

## **POLICY**

E & B Oilfield Services, Inc. has adopted this policy for the prevention of employee exposure to hazards resulting either directly or indirectly from “Hot Work” (welding, cutting, and brazing) in the workplace from the following OSHA regulations:

## **REFERENCES**

- §1910.252 – General Requirements
- §1910.253 – Oxygen-fuel Gas Welding and Cutting
- §1910.254 – Arc Welding and Cutting

## **RESPONSIBILITIES**

Danny Abegglen is the supervisor responsible for ensuring the following engineering controls, work practices, and safety procedures are enforced

## **TRAINING**

E & B Oilfield Services, Inc. has implemented this policy to ensure that employees are properly trained, aware of hazards associated with hot work, and correctly informed of Company policies, practices, and procedures to prevent, or if possible, eliminate these hazards.

## **SAFE PRACTICES**

Danny Abegglen will ensure that welders, cutters, and their supervisors involved in the performance of hot work operations is properly trained in the safe operations of any equipment required, the safe use of the process, proper Personal Protective Equipment (PPE), and safety procedures which will be followed.

Propper PPE such as goggles, welding hood, helmets or another suitable eye protection, and hand shields, leather gloves, and fire-resistant clothing shall be used during all welding, including gas welding, arc welding, oxygen cutting, arc cutting mechanical cutting, or grinding operations.

Before cutting or welding processes are permitted, the area will be inspected and cleared by Danny Abegglen before authorization to proceed is granted. Written “Hot Work” permits will be utilized to ensure appropriate safe work practices are observed.

Operators will report any equipment defect or safety hazard to his supervisor and the use of the equipment will be discontinued until its safety has been assured. Repairs will be performed only by qualified personnel.

Where possible, all hot work operations will be performed outside of buildings or structures, clear of any foreseeable fire hazards. If the object to be welded or cut cannot readily be moved, all moveable fire hazards will be removed.

Prohibited areas. Cutting or welding shall not be permitted in the following situations: In areas not authorized by management, in sprinklered buildings while such protection is impaired, in the presence of explosive atmospheres (mixtures of flammable gases, vapors, liquids, or dusts with air), or explosive atmospheres that may develop inside uncleaned or improperly prepared tanks or equipment which have previously contained such materials, or that may develop in areas with an accumulation of combustible dusts, In areas near the storage of large quantities of exposed, readily ignitable materials such as bulk sulfur, baled paper, or cotton.

Where hot work must be performed indoors or in the vicinity of fire hazards, the area will be cleared, if possible, of all material and equipment which may present a hazard of fire or explosion from flame, sparks, arcs, or slag.

Where fire hazards exist in the area of hot work operations that cannot be removed, they will be guarded to prevent fire, and the hot work operation will be shielded to confine the heat sparks and slag and to protect the immovable fire hazards and prevent hot materials from falling to a lower level. Fire watchers will have fire extinguishers readily available. A fire watch will be maintained for at least a half hour after the welding or cutting operation is completed to prevent or extinguish any fire resulting from these operations.

The employee(s) assigned to fire watch will be trained in the proper use of fire extinguishers and fire prevention measures, ensure that appropriate fire-fighting equipment and fire extinguishers are readily available, and be responsible for sounding of fire alarms in the event of a fire which is not readily extinguishable. All arc welding operations in occupied areas will be screened to prevent other personnel from being exposed to flash hazards.

E & B Oilfield Services, Inc. will be responsible for inspecting work areas prior to any hot work being performed, designate precautions to be followed prior to work commencing, and assign a fire watch where advisable or required when any of the following conditions exist:

- Locations where other than a minor fire might develop
- Appreciable combustible material, in building construction or contents, closer than 35 feet to the point of operation
- Appreciable combustibles are more than 35 feet away, but are easily ignited by sparks
- Wall or floor openings within a 35-foot radius that expose combustible material in adjacent areas including concealed spaces in walls or floors
- Combustible materials are adjacent to the opposite side of metal partitions, walls, ceilings, or roofs and are likely to be ignited by conduction or radiation

If the requirements for fire hazards and guarding as stated above cannot be fully met, E & B Oilfield Services, Inc. personnel will not perform the welding and cutting operations until hazardous conditions are fully resolved. Any hot work to be performed in confined spaces will conform to Permit-required Confined Space procedures and the following requirements:

- Adequate ventilation is a prerequisite to work in confined spaces
- When welding or cutting is being performed in any confined spaces the gas cylinders and welding machines will be kept outside of the space. Before operations are started, gas cylinders will be secured, heavy portable equipment mounted on wheels will be securely blocked to prevent accidental movement, and warning signs will be posted
- Where a welder must enter a confined space through a manhole or other small opening, means will be provided for quickly removing him in case of emergency. When safety belts and lifelines are used for this purpose they will be so attached to the welder's body that his body cannot be jammed in a small exit opening. An attendant with a preplanned rescue procedure will be stationed outside to observe the welder at all times and be capable of putting rescue operations into effect

- When arc welding is to be suspended for any substantial period of time, such as during lunch or overnight, all electrodes will be removed from the holders and the holders stored so that accidental contact cannot occur and the machine disconnected from the power source
- In order to eliminate the possibility of gas escaping through leaks of improperly closed valves when gas welding or cutting, the torch valves will be closed and the fuel-gas and oxygen supply to the torch positively shut off at some point outside the confined area, whenever the torch is not to be used for a substantial period of time, such as during lunch hour or overnight. Where practicable, the torch and hose will also be removed from the confined space

Any welding or brazing materials used in hot work which might possibly generate hazardous fumes, gases, or dust to the metals involved will be suitably labeled to indicate the hazard, and appropriate measures for ventilation or respiratory protection provided to ensure that no employee is exposed to higher than permissible levels of hazardous fumes.

Welding, cutting, or burning of metals containing lead, zinc, cadmium, mercury, beryllium, or other exotic metals, paints, coatings, or preservatives will require that regulation ventilation or respiratory protection be utilized.

After welding or cutting operations are completed, the welder will mark the hot metal or provide some other means of warning other workers.

First aid kits and equipment are readily available at all times for employee use during welding and cutting operations. First aid kits are kept in all company vehicles and are regularly inspected by Danny Abegglen to ensure that contents are kept fully stocked and that the appropriate items are available.

Personnel in charge of fuel-gas and oxygen supply equipment (including distribution piping systems and generators) will be fully instructed and determined competent for handling, use, and storage of compressed gas cylinders and related equipment.

The manufacturer's recommendations covering the operation and maintenance of oxygen or fuel-gas supply equipment including generators, and oxygen or fuel-gas distribution piping systems will be followed and readily available to employees.

Fuel gas and oxygen cylinders must be transported, moved, stored, and used in an upright position, secured to prevent tipping, and located to prevent accidental collision with the cylinders. Cylinders must be kept away from any heat or combustion sources, and at least 20 feet from any flammable gases or petroleum products. When not in use, cylinders must have their valves closed, any regulators or attachments removed, and their valve covers in place.

Personnel assigned to operate or maintain arc welding equipment will be properly trained and qualified to operate such equipment and in safety procedures and familiar with OSHA §1910.252(a)(b) and (c), §1910.253 and §1910.254 requirements for arc welding and equipment handling to include the following areas: machine hook up; grounding; electric shock; switches; manufacturers' instructions; electrode holders.

Only approved apparatus such as torches, regulators or pressure-reducing valves, acetylene generators, and manifolds shall be used.

Compressed gas cylinders shall be legibly marked, for the purpose of identifying the gas content, with either the chemical or the trade name of the gas. Such marking shall be by means of stenciling, stamping, or labeling, and shall not be readily removable. Whenever practical, the marking shall be located on the shoulder of the cylinder.

1910.252(a)(2)(vii) Where practicable, all combustibles shall be relocated at least 35 feet from the work site. Where relocation is impracticable, combustibles shall be protected with flameproof covers or otherwise shielded with metal or asbestos guards or curtains.

Grounding. 1910.254(c)(2)(i) The frame or case of the welding machine (except engine-driven machines shall be grounded.

Before starting operations all connections to the machine shall be checked to make certain they are properly made. The work lead shall be firmly attached to the work; magnetic work clamps shall be freed from adherent metal particles of spatter on contact surfaces. Coiled welding cable shall be spread out before use to avoid serious overheating and damage to insulation.

Grounding of the welding machine frame shall be checked. Special attention shall be given to safety ground connections of portable machines.

There shall be no leaks of cooling water, shielding, gas, or engine fuel.

If gas shielded arc welding operations are being performed, operators will be familiar with the American Welding Society Standard A6-1-1966.

Machines that have become wet will be thoroughly dried and tested before being used.

Cables with damaged insulation or exposed bare conductors will be replaced. Joining lengths of work and electrode cables will be done by the use of connecting means specifically intended for the purpose. The connecting means will have insulation adequate for the service conditions.

The above policies and procedures will be enforced at E & B Oilfield Services, Inc.

**HOT WORK SAFETY CHECKLIST/PERMIT (PAGE 1 OF 2)**

Hazard Assessment must be completed and resolved before commencing welding, cutting, or heating operations. The Authorized Supervisor must sign off on this permit.

Hot Work Location		
Y	N	
<input type="checkbox"/>	<input type="checkbox"/>	Is appropriate fire-extinguishing equipment ready for use?
<input type="checkbox"/>	<input type="checkbox"/>	Is all flammable material moved away from work zone or properly shielded?
<input type="checkbox"/>	<input type="checkbox"/>	Are drums, barrels, tanks, or other containers cleansed of flammable, explosive, or toxic residue that could react to heat?
<input type="checkbox"/>	<input type="checkbox"/>	Are containers tested prior to and frequently during welding, torching, abrasive cutting, or other hot works to ensure that the containers are free of flammable or toxic vapors?
<input type="checkbox"/>	<input type="checkbox"/>	Are shaded goggles or other suitable eye protection used when gas welding or oxygen cutting?
<input type="checkbox"/>	<input type="checkbox"/>	Are transparent face shields or goggles used when resistance welding or resistance brazing?
<input type="checkbox"/>	<input type="checkbox"/>	Do all welding helpers and equipment attendants use face or eye protection?
<input type="checkbox"/>	<input type="checkbox"/>	Are helmets and hand shields worn to protect the face, neck, and ears when arc welding?
<input type="checkbox"/>	<input type="checkbox"/>	Do lenses have permanent markings to show the source and shade?
<input type="checkbox"/>	<input type="checkbox"/>	Do all employees wear PPE when exposed to the hazards created by welding, cutting, or brazing?
<input type="checkbox"/>	<input type="checkbox"/>	Is clothing that is easily ignited or highly flammable, such as that made from synthetic materials, prohibited while welding, cutting, or brazing?
<input type="checkbox"/>	<input type="checkbox"/>	Are all electrodes removed from the holders and the machine turned off when arc welding is stopped for lunch or overnight?
<input type="checkbox"/>	<input type="checkbox"/>	Are the torch valves closed when gas welding or cutting is stopped for lunch or overnight?
<input type="checkbox"/>	<input type="checkbox"/>	Are only approved apparatus such as torches, regulators, or pressure-reducing valves used?



**HOT WORK SAFETY CHECKLIST/PERMIT (PAGE 2 OF 2)**

<input type="checkbox"/> <input type="checkbox"/>	Are all compressed-gas cylinders legibly marked to identify the gas content?	
<input type="checkbox"/> <input type="checkbox"/>	Are all compressed-gas cylinders stored away from radiators and other sources of heat?	
<input type="checkbox"/> <input type="checkbox"/>	Do all compressed-gas cylinders have valve protection caps in place, hand-tight when not in use?	
<input type="checkbox"/> <input type="checkbox"/>	Are all compressed-gas cylinders securely lashed in place to prevent them from falling?	
<input type="checkbox"/> <input type="checkbox"/>	Are oxygen and fuel-gas cylinders stored separately by at least 20 feet or by a noncombustible barrier at least five feet high with a fire-resistance rating of at least one-half hour?	
<input type="checkbox"/> <input type="checkbox"/>	Are there signs in fuel-gas storage areas that read "DANGER – NO SMOKING, MATCHES OR OPEN LIGHTS" or equivalent wording?	
<input type="checkbox"/> <input type="checkbox"/>	Are regulators with cracked, broken, or defective parts removed from service?	
<input type="checkbox"/> <input type="checkbox"/>	Are approved back-flow valves or flash-back valves installed between the blowpipe or torch and the hoses?	
<input type="checkbox"/> <input type="checkbox"/>	Are arc welder lead cables or electrode lead cables with damaged insulation or exposed conductors removed from service?	
Hot Work Permit Observations		
Assessor Name	Signature	Date
Supervisor Name	Signature	Date





