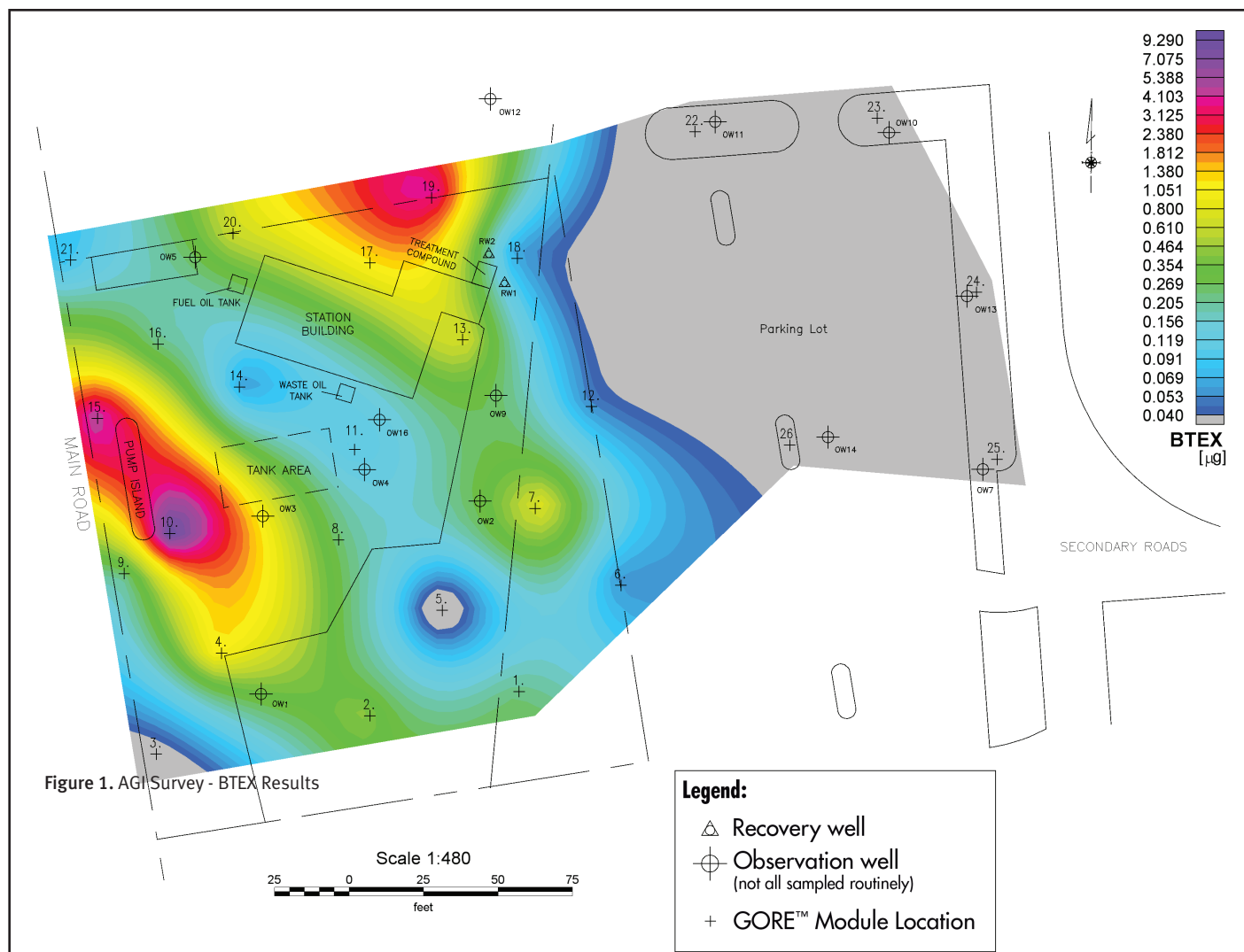


GAS STATION SITE ASSESSMENT



Survey Summary

Location: Mid-Atlantic US

Property: Active gas station and vehicle repair shop

Objective: Delineate subsurface fuel contamination

Survey Objective

A monitoring well network on site indicated free product under the current gas station and dissolved gasoline-range compounds elsewhere. The AGI Survey was conducted to demonstrate its non-invasive utility to screen for fuel-related compounds at an active gas station, and further delineate the source and extent of the subsurface contamination identified previously with the groundwater data.

GAS STATION SITE ASSESSMENT

Site Background & Geology

- Active gas station and vehicle repair shop
- 30 ft. (10m) of silty clay above fractured bedrock
- Groundwater depth – 11-17 ft. (4 to 6m), flat gradient gently sloping east
- Well network, free product and dissolved phase observed
- Pump and treatment of known groundwater plume

AGI Survey

- 26 AGI passive samplers over 1.1 acres
- Regular grid, 60 ft. (20m) spacing, three ft. (1m) install depth, through asphalt parking lot and adjacent lawn
- 27-day exposure
- Modified EPA method 8260/8270 analysis at AGI labs

Survey Results

Fuel-related compounds (e.g., BTEX) were observed in the soil gas beneath the parking lot surrounding the station building. Two north-south oriented soil gas plumes were identified (Figure 1). The eastward plume was associated with a known gasoline release from a former leaking underground storage tank (UST) and correlated with the free product and high dissolved groundwater concentrations beneath the building. The second plume was located adjacent to the pump island, and appeared to be associated with a leak(s) between the UST area and the pump island. BTEX was not observed in the monitoring well south of this plume, and suggested the release was recent and had only impacted the soil.

Survey Conclusions

The minimally invasive installation of the AGI Survey was quick and inexpensive, and did not disrupt the normal activities at an active gas station and vehicle repair shop. The AGI Survey detected gasoline-range compounds in the soil gas beneath the site, and formed in two separate soil gas plumes. In one area, elevated soil gas mass correlated with a known previous UST release and delineated the spatial extent of this release. Near the pump island, a second soil gas plume was observed. Conventional groundwater sampling had not identified gasoline-range compounds near the pump island. Transfer lines, USTs, and pumps had been replaced recently and thought to be leak free. The lines were inspected following the soil gas survey, and revealed a leak at a pump-transfer line connection. The soil had been impacted by fresh gasoline which had not yet migrated to the groundwater.

The AGI Survey achieved the objectives - demonstrating its utility at an active gas station, and delineating the subsurface impact by gasoline-range compounds. A significant return on the investment was realized when the survey identified a new release, which could have gone undetected for a period of time, and impacted the groundwater. The leak was repaired and the impacted soil (250 yd³) was removed in a timely and cost-effective manner.