District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 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 & Natural Resources

Form C-101
Revised March 12, 1999

OIL CONSERVATION DIVISION
2040 South Pacheco
Santa Fe, NM 87505

RECEIVED
MAR 29 2004
OCD-ARTESIA

Submit to Appropriate District Office
State Lease - 6 Copies
Fee Lease - 5 Copies

☐ AMENDED REPORT

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK OR ADD A ZONE

[1] Operator Name and Address	[2] OGRID Number
Dominion Oklahoma Texas E&P, Inc. 14000 Quail Springs Parkway - Suite 600 Oklahoma City, OK 73134	25773
	[3] API Number 30-015-33369

[4] Property Code	[5] Property Name	[6] Well No.
	Artesia "16" State Com	1

[7] Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	16	18S	28E		990	South	940	West	Eddy

[8] Proposed Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South

Cement to cover all oil, gas and water bearing zones.

[9] Proposed Pool 1
Illinois Camp Morrow, North (Gas)

[11] Work Type Code	[12] Well Type Code	[13] Cable/Rotary	[14] Lease Type Code	[15] Ground Level Elevation
N	G	Rotary	S	3616'
[16] Multiple	**[17] Proposed Depth**	**[18] Formation**	**[19] Contractor**	**[20] Spud Date**
N	10,750'	Morrow	Patterson	4/12/2004

[21] Proposed Casing and Cement Program

Hole Size	Casing Size	Casing weight/foot	Setting Depth	Sacks of Cement	Estimated TOC
17 1/2"	13 3/8"	54.5#	440'	450 sks	Surface
12 1/4"	9 5/8"	36#	2,800'	900 sks	Surface
8 1/2"	4 1/2"	17#	10,750'	1300 sks	Tie back to
					Nearest Producing
					Zone

[22] Describe the proposed program. If this application is to DEEPEN or PLUG BACK give the data on the present productive zone and proposed new productive zone. Describe the blowout prevention program, if any. Use additional sheets if necessary.

1. Drill 17 1/2" hole to ± 440'. Run 13 3/8" csg. and cement to surface w/450 sks cement.
2. Drill 12 1/4" hole to ± 2,800'. Run 9 5/8" csg. and cement to surface w/900 sks cement.
3. Drill 8 1/2 " hole to ± 10,750'. Run 4 1/2" csg. and cement to 9 5/8" w/1300 sks cement.

See attached "Exhibit 6" for BOP assembly.

[23] I hereby certify that the information given above is true and complete to the best of my knowledge and belief.

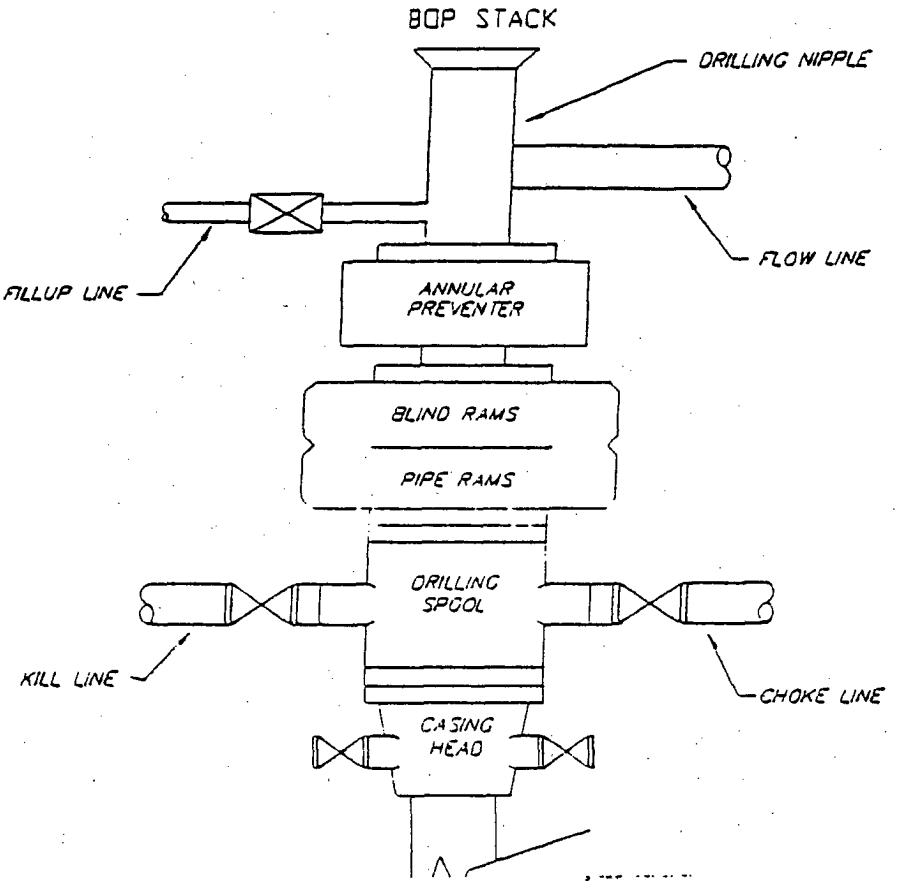
Signature: Carla Christian
Printed name: Carla Christian
Title: Regulatory Specialist
Date: 3/26/2004 Phone: 405-749-5263

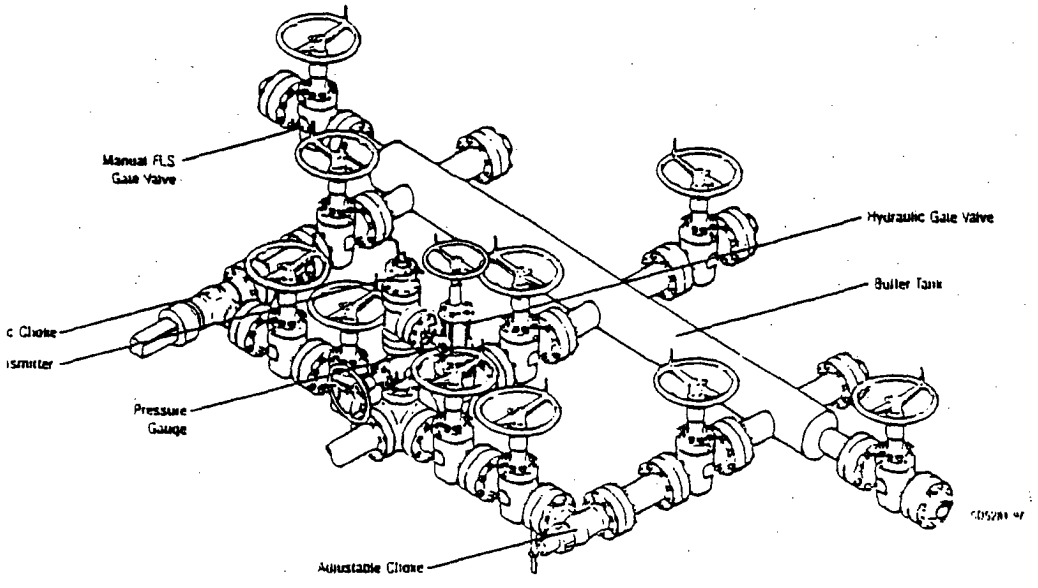
OIL CONSERVATION DIVISION

Approved by: Lines at Hoss
Title: District Supervisor
Approval Date: APR 06 2004 Expiration Date: APR 06 2005
Condition of Approval:
Attached ☐

Exhibit 6

TYPICAL 5,000 p.s.i.
BLOWOUT PREVENTER & CHOKE MANIFOLD SCHEMATIC





Typical Choke Manifold Designed for Land Drilling Applications

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State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

2040 South Pacheco
Santa Fe, New Mexico 87504-2088

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
	78890	Illinois Camp Morrow, N. (Gas)

Property Code	Property Name	Well Number
	ARTESIA "16" STATE COM	1

OGRID No.	Operator Name	Elevation
025773	DOMINION OKLAHOMA TEXAS E&P INC.	3616'

Surface Location

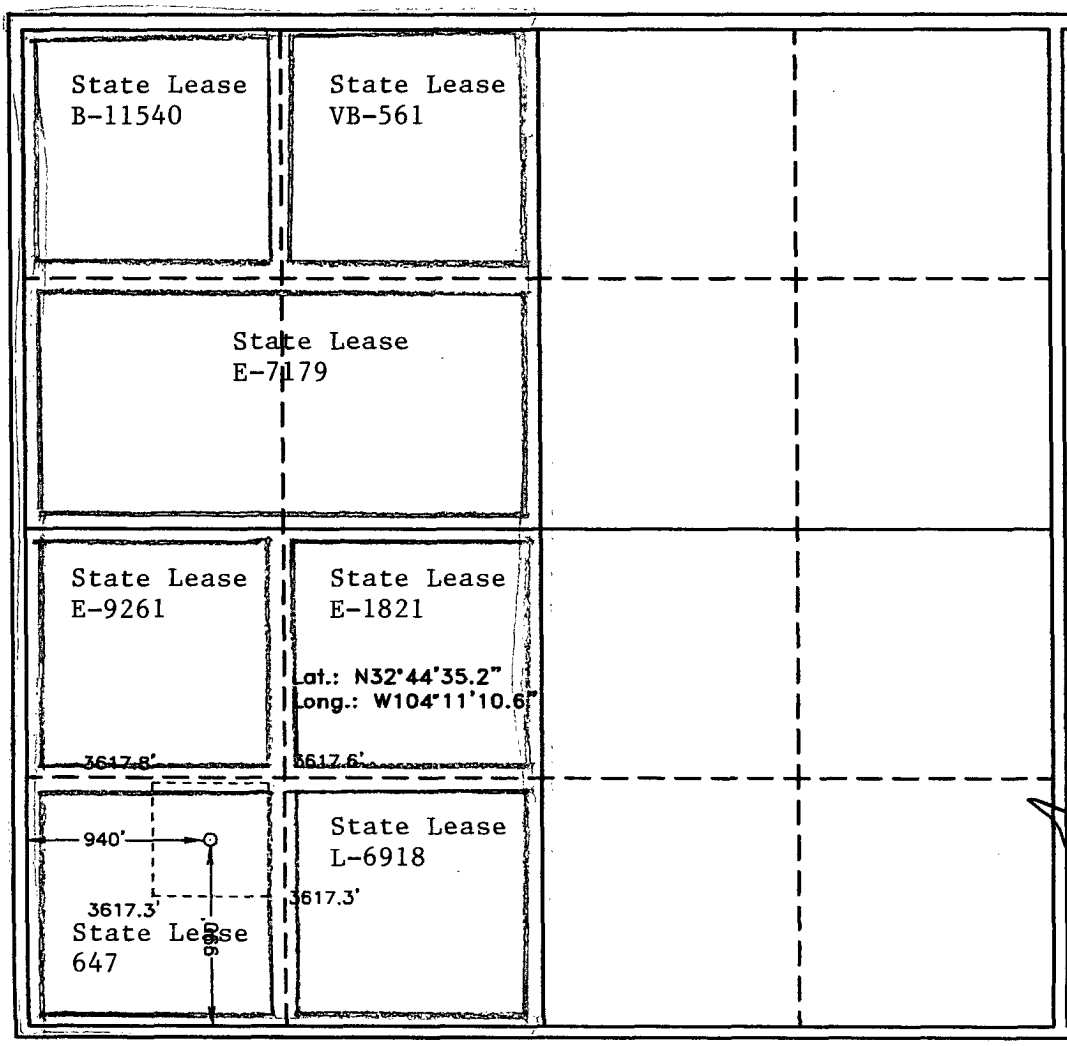
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	16	18-S	28-E		990'	SOUTH	940'	WEST	EDDY

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.
320	Y		

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.

Carla Christian
Signature

Carla Christian
Printed Name

Regulatory Specialist
Title

March 26, 2004
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.

March 18, 2004
Date Surveyed
Signature & Seal of Professional Surveyor

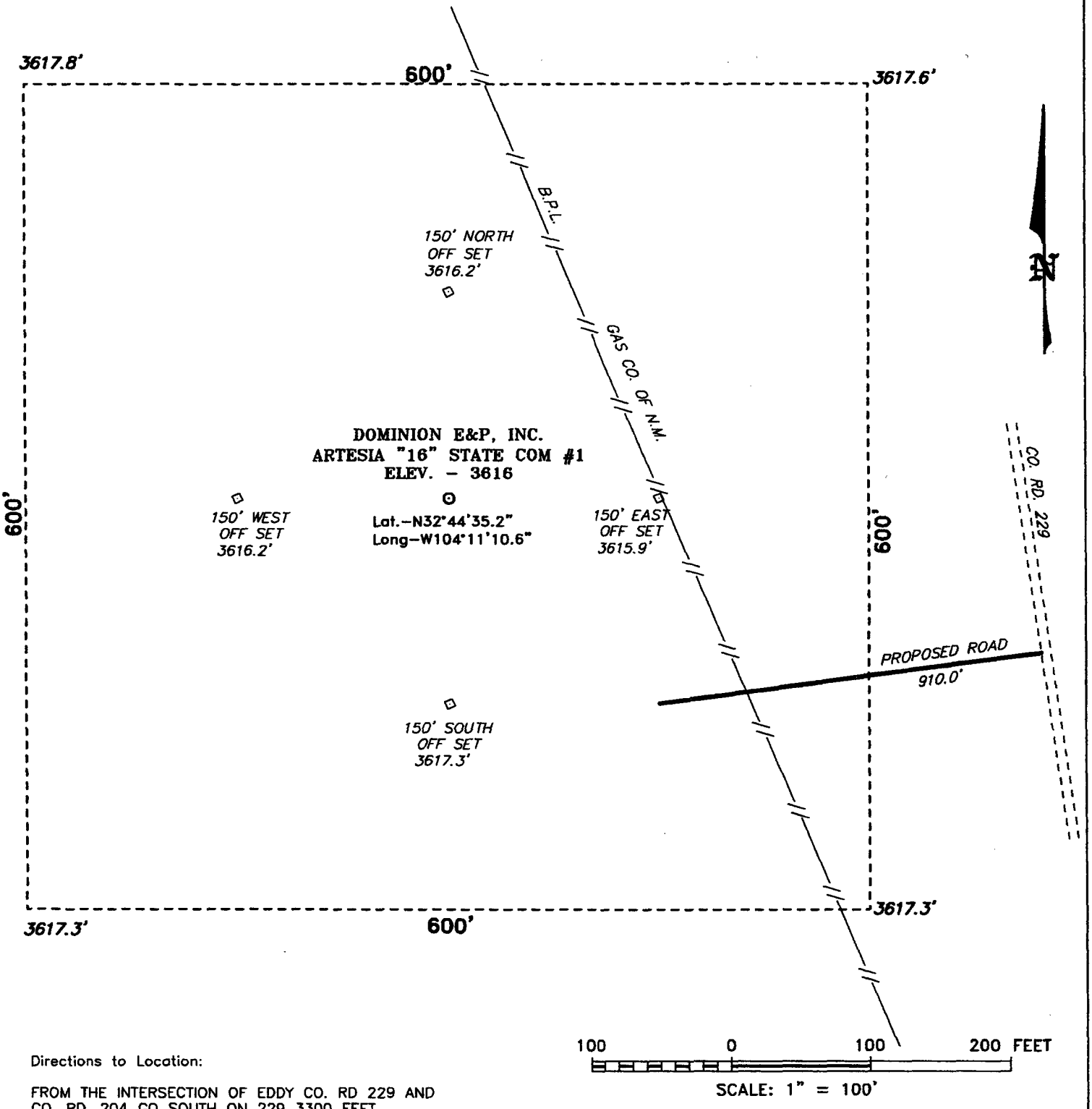
7977

W.O. No. 4048

Certificate No. Gary L. Jones 7977

JLP BASIN SURVEYS

SECTION 16, TOWNSHIP 18 SOUTH, RANGE 28 EAST, N.M.P.M.,
EDDY COUNTY, **NEW MEXICO.**



Directions to Location:

FROM THE INTERSECTION OF EDDY CO. RD 229 AND CO. RD. 204 GO SOUTH ON 229 3300 FEET, LOCATION IS 910' WEST OF ROAD.

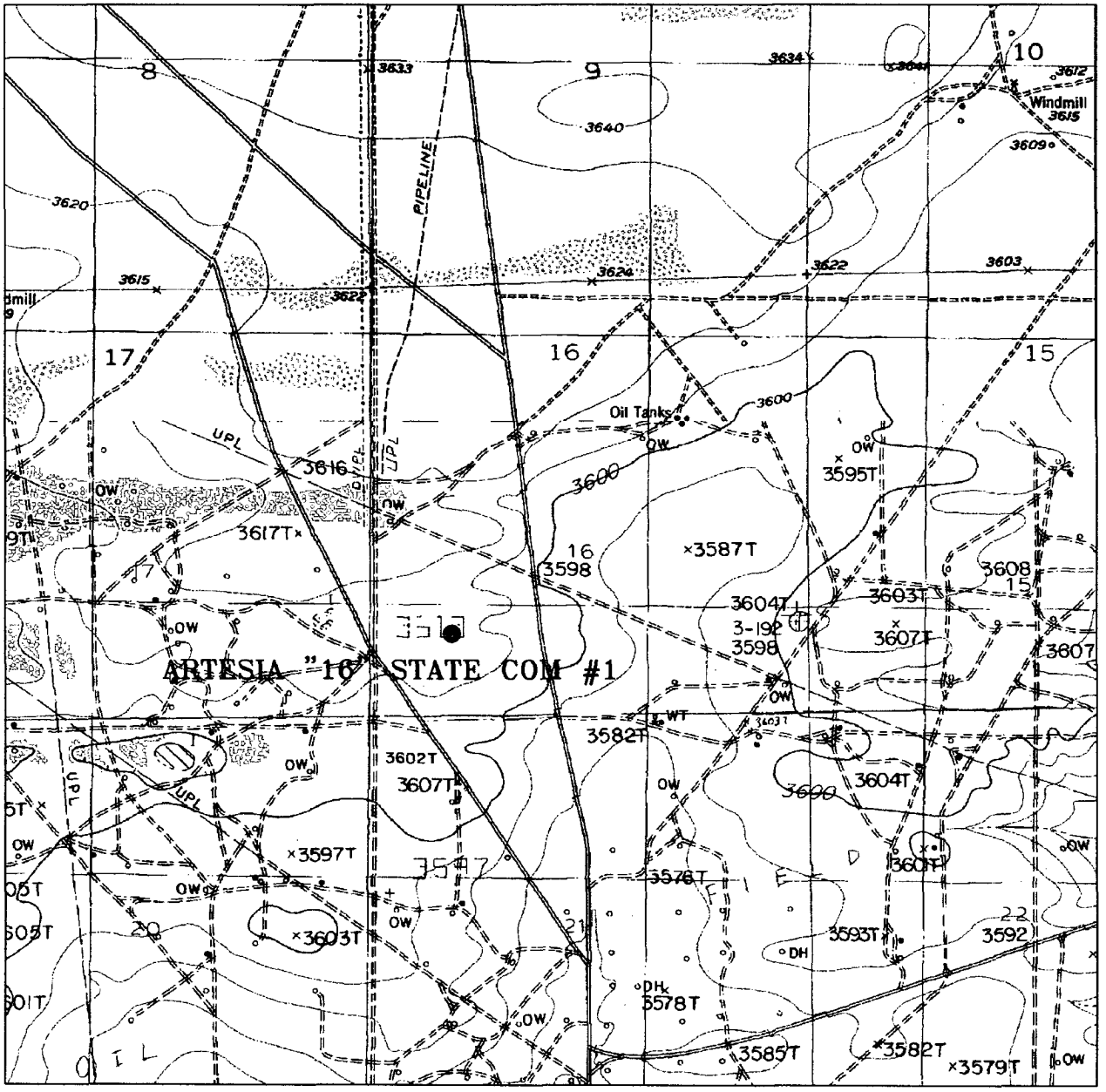
DOMINION OKLAHOMA TEXAS E&P INC.

REF: ARTESIA "16" STATE COM #1 / Well Pad Topo

THE ARTESIA "16" STATE COM. No. 1 LOCATED 990' FROM THE SOUTH AND 940' FROM THE WEST LINE OF SECTION 16, TOWNSHIP 18 SOUTH, RANGE 28 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO.

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

W.O. Number: 4084	Drawn By: JAMES PRESLEY		
Date: 03/19/04	Disk: JLP CD#1 - 4084A.DWG	Survey Date: 03/18/04	Sheet 1 of 1 Sheets



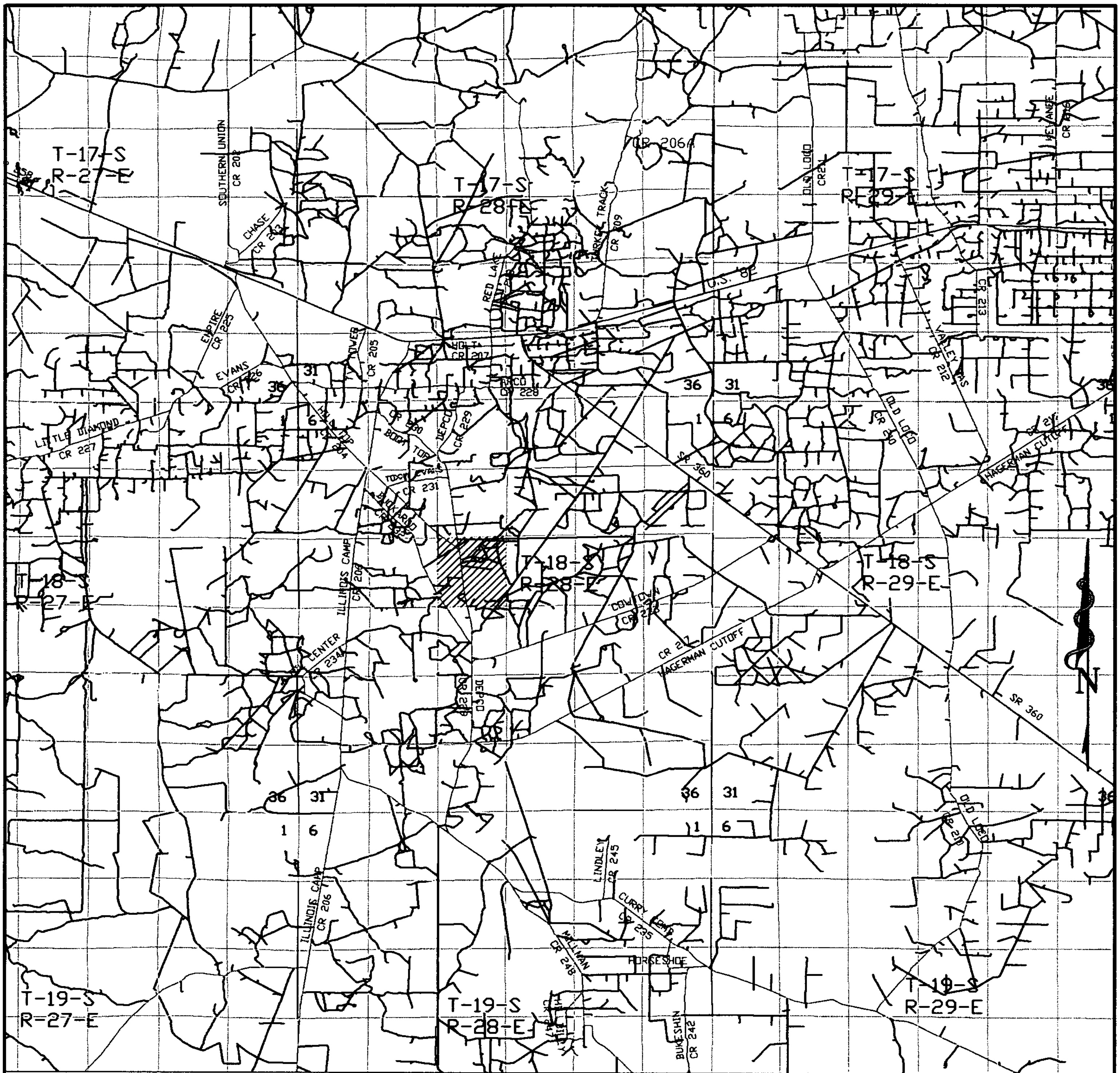
ARTESIA "16" STATE COM #1
Located at 990' FSL and 940' FWL
Section 16, Township 18 South, Range 28 East,
N.M.P.M., Eddy County, New Mexico.

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:	4084AA - JLP CD#1
Survey Date:	03/18/04
Scale:	1" = 2000'
Date:	03/19/04

DOMINION
OKLAHOMA
TEXAS
E&P, INC.



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DOMINION OKLAHOMA TEXAS E&P, INC.

DOMINION OKLAHOMA TEXAS E&P, INC.

H2S CONTINGENCY PLAN

RECEIVED
APR 0 5 2004
OCD-ARTESIA

DRILLING OPERATIONS FOR

ARTESIA "16" STATE COM 1

STATE OF NEW MEXICO

EDDY COUNTY, NEW MEXICO

LEGAL DESCRIPTION

990' FSL & 940' FWL (SW/4 SW/4)
SEC. 16-18S-28E
EDDY COUNTY, NEW MEXICO
UNIT LETTER: M

EMERGENCY PHONE LIST
ARTESIA "16" STATE COM 1

GOVERNMENTAL AGENCIES:
FEDERAL AGENCIES
BUREAU OF LAND MANAGEMENT (Carlsbad)..... (505) 887-6544

STATE AGENCIES:
LAW ENFORCEMENT.....911
STATE POLICE (Carlsbad).....(505) 885-3147
POLICE DEPARTMENT (Artesia).....(505) 746-5000
SHERIFFS DEPARTMENT (Eddy County).....(505) 887-7551

EMERGENCY SERVICES:
IN CASE OF AN EMERGENCY DIAL 911
AMBULANCE (Artesia).....(505) 746-5050
FIRE DEPARTMENT (Artesia).....(505) 746-5050
FIRE DEPARTMENT (Loco Hills).....(505) 677-2349
(Not always manned. Artesia Fire Dept. will notify if unable to contact by phone.)

DISTRICT OFFICE:
PRODUCTION AND DRILLING FOREMAN:
GENE SIMER.....OFFICE.....(505) 885-1313
MOBILE.....(505) 706-3225
PAGER.....(505) 490-5801
HOME.....(505) 885-6302
ASSISTANT PRODUCTION FOREMAN:
CALVIN DANIEL.....OFFICE.....(505) 885-1313
MOBILE..... (505) 390-3736

DRILLING FOREMAN IS THE ONSITE COMPANY SAFETY REPRESENTATIVE

DISTRICT ENVIRONMENTAL AND SAFETY DIRECTOR (SONORA, TX):
TOMMY ARNWINE.....OFFICE.....(915) 387-3588
MOBILE.....(915) 277-2759
HOME.....(915) 387-2317
MANAGER OF DRILLING/COMPLETIONS:
ALAN MCNALLY .....OFFICE.....(405) 749-5277

SENIOR ENGINEER II:
PAT MCCOLLOM.....OFFICE.....(405) 748-2762

H_2S CONTINGENCY PLAN

EMERGENCY PROCEDURES

A. IN THE EVENT OF ANY EVIDENCE OF H_2S 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 H_2S 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 NEW MEXICO OIL CONSERVATION DIVISION OF THE SITUATION.
2. REMOVE ALL PERSONNEL TO SAFE BREATHING AREA.
3. NOTIFY PUBLIC SAFETY PERSONNEL TO HELP MAINTAIN ROAD BLOCKS.
4. PROCEED WITH BEST PLAN (AT THE TIME) TO REGAIN CONTROL OF THE WELL. MAINTAIN TIGHT SECURITY AND SAFETY PROCEDURES.

C. RESPONSIBILITY:

1. APPROVED SUPERVISOR, TO BE NAMED PRIOR TO SPUD OF WELL.
   - 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

EMERGENCY REACTION STEPS

MUD ENGINEER:	1. REPORT TO BRIEFING AREA. 2. WHEN INSTRUCTED, BEGIN CHECK OF MUD FOR PH AND H_2S LEVEL (CARRET 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.	SAME

TAKING A KICK

WHEN TAKING A KICK DURING AN H_2S EMERGENCY, ALL PERSONNEL WILL FOLLOW STANDARD BOP PROCEDURES AFTER REPORTING TO BRIEFING AREA AND MASKING UP.

OPEN HOLE LOGGING

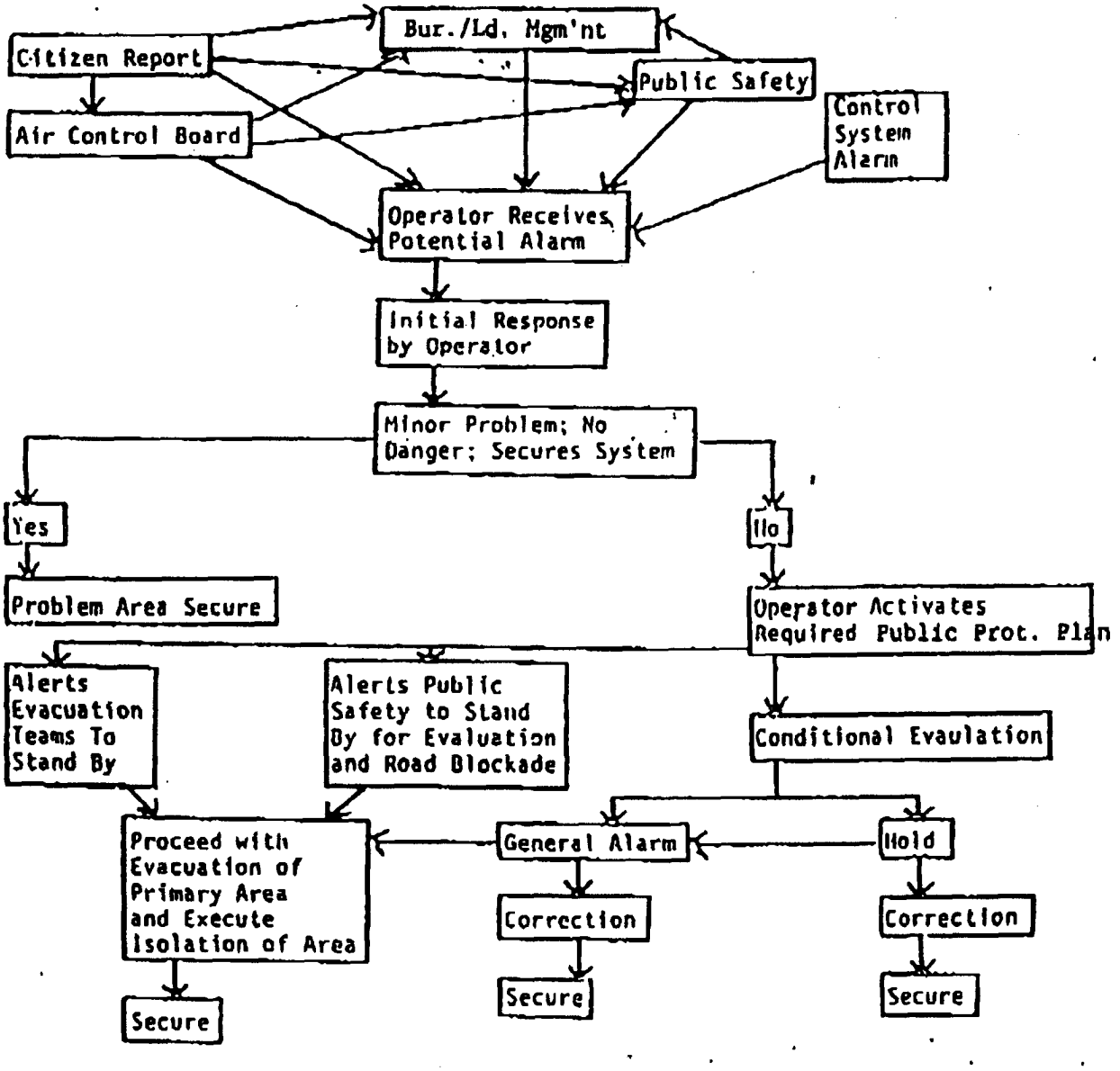
ALL UNNECESSARY PERSONNEL OFF FLOOR. DRILLING FOREMAN AND SAFETY PERSONNEL SHOULD MONITOR CONDITION, ADVISE STATUS AND DETERMINE NEED FOR USE OF AID EQUIPMENT.

RUNNING CASING OR PLUGGING

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

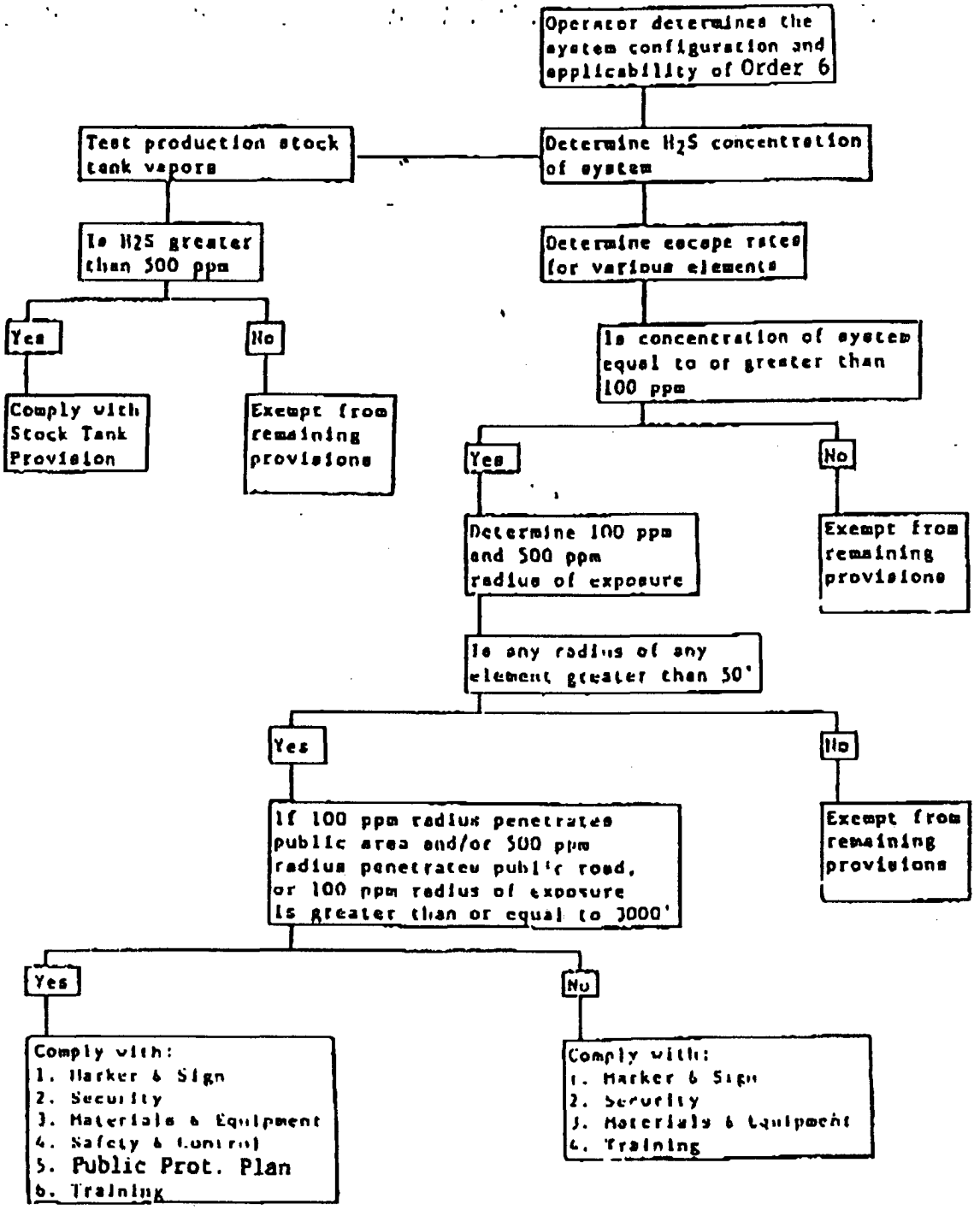
I

GENERAL OUTLINE OF AN EMERGENCY PLAN



I.

CHART #1
FOR EXISTING OPERATION



H_2S CONTINGENCY PLAN

IGNITION PROCEDURES

THE DECISION TO IGNITE THE WELL IS THE RESPONSIBILITY OF THE COMPANY FOREMAN. IN THE EVENT HE IS INCAPACITATED, IT BECOMES THE RESPONSIBILITY OF THE CONTRACT RIG TOOL PUSHER. THIS DECISION SHOULD BE MADE ONLY AS A LAST RESORT AND IN A SITUATION WHERE IT IS CLEAR THAT:

1. HUMAN LIFE AND PROPERTY ARE ENDANGERED.
2. THERE IS NO HOPE OF CONTROLLING THE BLOWOUT UNDER THE PREVAILING CONDITIONS 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.

INSTRUCTIONS FOR IGNITING THE WELL

1. TWO PEOPLE ARE REQUIRED FOR THE ACTUAL IGNITION 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: 25MM 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 COVERT TO SULFUR DIOXIDE, WHICH IS ALSO HIGHLY TOXIC.
DO NO ASSUME THE AREA IS SAFE AFTER THE WELL IS IGNITED.

H_2S CONTINGENCY PLAN

TRAINING REQUIREMENTS

WHEN WORKING IN AN AREA WHERE HYDROGEN SULFIDE GAS (H_2S) MIGHT BE ENCOUNTERED, DEFINITE TRAINING REQUIREMENTS MUST BE CARRIED OUT. ALL HAD ADEQUATE TRAINING IN THE FOLLOWING:

1. HAZARDS AND CHARACTERISTICS OF H_2S.
2. PHYSICAL EFFECTS OF H2 S ON THE HUMAN BODY.
3. TOXICITY OF H_2S AND SLUGGER DIOXIDE.
4. H_2S DETECTION.
5. EMERGENCY RESCUE.
6. RESUSCITATORS.
7. FIRST AID AND ARTIFICIAL RESPIRATION.
8. EFFECTS OF H_2S 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 H_2S.

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 WELLSITE BRIEFING.

H_2S CONTINGENCY PLAN

EMERGENCY EQUIPMENT REQUIREMENTS

SIGNS

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

WELL NAME:

Artesia "16" State Com 1
CAUTION - POTENTIAL POISON GAS
HYDROGEN SULFIDE
NO ADMITTANCE WITHOUT AUTHORIZATION

WIND SOCK - WIND STREAMERS

A. ONE 36" WIND SOCK LOCATED AT PROTECTION CENTER, AT HEIGHT VISIBLE FROM RIG FLOOR.

B. ONE 36" SOCK LOCATED AT MUD PITS, AT HEIGHT VISIBLE FROM PIT AREAS.

HYDROGEN SULFIDE DETECTOR AND ALARMS

A. H_2S MONITOR WITH ALARM WILL BE LOCATED ON THE RIG FLOOR, AT THE BELL NIPPLE, AND AT THE SHALE SHAKER. THESE MONITORS WILL BE SET TO ALARM AT 10 PPM WITH AMBER LIGHT, AND TO ALARM AT 20 PPM WITH AMBER LIGHT AND AUDIO ALARM.

B. HAND OPERATED DETECTORS WITH TUBES.

C. H_2S MONITOR TESTER.

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, H_2S PRESENT

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

H2 S CONTINGENCY PLAN

EMERGENCY EQUIPMENT REQUIREMENTS

AUXILIARY RESCUE EQUIPMENT

A. STRETCHER.

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

MUD INSPECTION DEVICES

GARRET GAS TRAIN OR HATCH TESTER FOR INSPECTION OF SULFIDE CONCENTRATION IN MUD SYSTEM.

FIRE EXTINGUISHER

ADEQUATE FIRE EXTINGUISHERS SHALL BE LOCATED AT STRATEGIC LOCATIONS.

BLOWOUT PREVENTION EQUIPMENT

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

COMBUSTIBLE GAS DETECTOR

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

BOP TESTING

BOP AND CHOKE LINE AND KILL LINE WILL BE TESTED.

AUDIO SYSTEM

RADIO COMMUNICATIONS WILL BE AVAILABLE AT THE RIG.

A. RIG FLOOR OR TRAILER

B. VEHICLE

H_2S CONTINGENCY PLAN

EMERGENCY EQUIPMENT REQUIREMENTS

SPECIAL CONTROL EQUIPMENT

A. HYDRAULIC BOP EQUIPMENT WITH REMOTE CONTROL ON GROUND.

B. ROTATING HEAD.

EVACUATION PLAN

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

DESIGNATED AREA

A. PARKING AND VISITOR AREA - ALL VEHICLES ARE TO BE PARKED AT A PRE-DETERMINED 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 WELLBORE SO THEY OFFSET PREVAILING WINDS PERPENDICULARLY, OR AT A 45-DEGREE ANGLE IF WIND DIRECTION TENDS TO SHIFT IN THE AREA. PERSONNEL PROTECTIVE EQUIPMENT SHOULD BE STORED IN BOTH PROTECTION CENTERS OR IF A MOVABLE TRAILER IS USED, IT SHOULD BE KEPT UPWIND OF EXISTING WINDS WHEN WIND IS FROM THE PREVAILING DIRECTION. BOTH PROTECTION CENTERS SHOULD BE ACCESSIBLE.

H2S CONTINGENCY PLAN

STATUS CHECK LIST

NOTE: ALL ITEMS ON THIS LIST MUST BE COMPLETED BEFORE DRILLING AFTER 500'

ITEM	DESCRIPTION	CHECK BY: DATE
1.	H2S SIGN AT LOCATION ENTRANCE	_____
2.	WIND SOCKS LOCATED AS REQUIRED	_____
3.	30 MINUTE PRESSURE DEMAND AIR PACKS AT SAFE AREAS	_____
4.	FIVE (5) MINUTE ESCAPE PACKS FOR EACH INDIVIDUAL ON RIG	_____
5.	SAFE BREATHING AREAS SET UP	_____
6.	CONDITION FLAGS ON LOCATION AND READY FOR USE	_____
7.	H2S DETECTION SYSTEM SET UP	_____
8.	H2S ALRAM SYSTEM HOOKED UP AND READY	_____
9.	ALL RIG CREW AND SUPERVISORS TRAINED IN H2S SAFETY AND CERTIFIED.	_____
10.	ALL OUTSIDE SERVICE CONTRACTORS ADVISED OF POTENTIAL H2S HAZARD ON WELL.	_____
11.	"NO SMOKING" SIGNS IN PLACE	_____

H_2S CONTINGENCY PLAN

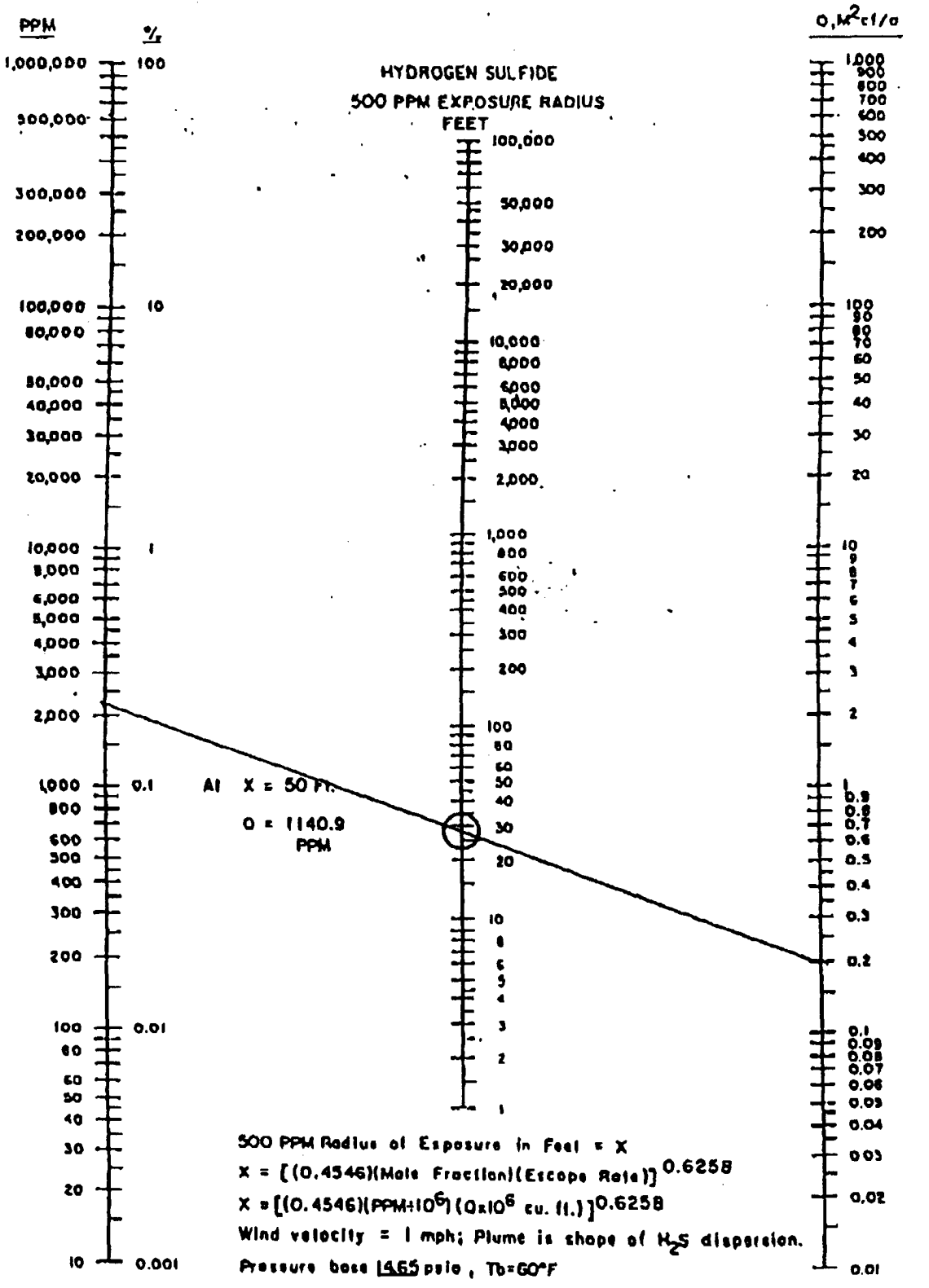
PROCEDURAL CHECK LIST

PERFORM EACH TOUR:

1. CHECK FIRE EXTINGUISHERS TO SEE THAT THEY HAVE THE PROPER CHARGE.
2. CHECK BREATHING EQUIPMENT TO ENSURE THAT IT HASN'T BEEN TAMPERED WITH.
3. MAKE SURE ALL THE H_2S 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 GET AIR.
2. BLOWOUT PREVENTOR 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 LISTS
   - B. HAND OPERATED H_2S DETECTORS AND TUBES


PPM
%
Q, M²c1/a
HYDROGEN SULFIDE
500 PPM EXPOSURE RADIUS
FEET
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500,000
300,000
200,000
100,000
80,000
60,000
40,000
30,000
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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
At X = 50 Ft.
Q = 1140.9 PPM
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
T.R. King 2-29-76

GENERAL INFORMATION

THE 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'S.

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 IT 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 MUSE WEAR EYEGLASSES. CONTACT LENSES SHOULD NOT BE ALLOWED.

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 RECORD 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.

GENERAL INFORMATION

THE USE OF SELF-CONTAINED BREATHING EQUIPMENT

5. PERSONS ASSIGNED TASK THAT REQUIRE 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 H_2S.

   B. WHEN BREAKING OUT ANY LINE WHERE H_2S CAN REASONABLY BE EXPECTED.

   C. WHEN SAMPLING AIR IN AREAS TO DETERMINE IF TOXIC CONCENTRATIONS OF H_2S EXISTS.

   D. WHEN WORKING IN AREAS WHERE OVER 10 PPM H_2S HAS BEEN DETECTED.

   E. AT ANY TIME THERE IS A DOUBT AS TO THE H_2S LEVEL IN THE AREA TO BE ENTERED.

GENERAL INFORMATION

RESCUE - FIRST AID FOR HYDROGEN SULFIDE POISONING

DO NOT PANIC!!

REMAIN CALM - THINK

1. HOLD YOUR BREATH. (DO NOT INHALE; STOP BREATHING.)
2. PUT ON BREATHING APPARATUS.
3. REMOVE VICTIM(S) TO FRESH AIR AS QUICKLY AS POSSIBLE. (GO UPWIND FROM SOURCE OR AT RIGHT ANGLES TO THE WIND; NOT DOWNWIND)
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, BEFOREHAND, OF THE POSSIBILITY OF H_2 S GAS POISONING (NO MATTER HOW REMOTE THE POSSIBILITY IS).
7. NOTIFY EMERGENCY ROOM PERSONNEL THAT THE VICTIM(S) HAS BEEN EXPOSED TO $H2_s$ 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 H_2 S. EVERYONE NEEDS TO MASTER THESE NECESSARY SKILLS.

H_2S CONTINGENCY PLAN

GENERAL EVACUATION PLAN

THE DIRECT LINE OF ACTION TO PROTECT PUBLIC FROM HAZARDOUS GAS SITUATIONS ARE AS FOLLOWS:

1. WHEN THE COMPANY APPROVED SUPERVISOR (DRILLING FOREMAN, CONSULTANT, RIG PUSHER, OR DRILLER) DETERMINES THAT H_2S 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 H_2S DETECTION EQUIPMENT AND SELF-CONTAINED BREATHING EQUIPMENT, WILL MONITOR H_2S 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 DEPARTMENT, FIRE DEPARTMENT, AND SHERIFF'S DEPARTMENT) WILL BE CALLED TO AID IN SETTING UP AND MAINTAINING ROAD BLOCKS. ALSO, THEY WILL AID IN EVACUATION OF THE PUBLIC IF NECESSARY.

   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.

"SEE EMERGENCY REACTION PLAN"

WHAT TO DO

ANYONE
EMERGENCY ACTION CHECKLIST

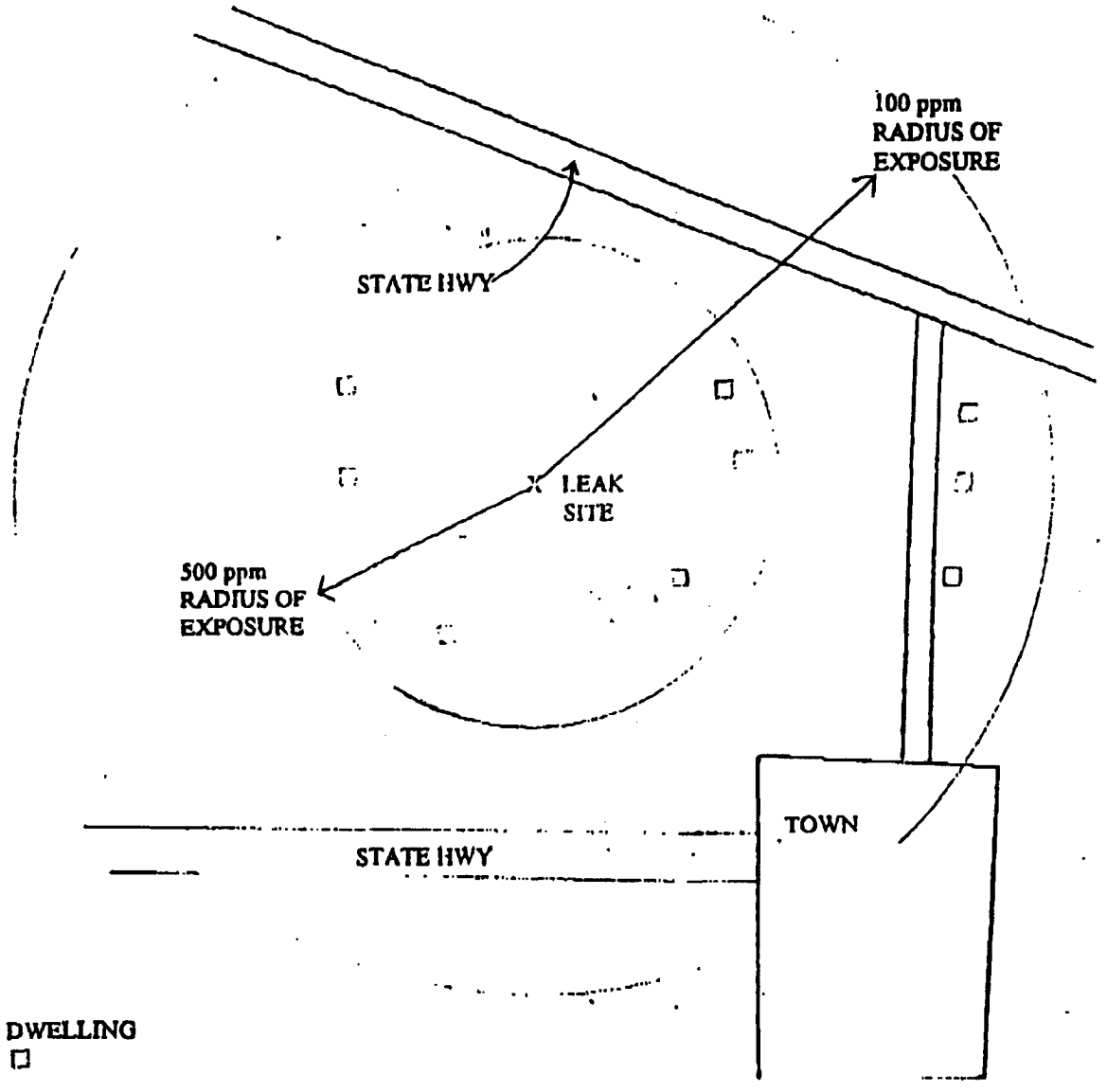
WELL BLOWOUT

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

PERSON DOWN LOCATION/FATALITY

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

EXAMPLES OR DISPERSION PROBLEM



GENERAL INFORMATION

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 DENOTED 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	H_2S	1.18	10 PPM4 20 PPM5	250 PPM/HR	600 PPM
SULFUR DIOXIDE	SO_2	2.21	5 PPM	----------	1000 PPM
CHLORINE	CL_2	2.45	1 PPM	4 PPM/HR	1000 PPM
CARBON MONOXIDE	CO	0.97	50 PPM	400 PPM/HR	1000 PPM
CARBON DIOXIDE	CO_2	1.52	5000 PPM	5%	10%
METHANE	CH_4	0.55	90,000 PPM (9%) COMBUSTIBLE ABOVE 5% IN AIR		------

GENERAL INFORMATION

TOXIC EFFECTS OF HYDROGEN SULFIDE

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 MAY CAUSE DEATH.

3. **LETHAL CONCENTRATION:** CONCENTRATION THAT WILL CAUSE DEATH WITH SHORT TERM EXPOSURE.

4. **THRESHOLD LIMIT:** 10 PPM - 1972 ACGIA (AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS).

5. **THRESHOLD LIMIT:** 10 PPM - 1989 ANSI ACCEPTABLE CEILING CONCENTRATION FOR EIGHT-HOUR EXPOSURE (BASED ON 40-HR WEEK) IS 10 PPM. OSHA RULES AND REGULATIONS (FEDERAL REGISTER, VOLUME 37, NO. 202, PART II, DATED 02/01/89).

GENERAL INFORMATION

TOXIC EFFECTS OF HYDROGEN SULFIDE

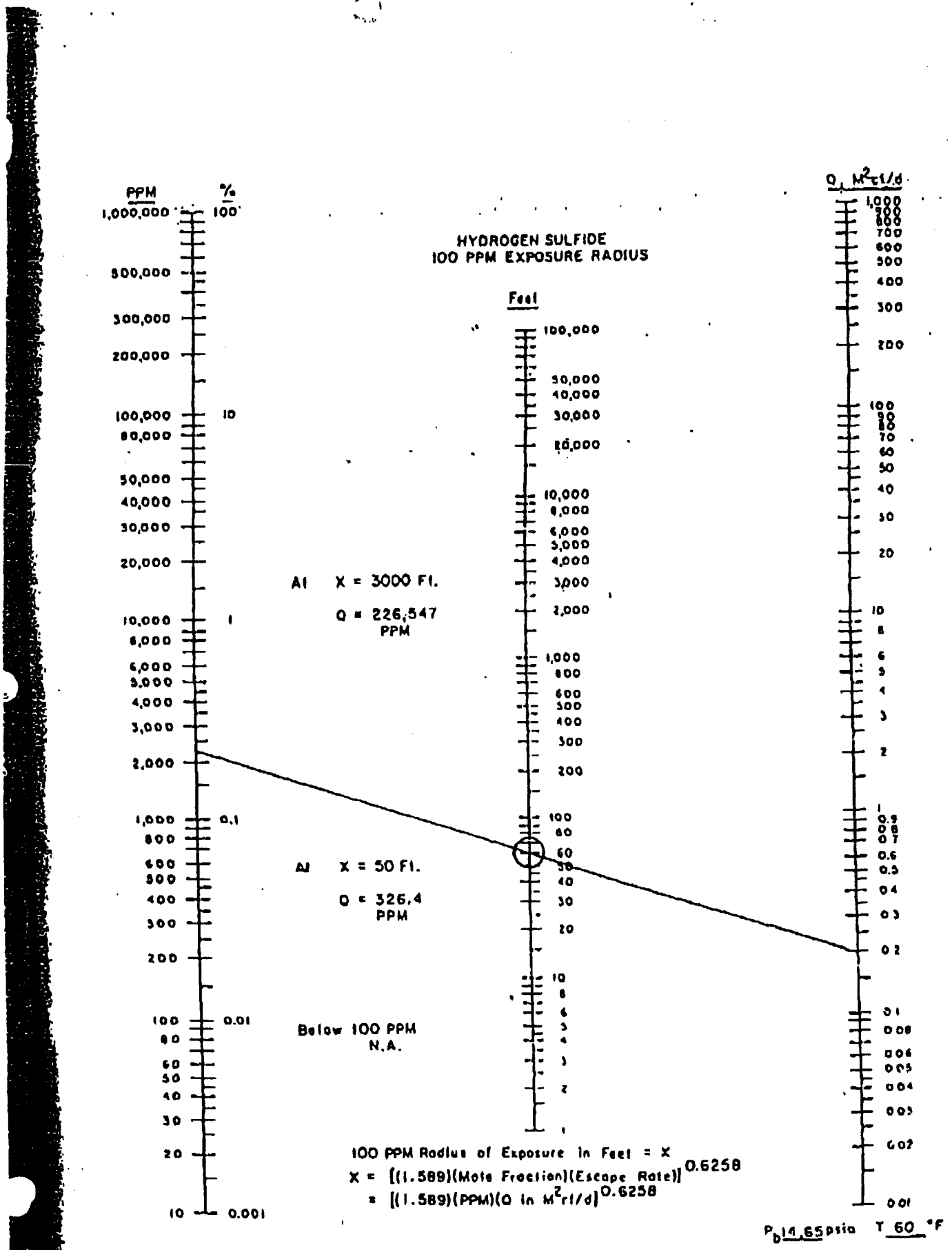
TABLE II

PHYSICAL EFFECTS OF HYDROGEN SULFIDE*

CONCENTRATION			PHYSICAL EFFECTS
PERCENT (%)	PPM	GRAINS 100 STD. FT3**	
0.001	10	.65	OBVIOUS AND UNPLEASANT ODOR
0.002	20	1.30	SAFE FOR 8 HRS EXPOSURE
0.01	100	6.48	KILLS SMELL IN 3 - 15 MIN MAY STING EYES AND THROAT
0.02	200	12.96	KILLS SMELL SHORTLY; STINGS EYES AND THROAT
0.05	500	32.96	DIZZINESS; BREATHING CEASES IN A FEW MIN; NEEDS PROMPT ARTIFICIAL RESPIRATION
0.07	700	45.36	UNCONSCIOUS QUICKLY; DEATH WILL RESULT IF NOT RESCUED PROMPTLY
0.10	1000	65.80	UNCONSCIOUS AT ONCE; FOLLOWED BY DEATH WITHIN MINUTES

* CAUTION: HYDROGEN SULFIDE IS A COLORLESS AND TRANSPARENT GAS AND IS FLAMMABLE. IT IS HEAVIER THAN AIR AND MAY ACCUMULATE IN LOW PLACES.

** AT 15.00 PSIA AND 60° F.


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 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
Pb 14.65 psia T 60 °F