

APPLICATION FOR AUTHORIZATION TO INJECT

- I. PURPOSE: ☒ Secondary Recovery ☐ Pressure Maintenance ☐ Disposal ☐ Storage
Application qualifies for administrative approval? ☐ 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 ☒ 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: Consultant
SIGNATURE: Kay C Havenor DATE: May 28, 2011
E-MAIL ADDRESS: KHavenor@georesources.com
- * If the information required under Sections VI, VIII, X, and XI above has been previously submitted, show the date and circumstances of the earlier submittal: _____

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

Oil Conservation Division

Case No. 151467P

Exhibit No. 15

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.

INJECTION WELL DATA SHEET

OPERATOR: Cimarex Energy Co. of Colorado (OGRID 162383)WELL NAME & NUMBER: Bondurant Federal #10 30-025-32431WELL LOCATION: 990 FNL & 1980 FEL B 1 19S 32E
FOOTAGE LOCATION UNIT LETTER SECTION TOWNSHIP RANGEWELLBORE SCHEMATIC

See attached diagram

WELL CONSTRUCTION DATASurface CasingHole Size: 12-1/4" Casing Size: 8-5/8" 28# H-40 STCCemented with: 360 sx. or ft³Top of Cement: Surface Method Determined: Circ 157 sxIntermediate CasingHole Size: Casing Size: Cemented with: or ft³Top of Cement: Method Determined: Production CasingHole Size 7-7/8" Casing Size: 5-1/2" 15.5# @ 3,650'Cemented with: 900 sx sx. or ft³Top of Cement: Surface Method Determined: Circ 84 sxTotal Depth: 3,650' Injection Interval3,362' To 3,650'(Perforated or Open Hole; indicate which) Perforated

INJECTION WELL DATA SHEET

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 3,310 ft

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

Additional Data

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

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

2. Name of the Injection Formation: Yates

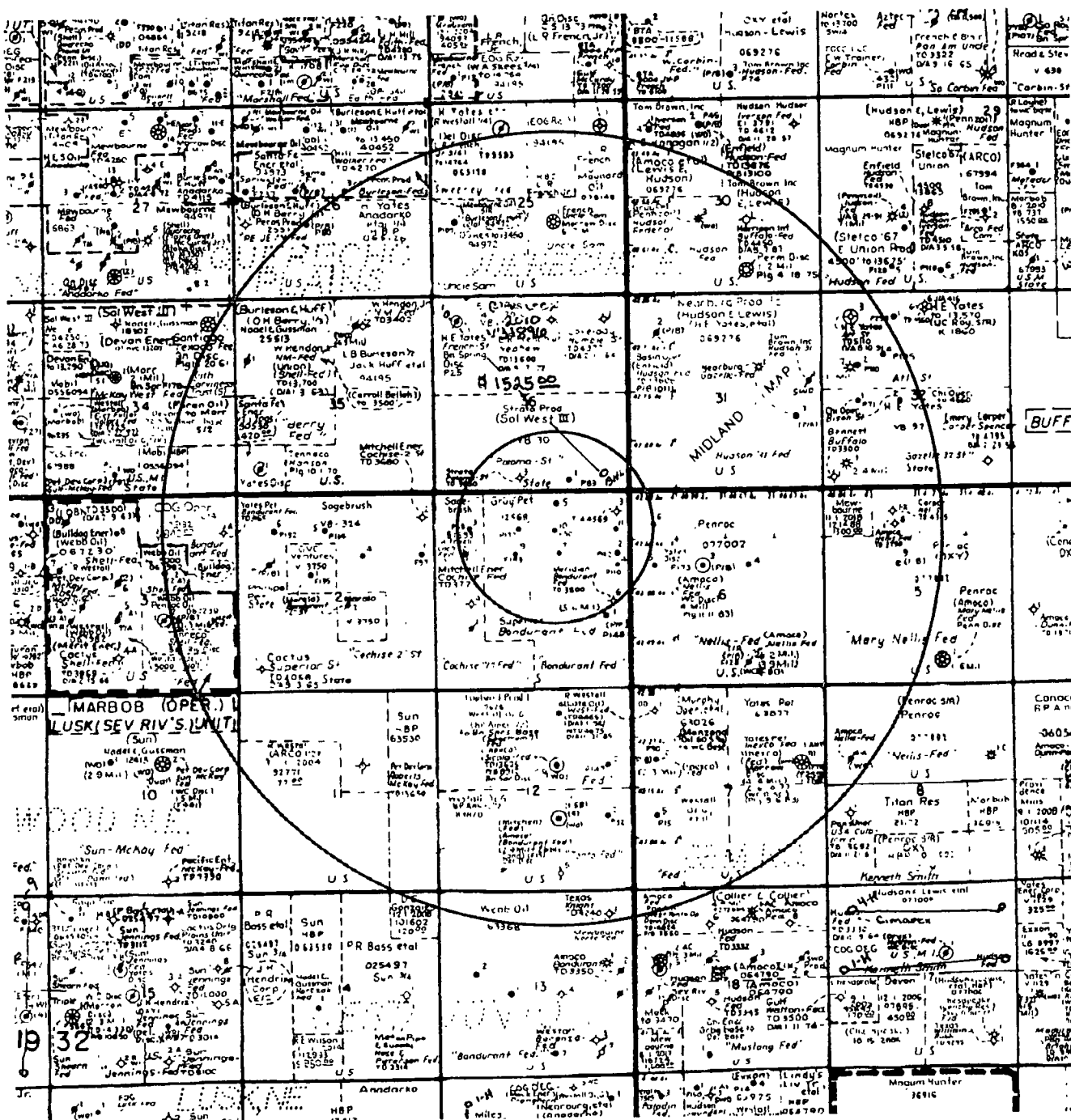
3. Name of Field or Pool (if applicable): Buffalo Yates

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. No. Details on well diagram

5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area: Lusk Seven Rivers 3800', West Tonto Bone Springs 8,750', Buffalo Penn (Morrow) 13,254'

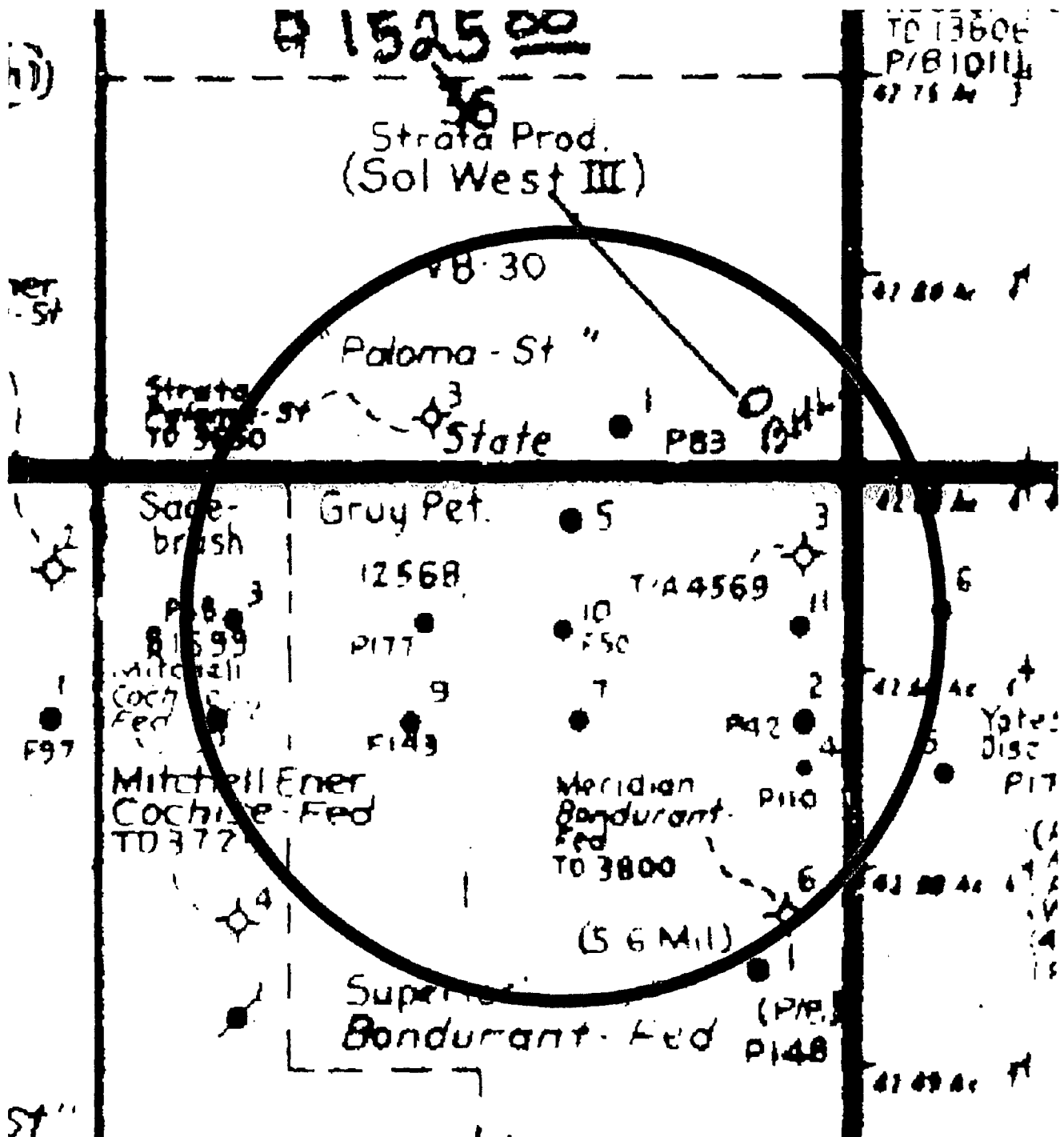
API 30-025-32431

Area of Review
½ Mile AOR and 2 Mile Radius



API 30-025-32431

Area of Review
1/2 Mile AOR

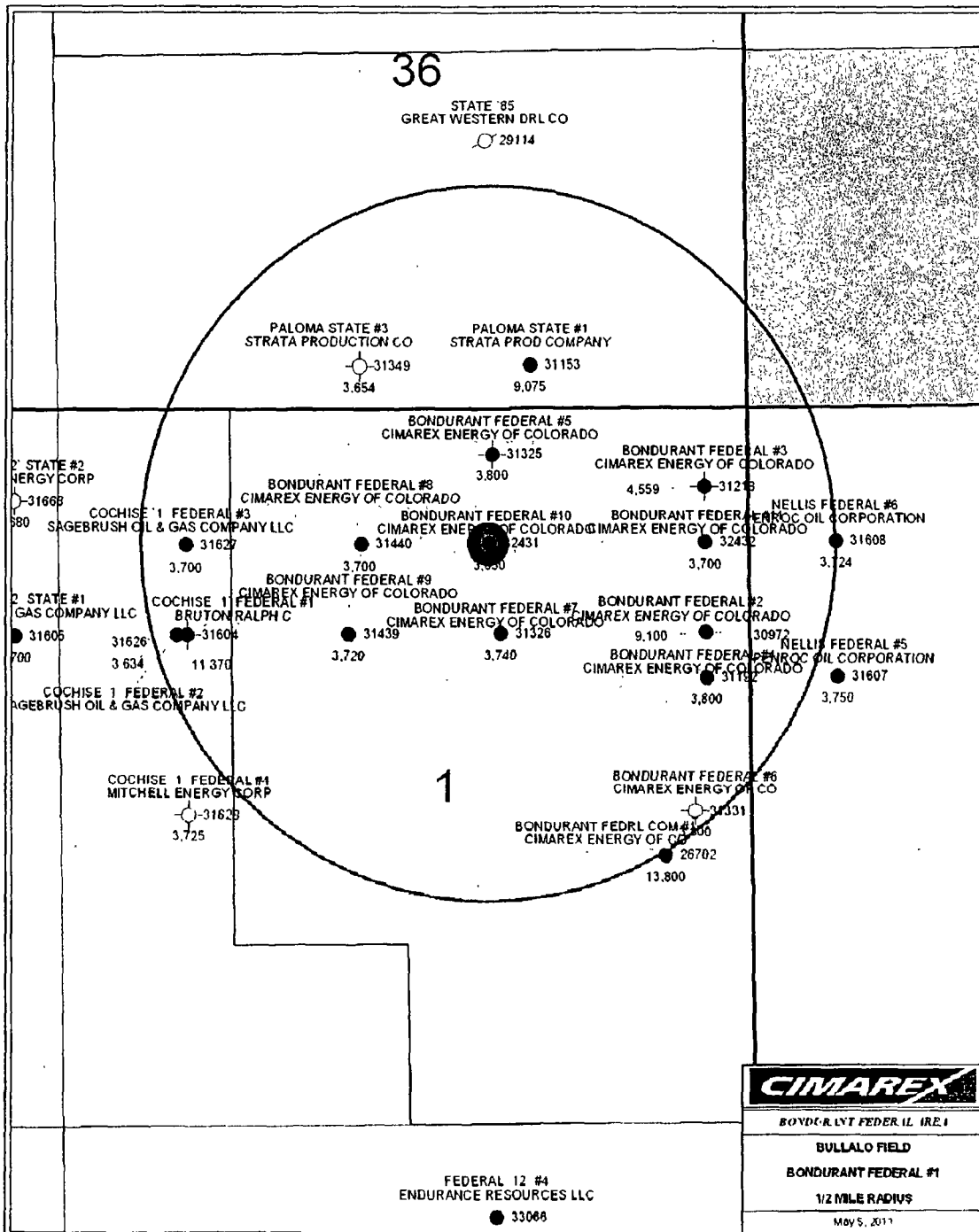


Cimarex Energy Company
 Bondurant Federal #10
 990' FNL & 1980' FEL
 Sec. 1, T19S-R32E Lea County, NM

API 30-025-32431

Item V (a):

Area of Review
 1/2 Mile AOR



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API	WELL NAME	STATUS	SEC	WNSHP	RANGE	NS	FTG	EV	CD	DEFEAT	LAND	OYS	PLUG	SPUD	ELEV	TD
300254064	QUERECHE 36 STATE COM001	New/Not Drilled	36	130E	32E	330 N	400	N	C	CIMAREX ENERGY CO OF COLORADO	S	J			3731	0
300253149	PALOMA STATE 003	Flugged	36	130E	32E	330 S	230	N	K	STRATA PRODUCTION CO	S	J	9/13/1991	9/7/1991	3702	3654
300253153	PALOMA STATE 001	Active	36	130E	32E	330 S	1600	E	C	STRATA PRODUCTION CO	S	J		2/27/1993	3710	3675
300253126	BONDURANT FEDERAL 003	Flugged		130E	32E	580 N	300	E	A	CIMAREX ENERGY CO OF COLORADO	F	J	9/5/2010	7/5/1993	3697	4559
300253242	BONDURANT FEDERAL 01	Active		130E	32E	990 N	300	E	A	CIMAREX ENERGY CO OF COLORADO	F	J		3/13/1994	3690	3700
3002532431	BONDURANT FEDERAL 010	Active		130E	32E	990 N	1900	E	E	CIMAREX ENERGY CO OF COLORADO	F	J		3/13/1994	3693	3650
300253125	BONDURANT FEDERAL 005	Flugged		130E	32E	330 N	1900	E	E	CIMAREX ENERGY CO OF COLORADO	F	J	9/2/2010	7/6/1993	3706	3600
300253140	BONDURANT FEDERAL 003	Active		130E	32E	990 N	200	N	C	CIMAREX ENERGY CO OF COLORADO	F	J		1/8/1993	3698	3700
300253157	DOCHISE FEDERAL 03	Active		130E	32E	990 N	900	N	C	SABER OIL; GAE VENTURE, LLC	F	J		7/2/1992	3697	3700
300253154	DOCHISE FEDERAL 01	Flugged		130E	32E	650 N	900	N	E	FALPH CERUTON	F	J	5/13/2000	6/3/1992	3694	3670
300253156	DOCHISE FEDERAL 02	Active		130E	32E	650 N	500	N	E	SABER OIL; GAE VENTURE, LLC	F	J		8/2/1992	3698	3634
300253143	BONDURANT FEDERAL 003	Active		130E	32E	650 N	220	N	F	CIMAREX ENERGY CO OF COLORADO	F	J		11/5/1993	3717	3720
300253126	BONDURANT FEDERAL 007	Active		130E	32E	650 N	1900	E	G	CIMAREX ENERGY CO OF COLORADO	F	J		8/2/1993	3694	3740
300253172	BONDURANT FEDERAL COM002	Active		130E	32E	650 N	300	E	H	CIMAREX ENERGY CO OF COLORADO	F	J		9/1/1990	3687	3700
300253152	BONDURANT FEDERAL 004	Active		130E	32E	980 N	300	E	H	CIMAREX ENERGY CO OF COLORADO	F	J		3/21/1993	3687	3600
300253153	BONDURANT FEDERAL 005	Flugged		130E	32E	230 S	400	E	I	EURLINGTON RESOURCES OIL; GAE COMPANY LP	F	J	11/1/00	1/1/1990	3685	3600
300253158	DOCHISE FEDERAL 04	Flugged		130E	32E	230 S	900	N	-	CEYON ENERGY OPERATING COMPANY LP	F	J	7/21/1992	7/11/1992	3690	3725
300253158	WELLS FEDERAL 06	Active	E	130E	32E	990 N	600	N	C	FENFOC OIL CORP	F	J		3/13/1992	3695	3724

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

1. 3002532431 Cimarex Energy Co. of Colorado Bondurant Federal #10 Unit B, 990' FNL & 1980' FEL Sec. 1, T19S-R32E, Lea Co. Elev 3,693' GL. Spud 3/13/1994. 12-1/4" hole set 8-5/8" 28# H-40 STC @620' w/360 sx cmt. Circ 157 sx. 7-7/8" hole set 5-1/2" 15.5# K-55 LTC @3,650' w/900 sx cmt. Circ 84 sx. TD 3,650'. Perf 3,408'-3,426' w/4 spf, 76 holes. Acid 1,000 gals 7.5% NEFE, Frac 184,000 gal XL gel + 65,000# 12/20 Brady sd. Completed IPF/day 50 BO, 35 MCFG/ 3 BW 4/3/1994.
2. 3002540064 Cimarex Energy Co. of Colorado Querecho 36 State Com #1. OCD Unit D, 330' FNL & 400' FWL. Sec. 36, T18S-R32E, Lea Co. Elev 33731 GL. Location - not yet spudded. Lateral targeted for Unit P Sec. 36.
3. 3002531349 Strata Production Company Paloma State #3 OCD Unit N, 330' FSL & 2310' FWL Sec 36, T18S-R32E, Lea Co. Elev 3,702' GL. Spud 9/7/1991. 12-1/4" hole set 8-5/8" J-55 24-32# @1,418' w/400 sx, circ 260 sx. Drilled 7-7/8" to TD 3,684'. Plug: 3,350'-3,250' w/35 sx, 2,785'-2,685' w/35 sx, 1,490'-1,390' w/35 sx, 30' plug w/15 sx @surface. P&A 9/16/1991.

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4. 3002531153 Strata Production Company Paloma State #1. OCD Unit O, 330' FSL & 1650' FEL Sec. 36, T18S-R32E, Lea Co. Elev 3710' GL. Spud 2/07/1991. 12-1/4" hole set 8-5/8" 24# 1,497' w/800 sx, circ 220 sx. 7-7/8" hole set 5-1/2" 15.5# LTC w/1500 sx TOC NR. Perf 3,361'-3,526' w/18 holes (OA). Acid 3,361'-3,365' w/600 gal 7.5%, Acid 3,462'-3,267' w/1500 gal 7.5%, Frac 3,524'-3,526' w/40,000 gal jel +57,700# 20/40 sand. IPP 83 BOPD + 23 BWPD 4/16/1991.

5. 3002531218 Cimarex Energy Company of Colorado Bondurant Federal #3, OCD Unit A, 580' FNL & 330' FEL Sec. 1, T19S-R32E, Lea Co. Elev 3697' GL. Spud 7/5/1991. 12-1/4" hole set 8-5/8" 28# 473' w/3,255 sx, circ 120 sx. 7-7/8" hole set 5-1/2" 15.5# @4,559' w/1,125 sx circ 130 sx. Perf 3,412'-3,478' (OA) w/44 holes. CIBP 3,360' +35' cmt. 25 sx plug @3,280', tagged @3,220'. 25 sx @3,220' tagged @3,026'. 45 sx @1,675', tagged @1,421'. 30 sx @1,421' tagged @1,191'. Plug @525'523'. 70 sx to surface. P&A 9/5/2010.

6. 3002532432 Cimarex Energy Company of Colorado Bondurant Federal #11, OCD Unit A, 990' FNL & 330' FEL Sec. 1, T19S-R32E Lea Co. Elev 3690' GL. Spud 3/8/1994. 12-1/4" hole set 8-5/8" 28# 616' w/370 sx, circulated. 7-7/8" hole set 5-1/2" 15.5# K-55 LTC @3,700' w/720 sx, circulated. Re-work IPP 2MCF +1.39 BO +1.19 BWPD 6/23/2010.

7. 3002531325 Cimarex Energy Company of Colorado Bondurant Federal #5, OCD Unit B, 330 FNL & 1950 FEL Sec 1, T19S-R32E Lea Co. Elev 3706' GL. Spud 7/16/1991. 12-1/4" hole set 8-5/8" 28# 608' w/450 sx, circ 110 sx. 7-7/8" hole set 5-1/2" 3,800' w/1050 sx, circ 110 sx. Perf 3,518'-3,539' w/2 SPF 44 holes. 110 gal 7.5% NEFe HCl, Frac 28,000 gal35# x-link + 110,000# sand. CIBP @3,500' +25 sx cmt calc 3,300'. 25 sx @2,920' not tagged, 25 sx @2,920' tagged @2,890'. 50 sx cmt @2,890' tagged @2,690'. 55 sx cmt @1,365'. 80 sx cmt plug 708' - 3'. P&A 9/2/2010.

8. 3002531440 Cimarex Energy Company of Colorado Bondurant Federal #8, OCD Unit C, 990 FNL & 2310 FWL Sec 1, T19S-R32E Lea Co. Elev 3698' GL. Spud 11/8/1991. 12-1/4" hole set 8-5/8" 28# K-55 @605' w/400 sx, circ 100 sx. 7-7/8" hole set 5-1/2" 15.5# K-55 @3,700' w/750 sx cmt, circ 125 sx. Perf 3,496'-3,512' w/2 SPF 34 holes. Acid 1200 gal 7.5% HEFE. Frac 15,000 gal gel + 60,000# 20/30 sand. Completed 11/22/1991 IPP 177 BO, 75 MCFG, 282 BWPD.

9. 3002531627 Saber Oil & Gas Ventures, LLC Cochise 1 Federal #3, OCD Unit D, 990 FNL & 990 FWL Sec 1, T19S-R32E Lea Co. Elev 3697' GL. Spud 7/6/1992. 12-1/4" hole set 8-5/8" 24# K-55 STC @603' w/320 sx cmt circ 124 sx. 7-7/8" hole set 4-1/2" 10.5# K-55 STC @3700' w/2000 sx cmt, circ 149 sx. PBTB 3,657'. Perf 3,364'-3,460' w/27 shots. Acid 2500 gal 15% NEFE. Frac 56,000 gal gel + 148,000# 16/30 sand. IPP 88 BO, 431 MCFG, 66 BWPD.

10. 3002531604 Ralph C. Burton Chchise 1 Federal #1, OCD Unit E, 1650 FNL & 990 FWL Sec 1, T19S-R32E Lea Co. Elev 3694' GL. Spud 6/3/1992. 17-1/2" hole set 13-3/8" 32# K-55 STC 4,599' w/1550 sx cmt, circ 55 sx. 7-7/8" hole 11,370' set 5-1/2" 11,368' w/DV @7,705' w/910 sx, circ 200 sx, opened DV cmt w/753 sx, TOC 5,260' (Cimarex). Perf 11,104'-11,220' w/117 shots 0.41". CIBP 11,075' + 30' cmt. Perf 1 SP2F 8,833-39, 8,853-55, 8,908'-8,930' (18 holes), acid w/1900 gals 15% NEFe. Frac w/29,500 gal gel + 100,000# 20/40 Ottawa sand + 20,000# resin-coated sand. Perf 1 SP2F 8,598'-8,645' (OA) w/7 holes. Acid 8,598'-8,645' w/2000 gal 15% NEFe. Frac 8,598'-8,645' w/39,000 gal gel + 122,000# Ottawa sand + 28,000# resin-coated sand. CIBP 8,560' + 35' CMT. Perf 7,472'-7,500 w/50 holes (OA). Acid 7,542'-7,500 w/2,500 gal NEFe. CIBP 7,450' + 35' cmt. CIBP 7,450' + 35' cmt, tagged. 25 sx @5,482'-2,242'. 25 sx @4,672'-4,432'. 25 sx 2,678'-2,438', 45 sx 654'-222', 10 sx 60'-surface. P&A 3/13/2000.

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11. 3002531626 Saber Oil & Gas Ventures, LLC Cochise 1 Federal #2, OCD Unit E, 1650 FNL & 915' FWL Sec. 1, T19S-R32E Lea Co. Elev 3598 GL. Spud 8/6/1992. 12-1/4" hole set 8-5/8" 24# 598' w/300 sx, reported cmt to surface. 7-7/8" hole set 4-1/2" 10.5# 3,634' w/1,250 sx to surface. Perf 3,455'-3,472' w/18 shots .041". Acid 1,500 gal 15% NEFe. Frac 48,800# 16/30 sand + 18,000 gal gel. IPP 123 BO, 113 MCFG, 9 BWPD 8/24/1992.
12. 3002531439 Cimarex Energy Company of Colorado Bondurant Federal #9, OCD Unit F, 1650 FNL & 2210 FWL Sec 1, T19S-R32E Lea Co. Elev 3703' GL. Spud 11/15/1991. 12-1/4" hole set 8-5/8" 28# @600' w/400 sx, circ 100 sx. 7-7/8" hole set 5-1/2" 3,720' w/872 sx, circ 70 sx. Perf 3,560'-3,568' w/2 SP 18 holes, sqzd w/100 sx cmt. Perf 3,462'-3,482' w/2SPF, 44 holes. 3,560'-3,568' Acid 1,200 gal 7.5% NEFe. Acid 3,461'-3,482' w/1,200 gal 7.5% NEFe. Frac w/18,000 gal 35# gel +81,700# 20/40 NW sand. IPF 143 BO, 107 MCFG, 70 BWPD 12/17/1991.
13. 3002531326 Cimarex Energy Company of Colorado Bondurant Federal #7, OCD Unit G, 1650 FNL & 1900 FEL Sec 1, T19S-R32E Lea Co. Elev 3694' GL. Spud 8/12/1991. 12-1/4" hole set 8-5/8" 28# @606' w/400 sx, circ 105 sx. 7-7/8" hole set 5-1/2" 15.5# @3,740' w/1,100 sx. PBTd 3,680'. TOC NR. Perf 3,484'-3,502' w/38 holes. Acid 1,200 gal 7.5%. Frac w/10,000 gal gel +40,400# 20/40 sand. IPF 222 BO 436 MCFG, 302 BWPD 8/31/1991.
14. 3002530972 Cimarex Energy Company of Colorado Bondurant Federal Com. #2, OCD Unit H, 1650 FNL & 330 FEL, Sec 1, T19S-R32E Lea Co. Elev 3687' GL. Spud 9/4/1990. 12-1/4" hole set 8-5/8" 24# K-55 STC @1515' w/700 sx, circ 200 sx. 7-7/8" hole set 5-1/2" 17# K-55 LTC @9,100' w/2,150 sx 2-stage DV@3,797', circ 10 sx. Perf 8,750'-8,850' (OA) w/106 shots. Acid 2,500 gal NEFe. Frac 45,400 gal gel +156,000# 20/40 sand. IP 42 BO, 44 MCFG, 231 BWPD 10/23/1990.
15. 3002531192 Cimarex Energy Company of Colorado Bondurant Federal #4, OCD Unit H, 1980 FNL & 330 FEL, Sec 1, T19S-R32E Lea Co. Elev 3687' GL. Spud 3/20/1991. 12-1/4" hole set 8-5/8" 28# K-55 STC @454' w/300 sx, circ 105 sx. 7-7/8" hole set 5-1/2" 15.5# K-55 STC @3,800' w/760 sx. Not circ. Perf 3,494'-3,514' w/84 shots. Acid 1,000 gal 7.5% NEFe, Frac 23,600 gal gel + 52,900# sand. IP 110 BO, 30 MCFG, 270 BWPD 4/11/1991.
16. 3002531331 Burlington Resources O&G Co. LP Bondurant Federal #6, OCD Unit I, 2310 FSL & 430 FEL Sec 1, T19S-R32E, Lea Co. Elev 3685 GL. Spud 7/23/1991. 12-1/4" hole set 8-5/8" 24# K-55 STC @605' w/475 sx, circ 110 sx. 7-7/8" hole to 3,800'. Hole problems. Logged hole. 120 sx plug 3,700' tagged @3,327'. Set plug 2,820'-3,000', 1,620'-1,720', surface-655' (sx cmt not reported), P&A 8/3/1991 witnessed by BLM.
17. 3002531628 Devon Energy Operating Co. LP, Cochise 1 Federal #4, OCD Unit L, 2310 FSL & 990 FWL Sec 1, T19S-R32E, Lea Co. Elev 3690' GL. Spud 7/14/1992. 12-1/4" hole set 8-5/8" 24# K-55 STC @625' w/320 sx, circ 79 sx. 7-7/8" hole to TD 3,725', unable to log below 3,199'. Plug 125 sx 3,199'-2,880', tagged. Plug 1,398'-1,1198' w/85 sx. Plug 35 sx 684'-580', tagged. Plug 35 sx 60'-surface. P&A 7/24/1992
18. 3002531608 Penroc Oil Corp. Nellis Federal #6, OCD Unit D, 990 FNL & 660 FWL Sec. 6, T19S-R33E, Lea Co. Elev 3695' GL. Spud 6/19/1992. 12-1/4" hole set 8-5/8" 32# K-55 @450' w/300 sx, circ 66 sx. 7-7/8" hole set 3,724' 5-1/2" 15.5# K-55 @3,724' w/1,150 sx, circ 230 sx. Perf 3,504'-3,528' w/4 JSPF. IPP 22 BO, 65 MCFG, 11 BWPD 8/12/1992

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Item VII:

1. The maximum injected volume anticipated is 10,000 BWPD. Average anticipated is 8,000 BWPD.
2. Injection will be through a closed system.
3. Maximum injection pressure is expected to be 672 psi.
4. Sources will be produced water from this and adjacent Cimarex leases. These waters will be compatible with waters in the disposal zone.
5. Water sample analysis from the Cimarex Bondurant Fed. #9, F-Sec 1, T19S-R32E Lea Co.

P O BOX 1488
MONAHANS TEXAS 79756
PH 943-3234 OR 563-1040

Martin Water Laboratories, Inc.

709 W INDIANA
MIDLAND TEXAS 79701
PHONE 683-4521

RESULT OF WATER ANALYSES

TO: Mr. David Cook
P. O. Box 51810, Midland, TX 79710

LABORATORY NO. 129170
SAMPLE RECEIVED 12-6-91
RESULTS REPORTED 12-16-91

COMPANY Meridian Oil Company LEASE Bondurant #9
FIELD OR POOL
SECTION BLOCK SURVEY COUNTY Lea STATE NM
SOURCE OF SAMPLE AND DATE TAKEN

NO. 1 Produced water - taken from Bondurant #9.

NO. 2

NO. 3

NO. 4

REMARKS: Yates "C" Sand

CHEMICAL AND PHYSICAL PROPERTIES				
	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.1038			
pH When Sampled				
pH When Received	5.12			
Bicarbonate as HCO ₃	415			
Supersaturation as CaCO ₃				
Undersaturation as CaCO ₃				
Total Hardness as CaCO ₃	21,600			
Calcium as Ca	4,400			
Magnesium as Mg	2,576			
Sodium and/or Potassium	50,092			
Sulfate as SO ₄	2,867			
Chloride as Cl	90,194			
Iron as Fe	36.8			
Barium as Ba				
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	150,544			
Temperature °F				
Carbon Dioxide, Calculated				
Dissolved Oxygen				
Hydrogen Sulfide	0.0			
Resistivity, ohms/cm at 77° F.	0.070			
Suspended Oil				
Filtrable Solids as mg/l				
Volume Filtered, ml				
Total Dissolved Solids @ 180°C.	153,444			
Results Reported As Milligrams Per Liter				
Additional Determinations And Remarks We are not familiar with the field or location of this well in order to accomplish a good comparison with what we would expect from natural Yates. Yates varies substantially in Lea county in both ratios and levels of salts. If we can be of any additional assistance with more information, please contact us.				

Form No. 3

By Waylan C. Martin, M.A.

Cimarex Energy Company
Bondurant Federal #10
990' FNL & 1980' FEL
Sec. 1, T19S-R32E Lea County, NM

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Item VIII:

The Yates Formation is comprised of interbedded sandstones, shales, dolomites and anhydrite. The sandstones are typically isolated within the formation, and from formations above and below, by the very-low vertical transmissivity of the bounding shales and anhydrites. This is also demonstrated by highly variable water productivity within the sandstones of the Yates between different wells in the field.

A search of the records of the NM Office of the State Engineer disclosed no known domestic or potable water wells within the 2-mile radius of the proposed disposal/injection.



New Mexico Office of the State Engineer
Wells with Well Log Information

No wells found

Basin/County Search:

Basin: Lea County

UTMNA083 Radius Search (in meters):

Easting (X): 620256

Northing (Y): 3617892

Radius: 3300

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

5/17/11 11:29 AM

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WELLS WITH WELL LOG INFORMATION

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 Permian Rustler Formation and some evaporites. The top of the salt is locally reported at 1,680' and the base of the main salt is 2,800'. The top of the Yates Formation of the Artesia Group is at 3,345'. Locally the Yates Formation is about 270' thick and is underlain the Seven Rivers Formation and other formations of the Artesia Group.

Item IX:

The formation was originally acidized and fractured as described above in Item XI (a) 1. Additional treatment/fracturing may occur after initial testing.

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Item X:

Logs are on file with the OCD.

Item XI:

No commercial, domestic, or stock water wells are reported in the 2-mile area. Please note Item VIII discussion above.

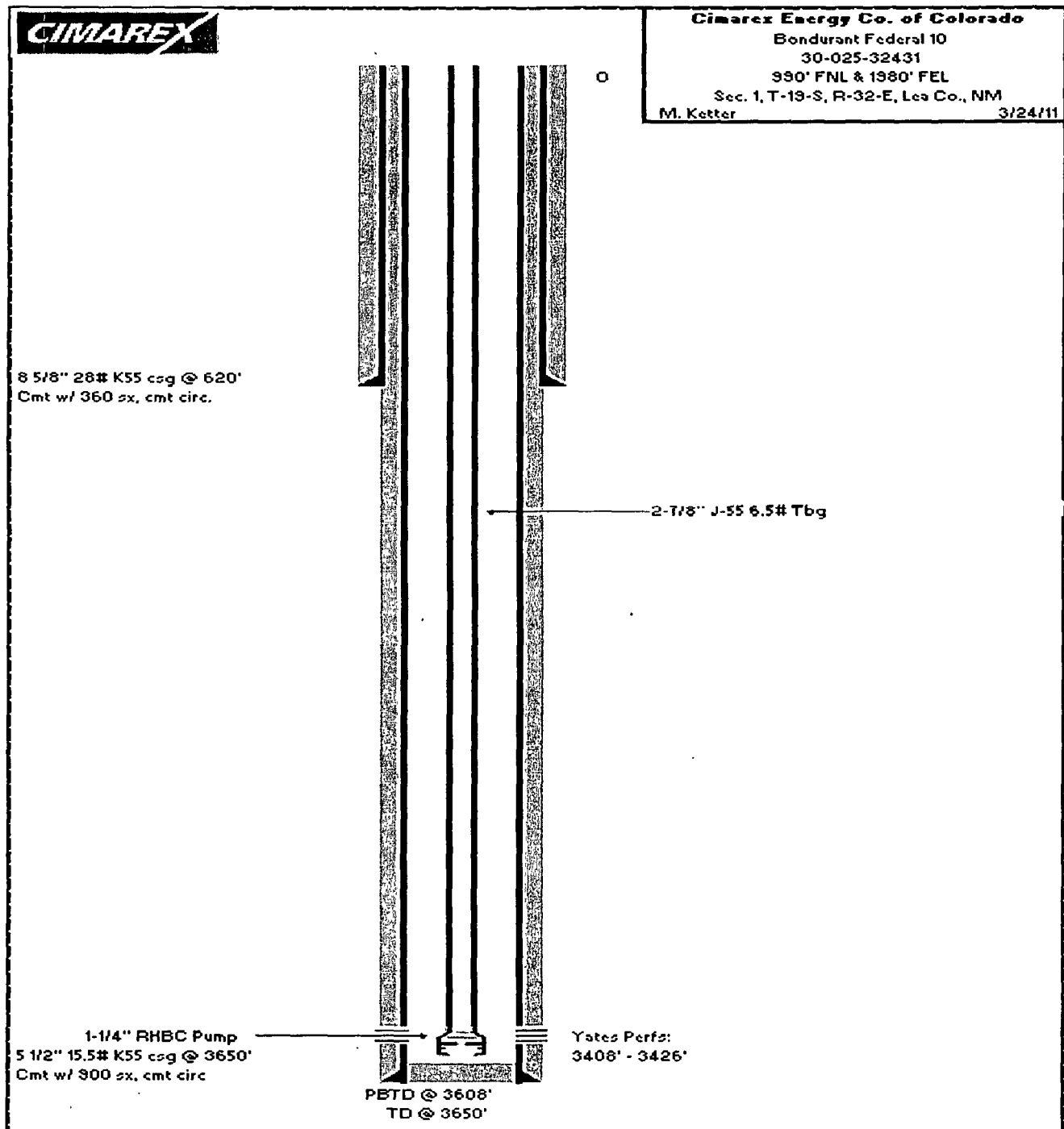
Item XII:

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

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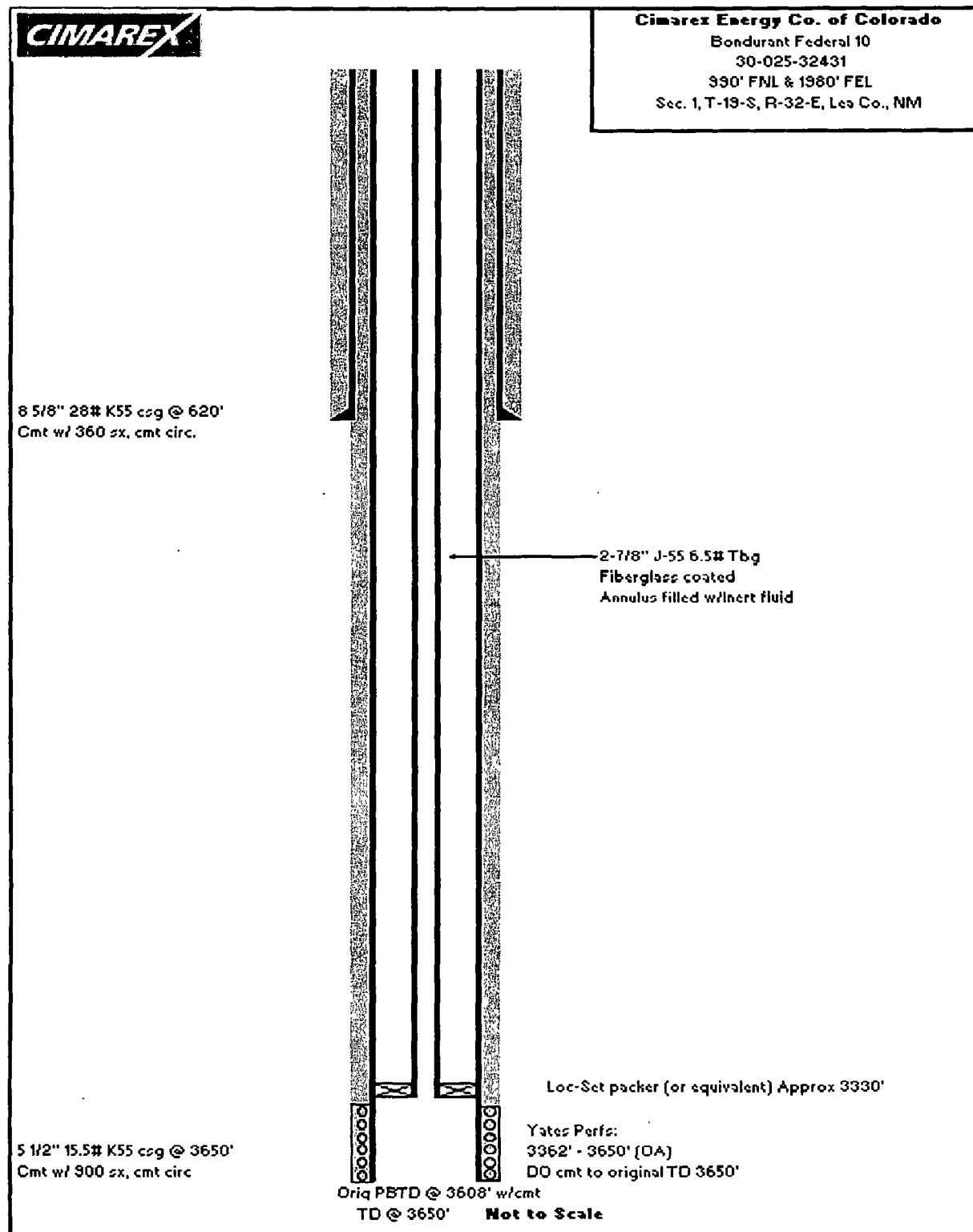
Present status of Cimarex Energy Co. Bondurant Federal #10 proposed SWD



Cimarex Energy Company
Bondurant Federal #10
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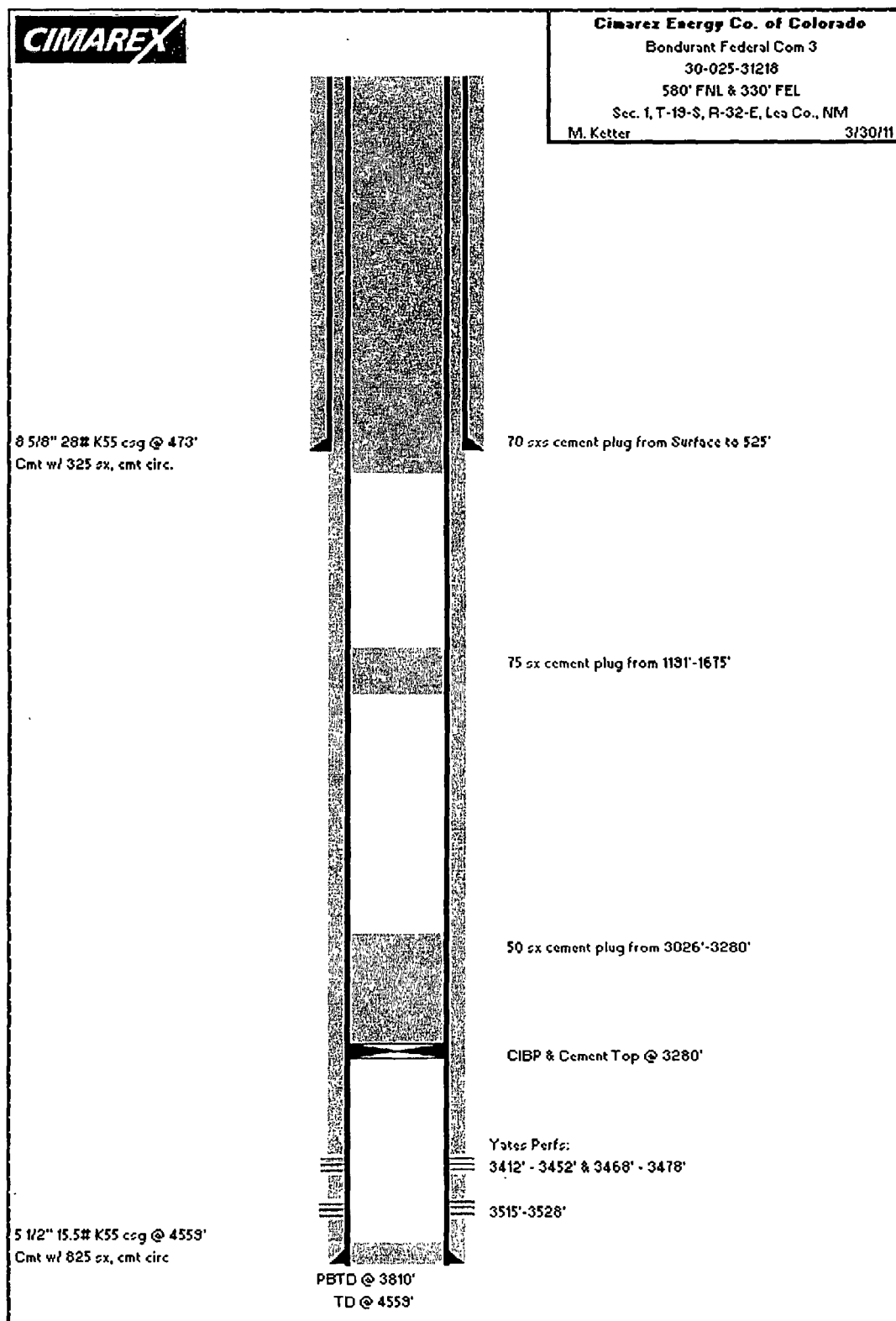
Proposed SWD completion Cimarex Energy Co. Bondurant Federal #10



Cimarex Energy Company
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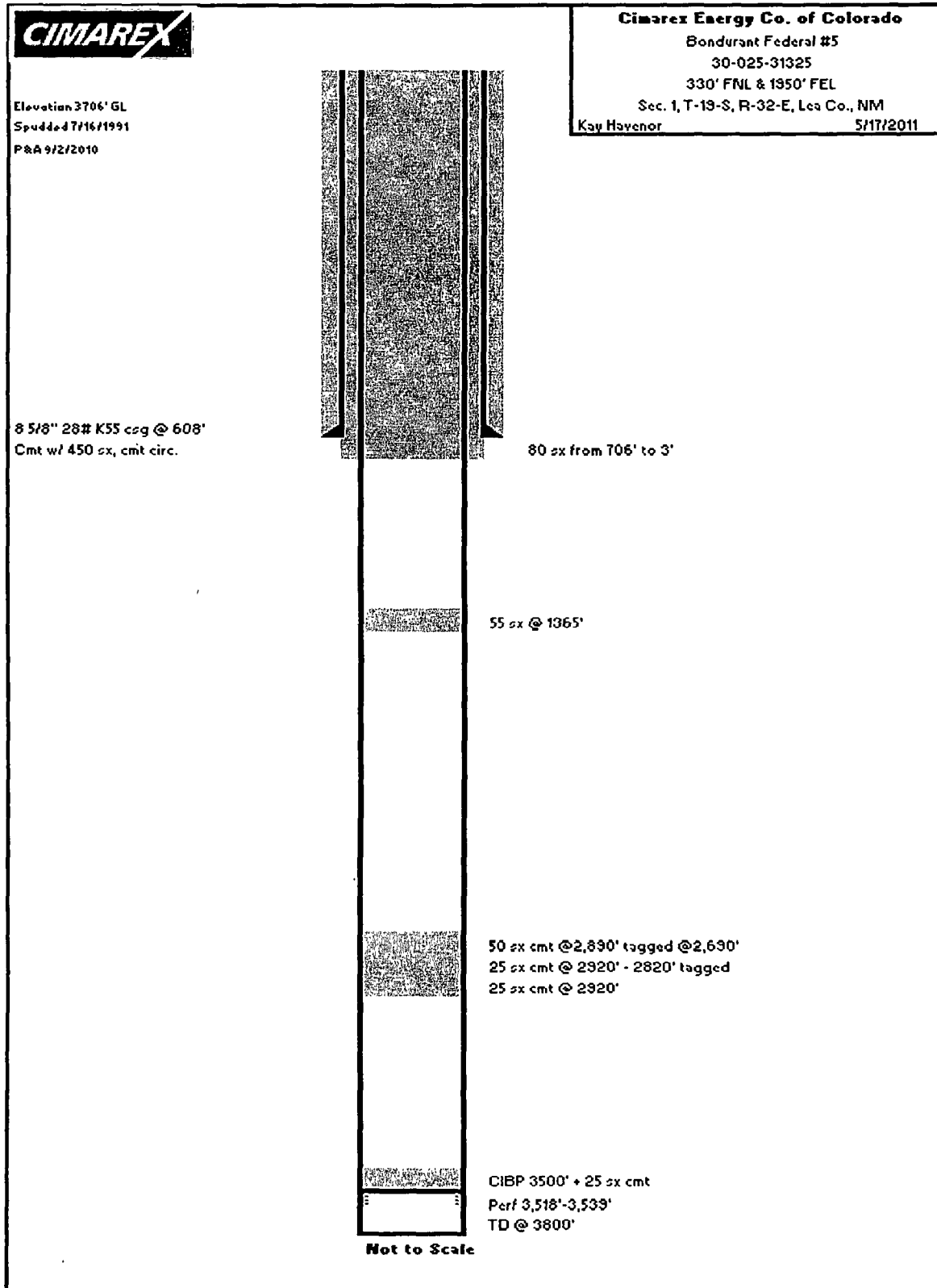
P&A Diagram Cimarex Energy Co. Bondurant Federal #3



Cimarex Energy Company
Bondurant Federal #10
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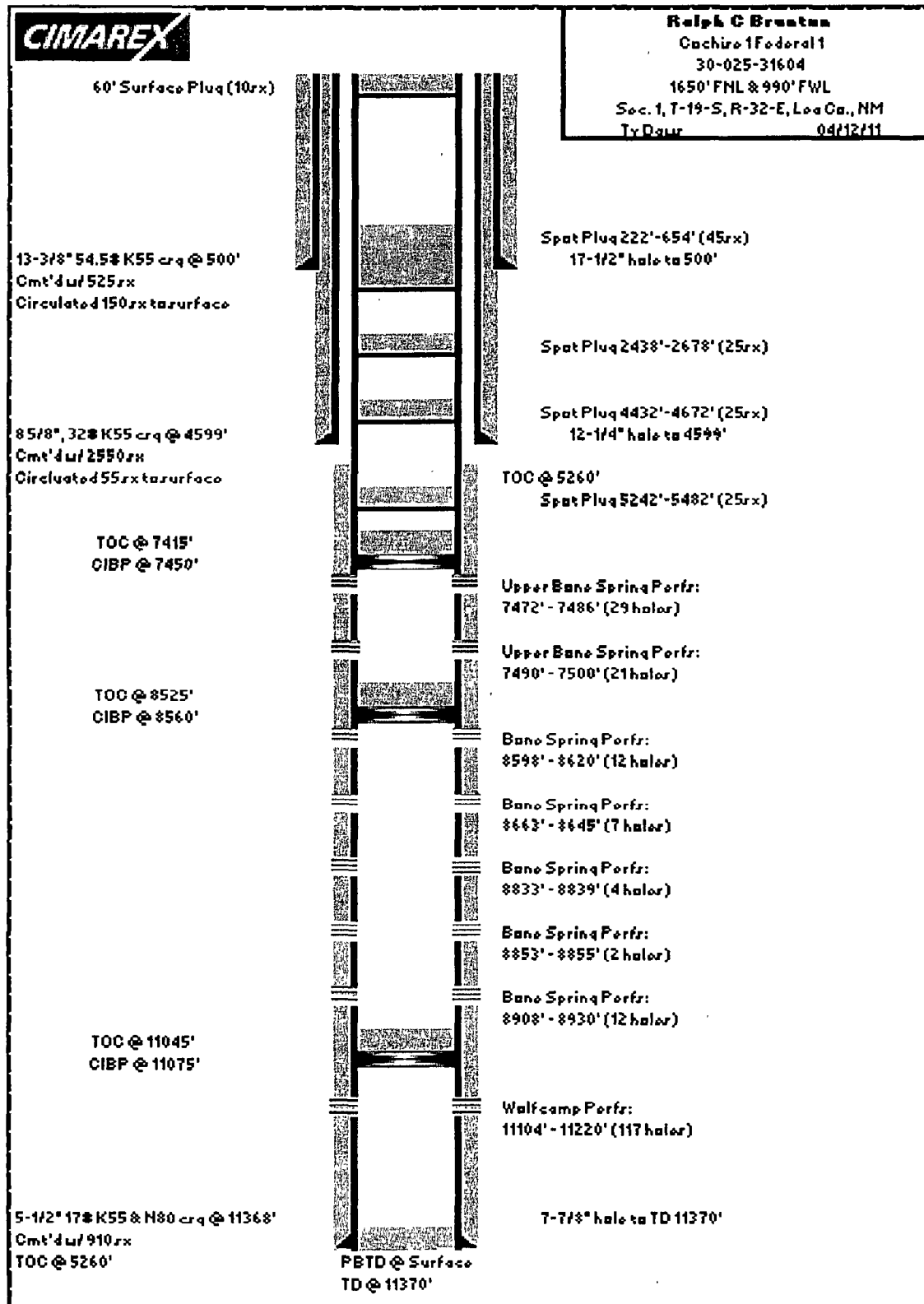
P&A Diagram Cimarex Energy Co. Bondurant Federal #5



Cimarex Energy Company
 Bondurant Federal #10
 990' FNL & 1980' FEL
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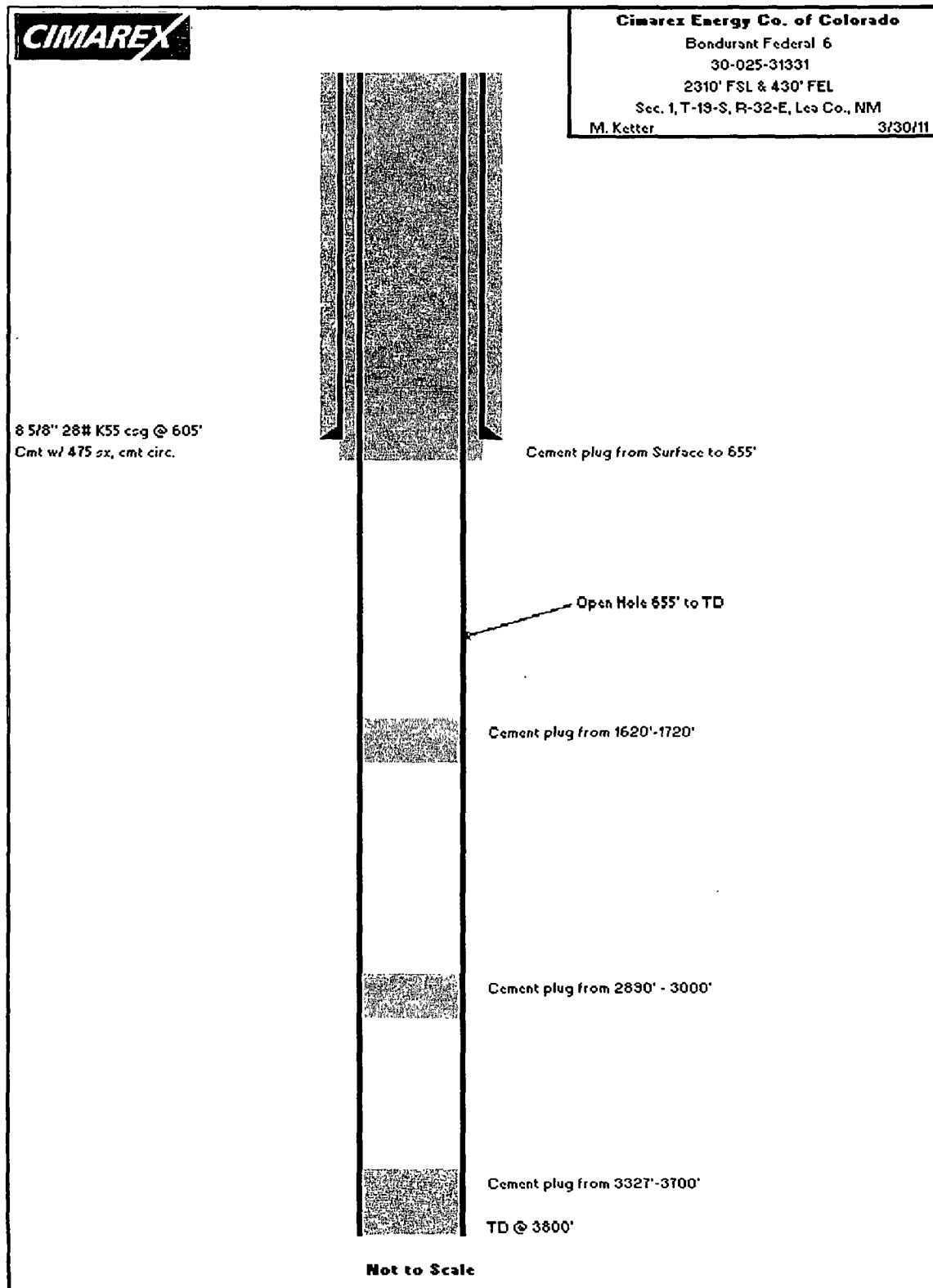
P&A Diagram Ralph C. Burton Cochise 1 Federal #1



Cimarex Energy Company
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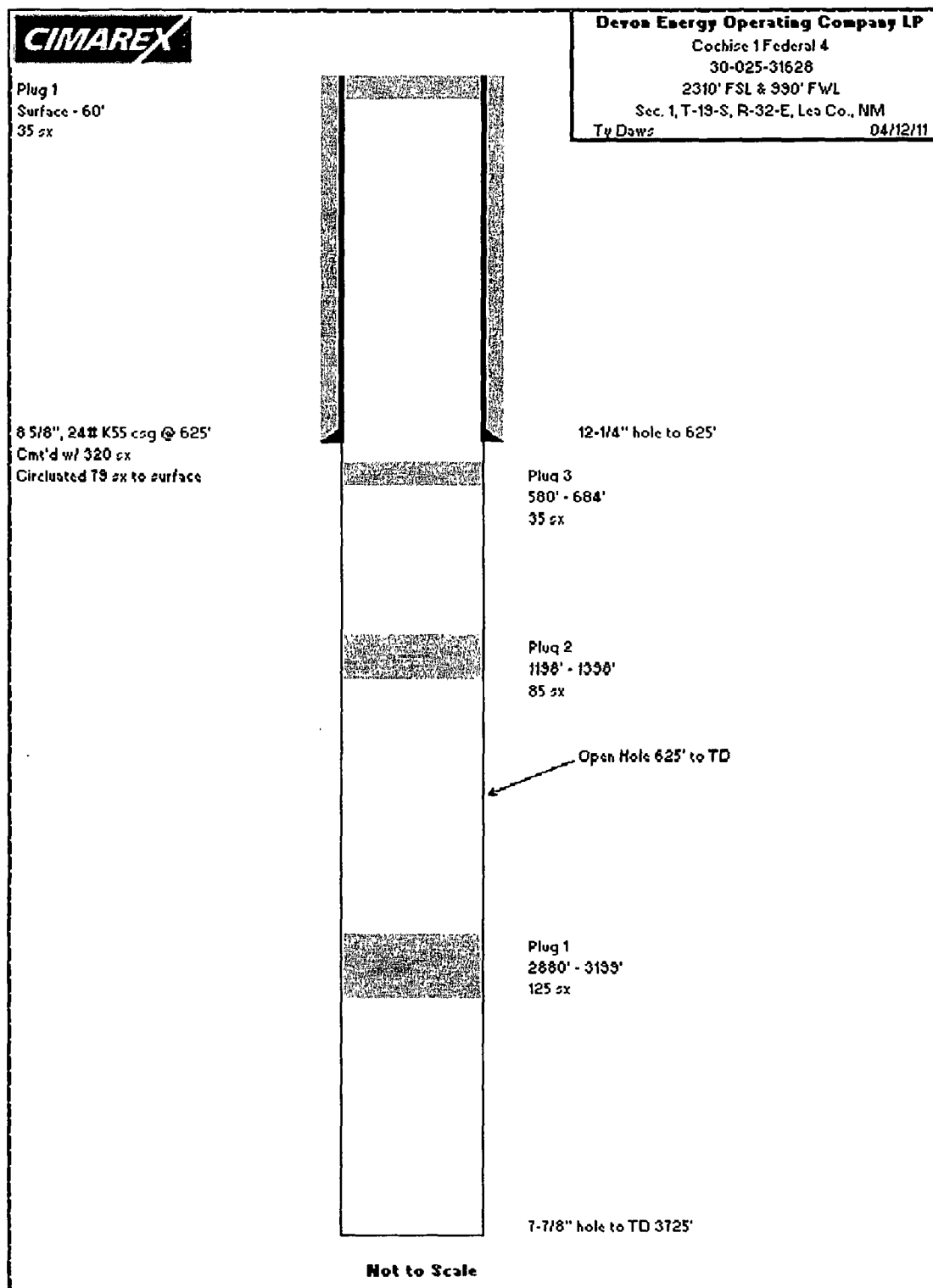
P&A Diagram Cimarex Energy Company Bondurant Federal #6



Cimarex Energy Company
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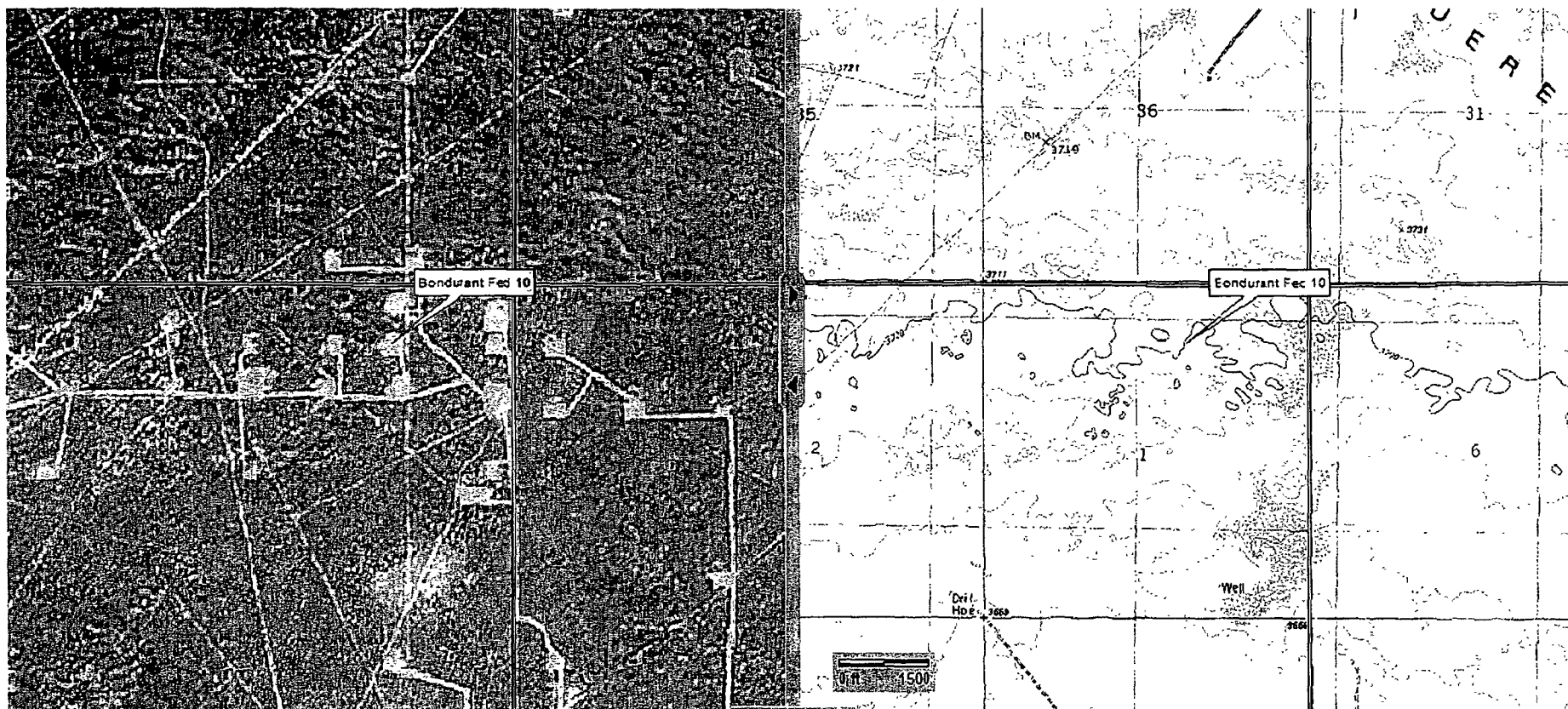
P&A Diagram Devon Energy Operating Co. Cochise 1 Federal #4



Cimarex Energy Company
Bondurant Federal #10
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SPOT10 Satellite and Matching Topographic Map



Directions to location: From the intersection of CR-248 and CR-126A proceed east for 5.16 miles, then north for 2.1 miles onto a large drill pad, then north-northwest for 0.4 miles to the Bondurant Federal #10 pad.

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