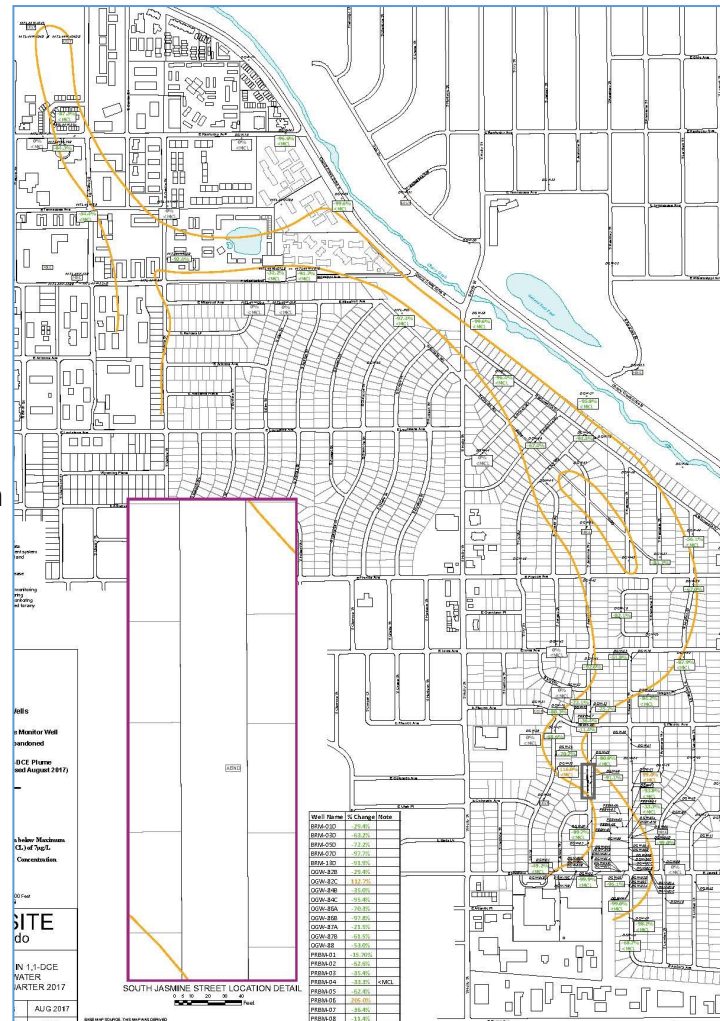


The Redfield Rifle Scope Site

5800 East Jewell Avenue, Denver, Colorado

- Former gun scope manufacturing facility used solvents, which got into local groundwater and created groundwater plume that moved north toward Cherry Creek; groundwater contamination discovered in 1994
- The Colorado Department of Public Health and Environment provides ongoing regulatory oversight under a 1999 Order
- Groundwater and indoor air routinely monitored and sampled by scientists and the extent of the contamination is well known
- Facility owners and operators responsible for cleanup
- Volatile organic compounds (VOCs) - chlorinated solvents and associated products, e.g. tetrachloroethene, trichloroethene, 1,1-dichloroethene, and 1,4-dioxane
- Multiple remediation systems and treatments operate on and offsite to help protect human health and the environment:
 - o Source treatment under onsite building using angled wells and in-situ chemical oxidants
 - o Northern boundary groundwater containment system pump and treat onsite - using Advanced Oxidation Process and UV light
 - o Passive property boundary treatment - inject vegetable oil and microbes into subsurface
 - o Three off-site dechlorination systems
- Indoor air mitigation systems - impacted neighborhood homes; periodic home indoor air testing continues
- Local groundwater quality generally in decline. However, treatment will be required for many more years before contaminant concentrations drop below state standards



Redfield/CDOT Ground Water Contamination Update May 2018

Colorado Department of Public Health and Environment Hazardous Materials and Waste Management Division

Site Project Manager Contacts

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CO Department of Transportation Site

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COLORADO
**Hazardous Materials
& Waste Management Division**
Department of Public Health & Environment

Colorado Department of Transportation Site

2000 South Holly Street, Denver

- Approximately 10 acre property used by Colorado Department of Transportation (CDOT) for materials testing laboratory, maintenance yard, sign shop and offices
- 1997-1998 Groundwater contamination flowing from CDOT holly street property discovered during redfield investigation
- 1998 Major source of groundwater contamination found to be a “dry well” used to dispose of waste solvents from cleaning of pavement testing machines. Other minor sources found on property.
- 1998 CDOT and Colorado Department of Public Health and Environment (state health department) enter into a consent order requiring investigation and remediation of releases of chemicals at site
- 1998 Solvent contaminated groundwater shown to be migrating off-site and under neighborhood homes
- 2001 CDOT and state health department select a corrective measure to treat soil and groundwater at dry well source area prevent continued off-site flow of contaminants and address other minor sources
- 2002 through 2010 Active injection of treatment chemicals within dry well source area very successful and reducing contaminant concentrations and off-site flow. All other minor sources are completely remediated
- 2010 through current continued groundwater monitoring results show plume has reduced in size to two small areas where contaminant concentrations slightly exceed state groundwater standards
- Enforceable land use restrictions in place to prevent use of contaminated groundwater and ensure protection of human health during proposed development



Colorado Department of Transportation HQ

4201 East Arkansas Avenue, Denver

Materials Testing Laboratory (MTL)

4340 East Louisiana Avenue, Denver

1950s - Concrete, asphalt and paint were tested at the MTL; generated several hazardous wastes

Mid to Early 1970s - Underground storage tanks were installed that stored solvents

1993 - 1994 - CDOT conducted investigations to define nature and extent of on and off-site contamination, petroleum hydrocarbons and chlorinated solvents were identified

July 1994 - CDPHE approved a groundwater and soils treatment plan, which began implementation onsite shortly thereafter

May 24, 1995 - a Compliance Order on Consent was signed by CDPHE and CDOT, which established requirements and schedules for additional investigations and remediation of any contamination relating to the facility

1997 - data confirmed vapors from the CDOT groundwater plume were present in indoor air samples collected from nearby single family homes and apartment buildings, vapor mitigation systems were quickly installed at these locations

1997 - 2014 - residential vapor mitigation systems were operational and groundwater continues to be remediated both onsite and offsite

August 2014 - all residential vapor mitigation systems were discontinued, indoor air testing concluded that indoor air was safe while the systems were turned off

2014 - Present Day - groundwater continues to be treated in limited areas offsite and a more aggressive approach is being implemented in the source area beneath the MTL

