



# Superfund and the States

## A COMPENDIUM OF

### Success Stories in State Involvement



Association of State and Territorial

**ASTSWMO**

Solid Waste Management Officials

State Superfund Focus Group

October, 2006

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#### Introduction

On December 11, 1980 the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) was signed into law by President Jimmy Carter, creating the federal government's program to clean up the nation's uncontrolled hazardous waste sites. It quickly became clear, however, that the new Superfund program could not address all of the hazardous waste disposal sites being discovered across the country. Instead, it was agreed the Superfund program would focus on the identification, investigation, and cleanup of the nation's worst hazardous waste sites, and the much larger number of remaining sites would have to be addressed by State environmental programs.

The Superfund program is different than some other federal environmental programs in that there is no provision for authorization or delegation of program functions to the States. The United States Environmental Protection Agency (US EPA) retains primary responsibility for implementation of the program. However, CERCLA and the National Contingency Plan (NCP) provide for significant State involvement throughout the various phases of the program. Subpart F of the NCP requires that US EPA ensure meaningful and substantial State involvement in hazardous substance responses, and further requires that US EPA provide an opportunity for State participation in removal, pre-remedial, remedial, and enforcement response activities. In addition, US EPA is required to consider State acceptance as one of the nine criteria for evaluation of proposed remedies contained in the NCP. The NCP also provides States the opportunity to act as Lead Agency in Superfund response actions.

CERCLA, the NCP, and US EPA policy also place certain obligations on States that require State involvement. For example, in order to conduct fund-lead remedial actions, CERCLA re-

quires the State to contribute 10% of remedial action costs and to assure full implementation and funding of all required operation and maintenance activities. In most cases, as a matter of policy, US EPA requires the concurrence of the State's governor prior to nominating a site for listing on the National Priorities List (NPL). The NCP also requires US EPA to seek State concurrence on remedy decisions. Meeting these obligations requires a high level of State involvement in all phases of the Superfund program.

Of course, there are many other reasons why States stay involved in the Superfund process above and beyond the obligations contained in the NCP and CERCLA. Among these reasons is the responsibility of each State to ensure, to the greatest extent possible, that sites in their State are cleaned up to a safe and proper level in order to protect the citizens they represent and environmental resources they are charged with safeguarding.

Throughout the life of the Superfund program, the States have worked closely with US EPA to help ensure that sites are adequately characterized, appropriate and cost effective remedies are implemented, innovative approaches are considered, and the public remains informed and involved. This Compendium outlines several examples where States have offered their experience and knowledge to facilitate a more efficient and successful implementation of remedial actions. The experience gained from the large number and variety of sites addressed through their own programs, combined with the understanding of local environmental conditions and community issues, has in many cases led to better, more protective and more cost effective remedies. The following case studies highlight examples of how the overall Superfund process has benefited from significant State involvement and strong US EPA/State partnerships.

## Lake Calumet Cluster Site Chicago, Illinois

For decades until the 1970s, a cluster of industrial sites near Lake Calumet on Chicago's South Side was used for improper disposal of industrial, municipal and chemical waste. Surrounded by wetlands, this 87-acre area poses a threat to local workers and wildlife, including the nesting grounds of the endangered black-crowned night heron. Since the late 1970s, US EPA and the Illinois Environmental Protection Agency (Illinois EPA) have worked to investigate and mitigate contamination at Lake Calumet. Illinois EPA currently is attempting to implement an interim action to decrease risks to the local community and costs for State and federal taxpayers. The site was proposed for the NPL in September of 2005.

Illinois EPA's work includes a series of novel cost-reducing solutions that re-use materials from other projects. In cooperation with the Illinois Department of Transportation, the agency is stockpiling roughly a million cubic yards of soils excavated in a Dan Ryan Expressway (Interstate 90/94) construction project for future use as a hazardous waste site cap. Because cap construction fill will not need to be purchased, the State of Illinois will save over \$12 million.

Similarly, Illinois EPA has proposed to use bio-solids from a nearby wastewater reclamation facility to provide materials for incorporation into the vegetative layer for the cap. This technology has been proved successful at other sites. Used in place of topsoil and fertilizer, the bio-solids method will provide a cost reduction in the tens of thousands of dollars.

Illinois EPA also is proposing to use Illinois statutes governing beneficial use of spent slag material for the construction of the gas management layer required for this type of cap. It is anticipated that this spent material will be delivered and stockpiled at the site at no cost to the State of Illinois. This effort will provide further savings of hundreds of thousands of dollars.



Lake Calumet Cluster Site		
<b>State Contributions:</b>		
•Cost Savings	•Reuse/Recycling	•Innovative Solution
•Time Savings	•Technical Expertise	

Finally, Illinois EPA used pre-existing studies and data to complete a Focused Feasibility Study, Proposed Plan and Record of Decision (ROD). This 'recycled information' cut nearly 24 months from the typical remedial investigation/feasibility study (RI/FS) process, leading to \$2 million in additional savings.

## New Bedford Harbor New Bedford, Massachusetts

New Bedford Harbor is one of the most costly fund-lead sites in the United States. From the 1940s into the 1970s, electric components manufacturers discharged polychlorinated biphenyl (PCBs) into the harbor, contaminating sediments on the ocean floor. The site was listed on the NPL in 1983 and more than \$20 million was collected from responsible parties. All settlement funds from the responsible parties have been spent, and for the last three years US EPA has contributed roughly \$15 million per year for cleanup work. This rate of expenditure is expected to continue indefinitely.

The harbor site consists of approximately 18,000 acres of tidal estuary and shoreline areas in the City of New Bedford and the Towns of Acushnet and Fairhaven. In 1998, US EPA signed a ROD to address both human health and ecological risks. The



amount of contaminated sediment being removed currently is estimated at 880,000 cubic yards.

In an effort to combine and streamline two massive projects, the Massachusetts Department of Environmental Protection (MassDEP) requested that EPA include in the ROD a rarely used provision of CERCLA called ‘enhancement of remedy’ (40 CFR 300.515(f)). Using this provision, MassDEP added some 1.7 million cubic yards of dredging in navigational channels to the original ROD. The areas covered by the remedy enhancement are contaminated with PCBs below US EPA’s action level for human health and environmental risk. However, the presence of low-level PCB contamination in the channels presented significant hurdles to navigational dredging work, which is necessary to re-open the harbor to the large commercial vessels that are critical to the region’s economy. By conducting navigational and cleanup work simultaneously, sediment disposal is simplified, public involvement processes are coordinated and years and millions of dollars are saved.

MassDEP is managing the enhancement portion of the remedy as state lead under a memorandum of agreement. The State and local communities are covering the cost of the enhanced portion of the remedy. To date, about 123,000 cubic yards of additional contaminated sediments have been dredged under the MassDEP navigational dredging program. In the summer of 2005, a 25,000-cubic yard contaminated area that was planned for dredging by US EPA instead was capped, using clean sand obtained during construction of the on-site navigational dredge disposal facility.

New Bedford Harbor		
<b>State Contributions:</b>		
•Cost Savings	•Technical Expertise	•Partnership with USEPA
•Time Savings	•Enhanced Solution	•Economic Benefit

The cap saved US EPA a year’s worth of work and approximately \$15 million.

MassDEP’s navigational dredging and US EPA’s cleanup work have produced synergies beyond cost and time savings. The navigational dredging enhancement has removed contaminated sediments that were not part of US EPA’s original plan. This process has increased cooperation among many local, state, and federal agencies. Finally, navigational dredging will help to relieve the economic hardship that harbor contamination has caused this part of Massachusetts.

### Rose Hill Landfill South Kingstown, Rhode Island

The Town of South Kingstown’s municipal landfill was located at Rose Hill from 1967 to 1983. In the middle 1980s, Town staff found that the landfill had contaminated local drinking water wells, and the site was placed on the NPL in 1989. The Rhode Island Department of Environmental Management (RIDEM) and US EPA entered into a Cooperative Agreement (CA) for the Rose Hill landfill site in 2001.

The CA gave RIDEM lead agency status for remedial design (RD) and for construction of the selected remedy. US EPA and their contractor had estimated the RD’s cost at \$1.8 million. RIDEM and their design contractor completed the RD, conducted the bid process, and awarded





Rose Hill Landfill		
<b>State Contributions:</b>		
•Cost Savings	•Enhanced Community Involvement	
•Technical Oversight	•Contract Management	•Technical Expertise

the first phase of construction of the RD for a total of \$1.06 million dollars, for a savings of roughly \$750,000. The first phase of the construction of the RD was estimated at approximately \$5.2 million dollars. The first phase is now complete and the cost is estimated at just over \$4 million dollars, saving an additional \$1.2 million. Since RIDEM took over lead status at Rose Hill, roughly \$2 million – almost 30% of the originally estimated cost – has been saved. RIDEM also is the project lead for Phase II of the RD, construction of a landfill cap, which is now underway. US EPA’s estimate for cap construction was \$9 million; RIDEM hopes its involvement will yield savings during this phase, as well.

Another positive aspect of the project has been the involvement of the Towns of Narragansett and South Kingstown, both of which have been active in the remediation process. Both have had staff review all documents generated for the site, attend all public and technical meetings, voice the concerns of residents, negotiate access agreements with local residents, and lend their expertise in local construction and building codes to aid the project. This level of public participation is not commonplace under Superfund, but it has been beneficial both to cleanup work and to prospects for the eventual re-use of the site.

## Reinhardt Tire Fire Frederick County, Virginia

Reinhardt Tire Fire		
<b>State Contributions:</b>		
•Beneficial Reuse	•Innovative Solution	•Technical Expertise
•Cost Savings	•Technical Oversight	

The Virginia Department of Environmental Quality (VDEQ) assisted US EPA with this site after a tire fire broke out in October of 1983. Approximately 7 million tires were involved with the fire. VDEQ’s Valley Region and Central offices provided assistance to US EPA’s Removal staff in getting the site stabilized and, later, in listing the site on the NPL. Reinhardt was placed on the NPL in June of 1986 as a fund-lead site.

Once the site had been stabilized, long-term remedial options were explored. One option that was considered was the creation of an on-site landfill to dispose of the remaining tires. Instead, VDEQ’s Superfund staff was able to coordinate with the Commonwealth’s fledgling waste tire program to create a novel and more effective solution. Through the tire program, the Commonwealth funded a mobile tire shredding operation. Shredded tires from Reinhardt were transported off-site and recycled in various civil engineering applications. This re-use strategy eliminated the need for an on-site landfill, saving US EPA and Virginia millions of dollars in construction and long-term monitoring and maintenance obligations. With the tires removed, the site was delisted from the NPL in 2005, resulting in no further responsibilities for US EPA or for the Commonwealth. The site is currently available for re-development.

## Operating Industries, Inc. Landfill Monterey Park, California

Operating Industries, Inc. Landfill		
<b>State Contributions:</b>		
•Partnership with USEPA	•Cost Savings	•Technical Expertise
•Innovative Solution	•Time Savings	

Operating Industries, Inc.’s (OII’s) Monterey Park landfill was referred to US EPA by the California Department of Toxic Substances Control (DTSC) in 1986 to be added to the NPL. After US EPA assumed site lead status, DTSC contin-

ued to provide support for development of the RI/FS and RD, eventually assisting with implementation of the remedy. The work performed by DTSC scientists and engineers complemented existing US EPA efforts, resulting in positive technical, financial and administrative impacts on the Superfund process.

The remedy selected for the OII site was quite an engineering feat, costing hundreds of millions of dollars. The evapotranspirative cover system developed for this landfill was the first of its kind to be approved by US EPA for use at a Superfund site. This type of cover is unique in that its ability to control landfill gas and water intrusion is similar to a prescriptive cover's, but installation and maintenance costs are greatly reduced. DTSC scientists and engineers helped in the development and evaluation of this innovative cover.

The landfill cover is one of many techniques utilized to control the wastes found in the former landfill. A landfill gas treatment system was designed and constructed to achieve the US EPA requirement of 99.99% for destruction and removal efficiency of landfill gas. DTSC scientists and engineers provided timely and valuable input regarding design, construction and testing, minimizing the likelihood of delays. At times when an US EPA representative was not available to provide oversight during source testing of the system, DTSC was able to provide the needed regulatory oversight, sometimes at the last minute.

While the entire OII site is listed on the NPL, it was discovered during the RI that the North Parcel of the landfill was not as severely impacted as the remainder of the site. As a result, the 45-acre lot was targeted for redevelopment, and in 1998 a developer began moderate remediation activities, hoping that the site could be used for commercial purposes. DTSC worked closely with the developer's consulting firm so that they could achieve their deadline for a December, 1999 groundbreaking ceremony. Because US EPA is not involved in local land-use decisions, DTSC stepped in to establish cleanup goals that

were compatible with a commercial land-use scenario. DTSC also provided oversight in the field during cleanup efforts, so that time-sensitive decisions could be made without delay. Though the North Parcel redevelopment was later put on hold for business reasons, DTSC was able to help the developer achieve commercial land-use status in time for its groundbreaking ceremony.

### Standard Chlorine Delaware City, Delaware

Standard Chlorine		
<b>State Contributions:</b>		
•Partnership with USEPA	•Enhanced Community Involvement	
•Financial Contribution	•Time Savings	•Technical Expertise

From 1966 to 2002, chlorinated benzene compounds were produced at Standard Chlorine's Delaware City facility. More than half a million gallons of Volatile Organic Compounds (VOCs) were spilled during a tank rupture in 1981, leading to the site's listing on the NPL in 1987. The Delaware Department of Natural Resources and Environmental Control (DNREC) has been a valuable and supportive partner in the cleanup at Standard Chlorine.

When the site's owner declared bankruptcy in 2002, cleanup work grew vastly more complex and costly overnight. DNREC responded immediately, joining US EPA's Emergency Removal staff on-site to assess the situation. DNREC staff have been by US EPA's side ever since. DNREC has contributed roughly \$3 million (partly non-



reimbursable) and many hours of staff time to ensuring that this project keeps moving smoothly toward a better and faster cleanup. By proactively funding the disposal of drums and small containers on-site in cooperation with US EPA Region III, DNREC accelerated the cleanup process. DNREC also has made numerous contributions in the area of local community relations, through its facilitation of public meetings and via electronic distribution of fact sheets and other informational materials. It is expected that a slurry wall Interim Remedy will be complete late in 2006.

### Valley Park TCE Site Valley Park, Missouri

Valley Park Site	
<b>State Contributions:</b>	
•Innovative Technology	•Time Savings
•Cost Savings	•Greater Protection

In 1982, the Missouri Department of Natural Resources (MDNR) detected VOCs including tetrachloroethylene (PCE) and trichloroethylene (TCE) in samples collected from three Valley Park municipal wells. In response to the contamination, the City of Valley Park installed

equipment to remove the VOCs, though by 1988 Valley Park residents were connected to the St. Louis County public water supply system. The Valley Park TCE Site was placed on the NPL in 1986.

The sources of contamination originated and continue to exist at industrial facilities on the former Wainwright Industries and current Valley Technologies, Inc. properties along the Meramec River. The processes at Wainwright and Valley Technologies included the use of degreasers and solvents for cleaning purposes, which included PCE, TCE and 1,1,1-tetrachloroethene (TCA).

In September of 1994, US EPA and MDNR issued the ROD for the Wainwright site, which called for cleanup of soil and groundwater. The remedy for Wainwright has been constructed and currently is operating. As defined in the 2001 ROD, the selected remedy for Valley Technologies is intended to be the final remedial action for the Valley Park TCE Site. Specifically, the Valley Technologies remedy addresses the chlorinated VOC contamination identified in the soil source on the property and contamination within the regional aquifer.

**A View from US EPA**

**Hellertown Manufacturing Company  
Hellertown, Pennsylvania**

The Hellertown Manufacturing Company is a Superfund site comprised of a groundwater pump and treat facility and a cap over a contaminated lagoon area. The Pennsylvania Department of Environmental Protection's (PADEP's) project manager at Hellertown has provided abundant historical knowledge, strong community relationship skills, and sound technical advice that has improved the operation and maintenance of the remediation efforts over the four years I have been US EPA's remedial project manager for this site.

Specifically, PADEP's project manager facilitated the removal of two concrete tanks that were a local concern for the West Nile Virus, deftly addressing the community's questions. She also provided astute technical input during the Five-Year Review process, and has been a strong, active partner in ongoing remediation efforts. In addition, she facilitated the review of US EPA's request to reduce the discharge sampling frequency and coordinated the approval of this request, resulting in significant time and money savings. Most recently, she has been a leader in responding to the upcoming transfer of responsibility for the site to the State, helping to guarantee that the transfer proceeds smoothly.

-US EPA Region III staff

Remedial actions for the soil and groundwater at Valley Technologies began late in 2005. Through discussions with US EPA and the MDNR, it was determined that nearby residences and businesses would need to be monitored for air toxics during the excavation of a highly contaminated area, as part of the remedy. To accomplish this task, the MDNR entered into a cooperative agreement with US EPA to provide open-path Fourier Transform Infrared (FTIR) air monitoring technology to provide for the detection of risk-based constituents of concern. Using the FTIR technology enabled the completion of the excavation work in a short period of time and reduced the uncertainty of using conventional monitoring techniques, such as the portable gas chromatograph, time-averaged ambient air samplers or portable photo-ionization detectors. As a result, excavation work was completed more efficiently using less time and money, while ensuring that the nearby residents and businesses were protected. It is anticipated that the MDNR will provide off-gas and groundwater sampling and analysis during the start-up phase of this project.

### Beede Waste Oil Plaistow, New Hampshire

Beede Waste Oil	
<b>State Contributions:</b>	
•Partnership with USEPA	•Time Savings
•Cost Savings	•Technical Expertise

From the 1920s until 1994, Beede Waste Oil operated as a processor and reseller of waste oil products. When the site was abandoned in 1994, the New Hampshire Department of Environmental Services (NHDES) found that VOCs and PCBs had contaminated local groundwater. For the next two years, NHDES conducted site investigations to present US EPA with conclusive evidence that the site was worthy of a removal action and of listing on the NPL; the site was added to the NPL in 1999.

US EPA and NHDES are working together to remediate the site. Under Superfund, US EPA is removing all hazardous waste, while the State has a separate contract to remove non-hazardous waste and its associated tanks and drums. Before cleanup work began, NHDES performed the RI/

FS through a cooperative agreement with US EPA. Because the State and its contractor already were intimately familiar with the site, considerable time and money were saved in the execution of the RI/FS.

### Starmet Corporation Concord, Massachusetts

Starmet Corporation	
<b>State Contributions:</b>	
•Cost Savings	•Payment Facilitation
•Enforcement	

The Starmet Corporation, formerly Nuclear Metals, Inc., operated a 46-acre metallurgical research and manufacturing facility in Concord starting in 1958. More recently, the facility was used to manufacture depleted uranium munitions, such as armor-piercing bullets, for the US military. Waste products from manufacturing processes were deposited either in drums or in an unlined holding basin. Over time, waste (including radionuclides) migrated into groundwater and nearby wetlands. In the mid- to late-1990s, operations at the facility subsided and the company undertook various remediation projects under MassDEP's privatized cleanup program. Due to the owner's financial inability to complete the necessary work, the site was added to the NPL on June 14, 2001.

Subsequent to the site's listing, Starmet's affiliate Carolina Metals, Inc. shipped 1,800 drums of uranium tetrafluoride from its South Carolina facility to the Concord facility. By 2003, the aggregate number of drums and containers of radioactive material at the facility was roughly





3,800. Additionally, it was estimated that 300 tons of depleted uranium metal was present on the site. Starmet lacked the resources to dispose of these materials appropriately.

In 2003, when US EPA was unable to enter into agreement with the US Army to fund disposal of the uranium and containerized waste because of a limitation on federal interagency payments, MassDEP was asked to intercede. The negotiation culminated in 2004 with a signed Administrative Order that the Army would provide \$5.2 million to an expendable trust. Based on responses to MassDEP's competitive procurement process, the actual cost of the drum removal was greater than the originally estimated amount and required an additional \$3.1 million; this funding was received in August of 2005.

After receipt of the additional funding, MassDEP awarded a drum removal contract. The scope of service included the removal of containerized radioactive material as well as raw, depleted uranium metal. The first shipment of radioactive material was made on October 5, 2005. 162 tractor-trailer shipments were made, with the last shipment occurring in February of 2006. In total, MassDEP's drum removal contractor removed 3,846 containers of depleted uranium waste and 322.3 tons of depleted uranium metal.

As a result of significant unused contingency funds, MassDEP tasked its contractor in March of 2006 to gather, test, and consolidate miscellaneous containerized material remaining inside

the facility. MassDEP currently is awaiting a Characterization Report and Cost Estimate to perform this supplemental disposal activity.

## Herron Farm Elkton, Maryland

Herron Farm	
<b>State Contributions:</b>	
•Partnership with USEPA	•Site Discovery
•Technical Oversight	•Time Savings

It is believed that Triumph Explosives, a WWII munitions manufacturer, used Herron Farm as a burn area for discarded munitions components. The Maryland Department of Environment's (MDE's) State Superfund program began a reexamination of the farm in 1999, following its designation by US EPA as a No Further Remedial Action Planned site. The resulting assessments have led to the identification of Triumph's burn pits and of 'blowout' from the pits that is scattered over a portion of the farm. Cooperation between MDE and US EPA led to the timely identification of the site and to a faster and more extensive planned cleanup. Moreover, US EPA's involvement persuaded the US Army Corps of Engineers to become involved at the site, lending their expertise to the planned removal.

The site formerly was slated for residential development; removal action funded by the State of Maryland and US EPA Region III was initiated early in 2006, in hopes of attracting developers back to the site. Site work is currently suspended, pending resolution of a funding issue.



## DuPont Site Newport, Delaware

DuPont Site	
<b>State Contributions:</b>	
•Technical Expertise	•Cost Savings
•Time Savings	•Innovative Solution

DuPont and other chemical manufacturers produced pigments and chromium dioxide at Newport for at least eight decades after 1902. Waste by-products were disposed of in landfills at the site. Over time, contaminants migrated from the landfills into wetlands along Newport’s Christina River, damaging local water supplies and reducing biodiversity. The site was added to the NPL in 1990.

DNREC provided technical expertise in rehabilitating and expanding the impacted wetlands. Having conducted successful wetlands restoration projects in the past, DNREC was able to work with US EPA and DuPont to accelerate design and review processes. DNREC’s expertise also facilitated agreement among the three parties to increase the scope of cleanup work, increasing the size of the wetland area and improving its biodiversity. Cleanup work at the site was completed in 2002, with operations, maintenance and monitoring activities ongoing.

## Troy Mills Landfill Troy, New Hampshire

Troy Mills	
<b>State Contributions:</b>	
•Partnership with USEPA	•Time Savings
•Innovative Solution	•Cost Savings

Troy Mills, a textile manufacturer, used a 2-acre portion of its property to dispose of solvents, pigments and other waste chemicals from 1967 to 1978. Following the company’s bankruptcy in 2001, the NHDES found several thousand barrels of waste at Troy Mills and referred the former landfill site to US EPA for a possible drum removal action. In September of 2003, the site was placed on the NPL. The State and US EPA worked together to initiate a time-critical removal action, using light non-aqueous phase liquid (LNAPL) interceptor trenches as an interim remedial measure until a drum removal could be funded.



In the spring of 2004, US EPA allocated \$8,000,000 for the drum removal, contingent upon a very aggressive schedule set by US EPA headquarters for removal action and for completion of the RI/FS. Drum removal began in July of 2004 and before December of that year, 7,692 buried drums were excavated and 29,924 gallons of flammable liquid waste, 3,099 cubic yards of sludge and 21,000 tons of heavily contaminated soil also were removed.

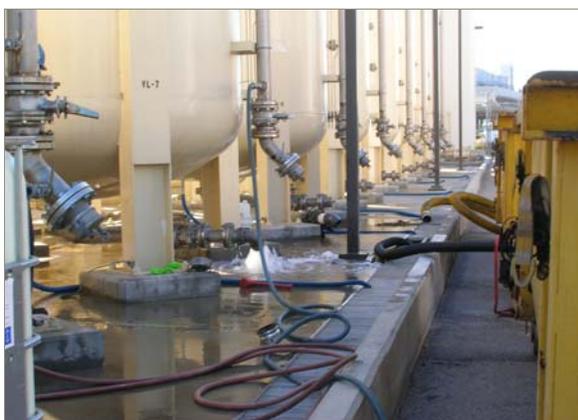
During the remedial action, NHDES worked with US EPA to save time and money and to avoid residual contamination. When US EPA planned to dispose of contaminated soils at a Subtitle C landfill, NHDES conducted an expedited evaluation of the soils and determined them to be non-hazardous and, therefore, acceptable for processing locally. This alternative resulted in a substantial savings in total removal action cost. In addition, State staff frequently reviewed drum excavation procedures with US EPA and recommended improvements to minimize potential groundwater contamination impacts during drum excavation. NHDES supported US EPA in developing field-screening procedures to effectively and efficiently remove highly contaminated soils from the site. These procedures prevented residual contaminated soils from being left on-site, which could have resulted in a long-term groundwater impact that ultimately might have become the State’s responsibility. This assurance that a possible source of continued groundwater contamination was eliminated facilitated “fast-track” review of the RI/FS. The ROD was signed less than one year after the RI/FS, and only two years from NPL listing.

## San Fernando Valley Sites Los Angeles, California

San Fernando Valley Sites
<b>State Contributions:</b> <ul style="list-style-type: none"><li>• Technical Expertise</li><li>• Multi-agency Partnership</li></ul>

The San Fernando Valley is an important source of drinking water for the Los Angeles metropolitan area, in particular the municipalities of Glendale, Burbank, San Fernando, La Canada-Flintridge and La Crescenta. Testing in the early 1980s revealed that volatile organic compounds were present in groundwater at concentrations above federal and state standards in large portions of the valley. Primary contaminants were TCEs and PCEs.

State and local agencies acted to provide alternative water supplies and to investigate and clean up potential sources. US EPA and the California DTSC became involved in coordinating efforts to address the valley's groundwater contamination. DTSC provided technical assistance to US EPA, particularly toxicology support, since DTSC has several toxicologists on staff.



During a 1998 review of groundwater monitoring data, DTSC discovered that some areas of the valley had elevated levels of total chromium in groundwater. Based on this information, DTSC recommended having the chromium analyzed to determine the percentage of hexavalent chromium. In most samples that were analyzed, hexavalent chromium represented anywhere

from 80-100% of the chromium present. Although the health effects from ingesting hexavalent chromium are not well known, it is suspected that the chemical is a carcinogen via this pathway. DTSC helped form a chromium task force with US EPA and other state and local agencies. The task force evaluated potential health effects by locating chromium source areas and identifying potential treatment technologies. Today, treatment technologies are being developed so that the San Fernando Valley's hexavalent chromium-impacted groundwater may once again be used for beneficial purposes.

This document was prepared by the ASTSWMO State Superfund Focus Group, with assistance from the U.S. Environmental Protection Agency under Cooperative Agreement R-829817.

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It is important to note that this document does not establish any official opinions, positions, preferences, or recommendations by ASTSWMO or by any individual ASTSWMO member or their respective State or region.

The group thanks Andrew Loew of Massachusetts DEP for compiling and formatting the information presented in this Compendium.



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