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SECTION 1

HYDROGEN SULFIDE (H_2S) CONTINGENCY PLAN

1.1. Scope:

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

1.2. Objectives:

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

B. Provide proper evacuation procedures to cope with emergencies.

C. Provide immediate and adequate medical attention should an injury occur.

1.3. Outline of Contingency Plan:

1.3.1. Suspected Problem Zones

None, no H_2S encountered in wells drilled in this field

1.3.2. Implementation

This Contingency Plan, with all details, is to be fully implemented 1,000 ft. before drilling into the first sour zone.

1.3.3. Emergency Response Procedure

This section outlines the conditions and denotes steps to be taken in the event of an

emergency.

1.3.4. Emergency Equipment and Procedure

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

1.3.5. Training Provisions

This section outlines the training provisions that must be adhered to 1,000 ft. before drilling into the first sour zone.

1.3.6. Emergency call lists

Included are the telephone numbers of all persons that would need to be contacted, should an H_2S emergency occur.

1.3.7. Briefing

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

1.3.8. Public Safety

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

1.3.9. Check Lists

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

1.3.10. General Information

A general information section has been included to supply support information.

SECTION 2

EMERGECY PROCEDURES

2.1. Emergency Procedure Steps

Emergency Procedure in the event of any evidence of H_2S level above 10 ppm, immediately take the following steps below:

A. Secure breathing apparatus.

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

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

2.1.1. If uncontrollable conditions are encountered, proceed with the following:

A. Take steps to protect and/or remove any public downwind of the rig, including partial evacuation or isolation. Notify necessary public safety personnel and the New Mexico Oil Conservation Division (NMOCD) of the situation.

B. Remove all personnel to the Safe Briefing Area.

C. Notify Public Safety Personnel for help with maintaining roadblocks and implementing evacuation.

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

2.1.2. Responsibility:

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

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

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

2.2. Emergency Reaction Steps

2.2.1. Drilling or Tripping

A. All Personnel

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

B. Drilling Foreman

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

C. Tool Pusher

1. Report to the upwind Safe Briefing Area.
2. Don Breathing Apparatus and return to the point of release with the Drilling Foreman or the Driller (*Buddy System*).
3. Determine the concentration.
4. Assess the situation and take appropriate control measures.

D. Driller

1. Check the status of other personnel (in a rescue attempt, always use the Buddy System).
2. Assign the least essential person to notify the Drilling Foreman and Tool Pusher, in the event of their absence.
3. Assume the responsibility of the Drilling Foreman and the Tool Pusher until they arrive, in the event of their absence.

E. Derrick Man and Floor Hands

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

F. Mud Engineer

1. Report to the upwind Safe Briefing Area.
2. When instructed, begin check of mud for pH and H_2S levels.

G. Safety Personnel

1. Don Breathing Apparatus.
2. Check status of all personnel.
3. Wait for instructions from Drilling Foreman or Tool Pusher.

2.2.2. Taking a Kick

A. All personnel report to the upwind Safe Briefing Area.
B. Follow standard BOP procedures.

2.2.3. Open Hole Logging

A. All unnecessary personnel should leave the rig floor.
B. Drilling Foreman and Safety Personnel should monitor the conditions and make necessary safety equipment recommendations.

2.2.4. Running Casing or Plugging

A. Follow "Drilling or Tripping" procedures.
B. Assure that all personnel have access to protective equipment.

2.3 Simulated Blowout Control Drills

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

Drill no. 1 -- Bottom Drilling

and,

Drill no. 2 -- Tripping Drill Pipe

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

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

2.3.1. Drill Overviews

A. Drill No. 1- Bottom Drilling

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

B. Drill No. 2 – Tripping Drill Pipe

1. Sound the alarm immediately.
2. Position the upper tool joint just above the rotary table and set the slips.
3. Install a full opening valve or inside blowout preventer tool in order to close the drill pipe.
4. Close the drill pipe rams.
5. Record the shut-in annular pressure.

2.3.2. Crew Assignments

A. Drill No. 1 – Bottom Drilling

1. Driller

a) Stop the rotary and hoist kelly joint above the rotary table.
b) Stop the circulatory pump.
c) Check flow.
d) If flowing, sound the alarm immediately.
e) Record the shut-in drill pipe pressure.
f) Determine the mud weight increase needed or other courses of action.

2. Derrickman

a) Open choke line valve at BOP.
b) Signal Floor Man no. 1 at accumulator that choke line is open.
c) Close choke and upstream valve after pipe tams have been closed.
d) Read the shut-in annular pressure and report readings to Driller.

3. Floor Man no. 1

a) Close the pipe rams after receiving the signal from the Derrickman.
b) Report to Driller for further instructions.

4. Floor Man no. 2

a) Notify the Tool Pusher and Operator Representative of the H_2S alarms.
b) Check for open fires and, if safe to do so, extinguish them.
c) Stop all welding operations.
d) Turn-off all non-explosion proof lights and instruments.
e) Report to Driller for further instructions.

5. Tool Pusher

a) Report to the rig floor.
b) Have a meeting with all crews.
c) Compile and summarize all information and logs.
d) Calculate the proper kill weight.

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

6. Operator Representative

a) Notify the Drilling Superintendent.
b) Determine if an emergency exists and if so, activate the Contingency Plan.

B. Drill No. 2 – Tripping Pipe

1. Driller

a) Sound the alarm immediately when mud volume increase has been detected.
b) Position the upper tool joint just above the rotary table and set slips.
c) Install a full opening valve or inside blowout preventer tool to close the drill pipe.
d) Check flow.
e) Record all data reported by the crew.
f) Determine the course of action.

2. Derrickman

a) Come down out of derrick.
b) Notify Tool Pusher and Operator Representative.
c) Check for open fires and, if safe to do so, extinguish them.
d) Stop all welding operations.
e) Report to Driller for further instructions.

3. Floor Man no. 1

a) Pick up full opening valve or inside blowout preventer tool and stab into tool joint above rotary table (with Floor Man no. 2).
b) Tighten valve with back-up tongs.
c) Close pipe rams after signal from Floor Man no. 2.
d) Read accumulator pressure and check for possible high pressure fluid leaks in valves or piping.
e) Report to Driller for further instructions.

4. Floor Man no. 2

a) Pick-up full opening valve or inside blowout preventer tool and stab into tool joint above rotary table (with Floor Man no. 1).
b) Position back-up tongs on drill pipe.
c) Open choke line valve at BOP.
d) Signal Floor Man no. 1 at accumulator that choke line is open.
e) Close choke and upstream valve after pipe rams have been closed.
f) Check for leaks on BOP stack and choke manifold.
g) Read annular pressure.
h) Report readings to the Driller.

5. Tool Pusher

a) Report to the rig floor.
b) Have a meeting with all of the crews.
c) Compile and summarize all information.
d) See that proper well kill procedures are put into action.

6. Operator Representative

a) Notify Drilling Superintendent
b) Determine if an emergency exists, and if so, activate the Contingency Plan.

SECTION 3

IGNITION PROCEDURES

3.1. Responsibility:

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

1. Human life and property are endangered.
2. There is no hope of controlling the blowout under the prevailing conditions.

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

3.2. Instructions for Igniting the Well:

1. Two people are required for the actual igniting operation. Both men must wear self-contained breathing apparatus and must use a full body harness and attach a retrievable safety line to the D-Ring in the back. One man must monitor the atmosphere for explosive gases with the LEL monitor, while the Drilling Foreman is responsible for igniting the well.
2. The primary method to ignite is a 25mm flare gun with a range of approximately 500 feet.
3. Ignite from upwind and do not approach any closer than is warranted.
4. Select the ignition site best suited for protection and which offers an easy escape route.
5. Before igniting, check for the presence of combustible gases.
6. After igniting, continue emergency actions and procedures as before.
7. All unassigned personnel will limit their actions to those directed by the Drilling Foreman.

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

SECTION 4

TRAINING PROGRAM

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

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

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

SECTION 5

EMERGENCY EQUIPMENT REQUIREMENTS

Lease Entrance Sign: Should be located at the lease entrance with the following information:

CAUTION-POTENTIAL POISON GAS

HYDROGEN SULFIDE

NO ADMITTANCE WITHOUT AUTHORIZATION

Respiratory Equipment:

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

Windsocks or Wind Streamers:

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

Hydrogen Sulfide Detector and Alarms:

- 1-Four channel H_2S monitor with alarms.
- Four (4) sensors located as follows: no. 1 – Rig Floor, no. 2 – Bell Nipple, no. 3 – Shale Shaker, no. 4 – Mud Pits.
- Gastec or Draeger pump with tubes.
- Sensor test gas.

Well Condition Sign and Flags:

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

GREEN – Normal Operating Conditions

YELLOW – Potential Danger

RED – Danger, H_2S Gas Present

Auxiliary Rescue Equipment:

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

Mud Inspection Equipment:

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

Fire Extinguishers:

- Adequate fire extinguishers shall be located at strategic locations.

Blowout Preventor:

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

Confined Space Monitor:

There should be a portable multi-gas monitor with at least 3 sensors (O_2, LEL & H_2S). This instrument should be used to test the atmosphere of any confined space before entering. It should also be used for atmospheric testing for LEL gas before beginning any type of Hot Work. Proper calibration documentation will need to be provided.

Communication Equipment:

- Proper communication equipment such as cell phones or 2 – way radios should be available at the rig.
- Radio communication shall be available for communication between the company man's trailer, rig floor and the tool pusher's trailer.
- Communication equipment shall be available on the vehicles.

Special Control Equipment:

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

Evacuation Plan:

- Evacuation routes should be established prior to spudding the well.
- Should be discussed with *all* personnel that enter the location.

Designated Areas:

Parking and Visitor area:

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

Safe Briefing Areas:

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

Note: Additional equipment is available at the nearest Total Safety Office. Additional personal H_2S monitors are available for all employees on location. Automatic Flare Igniters are recommended for installation on the rig

SECTION 6

CHECK LISTS

6.1. Status Check List

Note: Date and initial each item as they are implemented.

1. Sign at location entrance _____
2. Two (2) wind socks (in required locations) _____
3. Wind Streamers (if required) _____
4. SCBA's on location for all rig personnel and mud loggers _____
5. Air packs, inspected and ready for use _____
6. Spare bottles for each air pack (if required) _____
7. Cascade system for refilling air bottles _____
8. Cascade system and hose line hook up _____
9. Choke manifold hooked-up and tested. (Before drilling out surface casing.) _____
10. Remote Hydraulic BOP control

    (hooked-up and tested before drilling out surface casing) _____
11. BOP tested (before drilling out surface casing) _____
12. Mud engineer on location with equipment to test mud for H_2S _____
13. Safe Briefing Areas set-up _____
14. Well Condition sign and flags on location and ready _____
15. Hydrogen Sulfide detection system hooked-up & tested _____
16. Hydrogen Sulfide alarm system hooked-up & tested _____
17. Stretcher on location at Safe Briefing Area _____

18. 2-100 ft. Life Lines on location _____

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

20. Confined Space Monitor on location and tested _____

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

22. Access restricted for unauthorized personnel _____

23. Drills on H_2S and well control procedures _____

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

25. NO SMOKING sign posted _____

26. H_2S Detector Pump w/tubes on location _____

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

28. Automatic Flare Igniter installed on rig _____

6.2. **Procedural Check List**

6.2.1. Perform the following on each tour:

1. Check fire extinguishers to see that they have the proper charge.
2. Check Breathing equipment to insure that they have not been tampered with.
3. Check pressure on the supply air bottles to make sure they are capable of recharging.
4. Make sure all of the Hydrogen Sulfide detection systems are operative.

6.2.2. Perform the following each week:

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

3. Check supply pressure on BOP accumulator stand-by source.
4. Check all breathing air mask assemblies to see that straps are loosened and turned back, ready to use.
5. Check pressure on cascade air cylinders to make sure they are fully charged and ready to use for refill purposes if necessary.
6. Check all cascade system regulators to make sure they work properly.
7. Perform breathing drills with on-site personnel.
8. Check the following supplies for availability:
    - Stretcher
    - Safety Belts and ropes.
    - Spare air bottles.
    - Spare oxygen bottles (if resuscitator required).
    - Gas Detector Pump and tubes.
    - Emergency telephone lists.
9. Test the Confined Space Monitor to verify the batteries are good.

SECTION 7

BRIEFING PROCEDURES

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

7.1. Pre-Spud Meeting

Date:

Prior to spudding the well.

Attendance:

Drilling Supervisor

Drilling Engineer

Drilling Foreman

Rig Tool Pushers

Rig Drillers

Mud Engineer

All Safety Personnel

Key Service Company Personnel

Purpose:

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

SECTION 8

EVACUATION PLAN

8.1. General Plan

The direct lines of action are modified from and were prepared by Total Safety US, Inc., to protect the public from hazardous gas situations are as follows:

1. When the Company Approved Supervisor (Drilling Foremen, Tool Pusher or Driller) determines that Hydrogen Sulfide gas cannot be limited to the well location, and the public will be involved, he will activate the evacuation plan. Escape routes are noted on the Area Map.
2. Company Safety Personnel or designee will notify the appropriate local government agency that a hazardous condition exists and evacuation needs to be implemented.
3. Company approved safety personnel that have been trained in the use of the proper emergency equipment will be utilized.
4. Law Enforcement Personnel (State Police, Local Police Department, Fire Department, and the Sheriff's Department) will be called to aid in setting up and maintaining road blocks. Also, they will aid in evacuation of the public if necessary.

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

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

SEE EMERGENCY ACTION PLAN

8.2. Emergency Assistance Telephone List

PUBLIC SAFETY:	*911 or No.'s Listed*
Lea Co. Sheriff's	(575) 396-3611
Jal Police Department	(575) 395-2121
Jal Fire Department	(575) 395-2221
Jal Community Hospital	(505) 395-2511
Ambulance	(575) 441-2251
Southwest Air-Med E Vac.	(800) 242-6199
*Latitude: 32.22371714	
*Longitude: -103.09640612	
New Mexico State Police	(505) 392-5588
New Mexico D.O.T.	(505) 827-5100
Bureau of Land Management	(505) 393-3612
U. S. Department of Labor	(505) 248-5302
New Mexico Poison Center	(800) 222-1222
New Mexico OCD	(505) 393-6161
New Mexico/After Hours Pager	(505) 370-7106

**NAD83*

Operator: Spindletop Oil & Gas Co.

Spindletop Oil & Gas Co. .....Office (972) 644-2581

Contact Persons:

Chuck Howell (Geologist) .....Cell (214) 532-7583

Michael Boos (Geologist) .....Cell (214) 991-7991

Megan Hurth (Geologist) .....Cell (972) 741-4052

Dave Chivvis (Engineer) .....Cell (214) 546-0179

David Owen (Engineer) .....Cell (214) 577-0554

Drilling Company / Contractor: To be determined…

Safety Contractor: Total Safety US, Inc.

Total Safety US, Inc. Hobbs, NM .....Office (575) 392-2973

Affected Notification List

(within a 500 ft. (radius of exposure @100ppm)

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

8.3. Evacuee Description:

Residents:

Notification Process: A continuous siren audible to all residence will be activated, signaling evacuation of previously notified and informed residents.

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

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

SECTION 9

MAPS AND PLATS

(Maps & Plats Figures 1, 2 and 3 Enclosed)

SECTION 10

GENERAL INFORMATION

Toxic Effects of H_2S Poisoning

Hydrogen Sulfide is extremely toxic. The acceptable ceiling concentration for eight-hour exposure is 10 PPM, which is .001% by volume. Hydrogen Sulfide is heavier than air (specific gravity-1.192) and is colorless and transparent. Hydrogen Sulfide is almost as toxic as Hydrogen Cyanide and is 5-6 times more toxic than Carbon Monoxide.

Occupational exposure limits for Hydrogen sulfide and other gasses are compared below in Table 1. Toxicity table for H_2S and physical effects are shown in Table II.

10.1. H_2S Permissible Limits

Table 1

Permissible Exposure Limits of Various Gasses

Common Name	Symbol	Sp. Gravity	TLV	STEL	IDLH
Hydrogen Cyanide	HCN	0.94	4.7 ppm	C	
Hydrogen Sulfide	H_2S	1.192	10 ppm	15 ppm	100 PPM
Sulfide Dioxide	SO_2	2.21	2 ppm	5 ppm	
Chlorine	CL	2.45	.5 ppm	1 ppm	
Carbon	CO	0.97	25 ppm	200 ppm	
Carbon Dioxide	CO_2	1.52	5000 ppm	30,000 ppm	
Methane	CH_4	0.55	4.7% LEL	14% UEL	

10.1.1. Definitions

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

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

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

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

10.2. Toxicity and Physical Effects

TABLE 2

Toxicity Table of H_2S

Percent %	PPM	Physical Effects
0.0001	1	Can smell less than 1 ppm.
0.001	10	TLV for 8 hours of exposure
0.0015	15	STEL for 15 minutes of exposure
0.01	100	Immediately Dangerous to Life & Health. Kills sense of smell in 3 to 5 minutes.
0.02	200	Kills sense of smell quickly, may burn eyes and throat.
0.05	500	Dizziness, cessation of breathing begins in a few minutes.
0.07	700	Unconscious quickly, death will result if not rescued promptly.
0.1	1000	Death will result unless rescued promptly. Artificial resuscitation may be

10.3. Physical Properties of H_2S

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

1. COLOR
2. ODOR
3. VAPOR DENSITY
4. EXPLOSIVE LIMITS
5. FLAMMABILITY
6. SOLUBILITY (IN WATER)
7. BOILING POINT

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

10.3.1. Color – Transparent

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

10.3.2. Odor – Rotten Eggs

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

10.3.3. Vapor Density – Specific Gravity of 1.192

Hydrogen Sulfide is heavier than air so it tends to settle in low-lying areas like pits, cellars or tanks. If you find yourself in a location where H_2S is known to exist, protect yourself.

Whenever possible, work in an area upwind and keep to higher ground.

10.3.4. Explosive Limits – 4.3% to 46%

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

10.3.5. *Flammability*

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

10.3.6. Solubility – 4 to 1 Ratio with Water

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

10.3.7. Boiling Point – (-76 degrees Fahrenheit)

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

10.4. Respirator Use

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

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

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

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

Respirators shall be worn during the following conditions:

A. Any employee who works near the top or on the top of any tank unless tests reveal less than 20 ppm of H_2S.
B. When breaking out any line where H_2S can reasonably be expected.
C. When sampling air in areas where H_2S may be present.
D. When working in areas where the concentration of H_2S exceeds the Threshold Limit Value for H_2S (10 ppm).
E. At any time where there is a doubt as to the H_2S level in the area to be entered.

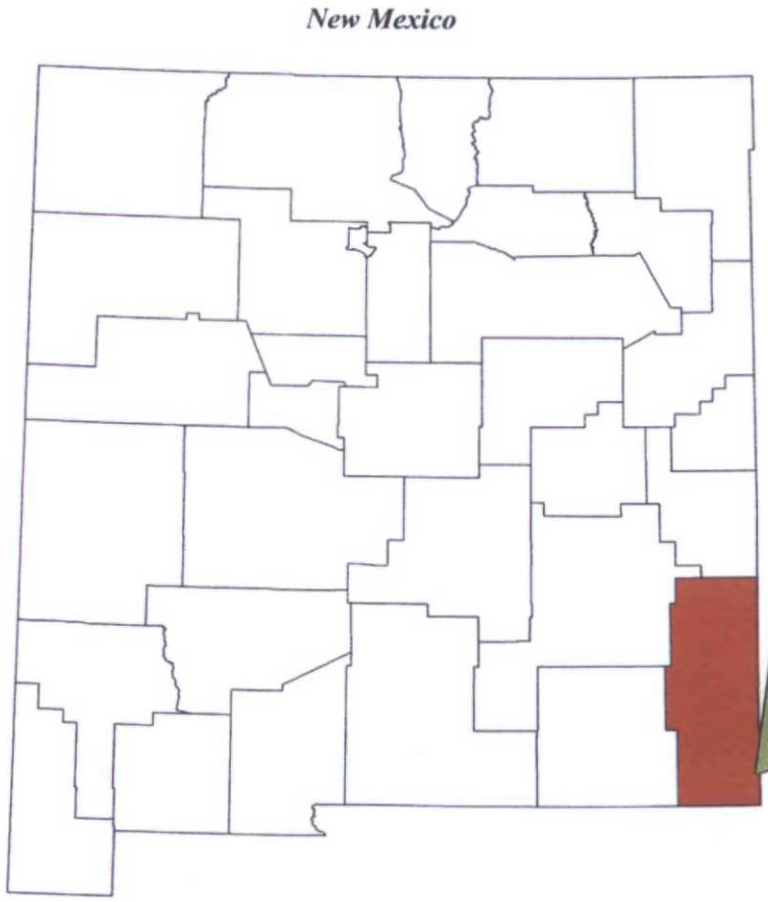
10.5. Emergency Rescue Procedures

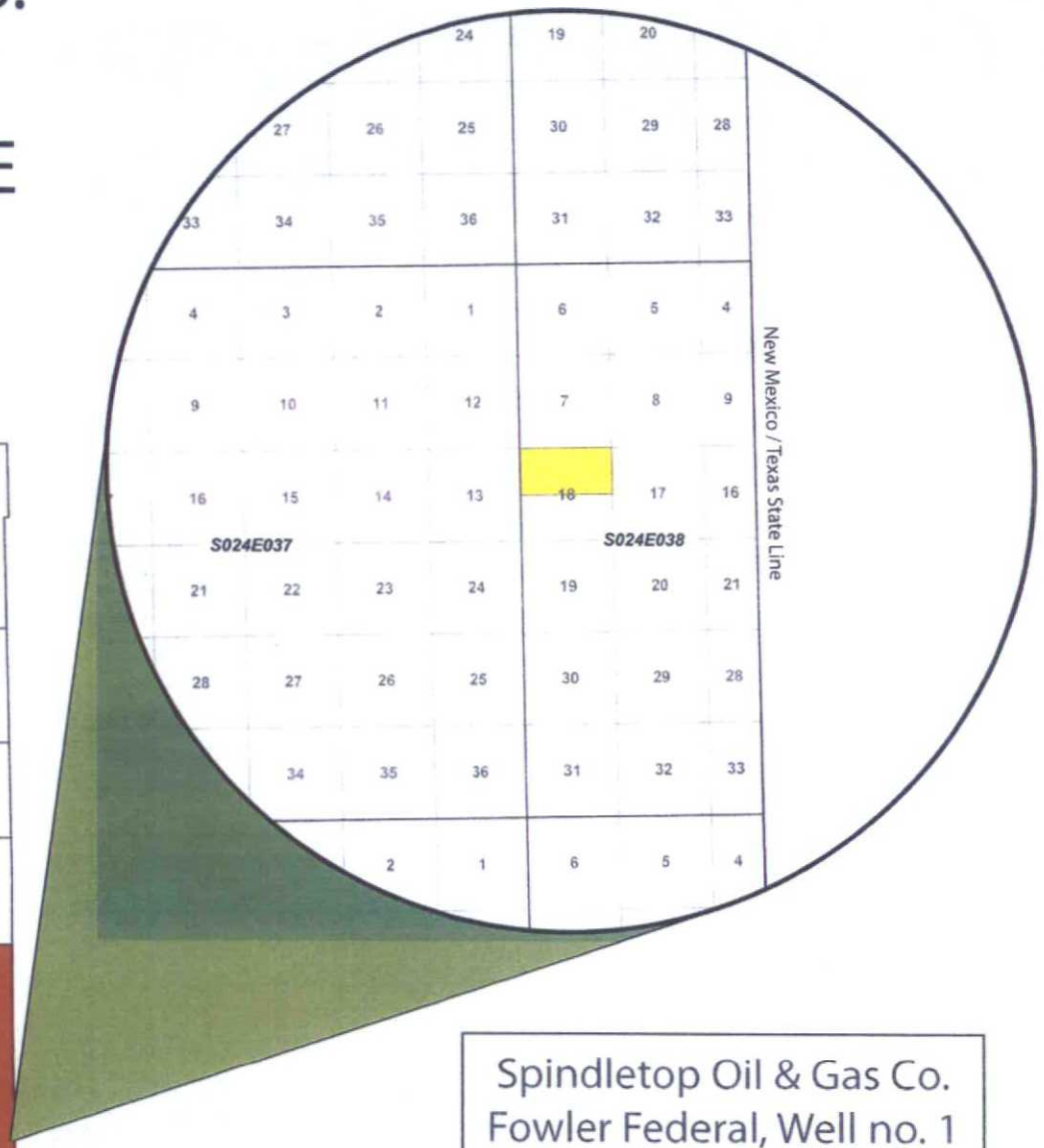
DO NOT PANIC!!!

REMAIN CALM and THINK!!!

1. Before attempting any rescue you must first get out of the hazardous area yourself. Go to a Safe Briefing Area.
2. Sound an alarm and activate the 911 system.
3. Put on breathing apparatus. At least two persons should do this, when available use the Buddy System.
4. Rescue the victim and return them to a Safe Briefing Area.
5. Perform an initial assessment and begin proper First Aid/CPR procedures.
6. Keep the victim lying down with a blanket or coat, etc..., under the shoulders to keep airway open. Conserve body heat and do not leave unattended.
7. If the eyes are affected by H_2S, wash them thoroughly with potable water. For slight irritation, cold compresses are helpful.
8. In case a person has only minor exposure and does not lose consciousness totally, it's best if he doesn't return to work until the following day.
9. Any personnel overcome by H_2S should always be examined by medical personnel. They should always be transported immediately to a hospital or doctor.

Spindletop Oil & Gas Co.
320 ac. Leasehold
N1/2 Sec.18; T24S; R38E
Lea County, NM





Chuck D. Howell
17-Jun-2014

Spindletop Oil & Gas Co.
Fowler Federal, Well no. 1
Re-entry Side Track no. 1
API no. 30-025-38408
Sec 18; T24S; R38E
Lee County, New Mexico

Spindletop Oil & Gas Co.
320 ac. Leasehold
N1/2 Sec.18; T24S; R38E
Lea County, NM

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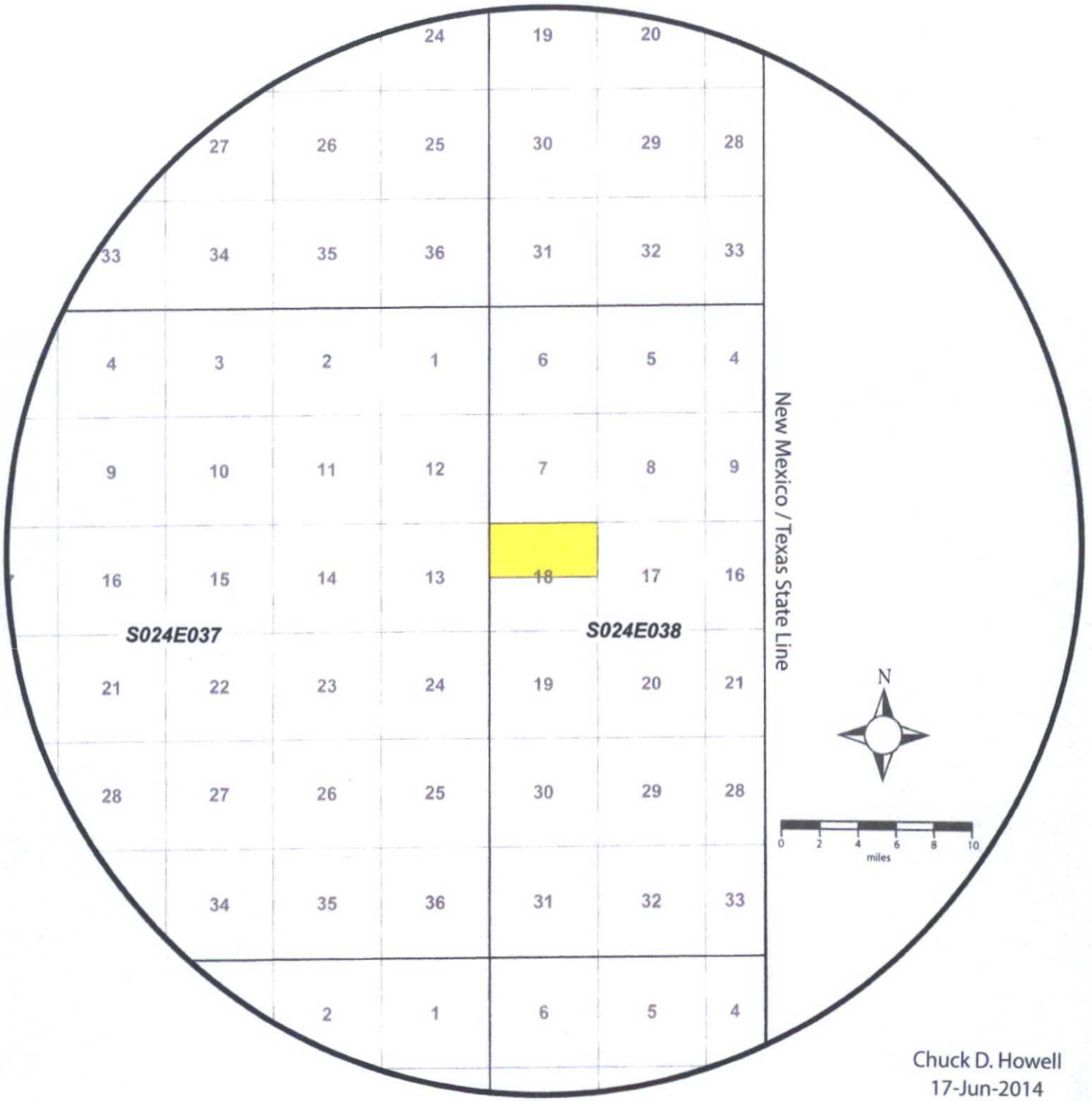
API no. 30-025-38408
Sec 18; T24S; R38E
Lee County, New Mexico



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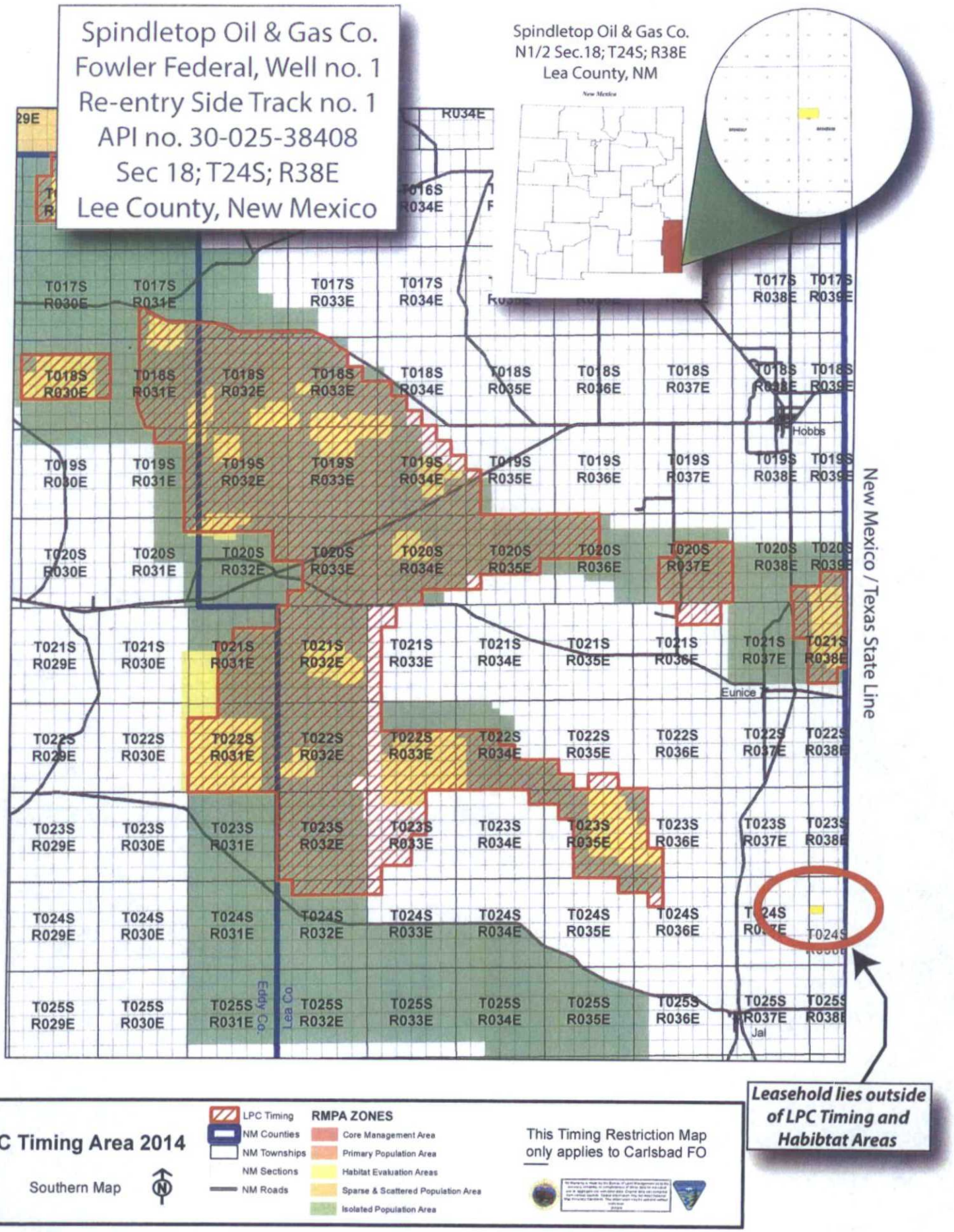


Source: BLM Mapping and GIS Department, Carlsbad Field office, ca. 14-May-2014
Modified and annotated to show location of well re-entry

Chuck D. Howell
17-Jun-2014

Fowler Federal, Well no. 1 Re-entry Aerial Image

Fowler Federal, Well no. 1 Proposed Re-entry Location

Offset Operator: Spindletop

N1/2 NE1/4 NE1/4 of 320 ac. leasehold

Offset Operator: Spindletop

330'

530'

1,280'

Proposed Well-bore

BHL

1,650'

ca. 2007

Existing Access Road

Exisiting Well Pad Location

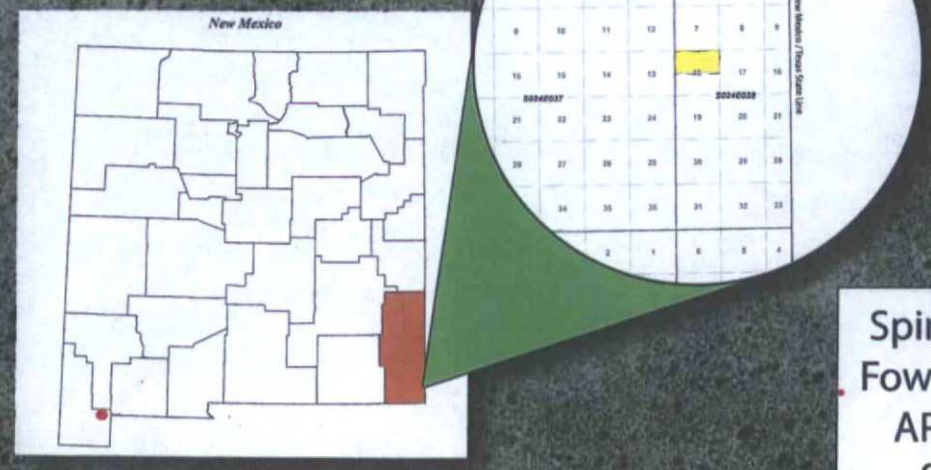
ca. 2007

Existing Access Road

Map Key

= Proposed Re-entry

= Leasehold Boundary



Distance Scale

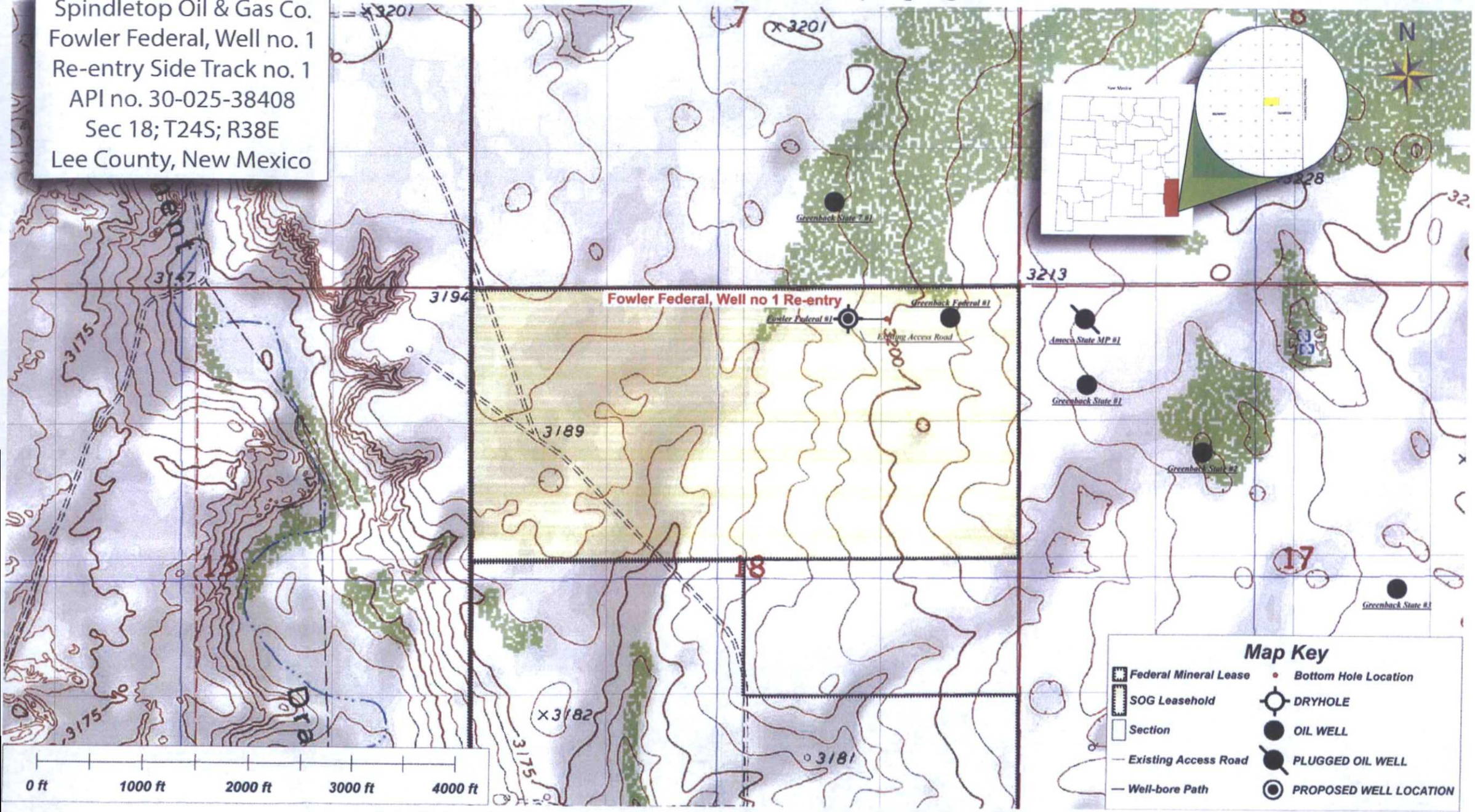
463 ft

Spindletop Oil & Gas Co. - Simple Cylindrical WGS 84 - Chuck D. Howell 13-Jun-2014

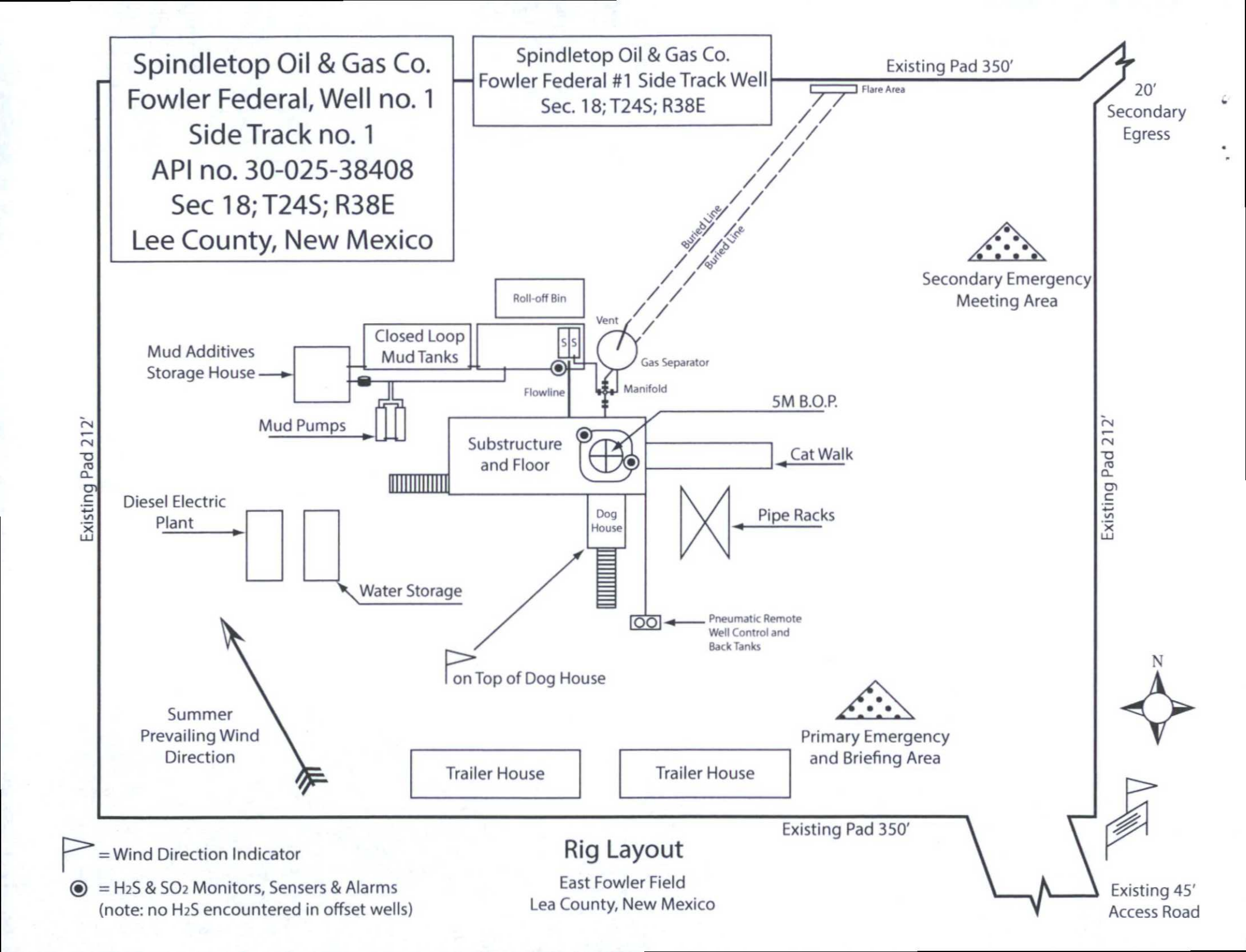
Spindletop Oil & Gas Co.
Fowler Federal, Well no. 1
API no. 30-025-38408
Sec 18; T24S; R38E
Lee County, New Mexico

Fowler Federal, Well no. 1 Re-entry Topo Quad

Spindletop Oil & Gas Co.
Fowler Federal, Well no. 1
Re-entry Side Track no. 1
API no. 30-025-38408
Sec 18; T24S; R38E
Lee County, New Mexico

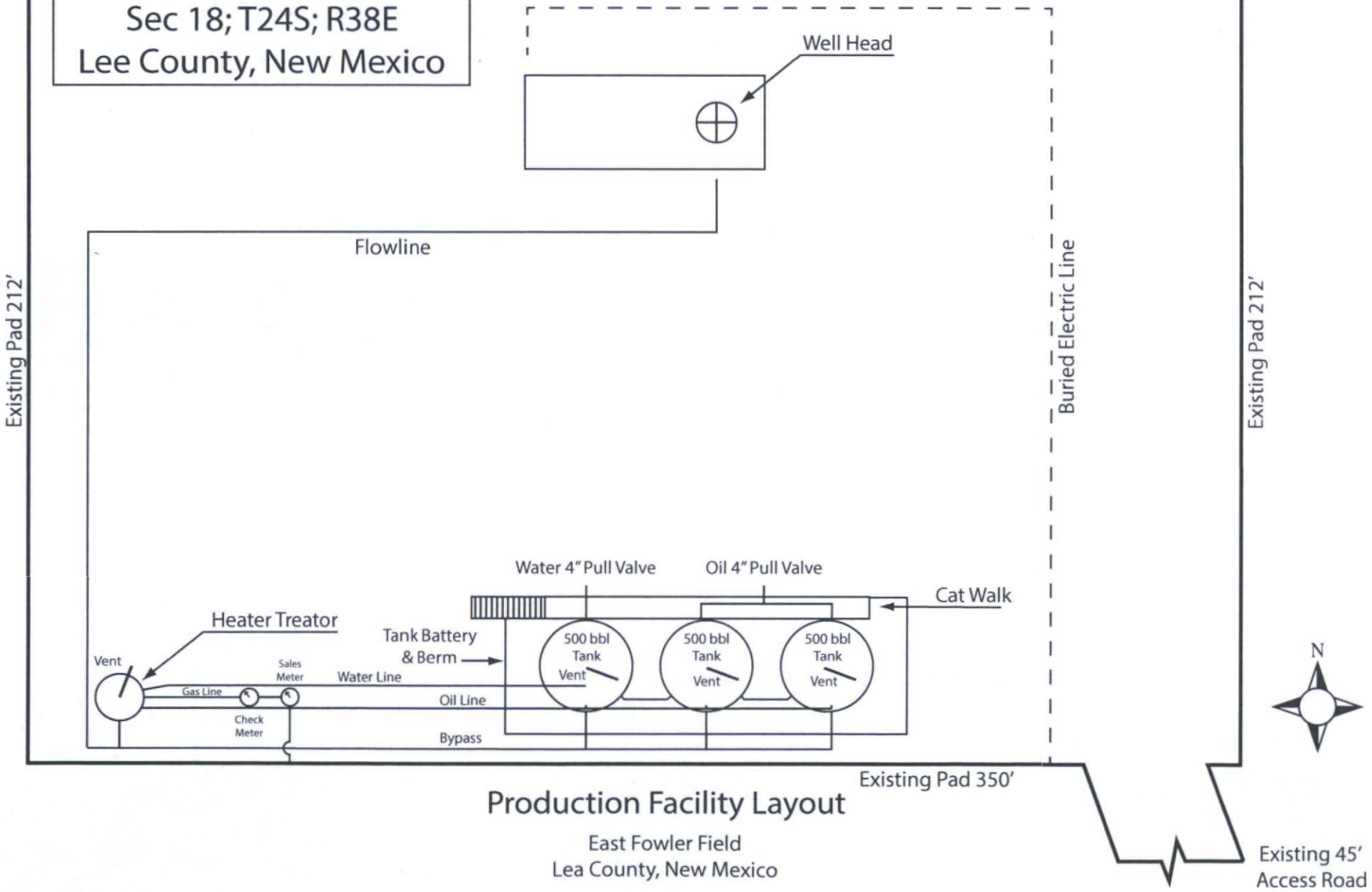


Spindletop Oil and Gas Co. - UTM NAD83 Zone 13 - Chuck D. Howell / 16-Jun-2014


Spindletop Oil & Gas Co.
Fowler Federal, Well no. 1
Side Track no. 1
API no. 30-025-38408
Sec 18; T24S; R38E
Lee County, New Mexico
Spindletop Oil & Gas Co.
Fowler Federal #1 Side Track Well
Sec. 18; T24S; R38E
Existing Pad 350'
Flare Area
20' Secondary Egress
Buried Line
Buried Line
Secondary Emergency Meeting Area
Roll-off Bin
Vent
Closed Loop Mud Tanks
S S
Gas Separator
Mud Additives Storage House
Flowline
Manifold
5M B.O.P.
Mud Pumps
Substructure and Floor
Cat Walk
Existing Pad 212'
Diesel Electric Plant
Dog House
Pipe Racks
Water Storage
Pneumatic Remote Well Control and Back Tanks
on Top of Dog House
Summer Prevailing Wind Direction
Trailer House
Trailer House
Primary Emergency and Briefing Area
N
Existing Pad 350'
Existing 45' Access Road
= Wind Direction Indicator
= H2S & SO2 Monitors, Sensers & Alarms
(note: no H2S encountered in offset wells)
Rig Layout
East Fowler Field
Lea County, New Mexico

Spindletop Oil & Gas Co.
Fowler Federal, Well no. 1
Re-entry Side Track no. 1
API no. 30-025-38408
Sec 18; T24S; R38E
Lee County, New Mexico

Spindletop Oil & Gas Co.
Fowler Federal #1Side Track Well
Sec. 18; T24S; R38E



Production Facility Layout

East Fowler Field
Lea County, New Mexico

March 25, 2015

VIA: EMAIL

Attention Cathy Queen
Project Manager
Permitting Department
Bureau of Land Management
620 East Greene Street
Carlsbad, New Mexico 88220

REFERENCE: **Surface Use Plan** – Re-entry & Side Track of Fowler Federal, Well No. 1
API #30-025-38408
1,650' FEL and 330' FNL, Sec. 18; T24S; R38E
Lea County, New Mexico
Lease No.: NMNM90558

Dear Permitting Team Members:

Spindletop Oil & Gas Co. is preparing to re-enter the Fowler Federal, Well No. 1 and side track the well to target proven oil deposits found contained in the Ellenburger Formation. Our plans to re-enter the well are designed to minimize surface impacts, mitigate any faunal disturbance through the use of an existing surface well pad and existing access lease road for the Fowler Federal, Well No. 1. In addition, The Fowler Federal, Well No. 1 has 11 3/4" 42# surface casing installed to 1,425' and cement was circulated to surface. 8 5/8" intermediate casing was set to a depth of 5,999' and cement was circulated to surface.

Spindletop Oil and Gas Co.'s plans that the Fowler Federal, Well No 1 re-entry and side track operations will commence once an approved APD is received and contractors are scheduled.

If you have any question, require further information, or need to reach me, please feel free to call (972) 644-2581, or e-mail me at *chowell@spindletopoil.com*, or you are welcome to write at any time.

Very truly yours,

Chuck D. Howell
SPINDLETOP OIL & GAS CO.

An onsite inspection was held with Trishia Bad Bear on 09/16/2014

This plan is submitted with an Application for Permit to re-enter the Fowler Federal, Well No. 1. The purpose of the plan is to describe the location of the proposed well, the use of existing surface facilities and existing access roads, proposed remediation activities and operation plans to be followed in rehabilitating the surface and environmental effects associated with the operations

Enclosed herewith are the following:

A) Surface Use Plan of Operations
B) Exhibit "A"
C) Exhibit "B1" & "B2"
D) Exhibit "C"
E) Exhibit "D1" & "D2"
F) Exhibit "E"
G) Operator's Certification