

Federal WMC 24-17 Pad Fluid Leak Detection Plan



INTRODUCTION

TEP Rocky Mountain LLC (“TEP”) has developed the following fluid leak detection plan to document the location of the production facilities and equipment at the Federal WMC 24-17 pad, and to describe the engineering and administrative processes to prevent the discharge of fluids (oil, condensate, or produced water) to the environment, and to document the repair of any fluid leaks or discharges. The procedures and processes used to monitor, inspect, test, and maintain the equipment, vessels, tanks, structures, flowlines, at the WMC 24-17 pad are described in greater detail below. This Fluid Leak Detection Plan has been prepared in accordance with the requirements of COGCC Rule 304.c.(13).

SITE DESCRIPTION

The proposed WMC 24-17 pad is location in the SESW of Section 17, Township 7 South, Range 93 West, 6th P.M. on Federal land administered by the Bureau of Land Management (“BLM”). The land on which the pad would be located is classified as non-crop lands, range land and recreation, and is primarily used for grazing cattle.

The WMC 24-17 Oil and Gas Development Plan involves construction of one (1) new Oil and Gas Location, construction of a new access road to the WMC 24-17 pad, construction of a new pipeline corridor for natural gas and produced water transport, and the utilization of other existing facilities to support well completion and production operations. The proposed pad location would have a constructed pad elevation of 8868.5 feet.

The proposed 4.89-acre WMC 24-17 pad would be constructed for drilling and completions operations of the seventeen (17) proposed directional wells. The long-term disturbance attributed to the WMC 24-17 well pad would be approximately 1.08 acres. All proposed disturbance for the WMC 24-17 well pad would be on Federal surface.

Construction of the WMC 24-17 pad would include the installation of production facilities including wellheads, wellhead flowlines, separators, fluid storage tanks and secondary containment, enclosed combustion devices, on-location dump lines and process piping, off-location flowlines, and a natural gas gathering line. Site construction is scheduled to being in September 2021 following approval of required permit applications.

MONITORING AND INSPECTION PROCEDURE AND SCHEDULE

Produced Fluid Facilities and Equipment

The on-location production equipment planned for use during production operations at the WMC 24-17 pad include the following:

- Proposed Separators (18)
 - Four (4) Quad Separators
 - One (1) Single Separator
 - One (1) Low Pressure Separator
- Proposed Tank Battery: Four (4) tanks within a 47.5’ x 47.5’ lined, steel secondary containment structure
 - Two (2) 500 bbl condensate tanks (internally coated)
 - One (1) 80 bbl blowdown tank (internally coated)
 - One (1) 80 bbl vent tank (internally coated)

- Proposed Enclosed Combustion Device: One (1) – 48” X 12’
- Various on-location pipelines as described in the WMC 24-17 Pad Plan of Development which has been submitted as an attachment to the Form 2A for this location.

The proposed locations for the production equipment are shown on the attached Plan of Development Map for this location.

Monitoring and Inspections

Routine Production Inspections and Monitoring: Production equipment is physically monitored and inspected by TEP Production Technicians during routine visits to each location. At a minimum, all sites are physically inspected on a weekly basis, and some locations are visited more often. During these routine site visits, the Production Technicians are visually inspecting all components of the fluid production process for any signs / evidence of active leaks, drips, or pending leaks. The routine, physical inspection of the location and production equipment includes a close examination of the following components:

- Production Tanks
- Secondary Containment Structures and poly liners (if equipped)
- Separators (interior and exterior)
- Flowlines and Production Piping between the wellhead and the processing equipment

The Production Personnel are specifically looking for any evidence of active leaks from tanks, piping and associated fittings. Obvious signs of leakage may include drips, bubbles, puddling and pooling of liquids, wet spots, corrosion (rust, flaking / blistered / bubbled paint, etc.). Less obvious signs of leakage may include an unexplained loss of tank volumes, loss of normal operating pressures, unusual sounds, odors, etc. When a leak or loss of fluid is confirmed, the Production Technician takes immediate action to stop the flow of liquids (if possible) and initiate the appropriate repairs. TEP Production Technicians will communicate details of the fluid loss with their direct supervisor, who will notify TEP’s Spill Response Coordinator who will investigate and evaluate the incident and initiate spill reporting and cleanup actions as needed.

AVO / LDAR / STEM / OOOOa / Flare Inspections: The following inspections are also performed at all well pads (as appropriate) and present another opportunity where TEP personnel are conducting a physical inspection of each location and performing a thorough inspection of site equipment.

- Audio, Visual, and Olfactory (AVO) inspections are conducted monthly at each location throughout the life of the well.
- Leak Detection and Repair (LDAR) inspections are performed at all locations; however, the inspection frequency is tiered based upon the level of emission controls that are required / employed at each location.
- Storage Tank Emission Monitoring (STEM) inspections are performed monthly at any location where emissions must be controlled (> 2 tpy).
- OOOOa inspections are performed semi-annually on any facility constructed after 2015.
- Flare Logs are completed daily for all locations where active flares and emissions controls are required.

The technicians performing these air compliance inspections are also highly specialized and trained to identify and perform on-the-spot repairs to production fluid equipment to correct a variety of maintenance and repair issues.

SPCC Inspections: As required by Spill Prevention Control and Countermeasures (SPCC) regulations found at 40 CFR 112, TEP conducts routine inspections of all regulated oil storage facilities and related equipment (including secondary containment structures). These inspections are conducted annually to verify the types and number of production equipment that is located at each well pad, and to ensure that the secondary containment structures are in good working condition, and that they are adequately sized to contain the contents of the largest single tank (plus a 25-year, 24-hour precipitation event) in the event of a spill / release. An example of the annual SPCC inspection checklist is attached.

Storm Water Compliance Inspections: As required by the Colorado Department of Public Health and Environment (CDPHE) Storm Water Discharge Permit requirements, TEP conducts on-going and routine inspections of all well pads, pipeline corridors, and access roads. Depending upon the location, these inspections are conducted every 2 weeks (active construction sites), or every 30 days (post-construction sites). These inspections are yet another opportunity where oil and gas locations, facilities, and equipment are being inspected and monitored on a continual basis.

Dedicated Continuous Monitoring (SCADA): All oil and gas locations are also equipped with Supervisory Control and Data Acquisition (SCADA) monitoring technology which enables remote monitoring of individual well attributes (e.g., well-head pressures, casing pressures, production/sales volumes, etc.). In addition, most locations with produced water / condensate tanks, are also equipped with SCADA systems to monitor fluid production rates, actual fluid volume tank levels, etc. In addition, various alarms (e.g., high liquid level alarm) can be set to notify technicians if a tank is close to exceeding its maximum capacity and is at risk of overfilling / spilling. The SCADA is also useful to detect any sudden, unexplained loss in fluid volumes ... another means indicative of a potential leak / release.

TESTING MAINTENANCE PROCEDURE AND SCHEDULE

Testing

TEP production personnel perform pressure / integrity testing of all new construction production piping and pipeline facilities prior to being placed into active service. Pressure testing for all new and relocated pressure piping and facilities are pressure tested according to TEP's *Construction Specification for Land Pipeline Construction*.

Pressure / integrity testing is also conducted on all existing (in-service) off-location flowlines on an annual basis, or after any repair. All pressure / integrity testing is conducted per TEP's *Pressure Testing Standard – Facilities & Construction* which has been prepared in accordance with ASME B 31.8 and ASME B 31.4 standards.

Corrosion Control for production piping and pipeline facilities is implemented in accordance with the requirements as proposed by the ASME B31.4 standards 460 - 468, *Corrosion Control*.

Maintenance

All maintenance required for production piping, pipeline facilities, tank storage, and secondary containment structures is performed by TEP's Construction and Maintenance personnel. Maintenance is performed on an "as-needed" basis.

PRODUCED FLUIDS PROCEDURES

TEP has prepared the following procedures to reduce the potential for discharge from produced fluid facilities and equipment at all oil and gas locations:

- TEP Piceance Basin Spill Prevention and Response Plan
- TEP Piceance Basin Integrated SPCC Plan
- TEP Drilling and Workover Facilities Integrated SPCC Plan

These procedures are maintained at the TEP Parachute Field office located in Parachute, CO.

RECORD KEEPING REQUIREMENTS

Written procedures associated with the inspection and testing activities conducted per the requirements of this Plan will be signed by the appropriate personnel and retained for a period of three (3) years or as indicated in COGCC's rules. Inspection records and associated information will be maintained with a copy of this Plan.

SITE SPECIFIC FLUID LEAK DETECTION BMPs

TEP will use the following site-specific BMPs at the WMC 24-17 well pad to evaluate / determine that all above ground and below ground onsite (and offsite) fluid handling, storage, transmission, and transportation equipment have integrity and are in compliance with the applicable standards cited in the COGCC rules include the following:

- Audio, Visual, and Olfactory (AVO) inspections: AVO inspections will be conducted monthly at the WMC 24-17 location throughout the life of the WMC 24-17 well pad.
- Routine inspection of all production equipment, wellheads, temporary equipment, etc.; As described above, routine inspections to be conducted at the WMC 24-17 location will include: Routine physical inspections of production equipment (by TEP production personnel); Air Compliance inspections and monitoring (by TEP Air Compliance staff); SPCC Inspections (by 3rd party contractor), Storm Water Management inspections (by 3rd party contractor), and continuous, dedicated SCADA monitoring of fluid production rates and pressures, and fluid storage volumes (by TEP production personnel).
- As part of our LDAR, STEM, OOOOa inspection / compliance programs, TEP will adhere to the use of Approved Instrument Monitoring Methods (AIMM) for inspecting production equipment and facilities at the WMC 24-17 well pad.
- Spill prevention training is provided to all field employees on a monthly basis. The monthly training consists of reviewing past incidents, root causes of the incidents, and what specific actions (lessons-learned) could be taken to prevent the reoccurrence of such incidents in the future.
- Flowlines will be integrity-tested per the 1100 Series rules.
- TEP spill response procedures will be adhered to for any spills or releases occurring at the WMC 24-17 well pad. All spills will be managed in accordance with the COGCC 900 Series rules.

Piceance SPCC Field Inspection Checklist

Report Date:

Inspection ID:

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A. Location Information

Enter the inspection date and time.

Choose the facility that you inspected.

Enter the name of the inspector.

Take a photo of the facility placard.

Images Attached

B. Storage Tanks

1. *Tank surfaces and valves appear leak-free.*

Yes / No

2. *Tanks are free of damage, rust and deterioration.*

Yes / No

3. *Bolts, rivets and seams are undamaged.*

Yes / No

4. *Tank supports appear in good condition.*

Yes / No

5. *Tank foundations are level and intact, without erosion.*

Yes / No

6. *Tanks are appropriately labeled.*

Yes / No

7. *Vents are unobstructed.*

Yes / No

8. *Level/Indicator alarm and telemetry in place.*

Yes / No

9. *Cathodic protection installed and connected.*

Yes / No

10. *All valves associated with condensate tanks are sealed.*

Yes / No

11. *All valves have plugs.*

Yes / No

12. *Secondary containment is in good condition.*

Yes / No

13. *If present, secondary containment liner appears intact and functional, without visible wear points, gaps, slices or holes.*

Yes / No

14. *Secondary containment is free of accumulated stormwater.*

Yes / No

15. *Secondary containment is free of stains and other signs of leaks.*

Yes / No

Take a photo of: the tank battery, Methanol tanks (if present), Drip Pot (if present).

Images Attached

C. Separators/Dehydrators and Other Equipment/Vessels

1. *Separators, dehydrator and other equipment/vessels are free of stains and other signs of leaks, inside and out.*

Yes / No

2. *Internal piping and vessels are visually free of damage, rust and deterioration.*

Yes / No

3. *Secondary containment is in good condition.*

Yes / No

Take a photo of: Separators, Flare (if present), TEG (if present).

Images Attached

D. Piping and Pipelines

1. *Valve seals, gaskets and other appurtenances appear leak-free.*

Yes / No

D. Piping and Pipelines

2. Pipelines and supports appear undamaged and in good condition.

Yes / No

3. Flowline piping area(s) are free of stains and other signs of leaks.

Yes / No

4. Buried piping remains covered in all areas.

Yes / No

Take a photo of wellheads.

Images Attached

E. Truck Loading Areas

1. Load buckets are present, functional and in good condition.

Yes / No

2. All connections are located within secondary containment.

Yes / No

3. Loading area(s) are free of stains and other signs of spills.

Yes / No

4. BMPs are in place and provide adequate secondary containment for manned loading operations.

Yes / No

5. Loading ground line(s) are in place and operational.

Yes / No

F. General Facility

1. Drain ditches, catch basins and ponds are oil-free and appear to be operating properly.

Yes / No

2. Fencing and gates are functional at public access sites.

Yes / No

3. Appropriate signage is present.

Yes / No

G. Facility Changes

1. Tank number, volume, contents and layout same as ACTS. (If No, take photos of: tank, tank plaque, tank NFPA label. If not legible in photo, type information into comments.)

Yes / No

Photo(s) of tank, plaque, and/or NFPA label:

Images Attached

2. Separators, dehydrators and other vessels/equipment number, size, contents and layout same as ACTS. (If No, take photos of: equipment and MFG label. If not legible in photo, type information into comments.)

Yes / No

Photo(s) of equipment and/or MFG label:

Images Attached

3. Secondary containment dimensions and construction same as ACTS.

Yes / No

4. Other aspects of the site layout, drainage, BMPs, security and operations consistent with facility diagram.

Yes / No

5. Site diagram is accurate.

Yes / No

Site diagram change photos:

Images Attached

6. Facility change comments:

H. Maintenance / Repairs

Maintenance / Repairs Required? (CHECK IF YES)

Yes / No

Comments on Maintenance / Repairs Required

Yes / No

Maintenance/Repair Issue Photos:

Images Attached