



Conestoga-Rovers & Associates Project Summary

KEY PROJECT ELEMENTS

- Remediation of a former Gasoline Service Station
- Underground Storage Tanks and Dispensers
- Installation of a Cost-effective Ozone Emitter System
- Meets USEPA Best Site Management Practices
- Solar Powered System

GENERAL INQUIRIES:
info@CRAworld.com

WEB SITE:
www.CRAworld.com

SOLAR POWERED REMEDIATION SYSTEM FOR A FORMER SERVICE STATION WILLOWS, CALIFORNIA



CLIENT: CONFIDENTIAL
DURATION: 2002 - ONGOING
COST: \$300,000 INCLUDING \$20,000 FOR OZONE EMITTER SYSTEM

CRA was retained by a confidential client in 2002 to investigate the extent of petroleum hydrocarbon impact at a former service station located in the City of Willows, in the Sacramento Valley of northern California. The former station had four underground storage tanks (USTs), two dispenser islands, one used-oil tank, and a station building. The site is surrounded by commercial property, including Union Pacific Railroad tracks along the east side of the site.

CRA completed six borings and ten monitoring wells up to 155 feet deep, across five water-bearing zones. The five water-bearing zones consisted of clay sand, sand, and gravel interbedded within clay and silt. After determining impact was mainly limited to the first shallow water-bearing zone, CRA negotiated with the California Regional Water Quality Control Board and received approval to install CRA's Ozone Emitter System (OES). CRA proposed the OES because of its cost-effectiveness at remediating the constituents of concern at gasoline service station sites, and the reliability of the system requiring fewer O&M visits to reduce operating costs at this distant site. Also, CRA's OES has been gaining acceptance from regulatory agencies across California for its compliance with the State's General Waste Discharge Requirements (WDRs).

In January 2009, CRA installed and began operating the OES in two wells in the vicinity of the former northern UST to remediate the highest remaining dissolved gasoline range organics, including benzene, in groundwater. The OES is designed to be installed in existing wells two inches in diameter or larger, and can provide immediate remedial action on most sites without significant disruption to site operations. Its installation meets U.S. EPA Best Site Management Practices by producing minimal waste and saving time. The system operates on low-voltage direct current power and was designed to be powered by a small solar panel array.