

Information for Norwalk Neighbors

PIPELINE TESTING RESULTS IN VALVE LEAK DISCOVERY

Environmental cleanup of soil and groundwater continues at the former Defense Fuel Support Point (DFSP) Norwalk, also known as the Tank Farm, located at 15306 Norwalk Boulevard in Norwalk, California. Chemicals of concern at the site include total petroleum hydrocarbons (TPH), 1,2-dichloroethane (1,2-DCA), benzene, and methyl tertiary-butyl ether (MTBE). The California Regional Water Quality Control Board (RWQCB) is the state regulatory agency overseeing the cleanup. This newsletter is one in a series of notices distributed semiannually to update the community on the Tank Farm cleanup progress.

SFPP L.P. (SFPP), an operating partnership of Kinder Morgan Energy Partners, L.P. (KMEP), operates fuel distribution pipelines that travel through an easement on the southern edge of the Tank Farm property. SFPP formerly operated a pump station at the Tank Farm, but it was removed after the military ceased operations at the Tank Farm in 2001.

SFPP has one 24-inch and two 16-inch pipelines that travel from Carson, California. These pipelines transport gasoline, diesel, and jet fuels. They enter the Tank Farm from the southwest area and follow along the easement. One of the lines continues to Mission Valley in San Diego, California. The other two continue to Colton, California.

During January and February 2003, KMEP (on behalf of SFPP) performed leak detection testing on these pipelines. A small leak was found on the 24-inch pipeline near an intermediate block valve near the SFPP lease area onsite. Upon confirmation of the leak, KMEP immediately implemented emergency

response measures. The soil around the block valve was excavated and the leak was determined to be from a 1/4-inch threaded hard plastic plug that had deteriorated. The leak was repaired and the plastic plug was replaced with a steel plug. The other block valves onsite were inspected and were found to be in good shape and had steel plugs. The integrity of the remainder of the pipelines was intact. The excavation area was refilled with clean soil, and the 30-yards of excavated contaminated soil was properly disposed of offsite.

The soil surrounding the block valve was sampled and appeared saturated, but not stained. This indicated that it was a relatively new leak. In addition, the history of nearby monitoring wells was reviewed, and they did not show any trends that these wells were being impacted by a new leak. The nearby monitoring wells were then sampled in March 2003. No free product was found, and chemical concentrations were similar to concentrations within the past two years. Collectively, these factors indicate that the release was most likely a short-term leak.

In consultation with the RWQCB, KMEP (on behalf of SFPP)



Intermediate Block Valve. Pipeline testing in January detected a small, short-term leak in the southern area. It was immediately repaired, and the remainder of the SFPP pipelines were intact.

conducted an assessment of the area to determine the full extent of the release and to determine cleanup options, if necessary. This included the drilling of additional soil borings and the installation of a new monitoring well. The investigation determined that the lateral extent of soil impacted by the release is limited to a distance of approximately 30 feet or less. Impacts to groundwater detected during the assessment were consistent with historical conditions interpreted for this part of the site.

Based on the investigation results, KMEP (on behalf of SFPP) is planning to continue monitoring the area and is implementing remedial measures to address the release. This has included the installation and operation of a soil-vapor extraction well within the new release area to extract fuel vapors from the soil. ■

MONITORING WELLS HELP GEOLOGISTS STUDY GROUNDWATER BENEATH TANK FARM

An Overview of What Monitoring Wells are and How They are Used

The water underground is known as *groundwater*, an important natural resource. Groundwater can become contaminated from natural or human sources. Fuel and fuel-related products were discovered in the groundwater beneath the Tank Farm in on-site and off-site areas to the south, east, and west. Fuel had apparently been released from Tank Farm operations and moved down through the soil to the groundwater. DESC and KMEP use monitoring wells to study the groundwater impacts and to help design a cleanup program.

Why is Groundwater Protection Important?

The RWQCB, a part of the California Environmental Protection Agency, is the agency charged with protecting the State's ground and surface water quality. The beneficial uses for the groundwater underlying the Norwalk Tank Farm include Municipal and Domestic Supply (MUN), Industrial

Process Supply (PROC), Industrial Service Supply (IND), and Agricultural Supply (AGR) as listed in the Water Quality Control Board – Los Angeles Region Basin Plan (Basin Plan). The underlying shallow groundwater is currently not used for drinking water; however, the RWQCB oversees the Tank Farm soil and groundwater cleanup to help ensure the affected groundwater does not spread to local drinking water wells.

The RWQCB's Tank Farm Project Manager, Ms. Ana Townsend, is responsible for reviewing and approving the environmental cleanup activities at the Tank Farm. She also oversees the soil and groundwater sampling programs. This includes reviewing and approving each monitoring report, sampling program changes, new monitoring well installations, well maintenance programs, and approval of old well destructions.

How were the Groundwater Impacts Discovered?

Buried oily wastes were discovered at the Tank Farm in the mid-1980s while crews were digging a trench for a new storm drain. DESC and SFPP hired consultants to conduct studies to determine if the groundwater beneath the site had been impacted. To help "see" what was happening underground, geologists installed several monitoring wells throughout the Tank Farm and in off-site locations. *Monitoring wells* are specially constructed wells used for testing water quality.

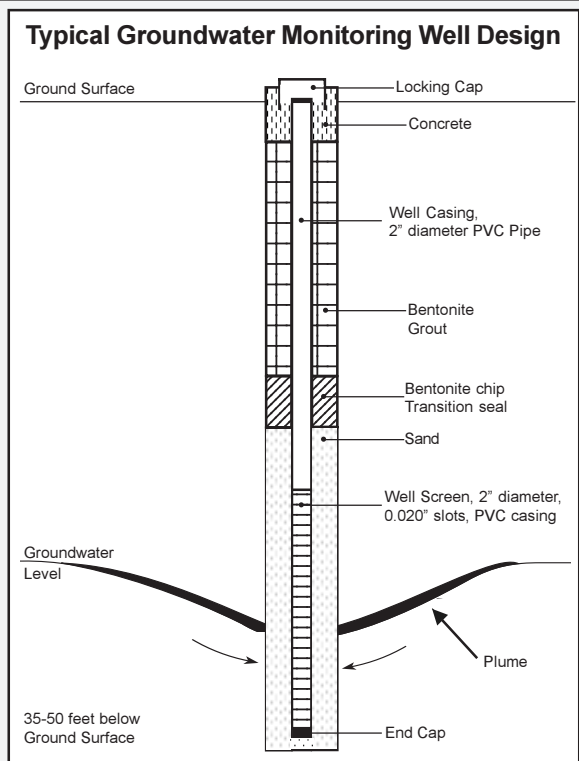
Floating fuel product (fuel floating on top of the groundwater) and dissolved fuel in groundwater were discovered in the most shallow groundwater zone beneath the Tank Farm. This zone of shallow groundwater ranges from approximately 25 feet to 50 feet below ground surface. Deeper groundwater zones were not impacted.

How are Monitoring Wells Constructed?

Monitoring well locations are chosen in and around the areas suspected to have groundwater impacts. Prior to installation, permits must be received from the County of Los Angeles Environmental Health Division. The proposed locations are mapped and surveyed to ensure the areas are clear of underground structures or pipelines. A *borehole* is then drilled with a hollow-stem auger attached to a drill rig that can look similar to a small truck. The borehole is drilled down to the level of the groundwater. The soil removed from the borehole is carefully gathered. Some of this soil may be used for sampling while the rest is taken off-site to a licensed disposal facility. A typical monitoring well at the Tank Farm has a 10-inch diameter borehole drilled to 38.5 feet below ground surface.

Once the borehole is drilled, a *well screen* is inserted into the bottom of the hole. A well screen is usually a polyvinyl chloride (PVC) pipe that contains small slots to allow groundwater to flow into the well while not allowing soil particles to enter the well. A typical well screen at the Tank Farm is 4 inches in diameter with 0.02-inch slots and can be about 15 feet in length. A PVC end cap is placed at the bottom of the well screen. A *well casing* or riser is then inserted to connect the well screen to the ground surface. A typical casing at the Tank Farm is a solid PVC pipe two to four inches in diameter.

Finally, the space between the borehole and the well screen and casing (annulus), must be filled. The annulus around the well screen is filled with sand called "filter pack." The rest of the annulus is filled with an absorbent clay material known as bentonite. The final two to three feet are filled with concrete. The bentonite and concrete form a seal to prevent surface water from entering the well. A locking removable cap is then installed atop the well.





Some monitoring wells located inside the Tank Farm have aboveground caps.

How are the Wells Sampled and Analyzed?

Groundwater levels are measured prior to collecting groundwater samples. Then the existing stagnant groundwater in the well is removed (purged) using an electrical submersible pump or a vacuum truck. About four well casing volumes are removed from each well. The purge water is tested for temperature, pH, and turbidity (or clearness). The purge water is discharged into one of the onsite treatment systems. Once the well recharges with groundwater, a groundwater sample can be collected by lowering a disposable bailer into the groundwater and retrieving the sample, or by using a submersible pump that pumps the groundwater out of the well through plastic tubing. If free product (fuel) is present, the well is not sampled, but free product thickness is measured. Free product at the Tank Farm has been measured as thick as 12 feet, but now it ranges from only 0.01 to 1 foot.



Other monitoring wells at the Tank Farm have caps at ground level such as this one.

Sampling protocol is strictly adhered to prevent cross-contamination of samples. This includes using a clean pump, equipment, and gloves for each sample. The procedures and field observations are recorded in field logs. Each sample is placed in a certified clean container, labeled, and put on ice for immediate shipment to a state-certified laboratory for analysis. A chain-of-custody form is filled out to document each time the shipment changes hands.

“Blank” samples containing only clean water are included to provide additional quality control. Once at the laboratory, the samples are analyzed using U.S. Environmental Protection Agency-approved tests. The laboratory then provides an analytical report detailing the chemical concentrations, if any, found in each sample.

How often is the Groundwater Sampled?

There are currently over 150 active groundwater monitoring wells on- and off-site at the 50-acre Tank Farm. Originally, they were monitored on an as-needed basis starting in the mid-1980s. However, in 1994, DESC and KMEP began a new semiannual joint monitoring program. Site-wide sampling now takes place during the second and fourth quarters of each year.

In 1998, the citizen members of the Restoration Advisory Board (RAB) requested that certain wells be sampled on a quarterly basis. This “Sentry Event” originally consisted of 11 wells and now includes 14 wells. Additional wells are sampled on a voluntary basis to provide additional information or to confirm results from a previous sampling event. The quarterly monitoring was designed to provide additional seasonal data and early warning of potential significant changes.

How are the Monitoring Data Used?

The data from each sampling event are analyzed and documented in a Groundwater Sampling and

Monitoring Investigation Semiannual Report. The report includes copies of all field logs, chain-of-custody forms, and laboratory analytical reports. Each monitoring report is discussed at RAB meetings. Copies of the reports are kept in the information repository at the Norwalk Library for the public to review.

Data from the wells help geologists define the sizes and shapes of the groundwater plumes and help track any changes. The data also help prepare a well maintenance program. The wells are cleaned frequently to ensure they are functioning properly.

Data received from the monitoring wells are also used to develop and update groundwater treatment programs. KMEP constructed a treatment system in the south-central area of the Tank Farm that has operated since September 1995 and later expanded the system to the southeast area. A series of “barrier wells” were installed on the west side of the facility to help minimize plume movement offsite. DESC constructed a treatment system in the north-central portion that has operated since April 1996. The groundwater is pumped into the systems, treated, and then safely discharged into the storm drain. To date, over 75 million gallons of groundwater combined have been pumped and treated. ■



Well MW-SF-4, a vapor extraction well located in the southern area near the Intermediate Block Valve, was used for groundwater monitoring after the release was detected.

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**Norwalk Tank Farm
Restoration Advisory
Board Meeting:
Thursday, July 31,
2003, 6:30 p.m.,
Arts & Sports Complex.**

 Printed on recycled paper.

FOR MORE INFORMATION . . .

If you have any questions, comments, would like copies of previous newsletters, or want to be added or deleted from the mailing list, please contact one of the representatives listed below:

Or, visit the information repository to review RAB meeting handouts, minutes, and project documents:

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