

Proposed BMPs

SG Interests I Ltd. proposes the following Best Management Practices to be implemented as part of the McIntyre Flowback Pits project.

- Fluid volume in pits will be drawn down to accommodate average annual precipitation and average yearly snowfall at the end of each year to prevent accumulation of precipitation over winter from causing overflow.
- Pits will be designed with a 12" liner lip to prevent water flow into the pits.
- Water pumps will be trailer mounted with built-in secondary containment systems. Ecology rails are built in sump systems that are part of the skids of these pieces of equipment.
- A centralized manifold will be installed on the equipment access pad for each pit. The manifold will provide a point at which any truck transported water can be loaded or unloaded to/from each pit. This will prevent operators from having to drop water hoses into the pits and will prevent accidental damage to the pit liners from contact with these hoses. Each manifold will have a galvanized or graded catch basin in case of leak while connecting or disconnecting hoses.
- Perimeter security fencing will prevent livestock or wildlife from entering the pits (fence height will be 7'). Frame reinforced bird netting will be maintained year round to keep it functional.
- Pipelines crossing sensitive areas will be cased from upland to upland to prevent any leakage from entering surface waters (see attached typical depiction of this design).
- Upslope drainage ditches with rock check dams will be designed to divert snow melt and stormwater runoff around pits and prevent fluid overflow.
- Pits will be designed with leak detection beneath primary liner. Liner welds will be inspected prior to filling to make sure connections are complete. Liner will be inspected regularly to ensure integrity.
- Straw wattles and silt fence will be used around disturbed areas such as spoil piles until fully vegetated. These devices will be properly maintained when in use and removed (or allowed to degrade if applicable) when no longer needed. Straw or other mulch (including erosion control blankets that use straw) will use weed-free straw or mulch.
- Trash containers located within sensitive wildlife habitat will be bear proof.
- Weeds identified on site will be treated by a licensed applicator.
- Install culverts under access roads as needed to allow stormwater and drainage to pass under roadways. Outfalls of these culverts will be rocked as needed to prevent scouring.
- Fugitive dust will be controlled on roadways and staging areas by water application as needed.
- The top 8" of soil will be salvaged from each pit location and stored separately from spoil for reapplication on the land surface during reclamation.
- Limit disturbance to wildlife through use of temporary poly pipelines to deliver water for storage in the pits (limited number of truck trips).
- Quickly reclaim all areas disturbed during construction that are not needed during long-term operations. Seed these areas with Colorado Division of Wildlife recommended seed mix.