

1,2,3-Trichloropropane (1,2,3-TCP) Update Operable Unit 1A Former Marine Corps Air Station Tustin, Tustin, California

112th Restoration Advisory Board Meeting

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Presentation Overview



- Operable Unit (OU) 1A/Installation Restoration Program (IRP) Site 13S
 - -Location and Background
 - -Remedial Design
- California Maximum Contaminant Level (MCL) for 1,2,3-TCP
- Current (March 2021) 1,2,3-TCP Plumes
 - -First Water-Bearing Zone (WBZ)
 - -Second WBZ
 - -Third WBZ
- 1,2,3-TCP Plume Stability (2008–21)
 - -First WBZ
 - -Second WBZ
- Next Steps
- Questions

OU-1A/IRP Site 13S Location and Background

Drum Storage Area Number 3

Temporary Storage Area 72

- Former vehicle maintenance garage and lubrication facility
- Main source of 1,2,3-TCP impacts
- $_{\odot}$ Located north of the current plume extents

Miscellaneous Wash Area 18

- Formerly used for cleaning generators and other field equipment
- Main source of trichloroethene (TCE) impacts
- $_{\odot}$ Located near the head of the plume

Disposal Storm Drain 07

 Located primarily within the boundary of Miscellaneous Wash Area 18



OU-1A/IRP Site 13S Remedial Design



Final Record of Decision in December 2004

Remedy Features

- Chemicals of concern: 1,2,3-TCP, TCE and its breakdown products
- Groundwater remedy includes hot spot groundwater extraction, hydraulic containment, semiannual monitoring, institutional controls
- Soil remedy included source area removal (no further action)

1,2,3-TCP Remediation Goal (RG)

 – 0.5 microgram per liter (µg/L) based on risk and the limitations of laboratory analysis and the best available technology at the time

• TCE RG

- 5 µg/L (state and federal MCL)
- Operating Properly and Successfully since 2009
- Fourth Five-Year Review Completed in 2021
 - For 1,2,3-TCP in OU-1A groundwater, the remedy is protective with respect to the established RG, but additional action needed to address the MCL

Updated California MCL for 1,2,3-TCP



- MCL for 1,2,3-TCP is now 0.005 µg/L (or 5 parts per trillion [ppt]: 100 times < the current RG)
- Promulgated in December 2017
- Applies to concentrations in drinking water
- Responsive to changes in health risk assessments
- Refinement of analytical methods allows lower detection limits
- No federal MCL







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First WBZ 1,2,3-TCP Plume Stability (2008–21)



Second WBZ 1,2,3-TCP Plume Stability (2008–21)







Further evaluate plume stability

 Conduct additional groundwater monitoring and modeling to provide additional data. Add new wells to the program as recommended

Evaluate potential need to modify/augment remedy

- Collaborate with regulatory agencies to assess options
- Potentially adopt the California MCL for 1,2,3-TCP as the RG
- Potentially add/integrate new extraction wells to capture portions of the plume above the MCL
- Consider commingled per- and polyfluoroalkyl substances impacts
- Determine if the remedy is protective of human health and the environment in the long term during the next five-year review in 2026

Questions?





	Acronyms	
μg/L – microgram(s) per liter	Navy – U.S. Department of the Navy	TCE – tetrachloroethene
BRAC – Base Realignment and Closure	OU – Operable Unit	TCP – trichloropropane
IRP – Installation Restoration Program	RG – remediation goal	WBZ – water-bearing zone

MCL – Maximum Contaminant Level

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