



CASE STUDY

E0401

FORMER UST SITE – SOIL MIXING – LOW LEVEL

SITE OVERVIEW

Former UST Site, St. John's, Az
AZ DEQ Site Number: **0-000772**

CONTAMINATION

Gasoline contaminants in clayey soil

HISTORY

- Leaking Underground Storage Tank (UST) had contaminated an area at the refueling location for the City maintenance yard. SVE was applied which worked in sandy zone but provided no reduction for clays and sandy clays. Chem Ox was applied to clayey zone but was minimally successfully, making a soil mixing project economical.

PRE-CLEAN DATA

- Concentrations above the RSRLs in the soil from 10 to 20 ft bls. Sandy clays were stiff from 14 to 20 ft bls.
- Two samples were collected from a relatively small foot print 15ft by 20 ft, samples were collected from the vertical center of impact and worst location 15 ft bls. Approximately 100 cy of soil was impacted

REMEDIATION ACTIVITIES

- One proprietary EN Rx Reagent™ application was used to treat the soil with EN-Rx-SC™ soil conditioner.
- The goal was to break the clays down and treat the soil to below RSTLs criteria.
- Remediation used a technique of soil inversion where the overburden is removed, the contaminated soil is removed, the overburden is replaced in the open excavation, then the contaminated soil is reinserted into the excavation in lifts while EN Rx reagent s are applied which minimized space needed and provides good control of the operation at the same location of initial impact.

POST-CLEAN UP DATA

- Although exact location of pre sampled soil is unknown after the excavation process, three samples confirm the reduction to very low concentrations far below the RSRL standard for Benzene.
- Mass reduced can be calculated as 99.7%
- The soil conditioning transformed the clayey soil into a loamy soil suitable for treatment in minutes. Treatment took 1 day.
- Site was closed.

Case Study 0401: Treatment Results

	Date	Benzene	Toluene	Ethyl benzene	Xylenes
Pre Sample 1	12/15/2009	2.5	7.5	1.4	8.0
Pre Sample 2	12/15/2009	1.1	5.9	3.7	19
	3/23/10	EN Rx Treatment			
Post Sample 1	4/14/2010	<0.050	<0.010	<0.10	<0.15
Post Sample 2	4/14/2010	<0.050	<0.010	<0.10	0.24
Post Sample 3	4/14/2010	<0.050	<0.010	<0.10	<0.15
RSRLs		0.65	650	400	270

All results in mg/L unless otherwise specified
RSRL = Residential Soil Remediation Level