



NEWMARK GROUNDWATER CONTAMINATION SUPERFUND SITE

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY • REGION 9 • MARCH 2005

U.S. EPA Completes Construction of Muscoy Treatment Facility

Introduction

In cooperation and partnership with the City of San Bernardino Municipal Water Department (SBMWD), the California Environmental Protection Agency Department of Toxic Substances Control and the California Department of Health Services, the United States Environmental Protection Agency (U.S. EPA) has completed construction of the second cleanup system for the groundwater contamination plume at the Newmark Groundwater Contamination Superfund site in San Bernardino, California (see Figure 1, site map).

Muscoy Treatment Facility Opens

The second phase of the Newmark groundwater contamination construction effort is now complete. A formal agreement has been developed between the U.S. EPA and SBMWD to share operating costs for the treatment plants over the next fifty years. With continued monitoring, this system will provide safe and high quality drinking water to the region. Figure 5 on page 3 shows the location of the pipelines, the wells and the treatment plants for both the Newmark and Muscoy treatment systems.

MUSCOY COMPONENTS

With the U.S. EPA assistance, the SBMWD obtained the residential properties where five new extraction wells were constructed. The system contains a pipeline that connects these five extraction wells to the 19th Street Treatment Plant through a bore hole under the 215 freeway. Construction also included the expansion of 19th Street Treatment Plant and the construction of a booster station at the Encanto Park. After treatment to remove the contaminants, the water will be used by the City in its water supply system. More than 15 million gallons of high quality water will be pro-

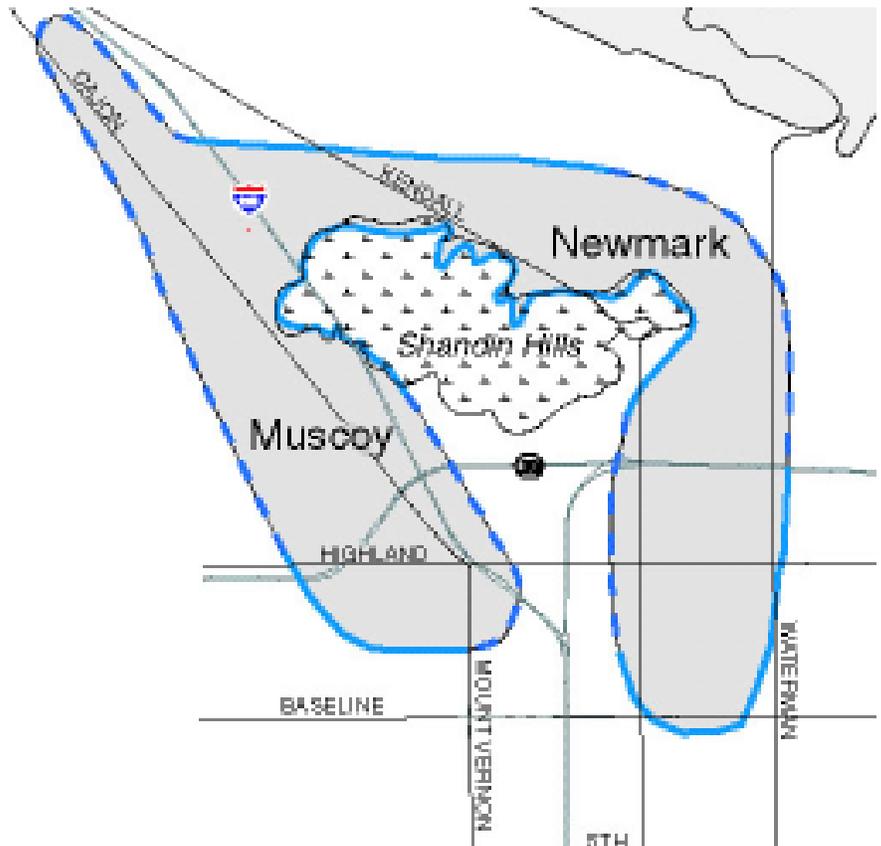


Figure 1: Newmark Groundwater Contamination Superfund Site

duced by the Muscoy groundwater contamination treatment system each day. The treatment technology has a long record of reliability for supplying safe public drinking water. Continuous monitoring will ensure that water piped to the public water supply system meets drinking water standards. More than \$28 million of federal funds have supported the construction of the Muscoy treatment system.

Community Outreach

Prior to starting the construction, the U.S. EPA sent out a fact sheet and went door-to-door to advise residents living near the first two well locations that we were about to demolish the houses on the properties. To most of these residents, this was the first time they had heard of the Newmark Groundwater Contamination Superfund site (which was later dubbed the “well project”). Community members were upset that this type of activity would occur in their neighborhood. The U.S. EPA decided to postpone the project and with the help of the Mayor’s Office and the SBMWD representatives, we began conducting an extensive community involvement program. We took action by conducting public meetings, meetings at the actual property sites, meetings with civic groups, neighborhood associations and grass-root leaders who lived on the block. The goal was to ensure that the affected communities understood the importance of the project, to involve them in the process and gather their concerns, and to use this information to initiate a comprehensive communication process that met the needs of the community.

After this public outreach process was completed and we addressed most of the concerns of community, interested residents and stakeholders were called to let them know that we were going ahead with the project. A notice was placed in all the local papers as well. All through the construction process, we gave the community updates on the project in various ways (i.e., individual and group meetings, site bulletin board updates, fact sheets on progress, city council updates and messages to the public access channel). We also conducted a hazmat and construction training program for local residents to become eligible for any entry level construction projects in the area. We held a workshop for local minority contractors on how to obtain work on the project. We placed notices in all the local papers as contract job opportunities became available.

All through the construction of the project, the community was informed about how and when the site activities would affect them. In addition, the SBMWD provided additional arrangements for people who had disabilities and/or health problems to accommodate their needs. We made sure that, wherever possible, we used sound walls, dust abatement and provided traffic patrols. Below is a description of the constructed system components and the role they play within the overall project.

Extraction Wells

After purchasing the residential properties at each of the five well locations, we met with the neighbors to find out how they would like the well site to look once it was completed. Their ideas and choices were incorporated into the design. Four facade homes were constructed and one tot park (see Figures 2 and 3). After each well was constructed, we conducted pump tests and evaluations. The extraction wells pump contaminated water from underground up into the pipeline which takes it to the plant for treatment. The pumping capacity of these wells ranges from 1,300 gallons per minute (or 1.9 million gallons per day) to 2,500 gallons per minute (or 3.6 million gallons per day).

Pipeline and Tunnel Boring

In addition to fact sheets, local paper notices and a two-week door-to-door outreach effort, each resident was given two days advance notice as pipeline construction approached their individual driveways. The pipeline is 12 to 30

inches in diameter and runs approximately 6 miles under the streets. This pipeline connects the five new Muscoy extraction wells to the existing extraction wells of the Newmark treatment system, forming an East to West well barrier system. Figure 5 shows the pipeline route and where it connects to the extraction wells. In addition, a pipeline was built to connect the 9th Street Booster Station to the San Bernardino Valley Municipal Water District, making the clean water potentially available to other water companies in the area.



Figure 2: Facade House



Figure 3: Tot Park



Figure 4: Plant Enclosure

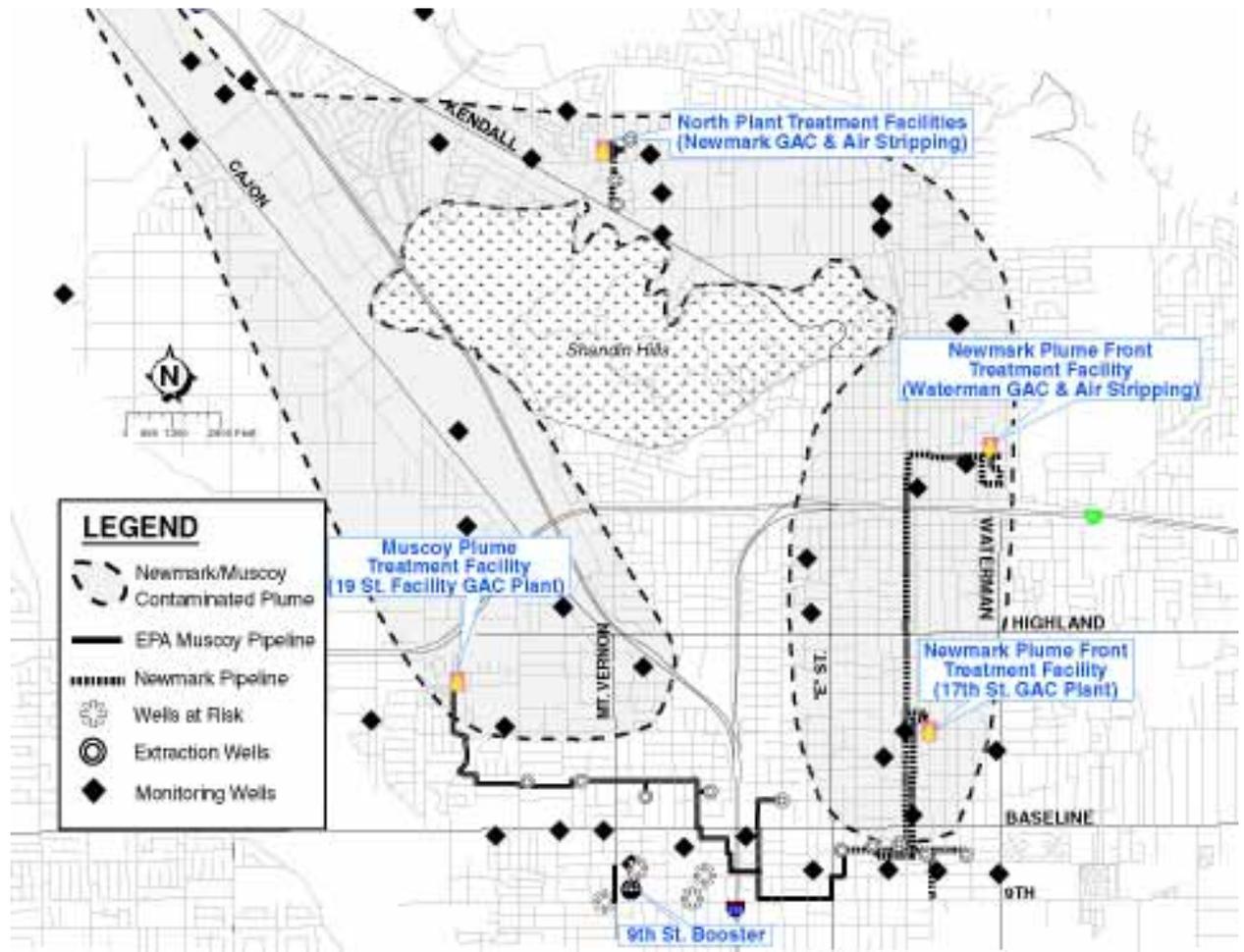


Figure 5:
Newmark
Groundwater
Contamination
Superfund site
project

Treatment Plant and Booster Station

The 19th Street Treatment Plant was expanded to treat the additional contaminated water that is produced by the Muscoy extraction wells. The expansion includes adding 12 new pairs of carbon filter vessels, sound-insulating the existing pump station within the facility, and moving the main entrance from 19th Street to Highland Avenue to reduce truck traffic in the neighborhood on 19th Street (see Figure 6). A new enclosure was constructed around the plant to blend its appearance into the neighborhood and to help reduce noise impacts to nearby neighborhood residents (see Figure 4).

To enable potential transfer of some treated water into the San Bernardino Valley Municipal Water District system, we constructed a new booster pump station located behind the existing hand ball courts at the Encanto Park on 9th Street. As part of the construction, we upgraded the tot park adjacent to the booster station.

Update on Newmark and Source Operable Units Present Newmark Cleanup

The Newmark groundwater contamination treatment system consists of seven extraction wells, three treatment plants, a pipeline connecting the extraction wells to the treatment plants, and groundwater monitoring wells to confirm the effectiveness of the extraction system. This system has been in operation since late 1998, and has removed 1819 pounds of contaminants, producing nearly 44 billion gallons of clean drinking water for the City of San Bernardino. The Newmark treatment system has been successful in capturing and stopping the contamination from going beyond 11th Street in eastern San Bernardino.

Source Operable Unit Investigation

The U.S. EPA is continuing to conduct an investigation to determine the source or sources of groundwater contamination within the Newmark and Muscoy operable units.

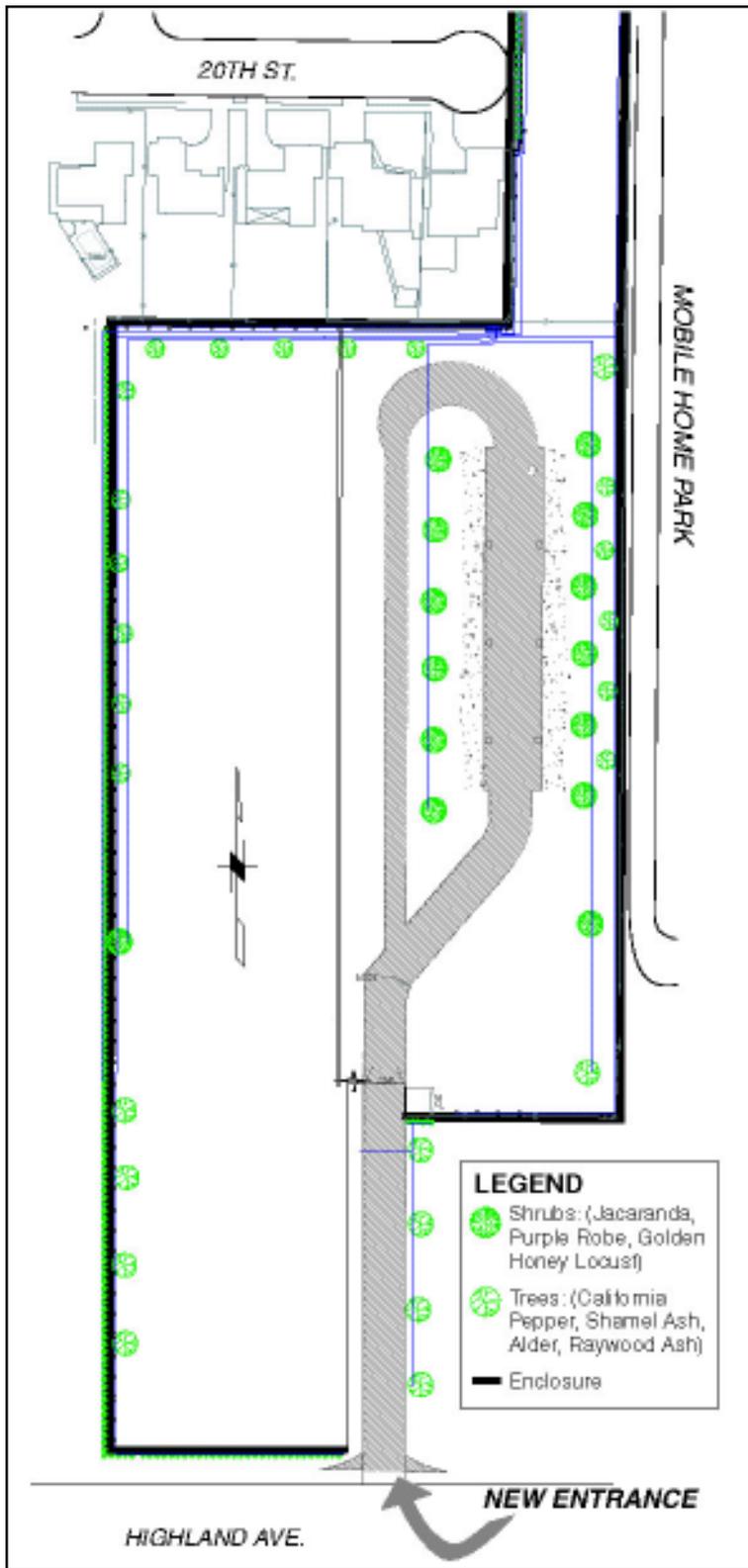


Figure 6: 19th Street Treatment Plant layout

Test Wells (Monitoring Wells)

We constructed five monitoring wells between Baseline and 11th Street. Each well is located south of the pumping wells (see Figures 5 and 7). The wells are used to sample and measure the effectiveness of the extraction wells. During the first year of operation of the system, water samples will be taken from each well every month for the first six months, then to every three months during the next six months, then taper off to twice a year thereafter.

What's Next?

The U.S. EPA and the SBMWD will conduct a year-long performance evaluation of the Muscoy treatment system. Once the year is complete, the SBMWD will take over the operation and maintenance of the system. Every five years, the U.S. EPA in conjunction with the SBMWD will conduct a review of both cleanup systems to ensure the remedies continue to function effectively until the groundwater returns to drinking water standards. The U.S. EPA continues to work toward isolation of the source or sources of this contamination and to develop a comprehensive final cleanup plan for the entire Newmark Groundwater Contamination Superfund site.

Parallel Enforcement Activities

Explanation of Significant Differences

On August 18, 2004, the U.S. EPA issued an Explanation of Significant Differences (ESD) to provide notice of changes to the 1993 and 1995 Interim Records of Decision (RODs) for the Newmark Groundwater Contamination site. An ESD is a change to an original ROD that does not fundamentally affect the scope, the performance or cost of the selected cleanup action. The purpose of this ESD is to supplement the existing interim ROD with an institutional controls (IC) program. It will assure that the Newmark and Muscoy extraction and treatment

Figure 7: A monitoring well



systems remain effective in meeting the objectives of capturing contaminated groundwater and inhibiting the movement of contaminated water into clean portions of the groundwater.

This ESD requires that a groundwater management program be instituted to oversee the installation of any new wells or spreading of water within the City limits that might affect the cleanup project. Any new wells or proposal to spread water would be required to show that it will not contribute to the movement of contaminants past the treatment system into the clean portions of the groundwater.

Consent Decree Entered

The U.S. EPA has reached a formal agreement with the U.S. Army, the State of California and the SBMWD on the terms and conditions for operating the Newmark and Muscoy treatment systems for the next 50 years. On August 18, 2004, a Consent Decree was lodged in the District Court which resolves a lawsuit brought by the City of San Bernardino and the Department of Toxic Substances Control against the U.S. Army over groundwater contamination. Under the settlement, the United States will pay to the City of San Bernardino \$69 million. The City is required to use most of the money to operate and maintain the U.S. EPA's groundwater extraction and treatment remedies at the Newmark Superfund Site, for up to fifty years. The City may use some of the funds for other activities related to the cleanup, and to build additional City treatment plants to expand its water treatment capacity.

Superfund Project Information Repositories

The U.S. EPA maintains site information repositories at the San Bernardino Municipal Water Department and the San Bernardino Valley Municipal Water District Office. These repositories contain project documents, fact sheets and other reference materials, and include the Administrative Record for the site which contains the documents the U.S. EPA relied on to select the cleanup plans for the site. The U.S. EPA encourages you to review these documents to gain a more complete understanding of activities at the site.

San Bernardino Municipal Water Department

300 North "D" Street, 5th Floor
San Bernardino, CA
Contact: Lana Kennerly, at (909) 384-5906
Hours: M-F 8:00 a.m. to 5:00 p.m.

San Bernardino Valley Municipal Water District Office

1350 S. "E" Street
San Bernardino, CA 92412
(909) 387-9211
Call for Appointment - Hours: M-F 8:00 a.m.-Noon
& 1:00 p.m.-5:00 p.m.

United States EPA Superfund Records Center

95 Hawthorne Street, 4th Floor
San Francisco, CA 94105
(415) 536-2000
Call for Appointment - Hours: M-F 8:00 a.m.-4:30 p.m.



Site History

The Newmark Groundwater Contamination Superfund site consists of a wide area of groundwater contamination underlying portions of the City of San Bernardino (see Figure 1). Two groundwater plumes border the Shandin Hills. On the east side of the site, a contaminated groundwater plume extends for 5 miles and is referred to as the Newmark Plume area. On the west side of Shandin Hills is a 4-mile long contaminated groundwater plume known as the Muscoy Plume area. The site covers a portion of an essential groundwater aquifer for the City of San Bernardino. Although the groundwater contamination problem may have been caused by waste disposal beginning as early as the 1940s, the problem was not discovered until a water supply monitoring program was instituted in 1980. The discovery of contaminants, including the chlorinated solvents tetrachloroethylene (PCE) and trichloroethylene (TCE), resulted in the closing of 20 water supply wells within a 6-mile radius of the site. The State brought 12 of the wells back into operation by installing air stripping towers on eight wells and carbon filtration systems on the other four. More than 25 percent of the municipal water supply for the City of San Bernardino's 160,000 residents has been affected by the advancing contamination plumes. The City of Riverside relies on drinking wells down gradient from the Newmark plume for approximately 75 percent of its total water supply. The rapidly growing communities of Colton, Loma Linda, Fontana, Rialto and several unincorporated areas also depend on clean water wells down gradient from the Newmark and Muscoy plumes. The complete Newmark and Muscoy treatment systems potentially benefit over 600,000 residents in these areas.

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For More Information

If you would like to get a copy of this fact sheet or any previous ones, or if you need other information about the site, please call or write:

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75 Hawthorne Street
San Francisco, CA 94105
(415) 972-3236
Toll Free 800 231-3075

Kim Hoang

Remedial Project Manager
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75 Hawthorne Street
San Francisco, CA 94105
(415) 972-3147
Toll Free 800 231-3075

Estimado residente:

Si prefiere este folleto en Español, por favor llame
al 1-800-231-3075 y deje su nombre y domicilio.
Se lo enviaremos inmediatamente.



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San Francisco, CA 94105
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