

PROJECT SNAPSHOT

Addressing Historical MGP Waste with Activated Sodium Persulfate

ISCO

Location: Boulder, Colorado

Client: City of Boulder

Contamination: Coal Tars

Lithology: Sand and Gravel

Reagent: Sodium Persulfate & Hydroxide

Type: Injection Wells

Number of Injection Points: 25

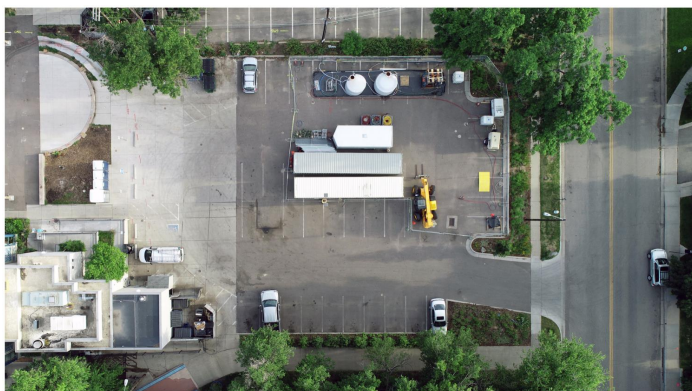
Project Duration: 36 Field Days

Project Approach:

Cascade mixed and injected a solution of Klozur SP sodium persulfate and sodium hydroxide. Sodium persulfate was packaged in 2204-pound super sacks and sodium hydroxide at 25% solution in 3000-pound plastic totes. The reagent was injected through one-inch PVC injection wells at the greatest flow rate the subsurface would allow without reagent surfacing. The injection wells were screened between 10 and 20 feet below ground surface as detailed in the injection field logs (Appendix A). The Klozur SP was mixed with water from an onsite hydrant using the PeroxyChem bulk mixing system. The 25% sodium hydroxide was introduced to the mixed solution through plumbing ahead of the injection pump. The injection design provided by the City of Boulder included large scale batching and mixing of Peroxychem Klozur SP sodium persulfate activated using 25% sodium hydroxide caustic solution. The bulk mixing unit uses a product feed hopper and eductor system to mix persulfate to match design concentrations using metered inflow of persulfate product and a concurrent inflow of mix water. The use of supersacks, each of which contains approximately 2,000 pounds of product, is directly dosed into the mixing system with the assistance of a forklift. During injection, 25% sodium hydroxide caustic solution was metered in at the appropriate concentration per area. Inline mixing of caustic and persulfate maximized the reaction time of persulfate since it was only mixed immediately prior to injection. The reagent solution was then injected into 27 permanent 1-inch injection wells installed on the site using an air diaphragm pump with up to 10 injection points simultaneous using a custom-made injection manifold.

WHAT MAKES THIS PROJECT UNIQUE?

Cascade was able to install the injection wells, handle large volumes of reagent, meet a tight schedule, able to bulk mix reagents, and contract the work which required bonding.



CONTACT

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