OCD-ARTESIA

ATS-1

Form 3160-3
(August 1999)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Month - Year FEB 16 2007 OCD - ARTESIA, NM

FORM APPROVED
OMB No. 1004-0136
Expires November 30, 2000

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.: NM-0265356-A

6. If Indian, Allottee or Tribe Name:

7. If Unit or CA Agreement, Name and No.:

1a. Type of Work: ☑ DRILL ☐ REENTER

1b. Type of Well: ☐ Oil Well ☒ Gas Well ☐ Other ☐ Single Zone ☐ Multiple Zone

8. Lease Name and Well No. 36496: Crozier 28 Federal, Well #1

2. Name of Operator: Chi Operating, Inc. 4378

9. API Well No.: 30-015-35573

3a. Address: P.O. Box 1799 Midland, TX 79702

3b. Phone No. *(include area code)*: (432) 685-5001

10. Field and Pool, or Exploratory: Happy Valley Morrow

4. Location of Well *(Report location clearly and in accordance with any State requirements. *)*
760' FNL & 2380' FEL Sec. 33-T21S-R26E

At proposed prod. zone: 660' FSL & 660' FEL, Sec. 28-T21S-R26E

11. Sec., T., R., M., or Blk. and Survey or Area: Sec. 28-T21S-R26E

14. Distance in miles and direction from nearest town or post office*: 3 miles west of Carlsbad, NM

12. County or Parish: Eddy

13. State: NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any): BHL: 660' Surf: 760'

16. No. of Acres in lease: 960

17. Spacing Unit dedicated to this well: 320

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.: N/A

19. Proposed Depth: 12,080' TVD

20. BLM/BIA Bond No. on file: NM-1616

21. Elevations (Show whether DF, KDB, RT, GL, etc.): 3282' GL (Sec. 33)

22. Approximate date work will start*: 1/29/07

23. Estimated duration: 4-6 weeks

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, shall be attached to this form:

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification.
6. Such other site specific information and/or plans as may be required by the authorized officer.

25. Signature: George R. Smith — Name *(Printed Typed)*: George R. Smith — Date: 12/21/06

Title: Agent for Chi Operating, Inc.

Approved by *(Signature)*: /s/ James Stovall — Name *(Printed Typed)*: — Date: FEB 12 2007

Title: ACTING FIELD MANAGER — Office: CARLSBAD FIELD OFFICE

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on reverse)

Lease Responsibility Statement: Chi Operating, Inc. accepts all applicable terms, conditions, stipulations, and restrictions concerning operations conducted on the leased land or portion thereof.

CARLSBAD CONTROLLED WATER BASIN

George R. Smith, agent

SEE ATTACHED FOR
CONDITIONS OF APPROVAL
APPROVAL SUBJECT TO
GENERAL REQUIREMENTS
AND SPECIAL STIPULATIONS
ATTACHED

Arrant, Bryan, EMNRD

To: John Qualls

Cc: Gum, Tim, EMNRD; Sanchez, Daniel J., EMNRD; John_Simitz@nm.blm.gov; grsmith1@prodigy.net; Britt, Ken, EMNRD

Subject: Crozier 28 Federal # 1

Dear Mr. Qualls or to Whom It May Concern,

In order to further review and issue an API number for the following application to drill (APD), please submit the following information:

1. A detailed h2s well contingency plan that meets all of the requirements of New Mexico Oil Conservation Division (NMOCD) Rule 118.
2. A revised NMOCD form C-102 that shows the project area, producing area and point of penetration.

Point of penetration meaning: "as to where the well penetrates the top of the pool from which it is intended to produce".
For further information regarding rules 111 & 118, please go to our website at: http://www.emnrd.state.nm.us/ocd

Please call me if you have any questions regarding this matter.

Yours truly,

Bryan G. Arrant
District II Geologist
NMOCD-Artesia
505-748-1283

DISTRICT I
1625 N. FRENCH DR., HOBBS, NM 88240

DISTRICT II
1301 W. GRAND AVENUE, ARTESIA, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV
1220 S. ST. FRANCIS DR., SANTA FE, NM 87505

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-102
Revised October 12, 2005
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number	Pool Code	Pool Name
30-015-35573	78060	Happy Valley Morrow

Property Code	Property Name	Well Number
	CROZIER 28 FEDERAL	1

OGRID No.	Operator Name	Elevation
4378	CHI OPERATING, INC.	3282'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	33	21-S	26-E		760	NORTH	2380	EAST	EDDY

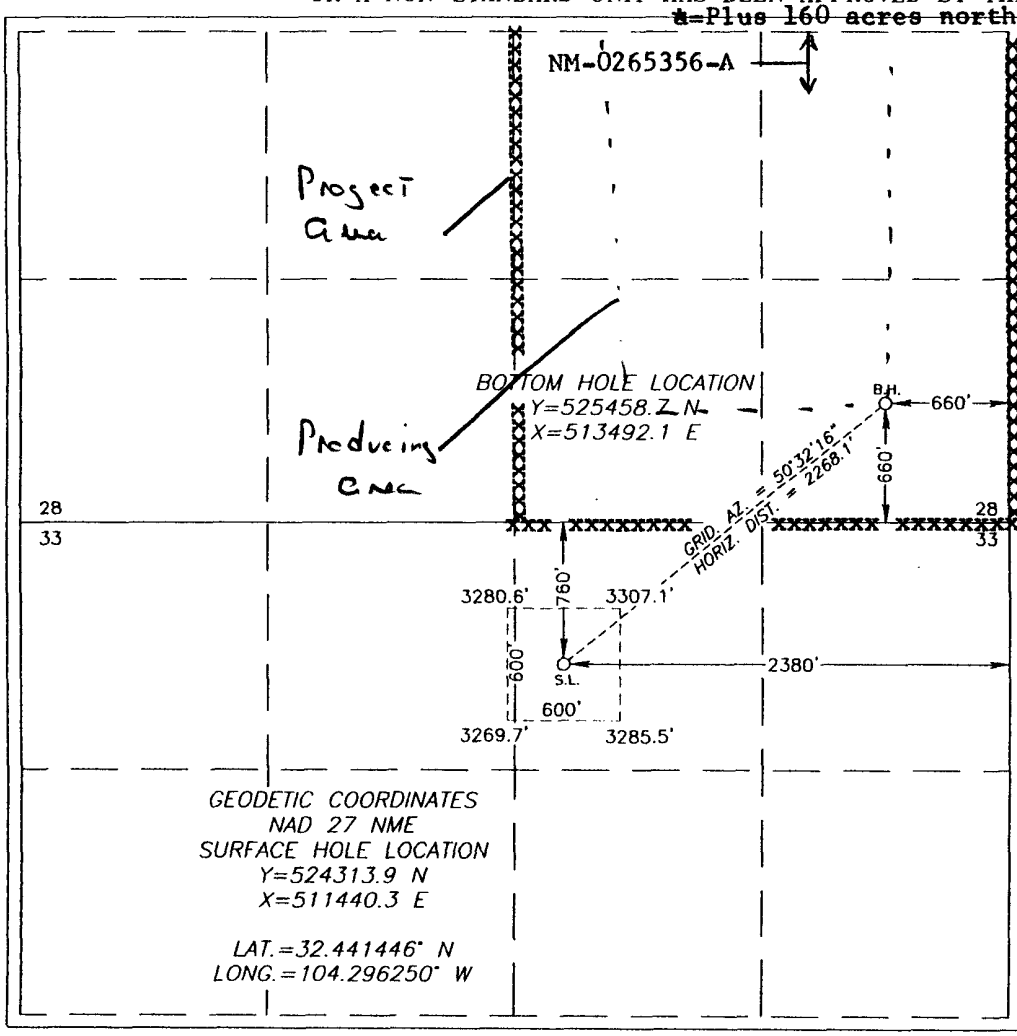
Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	28	21-S	26-E		660	SOUTH	660	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
320			

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

~~& = Plus 160 acres north~~



OPERATOR CERTIFICATION

I hereby certify that the information herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

George R. Smith 12/21/06
Signature Date

George R. Smith, agent
Printed Name

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

SEPTEMBER 21, 2006
Date Surveyed LA

Signature & Seal of Professional Surveyor

Ronald J. Eidson 9/26/06
06.11.1516

Certificate No. GARY EIDSON 12641
RONALD EIDSON 3239

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

BILL RICHARDSON
Governor
Joanna Prukop
Cabinet Secretary

Mark E. Fesmire, P.E.
Director
Oil Conservation Division

February 20, 2007

Chi Operating, Inc.
P.O. Box 1799
Midland, TX 79702
Attn: Mr. John Qualls or To Whom It May Concern:

Dear John or To Whom It May Concern:

RE: Chi Operating, Inc. : Application to drill (APD) for the Crozier 28 Federal # 1.
Surface location to be in Unit B, of Section 33, Township 21 South, Range 26 East, Eddy County, New Mexico NMPM.

In reference to the above noted APD, the New Mexico Oil Conservation Division (NMOCD) will require (in part) that drilling mud samples from the flow line be sampled every 100' in order to determine chloride levels during the drilling of the Capitan Reef section of the well bore. Results are to be submitted to our office before drilling to total depth of the well bore.
As noted in the APD, the surface and intermediate hole sections or the well bore are to be drilled with a fresh water mud.
In addition, please notify the NMOCD in Artesia the time said well is spud.
Please call me if you have any questions about this matter.

Respectfully yours,

Bryan G. Arrant
NMOCD's District II Geologist
Artesia, New Mexico
505-748-1283 ext. 103

CC: well file

APPLICATION FOR DRILLING

CHI OPERATING, INC.
Crozier 28 Federal, Well No. 1
BH Loc.: 660' FSL & 660' FEL, Sec. 28-T21S-R26E
Surface Loc.: 760' FNL & 2380' FEL, Sec 33-21S-R26E
Eddy County, New Mexico
Lease No.: NM-0265356-A
(Development Well)

In conjunction with Form 3160-3, Application for Permit to Drill subject well, Chi Operating, Inc. submits the following items of pertinent information in accordance with BLM requirements:

1. The geologic surface formation is recent Permian with quaternary alluvium and other surficial deposits.

2. The estimated tops of geologic markers are as follows:

Delaware	2390'	Atoka	10,310'
Bone Spring	4740'	Morrow Clastic	11,040'
3rd sand	8060'	Lower Morrow	11,220'
Wolfcamp	8650'	Mississippian	11,450'
Strawn	9910'	T.V.D.	12,080'

3. The estimated depths at which water, oil or gas formations are anticipated to be encountered:

Water: Surface water between 100' - 1400'.
Oil: Possible in the Delaware below 2390' and Bone Spring 2nd or 3rd sand.
Gas: Possible in the Wolfcamp, Upper Penn, Strawn below 9910' and the L. Morrow below 11,220'.

4. Proposed Casing Program: See COA

HOLE SIZE	CASING SIZE	WEIGHT	GRADE	JOINT	SETTING DEPTH	QUANTITY OF CEMENT
17 1/2"	13 3/8"	48.5/54.5#	K-55	ST&C	500'	Circ. 300 sx "C" to surface.
12 1/4"	9 5/8 "	36.0#	J-55	ST&C	2,130'	Circ. 570 sx "C" to surface.
8 3/4"	5 1/2"	20/17.0#	N-80	LT&C	12,620' MD	500 sx of "H" to 500' above top prod zone

5. Proposed Control Equipment: A 12" 5000 psi wp Shaffer Type LWS Double Gate BOP will be installed on the 13 3/8" casing. Casing and BOP will tested regularly, as per Onshore Oil & Gas Order #2. Casing and BOP will be tested before drilling out with 12 1/4"and the 8 3/4" and will be tested regularly as required. See Exhibit "E".

6.

MUD PROGRAM:		MUD WEIGHT	VIS.	W/L CONTROL
0' - 500':	Fresh water mud:	8.4 - 8.6 ppg	32 - 36	No W/L control
500' - 2130':	Fresh water mud	8.4 - 8.6 ppg	28	No W/L control
2130' - 8500':	Fresh water mud:	8.4 - 8.8 ppg	28	No W/L control
8500' - 10,260':	Brine/C. Brine:	10.0 ppg	29	No W/L control
10,260' - 11,170':	Brine/C. Brine(starch)	9.5 - 10.0 ppg	36 - 40	W/L control 12 - 15 cc+/-
11,170' - 12,620':	(XCD,etc)	9.5 - 10.0 ppg	45	W/L control <6 cc +/-

7. Auxiliary Equipment: Blowout Preventer, gas detector, Kelly cock, and stabbing valve.

8. Testing, Logging, and Coring Program:
Drill Stem Tests: As deemed necessary.
Logging: T.D.to 2130': (GR-CAL-CNL-LDT)-GR-CAL-DLL-MICRO) and possible FMI
T.D. to Surface: GR-Comp. Neutron
Coring: As dictated by logs

9. No abnormal pressures or temperatures are anticipated. In the event abnormal pressures are encountered the proposed mud program will be modified to increase the mud weight. Estimated evacuated BHP = 5315 with a temperature of 181°.

10. H_2S: None expected. None in previous area wells, but the Mud Log Unit will be cautioned to use a gas trap to detect H_2S and if any is detected the mud weight will be increased along with H_2S inhibitors sufficient to control the gas.

11. Anticipated starting date: January 29, 2007.
Anticipated completion of drilling operations: Approximately 30 - 40 days.

MULTI POINT SURFACE USE AND OPERATIONS PLAN

CHI OPERATING, INC.
Crozier 28 Federal, Well No. 1
Surface Loc.: 760' FNL & 2380' FEL, Sec. 33-T21S-R26E
BH Loc.: 660' FSL & 660' FEL, Sec. 28-T21S-R26E
Eddy County, New Mexico
Lease No.: NM-0265356-A
(Development Well)

This plan is submitted with the Application for Permit to Drill the above described well. The purpose of the plan is to describe the location of the proposed well; the proposed construction activities and operations plan to be followed in rehabilitating the surface and environmental effects associated with the operations.

1. EXISTING ROADS:

A. Exhibit "A" is a portion of a BLM Public Access map showing the location of the proposed well as staked. The well site location is approximately 1300 feet east of NM Highway 524, truck by-pass west of Carlsbad, NM.

B. Directions: Traveling on NM Highway 524 west of Carlsbad, the start of the proposed access road is approximately halfway between MM 3 and 4. Turn east from the highway through a gate owned by Victor Sing. The gate is on the south side of his property. Continue east for 300 feet passing a run down fence, then turn northeast for 840 feet to the southwest corner of the proposed well site.

2. PLANNED ACCESS ROAD:

A. Length and Width: The proposed access roads will be approximately 1141 feet long. The proposed and existing roads are color coded on Exhibits "A" and "B".

B. Construction: The proposed access road will be constructed by grading and topping with compacted caliche. The surface will be properly drained.

C. Turnouts: One turnout may be required increasing the road width to 20 feet for passing.

D. Culverts: None.

E. Cuts and Fills: None required.

F. Gates, Cattle guards. One cattleguard will be used at the gate on the NM 524 road ROW fence.

G. Off lease right of way: None required from BLM but an agreement is being made with the New Mexico State Parks for use of their surface. The well is on the surface of the Living Desert State Park. The first 300 feet of the access road is on the private surface of Victor Sing and a surface agreement is being obtained from Mr. Sing.

3. LOCATION OF EXISTING WELLS:

A. Existing wells within a two-mile radius are shown on Exhibit "C".

4. LOCATION OF EXISTING AND/OR PROPOSED FACILITIES;

A. Chi Operating, Inc. does not have production facilities on the lease by this time.

B. If the well proves to be commercial, the necessary production facilities, gas separation-process equipment, and tank battery, if required, will be installed on the drilling pad.

5. LOCATION AND TYPE OF WATER SUPPLY:

A. It is planned to drill the proposed well with fresh water that will be obtained from private or commercial sources and will be transported over the existing and proposed access roads

6. SOURCE OF CONSTRUCTION MATERIALS:

A. Caliche for surfacing the proposed access road and well site pad will be obtained from the location, if available, or from the nearest pit available. No surface materials will be disturbed except those necessary for actual grading and leveling of the drill site and access road.

7. METHODS OF HANDLING WASTE DISPOSAL:

A. Drill cuttings will be disposed of in the reserve pits.

B. Drilling fluids will be allowed to evaporate in the reserve pits until the pits are dry.

C. All pits will be fenced with normal fencing materials to prevent livestock from entering the area.

D. Water produced during operations will be collected in tanks until hauled to an approved disposal system, or a separate disposal application will be submitted to the BLM for approval.

E. Oil produced during operations will be stored in tanks until sold.

F. Current laws and regulations pertaining to the disposal of human waste will be complied with.

G. Trash, waste paper, garbage and junk will be contained in trash bins to prevent scattering by the wind and will be removed for deposit in an approved sanitary landfill within 30 days after finishing drilling and/or completion operations.

8. ANCILLARY FACILITIES:

A. None required.

9. WELL SITE LAYOUT:

A. Exhibit "D" shows the relative location and dimensions of the well pad, reserve pits, and major rig components. The pad and pit area has been staked and flagged, 600' X 600'.

B. Mat Size: 275' X 185', plus 130' X 135' reserve pits on the north.

C Cut & Fill: The location will require a 2-3 foot cut on the north and east with fill to the south and west.

D. The surface will be topped with compacted caliche and the reserve pits will be plastic lined.

10. PLANS FOR RESTORATION OF THE SURFACE:

A. After completion of drilling and/or completion operations, all equipment and other material not required for operations will be removed. Pits will be filled and the location cleaned of all trash and junk to leave the well site in an aesthetically pleasing a condition as possible.

B. Any unguarded pits containing fluids will be fenced until they are filled.

C. If the proposed well is non-productive, all rehabilitation and/or vegetation requirements of the Bureau of Land Management will be complied with and will be accomplished as expeditiously as possible. All pits will be filled and leveled as soon as they are dry enough to be worked.

11. OTHER INFORMATION:

A. Topography: The proposed well site and access road are located on the west side of the Ocotillo Hills in the Living Desert State Park with a 3.3% slope to the southwest. The location has an elevation of 3282.4'.

B. Soil: The topsoil at the well site is a dark colored calcareous loam with caliche scatter and possible caliche below the surface. The soil is part of the Reagan-Upton association complex.

C. Flora and Fauna: The vegetation cover has a fair grass cover of blue grama, three-awn, muhly tabosa along with of mesquite, yucca, creosote, broomweed, catclaw, cacti and miscellaneous weeds and wildflowers. The wildlife consists of rabbits, coyotes, antelope, deer, rattlesnakes, lizards, dove, quail and other wildlife typical of the semi-arid desert land.

D. Ponds and Streams: None.

E. Residences and Other Structures: There are several residences in the immediate vicinity, approximately 1,000 feet are farther away from the well location.

F. Land Use: Cattle grazing.

11. OTHER INFORMATION: cont.....

G. Surface Ownership: The proposed well site and part of the access road is on The Living Desert State Park, New Mexico Park Land surface and Federal minerals. Approximately 300 feet of the existing access road is on private surface of Victor Sing, R-396, Happy Valley Rd., and phone #505-361-4171. Chi Operating, Inc. has negotiated a surface/landowner agreement with both parties.

H. There is no evidence of archaeological, historical or cultural sites in the staked area. Southern New Mexico Archaeological Services, Inc., P. O. Box 1, Bent, NM 88314, is conducting an archaeological survey and their report has been submitted to the appropriate government agencies.

12. OPERATOR'S REPRESENTATIVE:

A. The field representative for assuring compliance with the approved use and operations plan is as follows:

John Qualls
Chi Operating, Inc.
P. O. Box 1799
Midland, Texas 79701
Office Phone: (432) 685-5001
Cell Phone: (432) 684-8825

13. CERTIFICATION:

I hereby certify that I have inspected the proposed drill site and access route; that I am familiar with the conditions which presently exist the statements made in the plan are, to the best of my knowledge, true and correct; and, that the work associated with the operations proposed herein will be performed by Chi Operating, Inc. and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provisions of 18 U.S.C. 1001 for the filing of a false statement.

December 21, 2006

George R. Smith
Agent for: Chi Operating, Inc.

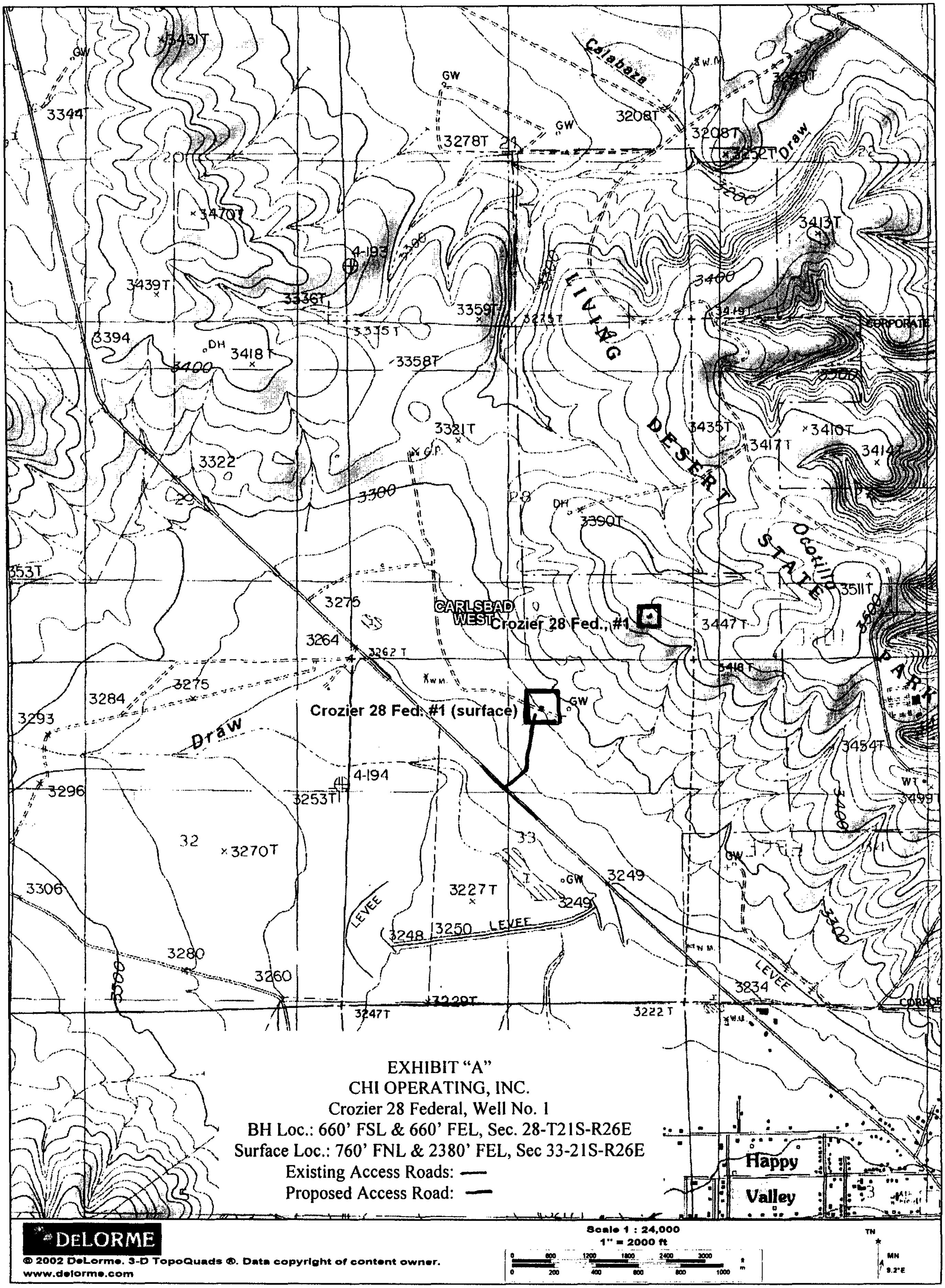


EXHIBIT "A"
CHI OPERATING, INC.
Crozier 28 Federal, Well No. 1
BH Loc.: 660' FSL & 660' FEL, Sec. 28-T21S-R26E
Surface Loc.: 760' FNL & 2380' FEL, Sec 33-21S-R26E
Existing Access Roads: —
Proposed Access Road: —

Conditions of Approval
Cave and Karst

EA#: NM-080-07-0287
Lease #: NM-0265356A
Chi Operating, Inc.
Crozier 28 Fed. #1

Cave/Karst Surface Mitigation
The following stipulations will be applied to minimize impacts during construction, drilling and production.

Berming:
Any tank batteries will be constructed and bermed large enough to contain any spills that may occur.

Bermed areas will be lined with rip-stop padding to prevent tears or punctures in liners and lined with a permanent 20 mil plastic liner.

Closed Mud System Using Steel Tanks with All Fluids and Cuttings Hauled Off.

Cave/Karst Subsurface Mitigation
The following stipulations will be applied to protect cave/karst and ground water concerns:

Rotary Drilling with Fresh Water:
Rotary drilling techniques in cave or karst areas will include the use of fresh water as a circulating medium in zones where caves or karst features are expected. See geologist report for depth.

Directional Drilling:
Kick off for directional drilling will occur at least 100 feet below the bottom of the cave occurrence zone as identified in the geologic report.

Casing:
All casing will meet or exceed National Association of Corrosion Engineers specifications pertaining to the geology of the location and be run to American Petroleum Institute and BLM standards.

Cementing:
All casing strings will be cemented to the surface.

Lost Circulation:
ALL lost circulation zones from the surface to the base of the cave occurrence zone will be logged and reported.

Regardless of the type of drilling machinery used, if a bit drops of four feet or more and circulation losses greater then 75 percent occur simultaneously while drilling in any cave-bearing zone, drilling operations will immediately stop and the BLM will be notified by the operator. The BLM will assess the consequences of the situation and work with operator on corrective actions to resolve the problem.

Abandonment Cementing:
Upon well abandonment the well bore will be cemented completely from 100 feet below the bottom of the cave bearing zone to the surface.

Pressure Tests:
Annual pressure tests will be performed by the Operator on all casing annuli. If the test results indicated a casing failure, remedial actions approved by the BLM will be undertaken to correct the problem.

Differential Shut-off Systems:
A leak detection system and differential shut off systems will be installed for pipelines and tanks used in production or drilling.

Record Keeping:
The Operator will track customary drilling activities, including the rate of penetration, pump pressure, weight on bit, bit drops, percent of mud returns, and presence of absence of cuttings returning to the surface. As part of customary record keeping, each detectable void or sudden increase in the rate of penetration not attributable to a change in the formation type should be documented and evaluated as it is encountered.

CONDITIONS OF APPROVAL - DRILLING

Well Name & No.	**1-Crozier 28 Federal**
Operator's Name:	**Chi Operating, Inc**
Location SHL:	**0760FNL, 2380FEL, Section 33, T-21-S, R-26-E**
Location BHL:	**0660FSL, 0660FEL, Section 28, T-21-S, R-26-E**
Lease:	**NM-0265356-A**

I. DRILLING OPERATIONS REQUIREMENTS:

1. The Bureau of Land Management (BLM) is to be notified at the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (505) 234-5972 or (505) 361-2822 - for wells in Eddy County in sufficient time for a representative to witness:

A. Spudding

B. Cementing casing: 13-3/8 inch 9-5/8 inch 5-1/2 inch

C. BOP tests

2. **Although no H2S has been reported in this section, it is always a potential hazard. It is recommended that monitoring equipment be available prior to drilling into the Delaware formation.**

3 Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.

4. Submit a Sundry Notice (Form 3160-5, one original and five copies) for each casing string, describing the casing and cementing operations. Include pertinent information such as; spud date, hole size, casing (size, weight, grade and thread type), cement (type, quantity and top), water zones and problems or hazards encountered. The Sundry shall be submitted within 15 days of completion of each casing string. The reports may be combined into the same Sundry if they fall within the same 15 day time frame.

5. The API No. assigned to the well by NMOCD shall be included on the subsequent report of setting the first casing string.

6. A Communitization Agreement covering the acreage dedicated to this well must be filed for approval with the BLM. The effective date of the agreement shall be prior to any sales.

7. Gamma-Ray/Neutron logs shall be run from the base of the Salado Formation to the surface; cable speed not to exceed 30 feet per minute.

II. CASING: All casing to meet or exceed API standards.

1. The 13-3/8 inch surface casing shall be set **at approximately 500 feet**, below usable water and cement circulated to the surface. If cement does not circulate to the surface the appropriate BLM office shall be notified and a temperature survey or cement bond log shall be run to verify the top of the cement. Remedial cementing shall be completed prior to drilling out that string.

Possible lost circulation in Capitan Reef, Delaware, and Bone Spring formations.
Possible over-pressured zones in Strawn, Atoka, and Morrow formations.
High cave/karst area.

2. The minimum required fill of cement behind the 9-5/8 inch intermediate casing is **circulate cement to the surface.**

3. The minimum required fill of cement behind the 5-1/2 inch production casing is **cement shall extend a minimum of 200 feet into the intermediate casing.**

III. PRESSURE CONTROL:

1. **All BOP systems and related equipment shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 (Exhibit E diagrams do not meet these requirements).** The BOP and related equipment shall be installed and operational before drilling below the **13-3/8** inch casing shoe and shall be tested as described in Onshore Order No. 2. Any equipment failing to test satisfactorily shall be repaired or replaced.

2. Minimum working pressure of the blowout preventer and related equipment (BOPE) required for drilling the surface and intermediate casing shall be **2M** psi. Minimum working pressure of the blowout preventer and related equipment (BOPE) required for drilling below the **9-5/8** inch casing shall be **5M** psi.

3. The appropriate BLM office shall be notified in sufficient time for a representative to witness the tests.
- The tests shall be done by an independent service company.
- The results of the test shall be reported to the appropriate BLM office.
- Testing fluid must be water or an appropriate clear liquid suitable for sub-freezing temperatures. Use of drilling mud for testing is not permitted since it can mask small leaks.
- Testing must be done in a safe workman-like manner. Hard line connections shall be required.
- BOPE must be tested prior to drilling into the **Wolfcamp** Formation by an independent service company.

IV. DRILLING MUD:

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the **Wolfcamp** Formation, and shall be used until production casing is run and cemented. Monitoring equipment shall consist of the following:

1. Recording pit level indicator to indicate volume gains and losses.
2. Mud measuring device for accurately determining the mud volumes necessary to fill the hole during trips.
3. Flow-sensor on the flow line to warn of abnormal mud returns from the well.

Engineer on call phone: 505-706-2779

WWI 010807

ENERGY ADMINISTRATIVE SERVICES CO.

OIL and GAS

P. O. BOX 458 ROSWELL, NEW MEXICO 88202 TELEPHONE (505) 623-4940

February 8, 2007

Bureau of Land Management
620 Greene St,
Carlsbad, NM 88220-3292

Attn: Barry Hunt

Re: Chi Operating, Inc., APD for Crozier Federal, Well No. 1
660' FSL & 660' FEL, Sec. 28-T21S-R26E, surface 760' FNL & 2380' FEL, Sec. 3-T21S-R26E

Dear Barry,

The APD for the above captioned well is currently submitted in your office but the land owner agreements have just been received to cover the surface of the well and access road on the New Mexico State Park land and the access road from the NM Highway #524 to the State Park land. Victor Sing is the landowner on the highway and we have enclosed an agreement to put in two cattle guards, one on the north near his home and the south one for rig and oilfield traffic. This should clear up everything needed to approve the APD.

If there are any other problems or questions, please call me.

Sincerely yours,

George R. Smith

George R. Smith

Encl

432 685-5001

FAX 432 687-2662

CHI ENERGY, INC.
P.O. BOX 1799
MIDLAND, TEXAS 79702

December 27, 2006

Victor Sing
R 396 Happey Valley Road
Carlsbad, New Mexico 88221

Re: Crozier 28 Fed #1
T-21S-R-26E
Section 28: E/2
Eddy County, New Mexico

Mr. Sing:

Pursuant to our phone call on ~~12-27-06~~ 01-11-07, Chi Operating, Inc. agrees to install two cattle guards (with gates) ~~across~~ on your property to access the drilling, completing and producing and abandonment of the Crozier 28 Fed #1. Chi will maintain the road and we will contact you should we need to purchase water for the drilling of the well. Return a signed copy of this agreement to me at your earliest convenience. Thanks and please contact me should you have any questions.

Sincerely,

John W. Qualls

JWQ/fh

Agreed and Accepted this 11 day of JAN. '07 ~~December, 2006~~.

Victor Sing

Chi energy has agreed to install two (2) cattle guards with gates, one to access well sight and one to access house on property.

Chi energy will maintain only one cattle guard and road to drilling sight as agreed by phone with John W. Qualls.

SURFACE ACCESS AND USE AGREEMENT

STATE OF NEW MEXICO §

COUNTY OF EDDY §

This Surface Access and Use Agreement (hereinafter referred to as the "Agreement") is dated the 26TH day of JANUARY, 2007, by and between the **State of New Mexico, Energy, Minerals and Natural Resources Department, State Parks Division**, P. O. Box 1147, Santa Fe, New Mexico, 87505-1147 (hereinafter referred to as "SPD") and **Chi Operating, Inc.**, P.O. Box 1799, Midland, Texas, 79702, a Texas corporation (hereinafter referred to as "Chi").

WHEREAS, Chi and other parties are the owners of the oil and gas leasehold estate underlying the E/2 of Section 28, T-21-S, R-26-E, N.M.P.M., Eddy County, New Mexico, and, as such, have proposed the drilling of a well for the production of oil and/or gas from said land, with the proposed well to be operated by Chi; and

WHEREAS, the surface of the E/2 of said Section 28 is occupied by the Living Desert Zoo and Gardens State Park, rendering impractical the use of the surface estate of said land for the drilling and development operations contemplated by Chi; and

WHEREAS, Chi proposes to use the surface estate of the NE/4 of Section 33, T-21-S, R-26-E, N.M.P.M., Eddy County, New Mexico (also owned by SPD) as the surface location for the proposed well, and to directionally drill said well to a bottom hole location 660 feet from the south line and 660 feet from the east line of said Section 28; and

WHEREAS, SPD is amenable to the use by Chi of the NE/4 of said Section 33 as the surface location for the proposed well, subject to certain restrictions, as set forth in this Agreement.

NOW, THEREFORE, for a valuable consideration to be paid as detailed below, the receipt and sufficiency of which is hereby acknowledged, Chi and SPD do hereby agree as follows:

(1) SPD hereby grants and conveys to Chi the right and privilege to use and occupy a mutually agreeable location in the NE/4 of Section 33, T-21-S, R-26-E, N.M.P.M., Eddy County, New Mexico, such location and actual size to be determined in consultation with SPD at or before the Application for Permit to Drill is finalized with the Bureau of Land Management (hereinafter referred to as the "Well Site") as the surface location for its operations in connection with the drilling, completion, maintenance and operation of an oil and/or gas well, the bottom location of which is to be 660 feet from

the south line and 660 feet from the east line of Section 28, T-21-S, R-26-E, N.M.P.M., Eddy County, New Mexico. As consideration for the use of the Well Site, Chi agrees to pay to SPD the sum of Five Thousand Dollars ($5,000.00) for the pad, plus an additional amount equal to Twenty Dollars ($20.00) per rod of roadway constructed by Chi in the NE/4 of said Section 33. Chi shall pay the sum of $5,000 for the pad to SPD within thirty (30) days of initial ground disturbance to create the pad, and Chi shall pay the $20 per rod of roadway to SPD within thirty (30) days after completion of any such road. Chi shall provide a survey of the "as built" pad, road and any artificial features, for the convenience and records of SPD, within thirty (30) days after the placement of the production equipment on the pad area.

(2) Chi shall construct all roads on the Well Site in accordance with current standards established by the Bureau of Land Management for construction of roads. Chi personnel shall secure the Well Site and points of ingress with locked gates when no Chi employee or agent is on site, to prevent public access. Chi shall provide the superintendent of Living Desert Zoo and Gardens State Park with a key.

(3) Chi shall clear and use the area for the pad and roads in accordance with all applicable laws, rules and regulations, which clearance shall in no event be less stringent than the standards established by the National Environmental Policy Act, 42 U.S.C. §§4321 et seq. (hereinafter referred to as "NEPA"); Chi's activities shall include appropriate measures for the protection of archaeological artifacts, endangered plants and animals, visual resources and air quality. SPD shall review and approve all such measures. In addition, due to the sensitive nature of the animals housed at the Living Desert Zoo and Gardens State Park, the parties agree to enter into a noise abatement plan which shall apply to all operations on the Well Site.

(4) Chi shall use a closed loop system during all drilling and production operations conducted on the Well Site. Chi shall not dig or maintain pits on the Well Site.

(5) In the event Chi establishes production in commercial quantities from the well located on the Well Site, Chi shall use low profile production equipment and shall paint all equipment in accordance with current Bureau of Land Management standards.

(6) In the event any gas is produced from a well located on the Well Site, Chi shall use a closed production system so as to ensure that no gases shall be released into the atmosphere except in the case of emergencies, and then only for so long as the emergency exists.

(7) All motorized production equipment will be fitted with electric motors in order to limit noise.

(8) Upon abandonment of the Well Site, Chi agrees to re-seed and restore the Well Site with grasses, shrubs and other vegetation consistent with current vegetation in the surrounding area, all in accordance with current reclamation standards

established by the Bureau of Land Management. In addition, while conducting operations on the Well Site, Chi shall take all reasonable steps to prevent erosion to the Well Site and any roads Chi constructs, as well as the area immediately surrounding the Well Site and any such roads. Upon installation of production equipment within the Well Site location, should the footprint of such equipment be less than the original Well Site, Chi shall conduct revegetation and reclamation of the then-vacant areas, in accordance with standards as stated in this paragraph, within 60 days, unless SPD grants an extension in writing in its sole discretion, as an interim measure pending ultimate, final abandonment of the Well Site.

(9) Chi currently maintains satisfactory bonds with the Bureau of Land Management to allow it to conduct the proposed operations. Chi agrees to maintain said bonds in effect during the course of its operations on the Well Site. Chi shall furnish a copy of such bonds to SPD upon request.

(10) Chi shall properly dispose of all waste products off the Well Site. Chi shall not dispose of waste products on the Well Site. Chi shall be required to place chemical toilets to prevent such waste.

(11) This Agreement shall remain in effect for so long as Chi conducts operations on the Well Site, provided that such operations produce paying, commercial quantities of oil or gas, and in case of failure to so produce, for 60 days thereafter upon which this Agreement terminates and reclamation by Chi or its qualified contractor must occur.

(12) This Agreement shall be binding upon and inure to the benefit of the parties hereto and their successors and assigns.

(13) This Agreement shall be governed by and construed in accordance with the laws of the State of New Mexico. The parties expressly agree that venue for any claims or disputes which arise under the terms of this Agreement shall be Santa Fe County, New Mexico.

(14) All notices, requests, demands and other communications required or permitted hereunder shall be in writing and shall be deemed to have been fully given, made and received only when personally delivered, delivered by Federal Express or other nationally recognized courier service, delivered by facsimile (with receipt confirmation; provided, however, that facsimiles delivered after 5:00 p.m. shall be deemed to have been delivered on the following business day), or three (3) days after having been deposited in the United States mail, certified mail, postage pre-paid, return receipt requested. All notices, requests, demands and other communications required or permitted hereunder shall be addressed to the appropriate party at the address set forth above. Any party may change the address to which communications or copies are to be sent by giving notice of such change of address in conformity with the provisions of this section for the giving of notice.

(15) This Agreement may be executed in any number of counterparts, and each counterpart shall be deemed to be an original, all of which together shall constitute one and the same instrument.

(16) This Agreement contains the entire understanding among the parties hereto with respect to the subject matter hereof, and supersedes all prior agreements and understandings, inducements and conditions, express or implied, oral or written, except as herein contained. The express terms hereof control and supersede any course of performance or usage of the trade inconsistent with any of the terms hereof. This Agreement may not be modified or amended other than by an Agreement in writing that is signed by the parties hereto.

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

By:_____
Sandra Haug, Administrative Services Division Director

CHI OPERATING, INC.

By:_____
John W. Qualls, Vice- president

STATE OF TEXAS §

COUNTY OF MIDLAND §

This instrument was acknowledged before me on the 15 day of January, 2007, by John W. Qualls, Vice-president of Chi Operating, Inc., a Texas Corporation, on behalf of said corporation.

Notary Public, State of Texas

DANA L. WELCH
MY COMMISSION EXPIRES
May 13, 2008

STATE OF NEW MEXICO §

COUNTY OFSANTA FE §

This instrument was acknowledged before me on the 24th day of January 2007, by Sandra Haug, Administrative Services Division Director, of the Energy, Minerals and Natural Resources Department of the State of New Mexico, on behalf thereof.

Denise M Zendell
Notary Public

My Commission Expires:

1-09-08

Chi Operating, Inc.

Location: Eddy County, NM
Field: Happy Valley (Morrow)
Facility: Crozier

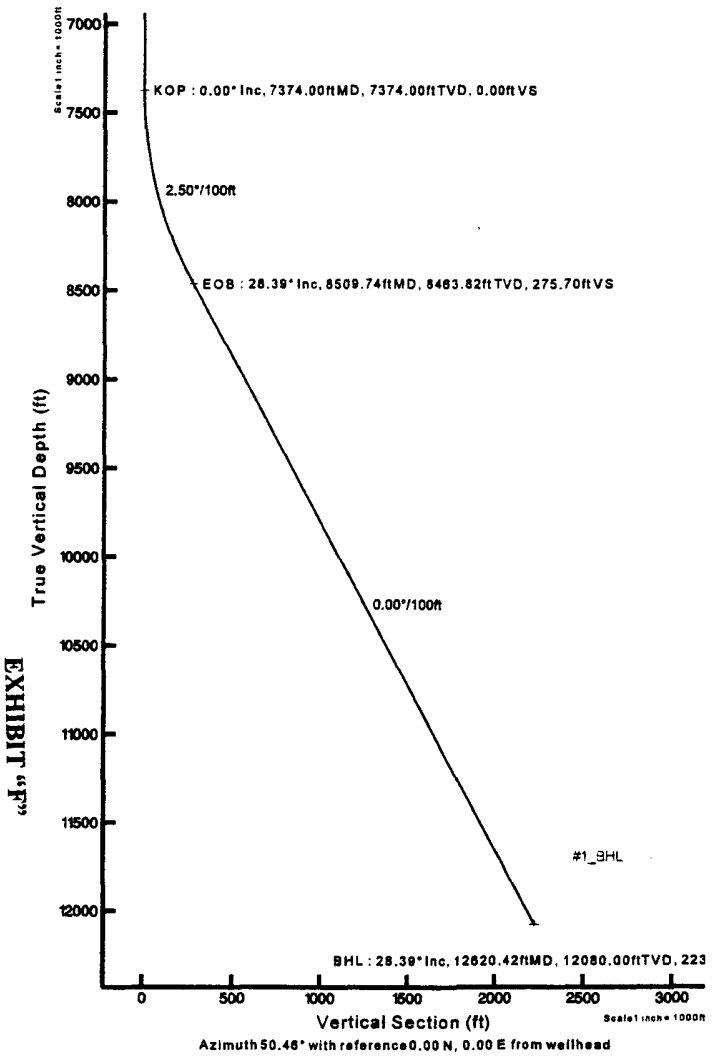
Slot: #1_SHL
Well: Crozier Fed #1
Wellbore: #1H PWB

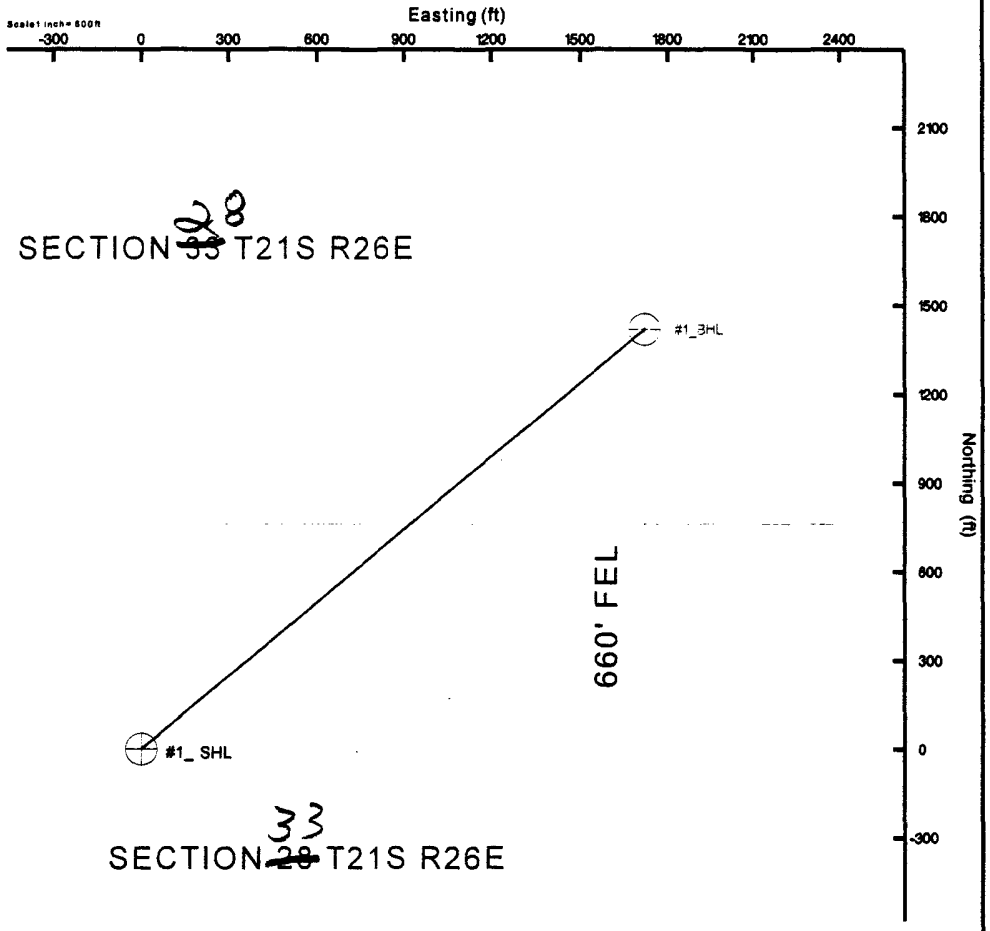
BAKER HUGHES INTEQ

Well Profile Data

DesignComment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	0.00	0.000	50.458	0.00	0.00	0.00	0.00	0.00
KOP	7374.00	0.000	50.458	7374.00	0.00	0.00	0.00	0.00
EOB	8509.74	28.393	50.458	8463.82	175.52	212.61	2.50	275.70
BHL	12620.42	28.393	50.458	12080.00	1420.00	1720.00	0.00	2230.43

Plot reference wellpath is Plan #1	
True vertical depths are referenced to Rig on #1_SHL (RT)	Grid System: NAD27 - TM New Mexico State Planes, Eastern Zone (3001), US feet
Measured depths are referenced to Rig on #1_SHL (RT)	North Reference: Grid north
Rig on #1_SHL (RT) to Mean Sea Level: 0 feet	Scale: True distance
Mean Sea Level to Mud line (Facility - Crozier): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: gomesoc on 10/26/2006





SECTION/HARD LINES ARE ESTIMATE ONLY AND ARE SUBJECT TO CUSTOMER APROVAL.

EXHIBIT "F"

CHI OPERATING, INC.
Crozier 28 Federal, Well No. 1
Directional Drilling Program
Surface: 760' FNL & 2380' FEL, Sec. 33-T21S-R26E
Production: 660' FSL & 660' FEL, Sec. 28-T21S-R26E

Planned Wellpath Report

Plan #1

BAKER HUGHES

INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	**Chi Operating, Inc.**	Slot	**#1_SHL**
Area	**Eddy County, NM**	Well	**Crozier Fed #1**
Field	**Happy Valley (Morrow)**	Wellbore	**#1H PWB**
Facility	**Crozier**		

WELLPATH DATA (61 stations) † = interpolated/extrapolated station

MD [feet]	Inclination [°]	Azimuth [°]	TVD [feet]	Vert Sect [feet]	North [feet]	East [feet]	DLS [°/100ft]	Design Comments
0.00	0.000	50.458	0.00	0.00	0.00	0.00	0.00	Tie On
7000.00†	0.000	0.000	7000.00	0.00	0.00	0.00	0.00	
7100.00†	0.000	0.000	7100.00	0.00	0.00	0.00	0.00	
7200.00†	0.000	0.000	7200.00	0.00	0.00	0.00	0.00	
7300.00†	0.000	0.000	7300.00	0.00	0.00	0.00	0.00	
7374.00	0.000	50.458	7374.00	0.00	0.00	0.00	0.00	KOP
7400.00†	0.650	50.458	7400.00	0.15	0.09	0.11	2.50	
7500.00†	3.150	50.458	7499.94	3.46	2.20	2.67	2.50	
7600.00†	5.650	50.458	7599.63	11.13	7.09	8.59	2.50	
7700.00†	8.150	50.458	7698.90	23.15	14.74	17.85	2.50	
7800.00†	10.650	50.458	7797.55	39.48	25.13	30.44	2.50	
7900.00†	13.150	50.458	7895.39	60.10	38.26	46.34	2.50	
8000.00†	15.650	50.458	7992.24	84.96	54.09	65.52	2.50	
8100.00†	18.150	50.458	8087.92	114.03	72.60	87.94	2.50	
8200.00†	20.650	50.458	8182.23	147.25	93.74	113.55	2.50	
8300.00†	23.150	50.458	8275.01	184.54	117.49	142.31	2.50	
8400.00†	25.650	50.458	8366.07	225.85	143.79	174.16	2.50	
8500.00†	28.150	50.458	8455.24	271.09	172.59	209.05	2.50	
8509.74	28.393	50.458	8463.82	275.70	175.52	212.61	2.50	EOB
8600.00†	28.393	50.458	8543.22	318.62	202.85	245.71	0.00	
8700.00†	28.393	50.458	8631.19	366.17	233.12	282.38	0.00	
8800.00†	28.393	50.458	8719.16	413.73	263.40	319.05	0.00	
8900.00†	28.393	50.458	8807.13	461.28	293.67	355.72	0.00	
9000.00†	28.393	50.458	8895.10	508.83	323.95	392.39	0.00	
9100.00†	28.393	50.458	8983.08	556.38	354.22	429.06	0.00	
9200.00†	28.393	50.458	9071.05	603.94	384.50	465.73	0.00	
9300.00†	28.393	50.458	9159.02	651.49	414.77	502.40	0.00	
9400.00†	28.393	50.458	9246.99	699.04	445.04	539.07	0.00	
9500.00†	28.393	50.458	9334.96	746.59	475.32	575.74	0.00	
9600.00†	28.393	50.458	9422.93	794.15	505.59	612.41	0.00	
9700.00†	28.393	50.458	9510.90	841.70	535.87	649.08	0.00	
9800.00†	28.393	50.458	9598.87	889.25	566.14	685.75	0.00	
9900.00†	28.393	50.458	9686.84	936.80	596.42	722.42	0.00	
10000.00†	28.393	50.458	9774.81	984.35	626.69	759.09	0.00	
10100.00†	28.393	50.458	9862.78	1031.91	656.96	795.76	0.00	
10200.00†	28.393	50.458	9950.75	1079.46	687.24	832.43	0.00	
10300.00†	28.393	50.458	10038.72	1127.01	717.51	869.10	0.00	
10400.00†	28.393	50.458	10126.69	1174.56	747.79	905.77	0.00	
10500.00†	28.393	50.458	10214.66	1222.12	778.06	942.44	0.00	
10600.00†	28.393	50.458	10302.63	1269.67	808.33	979.11	0.00	

Planned Wellpath Report

Plan #1

BAKER HUGHES

INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	Chi Operating, Inc.	Slot	#1_ SHL
Area	Eddy County, NM	Well	Crozier Fed #1
Field	Happy Valley (Morrow)	Wellbore	#1H PWB
Facility	Crozier		

WELLPATH DATA (61 stations) † = interpolated/extrapolated station

MD [feet]	Inclination [°]	Azimuth [°]	TVD [feet]	Vert Sect [feet]	North [feet]	East [feet]	DLS [°/100ft]	Design Comments
10700.00†	28.393	50.458	10390.60	1317.22	838.61	1015.78	0.00	
10800.00†	28.393	50.458	10478.57	1364.77	868.88	1052.45	0.00	
10900.00†	28.393	50.458	10566.54	1412.33	899.16	1089.12	0.00	
11000.00†	28.393	50.458	10654.51	1459.88	929.43	1125.79	0.00	
11100.00†	28.393	50.458	10742.48	1507.43	959.71	1162.46	0.00	
11200.00†	28.393	50.458	10830.45	1554.98	989.98	1199.13	0.00	
11300.00†	28.393	50.458	10918.42	1602.54	1020.25	1235.80	0.00	
11400.00†	28.393	50.458	11006.39	1650.09	1050.53	1272.47	0.00	
11500.00†	28.393	50.458	11094.36	1697.64	1080.80	1309.14	0.00	
11600.00†	28.393	50.458	11182.33	1745.19	1111.08	1345.81	0.00	
11700.00†	28.393	50.458	11270.30	1792.74	1141.35	1382.48	0.00	
11800.00†	28.393	50.458	11358.27	1840.30	1171.62	1419.15	0.00	
11900.00†	28.393	50.458	11446.24	1887.85	1201.90	1455.82	0.00	
12000.00†	28.393	50.458	11534.21	1935.40	1232.17	1492.49	0.00	
12100.00†	28.393	50.458	11622.18	1982.95	1262.45	1529.16	0.00	
12200.00†	28.393	50.458	11710.15	2030.51	1292.72	1565.83	0.00	
12300.00†	28.393	50.458	11798.13	2078.06	1323.00	1602.50	0.00	
12400.00†	28.393	50.458	11886.10	2125.61	1353.27	1639.17	0.00	
12500.00†	28.393	50.458	11974.07	2173.16	1383.54	1675.84	0.00	
12600.00†	28.393	50.458	12062.04	2220.72	1413.82	1712.51	0.00	
12620.42	28.393	50.458	12080.00[1]	2230.43	1420.00	1720.00	0.00	BHL

HOLE & CASING SECTIONS **Ref Wellbore: #1H PWB** **Ref Wellpath: Plan #1**

String/Diameter	Start MD [feet]	End MD [feet]	Interval [feet]	Start TVD [feet]	End TVD [feet]	Start N/S [feet]	Start E/W [feet]	End N/S [feet]	End E/W [feet]
8.75in Open Hole	0.00	12620.42	12620.42	0.00	12080.00	0.00	0.00	1420.00	1720.00

TARGETS

Name	MD [feet]	TVD [feet]	North [feet]	East [feet]	Grid East [us survey feet]	Grid North [us survey feet]	Latitude [°]	Longitude [°]	Shape
1) #1_BHL	12620.42	12080.00	1420.00	1720.00	1720.33	1420.27	30 59 38.808N	105 55 24.613W	point

Planned Wellpath Report

Plan #2

BAKER HUGHES INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	**Chi Operating, Inc.**	Slot	**#1_ SHL**
Area	**Eddy County, NM**	Well	**Crozier 28 Fed #1**
Field	**Happy Valley (Morrow)**	Wellbore	**#1H PWB**
Facility	**Crozier 28 Federal**		

REPORT SETUP INFORMATION			
Projection System	**NAD27 / TM New Mexico State Planes, Eastern Zone (3001), US feet**	Software System	**WellArchitect™ 1.2**
North Reference	**Grid**	User	**GomeOscR**
Scale	**1.0002**	Report Generated	**03/19/07 at 11:25:45**
Wellbore last revised	**10/26/06**	Database/Source file	**WA_Midland/#1H_PW**

WELLPATH LOCATION	Local coordinates		Grid coordinates		Geographic coordinates	
	North [feet]	**East [feet]**	**Easting [US feet]**	**Northing [US feet]**	**Latitude [°]**	**Longitude [°]**
Slot Location	**0.00**	**0.00**	0.00	0.00	30 59 24.512N	105 55 44.137W
Facility Reference Pt			**0.00**	**0.00**	30 59 24.512N	105 55 44.137W
Field Reference Pt			**0.00**	**0.00**	30 59 24.512N	105 55 44.137W

WELLPATH DATUM			
Calculation method	**Minimum curvature**	Rig on #1_ SHL (RT) to Facility Vertical Datum	**0.00 feet**
Horizontal Reference Pt	**Slot**	Rig on #1_ SHL (RT) to Mean Sea Level	**0.00 feet**
Vertical Reference Pt	**Rig on #1_ SHL (RT)**	Facility Vertical Datum to Mud Line (Facility)	**0.00 feet**
MD Reference Pt	**Rig on #1_ SHL (RT)**	Section Origin	**N 0.00, E 0.00 ft**
Field Vertical Reference	**Mean Sea Level**	Section Azimuth	**48.53°**

Planned Wellpath Report

Plan #2

BAKER HUGHES INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	**Chi Operating, Inc.**	Slot	**#1_ SHL**
Area	**Eddy County, NM**	Well	**Crozier 28 Fed #1**
Field	**Happy Valley (Morrow)**	Wellbore	**#1H PWB**
Facility	**Crozier 28 Federal**		

WELLPATH DATA (83 stations) † = interpolated/extrapolated station

MD [feet]	Inclination [°]	Azimuth [°]	TVD [feet]	Vert Sect [feet]	North [feet]	East [feet]	DLS [°/100ft]	Design Comments
0.00	0.000	48.532	0.00	0.00	0.00	0.00	0.00	Tie On
5000.00	0.000	48.532	5000.00	0.00	0.00	0.00	0.00	KOP
5100.00†	2.500	48.532	5099.97	2.18	1.44	1.63	2.50	
5200.00†	5.000	48.532	5199.75	8.72	5.78	6.53	2.50	
5300.00†	7.500	48.532	5299.14	19.61	12.98	14.69	2.50	
5400.00†	10.000	48.532	5397.97	34.82	23.06	26.09	2.50	
5500.00†	12.500	48.532	5496.04	54.33	35.97	40.71	2.50	
5600.00†	15.000	48.532	5593.17	78.09	51.71	58.52	2.50	
5700.00†	17.500	48.532	5689.17	106.07	70.24	79.48	2.50	
5800.00†	20.000	48.532	5783.85	138.21	91.53	103.57	2.50	
5900.00†	22.500	48.532	5877.05	174.46	115.52	130.72	2.50	
6000.00†	25.000	48.532	5968.57	214.73	142.19	160.90	2.50	
6100.00†	27.500	48.532	6058.25	258.95	171.48	194.04	2.50	
6200.00†	30.000	48.532	6145.92	307.05	203.33	230.08	2.50	
6300.00†	32.500	48.532	6231.40	358.92	237.68	268.95	2.50	
6400.00†	35.000	48.532	6314.54	414.47	274.46	310.58	2.50	
6500.00†	37.500	48.532	6395.18	473.60	313.62	354.88	2.50	
6600.00†	40.000	48.532	6473.16	536.19	355.06	401.78	2.50	
6659.90	41.497	48.532	6518.54	575.28	380.95	431.08	2.50	EOB
6700.00†	41.497	48.532	6548.57	601.85	398.55	450.99	0.00	
6800.00†	41.497	48.532	6623.47	668.11	442.42	500.64	0.00	
6900.00†	41.497	48.532	6698.37	734.37	486.30	550.29	0.00	
7000.00†	41.497	48.532	6773.27	800.63	530.18	599.94	0.00	
7100.00†	41.497	48.532	6848.17	866.89	574.05	649.59	0.00	
7200.00†	41.497	48.532	6923.07	933.15	617.93	699.24	0.00	
7300.00†	41.497	48.532	6997.96	999.41	661.80	748.88	0.00	
7400.00†	41.497	48.532	7072.86	1065.66	705.68	798.53	0.00	
7500.00†	41.497	48.532	7147.76	1131.92	749.56	848.18	0.00	
7600.00†	41.497	48.532	7222.66	1198.18	793.43	897.83	0.00	
7700.00†	41.497	48.532	7297.56	1264.44	837.31	947.48	0.00	
7800.00†	41.497	48.532	7372.46	1330.70	881.19	997.13	0.00	
7808.88	41.497	48.532	7379.11	1336.58	885.08	1001.54	0.00	EOH
7900.00†	40.131	48.532	7448.07	1396.14	924.52	1046.17	1.50	
8000.00†	38.631	48.532	7525.36	1459.58	966.53	1093.71	1.50	
8100.00†	37.131	48.532	7604.29	1520.98	1007.19	1139.72	1.50	
8200.00†	35.631	48.532	7684.80	1580.30	1046.47	1184.16	1.50	
8300.00†	34.131	48.532	7766.83	1637.48	1084.34	1227.01	1.50	
8400.00†	32.631	48.532	7850.33	1692.50	1120.77	1268.24	1.50	
8500.00†	31.131	48.532	7935.24	1745.31	1155.74	1307.81	1.50	
8600.00†	29.631	48.532	8021.51	1795.89	1189.23	1345.71	1.50	

Planned Wellpath Report

Plan #2

BAKER HUGHES INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	**Chi Operating, Inc.**	Slot	**#1_ SHL**
Area	**Eddy County, NM**	Well	**Crozier 28 Fed #1**
Field	**Happy Valley (Morrow)**	Wellbore	**#1H PWB**
Facility	**Crozier 28 Federal**		

WELLPATH DATA (83 stations) † = interpolated/extrapolated station

MD [feet]	Inclination [°]	Azimuth [°]	TVD [feet]	Vert Sect [feet]	North [feet]	East [feet]	DLS [°/100ft]	Design Comments
8700.00†	28.131	48.532	8109.07	1844.18	1221.21	1381.90	1.50	
8800.00†	26.631	48.532	8197.86	1890.17	1251.67	1416.36	1.50	
8900.00†	25.131	48.532	8287.83	1933.82	1280.57	1449.07	1.50	
9000.00†	23.631	48.532	8378.91	1975.10	1307.91	1480.00	1.50	
9100.00†	22.131	48.532	8471.04	2013.98	1333.65	1509.13	1.50	
9200.00†	20.631	48.532	8564.15	2050.43	1357.79	1536.45	1.50	
9300.00†	19.131	48.532	8658.19	2084.44	1380.31	1561.93	1.50	
9400.00†	17.631	48.532	8753.09	2115.97	1401.19	1585.56	1.50	
9500.00†	16.131	48.532	8848.78	2145.01	1420.42	1607.32	1.50	
9600.00†	14.631	48.532	8945.19	2171.53	1437.98	1627.19	1.50	
9700.00†	13.131	48.532	9042.27	2195.52	1453.87	1645.17	1.50	
9800.00†	11.631	48.532	9139.94	2216.96	1468.07	1661.23	1.50	
9900.00†	10.131	48.532	9238.14	2235.83	1480.56	1675.38	1.50	
10000.00†	8.631	48.532	9336.80	2252.13	1491.36	1687.59	1.50	
10100.00†	7.131	48.532	9435.85	2265.84	1500.44	1697.86	1.50	
10200.00†	5.631	48.532	9535.23	2276.96	1507.80	1706.19	1.50	
10300.00†	4.131	48.532	9634.87	2285.46	1513.43	1712.57	1.50	
10400.00†	2.631	48.532	9734.69	2291.36	1517.33	1716.98	1.50	
10500.00†	1.131	48.532	9834.63	2294.64	1519.51	1719.44	1.50	
10557.87	0.000	48.532	9910.00[1]	2295.39	1520.00	1720.00	1.50	#1 KOP
10600.00†	0.000	0.000	9934.63	2295.39	1520.00	1720.00	0.00	
10700.00†	0.000	0.000	10034.63	2295.39	1520.00	1720.00	0.00	
10800.00†	0.000	0.000	10134.63	2295.39	1520.00	1720.00	0.00	
10900.00†	0.000	0.000	10234.63	2295.39	1520.00	1720.00	0.00	
11000.00†	0.000	0.000	10334.63	2295.39	1520.00	1720.00	0.00	
11100.00†	0.000	0.000	10434.63	2295.39	1520.00	1720.00	0.00	
11200.00†	0.000	0.000	10534.63	2295.39	1520.00	1720.00	0.00	
11300.00†	0.000	0.000	10634.63	2295.39	1520.00	1720.00	0.00	
11400.00†	0.000	0.000	10734.63	2295.39	1520.00	1720.00	0.00	
11500.00†	0.000	0.000	10834.63	2295.39	1520.00	1720.00	0.00	
11600.00†	0.000	0.000	10934.63	2295.39	1520.00	1720.00	0.00	
11700.00†	0.000	0.000	11034.63	2295.39	1520.00	1720.00	0.00	
11800.00†	0.000	0.000	11134.63	2295.39	1520.00	1720.00	0.00	
11900.00†	0.000	0.000	11234.63	2295.39	1520.00	1720.00	0.00	
12000.00†	0.000	0.000	11334.63	2295.39	1520.00	1720.00	0.00	
12100.00†	0.000	0.000	11434.63	2295.39	1520.00	1720.00	0.00	
12200.00†	0.000	0.000	11534.63	2295.39	1520.00	1720.00	0.00	
12300.00†	0.000	0.000	11634.63	2295.39	1520.00	1720.00	0.00	
12400.00†	0.000	0.000	11734.63	2295.39	1520.00	1720.00	0.00	
12500.00†	0.000	0.000	11834.63	2295.39	1520.00	1720.00	0.00	

Planned Wellpath Report

Plan #2

BAKER HUGHES INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	**Chi Operating, Inc.**	Slot	**#1_ SHL**
Area	**Eddy County, NM**	Well	**Crozier 28 Fed #1**
Field	**Happy Valley (Morrow)**	Wellbore	**#1H PWB**
Facility	**Crozier 28 Federal**		

WELLPATH DATA (83 stations) † = interpolated/extrapolated station

MD [feet]	Inclination [°]	Azimuth [°]	TVD [feet]	Vert Sect [feet]	North [feet]	East [feet]	DLS [°/100ft]	Design Comments
12600.00†	0.000	0.000	11934.63	2295.39	1520.00	1720.00	0.00	
12700.00†	0.000	0.000	12034.63	2295.39	1520.00	1720.00	0.00	
12745.37	0.000	48.532	12080.00	2295.39	1520.00	1720.00	0.00	#1H BHL

HOLE & CASING SECTIONS Ref Wellbore: #1H PWB Ref Wellpath: Plan #2

String/Diameter	Start MD [feet]	End MD [feet]	Interval [feet]	Start TVD [feet]	End TVD [feet]	Start N/S [feet]	Start E/W [feet]	End N/S [feet]	End E/W [feet]
17.5in Open Hole	0.00	500.00	500.00	0.00	500.00	0.00	0.00	0.00	0.00
13.375in Casing Surface	0.00	500.00	500.00	0.00	500.00	0.00	0.00	0.00	0.00
12.25in Open Hole	0.00	2130.00	2130.00	0.00	2130.00	0.00	0.00	0.00	0.00
9.625in Casing	0.00	2130.00	2130.00	0.00	2130.00	0.00	0.00	0.00	0.00
8.75in Open Hole	0.00	12745.37	12745.37	0.00	12080.00	0.00	0.00	1520.00	1720.00
5.5in Casing	0.00	12745.37	12745.37	0.00	12080.00	0.00	0.00	1520.00	1720.00

TARGETS

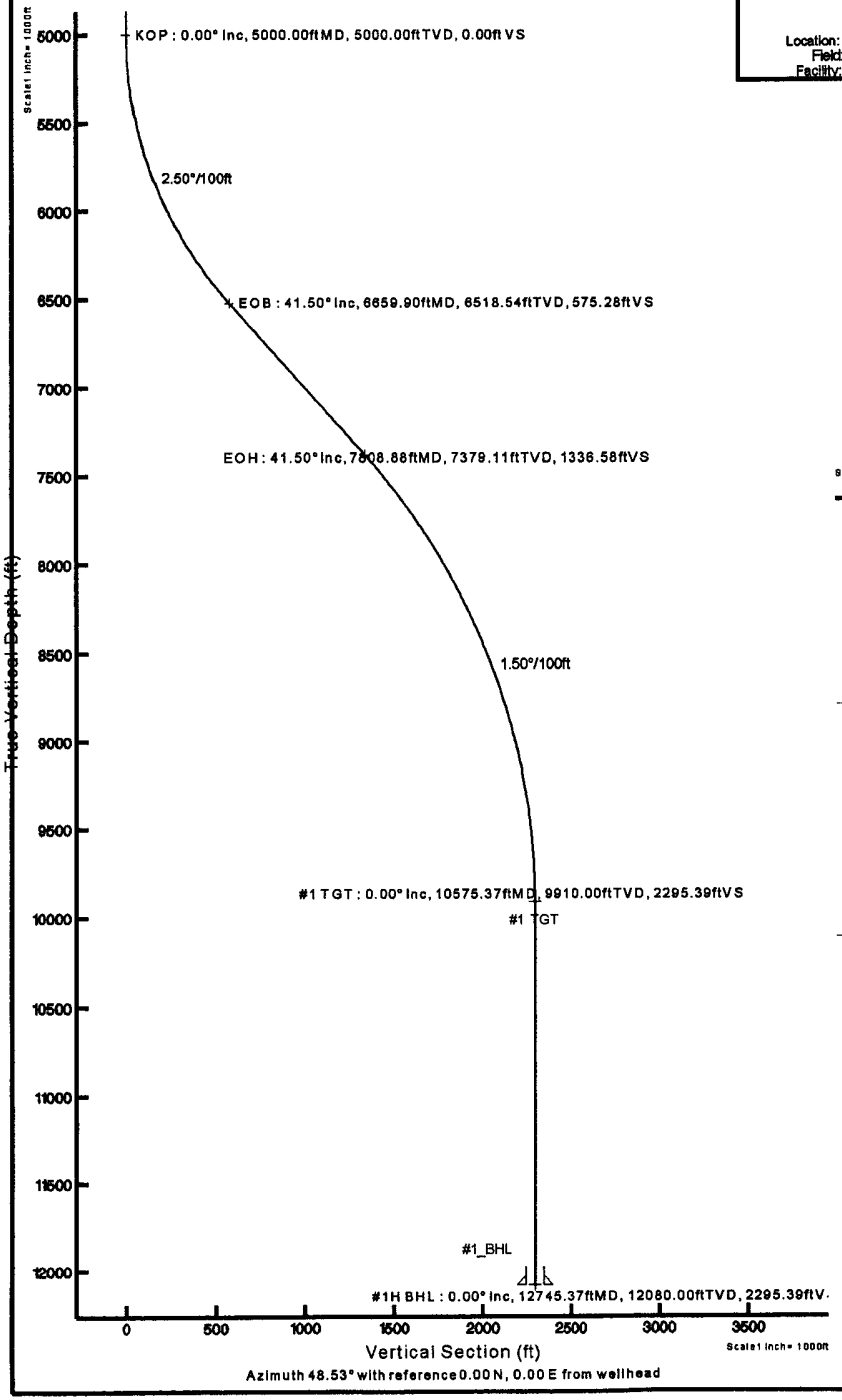
Name	MD [feet]	TVD [feet]	North [feet]	East [feet]	Grid East [us survey feet]	Grid North [us survey feet]	Latitude [°]	Longitude [°]	Shape
1) #1 TGT	10575.37	9910.00	1520.00	1720.00	1720.33	1520.29	30 59 39.798N	105 55 24.630W	point
#1_BHL		12080.00	1520.00	1720.00	1720.33	1520.29	30 59 39.798N	105 55 24.630W	point

Chi Operating, Inc.

Location: Eddy County, NM
Field: Happy Valley (Morrow)
Facility: Crozier 28 Federal

Slot: #1_ SHL
Well: Crozier 28 Fed #1
Wellbore: #1H PWB

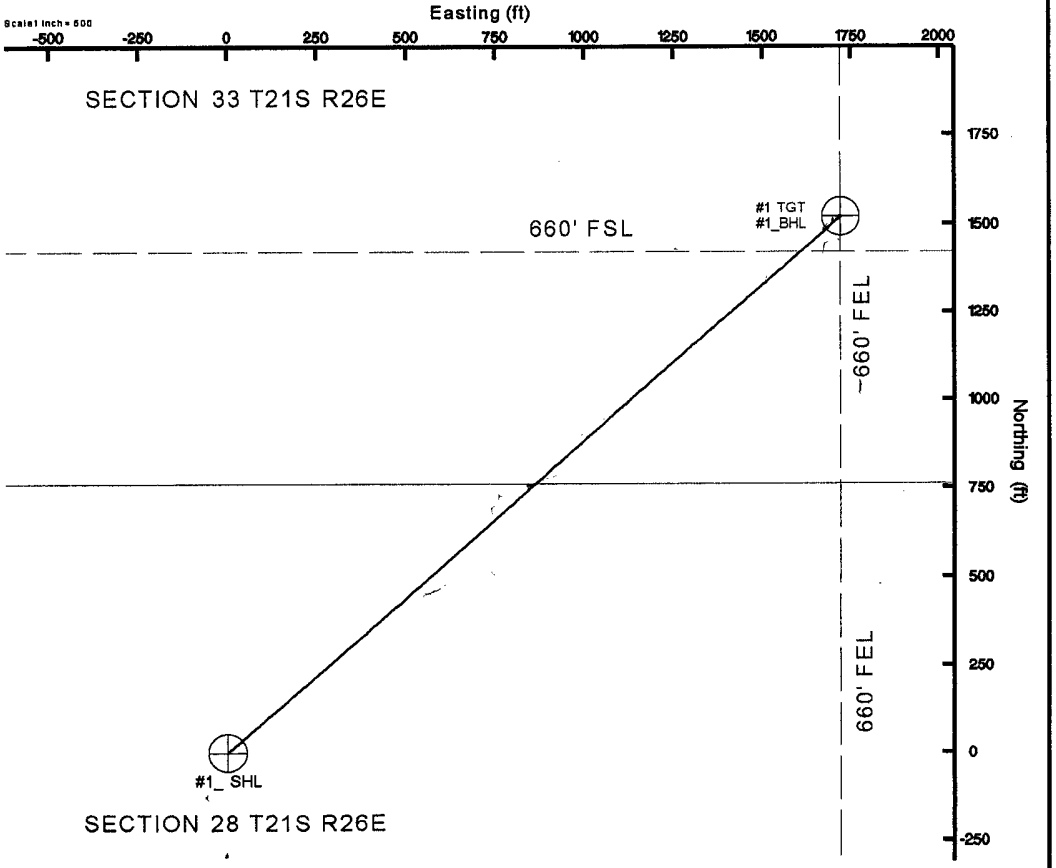
BAKER HUGHES INTEQ



Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	0.00	0.000	48.532	0.00	0.00	0.00	0.00	0.00
KOP	5000.00	0.000	48.532	5000.00	0.00	0.00	0.00	0.00
EOB	6659.90	41.497	48.532	6518.54	380.95	431.08	2.50	575.28
EOH	7808.88	41.497	48.532	7379.11	885.08	1001.54	0.00	1336.58
#1 TGT	10575.37	0.000	48.532	9910.00	1520.00	1720.00	1.50	2295.39
#1H BHL	12745.37	0.000	48.532	12080.00	1520.00	1720.00	0.00	2295.39

Plot reference wellpath is Plan #2	
True vertical depths are referenced to Rig on #1_ SHL (RT)	Grid System: NAD27 / TM. New Mexico State Planes, Eastern Zone (3001), US feet
Measured depths are referenced to Rig on #1_ SHL (RT)	North Reference: Grid north
Rig on #1_ SHL (RT) to Mean Sea Level: 0 feet	Scale: True distance
Mean Sea Level to Mud line (Facility - Crozier 28 Federal): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: DomeDac Ron 3/19/2007



SECTION/HARDLINES ESTIMATE ONLY ARE SUBJECT TO CUSTOMER APPROVAL.

CHI Operating, INC.

Legals:
Crozier 28 Federal Well #1
Surface 760' FNL & 2380' FEL
Bottom 660' FSL & 660' FEL
Surface Section B-33, Bottom Section P- 28
Township 22-South, Range 26 East, N.M.P.M. Survey
Eddy County, New Mexico

H_2S
"Contingency Plan"

CALLAWAY SAFETY EQUIPMENT CO, INC.
1020 W. Hwy. 80 East
Odessa, Texas 79765
(432) 561-5049

3229 Industrial Drive
Hobbs, New Mexico 88240
(877) 422-6345 (505) 392-2973

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H_2S CONTINGENCY PLAN SECTION

Scope:

This contingency plan provides an organized plan of action for alerting and protecting the public within an area of exposure prior to an intentional release, or following the accidental release of a potentially hazardous volume of hydrogen sulfide. The plan establishes guidelines for all personnel whose work activity may involve exposure to Hydrogen Sulfide Gas (H_2S).

Objective:

Prevent any and all accidents, and prevent the uncontrolled release of H_2S into the atmosphere.

Provide proper evacuation procedures to cope with emergencies.

Provide immediate and adequate medical attention should an injury occur.

Discussion of Plan:

Suspected Problem Zones:

Implementation: This plan, with all details, is to be fully implemented 1000' before drilling into the first sour zone.

Emergency Response Procedure: This section outlines the conditions and denotes steps to be taken in the event of an emergency.

Emergency Equipment and Procedure: This section outlines the safety and emergency equipment that will be required for the drilling of this well.

Training Provisions: This section outlines the training provisions that must be adhered to 1000' before drilling into the first sour zone.

Emergency call lists: Included are the telephone numbers of all persons that would need to be contacted, should an H2S emergency occur.

Briefing: This section deals with the briefing of all persons involved with the drilling of this well.

Public Safety: Public Safety Personnel will be made aware of the drilling of this well.

Check Lists: Status check lists and procedural check lists have been included to ensure adherence to the plan.

General Information: A general information section has been included to supply support information.

EMERGECY PROCEDURES SECTION

I. In the event of any evidence of H_2S level above 10 ppm, take the following steps immediately:

A. Secure breathing apparatus.

B. Order non-essential personnel out of the danger zone.

C. Take steps to determine if the H_2S level can be corrected or suppressed, and if so, proceed with normal operations.

II. If uncontrollable conditions occur, proceed with the following:

A. Take steps to protect and/or remove any public downwind of the rig, including partial evacuation or isolation. Notify necessary public safety personnel and the N.M. Railroad Commission of the situation.

B. Remove all personnel to the Safe Briefing Area.

C. Notify public safety personnel for help with maintaining roadblocks and implementing evacuation.

D. Determine and proceed with the best possible plan to regain control of the well. Maintain tight security and safety measures.

III. Responsibility:

A. The Company Approved Supervisor shall be responsible for the total implementation of the plan.

B. The Company Approved Supervisor shall be in complete command during any emergency.

C. The Company Approved Supervisor shall designate a back up Supervisor in the event that he/she is not available.

EMERGENCY PROCEDURE IMPLEMENTATION

I. Drilling or Tripping

A. All Personnel

1. When alarm sounds, don escape unit and report to upwind Safe Briefing Area.
2. Check status of other personnel (buddy system).
3. Secure breathing apparatus.
4. Wait for orders from supervisor.

B. Drilling Foreman

1. Report to the upwind Safe Briefing Area.
2. Don Breathing Apparatus and return to the point of release with the Tool Pusher or Driller (buddy system).
3. Determine the concentration of H_2S.
4. Assess the situation and take appropriate control measures.

C. Tool Pusher

1. Report to the upwind Safe Briefing Area.
2. Don breathing apparatus and return to the point of release with the Drilling Foreman or the Driller (buddy system).
3. Determine the concentration.
4. Assess the situation and take appropriate control measures.

D. Driller

1. Check the status of other personnel (in a rescue attempt, always use the buddy system).
2. Assign the least essential person to notify the Drilling Foreman and Tool Pusher, in the event of their absence.

3. Assume the responsibility of the Drilling Foreman and the Tool Pusher until they arrive, in the event of their absence.

E. Derrick Man and Floor Hands

1. Remain in the upwind Safe Briefing Area until otherwise instructed by a supervisor.

F. Mud Engineer

1. Report to the upwind Safe Briefing Area.

2. When instructed, begin check of mud for pH level and H_2S level.

G. Safety Personnel

1. Don Breathing Apparatus.

2. Check status of all personnel.

3. Wait for instructions from Drilling Foreman or Tool Pusher.

II. Taking a Kick

A. All personnel report to the upwind Safe Briefing Area.

B. Follow standard BOP procedures.

III. Open Hole Logging

A. All unnecessary personnel should leave the rig floor.

B. Drilling Foreman and Safety Personnel should monitor the conditions and make necessary safety equipment recommendations.

IV. Running Casing or Plugging

A. Follow "Drilling or Tripping" procedures.

B. Assure that all personnel have access to protective equipment.

SIMULATED BLOWOUT CONTROL DRILLS

All drills will be initiated by activating alarm devices (air horn). One long blast, on the air horn, for ACTUAL and SIMULATED Blowout Control Drills. This operation will be performed by the Drilling Foreman or Tool Pusher at least one time per week for each of the following conditions, with each crew:

Drill # 1 Bottom Drilling

Drill # 2 Tripping Drill Pipe

In each of these drills, the initial reaction time to shutting in the well shall be timed as well as the total time for the crew to complete its entire pit drill assignment. The times must be recorded on the IADC Driller's Log as "Blowout Control Drill".

Drill No.: Reaction Time to Shut-In: minutes, seconds. Total Time to Complete Assignment: minutes, seconds.

I. Drill Overviews

A. Drill No. 1- Bottom Drilling

1. Sound the alarm immediately.
2. Stop the rotary and hoist kelly joint above the rotary table.
3. Stop the circulatory pump.
4. Close the drill pipe rams.
5. Record casing and drill pipe shut-in pressures and pit volume increases.

B. Drill No. 2 – Tripping Drill Pipe

1. Sound the alarm immediately.
2. Position the upper tool joint just above the rotary table and set the slips.

3. Install a full opening valve or inside blowout preventor tool in order to close the drill pipe.

4. Close the drill pipe rams.

5. Record the shut-in annular pressure.

II. Crew Assignments

A. Drill No. 1 – Bottom Drilling

1. Driller

   a) Stop the rotary and hoist kelly joint above the rotary table.

   b) Stop the circulatory pump.

   c) Check flow.

   d) If flowing, sound the alarm immediately.

   e) Record the shut-in drill pipe pressure.

   f) Determine the mud weight increase needed or other courses of action.

2. Derrickman

   a) Open choke line valve at BOP.

   b) Signal Floor Man # 1 at accumulator that choke line is open.

   c) Close choke and upstream valve after pipe tams have been closed.

   d) Read the shut-in annular pressure and report readings to Driller.

3. Floor Man # 1

   a) Close the pipe rams after receiving the signal from the Derrickman.

   b) Report to Driller for further instructions.

4. Floor Man # 2

a) Notify the Tool Pusher and Operator Representative of the H_2S alarms.

b) Check for open fires and, if safe to do so, extinguish them.

c) Stop all welding operations.

d) Turn-off all non-explosion proof lights and instruments.

e) Report to Driller for further instructions.

5. Tool Pusher

a) Report to the rig floor.

b) Have a meeting with all crews.

c) Compile and summarize all information.

d) Calculate the proper kill weight.

e) Ensure that proper well procedures are put into action.

6. Operator Representative

a) Notify the Drilling Superintendent.

b) Determine if an emergency exists and if so, activate the contingency plan.

B. Drill No. 2 – Tripping Pipe

1. Driller

a) Sound the alarm immediately when mud volume increase has been detected.

b) Position the upper tool joint just above the rotary table and set slips.

c) Install a full opening valve or inside blowout preventor tool to close the drill pipe.

d) Check flow.

e) Record all data reported by the crew.

f) Determine the course of action.

2. Derrickman

   a) Come down out of derrick.

   b) Notify Tool Pusher and Operator Representative.

   c) Check for open fires and, if safe to do so, extinguish them.

   d) Stop all welding operations.

   e) Report to Driller for further instructions.

3. Floor Man # 1

   a) Pick up full opening valve or inside blowout preventor tool and stab into tool joint above rotary table (with Floor Man # 2).

   b) Tighten valve with back-up tongs.

   c) Close pipe rams after signal from Floor Man # 2.

   d) Read accumulator pressure and check for possible high pressure fluid leaks in valves or piping.

   e) Report to Driller for further instructions.

4. Floor Man # 2

   a) Pick-up full opening valve or inside blowout preventor tool and stab into tool joint above rotary table (with Floor Man # 1).

   b) Position back-up tongs on drill pipe.

   c) Open choke line valve at BOP.

   d) Signal Floor Man # 1 at accumulator that choke line is open.

   e) Close choke and upstream valve after pipe rams have been closed.

   f) Check for leaks on BOP stack and choke manifold.

   g) Read annular pressure.

h) Report readings to the Driller.

5. Tool Pusher

a) Report to the rig floor.

b) Have a meeting with all of the crews.

c) Compile and summarize all information.

d) See that proper well kill procedures are put into action.

6. Operator Representative

a) Notify Drilling Superintendent

b) Determine if an emergency exists, and if so, activate the contingency plan.

IGNITION PROCEDURES

Responsibility:

The decision to ignite the well is the responsibility of the DRILLING FOREMAN in concurrence with the STATE POLICE. In the event the Drilling Foreman is incapacitated, it becomes the responsibility of the RIG TOOL PUSHER. This decision should be made only as a last resort and in a situation where it is clear that:

1. Human life and property are endangered.

2. There is no hope of controlling the blowout under the prevailing conditions.

If time permits, notify the main office, but do not delay if human life is in danger. Initiate the first phase of the evacuation plan.

Instructions for Igniting the Well:

1. Two people are required for the actual igniting operation. Both men must wear self-contained breathing apparatus and must use a full body harness and attach a retrievable safety line to the D-Ring in the back. One man must monitor the atmosphere for explosive gases with the LEL monitor, while the Drilling Foreman is responsible for igniting the well.

2. The primary method to ignite is a 25mm flare gun with a range of approximately 500 feet.

3. Ignite from upwind and do not approach any closer than is warranted.

4. Select the ignition site best suited for protection and which offers an easy escape route.

5. Before igniting, check for the presence of combustible gases.

6. After igniting, continue emergency actions and procedures as before.

7. All unassigned personnel will limit their actions to those directed by the Drilling Foreman.

NOTE: After the well is ignited, burning Hydrogen Sulfide will convert to Sulfur Dioxide, which is also highly toxic. Do not assume the area is safe after the well is ignited.

TRAINING PROGRAM

When working in an area where Hydrogen Sulfide (H_2S) might be encountered, definite training requirements must be carried out. The Company Supervisor will ensure that all personnel, at the well site, have had adequate training in the following:

1. Hazards and Characteristics of Hydrogen Sulfide.
2. Physicals effects of Hydrogen Sulfide on the human body.
3. Toxicity of Hydrogen Sulfide and Sulfur Dioxide.
4. H_2S detection, emergency alarm and sensor location.
5. Emergency rescue.
6. Resuscitators.
7. First aid and artificial resuscitation.
8. The effects of Hydrogen Sulfide on metals.
9. Location safety.

Service company personnel and visiting personnel must be notified if the zone contains H_2S, and each service company must provide adequate training and equipment for their employees before they arrive at the well site.

EMERGENCY EQUIPMENT REQUIREMENTS

Lease Entrance Sign:

Should be located at the lease entrance with the following information:

CAUTION-POTENTIAL POISON GAS
HYDROGEN SULFIDE
NO ADMITTANCE WITHOUT AUTHORIZATION

Respiratory Equipment:

- Fresh air breathing equipment should be placed at the safe briefing areas and should include the following:
- Two SCBA's at each briefing area.
- Enough air line units to operate safely, anytime the H_2S concentration reaches the IDLH level (100 PPM).
- Cascade system with enough breathing air hose and manifolds to reach the rig floor, the derrickman and the other operation areas.

Windsocks or Wind Streamers:

- A minimum of two 10" windsocks located at strategic locations so that they may be seen from any point on location.
- Wind streamers (if preferred) should be placed at various locations on the well site to ensure wind consciousness at all times. (Corners of location).

Hydrogen Sulfide Detector and Alarms:

- 1-Four channel H_2S monitor with alarms.
- Four (4) sensors located as follows: # 1 – Rig Floor, # 2 – Bell Nipple, # 3 – Shale Shaker, # 4 – Mud Pits.
- Gastec or Draeger pump with tubes.
- Sensor test gas.

Well Condition Sign and Flags:

The Well Condition Sign w/flags should be placed a minimum of 150' before you enter the location. It should have three (3) color coded flags (green, yellow and red) that will be used to denote the following location conditions:

GREEN – Normal Operating Conditions
YELLOW – Potential Danger
RED – Danger, H2S Gas Present

Auxiliary Rescue Equipment:

- Stretcher
- 2 – 100' Rescue lines
- First Aid Kit properly stocked.

Mud Inspection Equipment:

Garret Gas Train or Hach Tester for inspection of Hydrogen Sulfide in the drilling mud system.

Fire Extinguishers:

Adequate fire extinguishers shall be located at strategic locations.

Blowout Preventor:

- The well shall have hydraulic BOP equipment for the anticipated BHP.
- The BOP should be tested upon installation.
- BOP, Choke Line and Kill Line will be tested as specified by Operator.

Confined Space Monitor:

There should be a portable multi-gas monitor with at least 3 sensors (O_2, LEL & H2S). This instrument should be used to test the atmosphere of any confined space before entering. It should also be used for atmospheric testing for LEL gas before beginning any type of Hot Work. Proper calibration documentation will need to be provided.

Communication Equipment:

- Proper communication equipment such as cell phones or 2 – way radios should be available at the rig.

- Radio communication shall be available for communication between the company man's trailer, rig floor and the tool pusher's trailer.
- Communication equipment shall be available on the vehicles.

Special Control Equipment:

- Hydraulic BOP equipment with remote control on the ground.
- Rotating head at the surface casing point.

Evacuation Plan:

- Evacuation routes should be established prior to spudding the well.
- Should be discussed with all rig personnel.

Designated Areas:

Parking and Visitor area:

- All vehicles are to be parked at a pre-determined safe distance from the wellhead.
- Designated smoking area.

Safe Briefing Areas:

- Two Safe Briefing Areas shall be designated on either side of the location at the maximum allowable distance from the well bore so they offset prevailing winds or they are at a 180 degree angle if wind directions tend to shift in the area.
- Personal protective equipment should be stored at both briefing areas or if a moveable cascade trailer is used, it should be kept upwind of existing winds. When wind is from the prevailing direction, both briefing areas should be accessible.

NOTE:

- Additional equipment will be available at the nearest Callaway Safety Office.
- Additional personal H_2S monitors are available for all employees on location.

- Automatic Flare Igniters are recommended for installation on the rig.

CHECK LISTS

Status Check List

Note: Date each item as they are implemented.

1. Sign at location entrance. _____
2. Two (2) wind socks (in required locations). _____
3. Wind Streamers (if required). _____
4. SCBA's on location for all rig personnel and mud loggers. _____
5. Air packs, inspected and ready for use. _____
6. Spare bottles for each air pack (if required). _____
7. Cascade system for refilling air bottles. _____
8. Cascade system and hose line hook up. _____
9. Choke manifold hooked-up and tested. (Before drilling out surface casing.) _____
10. Remote Hydraulic BOP control (hooked-up and tested before drilling out surface casing). _____
11. BOP tested (before drilling out surface casing). _____
12. Mud engineer on location with equipment to test mud for H_2S. _____
13. Safe Briefing Areas set-up. _____
14. Well Condition sign and flags on location and ready. _____
15. Hydrogen Sulfide detection system hooked-up & tested. _____
16. Hydrogen Sulfide alarm system hooked-up & tested. _____
17. Stretcher on location at Safe Briefing Area. _____
18. 2-100' Life Lines on location. _____

19. 1-20# Fire Extinguisher in safety trailer. _____

20. Confined Space Monitor on location and tested. _____

21. All rig crews and supervisor trained (as required). _____

22. Access restricted for unauthorized personnel. _____

23. Drills on H_2S and well control procedures. _____

24. All outside service contractors advised of potential H_2S on the well. _____

25. NO SMOKING sign posted.

26. H_2S Detector Pump w/tubes on location. _____

27. 25mm Flare Gun on location w/flares. _____

28. Automatic Flare Ignitor installed on rig. _____

Procedural Check List

Perform the following on each tour:

1. Check fire extinguishers to see that they have the proper charge.

2. Check Breathing equipment to insure that they have not been tampered with.

3. Check pressure on the supply air bottles to make sure they are capable of recharging.

4. Make sure all of the Hydrogen Sulfide detection systems are operative.

Perform the following each week:

1. Check each piece of breathing equipment to make sure that they are fully charged and operational. This requires that the air cylinder be opened and the mask assembly be put on and tested to make sure that the regulators and masks are properly working. Negative and Positive pressure should be conducted on all masks.

2. BOP skills.

3. Check supply pressure on BOP accumulator stand-by source.

4. Check all breathing air mask assemblies to see that straps are loosened and turned back, ready to use.

5. Check pressure on cascade air cylinders to make sure they are fully charged and ready to use for refill purposes if necessary.

6. Check all cascade system regulators to make sure they work properly.

7. Perform breathing drills with on-site personnel.

8. Check the following supplies for availability:

   - Stretcher
   - Safety Belts and ropes.
   - Spare air bottles.
   - Spare oxygen bottles (if resuscitator required).
   - Gas Detector Pump and tubes.
   - Emergency telephone lists.

9. Test the Confined Space Monitor to verify the batteries are good.

BRIEFING PROCEDURES

The following scheduled briefings will be held to ensure the effective drilling and operation of this project:

Pre-Spud Meeting

Date: Prior to spudding the well.
Attendance: Drilling Supervisor
Drilling Engineer
Drilling Foreman
Rig Tool Pushers
Rig Drillers
Mud Engineer
All Safety Personnel
Key Service Company Personnel

Purpose: Review and discuss the well program, step-by-step, to insure complete understanding of assignments and responsibilities.

EVACUATION PLAN

General Plan

The direct lines of action prepared by CALLAWAY SAFETY EQUIPMENT CO., INC., to protect the public from hazardous gas situations are as follows:

1. When the company approved supervisor (Drilling Foremen, Tool Pusher or Driller) determine that Hydrogen Sulfide gas cannot be limited to the well location, and the public will be involved, he will activate the evacuation plan. Escape routes are noted on the Area Map.

2. Company safety personnel or designee will notify the appropriate local government agency that a hazardous condition exists and evacuation need to be implemented.

3. Company approved safety personnel that have been trained in the use of the proper emergency equipment will be utilized.

4. Law enforcement personnel (State Police, Local Police Department, Fire Department, and the Sheriff's Department) will be called to aid in setting up and maintaining road blocks. Also, they will aid in evacuation of the public if necessary.

NOTE: Law enforcement personnel will not be asked to come into a contaminated area. Their assistance will be limited to uncontaminated areas. Constant radio contact will be maintained with them.

5. After the discharge of gas has been controlled, "Company" safety personnel will determine when the area is safe for re-entry.

See Emergency Action Plan

Emergency Assistance Telephone List

PUBLIC SAFETY:	*911 or*
Eddy Co. Sheriff	(505) 887-7551
Fire Department	(505) 746-5050
Artesia General Hospital	(505) 748-3333
Life Flight:	
Arrow Care-Lubbock	(806) 744-5055
Southwest Air-Med E Vac.	(800) 242-6199
Lat: N.32"42.6906"	
Long: W.104"281058"	
New Mexico D.O.T.	(505) 827-5100
Bureau of Land Management	(505) 393-3612
U. S. Dept. of Labor	(505) 248-5302
New Mexico OCD	(505) 393-6161
New Mexico OCD/After Hours	(505) 370-7106

Chi Operating,INC.

Chi Operating,INC./Midland Tx.	Office	(432) 685-5001
Contact Person:		
Gary Womack	Cell	(432) 634-8958

Drilling Company

Rig#

Toolpusher

Callaway Safety Equipment

Odessa	Office	(432) 561-5049
Hobbs	Office	(877) 422-6345

MAPS AND PLATS
(Maps & Plats Attached)

State of New Mexico
Energy, Minerals and Natural Resources Department

DISTRICT I
25 N. FRENCH DR., HOBBS, NM 88240

DISTRICT II
1301 W. GRAND AVENUE, ARTESIA, NM 88210

ISTRICT III
000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV
220 S. ST. FRANCIS DR., SANTA FE, NM 87505

OIL CONSERVATION DIVISION
1220 SOUTH ST. FRANCIS DR.
Santa Fe, New Mexico 87505

Form C-102
Revised October 12, 2005
Submit to Appropriate District Office
State Lease – 4 Copies
Fee Lease – 3 Copies

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number	Pool Code	Pool Name
		Happy Valley Morrow

Property Code	Property Name	Well Number
	CROZIER 28 FEDERAL	1

OGRID No.	Operator Name	Elevation
4378	CHI OPERATING, INC.	3282'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	33	21-S	26-E		760	NORTH	2380	EAST	EDDY

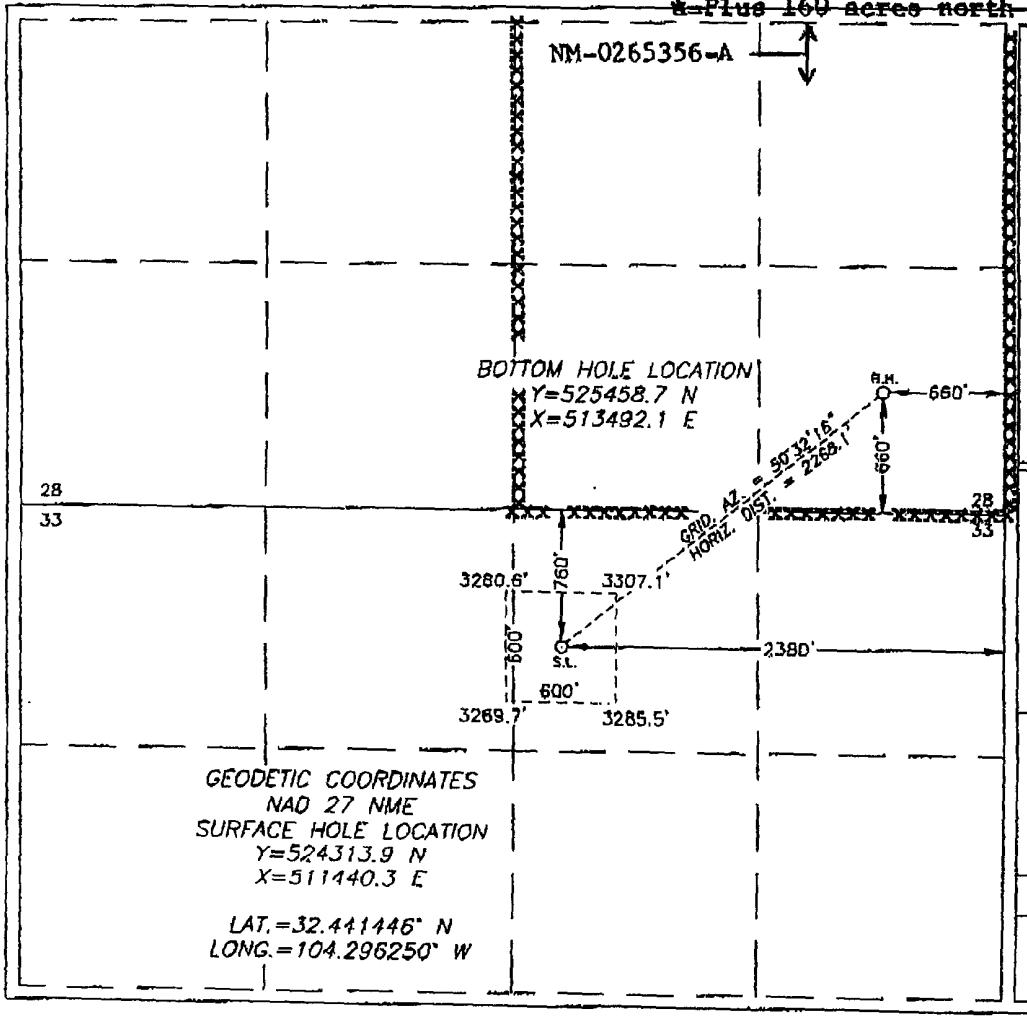
Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	28	21-S	26-E		660	SOUTH	660	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
320			

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

~~E-Plus 160 acres north~~



OPERATOR CERTIFICATION

I hereby certify that the information herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

George R. Smith 12/21/06
Signature Date

George R. Smith, agent
Printed Name

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

SEPTEMBER 21, 2006
Date Surveyed LA

Signature & Seal of Professional Surveyor

Ronald J. Eidson 9/26/06
06.11.1516

Certificate No. GARY L. EIDSON 12641
RONALD J. EIDSON 3239

Affected Notification List

(within a 65' radius of exposure @100ppm)

The geologic zones that will be encountered during drilling are known to contain hazardous quantities of H_2S. The accompanying map illustrates the affected areas of the community. The residents within this radius will be notified via a hand delivered written notice describing the activities, potential hazards, conditions of evacuation, evacuation drill siren alarms and other precautionary measures.

Evacuee Description:
Residents: **THERE ARE NO RESIDENTS WITHIN 3000' ROE.**

Notification Process:

A continuos siren audible to all residence will be activated, signaling evacuation of previously notified and informed residents.

Evacuation Plan:
All evacuees will migrate lateral to the wind direction.

The Oil Company will identify all home bound or highly susceptible individuals and make special evacuation preparations, interfacing with the local and emergency medical service as necessary.

GENERAL INFORMATION

Toxic Effects of H_2S Poisoning

Hydrogen Sulfide is extremely toxic. The acceptable ceiling concentration for eight-hour exposure is 10 PPM, which is .001% by volume. Hydrogen Sulfide is heavier than air (specific gravity-1.192) and is colorless and transparent. Hydrogen Sulfide is almost as toxic as Hydrogen Cyanide and is 5-6 times more toxic than Carbon Monoxide. Occupational exposure limits for Hydrogen sulfide and other gasses are compared below in Table !. Toxicity table for H_2S and physical effects are shown in Table II.

Table 1
Permissible Exposure Limits of Various Gasses

Common Name	Symbol	Sp. Gravity	TLV	STEL	IDLH
Hydrogen Cyanide	HCN	.94	4.7 ppm	C	
Hydrogen Sulfide	H_2S	1.192	10 ppm	15 ppm	100 ppm
Sulfide Dioxide	SO_2	2.21	2 ppm	5 ppm	
Chlorine	CL	2.45	.5 ppm	1 ppm	
Carbon Monoxide	CO	0.97	25 ppm	200 ppm	
Carbon Dioxide	CO_2	1.52	5000 ppm	30,000 ppm	
Methane	CH_4	0.55	4.7% LEL	14% UEL	

Definitions

A. TLV – Threshold Limit Value is the concentration employees may be exposed to based on a TWA (time weighted average) for eight (8) hours in one day for 40 hours in one (1) week. This is set by ACGIH (American Conference of Governmental Hygienists and regulated by OSHA.

B. STEL – Short Term Exposure Limit is the 15 minute average concentration an employee may be exposed to providing that the highest exposure never exceeds the OEL (Occupational Exposure Limit). The OEL for H_2S is 19 PPM.

C. IDLH – Immediately Dangerous to Life and Health is the concentration that has been determined by the ACGIH to cause serious health problems or death if exposed to this level. The IDLH for H_2S is 100 PPM.

D. TWA – Time Weighted Average is the average concentration of any chemical or gas for an eight (8) hour period. This is the concentration that any employee may be exposed to based on an TWA.

TABLE II

Toxicity Table of H_2S

Percent %	PPM	Physical Effects
,0001	1	Can smell less than 1 ppm.
.001	10	TLV for 8 hours of exposure
.0015	15	STEL for 15 minutes of exposure
.01	100	Immediately Dangerous to Life & Health. Kills sense of smell in 3 to 5 minutes.
.02	200	Kills sense of smell quickly, may burn eyes and throat.
.05	500	Dizziness, cessation of breathing begins **in a few minutes.**
.07	700	Unconscious quickly, death will result if not rescued promptly.
.10	1000	Death will result unless rescued promptly. Artificial resuscitation may be necessary.

PHYSICAL PROPERTIES OF H_2S

The properties of all gasses are usually described in the context of seven major categories:

COLOR
ODOR
VAPOR DENSITY
EXPLOSIVE LIMITS
FLAMMABILITY
SOLUBILITY (IN WATER)
BOILING POINT

Hydrogen Sulfide is no exception. Information from these categories should be considered in order to provide a fairly complete picture of the properties of the gas.

COLOR – TRANSPARENT

Hydrogen Sulfide is colorless so it is invisible. This fact simply means that you can't rely on your eyes to detect its presence. a fact that makes the gas extremely dangerous to be around.

ODOR – ROTTEN EGGS

Hydrogen Sulfide has a distinctive offensive smell, similar to "rotten eggs". For this reason it earned its common name "sour gas". However, H_2S, even in low concentrations, is so toxic that it attacks and quickly impairs a victim's sense of smell, so it could be fatal to rely on your nose as a detection device.

VAPOR DENSITY – SPECIFIC GRAVITY OF 1.192

Hydrogen Sulfide is heavier than air so it tends to settle in low-lying areas like pits, cellars or tanks. If you find yourself in a location where H_2S is known to exist, protect yourself. Whenever possible, work in an area upwind and keep to higher ground.

EXPLOSIVE LIMITS – 4.3% TO 46%

Mixed with the right proportion of air or oxygen, H_2S will ignite and burn or explode, producing another alarming element of danger besides poisoning.

FLAMMABILITY

Hydrogen Sulfide will burn readily with a distinctive clear blue flame, producing Sulfur Dioxide (SO_2), another hazardous gas that irritates the eyes and lungs.

SOLUBILITY – 4 TO 1 RATIO WITH WATER

Hydrogen Sulfide can be dissolved in liquids, which means that it can be present in any container or vessel used to carry or hold well fluids including oil, water, emulsion and sludge. The solubility of H_2S is dependent on temperature and pressure, but if conditions are right, simply agitating a fluid containing H_2S may release the gas into the air.

BOILING POINT – (-76 degrees Fahrenheit)

Liquefied Hydrogen Sulfide boils at a very low temperature, so it is usually found as a gas.

RESPIRATOR USE

The Occupational Safety and Health Administration (OSHA) regulates the use of respiratory protection to protect the health of employees. OSHA's requirements are written in the Code of Federal Regulations, Title 29, Part 1910, Section 134, Respiratory Protection. This regulation requires that all employees who might be required to wear respirators, shall complete a OSHA mandated medical evaluation questionnaire . The employee then should be fit tested prior to wearing any respirator while being exposed to hazardous gasses.

Written procedures shall be prepared covering safe use of respirators in dangerous atmospheric situations, which might be encountered in normal operations or in emergencies. Personnel shall be familiar with these procedures and the available respirators.

Respirators shall be inspected prior to and after each use to make sure that the respirator has been properly cleaned, disinfected and that the respirator works properly. The unit should be fully charged prior to being used.

Anyone who may use respirators shall be properly trained in how to properly seal the face piece. They shall wear respirators in normal air and then in a test atmosphere. (Note: Such items as facial hair (beard or sideburns) and eyeglass temple pieces will not allow a proper seal.) Anyone that may be expected to wear respirators should have these items removed before entering a toxic atmosphere. A special mask must be obtained for anyone who must wear eyeglasses. Contact lenses should not be allowed.

Respirators shall be worn during the following conditions:

A. Any employee who works near the top or on the top of any tank unless tests reveal less than 20 ppm of H2S.

B. When breaking out any line where H2S can reasonably be expected.

C. When sampling air in areas where H2S may be present.

D. When working in areas where the concentration of H2S exceeds the Threshold Limit Value for H2S (10 ppm).

E. At any time where there is a doubt as to the H2S level in the area to be entered.

EMERGENCY RESCUE PROCEDURES

DO NOT PANIC!!!

Remain Calm - THINK

1. Before attempting any rescue you must first get out of the hazardous area yourself. Go to a safe briefing area.

2. Sound an alarm and activate the 911 system.

3. Put on breathing apparatus. At least two persons should do this, when available use the buddy system.

4. Rescue the victim and return them to a safe briefing area.

5. Perform an initial assessment and begin proper First Aid/CPR procedures.

6. Keep the victim lying down with a blanket or coat, etc..., under the shoulders to keep airway open. Conserve body heat and do not leave unattended.

7. If the eyes are affected by H2S, wash them thoroughly with potable water. For slight irritation, cold compresses are helpful.

8. In case a person has only minor exposure and does not lose consciousness totally, it's best if he doesn't return to work until the following day.

9. Any personnel overcome by H2S should always be examined by medical personnel. They should always be transported to a hospital or doctor.