



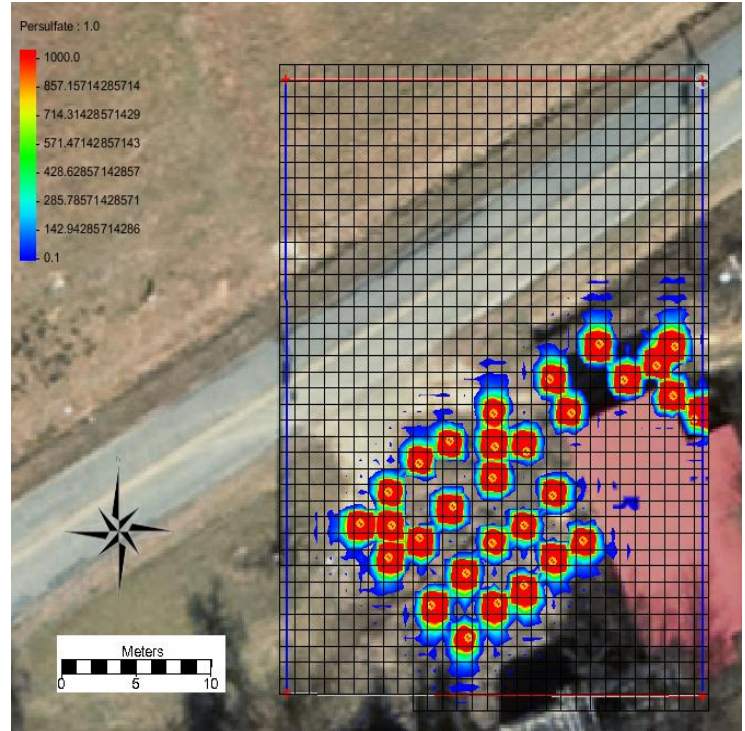
## CASE SUMMARY: BENZENE COC AT UST SITE IN ORANGE COUNTY, NC

**Overview:** RemRx<sup>TM</sup> CRP Persulfate was deployed at a former gas station in Orange County, NC. Petroleum contaminants have persisted at this site since the removal of two USTs in 1991. GCL exceedances were estimated in a lateral area of 1,304 ft<sup>2</sup> and 11 ft below the surficial aquifer. Of the BTEX contaminants, benzene was detected in the greatest concentrations in monitoring wells MW-3R (17,500 ppb) and MW-11 (10,300 ppb). The deployment scenario used a combination of fast and slow release CRP persulfate to remediate zones with varying benzene concentrations (5–10,000 ppb).

**Approach:** Borings of RemRx<sup>TM</sup> CRP Persulfate were placed in a tight grid with about 10 ft spacing to account for the estimated amendment ROI of 5 ft. Hollow stem auger was used to bore down to the desired depth (~25 ft) and then retreated to backfill the void space with the amendment. Fast release sodium persulfate was added to the borings to overcome soil oxidant demand followed by RemRx<sup>TM</sup> CRP pellets. Finally, persulfate activator was added to the boring before sealing it with soil cuttings and bentonite.

Fast release persulfate alone was deployed at several injection points in and around the source zone, where COC concentrations exceed 5,000 ppb, to rapidly bring down contaminant concentrations. RemRx<sup>TM</sup> CRP slow release persulfate was used in the surrounding 1.0 ppb contour area as a polishing step to mitigate rebounding and tailing as contaminants diffuse out of the source zone. For injection points where only fast release persulfate was used, fine sand was also added to maintain structure.

**Figure 1.** MODFLOW rendering of persulfate deployment after 100 days. Fast release persulfate deployed in the source area (row 2) shows smaller ROI than injection points containing RemRx<sup>TM</sup> CRP Persulfate. Model includes reaction with BTEX contaminants.



**Figure 2.** Backfilling of the hollow stem auger borings with RemRx<sup>TM</sup> CRP Persulfate pellets. Borings were loaded with persulfate (to overcome SOD), pellets, and persulfate activator.



RemRx<sup>TM</sup> manufactures innovative solutions to solve widespread environmental issues.

RemRx<sup>TM</sup> CRP is the patented system of **Controlled Release Pellets** that provide a time-released, prescriptive oxidant dosage that **sustains** delivery into the subsurface with only a single deployment. This extended release provides a constant feed of oxidant to combat natural oxidant demand and back diffusion, in order to mitigate rebounding and tailing issues that are common to traditional ISCO treatment methods. Ultimately, this means increased efficiency and decreased total project costs.

RemRx<sup>TM</sup> CRP based treatments utilize a range of oxidants and can be used to remediate chlorinated solvents, petroleum products, and numerous other industrial contaminants.

RemRx<sup>TM</sup> is actively partnering with innovative remediation site managers in pilot and test site deployments. Contact us!