Omega Chemical Corporation Superfund Site

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EPA Selects Remedy for Groundwater Contamination at Operable Unit 2

The United States Environmental Protection Agency (EPA) signed a **Record of Decision*** (ROD) on September 20, 2011, selecting an interim remedial action (Interim Remedy) to contain the large **plume** of contaminated **groundwater** at the Omega Chemical Corporation **Superfund** Site, located in Los Angeles County (See Figure 1). The purpose of this fact sheet is to summarize the decision memorialized in the ROD.

The selected Interim Remedy for **Operable Unit** 2 (OU-2) addresses the plume of contaminated groundwater that extends approximately 4 ½ miles south-southwest from the former Omega Chemical Corporation facility in Whittier, California (See Figure 2). Much of the plume lies beneath a large commercial/industrial area where chemicals released at other facilities have commingled with the contamination originating at the former Omega Chemical facility.

EPA issued a **Proposed Plan** for public comment on August 23, 2010, and held a public meeting in Whittier on August 31, 2010 to present the Plan and formally recorded verbal comments. EPA's Proposed Plan summarized key information from the OU-2 **remedial investigation and feasibility study** (RI/FS) completed by EPA in July 2010. The RI/FS describes the nature and extent of OU-2 groundwater contamination, the risks it poses to human health and the environment, and the alternatives EPA evaluated to address those risks.

The public comment period ended on November 22, 2010. EPA considered all comments received during the comment period, and responses to the comments are included in the ROD. The ROD and the Administrative Record (AR), which contains documents that formed the basis for EPA's decision, are available at the **information repositories** listed on the back page. The AR Index along with other Site information is available on EPA's web page for the Omega Site at **www.epa.gov/region09/OmegaChemical.**

The selected remedy is an interim action to contain the plume of contaminated groundwater. The overall objective of the Interim Remedy is to protect human health and environment by preventing further spreading of

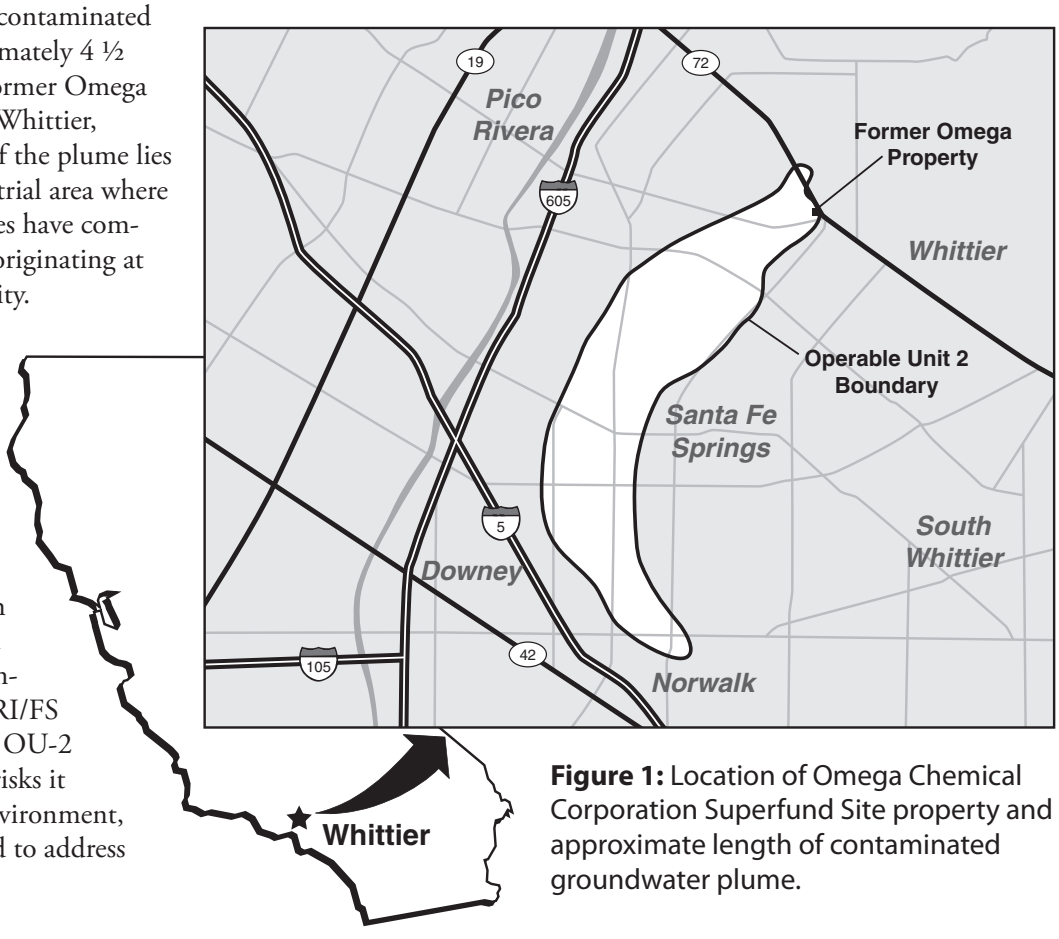

Figure 1: Location of Omega Chemical Corporation Superfund Site property and approximate length of contaminated groundwater plume.

*Terms that appear in **bold** are defined in the glossary on page 5

the contaminated groundwater to as yet uncontaminated portions of the **aquifer** and to nearby production wells. The interim remedy will also prevent areas of high concentration of contaminants (i.e., the "hot spots") from moving laterally and vertically into low concentration areas of the plume.

Following implementation of the interim remedy, EPA will conduct further studies and expects to propose additional remedial actions for the OU-2 plume as part of the final cleanup remedy for the Site. EPA will work with the State to identify and address significant sources within the OU-2 plume area that have contributed to the groundwater contamination. Most of the known sources are currently being addressed by State-led actions; EPA expects that other identified sources will be addressed by the combined efforts of the State and EPA.

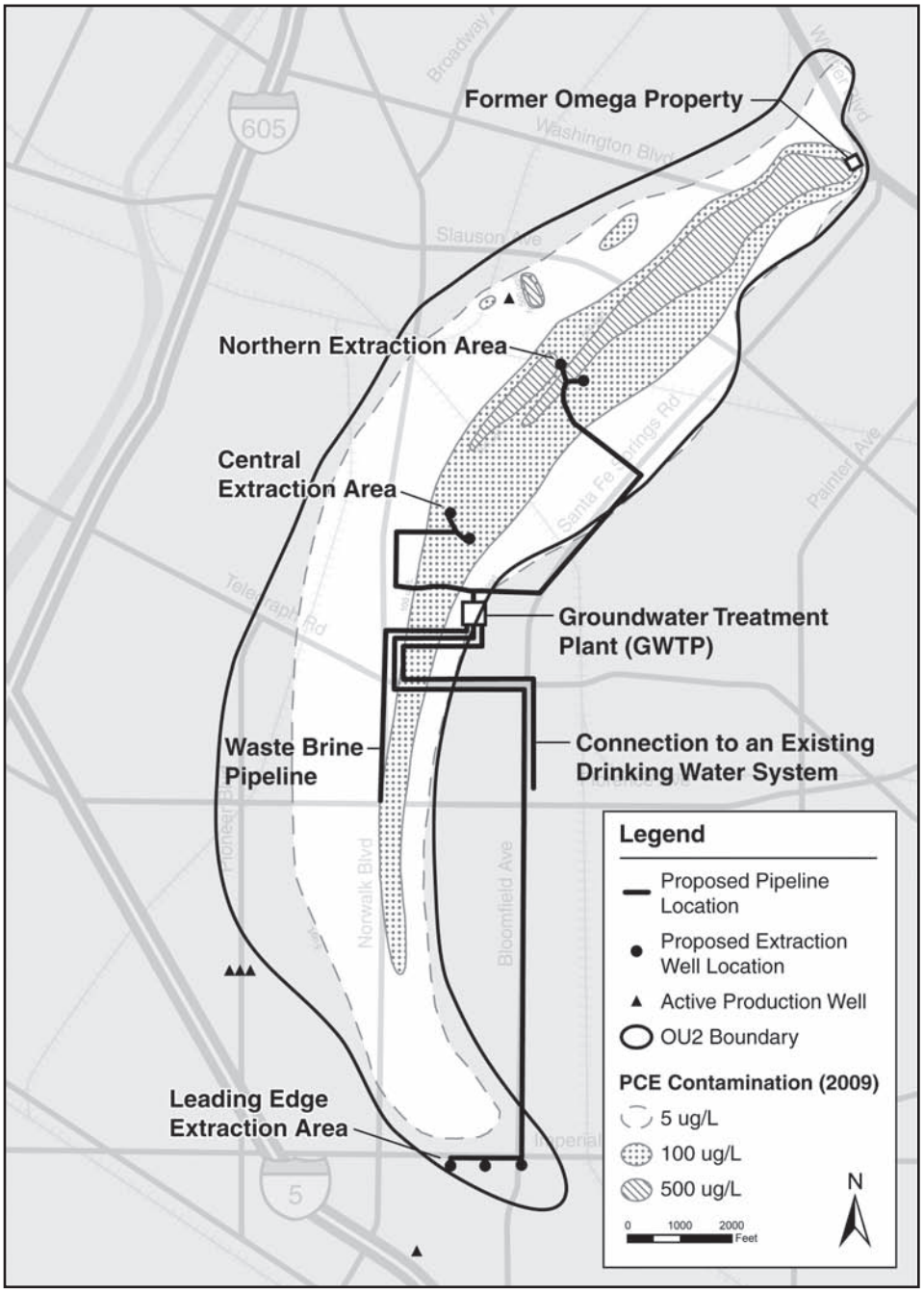

Figure 2: Schematic of EPA Selected Remedy

Selected Interim Remedy for OU-2

The selected remedial action is containment of contamination in groundwater that extends approximately 4 ½ miles generally downgradient and originating from the former Omega Chemical Corporation facility in Whittier, California. The following Interim Remedy (See Figure 2) is expected to begin the process of restoring the contaminated aquifer by removing contaminant mass from the groundwater:

1. Construction of **extraction wells** at three locations along the plume and installation of monitoring wells;

2. Pipelines to convey contaminated groundwater to one or more treatment plants, which will remove the contaminants of concern from the water;

3. Delivery of treated water to one or more local drinking water purveyors, or reinjection of the water into the aquifer if an agreement for drinking water end use cannot be reached;

4. Discharge of waste brine to an industrial sewer connection; and

5. Ongoing information exchange regarding area well-drilling and groundwater pumping rates to ensure the effectiveness of the remedial action.

The drinking water end use for this Interim Remedy is contingent upon one or more local water purveyors agreeing to accept the treated water. If an agreement with the water purveyor(s) cannot be reached in a timely manner, the treated water may be reinjected into the aquifer. Reinjection would have to be implemented in a manner that does not cause interference with containment of the plume and does not result in further spreading of existing plumes in the shallow aquifer. Although EPA does not expect significant changes to this Interim Remedy, there may be some level of modification during the remedial design and construction processes. Any changes to the Interim Remedy described in the ROD would be adopted and documented as appropriate and consistent with the applicable regulations. The extraction well system for the Interim Remedy will be determined during remedial design based on achieving the primary cleanup goals and performance criteria. Institutional Controls (ICs) are included in the remedy and are explained below.

Institutional Controls (ICs)

ICs are non-engineering controls that help minimize the potential for human exposure to hazardous substances, pollutants, or contaminants, and their purpose is to help ensure the effectiveness of the Interim Remedy. Groundwater in the vicinity of OU-2 is an important source of drinking water. The groundwater contamination in OU-2 potentially limits the ability of numerous water rights holders to fully exercise their water rights. It could also create a significant challenge to operate certain production wells in a manner that is compatible with the groundwater contamination containment goals of the OU-2 Interim Remedy.

The ICs include: (1) an annual notification to all water rights holders in the Central Basin, which explains the extent of the groundwater contamination, the status of the interim remedy and the restrictions on well-drilling. This will ensure there is no interference with the containment remedy. (2) periodic meetings with State and local agencies with jurisdiction over well drilling and groundwater use within the Central Basin and (3) at this same time agencies will give EPA notification regarding groundwater extraction and well drilling, as described in the ROD.

Environmental Footprint Assessment

The FS provided a preliminary assessment of the environmental footprint of the remedial alternatives, including those that make up the selected remedy. During the Remedial Design (RD) phase, the construction and operation of the **groundwater extraction and treatment system** will be evaluated in terms of opportunities to reduce the environmental footprint of the remedy. Detailed engineering studies will be conducted to optimize pipeline routing and design, for example, not just to reduce the initial cost of pipeline installation, but to account for energy usage (pumping power costs) associated with different pipeline materials (e.g., use smaller versus larger pipe sizes; use of smoother pipeline materials to reduce pressure losses, etc.). The design will include consideration of extensive use of lower energy-consuming equipment such as variable frequency motors with high efficiencies. As appropriate, consideration will be given to solar panels to produce onsite power to offset facility power requirements from the local power supplier, and procurement of electrical power from alternative energy (greener) source suppliers. Emerging technologies at the time of the RD effort will be considered to minimize the environmental footprint of the selected remedy.

Estimated NPV

Capital Costs:	$38.4 million
Annual Operations and Maintenance (O&M):	$ 2.5 million
Estimated (NPV)*	$69.2 million

*Net Present Value (NPV) is based on a 30-year O&M period using a 7% discount rate.

Technical Assistance Program

EPA has a Technical Assistance Grant (TAG) program that is available for citizens who live near a Superfund site. The grant helps qualified citizen groups affected by a Superfund site to hire an independent technical advisor to help interpret and comment on site-related information. An initial grant of up to $50,000 is available. For further information about the grant, please call us and request an application (toll free 800-231-3075) or go to **http://www.epa.gov/superfund/community/tag/resource.htm.**

Site Background and Enforcement History

The Omega Chemical facility was located at 12504 and 12512 East Whittier Boulevard in Whittier, California, and operated as a refrigerant and solvent recycling, reformulation and treatment facility from approximately 1976 to 1991. Drums and bulk loads of waste solvents and other chemicals from various industrial activities were processed at the facility. As a result of the operations and spills and leaks of various chemicals, the soil and groundwater beneath the facility became contaminated with high concentrations of tetrachloroethylene (PCE), trichloroethylene (TCE), Freons 11 and 113 and other contaminants. In January 1999, EPA placed the Site on its **National Priorities List**.

EPA manages the Site as three operable units (OU-1, OU-2, and OU-3). OU-1 refers to the contaminated soil and groundwater at and in the immediate vicinity of the former Omega property. OU-2 is composed of groundwater contamination outside and generally downgradient (generally south-southwest) of OU-1. OU-3 includes EPA's interim response actions at several buildings impacted by **vapor intrusion** from subsurface contamination on and near the former Omega Chemical facility. Vapor intrusion is the process by which contaminant vapors migrate through subsurface soils and enter overlying buildings. EPA is addressing OU-3 through an interim action until the OU-1 soil remedy is operational.

Summary of Enforcement Activities

On May 9, 1995, EPA issued a Unilateral Administrative Order (UAO) to the Omega Chemical Corporation, its President, Dennis O'Meara, and to "major" generators (i.e., **potentially responsible parties (PRPs)** that sent at least 10 tons of hazardous substances to the Omega Chemical facility. The UAO required various actions on or near the Omega Chemical property, including the removal of containers of materials and hazardous substances, the decommissioning of certain equipment, and an investigation of soil and groundwater contamination. Approximately 147 parties performed work under the UAO, as amended in September 1995.

PRPs also agreed to perform a **removal action** addressing groundwater and an RI/FS addressing soil in the OU-1 area. This agreement was memorialized in a **consent decree (CD)**, ultimately entered by the U.S. District Court in 2001. The removal action involved installation of a groundwater extraction and treatment system to contain contaminated groundwater in the OU-1 area. The extraction and treatment system began operation on June 7, 2009, and groundwater monitoring is ongoing. To date, the system has pumped 12.5 million gallons of groundwater and removed 480 lbs of contaminants.

In 2004, EPA ordered other PRPs to install and sample additional groundwater monitoring wells to help characterize the plume of contaminated groundwater coming from the Omega property.

In 2005, EPA settled with 171 "de minimis parties" who sent between 3 and 10 tons of hazardous substances to the former Omega Chemical facility. In 2006, EPA settled with 12 parties deemed to have limited ability to pay response costs associated with the Site.

In 2006, EPA issued an Action Memorandum identifying response actions needed to mitigate threats to human health posed by vapor intrusion in the Skateland building, an indoor roller skating rink adjacent to the former Omega Chemical facility. PRPs ultimately funded the purchase of the Skateland property and demolished the building.

EPA selected a remedial action for soil cleanup at OU-1 in a ROD issued on September 30, 2008. The cleanup action will consist of a **soil vapor extraction (SVE)** system to remove and treat chemicals in soil. A series of SVE wells will be used to pull the contaminant vapors out of the soil and into a **granular activated carbon (GAC)** filter for treatment. In 2010, more than 150 PRPs agreed to perform the OU-1 soils remedy. The system currently is being designed by PRPs, with EPA oversight.

In 2009, EPA entered into an agreement with the PRPs to address indoor air contamination caused by vapor intrusion into buildings. Under the agreement, the PRPs installed an interim SVE system, a sub-slab depressurization (SSD) system and are taking other measures to address vapor intrusion at buildings in the OU-1 area. PRPs continue to monitor indoor air in several buildings.

Glossary of Terms

Aquifer: An underground geological formation, or group of formations, containing water. This is a source of groundwater for wells and springs.

Consent Decree: A legal document approved by a judge that formalizes an agreement reached between EPA and potentially responsible parties where they perform all or part of a site cleanup.

Extraction Well: A discharge well used to remove groundwater or air.

Feasibility Study: A study that determines the best way to clean up environmental contamination.

Granular Activated Carbon (GAC) Treatment: A filtering system often used in small water systems and individual homes to remove organics. Also used by municipal water treatment plants.

Groundwater: The supply of water found below the ground surface, usually in aquifers.

Groundwater Extraction and Treatment System: A system that uses one or more extraction wells to remove contaminated groundwater and treat it to remove the contamination before the water is used or discharged.

Information Repository: A location accessible to community members (such as a local library) that houses documents, reports and other site-related information, general information about Superfund, newspaper notices, and the Administrative Record for the site. EPA also maintains an information repository for all Superfund sites at its offices in San Francisco, California.

National Priorities List (NPL): EPA's list of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial action under Superfund. The list is based primarily on the score a site receives from the Hazard Ranking System. EPA is required to update the NPL at least once a year. A site must be on the NPL to receive money from the Trust Fund for remedial action.

Operable Unit (OU): At large and/or complex sites the remediation may be broken into two or more parts or pieces, each of which is designated an Operable Unit, and is numbered consecutively (e.g., OU-1, OU-2, etc.).

Plume: A body of contaminated groundwater originating from a specific source.

Potentially Responsible Parties (PRPs): An individual or company (e.g., an owner, operator, transporter, or generator of hazardous waste) that is potentially responsible for the contamination problems at a Superfund site. Whenever possible, EPA requires PRPs to clean up hazardous waste sites they have contaminated.

Proposed Plan: A document that summarizes the cleanup alternatives evaluated as part of the Feasibility Study process and identifies the preferred cleanup alternative.

Record of Decision: The document that formalizes EPA's decision to implement a specific remedial action.

Remedial Investigation: The CERCLA process of determining the nature and extent of hazardous material contamination at a site.

Removal Action (RA): Removal actions are responses performed at NPL and non-NPL sites that eliminate or reduce threats to public health or the environment from the release, or potential release, of hazardous substances or pollutants or contaminants which may pose an imminent and substantial danger to public health or welfare.

Soil Vapor Extraction: A technology that removes contaminants from the subsurface by extracting and treating contaminant vapors.

Superfund: The common name for the process established by CERCLA to investigate and clean up abandoned or uncontrolled hazardous waste sites. CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act) is a federal law first passed in 1980, and subsequently amended, that created a trust fund, known as Superfund, to investigate and clean up abandoned or uncontrolled hazardous waste sites.

Vapor Intrusion: The process by which contaminant vapors in the soil and/or groundwater migrate through subsurface soils and enter overlying buildings.

Omega Chemical Corporation Superfund Site

Interim Record of Decision for Groundwater Contamination at Operable Unit 2

Site Information Repository

EPA maintains site information repositories at the following locations. These repositories contain the Administrative Record file, project documents, fact sheets and reference materials.

Whittier Public Library
7344 S. Washington Avenue
Whittier, CA 90602
(562) 464-3450

U.S. EPA Superfund Records Center
95 Hawthorne Street, 4th floor
San Francisco, CA 94105
(415) 536-2000

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