

May 27, 2004

## Office

## District I

1625 N. French Dr., Hobbs, NM 88240

## District II

1301 W. Grand Ave., Artesia, NM 88210

## District III

1000 Rio Brazos Rd., Aztec, NM 87410

## District IV

1220 S. St. Francis Dr., Santa Fe, NM  
87505OIL CONSERVATION DIVISION  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

WELL API NO.

30-025-22049

5. Indicate Type of Lease

STATE ☒ FEE ☐

6. State Oil &amp; Gas Lease No.

K-1763

7. Lease Name or Unit Agreement Name

State "K"

8. Well Number 1-21

9. OGRID Number 004115

10. Pool name or Wildcat

Bagley Penn, North Field

## SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

1. Type of Well: Oil Well ☒ Gas Well ☐ Other ☐

2. Name of Operator

Chaparral Energy, LLC

3. Address of Operator

701 Cedar Lake Blvd., OKC, OK 73114

4. Well Location

Unit Letter K 1980 feet from the South line and 1980 feet from the West lineSection 21 Township 11S Range 33E NMPM Lea County

11. Elevation (Show whether DR, RKB, RT, GR, etc.)

4258.3' GL, 4270' DR, 4271' RKB

Pit or Below-grade Tank Application ☐ or Closure ☐

Pit type \_\_\_\_\_ Depth to Groundwater \_\_\_\_\_ Distance from nearest fresh water well \_\_\_\_\_ Distance from nearest surface water \_\_\_\_\_

Pit Liner Thickness: \_\_\_\_\_ mil Below-Grade Tank: Volume \_\_\_\_\_ bbls; Construction Material \_\_\_\_\_

## 12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

## NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☐ PLUG AND ABANDON ☐TEMPORARILY ABANDON ☐ CHANGE PLANS ☐PULL OR ALTER CASING ☐ MULTIPLE COMPL ☐OTHER: ☐

## SUBSEQUENT REPORT OF:

REMEDIAL WORK ☐ ALTERING CASING ☐COMMENCE DRILLING OPNS. ☐ P AND A ☐CASING/CEMENT JOB ☐OTHER: Temporarily Abandon ☒

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 1103. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

Report for period 01/31/06 thru 02/15/06:

1. SICP 0#. NU BOP. Unload 97 jts 5 1/2" 17# J-55 LT&C csg. RU WL. RIH w/3 1/8" HSC. Tag @ 3771'. Could not locate gun into cut-off 5 1/2" csg @ 3771' POH w/perforating gun. TIH w/Arrowset I-X pkr (2 7/8" x 6' tbg sub & 2.313" XN nipple below pkr), x/overs & 94 jts 5 1/2" csg. Set pkr in 8 5/8" csg @ 3722' w/20K tension. Load 5 1/2" - 8 5/8" csg annulus w/100 bbl lse wtr to pressure test - communicated to surface. Pump 225 BW down 5 1/2" csg. Establish injection rate 5 BPM @ 450#. ISDP 0#.
2. RU csg crew. Rel pkr & LD 94 jts 5 1/2" csg, pkr & tailpipe assembly. Change pipe rams in BOP.
3. SICP 0#. TIH w/LokSet RBP ("H" valve) on 2 3/8" 4.7# N-80 8rd EUE tbg. Set RBP @ 3734' TOH w/RBP retrieving tool. TIH w/P-1 tension set pkr on 2 3/8" tbg. Isolate leak in 8 5/8" csg @ 329' - 361' (circulates to surf). Remainder of csg testing to 500#.
4. SITP/SICP 0#. Rel pkr & TOH. Waiting on cement equipment.
5. SICP 0#. TIH w/P-1 tension set pkr & 6 jts 2 3/8" tbg. Set pkr @ 193' w/20K tension. Mix & pump 250 sxs expanding Class C cmt + 3% CC. Rec cmt returns to surf w/100 sxs pumped. Close surf csg valve & continue to pump - pressure increase to 600#. Open surf csg valve & continue to pump remainder of cmt. Displ cmt to 290'. SITP 400#.
6. SITP/SICP 0#. Rel pkr & TOH. Change rams in BOP. Prep to drill cmt. WOC to harden.
7. SICP 0#. TIH w/7.625" rock bit, 6 - 4" drill collars & 2 3/8" tbg. Tag cmt @ 289' Drld hard cmt to 367' & fell thru. Continue TIH w/bit & tag @ 3667'. Pressure test 8 5/8" csg to 500# for 30 min - ok. Clean out to 3698'. Circ clean.
8. SITP/SICP 0#. Wash sand to RBP @ 3734' & circ clean. TOH w/drill collars & bit. TIH w/RBP retrieving tool & 2 3/8" tbg. Latch onto RBP, release and POH w/RBP.
9. SICP 0#. TIH w/Arrowset I-X pkr, tbg seal divider (2.315" F profile) & 119 jts 2 7/8" 6.5# J-55 8rd EUE tbg. Set pkr @ 3722' w/12K tension. ND BOP/NU wellhead. Load csg w/2% KCl wr & pressure to 560# for 37 min - ok. Release pressure, well TA'd.

I hereby certify that the information above is true and complete to the best of my knowledge and belief. I further certify that any pit or below-grade tank has been/will be constructed or closed according to NMOC guidelines ☐, a general permit ☐ or an (attached) alternative OCD-approved plan ☐.SIGNATURE Traci Cornish TITLE ENGINEERING TECH DATE 3-7-06Type or print name Traci Cornish E-mail address: traci@chaparralenergy.com Telephone No. (405)478-8770

For State Use Only

APPROVED BY: \_\_\_\_\_ TITLE \_\_\_\_\_ DATE \_\_\_\_\_

Conditions of Approval (if any):

CASE NO. 13695 - CHAPARRAL  
EXHIBIT NO. 1



# Chaparral

Energy, Inc.

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August 10, 2005

State of New Mexico  
Energy, Minerals & Natural Resources Dept.  
Oil Conservation Division  
1220 South Saint Francis Drive  
Santa Fe, NM 87505

Attn: Mr. William V. Jones, PE

Re: Form C-108  
Application for Authorization to Inject  
State K #1-21 Well  
Lea Co., NM

Dear Mr. Jones:

Enclosed in duplicate is Form C-108, Application for Authorization to Inject, with the required attachments. Chaparral Energy, LLC, is requesting permission to convert the above well for use as a salt water disposal.

The required attachments are as follows:

- Area of Review map and tabulation
- Wellbore schematics of all wells which penetrate the injection zone within 1/2 mile
- Water Analysis of two fresh water wells within area of review
- Water Analysis of source well
- Affidavit of Publication
- Proof of Notice to offset operator and surface tenant

If you have questions or need further information regarding this project, please call me at (405) 426-4411, or email me at [leighk@chaparralenergy.com](mailto:leighk@chaparralenergy.com).

Thank you for your assistance.

Sincerely,

CHAPARRAL ENERGY, LLC



Leigh Kuykendall  
Sr. Engineering Tech

**APPLICATION FOR AUTHORIZATION TO INJECT**

- I. PURPOSE: \_\_\_\_\_ Secondary Recovery \_\_\_\_\_ Pressure Maintenance   X   Disposal \_\_\_\_\_ Storage  
Application qualifies for administrative approval? \_\_\_\_\_ Yes \_\_\_\_\_ No
- II. OPERATOR: Chaparral Energy, LLC  
ADDRESS: 701 Cedar Lake Blvd., Oklahoma City, OK 73114  
CONTACT PARTY: Leigh Kuykendall PHONE: (405) 478 8770
- 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: Leigh Kuykendall TITLE: Sr. Engineering Tech  
SIGNATURE: Leigh Kuykendall DATE: 6/29/05  
E-MAIL ADDRESS: leighk@chaparralenergy.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: \_\_\_\_\_

### 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.

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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.

5

## INJECTION WELL DATA SHEET

OPERATOR: Chaparral Energy, LLCWELL NAME & NUMBER: State K #1-21WELL LOCATION: 1980' FSL & 1980' FWL

FOOTAGE LOCATION

UNIT LETTER

SECTION

TOWNSHIP

RANGE

WELLBORE SCHEMATICWELL CONSTRUCTION DATA  
Surface Casing

- Attached -

Hole Size: 17 1/2"Casing Size: 13 3/8"Cemented with: 400

sx.

or

ft<sup>3</sup>Top of Cement: surfaceMethod Determined: CirculatedIntermediate CasingHole Size: 11"Casing Size: 8 5/8"Cemented with: 350

sx.

or

ft<sup>3</sup>Top of Cement: 2235'Method Determined: CalculatedProduction CasingHole Size: 8 5/8"Casing Size: 5 1/2"Cemented with: 700

sx.

or

ft<sup>3</sup>Top of Cement: surfaceMethod Determined: CirculatedTotal Depth: 3850'Injection Interval3850 feet to 4469 Open hole

(Perforated or Open Hole; indicate which)

**INJECTION WELL DATA SHEET**Tubing Size: 2 7/8" Lining Material: CeramicType of Packer: Arrowset 1XPacker Setting Depth: 3825'Other Type of Tubing/Casing Seal (if applicable): NA**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 production

2. Name of the Injection Formation: San Andres

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

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. 9745'-9932' Strawn; 9358'-9364' Canyon; 9094'-9310' Cisco. Cement retainer @ 4496' w/20' cement plug.

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

ABOVE THIS LINE FOR DIVISION USE ONLY

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



**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

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 ☒ SWD ☐ IPI ☐ EOR ☐ PPR

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

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

- [A]** ☐ Working, Royalty or Overriding Royalty Interest Owners
- [B]** ☐ Offset Operators, Leaseholders or Surface Owner
- [C]** ☒ Application is One Which Requires Published Legal Notice
- [D]** ☐ Notification and/or Concurrent Approval by BLM or SLO  
U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office
- [E]** ☐ For all of the above, Proof of Notification or Publication is Attached, and/or,
- [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.**

Leigh Kuykendall

Print or Type Name

*Leigh Kuykendall*  
 Signature

Sr. Engineering Tech

Title

6/30/05

Date

leighk@chaparralenergy.com

e-mail Address

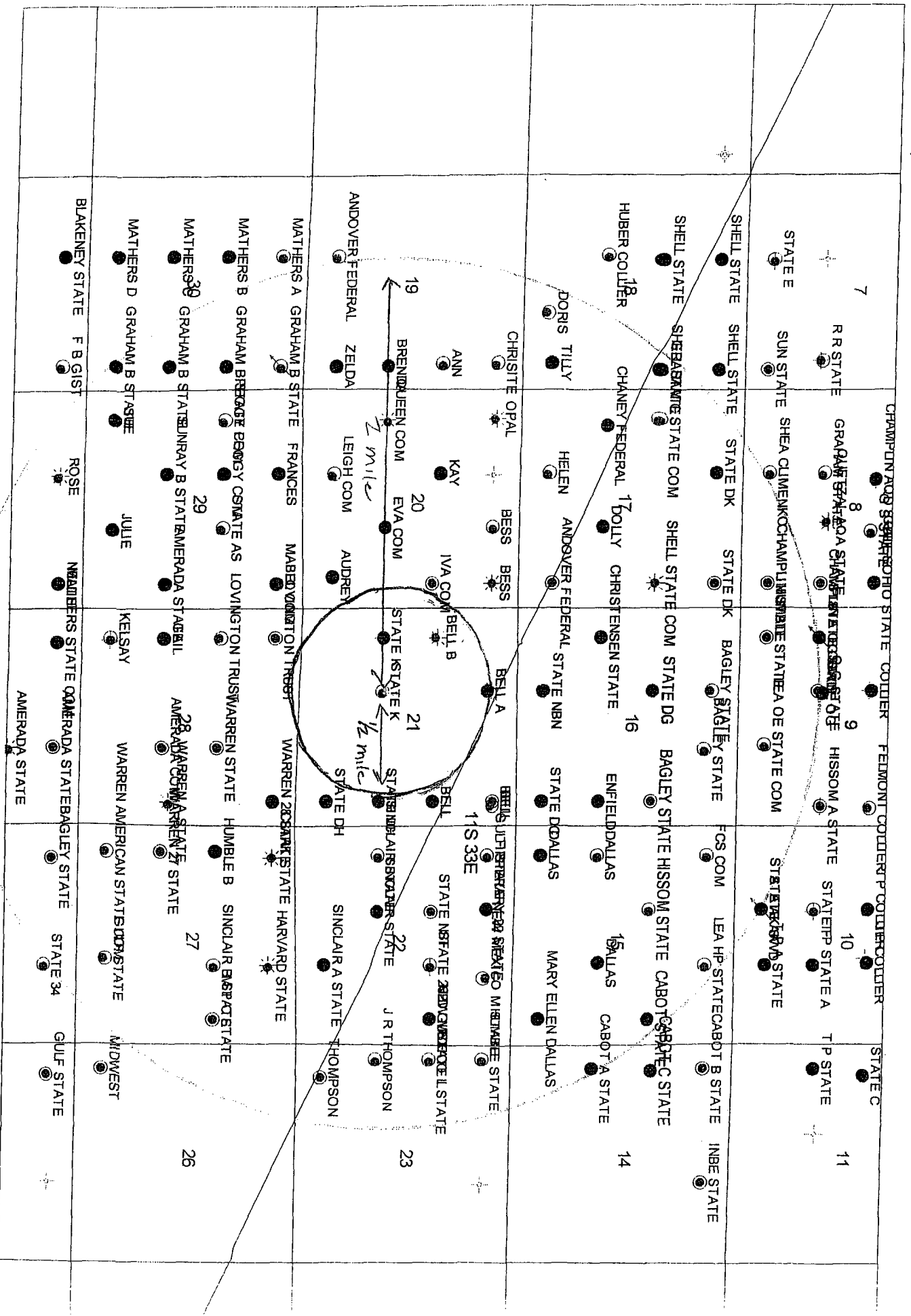


C-108 Application for Authorization to Inject  
State K #1-21  
1980' FSL & 1980' FWL of Sec. 21-11S-33E  
Lea Co., NM

- V. Area of Review Map is attached.
- VI. Wellbore schematics are attached for all wells that penetrate the proposed injection zone within the ½ mile area of review.
- VII.
  - 1. Proposed average daily injection rate is 750 BW  
Proposed maximum daily injection rate is 1200 BW
  - 2. Closed system
  - 3. Proposed maximum injection pressure is 2000 psi.
  - 4. Source of injected water is a well being completed in the Penn/Wolfcamp reservoirs. No compatibility problems with San Andres water is expected. A water analysis is attached.
- VIII. The injection zone is the San Andres, a fine grained sucrosic dolomite from 3730' – 5100'. The average depth of drinking water is 55' from surface in this area.
- IX. The San Andres injection interval will not require stimulation in order to take water.
- X. Well logs are on file from the original completion of the well.
- XI. Chemical analyses of fresh water wells within the area of review are attached.
- XII. After examining the available engineering and geologic data, no evidence of open faults or other hydrologic connection between the disposal zone and underground sources of drinking water.
- XIII. Proof of Notice is attached.

Project: \\profile\profile\ronb\My Documents\Power Tools vs. Oletate & WBB

Date: 3/25/2005  
Time: 9:42 AM



## State K #1-21

Proposed Injection Well

Sec. 21-11S-33E

Lea Co., NM

### Area of Review Tabulation

Well Name	Operator	Well Type	Well Status	Date Drilled	Location	Total Depth	Compl Record Attached?	Schematic Attached?
Bell A	Phoenix Hydrocarbons	Oil	Producing	5/24/1966	720' FNL & 1980' FWL	10801'	Yes	Yes
Bell B	Tipperary Oil & Gas	Gas	P&A	12/31/1966	1980' FNL & 660' FWL	10250'	Yes	Yes
State K #2-21	Chaparral Energy, LLC	Oil	Shut in	4/1/1968	1980' FSL & 660' FWL	10170'	Yes	Yes
State K #3-21	Chaparral Energy, LLC	Oil	Completing	1/20/2005	660' FSL & 1980' FWL	10200'	Yes	Yes

Size: 16  
Size: 10 3/4  
CP: 700- 585  
CP: 435- 333  
CP: 30- 0

13 3/8 , # , @385 , 400 sx  
8 5/8 , # , @650 , 250 sx

CP: 3900- 3700  
TOC@ 3685'

4 1/2 , # , @3850 , 35 sx

Size: 7 7/8

CP: 6245- 5900

Casing parted @ 6245'.

OPBTD: 10167'

9790 -9794 L. Penn

TD: 10250

9961 -10140 L. Penn

Well: Bell B  
Operator:  
Location: 1980' FNL & 660' FWL  
Legal: Sec. 21-11S-33E, Lea Co., NM

Dir:

Spud Date: 12/31/1966  
Drilling Finished:  
Completion Date: 2/10/1967  
First Production: 2/10/1967

#### PUMPING DATA:

PU:  
PM:  
BHP:  
Anchor:

#### PRODUCTION FACILITY:

#### HISTORY:

10/11/84 □ TA'd due to parted csg @ 6245'.

3/21/95 □ Tagged up w/tbg @ 6245'. Pump 200 sx cmt @ 6245'. WOC.

3/22/95 □ Load hole w/wtr. Mix mud & displace w/mud Pump 25 sx @ 6245'. WOC 4 hrs. Tag plug @ 5900'.

3/23/95 □ Cut 4 1/2" csg @ 3850' (100' below 8 5/8" shoe). POH w/csg. Pump 35 sx plug 3900'-3700'. WO Tag plug @ 3685'.

3/24/95 □ Cut 8 5/8" csg @ 650'. POH w/csg. Set 45 sx plug @ 700'-600'.

3/27/95 □ Tag plug @ 585'. Pump 65 sx plug 435'-335'. WOC 4 hrs. Tag @ 333'. Pump 10 sx plug 30'-surface. Weld on dry hole marker. P&A.

Input by: leigh  
Approved by:  
Last Update: 3/28/05

Size: 15"

13 3/8", #, @345' ,350 sx

Size: 10 3/4"

TOC@ 2859'

Size: 7 7/8"

TOC@ 8166'

9812 -9816 Middle Penn

OPBTD: 10730'

10475 -10482 Strawn

TD: 10801

4 1/2", #, @10800' ,600 sx

Well:

Operator: Chaparral (USA) Energy, Inc.  
Location: Unit C, 720' FNL & 1980' FWL  
Legal: Sec. 21-11S-33E, Lea Co., NM

Dir:

Spud Date:  
Drilling Finished:  
Completion Date:  
First Production:

#### PUMPING DATA:

PU:  
PM:  
BHP:  
Anchor:

#### PRODUCTION FACILITY:

#### HISTORY:

Input by: leigh  
Approved by:  
Last Update: 6/29/05

Size: 17 1/2"

13 3/8", 54.5##, @420' , 365 sx

Size: 12 1/4"

TOC@ 2328'

Size: 7 7/8"

TOC@ 8000'

TAnchor@8612'

SN@10133'

TD: 10200

8 5/8" , 32# #, J-55 @4000' , 690 sx

8668' -9552' Wolfcamp/U. Pen

9691' -10112' L. Penn

5 1/2" , 17# #, J-55 @10200' , 640 sx

Well: 21-11S-33E, Lea Co.

Operator: Chaparral (USA) Energy, Inc.

Location: Unit N, 660' FSL & 1980' FWL

Legal: Sec. 21-11S-33E, Lea Co.

Dir:

Spud Date: 1/21/05

Drilling Finished: 2/23/05

Completion Date:

First Production:

#### PUMPING DATA:

PU:

PM:

BHP:

Anchor:

#### PRODUCTION FACILITY:

#### TUBING #1:

Type	#Jts	Size	Wt#/f	Grade	Set@
Production	319	2 7/8"	6.5		1013

#### HISTORY:

Segment detail:

L. Penn ☐

☐ 9691'-9706'

☐ 9738'-9740'

☐ 9761'-9771'

☐ 9802'-9832'

☐ 9838'-9854'

☐ 9868'-9876'

☐ 9898'-9905'

☐ 9924'-9935'

☐ 9960'-9966'

☐ 9986'-9992'

☐ 10024'-10026'

☐ 10050'-10054'

☐ 10100'-10112'

Wolfcamp/U. Penn

☐ 8668'-8671'

☐ 8704'-8706'

☐ 8719'-8721'

☐ 8819'-8823'

☐ 8835'-8840'

☐ 8990'-8995'

☐ 9146'-9147'

☐ 9152'-9154'

☐ 9212'-9218'

☐ 9280'-9284'

☐ 9294'-9297'

☐ 9311'-9315'

☐ 9317'-9320'

☐ 9324'-9327'

☐ 9350'-9360'

☐ 9368'-9381'

☐ 9490'-9494'

☐ 9496'-9498'

☐ 9508'-9511'

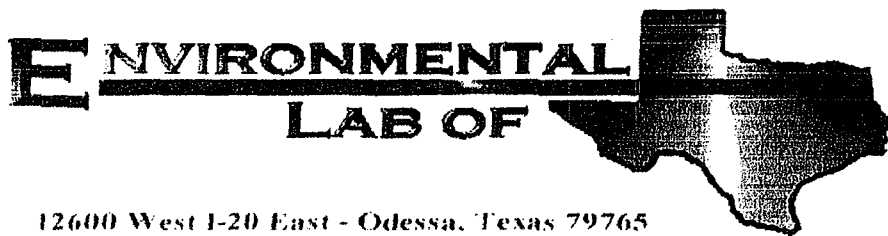
☐ 9546'-9552'

☐

Input by: leigh

Approved by:

Last Update: 6/29/05



12600 West I-20 East - Odessa, Texas 79765

## Analytical Report

Prepared for:

Leigh Kuykendall

Chaparral Energy

701 Cedar Lake Bld.

Oklahoma City, OK 73114

Project: State K #3-21

Project Number: None Given

Location: 18 mi. west of Tatum, NM

Lab Order Number: 5G01015

Report Date: 07/12/05

Fresh Water Wells

Chaparral Energy  
701 Cedar Lake Bld.  
Oklahoma City OK, 73114

Project: State K #3-21  
Project Number: None Given  
Project Manager: Leigh Kuykendall

Fax: (405) 478-4162

Reported:  
07/12/05 15:41

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Section 21	5G01015-01	Water	06/30/05 16:00	07/01/05 14:30
Section 22	5G01015-02	Water	06/30/05 16:10	07/01/05 14:30



Chaparral Energy  
701 Cedar Lake Bld.  
Oklahoma City OK, 73114

Project: State K #3-21  
Project Number: None Given  
Project Manager: Leigh Kuykendall

Fax: (405) 478-4162

Reported:  
07/12/05 15:41

**General Chemistry Parameters by EPA / Standard Methods**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Section 21 (5G01015-01) Water</b>									
Total Alkalinity	150	4.00	mg/L	2	EG50715	07/07/05	07/07/05	EPA 310.2M	
Chloride	50.7	2.50	"	5	EG51103	07/08/05	07/08/05	EPA 300.0	
Specific Conductance (EC)	907	5.00	umhos/cm	1	EG50803	07/07/05	07/07/05	EPA 9050A	
Total Dissolved Solids	644	5.00	mg/L	"	EG51209	07/07/05	07/08/05	EPA 160.1	
Sulfate	228	2.50	"	5	EG51103	07/08/05	07/08/05	EPA 300.0	
<b>Section 22 (5G01015-02) Water</b>									
Total Alkalinity	128	4.00	mg/L	2	EG50715	07/07/05	07/07/05	EPA 310.2M	
Chloride	49.0	2.50	"	5	EG51103	07/08/05	07/08/05	EPA 300.0	
Specific Conductance (EC)	780	5.00	umhos/cm	1	EG50803	07/07/05	07/07/05	EPA 9050A	
Total Dissolved Solids	497	5.00	mg/L	"	EG51209	07/07/05	07/08/05	EPA 160.1	
Sulfate	171	2.50	"	5	EG51103	07/08/05	07/08/05	EPA 300.0	

Chaparral Energy  
701 Cedar Lake Bld.  
Oklahoma City OK, 73114

Project: State K #3-21  
Project Number: None Given  
Project Manager: Leigh Kuykendall

Fax: (405) 478-4162

Reported:  
07/12/05 15:41

**Total Metals by EPA / Standard Methods**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Section 21 (5G01015-01) Water**

Calcium	116	0.500	mg/L	50	EG50802	07/08/05	07/08/05	EPA 6010B	
Magnesium	18.2	0.0100	"	10	"	"	"	"	
Potassium	4.56	0.0500	"	1	"	"	"	"	
Sodium	66.7	0.100	"	10	"	"	"	"	
Mercury	ND	0.00100	"	2	EG50807	07/08/05	07/08/05	EPA 7470A	
Aluminum	ND	0.0150	"	1	EG50708	07/07/05	07/07/05	EPA 6010B	
Arsenic	ND	0.00800	"	"	"	"	"	"	
Barium	0.0303	0.00100	"	"	"	"	"	"	
Boron	0.187	0.00500	"	"	"	"	"	"	
Cadmium	0.00100	0.00100	"	"	"	"	"	"	
Chromium	ND	0.00500	"	"	"	"	"	"	
Cobalt	ND	0.00200	"	"	"	"	"	"	
Copper	0.00450	0.00200	"	"	"	"	"	"	
Iron	ND	0.00200	"	"	"	"	"	"	
Lead	J [0.00280]	0.0110	"	"	"	"	"	"	J
Manganese	0.00130	0.00100	"	"	"	"	"	"	
Molybdenum	ND	0.00200	"	"	"	"	"	"	
Nickel	ND	0.00600	"	"	"	"	"	"	
Selenium	0.0216	0.00400	"	"	"	"	"	"	
Silver	ND	0.00500	"	"	"	"	"	"	
Zinc	0.00330	0.00100	"	"	"	"	"	"	

**Section 22 (5G01015-02) Water**

Calcium	82.0	0.100	mg/L	10	EG50802	07/08/05	07/08/05	EPA 6010B	
Magnesium	14.9	0.0100	"	"	"	"	"	"	
Potassium	3.62	0.0500	"	1	"	"	"	"	
Sodium	55.2	0.100	"	10	"	"	"	"	
Mercury	ND	0.00100	"	2	EG50807	07/08/05	07/08/05	EPA 7470A	
Aluminum	ND	0.0150	"	1	EG50708	07/07/05	07/07/05	EPA 6010B	
Arsenic	0.0125	0.00800	"	"	"	"	"	"	
Barium	0.0370	0.00100	"	"	"	"	"	"	
Boron	0.177	0.00500	"	"	"	"	"	"	
Cadmium	ND	0.00100	"	"	"	"	"	"	
Chromium	ND	0.00500	"	"	"	"	"	"	
Cobalt	ND	0.00200	"	"	"	"	"	"	
Copper	J [0.00120]	0.00200	"	"	"	"	"	"	J
Iron	ND	0.00200	"	"	"	"	"	"	
Lead	J [0.00310]	0.0110	"	"	"	"	"	"	J

Environmental Lab of Texas

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Page 3 of 11

Chaparral Energy  
701 Cedar Lake Bld.  
Oklahoma City OK, 73114

Project: State K #3-21  
Project Number: None Given  
Project Manager: Leigh Kuykendall

Fax: (405) 478-4162

Reported:  
07/12/05 15:41

**Total Metals by EPA / Standard Methods**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Section 22 (5G01015-02) Water</b>									
Manganese	ND	0.00100	mg/L	1	EG50708	07/07/05	07/07/05	EPA 6010B	
Molybdenum	ND	0.00200	"	"	"	"	"	"	
Nickel	ND	0.00600	"	"	"	"	"	"	
Selenium	0.0266	0.00400	"	"	"	"	"	"	
Silver	ND	0.00500	"	"	"	"	"	"	
Zinc	0.00420	0.00100	"	"	"	"	"	"	

Chaparral Energy  
701 Cedar Lake Bld.  
Oklahoma City OK, 73114

Project: State K #3-21  
Project Number: None Given  
Project Manager: Leigh Kuykendall

Fax: (405) 478-4162

Reported:  
07/12/05 15:41

**General Chemistry Parameters by EPA / Standard Methods - Quality Control**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EG50715 - General Preparation (WetChem)**

**Blank (EG50715-BLK1)**

Prepared & Analyzed: 07/07/05

Total Alkalinity ND 2.00 mg/L

**Duplicate (EG50715-DUP1)**

Source: 5G01015-01

Prepared & Analyzed: 07/07/05

Total Alkalinity 152 4.00 mg/L 150 1.32 20

**Reference (EG50715-SRM1)**

Prepared & Analyzed: 07/07/05

Bicarbonate Alkalinity 230 mg/L 200 115 80-120

**Batch EG50803 - General Preparation (WetChem)**

**Calibration Check (EG50803-CCV1)**

Prepared & Analyzed: 07/08/05

Specific Conductance (EC) 1420 umhos/cm 1410 101 80-120

**Duplicate (EG50803-DUP1)**

Source: 5G01015-01

Prepared & Analyzed: 07/07/05

Specific Conductance (EC) 909 5.00 umhos/cm 907 0.220 20

**Batch EG51103 - General Preparation (WetChem)**

**Blank (EG51103-BLK1)**

Prepared & Analyzed: 07/08/05

Chloride ND 0.500 mg/L

Sulfate ND 0.500 "

**LCS (EG51103-BS1)**

Prepared & Analyzed: 07/08/05

Chloride 10.7 mg/L 10.0 107 80-120

Sulfate 9.90 " 10.0 99.0 80-120

Chaparral Energy  
701 Cedar Lake Bld.  
Oklahoma City OK, 73114

Project: State K #3-21  
Project Number: None Given  
Project Manager: Leigh Kuykendall

Fax: (405) 478-4162

Reported:  
07/12/05 15:41

**General Chemistry Parameters by EPA / Standard Methods - Quality Control**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EG51103 - General Preparation (WetChem)**

**Calibration Check (EG51103-CCV1)**

Prepared & Analyzed: 07/08/05

Sulfate	10.4		mg/L	10.0		104	80-120			
Chloride	10.9		"	10.0		109	80-120			

**Duplicate (EG51103-DUP1)**

Source: 5G01015-01

Prepared & Analyzed: 07/08/05

Sulfate	231	2.50	mg/L		228			1.31	20	
Chloride	52.9	2.50	"		50.7			4.25	20	

**Batch EG51209 - General Preparation (WetChem)**

**Blank (EG51209-BLK1)**

Prepared: 07/07/05 Analyzed: 07/08/05

Total Dissolved Solids	ND	5.00	mg/L							
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**Duplicate (EG51209-DUP1)**

Source: 5G01015-01

Prepared: 07/07/05 Analyzed: 07/08/05

Total Dissolved Solids	609	5.00	mg/L		644			5.59	20	
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Chaparral Energy  
701 Cedar Lake Bld.  
Oklahoma City OK, 73114

Project: State K #3-21  
Project Number: None Given  
Project Manager: Leigh Kuykendall

Fax: (405) 478-4162

Reported:  
07/12/05 15:41

**Total Metals by EPA / Standard Methods - Quality Control**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EG50708 - 6010B/No Digestion**

**Blank (EG50708-BLK1)**

Prepared & Analyzed: 07/07/05

Aluminum	ND	0.0150	mg/L
Arsenic	ND	0.00800	"
Barium	ND	0.00100	"
Boron	ND	0.00500	"
Cadmium	ND	0.00100	"
Chromium	ND	0.00500	"
Cobalt	ND	0.00200	"
Copper	ND	0.00200	"
Iron	ND	0.00200	"
Lead	ND	0.0110	"
Manganese	ND	0.00100	"
Molybdenum	ND	0.00200	"
Nickel	ND	0.00600	"
Selenium	ND	0.00400	"
Silver	ND	0.00500	"
Zinc	ND	0.00100	"

**LCS (EG50708-BS1)**

Prepared & Analyzed: 07/07/05

Aluminum	1.36	0.0150	mg/L	1.50	90.7	85-115
Arsenic	0.881	0.00800	"	0.800	110	85-115
Barium	0.230	0.00100	"	0.200	115	85-115
Boron	0.981	0.00500	"	1.00	98.1	85-115
Cadmium	0.208	0.00100	"	0.200	104	85-115
Chromium	0.206	0.00500	"	0.200	103	85-115
Cobalt	0.183	0.00200	"	0.200	91.5	85-115
Copper	0.195	0.00200	"	0.200	97.5	85-115
Iron	0.202	0.00200	"	0.200	101	85-115
Lead	1.02	0.0110	"	1.10	92.7	85-115
Manganese	0.201	0.00100	"	0.200	100	85-115
Molybdenum	0.212	0.00200	"	0.200	106	85-115
Nickel	0.568	0.00600	"	0.600	94.7	85-115
Selenium	0.404	0.00400	"	0.400	101	85-115
Silver	0.102	0.00500	"	0.100	102	85-115
Zinc	0.216	0.00100	"	0.200	108	85-115

Environmental Lab of Texas

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Page 7 of 11

Chaparral Energy  
701 Cedar Lake Bld.  
Oklahoma City OK, 73114

Project: State K #3-21  
Project Number: None Given  
Project Manager: Leigh Kuykendall

Fax: (405) 478-4162

Reported:  
07/12/05 15:41

**Total Metals by EPA / Standard Methods - Quality Control**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EG50708 - 6010B/No Digestion**

**Calibration Check (EG50708-CCV1)**

Prepared & Analyzed: 07/07/05

Aluminum	0.936		mg/L	1.00		93.6	90-110			
Arsenic	0.990		"	1.00		99.0	90-110			
Barium	1.03		"	1.00		103	90-110			
Boron	0.996		"	1.00		99.6	90-110			
Cadmium	1.03		"	1.00		103	90-110			
Chromium	1.02		"	1.00		102	90-110			
Cobalt	0.992		"	1.00		99.2	90-110			
Copper	1.01		"	1.00		101	90-110			
Lead	0.929		"	1.00		92.9	90-110			
Iron	1.00		"	1.00		100	90-110			
Manganese	0.988		"	1.00		98.8	90-110			
Molybdenum	1.04		"	1.00		104	90-110			
Nickel	0.957		"	1.00		95.7	90-110			
Selenium	0.994		"	1.00		99.4	90-110			
Silver	0.520		"	0.500		104	90-110			
Zinc	0.914		"	1.00		91.4	90-110			

**Matrix Spike (EG50708-MS1)**

Source: 5G01015-01

Prepared & Analyzed: 07/07/05

Aluminum	1.48	0.0150	mg/L	1.50	ND	98.7	75-125			
Arsenic	0.976	0.00800	"	0.800	ND	122	75-125			
Barium	0.242	0.00100	"	0.200	0.0303	106	75-125			
Boron	1.18	0.00500	"	1.00	0.187	99.3	75-125			
Cadmium	0.204	0.00100	"	0.200	0.00100	102	75-125			
Chromium	0.202	0.00500	"	0.200	ND	101	75-125			
Cobalt	0.195	0.00200	"	0.200	ND	97.5	75-125			
Copper	0.206	0.00200	"	0.200	0.00450	101	75-125			
Lead	1.16	0.0110	"	1.10	0.00280	105	75-125			
Iron	0.197	0.00200	"	0.200	ND	98.5	75-125			
Manganese	0.199	0.00100	"	0.200	0.00130	98.8	75-125			
Molybdenum	0.206	0.00200	"	0.200	ND	103	75-125			
Nickel	0.614	0.00600	"	0.600	ND	102	75-125			
Selenium	0.487	0.00400	"	0.400	0.0216	116	75-125			
Silver	0.119	0.00500	"	0.100	ND	119	75-125			
Zinc	0.240	0.00100	"	0.200	0.00330	118	75-125			

Environmental Lab of Texas

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Page 8 of 11

Chaparral Energy  
701 Cedar Lake Bld.  
Oklahoma City OK, 73114

Project: State K #3-21  
Project Number: None Given  
Project Manager: Leigh Kuykendall

Fax: (405) 478-4162

Reported:  
07/12/05 15:41

**Total Metals by EPA / Standard Methods - Quality Control**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EG50802 - 6010B/No Digestion**

**Blank (EG50802-BLK1)**

Prepared & Analyzed: 07/08/05

Calcium	ND	0.0100	mg/L							
Magnesium	ND	0.00100	"							
Potassium	ND	0.0500	"							
Sodium	ND	0.0100	"							

**Calibration Check (EG50802-CCV1)**

Prepared & Analyzed: 07/08/05

Calcium	2.01		mg/L	2.00		100	85-115			
Magnesium	2.24		"	2.00		112	85-115			
Potassium	1.77		"	2.00		88.5	85-115			
Sodium	1.85		"	2.00		92.5	85-115			

**Duplicate (EG50802-DUP1)**

Source: 5G01015-01

Prepared & Analyzed: 07/08/05

Calcium	117	0.500	mg/L		116			0.858	20	
Magnesium	18.1	0.0100	"		18.2			0.551	20	
Potassium	4.40	0.0500	"		4.56			3.57	20	
Sodium	61.8	0.100	"		66.7			7.63	20	

**Batch EG50807 - EPA 7470A**

**Blank (EG50807-BLK1)**

Prepared & Analyzed: 07/08/05

Mercury	ND	0.00100	mg/L							
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**LCS (EG50807-BS1)**

Prepared & Analyzed: 07/08/05

Mercury	0.00170	0.000500	mg/L	0.00200		85.0	85-115			
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**Calibration Check (EG50807-CCV1)**

Prepared & Analyzed: 07/08/05

Mercury	0.00103		mg/L	0.00100		103	90-110			
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Chaparral Energy  
701 Cedar Lake Bld.  
Oklahoma City OK, 73114

Project: State K #3-21  
Project Number: None Given  
Project Manager: Leigh Kuykendall

Fax: (405) 478-4162

Reported:  
07/12/05 15:41

**Total Metals by EPA / Standard Methods - Quality Control**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EG50807 - EPA 7470A**

**Matrix Spike (EG50807-MS1)**      **Source: 5G01015-02**      **Prepared & Analyzed: 07/08/05**

Mercury	0.00212	0.000500	mg/L		ND		75-125			
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**Matrix Spike Dup (EG50807-MSD1)**      **Source: 5G01015-02**      **Prepared & Analyzed: 07/08/05**

Mercury	0.00206	0.000500	mg/L		ND		75-125	2.87	20	
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Page 10 of 11

Chaparral Energy  
701 Cedar Lake Bld.  
Oklahoma City OK, 73114

Project: State K #3-21  
Project Number: None Given  
Project Manager: Leigh Kuykendall

Fax: (405) 478-4162

Reported:  
07/12/05 15:41

### Notes and Definitions

J Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

LCS Laboratory Control Spike

MS Matrix Spike

Dup Duplicate

Report Approved By: \_\_\_\_\_

*Raland K. Tuttle*

Date: 7/12/2005

Raland K. Tuttle, Lab Manager

Celey D. Keene, Lab Director, Org. Tech Director

Peggy Allen, QA Officer

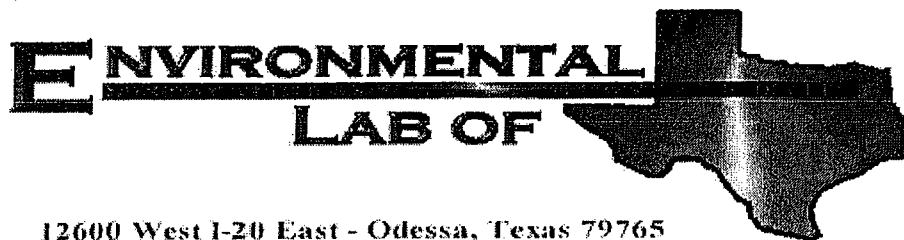
Jeanne Mc Murrey, Inorg. Tech Director

LaTasha Cornish, Chemist

Sandra Sanchez, Lab Tech.

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If you have received this material in error, please notify us immediately at 432-563-1800.



12600 West I-20 East - Odessa, Texas 79765

## Analytical Report

**Prepared for:**

Herman Steen

Chaparral Energy, LLC (Odessa)

11908 W Hwy. 80 E

Odessa, TX 79765

Project: Permit Water

Project Number: State K 3-21

Location: None Given

Lab Order Number: 5G28004

Report Date: 08/09/05

*Source Well*

Chaparral Energy, LLC (Odessa)  
11908 W Hwy. 80 E  
Odessa TX, 79765

Project: Permit Water  
Project Number: State K 3-21  
Project Manager: Herman Steen

Fax: (432) 561-9467

Reported:  
08/09/05 16:12

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Produced Water	5G28004-01	Water	07/19/05 00:00	07/21/05 13:55

Chaparral Energy, LLC (Odessa)  
11908 W Hwy. 80 E  
Odessa TX, 79765

Project: Permit Water  
Project Number: State K 3-21  
Project Manager: Herman Steen

Fax: (432) 561-9467

Reported:  
08/09/05 16:12

**General Chemistry Parameters by EPA / Standard Methods**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Produced Water (5G28004-01) Water</b>									
Carbonate Alkalinity	ND	0.100	mg/L	1	EH50502	07/28/05	07/28/05	EPA 310.2M	O-04
Bicarbonate Alkalinity	76.0	2.00	"	"	"	"	"	"	O-04
Hydroxide Alkalinity	ND	0.100	"	"	"	"	"	"	O-04
Chloride	63800	5.00	"	"	EH50901	08/08/05	08/08/05	EPA 325.3M	
pH	5.95		pH Units	"	EG52818	07/28/05	07/28/05	EPA 150.1	
Total Dissolved Solids	95300	20.0	mg/L	4	EH50306	08/02/05	08/03/05	EPA 160.1	
Sulfate	821	50.0	"	100	EH50312	08/03/05	08/03/05	EPA 300.0	

Chaparral Energy, LLC (Odessa)  
11908 W Hwy. 80 E  
Odessa TX, 79765

Project: Permit Water  
Project Number: State K 3-21  
Project Manager: Herman Steen

Fax: (432) 561-9467

Reported:  
08/09/05 16:12

**Total Metals by EPA / Standard Methods**

**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Produced Water (SG28004-01) Water</b>									
Calcium	4800	10.0	mg/L	1000	EH50405	08/04/05	08/04/05	EPA 6010B	
Magnesium	881	0.200	"	200	"	"	"	"	
Potassium	120	2.50	"	50	"	"	"	"	
Sodium	26800	100	"	10000	"	"	"	"	

Chaparral Energy, LLC (Odessa)  
11908 W Hwy. 80 E  
Odessa TX, 79765

Project: Permit Water  
Project Number: State K 3-21  
Project Manager: Herman Steen

Fax: (432) 561-9467

Reported:  
08/09/05 16:12

**General Chemistry Parameters by EPA / Standard Methods - Quality Control**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch EG52818 - General Preparation (WetChem)</b>										
<b>Calibration Check (EG52818-CCV1)</b>				Prepared & Analyzed: 07/28/05						
pH	6.99		pH Units	7.00		99.9	97.5-102.5			
<b>Duplicate (EG52818-DUP1)</b>				Source: 5G28004-01		Prepared & Analyzed: 07/28/05				
pH	5.97		pH Units		5.95			0.336	2.5	
<b>Batch EH50306 - General Preparation (WetChem)</b>										
<b>Blank (EH50306-BLK1)</b>				Prepared: 08/02/05 Analyzed: 08/03/05						
Total Dissolved Solids	ND	5.00	mg/L							
<b>Duplicate (EH50306-DUP1)</b>				Source: 5G28004-01		Prepared: 08/02/05 Analyzed: 08/03/05				
Total Dissolved Solids	96300	20.0	mg/L		95300			1.04	5	
<b>Batch EH50312 - General Preparation (WetChem)</b>										
<b>Blank (EH50312-BLK1)</b>				Prepared & Analyzed: 08/03/05						
Sulfate	ND	0.500	mg/L							
<b>LCS (EH50312-BS1)</b>				Prepared & Analyzed: 08/03/05						
Sulfate	9.66		mg/L	10.0		96.6	80-120			
<b>Calibration Check (EH50312-CCV1)</b>				Prepared & Analyzed: 08/03/05						
Sulfate	8.35		mg/L	10.0		83.5	80-120			
<b>Duplicate (EH50312-DUP1)</b>				Source: 5G29003-01		Prepared & Analyzed: 08/03/05				
Sulfate	748	25.0	mg/L		743			0.671	20	

Chaparral Energy, LLC (Odessa)  
11908 W Hwy. 80 E  
Odessa TX, 79765

Project: Permit Water  
Project Number: State K 3-21  
Project Manager: Herman Steen

Fax: (432) 561-9467

Reported:  
08/09/05 16:12

**General Chemistry Parameters by EPA / Standard Methods - Quality Control**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EH50502 - General Preparation (WetChem)**

**Blank (EH50502-BLK1)**

Prepared & Analyzed: 07/28/05

Total Alkalinity ND 2.00 mg/L

**Duplicate (EH50502-DUP1)**

Source: 5G20026-02

Prepared & Analyzed: 07/28/05

Total Alkalinity 94.0 2.00 mg/L 94.0 0.00 20

**Reference (EH50502-SRM1)**

Prepared & Analyzed: 07/28/05

Bicarbonate Alkalinity 230 2.00 mg/L 200 115 80-120

**Batch EH50901 - General Preparation (WetChem)**

**Blank (EH50901-BLK1)**

Prepared & Analyzed: 08/08/05

Chloride ND 5.00 mg/L

**Duplicate (EH50901-DUP1)**

Source: 5G28004-01

Prepared & Analyzed: 08/08/05

Chloride 63800 5.00 mg/L 63800 0.00 20

**Reference (EH50901-SRM1)**

Prepared & Analyzed: 08/08/05

Chloride 4960 mg/L 5000 99.2 80-120



Chaparral Energy, LLC (Odessa)  
11908 W Hwy. 80 E  
Odessa TX, 79765

Project: Permit Water  
Project Number: State K 3-21  
Project Manager: Herman Steen

Fax: (432) 561-9467

Reported:  
08/09/05 16:12

**Total Metals by EPA / Standard Methods - Quality Control**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EH50405 - 6010B/No Digestion**

**Blank (EH50405-BLK1)**

Prepared & Analyzed: 08/04/05

Calcium	ND	0.0100	mg/L							
Magnesium	ND	0.00100	"							
Potassium	ND	0.0500	"							
Sodium	ND	0.0100	"							

**Calibration Check (EH50405-CCV1)**

Prepared & Analyzed: 08/04/05

Calcium	1.75		mg/L	2.00		87.5	85-115			
Magnesium	1.98		"	2.00		99.0	85-115			
Potassium	1.83		"	2.00		91.5	85-115			
Sodium	1.70		"	2.00		85.0	85-115			

**Duplicate (EH50405-DUP1)**

Source: 5G28004-01

Prepared & Analyzed: 08/04/05

Calcium	4800	10.0	mg/L		4800			0.00	20	
Magnesium	854	0.200	"		881			3.11	20	
Potassium	122	2.50	"		120			1.65	20	
Sodium	25900	100	"		26800			3.42	20	

Chaparral Energy, LLC (Odessa)  
11908 W Hwy. 80 E  
Odessa TX, 79765

Project: Permit Water  
Project Number: State K 3-21  
Project Manager: Herman Steen

Fax: (432) 561-9467

Reported:  
08/09/05 16:12

### Notes and Definitions

O-04 This sample was analyzed outside the EPA recommended holding time.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

LCS Laboratory Control Spike

MS Matrix Spike

Dup Duplicate

Report Approved By: Roland K Tuttle Date: 8/9/2005

Roland K. Tuttle, Lab Manager  
Celey D. Keene, Lab Director, Org. Tech Director  
Peggy Allen, QA Officer

Jeanne Mc Murrey, Inorg. Tech Director  
LaTasha Cornish, Chemist  
Sandra Sanchez, Lab Tech.

This material is intended only for the use of the individual (s) or entity to whom it is addressed, and may contain information that is privileged and confidential.

If you have received this material in error, please notify us immediately at 432-563-1800.

# WATER ANALYSIS REPORT

Company : Chaparral Energy Date : 08/08/05  
 Address : Date Sampled : 07/19/05  
 Lease : State K 3-21 Analysis No. : 56080505  
 Well :  
 Sample Pt. : Well Head

ANALYSIS	mg/L	* meq/L
1. pH	5.9	
2. H2S	NR	
3. Specific Gravity	NR	
4. Total Dissolved Solids	105002.3	
5. Suspended Solids	NR	
6. Dissolved Oxygen	NR	
7. Dissolved CO2	NR	
8. Oil In Water	NR	
11. Bicarbonate	HCO3 76.0	HCO3 1.2
12. Chloride	Cl 63800.0	Cl 1799.7
13. Sulfate	SO4 821.0	SO4 17.1
14. Calcium	Ca 4800.0	Ca 239.5
15. Magnesium	Mg 881.0	Mg 72.5
16. Sodium (calculated)	Na 34624.3	Na 1506.1
17. Iron	Fe 0.0	
18. Barium	Ba 0.0	
19. Strontium	Sr 0.0	
20. Total Hardness (CaCO3)	0.0	

## PROBABLE MINERAL COMPOSITION

*milli equivalents per Liter	Compound	Equiv wt X meq/L	= mg/L
+-----+			
240   *Ca <----- *HCO3   1	Ca (HCO3) 2	81.0 1.2	101
-----  /----->  -----	CaSO4	68.1 17.1	1164
72   *Mg -----> *SO4   17	CaCl2	55.5 221.2	12273
-----  <-----/  -----	Mg (HCO3) 2	73.2	
1506   *Na -----> *Cl   1800	MgSO4	60.2	
+-----+	MgCl2	47.6 72.5	3450
Saturation Values Dist. Water 20 C	NaHCO3	84.0	
CaCO3 13 mg/L	Na2SO4	71.0	
CaSO4 * 2H2O 2090 mg/L	NaCl	58.4 1506.1	88014
BaSO4 2.4 mg/L			

REMARKS:

Respectfully submitted,  
 Sandra S

SCALE TENDENCY REPORT

Company : Chaparral Energy Date : 08/08/05  
Address : Date Sampled : 07/19/05  
Lease : State K 3-21 Analysis No. : 5G080505  
Well : Analyst : Sandra S  
Sample Pt. : Well Head

STABILITY INDEX CALCULATIONS  
(Stiff-Davis Method)  
CaCO3 Scaling Tendency

S.I. = -0.8 at 80 deg. F or 27 deg. C  
S.I. = -0.6 at 120 deg. F or 49 deg. C  
S.I. = -0.4 at 180 deg. F or 82 deg. C

\*\*\*\*\*

CALCIUM SULFATE SCALING TENDENCY CALCULATIONS  
(Skillman-McDonald-Stiff Method)  
Calcium Sulfate

S = 2892 at 80 deg. F or 27 deg C  
S = 3126 at 120 deg. F or 49 deg C  
S = 3101 at 180 deg. F or 82 deg C

Respectfully submitted,  
Sandra S



**Environmental Lab of Texas**  
**Variance / Corrective Action Report – Sample Log-In**

Client: Chaparral Energy  
 Date/Time: 7/21/05 2:00  
 Order #: SG2105G28004  
 Initials: CK

**Sample Receipt Checklist**

Temperature of container/cooler?	Yes	No	<u>24.0</u> C
Shipping container/cooler in good condition?	Yes	No	<u>none</u>
Custody Seals intact on shipping container/cooler?	Yes	No	<u>Not present</u>
Custody Seals intact on sample bottles?	Yes	No	<u>Not present</u>
Chain of custody present?	<u>YES</u>	No	
Sample Instructions complete on Chain of Custody?	<u>YES</u>	No	
Chain of Custody signed when relinquished and received?	<u>YES</u>	No	
Chain of custody agrees with sample label(s)	<u>YES</u>	No	
Container labels legible and intact?	<u>YES</u>	No	
Sample Matrix and properties same as on chain of custody?	<u>YES</u>	No	
Samples in proper container/bottle?	<u>YES</u>	No	
Samples properly preserved?	<u>YES</u>	No	
Sample bottles intact?	<u>YES</u>	No	
Preservations documented on Chain of Custody?	<u>YES</u>	No	
Containers documented on Chain of Custody?	<u>YES</u>	No	
Sufficient sample amount for indicated test?	<u>YES</u>	No	
All samples received within sufficient hold time?	<u>YES</u>	No	
VOC samples have zero headspace?	Yes	No	Not Applicable

Other observations:

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Variance Documentation:**

Contact Person: Herman Date/Time: 7/21/05 1:55 Contacted by: Carrie  
 Regarding:

On ice

Corrective Action Taken:

When/if testing for metals - need to be on ice.  
Client wants to proceed with analysis.

AFFIDAVIT OF PUBLICATION

State of New Mexico,  
County of Lea.

I, KATHI BEARDEN

Publisher

of the Hobbs News-Sun, a  
newspaper published at  
Hobbs, New Mexico, do solemnly  
swear that the clipping attached  
hereto was published once a  
week in the regular and entire  
issue of said paper, and not a  
supplement thereof for a period.

of 1

weeks.

Beginning with the issue dated

July 3 2005

and ending with the issue dated

July 3 2005

Kathi Bearden

Publisher

Sworn and subscribed to before

me this 6th day of

July 2005

Dora Montz  
Notary Public.

My Commission expires  
February 07, 2009  
(Seal)



OFFICIAL SEAL  
DORA MONTZ  
NOTARY PUBLIC  
STATE OF NEW MEXICO

My Commission Expires: \_\_\_\_\_

This newspaper is duly qualified  
to publish legal notices or adver-  
tisements within the meaning of  
Section 3, Chapter 167, Laws of  
1937, and payment of fees for  
said publication has been made.

LEGAL NOTICE  
July 3, 2005

Chaparral Energy, LLC, 701 Cedar Lake Blvd., Oklahoma City, OK, 73114, has filed Form C-108 (Application for Authorization to Inject) with the New Mexico Oil Conservation Division seeking administrative approval for a salt water disposal well. The proposed well, the State K #1-21, is located 1980' FSL & 1980' FWL of Sec. 21-11S-33E, Lea Co., NM. Disposal water will be sourced from an area well producing from the Permian and Wolfcamp formations at a depth of 8668' - 10112'. The disposal water will be injected into the San Andres formation from 3850' - 4469' at a maximum pressure of 2000 psi and a maximum rate of 1200 BWPD. Any interested party who has an objection to this must give notice in writing to the Oil Conservation Division, 1220 South Saint Francis Street, Santa Fe, NM, 87505, within 15 days of this notice. Any interested party with questions or comments may contact Ron Brown at Chaparral Energy, LLC, 701 Cedar Lake Blvd., Oklahoma City, OK, 73114, or by phone at (405) 478-8770. #21630

02105572000

67531631

Chaparral Energy, Inc.

701 Cedar Lake Blvd.

OKLAHOMA CITY, OK 73114-7806

June 30, 2005

Phoenix Hydrocarbons Operating Corporation  
PO Box 3638  
Midland, TX 79702

Re: Application to Inject  
State K #1-21  
Sec. 21-11S-33E  
Lea Co., NM

Gentlemen:

Enclosed for your review is a copy of Chaparral Energy, LLC's, application to convert the above referenced well into a salt water disposal. A requirement of the New Mexico Oil & Gas Conservation Division is that all surface owners and offset operators be notified of the application.

Any objections must be submitted in writing to the NMOC, 1220 S. St. Francis Dr., Santa Fe, NM, 87505. Objections must be received within 15 days of receipt of this letter.

If you have questions or need further information regarding this request, please contact Ron Brown, Operations Engineer, at (405) 478-8770.

Sincerely,

CHAPARRAL ENERGY, LLC

*Leigh Kuykendall*

Leigh Kuykendall  
Sr. Engineering Tech

U.S. Postal Service <b>CERTIFIED MAIL RECEIPT</b> (Domestic Mail Only; No Insurance Coverage Provided)	
<b>OFFICIAL USE</b>	
Postage \$	Postmark Here
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees \$	
Sent To: <i>Phoenix Hydrocarbons</i>	
Street, Apt. No., or PO Box No. <i>PO Box 3638</i>	
City, State, ZIP+4 <i>Midland TX 79702</i>	
PS Form 3800, January 2001 See Reverse for Instructions	

701 Cedar Lake Blvd., Oklahoma City, Oklahoma 73114 • telephone: 405-478-8770 • facsimile: 405-478-1947

SENDER: COMPLETE THIS SECTION		COMPLETE THIS SECTION ON DELIVERY	
<ul style="list-style-type: none"> <li>Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.</li> <li>Print your name and address on the reverse so that we can return the card to you.</li> <li>Attach this card to the back of the mailpiece, or on the front if space permits.</li> </ul>		<p>A. Received by (Please Print Clearly) <i>LOU PEARSON</i> B. Date of Delivery <i>7-7-05</i></p> <p>C. Signature <i>Lou Pearson</i> <input type="checkbox"/> Agent <input type="checkbox"/> Addressee</p> <p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes <input type="checkbox"/> No If YES, enter delivery address below:</p>	
<p>1. Article Addressed to:</p> <p><i>Phoenix Hydrocarbons</i> <i>PO Box 3638</i> <i>Midland TX 79702</i></p>		<p>3. Service Type</p> <p><input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail</p> <p><input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise</p> <p><input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.</p>	
		<p>4. Restricted Delivery? (Extra Fee)</p>	



June 30, 2005

Weldon Dallas  
Weldon L. & Edith Dallas Living Trust  
HC 12, Box 46  
Tatum, NM 88267

Re: Application to Inject  
State K #1-21  
Sec. 21-115-33E  
Lea Co., NM

Gentlemen:

Enclosed for your review is a copy of Chaparral Energy, LLC's, application to convert the above referenced well into a salt water disposal. A requirement of the New Mexico Oil & Gas Conservation Division is that all surface owners and offset operators be notified of the application.

Any objections must be submitted in writing to the NMOCD, 1220 S. St. Francis Dr., Santa Fe, NM, 87505. Objections must be received within 15 days of receipt of this letter.

If you have questions or need further information regarding this request, please contact Ron Brown, Operations Engineer, at (405) 478-8770.

Sincerely,

CHAPARRAL ENERGY, LLC

*Leigh Kuykendall*

Leigh Kuykendall  
Sr. Engineering Tech

U.S. Postal Service CERTIFIED MAIL RECEIPT (Domestic Mail Only; No Insurance Coverage Provided)	
OFFICIAL USE	
Postage \$	Postmark Here
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Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees \$	
Sent To <i>Weldon Dallas</i>	
Street, Apt. No.; or PO Box No. <i>HC 12 Box 46</i>	
City, State, ZIP+ 4 <i>Tatum NM 88267</i>	
PS Form 3800, January 2001 See Reverse for Instructions	

701 Cedar Lake Blvd., Oklahoma City, Oklahoma 73114 • telephone: 405-478-8770 • facsimile: 405-478-1947

SENDER: COMPLETE THIS SECTION		COMPLETE THIS SECTION ON DELIVERY							
<ul style="list-style-type: none"><li>Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.</li><li>Print your name and address on the reverse so that we can return the card to you.</li><li>Attach this card to the back of the mailpiece, or on the front if space permits.</li></ul>		<table border="1"><tr><td>A. Received by (Please Print Clearly) <i>W L Dallas</i></td><td>B. Date of Delivery <i>7/12/05</i></td></tr><tr><td>C. Signature <i>x W L Dallas</i></td><td><input type="checkbox"/> Agent <input type="checkbox"/> Addressee</td></tr><tr><td colspan="2">D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No</td></tr></table>		A. Received by (Please Print Clearly) <i>W L Dallas</i>	B. Date of Delivery <i>7/12/05</i>	C. Signature <i>x W L Dallas</i>	<input type="checkbox"/> Agent <input type="checkbox"/> Addressee	D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No	
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C. Signature <i>x W L Dallas</i>	<input type="checkbox"/> Agent <input type="checkbox"/> Addressee								
D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No									
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		4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes							