N.M. Oil Cons. DIV-Dist. 2
1301 W. Grand Avenue
Artesia, NM 88210

F-27

Form 3160-3
(April 2004)

FORM APPROVED
OMB No. 1004-0137
Expires March 31, 2007

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED
APR 29 2005
OCD-ARTESIA

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: [XX] DRILL [ ] REENTER	5. Lease Serial No. NMNM 95627
1b. Type of Well: [ ] Oil Well [XX] Gas Well [ ] Other [ ] Single Zone [ ] Multiple Zone	6. If Indian, Allotee or Tribe Name
2. Name of Operator Clayton Williams Energy, Inc.	7. If Unit or CA Agreement, Name and No.
3a. Address Six Desta Drive, Ste 3000 Midland, TX 79705	3b. Phone No. *(include area code)* (432) 682-6324
4. Location of Well *(Report location clearly and in accordance with any State requirements.*)* At surface 990' FNL & 660' FEL; UL A At proposed prod. zone	8. Lease Name and Well No. Rocky Arroyo Federal #1
	9. API Well No. 30-015- 34095
	10. Field and Pool, or Exploratory Rocky Arroyo (Morrow Gas)
	11. Sec., T. R. M. or Blk. and Survey or Area Sec. 8, T22S, R22E
14. Distance in miles and direction from nearest town or post office* 28 miles west of Carlsbad, NM	12. County or Parish Eddy County / 13. State New Mexico

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 660'	16. No. of acres in lease 320	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 10,000'	20. BLM/BIA Bond No. on file NM 2787
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 4473'	22. Approximate date work will start* upon APD approval	23. Estimated duration drilling 30 days completion 25 days

24. Attachments

CARLSBAD CONTROLLED WATER BASIN

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 Betsy Luna	Name *(Printed/Typed)* Betsy Luna	Date 03-23-2005
Title Engineering Technician		
Approved by *(Signature)* /s/ Joe G. Lara	Name *(Printed/Typed)* /s/ Joe G. Lara	Date APR 27 2005
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.

APPROVAL FOR 1 YEAR

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 page 2)*

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS
AND SPECIAL STIPULATIONS
ATTACHED

WITNESS 8 5/8" Cement Job

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-144
June 1, 2004

For drilling and production facilities, submit to appropriate NMOCD District Office.
For downstream facilities, submit to Santa Fe office

Pit or Below-Grade Tank Registration or Closure

Is pit or below-grade tank covered by a "general plan"? Yes ☐ No ☒
Type of action: Registration of a pit or below-grade tank ☒ Closure of a pit or below-grade tank ☐

Operator: Clayton Williams Energy, Inc Telephone: 432-682-6324 e-mail address: bluna@claytonwilliams.com
Address: Six Desta Drive, Suite 3000, Midland, TX 79705
Facility or well name: Rocky Arroyo Federal #1 API #: 30-015-34095 U/L or Qtr/Qtr _____ Sec 8 T 22S R 22E
County: Eddy Latitude N32 24' 36.8" Longitude W104 43' 08.4" NAD: 1927 ☑ 1983 ☐
Surface Owner: Federal ☒ State ☐ Private ☐ Indian ☐

Pit	**Below-grade tank**	
Type: Drilling ☒ Production ☐ Disposal ☐ Workover ☐ Emergency ☐ Lined ☒ Unlined ☐ Liner type: Synthetic ☒ Thickness 20 mil Clay ☐ Pit Volume 8000 bbl	Volume: _____ bbl Type of fluid: _____ Construction material: _____ Double-walled, with leak detection? Yes ☐ If not, explain why not.	
Depth to ground water (vertical distance from bottom of pit to seasonal high water elevation of ground water.)	Less than 50 feet 50 feet or more, but less than 100 feet 100 feet or more	(20 points) (10 points) (0 points) 0 points
Wellhead protection area: (Less than 200 feet from a private domestic water source, or less than 1000 feet from all other water sources.)	Yes No	(20 points) (0 points) 0 points
Distance to surface water: (horizontal distance to all wetlands, playas, irrigation canals, ditches, and perennial and ephemeral watercourses.)	Less than 200 feet 200 feet or more, but less than 1000 feet 1000 feet or more	(20 points) (10 points) (0 points) 0 points
	Ranking Score (Total Points)	0 points

If this is a pit closure: (1) Attach a diagram of the facility showing the pit's relationship to other equipment and tanks. (2) Indicate disposal location: (check the onsite box if your are burying in place) onsite ☐ offsite ☐ If offsite, name of facility_____. (3) Attach a general description of remedial action taken including remediation start date and end date. (4) Groundwater encountered: No ☐ Yes ☐ If yes, show depth below ground surface_____ft. and attach sample results.
(5) Attach soil sample results and a diagram of sample locations and excavations.

Additional Comments:

RECEIVED
MAR 24 2005
OCD-ARTESIA

I hereby certify that the information above is true and complete to the best of my knowledge and belief. **I further certify that the above-described pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines ☒, a general permit ☐, or an (attached) alternative OCD-approved plan ☐.**

Date: 03-22-2005
Printed Name/Title Matt Swierc, Production Supt. Signature Matt Swierc

Your certification and NMOCD approval of this application/closure does not relieve the operator of liability should the contents of the pit or tank contaminate ground water or otherwise endanger public health or the environment. Nor does it relieve the operator of its responsibility for compliance with any other federal, state, or local laws and/or regulations.

Approval:
Printed Name/Title _____ Signature _____ Date: MAR 25 2005

CLAYTON WILLIAMS ENERGY, INC.
DRILLING PROGRAM

Attached to BLM form 3160-3

Lease Name: Rocky Arroyo Federal
Well No.: 1
Location: 990' FNL & 660' FEL, UL A
Sec. 8, T22S, R22E

Eddy Co., NM

1. Geological name of surface location: Quaternary Deposits

2. Estimated tops of important geological markers:

Name	Depth
Glorieta	1540
Wolfcamp	4360
Cisco	7290
Strawn	7990
Atoka	8500
Morrow	8900

3. Estimated name of anticipated fresh water, oil, and gas:

Formation	Depth	Fresh Water/Oil/Gas
Usable Quality Water	350-900	Fresh Water
Wolfcamp	4360	Oil/Gas
Strawn	7990	Gas
Atoka	8500	Gas
Morrow	8900	Gas

4. CASING PROGRAM

Hole Size	Interval	OD Csg	Weight, Grade, Type.
11"	1700'	8-5/8	24#, J-55, ST&C
7-7/8"	9500'	5-1/2"	17#, L-80, LT&C

CEMENT PROGRAM

Conductor Casing: 20" set at 40'; cement to surface

8-5/8" Surface Casing:
770 sx Light + 6% gel + 0.25 ppsk cello flake
380 sx 'C' + 2% CaCl2

5-1/2" Production Casing:
Stage tool @ +/- 5500'
1st Stage: 1000 sx 50/50 Poz 'H' + fluid loss additive
300 sx 50/50 Poz 'H' + fluid loss additive + SMS + salt

2nd Stage: Lead: 1200 sx 50/50 Poz 'C' + 4% gel + fluid loss additive

5. Minimum Specifications for Pressure Control:

The blowout preventer equipment (BOP) schematic attached will consist of a double ram-type (5000 psi WP) preventer and/or a bag-type (hydril) preventer (5000 psi WP). BOP will be hydraulically operated and the ram-type preventer will be equipped with blind rams and appropriate pipe rams. The BOP will be nippled up on the surface casing and used continuously until TD is reached. Before drilling out of surface casing, the ram-type BOP and accessory equipment will be tested to 5000 psi and the hydril to 50% of rated working pressure (2500 psi). Pipe rams will be operationally checked each 24-hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. A 2" kill line and 3" choke line will be attached to a drilling spool or BOP side outlets. Other accessories to the BOP equipment will include a kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold with 5000 psi WP rating.

6. Type & Characteristics of the Proposed Mud System:

The well will be drilled to TD with a Fresh Water system .

The applicable depths and properties of this system are as follows:

Depth	Type	Weight (ppg)	Viscosity (sec)	Water Loss (cc)
1700'	FW Gel	8.4-8.8	29-60	NC
9500'	FW Gel	8.4-8.8	29-45	NC - 10

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept at the well site at all times.

7. Auxiliary Well Control and Monitoring Equipment:

A. A Kelly cock will be kept in the drill string at all times.

B. A full opening drill pipe stabbing valve (inside BOP) with proper drill pipe connections will be on the rig floor at all times.

C. The drilling fluids system will be visually monitored at all times.

D. A mudlogging unit will be continuously monitoring drilling penetration rate and hydrocarbon shows from surface casing to TD.

E. A fixed electronic H2S monitoring system, including alarms with monitors at the shaker and the bell nipple, will be in operation from 1700' to TD.

8. Logging, Testing, & Coring Program:

A. Drill stem tests: Possible DST's in Wolfcamp, Atoka, Morrow

B. Electronic logging program: DSN, MSFL, DIL, FMI (optional)

C. Coring: Possible side wall wireline cores

9. Abnormal Conditions, Pressures, Temperatures & Potentials Hazards:

Hole instability plus losses in surface rubble zones.

10. Anticipated Starting Date & Duration of Operations:

Road and location work will not begin until approval has been received from the BLM. The anticipated spud date is upon approval of APD. Once commenced, the drilling operations should be finished within approximately 30 days. If the well is productive, an additional 25 days will be required for completion and testing.

CLAYTON WILLIAMS ENERGY, INC.
HYDROGEN SULFIDE DRILLING OPERATIONS PLAN

I. HYDROGEN SULFIDE TRAINING

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well.

1. The hazards and characteristics of hydrogen sulfide (H2S).

2. The proper use and maintenance of personal protective equipment and life support systems.

3. The proper use of H2S detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.

4. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

1. The effects of H2S on metal components. If high tensile tubulars are to be used, personnel will be trained in their special maintenance requirements.

2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.

3. The contents and requirements of the H2S Drilling Operations Plan and the Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H2S zone (within 3 days or 500 feet) and weekly H2S and well control drills for all personnel in each crew. The initial training session shall include a review of the site, specific H2S Drilling Operations Plan, and the Public Protection Plan. This plan shall be available at the well site. All personnel will be required to carry documentation that they have received the proper training.

II. H2S SAFETY EQUIPMENT AND SYSTEMS

NOTE: All H2S safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonably expected to contain H2S.

1. Well Control Equipment:

   A. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit.

   B. Auxiliary equipment to include: annular preventer

2. Protective Equipment for Essential Personnel:

   Five – 30 minute self – contained breathing apparatuses (Scott).

3. H2S Detection and Monitoring Equipment:

   A. Fixed electronic monitoring system and alarms with two monitors: one at shaker and one at bell nipple.

4. Visual Warning Systems:

   A. Two windsocks with frames and extension poles.

   B. One entrance sign with flags (with "CAUTION" and present well condition).

   C. Two briefing area signs.

5. Mud Program:

   A. The mud program has been designed to minimize the volume of H2S circulated to the surface. Proper mud weight, safe drilling practice, and the use of H2S scavengers will minimize hazards when penetrating H2S bearing zones.

6. Metallurgy:

   A. All drill strings, casing, tubing, wellhead, blowout preventers, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H2S service.

7. Communication:

   A. Cellular telephones in Company vehicles and at rig.

8. Well Testing:

   A. Drill stem testing will be performed with a minimum number of personnel in the immediate vicinity which is necessary to safely and adequately conduct the test. All drill stem testing operations conducted in an H2S environment will use the closed chamber method of testing.

CLAYTON WILLIAMS ENERGY, INC.
SURFACE USE PLAN

Attached to form 3160-3

Lease Name: Rocky Arroyo Federal
Well No.: 1
Location: 990' FNL & 660' FEL, UL A
Sec. 8, T22S, R22E
Eddy Co., NM

1. **Existing Roads:**

A. The well site and elevation for the proposed well are shown on the attached plat.

B. Existing roads are indicated on attached map. Existing roads are adequate for travel during drilling and production operations. Upgrading of the road prior to drilling well will be done when necessary as determined during the onsite inspection.

C. Direction to location:
From the Jct. of U.S. Hwy 285 and State Hwy 137: turn west on 137 and proceed west 8.6 miles to CR 401; continue west on CR 401 9.6 miles to CR 400 on the right (north); go north on CR 400 and proceed 2.3 miles to caliche lease road on left; turn left onto caliche lease road and follow 3.8 miles to 'Y'; take right 'Y' and go 0.6 mile to 'Y'; take right 'Y' and go 0.1 mile to road on right; take road right 0.7 mile to road on left; take left to location.

D. Routine grading and maintenance of existing roads will be conducted as necessary to maintain their condition as long as any operations continue on this lease.

2. **Proposed access Roads:**

Attached map indicates the proposed new access road to be constructed. The road will be constructed as follows:

A. The maximum width of the running surface will be 20'. The road will be crowned and ditched and constructed of 6" rolled and compacted caliche. Ditches will be 3.1 slope and 4 feet wide. Water will be diverted where necessary to avoid ponding, prevent erosion, maintain good drainage, and to be consistent with local drainage patterns. BLM may specify any additions or changes during the onsite inspection.

B. The average grade will be less than 1%

C. No turnouts are planned

D. Culverts, cattle guards, low-water crossing, fence cuts:

E. Surface material will consist of native caliche. Caliche will be obtained from nearest BLM approved pit. Any additional materials required will be purchased from the dirt contractor.

F. The proposed access road will be centerlined flagged.

3. **Location of Existing Wells :** NONE

4. **Location of Existing Wells and/or Proposed Facilities:**

A. **Tank Battery: 2 – 400 bbl. Oil tanks, 1 – 500 bbl. water tank, 30" x 10" HP separator and line heater**

B. **Flowlines: 2-7/8" steel**

5. **Location and type of Water Supply:**

Fresh water to be supplied by area water supply wells.

6. **Source of Construction Materials:**

All caliche required for construction of the drill pad and the proposed new access road will be obtained from a BLM approved caliche pit.

7. **Methods of Handling Waste Disposal:**

A. Drill cuttings not retained for evaluation purposes will be disposed of into the reserve pit.

B. Drilling fluids will be contained in steel mud tanks. The reserve pit will contain any excess drilling fluids or flow from the well during drilling, cementing, and completion operations. The reserve pit will be an earthen pit, approximately 120' x 130' x 10' deep and fences on three sides prior to drilling. It will be fenced on the fourth side immediately following rig removal. The reserve will be plastic-lined to minimize loss of drilling fluids and saturations of the ground with brine water.

C. Water produced from the well during completion may be disposed into the reserve pit or steel tank. After the well is permanently placed on production, produced water will be collected in tanks until hauled by transport to an approved disposal system or separate disposal application will be submitted for appropriate approval. Produced oil will be collected in steel tanks until sold.

D. A portable chemical toilet will be provided on the location for human waste during the drilling and completion operations.

E. Garbage and trash produced during drilling and completion will be put in trash trailer. If well is productive, maintenance waste will be placed in special trash cans and hauled away periodically. All waste material will be contained to prevent scattering by the wind. No toxic waste or hazardous chemicals will be produced by this operation.

F. After the rig is moved out and the well is either completed or abandoned, all waste materials will be cleaned-up within 30 days. No adverse materials will be left on the location. The reserve pit will be completely fenced and kept closed until it has dried. When the reserve pit is dry enough to break out, CWEI will close the pit as per NMOCD guidelines (Rule 19.15.2.50 NMAC, reference OCD Form C-144). And, as weather permits, the unused portion of the well site will be leveled and re-seeded as per BLM specifications. Only the part of the pad required for production will be kept in use. In the event of a dry hole, only a dry hole marker will remain.

8. **Ancillary Facilities:**

No airstrip, campsite, or other facilities will be built as a result of the operations of this well.

9. **Well Site Layout:**

A. **Drill pad:** Per attached plat.

B. Attached plat shows planned orientation for the rig and associated drilling equipment, reserve pit, pipe racks, turnaround and parking areas, and access road. No permanent living facilities are planned, but a temporary foreman/tool pusher's trailer will be on location during the drilling operations.

C. The reserve pit will be lined with high-quality plastic sheeting.

10. **Plans for Restoration of the Surface:**

A. Upon completion of the proposed operations, if the well is to be abandoned, the caliche will be removed from the location and road and returned to the pit from which it was taken. The pit area, after allowing to dry, will be broken out and leveled (see above sec. 7, item. F). The original topsoil will be returned to the entire location, which will be leveled and contoured to as nearly to the original topography as possible.

All trash, garbage, and pit lining will be buried or hauled away in order to leave the location in an aesthetically pleasing condition. All pits will be filled and the location leveled within 120 days after abandonment.

B. The disturbed area will be re-vegetated by re-seeding during the proper growing season with a seed mixture of native grasses as recommended by the BLM.

C. Three sides of the reserve pit will be fenced prior to and during drilling operations. At the time the rig is removed; the reserve pit will be fenced on the rig (fourth) side to prevent livestock or wildlife from being entrapped.

The fencing will remain in place until the pit area is cleaned up and leveled. No oil will be left on the surface of the fluid in the pit. The entire reserve pit will be netted until the fluid has completely evaporated.

D. Upon completion of the proposed operations, if the well is completed; the reserve pit area will be treated as outlined above within the same prescribed time. Topsoil removed from the drill site will be used to re-contour the pit area; any uncased portions of the drill pad to the original natural level and re-seeded as per BLM specifications.

11. **Surface Ownership:**

The wellsite and lease is located entirely on Federal surface.

Other Information:

A. **Terrain:** See Archaeological Report
B. **Soil:** See Archaeological Report
C. **Vegetation:** See Archaeological Report
D. **Surface Use:** See Archaeological Report
E. **Ponds and Streams:** None
F. **Water Wells:** Local
G. **Residences and Buildings:** None
H. **Arroyos, Canyons, Etc.:** Local
I. **Well Sign:** To be installed at the wellsite
J. **Archaeological Resources:** See Archaeological Report

12. **Lessee's and Operator's Representative:**

The Clayton Williams Energy, Inc. representatives responsible for assuring compliance with the Surface Use Plan are:

John Kennedy
Clayton Williams Energy, Inc.
Six Desta Drive, Ste. 3000
Midland, TX 79705
(432) 682-6324

or

Matt Swierc
Clayton Williams Energy, Inc.
Six Desta Drive, Ste. 3000
Midland, TX 79705
(432) 682-6324

Certification:

I hereby certify that I, or persons under my direct supervision, have inspected the drill site and access route; that I am familiar with the conditions which presently exist; that the statements made in this 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 Clayton Williams Energy, Inc. and it's contractors in conformity with this plan and the terms and conditions under which it is approved.

John F. Kennedy
Drilling Manager

UNITED STATES DEPARTMENT OF THE INTERIOR
Bureau of Land Management
Roswell Field Office
2909 West Second Street
Roswell, New Mexico 88201-1287

Statement Accepting Responsibility for Operations

Operator Name:	**Clayton Williams Energy, Inc.**
Street or Box:	**Six Desta Drive, Suite 3000**
City, State:	**Midland, Texas**
Zip Code:	**79705**

The undersigned accepts all applicable terms, conditions, stipulations, and restrictions concerning operations conducted on the leased land or portion thereof, as described below:

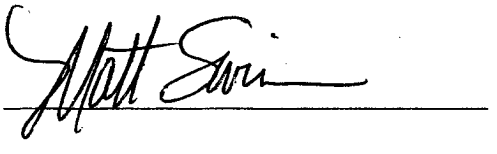
Lease No.: **NMNM 95627**

Legal Description of Land: **Well No. 1, Rocky Arroyo Federal**
Sec. 8, T-22-S, R-22-E
990' FNL & 660' FEL; UL A
Eddy Co., New Mexico

Formation(s) if applicable: **Rocky Arroyo (Morrow Gas)**

Bond Coverage: **$25,000.00 SW (copy attached)**

BLM Bond File No.: **NM2787 (Surety Bond No. RLB0002027)**

Authorized Signature: 

Name: Matt Swierc

Title: Production Superintendent

Phone No.: (432) 682-6324
Fax No.: (432) 688-3225

Date: March 21, 2005

[redacted] Dr., Hobbs, NM 88240

DISTRICT II
[redacted] South First, Artesia, NM 88210

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

DISTRICT IV
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

2040 South Pacheco
Santa Fe, New Mexico 87505

Form C-102
Revised March 17, 1999

Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-015-		Rocky Arroyo (Morrow Gas)

Property Code	Property Name	Well Number
	ROCKY ARROYO FEDERAL	1

OGRID No.	Operator Name	Elevation
25706	CLAYTON WILLIAMS ENERGY,INC.	4473'

Surface Location

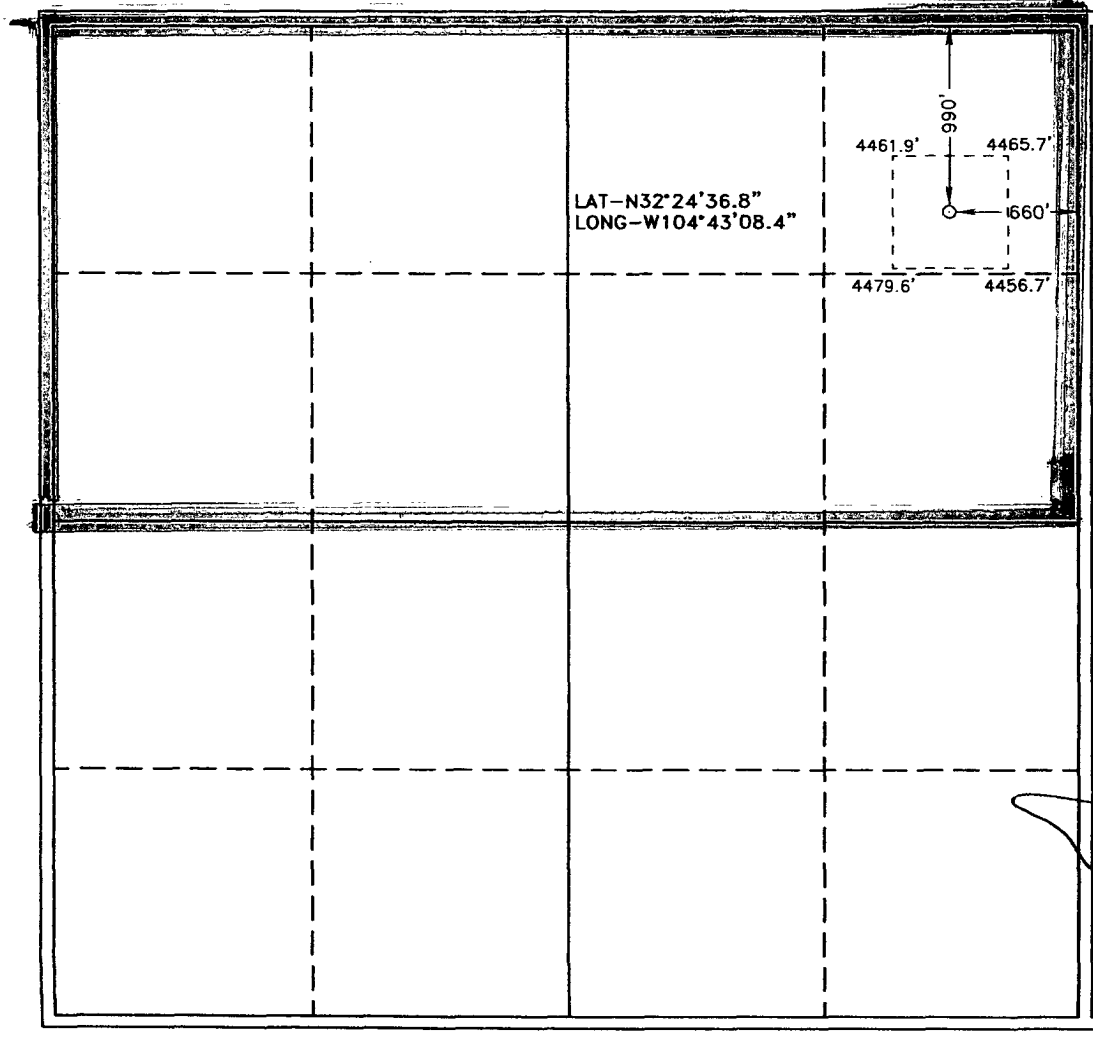
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	8	22 S	22 E		990	NORTH	660	EAST	EDDY

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

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



OPERATOR CERTIFICATION

I hereby certify the the information contained herein is true and complete to the best of my knowledge and belief.

Signature: Betsy Luna

Betsy Luna
Printed Name

Engineering Technician
Title

03-22-2005
Date

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 supervison, and that the same is true and correct to the best of my belief.

FEBRUARY 7, 2005
Date Surveyed

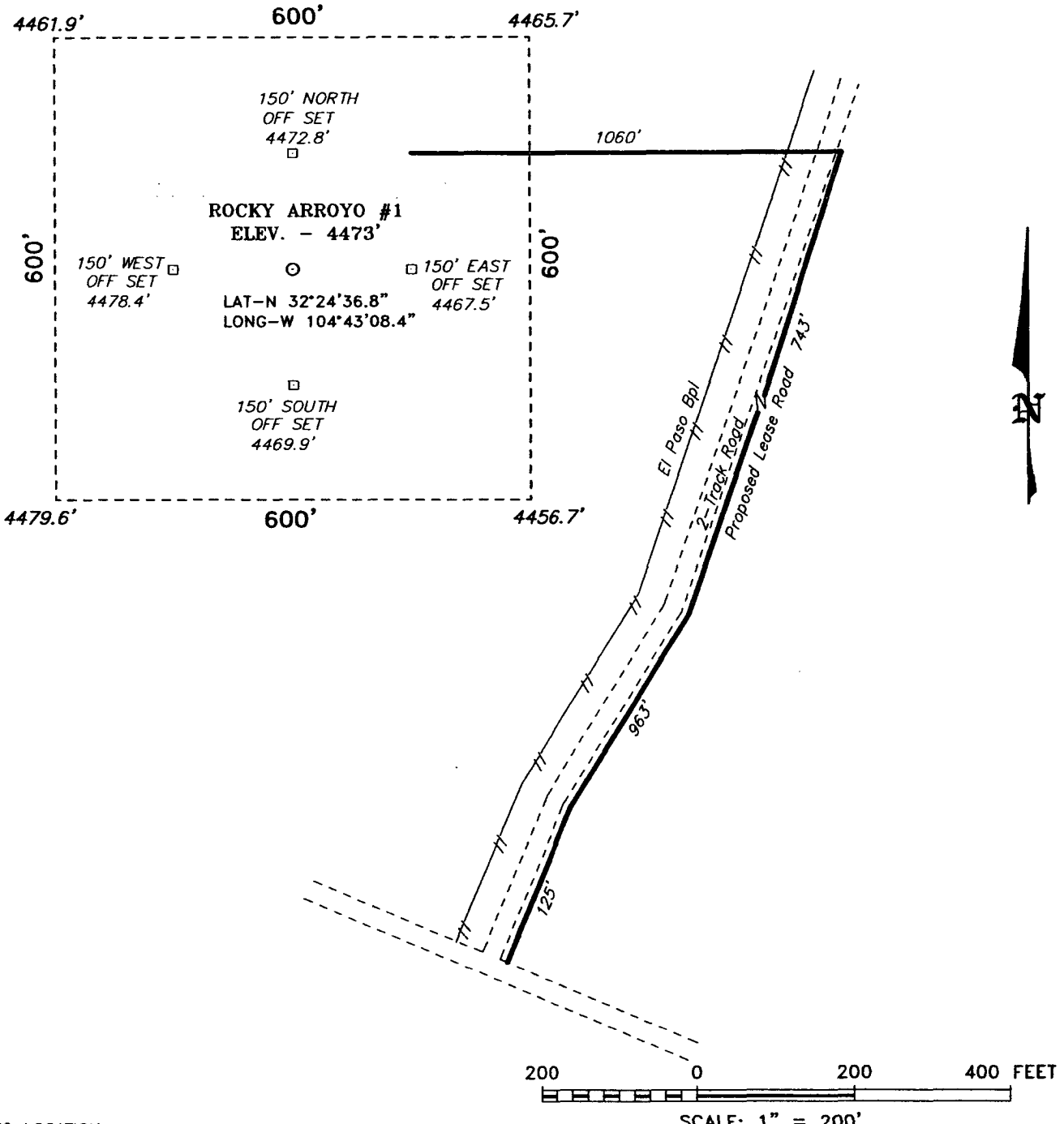
Signature & Seal of Professional Surveyor

GARY L. JONES
NEW MEXICO
7977
REGISTERED PROFESSIONAL LAND SURVEYOR
BASIN SURVEYS

W.O. No. 4956

Certificate No. Gary L. Jones 7977

CTION 8, TOWNSHIP 22 SOUTH, RANGE 22 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO.



DIRECTIONS TO LOCATION:

FROM THE JUNCTION OF STATE HWY 137(QUEENS HWY) AND US HWY 285, GO WESTERLY ON HWY 137 FOR 8.5 MILES TO CO. RD. 401(MARATHON ROAD); THENCE WEST ON CO. RD. 401 FOR 9.5 MILES; THENCE WEST ON CO. RD. 400(BOX CANYON) FOR 2.1 MILES TO LEASE ROAD; THENCE SOUTH ON LEASE ROAD FOR 4.2 MILES TO PROPOSED LEASE ROAD.

BASIN SURVEYS P.O. BOX 1786 - HOBBS, NEW MEXICO

CLAYTON WILLIAMS ENERGY, INC.

REF: ROCKY ARROYO FED No. 1 / Well Pad Topo

THE ROCKY ARROYO FED. No. 1 LOCATED 990' FROM THE NORTH LINE AND 660' FROM THE EAST LINE OF SECTION 8, TOWNSHIP 22 SOUTH, RANGE 22 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO.

W.O. Number: 4956	Drawn By: K. GOAD		
Date: 02-10-2005	Disk: KJG CD#4 - 4956A.DWG	Survey Date: 02-07-2005	Sheet 1 of 1 Sheets

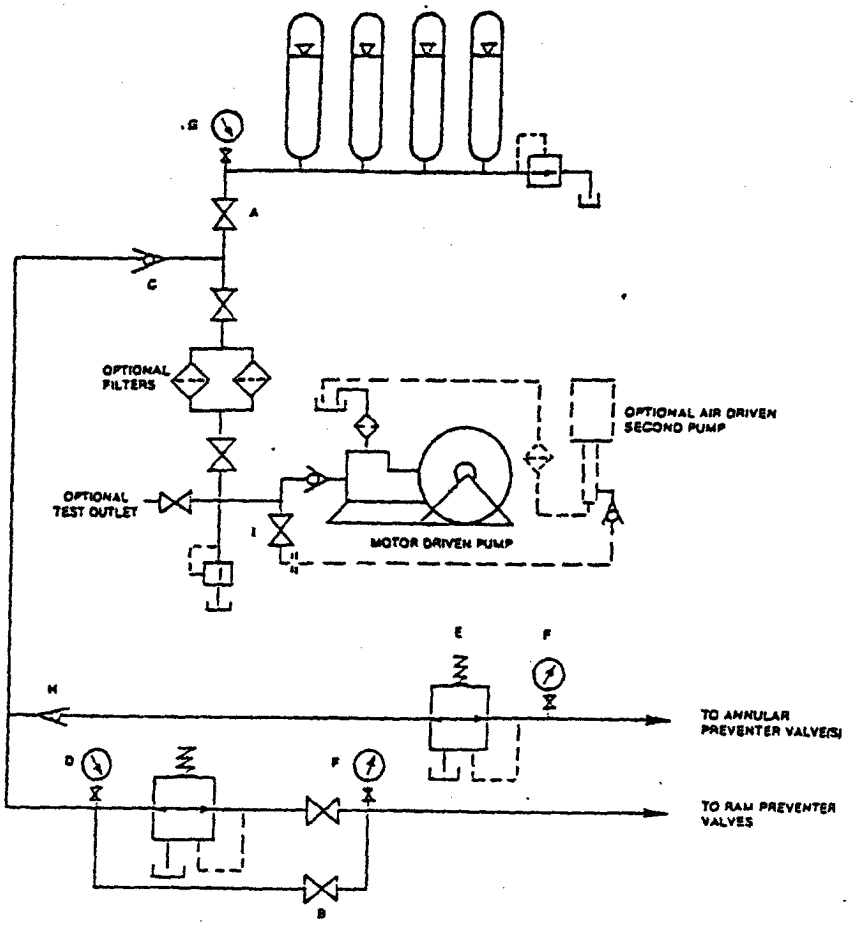


FIGURE K6-1. The schematic sketch of an accumulator system shows required and optional components.

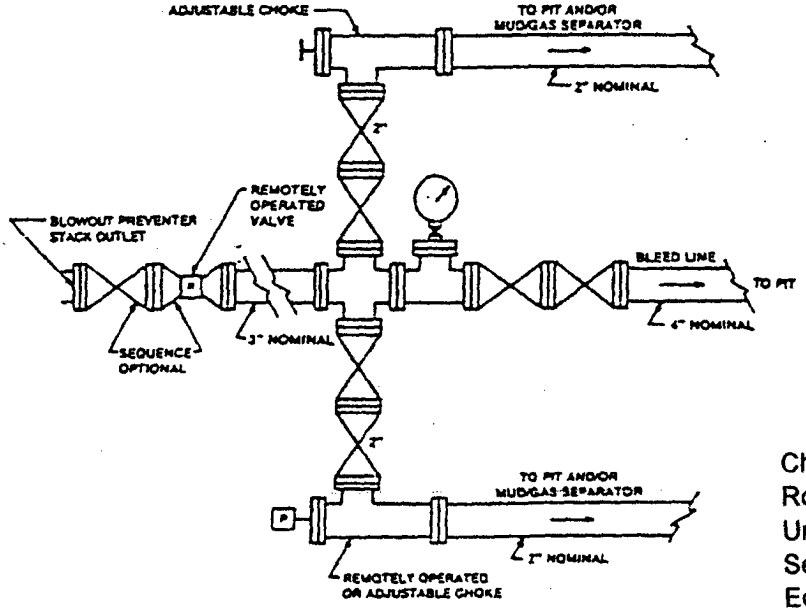
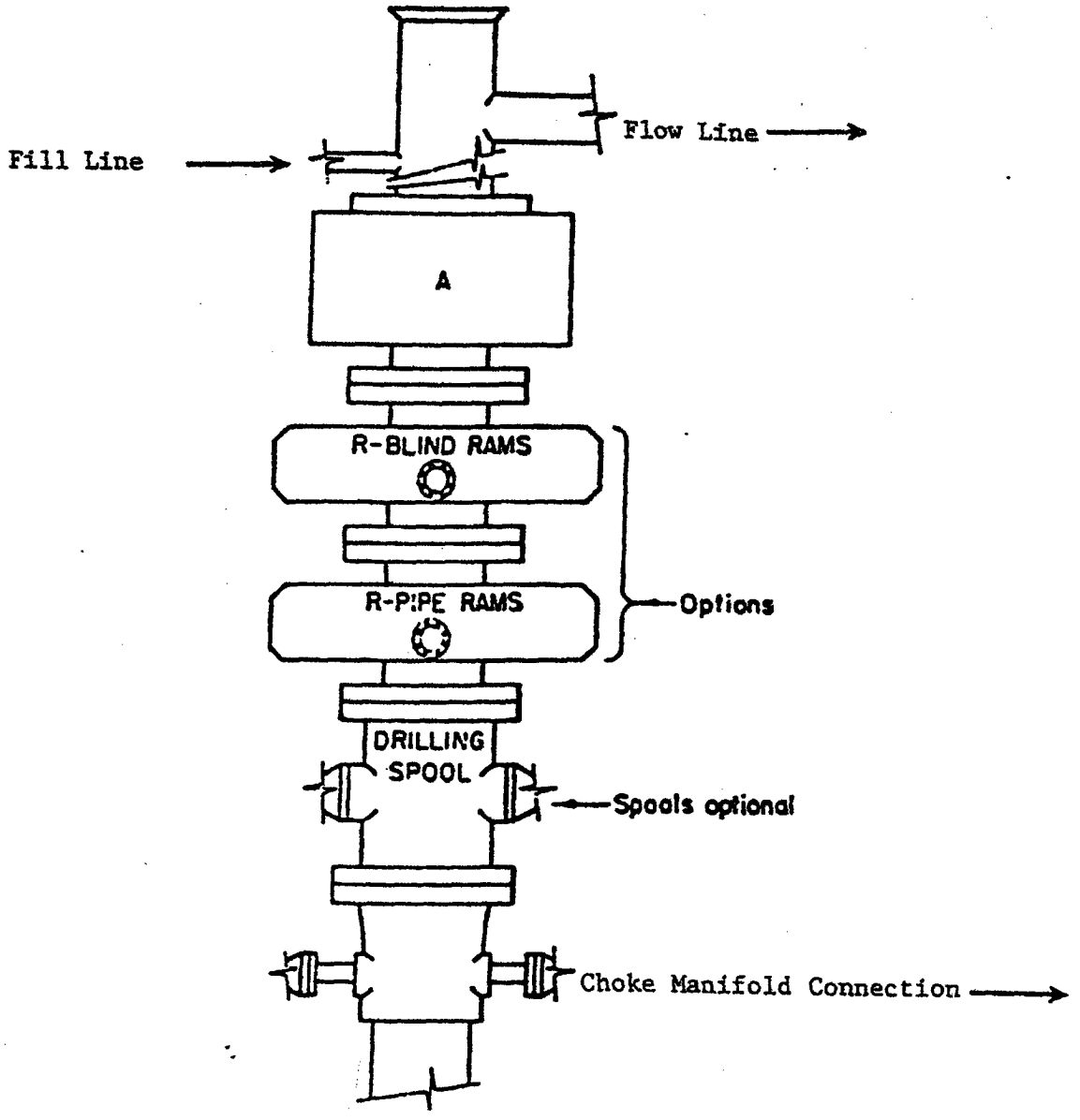


FIGURE K4-2. Typical choke manifold assembly for 5M rated working pressure service — surface installation.

Choke Manifold Arrangement
Rocky Arroyo No. 1
Unit A
Sec. 8 - T22S - R22E
Eddy, NM



ARRANGEMENT SRRA

1500 Series
5000 PSI WP

BOPE Arrangement
Rocky Arroyo No. 1
Unit A
Sec. 8 - T22S - R22E
Eddy, NM

CONTINGENCY PLAN

CLAYTON WILLIAMS ENERGY, INC.

ROCKY ARROYO FEDERAL #1

990' FNL & 660' FEL; UL A
Section 8: T-22-S R-22-E
Eddy County, New Mexico

Prepared For:	**Clayton Williams Energy, Inc.**
Date Prepared:	**March 22, 2005**
Prepared By:	**INDIAN Fire & Safety, Inc.**

TABLE OF CONTENTS

H2S CONTINGENCY PLAN
1. SCOPE 1
2. OBJECTIVE 1
3. DISCUSSION OF PLAN 2

EMERGENCY PROCEDURES
1. EMERGENCY REACTION STEPS 3-5

IGNITION PROCEDURES
1. RESPONSIBILITY 6
2. INSTRUCTIONS FOR IGNITING THE WELL 7

TRAINING PROGRAM
1. TRAINING REQUIREMENTS 8

EMERGENCY EQUIPMENT REQUIREMENTS 9-11

CHECK LISTS
1. STATUS CHECK LIST 12
2. PROCEDURAL CHECK LIST 13

EVACUATION PLAN 14
1. EMERGENCY ACTIONS 15
2. PHONE LIST – GOVERNMENT AGENCIES 16
3. PHONE LIST – COMPANY CONTACTS 16a

MAPS & PLATS
1. MAP OF WELLSITE & PUBLIC WITHIN RADIUS OF EXPOSURE 17

GENERAL INFORMATION
1. 100 PPM RADIUS CHART 18
2. 500 PPM RADIUS CHART 19
3. TOXIC EFFECTS OF HYDROGEN SULFIDE POISONING 20-21
4. USE OF SELF-CONTAINED BREATHING EQUIPMENT 22-23
5. RESCUE – FIRST AID FOR H2S POISONING 24

HYDROGEN SULFIDE CONTINGENCY PLAN

SCOPE

THIS CONTINGENCY PLAN ESTABLISHES GUIDELINES FOR THE PUBLIC, ALL COMPANY EMPLOYEES WHO'S WORK ACTIVITIES MAY INVOLVE EXPOSURE TO HYDROGEN SULFIDE (H2S) GAS.

OBJECTIVE

1. PREVENT ANY AND ALL ACCIDENTS, AND PREVENT THE UNCONTROLLED RELEASE OF HYDROGEN SULFIDE INTO THE ATMOSPHERE.

2. PROVIDE PROPER EVACUATION PROCEDURES TO COPE WITH EMERGENCIES.

3. PROVIDE IMMEDIATE AND ADEQUATE MEDICAL ATTENTION SHOULD AN INJURY OCCUR.

DISCUSSION

GEOLOGICAL PROGNOSIS

IMPLEMENTATION:	THIS PLAN WITH ALL DETAILS IS TO BE FULLY IMPLEMENTED AFTER DRILLING TO INTERMEDIATE CASING POINT.
EMERGENCY RESPONSE PROCEDURE:	THIS SECTION OUTLINES THE CONDITIONS AND DENOTES STEPS TO BE TAKEN IN THE EVENT OF AN EMERGENCY.
EMERGENCY EQUIPMENT 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 PRIOR TO DRILLING TO INTERMEDIATE CASING POINT.
DRILLING EMERGENCY CALL LISTS:	INCLUDED ARE THE TELEPHONE NUMBERS OF ALL PERSONS TO BE CONTACTED SHOULD AN EMERGENCY EXIST.
BRIEFING:	THIS SECTION DEALS WITH THE BRIEFING OF ALL PEOPLE INVOLVED IN THE DRILLING OPERATION.
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 INSURE ADHERENCE TO THE PLAN.
GENERAL INFORMATION:	A GENERAL INFORMATION SECTION HAS BEEN INCLUDED TO SUPPLY SUPPORT INFORMATION.

EMERGENCY PROCEDURES

A. IN THE EVENT OF ANY EVIDENCE OF H2S LEVEL ABOVE 10 PPM, TAKE THE FOLLOWING STEPS:

1. SECURE BREATHING EQUIPMENT.

2. ORDER NON-ESSENTIAL PERSONNEL OUT OF DANGER ZONE.

3. TAKE STEPS TO DETERMINE IF THE H2S LEVEL CAN BE CORRECTED OR SUPPRESSED AND, IF SO, PROCEED IN NORMAL OPERATION.

B. IF UNCONTROLLABLE CONDITIONS OCCUR:

1. TAKE STEPS TO PROTECT AND/OR REMOVE ANY PUBLIC IN THE DOWN-WIND AREA FROM THE RIG – PARTIAL EVACUATION AND ISOLATION. NOTIFY NECESSARY PUBLIC SAFETY PERSONNEL AND THE BUREAU OF LAND MANAGEMENT OF THE SITUATION.

2. REMOVE ALL PERSONNEL TO SAFE BREATHING AREA.

3. NOTIFY PUBLIC SAFETY PERSONNEL TO SAFE BREATHING AREA.

4. PROCEED WITH BEST PLAN (AT THE TIME) TO REGAIN CONTROL OF THE WELL. MAINTAIN TIGHT SECURITY AND SAFETY PROCEDURES.

C. RESPONSIBILITY:

1. DESIGNATED PERSONNEL.

a. SHALL BE RESPONSIBLE FOR THE TOTAL IMPLEMENTATION OF THIS PLAN.

b. SHALL BE IN COMPLETE COMMAND DURING ANY EMERGENCY.

c. SHALL DESIGNATE A BACK-UP. . .

EMERGENCY PROCEDURES

*(Procedures are the same for both Drilling and Tripping)

ALL PERSONNEL:

1. ON ALARM, DON ESCAPE UNIT AND REPORT IN UP WIND BRIEFING AREA.
2. CHECK STATUS OF PERSONNEL (BUDDY SYSTEM).
3. SECURE BREATHING EQUIPMENT.
4. AWAIT ORDERS FROM SUPERVISOR.

DRILLING FOREMAN:

1. REPORT TO UP WIND BRIEFING AREA.
2. DON BREATHING EQUIPMENT AND RETURN TO POINT OF RELEASE WITH TOOL PUSHER OR DRILLER (BUDDY SYSTEM).
3. DETERMINE H2S CONCENTRATIONS.
4. ASSESS SITUATION AND TAKE CONTROL MEASURES.

TOOL PUSHER:

1. REPORT TO UP WIND BRIEFING AREA.
2. DON BREATHING EQUIPMENT AND RETURN TO POINT OF RELEASE WITH DRILLING FOREMAN OR DRILLER (BUDDY SYSTEM).
3. DETERMINE H2S CONCENTRATION.
4. ASSESS SITUATION AND TAKE CONTROL MEASURES.

DRILLER:

1. DON ESCAPE UNIT.
2. CHECK MONITOR FOR POINT OF RELEASE.
3. REPORT TO BRIEFING AREA.
4. CHECK STATUS OF PERSONNEL (IN AN ATTEMPT TO RESCUE, USE THE BUDDY SYSTEM).
5. ASSIGNS LEAST ESSENTIAL PERSON TO NOTIFY DRILLING FOREMAN AND TOOL PUSHER BY QUICKEST MEANS IN CASE OF THEIR ABSENCE.
6. ASSUMES THE RESPONSIBILITIES OF THE DRILLING FORMAN AND TOOL PUSHER UNTIL THEY ARRIVE SHOULD THEY BE ABSENT.

EMERGENCY PROCEDURES

DERRICK MAN FLOOR MAN #1 FLOOR MAN #2	1.	WILL REMAIN IN BRIEFING AREA UNTIL INSTRUCTED BY SUPERVISOR.
MUD ENGINEER:	1. 2.	REPORT TO BRIEFING AREA. WHEN INSTRUCTED, BEGIN CHECK OF MUD FOR PH AND H2S LEVEL. (GARETT GAS TRAIN.)
SAFETY PERSONNEL:	1.	MASK UP AND CHECK STATUS OF ALL PERSONNEL AND SECURE OPERATIONS AS INSTRUCTED BY DRILLING FOREMAN AND REPORT TO BRIEFING AREA.

TAKING A KICK

WHEN TAKING A KICK DURING AN H2S EMERGENCY, ALL PERSONNEL WILL FOLLOW STANDARD BOP PROCEDURES AFTER REPORTING TO BRIEFING AREA AND MASKING UP.

OPEN-HOLE LOGGING

ALL UNNECESSARY PERSONNEL OFF FLOOR. DRILLING FOREMAN AND SAFETY PERSONNEL SHOULD MONITOR CONDITION, ADVISE STATUS AND DETERMINE NEED FOR USE OF AID EQUIPMENT.

RUNNING CASING OR PLUGGING

FOLLOWING THE SAME "TRIPPING" PROCEDURE AS ABOVE. DRILLING FOREMAN AND SAFETY PERSONNEL SHOULD DETERMINE IF ALL PERSONNEL HAVE ACCESS TO PROTECTIVE EQUIPMENT.

IGNITION PROCEDURES

THE DECISION TO IGNITE THE WELL IS THE RESPONSIBILITY OF COMPANY FOREMAN. IN THE EVENT HE IS INCAPACITATED, IT BECOMES THE RESPONSIBILITY OF THE CONTRACT RIG TOOL PUSHER. THE 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 CONTROLLING THE BLOWOUT UNDER THE PREVAILING CONDITIONS AT THE WELL.

NOTIFY THE DISTRICT OFFICE IF TIME PERMITS, BUT DO NOT DELAY IF HUMAN LIFE IS IN DANGER.

INITIATE FIRST PHASE OF EVACUATION PLAN.

IGNITION PROCEDURES

INSTRUCTIONS FOR IGNITING THE WELL

1. TWO PEOPLE ARE REQUIRED FOR THE ACTUAL IGNITING OPERATION. THEY MUST WEAR SELF-CONTAINED BREATHING UNITS AND HAVE SAFETY ROPE ATTACHED. ONE MAN (TOOL PUSHER OR SAFETY ENGINEER) WILL CHECK THE ATMOSPHERE FOR EXPLOSIVE GASES WITH THE EXPLOSIMETER. THE OTHER MAN (DRILLING FOREMAN) IS RESPONSIBLE FOR IGNITING THE WELL.
2. PRIMARY METHOD TO IGNITE: 25 MM FLARE GUN WITH RANGE OF APPROXIMATELY 500 FEET.
3. IGNITE UP WIND AND DO NOT APPROACH ANY CLOSER THAN IS WARRANTED.
4. SELECT THE IGNITION SITE BEST FOR PROTECTION, AND WHICH OFFERS AN EASY ESCAPE ROUTE.
5. BEFORE FIRING, CHECK FOR PRESENCE OF COMBUSTIBLE GAS.
6. AFTER LIGHTING, CONTINUE EMERGENCY ACTION AND PROCEDURE AS BEFORE.
7. ALL UNASSIGNED PERSONNEL WILL LIMIT THEIR ACTIONS TO THOSE DIRECTED BY THE DRILLING FOREMAN.

REMEMBER: AFTER 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 REQUIREMENTS

WHEN WORKING IN AN AREA WHERE HYDROGEN SULFIDE GAS (H2S) MIGHT BE ENCOUNTERED, DEFINITE TRAINING REQUIREMENTS MUST BE CARRIED OUT. ALL COMPANIES WILL INSURE THAT ALL PERSONNEL AT THE WELL SITE WILL HAVE HAD ADEQUATE TRAINING IN THE FOLLOWING:

1. HAZARDS AND CHARACTERISTICS OF H2S.
2. PHYSICAL EFFECTS OF HYDROGEN SULFIDE ON THE HUMAN BODY.
3. TOXICITY OF HYDROGEN SULFIDE AND SULFUR DIOXIDE.
4. H2S DETECTION.
5. EMERGENCY RESCUE.
6. RESUSCITATORS.
7. FIRST AID AND ARTIFICIAL RESPIRATION.
8. EFFECTS OF H2S ON METALS.
9. LOCATION SAFETY.

SERVICE COMPANY AND VISITING PERSONNEL

A. EACH SERVICE COMPANY THAT WILL BE ON THIS WELL WILL BE NOTIFIED IF THE ZONE CONTAINS H2S.

B. EACH SERVICE COMPANY MUST PROVIDE FOR THE TRAINING AND EQUIPMENT OF THEIR EMPLOYEES BEFORE THEY ARRIVE AT THE WELL SITE.

C. EACH SERVICE COMPANY WILL BE EXPECTED TO ATTEND A WELL SITE BRIEFING.

EMERGENCY EQUIPMENT REQUIREMENTS

1. SIGNS

   A. ONE SIGN LOCATED AT LOCATION ENTRANCE WITH THE FOLLOWING LANGUAGE:

(LEASE)
CAUTION – POTENTIAL POISON GAS
HYDROGEN SULFIDE
NO ADMITTANCE WITHOUT AUTHORIZATION

2. WIND SOCK – WIND STREAMERS

   A. ONE 36" (IN LENGTH) WIND SOCK LOCATED AT PROTECTION CENTER, AT HEIGHT VISIBLE FROM RIG FLOOR.
   B. ONE 36" (IN LENGTH) WIND SOCK LOCATED AT HEIGHT VISIBLE FROM PIT AREAS.

3. HYDROGEN SULFIDE DETECTOR AND ALARMS

   A. H2S MONITORS WITH ALARMS WILL BE LOCATED ON THE RIG FLOOR, AT THE BELL NIPPLE, AND AT THE FLOW LINE. THESE MONITORS WILL BE SET TO ALARM AT 10 PPM WITH RED LIGHT, AND TO ALARM AT 15 PPM WITH RED LIGHT AND AUDIBLE ALARM.
   B. HAND OPERATED DETECTORS WITH TUBES.
   C. H2S MONITOR TESTER.

4. CONDITION FLAGS

   A. ONE EACH OF GREEN, YELLOW, AND RED CONDITION FLAGS TO BE DISPLAYED TO DENOTE CONDITIONS.

GREEN – NORMAL CONDITIONS
YELLOW – POTENTIAL DANGER
RED – DANGER, H2S PRESENT

   B. CONDITION FLAG SHALL BE POSTED AT LOCATION SIGN ENTRANCE.

EMERGENCY EQUIPMENT REQUIREMENTS

5. AUXILIARY RESCUE EQUIPMENT

   A. STRETCHER
   B. 100' LENGTH OF 5/8" NYLON ROPE.

6. MUD INSPECTION DEVICES

   GARRETT GAS TRAIN OR HACH TESTER FOR INSPECTION OF SULFIDE CONCENTRATION IN MUD SYSTEM.

7. FIRE EXTINGUISHER

   ADEQUATE FIRE EXTINGUISHERS SHALL BE LOCATED AT STRATEGIC LOCATIONS.

8. BLOW OUT PREVENTION EQUIPMENT

   THE WELL SHALL HAVE HYDRAULIC BOP EQUIPMENT FOR THE ANTICIPATED BHP OF 1500 PSI. EQUIPMENT IS TO BE TESTED ON INSTALLATION.

9. COMBUSTIBLE GAS DETECTOR

   THERE SHALL BE ONE COMBUSTIBLE GAS DETECTOR ON LOCATION AT ALL TIMES.

10. BOP TESTING

    BOP AND CHOKE LINE AND KILL LINE WILL BE TESTED.

11. AUDIO SYSTEM

    RADIO COMMUNICATION WILL BE AVAILABLE AT THE RIG.
    A. RIG FLOOR OR TRAILER
    B. VEHICLE

12. SPECIAL CONTROL EQUIPMENT

    A. HYDRAULIC BOP EQUIPMENT WITH REMOTE CONTROL ON GROUND.
    B. ROTATING HEAD

EMERGENCY EQUIPMENT REQUIREMENTS

13. EVACUATION PLAN

EVACUATION ROUTES SHOULD BE ESTABLISHED PRIOR TO SPUDDING EACH WELL AND DISCUSSED WITH ALL RIG PERSONNEL.

14. DESIGNATED AREA

A. PARKING AND VISITOR AREA: ALL VEHICLES ARE TO BE PARKED AT A PREDETERMINED SAFE DISTANCE FROM THE WELLHEAD. THIS WILL BE THE DESIGNATED SMOKING AREA.

B. TWO BRIEFING AREAS ON EITHER SIDE OF THE LOCATION AT THE MAXIMUM ALLOWABLE DISTANCE FROM THE WELL BORE SO THEY OFFSET PREVAILING WINDS PERPENDICULARLY, OR AT A 45-DEGREE ANGLE IF WIND DIRECTION TENDS TO SHIFT IN THE AREA.

C. PROTECTION CENTERS OR IF A MOVABLE TRAILER IS USED, IT SHOULD BE DEPT UPWIND OF EXISTING WINDS. WHEN WIND IS FROM THE PREVAILING DIRECTIONS, BOTH PROTECTION CENTERS SHOULD BE ACCESSIBLE.

STATUS CHECK LIST

NOTE: ALL ITEMS ON THIS LIST MUST BE COMPLETED BEFORE DRILLING TO 2,000'.

1. SIGN AT LOCATION ENTRANCE.
2. TWO (2) WIND SOCKS LOCATED AS REQUIRED.
3. TWO (2) 30-MINUTE PRESSURE DEMAND AIR PACKS ON LOCATION FOR ALL RIG PERSONNEL AND MUD LOGGERS.
4. AIR PACK INSPECTED FOR READY USE.
5. CASCADE SYSTEM AND HOSE LINE HOOK-UP.
6. CASCADE SYSTEM FOR REFILLING AIR BOTTLES.
7. SAFE BREATHING AREAS SET UP.
8. CONDITION FLAG ON LOCATION AND READY FOR USE.
9. H2S DETECTION SYSTEM HOOKED UP.
10. H2S ALARM SYSTEM HOOKED UP AND READY.
11. OXYGEN RESUSCITATOR ON LOCATION AND TESTED FOR USE.
12. STRETCHER ON LOCATION AT SAFETY TRAILER.
13. 1 – 100' LENGTH OF NYLON ROPE ON LOCATION.
14. ALL RIG CREW AND SUPERVISORS TRAINED AS REQUIRED.
15. ALL OUTSIDE SERVICE CONTRACTORS ADVISED OF POTENTIAL H2S HAZARD ON WELL.
16. NO SMOKING SIGN POSTED.
17. HAND OPERATED H2S DETECTOR WITH TUBES ON LOCATION.

CHECKED BY:_____ DATE:_____

PROCEDURAL CHECK LIST

PERFORM EACH TOUR:

1. CHECK FIRE EXTINGUISHERS TO SEE THAT THEY HAVE THE PROPER CHARGE.

2. CHECK BREATHING EQUIPMENT TO ENSURE THAT IT HAS NOT BEEN TAMPERED WITH.

3. MAKE SURE ALL THE H2S DETECTION SYSTEM IS OPERATIVE.

PERFORM EACH WEEK:

1. CHECK EACH PIECE OF BREATHING EQUIPMENT TO MAKE SURE THAT DEMAND REGULATOR IS WORKING. THIS REQUIRES THAT THE BOTTLE BE OPENED AND THE MASK ASSEMBLY BE PUT ON TIGHT ENOUGH SO THAT WHEN YOU INHALE, YOU RECEIVE AIR.

2. BLOW OUT PREVENTER SKILLS.

3. CHECK SUPPLY PRESSURE ON BOP ACCUMULATOR STAND BY SOURCE.

4. CHECK ALL SKA-PAC UNITS FOR OPERATION: DEMAND REGULATOR, ESCAPE BOTTLE AIR VOLUMES, SUPPLY BOTTLE OF AIR VOLUME.

5. CHECK BREATHING EQUIPMENT MASK ASSEMBLY TO SEE THAT STRAPS ARE LOOSENED AND TURNED BACK, READY TO PUT ON.

6. CHECK PRESSURE ON BREATHING EQUIPMENT AIR BOTTLES TO MAKE SURE THEY ARE CHARGED TO FULL VOLUME.

7. CONFIRM PRESSURE ON ALL SUPPLY AIR BOTTLES.

8. PERFORM BREATHING EQUIPMENT DRILLS WITH ON-SITE PERSONNEL.

9. CHECK THE FOLLOWING SUPPLIES FOR AVAILABILITY.

   A. EMERGENCY TELEPHONE LIST.
   B. HAND OPERATED H2S DETECTORS AND TUBES.

GENERAL EVACUATION PLAN

THE DIRECT LINES OF ACTION PREPARED BY **INDIAN FIRE & SAFETY, INC.** TO PROTECT THE PUBLIC FROM HAZARDOUS GAS SITUATIONS ARE AS FOLLOWS:

1. WHEN THE COMPANY APPROVED SUPERVISOR (DRILLING FOREMAN, CONSULTANT, RIG PUSHER, OR DRILLER) DETERMINES THE H2S 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 AREA MAP.

2. "COMPANY MAN" OR DESIGNEE WILL NOTIFY LOCAL GOVERNMENT AGENCY THAT A HAZARDOUS CONDITION EXISTS AND EVACUATION NEEDS TO BE IMPLEMENTED.

3. COMPANY SAFETY PERSONNEL THAT HAVE BEEN TRAINED IN THE USE OF H2S DETECTION EQUIPMENT AND SELF-CONTAINED BREATHING EQUIPMENT WILL MONITOR H2S CONCENTRATIONS, WIND DIRECTIONS, AND AREA OF EXPOSURE. THEY WILL DELINEATE THE OUTER PERIMETER OF THE HAZARDOUS GAS AREA. EXTENSION TO THE EVACUATION AREA WILL BE DETERMINED FROM INFORMATION GATHERED.

4. LAW ENFORCEMENT PERSONNEL (STATE POLICE, POLICE DEPT., FIRE DEPT., AND SHERIFF'S DEPT.) WILL BE CALLED TO AID IN SETTING UP AND MAINTAINING ROAD BLOCKS. ALSO, THEY WILL AID IN EVACUATION OF THE PUBLIC IF NECESSARY.

IMPORTANT: 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.

EMERGENCY ACTIONS

WELL BLOWOUT – IF EMERGENCY

1. EVACUATE ALL PERSONNEL IF POSSIBLE.
2. IF SOUR GAS – EVACUATE RIG PERSONNEL.
3. IF SOUR GAS – EVACUATE PUBLIC WITHIN 1 HOUR RADIUS OF EXPOSURE.
4. DON SCBA AND RESCUE.
5. CALL 911 FOR EMERGENCY HELP (FIRE DEPT AND AMBULANCE) AND NOTIFY SR. DRILLING FOREMAN AND DISTRICT FOREMAN.
6. GIVE FIRST AID.

PERSON DOWN LOCATION/FACILITY

1. IF IMMEDIATELY POSSIBLE, CONTACT 911. GIVE LOCATION AND WAIT FOR CONFIRMATION.
2. DON SCBA AND RESCUE.

EMERGENCY PHONE LIST

GOVERNMENTAL AGENCIES

Eddy County Sheriff's Office		911
Non emergency	505-746-9888	
Fire Departments		911
Artesia - Non-emergency	505-746-5050	
Atoka – Non-emergency.....	505-746-5050	
State Police Department		911
Non-emergency	505-437-1313	
Ambulance		911
Artesia – Non Emergency.....	505-746-5050	
Atoka – Non-Emergency.....	505-746-5050	
Hospital -Artesia	505-748-3333	
Indian Fire & Safety, Inc.		
24 Hour Emergency Service	800-530-8693	

CLAYTON WILLIAMS ENERGY, INC.
COMPANY EMERGENCY NUMBERS

Clayton Williams Energy, Inc.

Midland, Texas	432-682-6324

John Kennedy – Drilling Manager

Office	432-688-3218
Pager	800-917-9815
Home	432-620-0769

Mike Langford

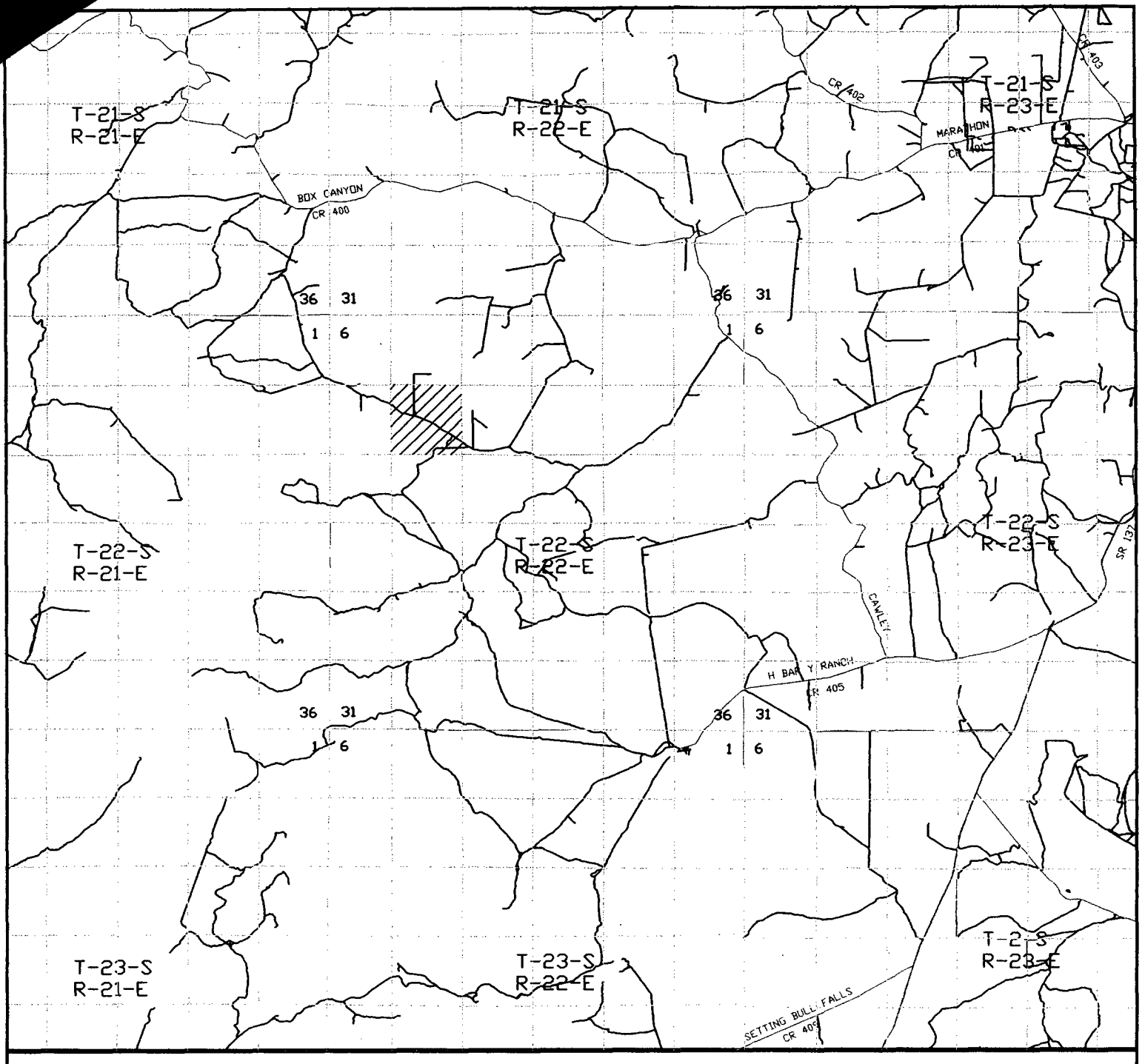
Sierra Engineering	432-683-8000
Cell	432-557-4698

Matt Swierc – Production and Regulatory

Office	432-688-3251
Fax	877-626-8106
Home	432-699-0147

Phillip Creech – Production Foreman

Cell	432-634-4018
Pager	877-612-6746
Home	432-389-5793



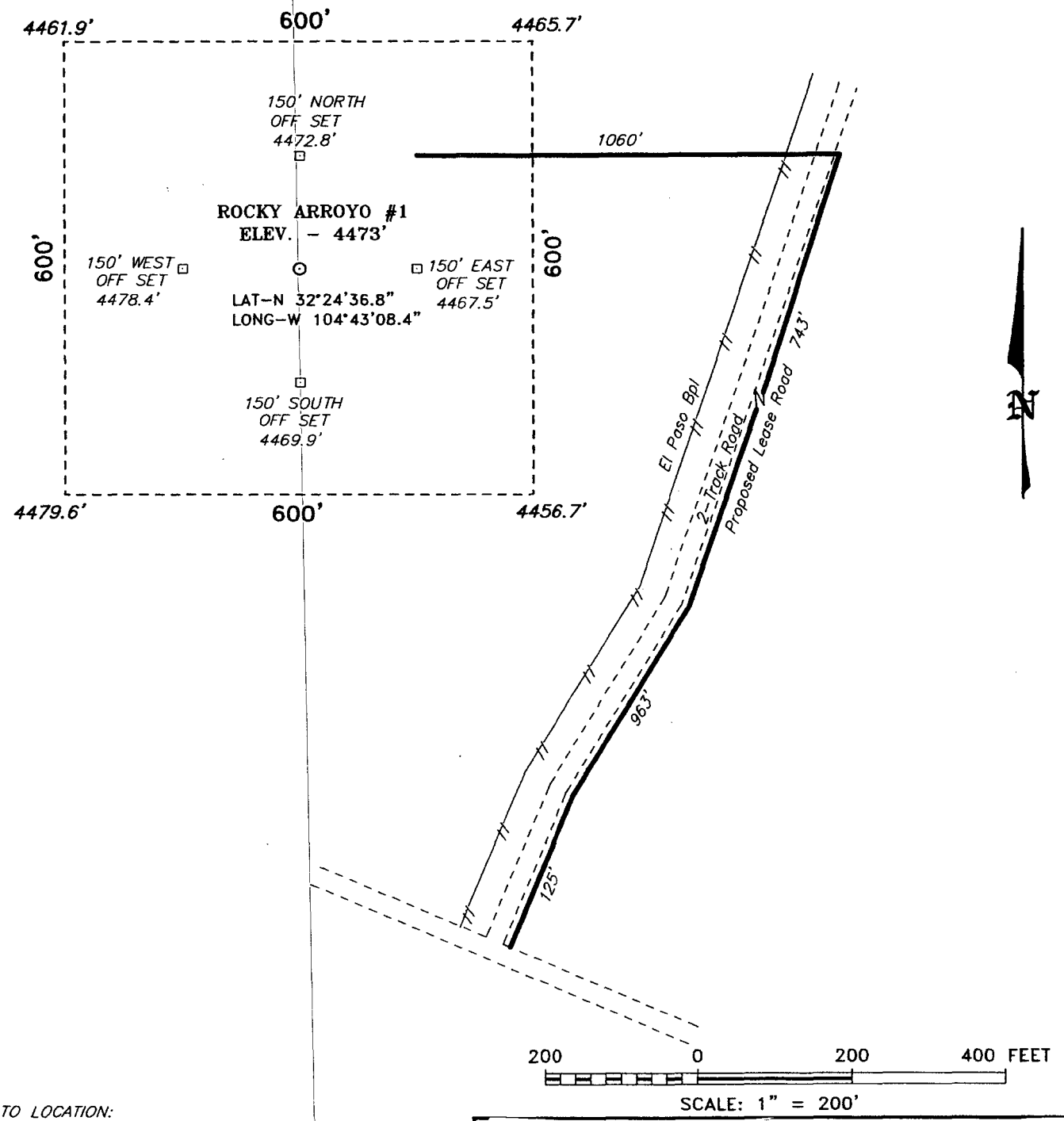
ROCKY ARROYO FEDERAL #1
Located at 990' FNL and 660' FEL
Section 8, Township 22 South, Range 22 East,
N.M.P.M., Eddy County, New Mexico.

basin surveys
focused on excellence in the oilfield
P.O. Box 1786
1120 N. West County Rd.
Hobbs, New Mexico 88241
(505) 393-7316 - Office
(505) 392-3074 - Fax
basinsurveys.com

W.O. Number:	4956AA - KJG CD#5
Survey Date:	02-07-2005
Scale:	1" = 2 miles
Date:	02-10-2005

CLAYTON WILLIAMS ENERGY, INC.

SECTION 8, TOWNSHIP 22 SOUTH, RANGE 22 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO.



DIRECTIONS TO LOCATION:

FROM THE JUNCTION OF STATE HWY 137(QUEENS HWY) AND US HWY 285, GO WESTERLY ON HWY 137 FOR 8.5 MILES TO CO. RD. 401(MARATHON ROAD); THENCE WEST ON CO. RD. 401 FOR 9.5 MILES; THENCE WEST ON CO. RD. 400(BOX CANYON) FOR 2.1 MILES TO LEASE ROAD; THENCE SOUTH ON LEASE ROAD FOR 4.2 MILES TO PROPOSED LEASE ROAD.

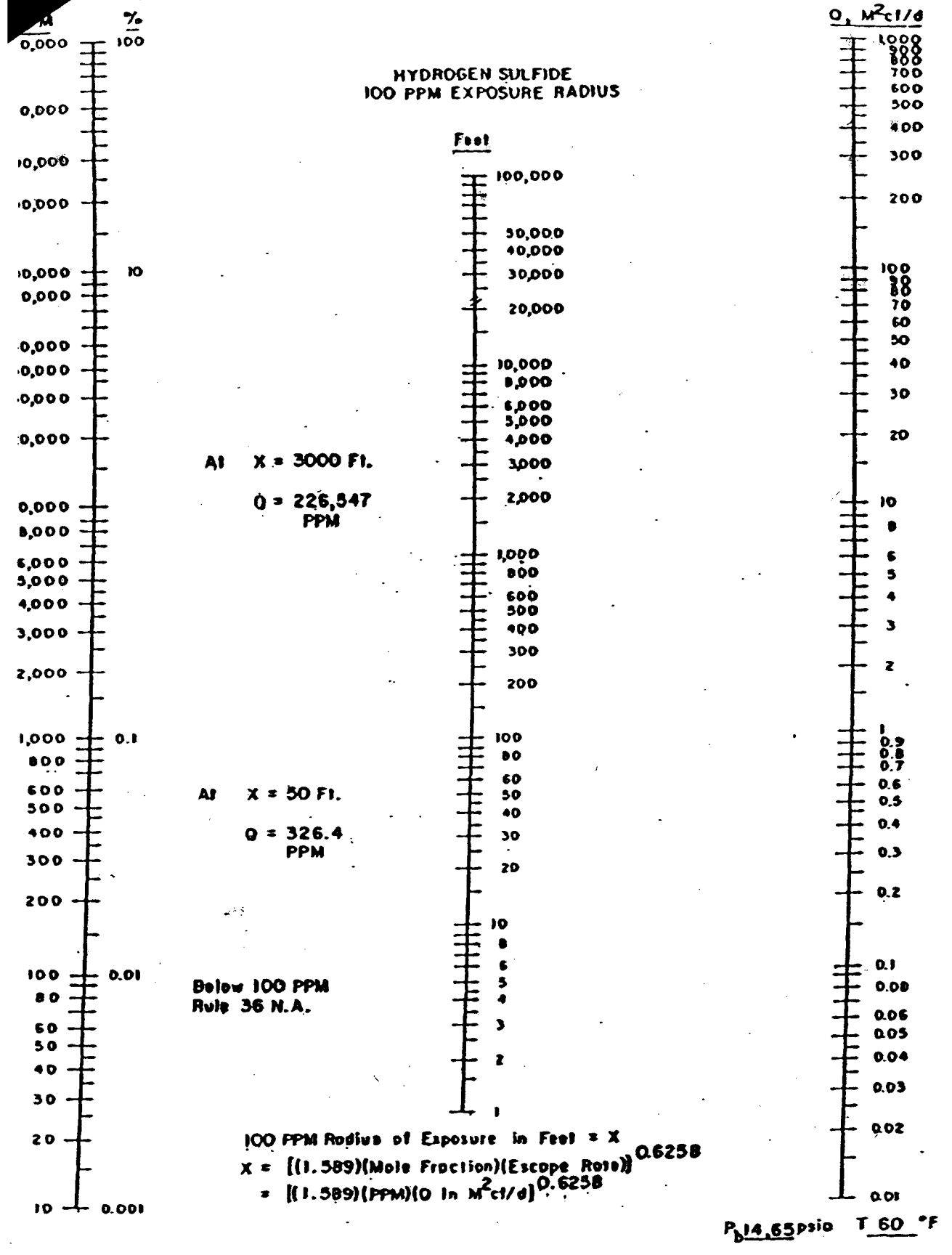
BASIN SURVEYS P.O. BOX 1786 - HOBBS, NEW MEXICO

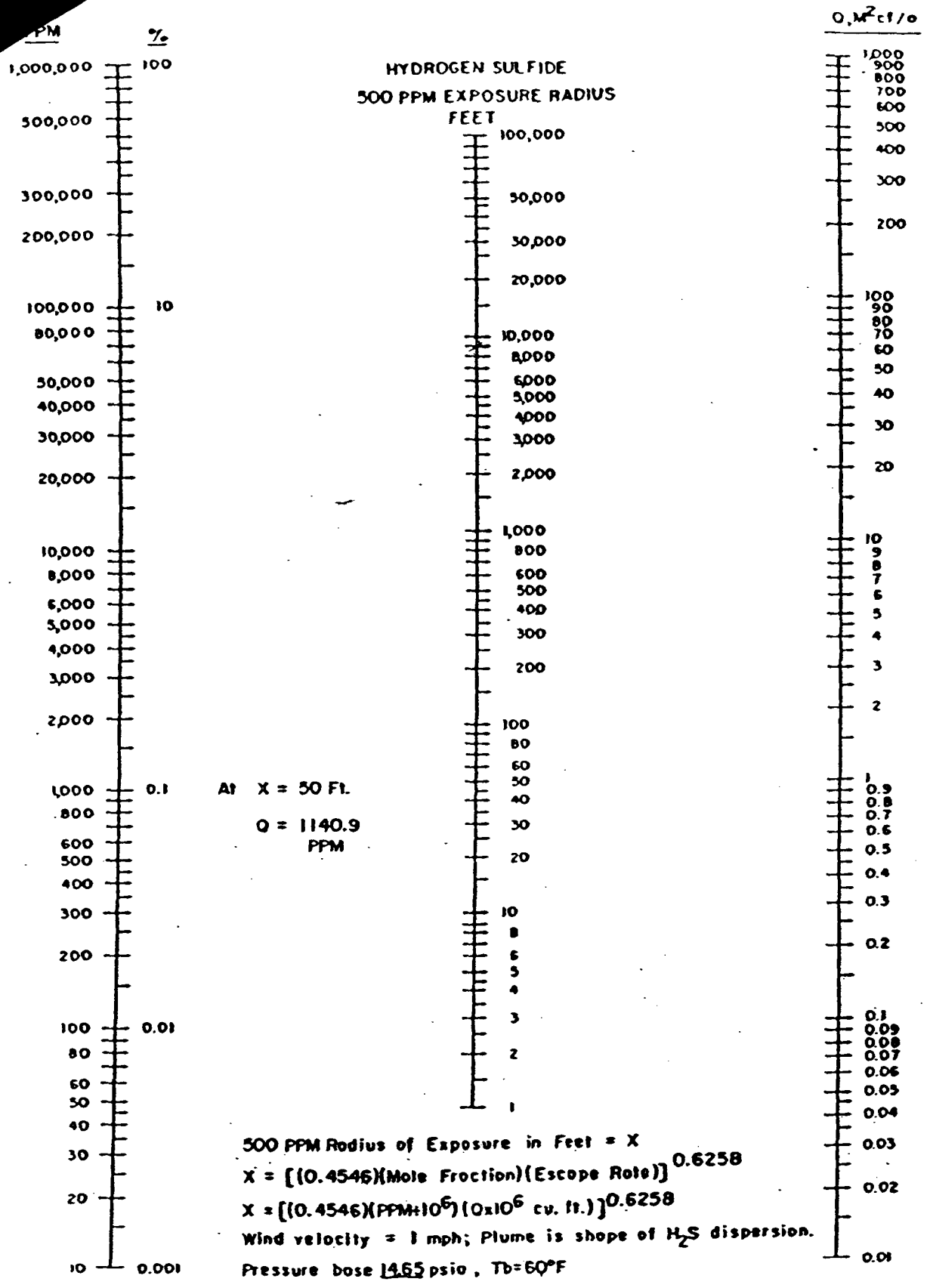
CLAYTON WILLIAMS ENERGY, INC.

REF: ROCKY ARROYO FED No. 1 / Well Pad Topo

THE ROCKY ARROYO FED. No. 1 LOCATED 990' FROM THE NORTH LINE AND 660' FROM THE EAST LINE OF SECTION 8, TOWNSHIP 22 SOUTH, RANGE 22 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO.

W.O. Number: 4956	Drawn By: K. GOAD		
Date: 02-10-2005	Disk: KJG CD#4 - 4956A.DWG	Survey Date: 02-07-2005	Sheet 1 of 1 Sheets


HYDROGEN SULFIDE
100 PPM EXPOSURE RADIUS
Feet
Q, M²cf/d
%
At X = 3000 Ft.
Q = 226,547 PPM
At X = 50 Ft.
Q = 326.4 PPM
Below 100 PPM Rule 36 N.A.
100 PPM Radius of Exposure in Feet = X
X = [(1.589)(Mole Fraction)(Escape Rate)]^0.6258
= [(1.589)(PPM)(Q in M²cf/d)]^0.6258
P_b 14.65 psia T 60 °F


PPM
%
1,000,000
500,000
300,000
200,000
100,000
80,000
50,000
40,000
30,000
20,000
10,000
8,000
6,000
5,000
4,000
3,000
2,000
1,000
800
600
500
400
300
200
100
80
60
50
40
30
20
10
100
10
0.1
0.01
0.001
HYDROGEN SULFIDE
500 PPM EXPOSURE RADIUS
FEET
100,000
50,000
30,000
20,000
10,000
8,000
6,000
5,000
4,000
3,000
2,000
1,000
800
600
500
400
300
200
100
80
60
50
40
30
20
10
8
6
5
4
3
2
1
At X = 50 Ft.
Q = 1140.9
PPM
Q, M²cf/o
1,000
900
800
700
600
500
400
300
200
100
90
80
70
60
50
40
30
20
10
9
8
7
6
5
4
3
2
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
500 PPM Radius of Exposure in Feet = X
X = [(0.4546)(Mole Fraction)(Escape Rate)]^0.6258
X = [(0.4546)(PPM÷10^6)(Q×10^6 cu. ft.)]^0.6258
Wind velocity = 1 mph; Plume is shape of H2S dispersion.
Pressure base 14.65 psia, Tb=60°F

TOXIC EFFECTS OF HYDROGEN SULFIDE

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 COLORLESS. IT FORMS AN EXPLOSIVE MIXTURE WITH AIR BETWEEN 4.3 AND 46.0 PERCENT BY VOLUME. HYDROGEN SULFIDE IS ALMOST AS TOXIC AS HYDROGEN CYANIDE AND IS BETWEEN FIVE AND SIX TIMES MORE TOXIC THAN CARBON MONOXIDE. TOXICITY DATA FOR HYDROGEN SULFIDE AND VARIOUS OTHER GASES ARE COMPARED IN TABLE I. PHYSICAL EFFECTS AT VARIOUS HYDROGEN SULFIDE EXPOSURE LEVELS ARE SHOWN IN TABLE II.

TABLE I
TOXICITY OF VARIOUS GASES

COMMON NAME	CHEMICAL FORMULA	SPECIFIC GRAVITY (SC=1)	THRESHOLD LIMIT (1)	HAZARDOUS LIMIT (2)	LETHAL CONCENTRATION (3)
HYDROGEN CYANIDE	HCN	0.94	10 PPM	150 PPM/HR	300 PPM
HYDROGEN SULFIDE	H2S	1.18	10 PPM	250 PPM/HR	600 PPM
SULFUR DIOXIDE	SO2	2.21	5 PPM	-	1000 PPM
CHLORINE	CL2	2.45	1 PPM	4 PPM/HR	1000 PPM
CARBON MONOXIDE	CO	0.97	50 PPM	400 PPM/HR	1000 PPM
CARBON DIOXIDE	CO2	1.52	5000 PPM	5%	10%
METHANE	CH4	0.55	90,000 PPM	COMBUSTIBLE ABOVE 5% IN AIR	

1) THRESHOLD LIMIT – CONCENTRATION AT WHICH IT IS BELIEVED THAT ALL WORKERS MAY BE REPEATEDLY EXPOSED DAY AFTER DAY WITHOUT ADVERSE EFFECTS.

2) HAZARDOUS LIMIT – CONCENTRATION THAT WILL CAUSE DEATH WITH SHORT-TERM EXPOSURE.

3) LETHAL CONCENTRATION – CONCENTRATION THAT WILL CAUSE DEATH WITH SHORT-TERM EXPOSURE.

TOXIC EFFECTS OF HYDROGEN SULFIDE

TABLE II
PHYSICAL EFFECTS OF HYDROGEN SULFIDE

CONCENTRATION			PHYSICAL EFFECTS
PERCENT (%)	PPM	GRAINS 100 STD. FT3*	
0.001	10	00.65	Obvious and unpleasant odor.
0.002	20	01.30	Safe for 8 hours of exposure.
0.010	100	06.48	Kill smell in 3 – 15 minutes. May sting eyes and throat.
0.020	200	12.96	Kills smell shortly; Stings eyes and throat.
0.050	500	32.96	Dizziness; Breathing ceases in a few minutes; Needs prompt artificial respiration.
0.070	700	45.36	Unconscious quickly; Death will result if not rescued promptly.
0.100	1000	64.30	Unconscious at once; Followed by death within minutes.

*AT 15.00 PSIA AND 60'F.

USE OF SELF-CONTAINED BREATHING EQUIPMENT

1. WRITTEN PROCEDURES SHALL BE PREPARED COVERING SAFE USE OF SCBA'S IN DANGEROUS ATMOSPHERE, WHICH MIGHT BE ENCOUNTERED IN NORMAL OPERATIONS OR IN EMERGENCIES. PERSONNEL SHALL BE FAMILIAR WITH THESE PROCEDURES AND THE AVAILABLE SCBA.

2. SCBA'S SHALL BE INSPECTED FREQUENTLY AT RANDOM TO INSURE THAT THEY ARE PROPERLY USED, CLEANED, AND MAINTAINED.

3. ANYONE WHO MAY USE THE SCBA'S SHALL BE TRAINED IN HOW TO INSURE PROPER FACE-PIECE TO FACE SEAL. THEY SHALL WEAR SCBA'S IN NORMAL AIR AND THEN WEAR THEM IN A TEST ATMOSPHERE. (NOTE: SUCH ITEMS AS FACIAL HAIR (BEARD OR SIDEBURNS) AND EYEGLASSES WILL NOT ALLOW PROPER SEAL.) ANYONE THAT MAY BE REASONABLY EXPECTED TO WEAR SCBA'S SHOULD HAVE THESE ITEMS REMOVED BEFORE ENTERING A TOXIC ATMOSPHERE. A SPECIAL MASK MUST BE OBTAINED FOR ANYONE WHO MUST WEAR EYEGLASSES OR CONTACT LENSES.

4. MAINTENANCE AND CARE OF SCBA'S:

   A. A PROGRAM FOR MAINTENANCE AND CARE OF SCBA'S SHALL INCLUDE THE FOLLOWING:
      1. INSPECTION FOR DEFECTS, INCLUDING LEAK CHECKS.
      2. CLEANING AND DISINFECTING.
      3. REPAIR.
      4. STORAGE.

   B. INSPECTION; SELF-CONTAINED BREATHING APPARATUS FOR EMERGENCY USE SHALL BE INSPECTED MONTHLY FOR THE FOLLOWING PERMANENT RECORDS KEPT OF THESE INSPECTIONS.
      1. FULLY CHARGED CYLINDERS.
      2. REGULATOR AND WARNING DEVICE OPERATION.
      3. CONDITION OF FACE PIECE AND CONNECTIONS.
      4. ELASTOMER OR RUBBER PARTS SHALL BE STRETCHED OR MASSAGED TO KEEP THEM PLIABLE AND PREVENT DETERIORATION.

   C. ROUTINELY USED SCBA'S SHALL BE COLLECTED, CLEANED AND DISINFECTED AS FREQUENTLY AS NECESSARY TO INSURE PROPER PROTECTION IS PROVIDED. (22)

USE OF SELF-CONTAINED BREATHING EQUIPMENT

5. PERSONS ASSIGNED TASKS THAT REQUIRES USE OF SELF-CONTAINED BREATHING EQUIPMENT SHALL BE CERTIFIED PHYSICALLY FIT FOR BREATHING EQUIPMENT USAGE BY THE LOCAL COMPANY PHYSICIAN AT LEAST ANNUALLY.

6. SCBA'S SHOULD BE WORN WHEN:

   A. ANY EMPLOYEE WORKS NEAR THE TOP OR ON TOP OF ANY TANK UNLESS TEST REVEALS LESS THAN 10 PPM OF H2S.

   B. WHEN BREAKING OUT ANY LINE WHERE H2S CAN REASONABLY BE EXPECTED.

   C. WHEN SAMPLING AIR IN AREAS TO DETERMINE IF TOXIC CONCENTRATIONS OF H2S EXISTS.

   D. WHEN WORKING IN AREAS WHERE OVER 10 PPM H2S HAS BEEN DETECTED.

   E. AT ANY TIME THERE IS A DOUBT AS TO THE H2S LEVEL IN THE AREA TO BE ENTERED.

RESCUE
FIRST AID FOR H2S POISONING

DO NOT PANIC!

REMAIN CALM – THINK!

1. HOLD YOUR BREATH. (DO NOT INHALE FIRST; STOP BREATHING.)

2. PUT ON BREATHING APPARATUS.

3. REMOVE VICTIM(S) TO FRESH AIR AS QUICKLY AS POSSIBLE. (GO UP-WIND FROM SOURCE OR AT RIGHT ANGLE TO THE WIND. NOT DOWN WIND.)

4. BRIEFLY APPLY CHEST PRESSURE – ARM LIFT METHOD OF ARTIFICIAL RESPIRATION TO CLEAN THE VICTIM'S LUNGS AND TO AVOID INHALING ANY TOXIC GAS DIRECTLY FROM THE VICTIM'S LUNGS.

5. PROVIDE FOR PROMPT TRANSPORTATION TO THE HOSPITAL, AND CONTINUE GIVING ARTIFICIAL RESPIRATION IF NEEDED.

6. HOSPITAL(S) OR MEDICAL FACILITIES NEED TO BE INFORMED, BEFORE-HAND, OF THE POSSIBILITY OF H2S GAS POISONING – NO MATTER HOW REMOTE THE POSSIBILITY IS.

7. NOTIFY EMERGENCY ROOM PERSONNEL THAT THE VICTIM(S) HAS BEEN EXPOSED TO H2S GAS.

BESIDES BASIC FIRST AID, EVERYONE ON LOCATION SHOULD HAVE A GOOD WORKING KNOWLEDGE OF ARTIFICIAL RESPIRATION, AS WELL AS FIRST AID FOR EYES AND SKIN CONTACT WITH LIQUID H2S. EVERYONE NEEDS TO MASTER THESE NECESSARY SKILLS.