JASCO Petroleum Groundwater Remediation

Jackson, Mississippi

FISHER ARNOLD

PROJECT EXPERIENCE

Fisher Arnold was tasked to design and install a dual-phase extraction (DPE) groundwater treatment system under the oversight of the Mississippi Department of Environmental Quality (MDEQ) Underground Storage Tank Branch (UST). Gasoline from ongoing USTs were confirmed to have impacted groundwater at an active convenience store.

Major System Components MK Environmental
40 HP single stage oil sealed liquid ring blower
200 Gallon Air/Water Separator with conductivity probe level switches
MKE Model SA30 Stripperator Oil Water Separator. 30 gpm designed capacity. 268 gallon working capacity.
800 SCFM blower
1.5 HP transfer pump, 3,450 rpm, TEFC motor
Groundwater flow totalizer
Master Control System
Telemetry system model 570
System Building
12,000 BTU XP heater with XP thermostat
200 Amp Fused Main Disconnect
Run-time Meter

Based on site conditions, the DPE system was chosen for the site remediation activities. The remediation system, manufactured by MK Environmental, uses an oil sealed liquid ring pump to extract gasoline impacted groundwater and related vapors.

Fisher Arnold was responsible for operations and maintenance of the following Corrective Action System (CAS) components by conducting monthly and bi-weekly sits visits in order to optimize the extent of the remediation system's hydraulic capture zone and increase the radius of vacuum influence across the highest Benzene Toluene Ethylbenzene and Xylene (BTEX) concentrations found onsite.

The startup for the CAS was performed on March 30, 2017 and as of December 2018 has treated and discharged to the POTW, a cumulative 75,521.8 gallons of shallow groundwater. The total amount of Volatile Organic Compound (VOC) mass removed since CAS initialization is estimated to be 2,593.4 pounds.

Fisher Arnold has been able to reduce groundwater detection of BTEX from 12 groundwater wells to 5 groundwater wells during two years of operation. Fisher Arnold recently recommended the installation of four (4) additional recovery wells to optimize the system by increasing the vacuum influence on the portion of the site that has historically shown the highest concentrations of BTEX remaining in the dissolved plume. This recommendation was approved by MDEQ and will be installed early in the second quarter.