ms. Gerholt:

Cimarex and Geolex have reached a mutual consensus regarding the injection at the proposed Pearsall SWD. Please consider this letter as our endorsement of the technical data presented in the letter from Alberto Gutiérrez to your office (copy attached). Also we endorse the following conditions to be included in the SWD administrative order:

- a total volume limitation of 15 million barrels over the entire life of the well,
- maximum rate of 5000BWPD and pressure of 1860 psig as requested by Cimarex,
- a condition that the well not be converted to a commercial SWD, and
- Cimarex may petition the NMOCD for an increase in the total volume limitation should it become necessary in the future after appropriate notice to Frontier.

Please let us know if you need additional information.

Sincerely,
Cimarex Energy Co.

Aaron Hamilton
Manager – Permian Region
Cimarex Energy Co.

RECEIVED OCD
2012 MAR 26 P 2:01

Enclosures — Letter from Alberto Gutiérrez

E-mail cc:
Will Jones, NMOCD
Alberto A. Gutiérrez, Geolex
Barbara Wickman, AKA Energy
Chip Burkett, AKA Energy
Mike Hicks, Frontier Field Services
John Prentiss, Frontier Field Services
David Pearcy, Cimarex
Jesse Parkison, Cimarex

Jones, William V., EMNRD

From: Alberto A. Gutierrez, RG [aag@geolex.com]
Sent: Friday, March 23, 2012 8:52 AM
To: Gerholt, Gabrielle, EMNRD; Jones, William V., EMNRD
Cc: bwickman@akaenergy.com; 'PE CHIP BURKETT'; 'Hicks, Mike'; 'Jesse Parkison'; 'David Pearcy'; Julie W. Gutierrez
Subject: Joint Cimarex/Frontier request for conditions on order approving Pearsall Fed SWD
Attachments: Gerholt002.ltr.pdf

Importance: High

Dear Gabrielle and Will,

Frontier and Cimarex have exchanged technical data on our respective wells and have come up with an acceptable solution to Frontier's concerns that were expressed to you in our February 29th letter. With these conditions, Frontier feels comfortable that the potential interference between Cimarex's proposed SWD and our Maljamar AGI#1 (which was spudded yesterday) has been eliminated. For this reason, both Frontier and Cimarex are requesting that OCD issue the injection order for the Pearsall well administratively with the conditions attached regarding volume limitations and the purpose of the well as expressed in the enclosed letter. You should receive a similar letter endorsing these conditions from Cimarex today as well. Thanks for your patience in allowing both parties to reach a solution acceptable to us which we hope will be acceptable to NMOCD. If you have any questions regarding this matter please call me or Jesse Parkinson at Cimarex.
Have a good weekend.
Regards
Alberto

Alberto A. Gutiérrez, RG
Geolex, Incorporated®
500 Marquette Avenue, NW Suite 1350
Albuquerque, NM 87102
505-842-8000 Ext. 105
505-842-7380 Fax

GEOLEX®
INCORPORATED

Alberto A. Gutiérrez, C.P.G.

March 23, 2012

Gabrielle A. Gerholt, Esq.
1220 South Saint Francis Drive
Santa Fe NM 87505

VIA E-MAIL & 1ST CLASS MAIL

RE: RESOLUTION OF FRONTIER FIELD SERVICES, LLC CONCERNS REGARDING PENDING C-108 FOR CIMAREX PEARSALL FED SWD #1, SEC. 28, T17S, R32E, LEA COUNTY, NEW MEXICO

Dear Ms. Gerholt:

On February 29, 2012, we wrote to you regarding our concerns about the above proposed SWD for Cimarex. As I mentioned we would do in that letter, Frontier approached Cimarex to share our concerns with them and to exchange technical information and analyses in an attempt to arrive at a mutually acceptable solution. I am pleased to inform you that Cimarex and Frontier have arrived at a compromise, that if agreeable to NMOCD and if included in the order approving Cimarex's Pearsall Fed. SWD #1, would adequately resolve our concerns and we could support Cimarex's request for administrative approval of the pending application.

Frontier's initial concern was in large measure based on the combination of the location of the well and the injection rates requested by Cimarex. Based on our analyses and the maximum rates originally requested by Cimarex we were concerned about possible long term effects on the reservoir and how that would affect our AGI operations. When we exchanged technical data we were pleased that our assumptions about the reservoir in terms of porosity and permeability generally matched Cimarex's with the one difference being that they do not intend to inject at the maximum requested rate for the full life of the well. Cimarex has assured us that the well will not be a commercial SWD but rather designed only to serve the needs of their field as it develops. Based on the decline curve for their field they will only inject approximately 9 million barrels over the next 30 years. This significantly reduces the area impacted by their injection to the point that it does not cause us concern. For this reason the proposed solution would be that Cimarex would agree to having NMOCD add as conditions to their approved order the following:

- a total volume limitation of 15 million barrels over the entire life of the well,
- maximum rate of 5000BWPD and pressure of 1860 psig as requested by Cimarex,
- a condition that the well not be converted to a commercial SWD, and
- Cimarex may petition the NMOCD for an increase in the total volume limitation should it become necessary in the future after appropriate notice to Frontier.

Frontier has prepared this letter in conjunction with Cimarex such that we are both requesting that these conditions be added to their request for approval of the C-108 to assure that the potential for interfering with the reservoir which we have been approved to inject into will be minimized. We understand Cimarex will draft a letter to you confirming these agreements. Nothing in this letter is to be construed as a waiver of any rights or remedies available to any party regarding this matter or matters arising from either Frontier's or Cimarex's operations.

Cimarex has also reviewed our data and concurs that there is no indication that our injected AGI plume, even after 30 years, would in any way affect the Cimarex Well. With the above-requested volume limitation our concerns regarding the migration of their injected fluids would be resolved.

phone: 505-842-8000
fax: 505-842-7380

500 Marquette Avenue NW, Suite 1350
Albuquerque, New Mexico 87102

email: aag@geolex.com
web: www.geolex.com

Please consider this letter as an expression of support for the administrative approval of Cimarex's application provided the requested conditions are incorporated in the approved order. Please let us know if you need additional information or have any questions regarding the proposed resolution of this issue.

Sincerely,
Geolex, Inc.

Alberto A. Gutierrez CPG
President
Consultant to Frontier Field Services, LLC.

AAG/lh

Enclosures

E-mail cc: Will Jones, NMOCD
Barbara Wickman, AKA Energy
Chip Burkett, AKA Energy
Mike Hicks, Frontier Field Services
John Prentiss, Frontier Field Services
David Pearcy, Cimarex
Jesse Parkison, Cimarex

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Jones, William V., EMNRD

Subject: Joint Cimarex/Frontier request for conditions on order approving Pearsall Fed SWD

Start: Wed 4/11/2012 2:00 PM
End: Wed 4/11/2012 3:00 PM
Show Time As: Tentative

Recurrence: (none)

Organizer: Alberto A. Gutierrez, RG

Importance: High

All:

Here is the call in information. At present I believe we are only having a subset of the recipients participate. Please note

Call in phone number: 877-820-7831

Passcode 842-8000#

If we end up needing to do a gotomeeting, we can set that up on the fly; however, we hope to be able to address OCD's questions on the phone.

Alberto A. Gutiérrez, RG

Geolex, Incorporated®

500 Marquette Avenue, NW Suite 1350

Albuquerque, NM 87102

505-842-8000 Ext. 105

505-842-7380 Fax

Jones, William V., EMNRD

From: Gerholt, Gabrielle, EMNRD
Sent: Thursday, April 12, 2012 11:11 AM
To: Jones, William V., EMNRD
Subject: Cimarex SWD

Please include the annual letter requirement reporting total injected volumes to OCD and Frontier. Thanks

Gabrielle A. Gerholt
Assistant General Counsel
Oil Conservation Division
505.476.3451

Jones, William V., EMNRD

From: Jesse Parkison [jparkison@cimarex.com]
Sent: Thursday, April 12, 2012 3:51 PM
To: Gerholt, Gabrielle, EMNRD; aag@geolex.com; Jones, William V., EMNRD; Gonzales, Elidio L, EMNRD; Kautz, Paul, EMNRD; Bailey, Jami, EMNRD
Cc: bwickman@akaenergy.com; 'PE CHIP BURKETT'; 'Hicks, Mike'; David Pearcy; 'Julie W. Gutierrez'
Subject: RE: Joint Cimarex/Frontier request for conditions on order approving Pearsall Fed SWD

Will, Gabrielle

As a follow up to our conversation on monitoring of injection volumes for the Pearsall SWD, I would like to propose the following steps that could be a part of the OCD order if desired to insure that annual volume/pressure reports get to the Frontier and NMOCD. Of course all this data will be available online, but I think these notifications will act as an alarm clock each year for the technical staff at Cimarex & Frontier to touch base and ensure effective operations. Here at Cimarex we create an internal file with agreements, correspondence, and technical data pertaining to the well (just like a standard well file). In addition we will include a procedure (using Outlook and internal communications) for initiating the following process. I think this process will proceed seamlessly for many years, and when the time approaches to evaluate the injection totals (likely 15+ yrs from now) there will be ample evidence to determine the "go-forward" plan. In this way, we are agreeing to self-enforce the conditions of approval because we feel the conditions are well within our expected means of operation.

- Cimarex agrees to send a report to NMOCD and Frontier by the end of January to summarize the data related to the previous calendar year's operations.
- Cimarex will outline all operations done to the well including acid clean-ups, re-perfs, tubing changes, or casing failures.
- Cimarex will provide all daily/monthly production volumes, depending on the frequency in which they are recorded.
- Cimarex will provide all injection pressure readings, again depending on the frequency in which they are recorded.
- Cimarex will make available their technical staff any time the Frontier staff would like to discuss operations.

I hope that no party feels pressure to enforce these conditions of approval, because we believe we will be operating well below them for the life of the well. We plan to have an open door regarding our operations, as with any Cimarex owned facility. Cimarex is just trying to get an SWD online as soon as possible, and in no way plans to jeopardize that value of the facility by breaking any pre-agreed upon conditions. I hope this will further alleviate any concerns of Frontier and NMOCD.

Thanks.

Jesse Parkison
O: 432.620.1941
C: 432-312-1274

From: Gerholt, Gabrielle, EMNRD [mailto:Gabrielle.Gerholt@state.nm.us]
Sent: Tuesday, April 10, 2012 9:20 AM

To: Jesse Parkison; aag@geolex.com; Jones, William V., EMNRD; Gonzales, Elidio L, EMNRD; Kautz, Paul, EMNRD; Bailey, Jami, EMNRD
Cc: bwickman@akaenergy.com; 'PE CHIP BURKETT'; 'Hicks, Mike'; David Pearcy; 'Julie W. Gutierrez'
Subject: RE: Joint Cimarex/Frontier request for conditions on order approving Pearsall Fed SWD

Dear Jesse,
We are available Wednesday afternoon 2 pm MDT. Thank-you

Gabrielle A. Gerholt
Assistant General Counsel
Oil Conservation Division
505.476.3451

From: Jesse Parkison [mailto:jparkison@cimarex.com]
Sent: Monday, April 09, 2012 3:15 PM
To: aag@geolex.com; Jones, William V., EMNRD; Gerholt, Gabrielle, EMNRD; Gonzales, Elidio L, EMNRD; Kautz, Paul, EMNRD; Bailey, Jami, EMNRD
Cc: bwickman@akaenergy.com; 'PE CHIP BURKETT'; 'Hicks, Mike'; David Pearcy; 'Julie W. Gutierrez'
Subject: RE: Joint Cimarex/Frontier request for conditions on order approving Pearsall Fed SWD

Will, Gabrielle

Can we confirm that you will be available Wednesday afternoon 2pm MDT? It sounds like Cimarex and Geolex will be ready. If we chose to go with a phone conference, Dave and I will get our visual aids out via email sometime tomorrow afternoon. It should be easier to go explain if everyone has a printed copy.

Jesse Parkison
O: 432.620.1941
C: 432-312-1274

From: Alberto A. Gutierrez, RG [mailto:aag@geolex.com]
Sent: Wednesday, April 04, 2012 10:50 AM
To: Jesse Parkison; 'Jones, William V., EMNRD'; 'Gerholt, Gabrielle, EMNRD'; 'Gonzales, Elidio L, EMNRD'; 'Kautz, Paul, EMNRD'; 'Bailey, Jami, EMNRD'
Cc: bwickman@akaenergy.com; 'PE CHIP BURKETT'; 'Hicks, Mike'; David Pearcy; 'Julie W. Gutierrez'
Subject: RE: Joint Cimarex/Frontier request for conditions on order approving Pearsall Fed SWD

Jesse

I can set up the go to meeting but if everyone has all the attachments we can perhaps just do a phone conference and don't need a go to meeting. Either way I will set it up and we can use it if we need it. 2pm on Wednesday the 11th will work for me.
Alberto

Alberto A. Gutiérrez, RG
Geolex, Incorporated®
500 Marquette Avenue, NW Suite 1350
Albuquerque, NM 87102
505-842-8000 Ext. 105
505-842-7380 Fax

See R-13443 ACID Gas well Frontier Maljamar AGI 30-025-40420

Injection Permit Checklist (11/15/2010)

WFX____ PMX____ SWD 1320 Permit Date 4/20/12 UIC Qtr (J/F/M)

Wells 1 Well Name(s): PEARSALL Federal SWD #1

API Num: 30-025-NA Spud Date: ______ New/Old: N (UIC primacy March 7, 1982)

Footages 2303 FNL/1260 FWL Unit E Sec 28 Tsp 17S Rge 32E County LEA

General Location: 3.6 mi SSE of Maljamar

Operator: CIMAREX ENERGY CO OF COLORADO Contact Kay Havenor

OGRID: 162683 RULE 5.9 Compliance (Wells) 0/1270 (Finan Assur) OK ~~IS~~ 5.9 OK? OK

Well File Reviewed None Current Status:

Planned Work to Well: Drill, EQUIP

Diagrams: Before Conversion — After Conversion ✓ Elogs in Imaging File: New Drill

Well Details:

	Sizes Hole.......Pipe	Setting Depths	Stage Tool	Cement Sx or Cf	Determination Method
New __Existing __Surface	17 1/2 13 3/8			800 SX	Surf.
New__Existing __Interm	12 1/4 9 5/8			1350 SX	Surf
New__Existing __ LongSt	7 7/8 5 1/2	10500		1725 SX	≈3700' calc.
New__Existing __ Liner					
New__Existing __ OpenHole					(Baish-WC)

Depths/Formations:

	Depths, Ft.	Formation	Tops?
Formation(s) Above	9750 / 9225	abo / Upper WC	✓ / ✓
Injection TOP:	~~9300~~ 9550	WC	Max. PSI ~~1860~~ 1910 OpenHole____ Perfs ✓
Injection BOTTOM:	~~10100~~ 10200	WC	Tubing Size 3 1/2 Packer Depth ~~9250~~ 9500
Formation(s) Below	10700	CISCO	✓

See SWD-241 30-025-00757 ~~Queen B #36~~ Gas Pot

~~Capitan Reef?____(Potash?____Noticed?____) [WIPP?____Noticed?____]~~ Salado Top/Bot 1015'-2050' ~~Cliff House?____~~

Fresh Water: Depths: <116' Formation QAL Wells? 1 Analysis? NA Affirmative Statement ✓

Disposal Fluid Analysis? Sources: From Cimarex's operation (≈ Yeso/BLINEBRY)

Disposal Interval: Analysis? Production Potential/Testing: offset well Tested/LOGGED wet

Notice: Newspaper Date 1/5/12 Surface Owner BLM Mineral Owner(s)

RULE 26.7(A) Affected Persons: COG/COP/OXY/ (JAN 5, 2012)

AOR: Maps? ✓ Well List? ✓ Producing in Interval? NO Wellbore Diagrams? ✓

.......Active Wells 0 Repairs? — WhichWells? —

.........P&A Wells 1 Repairs? 0 Which Wells? —

Gary Larson Hinkle Hensley Shanor & Martin, LLP PO Box 2068 Santa Fe NM 87504-2068

John Prentiss Gas Manager Frontier Field Services LLC PO Box 7 Maljamar NM 88264

Issues: Nearby ACID Gas Well (To NE) Request Sent ______ Reply: ______

Put Danger Flag on well

9550/9100