



Castle Springs Federal T - Temp Tank Battery Best Management Practices (BMPs) April 2014

BACKGROUND

- Ursa Operating Company LLC (Ursa) acquired all assets previously held by Antero Resources and assumed full operations on 4/1/13.
- This location is an approved, constructed and producing location.
- As these locations are on Federal (BLM) managed lands; there are no building units within 1000'. BLM has primary jurisdiction on Federal surface; as such BMPs and mitigation required by the BLM will be complied with.
- BLM and Ursa conducted a joint onsite on April 4, 2014 and confirmed that the well pads being drilled and the temporary tank battery locations are within the scope of the BLM Environmental Assessment for the Castle Springs field.
- The location was permitted and constructed prior to Form 2A regulations being implemented. Therefore these BMPs focus on those required for placement, operations, and removal of the temporary tank battery to support completions at an adjacent location; and not on construction, drilling, completions and production operations specific to this location.
- Temporarily staging the tanks at this location does not require a pad expansion, addition of wells, installation of a pit, or significant change in the pad design or use essential to lease operations; as the temporary tanks will be placed in the same approximate location as if completions were supporting drilling at the same location (see Facility Layout Diagram).
- The only change is that staging Temporary Tank Batteries at this location will support completions at the Castle Springs E (4 wells) & Q pads (2 wells) vs. the location on which they are temporarily staged; which is a standard practice recognized by the COGCC and other state agencies to avoid the need for additional surface disturbance.
- The temporary tank battery is anticipated to be in use from late August through mid-October (approximately 60 days).
- A maximum number of 20 - 500 bbl tanks will be temporarily staged at this location.
- Existing buried water lines will be used to transfer water to and from the temporary tank battery.
- The location is not within a 317B area.
- Raptor surveys were conducted and nests were located in close proximity to this well pad. However, completions activities will not occur until after the nesting season (August).

TEMPORARY TANK BATTERY - PRE-OPERATIONS

- Ursa will hold a pre-completions meeting with contractors using Ursa's checklists prior to startup of activities. Ursa's temporary tank battery protocol will be discussed and implemented.
- The tanks (cleaned and sanitized) will be placed at the location prior to startup and will be labeled as out of service until tanks are being filled and used, then properly labeled for use.



- Prior to filling the tanks and placing them in use, Ursa shall provide Form 42 notification to COGCC in accordance with NTO's when operations will be supported by this pad. Ursa will also notify the COGCC 48 hours prior to start of temporary frac operations.
- Secondary Containment – Prior to filling the tanks, Ursa will install secondary containment for fluids contained in the temporary tanks. The containment would accommodate at least the volume of the manifolded volume and 150% of the largest tank; including, but not limited to, construction of a berm immediately adjacent to the tanks. This is based on Ursa's temporary tank battery protocol.

TEMPORARY TANK BATTERY - OPERATIONS

- Ursa will implement its temporary tank battery protocol (attached) that addresses equipment start up, operations, and decommissioning. The checklist ensures integrity of all pipelines, secondary containment necessary for equipment, and ensures all valves and fittings are inspected for leaks or deficiencies. It should be noted that changes may be necessary to this checklist as site specific actions may be necessary to ensure all equipment and operations satisfy COGCC rules and regulations.
- Completions Equipment Inspections – Ursa will conduct daily inspections of tanks and equipment for leaks and equipment problems with appropriate documentation retained in the operator's office/onsite office. All equipment deficiencies shall be corrected promptly. Daily monitoring will end approximately 14 days after well use of the tank battery.
- Trained Personnel – Ursa shall have trained personnel present at the frac tanks during water transfer into or out of tanks; personnel shall be able to shut off transfer pumps or close valves as necessary in response to upset conditions in accordance with Ursa's tank battery protocol.
- In addition, as outlined in Ursa's Spill Prevention and Response Plan, SPCC plan (required by EPA), and protocols to comply with COGCC Section 600 containment rules, training is conducted for Ursa employees and contractors at least annually. This training was recently completed in accordance with SPCC regulations and COGCC spill regulations Nov 21, 2013, in January 2014, and again on April 3, 2014.

TEMPORARY WATER LINES TO SUPPORT TEMPORARY TANK

- Ursa will pressure test pipelines any surface lines in accordance with Rule 1101.e. (1) prior to putting into initial service any temporary surface or permanent buried (steel/poly) pipelines and following any reconfiguration of the pipeline network.
- Ursa will use adequately sized containment devices for and hazardous chemicals and/or materials if stored or used on location.

ENVIRONMENTAL STEWARDSHIP AND COMPLIANCE (GENERAL)

- AIR / ODORS – Ursa will comply with CDPHE Section 600 and 800 rules regarding green completions and controlling air emissions from the tanks, and minimizing the potential for odors.
- CHEMICAL & MATERIAL HANDLING – All materials and chemicals will be managed to minimize environmental contamination. All chemicals used will be reported in accordance with COGCC Section 200 rules and policies; including entries to Frac Focus.
- SPCC / COGCC SECONDARY CONTAINMENT - Ursa developed and implemented a site-specific Spill Prevention, Control and Countermeasures Plan (SPCC) for temporary tank batteries in accordance



with EPA SPCC regulations (40 CFR 112) and COGCC Section 600 regulations, prior to placement of tanks at the location. In addition Ursa conducts monthly leak and spill visual inspections under its Temporary Tank Battery SPCC plan.

- **SPILLS / INCIDENTS** – Spill prevention and response are outlined in Ursa’s Spill Prevention and Management Plan (attached). 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 require that waste be properly classified as E&P or non-E&P wastes. For E&P waste, all spills greater than 1 barrel (not within containment) or 5 bbls within containment will be reported to the COGCC using a Form 19. Should remediation be required, a Form 27 will be submitted upon COGCC request, outlining the proposed remediation. Spills related to non-E&P waste will be managed in accordance with CDPHE and EPA regulations depending on the volume spilled.
- **SPILL RESPONSE** - Ursa currently stages spill response equipment and materials onsite. If additional response equipment is needed, equipment and materials, including Vac truck, backhoes are approximately 20 minutes away. Ursa requires all key personnel to also be equipped with spill equipment for immediate use upon discovery of a release. Personnel trained in spill response are on call 24 hours a day, 7 days a week. Ursa’s Spill Prevention and Management Plan and Spill, among others, provide explicit detail with regards to spill notification, reporting, response and prevention.
- **WASTE MANAGEMENT** – The location will be managed in accordance with Ursa’s Waste Management Plan which incorporates COGCC Section 900 rules. Appendix L of Ursa’s Waste Management Plan specifically addresses temporary tank batteries. Containment will be designed to localize and 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.
- **PLANS** - All plans referenced herein have been provided the COGCC on previous occasions and are available upon request, as updated.