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| <b>Hot Oiling Truck - Job Safety Analysis (JSA)</b> | Job/Task/Operation:<br>Hot Oil Truck Operations | Date of Work: | <input type="checkbox"/> Revised JSA<br><input type="checkbox"/> New JSA |
|   |   | Optional ID:  | Page ___ of ___  |

|                                |                                 |                        |
|--------------------------------|---------------------------------|------------------------|
| Business Unit/Area/Department: | Name of Person Supervising Job: | Analysis Performed By: |
|--------------------------------|---------------------------------|------------------------|

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| <b>Personal Protective Equipment Needed:</b><br>Hard Hat, Safety glasses with side shields, thermal gloves, PAM, Steel toe boots, Flame Resistant Clothing | Field/Rig/Location: | HES Review: | Task Supervisor Approval: |
|  |                     | Date:       | Date:                     |

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| <b>1) Job Steps</b><br><b>Sequence of Basic Job Steps</b><br><small>(See instructions on next page)</small> | <b>2) Hazards (energy sources), Dangers (potential harm from those sources), and Potential Environmental Impacts</b> | <b>3) Hazard Controls: Assignments to make before the job is completed to minimize exposure to dangers and Environmental Impacts</b> |
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| 1. | Conduct pre-job planning and safety meeting | 1a | Hazardous atmosphere, Pressure, Flammable, Hot Oil Truck hazards, SIMOPS, Chemical Hazards, Thermal Hazards | 1a | ___ Task Supervisor will ensure personnel involved in task has completed Marathon orientation.<br>___ Task Supervisor will communicate the hazards of the operation (i.e. trapped pressure, high temperatures, SDS review, flash fires, LOTO, and pinch points). Also, explain the importance of good body mechanics for lifting to prevent back/muscle strain and good housekeeping to prevent slips, trips, and falls.<br>___ Task Supervisor will be aware of the hazards when working with flammables and verify if everyone is wearing the proper PPE (including Flame Resistant Clothing). Check wind direction.<br>___ Hot Oil Truck operator will verify that all hand tools are inspected and used as designed with safety features in place. Any deficiencies of tools during inspection will be removed from service until repaired/replaced.<br>___ Hot Oil Truck operator will verify pressure on operating system (if any exists) and check for proper make-up of the bushing and gauge to the connected system (e.g. surface casing).<br>___ Hot Oil Truck operator will verify a periodic hydrotest has been completed on the pump iron and the iron is banded and within the iron's expiration.<br>___ Hot Oil Truck operator will meet with Marathon PIC on location to discuss SIMOPS if applicable.<br>___ Hot Oil Truck operator will verify with Marathon PIC requesting the work, the max temperature/pressure for the line/material type and any other safety concerns.<br>___ Hot Oil truck operator will review the Safety Data Sheet for proper PPE use and first aid measures. |
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| 2. | Rig Up for Hot Oil Truck operations | 2a | Hazardous atmosphere (Flammable vapors, personnel exposure) | 2a | ___ Hot Oil Truck operator will ensure that wheel chocks are utilized, and brakes are set.<br>___ Hot Oil Truck operator will ensure that the hot oil truck is parked on the upwind direction of well head and any other open sources of hydrocarbon on location, and in a location the operator can see the operation while standing at the controls of the truck.<br>___ Hot Oil Truck operator will ensure a vent hose is utilized to direct vapors at least 50 feet away from any potential ignition sources including the hot oil truck and personnel.<br>___ Hot Oil Truck operator will ensure that hydrocarbon containing lines are not run beneath the Hot Oil Truck such as buried flowlines etc.<br>___ Hot Oil Truck operator will ensure that the location of the fire box is located at least 50 feet from any above ground hydrocarbon source, and 100 feet from any open (venting) hydrocarbon source including oil haulers vent hose if operating in unison with transport oil hauler. |
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|    |               | 2b | Damaged/expired/uncertified equipment | 2b | <p>___ Hot Oil Truck operator will request a Safe Work Permit from a Marathon PIC if the layout requires the fire box to be operated within 50 feet of a hydrocarbon source, hot reservoir vent port.</p> <p>___ Hot Oil Truck operator will monitor the wind direction throughout the operation.</p> <p>___ Hot Oil Truck operator will ensure the truck is continuously grounded/bonded during the transfer operation including metal buckets.</p> <p>___ Hot Oil Truck operator inspects hose and/or hardline for damage and verifies proper certifications and ratings (temperature and pressure).</p> <p>___ Hot Oil Truck operator will install whip checks or iron restraints at all connections.</p>  |
|    |               | 2c | Pressure release                      | 2c | <p>___ Hot Oil Truck operator will verify hammer unions are used for hose connections that will see more than atmospheric conditions and cam lock connections will not be used.</p> <p>___ Hot Oil Truck operator will ensure that a check valve is installed in the discharge line or on the truck as near the planned treated equipment as possible (e.g. wellhead or separator).</p>   |
|    |               | 2d | Spills to the environment             | 2d | <p>___ Hot Oil Truck operator will ensure duck ponds or containments are placed at each connection point and will report any spills to the environment to a Marathon PIC.</p>   |
|    |               | 2e | Fire                                  | 2e | <p>___ Hot Oil Truck operator will walk the line to ensure proper valve alignment after rig up and prior to beginning pump/burner operations</p> <p>___ Hot Oil Truck operator will verify that all equipment has been pressure tested before putting it in service with production equipment/systems.</p> <p>___ Hot Oil Truck operator will inspect the burner box to ensure there are no leaks prior to igniting the burner.</p> <p>___ Hot Oil Truck operator will ensure a fire extinguisher is removed from the truck and positioned in an area the operator can easily access.</p> <p>___ Hot Oil Truck operator will ensure that there is a functioning E-stop switch on the outer control panel.</p> <p>___ Hot Oil Truck operator will ensure that Hi/Lo shut down switches are set and functional.</p>   |
|    |               | 2f | Line of fire                          | 2f | <p>___ Hot Oil Truck operator will ensure a Buffer Zone is established and documented for all hot oiling operations and an Exclusion Zone is established for all pressure testing operations.</p> <ul style="list-style-type: none"> <li>• Buffer Zones are identified with ONE of the following: A visual indicator (e.g. tape, rope, signage posted), OR noted on the JSA, OR monitored by a dedicated attendant</li> <li>• Exclusion Zones (EZ) are constructed by utilizing ALL of the following: Red chain or tape and red cone stands making up the majority of the EZ, AND “Do Not Enter Without Approval” signs are placed around the perimeter of the EZ to ensure visibility to all personnel working around the zone, and all chain or tape is kept at a height that adequately prevents entering. Authorized entrants into the EZ are required to be documented by name on the JSA and identified with Hi-Vis entry vest, hard hat cover, or arm band, or an unique hardhat color only assigned to authorized entrants.</li> </ul> <p><b>Note:</b> Operations which involve a small team, engaged in a single task, who are aware of the hazards are not required to physically erect the EZ or utilize Hi-Vis identifiers when there are no other activities on the location</p> |
| 3. | Heating Fluid | 3a | Fire                                  | 3a | <p>___ Hot Oil Truck operator will ensure water or oil is running through coils without leaks prior to igniting burners.</p> <p>___ Hot Oil Truck operator follows contractor’s policy/procedure for igniting burners.</p> <p>___ Hot Oil Truck operator remains at the controls for the duration of the heating process.</p>   |

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| 4. | Rig Down        | 4a | Fire                           | 4a | ____ Hot Oil Truck operator will follow the contractor's policy/procedure for shutting down burners.   |
|    |                 | 4b | Injury/exposure                | 4b | ____ Hot Oil Truck operator will ensure that pressure is bled off appropriately prior to breaking connections and utilize gloves with thermal protection if opening lines when a potential for heated fluid remains. |
| 5. | Post Job Review | 5a | JSA Not Complete or inaccurate | 5a | ____ Hot Oil Truck operator will review this JSA and report any needed changes to Marathon PIC or Safety.  |
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**SIGNATURES**

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| <b>JSA reviewed by the following personnel involved in the job:</b> |  |  |
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## JSA INSTRUCTIONS

Use a JSA to identify hazards, understand the risk of the hazards and determine the actions to reduce risk and protect personnel exposed to potential hazards.

### Steps to Complete a JSA

- Document the results of the JSA using the front of this form or equivalent
- 1. Break the job down into steps**
    - For each step, describe what is done (not how it is done) and begin with an action verb, e.g., “remove”, “open”, “weld”
    - Avoid being too detailed or general so the basic steps are easy to identify
  - 2. Identify the Hazards (energy sources)**
    - Examine each job step for actual and potential hazards that might reasonably be expected during the work
    - Consider the impacts of potential hazards, emergencies and changes in weather
    - Position personnel to avoid hazards that are associated with work inside the Buffer or Exclusion Zones (e.g. dropped objects, pressure, vehicles, etc.)
  - 3. Determine Hazard Controls and Assign Responsibilities**
    - For each hazard identified, determine the controls needed to eliminate or mitigate the identified hazards and manage the overall risks to an acceptable level
    - Assign, by name or position, each hazard control action to personnel involved in the job. Once assigned, the JSA is communicated to all affected by the job
  - 4. Review, Communicate and Sign the completed JSA**
    - Obtain a signature on the JSA form from everyone involved in the job to acknowledge approval and acceptance of their role (specific responsibilities) in the job
    - Review the JSA at the Pre-Job Safety Meeting (PJSM)
  - 5. Amend the JSA if scope changes, new hazards are identified or if new personnel are added to the work crew**
  - 6. Conduct Post-Job Review when activities do not go as planned or specific learnings were identified**

## POST-JOB REVIEW

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| <input type="checkbox"/> <b>Post-Job Review Conducted</b> | <ul style="list-style-type: none"><li>• Did the JSA accurately detail the job steps?</li><li>• Were any hazards encountered that were not identified in the JSA?</li><li>• Were the mitigating measures effective?</li><li>• Suggestions for improvements?</li></ul> | Comments: |
|---|--|-----------|