



Leak Protection and Monitoring Plan Summary Mustang Oil Gathering System

Introduction

Noble Midstream Services, LLC (NMS) operates several gathering systems owned by its affiliated companies in Weld County, Colorado and is committed to responsible and safe development and transportation of oil, natural gas, fresh water, and produced water. Safety is a responsibility shared by all. Our “No Harm” culture is not just a commitment to the safety of our workforce. It demonstrates our steadfast commitment to the safety of neighboring communities and to the protection of the environment.

We are committed to full compliance with safety regulations governing our operations and some of our internal practices exceed the requirements of those regulations. On the issue of potential leaks, we take a comprehensive approach that encompasses prevention, monitoring, detection and response activities.

This summary document outlines key ideas from the comprehensive Leak Protection and Monitoring Plan for the NMS Mustang Oil Gathering System, as called for under Colorado Oil and Gas Conservation Commission (COGCC) regulations for crude oil transfer lines. This plan has been prepared in accordance with good engineering practices to prevent system failures and mitigate impacts from potential leaks. This plan will be reviewed by NMS at least once per year to ensure it remains current and up-to-date. This review process may include updating contact names, phone numbers, and addresses as well as substantial program changes. This plan may also be amended to reflect advances in leak prevention and control technologies. The latest version of this plan is available for COGCC audits at Noble Midstream offices.

Regulatory Background

COGCC rule 1104.g.(1) provides:

All crude oil transfer line operators must prepare and file with the Director a leak protection and monitoring plan with their registration.

COGCC rule 1104.g.(2) provides:

All crude oil transfer line operators must develop and maintain a plan to coordinate the assessment of all inflow and outflow data. The plan must provide for the assessment of inflow and outflow data between the production facility operator, the crude oil transfer line operator, and the operator at the point or points of disposal, storage, or sale. Upon discovery of a material data discrepancy, the discovering party is to notify all other appropriate parties and take action to determine the cause. The crude oil transfer line operator is to retain a record of all material data discrepancies.

A crude oil transfer line (“COTL”) is defined at COGCC rule 100 series as:

“...a piping system or pipeline segment that is not regulated or subject to regulation by the U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA) pursuant to 49 C.F.R. § 195 Subpart A, and that transfers crude oil, crude oil emulsion or condensate from more than one well site or production facility to a production facility with permanent storage capacity greater than 25,000 barrels of crude oil or condensate or a PHMSA gathering system.”

Therefore, NMS has prepared a Leak Protection and Monitoring Plan to comply with these COGCC requirements.

Current Prevention Methodology

Our prevention methodology covers many aspects, including prevention steps in design, construction, and operation & maintenance, and includes these categories:

- Engineering design/design standards
- One Call participation
- Use of pipeline markers
- Public awareness
- Cathodic protection
- GIS/asset information
- Integrity management
- Risk mitigation
- Corrosion control
- Pipeline cleaning, also known as “pigging”
- Training

Our prevention methodology builds upon the underlying industry best practices and standards for pipe fabrication, construction and integrity testing before operation, as well as best practices and standards for pipeline maintenance to ensure upkeep of our assets. The methodology also draws upon specific Spill Prevention, Control and Countermeasure Plans (SPCC) required by the U.S. Environmental Protection Agency

Current Monitoring Methodology

A comprehensive maintenance program uses a variety of tools to monitor the condition of the right of way and monitor the pipelines for integrity, including:

- Smart Pigging
- Aerial and/or land patrolling
- Continuous pressure monitoring
- Security
- Protection of assets
- Training
- Operations Control Center (OCC)

Monitoring activities of the pipeline systems or through day to day operations by company personnel are an important step to identify unauthorized activities, indications of leaks, or deterioration of the system. In addition, NMS monitors pipelines from the OCC, where highly trained pipeline controllers monitor the operation of the pipeline 24 hours a day, 365 days per year. Our team of pipeline controllers ensure that the pipeline systems are running safely and efficiently.

The OCC includes an operations control system and satellite communication with control room management. A computer system known as Supervisory Control and Data Acquisition (SCADA) is used to monitor the pipeline system. OCC operators monitor pressure and flow data received from receipt and delivery points and valve sites. Pipeline operations can be adjusted remotely in real-time from the OCC, or immediately halted, if needed. Personnel can also be dispatched to manually adjust valves or operation set points.

Current Leak Detection Methodology

While we strive to prevent leaks from occurring, NMS has strong leak detection and rapid response protocols in place. Controllers of the SCADA system use computers, networked data communications, and graphical user interfaces to create a single source of information flow from monitor multiple points of the field.

Data points from the pipelines are monitored remotely at the OCC. The Controller monitors the console for alarms and any out-of-threshold values. The alarms generated by the system do not necessarily indicate a leak. Instead, they identify possible abnormal conditions that require evaluation by operations personnel. There are several levels of alarms:

- Critical
- High
- Medium
- Low
- Alarm disable
- Alarm alert
- Communication failure
- Leak detection

If abnormal conditions are identified, the Controller will contact the field operators to verify the cause of the alarm. If necessary, a Controller can activate automatic emergency shutdowns from the OCC or dispatch personnel to manually operate valves and other equipment. The OCC can also initiate a system shutdown if circumstances warrant.

The OCC has a comprehensive Control Room Management Plan, which defines roles and responsibilities, communication protocols, and procedures for responding to abnormal operating conditions and accident/incident investigation, and emergency response plans.

Training

Training is an extensive component of the leak prevention, monitoring, and detection program for employees and contractors. Consistent with its corporate culture of “No Harm,” NMS recruits qualified personnel and provides regular training on company policies for reporting and responding to spills, containment and cleanup. Additionally, all contractors and employees working on NMS locations must be trained on Environmental Health & Safety procedures and federal, state, and local regulations. Above all, our training is focused on protecting people by ensuring safe operations, which also minimizes the risk of leaks.

Controllers who work in the OCC regularly receive specialized training in system operations, safety measures, identification of abnormal operating conditions and emergency response. In addition, Controllers regularly receive communications system training on concurrently monitoring operational data, information from field personnel, and notices from the public. NMS periodically reviews OCC procedures for their effectiveness, making updates as needed.

Training also includes drills and other exercises to simulate the response to abnormal operating conditions. On a monthly basis, table-top drills covering abnormal operating conditions and other potential situations are included in safety meetings. Practice drills are also held in the field periodically, involving local emergency responders, NMS contractors, and operations personnel to walk through hypothetical scenarios and ensure roles, responsibilities and response procedures are well understood.

Response

In the unlikely event of a leak, a swift and effective response is essential to ensure the safety of first responders, neighboring communities, employees and contractors, in addition to mitigating any environmental impacts.

NMS has compiled Emergency Action Plans (EAPs) for all of its assets. The EAPs consist of systematic actions, activities, and supporting materials to proactively minimize potential losses and promote safe actions in the event of unexpected incidents or releases. It also assists NMS in identifying the availability and allocation of resources necessary to safeguard life, the environment and property. The scope of an EAP begins as soon as an incident occurs and continues until the transfer of command to the Denver Julesburg Business Unit Incident Management Team. When an incident or release is detected, these EAPs are put into action immediately, leveraging the experience and expertise of our employees and response contractors.