

OWL Danish Flats SWD

Phase 2 Ground Water Discharge Permit

Permit: UGW190002

Appendix A - Best Available Technology Monitoring Plan

A. PHYSICAL FEATURES

1. The Phase II OWL Danish Flats SWD project has been permitted to accept non-hazardous low and high salinity fluids. Phase II consists of six lined evaporation ponds. All six ponds were constructed with a composite liner system consisting of a 6-inch clay underliner with a permeability of 1×10^{-5} cm/sec overlain with a synthetic primary liner consisting of 60-mil high density polyethylene (HDPE) flexible membrane liner (FML). The ponds are slightly sloped at a minimum of 0.4% with a gravel/pipe trench leak detection system at the low end of each pond. A riser access pipe allows sump water detection measurements and samples to be collected if any leakage is detected in the sump. A perimeter berm was also constructed to prevent any surface water from entering or leaving the complex.

B. BEST AVAILABLE TECHNOLOGY PERFORMANCE MONITORING

1. Fluid Measurement – the leak detection sump will be monitored weekly for the presence of fluids, and recorded results will include:
 - a. Presence or absence of fluid in the leak detection sumps.
 - b. Volume of fluid in a leak detection sump, if present.
 - c. Depth of fluid in a leak detection sump, if present.
 - d. Results of sampling and analysis of fluid collected for compliance or leak assessment purposes.
 - e. The disposition of any fluids in a leak detection sump.
 - f. The volume of fluid removed from the leak detection sumps.
 - g. Vertical freeboard measurement of 24 inches calculated on a 3:1 slope.
2. Sampling if Fluids Present – if fluids are detected in the leak detection sump, the permittee will either collect samples or measure conductivity to determine the source of the fluid.
3. Minimum Vertical Freeboard – a minimum of 24 inches of vertical freeboard shall be maintained to ensure total containment of the evaporation/surge pond & peripheral ditches. Freeboard level will be measure weekly & recorded.
4. Maximum Allowable Leakage Rate (ALR) – the maximum allowable leakage rate through the primary HDPE liner of an evaporation pond is 200 gallons per acre per day (average pond size is 5.5 acres).
5. Maximum allowable head in any pond sump is 1.0 foot.

C. OPERATION

1. In the unlikely event of evaporation pond failure the permittee shall follow the Contingency Plan outlined in the Phase 2 Groundwater Discharge Permit, UGW190002, Part 1.F. If the permittee is determined to be in a 'Non-Compliance Status', i.e. exceeding the ALR for a consecutive period of 30 days, they shall submit to the Grand County Sheriff's Office and Director of the DWQ both verbal and written notification. All valves leading to a failed pond will be closed immediately upon notice of failure to prevent any water from flowing into a failed pond. Any ponded released material will be pumped into a transporter and returned to the acceptance area or to storage tanks for reprocessing, or

alternatively, evacuated in to a neighboring pond. An environmental investigation will be conducted on any soil, surface or groundwater potentially impacted by the release.

D. POND & LDS MAINTENANCE

1. OWL Danish Flats SWD conducts regular inspections of the facility. These inspections include checking the integrity of the pond liner, assessing the tank battery and in particular visible leaks on tanks, tank seams, connections, fittings or valves. Also checking visible leaks on aboveground piping, pipe seams, connections, fittings, flanges, and threaded connections. During the weekly inspections of the LDS system, the integrity of the LDS and pond is examined for integrity failure.

Name: Doug Wheeler

Title: Regional Operations Manager

Signature:  _____

Date: October 18, 2019