Asarco Problem: There is an arsenic and selenium plume in East Helena from an abandoned Asarco lead smelter. As a consultant agency how are you going to resolve this issue?

**Introduction:**

The East Helena Superfund Site includes a lead smelter that operated from 1888 until 2001, the town of East Helena, several residential subdivisions, and surrounding rural agricultural lands. For more than 100 years, lead and zinc smelting operations deposited lead, arsenic, selenium, copper, zinc, cadmium and some 15 other hazardous substances into the soil, surface water and groundwater of the Helena Valley. ASARCO shut the plant down on April 4, 2001. The shutdown has been characterized by ASARCO as temporary. Public access to the smelter is restricted.

About 1,800 to 2,000 people live within one and one half miles of the smelter complex and most of the residential properties within that area were, until a yard cleanup began in 1991, contaminated with lead above health-based concentrations. Approximately 180-200 residential yards and several hundred acres of undeveloped lands remain contaminated with lead to this day. Most of the area's residences are hooked up to a municipal or community water supply system.

Lead in people’s yards is a major concern; however another concern is the arsenic and selenium plume that is found in the groundwater that may have an impact on local wells. The concern is that the arsenic and selenium is moving and the plume is expanding.

Note: EPA **arsenic** regulations are a Maximum Contaminant Level (MCL) of 0.005 mg/L or 10 parts per billion (ppb).

EPA **selenium** regulations are a Maximum Contaminant Level (MCL) of 0.05 mg/L or 50 parts per billion (ppb).

Procedure:

 Work in groups 3 to solve this problem. Your findings will be presented to your classmates using a large white sheet of paper as your presentation median. There are three tasks that need to be completed for your presentation.

1. Map out both the selenium plume and the arsenic plume in the East Helena Area.
2. Devise a plan to educate the public about the problem.
3. Develop a plan to restore the land back to its original form, include a plan to restore the area of ASARCO to a useable landscape for East Helena residents.

Resources: ●Well data logs ●Well Map ●Test Hole Logs