Valley Farms O Pad
Attachment M
Best Management Practices (BMP) LIST

GENERAL – PLANNING

- Due to the location of Ursa's operations, Ursa determined that the Rifle Office will be staffed with a Regulatory and Environmental Manager, and a landman; these positions didn't exist in the Rifle office under the previous operator. This decision reflects Ursa's commitment to sound environmental stewardship, and to an increased level of communication with all stakeholders (see below).
- Ursa typically holds weekly meetings to address new, expanded, or additional wells at an Oil and Gas locations. Once a location is determined feasible, preliminary notifications are made to affected surface owners (see below) as a best management practice (BMP).
- Prior to initiation of the Form 2A permitting process, internal onsites are held to determine the feasibility of the location (based on the SUA and landowner preferences), topographic constraints, proximity to building units, and public and environmental concerns including surface waters, traffic/haul routes, 317B applicability, wildlife RSOs and SWH areas, noise potential, soil stability, etc. All information that may affect the location is documented as appropriate in Ursa's "Site Assessment Checklist and Site Assessment Map" as a BMP. A copy of these internal practices was provided to the COGCC at the Setback Training on August 30, 2013 held in Grand Junction.
- Upon approval of the Form 2A, Ursa holds Pre-Construction, Pre-Spud, Pre-Completions and Pre-Production meetings with contractors performing work at the location as determined necessary by the responsible Ursa Operations Manager or Supervisor. As a BMP, Ursa has developed checklists for these meetings to review COAs, NTOs and related issues.
- Traffic and Public Safety – Ursa developed a site-specific Emergency Response Plan and Haul Route Map which is communicated to local emergency response agencies and stakeholders, as well as contractors performing work at the location.

GENERAL - COMMUNITY OUTREACH AND NOTIFICATIONS

- Voluntary Notifications - Once a new or expanded location, or additional wells are proposed, Ursa's land department contacts the landowner to get an initial approval, prior to formal Pre-application notifications to all affected stakeholders.
- Once the Form 2A permitting process was initiated all surface owners and owners of building units within 1000 feet of the location were notified by letter with an invitation to meet or discuss the proposal (See Attachment J (2)).

- Ursa routinely communicates proposed plans and operations schedules with Community Counts, the GARCO Energy Advisory Board, and Battlement Mesa Concerned Citizens (BMCC), if the proposal or work may affect Battlement Mesa. In addition, periodic stakeholder meetings are held with landowners and affected parties.
- Communication with Kirby Wynn and municipal LGDs are also held routinely in addition to communication required by COGCC regulations.

PRECONSTRUCTION / CONSTRUCTION AND SITE STABILIZATION

- MULTI-WELL PAD - The location submittal as proposed will result in the ability to drill 18 wells from a single location and eliminate the need for an additional well pad; hence a reduction in surface disturbance, traffic, and impacts to the environment and wildlife habitat.
- SAFETY - The location and site layout has been designed to accommodate all operations within the limits of disturbance while meeting Federal and state safety regulations, including required buffers and distances between operating components and combustion sources.
- DUST CONTROL - The pad and access road will be graveled to reduce fugitive dust. In addition, water and other dust suppressants are used as required, dependent upon the level of activity, moisture conditions, etc.
- INTERIM RECLAMATION - The site will stabilized using seed mixes and materials compatible with soil types, moisture, and local climate conditions as specified in landowner surface use agreements, or locally acceptable industry practices. Seeding will be completed during optimum conditions to achieve best results for plant growth.
- STORMWATER - The location will be constructed in accordance with the CDPHE Stormwater regulations as implemented by Ursa's Stormwater Management Plan, so as to control sediment run-off. Stormwater BMPs may also serve as secondary or tertiary containment in the event of a spill. Site specific plans (i.e. diagrams) will be developed and inspected against at the frequency required by CDPHE regulations, to include 14 day, 30 day, and major storm event inspections until 70% reclamation is achieved. Corrective actions will be tracked and implemented. COGCC inspections will be conducted through 80% interim reclamation and annually thereafter. These inspections are also tracked and corrective actions implemented. Native soils will be used whenever available to construct stormwater BMPs, supplemented by non-native materials based on site-specific conditions.

- WASTE - The location will be managed in accordance with Ursa's Waste Management Plan as summarized in Attachment J(1) of this applications. The location will be constructed to minimize the potential for any exploration and production wastes, chemicals, fluids, etc. from leaving the location, including berms, barriers, and use of spill control materials.

DRILLING

- DIRECTIONAL DRILLING - Directional / horizontal drilling will be implemented to avoid the need for additional well pads; reducing habitat loss and fragmentation, noise, traffic concerns, etc.
- NOISE – Will be monitored to be within acceptable decibel readings.
- WASTE - A closed-loop (pitless) drilling system will be used; No cuttings pit will be constructed; cuttings will be hauled to an approved waste facility (see Waste Management Plan Summary – Attachment J(1).
- WATER SAMPLING - Baseline and post drilling water well testing will be performed for permitted water wells in accordance with COGCC Sec 609.

COMPLETIONS

- CHEMICAL USE – All chemicals used will be tracked and reported in accordance with COGCC rules and submitted through FracFocus within 120 days of initiating well stimulation.
- ODORS - Well completions will utilize flowback completion technologies and/or flares to reduce odors from plug drillout, and venting of salable and non-salable gas
- WASTE - No stimulation or flowback pits will be constructed.
- WORK HOURS - Completions will typically be conducted during daylight hours.
- SPILL PREVENTION AND CONTAINMENT – As this location is within a 317b area, a tertiary berm will be constructed at the northern, east and west sides of the location. This location will not be used as a remote temporary tank farm for other locations; therefore the berm will accommodate 100% containment of the largest volume of tanks to conduct completions at this location only.

PRODUCTION

- ODORS - Combustor controls will be used to mitigate odors from production tanks.
- SPILL PREVENTION – Spills will be managed in accordance with Ursa's SPCC plan, COGCC rules 317b and 604 including prevention, spill containment and monthly inspections. High level alarms will be installed on production tanks.
- VISUAL IMPACTS - Above-ground facilities (e.g. production tanks) will be managed to minimize visual effects (e.g. painted to blend with environment)

- REMOTE MONITORING - Remote monitoring will be used to reduce truck traffic, fugitive dust to the extent practical.
- WATER LINES - Water pipeline infrastructure will be installed concurrently with the gas pipeline infrastructure where possible. No water infrastructure currently exists.

- WATER RECYCLING – Produced water used for well completions will be recycled and treated to the maximum extent practical. Water that can't be recycled will be injected through the use of wells approved by COGCC and Garfield County.
- WILDLIFE – All separators/dehydrators and heater –treater equipment are outfitted with bird cones.

ENVIRONMENTAL STEWARDSHIP AND COMPLIANCE (GENERAL)

- GENERAL – AGENCY INSPECTIONS / CONCERNS
  Ursa has developed and implemented processes and systems to track all agency inspections and concerns (e.g. COGCC, CDPHE, BLM…). Corrective actions are typically implemented with 24 hours of discovery.
- AIR – Ursa will comply with CDPHE regulations regarding air permits, including the application for general permits, including compliance monitoring. In addition, Ursa is required to track, monitor and report Greenhouse Gas (GHG) emissions to EPA. All air sources will be assigned AIRS ID numbers and tracked for compliance and reporting purposes.
- CHEMICAL & MATERIAL HANDLING – All materials and chemicals will be managed to minimize environmental contamination. It should be noted that materials and chemicals that are not a waste may be reused or recycled.
- NOXIOUS WEEDS – Weeds will be managed in accordance with Ursa's Noxious Weed plan; to include three treatments per year, mapping, etc.
- SPILLS / INCIDENTS – Spill prevention is addressed in Ursa's Spill Prevention and Management Plan, to include COGCC rules 317b and 604. This includes training of employees and contractors personnel. Spills response includes notifications, reporting, response actions, remediation and corrective actions. The spill criteria in Ursa's plan requires that waste be properly classified as E&P or non-E&P wastes. For E&P waste, all spills greater than 1 barrel the COGCC will be reported to the COGCC using a Form 19. Should remediation be required, a Form 27 will be submitted as well. Spills related to non-E&P waste will be managed in accordance with CDPHE and EPA regulations depending on the volume spilled.
- WILDLIFE - A Wildlife Mitigation Plan (March 24, 2010) is in place that was agreed to by Ursa (previously Antero). The plan allows for 90+ well pads. Currently, Ursa has 62 well pads. Ursa is current on all obligations under the plan.