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

Form 3160-3
(August 1999)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of Work: [X] DRILL [ ] REENTER	7. If Unit or CA Agreement, Name and No.
1b. Type of Well: [ ] Oil Well [X] Gas Well [ ] Other [ ] Single Zone [ ] Multiple Zone	8. Lease Name and Well No. Nubes 33 Fed Com No.1
2. Name of Operator EOG Resources, Inc.	9. API Well No. 30-015-33918
3a. Address P.O. Box 2267 Midland, TX 79702	3b. Phone No. *(include area code)* (432) 686-3714
	10. Field and Pool, or Exploratory Undes. East Lake; Morrow
4. Location of Well *(Report location clearly and in accordance with any State requirements.*)* At surface ~~1980'FNL & 1980' FEL UNIT~~ 2612 FSL & 1795 FEL per attached SN dated 1-5-05 SHL BHL Bottom: 1980 FSL & EL At proposed prod. Zone same	11. Sec., T., R., M., or Blk. And Survey or Area Sec.33 T-18-S;R-27-E
14. Distance in miles and direction from nearest town or post office* 16 mi north from Carlsbad	12. County or Parish Eddy / 13. State NM
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drlg. Unit line, if any) 1980 / 1,980	16. No. of Acres in lease 320 / 17. Spacing Unit dedicated to this well E/2 Sec 33(320 ac.)
18. Distance from proposed location* to nearest well, drilling, completed applied for, on this lease, ft.	19. Proposed Depth 10100 / 20. BLM/BIA Bond No. on file NM2308
21. Elevations (Show whether DF, KDB, RT, GL, etc) GL 3381	22. Approximate date work will start* 1/15/2005 / 23. Estimated duration 31

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24. Attachments

The following completed in accordance with the requirements of Onshore Oil an 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 Sytem 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	Name *(Printed/Typed)*	Date
Mike Francis	Mike Francis	12/6/2004

Title Agent

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
/s/ Joe G. Lara	/s/ Joe G. Lara	JAN 28 2005
Title FIELD MANAGER	Office CARLSBAD FIELD OFFICE	

Application approval does not warrant or certify the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations theron.
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 jurisidiction.

(Instructions on reverse)

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS AND
SPECIAL STIPULATIONS
ATTACHED

Roswell Controlled Water Basin

OCD-ARTESIA

Form 3160-5
(August 1999)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
SUNDRY NOTICES AND REPORTS ON WELLS
Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE - Other instructions on reverse side

FORM APPROVED
OMB NO. 1004-0135
Expires: November 30, 2000

5 Lease Serial No.: NM 105206
6 If Indian, Allottee or Tribe Name:
7 If Unit or CA/Agreement, Name and/or No.:

1. Type of well: ☐ Oil Well ☒ Gas Well ☐ Other
2. Name of Operator: EOG Resources, Inc.
3a. Address: P.O. Box 2267, Midland, TX 79702
3b. Phone No. (include area code): (915)686-3714
4. Location of Well (Footage, Sec., T.,R.,M., or Survey Description):
S/L2612'FSL&1795' FEL(U/L J) Sec 33 T-18-S;R-27-E
BHL 1980' FSL& 1980' FEL(U/L J) Sec.33

8 Well Name and No.: Nubes 33 Fed Com No. 1
9 API Well No.:
10 Field and Pool, or Exploratory: Wildcat
11 County or Parish, State: Eddy

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other Change Surface Location
☐ Subsequet Report	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
☐ Final Abandonment Notice	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.

BLM- Carlesbad has requested EOG Resources Inc. Change it's surface location for the subject well because of Topographical Concerns. This will necessitate drilling a directional well.
Enclosed herewith are new Location Plat, Road Plat, and Verication Plat.

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2005 JAN 25 PM 2:25

14. I hereby certify that the foregoing is true and correct
Name (Printed/Typed): Mike Francis
Title: Agent
Signature: Mike Francis
Date: 1/05/2005

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by /s/ Joe G. Lara
Title: ACTING FM
Date: JAN 28 2005
Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject leaase which would entitle the applicant to conduct thereon.
Office: CARLSBAD FIELD OFFICE

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.

ch Dr., Hobbs NM 88240
Grand Avenue, Artesia, NM 88210
ict III
00 Rio Brazos Rd., Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised June 10, 2003
Submit to Appropriate District Office
State Lease – 4 Copies
Fee Lease – 3 Copies
☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1]API Number	[2]Pool Code	[3]Pool Name
		Wildcat

[4]Property Code	[5]Property Name	[6]Well Number
	Nubes "33" Fed Com	1

[7]OGRID No.	[8]Operator Name	[9]Elevation
7377	EOG Resources, Inc.	3389'

[10]Surface Location

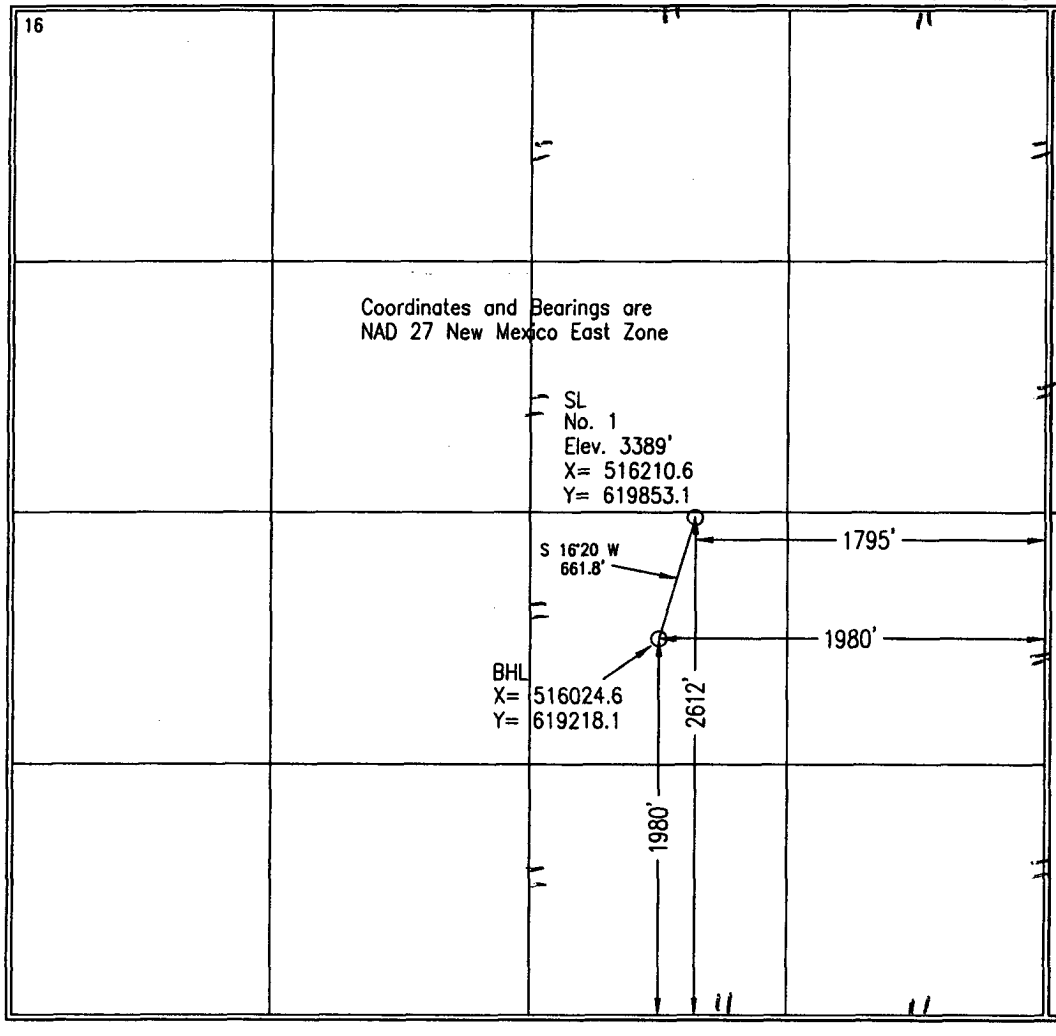
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
J	33	18 S	27 E		2612	South	1795	East	Eddy

[11]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
J	33	18 S	27 E		1980	South	1980	East	Eddy

[12]Dedicated Acres	[13]Joint or Infill	[14]Consolidation Code	[15]Order No.
320			

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



[17]OPERATOR CERTIFICATION

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

Signature

Mike Francis
Printed Name

Agent
Title and E-mail Address

1/05/2005
Date

[18]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.

12-21-2004
Date of Survey

Signature and Seal of Professional Surveyor:

MICHAEL L. STANFORD
NEW MEXICO
10324
REGISTERED PROFESSIONAL LAND SURVEYOR

Certificate Number 10324

18 Miles N of Carlsbad, New Mexico.

File No. A-2645A1.DWG

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
March 12, 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: EOG Resources, Inc. Telephone: 432 686-3714 e-mail address: mike_francis@eogresources.com
Address: PO Box 2267 Midland Tx.
Facility or well name: Nubes 33 Fed Com #1 API #: _____ U/L or Qtr/Qtr J Sec 33 T 18 R 27
County: Eddy Latitude N 32.702319 Longitude W 104.281237 NAD: 1927 ☒ 1983 ☐ Surface Owner Federal ☒ State ☐ Private ☐ Indian ☐

Pit
Type: Drilling ☒ Production ☐ Disposal ☐
Workover ☐ Emergency ☐
Lined ☒ Unlined ☐
Liner type: Synthetic ☒ Thickness 12 mil Clay ☐ Volume _____ bbl

Below-grade tank
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)	(20 points)
	50 feet or more, but less than 100 feet	(10 points)
	100 feet or more	(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	(20 points)
	(No)	(0 points)
Distance to surface water: (horizontal distance to all wetlands, playas, irrigation canals, ditches, and perennial and ephemeral watercourses.)	Less than 200 feet	(20 points)
	200 feet or more, but less than 1000 feet	(10 points)
	(1000 feet or more)	(0 points)
	Ranking Score (Total Points)	20

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DEC 13 2004
OCD-ARTESIA

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: 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.

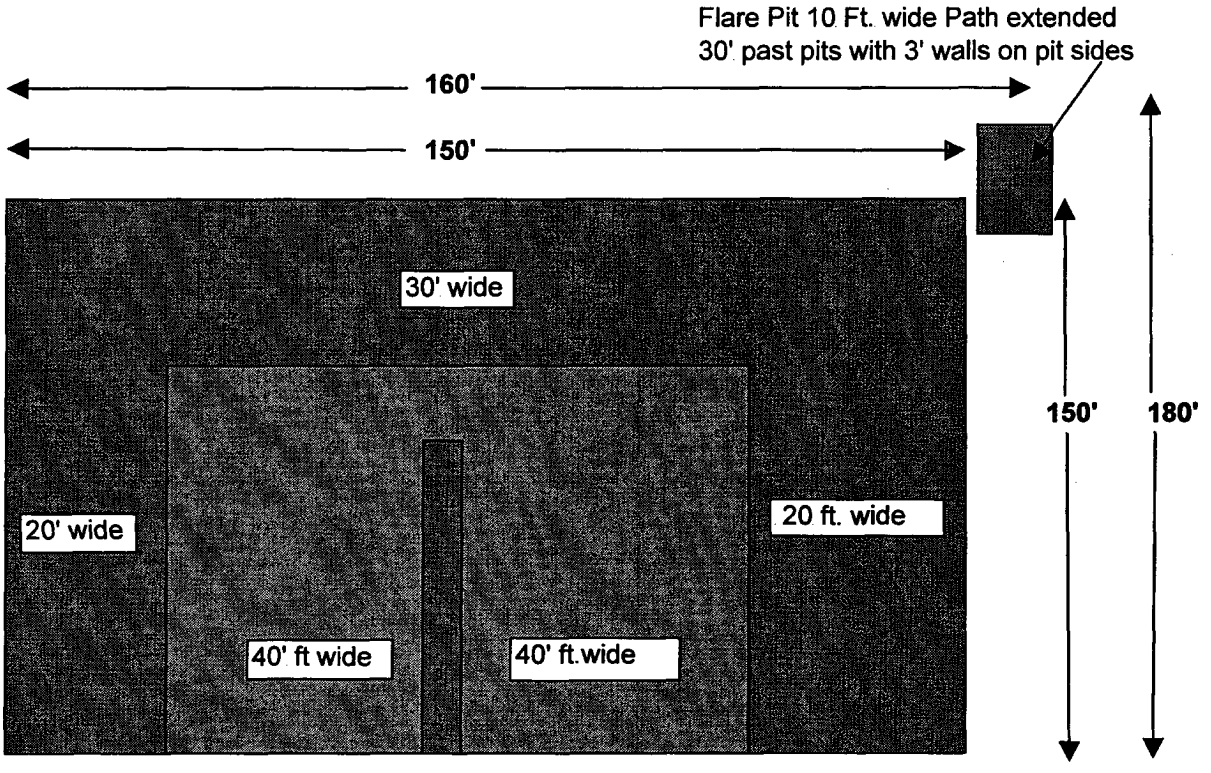
I hereby certify that the information above is true and complete to the best of my knowledge and belief. I further certify that the above-described pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines ☒, a general permit ☐, or an (attached) alternative OCD-approved plan ☐.
Date: 12/10/04
Printed Name/Title Mike Francis Agent Signature Mike Francis

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:
Date: DEC 16 2004
Printed Name/Title Field Rep II Signature

As per Guidelines, a detailed closure plan must be submitted prior to closure.

New Mexico Ground Level Double Horseshoe Pits (EOG)



Pits will be 150' deep X 150' wide ground level. Flare pit is 10 X30

Location & Elevation Verification Plat

U.S.G.S. TOPOGRAPHIC MAP	Lake McMillan North, New Mexico
CONTOUR INTERVAL	10 FEET
LOCATION COORDINATES	NAD 27: LAT. 32.704063 LONG. 104.280633
LOCATION ELEVATION	3389 FEET

EOG Resources, Inc.
NUBES 33 Fed Com No. 1
Section 33, T18S, R27E, N.M.P.M.
Eddy County, New Mexico

STANFORD SURVEYING COMPANY
P.O. BOX 8490
MIDLAND, TEXAS 79708-8490
432-699-5708

DRAWN BY Mike Stanford	Rev. 12-29-2004 JMR DATE 11-19-2004	SCALE 1" = 2000'	FILE NAME A-2645T

DRILLING PROGRAM

EOG RESOURCES, INC.
Nubes 33 Fed Com No.1

1. GEOLOGIC NAME OF SURFACE FORMATION:

Permian

2. ESTIMATED TOPS OF IMPORTANT GEOLOGICAL MARKERS:

Rustler	600'
Grayburg	1500'
San Andres	1800'
Bone Spring	4400'
Strawn	8850'
Atoka	9300'
Morrow	9530'
Barnett	9900'

3. ESTIMATED DEPTHS OF ANTICIPATED FRESH WATER, OIL OR GAS:

Upper Permian Sands	Above 200'	Fresh Water
Grayburg	1600	Oil
Strawn	8850	Gas
Atoka	9350	Gas
Morrow	9600	Gas

CASING PROGRAM

Hole Size	Interval	OD Casing	Weight Grade Jt. Cond. Type
14 ¾	0-400'	11 3/4"	42# H-40 ST&C
11"	0-2400'	8 5/8"	32# J-55 LT&C
7 7/8'	0-10'100	5 ½'	17# N80/S95 LT&C

Cementing Program:

WITNESS

11 3/4" Surface Casing: Cement to surface with 100 sx Prem Plus, 3% Econolite, 2% Calcium Chloride, 0.25#/sx Flocele, 150 sx Prem Plus, 2% Calcium Chloride

8 5/8" Intermediate: Cement to surface with 550 sx Interfill C, .25#/sx flocele, 230 sx Premium Plus, 2% Calcium Chloride

5 ½" Production: Cement w/600 sx Premium, 3% Econolite, 5#/sx Salt (3%), 0.2% HR5, .25#/sk Flocele, 485sx 50/50 Poz with retarders.. This is designed to bring TOC to 2000'.

5. MINIMUM SPECIFICATIONS FOR PRESSURE CONTROL:

(SEE EXHIBIT #1)

The blowout preventer equipment (BOP) shown in Exhibit #1 will consist of a double ram-type (5000 psi WP) preventer and an annular preventer (5000-psi WP). Units will be hydraulically operated and the ram-type will be equipped with blind rams on top and drill pipe rams on bottom. All BOP's and accessory equipment will be tested in accordance with Onshore Oil & Gas order No. 2. EOG request authorization to use a 2M system, providing for an annular preventer to be used prior to drilling the surface casing shoe before drilling out of surface casing. Before drilling out of 1st intermediate casing, the ram-type BOP and accessory equipment will be tested to 5000/1000 psi and the annular to 3500/5000-psig pressure.

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.

6. TYPES AND CHARACTERISTICS OF THE PROPOSED MUD SYSTEM:

The well will be drilled to TD with a combination of brine, cut brine, and polymer/KCL mud system. The applicable depths and properties of this system are as follows:

Depth	Type	Wt (PPG)	Viscosity (sec)	Waterloss (cc)
0-400'	Fresh Water	8.5	40-45	N.C.
400'-2400'	Brine Water	10.0	30	N.C.
2400'- TD	Cut Brine + Polymer/KCL	8.8 – 9.2	32	10

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept at the wellsite 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) A mud logging unit complete with H2S detector will be continuously monitoring drilling penetration rate and hydrocarbon shows from 5000' to TD.

8. LOGGING, TESTING AND CORING PROGRAM:

Electric logging will consist of GR-Dual Induction Focused and GR-Compensated Density-Neutron from TD to intermediate casing with a GR-Compensated Neutron run from intermediate casing to surface and optional Sonic from TD to Intermediate casing.

Possible sidewall cores based on shows.

9. ABNORMAL CONDITIONS, PRESSURES, TEMPERATURES AND POTENTIAL HAZARDS:

The estimated bottom hole temperature (BHT) at TD is 175 degrees F with an estimated maximum bottom-hole pressure (BHP) at TD of 5000 psig. No hydrogen sulfide or other hazardous gases or fluids have been encountered, reported or are known to exist at this depth in this area. No major loss circulation zones have been reported in offsetting wells.

10. ANTICIPATED STARTING DATE AND DURATION OF OPERATIONS:

The drilling operation should be finished in approximately one month. If the well is productive, an additional 30-60 days will be required for completion and testing before a decision is made to install permanent facilities.

DRILLING PROGRAM

EOG RESOURCES, INC.
Nubes 33 Fed Com No.1

ATTACHMENT TO EXHIBIT #1

1. Wear ring to be properly installed in head.

2. Blow out preventer and all fittings must be in good condition, 5000 psi W.P. minimum. Exhibit #1.

3. All fittings to be flanged

4. Safety valve must be available on rig floor at all times with proper connections, valve to be full bore 5000 psi W.P. minimum.

5. All choke and fill lines to be securely anchored especially ends of choke lines.

6. Equipment through which bit must pass shall be at least as large as the diameter of the casing being drilled through.

7. Kelly cock on kelly.

8. Extension wrenches and hand wheels to be properly installed.

9. Blow out preventer control to be located as close to driller's position as feasible.

10. Blow out preventer closing equipment to include minimum 40-gallon accumulator, two independent sources of pump power on each closing unit installation, and meet all API specifications.

EOG Resources, Inc.

Nubes 33 Fed Com No.1

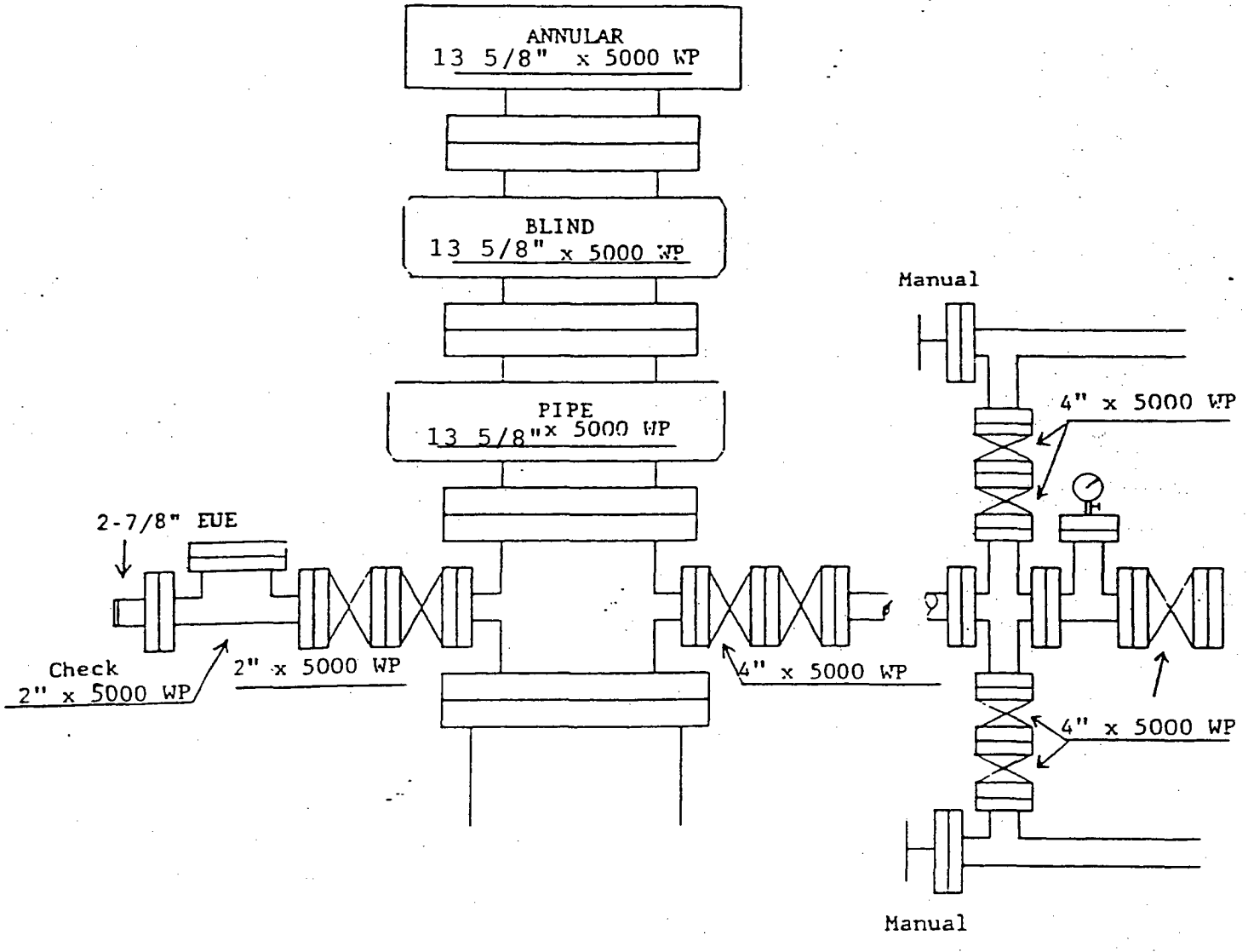


Exhibit 1

EOG RESOURCES, INC.
HYDROGEN SULFIDE (H2S) CONTINGENCY PLAN
FOR DRILLING/COMPLETING/WORKOVER/FACILITY
WITH THE EXPECTATION OF H2S IN EXCESS OF 100 PPM

EOG Resources, Inc. Nubes 33 Fed Com. No.1 Well Eddy Co. NM

TABLE OF CONTENTS

GENERAL H2S EMERGENCY ACTIONS:

In the event of an H2S emergency, the following plan will be initiated.

1) All personnel will immediately evacuate to an up-wind and if possible up-hill "safe area".

2) If for any reason a person must enter the hazardous area, they must wear a SCBA (Self contained breathing apparatus)

3) Always use the "buddy system"

4) Isolate the well/problem if possible

5) Account for all personnel and provide for medical treatment if needed.

6) Display the proper colors warning all unsuspecting personnel of the danger at hand.

7) As per EOG's Crisis Management Plan contact EOG Management.

At this point the company representative will evaluate the situation and co-ordinate the necessary duties to bring the situation under control, and if necessary, the notification of emergency response agencies and residents.

EMERGENCY PROCEDURES FOR AN UNCONTROLLABLE RESLEASE OF H2S

1) All personnel will don the self-contained breathing apparatus

2) Remove all personnel to the "safe area" (always use the "buddy system")

3) Contact company personnel if not on location.

4) Set in motion the steps to protect and or remove the general public to an upwind "safe area". Maintain strict security & safety procedures while dealing with the source. Provide for medical treatment if necessary

5) No entry to any unauthorized personnel.

6) Notify the appropriate agencies: City Police-City street(s)
State Police-State Rd
County Sheriff-County Rd.
(will assist in general public evacuation/safety while maintaining roadblocks)

7) Call the NMOCD

EMERGENCY CALL LIST: (Start and continue until ONE of these people have been reached)

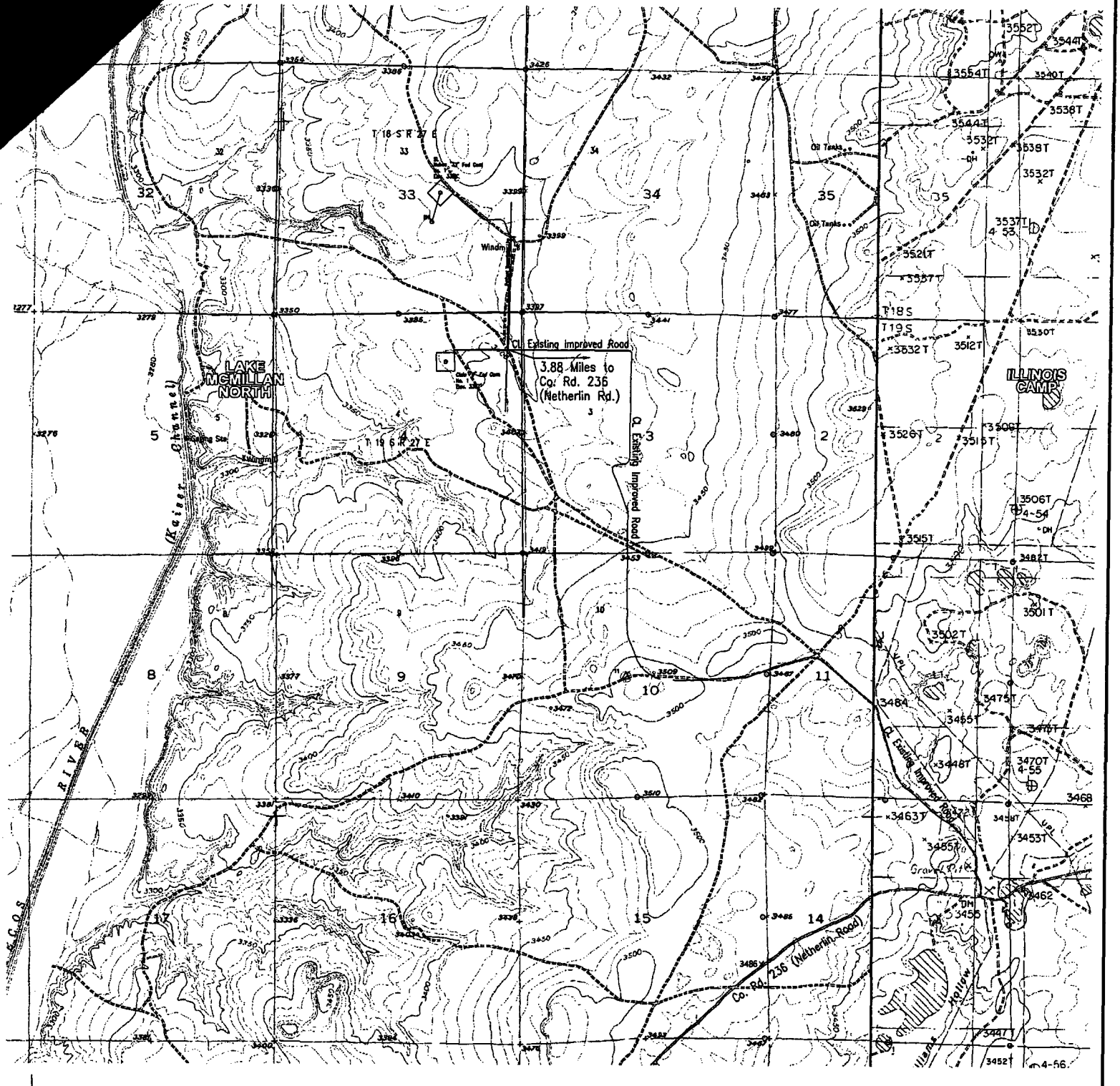
	OFFICE	MOBILE	HOME
EOG Resources, Inc.	432/686-3600		
David Anderson	432/686-3601	432/634-1002	
Billy Helms	432/686-3795	432/557-5345	
Howard Kemp	432/686-3704	432/634-1001	

EMERGENCY RESPONSE NUMBERS: Eddy County, New Mexico

State Police	505/748-9718
Eddy County Sheriff	505/746-2701
Emergency Medical Service (Ambulance)	911 or 505/746-2701
Eddy County Emergency Management (Harry Burgess)	505/887-9511
State Emergency Response Center (SERC)	505/476-9620
Artesia Police Department	505/746-5001
Artesia Fire Department	505/746-5001
Carlsbad Police Department	505/885-2111
Carlsbad Fire Department	505/885-3125
Loco Hills Fire Department	505/677-2349
(NMOCD) New Mexico Oil Conservation Division,	
District I (Lea, Roosevelt, Chavez, Curry)	505/393-6161
District II (Eddy, Chavez)	505/748-1283
American Safety	505/746-1096
Indian Fire & Safety	800/530-8693
Callaway Safety	505/392-2973
BJ Services	502/746-3146

PROTECTION OF THE GENERAL PUBLIC/ROE:

Existing Oil Field Road Plat



EOG Resources, Inc. NUBES 33 Fed Com No. 1 Section 33, T18S, R27E, N.M.P.M. Eddy County, New Mexico		STANFORD SURVEYING COMPANY P.O. BOX 8490 MIDLAND, TEXAS 79708-8490 432-699-5708	
DRAWN BY Mike Stanford	Rev. 12-29-2004 JMR DATE 11-19-2004	SCALE 1" = 3000'	FILE NAME A-2645R

In the event greater than 100 ppm H2S is present, the ROE (Radius Of Exposure) calculations will be done to determine if the following is warranted:

- 100 ppm at any public area (any place not associated with this site)
- 500 ppm at any public road (any road which the general public may travel)
- 100 ppm radius of 3000' will be assumed if there is insufficient data to do the calculations, and there is a reasonable expectation that H2S could be present in concentrations greater than 100 ppm in the gas mixture.

Calculation for the 100 ppm ROE:

X = [(1.589)(concentration)(Q)]^(0.6258)

Calculation for the 500 PPM ROE

X = [(0.4546)(concentration)(Q)]^(.06258)

Q=Gas flow rate, SCFPD
concentration = decimal equivalent of the volume fraction of hydrogen sulfide in the gaseous mixture

PUBLIC EVACUATION PLAN :
(When the supervisor has determined that the General Public will be involved, the following plan will be implemented)

1) Notification of the emergency response agencies of the hazardous condition and Implement evacuation procedures.

2) A trained person in H2S safety shall monitor with detection equipment the H2S Concentration, wind and area of exposure (ROE). This person will determine the outer perimeter of the hazardous area. The extent of the evacuation area will be determined from the data being collected. Monitoring shall continue until the situation has been resolved. (All monitoring equipment shall be UL approved, for use in class I groups A, B, C & D, Division I, hazardous locations. All monitors will have a minimum capability of measuring H2S, oxygen, and flammable values).

3) Law enforcement shall be notified to set up necessary barriers and maintain such for the duration of the situation as well as aid in the evacuation procedure.

4) The company supervising personnel shall stay in communication with all agencies through out the duration of the situation and inform such agencies when the situation has been contained and the effected area(s) is safe to enter.

PROCEDURE FOR IGNITING AN UNCONTROLLABLE CONDITION:

The decision to ignite a well should be a last resort and one if not both of the following pertain.

1) Human life and/or property are in danger.

2) There is no hope of brining the situation under control with the prevailing conditions at the site.

INSTRUCTIONS FOR IGNITION:

1) Two people are required. They must be equipped with positive pressure; self contained breathing apparatus and a "D"-ring style, full body, OSHA approved safety harness. Non-flammable rope will be attached.

2) One of the people will be a qualified safety person who will test the atmosphere for H2S, Oxygen, and LFL. The other person will be the company supervisor; he is responsible for igniting the well.

3) Ignite up-wind from a distance no closer than necessary. Make sure that where you ignite from has the maximum escape avenue available. A 25 mm flare gun shall be used, with a ±500' range to ignite the gas.

4) Prior to ignition, make a final check for combustible gases.

5) Following ignition, continue with the emergency actions and procedures as before.

REQUIRED EMERGENCY EQUIPMENT

1) Breathing Apparatus:

- Rescue Packs (SCBA) – 1 unit shall be placed at each breathing area, 2 shall be stored in the safety trailer.
- Work/Escape Packs – 4 packs shall be stored on the rig floor with sufficient air hose not to restrict work activity.
- Emergency Escape Packs – 4 packs shall be stored in the doghouse for emergency evacuation.

2) Signage and Flagging:

- One Color Code Condition Sign will be placed at the entrance to the site reflecting the possible conditions at the site.
- A Colored Condition flag will be on display, reflecting the condition at the site at that time.

3) Briefing Area: Two, perpendicular areas will be designated by signs and readily accessible.

4) Wind Socks: Two windsocks will be placed in strategic locations, visible from all angles.

5) H2S Detectors and Alarm: The stationary detector with three (3) sensors will be placed in the upper dog house if equipped, set to visually alarm @ 10 ppm and audible @ 15 ppm. Calibrate a minimum of every 30 days or as needed. The 3 sensors will be placed in the following places: (Gas sample tubes will be stored in the safety trailer)

- Rig Floor
- Bell Nipple
- End of Flow line or where well bore fluid are being discharged.

6) Auxiliary Rescue Equipment:

- Stretcher
- Two OSHA full body harness
- 100' of 5/8" OSHA approved rope
- 1-20# Class ABC fire extinguisher
- Communication via cell phones on location and vehicles on location.

USING SELF-CONTAINED BREATHING AIR EQUIPMENT (SCBA):

SCBA should be worn when any of the following are performed:

- Working near the top or on top of a tank.
- Disconnecting any line where H2S can reasonably be expected.
- Sampling air in the area to determine if toxic concentrations of H2S exist
- Working in areas where over 10 ppm on H2S has been detected.
- At any time there is a doubt as the level of H2S in the area.

All personnel shall be trained in the use of SCBA prior to working in a potentially hazardous location.

Facial hair and standard eyeglasses are not allowed with SCBA.

Contact lenses are never allowed with SCBA.

Air quality shall continuously be checked during the entire operation.

After each use, the SCBA unit shall be cleaned, disinfected, serviced and inspected.

All SCBA shall be inspected monthly.

RESCUE & FIRST AID FOR VICTIMS OF HYDROGEN SULFIDE (H2S) POISONING:

Do not panic.

Remain calm & think.

Get on the breathing apparatus.

Remove the victim to the safe breathing area as quickly as possible. Upwind an uphill from source or cross wind to achieve upwind.

Notify emergency response personnel.

Provide artificial respiration and/or CPR, as necessary.

Remove all contaminated clothing to avoid further exposure.

A minimum of two (2) personnel on location shall be trained in CPR and First Aid.

H2S TOXIC EFFECTS:

H2S is extremely toxic. The acceptable ceiling for eight hours of exposure is 10 ppm, which is .001% by volume. H2S is approximately 20% heavier than air (SP.Gr=1.19/Air=1) and colorless. It forms an explosive mixture with air between 4.3% and 46.0%. By volume hydrogen sulfide (H2)) is almost as toxic as hydrogen cyanide and is 5-6 times more toxic than carbon monoxide.

Various Gasses

Common Name	Chemical Abbrev.	Sp. GR.	Threahold Limits	Hazardous Limits	Lethal Concentration
Hydrogen Sulfide	H2S	1.19	10 ppm 15 ppm	100 ppm/hr	600 ppm
Hydrogen Cyanide	HCN	0.94	10 ppm	150 ppm/hr	300 ppm
Sulfur Dioxide	SO2	2.21	2 ppm	N/A	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	Combustible @ 5%	N/A

1 Threshold limit – Concentrations at which it is believed that all workers may be repeatedly exposed, day after day without Adverse effects.
2 Hazardous limit – Concentration that may cause death
3 Leathal concentration – Concentration that will cause death with short-term exposure
4 Threshold limit – 10 ppm – NIOSH guide to chemical hazards
5 Short-term threshold limit

PHYSICAL EFFECTS OF HYDROGEN SULFIDE:

CONCENTRATIONS		PHYSICAL EFFECTS
.001%	10 ppm	Obvious and unpleasant odor. Safe for 8 hr exposure
.005%	50 ppm	Can cause some flu-like symptoms and can cause pneumonia
.01%	100 ppm	Kills the sense of smell in 3-15 minutes. May irritate eyes and throat.
.02%	200 ppm	Kills the sense of smell rapidly. Severely irritates eyes and throat. Severe flu-like symptoms after 4 or more hours. May cause lung damage and/or death.
.06%	600 ppm	Loss of consciousness quickly, death will result if not rescued promptly