



ISCO CASE STUDY: ACTIVATED SODIUM PERSULFATE TREATMENT OF MTBE IN GROUNDWATER, CAMP PENDLETON MARINE CORPS BASE, CA

INTRODUCTION

In July 2009 JAG Consulting Group completed two injections of activated sodium persulfate for treatment of MTBE at a gas station UST site at the Camp Pendleton Marine Corps Base, CA. The sodium persulfate was activated using chelated iron (EDTA). The work was performed under a Waste Discharge Requirements (WDR) Permit issued by the San Diego Regional Water Quality Control Board.



completed over two injection events approximately 4 months apart.

During the injections, JAG Consulting also provided water quality measurements of pH, dissolved oxygen, ORP, conductivity, and temperature in nearby monitoring wells, which helped to determine whether oxidizing conditions were being achieved throughout the treatment zone.



PROJECT BACKGROUND

An extensive MTBE plume had migrated off-site from a gas station UST site and extended over 200 feet in length along Christianitos Road. The soils at the Site consisted primarily of sands, gravels, and some silts to a depth of 40 feet. The depth to groundwater at the Site was approximately 30 feet below ground surface (bgs).

ISCO DESIGN

Eight injection wells were constructed in a linear fashion along the length of the MTBE plume. The injection wells were screened from approximately 30 feet to 40 feet below ground surface (bgs). Each well was estimated to have a radius of influence of approximately 15 feet each.

Over the course of this project, a total of 14,000 gallons (16,000 pounds of sodium persulfate and 4,000 pounds of iron EDTA) were mixed into solution and injected into the groundwater. The injections were

ISCO EFFECTIVENESS

Following the ISCO injections, quarterly sampling of five monitoring wells was performed to track the progress of VOC cleanup. A declining trend in MTBE was measured in a few of the wells, but the other wells did not show substantial change in MTBE levels. The reason for the moderate MTBE reductions was believed to be due improper spacing of the injection wells.

Water quality measurements taken during the injections indicated that the injection well spacing was slightly too far apart for the radius of influence and that additional injection wells would be required.

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