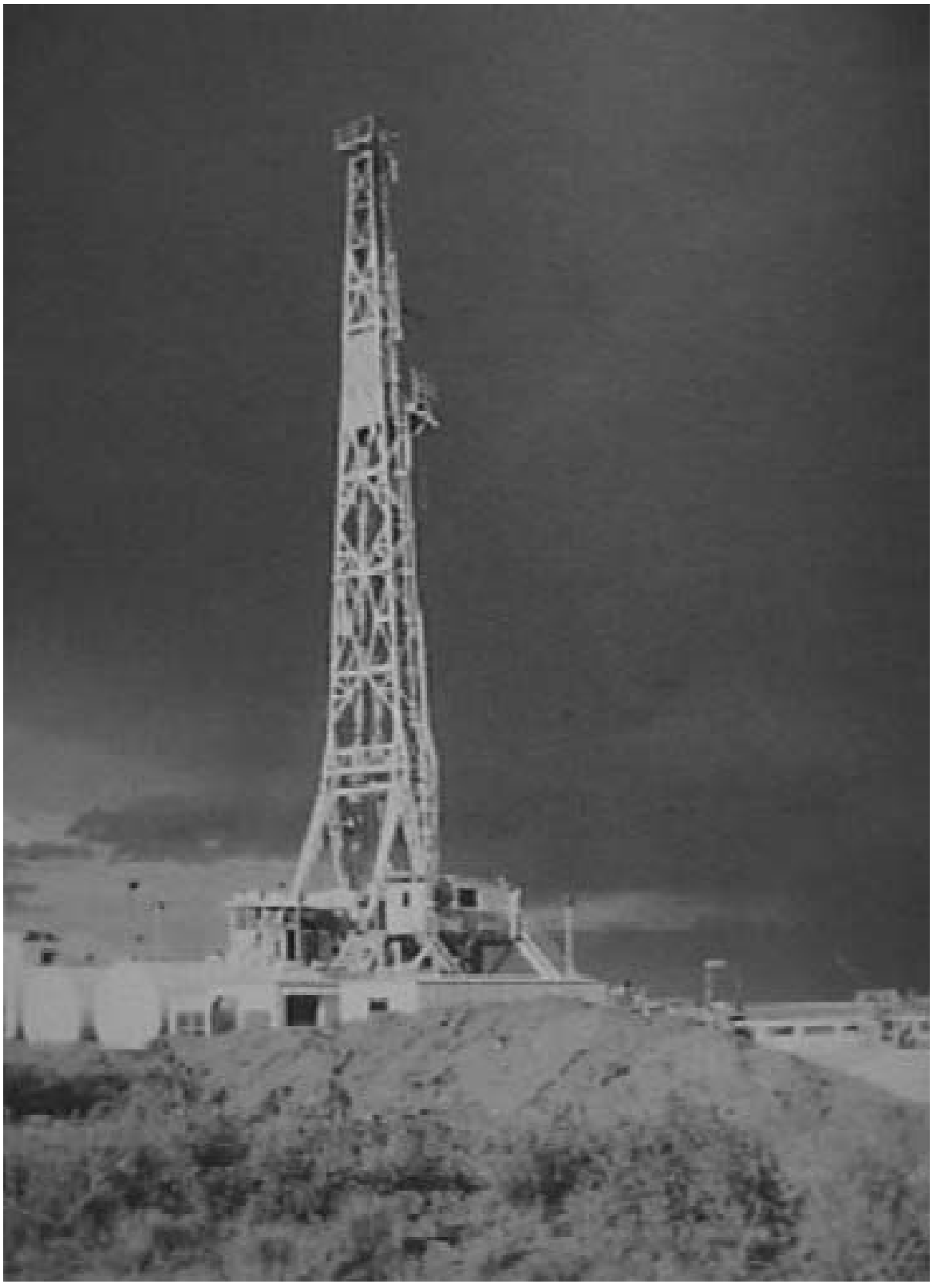
Texas Oil & Gas Safety Group



This sample program has been provided as a building block to help in furthering Loss Prevention Efforts.

It should not be used without consideration of the unique conditions and requirements that may exist at your facility and/or at each site.

It will/may be necessary to modify/revise this program for your specific needs, and to meet applicable, existing and future standards.

REMEMBER, You remain obligated to comply with all applicable local, state and federal standards, rules and regulations.

The use of this program, "As-Is", does not guarantee compliance has been achieved or met with any applicable requirements, rules and/or regulations.

It is strongly suggested that a qualified person review your final program.

THE BEST-WRITTEN PROGRAM WITHOUT IMPLEMENTATION IS INADEQUATE.

Disclaimer:

The materials represented herein, are examples. They are not to be construed as a set methods or procedures that comply with your company, or Federal, State or local regulatory authorities.

REMEMBER: Not all rules, regulations and/or procedures can, or, are covered here. There are exceptions to the rules and different rules for different situations.

Check before you begin
Ask before you start
Stop and think

Various companies differ in rules, regulations and procedures. Always follow the directions provided by your employer.

It is the readers/users responsibility to check and ensure all areas meet the current requirements of your company, and State, Federal and local regulatory agencies.

Above all, do not “rubber stamp” this material.

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23. **Disclaimer**

SAFETY MANAGEMENT

MANAGEMENT STATEMENT OF SAFETY POLICY

It is the policy of this company to provide a safe and healthy place of employment for every employee, and to abide by accident prevention regulations, as set forth by Federal, State and Local governments, that have jurisdiction over the safety and health rules and regulations for industry of the type and kind.

This company is sincerely interested in the safety and welfare of each and every one of our employees.

Accident Prevention Is Essential In Maintaining An Efficient Operation.

The President/Owner will be the primary person responsible for the implementation and enforcement of the Accident Prevention Program and specifically, the Safety Policy.

The President/Owner will be responsible for all documentation and records developed, as a result of trend analysis, safety training, safety meetings, accident investigations, and physical hazard reports.

It is the policy of this company that all safety rules, regulations and policies listed within our Safety Program (**APP - Accident Prevention Program**), shall be strictly observed at all times. Although these rules are considered to be very important, it is impossible to publish a rule to cover every circumstance. If a rule, that might cover any specific safety hazard condition, has been omitted, that shall be no excuse for carelessness or a disregard of common sense in the performance of your work.

You are urged to cooperate fully in our safety effort. Abuse, or a disregard of safety rules/procedures is a violation of this company's policy, and will be treated accordingly, with disciplinary action, up to and including termination.

Remember, your help in preventing accidents benefits you and your fellow employees.

We should all strive for a record of zero accidents.

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SAFETY RESPONSIBILITIES

Supervisor's Safety Responsibilities:

Safety is as much a part of the supervisor's responsibility, as that of getting the job done efficiently. Important responsibilities for the supervisor include, but are not limited to:

- Use simple, easily understood instructions. Follow up to ensure compliance with those instructions.
- Correct or have corrected all reported hazards, immediately. Operating under known hazardous conditions will not be tolerated.
- Do not permit new, or inexperienced employees to work with power tools or complex equipment without proper instruction and supervision.
- Give adequate and full instructions. Do not assume that an employee knows how to do a job unless you personally have knowledge that the person can perform the task correctly.
- Ensure that proper tools, and/or equipment are available for the job at hand.
- Ensure that proper **PPE** (**P**ersonal **P**rotective **E**quipment) is available and that employees use it when necessary or required.
- As a supervisor, always set a good example in safety for other employees, such as wearing the needed proper PPE and safety equipment (safety goggles, gloves, etc.).
- Do not allow the use of unsafe tools or equipment. As a supervisor, it is your responsibility to ensure your subordinates have the necessary and proper tools for the job.
- Rigidly enforce the Safety Policies and its rules, equally and fairly. When it comes to Safety, friends, buddies etc, come second, Safety, above all else, comes first !
- Ensure that all employees/subordinates under your supervision have been provided with a copy of safety procedures, and that you have reviewed these procedures with them, prior to commencement of their work.
- Encourage safety suggestions, reporting of hazardous conditions/equipment from employees under your supervision.
- Obtain prompt first aid for injured employees.
- Immediately after rendering first aid for an injured employee, perform an investigation to determine root cause of all incidents. Determine what occurred and what will be necessary to prevent a reoccurrence
- Provide on-the-job training or refresher training for those in need, or when and if new equipment or procedures are placed in line or in service.

EMPLOYEE SAFETY RESPONSIBILITIES:

All employees bear a certain amount of responsibility and accountability in any safety program. All employees must be aware of their actions, be in an alert, coherent, mental state, be physically fit for their job and its conditions, and maintain a proper attitude for their work requirements and the job requirements overall as this will directly effect the safety of each employee.

All Employees Will:

- Know your job, follow instructions, and think before you act.
- Immediately stop their duties or job, if they are unsure, in doubt, need help, or, are unclear of their duties, job requirements or equipment usage. Until a clear and proper answer is obtained from their supervisor.
- Use PPE, such as eye protection, gloves, hard had, safety footwear, respirators back support belts etc., as the job requires.
- Work according to good safety practices, as posted, instructed, and discussed.
- Refrain from any unsafe act that might endanger themselves or fellow workers.
- Use all safety devices provided for their protection, or as required for the job at hand.
- Report any unsafe situation or act to their supervisor or safety representative immediately, and refrain from continuing the job until it is safe to do so.
- Assume your share of responsibility for thoughtlessness or deliberate acts that cause or may cause injury to yourself or your fellow workers.
- Follow ALL safety rules, inclusive of your company's clients you are work for. Ensure you are aware of their safety rules and regulations, as they may differ somewhat from yours.
- Never operate any machinery or equipment that you are not familiar with and trained to operate, or equipment that is defective or in need of repair. Amy machinery, or equipment that you find is unsafe, defective or in need of repair, it is your responsibility to immediately notify your supervisor and help prevent its use, until removed, destroyed, repaired or replaced.
- Report all accidents, regardless of severity, as soon as they occur prior to the end of your shift, to your supervisor. The supervisor will decide if further action is needed, however the supervisor must be made a ware of the incident. Near Misses are to be reported just the same as a regular incident would.

SAFETY RECORDKEEPING

SAFETY RECORD KEEPING

This company acknowledges the importance of an effective record-keeping program for recognizing, identifying and reviewing trends and deficiencies**.** This company also recognizes the importance of Recordkeeping in tracking the performance of duties and responsibilities for employees, under the program.

We (the company), are committed to implementing and maintaining an active, up-to-date, record-keeping program.

All data pertaining to injuries or illnesses that does not require medical treatment or was otherwise not recordable on the above-mentioned documents, will be maintained in written form. This includes first aid treatment, of any kind.

All injury and illness documentation and records will be reviewed on a regular basis by management and supervisors, as designated by President/Owner to analyze occurrences, identify developing trends, and plan courses of corrective actions.

It is the policy of this company to maintain records of all health and safety documents for a minimum of **five** years (longer if required by law), not including the current year. The President/Owner is responsible for, and will ensure these logs and files are maintained. The logs and files include, but are not limited to:

- **INJURY RECORDS:**

  Injuries, per OSHA definitions, will be recorded on an OSHA 200 form or equivalent within 24 hours of being reported. A master injury log will be maintained in the main office for reporting of all injuries, no matter how minor. Regardless of the jurisdiction of OSHA, and the fact the district is considered a public entity, the injuries will be recorded, either on the OSHA 200 log, or an equivalent, that provides the same base information.

  TWCC-1 forms that have been filed, shall be kept on file in the main office.

  Claim/loss information from insurance carriers (all lines of coverage) shall be maintained in files in the office.

- **INSPECTION REPORTS:**

  Inspection reports will be maintained in the office as required in and by the Safety Program. All equipment, facilities, and vehicle inspection reports will be maintained in file, in the office. Only inspection forms approved by the President/Owner will be used. This company also reserves the right to alter, change and/or modify inspection reports to best suit their needs. The President/Owner is ultimately responsible for ensuring supervisors/employees, as he may have designated, turn in inspection reports, with noted correction action(s) taken, to the office, in a timely fashion.

- **SAFETY MEETINGS:**
  A file of safety meetings held, will be maintained in the office. Only safety meeting forms approved by the President/Owner shall be used. When safety meetings are used as, or in conjunction with training activities, it will be noted on the safety meeting form. The individual employee conducting the safety meeting, is responsible for providing a copy of the safety meeting to the office for record maintenance.

- **SAFETY TRAINING:**
  A file of all training sessions, verbal and written, shall be maintained in the main office. Only company-approved safety training forms shall be used. Annual and/or quarterly safety training requirements will be noted on the log and monitored by the records keeper in the office.

  All training requirements by OSHA and other regulatory agencies, even though the district is considered a public entity, are considered base minimum guidelines and for the safety and welfare of all concerned, should be followed, according to spirit and intent. These training requirements will be conducted in accordance to time requirements. Also, regulatory record keeping requirements will be followed.

  Specialized training, where necessary, concerning specific equipment, programs, and/or procedures, etc. will be conducted and documented using the proper company forms, in accordance with the proper regulatory guidelines.

- **NEW EMPLOYEE SAFETY ORIENTATION:**
  A log shall be maintained by the main office to ensure new employee safety orientations are conducted with **all** new employees. The President/Owner or an employee He designates, is responsible for conducting new employee safety orientation using company-approved forms. It is ultimately the responsibility of the President/Owner, to ensure these orientations are conducted and recorded properly.

- **ACCIDENT INVESTIGATION REPORTS:**
  Accident Investigation reports will be maintained in the office so as to ensure all accident investigation reports are turned in for each reported incident. The records keeper in the office, will maintain a file of all accident investigation reports. Only company approved accident investigation report forms shall be used to document accident investigation data. Accident investigations will be conducted to document the facts and finding of all incidents as well as to determine the root cause so preventative measures can be taken.

The President/Owner or one he designates on his behalf, will monthly, spot check files for inclusion of required safety documentation. The President/Owner shall be notified if record keeping is not in accordance with company policy. If required documentation is not available, then the President/Owner, or one he designates, will initiate follow up action to ensure that specific safety activities are being effectively carried out and adequately documented by responsible and accountable employee(s).

How do I decide whether a particular injury or illness is recordable?

The decision tree for recording work-related injuries and illnesses below shows the steps involved in making this determination.

01/01/1993 - General OSHA Recordkeeping Requirements

OSHA Fact Sheets - Table of Contents

- **Record Type:** Fact Sheets
- **Subject:** General OSHA Recordkeeping Requirements
- **Information Date:** 01/01/1993
- **Fact Sheet:** 93-05

U.S. Department of Labor
Program Highlights

Fact Sheet No. OSHA 93-05

GENERAL OSHA RECORDKEEPING REQUIREMENTS

The Occupational Safety and Health Act of 1970 requires most private sector employers to prepare and maintain records of work related injuries and illnesses. These records include the OSHA Form No. 200, Log and Summary of Occupational Injuries and Illnesses, and the OSHA Form No. 101, Supplementary Record of Occupational Injuries and Illnesses.

EMPLOYERS REQUIRED TO KEEP RECORDS

All employers with 11 or more employees in the following industries, as determined by their Standard Industrial Classification (SIC), must keep injury and illness records: Agriculture, Forestry, and Fishing (SIC's 01-02 and 07-09), Oil and Gas Extraction (SIC 13), Construction (SIC's 15-17), Manufacturing (SIC's 20-39), Transportation, Communications, and Public Utilities (SIC's 41-42 and 44-49), Wholesale Trade (SIC's 50-51), Building Materials, Hardware, Garden Supply and Mobile Home Dealers (SIC 52); General Merchandise Stores (SIC 53); Food Stores (SIC 54); Hotels, Rooming Houses, Camps, and Other Lodging Places (SIC 70); Repair Services (SIC's 75 and 76); Amusement and Recreation Services (SIC 79); and Health Services (SIC 80).

EMPLOYERS NORMALLY EXEMPT, BUT PERIODICALLY REQUIRED TO KEEP RECORDS

The following employers are normally exempt from these recordkeeping requirements unless notified in advance by the Bureau of Labor Statistics (BLS) that they have been selected to participate in the mandatory Annual Survey of Occupational Injuries and Illnesses:

1) employers who had no more than ten employees (full- and part-time) at any time during the previous calendar year; or

2) employers who conduct business primarily in one of the following SIC's, regardless of the number of employees:

MAJOR GROUP	TITLE
	Retail Trade
55	Automotive Dealers and Gasoline Service Stations
56	Apparel and Accessory Stores
57	Furniture, Home Furnishings and Equipment Stores
58	Eating and Drinking Places
59	Miscellaneous Retail
	Finance, Insurance and Real Estate
60	Banking
61	Credit Agencies other than Banks
62	Security and Commodity Brokers, and Services
63	Insurance
64	Insurance Agents, Brokers and Services
65	Real Estate
67	Holding and other Investment Offices Services
72	Personal Services
73	Business Services
78	Motion Pictures
81	Legal Services
82	Educational Services
83	Social Services
84	Museums, Botanical and Zoological Gardens
86	Membership Organizations
87	Engineering, Accounting, Research, Management, and Related Services
88	Private Households
89	Miscellaneous Services

These exemptions do not excuse any employer from coverage by OSHA or from compliance with all applicable safety and health standards (which may include other types of recordkeeping requirements).

The recordkeeping exemptions apply to all eligible workplaces under the jurisdiction of Federal OSHA. However, 25 states and territories operate their own OSHAs. Employers in the following areas should contact the state agency to determine if it has or intends to adopt the exemptions: Alaska, Arizona, California, Hawaii, Indiana, Iowa, Kentucky, Maryland, Michigan, Minnesota, Nevada, New Mexico, North Carolina, Oregon, Puerto Rico, South Carolina, Tennessee, Utah, Vermont, Virginia, Virgin Islands, Washington, and Wyoming. Connecticut and New York cover state and local government employees only.

RECORDS THAT MUST BE KEPT

OSHA requires the use of OSHA Form No. 200, the Log and Summary of Occupational injuries and Illnesses, or an equivalent form. On the OSHA Log employers provide some brief descriptive information then use a simple check-off procedure to maintain a running total of occupational injuries and illnesses for the year. Authorized Federal and State government officials, employees, and their representatives are guaranteed access, upon request, to the injury and illness log for the establishment.

Employers are required to post an annual summary of occupational injuries and illnesses for the previous calendar year. The summary must be posted no later than February 1 and must remain in place until March 1.

OSHA Form No. 101 is used to supply supplementary information regarding each injury and illness entered on the log. This form names the person and describes the circumstances of his or her injury or illness. Substitute forms (such as workers' compensation reports) may be used if they contain all the specified information. Authorized government officials shall be provided access to these records also.

Injury and illness records shall be maintained at each workplace. In the absence of a regular workplace, records shall be maintained at some central location. The records shall be retained and updated for five years following the calendar year they cover.

Each workplace, regardless of the number of employees or type of business, must:

* display either an OSHA or State poster containing information for employees, and

* report to the nearest OSHA office within 8 hours all accidents, which result in a work-related fatality or the hospitalization of three or more employees.

FOR MORE INFORMATION

For official instructions on recording occupational injuries and illnesses please refer to the **Recordkeeping Guidelines for Occupational Injuries and Illnesses, 1986.** You may obtain copies of the Guidelines and OSHA forms by calling the OSHA Area Office or the State OSHA Office in your jurisdiction.

# # #

SAFETY
RULES
&
PROCEDURES

SAFETY RULES AND PROCEDURES

In order for an accident prevention plan to be successful, it is essential that rules be developed and enforced. The rules must be understood and followed by all employees. Supervisors must enforce the rules as part of their duties, without bias or prejudice. Remember, Safety first, friends, second!.

Employees are required to know and comply with the following general safety rules as a condition of employment.

Since it is not possible to publish a rule that will cover every circumstance that may arise, employees are expected to use common sense, and to ask for guidance from supervisors prior to performing a task with which they are not familiar. Also, if there is doubt, a question, a concern or ANY reason that would question the task, duty or procedure about to be accomplished, the employee is to immediately stop, until the employee has a complete understanding of the task, duty or procedure. If the employee feels the duty, task or procedure is unsafe, the employee will NOT continue, until guidance is obtained from a supervisor.

Violations of the rules may be cause for immediate disciplinary action, up to and including termination.

The President/Owner will review the rules at least annually, to determine if the list should be changed because of changes in facilities, equipment, work procedures/practices, etc.

General Rules

1. Whenever employees are involved in any incident that results or could have resulted in personal injury or damage to property, no matter how insignificant, the incident must be reported to the Safety Department within a 24-hour period.
2. All prescribed safety and personal protective equipment should be used when required and maintained in good working condition.
3. Obey all company rules, governmental regulations, signs, markings, and instructions. Be particularly familiar with those that apply directly to you. Ask if you don't know.
4. When lifting, use the approved lifting technique at all times, i.e., bend your knees, grasp the load firmly, then raise the load keeping your back as straight as possible. Always get help or use mechanical assistance when lifting heavy loads.
5. Horseplay, such as wrestling and practical jokes, etc., can be dangerous and is prohibited.
6. Always use the right tools and equipment for the job. Use them safely and only when authorized.
7. At no time will alcohol or narcotic drugs be permitted in company vehicles, on premises owned by the company, or at customer locations; nor will any employee under the influence of alcohol or narcotic drugs be permitted in company vehicles, on premises owned by the company, or at customer locations.
8. All employees will wear a protective hard hat while working on locations, or in shops and yards. Mechanics and welder will wear hats when feasible.
9. All employees will wear protective steel-toed shoes while working on locations, or in shops and yards.
10. Each employee will wear clothing suitable for weather conditions and work being performed. Clothing that is too big, baggy, or torn should not be worn.
11. Employees should not wear jewelry such as rings, necklaces, etc., while working around machinery.

12. At no time will any employee enter tanks.
13. At no time will any type of firearms be permitted in company vehicles, on premises owned by the company, or at customer locations.
14. No smoking will be allowed around mud tanks, production facilities, frac tanks, production testing equipment, and mud pumps or within 100 feet of a wellhead.
15. Vehicles
    a. All company vehicles should not exceed the posted speed limit.
    b. All company vehicles should be driven only by a licensed, approved employee.
    c. Company vehicles should be used only for company business.
    d. All employees in company vehicles should wear seat belts whenever the vehicles are in motion. (This also is a state law.)
16. All company safety standards should be followed by all company employees.
17. Only personnel designated by the company may operate company equipment.
18. Before performing work on a H_2S well, the Safety Department must be notified and each employee assigned to work on the well must have taken the following course: "How to Work Safely in H_2S."
19. Company policy requires safety meetings. Attendance at and participation in safety meetings are essential to learning about and understanding the necessity for safe conditions and practices.
20. Employees should not attempt to operate any tool, piece of equipment, or machinery unless properly trained and authorized by the immediate supervisor. Defective tools, equipment, machinery, or unsafe work practices or conditions should be reported immediately to your supervisor. Use the proper tool and equipment for the job being performed. Keep them clean, in good condition, and stored properly when not in use.
21. The cleaning, adjusting, or repairing of machinery while in motion is a dangerous practice and should not be attempted.
22. Good housekeeping is a necessity. It is the responsibility of each employee to practice good housekeeping at all times. Pick up tools and equipment and store them properly to prevent tripping hazards. Clean up oil, grease, or other slipping hazards before they cause an injury to you or your fellow workers.
23. All moving belts, drive chains, and reciprocating parts should be guarded.
24. Stairways and handrails must be maintained in good working order and installed where required.
25. Keep hands, feet, and other body parts clear of "crushing" or "pinching" points.
26. Do not walk, work, or stand under suspended loads. Attach tag lines to guide or control loads.
27. Any employee unable to perform his or her duties safely should notify their supervisor promptly.
28. Study your job and working conditions, know the hazards, and protect yourself and your fellow employees against them.
29. Take an interest in new and inexperienced employees. Call their attention to unsafe practices and teach them the safe method of doing the work.
30. Walkways, aisles, and work areas should be kept free from tripping and falling hazards.
31. Oil, grease, and water spills should be cleaned immediately.
32. Tools, equipment, and other materials should be placed securely so they will not fall.
33. Dirty rags should be placed in metal containers with the lids securely in place.
34. Employees should clean and return all tools, equipment, and materials to their proper place when finished with them.
35. Tools or equipment in need of repair should be repaired or taken out of service and their condition reported to the supervisor.

36. Materials should be stacked so the weight is equally distributed and so they do not intrude into passages or walkways.
37. Materials storage areas should be kept orderly. Scrap and junk material should be disposed of properly.
38. Oils, greases, paints, and other flammable liquids and solids should be labeled and properly stored in approved containers.
39. All employees should wear lumbar support belts when lifting, pushing, or pulling large items.

Safety Procedures
Motor Vehicles

1. All motor vehicles should be operated in a safe and cautious manner and all laws and regulations on both public and private roads should be obeyed.
2. Tool trucks and pickups at the wellsite represent emergency transportation and communication media. Park them where they will suffer no damage and be ready for use in case of a blowout, fire, or accident. They should be parked outside the fall line of the derrick.
3. Supervisors should familiarize themselves with all grade and road conditions leading to a location.
4. Check brakes, lights, signal arm, water, oil pressure, and tires and clean the windshield before embarking with equipment. Clean lights, reflectors, and rearview mirror at the same time.
5. When tool trucks accompany masts and hoists, they should follow as closely as the law and good judgment allow.
6. At the start of extreme grades on lease roads, shift to the lowest gear that will be used and stay in that gear until the end of grade. Do not shift gears on grades.
7. Employees should not stand close to a load being pulled by a winch line.
8. Do not act as counterweight on truck bumpers or hoods since the lifting of a load may cause the front end of the truck to tilt upward. Such lifting indicates that the load is too heavy and it should be decreased.
9. Make certain there is no hazard behind your vehicle when backing, even if it requires walking around the vehicle.
10. When parking automotive equipment, a driver must take positive steps to ensure that the vehicle does not roll out of control while unattended. Do not depend on the emergency brake alone.
11. A-frame sheaves, pins, and lines must be inspected at frequent intervals.
12. Good housekeeping applies to vehicles as well as wellsites. Keep the cab, tool box, and storage area free of oily rags, waste, old clothes, etc.
13. Keep all necessary paper work (logs, pre-trip and post-trip inspections, and any other papers) filled out and carried at all times.
14. Any items on vehicle audit forms will need to be checked and/or updated by the driver and/or the shop personnel on a daily basis.

Machinery and Tools

1. All machinery operating and maintenance instructions should be strictly observed.
2. Chain guards should be constructed of heavy metal, strong enough to withstand the impact of a broken chain.
3. In using cathead, the tight lines should not be touched for guiding or removing fouled loops. Engine clutch should be disengaged before removing fouled rope. Do not use cathead unless operator is at controls. No part of a rope being used on a cathead may be touched except at its free end. An emergency kill switch located within reach of cathead operator is highly recommended.
4. No rope should be left wrapped on cathead unattended.
5. Catheads grooved over 1/4-inch must be reported immediately and repaired or replaced before use.
6. Catheads should be equipped with a properly adjusted rope divider.
7. Spliced or frayed rope should not be run on any cathead.
8. Do not work on hoisting machinery until engines have been stopped. Fuel tanks should not be filled unless engines have been stopped. Special care should be taken when fuel might spill on hot spots.
9. All shutdown switches should be checked daily to see if they are in proper working condition.
10. The hoist gears should be checked to be sure that they are in neutral before shifting hoist into road gear.
11. Blocks, hoist, and crown should be greased daily on daylight tour while they are without a load. When greasing crown, check sheaves and guards.
12. All skid mounted submersible pump spools should be safely deadmanned.
13. Unsafe or defective tools are not to be used. Report to tool pusher the need for repair or replacement of any worn or defective tool.
14. Do not use tools and equipment for purposes other than those for which they were designed.
15. Tools and materials should not be kept or left in derrick above floor except during period of use and adequate precautions should be taken to prevent their falling.
16. Tools and equipment used in derrick should be lowered -- not thrown -- to the floor or ground.
17. When working on tongs, regardless of nature of repair or adjustment, shut off power at primary source.
18. Tongs may be equipped with an emergency backup sling to protect operator in case stiff arm breaks.
19. Keep hands away from jaws in tongs while in operation. Doors on tongs should be maintained in good condition.
20. Automatic engine shutdown switches should not be changed except under a mechanic's supervision.
21. Working platforms should be used when working conditions are elevated to a point where work on floor is unsafe.
22. Do not put oil, kerosene, or naphtha on brakes of pulling unit.
23. When ram type preventer is used, check rams around pipe to be sure they are of proper size before well is pulled.
24. Check the manual or pressure controls to be sure that blowout preventer (BOP) is in good working order and pressure test the BOP daily to ensure proper operations under high pressure.

25. All air compressor tanks should be constructed and equipped as specified by the appropriate pressure vessel codes. Moving belts and chains should be covered with appropriate guards. Safety pop valves and pressure gauges should be maintained in good working condition.
26. Chain tongs should not be used with power tubing tongs.
27. Elevators and rod hooks should be kept clean and in good repair at all times. A periodic check should be made of latch springs and replaced when necessary.
28. No rod hook will be used without a safety latch.

Ladders, Stairways, Runways, Floors, and Platforms

1. Every scaffold, stage, walkway, working platform, stairway, and ladder, whether temporary or permanent, should be constructed and maintained in safe condition and should not be altered or moved while in use.
2. Work areas should be clean and free of debris.
3. Walkways, stairways, and exits should be kept clear to provide unimpeded ingress and egress except during rigup, rigdown, and moving.
4. Safe ingress and egress to and from all work areas should be provided.
5. Every stairway, ladder, ramp, runway, floor, and platform should be kept reasonably free of objects and substances which may create a slipping or tripping hazard or prevent or hinder the escape of workmen in an emergency.
6. With the exception of exit and entrance openings and loading and unloading areas, a standard guardrail with midrail and a four-inch (4-inch) toeboard should be installed at the outer edge of any floor, platform, walkway, ramp, or runway which is four-feet (4-feet) above the ground or another floor or working level. Where guardrails are not feasible, chains or wire rope may be used.
    a. A standard guardrail should not be used for purposes other than personnel protection.
    b. A guardrail used and/or needed for the purpose of actual or potential containment of equipment or materials should be of such construction and strength so as to effectively contain the full load or stress that may be anticipated.
7. Any temporary stabbing board or other temporary boards placed in derrick should be securely fastened.
8. A stairway with handrails should be installed beside the ramps which extend from the ground to the derrick floor.
9. Every opening in a derrick floor should be removed or guarded when not being used.
10. A derrick floor, derrick walk, or engine room floor should not be used as a storage platform for equipment or material that is not required for immediate use unless the material or equipment:
    a. Is properly racked or stored, and
    b. Does not cause congestion of work areas or walkways.
11. Ladder platforms should be located at the crown of all rigs requiring crown block servicing or maintenance during work operations.
12. All platform planks should be secured.
13. All ladders should be maintained in safe condition. All ladders should be inspected regularly with the intervals between inspections being determined by use and exposure.

14. Employees should not ride the traveling block or elevators except in an emergency and then they should:
    a. Wear an approved safety belt with appropriate lanyard and safety attachment anchored and adjusted to prevent a fall of more than five feet, and
    b. Have the full and undivided attention of the employee operating the hoisting equipment. The operator should be a trained and competent person.
15. The catline should not be used as a personnel carrier except under emergency conditions. The person operating the cathead should be trained and competent.
16. In an emergency, workers should not slide down any pipe, kelly hose, cable, or rope line other than the escape line and buggy.
17. In an emergency, an injured worker may be lowered from the derrick by means of the traveling blocks or catlines, in which case the rotary table should be stopped. An experienced employee should operate the controls. Approved fall protection should be provided and used.

Machine Guarding

1. All belts, gears, shafts, pulleys, sprockets, spindles, drums, fly wheels, or other reciprocating and rotating parts, with the exception of the rotary table, kelly and cathead, should be guarded unless they are in a location which will prevent any person from coming in contact with them.
2. Machinery should not be operated without all guards properly maintained and in position except during maintenance or repair of rigup work, when limited testing may be performed by a qualified person.
3. No employee should clean or lubricate any machinery where there is danger of contact with a moving part until such machinery has been stopped and locked out.
4. Machinery and equipment should be maintained in such condition so as to insure safe operations and working conditions.
5. All guards and protective devices should be replaced and proper personnel notified when maintenance is complete.
6. All tools and equipment used by employees should be maintained in safe condition.

Confined Spaces

Confined spaces are those spaces that by design have limited openings for entry and exit. The space is not intended to be continuously occupied by employees or other personnel. Ventilation is usually inadequate and may contain dangerous air contaminants. A confined space includes all of the following characteristics:

1. The space is large enough and so configured that an employee can bodily enter and perform assigned work; and
2. The space has limited or restricted means for entry or exit, and
3. The space is not designed for continuous human occupancy.

The characteristics of confined spaces often make them unsafe or hazardous for employees to enter and perform work. Four conditions that commonly exist in confined spaces and are a serious safety and health hazard include the following:

1. Oxygen deficiency
2. Combustibility
3. Toxicity
4. Physical hazards

After identifying a space as a confined space, the employer then must determine if a potential for a safety or health hazard exists that characterizes the space as a permit-required confined space or permit space. According to the federal Occupational Safety and Health Administration (OSHA), for a confined space to be defined as a permit space the confined space will have one or more of the following characteristics:

1. Contains or has the potential to contain a hazardous atmosphere; and/or
2. Contains a material that has the potential for engulfing a person; and/or
3. Has an internal configuration so that a person could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross section, and/or
4. Contains any other recognized serious safety or health hazard.

If a permit space is present on an employer's premises, the employer may choose not to allow any employees or other persons to enter the confined space. If the employer does allow persons to enter the permit space, the employer is required to establish an entry-permit program. The entry-permit program must cover the following:

1. Hazard identification: The identity and severity of each hazard in the space must be determined and characterized.
2. Hazard control: Procedures and practices that provide for safe entry into the space must be established and implemented.
3. Permit system: A written system for preparation, issuance, and implementation of entry permits must be developed.
4. Employee information: Spaces must be posted with signs warning that entry is limited to authorized personnel only.
5. Unauthorized entry prevention: Precautions, such as special training or the installation of physical barriers, must be taken to prevent entry to all but those authorized.
6. Employee training: Employees who enter the space, serve as standby attendants, or issue permits must be trained in confined space entry procedures.
7. Equipment: Appropriate equipment such as air sampling instrumentation communication devices, respirators, and ventilation blowers must be provided, maintained, and used as necessary to ensure safe entry.
8. Rescue procedures: Emergency procedures, including provision for rescue equipment, must be established and implemented.
9. External hazard protection: Protection, such as physical barriers, must be provided to control potential hazards posed by pedestrians and vehicles.
10. Informing other employers: Contractors and subcontractors must be provided with information about the confined space's hazards, safety rules, emergency procedures, and that part of the permit program with which the contractor must comply.

For the purpose of the above paragraph, "confined or enclosed space" is defined as any space having a limited means of egress which is subject to the accumulation of toxic or flammable contaminants or has an oxygen-deficient atmosphere. Confined or enclosed spaces include, but are not limited to, storage tanks, process vessels, bins, boilers, ventilation or exhaust ducts, and pipelines and open top spaces more than four feet in depth such as pits, tubs, vaults, and vessels.

Scaffolding

Scaffolding is the structure, made of wood or metal, that supports the working platform. When scaffolding is leased or purchased, safety instructions for erection and use should accompany the equipment.

Scaffolding safety rules, as recommended by the Scaffolding and Shoring Institute, follow:

1. Provide adequate sills for scaffold posts and use base plates.
2. Use adjusting screws instead of blocking to adjust to uneven grade conditions.
3. Plumb and level all scaffolds as the erection proceeds.
4. Fasten all braces securely.
5. Do not climb cross braces.
6. On the wall scaffolds place and maintain anchors securely between structure and scaffold at least every 30-feet of length and 25-feet of height.
7. When scaffolds are to be partially or fully enclosed, specific precautions must be taken to assure frequency and adequacy of ties attaching the scaffolding to the building due to increased load conditions resulting from effects of wind and weather. The scaffolding components to which the ties are attached also must be checked for additional loads.
8. Freestanding scaffold towers must be restrained from tipping by guying or other means.
9. Equip all planked or staged areas with proper guardrails, midrails, and toeboards along all open sides and ends of scaffold platforms.
10. Power lines near scaffolds are dangerous. Use caution and consult the power service company for advice.
11. Do not use ladders or makeshift devices on top of scaffolds to increase height.
12. Do not overload scaffolds.
13. Planking:
    a. Use only lumber that is properly inspected and graded as scaffold plank.
    b. Planking should have at least 12 inches of overlap and extend six inches beyond center of support or be cleated at both ends to prevent sliding off supports.
    c. Fabricated scaffold planks and platforms should be cleated or restrained by hooks that extend over their end supports not less than six inches nor more than 12 inches.
    d. Secure plank to scaffold when necessary.
14. All scaffolding accessories should be used and installed in accordance with the manufacturers' recommended procedure. Accessories should not be altered in the field. Scaffolds, frames, and their components, manufactured by different companies, should not be intermixed.

Trenching/Shoring

Trenches more than five feet deep should be shored, laid back to a stable slope, or provided with other equivalent protection where employees may be exposed to moving ground or cave-ins per OSHA regulations. Trenches less than five feet deep also should be protected when studies show hazardous ground movement may be expected. Bracing or shoring of trenches should progress with the excavation.

Portable trench boxes, sliding trench boxes, or shields should be designed, constructed, and maintained to provide protection equal to or greater than the sheathing and shoring required for the situation. Cross braces or trench jacks should be in true horizontal position, secured to prevent sliding, falling, or kick-outs.

Backfilling and removal of trench supports should progress together from the bottom of the trench. Release jacks or braces slowly. In unstable soil, use rope to pull out the jacks or braces from above after personnel have cleared the trench.

In hand-excavated trenches, spike or bolt wooden cleats to join the ends of braces to stringers. This will prevent the braces from being knocked out of place.

In a long machine-excavated trench, a sliding trench shield may be used instead of shoring. Sliding trench shields generally are custom-made to size for a specific job. They must be designed and fabricated strong enough to withstand the pressures that will be encountered. Metal portable hydraulic shoring systems also are available.

Material Handling (Back Injury Prevention)

1. Size up the load that you are about to lift and get help if necessary.
2. In lifting, keep your back as nearly straight and vertical as possible, bend the knees, and do the lifting with the leg and thigh muscles.
3. Be sure you have a secure grip on whatever you are going to lift or carry and avoid jerking and awkward positions.
4. Particular care must be exercised when doing group lifting or carrying to avoid injury. One man or woman in the group should give signals so that everyone will work in unison.
5. Handling pipe:
    a. When pipe is lifted, lowered, and carried, teamwork is essential. Pipe should be lifted and lowered at a given signal.
    b. You should roll pipe from ends or from behind in order to get out of the way if the joint gets out of control.
    c. Hands should be kept out of the ends of pipe at all times.
    d. You should not get between loading or unloading skids unless necessary. If the work necessitates getting between skids, notify fellow workmen so pipe will not be released.
    e. When unloading pipe, make sure that skids are securely fastened.
    f. Stacking strips or "stripping" should be used between the ends of each layer of pipe for spacers. These strips should be cut flush with the stack.
    g. Pipe must be securely chocked to prevent accidental rolling off racks of trucks.
    h. In stringing pipe or in picking up pipe, stay beside the truck while it is in motion. The truck should be stopped while taking pipe off the truck or when a joint is being loaded onto the truck.
    i. Always keep hands and feet clear of any pipe that is suspended in a derrick.

Housekeeping

1. Do not leave tools or other objects where they might fall on or trip someone.
2. Do not leave planks or timbers with nails sticking out of them lying about.
3. Mud and oil should be kept at a minimum around the working unit.
4. Tools should be kept in place on a rack and not scattered about the job.

Safe Electrical Work Practices

1. Electrical Hazard Zones:

a. Areas of the drilling rig are classified into "electrical hazard zones" based on the operative potential of release and accumulation of flammable gases. Electrical equipment used in these zones must conform to OSHA regulations.

2. Grounding and Bonding:
   a. All temporary, 120-volt, single-phase, 12- to 20-ampere flexible electrical cords and receptacles must conform to OSHA grounding and bonding requirements by having a ground-fault circuit interrupter system or an assured equipment grounding program.
3. All electrical equipment, wiring, fixtures, and cords should be installed and used in accordance with the applicable rules and regulations in National Electrical Codes.

Lock Out/Tag Out

1. When maintenance or servicing is to be accomplished on power-driven equipment, the immediate source of power to the individual piece of equipment to be worked on should be made inoperable. When maintenance or servicing is to be accomplished on electrical lines, air lines, gas lines, or other lines containing hazardous materials, the one being worked on should be rendered safe by emptying, purging, disconnecting, or other means before work is begun.
2. When more than one employee is to work on the same piece of equipment the employer should designate one employee to be in charge of the lockout procedure.
3. Safety locks should not be removed from main power breakers, disconnect switches, or valves until all personnel are clear.

Hearing Conservation Program

Hearing protectors should have the following characteristics and specifications:

1. Lightweight muff-type hearing protectors should include a rotational unit that can be worn over the head, behind the head, or under the chin. The unit should have met the prescribed requirements.
2. Self-adjusting hearing protectors should be lightweight and easy-to-wear, should automatically and gently sway for proper fit, and be disposable and individually wrapped. They should be attenuation tested in accordance with applicable rules and regulations.
3. Self-fitting, in-the-ear hearing protectors should be attached to a stainless steel head strap. They should be non-toxic, non-allergenic, and of high tear strength silicone rubber fabrication with a stainless steel headband with vinyl cover. The hearing protection should be able to be worn over head, under chin, or behind head. It should be packaged in a ziplock poly bag for clean storage and attenuation tested in accordance with applicable standards.

Personal Protective Equipment

According to American National Standard 29 CFR 1910.132, employers should evaluate potential hazards, determine the appropriate personal protective equipment and provide training on the personal protective equipment.

Respirator and Eye Protection Equipment

Respirators should have all NIOSH-certified cartridges needed for the job being performed. Single element respirators will be accepted if they meet the following guidelines:

1. Contoured facepiece, snug, comfortable fit.
2. Facepiece pre-tested to fit a range of sizes.
3. Filters and cartridges are mounted off-center for un-obscured vision.

4. Adjustable headband with four-point suspension.
5. Valve system minimizing breathing fatigue.
6. Easily disassembled for cleaning and sanitizing.

Respirators being used for protection against organic vapors (benzene, etc.) should be NIOSH-certified cartridges with dual elements. These cartridges should give protection against not more than 0.10-percent organic vapors by volume. The dual element respirators should meet the same six guidelines as the single element.

Safety Glasses
Eye protection should meet the requirements of American National Standard Z87.1-1989 (per 29 CFR 1910.133B). Each lens should be subjected to a rigorous drop-ball test before it leaves the factory.

Lenses that may be accepted include the following:

1. True Color -- neutral gray lenses primarily used as anti-glare lenses outdoors.
2. Clear -- to be used indoors and outdoors.
3. Calobar -- green lenses designed to be worn as a safeguard against glare, ultraviolet, and infrared radiators.

All eye protection should use side shields made of 24- or 40-wire mesh with plastic binding and reinforcing brace bar to provide maximum lateral protection.

Goggles
Cover goggles should have four slotted air vents (or air directing baffles) to control air flow and prevent inner fogging. Goggles should meet the requirements of any and all applicable standards or eye protection devices. The lens should be a molded polycarbonate material and be ophthalmically correct and free of distortions and aberrations.

Welding Goggles
Welding goggles should provide maximum protection in gas welding, cutting, burning, brazing, and furnace operations. Goggles should be equipped with special side vents to prevent light leaks. The lens should be individually drop-ball tested and the lens shade (3.4 or five) should be relative to the job application and need with shade five being standard. Goggles should meet any and all applicable standards.

Handling and Storage of Flammable and Combustible Liquids

1. Only approved containers, or approved safety containers, should be used as containers of flammable liquids having a flash point lower than 100 degrees F., such as gasoline, naphtha, etc.
2. No smoking or open flame should be allowed within 25 feet of the handling of flammable liquids. Any engine being refueled should be shut off during such refueling.
3. An electrical bond should be maintained between containers when a flammable liquid is being transferred from one to the other.
4. Storage of flammable liquids should be in approved containers.
5. Discharge nozzles and valves should be of the quick, self-closing type.
6. Proper signs should adequately designate all flammable storage areas.

Hot Work Permits
The employer should issue a hot work permit for hot work operations conducted on or near a covered process. Hot work means work involving electric or gas welding, cutting, brazing, or similar flame- or spark-producing operations.

The permit should document that the fire prevention and protection requirements in 29 CFR 1910.252 (a) have been implemented prior to beginning the hot work operations. It should indicate the date(s) authorized for hot work and identify the object on which hot work is to be performed. The permit should be kept on file until completion of the hot work operations.

Safety Procedures for Welding, Cutting, and Brazing

Welding, cutting, or brazing should not be done in the presence of explosive gas or fumes or near combustible materials.

1. Cylinders should be secured in an upright position.
2. Cylinders should be separated in storage on the basis of content and full or empty cylinders and either by a distance of 20 feet or by a non-combustible barrier at least five feet high with a fire resistance rating of at least one-half hour.
3. Cylinders should be handled carefully to prevent dropping.
4. Cylinders should be transported with gauges removed and caps in place, except for bottles in use on welding carts or trucks in the work area.
5. Oxygen cylinders and all attachments thereto should be kept free of all grease, oil, and other hydrocarbons.
6. Contract welders should be warned about fire or explosive hazards that may be present around the rig.
7. Oxygen/acetylene regulators should be equipped with reverse flow check valves.
8. If employees are assisting in welding operations, proper eye protection is mandatory. Certain equipment such as hooks, elevators, tongs, etc., which is heat-treated, can be damaged by welding. Care should be taken to see that such equipment is not weakened by having heat applied in field welding.

Hydrogen Sulfide or Toxic Gas Exposures

General Information

In certain areas where well servicing operations are carried out, hydrogen sulfide (H_2S) gas is encountered. This gas is characterized by the odor of rotten eggs. A very small concentration of the gas can be fatal. When this gas is encountered, employees must wear approved masks when their work requires them to be exposed to the gas in any way. Because of the rapid action of (H_2S) poisoning, normal warning properties are not necessarily dependable.

Hydrogen sulfide is a highly toxic, colorless, heavier than air gas. It burns with a blue flame to produce sulfur dioxide, a very irritating gas with a pungent odor. It forms explosive mixtures with air, the lower limit of complete flammability being 4.3-percent H_2S and the upper limit 45.5-percent. It is soluble in water but becomes less soluble as the temperature of the water increases. It is most frequently encountered in the production and refining of high sulfur petroleum and in natural gases.

Hydrogen sulfide gas is a very poisonous material which can cause disaster if it is not treated with proper respect. The principal hazard is poisoning by breathing the gas.

Although H_2S has the odor of rotten eggs, this is not a reliable warning signal because higher concentrations of the gas temporarily destroy the sense of smell. This failure may be responsible for exposed personnel not detecting the presence of H_2S and consequently inhaling lethal amounts. The only positive means of determining the amount of H_2S present is by testing with an approved H_2S detector. To rely solely on the sense of smell can be disastrous.

Procedures to Follow When Encountering H_2S

1. Any area where H_2S has been reported or encountered, or in areas of insufficient oxygen or contamination by flammable or toxic gases, vapors, or dust, should not be entered until

sufficient tests have been made with appropriate instruments to determine the extent of the hazard and the area is purged to reduce the hazard of an allowable concentration.

a. In the event of H_2S exposure, the following limits of exposure should apply, although certain state standards may vary.
    1. Ceiling value = 20 ppm.
    2. Time weighted average (TWA) = 10 ppm.
    3. Acceptable maximum peak above the acceptable ceiling concentration for an eight-hour shift = 50 ppm (10 minutes, once only, if no other measurable exposure occurs).

2. In case of toxic atmosphere or lack of oxygen, the employer should require proper respiratory equipment to be used by an employee required to enter the area.
3. In addition, any employee required to enter such an atmosphere as specified in paragraph (a) above should be required to wear a safety belt with attached tail line for emergency retrieval. The employer should require that an employee be stationed outside of the hazard area with the proper rescue equipment to assist in case of an emergency and to attend to the retrieval end of the tail line.
4. Canister-type filter masks should not be used.
5. The employer should provide and require the employees to use self-contained respirators (air packs) in those atmospheres where tests indicate oxygen content is less than that necessary to sustain life, normally considered to be 16-percent oxygen by volume.
6. Supplied-air respirators may be used instead of self-contained respirators as referenced in paragraph five above. In the event supplied-air respirators are used, they should be selected, used, and maintained in accordance with the requirements for respiratory protection.
7. The employer should require that all respirators on work locations meet the following standards:
    a. Housed in a proper cabinet or other appropriate container located close to, but not within, the potential area of use;
    b. Inspected at least once a month and documented for constant service readiness except, if rented, prior to each use but at least monthly. Note: Caution should be observed when using self-contained respirators (air packs) at low temperatures due to pressure drop, and
    c. Serviced and brought back to readiness after each use.
8. All employees should be trained and periodically refreshed in the use and operation of breathing equipment available on the job.
9. The employer should ensure the ready availability of medical personnel for advice and consultation on matters of occupational health. The information as to whom to contact to receive additional emergency aid such as a doctor, ambulance service, etc., should be conspicuously displayed.
10. The employer should assure that one or more employees on each shift on each well site should be trained in first aid and one of these employees should be on duty at all times during work operations.
11. Where harmful chemicals are being used, readily accessible facilities should be available for rapid flushing of the eyes and or skin areas.

First Aid for H_2S Victims

First aid for victims of H_2S is based primarily on inhalation first aid and includes the following procedures:

1. Move the victim at once into fresh, pure air. (Rescuers must exercise due caution.)

2. If the victim is unconscious and not breathing, immediately apply mouth to mouth resuscitation and continue it without interruption until natural breathing is restored.
3. If it is available, give oxygen through an inhaling apparatus after cleaning oil from the injured employee's face.

Never forget that hydrogen sulfide is a deadly gas. Take no chances with it! Know what concentration of the gas is present before doing any work in it.

Use of Contractors and/or Subcontractors

Before starting the job, the contractor or subcontractor must have Certificates of Insurance filed at the yard office where the work is being performed or they (subcontractor) should provide a TWCC Waiver form. These forms are available on-line from the Texas Workers' Compensation Commission or via mail. Either way, the subcontractor must have a certificate of insurance or a waiver between you and the subcontractor available from TWCC. The contractor or subcontractor must submit a copy of their safety plan to the yard office or, if one is not available, must make a commitment to comply with the employer's plan. Each employer, employee, contractor, and subcontractor should be charged separately with the responsibilities and duties as required below:

Accident prevention responsibilities.

1. It should be the responsibility of the employer to initiate and maintain such programs as may be necessary to comply with state and federal standards.
2. Such programs should provide for frequent and regular inspections of the establishment, materials, and equipment to be made by persons designated by the employer.
3. The employer should prohibit the use of any machinery, tool, material, or equipment which he knows or reasonably should know is not in compliance with any applicable requirement of state or federal standards. Such machinery, tool, material, or equipment should either be identified as unsafe and rendered inoperable, or should be physically removed from its place of operation.
4. The employer should permit only authorized persons or employees being trained under the supervision of a qualified person(s) to operate equipment or machinery.

Any two or more employers who have employees at one job site (such as prime contractors and subcontractors) may make their own arrangements with respect to obligations that might be more appropriately treated on a job site basis rather than individually. Thus, for example, the prime contractor and the subcontractors may wish to make an agreement that the prime contractor or one of the subcontractors will provide all required first aid or toilet facilities, thus relieving the subcontractors from the actual, but not any legal responsibility (or, as the case may be, relieving the other subcontractors from this responsibility).

Planning and Directing the Job

1. Planning
    a. Examine potential hazardous conditions, considering the following:
        1. Nature of the job
        2. Job location
        3. Equipment, tools, and materials
        4. Weather
        5. Traffic and spectators
    b. Prepare yourself to take the following actions:
        1. Study the plan of operations
        2. Study the location
        3. Detail the job step-by-step
        4. Schedule materials and equipment

    c. Plan these job assignments:
        1. Individual
        2. Group
2. Directing the job
    a. Describe the job to the crew
        1. Tell what-why-when-where-how it is to be done
        2. Tell who is to do it
    b. Discuss all possible hazards
    c. Assign specific tasks
    d. Discuss special materials or equipment to be used
    e. Be sure all procedures are clearly understood
3. Complicated projects
    a. As the project progresses, present each part as an individual step
    b. If plans change, notify the crew of the changes
4. Follow-up
    a. Provide adequate supervision throughout the job
    b. Watch for development of job conditions which produce hazards and then correct the condition
    c. See that each step is carried out correctly
    d. See that each person carries out a specific assignment

As far as personal conduct is concerned, participation in practical jokes, horseplay, scuffling, and wrestling while on duty should be forbidden.

SAFETY MEETINGS

SAFETY MEETINGS

Safety meetings are an effective way to encourage and inform employees in developing and following safe work practices and will be held on a regular and consistent basis, such as weekly or monthly for ***"ALL" employees.*** Management will participate in the safety meetings.

Discussions of new safety rules, possible hazards to be encountered, or changes in procedures or equipment are examples of some topics which should be covered. For personnel not present at a designated safety meeting, regardless of vacation, sickness, business or other travel, those personnel must attend a make-up safety meeting to be provided the same basic information as those that attended. This make-up safety meeting must be documented.

When safety training is provided during safety meetings, it will also be documented as to the date, attendance (signature in each employee's own handwriting) and topic discussed.

No subject of a controversial nature, employment difficulties, complaints, criticism, or similar matters
should be introduced at the safety meeting. Matters relating to the safety of crew personnel, the prevention of equipment damage, or similar subjects should be discussed.

On-the-job safety meetings may be held in various ways. Some suggestions follow:

a. A short safety meeting (about five minutes) each day before work begins.
b. A short safety meeting once a week or whenever there is a new employee on the job.
c. A short safety meeting whenever a job changes to the extent that instructions are necessary or other circumstances might warrant a meeting.

The unit operator or field supervisor should discuss any topics relating to exposures on the job. Crew members should be encouraged to participate in each safety meeting. The unit operator should instruct other crew members in the proper use of any equipment on the rig. The crew members under the supervision of a unit operator may, and periodically should, use a part of the meeting time to perform a safety inspection of the rig and associated equipment.

General safety meetings are sometimes held at the yard or terminal on a regular basis. These meetings should be conducted by the owner, general manager, or field supervisors. This is generally a good time to discuss subjects that require more than five minutes or require special equipment. Some examples of topics include the following:

1. Operation of new equipment.
2. Fire extinguisher demonstration.
3. Emergency first aid procedures:
    a. Instructions for stopping the bleeding.
    b. Artificial respiration.
    c. Treatment for shock.
    d. Splinting.

4. Equipment inspection procedures.

An attendance record should be kept for each general safety meeting. The attached sample attendance record form may be used to keep this information.

SAFETY EDUCATION & TRAINING

EDUCATION AND TRAINING

Annual Training:
Annual training will be provided to employees of this company. There may be required different training topics, so as to promote and continue the safe performance of work at this company. This training may include, but is not limited to:

- Drug Abuse Policy
- Back Injury Prevention
- Safety Rules/Procedures
- Reporting Unsafe Conditions, Defective Equipment, Unsafe Work Practices
- Safety Equipment
- Personal Protective Equipment

The President/Owner is ultimately responsible for ensuring this training is conducted timely and properly. He may elect to delegate and/or designate a supervisor or employee to be responsible for the actual training of new employees, if any, in the above areas upon hiring.

Specialized Training:
Specialized training listed below will also be conducted by President/Owner, or a contract safety trainer or one designated by the President/Owner for each specialized training need or topic. This training will be documented and maintained on file at the office.

Hazard communication training will be provided for all employees before being allowed to work with, or in the area surrounding hazardous chemicals/materials. Refresher training will be provided on an annual basis, and as needed, when new hazardous materials are introduced into the workplace.

Other issues/area in Education and Training include:

- The employer should be responsible for the education and training of employees in the recognition, avoidance, and prevention of unsafe conditions and documentation thereof.

- The employer should require that each employee is instructed in the recognition and avoidance of unsafe conditions.

- Employees required to handle or use poisons, corrosives, and other harmful substances should be instructed in the safe handling, storage, and use of them and should be made aware of the potential hazards, personal hygiene, and personal protective measures required.

- Employees required to handle or use flammable liquids, gases, or toxic materials should be instructed in the safe handling and use of these materials.

- All employees required to enter confined or enclosed spaces should be instructed as to the nature of the hazards involved, the necessary precautions to be taken, and in the use of protective emergency equipment required. The employer should comply with any specific regulations that apply to work in dangerous areas.

Reporting Unsafe Conditions:

All employees are encouraged, and required to report any unsafe conditions observed or noted. The observations of unsafe conditions are to be written. The attached "Employee Report of Unsafe Condition" form is one example of the type of form and information needed. This company reserves the right to alter, revise, modify or alternate the use of forms as long as the same information is provided in written form. The forms will be kept at the main office by the President/Owner.

The President/Owner, or employees he so designates, are required to promptly respond to all reported unsafe conditions. This follow-up will also be documented. This company reserves the right to alter, revise, modify or alternate the use of forms as long as the same information is provided in written form. The forms will be kept at the main office, by the President/Owner.

Hazard identification numbers will be assigned to reported unsafe conditions individually. This will be done to make sure all hazards are individually evaluated. The hazard identification number will be assigned by "Year-Month-Day-Sequential Number". Example: 93-1-5-1 would be assigned for the St. reported unsafe condition on January 5, 1993. When the unsafe condition has been reported and followed up on, the results will be documented and, as necessary and pertinent, the employees that may or could be affected will be advised accordingly and trained as necessary. This advisement and/or training when provided will be documented and maintained at this company, by the President/Owner.

New Employee Safety Orientation:

Documented procedures will be utilized to ensure all new employees are informed of the hazards of their job that they are about to perform. This may include, but is not limited to, a briefing by the President/Owner or an employee he designates, to review the safety rules applicable to that job/equipment.

The new employee will be given the opportunity to ask relevant safety questions, clear up mis-understandings or re-define the job and its scope. The new employee will be required to sign documentation, indicating he has been provided safety training in a specific area of operation. The new employee safety orientations are required to be in written form, per requirements of this company reserves the right to change, revise, modify the use of a form or the type of the form to best suit their operational needs.

Documentation of Training:

All safety training will be documented on an approved form ,approved by this company that includes the date, topics discussed, trainer's name, and the signature of all employees in attendance. This documentation will be maintained at the main office by the President/Owner.

Safety Reprimands:

When an employee or employees are observed, **not** following documented safety rules, regulations, and/or procedures there will be an employee reprimand filled out. This company reserves the right to alter, revise, modify or alternate the use of forms as long as the same information is provided in written form. The forms will be kept at the main office by the President/Owner. It remains the responsibility of the President/Owner, or an employee he so designates to make every effort to make sure employees are following safe work practices. Employees observed in violation of established safety rules, regulations, procedures, regardless whether it is employees of this company or the employees or our clients, will be counseled. Client employees observed in violation will have the violation relayed to their immediate supervisor(s), for action deemed necessary by the client company. The verbal warning given for minor infractions, will be documented. Other violations are

documented as well. In all cases, infractions are dealt with immediately and regardless of the penalty, the employee committing the violation is counseled.

GUIDE FOR NEW EMPLOYEE SAFETY ORIENTATION

Supervisors should always remember that for a new employee, the first few weeks on the job carry the highest potential of injury.. The chance of an accident is greatly reduced when new employees are made aware of the **"SAFE WAY**" at the beginning of their employment.

1. ***COMPANY SAFETY PROGRAM***: Review the program with employees. Question the employee to determine his/her understanding of the program contents. Explain how the safety program is an integral part of this Company's operations.

2. ***USE OF SPECIAL EQUIPMENT:*** Explain the purpose and operation of any special equipment. emphasize the proper operation of any safety devices that are associated with the equipment.

3. ***REPORTING OF INJURIES:*** Stress the importance of employees reporting even the slightest injury so that you can arrange for proper treatment. Show him/her the location of First Aid equipment, emergency telephone numbers, etc,. in the operating areas.

4. ***SAFETY RULES FOR SPECIFIC JOB:*** Explain all the safety rules and procedures for the specific job to which the employee is assigned.

5. ***REPORTING UNSAFE EQUIPMENT OR CONDITIONS:*** Encourage the employee to report to you when equipment is not functioning properly or when there is an existing condition that jeopardized his/her safety.

6. ***HOUSEKEEPING:*** Explain the effect that housekeeping has on efficient operations and the employee's safety. Show the proper method of handling refuse and trash. Encourage the new employee to use the proper trash containers. Show the employee the conditions that create poor housekeeping, or that can contribute to the problem.

7. ***PROTECTIVE EQUIPMENT:*** Discuss the need for using any prescribed personal protective equipment.

8. ***ON THE JOB CONDUCT:*** Explain the effect that his/her job has on the safety of others, stressing particularly the matter of horseplay. Point out that most accidents are partly the result of some unsafe act by the employee. Explain that if the employee conducts himself/herself according to your instructions, a safe operation will result.

9. ***EMERGENCY PROCEDURES/EVACUATION:*** Explain the signal system and the need for keeping a cool head and evacuating by the proper exits.

10. ***MATERIAL HANDLING:*** Demonstrate the proper method of handling materials,. Explain the need of using leg muscles to lift. Show the employee that it is easier to lift objects if they are kept close to the body.

11. ***FOLLOW-UP:*** Check back and observe the employee several times to make sure that he/.she is following your instructions. MAKE SURE THE EMPLOYEE IS DOING the job the safe way. Correct any and all variations from your instructions immediately, unless the method being used by the employee results in an even greater degree of efficiency and safety than your original instructions.

Employee Name: _____ **Date Employed:** _____

Occupation: _____

NEW EMPLOYEE SAFETY ORIENTATION RECORD

Date Completed	Supervisor's Initials	Employee's Initials	Item
_____	_____	_____	Overall Safety Program discussed with employee.
_____	_____	_____	General Safety Rules and safety rules specific to job duty discussed with employee.
_____	_____	_____	Employee safety responsibilities reviewed with employee: Where and when to report unsafe conditions, how / when / where to report injuries, care & use of tools & equipment.
_____	_____	_____	General hazards in workplace reviewed
_____	_____	_____	Substance Abuse Policy discussed with and signed by employee.
_____	_____	_____	Safety goggles issued (if needed)
_____	_____	_____	Other protective equipment issued:
_____	_____	_____	Hazardous chemicals, including MSDS, discussed with employee
_____	_____	_____	Proper lifting and materials handling discussed with employee
_____	_____	_____	Identified past safety problem areas in employees job duty area discussed with employee
_____	_____	_____	RECORD KEEPING system discussed with employee
_____	_____	_____	_____
_____	_____	_____	_____

*To be placed in employee personnel file.

GENERAL SAFETY MEETING
ATTENDANCE RECORD

DATE: _____

CRAFTS: _____

LOCATION: _____

SUBJECTS DISCUSSED:

1. _____

_____

_____

2. _____

_____

_____

3. _____

_____

_____

REMARKS:

_____

_____

_____

_____

SIGNATURES OF EMPLOYEES ATTENDING:

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

SAFETY MEETING

Date:

_____

Presenter:_____

Topics Discussed:

Signature of Attendees:

1. 9.
2. 10.
3. 11.
4. 12.
5. 13.
6. 14.
7. 15.
8. 16.

Next Safety Meeting Scheduled: _____

*Attach Copy of Training Materials/Handouts Used

SAFETY TRAINING

Date: _____

Trainer:_____

Description of Training:

Signature of Employees Attending Training:

1. 9.

2. 10.

3. 11.

4. 12.

5. 13.

6. 14.

7. 15.

8. 16.

Refresher Training Needed: _____

*Attach Copy of Any Training Materials/Handouts Used.

EMPLOYEE REPORT OF UNSAFE CONDITIONS

EMPLOYEE _____

DEPARTMENT _____

DATE _____ HOUR _____

LOCATION _____

HAZARD OR PROBLEM _____

_____

SUGGESTIONS:

_____

_____

EMPLOYEE: COMPLETE AND GIVE TO SUPERVISOR

****

SUPERVISOR _____

DEPARTMENT _____

DATE RECEIVED: _____

ACTION TAKEN: _____

_____

DATE ACTION TAKEN: _____

SUPERVISOR: COMPLETE AND GIVE TO MANAGER

****

DATE RECEIVED: _____ HAZARD # _____

MANAGER _____

REVIEW - COMMENTS: _____

_____

_____

_____

Signature of Manager

REPORTED UNSAFE CONDITION FOLLOW-UP DOCUMENTATION

(* Assign Hazard #'s by year and date and sequential numbers
Example 93-1-5-1 for 1st reported unsafe condition on January 5, 2001.)

HAZARD # _____

HAZARD: _____

_____

POSSIBLE INJURY OR ILLNESS: _____

_____

EXPOSURE: _____ FREQUENCY: _____

DURATION: _____

INTERIM PROTECTION PROVIDED: _____

_____

CORRECTIVE ACTION TAKEN: _____

REQUIRED TIME FOR CORRECTIVE ACTION: _____

_____

COST OF ELIMINATING THE HAZARD: _____

_____

RETRAINING PROVIDED: _____

_____

FOLLOW-UP CHECK MADE ON _____. ANY ADDITIONAL ACTION TAKEN?
(date)

_____

_____

_____
Signature of Manager or Supervisor

_____
Date

* Keep in office Safety files
* Attach "Employee Report of Unsafe Conditions"

PERSONAL PROTECTIVE EQUIPMENT

If doghouses are used, the employer should require the following:

- Change areas should be kept reasonably clean and sanitary at all times.
- Trash, waste paper, dirty rags, clothing saturated with oil, etc., should not be allowed to accumulate in the change areas.
- The doghouse should be outside the guy lines pattern, upwind from the wellhead, and outside the fall line of the derrick.
- Fires should not be left on overnight and the gas valve should be turned off at the point of supply.
- Only approved heaters, properly inspected and maintained, should be used.
- Fire extinguishers should be provided in all doghouses with heaters.

Protective Personal Equipment

1. Head Protection
   a. The employer should require an approved helmet (protective hard hat) to be worn by all employees while working within working areas, with the exception of self-contained areas such as truck cabs and field offices.
   b. Helmets (protective hard hats) for the protection of heads of occupational workers from limited electric shock and burn should comply with the requirements and specifications established in American National Standards Safety Requirements for Industrial Head Protection Z89.1-1986. Class A helmets are recommended.
   c. Employees should inspect and maintain liners in helmets to comply with standards and should be worn properly.
   d. Helmets should not be modified in any manner.
2. Eye and Face Protection:
   a. Safety glasses, face shields, and goggles should be provided for employees. This equipment should be worn whenever an eye hazard exists and should meet all applicable Eye Protection Standard.
3. Foot Protection:
   a. The employer should require employees to wear safety shoes or safety boots in the working areas.
   b. Safety toed footwear for employees should meet the requirements and specifications in American National Standard for Safety Toewear, Z41.1-1967/1975.

4. General Protective Equipment:

a. The employer should require that unreasonably loose, poorly fitted, or torn clothing should not be worn.

b. The employer should require clothing that has been saturated with flammable or toxic substances to be removed and the affected skin area thoroughly washed.

c. Hazardous jewelry, such as finger rings, chain bracelets, etc., should not be worn. This is not intended to mean wrist watches equipped with bands that will break easily.

d. When conditions warrant, gloves and hearing protectors should be worn.

e. Hair of such length that it may become entangled in moving or rotating machinery should be contained in a suitable manner. Beards and sideburns should be kept in such condition and of such length so as not to interfere with the proper and efficient use of gas masks, air masks, or other safety apparel or equipment.

f. Where special circumstances warrant, or where these standards prescribe the use of safety belts, the employer should require and provide the following equipment:

1. An approved safety belt suitable for the particular job or hazard exposure, which should be attached by means of a tail rope or lanyard to a fixed anchor and adjusted to allow the minimum drop in case of a fall.
2. A separate life line for each employee exposed to the particular job or hazard. Safety belts and lines should be inspected prior to each use and should be repaired or replaced if found to be defective.

g. The employer should provide and require the employee to wear special protective wearing apparel as deemed necessary because of an unusually hazardous situation not normal to the job.

EMPLOYEE HEALTH PROTECTION

The company should provide first aid kits and equipment for temporary treatment of injuries and all employees should be familiar with the contents so they might render aid. However, it must be understood that unless the injury is of a minor nature, the services of a physician should be secured.

First Aid and Medical Attention

1. Information regarding availability of medical care should be made available by the employer for every employee.
   a. An adequate and approved first aid kit should be provided on each rig and should be conspicuously located.
   b. At least one person who is trained and currently certified in first aid and basic rescue techniques should be available at the wellsite anytime work is in progress.
   c. Refer to first aid manual for administering emergency first aid.

Policy Statement for the Return to Work Process

(Company's name) is committed to providing a safe and healthy workplace for our employees. Preventing injuries and illnesses is our primary objective.

If an employee is injured, we will use our return to work process to provide assistance. We will get immediate, appropriate medical attention for employees who are injured on the job and will attempt to create opportunities for them to return to safe, productive work as soon as medically possible.

Our ultimate goal is to return injured employees to their original jobs. If an injured employee is unable to perform all the tasks of the original job, we will make every effort to provide alternative productive work that meets the injured employee's capabilities.

The support and participation of management and all employees are essential for the success of our return to work process.

_____

President/CEO

Follow these procedures when an employee is injured on the job.

1. An employee who is injured must immediately report the injury or incident to a supervisor or an appropriate person in management.

2. The supervisor or return to work coordinator is responsible for:
   - ✶ following Texas Mutual Insurance requirements for reporting injuries and illnesses;
   - ✶ completing an incident investigation record for every report of injury, whether or not medical attention is needed; and
   - ✶ making a report to OSHA (when required for serious incidents) and keeping an OSHA log (if required).

3. If medical attention is needed, the injured employee's supervisor should go with the employee to the doctor or other medical provider.

   Whenever possible, the employee or supervisor should provide the treating doctor with the injured employee's job description, essential job elements, and an introductory letter explaining the return to work process.

4. If the employee is restricted from work, a contact person (the supervisor or return to work coordinator) should communicate regularly with the employee and treating doctor.

   The contact person should talk with the employee on the day of injury and once a week until the employee returns to work. The contact person should check with the treating doctor whenever the employee has a follow-up visit.

5. When the treating doctor releases the employee to alternative productive work, the supervisor should attempt to develop an alternative assignment. Every assignment must meet the doctor's restrictions.

   EVERY EFFORT WILL BE MADE TO DEVELOP ALTERNATIVE PRODUCTIVE WORK.

6. The supervisor must keep a copy of the doctor's work release.

7. The supervisor must follow up with the employee on a regular basis after the employee returns to work.

8. Employers are encouraged to allow an injured employee to return to work as soon as possible.
    a. A record of each injury should be maintained.
    b. An employee representative will be designated to maintain contacts with the injured workers, doctors, and insurance carriers.
    c. Light duty jobs can be designed around an injured person's physical limitations by modifying the normal job, by reducing the job's regular hours, or by selecting a job from other tasks that need to be done.
    d. Completion of a job analysis of the temporary light duty job is necessary. The employee's doctor should be informed that a light duty job is being designed to meet the employee's limitations. The employer will need the doctor's permission before the employee returns to work. If the worker is permanently disabled, the employer may need to consider a new permanent job.
    e. After securing the doctor's permission, discuss the job with the injured worker by clarifying the job duties and the worker's physical limitations. The employer should detail the job duties, hours, rate of pay, duration of the job, and include the physician's statement of permission to return to light duty.
    f. The employer should review the agreement for temporary light duty with the worker and obtain his or her signature. This does not constitute a legal agreement to work but simply is the employee's acknowledgment of the job offer.
    g. If the employee refuses the job offered, and if the physician agrees that the person is able to perform that work, the employer is not required to pay wages. It also is possible that temporary income benefits may be discontinued.

EMERGENCY PREPAREDNESS

Anticipation of the emergencies likely to occur, and appropriate contingency planning for them, may save the lives of injured employees. Employers should develop and post a detailed emergency plan suitable for the employer's location(s), the surrounding population, formation pressures, and contaminants likely to be encountered.

Emergency Communication

1. More than one means of communication may be necessary to ensure prompt help in case of accidents or emergencies.

2. Telephone numbers of physicians, hospitals, and ambulances should be conspicuously posted. Explicit directions to the wellsite should be included on the posted notice. Ambulance and or medical transport services should be kept informed of the location of the rig and the best access routes.

3. In remote areas where telephones are not practical, radio equipment that is capable of communication with a station (manned company base station, police, or emergency base station) in one of the larger communities should be provided. Radio call signs and frequency settings should be posted. Radio schedules should be maintained and coordinated by personnel on drill sites with the nearby community stations.

Signs and labeling

Warning signs should be posted to denote any unusual or hazardous situation. Warning signs should be posted in areas where the use of personal protective equipment is necessary. Identification signs should be conspicuously posted to locate emergency equipment. Containers of poisonous, toxic, flammable, and/or explosive material should be properly labeled and appropriately stored according to content. Signing must conform to OSHA standards.

AUDITS
&
INSPECTIONS

SELF-INSPECTION, SAFETY SURVEYS, AND ASSESSMENTS

SAFETY AUDITS/INSPECTIONS

A documented, regularly conducted (such as daily, weekly, or monthly) self inspection of all facilities/equipment will be conducted by the supervisor in an effort to detect unsafe conditions and initiate corrective action as soon as possible. Supervisory personnel are delegated the responsibility to conduct the inspection of facilities/equipment for unsafe conditions and unsafe observed acts of employees. Such information will be documented and provided to management for evaluation and initiation of corrective action. An employee may be requested/to assist the supervisor in conducting the inspection. Attached audit/inspection guides will be used and filed in the main office.

Employees are responsible for inspecting their workstations for possible hazards on a continuing basis. Hand & power tools will be inspected daily to identify daily to identify any hazardous conditions prior to beginning daily work. Hazards will be reported to supervisory personnel.

A documented monthly inspection of all company vehicles, as/if applicable, will be conducted in an effort to detect areas in need of repair/replacement. The attached vehicle inspection form will be used to perform this monthly inspection.

Employers should designate a qualified person to conduct safety assessments of equipment, work environment, and work habits in order to discover conditions that could injure employees and to control and eliminate any hazards found. A comprehensive survey may cover any of the following:

1. Housekeeping practices
2. Materials storage
3. Portable power tools
4. Personal protective equipment
5. Fire prevention
6. Forklift safety
7. Safety on scaffolding
8. Lifting and carrying procedures
9. Hand tools
10. Machine guards
11. Hazardous materials
12. Electrical safety
13. First aid
14. Ladder safety

Using housekeeping as an example, what kinds of things should you look for in conducting a safety survey? The following checklist may serve as a guide:

I. Housekeeping audit
   - A. Materials storage
     1. Are racks, bins, and lockers well designed and strategically placed?
     2. Are all raw materials, finished products, equipment, etc., stored, piled, or stacked in an orderly manner?
     3. Is material piled too high?
     4. Does material obstruct stairs, fire escapes, exits, or fire fighting equipment?
     5. Is stock piled on the tables of machines or on the floor near operators where it is likely to interfere with their free movement?
     6. Are racks or holders provided for all tools, jigs, fixtures, and parts needed for each machine?
   - B. Orderliness
     1. Is rubbish left on the floor?
     2. Are spills of oil, grease, and other liquids cleaned up promptly?

3. Are empty cartons and soft drink bottles and cans placed in refuse containers?

4. Are hand tools maintained in safe condition and used and stored in an orderly manner?
5. Are removed machine guards replaced?
6. Are personal protective devices worn regularly?
7. Are lockers cleaned out regularly?

C. Yards

Are the premises outside the building kept neat and clean?

D. Salvage

1. Are waste and scrap collected, graded, and sorted on a regular basis?
2. Are large piles of valuable waste and scrap stacked neatly and kept covered?

E. Fire prevention

1. Are oily, greasy, or paint-covered rags and other combustibles collected and disposed of regularly?
2. Are they placed temporarily in covered metal containers only?
3. Are oils, paint, varnishes, lacquers, cement, thinners, and solvents stored under fire- and explosion-proof conditions?
4. Are these materials handled carefully and kept in safety cans, in minimum quantities, for immediate use?
5. Are fire extinguishers, hoses, and other fire fighting equipment inspected, maintained, and located in prominent and quickly available positions? Are there clearly visible signs above extinguishers so that they can easily be located?

F. Floors

1. Are floors cleaned regularly?
2. Are overflowing liquids controlled?
3. Do machines or processes that throw or splash oils or other liquids have baffles, drip pans, gutters, drains, etc., to keep liquids off the floor?

G. Traffic and aisles

1. Are there definite practices for the loading and dumping of industrial hand and power trucks, skid racks, or pallets on which material is moved?
2. Are all aisles and passageways clearly marked and kept unobstructed?
3. Are all vehicles parked and operated according to definite regulations?

OIL & GAS WELL DRILLING OPERATIONS

Rig components to be inspected prior to beginning drilling operations:

A. Blowout prevention system
B. Hydrogen Sulfide detection System
C. Stairway system
D. Guardrail system
E. Safety Escape line system
F. Ladder climbing system
G. Electrical compound for grounding/bonding
H. Mud pump system
I. Braking system
J. Fuel storage tank system
K. Swivel/hooks/bales condition
L. Catheads on draw works
M. Makeup and breakout tongs
N. Fire protection equipment on rig
O. Drill string and Collars

Adequate equipment guarding provided in the following areas:

A. Pins/Keepers in derrick legs
B. Smooth Kelly bushing or guard around area
C. Rotary drive chain guard
D. Drive shaft/bull wheel drive area properly guarded
E. Draw works drives guarded
F. Engine compound drives
G. Mud Pump compound drives and safety relief valve areas
H. Rotary/Kelly hose properly chained
I. Pipe racks chocked
J. Deadline pins in place

Proper work practices observed for the following equipment?

A. Slip practices
B. Makeup/breakout tong activities
C. Spinning chain activities
D. Tong usage
E. Makeup/breakout operations if rotary table is used
F. Pipe handling techniques

WELL SERVICING/WORK OVER CHECKLIST

	Yes	No
Have job specific safety rules been established?		
Are monthly safety meetings completed?		
Are daily tailgate safety briefings completed at the field site?		
Are employees required to attend producer/customer sponsored safety meetings?		
Are employees formally oriented at the time of hire?		
Does the orientation cover all aspects of the company safety program?		
Is Hydrogen Sulfide training completed annually? (Where applicable)		
Is the rig equipped with a fixed Hydrogen Sulfide monitor & audible alarm?		
Is the Hydrogen Sulfide monitor calibrated on a monthly basis?		
Is CPR & First Aid training completed?		
Are weekly rig safety inspections completed & documented?		
Is each rig equipped with multiple SCBA units & Fire Extinguishers?		
Does procedure call for the SCBA units to be placed diagonally outside the guy wires of the rig?		
Is each rig or doghouse equipped with a windsock & appropriate warning signs?		
Hazard Communication program in place and MSDS maintained?		
Lock-out/Tag-out procedures established and utilized?		
Fall protection requirements established & training completed?		
Rescue procedures established to address derrick-climbing activities?		
Is the work over rig and its components inspected annually by a certified vendor?		
Is a First Aid kit provided in the doghouse?		

INSPECTION CHECKLIST:

	Yes	No
Is the rig cab clean and free of loose material?		
Is the rig properly guyed?		
Has the appropriate distance (10') been maintained form overhead power lines		
Are guards in place on all moving parts of the motor, draw works & accessory equipment such as a reverse drilling unit, BOP, mud pumps, etc.?		
Are guardrails provided around the rig floor when heights exceed 6'		
Are the access stairs equipped with a handrail system		
Are the power tongs in good condition?		
Is a counterweighted climbing device provided with full body harness?		
Is the derrick man tied-off 100% of the time when working from the rod basket & tubing platform.		
Is an emergency escape line (Geronimo) provided for the derrick man & equipped with a functional hand brake?		
Is the emergency escape line adequately secured and fixed at an appropriate angle?		
Are all hand tools (rod wrenches, pipe wrenches, etc.) maintained in good condition?		
Is the rig equipped with a functional Hydrogen Sulfide monitor?		
Is the monitor calibrated as outlined by the manufacturer?		
Are SCBA units provided and positioned outside opposite guy wires of the rig?		
Are fire extinguishers provided and positioned outside opposite guy wires of the rig?		
Are employees required to utilize appropriate PPE (hardhat, eye protection, gloves, steel toe boots, fall protection, Hydrogen Sulfide Monitors)?		
Is the doghouse in good condition?		
Are local emergency numbers posted in the doghouse?		
Are Material Safety Data Sheets maintained in the doghouse?		
Is the doghouse equipped with a phone or radio for emergency purposes?		

Oil & Gas Processing
Wire line Operations Checklist

	Yes	No	
Have safety rules been established?	☐	☐	
Are regular safety meetings completed and documented?	☐	☐	
Are all employees trained in H2S?		☐	☐
Are H2S devices located on the rig?	☐	☐	
Is the unit equipped with SCBA units?	☐	☐	
RIG & COMPONENTS:			
Are wire line units well away from fracturing or hot oil units?	☐	☐	
Is the wire line unit properly chocked?	☐	☐	
If skid mounted, is the wire line unit properly secured?		☐	☐
Is the wire line unit placed to avoid interference with entrance or exit of employees?	☐	☐	
Is gin pole properly attached to the wellhead?	☐	☐	
Are securing devices sufficient to handle the anticipated load?	☐	☐	
Has rope been properly inspected & free of splices and/or damages?	☐	☐	
Have blocks been inspected for shaft wear, condition of bearings, and damaged or worn sheaves?	☐	☐	
Has wire line equipment been properly attached to wellhead?	☐	☐	
Has lubricator been tested within past 12 months?	☐	☐	
Is working pressure on lubricator within limits of the testing pressure?	☐	☐	
If over 5,000 PSI does lubricator have: Two bleed valves	☐	☐	
Each section properly marked?	☐	☐	
OPERATIONS:			
Is loose end of wire line properly secured?	☐	☐	
Is wire line clamped off if slack line occurs while tools are in the hole?	☐	☐	
If clamped are devices capable of withstanding any load to which it may be subjected?	☐	☐	
When line is in motion, are sheaves completely clear of hands, rags, etc.	☐	☐	
When moving are mast and pole's properly secured?	☐	☐	

	Yes	No
Are all radioactive materials stored & handled in compliance with all federal, state, and local regulations?	☐	☐
PERFORATING OPERATIONS:		
Do qualified employees handle explosive devices only?	☐	☐
Are all units properly grounded?	☐	☐
Are all unnecessary personnel kept well away during arming of explosives, placing in the well, removal and disarming?	☐	☐
All necessary precautions taken in explosive operations?	☐	☐
Is primacord and blasting caps properly separated prior to assembly?	☐	☐
Are blasting caps transported properly?	☐	☐
During operations, is all equipment located so that equipment operators can see the person in charge during the operations?	☐	☐
Are signals between supervisor, perforating personnel, and other involved persons fully understood by everyone involved?	☐	☐
Is communication equipment in good working order?	☐	☐
SWABBING:		
While swabbing operations are being conducted, are all engines, motors, and any other sources of ignition not essential to the operation shutdown?	☐	☐
Is swabbing line packed off at the surface so that fluids are routed through a closed flow system to the maximum extent possible?	☐	☐
Are swabbing operations conducted during daylight hours?	☐	☐
Are swabbing units positioned upwind of any swab tanks or pits?	☐	☐

COMPREHENSIVE INSPECTION CHECK LIST

Name of Person Conducting Inspection:_____

Date Inspection Conducted:_____

GENERAL REQUIREMENTS		**YES**	**NO**	**EXPLANATION OR COMMENT**
1910 - IAC 4-4-2 -	Recordkeeping up to date.	___	___	_____
1910 - IAC 4-3-2	OSHA poster on job / job site	___	___	_____

SUBPART C
GENERAL SAFETY AND HEALTH PROVISIONS

1926.20 - No employee "to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to their health or safety."	___	___	_____
1926.20 - Accident prevention program (B)(1) initiated and maintained by employer.	___	___	_____
1926.20 - Regular and frequent (B)(1) inspection of job sites, materials, and equipment made by competent designated person.	___	___	_____
1926.20 - Procedure established to (B)(3) identify unsafe tools, materials, or equipment by tagging or by locking controls or removing from use.	___	___	_____
1926.20 - Only qualified employees (b)(4) permitted to operate equipment or machinery.		___	___ _____

	YES	NO	EXPLANATION OR COMMENT
1926.21 - Employees instructed in recognition and avoidance of unsafe conditions.	___	___	_____
1926.21 - Special instructions given (B)(1-6) in case of use of poisons, caustics, flammable liquids, gases, toxic materials, or work in confined or enclosed spaces.		___	___ _____
1926.25 - Housekeeping -- Work areas, passageways, stairs kept clear, projecting rails removed.	___	___	_____
-- Scrap and debris removed at regular intervals.	___	___	_____
-- Containers provided and used for waste, trash, other refuse, garbage.	___	___	_____

(SUBPART D)
OCCUPATIONAL HEALTH AND ENVIRONMENTAL CONTROLS

1926.50 - Medical personnel available (A) for advice and consultation.	___	___	_____
1926.50 - Person with valid certificate (C) in first aid training available in absence of infirmary, clinic, or hospital.	___	___	_____
1926.50 - Approved first aid supplies (D)(1)(2) and kit available on job and checked at least weekly.	___	___	_____
1926.50 - Provisions made for prompt (B) medical attention in case of serious injury.	___	___	_____
1926.50 - Equipment provided for (E) transporting injured or communication system for contacting ambulance service.	___	___	_____
1926.50 - Emergency telephone (F) numbers conspicuously posted.	___	___	_____

	YES	NO	EXPLANATION OR COMMENT
1926.51 - Adequate supply of potable (A)(1-5) (drinking) water provided, clearly marked, common cup provided.	___	___	_____
1926.51 - Toilets provided for (C) employees on job site. (20 or less, one; 20 or more, one toilet seat and one urinal per 40 workers; 200 or more, one toilet seat and one urinal per 50 workers)	___	___	_____
1926.52 - Protection against effects of noise exposure provided through administration or engineering controls or personal protective equipment. Ear protection worn when noise is excessive.	___	___	_____
GENERAL REQUIREMENTS			
1926.53 - Ionizing radiation, radioactive material or x-ray) protection provided where needed.	___	___	_____
1926.54 - Non-ionizing radiation (Iaser equipment) protection provided where needed.	___	___	_____
1926.55 - Gases, vapors, fumes, dusts, and mists threshold limits observed.	___	___	_____
(a) Engineering or administrative controls.	___	___	_____
(b) Respirators worn when controls unfeasible.	___	___	_____
1926.56 - Construction areas lighted to minimum illumination requirements. (See Table D-3)	___	___	_____
1926.57 - Harmful dusts, fumes, mists, vapors or gases controlled or ventilation provided.	___	___	_____

	YES	NO	EXPLANATION OR COMMENT
SUBPART E **PERSONAL PROTECTIVE AND LIFE SAVING EQUIPMENT**			
1926.100 - Hard hats are worn by everyone in the construction area.	___	___	_____
1926.101 - Hearing protection (ear) provided where/when required.	___	___	_____
1926.102 - Eye and face protection provided where operation of machines present potential eye or face injury.	___	___	_____
1926.103 - Appropriate respiratory equipment provided and used when and where required.	___	___	_____
1926.104 - Safety belts, lifelines and lanyards provided and used when and where required.	___	___	_____
1926.105 - Safety nets provided where other protection is impractical.	___	___	_____
SUBPART F **FIRE PROTECTION AND PREVENTION**			
1926.150 - Fire protection program (A) developed and followed.	___	___	_____
1926.150 - Water supply for fire (B) fighting (If/When required)	___	___	_____
1926.150 - Fire extinguisher's (water, (C) ABC, fire hose) provided.	___	___	_____
1926.150 - Alarm or telephone system (E) available for use in emergency.	___	___	_____
1926.150 - Fire walls, exit stairs and (F) fire doors given construction priority.	___	___	_____
1926.151 - Sources of ignition controlled.	___	___	_____
1926.151 - Proper storage practices observed for fire protection.	___	__	_____

	YES	NO	EXPLANATION OR COMMENT
1926.151 - "NO SMOKING OR OPEN (A)(3) FLAME" signs posted and enforced where required.	___	___	_____
1926.152 - Storage, use and handling of flammable and combustible liquids in accordance with standards.	___	___	_____
1926.153 - Liquefied petroleum gas, storage and handling in accordance with standards.	___	___	_____
1926.154 - Clearance, proper mounting, ventilation stability for temporary heating devices.	___	___	_____
SUBPART G SINGS, SIGNALS, AND BARRICADES			
1926.200 - "Danger Signs" available and used only where an immediate hazard exists.	___	___	_____
1926.200 - "Cautions Signs" available and used only to warn against potential hazards or to caution against unsafe practices.	___	___	_____
1926.200 - "EXIT" signs are posted (D) where required.	___	___	_____
1926.200 - "Safety Instruction" and (E)(F) "Directional" signs, posted where required.	___	___	_____
1926.200 - Traffic" signs posted (G) where required.	___	___	_____
1926.200 - "Accident Prevention" tags (H) available and used where required.	___	___	_____
1926.201 - Flag men used where (A) required.	___	___	_____
1926.201 - Crane and hoist signals (B) are posted and used.	___	___	_____

	YES	NO	EXPLANATION OR COMMENT
1926.202 - Barricades provided where needed.	___	___	_____
SUBPART H **MATERIAL HANDLING, STORAGE AND DISPOSAL**			
1926.250 - All materials stored and stacked properly.	___	___	_____
1926.250 - Safety load limits of floors are posted and observed.	___	___	_____
1926.250 - Aisles and passageways kept clear of obstructions.	___	___	_____
1926.251 - Rigging equipment for material handling inspected on each shift and load limits observed.	___	___	_____
1926.252 - Proper handling and disposal of waste materials practiced.	___	___	_____
1926.252 - All solvent waste, oily rags and flammable liquids shall be kept in fire resistant, covered containers until removed from job or job site.	___	___	_____
SUBPART I **TOOLS - HAND AND POWER**			
1926.301 - All hand and power tools (A) maintained in safe condition.	___	___	_____
1926.301 - All power operated tools (B) are properly guarded.	___	___	_____
1926.301 - All hand held power tools (D) equipped with proper switch.	___	___	_____
1926.302 - Electric tools grounded or double insulated.	___	___	_____
1926.302 - Pneumatic power tools, (B) fuel power tools, hydaulic power tools have required safeguards.	___	___	_____

	YES	NO	EXPLANATION OR COMMENT
1926.302 - Power-actuated tools (E) have required safeguards and operated ONLY by trained personnel.	___	___	_____
1926.304 - Woodworking tools are properly equipped and used.	___	___	_____
1926.305 - Jacks rated and capacity are not exceeded.	___	___	_____
SUBPART J WELDING AND CUTTING			
1926.350 - Transporting, moving and storing compressed gas cylinders according to standards. (Secured upright, valves protected, kept from sparks and heat).	___	___	_____
1926.350 - Placing of cylinders for (B) welding and cutting according to standards.	___	___	_____
1926.350 - Employees instructed in (D) safe welding and cutting practices.	___	___	_____
1926.352 - Fire prevention measures taken according to standards.	___	___	_____
1926.353 - Ventilation and protection in welding, cutting and heating, according to standards.	___	___	_____
1926.353 - Proper protective equipment provided and used.	___	___	_____
SUBPART K ELECTRICAL			
1926.400 - Employees protected from electrical shock by grounding, guarding or other approved means.	___	___	_____
1926.400 - Before work is begun, (C)(2) determine location of exposed or concealed electric lines to avoid personal contacts.	___	___	_____

	YES	NO	EXPLANATION OR COMMENT
1926.401 - Portable equipment grounded or double insulated.	___	___	_____
1926.401 - Extension cords are of (F) three-wired type.	___	___	_____
1926.401 - Temporary wiring properly (F) installed.	___	___	_____
1926.401 - Temporary lighting properly (J) protected and installed.	___	___	_____
1926.402 - Grounding type (A)(1) receptacles in use.	___	___	_____
1926.402 - Different type attachment (A)(2) plugs for different voltages.	___	___	_____
1926.402 - Skirted attachment plugs (A)(3) for equipment supplied by more than 300 volts.	___	___	_____
1926.402 - Attachment plugs to have (A)(4) cord grip.	___	___	_____
1926.402 - Flexible cord used in (A)(5) continuous length.	___	___	_____
1926.402 - Slices in traiting cables to (A)(7) be mechanically strong.	___	___	_____
1926.4502 - Protection for cables (A)(8) passing through work area provided.	___	___	_____
1926.402 - Brass shell, paper lined (A)(9) lamp holder not used.	___	___	_____
1926.402 - Worn or frayed electric (A)(10) cables/cords not used.	___	___	_____
1926.402 - Electrical cords are (A)(11) protected from damage.	___	___	_____
1926.402 - Extension cords fastened (A)(12) properly.	___	___	_____
1926.402 - Over current protection (B)(1) provided.	___	___	_____

	YES	NO	EXPLANATION OR COMMENT
1926.402 - Employees trained on (B)(3) proper way to change fuses.	___	___	_____
1926.402 - Marking or disconnecting (C)(2) means identified.	___	___	_____
1926.402 - Mounting of disconnecting (C)(3) boxes is properly done.	___	___	_____
1926.402 - Disconnecting means is in (C)(4) damp location.	___	___	_____
1926.402 - Energized transformers (D)(1) and related electrical energized equipment to be guarded from contact.	___	___	_____
1926.402 - Sign indicating danger (D)(3) conspicuously displayed on the enclosure around equipment.	___	___	_____
BATTERY ROOMS AND BATTERY CHARGING			
1926.403 - Ventilation of battery (A)(2) rooms is provided and adequate.	___	___	_____
1926.403 - Proper racks and trays (A)(3) are provided for batteries.	___	___	_____
1926.403 - Floor construction is of (A)(4) proper materials.	___	___	_____
1926.403 - Face shields, aprons and (A)(5) rubber gloves provided/used.		___	___ _____
1926.403 - Quick drenching for eyes. (A)(6)	___	___	_____
1926.403 - Proper placement of battery (B)(1) charging equipment.	___	___	_____
1926.404 - Hazardous Locations. (A)	___	___	_____

	YES	NO	EXPLANATION OR COMMENT
SUBPART L **LADDERS AND SCAFFOLDING**			
1926.450 - Ladders with broken or (A)(2) missing rungs, broken side rails or other defects are removed from service.	___	___	_____
1926.450 - Portable ladders have (A) proper base, used at one to four pitch, top and bottom kept clear, and properly secured.	___	___	_____
1926.450 - Ladder side rails extends (A)(9) 36 inches above landing area.	___	___	_____
1926.450 - Job made ladders are to standards.	___	___	_____
1926.451 - Scaffolding footing and anchorage is proper.	___	___	_____
1926.451 - All scaffolding operations (A)(3) under supervision of a competent person.	___	___	_____
1925.451 - Scaffold platform less than (A)(4) 45 inches in either direction above four feet, to be guarded.	___	___	_____
1926.451 - Guardrails (42inches high) (A)(4)(5) and toe boards on all scaffolds and platforms more than 10 feet high.	___	___	_____
1926.451 - Safety factor of "4" for (A)(7) scaffolds is maintained.	___	___	_____
1926.451 - Damaged or weakened (A)(8) scaffold parts are removed.	___	___	_____
1926.451 - Scaffold timber and planks (A) are according to standard.	___	___	_____
1926.451 - Access ladder provided for (A)(13) scaffolding.	___	___	_____

	YES	NO	EXPLANATION OR COMMENT
1926.451 - Wire mesh or equivalent (A)(6) provided on scaffolds when persons must pass under them.	___	___	_____
1926.451 - Other scaffold requirements to standard.	___	___	_____
SUBPART M FLOOR AND WALL OPENING AND STAIRWAYS			
1926.500 - Floor and roof openings (B) and holes effectively protected with standard guardrails or corners.	___	___	_____
1926.500 - Wall openings protected (C) where opening is less than 3 feet above the floor and where there is a drop of more than 4 feet.		___	___ _____
1926.501 - Stairways equipped with railings and handrails.	___	___	_____
SUBPART N CRANES, DERRCIKS, HOISTS, ELEVATORS AND CONVEYORS			
1926.550 - Crane and derrick (A)(1) operations according to specifications and limitations of manufacturers.	___	___	_____
1926.550 - Operating speeds, (A) warnings, instructions posted on equipment.	___	___	_____
1926.550 - Hand signal illustrations (A)(4) posted on job site and used.		___	___ _____
1926.550 - A competent person designated to inspect machinery and equipment prior to each use.	___	___	_____
1926.550 - Inspection records (A)(7) available.	___	___	_____
1926.550 - Wire rope used only (A)(7) according to standard.	___	___	_____

	YES	NO	EXPLANATION OR COMMENT
1926.550 - Moving parts are guarded. (A)(8)	___	___	_____
1926.550 - Minimum clearance to (A)(15) electrical power line observed (never less than 10 feet) and person designated to observe and give warnings.	___	___	_____
1926.550 - No modifications to (C)(16) equipment that will effect capacity or safe operation without manufacturer's written approval.	___	___	_____
1926.550 - Crawler and truck cranes, operated and maintained/inspected according to standards.	___	___	_____
1926.550 - Tower cranes and other cranes operated, maintained and inspected according to standard.	___	___	_____
1926.552 - Material hoists, personnel hoists and elavator operated according to specifications and limitations of manufacturer and according to standard.	___	___	_____
1926.552 - Operating rules, including (B)(1) "NO Rider Allowed" posted on/ at material hoists.	___	___	_____
1926.553 - Base-mounted drum hoist, (A)(1) have moving parts guarded.	___	___	_____
1926.553 - Controls within easy reach (A)(2) of operator's station.	___	___	_____
1926.553 - Electric motor hoist has (A)(3) disconnect for motors.	___	___	_____
1926.554 - Overhead hoist-working (A)(1) load posted on hoist where visible.	___	___	_____
1926.554 - Supporting structure in (A)(2) place.	___	___	_____
1926.554 - Sufficient air pressure for (A)(5) hoist.	___	___	_____

	YES	NO	EXPLANATION OR COMMENT
1926.554 - Conveyors are equipped (A)(3) with "STOP" switches.	___	___	_____

SUBPART O
MOTOR VEHICLES, MECHANIZED EQUIPMENT AND MARINE OPERATIONS

1926.600 - Equipment marked with (A) warning devices (reflectors, lights, etc.) after working hours when adjacent to public streets, highways.	___	___	_____
1926.601 - Off highway motor vehicles comply with standards and checked at beginning of each shift.	___	___	_____
1926.602 - Seat belts, brakes, operator protection on earth moving equipment according to standards. ROP structures where required.	___	___	_____
1926.602 - Forklift trucks maintained and used according to standards.	___	___	_____
1926.603 - Pile driving equipment, marine operations and equipment according to standard.	___	___	_____

SUBPART P
EXCAVATIONS, TRENCHING AND SHORING

1926.650 - Daily inspection of excavations by designated individuals.	___	___	_____
1926.650 - Walkways, runways, side- (A) walks are unobstructed and properly supported if necessary.	___	___	_____
1926.651 - Utility companies contacted (A) and advised of proposed excavation operations.	___	___	_____
1926.651 - Angle of repose and/or supporting system determined and utilized according to standards.	___	___	_____

	YES	NO	EXPLANATION OR COMMENT
1926.652 - Trenching requirements, bracing and other safeguards in place according to standard.	___	___	_____
SUBPART Q **CONCRETE, CVONCRETE FORMS AND SHORING**			
1926.700 - Concrete buggies, buckets, pumping systems, trowels, and equipment according to standards.	___	___	_____
1926.700 - Reinforcing steel placing (B) and trying according to standards.	___	___	_____
1926.701 - Forms and shoring equipment according to standard.	___	___	_____
1926.701 - Drawings and plans for (A)(2) framework, shoring, etc., on job site.	___	___	_____
SUBPART R **STEEL ERECTION**			
1926.750 - Temporary or permanent floor according to standards. Safety nets are up where applicable.	___	___	_____
1926.751 - Structural steel assembly according to standards.	___	___	_____
1926.752 - Bolting, riveting, fitting up and plumbing up is done according to standards.	___	___	_____
SUBPART S **TUNNELS AND SHAFTS, CAISSONS, COFFERDAMS AND COMPRESSED AIR**			
1926.800 - Tunnel and shafts according to standards.	___	___	_____
1926.801 - Caissons according to standards.	___	___	_____
1926.802 - Cofferdams according to standards.	___	___	_____

	YES	NO	EXPLANATION OR COMMENT
1926-803 - Compressed air work according to standards.	___	___	_____
SUBPART T DEMOLITION			
1926.850 - Survey in writing made (A) prior to start of demolition.	___	___	_____
1926.850 - Utility service lines cut (C) off or controlled.	___	___	_____
1926.851 - Stairways and ladders in place according to standards.		___	___ _____
1926.852 - Chutes provided where required.	___	___	_____
1926.853 - Systemic removal according to standards.	___	___	_____
SUBPART U BLASTING AND USE OF EXPLOSIVES			
1926.900 - Only authorized and qualified persons handle explosives.	___	___	_____
1926.901 - Blaster is qualified.	___	___	_____
1926.902 - Transportation and storage of explosives and blasting agents is according to standards.	___	___	_____

NOTE: Before blasting, consult the Internal Revenue Service-Alcohol, obacco and Firearms Division Publication 740 (6-71)

ACCIDENT
&
INCIDENT
INVESTIGATION

INCIDENT ACCIDENT INVESTIGATION

An accident can be defined as any occurrence that interrupts or interferes with the orderly progress of the job and that usually occurs suddenly and unexpectedly. Some accidents involve human injury. Accidents arise from a combination of unsafe acts and unsafe conditions.

An incident can be defined as an action likely to lead to grave consequences. A plan for all such incidents to be investigated should be implemented by the employer. All undesirable incidents without injury or "near misses" indicate a problem exists. An incident can uncover causal factors of an unsafe condition. Corrective actions should be taken to prevent a recurrence.

A documented investigation will be initiated as soon as practically possible (no later than 24 hours) after each accident, including "near misses", while the details surrounding the accident are still fresh in the minds of those involved. The immediate supervisor will be trained in the proper manner to conduct an accident investigation. The attached form will be used in documenting the occurrence of an accident or "near miss" and training supervisory personnel to properly investigate accidents. It is important to investigate <u>all</u> accidents, no matter how minor.

Accident reports will be turned in to the manager for review.

These general steps should be followed by supervisors to assure a thorough & effective investigation:

- Understand the need for the investigation.
- Prompt written investigation that identifies specific accident causes (what, how, and why it occurred).
- Take pictures, draw diagrams, and get witness's statements.
- Document and analyze all facts.
- Develop & analyze conclusions.
- Correct any situations or recommend corrective action, depending on your authority.
- Follow through to make sure recommendations are completed and are effective.
- Monitor corrective action at a later date to assure continued effectiveness of action taken.
- Discuss at next safety meeting/training, as appropriate.

The incident investigation determines what basic condition or act caused the incident so that corrective measures can be taken to prevent recurrence.

The person supervising the employee involved is usually the person in the best position to conduct a comprehensive investigation. Supervisors are responsible for getting the most efficient use out of the equipment, material, and employees and are the ones to whom management looks to solve operational problems such as unsafe acts or conditions.

An incident should be investigated as soon as possible, at least within the first 24 hours of the occurrence. The sooner the information is gathered, the more accurate the facts will be.

The incident investigation should include the following:

a. Interviewing the employee involved in the incident to evaluate the situation and potential liability.
b. Photographing the scene so as not to rely on memory.
c. Locating, interviewing, and getting statements from any witnesses.
d. Evaluating any evidence found at the scene in order to reconstruct events.
e. Having the employee outline the sequence of events.
f. Protecting the incident scene until the employer is satisfied with the investigation.
g. Before leaving the scene, warning others about protecting or repairing any exposure areas.
h. Having the involved employee complete a written report before leaving for the day and making sure that the report is in sufficient detail.
i. Reinterviewing the involved employee if necessary.
j. Completing all documentation of the event.
k. Recommending corrective action to management.

SUPERVISOR'S ACCIDENT INVESTIGATION TRAINING FORM

An accident can be defined as any occurrence that interrupts or interferes with the orderly progress of the job and usually occurs suddenly and unexpectedly. Some accidents involve human injury. Accidents arise from a combination of unsafe acts and unsafe conditions.

The intent of an accident investigation should be to determine what basic condition or act caused the accident so corrective measures can be taken to prevent reoccurrence and not to identify the guilty party.

The person supervising the employee involved will conduct a comprehensive investigation. Supervisors are responsible for getting the most efficient use out of the equipment, material and people and is the person management looks to solve operational problems such as unsafe acts or conditions.

An accident should be investigated as soon as possible and at least within the first 24 hours of the occurrence. The sooner the information is gathered, the more accurate the facts will be.

The accident investigation should include the following:

- Interview the employee involved (when possible) to evaluate the situation and potential liability.
- Photograph the scene. Don't rely on memory.
- Locate, interview and get statements from any witnesses.
- Evaluate any evidence found at the scene and reconstruct events.
- Have involved employee step through the sequence of events.
- Do not disturb the accident scene until you are satisfied with the investigation.
- Before leaving the scene, warn, protect and/or repair any exposure areas.
- Involved employee should complete a written report before leaving for the day. Be sure the report is in sufficient detail.
- Re-interview the involved employee if necessary.
- Complete all documentation of the event.

Accident Investigation – Training Outline

I. Preparation - review past accident reports

II. Introduce Topic and Objective

A. Purpose of investigations
B. Initial Investigation
C. Accident Evaluation
D. Written report

III. Purpose of investigations

A. to determine measures that can be taken to prevent similar accidents in the future
B. investigations must be unbiased, prompt and accurate

IV. Initial investigation

A. Immediate Steps
    1. Provide First Aid for any injured persons.
    2. Eliminate or control hazards
    3. Document accident scene information to determine the cause.
    4. Interview witnesses immediately.
B. Initial investigation purpose
    1. Prevent further possible injury and property damage
    2. Collect facts about the accident
    3. Collect and preserve evidence
C. Initial investigation procedure
    1. Secure the area. Do not disturb the scene unless a hazard exists.
    2.. Prepare the necessary sketches and photographs. Label each carefully and keep accurate records.
    3. Interview each victim and witness
D. Determine
    1. What was not normal before the accident.
    2. Where the abnormality occurred.
    3. When it was first noted.
    4. How it occurred.

V. Accident evaluation

A. analyze data
B. determine the causes
C. develop corrective action recommendations.
D. Steps
    1. Analyze the data obtained in the initial investigation
    2. Repeat any of the prior investigation steps, if necessary.
    3. Determine
        a. Why the accident occurred.
        b. A likely sequence of events and probable causes (direct, indirect, basic).

VI. Written Report

Prepare a summary report, including the recommended actions to prevent a recurrence.

A. Report Details

1. Date, Time, Location
2. Injured
3. Witnesses
4. Activities just prior to accident
5. Accident description - sequence of events
6. Accident results
7. Witness statements
8. Diagrams & photos
9. Immediate temporary corrective actions at scene
10. Recommended permanent corrective actions

VII. Conducting Interviews

1. Conduct in a quite and private location
2. Get statements as soon as possible
3. Do not provide any facts or opinions to the witness.
4. Explain the purpose of the investigation (accident prevention) and put each witness at ease.
5. Listen, let each witness speak freely, and be professional, courteous and considerate.
6. Take notes without distracting the witness. Use a tape recorder only with consent of the witness.
7. Use sketches and diagrams to help the witness.
8. Emphasize areas of direct observation. Label hearsay accordingly.
9. Do not argue with the witness.
10. Record the exact words used by the witness to describe each observation.
11. Identify each witness - name, address, occupation, years of experience, etc

KEY QUESTIONS THAT MUST BE ASKED ANDANSWERED IN CONDUCTING AN ACCIDENT INVESTIGATION	
WHO:	• **Was Injured?**
	• **Saw the accident?**
	• **Was the supervisor / manager at the time of the accident?**
	• **Was working with the person involved?**
	• **Else was involved?**
	• **Instructed the employee?**
	• **Trained the injured employee?**
	• **Assigned the employee to the job or task?**
	• **Can help or assistance with the job prevent a recurrence?**
WHAT:	• **Was the accident type?**
	• **Was the type of injury?**
	• **Part of the body was injured?**
	• **Job or task was the employee performing?**
	• **Was he told to do?**
	• **Tools was the employee using?**
	• **Machine or equipment was involved?**
	• **Instructions did the employee receive?**
	• **Specific precautions were necessary to do the job?**
	• **Specific precautionary instructions were given?**
	• **Protective equipment was used?**
	• **Protective equipment should have been used?**
	• **Protective equipment was available?**
	• **Problems or questions were encountered?**
	• **Did the employee or witness do when the accident occurred**
	• **Extenuating circumstances were involved?**
	• **Did the employee or witness see?**
	• **Will be done to prevent recurrence?**
	• **Safety rules were violated?**
	• **New rules are needed, if any?**
WHEN:	• **Did the accident occur?**
	• **Was the employee hired?**
	• **Did the employee start the job / task?**
	• **Were the specifics of the job / task discussed with the employee?**
	• **Were hazardous conditions discussed with the employee?**
	• **Did the supervisor last check on the employee's progress?**
	• **Will the hazardous situation be corrected?**
	• **Will the employee return to work?**

WHERE:	• **Did the accident occur?**
	• **Was the employee at the time of the accident?**
	• **Was the supervisor / manager?**
	• **Were the other people that were involved at the time of the accident?**
	• **Were witnesses when the accident occurred?**
WHY:	• **Was the employee injured?**
	• **Did employee do whatever contributed to the accident? (If another employee was involved.)**
	• **Wasn't protective equipment used?**
	• **Was the employee in the position he / she was in?**
	• **Was employee using the tools / equipment / machine he / she was using?**
HOW:	• **Was the employee injured?**
	• **Could the accident been avoided?**
	• **Could the other employee(s) have helped to prevent the accident**
	• **Could the supervisor / manager have prevented the accident?**
GENERAL:	• **Was protective equipment available?**
	• **Were specific instructions given?**
	• **Were specific instructions followed?**
	• **Was equipment / tools / machine defective?**
	• **Was the defective condition reported?**
	• **Did the employee continue working with the defective equipment?**
	• **Did the employee continue working with the defective equipment?**
	• **Did the employee continue working under the circumstances he or she was working under that led to the accident?**
	• **Were safe procedures followed?**

Employee Report of Accident, Injury or Illness

Instructions: Please Print. Fill in all blanks. If a blank does not pertain to your accident, injury or illness write "N/A" in that blank. When completed, return this form to your supervisor.

Name: _____

Social Security Number: _____ Sex _____ Age _____

Address_____ Phone Number _____

Marital Status ❑Single ❑Married ❑Separated ❑Divorced ❑Widowed

Number of Dependents____ Date of Hire_____ Occupation: _____

Employment Start Date	Time in Present Job
Job Title	Supervisor's Name
Department	Date & Time of Accident
Location of Accident	Task being Performed
Name of Witness	Name of Witness
Describe how the accident happened	
What caused the Accident	
What could have prevented this accident	
Date & Time you first sought medical attention	
Name of Hospital or Doctor	
Were you using required safety equipment?	
Do you have a job at another company?	

The information I have provided either in my own writing or verbally for the purpose of this form is true and correct. I understand that providing false or misleading information or omission of information on this report or any other form relating to this claim of injury/accident may result in termination of my employment.

Signature of Employee: _____ Date: _____

Reader or Interpreter: _____ Date: _____

Signature of Witness: _____

Supervisor's Report of Accident

Supervisor's Name: _____

Basic Rules for Accident Investigation

- Find the cause to prevent future accidents - Use an unbiased approach during investigation
- Interview witnesses & injured employees at the scene - conduct a walkthrough of the accident
- Conduct interviews in private - Interview one witness at a time.
- Get signed statements from all involved.
- Take photos or make a sketch of the accident scene.
- What hazards are present - what unsafe acts contributed to accident
- Ensure hazardous conditions are corrected immediately.

	__ Injury __ Fatality **__Property Damage**		

Describe Accident Facts & Events

Supervisor's Root Cause Analysis *Check ALL that apply to this accident*

Improper work technique		Poor Workstation design	
Safety rule violation		Unsafe Operation Method	
Improper PPE or PPE not used		Improper Maintenance	
Operating without authority		Lack of direct supervision	
Failure to warn or secure		Insufficient Training	
Operating at improper speeds		Lack of experience	
By-passing safety devices		Insufficient knowledge of job	
Protective equipment not in use		Slippery conditions	
Improper loading or placement		Excessive noise	
Improper lifting		Inadequate guarding of hazards	
Servicing machinery in motion		Defective tools/equipment	
Horseplay		Poor housekeeping	
Drug or alcohol use		Insufficient lighting	

Unsafe Acts require a written warning and re-training <u>before</u> the Employee resumes work

	Date		**Date**
Supervisor Signature		**Supervisor Signature**	

Accident Report Review

Supervisor _____ Date _____

Department Superintendent _____ _____ Date _____

Safety Manager _____ Date _____

Management Comments:

PERIODIC PROGRAM REVIEW

PERIODIC REVIEW AND REVISION OF THE SAFETY PROCESS

SAFETY PROGRAM REVIEW/REVISION

The Manager, or employee designated on the manager's behalf, will annually review the entire Safety Program for revisions to meet exposures within current operations. Areas that will be carefully evaluated include: operations added, equipment added/changed, changes in environmental conditions, adequacy of personal protective equipment, etc. Procedures should be reviewed to make sure they are still applicable.

Upon changes in the Safety Program, all employees will be informed in writing of these changes and provided proper safety training as needed.

This annual review will be documented on the attached form and kept on file in the main office.

An additional method to accomplish this is by forming a safety committee.

Safety committees are valuable if they have a purpose, an objective, and a plan of action. A safety committee of two or three in even the smallest business may successfully implement the basic elements of a safety program. It can inspect, investigate, record, educate, and recommend control measures.

Purpose

The purpose of this chapter is to outline the goals and function of the company safety committee.

Policy

Our Safety Committee is an important part of our company safety management effort. Managers and supervisors can gain valuable assistance in their areas by a joint effort with their committee members. Committee membership is a voluntary service to the company. All managers, supervisors and employees are to fully support the efforts of the Safety Committee.

Goals of the Safety Committee

Involve employees in safety management

Lower the rate and severity of accidents and injuries

Maintain a safe workplace

Involve all employee participation in safety programs

Safety Committee Formation

The committee should be large enough to represent all departments at the facility, but have the most efficient number of members to assist in accomplishment of committee goals.

Membership on the committee is to be voluntary and will meet any existing labor agreements. volunteer committee membership will rotate every six (6) months to one year. Standing members to the committee will include a representative from Management, Maintenance and Safety. The purpose of the standing membership is to provide continuity, lend experience and provide a resource for the Committee. The Committee Chairperson is elected from the employee membership. The Committee Chairperson will conduct the meetings and develop agendas. minutes.

Committee Operation

The Safety Committee will:

Meet on a regular basis and/or at least monthly.

Rotate membership every 6 months or at least annually.

Develop short and long term goals.

Discuss accident prevention methods

Review previous accidents and injuries.

Conduct monthly safety inspection of the plant.

Recommend changes to safety procedures and policies.

Duties and Responsibilities

Chairperson

The Chairperson will lead the meeting and will report Committee activities to Management.

Safety Committee Members

Safety Committee Members have the following responsibilities:

1. Attend each monthly meeting

2. Discuss safety activities and unsafe acts/conditions

3. Encourage all Employees to work safely

4. Report Safety Committee actions to their department during normally scheduled safety training

Records

Records of all Safety Committee Meetings and actions shall be maintained by the Safety Coordinator for at least 18 months.

Training

Each Safety Committee Member will be provided the necessary training in:

Function of the committee

Safety Programs

Safety Policies

SAFETY AND HEALTH REGULATIONS

The Texas Workers' Compensation Commission requires adoption of a policy to prevent drug abuse in the workplace. The following may be used to satisfy the requirement:

ALCOHOL AND CONTROLLED SUBSTANCES POLICY

The company has adopted and Alcohol and controlled substances policy to ensure the safety and well being of all employees. Company policy forbids the possession or consumption of alcoholic beverages and the possession or use of any controlled substances on the premises, or while on company business.

The definition of a controlled substance is any drug, narcotic, inhalant, hallucinogen, barbiturate, amphetamine, mixture, or compound not prescribed by a licensed physician for legitimate treatment of a specific employee's medical condition. All prescription drugs taken for an illness or other legitimate medical need must be registered with the department head and the personnel manager. Persons failing to register their prescriptions with the above personnel will be subject to immediate disciplinary action.

Users of illicit drugs, mixtures, compounds, or alcohol present a serious danger not only to themselves, but also to all other employees with whom they work or come in contact. Lack of mental alertness, slow reactions, and other effects of alcohol and drugs lead* to poor judgment and errors that place the safety of our workers and facility in grave danger. Management cannot and will not allow the safety of our workers and facility to be compromised.

Violations of any of the following rules will result in immediate dismissal:

1. No alcoholic beverages may be brought onto or consumed on company property, or consumed while on company business.
2. No illicit drug, mixture, or compound may be brought onto or used on company property, or consumed while on company business.
3. All legitimate prescription drugs prescribed for a specific employee by a licensed physician for a specific illness or other legitimate medical need will require a doctor's statement indicating the name of the drug, the duration of the treatment, and that the drug will not interfere with the employee's ability to work safely. The employee must register the prescription with the personnel manager and the department head immediately upon reporting to work on the first day of use of the drug.
4. Any employee taking a prescription drug as noted above will immediately inform his/her supervisor or department head of any adverse side effects occurring from use of the drug as soon as adverse side effects become evident to the employee.
5. No employee may give, sell, or otherwise transfer any drug, mixture, or compound to any other employee. To do so is in violation of federal law, and the employee involved will be reported to law enforcement authorities immediately.

All employees are cautioned that violation of the above rules will lead to immediate dismissal and possible criminal charges being filed in those cases where illicit drugs are involved or the transfer of prescription drugs takes place.

_____

PRESIDENT

EMPLOYEE ACKNOWLEDGMENT
of Alcohol and Controlled Substances Policy

I acknowledge that I have received a copy of the Alcohol and Controlled Substances Policy. I also acknowledge that the provisions of the Policy are part of the terms and conditions of my employment and I agree to abide by them.

_____

Date **Signature of Employee**

_____

Print Name

_____

Employee Social Security Number

DISCIPLINARY POLICY

_____ has developed a disciplinary policy that will apply to the safety and health program of this company. The disciplinary policy will be a tool to ensure enforcement of the rules and procedures for a safe and healthful working environment. The disciplinary policy will apply to all employees of this company.

Verbal Warnings

Management or supervisors may issue verbal warnings to employees that commit minor infractions or violations of the safety rules or safe work practices. Continued violations or verbal warnings will lead to more stringent action.

Written Warnings

Management or supervisors may issue written warnings for any of the following:

- Repeated minor violations of safety rules or procedures.
- Single serious violations of a rule or procedure that could have potentially resulted in injury to themselves, another employee, or could have caused damage to company property.
- Activities that could potentially result in injury or property damage.

Disciplinary Leave

Supervisors may recommend and management may institute disciplinary leave for any of the above reasons and any of the following:

- A single serious violation of a rule or procedure that results in injury to an employee or property damage.
- Repeated violations or non-conformance of safety rules or procedures.

Termination

Supervisors may recommend and management may concur on the termination of any employee for repeated serious violations of any of the above circumstances.

Documentation

_____ will establish employee files. Violations of company rules and/or safety rules, regulations or procedures will be documented by filling out a report on the employee. The report will state the type of violation and corrective action taken. The employee must read and sign the report acknowledging that they understand the seriousness of the violation.

EMPLOYEE REPRIMAND

DATE: _____

REGARDING EMPLOYEE: _____

EMPLOYEE POSITION: _____

LOCATION: _____

REGARDING: COMPANY POLICY/SAFETY/FOLLOWING INSTRUCTIONS/OTHER

DESCRIBE:

_____

_____

_____

_____

_____

_____

_____

_____ _____

(Employee Signature) (Supervisor's Signature)

EMPLOYEE IS:

_____ RETURNED TO DUTY
_____ TERMINATED

CC: SUPERVISOR
EMPLOYEE PERSONNEL FILE

* State Company policy or safety rule/procedure violated.

HAZARD COMMUNICATION

Hazard Communication

Manufacturers, importers, distributors, users, and contractors have varying responsibilities with regard to determining whether a chemical substance is hazardous. But all of them are responsible for communicating this information to their own employees and others.

Material Safety Data Sheets (MSDS)

The most important method of communicating information about hazardous materials is the Material Safety Data Sheet:

1. To be obtained for all chemicals and chemical products in the workplace, including material in pipelines or vessels.
2. Should be retained in a loose-leaf binder at each location and updated as new Material Safety Data Sheets become available.
3. Required to be available for all employees to review.
4. Should be made available for contractors to review prior to starting work.

This is a technical bulletin that contains information about hazardous chemicals such as chemical composition, chemical and physical characteristics, health and safety hazards, and precautions for safe handling.

Hazard Determination and Communication Responsibilities

1. Manufacturers -- Manufacturers of chemical products are responsible for determining whether or not their products are hazardous. For all hazardous chemicals they must develop Material Safety Data Sheets and provide them to importers, distributors, and users. Manufacturers also must label the hazardous chemical they produce.
2. Importers -- Importers of hazardous chemicals must label them and provide Material Safety Data Sheets to distributors and users.
3. Distributors -- Distributors should label hazardous chemicals and provide Material Safety Data Sheets to all users.
4. Users -- All company facilities should have a Material Safety Data Sheet on file for each hazardous product used. To accomplish this, the first-line supervisor should compile a list of all chemical products in each facility, including such items as paint, paint thinner, and cleaning fluids. This list should be sent to local management, who should forward copies of available data sheets to supervisors and obtain missing data sheets from manufacturers, importers, or distributors. Managers should retain a copy of all Material Safety Data Sheets. The supervisor also is responsible for providing all contractors working at the facility with a survey of hazardous substances and Material Safety Data Sheets.
5. Contractors -- Prior to starting work, contractors should review the Material Safety Data Sheets for all hazardous substances at the facility. They are also responsible for the following:
    a. Informing employees of hazardous substances to which they may be exposed.
    b. Complying with all health practices required by the Hazardous Communication Standard, which includes:
        1. Training;
        2. Supplying personal protective equipment, and
        3. Monitoring for exposure
    c. Obtaining phone numbers of emergency services and local hospitals and clinics.

Information for Employees

Information concerning employees' right-to-know about hazardous substances will be posted on bulletin boards in work areas and distributed in brochure form. Employees also will have access to the following information:

1. Survey of chemical substances in the workplace.
2. Material Safety Data Sheets on substances to which they may have been exposed.
3. List of occupational safety and health publications.
4. Phone numbers of local agencies that enforce right-to-know statutes.
5. This written plan.

HAZARD COMMUNICATION PROGRAM

OBJECTIVE

The objective of this program is to set forth policies and procedures, concerning Hazard Communications, which will enhance the safety and well being of the company's employees. Furthermore, this program is designed to provide for compliance with OSHA's Hazard Communication Standard if followed.

ASSIGNMENT OF RESPONSIBILITY

The manager will oversee the duties of HAZCOM OFFICER as he assumes the duties as Hazard Communication Officer. This position carries the responsibility of insuring this program is adhered to and that proper reporting is executed.

PROGRAM

The ensuing numbered items are to be followed to insure compliance with the OSHA Hazard Communication Standard.

I. HAZARDOUS CHEMICAL LIST

A list of hazardous materials and chemicals which are used in the course of the company's normal business activities must be maintained and continually updated. This list is to include all substances which require a Material Safety Data Sheet (MSDS).

One copy of this list is to be kept in the front of each MSDS book and one copy is to be kept on file with the Hazard Communication Officer.

II. MATERIAL SAFETY DATA SHEETS. (MSDS)

All Material Safety Data Sheets must be kept in an organized fashion and must be placed in an identified and accessible location for all employees to view at will.

A duplicate set of MSDS information must be maintained by the Hazard Communication Officer.

MSDS books must be maintained up to date as does the Hazardous Chemical List. As obsolete MSDS's are replaced by updated copies, they **must** be kept in a separate file of obsolete MSDS's. **Do not throw them away.**

If a hazardous chemical or substance is received without a proper MSDS, the receiving person must immediately notify the Hazard Communication Officer and then contact the manufacturer or distributor or the product and request a MSDS to be faxed immediately and mailed as a follow up. (MSDS's may be obtained from either the manufacturer or the distributor). If, for some reason, the manufacturer, or distributor is unable to produce a MSDS upon request, the Hazard Communication Officer should be notified immediately. Hazardous Materials or substances received without an MSDS are to be returned to sender.

III. LABELING

Each container of a hazardous chemical that is used in or around the work area must be properly labeled with the identity of the hazardous material, the appropriate hazard warnings, and the name and address of the manufacturer. Appropriate labels **must** be on **all** containers regardless of size. Containers must be approved and recommended for storage and/or dispensing of the particular hazardous chemicals contained in them.

Worn and torn labels must be replaced. It is the responsibility of the employees to report inappropriate labels to their supervisor. It is the responsibility of the hazard Communication Officer to insure that appropriate labels are in place and that replacement labels are available.

IV. TRAINING

Employee training for this Hazard Communication Program consists of the following:

1. All affected employees working for, or associated with, this company are required to review the training material with the Hazard Communication Officer and sign the acknowledgment form which will be placed in the employee's file. This training is to be done during the new employee orientation process before the new employee actual assumes status as an active employee.

   In addition to this training, affected employees must be shown the locations of Material Safety Data Sheets, fire extinguisher, first aid kit location, and locations of usage and storage of hazardous materials.

2. Fire extinguisher training may be provided to designated employees. An acknowledgment form must be signed by the employee and filed for documentation purposes.

3. First Aid and CPR training will be provided from time to time. An acknowledgment form must be signed by the employee and filed for documentation purposes.

NOTE: All Haz-com, first-aid, CPR, and fire prevention training should be documented to the employee's file. The Hazard Communication Officer must keep a separate file on who has received what training and when.

4. If this company were to engage the services of contract labor personnel, and there would be possible exposure to hazardous material, they must be made aware of the list of Hazardous Materials and the location of the MSDS information book.

NOTE: Affected employees are those who regularly work around and with hazardous substances or may casually come into contact with them during the regular course of their work.

As part of ongoing training, each employee must receive refresher training once per calendar year and sign the acknowledgment form for the file.

V. STORAGE

All storage areas for hazardous substances are to be secured, properly ventilated, and identified by signs.

Any direct or intentional violation or non-compliance with this program may result in the termination of the person or persons involved.

HAZARD COMMUNICATION PROGRAM

ACKNOWLEDGMENT OF RECEIPT
OF
HAZARD COMMUNICATION TRAINING

My signature below acknowledges that I have received training concerning Hazard Communications. I understand that this training fulfills the employee training requirement of OSHA's hazard Communication Standard.

The jobsite and classroom training included the following:

1. Understanding the purpose and scope of the OSHA Hazard Communication Standard.

2. Explanation of the existence of state and local right-to -know laws.

3. Definition of the classification "hazardous chemical".

4. Explanation of situations and elements which must be present for a material to be considered a health hazard.

5. Explanation and interpretation of labels, what is required on all containers, and the Hazard Materials Identification System (HMIS).

6. Understanding and interpretation of Material Safety Data Sheets (MSDS), which must be obtained for each hazardous chemical.

7. My responsibilities as an employee of this company..

EMPLOYEE NAME:_____

(Please print)

EMPLOYEE SIGNATURE: _____**DATE**_____

COMPANY REPRESENTATIVE _____**DATE**_____

ADDITIONAL FORMS & PROGRAMS

REQUIRED POSTINGS

The Texas Workers' Compensation Commission also requires employers to post (in English and Spanish) the notice of coverage of workers' compensation, the ombudsman notice, and the notice regarding the safety violation hotline. OSHA also requires certain postings. The list of regulatory agencies described below may be used as a reference.

The following is a regulatory agency and resource reference list to be maintained in the safety plan:

1.	TWCC	Texas Workers' Compensation Commission Workers' Health & Safety Division 512/440-3809 Customer Service 512/440-3789
2.	OSHA	Occupational Safety and Health Administration Dallas 214/320-2400 Lubbock 806/743-7681 Houston North 713/591-2438 Houston South 713/286-0583 Austin 512/482-5783 Corpus Christi 512/888-3257 Fort Worth 817/885-7025 El Paso 915/534-7004
3.	ANSI	American National Standard Institute 212/642-4900
4.	NFPA	National Fire Protection Association Customer Service 800/344-3555
5.	NEC	National Electric Code Customer Service 800/344-3555
6.	MSHA	Mine Safety and Health Administration Headquarters (TX, LA, ARK, MS, OK, NM) 214/767-8401
7.	DOT	Department of Transportation 202/366-4000
8.	NIOSH	National Institute for Occupational Safety & Health Information Line 800/356-4674
9.	CDC	Center for Disease Control 404/639-3535
10.	TSA	Texas Safety Association 512/343-6525
11.	NSC	National Safety Council Customer Service 800/621-7619

Record-keeping

The Texas Workers' Compensation Commission requires employers to keep records of occupational injuries and illnesses. All employers should maintain a log of injuries and illnesses on the OSHA 200 log.

Hazardous Chemicals

Company Name: _____ Facility Address: _____
Manager/Supervisor: _____ Date/Time: _____ _____
Inspector(s): _____

Yes	No	NA	Corr Date	Area Inspected
				1. Employees trained in the safe use of hazardous chemicals and materials? 2. Employees knowledgeable of potential workplace chemical hazards? 3. Eye wash fountains and safety showers provided in areas where corrosive chemicals are handled? 4. Containers labeled? 5. Employees required to use personal protective clothing and equipment when handling chemicals? 6. Flammable and toxic chemicals kept in closed containers when not in use? 7. Chemical piping systems clearly marked as to their content? 8. Adequate means readily available for containing spills or overflows properly and safely? 9. Standard operating procedures been established and are they being followed when cleaning up chemical spills? 10 Respirators stored in a convenient, clean, and sanitary location? 11. Respirators intended for emergency use adequate for the various uses for which they may be needed? 12. Employees prohibited from eating in areas where hazardous chemicals are present? 13. Personal protective equipment provided, used and maintained where needed? 14. Written standard operating procedures for the selection and use of respirators where needed? 15. If you have a respirator protection program, are your employees instructed on the correct usage and limitations of the respirators? 16. Regularly inspected and cleaned, sanitized and maintained? 17. If hazardous substances are used in your processes, do you have a medical or biological monitoring system in operation? 18. Control procedures instituted for hazardous materials, where appropriate, such as respirators, ventilation systems, handling practices, etc.? 19. Hazardous substances handled in properly designed and exhausted booth locations? 20. If internal combustion engines are used, is carbon monoxide kept within acceptable levels? 21. Whenever possible, is vacuuming used, rather than blowing or sweeping dusts for clean-up? 22. Materials which give off toxic asphyxiant, suffocating or anesthetic fumes, stored in remote or isolated locations when not in use? 23. Annual spriometry and medical examinations maintained for personnel using respirators? 24. Areas that use cryogenic nitrogen or carbon dioxide equipped with oxygen level monitors and warning devices?

SAMPLE EMERGENCY ACTION PLAN

REMEMBER, You remain obligated to comply with all applicable local, state and federal standards, rules and regulations.

The use of this program, "As-Is", does not guarantee or constitute compliance has been achieved or met with any applicable requirements, rules and/or regulations.

It is strongly suggested that a qualified person review your final program.

This program was drafted to provide a building block system and/or assistance in compliance with certain federal standards and/or Best Management Practices. It should not be used without consideration of each and every unique conditions and requirements at your facility and/or each site. It may be necessary to modify/revise this program for your specific needs. It is **your** obligation to comply with all applicable standards and to ensure this program, if used complies as well. It is strongly suggested that your final program be reviewed by a qualified person. REMEMBER, The best written program without implementation is inadequate.

Emergency Action Plan

COMPANY:
ADDRESS:

I. EMERGENCY PLAN COORDINATOR
NAME:
TITLE:
DEPARTMENT:
TELEPHONE NO:

II. PREFERRED MEANS OF REPORTING FIRES AND OTHER EMERGENCIES
Type Emergency Report By
Fire
Explosion
Tornado/Weather
Bomb Threat
Chemical Spill/Leak
Violence
Medical
Other

III. ELEMENTS

A. Emergency Escape Procedures and Routes
Emergency escape procedures and route assignments have been posted in each work area, and all employees have been trained by supervision in the correct procedures to follow. New employees are trained when assigned to a work area. A sample escape procedure and escape route sheet of the type posted in work areas is given in Appendix A.

B. Procedure for Employees Who Remain to Operate Critical Operations Before They Evacuate
The attached sheet (Appendix B) describes operations, procedures, and personnel required in order for critical operations to be performed before the assigned personnel evacuate during emergency situations. A description of the special training provided is also included.

C. Employee Accountability Procedures After Evacuations
Each supervisor is responsible for accounting for all assigned employees, personally or through a designee, by having all such employees report to a predetermined designated rally point and conducting a head count. Each assigned employee must be accounted for by name. All supervisors are required to report their head count (by name) to the Emergency Evacuation Coordinator. A summary of the evacuation rally points, together with the identities of supervisors and assigned employees who must report to each, is also given in Appendix A.

D. Rescue and Medical Duties
Specific rescue and medical duties have been assigned to designated individuals. These personnel have received special training and instructions for properly carrying out these assignments. A list of the individuals assigned and a summary of their training are attached (in Appendix C) for review.

E. Alarm System
Alarm systems for notifying all employees in case of an emergency are:

_____
_____
_____
_____

When so required by specific OSHA Standards, the organization will comply with OSHA Standard 1910.165, Employee Alarm Systems.

F. Training
The following personnel have been trained to assist in the safe and orderly emergency evacuation of other employees. See also Appendix B.
Name Title Work Area Special Assignment

_____
_____
_____
_____

Training is provided for employees when:
1. The plan was initiated
2. Responsibilities change
3. New employees are hired or transferred

IV. EMERGENCY SHUTDOWN PROCEDURES
During some emergency situations, it will be necessary for some specifically assigned and properly trained employees to remain in work areas that are being evacuated long enough to perform critical operations. These assignments are necessary to ensure proper emergency control.
Assignments
Work Area Name Job Title Description of Assignment

_____
_____
_____
_____

V. SPECIAL TRAINING
The preceding individuals have received special instructions and training by their immediate supervisors to ensure their safety in carrying out the designated assignments. A training record describing the instructions provided and the detailed procedures to be followed is maintained in the Emergency Plan and Fire Protection Plan Coordinator's Office.
Emergency and Fire Protection Plan Coordinator:
Name: Date:

_____
_____

VI. EMPLOYEE ACCOUNTABILITY PROCEDURES FOLLOWING AN EMERGENCY EVACUATION
Each supervisor is responsible for accounting for each assigned employee following an emergency evacuation. This will be accomplished by performing the procedures established for such an eventuality.

VII. EMPLOYEE ACCOUNTABILITY

1. Rally points have been established for all evacuation routes and procedures. These points are designated on each posted work area escape route.

2. All work area supervisors and employees must report to their designated rally points immediately following an evacuation.

3. Each employee is responsible for reporting to his or her supervisor so that an accurate head count can be made. Supervisors will check off the names of all those reporting and will report those not checked off as missing to the Emergency Evacuation Coordinator.

4. The Emergency Evacuation Coordinator will be located at one of the following locations:
   A. Primary Location:
   B. Secondary Location:

5. The Emergency Evacuation Coordinator will determine the method to be utilized to locate missing personnel.

VIII. RESCUE AND MEDICAL DUTIES

It may become necessary in an emergency to rescue personnel and perform some specified medical duties, including first-aid treatment. All employees assigned to perform such duties will have been properly trained and equipped to carry out their assigned responsibilities properly and safely.

Assignments

Special

Name Location Assignment Training Provided

_____

_____

_____

_____

Special Instructions and Procedures

All personnel performing emergency rescue and medical duties must follow these instructions:

1.
2.
3.
4.
5.
6.

Appendix A.

A summary of the evacuation rally points, together with the identities of supervisors and assigned employees who must report to each.

A sample escape procedure and escape route sheet of the type posted in work areas.

Appendix B

Describes operations, procedures, and personnel required in order for critical operations to be performed before the assigned personnel evacuate during emergency situations. A description of the special training provided is also included.

Appendix C

Specific rescue and medical duties have been assigned to designated individuals. These personnel have received special training and instructions for properly carrying out these assignments. A list of the individuals assigned and a summary of their training are attached for review.

HAZARDOUS ENERGY CONTROL

REMEMBER, You remain obligated to comply with all applicable local, state and federal standards, rules and regulations.

The use of this program, "As-Is", does not guarantee or constitute compliance has been achieved or met with any applicable requirements, rules and/or regulations.

It is strongly suggested that a qualified person review your final program.

HAZARDOUS ENERGY CONTROL

This sample hazardous energy control program has been prepared to provide assistance in compliance with OSHA standard 1910.147.

The referenced standard is entitled, "The Control of Hazardous Energy (lockout/tagout)", but tagout has deliberately not been included in the sample program. This standard requires lockout unless "the employer can demonstrate that the utilization of a tagout system will provide full employee protection as set forth in paragraph (c)(3) of this section" [see 1910.147 (c)(2)(ii)].

Since there is a much greater risk of employee injury when tagout is used and with the availability of a variety of heavy-duty rigid plastic lockout adapter devices available on the market, *tagout is not recommended.*

I. PURPOSE

The purpose of this program is to protect employees from injuries while servicing and maintaining equipment.

II. SCOPE

The program establishes requirements for hazardous energy control. It is to be used to ensure that machines and equipment are isolated from all potentially hazardous energy sources whenever servicing or maintenance activities are in progress.

III. RESPONSIBILITY

1. The _____ is designated as the Program Coordinator for this company.

Specific responsibilities include:
a. Provide Hazardous Energy Control training to employees.
b. Maintain a current listing of employees who have completed lockout training (Attachment 1).
c. Maintain a current listing of all equipment/machines which fall under the Hazardous Energy Control program (Attachment 2). Listing is to be updated each time a change occurs.
d. Implementation and enforcement of this program.
e. Maintain an adequate supply of padlocks and DANGER tags for use each time a lockout process is performed. Padlocks and tags are located _____.
f. Conduct the annual inspection & review as required by section VII of this program.
2. Each supervisor is responsible for the effective use of this program in the work group and to see that all required procedures are followed in every instance.
3. Each employee is responsible for learning and following the procedures and practices developed under this program. Notify the Program Coordinator prior to a lockout process.

IV. BASIC LOCKOUT PRINCIPLES

All equipment must be locked out to protect against accidental or inadvertent operation, when operation could cause injury to personnel. Locks are to be applied and removed only by the authorized employee who is performing the servicing or maintenance.
No one should attempt to operate locked out equipment.
Disciplinary action will be applied if any employee violates these procedures, regardless of whether or not physical harm or equipment damage results.
Lockout devices (padlocks) with an appropriate DANGER warning tag shall be used only for energy control. Prior to the servicing or maintenance of equipment a padlock and DANGER warning tag will be obtained from the Program Coordinator. Each padlock will be keyed differently with no master key or duplicate keys available.

V. TRAINING

Each authorized employee shall receive training in the recognition of applicable hazardous energy sources, the type and magnitude of the energy available in the workplace, and the methods and means necessary for energy isolation and control.

Each affected employee shall be instructed in the purpose and use of the energy control procedure.

All other employees who do not work in areas where lockout may be used will be provided a brief overview of the lockout program.

Training in lockout will be given to all new employees as a part of their orientation. Retraining will be conducted whenever there is a change in job assignment, a change in machinery or equipment or process change that presents a new hazard.

Names of authorized employees who have received appropriate lockout training will be identified on the Hazardous Energy Control Training Record (Attachment 1).

VI. LOCKOUT

A. SEQUENCE OF LOCKOUT:

The following are specific procedures to be followed for lockout.

1. Notify the Program Coordinator.
2. Notify all affected employees that lockout is going to be utilized, and the reason why.
3. If the machine/equipment is in operation, shut it down by the normal shutdown procedure.
4. Operate the appropriate switch, valve, etc., so that the machine/equipment is isolated from the energy source.
5. Lock the energy isolating devices, using assigned locks and danger tags.
6. Release, restrain, or dissipate any stored energy.
7. Verify that energy isolation is complete, by attempting to start the affected machinery or equipment in the normal manner.
8. After testing, return all operation controls to the "neutral" or "off" positions.

B. RESTORATION TO NORMAL:

1. After service or maintenance is complete, check the area to ensure that no employees are exposed.
2. Remove all tools and repair equipment.
3. Ensure that all guards have been replaced and all safety interlocks reactivated (if so equipped).
4. Verify that the operating controls are in the "off" or neutral position.
5. Remove all lockout and tag devices and activate the energy isolation devices to restore energy.

VII. PROGRAM INSPECTION AND REVIEW

At least annually, a designated representative will verify the effectiveness of the energy control procedures. These inspections shall provide for a demonstration of the procedures and may be carried out through random audits and observations.

The inspector must review the Hazardous Energy Control Procedure with all authorized employees, and actually observe the use of the Hazardous Energy Control Procedure. This inspection must be certified and documented by the inspector using a Hazardous Energy Control Lockout Program Inspection form. (Attachment 3).

These inspections are to ensure that the energy control procedures are being properly used, and to provide a check on the continued adherence to the procedures. Management must certify that the prescribed inspections have been performed. Any deficiencies must be corrected immediately, either by modification of the procedure, retraining of employees, or a combination of both.

VIII. OUTSIDE CONTRACTORS

Outside personnel or contractors involved in lockout of equipment or machinery that affects our employees must submit their energy control procedures, in writing, to the Program Coordinator. All affected employees must be trained in and familiar with the contractor's submitted procedure.

In order to protect our employees, the contractor's work area will be isolated, and access by our employees will be restricted. If this is impractical or cannot be accomplished, the Program Coordinator must assure the contractor's compliance with proper work procedures, energy isolation procedures and contractor employee compliance.

Contractors failing to adhere to the provisions of the OSHA Hazardous Energy Control standard will be asked to terminate their work until their program is brought into compliance.

PROGRAM TRAINING RECORD
The following company employees have received Hazardous Energy Control (Lockout) training.
NAME DEPT TYPE OF TRAINING DATE _____

Attachment 2
HAZARDOUS ENERGY CONTROL
LOCKOUT EQUIPMENT LISTING
The following machines and equipment fall under the requirements of 29 CFR 1910.147, the Control of Hazardous Energy (Lockout/Tagout). For this reason appropriate lockout procedures must be performed each time servicing or maintenance is performed.
EQUIPMENT/MACHINE IDENTIFICATION LOCATION DATE LISTED _____

Attachment 3
HAZARDOUS ENERGY CONTROL
LOCKOUT PROGRAM INSPECTION DATE: _____
EQUIPMENT IDENTIFICATION: _____
INSPECTION: _____
AUTHORIZED EMPLOYEES (JOB TITLES)
1._____4. _____
2._____5. _____
3._____ 6. _____

PROCEDURES BEING FOLLOWED: Y / N
COMMENTS/DEFICIENCIES
DEFICIENCY FOLLOW-UP: COMPLETED _____ N/A
DATE
COMMENTS
REVIEWED BY: _____ DATE: _____

_____ DATE: _____

INJURY-ILLNESS RECORDKEEPING

Injury and Illness Recordkeeping

FOR

COMPANY:

ADDRESS:

I. POLICY STATEMENT

It is the policy of _____ to record occupational injuries and illnesses on the applicable OSHA Log and Summary, according to the "Recordkeeping Guide lines for Occupational Injuries and Illnesses", or any official interpretations of these Guidelines from OSHA's Office of Statistics in Washington, D.C., and OSHA 29 CFR 1904.

II. SOURCES OF INFORMATION

(A) Corporate Sources

(B) Plant/Facility Sources

(C) Outside Sources

III. FACILITY OFFICIAL RESPONSIBLE FOR INJURY AND ILLNESS RECORDKEEPING

Name:

Title:

Telephone:

IV. FACILITY OFFICIAL RESPONSIBLE FOR LOGGING INJURIES & ILLNESSES

Name:

Title:

Telephone:

V. RELEASE OF INJURY AND ILLNESS RECORDS POLICY

Upon written request of an employee, former employee, or authorized employee representative, the OSHA 300 will be provided within 15 working days from the date of receipt of the request (per 29 CFR 1904.7)

Upon request of an OSHA representative for medical records, the applicable OSHA log for the current year and the 5 preceding years will be provided. Also, the supplemental forms for each recordable case will be provided.

A request by OSHA for any other medical records will be reviewed by an attorney before a decision is made.

VI. CHANGE OF OWNERSHIP

If and as new facilities are acquired, the records that were the previous owner's will be retained at the facility. A new OSHA log for our company will be started on the day of purchase. If and as currently-owned facilities are sold, the records will be part of the sale and will belong to the new owners.

If a facility is closed, the OSHA 300 and other medical records will be sent to headquarters and retained for 5 years.

PERSONAL PROTECTIVE EQUIPMENT

REMEMBER, You remain obligated to comply with all applicable local, state and federal standards, rules and regulations.

The use of this program, "As-Is", does not guarantee compliance has been achieved or met with any applicable requirements, rules and/or regulations.

It is strongly suggested that a qualified person review your final program.

PERSONAL PROTECTIVE EQUIPMENT

COMPANY: _____

ADDRESS: _____

_____

I. GENERAL REQUIREMENTS

Protective equipment, including personal protective equipment (PPE) for eyes, face, head, and extremities, protective clothing, respiratory devices, and protective shields and barriers are provided, used, and maintained in a sanitary and reliable condition.

The protective equipment is provided wherever it is necessary by reason of hazards of processes or environment, chemical hazards, radiological hazards, or mechanical irritants encountered in a manner capable of causing injury or impairment in the function of any part of the body through absorption, inhalation or physical contact.

II. EMPLOYEE OWNED EQUIPMENT

Where employees provide their own protective equipment as authorized by their supervisors, the equipment must meet all applicable rules, procedures, standards, codes, and regulations. Also, the proper maintenance and sanitation of the equipment is provided.

III. DESIGN

All personal protective equipment is of a safe design and construction for the work to be performed. Applicable standards, codes, and regulations are followed in the design and construction of protective equipment.

IV. EYE AND FACE PROTECTION

Protective eye and face equipment is provided and required where there is a reasonable probability of injury that can be prevented by such equipment. Eye and face protection used meet the requirements of ANSI Standard Z 87.1 - Eye and Face Protection. All employees are required to wear the prescribed eye and face protection to protect themselves from a hazardous environment.

Situations where suitable eye protection is required, but not limited to, machine operations involving flying objects, glass, liquids, injurious radiation, or a combination thereof.

Eye and face protection meets the following requirements:

- A. Provide adequate protection.
- B. Reasonably comfortable.
- C. Fit snugly and do not unduly interfere with movements.
- D. Durable.
- E. Capable of being disinfected.
- F. Easily cleanable.
- G. Kept clean and in good repair.
- H. Persons requiring corrective lenses shall wear:
    1. Spectacles whose protective lenses provide the correction.
    2. Goggles that can be properly worn over corrective spectacles.
    3. Goggles that incorporate corrective lenses.

Every eye and face protector is distinctly marked to facilitate identification of the manufacturer and ANSI Z 87.1.

When protector limitations and precautions are provided by the manufacturer, they are transmitted to the users and compliance enforced.

V. RESPIRATORY PROTECTION

Feasible engineering controls are the primary measures used to control employee exposure to harmful dusts, fogs, fumes, mists, gasses, smokes, sprays, or vapors. Such engineering controls include, but are not limited to enclosures and confinement, general and local ventilation, and substitution of less toxic materials.

When effective engineering controls are not feasible, or while they are being instituted, appropriate respirators are used as specified by the following requirements.

Applicable and suitable respirators are provided when necessary to protect employee health.

A respiratory protection program has been established and is properly maintained to protect employees from atmospheric contamination and/or hazards. Key elements of the program include:

A. A written standard operating procedure governing the selection and use of respirators. See Appendix A.

B. Selection of respirators based on hazardous exposure per ANSI Z 88.1. See Appendix B.

C. Instruction and training of users concerning proper respirator use and their limitations. See Appendix F.

D. Regular cleaning and disinfections of respirators and thorough cleaning and disinfections before use by another employee.

E. Respirators are stored in a convenient, clean, and sanitary location.

F. Routine inspection of respirators during cleaning and replacement of worn or deteriorated parts. Respirators for emergency use such as self-contained breathing apparatus, are thoroughly inspected at least monthly and after each use. Records are maintained of these inspections.

G. Work areas are routinely surveyed to review work area conditions and degree of employee exposure or stress.

H. Regular inspections and evaluations are conducted to determine continued program effectiveness. A formal annual evaluation is conducted and a written report prepared.

I. A determination must be made and recorded that employees are physically able to wear respiratory protection and are able to perform the work and use the equipment prior to assigning them to wear respirators. The consulting physician has determined the pertinent physical conditions. See Appendix C. The respirator users' medical status is reviewed at least annually.

J. Only approved respirators (per ANSI Z 88.1) are worn which provide adequate respiratory protection against the particular hazard. Recognized authorization for respirator approval include ANSI, U.S. Department of Interior, Mine Safety and Health Administration, and the U.S. Department of Agriculture.

A. Air Quality

Where compressed air, compressed oxygen, liquid air, and liquid oxygen are used for respiration, it is of high purity. All oxygen used meets the requirements of the United States Pharmacopoeia for medical or breathing oxygen.

Breathing air meets at least the requirements of the specification for Grade D breathing air as described in Compressed Gas Association Commodity Specification G7.1.

Compressed oxygen is not used in supplied-air respirators or in open circuit self- contained breathing apparatus that have previously used compressed air. Oxygen is prohibited from use with air line respirators.

Breathing air is supplied to respirators from cylinders or air compressors. Breathing air cylinders are tested and maintained as prescribed in the Shipping Container Specification Regulations of the Department of Transportation 49 CFR 178.

B. Air Compressors

Compressors for supplying breathing air are equipped with the necessary safety and standby devices. Breathing air-type compressors are used which avoid entry of contaminated air into the systems and have suitable in-line air purifying sorbent beds and filters installed to further assure breathing air quality.

An air receiver of sufficient capacity is provided to enable respirator users to escape contaminated atmospheres in event of compressor failure. Also, alarms to indicate compressor failure and overheating are installed in the system.

If an oil-lubricated air compressor is used to supply breathing air, it will be provided with a high temperature or carbon monoxide alarm, or both. If only a high-temperature alarm is used, the air from the compressor is frequently tested for carbon monoxide to ensure it meets breathing air specifications described above.

Air line couplings are incompatible with outlets for other gas systems to prevent inadvertent servicing of air line respirators with non-respirable gases or oxygen. All modifications, changes, and/or additions to the breathing air supply system including, but not limited to, the compressor, piping, couplings, etc. must be approved and inspected to ensure that the work was done properly, and that the changes, modifications and/or additions did not adversely affect the quality of the breathing air, such as the mistaken connection of a breathing air line to an argon, or other gas line.

All breathing air containers are marked in accordance with American National Standard Method of Marking Portable Compressed Gas Containers Z 48.1; Federal Specification BB-A-1034a, air compressed for breathing purposes; or Interim Federal Specification GG-B-0067b, breathing apparatus, self-contained.

C. Respirator Use

Standard procedures for emergency and routine respirator use have been developed which include all information and guidance necessary for proper selection, use, and care.

The correct respirator has been specified for each job by the respiratory program coordinator who is a qualified individual supervising the program. The coordinator has received adequate instructions to ensure that the correct respirator is issued. See Appendix D.

D. Dangerous Atmospheres

Procedures have been written covering the safe use of respirators in dangerous atmospheres that might be encountered in normal operations or in emergencies. These procedures are located in the work areas where respirators are used and employees have been informed of the procedures and the available respirators.

At least one additional person is required for respirator use in areas where the wearer, with respirator failure, could be overcome by a toxic or oxygen-deficient atmosphere. Communications, including visual, voice, or signal line, are maintained between the respirator user and the attendant. Plans are provided such that one individual will be unaffected by any likely incident and will have the proper rescue equipment necessary to assist the others in an emergency.

When self-contained breathing apparatus or hose masks with blowers are used in atmospheres immediately dangerous to life and health (IDLH), an attendant is required outside the work area with suitable rescue equipment.

Persons using airline respirators in IDLH atmospheres are equipped with a safety harness and safety lines for lifting or removing them from the hazardous atmosphere or other equivalent provisions for rescue used. The attendant(s) and/or standby person shall have suitable self-contained breathing apparatus and be stationed at the nearest fresh air base for emergency rescue. All confined space entry and rescue comply with OSHA standard 1910.146.

E. Respiratory Protection Inspections
Frequent random respiratory protection inspections are conducted by the respiratory protection program coordinator to assure that respirators are properly selected, used, cleaned, and maintained. See Appendix E.

F. Education and Training
Supervisors and employees are properly instructed by competent persons in the selection, use, and maintenance of respirators. During the training program respirator users are provided an opportunity to handle the respirator, have it fitted properly, test its face piece-to-face seal, wear it in normal air for a long familiarity period, and to wear it in a test atmosphere. See Appendix F.

G. Fitting
Every respirator wearer receives fitting instructions including demonstration and practice in how the respirator should be worn, how to adjust it, and how to determine if it fits properly. See Appendix G.

Respirators must not be worn when conditions prevent a good face seal including growth of a beard, sideburns, a skull cap projecting under the face piece, temple pieces on glasses, or absence of dentures. Worker diligence in observing respirator fit factors is evaluated by periodic checks. Also, the respirator wearer has been instructed to check the respirator facepiece fit each time the respirator is donned as prescribed by the respirator manufacturer instructions.

H. Corrective Glasses and Respirator Use
There may be problems with respirator seals due to the temple pieces, therefore individuals wearing corrective lenses must obtain special authorization and approved to wear full face respirators. Special provisions will be made to ensure that employees can safely wear the respirator.

I. Maintenance and Care of Respirators

A respirator maintenance and care program is provided which covers the type of operations, working conditions, and hazards involved. The program includes:

1. Inspection for defects (including leak checks),
2. Cleaning and disinfecting,
3. Repair, and
4. Storage

J. Respirator Inspections
All respirators are routinely inspected before and after use by the user to ensure they meet their original effectiveness. Any defects, or possible defects, detected are reported to supervision so the necessary evaluations and maintenance can be performed prior to reuse.

Respirators not routinely used, but kept ready for emergency use, are inspected after each use and at least monthly to assure they are in satisfactory working condition. A record is maintained of these inspections showing the date of the inspection and findings.

Self-contained breathing apparatus are inspected monthly to ensure:
1. The breathing air cylinder is fully charged according to the manufacturer's instructions.
2. The regulator and warning devices function properly,
3. Connections are tight,
4. Facepiece, headband, valve, connecting tubes, and canister condition,
5. Rubber or elastomer parts are pliable, and not deteriorated, and are kept pliable by massaging to prevent a set during storage.

K. Cleaning and Disinfections
Routinely used respirators are collected, cleaned, and disinfected as frequently as necessary to ensure proper wearer protection. Emergency use respirators are cleaned and disinfected after each use.

L. Replacement and Repairs

Respirator replacement and repairs are performed with parts designed for the respirator only by authorized and experienced persons approved by the respiratory protection program coordinator and per the manufacturers recommendations. Reducing or admission valves or regulators are returned to the manufacturer or to a trained technician for adjustment or repair. Trained technicians must be authorized by the respiratory protection program coordinator to perform repairs.

M. Storage

Respirators are stored so as to protect against dust, sunlight, heat, extreme cold, excessive moisture, or damaging chemicals. Routinely used respirators may be placed in plastic bags.

Emergency respirators placed at stations and in work areas for quick accessibility are stored in special compartments built for that purpose. These compartments are clearly marked.

Storage of respirators in lockers or tool boxes are prohibited unless they are in carrying cases or cartons. Respirators are packed or stored so that the facepiece and exhalation valve rest in a normal position and functions will not be impaired by elastomer setting in an abnormal position.

N. Identification of Gas Mask Canisters

Gas mask canisters are primarily identified by properly worded labels. Color codes are used as a secondary means of identification. Those persons purchasing, issuing, advising, or using gas masks are responsible to ensure the canisters purchased or used are properly labeled and color coded before being placed in service. All labels and color codes are properly maintained at all times the canisters are in use. Bold letters are placed on each canister stating:

CANISTER FOR (name of atmospheric contaminant)
OR
TYPE N GAS MASK CANISTER

In addition, essentially the following wording appears beneath the appropriate phrase on the canister label:

"For respiratory protection in atmospheres containing not more than _____ percent by volume of (name of atmospheric contaminant)."

Canisters having a special high efficiency filter for protection against radionuclides and other highly toxic particulates are labeled with a statement of the type and degree of protection afforded by the filter. Such labels are affixed to the neck end of, or to the gray stripe around and near the top of the canister. The degree of protection is marked as the percent of penetration of the canister by a 0.3 micro- diameter diocty phthalate (DOP) smoke at a flow rate of 85 liters per minute.

Each canister has a level warning that gas masks must be used only in atmospheres containing sufficient oxygen to support life (at least 16 percent by volume) since gas mask canisters are only designed to neutralize or remove contaminants from the air.

TABLE 1

Atmospheric Contaminants to be Protected Against	Colors Assigned1
Acid gases	White.
Hydrocyanic acid gas	White with 1/2-inch green stripe completely around the canister near the bottom.
Chlorine gas	White with 1/2-inch yellow stripe completely around the canister near the bottom.
Organic vapors	Black.
Ammonia gas	Green.
Acid gases and ammonia gas	Green with 1/2-inch white stripe completely around the canister near the bottom.
Carbon monoxide	Blue.
Acid gases and organic vapors	Yellow.
Hydrocyanic acid gas and chloropicrin vapor	Yellow with 1/2-inch blue stripe completely around the canister near the bottom.
Acid gases, organic vapors, and ammonia gases	Brown.
Radioactive materials, excepting tritium and noble gases	Purple (magenta).
Particulates (dusts, fumes, mists, fogs, or smokes) in combination with any of the above gases or vapors.	Canister color for contaminant, as designated above, with 1/2- inch gray stripe completely around the canister near the top.
All of the above atmospheric contaminants	Red with 1/2-inch gray stripe completely around the canister the top.

1 Gray shall not be assigned as the main color for a canister designed to remove acids or vapors.

Note: Orange shall be used as a complete body, or stripe color to represent gases not included in this table. The user will need to refer to the canister label to determine the degree of protection the canister will afford.

O. Color Codes

Each gas mask canister is painted a distinctive color or combination of colors as indicated by Table 1 attached. All colors used are clearly identifiable by the user and clearly distinguishable from one another. Appropriately colored pressure sensitive tape may be used for the stripes.

VI. OCCUPATIONAL HEAD PROTECTION

Helmets (safety hard hats) for the protection of employee heads from impact and penetration from falling and flying objects and from limited electric shock and burns are provided that meet the requirements and specifications per ANSI Standard Z 89.1.

VII. OCCUPATIONAL FOOT PROTECTION

Safety-toe footwear is required for employees routinely handling solid objects weighing 15 pounds or more which can fall on their toes. All such safety-toe footwear (safety shoes) meets the requirements and specifications of ANSI Standard Z 41.1.

VIII. ELECTRICAL PROTECTIVE DEVICES

Rubber protective equipment for protecting workers from live electrical current greater than 50 volts conforms to the requirements of the following ANSI Standards.

Item	Standard
Rubber insulating gloves	J6.6-1967.
Rubber matting for use around electric apparatus.	J6.7-1935 (R1962).
Rubber insulating blankets	J6.4-1970.
Rubber insulating hoods	J6.2-1950 (R1962).
Rubber insulating line hose	J6.1-1950 (R1962).
Rubber insulating sleeves	J6.5-1962.

OTHER PERSONAL PROTECTIVE EQUIPMENT ITEMS

ACCIDENT INVESTIGATION PROCEDURE & TRAINING

REMEMBER, You remain obligated to comply with all applicable local, state and federal standards, rules and regulations.

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It is strongly suggested that a qualified person review your final program.

Accident Investigation

Purpose

Accident prevention and control of hazards is the result of a well designed and executed safety and health program. One of the keys to a successful program includes unbiased, prompt and accurate accident investigations. The basic purpose of these investigations is to determine measures that can be taken to prevent similar accidents in the future. This chapter addresses:

- ❑ Company Policy
- ❑ Responsibilities
- ❑ Hazard Control
- ❑ Role of Supervisors
- ❑ Investigation Procedures

Policy

It is the policy of COMPANYNAME that all work related accidents, injuries and illnesses are to be conducted in a professional manner to identify probable causes and are used to develop specific management actions for the prevention of future accidents.

Responsibilities

Management

- ❑ Conduct accident prevention and investigation training for supervisors
- ❑ Ensure all accidents and injuries are properly investigated
- ❑ Ensure immediate and long term corrective actions are taken to prevent reoccurrence
- ❑ Maintain Accident Reports permanently on file
- ❑ Ensure proper entries are made on the OSHA 200 Log and First Report of Injury
- ❑ Provide all necessary medical care for injured workers

Supervisors

- ❑ Conduct immediate initial accident investigations
- ❑ Report all accidents to management as soon after the event as possible
- ❑ Collect and preserve all evidence that may be useful in an investigation
- ❑ Conduct interviews of witnesses in a polite professional manner
- ❑ Do not attempt to find or assign blame for accidents
- ❑ Take action to protect people and property from secondary effects of accidents

Employees

- ❑ Immediately report all accidents & injuries to their supervisor
- ❑ Assist as requested in all accident investigations
- ❑ Report all hazardous conditions and near-misses to supervisors

Hazard Control

Engineering Controls

There are numerous engineered safeguards throughout the facility used to protect employees and prevent exposure to hazards. Examples of engineering controls are machine guards, safety controls, isolation of hazardous areas, monitoring devices, etc. Specific engineering controls are addressed in other chapters of the company safety manual and in equipment and process procedures.

Administrative Controls
These controls involve the use of procedures, assessments, inspection, records to monitor and ensure safe practices and environments are maintained. Other administrative controls are in place to identify new hazards and implement corrective action. Examples of administrative controls are periodic inspections, equipment operating and maintenance procedures, hazard analysis, selection and assignment of personal protective equipment, etc.

Training Controls
This aspect of hazard control is used to ensure employees are fully and adequately trained to safely perform all tasks to which they are assigned. No employee is to attempt any task without proper training in the equipment used, required personal protective equipment, specific hazards and their control and emergency procedures. Examples of training controls are initial new hire safety orientation, job specific safety training and periodic refresher training.

Supervisor Involvement
In most cases, the immediate area supervisor will conduct the initial phase of an accident investigation. This initial activity is primarily a recording of facts involved in the accident, list of affected employees and witnesses. Direct supervisors are familiar with employee's work environment & assigned tasks. Supervisors must take the accident situation under control and immediately eliminate or control hazards to others.
Immediate Steps

1. Provide First Aid for any injured persons.
2. Eliminate or control hazards
3. Document accident scene information to determine the cause.
4. Interview witnesses immediately.

Accident Prevention
Accidents are usually complex. An accident may have 10 or more events that can be causes. A detailed analysis of an accident will normally reveal three cause levels: basic, indirect, and direct. At the lowest level, an accident results only when a person or object receives an amount of energy or hazardous material that cannot be absorbed safely. This energy or hazardous material is the DIRECT CAUSE of the accident. The direct cause is usually the result of one or more unsafe acts or unsafe conditions, or both. Unsafe acts and conditions are the INDIRECT CAUSES or symptoms. In turn, indirect causes are usually traceable to poor management policies and decisions, or to personal or environmental factors. These are the BASIC CAUSES.
Most accidents are preventable by eliminating one or more causes. Accident investigations determine not only what happened, but also how and why. The information gained from these investigations can prevent recurrence of similar or perhaps more disastrous accidents. Accident investigators are interested in each event as well as in the sequence of events that led to an accident. The accident type is also important to the investigator. The recurrence of accidents of a particular type or those with common causes shows areas needing special accident prevention emphasis.

Initial Investigation Procedures
The initial investigation has three purposes:

1. Prevent further possible injury and property damage
2. Collect facts about the accident
3. Collect and preserve evidence

Steps

a. Secure the area. Do not disturb the scene unless a hazard exists.
b. Prepare the necessary sketches and photographs. Label each carefully and keep accurate records.
c. Interview each victim and witness. Also interview those who were present before the accident and those who arrived at the site shortly after the accident. Keep accurate records of each interview. Use a tape recorder if desired and if approved.

Determine

a. What was not normal before the accident.
b. Where the abnormality occurred.
c. When it was first noted.
d. How it occurred.

Follow-up Accident Investigation

The follow-up investigation is used to analyze data and determine the causes and corrective actions necessary to prevent reoccurrence.

Steps

a. Analyze the data obtained in the initial investigation
b. Repeat any of the prior steps, if necessary.
c. Determine
    1. Why the accident occurred.
    2. A likely sequence of events and probable causes (direct, indirect, basic).
d.. Determine the most likely causes.
e.. Conduct a post-investigation briefing.
f.. Prepare a summary report, including the recommended actions to prevent a recurrence.

An investigation is not complete until all data are analyzed and a final report is completed. In practice, the investigative work, data analysis, and report preparation proceed simultaneously over much of the time spent on the investigation.

Conducting Interviews

In general, experienced personnel should conduct interviews. All interviews should be conducted in a quite and private location. It is essential to get preliminary statements as soon as possible from all witnesses. Investigators should not provide any facts to the witness - only ask non-leading questions.

a. Explain the purpose of the investigation (accident prevention) and put each witness at ease.
b. Listen, let each witness speak freely, and be professional, courteous and considerate.
c. Take notes without distracting the witness. Use a tape recorder only with consent of the witness.
d. Use sketches and diagrams to help the witness.
e. Emphasize areas of direct observation. Label hearsay accordingly.
f. Do not argue with the witness.
g. Record the exact words used by the witness to describe each observation.
h. Identify each witness (name, address, occupation, years of experience, etc.).

Accident Analysis
Accidents represent problems that must be solved through investigations. Formal procedures are helpful in identifying and solving problems. This section discusses two of the most common procedures: Change Analysis and Job Safety Analysis.

Change Analysis
As its name implies, this technique emphasizes change. To solve a problem, an investigator must look for deviations from the norm. Consider all problems to result from some unanticipated change. Make an analysis of the change to determine its causes. Use the following steps in this method:

1. Define the problem (What happened?).
2. Establish the norm (What should have happened?).
3. Identify, locate, and describe the change (What, where, when, to what extent).
4. Specify what was and what was not affected.
5. Identify the distinctive features of the change.
6. List the possible causes.
7. Select the most likely causes.

Job Safety Analysis
Job safety analysis (JSA) is part of many existing accident prevention programs. In general, JSA breaks a job into basic steps, and identifies the hazards associated with each step. The JSA also prescribes controls for each hazard. A JSA is a chart listing these steps, hazards, and controls. Review the JSA during the investigation if a JSA has been conducted for the job involved in an accident. Perform a JSA if one is not available. Perform a JSA as a part of the investigation to determine the events and conditions that led to the accident.

Investigation Report
An accident investigation is not complete until a report is prepared and submitted to management. To be and effective tool, an accident report should be clear and concise. The purpose of the investigation is to prevent future accidents. The following outline has been found especially useful in developing the information to be included in the formal report:

1. Background Information
    a. Where and when the accident occurred
    b. Who and what were involved
    c. Operating personnel and other witnesses
2. Account of the Accident (What happened?)
    a. Sequence of events
    b. Extent of damage
    c. Accident type
    d. Agency or source (of energy or hazardous material)
3. Discussion (Analysis of the Accident - HOW; WHY)
    a. Direct causes (energy sources; hazardous materials)
    b. Indirect causes (unsafe acts and conditions)
    c. Basic causes (management policies; personal or environmental factors)

4. Recommendations (to prevent a recurrence) for immediate and long-range action to remedy:
   a. Basic causes
   b. Indirect causes
   c. Direct causes (such as reduced quantities or protective equipment or structures)

Possible Causes
Obvious accident causes are most probably symptoms of a "root cause" problem. Some examples of Unsafe Acts and Unsafe Conditions which may lead to accidents are:

Unsafe Acts
Unauthorized operation of equipment
Running - Horse Play Not following procedures By-passing safety devices
Not using protective equipment
Under influence of drugs or alcohol
Unsafe Conditions
Ergonomic Hazards
Environmental hazards
Inadequate housekeeping
Blocked walkways
Improper or damaged PPE
Inadequate machine guarding

Recommendations
As a result of the finding is there a need to make changes to:
Employee training
Work Stations Design
Policies or procedures

Records
All accident reports will be maintained on file permanently. They shall receive timely review by upper management to ensure proper corrective actions have been taken.

First Report of Injury and OSHA 200 Log entries will be made within 8 hours of notification of injuries or illnesses

ACCIDENT PREVENTION CHECKLIST

Accident Prevention Checklist

Facility _____ **Area** _____

Auditor _____ **Date** _____

Employee Knowledge			
Date of last employee training			
Date of last supervisor training			
Job Safety Techniques			
Accident Reporting			
Near Miss Reporting			
Hazard Reporting			
Program Administration			
Person assigned to manage records			
Record keeper Trained			
Accident prevention included in new employee safety orientation			
Date of Last Audit			
Records			
All accident reports on file			
OSHA 101 Forms complete			
OSHA 200 Log complete			
Safeguards			
Engineering Safeguards			
Administrative Safeguards			
Training Safeguards			
Action Points			
Safety Committee has reviewed all reports			
Management has reviewed all reports			
All recommended actions for each report completed			
Date of last program review by W/C Insurance Carrier/ Third Party Administrator			
Insurance Carrier recommendations completed			
W/C Third Party Administrator recommendations completed			

ACCIDENT REPORTING & RECORDKEEPING SAMPLE PROCEDURE

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Accident Reporting & Record Keeping

Purpose
Accident, injury and illness reports are required by various Federal and State laws. Accident reports are also required by our company insurance carriers.

Policy
It is the policy of [COMPANY] to create, maintain and file accident reports as required by law. Accident reports submitted to outside agencies and agents of the company shall be submitted in the required format. Example: OSHA 300 log and OSHA 301 form (or equivalent).

All incidents and accidents resulting in injury or causing illness to employees and events (near-miss accidents) shall be reported in order to:

- ❑ Establish a written record of factors that cause injuries and illnesses and occurrences (near-misses) that might have resulted in injury or illness but did not, as well as property and vehicle damage.
- ❑ Maintain a capability to promptly investigate incidents and events in order to initiate and support corrective and/or preventive action.
- ❑ Provide statistical information for use in analyzing all phases of incidents and events..
- ❑ Provide the means for complying with the reporting requirements for occupational injuries and illness

The Incident Reporting System requirements apply to all incidences involving company employees, on-site vendors, contractor employees and visitors, which results in (or might have resulted in) personal injury, illness, and/or property and vehicle damage.

Responsibilities

Management:
- ❑ Establish and maintain an effective accident reporting program
- ❑ Establish and maintain an effective record keeping program including security controls over sensitive employee medical and exposure records.
- ❑ Train all employees in the accident reporting procedures
- ❑ Train record custodians in proper record entry, maintenance and release procedures
- ❑ Conduct annual program audit

Supervisors
Comply with the requirements of this program

Employees
Comply with the accident reporting procedures

Incidents (Occupational injuries and illnesses)
Injuries and illnesses that require reporting include those injuries and illnesses occurring on the job which result in any of the following: lost work time, restrictions in performing job duties, requirement for first aid or outside medical attention, permanent physical bodily damages, or death. Examples of "reportable injuries and illnesses include, but are not limited to, heat exhaustion from working in hot environments, strained back muscles from moving equipment, acid burns on fingers, etc.

Other incidents requiring reporting include those incidents occurring on the job which result in any of the following: injury or illness, damage to a vehicle, fire/explosion, property damage of more than $100, or chemical releases requiring evacuation of at least that immediate spill area.

Examples of "non-reportable" injuries and illnesses include small paper cuts, common colds, and small bruises not resulting in work restrictions or requiring first aid or medical attention.

Events (Near Misses)
Other incidents that, strictly by chance, do not result in actual or observable injury, illness, death, or property damage are required to be reported. The information obtained from such reporting can be extremely useful in identifying and mitigating problems before they result in actual personal or property damage. Examples of near miss incidences required to be reported include the falling of a compressed gas cylinder, overexposures to chemical, biological, or physical agents (not resulting in an immediately observable manifestation of illness or injury), and slipping and falling on a wet surface without injury.

Incident Reporting Procedures
The following procedures are to be followed by all employees in order to effectively report occupational injuries and illnesses and other incidents or events. All reports to outside agencies, except for those to local emergency response units (police, fire, ambulance), shall be made only by _____.

Incidents (Injuries and Illnesses)
Serious injury or illness posing a life-threatening situation shall be reported immediately to the local emergency response medical services (Call 911).

Injuries and illnesses shall be reported, by the injured employee, to his or her supervisor in person or by phone as soon after any life-threatening situation has been addressed. If the injured employee is unable to report immediately, then the incident should be reported as soon as possible.

Upon notification of an occupational injury or illness, the supervisor should complete the Incident/Accident Report and, if possible, send it with the injured employee to _____. The Incident/Accident Report Form must be completed and forwarded to _____ even if the employee receives medical treatment at the hospital and/or from a private physician.

Events
Incidents not involving injury or illness, but resulting in property damage, must also be reported within 24 hours of the incident. In cases of a fire or explosion that cannot be controlled by one person, vehicular accident resulting in injury or more than $500 worth of damage, or a chemical release involving a reportable quantity or requiring a building evacuation, the involved party must immediately report the incident to the emergency response services in the area (911 - police, fire, etc.)

All near miss incidences also must be reported on the Incident/Accident Report Form within 24 hours of occurrence. In place of indicating the result of the incident (i.e., actual personal or property damage), the reporting person shall indicate the avoided injury or damage.

Events, hazardous working conditions or situations, and incidents involving contractor personnel must be reported to _____ immediately.

Recordkeeping
_____ will maintain the required OSHA 300 Log and Summary of (recordable) Occupational Injuries and Illnesses and the OSHA 301 Supplementary Record of Occupational Injuries and Illnesses for each calendar year.

The required portion of the OSHA 300 Log and Summary of Occupational Injuries and Illnesses will be posted annually during the entire month of February throughout facilities for the previous calendar year.

Training
To ensure that all employees understand the incident reporting requirements and are aware of their own and other's responsibilities, annual training sessions will be held with all employees to review procedures and responsibilities. New Employee Orientation training will include information on incident reporting and procedures. Employees involved in record entry and record keeping will be trained in the company and statutory requirements.

Program Audits
The effectiveness of a program can only be accomplished if the program is implemented and maintained. Periodic reviews and audits shall be conducted to confirm that all employees are familiar with the incident reporting requirements and that the program is managed properly. These audits will consist of:

- ❑ Annual review of accident reports to ensure all records have been maintained and are complete.
- ❑ Annual review of the program with company insurance carriers and workers compensation third party provider.
- ❑ Annual refresher training for employees involved in record entry and record keeping
- ❑ Annual refresher training for all employees detailing the accident reporting procedures.
- ❑ Recording Injuries & Illnesses
- ❑ Basic recordkeeping concepts and guidelines are included with instructions on the back of form OSHA No. 300. The following summarizes the major recordkeeping concepts and provides additional information to aid in keeping records accurately.

General concepts of recordability

1. An injury or illness is considered work related if it results from an event of exposure in the work environment. The work environment is primarily composed of:

   (1) The employer's premises, and

   (2) other locations where employees are engaged in work-related activities or are present as a condition of their employment. When an employee is off the employer's premises, work relationship must be established, when on the premises, this relationship is presumed. The employer's premises encompass the total establishment. This includes not only the primary facility, but also such areas as company storage facilities, cafeterias, and rest rooms. In addition to physical locations, equipment or materials used in the course of an employee's work are also considered part of the employee's work environment.

2. All work-related fatalities are recordable.

3. All recognized or diagnosed work-related illnesses are recordable,

4. All work-related injuries requiring medical treatment or involving loss of consciousness, restriction of work or motion, or transfer to another job are recordable.

Analysis of injuries
Recordable and non-recordable injuries. Each case is distinguished by the treatment provided; i.e., if the injury was such that medical treatment was provided or should have been provided, it is recordable; if only first aid was required, it is not recordable. However, medical treatment is only one of several criteria for determining recordability. Regardless of treatment, if the injury involved loss of consciousness, restriction of work or motion, or transfer to another job, the injury is recordable.

Medical treatment.
The following procedures are generally considered medical treatment, Injuries for which this type of treatment was provided or should have been provided are almost always recordable if the injury IS work related:

- Treatment of INFECTION
- Application of ANTISEPTICS during second or subsequent visit to medical personnel
- Treatment of SECOND OR THIRD DEGREE BURN(S)
- Application of SUTURES (stitches)
- Application of BUTTERFLY ADHESIVE DRESSING(S) or STERI STRIP(S) in lieu of sutures
- Removal of FOREIGN BODIES EMBEDDED IN EYE
- Removal of FOREIGN BODIES FROM WOUND; if procedure is COMPLICATED because of Depth of embedment, size, or location
- Use of PRESCRIPTION MEDICATIONS (except a single dose administered on first visit for Minor injury or discomfort)
- Use of hot or cold SOAKING THERAPY during second or subsequent visit to medical personnel
- Application of hot or cold COMPRESS(ES) during second or subsequent visit to medical personnel
- CUTTING AWAY DEAD SKIN (surgical debridement)
- Application of HEAT THERAPY during second or subsequent visit to medical personnel
- Use of WHIRLPOOL BATH THERAPY during second or subsequent visit to medical personnel
- POSITIVE X-RAY DIAGNOSIS (fractures, broken bones, etc.)
- ADMISSION TO A HOSPITAL or equivalent medical facility FOR TREATMENT.

First aid treatment.
The following procedures are generally considered first aid treatment (e.g., one-time treatment and subsequent observation of minor injuries) and should not be recorded if the work-related injury does not involve loss of consciousness, restriction of work or motion, or transfer to another job:

- Application of ANTISEPTICS during first visit to medical personnel
- Treatment of FIRST DEGREE BURN(S)
- Application of BANDAGE(S) during a visit to medical personnel
- Use of ELASTIC BANDAGE(S) during first visit to medical personnel
- Removal of FOREIGN BODIES NOT EMBEDDED IN EYE if only irrigation is required
- Removal of FOREIGN BODIES FROM WOUND; if procedure is UNCOMPLICATED, and is, for example, by tweezers or other simple technique
- Use of NONPRESCRIPTION MEDICATIONS AND administration of single dose of PRESCRIPTION MEDICATION on first visit for minor injury or discomfort
  SOAKING THERAPY on initial visit to medical personnel or removal of bandages by SOAKING
- Application of hot or cold COMPRESS(ES) during first visit to medical personnel
- Application of OINTMENTS to abrasions to prevent drying or cracking
- Application of HEAT THERAPY during first visit to medical personnel
- Use of WHIRLPOOL BATH THERAPY during first visit to medical personnel
- NEGATIVE X-RAY DIAGNOSIS
- OBSERVATION of injury during visit to medical personnel.

Administration of TETANUS SHOT(S) or BOOSTER(S), by itself, is not considered medical treatment. However, these shots are often given in conjunction with more serious injuries; consequently, injuries requiring these shots may be recordable for other reasons.

OIL RIG BREAK DOWN AND SET UP

Many activities, tasks and duties associated with oilfield operations, expose crews to the risk of serious injury. The hazards are numerous, such as mechanical, electrical and hydraulic processes, falls from heights and falling objects are just a few. When certain activities become routine, it is necessary to build in controls that will minimize the likelihood of an accident. Some of the safeguards we rely on to protect us during the activities we perform each day include:

- ❑ Training and close supervision of new hires;
- ❑ Proper footwear, gloves and hard hats;
- ❑ Snub lines and guardrails;
- ❑ Safety harnesses and tie-off lanyards

Many serious and even fatal injuries occur as rigs are being broken down, moved and set up. When these activities are under way, working conditions change from moment to moment. You cannot rely on the usual safeguards. One of the most common accidents to occur during rig up and rig down operations is a fall. It is extremely important that you take nothing for granted. Look where you're stepping, climbing or going. Make sure floor sections have not been removed and floor openings are covered. If floor openings cannot be covered, an employee must be assigned to stand watch and caution other hands away. If you uncover a floor opening, never walk off and leave it unattended.

More than one injury has been suffered when employees noticed an opening in the rig floor, walked across or around it - and then forgot about it when they walked back again. Carrying loads in your hands or arms can obstruct your vision. Look ahead first to make certain your path is clear of trip or fall hazards.

Guardrails should be left in place as long as possible when rigging down, and put in place as soon as possible when rigging up. When guardrails are not in place, workers must be properly tied off with an approved fall protection system.

Don't ever fall into a habit of complacency. Be especially cautious during set up and breakdown activities. Remember, no one can take care of you like *you* can. Watch out for your fellow hands and always watch out for yourself.

SIX COMMONLY USED OILFIELD CHEMICALS

The following is a list of some of the more commonly used chemicals. The danger is explained, and necessary precautions are outlined.

Common Name:	**Calcium Chloride**
Chemical Symbol:	$CaCl_2$
Danger to Employee:	Irritating to eyes and skin. Mists and dusts very irritating if breathed.
Danger to Equipment:	Will react with aluminum and leather goods.
Precautions Needed:	Avoid eye and skin contact. Do not breathe.
First Aid Treatment:	Eyes/Skin - flush with running water immediately. Call a doctor.
Clothing:	Remove contaminated clothing at once.
Inhalation:	Move to fresh air and give artificial respiration if needed. Call a doctor.

Common Name:	**Calcium Bromide**
Chemical Symbol:	$CaBr_2$
Danger to Employee:	Irritating to eyes and skin. May be irritating if dust and mist are inhaled.
Danger to Equipment:	Reacts with aluminum, alloys, and leather goods.
Precautions Needed:	Avoid contact with eyes/skin. Do not swallow.
First Aid Treatment:	Eyes/Skin -- Immediately flush with water.
Clothing:	Remove contaminated clothing and boots at once.
Inhalation:	Remove to fresh air. Call doctor if victim behavior patterns are altered.

Common Name:	**Zinc Bromide**
Chemical Symbol:	$ZnBr_2$
Danger to Employee:	Eyes/Skin - Contact could cause severe burning and permanent loss of vision. Burns result from prolonged exposure.
Inhalation:	May be irritating.
Danger to Equipment:	Slightly corrosive.
Precautions Needed:	Contact with eyes/skin must be prevented. If swallowed or inhaled, may burn mouth or throat.
First Aid Treatment:	Eyes/Skin Flush with water.
Inhalation:	Remove to fresh air and call doctor. Remove contaminated clothing.

Common Name:	**Potassium Chloride**
Chemical Symbol:	KCl
Danger to Employee:	Prolonged exposure irritates skin and burns eyes.
Danger to Equipment:	Basically, none - may cause rust.
Precautions Needed:	Avoid eye and prolonged skin contact.
First Aid Treatment:	Flush thoroughly with water.

Common Name:	**Acids**
Danger to Employee:	Eyes/Skin - Irritation and burn.
Danger to Equipment:	Corrosive.
Precautions Needed:	Avoid contact with eyes or skin. Remove contaminated clothes.
First Aid Treatment:	Flush with water. Cover badly burned areas. Get medical help.

Common Name:	**Caustic Sodas**
Danger to Employee:	Eyes/Skin - Irritation and burns.
Danger to Equipment:	Corrosive.
Precautions Needed:	Avoid contact with skin/eyes. Reacts with water and sweat to burn skin.
First Aid Treatment:	Wash thoroughly with water. Remove contaminated clothing.

USEFULL MISCELLANEOUS INFORMATION

REMEMBER, <u>You</u> remain obligated to comply with all applicable local, state and federal standards, rules and regulations. The use of this program, "As-Is", does not guarantee compliance has been achieved or met with <u>any</u> applicable requirements, rules and/or regulations. <u>It is strongly suggested that a qualified person review your final program.</u>

BLOWOUT PREVENTION EQUIPMENT CONCERNS

o Maintenance of well control using adequate BOP equipment that has been properly installed.

o Each crewmember trained to operate all BOP equipment on site. Crewmembers are to become familiar with BOP opening and closing procedures.

o Testing of the Hydril bag on the pipe at the start of the job (not closed to zero). Close the pipe and blind rams to zero. **Flag the blind ram control, and do not leave accumulator controls in the neutral position**.

o Test BOP equipment according to customer specifications and record all tests on the daily report.

o Hydraulic BOPs, the crew should check the accumulator periodically throughout their work shift (manifold pressure, reservoir fluid level and nitrogen pressure).

o When using a mechanical BOP, install two wheels to shut in the rams.

o After closing the BOPs, flag the brake handle with a "BOP Closed" sign or other marker to ensure the pipe is not pulled before the BOP is opened.

o Bleed off trapped pressure as needed before opening BOPs.

o Qualified personnel should charge accumulators and high-pressure pulsation dampeners with nitrogen. The pre-charge should be checked between each well.

o Each control on the BOP accumulator and each BOP remote unit should be clearly marked as to its exact function.

o Check all electrical wiring periodically. Report worn or broken conduit fittings. Pay special attention to spliced connections on telescoping rigs.

CHAIN REQUIREMENT CONCERNS

o Inspect chain and attachments before use.

o Never exceed the safe working limit.

o Lift and lower loads slowly and smoothly. Avoid shock loading.

o Know the center of gravity and the angle of the lift.

o Remove all twists, knots, and kinks before using. Twisting, knotting or kinking decreases the safe working load limits.

o Do not point load hooks. The load should rest on the bowl of hook.

o Protect chain with padding when lifting sharp edged loads.

o Use only alloy chain and attachments for making repairs.

o Always use alloy chain when making overhead lifts of any type. The manufacturer must tag such chain and hardware with the proof-tested maximum weight capacity.

CHEMICAL SAFETY AND OTHER EMERGENCY PROCEDURES

HYDROGEN SULFIDE PROCEDURES

o In some areas, H_2S is a severe hazard because of the serious effect of even small concentrations. When exposed to H_2S, the sense of smell can be temporarily deadening to the extent that additional exposure is not realized. Due to this false sense of security, test any areas known or suspected to have H_2S to ensure the area is safe.

o Where applicable, rigs are equipped with H_2S detectors. After testing the well for H_2S, log the concentration on the tour report. If the concentration exceeds 10 ppm, cease operations until the well is killed with water, ammonia or other chemicals.

o Bring explosion-proof fans and respiratory protection to the well site if the concentration cannot be kept below 10 ppm.

NOTE: *Take care to monitor for H_2S gas when working on a back-flowing water injection well or during an acidizing operation.*

SUGGESTED MAKE-UP AND BREAKOUT PROCEDURES

DRILLING

o Rotary tongs and hydraulic casing tongs – Use 1/2” or 5/8” wire rope on the hydraulic breakout ram and a separate 5/8” wire rope safety sling as a backup.

o Half hitch and clamp shall not be used on any wire rope or sling.

o Do not use the rotary table to break out drill pipe or any other joint of pipe because:

There is a possibility of breaking a safety line, causing injury.
There is a possibility of bending the joint in the slips.
The slips in the rotary table could rotate around the pipe, ruining the joint.

o Only trained employees may use a spinning chain on drill pipe.

o A 12" to 18" tail rope must be on the end of the chain, and a spare chain must be at the location.

o Do not use a spinning chain as a breakout line.

o Rig personnel should keep their hands and feet, as well as chains, ropes, etc., away from slip handles when rotary is in motion.

SUGGESTIONS FOR CATHEAD USE

o Rig supervisors should ensure that a qualified person works the cathead.

o When in operation, a qualified person should be at the driller console to disengage the cathead if necessary.

o Use a flagman or two-way communication device when the cathead operator cannot see the object being raised or lowered.

- The rope should not be wrapped around the operator hand when in use.
- Do not stand inside rope coiled on the rig floor.
- Catheads are very dangerous. Do not use a spliced rope on a cathead, and do not leave a cat line wrapped or a cathead unattended.
- Each cathead must have a divider and rope guide. Adjust the divider within 3/8" of the cathead surface. If a 1/4" groove or more exists in the cathead, build it back up.

AIR HOISTS SUGGESTIONS

- Rig supervisors should ensure that a qualified person operates the air hoist.
- The hoisting line should not be in contact with any derrick member.
- The recommended load capacity of the air hoist and wire rope should be clearly marked and shall not exceed the manufacturer recommendation.
- The air hoist operator should set the drum brake anytime a load is in suspension. The operator should not leave hoist unattended.
- The air hoist operating lever should return to the neutral/locked position when the operator releases it.
- Tong counterbalance and parts thereof should be restrained, guarded, or located to prevent them from falling on or striking crewmembers.
- When excessive pull is needed to break a tight joint, all floor crewmen should move away from the rotary and out of the path of the tongs before torque is applied.
- Employees should not stand between the two pipe tongs while the driller is making up or breaking out pipe or collars.

MUD PITS AND EQUIPMENT

- Caustic soda should be added to water slowly to avoid splashing and should be mixed using a mixing tank or barrel. A face shield must be worn in addition to goggles.

- At the mud mixing hopper or location, the following items should be available for the employees' use:

  Eye protection
  Face protection
  Proper respiratory protection
  Rubber gloves and apron
  Eyewash station
  Appropriate warning/danger signs

PREVENTIVE MAINTENANCE REQUIREMENTS SUGGESTIONS

- The pusher will be accountable to ensure maintenance is performed. It is the responsibility of the supervisor and operator to ensure that the unit and all other equipment on location are properly serviced and maintained.

o By following the service guidelines presented below, the reliability of equipment can me maximized.

o If mechanical problems occur, either they are repaired promptly or reported to the superintendent.

o If any safety hazards develop, stop the job and repair them immediately or report them to the superintendent.

oDo not remove any guard or safety device except for maintenance, and replace it immediately after the maintenance has been completed.

Daily Service Checklist Suggestions

Engine oil level
Belts and hoses
Engine radiator water level
Transmission fluid level
Transfer box fluid level
Battery water level
Diesel tank level
Hydraulic tank level
Grease rod and tubing tongs, spider and elevators
Bleed moisture from air tanks
Check engine shutdowns

Weekly Service Checklist Suggestions

Right angle drive fluid level
Counter shaft fluid level
Chain oil levels
Grease blocks
Grease crown
Grease drum bearings and linkage
Main ram and knee ram pins and all other hinge pins
Grease clutch eccentrics (lightly)
Grease drive line "U" joints
Axles and steering linkage
Grease hydro-retarder bearings
Air system oiler
Rear axle lubricant level

PRODUCTION AND HAND TOOLS REQUIREMENT SUGGESTIONS

o Do not use unsafe or defective tools. Perform inspections before using.

o Do not use tools and equipment for purposes other than those for which they are designed.

o In applying force to a wrench, get in a position to maintain balance in case the nut or joint suddenly loosens.

o When connections are known to be quick breaking or releasing suddenly, a hammer wrench should be used instead of a wrench that requires body force.

o Extension "cheaters" or "snipes" should not be used until efforts to break out or make up the connection with the largest wrench available has failed.

o When a pipe wrench extension is used, the maximum length of the extension shall be no more than two times the length of the pipe wrench handle. The extension shall be constructed of steel pipe or fiberglass (where applicable) of such a diameter to snugly fit and cover the full length of the pipe wrench handle. The force exerted on the wrench should not exceed the manufacturer rated breaking strength of the wrench or two times the length of the wrench handle, which is 45" maximum length on a 36" pipe wrench.

o Never use an extension or a cheater on a crescent type or aluminum wrench.

o Never jump on a snipe or cheater to generate additional force.

o Do not leave hand tools or materials in the derrick or above the floor when not in use.

Carefully lower these tools to the ground when the work is completed. Avoid throwing tools.

Rod and Tubing Tong Jaw Changing Procedure

o Disconnect both tong hoses before changing dies in rod or tubing tongs.

o Relieve any possible trapped pressure after disconnecting the hoses.

o Change the dies from the top and/or bottom. Do not place your hand or arm through the front of the tongs.

PUMPS/CIRCULATORY SYSTEMS/POWER SWIVELS REQUIREMENT SUGGESTIONS

o All pump lines will be rigid steel lines or high pressure circulating hoses with a safe working pressure equal to or greater than the maximum test pressure of the pump and the maximum shut-in pressure of the well.

o If the pump pressure rating is 3000 PSI or less, 3000 PSI forged steel chic sans, unions, schedule 80 piping and 3000 PSI circulating hoses are to be used.

o If the pump pressure rating is greater than 3000 PSI, 6000 PSI forged steel chic sans, unions, schedule 160 plumbing, and schedule 80 pipe, running lines, standpipe, or 5000 PSI circulating hoses are to be used.

o Post the maximum working pressure of the pump prominently in view of the operator.

o Ensure all mud pumps with shear or spring loaded relief valves are set to relieve at a pressure no more than 10% above the rated operating pressure of the pump.

o Relief valve settings should be no higher than the working pressure of the circulating hose. Do not operate pump without relief valve.

o Use manufacturer shear pins. Do not use Allen wrenches, nails or other substitutes.

o Use a special shear pin on Demco shear relief valves. Place only Demco shear pins in the relief slot.

o Keep covers to shear relief valves closed.

o Hobble all hoses under pressure securely on both ends with clamps and 5/8" wire rope slings.

o Hobble the hose on the swivel to the eye of the links.

o Hobble and stake down all steel lines.

o Tie down open-end bleeder lines or blooey lines on pump systems to prevent swinging when fluid or foam is being discharged.

o When working on high GOR wells or where there is an H_2S hazard, the following procedures are to be followed during circulating operations.

After rigging up, the rig supervisor is to use a tri-meter to test the well and cellar areas for natural gas, H_2S, and oxygen content.

If the concentration of natural gas is in excess of 10% of the LEL or if the H_2S concentration is over 10 ppm, steps must be taken to kill the well or control the gas in order to eliminate the hazard.

o While circulating, ensure an experienced employee is at the pump controls at all times. Never walk away from the controls while the pump is engaged.

o The initial circulation of a well (or whenever there is reason to believe there is gas present) should always be done to a closed system (e.g., circulating manifold) until all gas has been circulated from the well bore.

o When pumping operations are in progress and gas is noticed in the atmosphere at the surface, shut down all engines immediately and remove all personnel to a safe area. Discuss the hazards that exist and the steps to take before the resuming the job.

o When making up or breaking out a connection on the ground with a power swivel, manually make up or manually break out the connection with a 36" pipe wrench.

o Use a 3/4" – 7/8" deadline with turnbuckles to secure 2.5 or larger swivels; do not use the sand line.

o When operating a power swivel, place an emergency kill switch that shuts the blower door to the engine on the hydraulic controls of the power swivel. Paint the kill switch ***red*** or ***yellow*** to contrast with the equipment color.

o Guard all exposed sumps by using flags or barricades. Keep personnel away from high-pressure lines while pumping.

PRODUCTION AND HAND TOOLS REQUIREMENTS

o Do not use unsafe or defective tools. Perform inspections before using.

o Do not use tools and equipment for purposes other than those for which they are designed.

o In applying force to a wrench, get in a position to maintain balance in case the nut or joint suddenly loosens.

o When connections are known to be quick breaking or releasing suddenly, a hammer wrench should be used instead of a wrench that requires body force.

o Extension “cheaters” or “snipes” should not be used until efforts to break out or make up the connection with the largest wrench available has failed.

o When a pipe wrench extension is used, the maximum length of the extension shall be no more than two times the length of the pipe wrench handle. The extension shall be constructed of steel pipe or fiberglass (where applicable) of such a diameter to snugly fit and cover the full length of the pipe wrench handle. The force exerted on the wrench should not exceed the manufacturer rated breaking strength of the wrench or two times the length of the wrench handle, which is 45” maximum length on a 36” pipe wrench.

o Never use an extension or a cheater on a crescent type or aluminum wrench.

o Never jump on a snipe or cheater to generate additional force.

o Do not leave hand tools or materials in the derrick or above the floor when not in use. Carefully lower these tools to the ground when the work is completed. Avoid throwing tools.

Rod and Tubing Tong Jaw Changing Procedure

o Disconnect both tong hoses before changing dies in rod or tubing tongs.

o Relieve any possible trapped pressure after disconnecting the hoses.

o Change the dies from the top and/or bottom. Do not place your hand or arm through the front of the tongs.

RESCUE/FIRST AID AND HYDROGEN SULFIDE PROCEDURE SUGGESTIONS

o Put on breathing apparatus before attempting a rescue to avoid being overcome by H_2S.

o Remove the person immediately to fresh air and have someone call an ambulance.

o If the person is not breathing, start artificial respiration immediately. Utilizing an approved barrier or mask as provided in *COMPANY NAME* Blood borne Pathogen Exposure Control Kit.

o If the person heart has stopped, begin cardiopulmonary resuscitation (CPR) immediately.

o Keep the person warm.

o After a person is removed to fresh air and normal respiration is restored, the affected individual should receive medical treatment. Keep the person under medical observation until released by a doctor.

DETECTION METHODS

o There are several ways to be alerted to the presence of H_2S gas. The scent is usually the first and sometimes the last indicator. It is possible to smell as little as one part of H_2S per million parts of air. However, if the concentration of gas is in the l00-150 ppm range, the sense of smell is quickly lost giving a false sense of security.

o When testing for H_2S gas, be prepared for deadly concentrations.

To determine the amount of H_2S present in your work area, use one of the following means of detection.

o Electronic Detectors: This type of device is belt-mounted or hand-held and gives audible alarms (and in some cases a readout) upon exposure to a predetermined level of H_2S.

o Air-Sampling Gas Detector Tubes: The length of discoloration registers the concentration of H_2S when air is drawn through the detector tube. There are several reliable makes and types available, but the accuracy depends on the training and practice of the operator. Tubes must be NIOSH certified.

o Fixed Systems: In larger plants and fields, a fixed system of continuous monitoring is often used. Where these units monitor an area continuously, an alarm system will give warning when the H_2S concentration gets above a certain fixed limit.

o Lead acetate ampoules or coated strips indicate the concentration: These change color (usually brown or black) in the presence of H_2S. These are not completely accurate and react relatively slowly; therefore, these should be used only as an indicator of the presence of H_2S.

PROPERTIES OF HYDROGEN SULFIDE

The following are properties of H_2S:

o *Color* – Colorless

o *Odor* – In low concentrations, it can be very offensive and is commonly described as smelling like “rotten eggs.” It is odorless in high concentrations.

o *Vapor density* – H_2S is heavier than air. It will settle in low areas such as cellars and tanks.

- *Boiling point* – minus 76°F.
- *Explosive limits* – 4.3 to 46 percent by volume, in air.
- *Auto Ignition temperature* – 500°F.
- *Water soluble* – Yes (4 volumes gas in 1 volume water at 32°F).
- *Flammability* – Forms explosive mixture with air.

TOXICITY OF H_2S

- l ppm = .0001% (1/10,000 of 1%) - Can smell (rotten egg odor); no risk.
- 10 ppm = .00l% (1/1000 of 1%) - Allowable for 8-hour exposure. Above this allowable concentration, protective equipment will be necessary.
- 100 ppm = .01% (1/100 of 1%) - Kills smell in 3 to 15 minutes. May burn eyes and throat.
- 500 ppm = .05% (5/100 of 1%) - Lose sense of reasoning.
- 700 ppm = .07% (7/100 of 1%) - Will become unconscious quickly. Breathing stops and death results if not rescued promptly. Need immediate artificial resuscitation.
- 1000 ppm = .10% (1/10 of 1%) - Unconscious at once. Permanent brain damage may result unless rescued promptly and resuscitation is administered immediately.

NOTE: *ppm = parts of gas per million parts of air by volume. 1% = 10,000 ppm*

EFFECTS ON METAL

- H_2S is very corrosive to all electrochemical series metals. It can also cause hydrogen embrittlement in steel pipe having a tensile strength of 95,000 PSI or more.
- Blistering and pitting are two other signs of corrosion that can indicate the presence of H_2S.
- Metal components used in H_2S service or potential H_2S areas should be manufactured to resist Sulfide Stress Cracking (SSC). SSC is a corrosive action causing unsuitable metals to crack under normal operations.
- API and NACE have established the requirements for metals suitable for H_2S service.
- Iron sulfide (FeS_2) is a reaction product of H_2S and iron or spent iron sponge (a treating material). It is subject to auto ignition (spontaneous combustion) and burning when exposed to air. It should be kept wet until it can be disposed of in accordance with applicable regulations. FeS_2 scale can accumulate on the inside surfaces of vessels as well as the internal walls of tubing and can become an auto ignition hazard if exposed to atmospheric oxygen. One of the products of burning FeS_2 is sulfur dioxide.

RIG OPERATING PROCEDURE SUGGESTIONS

The supervisor must:

- Meet with all onsite personnel prior to rig up/rig down.
- Meet with the customer to decide where all auxiliary equipment will be spotted prior to commencement of operations.
- Remind each employee of the hazards when rigging up or rigging down.

- Ensure that all employees know their assignments.
- Ask the customer if there are any special safety, toxic chemical, radiation, or pollution requirements or concerns.

Prior to moving a rig, inspect the road and area around the well site for proper support and/or possible overhead obstructions.

- Do not rig up or rig down after dark unless there is proper lighting.
- The rig supervisor and rig operator must ensure derrick masts and guy lines are not rigged any closer than 10 feet from overhead power lines. Post an overhead power line warning sign on each rig in view of the rig operator.
- Operators will lockout and tagout all pumping units at the main power source before well pulling operations begin. Shut down all nearby pumping units that could present a hazard to rig operations. Chain or secure pumping unit weights when the unit is left on down stroke.
- After positioning the rig, put the transmission in neutral, engage the maxi-brakes and chock the rear tires. Ensure the unit is shifted from road to hoist and positively locked out and/or pinned to prevent accidental disengagement.

Before proceeding with rig up, ensure the following requirements have been satisfied:

- The rig is properly positioned, and all derrick leg jacks are equal distances from the well.
- There is adequate footing for hydraulic jacks.
- Hydraulic jacks are used to level the rig from front to rear and side to side.
- Lock nuts on each hydraulic jack are tight.
- The foundation under the derrick complies with API and rig manufacturer specifications.

- Ensure outriggers and locknuts on hydraulic jacks on double and single rigs are in place before the mast is raised. They must remain in place until the mast has been lowered into its cradle.

NOTE: All jack stands must be rated to withstand maximum derrick pulling capacity. Pin all jack stands where applicable.

- Check the hydraulic fluid reservoir to ensure adequate fluid is available to raise and lower the derrick.
- Before the derrick is raised, position personnel to observe the derrick from all positions to prevent entanglement of lines. Do not stand under the derrick or on the carrier while it is being raised or lowered.
- Observe the scoping ram stabilizer(s) for proper operation. If one or more stabilizer(s) are not properly positioned, correct the problem immediately.
- Check raising and telescoping rams for pitting.
- The rig operator and derrick man must visually inspect the derrick to ensure the locking dogs are in the proper position after the derrick is raised. If a positive lockout is provided, engage it.
- Ensure the rig guy line pattern is in accordance with governmental, API and/or manufacturer requirements, and ensure all guy line sizes are in accordance with the manufacturer or API guy line specifications.

o Attach the guy lines on all portable masts to permanent dead men when available. Install screw-in (marsh) or retrievable anchors when there are no dead men available. Bury screw-in anchors no more than one foot above ground whenever possible.

o Flag all guy lines.

o Put out the emergency escape line (Geronimo line) on all jobs.

- o The escape line must be secured to an appropriate dead man or anchor as part of the rig up procedure.
- o Derrick men must have clear access from the tubing board or rod basket.
- o Ensure there is a clear path from the derrick to the ground.
- o Ensure the escape line is free of kinks, broken strands and grease.
- o Ensure the line is 1/2" or 7/16" plow steel. Do not use sand line.
- o Locate the emergency escape-riding device where the derrick man is working.
- o Do not secure the riding device with sash cord. If sash cord is used and becomes wet, it is difficult to untie! With a properly functioning riding device, the brake spring will hold it in place.

o Check each well for pressure. Never stand in front of a valve when it is being opened or when pressure is being released. Open all valves slowly.

o While an employee is on the walking beam, leave the unit on the down stroke with the brake set and use appropriate lockout/tagout procedures. Ensure that the guards are in the proper position and all personnel are in a safe position before starting a pumping unit. Ensure throat bolts are properly engaged in the head.

o The operator must inspect the hydraulic jacks, jack locknuts, guy lines, escape lines and static lines on a daily basis to ensure these items are in accordance with *COMPANY NAME* requirements.

o Do not subject a derrick or mast to a compression load greater than the safe load limit shown on the nameplate.

o Anytime a derrick man descends from the derrick, securely tie off the rods and tubing.

o Hobble all tubing and rod fingers to prevent them from falling out of the derrick.

Except as otherwise provided in applicable service manuals, following are the bleeding procedures.

- o After servicing the well and before rigging down:
- o Bleed the main raising and scoping rams to ensure air is eliminated from the hydraulic system prior to lowering the mast.
- o Bleed rams anytime the mast is rigged up over 48 hours.
- o Bleed the raising ram on newer Hopper™, Ideco™ (with two hydraulic lines at the top of the ram) and Hall™ rigs from the operator controls.
- o Manually bleed all older Hopper, Cooper, Moller, Skytop, Franks, and Taylor rigs (with bottom feed or only one hydraulic line at the top of ram) by opening a petcock at the top of the main ram.

FIRE/BLOWOUT HAZARDS AND BLOWOUT PREVENTION EQUIPMENT SUGGESTIONS

o Smoking, fires and/or internal combustion engines are not permitted within 50' of a well, production facility or other site where a flammable situation may exist. Post “No Smoking” signs at each rig or unit location.

o *Strike anywhere* matches and butane lighters are prohibited. Keep cigarettes and lighters in the crew truck or in the doghouse.

o Attach static lines to the wellhead on all jobs to prevent a spark from static electricity.

o Install spark arrestors on the engine exhausts (as required). Otherwise, inject water into the exhaust of all engines on jobs where water is available.

o Do not use gasoline or low flash point solvent for cleaning purposes.

o Use vapor-proof electrical equipment at well locations.

o Do not fill fuel tanks while engines are running.

o Locate auxiliary equipment, blowout prevention (BOP) accumulator, and fire-fighting equipment on the upwind side of the well whenever possible.

o Locate a safety valve of adequate pressure with a nipple (sized to fit the tubing being pulled) on the rig floor and leave valve in the open position, with valve handle readily available.

o When bleeding a well down, take extra caution. Install and stake down a blow down line. Due to fire hazards, employees are not permitted to work and engines are not permitted to run in areas where flammable mixtures might accumulate.

o Positive well control is to be established when the job first begins and maintained at all times.

o When there is an indication that a well may flow during operations or when circulating a gas: oil ratio (GOR) well, close the well immediately and evaluate the need for detection monitors for oxygen, flammability, and toxic gases (H_2S, CO and CO_2), if applicable.

o Do not circulate an oil/gas mixture directly into tanks. Either circulate the mixture into the production flow line or circulate it through a separator that vents the gas downwind and away from the rig.

WIRE ROPE SPECIFICATIONS AND PROCEDURE SUGGESTIONS

o Never stand on or reach into tubing or sand line drums while the engine is running.

o Do not use sand line to lift BOP equipment or horse heads. Use rig winches on small horse heads. Use blocks with 5/8" or 3/4" wire rope pick-up slings to lift BOP equipment and larger horse heads.

o Diligently inspect the sand line on each job when first running the well and once every eight hours of use thereafter.

o If three or more broken wires are found in one strand of a rope lay, or six broken wires in all strands of a rope lay, cut off the sand line or take it out of service.

o In general, a drill line will be considered “used” after six (6) months of service.

o Inspect the condition of the pulling line daily, weekly and monthly. The rig supervisor and operator shall use the monthly inspection report to document line inspections.

o Replacement of pulling lines. If any line has six or more breaks in all the strands in a rope lay, take the line out of service.

NOTE: *Inspect pulling lines before pulling on stuck pipe or before any operation that requires excessive pulling.*

o Base the maximum allowable working load on a minimum safety factor of four (4) for normal operations. A safety factor of three (3) is allowed when setting casing, pulling on stuck pipes, or while engaging in similar infrequent operations (OSHA requirements). *COMPANY NAME* recommends a minimum safety factor of five (5) when running used rope.

EXAMPLE: *A new 1" – 9 x 40 swage line (safety factor of 3) is rated at 38,000 lbs. per line in the blocks.*

Maximum pull with 6 – 1" lines in blocks = 250,000 lbs. (Multiply 6 x 41,666 lbs.)

A used line (safety factor of 5) is rated at 150,000 lbs. (60% of 250,000 lbs.)

The maximum pull for rigs doubled up is as follows.

- o Double rig – 6 lines – 100 stands or 6,000' 2-7/8" tubing: 40,000 lbs.
- o Double rig – 4 lines – 60 stands or 4,000' 2-7/8" tubing: 26,000 lbs.
- o Single rig – 4 lines – 100 joints or 3,000' 2-7/8" tubing: 20,000 lbs.

These are the safe loads without a weight indicator.

o Securely fasten the tubing line to the hoist drum with enough line on the drum to permit laying the blocks on the rig floor. Inspect and tighten the clamp at the end of the first 24 hours of operation with a new line then once a week thereafter.

NOTE: *The rigs have a variety of ways to connect the fast line to the tubing drum.*

1-1/8" line: secure with 1" phist grip clamp.
l" line: secure with 7/8" phist grip clamp.
7/8" line: secure with 3/4" phist grip clamp.
3/4" line: secure with 5/8" phist grip clamp.

o When singled out, ensure all three safety bolts on the dead line anchor are in place and tightened before pulling tubing (where applicable). Secure a minimum of three wraps to the deadline anchor. The buttons must be zinc poured or pressed-gripped.

o **Rig supervisors and operators must know how long the pulling line has been on the rig. They also must know the rig mast rating and the breaking strength and safety factors of the pulling line.**

Safe working loads and breaking strengths of pulling lines commonly used on rigs: *(These figures could vary based on manufacturer date and applicable regulations pertaining to them)*

1-1/8" – 9 x 40 or 6 x 19 class swage line
Breaking Strength per line = 79.5 tons or 159,000 lbs.
159,000 lbs. x 6 lines = 954,000 lbs.
159,000 lbs. x 8 lines = 1,272,000 lbs.

Safe Working Load (Singled Out):
New Line (Safety Factor of 3):
6 Lines = 318,000 lbs.
8 Lines = 424,000 lbs.

Used Line (Safety Factor of 5):
6 Lines = 190,800 lbs.
8 Lines = 254,400 lbs.

1" – 9 x 40 swage line
Breaking Strength per line = 62.5 tons or 125,000 lbs.

125,000 lbs. x 4 lines = 500,000 lbs.
125,000 lbs. x 6 lines = 750,000 lbs.

Safe Working Load (Singled Out):
New Line (Safety Factor of 3):
4 lines = 166,667 lbs.
6 lines = 250,000 lbs.

Used Line (Safety Factor of 5):
4 lines = 100,000 lbs.
6 lines = 150,000 lbs.

1" – 6 x 26 IWRC (EIP) lines
Breaking Strength per line = 51.7 tons per line or 103,400 lbs.
103,400 lbs. x 4 lines = 413,600 lbs.
103,400 lbs. x 6 lines = 620,400 lbs.

Safe Working Load (Singled Out):
New Line (Safety Factor of 3):
4 lines = 137,000 lbs.
6 lines = 206,800 lbs.

Used Line (Safety Factor of 5):
4 lines = 82,000 lbs.
6 lines = 124,000 lbs.

1" – 6 x 31 WS swage lines
Breaking Strength per line = 62 tons per line or 124,000 lbs.
124,000 lbs. x 4 lines = 496,000 lbs.
124,000 lbs. x 6 lines = 744,000 lbs.

Safe Working Load (Singled Out):
New Line (Safety Factor of 3):
4 lines = 165,333 lbs.
6 lines = 248,000 lbs.

Used Line (Safety Factor of 5):
4 lines = 99,200 lbs.
6 lines = 148,800 lbs.

7/8" – 6 x 31 swage line
Breaking Strength per line = 47.8 tons per line or 95,600 lbs.
95,600 lbs. x 4 lines = 382,400 lbs.
95,600 lbs. x 6 lines = 573,600 lbs.

Safe Working Load (Singled Out):
New Line (Safety Factor of 3)
4 lines = 127,467 lbs.
6 lines = 191,200 lbs.

Used Line (Safety Factor of 5)
4 lines = 76,480 lbs.
6 lines = 114,720 lbs.

7/8" – 6 x 26 IWRC (EIP) line
Breaking Strength per line = 39.8 tons per line or 79,600 lbs.
79,600 lbs. x 4 lines = 318,400 lbs.
79,600 lbs. x 6 lines = 434,400 lbs.

Safe Working Load (Singled Out):
New Line (Safety Factor of 3)
4 lines = 106,000 lbs.
6 lines = 159,000 lbs.

Used Line (Safety Factor of 5)
4 lines = 63,000 lbs.
6 lines = 95,000 lbs.

3/4" – 9 x 41 swage line
Breaking Strength per line =
36.2 tons or 72,400 lbs.
72,400 lbs. x 4 lines = 289,000 lbs.
72,400 lbs. x 6 lines = 434,000 lbs.

Safe Working Load (Singled Out):
New Line (Safety Factor of 3):
4 lines = 96,000 lbs.
6 lines = 144,800 lbs.

Used Line (Safety Factor of 5):
4 lines = 57,000 lbs.
6 lines = 86,000 lbs.

o When eyes are made by using clamps, the clamps should be six (6) diameters apart and the U-bolt is to be on the loose end of the line. The requirements are as follows:

Use 3 clamps on 5/8" wire rope or smaller.
Use 4 clamps on 3/4" wire rope.
Use 5 clamps on 1" wire rope.

NOTE**:** *If a pulley is used for turning back the wire rope, add an additional clamp.*

o Derrick men should never touch the pulling line when the traveling blocks are moving.

Disclaimer:

The materials represented herein, are examples. They are not to be construed as a set methods or procedures that comply with your company, or Federal, State or local regulatory authorities.

REMEMBER: Not all rules, regulations and/or procedures can, or, are covered here. There are exceptions to the rules and different rules for different situations.

Check before you begin
Ask before you start
Stop and think

Various companies differ in rules, regulations and procedures. Always follow the directions provided by your employer.

It is the readers/users responsibility to check and ensure all areas meet the current requirements of your company, and State, Federal and local regulatory agencies.

Above all, do not “rubber stamp” this material.