**Safe Work Requirement**

Control of Ignition Sources

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| PURPOSE To provide a general ignition safety program which could pre-empt potential hazards of fire and explosion because lots of potential sources of ignition for flammable gases and liquids on the rig site. SCOPE This procedure is applicable in ECDC well locations and workshop.  This procedure is applicable for workers performing hot work such as welding, cutting, brazing, soldering, and grinding are exposed to the risk of fires from ignition of flammable or combustible materials in the space, and from leaks of flammable gas into the space, from hot work equipment. RESPONSIBILITY  1. **Rig manager & Base manager:** 2. The rig manager & Base manager is responsible to ensure that these procedures are followed in the rig site and base camp. 3. Ensuring the procedures are followed and updated whenever necessary. 4. **HSE supervisor:** 5. Daily check in rig location & base camp to make sure the solution were followed during these activity happened. 6. Training Job executor the hazards and solution which they are implemented.  PROCEDURE AND GUILDLINES       GENERAL  1. **Potential hazard**   Ignition and explosions of flammable gases or vapors from:   1. Internal-combustion engine sparks 2. Open flames from any source 3. Smoking 4. Welding operations 5. Electric power tools 6. Two-way radios 7. Vehicles with catalytic converters 8. Portable generators 9. **Possible Solutions** 10. Provide spark arrestors for internal-combustion engines. 11. Post "NO SMOKING" signs wherever a flammable gas or vapor hazard exists. 12. Locate "spark producing" equipment or facilities well away from potential hazard areas. 13. Prohibit vehicles with catalytic converters from the immediate vicinity of the rig. 14. Prohibit open flames from the vicinity of the rig.  Hot Work/ Welding, Cutting, Fire, and Explosive Hazards Hot work is any work that involves burning, welding, using fire- or spark-producing tools, or that produces a source of ignition.  Welding and cutting operations are common to drilling and servicing operations.   1. **Potential hazard** 2. Potentially hazardous areas include, but are not limited to, well heads, fuel tanks, mud tanks, tank batteries, gas separators, oil theaters, or confined spaces where gases can accumulate. 3. Getting burned by fires or explosions during hot work. 4. Getting burned by a flash fire or explosion that results from an accumulation of flammable gases, such as Methane or Hydrogen Sulfide, around the wellhead area. 5. **Possible Solutions**   The basic precautions for fire prevention are:   1. Test for flammable gases in the work area before starting any hot work. 2. Perform hot work in a safe location, or with fire hazards removed or covered. 3. Use guards to confine the heat, sparks, and slag, and to protect the immovable fire hazards. 4. Special Precautions:  * Do not perform hot work where flammable vapors or combustible materials exist. Work and equipment should be relocated outside of the hazardous areas, when possible. * Make suitable fire-extinguishing equipment immediately available. Such equipment may consist of pails of water, buckets of sand, hose, or portable extinguishers. * Assign additional personnel (fire watch) to guard against fire while hot work is being performed. Fire watchers are required whenever welding or cutting is performed in locations where anything greater than a minor fire might develop. * Monitor the atmosphere with a gas detector. If a flammable or combustible gas exceeds 10 percent of the lower explosive level (LEL), the work must be stopped. * Identify the source of the gas and repair the leakage.  1. **Fire watchers shall** 2. Have fire-extinguishing equipment readily available and be trained in its use. 3. Be familiar with facilities for sounding an alarm in the event of a fire. 4. Watch for fires in all exposed areas, try to extinguish them only when obviously within the capacity of the equipment available, or otherwise sound the alarm. 5. Maintain the fire watch at least a half hour after completion of welding or cutting operations to detect and extinguish possible smoldering fires.  Grinding  1. **Potential Hazard** 2. Grinding (That results in sparks, noise, eye and skin injury from flying metal filings, grinding wheel pieces, etc.). 3. Having fingers or hands caught in the grinding wheel, resulting in amputation. 4. Being struck by portable grinder. 5. **Possible Solutions** 6. Wear appropriate PPE, such as face shield. Use cotton or denim clothing. 7. Inspect grinding equipment before use. 8. Review the hot work permit if available. 9. Ensure the availability of adequate fire watch/fire protection equipment. |