



## **EXHIBIT 13**

# **OPERATIONS PLAN FIELDWIDE - NIOBRARA**

**ConocoPhillips Company**  
**Niobrara Operations Plan – City of Aurora**

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## Introduction

ConocoPhillips (Operator) presents this Niobrara Operations Plan to the City of Aurora (City) as a field-wide document to satisfy **10.3 Required Application Contents, #13 Operations Plan** under the Oil and Gas Operator Agreement (OA) between the Operator and the City, effective June 5, 2019.

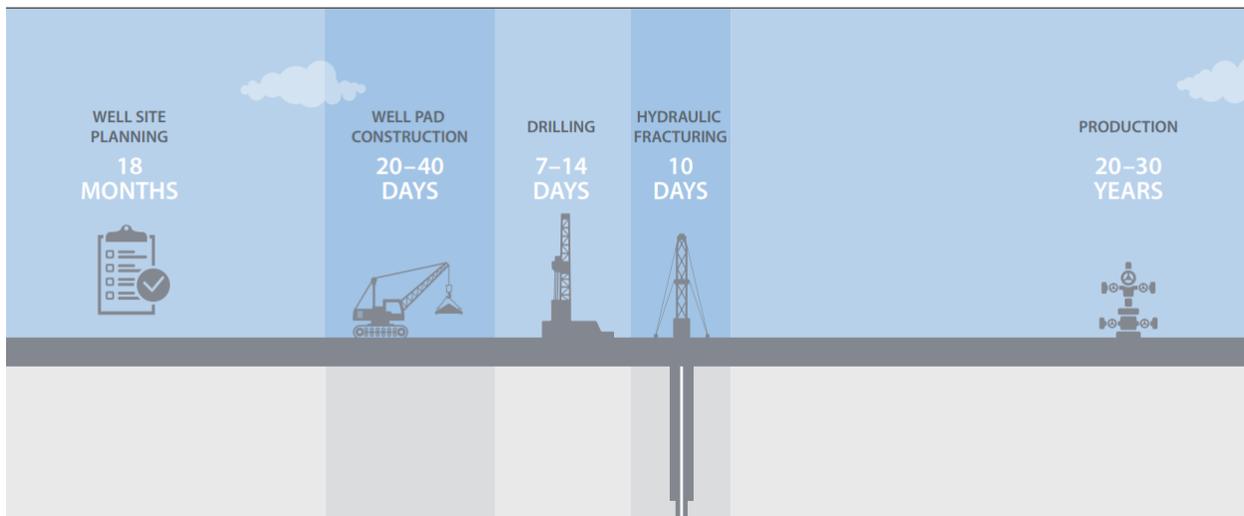
This Operations Plan is meant to provide a brief overview of drilling an oil and gas well, while also demonstrating how ConocoPhillips will comply with the Best Management Practices (BMPs) within the OA. A “BMP #” will appear after certain descriptions to help you associate the corresponding BMP with our process.

## Life Cycle of a Well in the Niobrara

The Operator intends to develop sites and drill wells within the City over a period of several years. The timing of individual sites will be dependent on several factors. Pursuant to the OA, the Operator will provide a Project Development Schedule with an OGP Application. The basic development process for a new well is generally consistent from one site to another. This document describes the life cycle of a typical well, which can be broken down into four basic phases: 1. Planning and Well Construction, 2. Drilling and Completion (including Hydraulic Fracturing), 3. Production and 4. Plugging and Restoration.

## The Development Phases of a Well

Each phase of development is characterized by several factors, such as: purpose and objective, duration, intensity of activity, required equipment, number and type of personnel, traffic intensity, local impacts, footprint of operations and more. Various resources are needed to implement each phase and the demand for these resources increase or decrease at various times within each phase. The overall process and the duration of each phase for a typical well are depicted in the diagram below.



## Pre-Development Planning

There has been a large planning effort underway since 2010 that has led up to the development plans contemplated in the OA. Much of this planning activity will not be described in detail in this Operations Plan, but it was essential work that forms the basis for the Development Plan and this Operations Plan.

Identifying and testing the Niobrara formation to determine whether it could economically produce hydrocarbons took several years. Once the formation was identified, surface and mineral rights had to be secured. Permitting for test sites and establishment of drilling and spacing units through the Colorado Oil and Gas Conservation Commission (COGCC) were completed. Exploration drilling collected essential data on reservoir characteristics, geologic hazards, formation tops and tested successful drilling and production strategies. Surveys of topography, sensitive water resources, wildlife and archaeological resources, and formation boundaries all aided in the selection of sites included in the OA (**BMP #10 Tree Mitigation, #47 Cultural and Historical Resource Protection and #48 Water Protection**). Engagement with the surrounding community, including open house events, rig tours and public hearings all provided a better understanding of local values. This led to the development of compatible strategies to mitigate concerns and shape this plan.

## Phase 1: Planning and Well Pad Construction

### Well Site Planning

The location of a well site is chosen most importantly on the underlying geology of the rock and the potential for oil and gas in a specific location. Other factors also include:

- desired location of the surface owner
- proximity to homes and buildings
- proximity to water and floodplains
- surrounding wildlife and habitat

A typical multi-well pad may take up to 18 months to plan. Our planning process incorporates site-specific studies on wildlife and natural resources to identify potential impacts from our operations. We use the data to make necessary modifications, such as locating well pads and facilities outside nesting habitats, adhering to timing restrictions and reclaiming land by planting vegetation that provides forage for animals and birds.

### Civil Survey

A survey of the specific dimensions of the well pad provide us with the plat package. The plat package and GIS data also form the basis for the required Site Plan and Storm Water Management Plan (SWMP) used in permitting. The local topography is measured, and the elevation of the well pad is established during this process. The data collected during civil survey determines earthworks volumes required for construction, and feeds into a viable stormwater management plan. The final access road alignment is typically laid out at this time. The route is based on the surface rights that have been granted, along with the local topography. The access point at the nearest public roadway is determined by sight

distances and setbacks from existing intersections. Other data collected includes PLSS Section breakdown to verify the acreage within the drilling and spacing unit as required by the COGCC, in addition to distance to nearest building units, water bodies, drainage, and more.

A survey crew of two to three workers can typically collect the required field data within a few days. Preparing the preliminary plat package for review can take two to three weeks. This can be an iterative process to ensure that the final design is achievable and accounts for site-specific conditions. The crew utilizes survey grade GPS data collectors, ATVs, light pickup trucks and hand tools to visibly mark the survey location. The plat package is generated on the computer by experienced draftsmen. Traffic associated with the activity is minimal, typically consisting of a few light passenger vehicles.

### Permitting

Once a plat package and civil engineering drawings are completed, permits are filed with the City and the COGCC. While these permit packages represent the same project, they can differ due to the specific regulations, rules and guidance issued by the agencies. Under the OA, the City permits are expected to take approximately 14 weeks to complete. COGCC permits will be processed concurrently with Aurora permits, but approval will not be granted until the City permit has been issued.

The Operator will not begin construction until a Stormwater Water Management Permit (SWMP) is approved by the City for the site (**BMP #30 Stormwater Management**).

### Well Pad Construction

Once all required permits have been issued, well pad construction can begin. On average, this takes 20 to 40 days. This work is normally done during daylight hours and scheduled far enough in advance that construction of the pad is done well ahead of bringing a drilling rig to site. This process uses construction equipment such as bulldozers, scrapers, loaders, backhoes, water wagons, rollers, graders and gravel trucks to construct the pad and haul in the surface gravel to the location. There are between 2 and 10 people on-site during this phase.

The first step in pad construction involves installation of perimeter best management principles (BMPs) pursuant to the approved SWMP, COGCC and CDPHE Stormwater requirements. Once these protections are in place, earthworks can begin. The existing vegetation is cleared, and the topsoil is stripped. No burning of debris occurs (**BMP #6 Burning**). Topsoil and spoil piles are clearly separated to ensure preservation of the topsoil for final site reclamation.

During the construction of the well pad there may be a trailer on the location, but no personnel stay overnight on-site (**BMP #26 Trailers**).

The pad is constructed to match the approved permits to the best of our ability. At times, new information is learned during construction that requires deviations from the plans. The Operator works with the COGCC and City representatives to make any required modification to plans as needed, which is often done in the field. Once the basic grading is complete to level the well pad, establish drainage ditches, spoils and topsoil stockpiles, gravel is hauled in to provide a stable surface for oil and gas operations. Gravel hauling generates heavy traffic, but generally only lasts a few days. Specific traffic estimates have been provided in the Traffic Letter for the OGP (**OGP Submittal Item #15 and BMP #27 Transportation**).

A portion of the pad is built for the permanent production facilities. This area is located away from the planned wellheads to abide by numerous safety standards set by the Operator, the COGCC and the American Petroleum Institute.

All disturbed ground not needed for subsequent operations, including stockpiles and cut and fill slopes, are seeded and mulched in accordance with the permits. Approved weed-free seed mix is used, and these areas are monitored and maintained for weed establishment for the life of the well (**BMP #33 Noxious Weed Control**).

A perimeter fence is constructed to establish the site boundary, turn livestock and deter the public from entering the site. Cattle guards may be installed at the site entrance, in addition to a locking gate. This perimeter fence will generally remain in place until after interim reclamation (as defined by the COGCC) has been performed, and all disturbed areas have re-established vegetation. Any additional fencing requirements under the OA will be installed after interim reclamation occurs (described below) (**BMP #17 Fencing**).

The site is left in a stable condition, ready for the rig. Specific project schedules will be communicated to the City through the OGP process (**OGP Submittal Item #14**). Operator will also communicate the schedule of these activities to the City pursuant to the OA (**BMP #4 Notifications to the City**).

## Phase 2: Drilling and Completion

### Drilling

The drilling rig is brought to the well site and begins drilling each of the planned wells. The drilling rig operates 24 hours per day. The drilling crews work in shifts, with some personnel living on-site during the entire operation. A crew size is about 15 to 20 people. There can be up to 40 people on-site at any time. The Operator will conduct drilling operations in compliance with all COGCC rules and regulations, as well as all applicable local rules and regulations. Drilling a single well takes 7 to 14 days. The drilling rig will be on location for a total of 60 to 70 days for an eight-well pad. Larger well pads take longer to drill than a single well pad but yield a smaller overall disturbance than drilling multiple smaller well pads. There will be a period of increased traffic prior to the rig arriving and when the rig moves off to the next location (**BMP #27 Transportation and Circulation and BMP #29 Road Repairs**).

The rig drills vertically down to a specified depth and then horizontally to a specified distance. This depth is thousands of feet below the surface and any freshwater sources. The hole (wellbore) is drilled in successive sections through the rock layers. Once the desired length of each wellbore section has been drilled, the drilling assembly is removed, and steel casing is inserted into the wellbore and cemented in place. As the well is constructed, concentric layers of steel casing and cement form the barrier to protect groundwater resources from the contents that will later flow inside the well (**BMP #46 Water Quality Monitoring Plan**). The Operator will follow the COGCC regulations (Rule 317) regarding wellbore integrity and testing to ensure water aquifer protection (**BMP #46.7 Wellbore Integrity and Aquifer Protection**).

Standard operations on the well site consist of a rig at the center of the pad along with water storage to be used in the drilling operation, pipe racks for temporarily stored drill piping, pumps, power

generators, tool storage, fuel storage for said generators and pumps and an enclosure to protect workers from inclement weather.

Construction trailers, portable toilets, garbage storage and extra fuel storage will be located near the edge of the pad site (**BMP #26 Trailers**). The Operator utilizes a “closed loop system” during drilling. Water used to support drilling operations may be trucked in or piped in and temporarily stored on-site (**BMP #5 Closed-Loop Pitless Systems for the Containment and/or Recycling of Drilling Fluids**). The Operator properly handles all drilling fluid in accordance with federal regulations. No fluid will be discharged on-site (**BMP #31 Wastewater Management**). Drilling fluid will be disposed of offsite, in a manner approved by the COGCC (**BMP #3 Transportation and Storage of Fluids**).

The Operator plans to use an electric drilling rig to reduce emissions where it is possible to do so (**BMP #13 Electric Equipment**). Drilling can also require noise mitigation based on its proximity to residences or zoning. In these cases, the Operator has agreed to use sound walls, berming, bales or other appropriate measures to mitigate sound (**BMP #2 Noise Mitigation**).

During drilling activities and other operations on the well site, the Operator uses various measures to manage dust from trucks and traffic (**BMP #12 Fugitive Dust Suppression**). Also, odor can result from drilling. If the Operator receives complaints from a Residential Building within 1,320 feet from the site, Operator will take measures to mitigate the odor, based on the specific circumstances (**BMP #36 Odor**).

Once drilling is complete, the rig is disassembled and moved offsite. At this stage, activity stops until the “completion” (or hydraulic fracturing) of the well occurs. This period of no activity can be as short as a few days or up to several months.

### Completions (Hydraulic Fracturing)

Prior to and following the Completion Phase of any New Well, Operator will assess the integrity of plugged and decommissioned wells, wells removed from use and dry holes ("Previously Abandoned Wells") within 1,500 feet of the completed portion of the projected track of the proposed New Well borehole (**BMP #43 Plugged and Decommissioned Well Testing**).

To “complete” a well means performing various tasks for a well to produce oil through the wellhead. Hydraulic Fracturing is just one portion of the completions process. There are also other minor activities that take place on the pad before and after fracturing, such as preparing the well for fracturing and cleaning the sand out afterwards. Hydraulic fracturing is a completion method that has been used since the late 1940s.

On average, it takes less than 10 days to complete a well and 50–60 days to complete an 8-well pad. Completions work is a 24-hour per day operation on the site. The completions crews work in shifts, with some personnel living on-site during the entire operation. Crew size can vary but is typically made up of about 20 people. There can be up to 60 people on-site at any time.

During hydraulic fracturing, fracturing materials, mainly sand, are brought in by truck and mixed on-site with water and other fracturing fluids. Pursuant to the terms of the OA, and the maximum extent

possible, the operator will bring in water through temporary lay flat pipe (not trucks) for this work (**BMP #3 Transportation and Storage of Fluids**).

The actual fracturing process uses machinery capable of driving fracturing fluid down the length of the entire wellbore (potentially more than 17,000 feet). The fracturing fluid consists of water, proppant (usually sand) and some chemical additives. This fracturing fluid is pumped into the well at high pressures to crack the rock in different stages in the targeted geologic horizon.

To start, the well casing must be perforated. At predetermined and specific intervals (stages) in the well, small perforations are made in the well bore that allow the fracturing fluid to pass through the steel casing and exert pressure against the rock. The force of the fluid creates tiny cracks, or fractures, in the reservoir deep underground. Once fluid injection stops, pressure begins to dissipate, and the fractures previously held open by the fluid pressure begin to close. The proppants then act as tiny wedges to hold open these narrow fractures, about half the width of a human hair, creating pathways for oil, natural gas and fracturing fluids to flow more easily to the well.

After a stage has been hydraulically fractured, a plug is set inside the casing to isolate the stimulated section of the well. The next stage is then perforated, fractured and isolated by a plug. The entire perforate-fracture-plug cycle is then repeated at regular intervals along the targeted section of the reservoir. A 10,000 ft lateral in the Niobrara formation may have 40 or more discrete stages associated with a frac job. Once all of the stages have been fractured, the plugs are drilled out by a coil tubing rig, allowing the oil, natural gas and fluids to flow into the well casing and up to the surface.

The Operator complies with “green completions” standards set by the COGCC and the EPA under 40 CFR 60 Subpart OOOO and OOOOa (**BMP #16 Reduced Emissions Completions**). Based on zoning and prescribed distances, the Operator has agreed to mitigate the sound created by hydraulic fracturing through appropriate means as described in the OA (**BMP #2 Noise Mitigation**).

Fracturing fluid is comprised of up to 99.5% water and sand. Small amounts of chemical additives are necessary to reduce fluid friction, kill bacteria that are present in the formation and enhance the fluid's ability to transport the propping agent. Many of these chemical additives are commonly used in everyday consumer products, such as toothpaste, ice cream, cosmetics, household cleaners, table salt substitutes and antiperspirant. The Operator supports disclosure of the chemical ingredients used in fracturing fluids in a way that informs the public and protects proprietary company information. Disclosure of these chemicals is required under the terms of the OA (**BMP #7 Chemical Disclosure and Storage**).

The last stage of the completions process is known as flowback. This describes the first few days of production from the well, after the plugs have been drilled out. The well produces an emulsion of hydrocarbon, formation water and produced water from the fracturing fluid. This emulsion flows through various pieces of temporary equipment on the surface to separate it out into various components. The flowback water is collected in tanks and may be recycled and blended with other water to be used at another fracturing site, or disposed of in accordance with all applicable rules, including COGCC. This typically means the water is hauled by truck to a State approved Injection Well

located outside of the City (**BMP #3 Transportation and Storage of Fluids and #34 Underground Injection Wells**).

At the end of this stage of development, all temporary equipment is removed from the site, leaving only the wellhead and the permanent production facilities, including, separators, storage tanks and emissions control equipment (**BMP #25 Removal of Equipment**).

### Phase 3: Production Phase

After drilling and completion operations conclude, the well is “put on production” and may produce for more than 20 years. Our commitment to safe and environmentally responsible operations continues throughout the life of each well.

Production from the well is an emulsion of oil, gas and naturally occurring water. Certain equipment is needed on the well site to separate the gas from the oil and oil from the water. The oil and gas are measured, metered and sold as they leave the well site. The separated water, or “produced water”, must be disposed of according to specific state regulations. A list of the production equipment used at this stage is provided with the OGP submittal.

Oil is planned to be transported from the well site via pipeline in order to minimize the truck traffic associated with production operations. Oil storage tanks are included on the site to provide for continuous production of oil during potential disruptions to pipeline infrastructure operations (**BMP #3 Permanent Tanks and BMP #9 Low Profile Tanks**). There are numerous engineering controls in place to prevent or minimize the impact of unplanned events such as spills or leaks (**BMP #40 Containment Berms, #38 Spills, #45 Automatic Safety Protective Systems**).

Produced water is trucked offsite, until such time as a water gathering system may be constructed. Produced water will be disposed of offsite to a State approved Injection Well located outside of the City, as approved by the COGCC. The Operator will not dispose of produced water within the City or within 4 miles of the City except as described in the OA (**BMP #34 Underground Injection Wells**).

Natural gas is sold through the meter and transported offsite through a gas gathering pipeline system in accordance with COGCC regulations.

The physical dimensions of the production facilities may vary based on several factors, all of which are covered by the OA or in OGP Process. Operator will use electricity to power most equipment on-site (**BMP #13 Electric Equipment**). Above ground structures are painted to blend with the surrounding landscape and to reduce the visual impact of the production facilities from visibility corridors (**BMP #8 Paint Color**). No permanent facilities will be placed in off-pad locations.

Well site facilities must meet internal engineering standards, as well as operating and process integrity requirements. The facility plans go through a PHA-Hazard Operability Study by a certified facilitator. Any recommendations are incorporated into the design (**BMP #44 PHA-Haz Op Study**). Alarms and relief systems are regularly tested (**BMP #45 Automatic Safety Protective Systems**), and personnel are trained to operate facilities responsibly.

Combustion devices are incorporated into the permanent facility design and are used for maintenance and emergency use (**BMP #19 Combustion Devices**).

Operator will maintain all equipment and machinery in a safe manner, and maintenance will not be performed within 500 feet of a navigable waterway (**BMP #35 General Maintenance and BMP #22 Maintenance of Machinery**). Operator will provide a safe and secure work environment to protect workers, our contractors and the community. Critical equipment will be secured by lock or with a security seal to prevent unauthorized tampering with equipment (**BMP #3.1 Permanent Tanks**).

Interim Reclamation will occur within 3 months of the first production on well sites surrounded by crop lands, and within 6 months of first production for well sites surrounded by grass lands. Interim reclamation is performed in accordance with the approved City SWMP plans and the COGCC Rules (**BMP #39 Reclamation**). During this phase, portions of the well pad that are no longer needed for production operations are reclaimed back to their original contours and reseeded with appropriate vegetative cover. The Operator will monitor the condition of these reclaimed areas until sufficient vegetative cover is established. The final fencing is typically installed at this time to enclose the pad area and establish the site perimeter. A gate to allow for vehicle access is installed and locked at all times, unless there are personnel on-site. The fence can serve multiple purposes including: visually screening the site from view, acting as a security measure to deter unauthorized access by members of the public and preventing livestock from entering the site.

During the Production Phase, the Operator will maintain the well site. Debris and flammable material will be removed from the well site (**BMP #18 Flammable Material and BMP #24 Removal of Debris**) and any mud tracked from the well site to public roads will be addressed (**BMP #23 Mud tracking**).

## Phase 4: Plugging and Restoration

At the end of a well's productive life (generally 20+ years), the Operator submits a Notice of Abandonment to the COGCC and will concurrently submit a final reclamation plan to the City.

The "Final Reclamation" of the well site is dictated by multiple documents, including COGCC Regulations, any Conditions of Approval associated with the City permits, the Surface Use Agreement and/or Oil and Gas Lease.

Final reclamation plans will include the appropriate surface reclamation necessary for approval from the COGCC (**BMP# 39.3 Final Reclamation**). All wellbores are plugged and abandoned in accordance with COGCC regulations and other applicable laws. At the time of final plugging and abandonment, all surface equipment is removed, and the well pad is graded back to approximate natural contours. Backfilling, leveling and recontouring is performed as soon as possible after plugging or cessation of production and removal of production equipment and facilities. Stockpiled topsoil is redistributed evenly over the re-contoured surface.

The area is treated to eliminate any compaction that may have occurred during final grading. The access road is reclaimed in a similar manner. If necessary, water bars and physical barricades may be implemented as necessary to promote reclamation efforts. Pipelines and subsurface power lines are typically abandoned in place.

The reclaimed area is reseeded with the approved seed mixture specifically designed to simulate adjacent undisturbed vegetation while maximizing utilization by both wildlife and domestic stock. Final reclamation of the access road is done in accordance with the terms and conditions of the right of way grant.

The Operator must meet stringent site-closure requirements and file appropriate documentation with government authorities to preserve the location and details of the well closure for future reference.

## OA, Exhibit C, Additional BMPs

**BMP #4 Notifications to the City** – The Operator will provide all required notifications under the OA to the City by notifying Stephen Rodriguez by e-mail at [srodrigu@auroragov.org](mailto:srodrigu@auroragov.org).

**BMP #6 Burning** – The Operator will not allow open burning of debris to occur on the site of any oil and gas operation, as per City code. This provision does not include emergency flares.

**BMP #9 Low Profile Tanks** – The Operator will use 16' tall tanks ("Low Profile Tanks") for New Wells on Well Sites where technically feasible and where oil pipeline exists. Operator will not be required to use Low Profile Tanks for New Wells on Well Sites that existed as of the Effective Date if no additional tanks are required on that Well Site for those New Wells. Please refer to the site-specific Oil and Gas Well Permit plan for listings of the number of tanks and their dimensions.

**BMP #10 Tree Mitigation** - The oil and gas location and/ or Well Site will be constructed by the Operator in a manner that minimizes the removal of and damage to existing trees in accordance with the City's tree mitigation ordinance.

**BMP #11 Discharge Valves** – The Operator will ensure that open-ended discharge valves on all storage tanks and other containers within the Well Site are secured, capped, or blind-flanged, and That they will not be accessible to the general public. The Operator will ensure that all open-ended discharge valves within the Well Site are be placed within the interior of the secondary containment area.

**BMP #22 Maintenance of Machinery** – Operator will ensure that routine field maintenance of vehicles or mobile machinery will not be performed within 500 feet of any navigable waters of the United States. Operator will ensure that all fueling occurs over impervious material.

**BMP #23 Mud Tracking** – Operator will, in accordance with the stormwater management plan submitted with all New Well permit applications, take all practicable measures to ensure that vehicles do not track mud or debris onto City streets. If mud or debris is nonetheless deposited on City streets,

in excess of de minimus levels, the streets shall be cleaned in a reasonable time by the Operator or within 24 hours of notice by the City. If for some reason this cannot be done, or needs to be postponed, Operator shall notify the City of the Operator's plan for mud removal.

**BMP #24 Removal of Debris** – Operator will ensure that all construction-related debris is removed from the Well Site for proper disposal in a timely manner. The Operator will ensure that Well Site is reasonably free of debris and excess materials at all times during all Phases of Operations. Operator shall not stockpile debris at the Well Sites.

**BMP #25 Removal of Equipment** - All equipment used for drilling, re-completion and maintenance of the facility will be removed from the site within 30 days of completion of the Operations, weather conditions permitting, unless otherwise agreed to by the surface owner. No permanent storage of removable equipment on Well Sites will occur.

**BMP #36 Odor** - Operator will mitigate odors by routing to closed loop systems to the maximum extent practicable. Odor emitting from Well Sites will be controlled safely and within a reasonable time. If a person living in a Residential Building Unit within 1,320 feet of a Well Site complains of odor, Operator will determine whether the odor is caused by Operator's Operations. If the odor is caused by Operator's Operations, Operator will resolve the odor concern to the maximum extent practical within 24 hours. Operator will wipe down drill pipe each time the drilling operation "trips" out of hole. Operator will comply with COGCC Rule 805 and CDPHE Regulation 2.