
FLUID LEAK DETECTION PLAN

BNL | ENTERPRISE

State 09 SWSE 3054

Sec. 9 T30S R54W (SW/4 SE/4)

Las Animas County, Colorado

Surface: State

Submitted as an accompaniment to the Form 2A Application.

January 19, 2022

BNL (Enterprise) Inc. Las Animas County, Colorado

Fluid Leak Detection Plan

Project Summary:

BNL (Enterprise) Inc. (“BNL”) proposed State 09 SWSE 3054 Location is located in Sec. 9 T30S R54W in Las Animas County, Colorado. BNL plans to drill and test one *helium* well. If the well produces commercial quantities of helium the well will be shut-in for a period of six to nine months until helium production/processing facilities can be constructed on an offsite facility location. The helium facility will be on lands outside of the Oil and Gas Development Plan. The facility will be constructed on private surface. The landowner agreement provides for the installation of the gas gathering line. The production/processing facilities will not require an oil and gas development plan. BNL will use a 130-mil rig liner during the drilling and testing of the well. As minimal soil will be disturbed during this time as possible. The well will be drilled vertically to no more than 2,500 feet and will not require hydraulic fracturing. The proposed location is state surface and state minerals with a total pad disturbance of 3.6± acres. During the drilling and testing phase, the existing access road will be minimally upgraded to allow for construction and, if needed, emergency vehicles. If the well proves to be of commercial quantities, the road will be crowned and ditched, in consultation with the Colorado State Land Board and any other owners along the access route. The graded site elevation is expected to be approximately 5,402’. No federal lands or minerals are involved in this project. All operations would be conducted in compliance with all federal, state, and local applicable laws, rules, and regulations.

Plan:

The contents of this Fluid Leak Detection Plan (Plan) addresses BNL’s Southeast Colorado Las Animas County Helium production facility. This Plan has been prepared in accordance with good engineering practices to prevent and mitigate damage to the environment from a potential leak or spill. This Plan will be in effect during drilling and completions operations and during production operations.

The State 09 SWSE 3054 wellpad (“Location”) is proposed in Section 9 T30W R54W (SW/4 SE/4). Total disturbance will be approximately 29.1 acres, including access road. The entire road disturbance was previously included in the State 35 NENW 2954 Oil and Gas Development Plan application. Working pad surface will be 3.4 acres and 1.2 acres after interim reclamation. Road disturbance is 25.5 acres and 10.2 acres after interim reclamation. Surface and mineral ownership is State of Colorado and private access. The site elevation will be approximately 5,403 feet. Pad and road construction is anticipated to take 1 week with drilling 2 weeks and completion/testing an additional 2 weeks.

The production facilities will operate 24 hours per day, 7 days per week, and are maintained by a lease operator who regularly inspects the facility and performs daily routine maintenance. The production facilities for both the State 09 SWSE 3054 and State 16 SWSE 3054 will be placed on an offsite facility location. Procedures for reporting discharges are provided in the BNL Emergency Response Plan which includes contact numbers and spill reporting guidelines. No production facilities will be placed on this wellpad.

BNL will review and evaluate this Plan at least once every year. As a result of this review, non-technical changes may be made to the Plan to ensure that the document is current and up to date. Such non-technical changes may include updating contact names, phone numbers, or addresses. In addition to non-technical changes, this Plan may be amended to include more effective prevention and control technology if the technology has been field-proven at the time of the review and will significantly reduce the likelihood of a discharge.

The following sections detail the regulatory notification requirements and emergency response contacts for spill or releases of produced water. This facility will not produce any hydrocarbons. The only hydrocarbons on location will be lubricants and fuel for generators.

Containment

The offsite location, which will house the production facilities for both the State 09 SWSE 3054 and State 16 SWSE 3054, will have all measures for production containment. The primary spill containment methods are steel secondary containment sufficiently impervious to contain oil or other released fluids. Secondary containments are constructed around all above ground storage tanks (AST). They are enough to hold the shell capacity of the largest tank located within the containment plus sufficient freeboard for precipitation (a 25-year, 24-hour storm event).

Production facilities must have appropriate containment and/or diversionary structures or equipment to prevent a discharge. The entire containment system, including the walls and floor, must be capable of containing fluid and must be constructed so that any discharge from a primary containment system, such as a tank, will not escape the containment system before cleanup occurs.

All ASTs have adequate capacity to assure that they will not overflow if a Pumper is delayed in making regularly scheduled rounds.

Above ground piping is restricted to areas directly around the wellhead, separator, flare and ASTs. Above ground piping associated with production equipment is typically located above and within the "footprint" of the secondary containment.

Secondary containment and other spill prevention and control methods for facility transfer and loading/unloading areas include the following:

- Load out lines and valves are located within the containment. At those facilities where the load out is not completely within the containment, the piping is sloped back towards the tank or vessel as a spill prevention and control method.
- Drip pans and load line buckets must be adequately sized to contain all discharge, drips and leaks inside the containment system.
- Drip pans and load line buckets must be inspected by the Lease Operators on routine rounds and emptied as needed.

All produced water vacuum truck operators are equipped and trained to contain small leaks, spills or drips that might occur during unloading of ASTs.

In the event of a discharge, the Pumper will use spill cleanup materials and equipment to contain the discharge.

Inspections, Tests, and Records

BNL operators are responsible for inspecting assigned facilities as part of their regular work routine. All above ground pipes, valves, and facilities are inspected as a part of the routine operations. The inspections include an assessment of the general condition of flange joints, valve glands and bodies, drip pans, load line buckets, pipeline supports, and other such items. Drainage ditches and other watercourses in and around the facilities are inspected for leaks on a regular basis. All malfunctions, improper operation of equipment, evidence of leakage, spills, stained or discolored soil, etc. are logged and communicated in a timely manner to the supervisor for proper response. Due to the lack of fluids and gaseous nature of the production the facilities best management practices (BMP's) will be:

- Daily audio, visual, and olfactory (AVO) inspection of all above ground facilities.
- Daily production monitoring.
- Approved Instrument Monitoring Method (AIMM) Inspections with "FLIR" technology Camera on a bi-monthly basis and at other times as needed and appropriate.
- Audio and visual inspections twice daily during drilling and completion operations.

All flowlines, gathering lines, associated valves and equipment are compatible with the type of production fluids/gases, their potential corrosivity, volume, and pressure, and other conditions expected in the operational environment. The above ground flowlines, gathering lines, and associated appurtenances are inspected on a regular schedule for leaks, corrosion, or other conditions that could lead to a discharge. Corrective actions will be taken and needed repairs will be made for conditions identified during the inspection. Any spills will be promptly removed, or stabilization and remediation actions will be initiated.

Personnel visually inspect the outside of all ASTs routinely for signs of deterioration and maintenance needs. All tanks, flow-through vessels, tank supports, and foundations undergo a visual inspection for integrity and to ensure no pitting or rusting.

BNL also conducts, at a minimum, an annual pressure testing of flowlines as per COGCC requirements. BNL's standard protocol for pressure testing of flowlines, dump lines, and facility equipment involve the following key steps:

- Isolate flowline at header and install appropriate gauge;
- Pressure flowline using well head pressure, preferably maximum casing pressure and isolate well head;
- Allow pressure to stabilize;
- Record beginning pressure/time on the Facility Pressure Test Report (F.P.T.R.);
- Monitor for 30 minutes;
- At the end of 30 minutes record pressure/time at end of test on F.P.T.R.;
- Any loss of pressure needs immediate action taken (e.g. eliminate isolation points as source, hydro test for final confirmation);
- If flowline fails test, isolate well and turn in work order;

- If flowline tests good, return well back to normal production; and,
- Turn in Facility Pressure Test Report to a supervisor.

Records of Inspection reports are maintained at the BNL field office for a period of three years.

Any leak discovered in a flowline or appurtenances is promptly addressed by shutting in the well and isolating the damaged portion of the line. The faulty piece of equipment is then repaired or replaced.

Drilling and Completion Operations

BNL will have the following during Drilling Operations.

- All potential pollution sources will have secondary containment.
- Daily inspections and preventive maintenance on the drillsite.
- Spill response, containment, and cleanup.
- Drilling Rig will be set on waterproof containment mat system.
- Completion of the wells will be a “natural completion” and will not require fracture stimulation.

Leak Response

After discovery of a leak, specific steps are taken, including immediate response, reporting, and containment and cleanup. Pumpers will have emergency contact information with them at all times to ensure immediate, appropriate response. Some of the key steps include:

- Account for onsite personnel, assure their safety, and evacuate if a fire, explosion, or exposure hazard exists. Remove all sources of ignition, position fire suppression equipment and alert the local Fire Department if necessary. Shut off pumps and close valves that allow fluids and gases to flow to the segment of the system causing the spill/release.
- Restrict access and alert adjacent property owners/operators as warranted by the incident and make internal notifications. BNL’s EHS Professionals will make external notifications to applicable regulatory agencies.
- As safety allows, on scene personnel will contain the spill, if appropriate, and prevent or divert spilled fluids from approaching structures or draining towards waterways or storm drains.
- Initiate cleanup and waste management activities working with an BNL EHS Professional. BNL EHS Professionals will complete all required written notifications or reports. The EHS Professional will conduct a spill assessment and determine any additional cleanup actions as needed.

Personnel, Training, and Discharge Prevention Measures

BNL’s EHS department has been designated as the primary point of contact for discharge prevention and response.

At a minimum, BNL field personnel are trained in the following related topics:

- General facility operations;
- Spill control equipment;
- Operation and maintenance of equipment to prevent discharges;

- Containment, vessel, tank and piping inspection and maintenance;
- Spill response, containment and cleanup;
- Company policies on reporting and responding to spills;
- Applicable pollution control laws, rules, and regulations;

Additionally, all BNL contractors must review and acknowledge the BNL Contractors Expectation Manual for Environmental, Health & Safety prior to entering any BNL facility.

Best Management Practices

- Daily audio, visual, and olfactory (AVO) inspection of all above ground facilities.
- Daily production monitoring.
- Approved Instrument Monitoring Method (AIMM) Inspections with “FLIR” technology Camera on a bi-monthly basis and at other times as needed and appropriate.
- Audio and visual inspections twice daily during drilling and completion operations.