

## **MODULE VII - GROUNDWATER CORRECTIVE ACTION**

### **VII.A. CORRECTIVE ACTION PROGRAM**

The Permittee shall maintain an ongoing corrective action program. The purpose of this program shall be to have the capability of removing hazardous constituents from the groundwater and to monitor the migration of the hazardous constituents as outlined in Module V. The corrective action program shall follow the plan specified below:

**VII.A.1.** The Permittee shall maintain a corrective action system in a state of readiness. The system shall be capable of treating and removing volatile organic hazardous constituents listed in Condition V.B.1.a., Table V-1 from the groundwater. The system shall be maintained as specified in, Corrective Measures Study (Parsons 2013) and Corrective Measures Implementation Plan (Parsons 2014).

**VII.A.2.** The Permittee shall sample the groundwater in the impacted aquifer.

### **VII.B. DESIGN AND EFFECTIVENESS OF THE CORRECTIVE ACTION SYSTEM**

**VII.B.1.** If a corrective action system is required to be operated; the following permit requirements will be implemented:

**VII.B.1.a.** The Permittee shall provide a summary of the effectiveness of the corrective action system in each annual report as indicated by Condition V.F.1, and listed in Table V-4.

### **VII.C. CORRECTIVE ACTION SYSTEM**

**VII.C.1.** The Permittee shall maintain a corrective action system that consists of the following elements:

**VII.C.1.a.** The Permittee shall maintain the corrective action system in accordance with Corrective Measures Study (Parsons 2013) and Corrective measures Implementation Plan (Parsons 2014).

**VII.C.1.b.** The Permittee may, based on the results of the Condition V.A.1.e., make modifications to the treatment system that will facilitate the acceleration of the cleanup. Significant modifications to the system, as classified in accordance with Utah Admin. Code R315-3-4.3 shall be approved by the Director.

**VII.C.1.c.** The Permittee shall maintain a system to monitor the corrective action units. This monitoring system shall be capable of system shutdown in the event of a malfunction that could impair the performance of the system or threaten human health and the environment.

**VII.C.1.d.** The Permittee shall operate an automatic alarm notification system. This system shall notify the appropriate personnel specified in the Contingency Plan, in the event that the system shuts down or requires attention.

**VII.C.3.** The Permittee shall maintain and inspect the corrective action systems in accordance with applicable work plans and specific Operation and Maintenance manuals.

## **VII.D. TREATMENT OF HAZARDOUS CONSTITUENTS**

**VII.D.1.** The Permittee shall maintain a treatment system that will treat the contaminated plume of groundwater to the concentration levels listed in Table V-2.

**VII.D.2.** If the Director receives information demonstrating that the treatment system is not capable of removing the volatile organic hazardous constituents to the levels specified in Condition V.D., Table V-2, the Permittee shall initiate a permit modification request to install additional treatment processes (e.g. carbon adsorption) to treat the groundwater to meet the requirements of Condition V.D., Table V-2.

## **VII.E. WELL LOCATION INSTALLATION AND CONSTRUCTION**

**VII.E.1.** The Permittee shall maintain all elements of the corrective action system in accordance with the Corrective Measures Study (Parsons 2013) and the Corrective Measures Implementation Plan (Parsons 2014) as specified below:

**VII.E.1.a.** The construction of additional extraction wells or injection wells shall follow the techniques described in the Technical Enforcement Guidance Document (TEGD), OSWER-9950.1, September 1986 and subsequent addenda. If techniques other than those described in the TEGD are used, the techniques shall be approved by the Director prior to installation of the extraction and injection wells.

**VII.E.2.** In areas within the groundwater contaminant plume, the Permittee may generate groundwater contaminated with hazardous constituents from the following processes: 1) development of newly constructed piezometers, monitoring wells, extraction wells, and injection wells; 2) sampling of monitoring wells; and 3) water generated from treatment units. Disposal of water generated from the processes listed above shall be as follows:

**VII.E.3.** Groundwater contaminated with the hazardous constituents listed in Table V-2 of Module V shall be characterized and if deemed hazardous disposed of off-site at an approved hazardous waste treatment facility.

**VII.E.4.** Upon approval by the Director, additional corrective action elements (Refer to Module VIII) as specified in the Corrective Measures Study (Parsons 2013) and Corrective Measures Implementation Plan (Parsons 2014) shall be installed to treat and/or monitor the plume, as indicated by the annual groundwater model recalibration (reported in Table V-3) or other evaluation and recommendations.

## **VII.F. OPERATION OF THE CORRECTIVE ACTION SYSTEM**

**VII.F.1.** The Permittee shall maintain and operate the corrective action system as specified in this permit.

**VII.F.2.** The Permittee shall operate the corrective action system in a manner that will prevent spills, releases, or other adverse affects to human health and the environment and as specified by Conditions VII.C.1.c. and d.

**VII.F.3.** The Permittee shall monitor the effects of the corrective action system as specified in Condition V.D.4.a. and b., and if the groundwater in any off-depot well(s) is affected, the Permittee shall notify the Director within seven days, as specified in Condition I.L., Table I-2.

**VII.F.4.** The Permittee shall train all personnel operating the corrective action system as outlined in Condition II.C.

**VII.F.5.** The Permittee shall maintain a Preventative Maintenance Schedule as part of the Contingency Plan as part of Attachment 6. This maintenance schedule shall include all parts of the corrective action system as specified in the Corrective Measures Implementation Plan (Parsons 2014) and any other parts of the system not specified above.

**VII.F.6.** The Permittee shall annually recalibrate the groundwater flow model and the groundwater solute transport model. A report describing annual model recalibration shall be submitted as required in Condition V.F.1, and reported as listed in Table V-4. An abstract of each year's modeling efforts will be included in Attachment 3.

**VII.F.7.** The Permittee shall take any action necessary to maintain the corrective action system as indicated by annual recalibration of the groundwater flow model and the groundwater solute transport model.

**VII.F.8.** If the corrective action unit is inactive due to a mechanical failure, or due to a power loss, then the Permittee shall implement the Contingency Plan, Attachment 6, specified in Condition II.E.2.

## **VII.G. INSPECTION AND DOCUMENTATION FREQUENCY**

**VII.G.1.** In order to prevent the release of hazardous wastes from the treatment system, the Permittee will operate, maintain, and inspect the system in accordance with Utah Admin. Code R315-8, as well as Table VII-2.

**VII.G.1.a.** Hazardous wastes may not be placed in the system if they could cause the system to rupture, leak, corrode, or otherwise fail.

**VII.G.1.b.** The Permittee shall maintain the use of appropriate controls and practices to prevent releases from the system.

**VII.G.1.c.** The Permittee shall maintain an inspection program and schedule intended to prevent the release of hazardous wastes from the system. Inspections shall be conducted on the components of the system, as specified in Table VII-2.

**VII.G.1.d.** If, during inspections required under Condition VII.G.1.c., the release or potential release of a hazardous waste is identified, the component of the system will be taken out of service immediately. If failure of the component has resulted in a release of hazardous waste, the Contingency Plan (Attachment 6) will be immediately implemented.

**VII.H. DURATION OF CORRECTIVE ACTION PROGRAM**

**VII.H.1.** The Permittee shall continue to treat the groundwater until such time as the Groundwater Protection Standard (as specified in Condition V.C.4.) has been met. Following written notification to the Director that the standard has been met, the Permittee may discontinue treatment but shall continue to monitor the groundwater (as specified in Module V) to determine if the concentration of the hazardous constituents listed in Table V-2 have been met for one year, followed by an appropriate statistical corrective action test, centering on confidence intervals, in accordance with the EPA Unified Guidance (2009), Chapters 21, and 22, or the ITRC Groundwater Statistics and Monitoring Compliance Technical Guidance (2013), Chapter 4.6, “Closure”, minimizing the false positive error rates to the extent possible

**Table VII-2  
CORRECTIVE ACTION SYSTEM  
SAFETY CHECKLIST**

<b>Treatment Facilities (where applicable)</b>	<b>Frequency</b>
Emergency Shower / Eye Wash Safety Signs Fire Extinguishers Facility Piping and Valves Emergency Lighting Flammable Storage Containers (Sealed and Labeled) House-keeping Equipment Ladders Aisles and Walkways Exits Equipment Being Repaired (Lock-out/Tag-out) Pump and Equipment Areas Fire Alarm Pumps and/or Equipment Containment Areas Sumps	Monthly (when in operation)