H2S CONTINGENCY PLAN

PURE RESOURCES – WEST
LOVINGTON UNIT

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Introduction:

This Contingency Plan is provided as a reaction-type plan for alerting and protecting the public if an accidental release of a potentially hazardous volume of hydrogen sulfide occurs.

It is also the intention of this plan to satisfy the New Mexico Oil Conservation Division requirements of Rule 19.15.3.118. Pure Resources local supervision is responsible for complying with the requirements of this Plan and for taking any other actions that may be necessary to protect both the public and personnel.

This plan is applicable to operations in Lea County, Mew Mexico. These operations include normal production operations, gas gathering, drilling and workovers/completions. This Plan will be activated whenever the public, public roads, or any public areas may be exposed to any release of a potentially hazardous concentration of hydrogen sulfide gas.

This plan shall be activated anytime that H2S levels reach 100 ppm in a public place or 500 ppm on any county road or public highway.

Information contained within this plan is based on the maximum casinghead gas production rate for the wells, injection lines and trunk lines.

For drilling and workover operations, it is not expected the 100 ppm hydrogen sulfide radius of exposure will equal or exceed 3,000 feet. If the 100 ppm radius of exposure is expected to equal or exceed 3,000 feet for a particular well, a form H-9 will be filed with the NMOCD for that well, according to the provisions of Rule 118.

For the purpose of determining the radius of exposure, the Pasquill-Gifford Equation was used.

Location and Description of Facilities:

Pure Resources – West has leases located 4 miles Southeast of Lovington, New Mexico on both sides of Hwy. 18 in Lea County. The Lovington Paddock Unit and the Lovington San Andres Unit contain pumping units, injection wells, submersible pumps and production equipment including, storage tanks, transfer pumps, gas sales lines and separators. Gas volumes range from 1 MCF to 250 MCF per day per well. H2S concentrations range from 0 ppm to 84,334 ppm.

Pure Resources also has a lease located approximately 5 miles South of Lovington, New Mexico and East of Highway 483 on County Road 78. The West Lovington Unit contains pumping units, injection wells and other equipment necessary for the production

of oil and gas. Gas volumes range from 2.6 mcf/day to 77 mcf/day. H2s concentrations range from 100 ppm to 111,659 ppm.

Primary areas of concern are the 4 pipeline crossings from the Lovington Paddock and the Lovington San Andres Units that cross Highway 18, approximately 4 miles Southeast of Lovington and the 5 crossings on West Lovington Unit that cross County Road 78. Their locations are as follows:
From the Northwest to the Southeast:

Crossing # 1	N-32* 53.044	W-103* 18.115
	Located 4.13 miles Southeast of Lovington on Hwy.18	
Crossing # 2	N-32* 52.925	W-103* 17.997
	Located 4.20 miles Southeast of Lovington on Hwy. 18	
Crossing # 3	N-32* 52.533	W-103* 17.069
	Located 4.85 miles Southeast of Lovington on Hwy. 18	
Crossing # 4	N-32* 52.445	W-103* 17.523
	Located 5 miles Southeast of Lovington on Hwy. 18	

The West Lovington Unit is located on both sides of County Road 78, approximately 5 miles South of Lovington:

Crossing N-1	N-32*51.409	W-103*21.450
	Located 1919 feet from intersection of Hwy. 483 & CR-78	
Crossing N-2	N-32*51.409	W-103*21.845
	Located 3995 feet from intersection of Hwy. 483 & CR-78	
Crossing N-3	N-32*51.409	W-103*21.970
	Located 4651 feet from intersection of Hwy. 483 & CR-78	
Crossing N-4	N-32*51.406	W-103*22.326
	Located 1.22 miles from intersection of Hwy. 483 & CR-78	
Crossing N-5	N-32*51.407	W-103*22.488
	Located 1.38 miles from intersection of Hwy. 483 & CR-78	

5" Steel trunk line that runs on the North side of CR-78 from N: 32*51.408 – W: 103*22.535 to N: 32*51.408 – W: 103*22.165. (From 1919 feet to 2.3 miles from Hwy. 483)

Operations involving the production, drilling and gas processing are attended by Pure Resources personnel on an 8 hour per day basis, 7 days per week. All personnel are equipped with cellular telephones and are subject to call-out's.

All lines that cross the roads have signage that reads: "Pure Resources" In Case of Emergency call (505) 396-7503 or 1-800-224-1976. These are 24 hour per day telephone numbers.

Local Terrain:

The characteristic terrain of the West Lovington Unit consists of flat terrain with some gently rolling hills. There are no rivers that cross through these fields. Winds are predominantly from the South and Southwest. The low lying areas throughout the fields will act to contain the movement of hydrogen sulfide should a release occur. Personnel should be aware that accumulations in these areas may be higher than the radius of exposure indicates.

Personnel entering a low area where a release of hydrogen sulfide has occurred should exercise extreme caution since this substance is heavier than air and will accumulate in these areas.

Hydrogen Sulfide Characteristics:

Hydrogen Sulfide Gas is present in the produced oil, water and gas throughout the Lovington Unit. The following will summarize the physical characteristics, toxicity of the gas and safety precautions to follow when working with produced fluids.

Physical Characteristics:

Hydrogen sulfide is a highly toxic, colorless gas having a characteristic foul odor similar to rotten eggs. This odor is only detectable, however, when the gas is present in low concentrations. The foul odor of Hydrogen Sulfide gas cannot always be taken as a warning sign because the ability to sense this odor will rapidly disappear when breathing low concentrations.

Other names for Hydrogen Sulfide gas are:

- H2S
- Sour Gas
- Rotten Egg Gas
- Sulphurated Hydrogen

The specific gravity of Hydrogen Sulfide gas is 1.18. The specific gravity of air is 1.0, which means the gas will settle and accumulate in low areas such as well cellars, ditches and drainage systems. Fortunately, Hydrogen Sulfide is readily dispersed by air currents.

Hydrogen Sulfide is flammable and explosive in high concentrations, therefore, precautions against ignition sources should be taken. The flammable limits in air are

approximately 4.3% (43,000 ppm) to 45% (450,000 ppm) by volume. Combustion of Hydrogen Sulfide results in a by-product known as Sulfur Dioxide (SO2). Sulfur Dioxide is also a toxic gas.

Toxicity:

Hydrogen Sulfide is a highly toxic and irritating gas. The principle hazard is inhalation. When high concentrations of Hydrogen Sulfide are inhaled, systemic poisoning occurs. This poisoning affects the nervous system. Immediate collapse can occur and death due to respiratory failure could result if the person is not rescued promptly. (Irreversible brain damage begins to occur in 4 to 6 minutes.) Artificial ventilations may be necessary to sustain life.

Hydrogen Sulfide is also a dangerous gas at lower concentrations. Hydrogen Sulfide binds with the oxygen carrying red blood cells of the body, prohibiting the oxygen molecule from attaching to the red blood cells.

Hydrogen sulfide, being an acidic gas, also can cause chemical pneumonia. Persons receiving a high dose, instantaneous exposure or an extended low dose exposure should be evaluated by a physician as soon as possible.

The following is a summary of the physical effects of hydrogen sulfide gas at various concentrations. Please note that these effects will vary from individual to individual. Factors such as alcohol intake, allergies, smoking and general physical condition should be taken into account.

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Concentration		Physical Effects
PPM	**Percent (%)**	
0.02 to 1	0.000002 to 0.0001	Detectable odor
10	0.001	Unpleasant odor. Eyes may become irritated. Safe for 8 hours exposure. (OSHA)

RESPIRATORY PROTECTION REQUIRED OVER 10 PPM.

100	0.01	Kills smell in 3 to 5 minutes. May burn eyes and throat.
200	0.02	Kills sense of smell rapidly. Burns eyes and throat.
300	0.03	This concentration is considered to be immediately dangerous to life and health. (OSHA – IDLH)
500	0.05	Dizziness. Respiratory disturbances in 2 to 15 minutes. Prompt artificial respiration needed.
700	0.07	Unconscious quickly. Breathing will stop and death Will result if not rescued promptly.
1000	0.10	Unconscious at once. Death will result within minutes.

Every effort shall be made to maintain hydrogen sulfide gas within a closed system. **Remember,** the sense of smell cannot be relied on to detect hazardous concentrations of hydrogen sulfide.

General Safety Equipment:

The following is a summary of the general types of safety equipment used by personnel in the Lovington fields. This equipment is used to minimize exposures to hydrogen sulfide gas. Each operator is responsible for maintaining their equipment.

Production:

All operations trucks are equipped with 30 minute, pressure demand, self-contained breathing apparatus for rescue and limited work applications. Each employee has a personal H2S monitor.

Fixed hydrogen sulfide monitoring systems are used at the Lovington San Andres/Lovington Paddock Unit and at the West Lovington Unit. These fixed monitors are located in the water injection stations. The monitors are set to activate an outside strobe when the hydrogen sulfide concentration reaches 10 ppm and at 15 ppm an outside horn is activated. The presence of the light and the horn indicate a potentially hazardous concentration of hydrogen sulfide at these locations.

The injection pumps are also equipped with low pressure alarms that send signals via telephone to the office. At night and on weekends, these alarms will rollover to the answering service. Low pressure indicates a possible leak downstream of the injection pumps. All injection wells have check valves to prevent backflow of well fluids.

Drilling/Workover Operations:

Safety trailers containing monitors, breathing air equipment, windsocks, warning signs and fire extinguishers are used at drilling sites. Each workover unit is equipped with a minimum of 2 self-contained breathing apparatus, 2 fire extinguishers, fixed 2 channel monitors and wind indicators. The low alarm will activate a light at 10 ppm H2S. The high alarm, set for 15 ppm H2S, will activate an audible alarm. Each individual company is responsible for maintaining their own safety equipment.

Training:

Pure Resources recognizes the importance of training in the effectiveness of the safety program for drilling, workover, gas processing and production operations. Therefore, several types of training are sponsored. This training is given by Pure personnel, competent contract/consultant personnel or a combination of both. Below are summaries of training topics.

Hydrogen Sulfide Safety

Both Pure and contract personnel are routinely trained in hydrogen sulfide, sulfur dioxide and chemical safety, both on location and in the classroom. This training includes practicing the use of protective equipment and includes practicing with self contained breathing apparatus.

First Aid/CPR and Fire Training

Pure personnel attend the Medic First Aid/CPR training course. These same personnel also attend periodic fire schools. This training includes classroom and hands-on incipient stage fire fighting instruction.

Blowout Prevention and Well Control School

Supervisory personnel participate in the same training programs as field personnel and receive formal training in blowout prevention and well control procedures. These programs help to provide supervisors with a good operational background to effectively manage drilling and workover/completion operations.

Hydrogen Sulfide Safety Procedure:

Drilling, Completions and Workover Operations:

The following procedure should be used when the hydrogen sulfide monitor detects escaping hydrogen sulfide gas.

1. When the low alarm light is activated, proceed to a safe briefing area.
2. Perform a head count to insure all personnel are accounted for.
3. Discuss necessary procedures to be used to secure the well.
4. If safe to do so, and back-up personnel are available, don SCBA's and secure the well.
5. Implement necessary actions to control the well. Use the "Buddy System".
6. When both the Low and High alarms are eliminated, exercise extreme caution before returning to normal operations.
7. If the well cannot be immediately or easily controlled, notify the Pure Resources Foreman and prepare to evacuate the area. Control access into the area.

Emergency Blowout Procedures

In case of a well blowout, action must be taken to protect human life and control the situation as rapidly as possible. All of the following steps should be considered; however, timing should be done to fit the individual circumstances.

1. If a rig is on location, shut down all engines and evacuate all personnel to a safe distance. Account for all personnel.
2. Move all vehicles out of the immediate area and clear location of all other equipment that can be safely moved. Ensure that H2S and Explosive levels are within a safe range.
3. Notify the appropriate area Supervisor/Foreman. Appropriate supervision shall then make necessary decisions to ensure the safety of all personnel, including the public.
4. Supervision should be prepared to become part of a "Unified Command System".
5. Notify necessary Fire Departments, Emergency Medical Services.
6. Obtain assistance for traffic and crowd control from necessary local and state agencies.
7. If the blowout affects a public area, **immediately** notify the appropriate public officials and/or dispatch necessary personnel to evacuate the area. Use necessary barricades to secure roads leading to any potentially dangerous area.
8. Designate a safe Staging Area.
9. Make arrangements for a continuous water supply, if necessary.
10. Construct barriers to contain any liquids flowing from well.
11. Order necessary safety equipment and personnel.
12. Order necessary mud materials, mixing and pumping equipment.
13. Lay kill lines from a safe location to the well.
14. Mix mud, if required, to kill the well.
15. Cooperate fully with any non-company personnel involved.
16. Maintain a daily log of control operations. Record the date, time and operation conducted. This log may be kept by supervision or a designee.

Responsibilities:

Certain personnel have responsibilities in implementing this Contingency Plan. These individuals are:

1. Pure West Operations Supervisor
2. Field Operations Superintendent
3. Production Foreman
4. Production Technician
5. General Workforce

See attachment for Pure Resources personnel telephones numbers.

Field Operations Superintendent

The Lovington Field Operations Supervisor is responsible for field operations and for implementing this Contingency Plan for the purpose of protecting the public and workers should an accidental release of a potentially hazardous volume of hydrogen sulfide occur. This person is also responsible for advising area supervisors and field personnel that this plan has been implemented. Notification of regulatory agencies, as applicable, is also the responsibility of this individual and the Health, Environment and Safety group.

Drilling and Production Foreman

The Drilling and Production Foreman are responsible for assuring specific actions are taken to protect the public and oilfield personnel from the potentially harmful effects of hydrogen sulfide. These actions may include, but are not limited to, the shut down of an operation and evacuation of the public/workers that may possibly be affected.

Production Technician/Health, Environment, Safety

The Production Technician, and / or the HES Coordinator, when notified of the implementation of this Plan, shall proceed to the incident location. This individual shall serve as on-site coordinator for the procurement of additional safety equipment and assure that appropriate actions are being taken to protect the public and field personnel.

General Workforce

All Pure personnel, contractors and visitors are responsible for conducting their respective work activities in a safe and healthful manner. If workers have questions regarding procedures, work shall not be initiated until all parties are satisfied that the work procedures to be used are safe and understood by all involved.

If a hydrogen sulfide incident occurs that may affect the public or field personnel, the site workers are responsible for taking immediate actions necessary to protect human life. Site personnel are also responsible for **immediately** notifying the appropriate supervisor.

Initial Action:

This Contingency Plan is to be activated immediately upon detecting a potentially hazardous concentration of hydrogen sulfide gas which may affect a public road and/or a public area. The escaping gas shall be controlled in the safest possible manner. At a

minimum, personnel must use pressure-demand breathing equipment and hydrogen sulfide detection equipment.

Barricading Roads

If public roads must be barricaded, the Pure Field Operation Superintendent will advise, where appropriate, the New Mexico State Police and the Lea County Sheriff's Department. If it becomes necessary to **immediately** barricade roads, Pure personnel will be dispatched to position and man the barricades.

Protection of Public Areas

Public areas that may be affected by hydrogen sulfide due to a **severe** uncontrolled release of gas from the LPU/LSA leases are Highway 18 at coordinates:

Crossing # 1	N-32* 53.044
	W-103* 18.115
Crossing # 2	N-32* 52.925
	W-103* 17.997
Crossing # 3	N-32* 52.533
	W-103* 17.069
Crossing # 4	N-32* 52.445
	W-103* 17.523

And at these crossings on CR – 78:

Crossing # 1	N-32*51.409	W-103*21.450
	Located 0.3miles from intersection of Hwy. 483 & CR-78	
Crossing # 2	N-32*51.409	W-103*21.844
	Located 0.7 miles from intersection of Hwy. 483 & CR-78	
Crossing # 3	N-32*51.409	W-103*21.970
	Located .8 miles from intersection of Hwy. 483 & CR-78	
Crossing # 4	N-32*51.407	W-103*22.326
	Located 1.22 miles from intersection of Hwy. 483 & CR-78	
Crossing # 5	N-32*51.407	W-103*22.488
	Located 1.38 miles from intersection of Hwy. 483 & CR-78	

If any of these public **areas** could possibly be endangered by escaping gas, the following steps shall be taken at a minimum by the Field Operations Superintendent.

1. Immediately dispatch Pure Resources personnel with hydrogen sulfide detection equipment and self-contained breathing equipment to the perimeter of the public area(s) and monitor H2S concentrations. Maintain contact with these personnel at all times.

2. Barricade roads and/or request the public to evacuate the area if a potential danger exists.

3. Notify the New Mexico Department of Public Safety and the Lea County Sheriff's Department.

4. Call for necessary safety equipment from outside sources.

Notification of New Mexico Oil Conservation Division

If it is necessary to activate this Contingency Plan, the Field Operations Superintendent or his designee shall notify the NMOCD at (505) 393-6161 as soon as possible, but no later than 4 hours after plan activation, recognizing that a prompt response should supercede notification.

Intentional Releases of Hydrogen Sulfide

This Contingency Plan must be executed to ensure the protection of the general public and workers for all intentional releases of a potentially hazardous volume of hydrogen sulfide. An intentional release may include, but not be limited to, de-pressurization or venting of piping, wellheads, pipelines, compressors or other similar equipment.

The New Mexico Oil Conservation Division must be notified at least 48 hours in advance of all potentially hazardous releases of hydrogen sulfide. Unless granted special permission by NMOCD, the gas must be flared instead of vented.

Note: A potentially hazardous volume of hydrogen sulfide is defined as one that may pose a threat to workers or the public.

Evacuation and Protection of the Public:

Evacuation of public roads will normally be handled by the appropriate public agencies/officials such as the Lea County Sheriff's Department. **If immediate actions are necessary, Pure Resources personnel will initiate notifications and evacuation procedures until appropriate public agencies can respond.**

Pure Resources personnel use the Incident Command System and will function as part of a Unified Command assisting other Local, State and Federal agencies in the event of an emergency.

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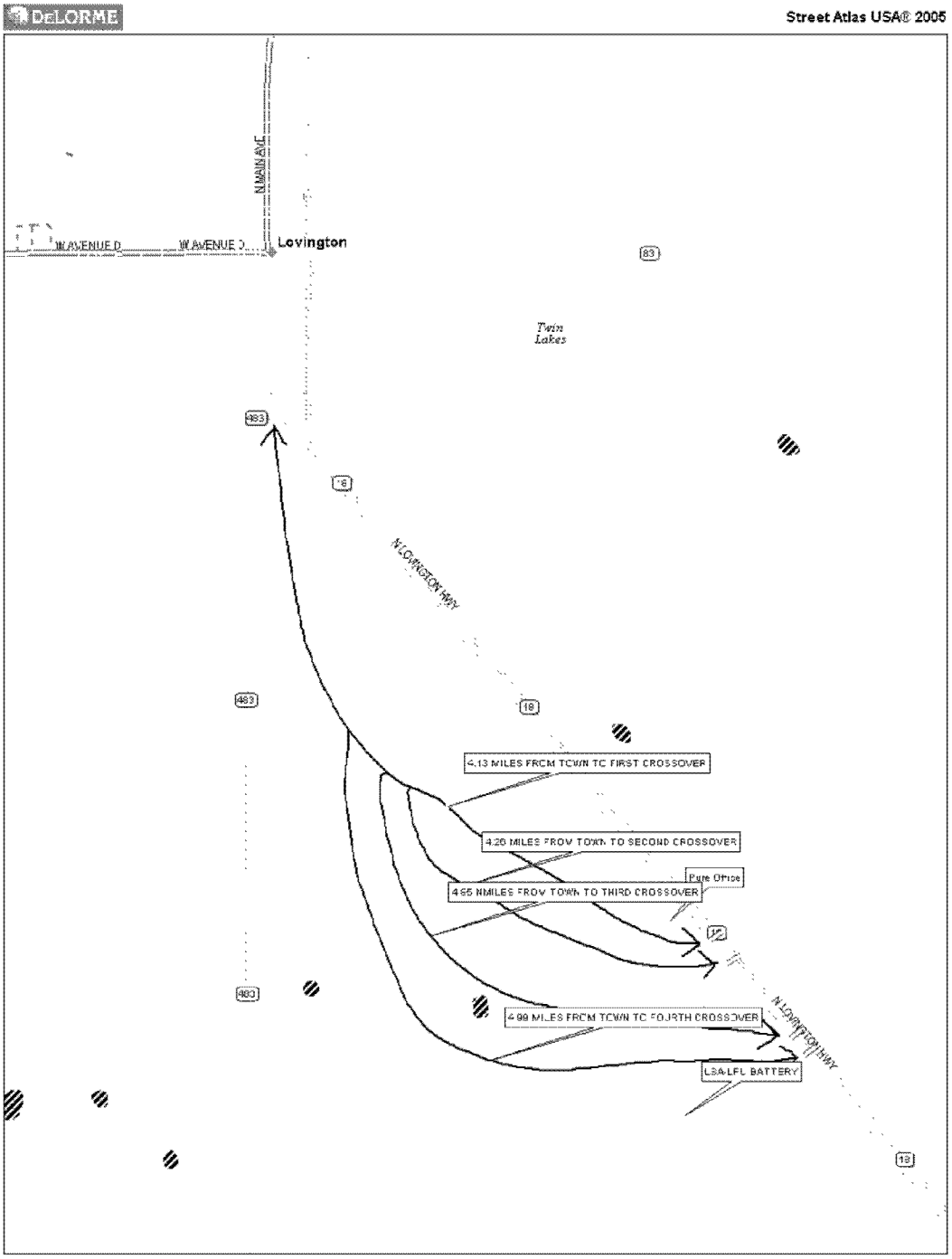
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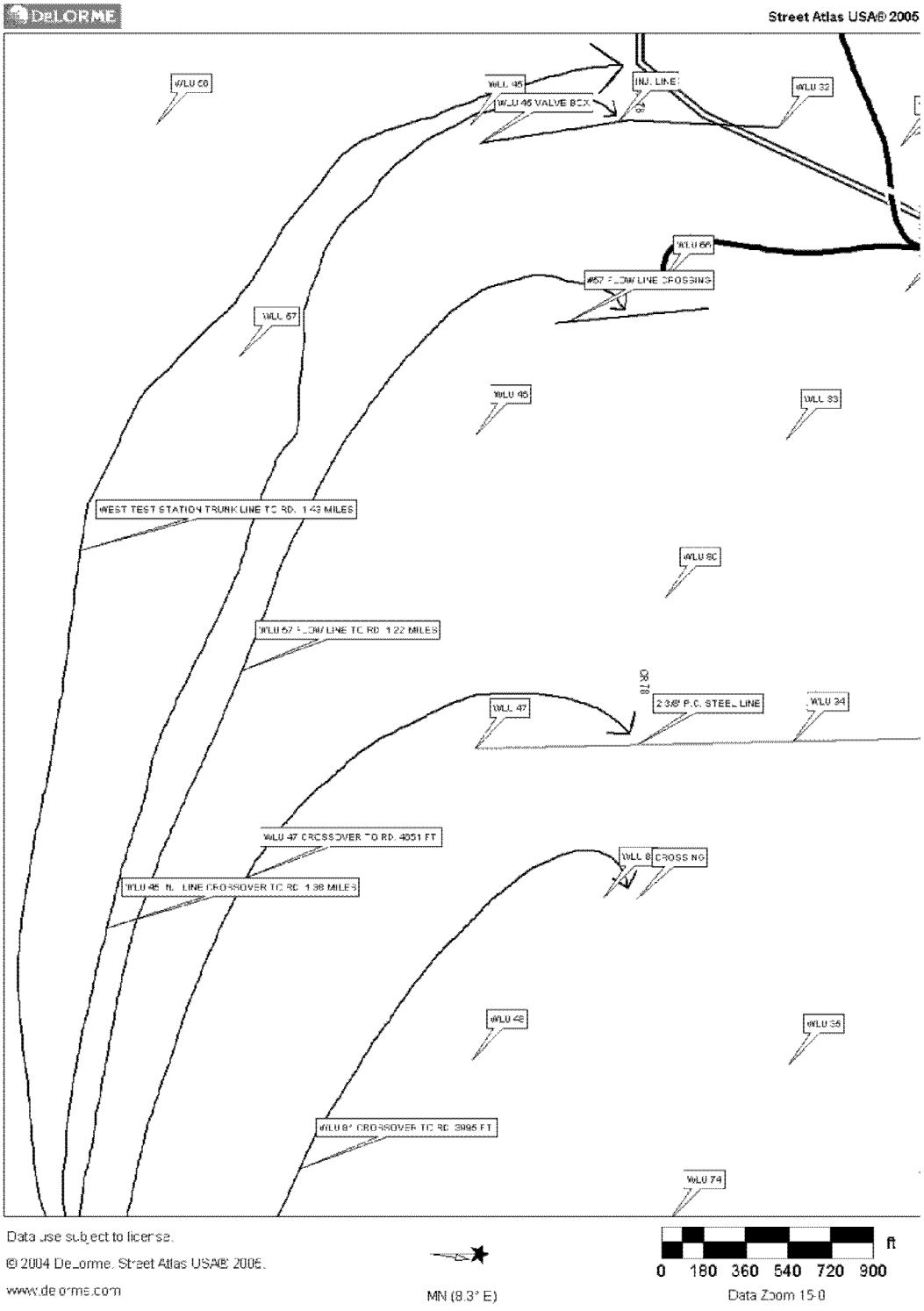
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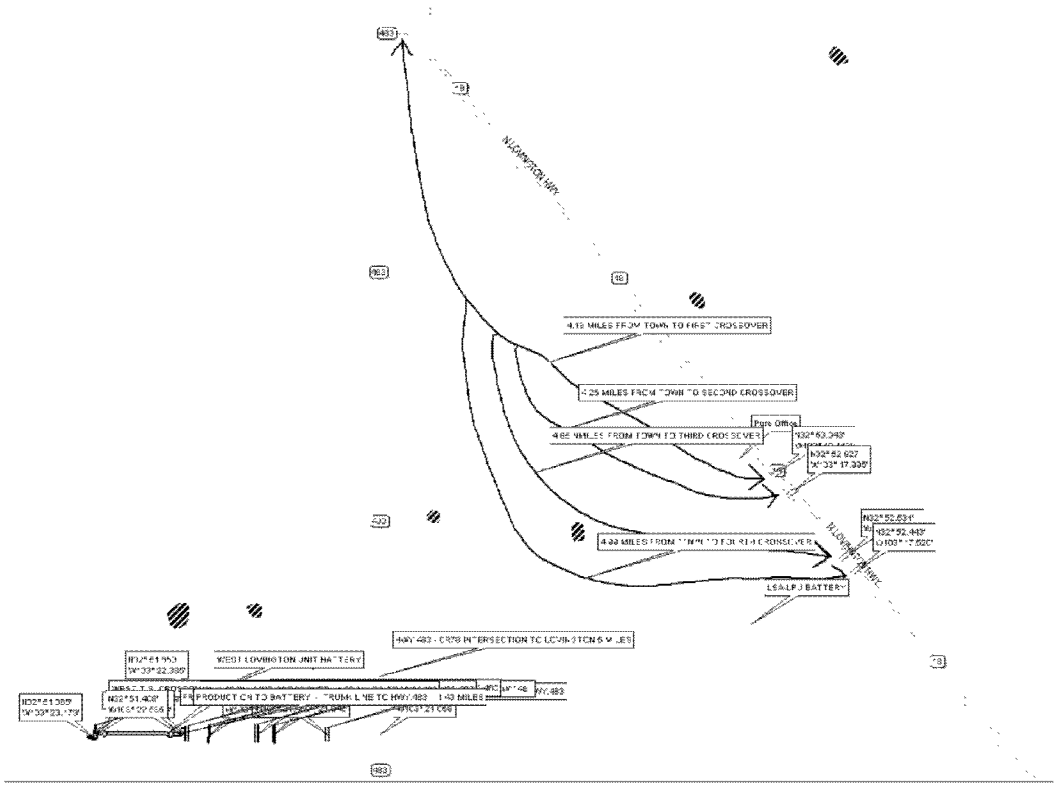

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Emergency Contact List
Lovington Unit

Tom Morrow	Operations Manager	Office: 432-498-2653 Cell: 432-664-7670 Home: 432-697-7523
Mike Northcutt	Superintendent	Office: 505-396-7503 Cell: 505-390-1090 Home: 505-392-8616
Darryl Ruthardt	East Area Foreman	Office: 505-396-7503 Cell: 505-390-8418 Home: 505-393-5856
Dee Tate	West Area Foreman	Office: 505-396-7503 Cell: 505-441-3749 Home: 505-392-1306
Larry Williams	Production Technician	Office: 505-396-7503 Cell: 505-390-8431 Home: 806-592-2808
Emergency		911
New Mexico Oil Conservation Division		505-393-6161