Kerr-McGee Oil & Gas Onshore LP

Fluid Leak Detection Plan

Parsnip Fed HZ

NWSW Section 20, T1N R66W, 6th PM.

Weld County, Colorado

January 2025

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I. Introduction and Site Description

Oil and Gas Location Name: Parsnip Fed HZ
Type of Surface: Fee
Total Area of Disturbance During Operations: 12.34 acres
Total Area of Disturbance After Interim Reclamation: 8.01 acres
Site Elevation: 4945

II. Tank Definition

Tank shall mean a stationary vessel constructed of non-earthen materials (e.g concrete, steel, plastic) that provides structural support and is designed and operated to store produced fluids or E&P waste. Examples include, but are not limited to, condensate tanks, crude oil tanks, produced water tanks, and gun barrels. Exclusions include Containers and process vessels such as separators, heater treaters, free water knockouts, and slug catchers.

III. Drilling Operations Best Management Practices

a. Two drilling crew members required and dedicated for all fluid transfers (no exceptions) from start to finish of the operation. Their sole focus is on the transfer. No fluid transfer will occur during crew change. Crew members conducting the fluid transfer will not leave the area until transfer operations completed.
b. During rig up, hoses and lines will be properly assembled, all bolts properly made up and gaskets installed (when applicable).
c. Appropriate secondary containment will be utilized when equipment maintenance is conducted on location.
d. Contractors will maintain an updated copy of their SPCC plan on location and its personnel will be trained accordingly.
e. Pre-job inspection will be conducted prior to start up which include the visual inspection of hoses, lines, and valves to ensure proper connection and alignment.
f. During operations, all fluid containing equipment is inspected daily.
g. Walk all lines and confirm valve alignment before starting the transfer.
h. Walk the lines as soon as the transfer starts to confirm no leaks.
i. All personnel on location on behalf of KMOG are trained in Auditory, Visual, Olfactory monitoring (AVO) techniques. All personnel are empowered with 'Stop Work Authority' and to report any leaks immediately.

IV. Completion Operations Best Management Practices

a. Two completion crew members required and dedicated for all fluid transfers (no exceptions) from start to finish of the operation. Their sole focus is on the transfer. No fluid transfer will occur during crew change. Crew members conducting the fluid transfer will not leave the area until transfer operations completed.
b. Appropriate secondary containment will be utilized when equipment maintenance is conducted on location.

c. Contractors will maintain an updated copy of their Spill Prevention and Control and Countermeasures (SPCC) plan on location and its personnel will be trained accordingly.

d. Shut down transfer pump and close supply valve when transfer or circulation is completed. Ensure fluids cannot enter holding tank through gravity feedback.

e. Pre-job inspection will be conducted prior to start up which include the visual inspection of hoses, lines, and valves to ensure proper connection and alignment.

f. During operations, all fluid containing equipment is inspected daily.

g. Walk all lines and confirm valve alignment before starting the transfer.

h. Walk the lines as soon as the transfer starts to confirm no leaks.

i. Monitor pressure responses and containment to identify potential leaks. Lines will be walked continuously throughout operations (between stages) to identify potential leaks.

j. There is a slam valve and control valve with Emergency Shut Down system in line to the external temp tanks to prevent overflowing tanks during the green flowback duration.

k. Hourly walk-throughs and pressure measurements recorded during flowback operations for leak detection.

l. During operations, all fluid containing equipment is inspected daily.

m. All personnel on location on behalf of KMOG are trained in AVO techniques. All personnel are empowered with 'Stop Work Authority' and to report any leaks immediately.

V. Production Operations Best Management Practices

a. Berm Construction: Secondary containment devices will be constructed around temporary sand tanks and will enclose an area sufficient to contain and provide secondary containment for150% of the largest single tank. Secondary containment devices will be inspected at the same time as stormwater inspections, with personnel on location, daily inspections will occur. During non-active, but while under construction, site inspections will occur every 14 days. When construction is completed and the Location is on production, site inspections will occur every 28 days.

b. Automation technology will be utilized at this facility. All automation is monitored by KMOG's Integrated Operations Center (IOC), which is manned 24 hours per day, seven days per week.

c. Field Inspections include the following: Field-Constructed Above Ground Containers; Secondary Containment Structures; Shop-Built Containers; Generators and associated secondary containment; Pressure Vessels (separators, heater treaters, pigging stations); Portable Containers and all Manifolded Piping; Onsite and Offsite Pipelines (flowlines, production piping, gathering lines) Field Drainage Systems (oil traps, sumps, or skimmers); and Additional equipment used during separation, storage, containment, or transferring of produced fluids.

d. All personnel on location on behalf of KMOG are trained in AVO techniques. All personnel are empowered with 'Stop Work Authority' and to report any leaks immediately.

e. KMOG complies with Colorado Energy & Carbon Management Commission (ECMC) Rule 609.

f. For pressure vessels, KMOG will adhere to API standard 510. With an additional pre-installation inspection of all vessels.

g. For tanks, KMOG will adhere to API standard 653 & 12R1. With an additional pre-installation inspection of all tanks.
h. After the first year, KMOG will pressure test flowlines annually.

VI. Recording Keeping

a. Inspections resulting in findings are reported to the IOC. These are entered into an internal management system. Corrective actions are automatically assigned when necessary. SPCC required inspection records are kept in accordance with US EPA requirements.
b. Maintenance or repair records are managed through an internal management system. These are tracked from assignment through completion of the tasks.
c. Leak records: All leaks are reported immediately to the IOC and logged in internal management systems. Leak reports are reviewed daily. Any additional investigation is conducted by trained personnel and records in the system. All leaks are tracked until final resolution. Records are retained per federal, state, and local guidelines.
d. Training Records: KMOG retains AVO training records for all personnel with access to the location in an internal management system. Records are retained per federal, state, and local guidelines.

Summary of Best Management Practices

a. **Material Handling and Spill Prevention**
The following site-specific best management practices will be used on location:

1. Berm Construction: Secondary containment devices will be constructed around temporary sand tanks and will enclose an area sufficient to contain and provide secondary containment for150% of the largest single tank. Secondary containment devices will be inspected at the same time as stormwater inspections, with personnel on location, daily inspections will occur. During non-active, but while under construction, site inspections will occur every 14 days. When construction is completed and the Location is on production, site inspections will occur every 28 days.

b. **Drilling Operations**
During drilling operations, the following site-specific BMPs will be used:

1. Appropriate secondary containment will be utilized when equipment maintenance is conducted on location. KMOG will shut down transfer pump and close supply valve when transfer or circulation is completed. KMOG will ensure fluids cannot enter holding tank through gravity feedback. Pre-job inspection will be conducted prior to start up which include the visual inspection of hoses, lines, and valves to ensure proper connection and alignment.
2. During operations, all fluid containing equipment is inspected daily.

c. **Completion Operations**
During completion operations, the following site-specific best management practices will be used:

1. KMOG will monitor pressure responses and containment to identify potential leaks. Lines will also be walked continuously throughout operations (between stages) to identify potential leaks

2. Water recycle operations will use pneumatic valves that auto shut to stop the treatment process.

d. **Production Operations**

During production operations, the following site-specific best management practices will be used:

1. Automation technology will be utilized at this facility.
2. All automation is monitored by KMOG's Integrated Operations Center (IOC), which is manned 24 hours per day, seven days per week.
3. All personnel on location on behalf of KMOG are trained in AVO techniques.
4. All personnel are empowered with 'Stop Work Authority' and to report any leaks immediately.