7012 222 ft.

OCD-ARTESIA

Month - Year MAR 28 2007 OCD - ARTESIA, NM

Form 3160-3
(February 2005)

459

SECRETARY'S POTASH

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No. NM NM 113962	
6. If Indian, Allotee or Tribe Name N/A	
1a. Type of work: ☑ DRILL ☐ REENTER	7. If Unit or CA Agreement, Name and No. N/A
1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other ☐ Single Zone ☐ Multiple Zone	8. Lease Name and Well No. East Turkey Track 3 Federal 35249 #2
2. Name of Operator Edge Petroleum Operating Company, Inc. 224400	9. API Well No. 30-015-35525
3a. Address 1301 Travis, Suite 2000 Houston, TX 77002	3b. Phone No. (include area code) 713-654-8960
	10. Field and Pool, or Exploratory Benson; Queen-Grayburg, North
4. Location of Well (Report location clearly and in accordance with any State requirements*) At surface 2030' FSL & 2310' FWL At proposed prod. zone CAPITAN CONTROLLED WATER BASIN	11. Sec., T. R. M. or Blk. and Survey or Area Sec 3, T-19S, R-30E
14. Distance in miles and direction from nearest town or post office* Approx. 18 miles in a Northeastern direction from Carlsbad, NM	12. County or Parish Eddy County / 13. State NM
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 330'	16. No. of acres in lease 40 acres / 17. Spacing Unit dedicated to this well NE/4 SW/4 of Sec. 3
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft	19. Proposed Depth 3700' / 20. BLM/BIA Bond No. on file NMB-000121
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3406'	22. Approximate date work will start* 04/06/2007 / 23. Estimated duration 20 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must 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 must 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 BLM.

25. Signature Angela Lightner	Name (Printed/Typed) Angela Lightner 432-682-2440	Date 02/01/2007
Title Consultant		
Approved by (Signature) /s/ Linda S.C. Rundell	Name (Printed/Typed) /s/ Linda S.C. Rundell	Date MAR 26 2007
Title STATE DIRECTOR	Office NM STATE 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

SEE ATTACHED FOR CONDITIONS OF APPROVAL

If earthen pits are used in association with the drilling of this well, an OCD pit permit must be obtained prior to pit construction.

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
	53cc	Benson; QN-GB, North

Property Code	Property Name	Well Number
	EAST TURKEY TRACK 3 FEDERAL	2

OGRID No.	Operator Name	Elevation
	EDGE PETROLEUM OPERATING COMPANY, INC.	3406'

Surface Location

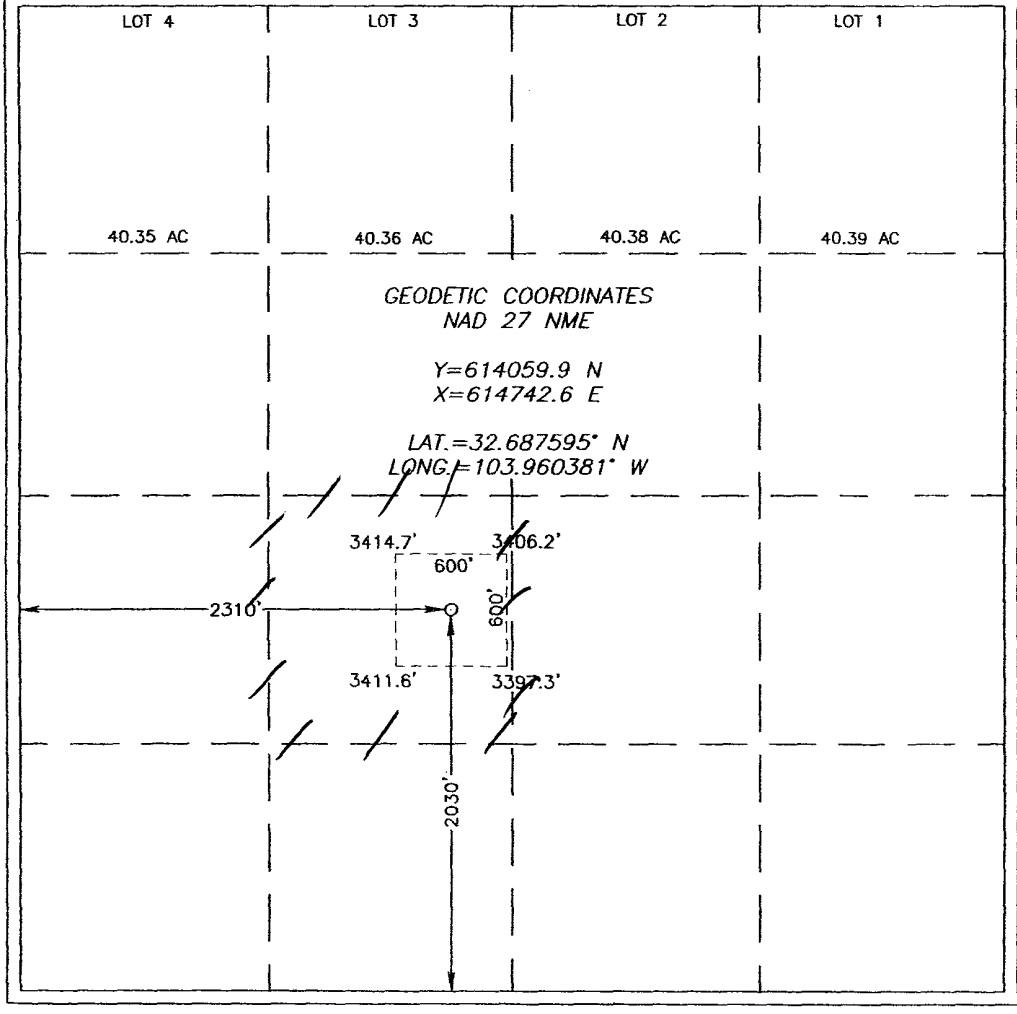
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
K	3	19-S	30-E		2030	SOUTH	2310	WEST	EDDY

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.
40			

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 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.

Angela Lightner 2-1-07
Signature Date

Angela Lightner
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.

OCTOBER 13, 2006
Date Surveyed JR

Signature & Seal of Professional Surveyor

Gary L Edson 10/28/06

06.11.1635

Certificate No. GARY EDSON 12641

REGISTERED PROFESSIONAL SURVEYOR

DRILLING PROGRAM

EDGE PETROLEUM OPERATING COMPANY, INC.

East Turkey Track 3 Federal #2

2030' FSL & 2310' FWL
Section 3, T-19-S, R-30-E
Eddy County, New Mexico

The following items supplement Form 3160-3 in accordance with instructions contained in Onshore Oil and Gas Orders #1 and #2, and all other applicable federal and state regulations.

1. ESTIMATED TOPS OF GEOLOGIC MARKERS:

Rustler	470'
Tansill	1770'
Yates	2280'
Queen	2900'
San Andres	3574'
Total Depth	3700'

2. ESTIMATED DEPTHS TO WATER, OIL, OR GAS FORMATIONS:

Fresh Water	Above 200'
Oil and Gas	Queen, Grayburg

3. Pressure control equipment: The blow out preventer equipment (BOP) shown in Exhibit #1 will consist of a 3000 psi double ram type preventer for drilling the 12-1/4" hole. The blowout preventer stack for the production (8-1/2") hole as shown on Exhibit #2 will consist of at least a double-ram blowout preventer and annular preventer rated to 3000 psi working pressure. A diagram of the BOPs and choke manifold is attached. All BOPs and accessory equipment will be tested according to Onshore Order #2 before drilling out.

4. PROPOSED CASING PROGRAM:

Hole Size	Interval	Casing Size	Weight	Grade, Joint
12-1/4"	0 – 550'	8-5/8"	24#	J-55 STC
7-7/8"	0 – 3650'	5-1/2"	15.5#	J-55 STC

Equivalent or adequate grades and weights of casing may be substituted at time casing is run, depending on availability. Changes will be relayed to BLM prior to running.

5. PROPOSED CEMENTING PROGRAM

20" conductor	cemented with ready mix to surface
8-5/8" surface	400 sxs Premium Plus cement, 2% calcium chloride
5-1/2" production	180 sxs Light Cement
	180 sxs Super "H" cement .5% Halad, .4% CFR-3, 3# per sx Gilsonite

6. PROPOSED MUD SYSTEM:

Fresh water based

DEPTH	DESCRIPTION	MUD WEIGHT	VISCOSITY	WATER LOSS
0 – 550'	spud mud	8.4 – 9.6 ppg	32 - 34	NC
550 – 2,900'	brine water	10.0 – 10.2 ppg	28	NC
2,900 – 3,700'	brine water	10.0 – 10.2 ppg	30 - 32	10cc

7. TESTING, LOGGING AND CORING PROGRAM:

Samples	Possible 10' Samples to TD
DST's	N/A
Logging	Density, Lateral, Resistivity
Coring	N/A

8. ABNORMAL PRESSURES AND TEMPERATURES:

None anticipated. Maximum bottom hole pressure should not exceed 4,900psi.

Sources at Edge Petroleum Operating Company, Inc. advised me that they do not anticipate enough H2S from the surface to TD to meet the OCD's minimum requirements for the submission of a contingency plan per Rule 118; however H2S monitoring equipment will be on location from below surface casing to TD.

ANTICIPATED STARTING DATE AND DURATION OF OPERATIONS:

It is planned that operations will commence on April 15, 2007. Drilling should be completed within 20 days followed by completion operations.

HYDROGEN SULFIDE DRILLING OPERATIONS PLAN

EDGE PETROLEUM OPERATING COMPANY, INC.

East Turkey Track 3 Federal #2
2030' FSL & 2310' FWL
Sec 3, T-19-S, R-30-E

I. HYDROGEN SULFIDE TRAINING

A. All regularly assigned personnel, contracted or employed by Cabal Energy Corporation, will receive training from a qualified instructor in the following areas prior to commencing drilling potential hydrogen sulfide bearing formations in this well:

1. The hazards and characteristics of hydrogen sulfide (H_2S).

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

3. The proper use of H_2S detectors, alarms, warning systems, briefing areas, evacuation procedures and prevailing winds.

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

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

1. The effects of H_2S 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 H_2S Drilling Operations Plan.

C. There will be an initial training session just prior to encountering a known or probable H_2S zone (within 3 days or 500 feet) and weekly H_2S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H_2S Drilling Operations 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. H_2S SAFETY EQUIPMENT AND SYSTEMS

Note: All H_2S 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 H_2S.

A. Well Control Equipment.

1. Flare line with continuous pilot.

2. Choke manifold with a minimum of one remote choke.

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

4. Auxiliary equipment to include: annular preventer, mud-gas separator, rotating head and flare.

B. Protective Equipment for Essential Personnel:

Mark II Surviveair 30-minute units located in the dog house and at briefing areas, as indicated on well site diagram.

C. H_2S Detection and Monitoring Equipment:

1. Two portable H_2S monitors positioned on location for best coverage and response. These units have warning lights and audible sirens when H_2S levels of 20 ppm are reached.

2. One portable SO_2 monitor positioned near flare line.

D. Visual Warning Systems

1. Wind direction indicators are shown on well site diagram.

2. Caution/Danger signs shall be posted on roads providing direct access to location. Signs will be painted a high visibility yellow with black lettering of sufficient size to be readable at a reasonable distance form the immediate location. Bilingual signs will be used when appropriate. See example attached.

E. Mud Program

1. The Mud Program has been designed to minimize the volume of H_2S circulated to the surface. Proper mud weights, safe drilling practices and the use of H_2S scavengers will minimize hazards when penetrating H_2S bearing zones.

2. A mud-gas separator will be utilized as needed.

F. Metallurgy:

All drill strings, casing, tubing, wellhead, blowout preventers, drilling spool, kill lines, choke manifold and line and valves shall be suitable for H_2S service.

G. Communication:

Cellular telephone communications in company vehicles, rig floor and mud logging trailer.

H. Well Testing:

Drill stem testing will be performed with a minimum number of personnel in the immediate vicinity, which are necessary to safely and adequately conduct the test. The drill stem testing and an H_2S environment will be conducted during the daylight hours.

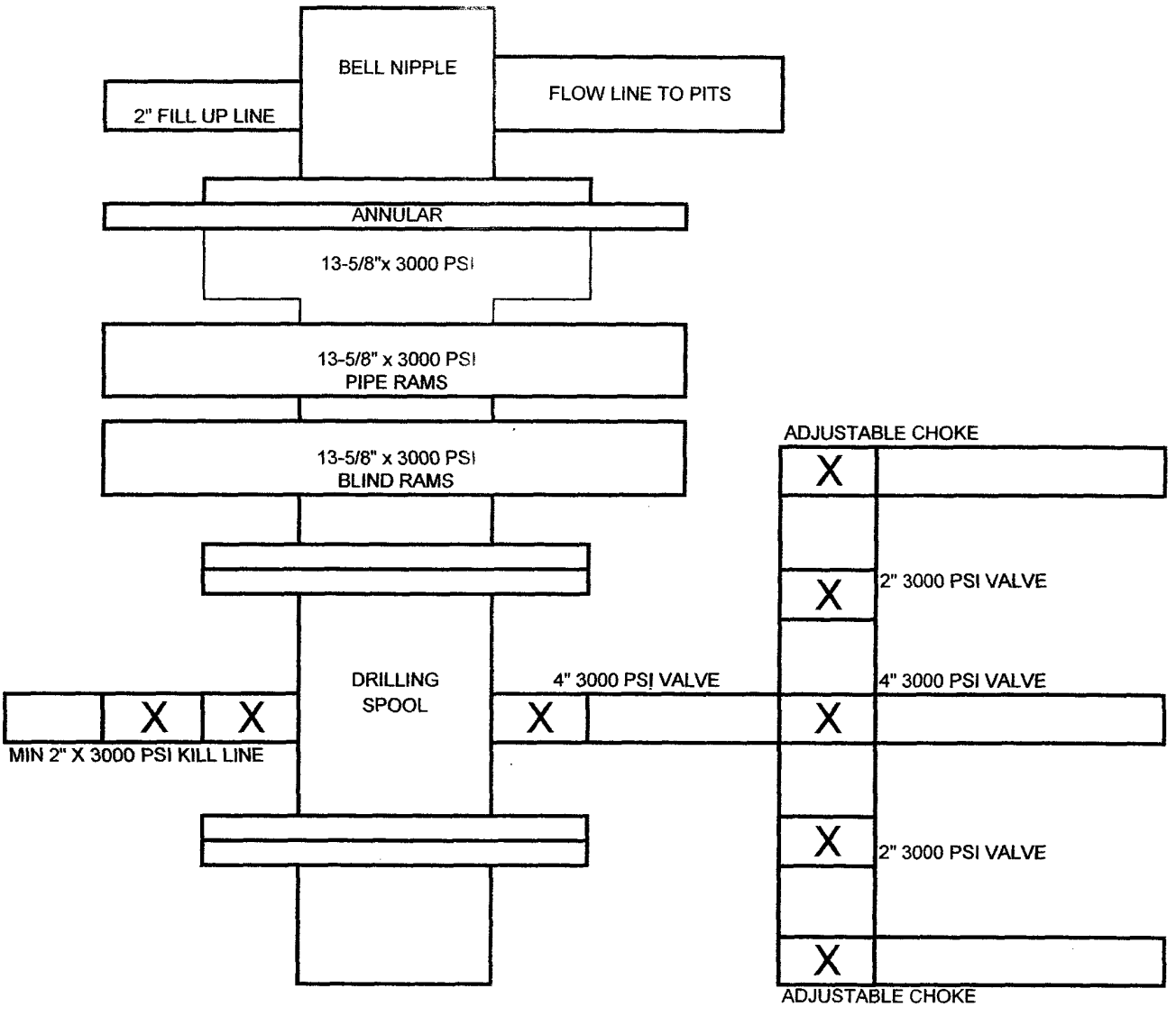
EDGE PETROLEUM OPERATING COMPANY INC.

WELL SUMMARY

LEASE:	EAST TURKEY TRACK 3 FEDERAL	SURF LOC: 2,030' FSL & 2,310' FWL of SEC 3 T19S R30E		ENGR:	Daniel Hurd
WELL:	No. 2	BHL: STRAIGHT HOLE		RIG:	TBD
AREA:	EDDY CO., NM	X: 614742.6 E		ELEV.	3406
FIELD:	SHUGART YESO,SR, QUEEN, GRAYBUF	Y: 614059.9 N		KB:	

DIRECTIONAL	OPEN HOLE LOGGING	SANDS/ MARKERS	DEPTH TVD	DEPTH MD	CASING PROFILE	HOLE SIZE	CASING DETAILS	MUD WT. & TYPE	MAXIMUM DOGLEG SEVERITY
			40'	40'		PRESET	16" Conductor		
		Rustler 470 MD	550'	550'		12-1/4"	8-5/8", 24.0 ppf J-55, STC	SPUD MUD 8.4 - 9.6 PPG	1°/100'
	Mud loggers on out of Surface							10.0 - 10.2 Brine	
		Tansill 1,770'							
		Capitan Reef (Poss) - 1,800'							
						7 7/8"			
		Yates 2,280'							
		Queen 2,900'							
		San Andres 3,574'							
STRAIGHT HOLE	E-LOGS Triple Combo 550' to 3700'	TD	3700'	3700'			5 1/2", 15.5#, J-55, STC 0'-3650'	10.0 ppg Brine	2°/100' DAH - 1/29/07

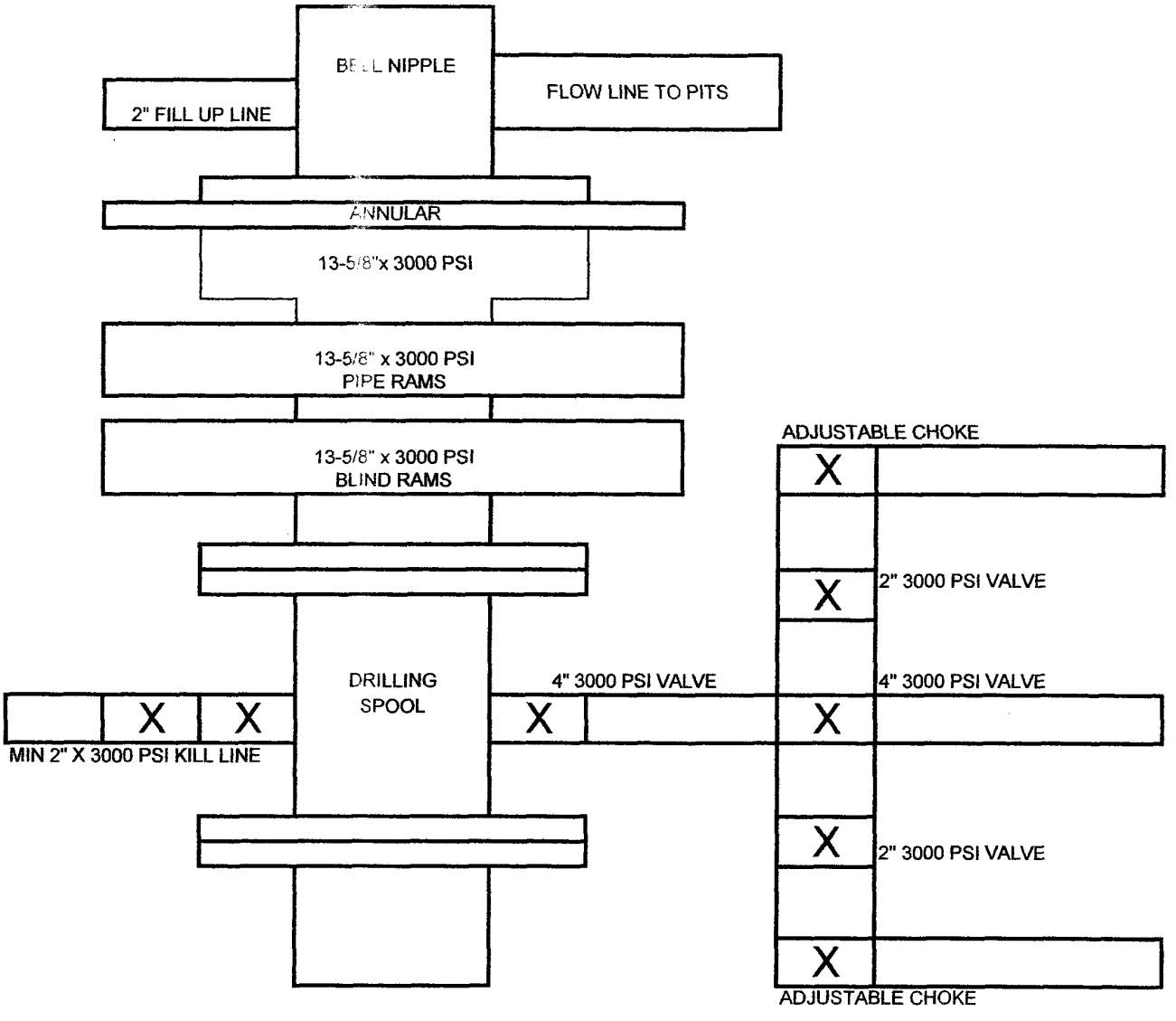
BOP SCHEMATIC FOR
12-1/4" HOLE



Edge Petroleum Operating Company, Inc.
East Turkey Track 3 Federal #2
Eddy County, New Mexico

Exhibit 1

BOP SCHEMATIC FOR
8 7/8" HOLE



Edge Petroleum Operating Company, Inc.
East Turkey Track 3 Federal #2
Eddy County, New Mexico

Exhibit 2

Recommended Drilling Fluids Program
and
Cost Estimate

For:

Edge Petroleum Corporation
1301 Travis, Suite 2000
Houston, TX 77002

The

East Turkey Track "3" Federal # 2

Located in:

Sec 3, T-19-S, R-30-E,
Eddy Co., NM

Prepared especially for:

Mr. Daniel Hurd

District Engineer

"The Nova Difference"

A Commitment to Service and Quality

NOVA MUD, Inc.

P.O. Box 2703 Hobbs, New Mexico 88241 800-530-8786
306 West Wall, Suite 550 Midland, Texas 79701 432-570-6663

8/30/2006

Mr. Daniel Hurd
Edge Petroleum Corporation
1301 Travis, Suite 2000
Houston, TX 77002

RE: East Turkey Track "3" Federal # 2 (3,700' - Yeso)

Dear Daniel;

We appreciate the opportunity to present our ideas for your upcoming prospect, located in Sec 3, T-19-S, R-30-E, of Eddy Co., NM.

This program has been designed to economically provide sufficient hole stability and adequate formation evaluation with minimum damage to your producing formation.

Our mud cost for this well under normal drilling conditions is approximately $9,318 based on 7 drilling days. Severe lost circulation, water flows, fishing jobs, pressure or other unforeseen drilling hazards could alter this estimate.

Our stockpoint for this area is Hobbs/Lovington, NM. A price list and brief resume' of our personnel are enclosed in the miscellaneous section of the program.

We thank you for the opportunity to be of service to you on this well and we look forward to working with you in the future. Please don't hesitate to call should you have any questions or comments.

Sincerely,

Dale S. Welch
Sales/Tech Advisor

Recommended Drilling Fluids Program

Edge Petroleum Corporation * East Turkey Track "3" Federal # 2 * Sec 3, T-1[illegible]S, R-30-E, Eddy, NM

INTERVAL: 0 - 550	12.25" hole	1 days	8.625" csg	1 drill bits		
Product	Function	Treatment	Unit Si.	Usage	Unit Price	Total Price
Bentonite	Viscosifier	12-14 ppb	100 #	30	$8.04	$241.20
Ground Paper	seepage and sweeps	1-3 sacks per 100 feet	40 #	10	$9.68	$96.80
Lime	pH additive, flocculant	1 sack per 15 sacks of bentonite	50 #	5	$5.74	$28.70
MF-55/VisPlus(non-ionic)	Hole sweep	1 can at total depth for sweep	5 gal.	1	$95.76	$95.76
Plastic	Storage aid	Cover mud	1 roll	1	$45.00	$45.00
				Interval Total:		$507.46

INTERVAL: 550 - 2,900	7.875" hole	3 days		1 drill bits		
Product	Function	Treatment	Unit Siz	Usage	Unit Price	Total Price
Caustic Soda	pH additive	.25 ppb	50 #	30	$33.00	$990.00
Cedar Fiber/Fiber Plug	LCM, sealant	10-20 ppb in pills	40 #	10	$6.79	$67.90
Ground Paper	seepage and sweeps	1-3 sacks per 200 feet	40 #	40	$9.68	$387.20
Maxi-Seal/Fiber Seal/Chem Seal	LCM, sealant	10-20 ppb in pills	40 #	10	$13.73	$137.30
Salt Gel	Viscosifier	12-14 ppb in sweeps	50 #	30	$8.74	$262.20
				Interval Total:		$1,844.60

INTERVAL: 2,900 - 3,700	7.875" hole	3 days	5.5" csg	0 drill bits		
Product	Function	Treatment	Unit Siz	Usage	Unit Price	Total Price
Biocide (STC)	Biocide	1 gal./100 bbls.	5 gal.	10	$103.20	$1,032.00
Caustic Soda	pH additive	.25 ppb	50 #	10	$33.00	$330.00
Defoamer	Defoamer	As needed	5 gal.	3	$63.75	$191.25
Maxi-Seal/Fiber Seal/Chem Seal	LCM, sealant	10-20 ppb in pills	40 #	5	$13.73	$68.65
Salt Gel	Viscosifier	12-14 ppb in sweeps	50 #	50	$8.74	$437.00
Yellow Starch	Filtrate control	4-5 ppb	50 #	160	$15.05	$2,408.00
				Interval Total:		$4,466.90

Totals

Bits	2
Days	7
Mud	$9,318

Materials Cost:	$6,819
Trucking Cost:	$1,900
Sales Tax/Product @ 6.88%	$469
Sales Tax/Trucking @ 6.88%	$131
Estimated Total Mud	**$9,318**

Edge Petroleum Corporation * East Turkey Track "3" Federal = [illegible] * Sec 3, T-19-S, R-30-E. Eddy, NM

INTERVAL: 0 - 550	12.25" hole	1 days	[illegible].625" csg			1 drill bits
Product	Function	Treatment	Unit Size	Usage	Unit Price	Total Price
Bentonite	Viscosifier	12-14 ppb	100 #	30	$8.04	$241.20
Ground Paper	seepage and sweeps	1-3 sacks per 100 feet	40 #	10	$9.68	$96.80
Lime	pH additive, flocculant	1 sack per 15 sacks of bentonite	50 #	5	$5.74	$28.70
MF-55/VisPlus(non-ionic)	Hole sweep	1 can at total depth for sweep	5 gal.	1	$95.76	$95.76
Plastic	Storage aid	Cover mud	1 roll	1	$45.00	$45.00
					Interval Total:	$507.46

Projected Mud Properties

Depth	Mud Wt. - ppg	Viscosity	Filtrate	pH	Solids - % by vol.
0' - 550'	8.4-9.6	32-34	N/C	10.0	2.0-8.0

General Geological Data

Tops/Bases	Formation	Lithology	Notes/Challenges
490' - 550'	Rustler	Anhydrite	surface casing seat

Interval Notes for 0 - 550

Spud with a conventional Fresh Water Gel and Lime spud mud. Maintain the viscosity as needed to clean the hole. Small amounts of should be used to flocculate the gel for better carrying capacity. Use Ground Paper sweeps periodically to aid in hole cleaning and control seepage. Sweep the hole at total depth if necessary with Vis Plus to ensure a clean hole for casing operations.

Edge Petroleum Corporation * East Turkey Track [illegible] Federal # 2 * Sec 3, T-19-S, R-30-E, Eddy, NM

INTERVAL: 550 - 2,900	7.875" hole	3 days			1 drill bits	
Product	Function	Treatment	Unit Size	Usage	Unit Price	Total Price
Caustic Soda	pH additive	.25 ppb	50 #	30	$33.00	$990.00
Cedar Fiber/Fiber Plug	LCM, sealant	10-20 ppb in pills	40 #	10	$6.79	$67.90
Ground Paper	seepage and sweeps	1-3 sacks per 200 feet	40 #	40	$9.68	$387.20
Maxi-Seal/Fiber Seal/Chem Seal	LCM, sealant	10-20 ppb in pills	40 #	10	$13.73	$137.30
Salt Gel	Viscosifier	12-14 ppb in sweeps	50 #	30	$8.74	$262.20
					Interval Total:	$1,844.60

Projected Mud Properties

Depth	Mud Wt. - ppg	Viscosity	Filtrate	pH	Chlorides - ppm
550' - 2,900'	10.0-10.2	28	N/C	11.0	186K

General Geological Data

Tops/Bases	Formation	Lithology	Notes/Challenges
550' - 650'	Rustler	Anhydrite	
650' - 1,990'	Salt	Salt	Leaching, key seats
1,990' - 2,380'	Yates	Sand w/anhydrite stringers	
2,380' - 2,900'	Seven Rivers	Anhydritic sandy dolomite	Poss. Water Flow

Interval Notes for 550 - 2,900

Drill out from under the surface casing with Brine. Circulate the reserve. Adjust the pH with Caustic Soda to 10.0. Continue to use Ground Paper sweeps periodically to control seepage and to aid in hole cleaning. More severe seepage to total losses may be expected in the Capitan Reef interval below 1,800'. Viscous Salt Water Gel pills containing fibrous LCM may be used to regain returns.

Edge Petroleum Corporation * East Turkey Track "3" Federal # 2 * Sec 3, T-19-S, R-30-E, Eddy, NM

INTERVAL: 2,900 - 3,700	7.875" hole	3 days	5.5" csg		0 drill bits	
Product	Function	Treatment	Unit Size	Usage	Unit Price	Total Price
Biocide (STC)	Biocide	1 gal./100 bbls.	5 gal.	10	$103.20	$1,032.00
Caustic Soda	pH additive	.25 ppb	50 #	10	$33.00	$330.00
Defoamer	Defoamer	As needed	5 gal.	3	$63.75	$191.25
Maxi-Seal/Fiber Seal/Chem Seal	LCM, sealant	10-20 ppb in pills	40 #	5	$13.73	$68.65
Salt Gel	Viscosifier	12-14 ppb in sweeps	50 #	50	$8.74	$437.00
Yellow Starch	Filtrate control	4-5 ppb	50 #	160	$15.05	$2,408.00
					Interval Total:	$4,466.90

Projected Mud Properties

Depth	Mud Wt. - ppg	Viscosity	Filtrate	pH	Chlorides - ppm
2,900' - 3,700'	10.0-10.2	30-32	10cc	10.0	186K

General Geological Data

Tops/Bases	Formation	Lithology	Notes/Challenges
2,900' - 3,535'	Queen	Sand	Pay Zone
3,535' - 3,700'	Grayburg		TD

Interval Notes for 2,900 - 3,700

Return to the working pits with clean Brine Water. Discontinue the use of MF-55 and adjust the pH to no more than 10.0 with Caustic Soda.. Add Biocide to prevent bacteria growth and Yellow Starch to lower the filtrate to below 10cc. Small amounts of Defoamer may be needed to prevent pump aeration while mixing the Starch. Continue the use of Ground Paper to control seepage and aid in hole cleaning. Should moderate to severe seepage occur use viscous (50-60) Salt Water Gel pills containing fibrous LCM to regain returns. Adjust the viscosity only as hole indications dictate. Sweep the hole at total depth with 50-100 bbl of a viscous (50-60) Salt Water Gel pill to ensure a clean hole for logging and casing operations.

MULTI POINT SURFACE USE AND OPERATIONS PLAN FOR

EDGE PETROLEUM OPERATING COMPANY, INC.
EAST TURKEY TRACK 3 FEDERAL #2

2030' FSL & 2310' FWL
Section 3, T-19-S, R-30-E
Eddy County, New Mexico
Lease No.: NM NM 113962

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 operation.

1. EXISTING ROADS:

   A. Exhibit "A" is a Vicinity map showing the location of the proposed well as staked.

   B. Directions: From the intersection of Co. Rd. #251 (Duval Shaft) and Co. Rd. #250 (Grubbs Road), go East on Co. Rd. #250 approximately 0.44 miles. Turn South and go approx. 1.6 miles. This location is approximately 165 feet West.

2. PLANNED ACCESS ROAD:

   A. Length and Width: Exhibit "B" is the proposed access road

   B. Construction: None required.

   C. Turnouts: None required.

   D. Culverts: None necessary.

   E. Cuts and Fills: 1' cut to North with 1' fill to South

   F. Gates and Cattle Guards: None necessary.

   G. Off lease right of way: None required.

3. LOCATION OF EXISTING WELLS:

   Existing wells in the immediate area are shown on the Location Verification Map, Exhibit "C".

4. LOCATION OF EXISTING AND/OR PROPOSED FACILITIES:

A. Edge Petroleum Operating Company, Inc. has no production facilities on the lease at 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:

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 MATERIAL:

Caliche for surfacing the proposed access road and well site pad will be obtained from the location, if available, or from an approved Federal pit. 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 drilling 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 tests will be stored in test tanks.

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

G. All trash and debris will be removed from the well site within 30 days after finishing drilling and/or completion operations.

8. ANCILLARY FACILITIES:

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: 230' x 330', plus 150' x 150' reserve pit on the north.

C. Cut & Fill: 1' cut to North with 1' fill to South

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 needed for operations will be removed. The well site will be cleaned of trash leaving the site aesthetically pleasing to the extent possible.

B. 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. Surface Ownership - Bureau of Land Management

B. Boone Archeological Services, 2030 NORTH CANAL STREET, CARLSBAD, NEW MEXICO 88220, conducted an archaeological survey. No significant archaeological resources were found in the area of the planned access road or of the proposed well site.

C. Oil & Gas Lease:
NMNM 113962 Township 19 South, Range 30 East,
NE/4 SW/4 of Section

D. RECORD LESSEE:

Edge Petroleum Exploration Company	50%
Pure energy Operation	25%
Chisos Operation, Inc.	25%

E. BOND COVERAGE:

$25,000 Statewide Oil & Gas Surety Bond
BLM Bond #: NMB 000121

12. OPERATOR'S REPRESENTATIVE:

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

R. K. Ford & Associates
415 West Wall, Suite 1700
Midland, Texas 79701
432-682-0440 (Office)
432-682-0441 (Fax)
432-570-7216 (Home)
432-559-2222 (Cell)
Randell@rkford.com (E-mail)

13. CERTIFICATION:

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access route; that I am familiar with the conditions which currently 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 Edge Petroleum Operating Company, Inc. and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved.

February 1, 2007

Angela Lightner

Angela Lightner Consultant

CONDITIONS OF APPROVAL - DRILLING

Operator's Name: Edge Petroleum Operating Co. Inc
Well Name & No. East Turkey Track 3 Federal # 2
Location: 2030'FSL, 2310'FWL, SEC3, T19S, R30E, Eddy County, NM
Lease: NM-113962

I. DRILLING OPERATIONS REQUIREMENTS:

A. The Bureau of Land Management (BLM) is to be notified a minimum of 4 hours in advance, at the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (505) 361-2822 - for wells in Eddy County; and the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (505) 393-3612 for wells in Lea County, in sufficient time for a representative to witness:

1. Spudding
2. Cementing casing: **8.625** inch **5.5** inch
3. BOP tests

B. A Hydrogen Sulfide (H2S) Drilling Plan should be N/A. A copy of the plan shall be posted at the drilling site.

C. 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.

D. 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. (R-111-P area only)

E. If floor controls are required, (3M or Greater) controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

II. CASING:

A. The **8.625** inch surface casing shall be set **above the salt, should the salt occur at a more shallow depth, at least 25 feet into the Rustler Anhydrite @ approximately 550 feet** and cement circulated to the surface.

1. If cement does not circulate to the surface the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with a surface log readout will be used or a cement bond log shall be run to verify the top of the cement.
2. Wait on Cement (WOC) time for a primary cement job will be a minimum of 12 hours for a non-water basin, 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compression strength, which ever is greater. (This is to include the lead cement)
3. WOC time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds of compression strength, which ever is greater.
4. If cement falls back, Remedial cementing shall be completed prior to drilling out that string.

B. The minimum required fill of cement behind the **5.5** inch production casing is **cement shall circulate to the surface.**

D. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

III. PRESSURE CONTROL:

A. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2.

B. Minimum working pressure of the blowout preventer and related equipment (BOPE) required for drilling below the **8.625** inch casing shall be **2000** psi.

C. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

1. The tests shall be done by an independent service company.
2. The results of the test shall be reported to the appropriate BLM office.
3. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of the independent service company test will be submitted to the appropriate BLM office.
4. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi in accordance with API RP 53. The test will be held for a minimum of 10 minutes if the test is done with a test plug and 30 minutes without a test plug.
5. A variance to test the_____ to the reduced pressure of ___psi with the rig pumps is approved the BOP/BOPE must be tested by an independent service company.

Engineering may be contacted at 505-706-2779 for variances if necessary.

FWright 2/23/07

CONTINGENCY PLAN

30-015-

Edge Petroleum Operating Company, Inc.

East Turkey Track 3 Federal #2

2310' FWL & 2030' FSL
Section 3: T-19-S R-30-E
Eddy County, New Mexico

Prepared For: Edge Petroleum Operating Company, Inc.
Date Prepared: January 8, 2007

Prepared By: **INDIAN**
Fire & Safety, Inc.

TABLE OF CONTENTS

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 BEFORE DRILLING TO PRODUCTION 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 PRODUCTION 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

H2S CONTINGENCY PLAN

EMERGENCY EQUIPMENT REQUIREMENTS

1. SIGNS

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 ORANGE, 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 PRODUCTION CASING POINT .

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 3000 FT 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	
Carlsbad – Non-emergency.....	505-885-2111	
BLM		
Carlsbad	505-361-2822	
State Police Department		911
Non-emergency	505-437-1313	
City of Carlsbad		
.....	505-885-2111	
Ambulance		911
Artesia – Non Emergency.....	505-746-5050	
Atoka – Non-Emergency.....	505-746-5050	
Carlsbad – Non Emergency.....	505-885-2111	
Hospitals		
Artesia	505-748-3333	
AEROCARE	806-747-8923	

Emergency Contact List

Edge Petroleum

Daniel Hurd:
Office: 713-427-8892 direct line
Cell: 281-814-7084
Office: 713-654-8660 main line

R.K. Ford & Associates

Randell Ford:
Home: 432-570-7216
Cell: 432-559-2222
Alt. Cell: 432-559-3351
Office: 432-682-0440

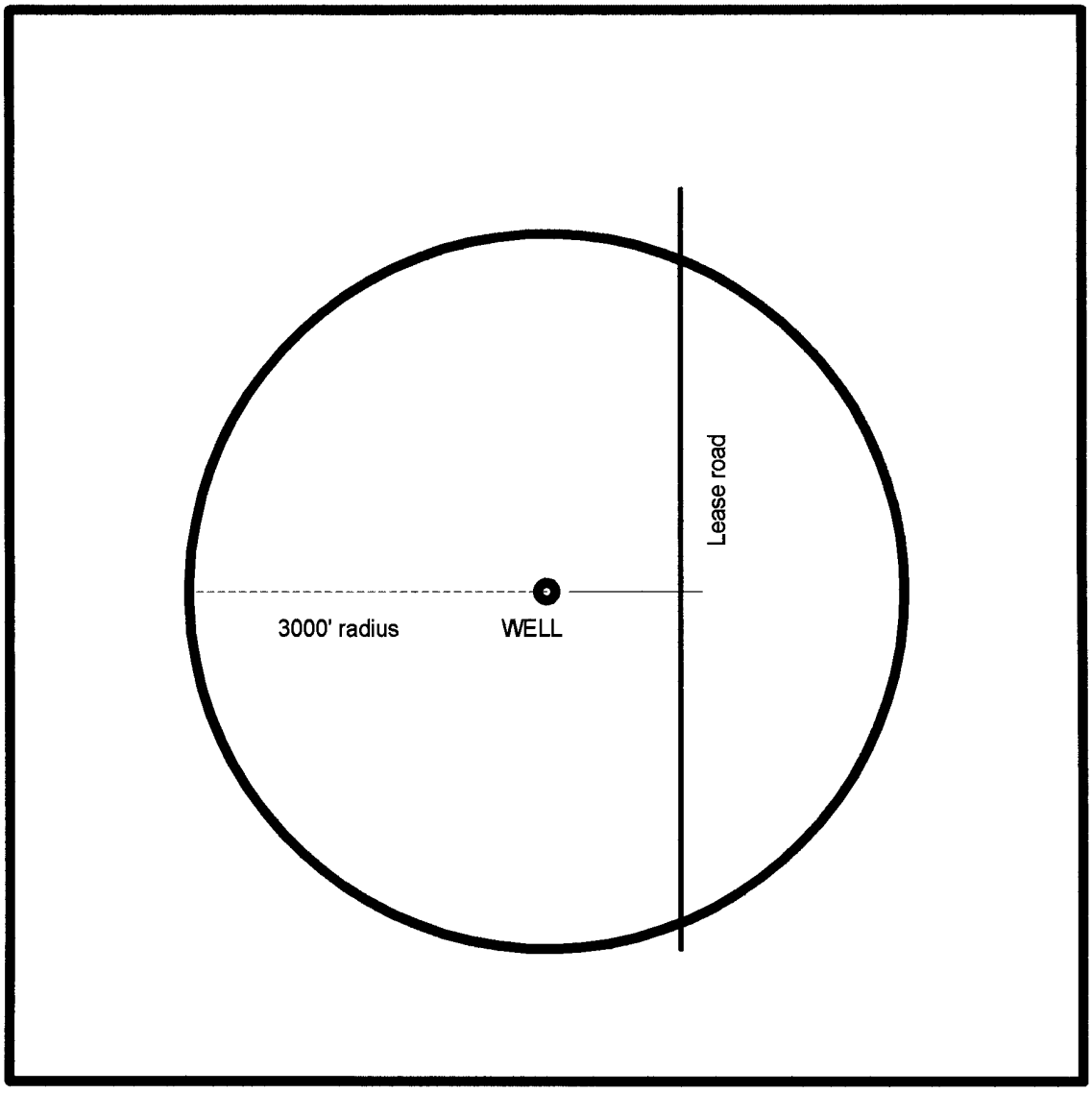
Lindsey Truesdell:
Office: 432-682-0440

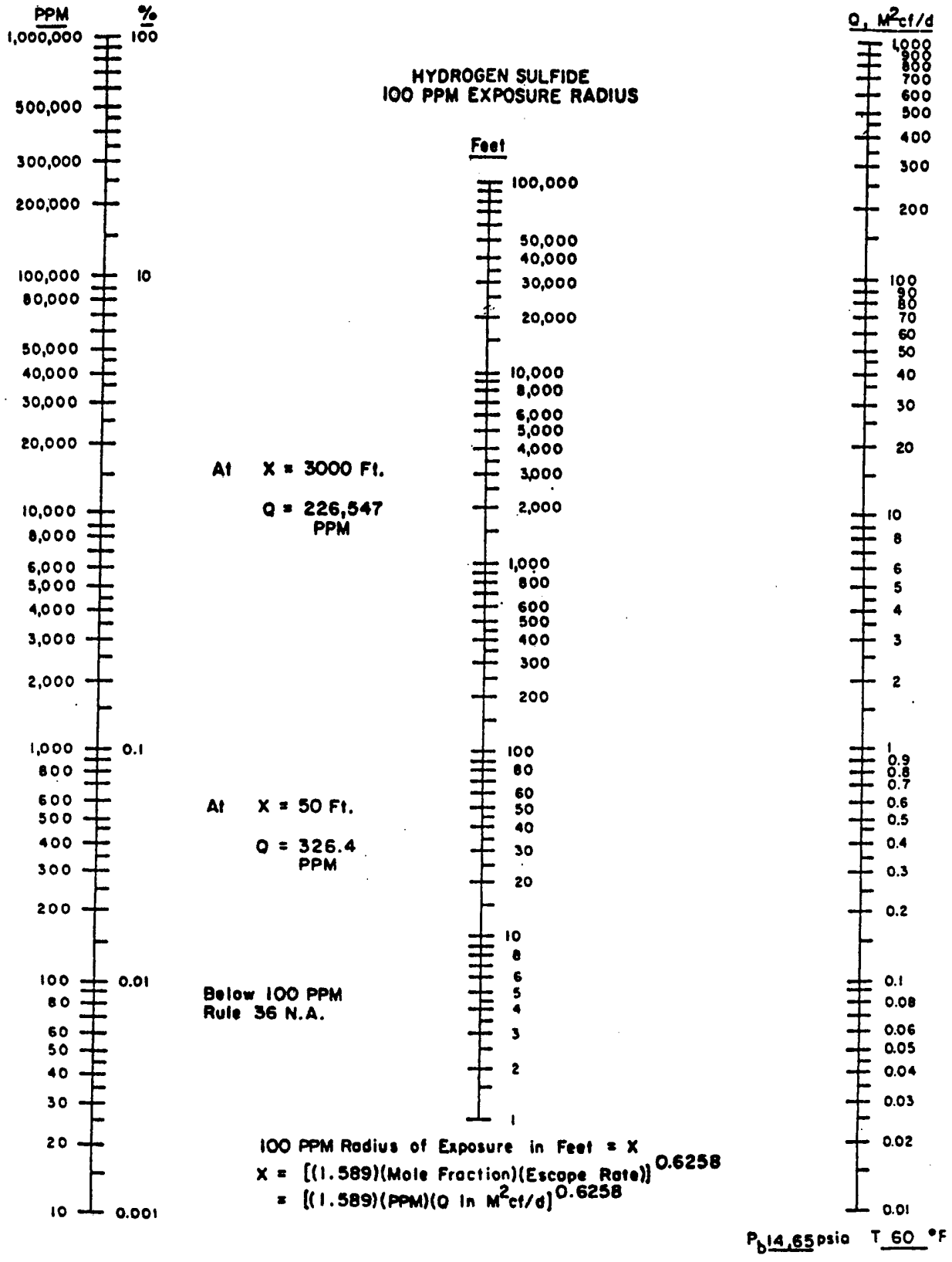
Indian Fire & Safety, Inc.
3317 W. County Road
505-393-3093 - office
800-530-8693 – toll free
505-392-6274 – fax

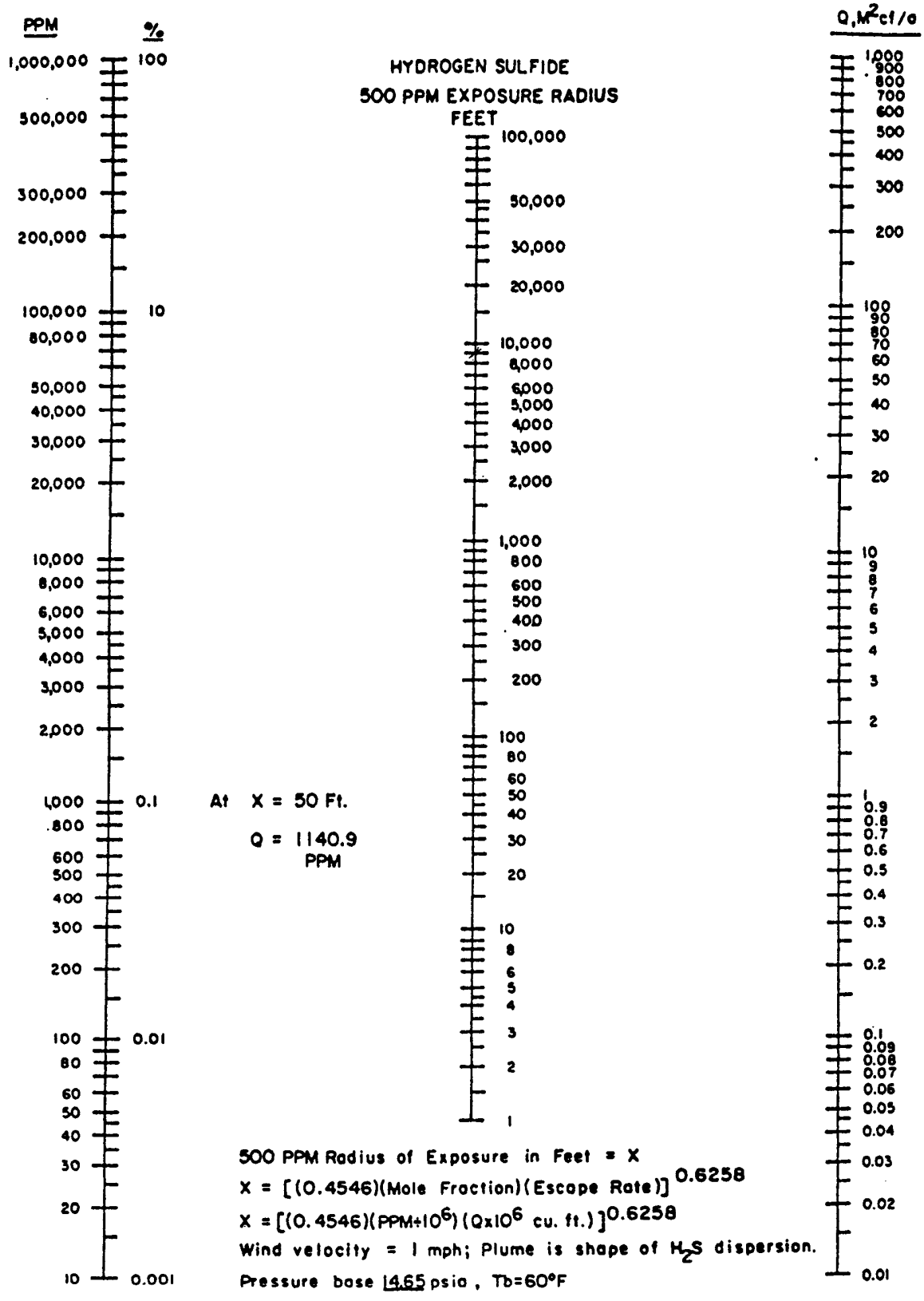
Personnel Contact List

	Cell Phone	Home Phone
Lanny Taylor	631-9755	392-6161
James Spurgeon	390-8582	492-9354
Scott Dudenhoeffer	631-9753	392-4833
Sam Abney	631-9712	393-5427
Curtis Newton	631-1255	393-3762
Chris Spurgeon	806-215-1087	806-592-0079

EDGE PETROLEUM OPERATING COMPANY
East Turkey Track 3 Federal # 2
Sec. 3, T-19-S, R-30-E
Eddy County, NM




HYDROGEN SULFIDE
100 PPM EXPOSURE RADIUS
PPM
%
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/d
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÷10⁶)(Q×10⁶ 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

PERCENT (%)	PPM	CONCENTRATION GRAINS 100 STD. FT3*	PHYSICAL EFFECTS
0.001	<10	00.65	Obvious and unpleasant odor.
0.002	10	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.