STATEMENT OF BASIS/FINAL DECISION AND RESPONSE TO COMMENTS SUMMARY

REGION IX
ID # 8728

Southern Pacific Transportation Company/Former Magna Corporation Site

Bakersfield, California
(Signed: June 1996)

Facility/Unit Type:	**Acrolein repackaging plant and former waste storage area**
Contaminants:	**Benzene, Xylene, 2-methylnaphthalene, Naphthalene, Phenanthrene, Bis(2-chloroethyl)ether, Aniline, 4-methylphenol, Total petroleum hydrocarbons diesel (TPH-diesel), Toluene, Ethylbenzene, Polyaromatic hydrocarbons (PAHs), Ringed sulfur, Sulfur compounds**
Media:	**Soil, air**
Remedy:	**Soil neutralization injections, soil neutralizing agent, asphalt capping, off-site disposal of contaminated soil, deed restrictions**

FACILITY DESCRIPTION

The Southern Pacific Transportation Company (SPTCo) is the owner of the 1.5-acre site located in Bakersfield, California. SPTCo leased the site to various parties between 1947 and 1985. One lessee (Agri-Chem), which occupied the property between 1947 and 1948, constructed a surface pit (a "sump") that contained "oily wastes." Agri-Chem terminated site operations in 1948.

The Magna Corporation leased the site from 1974 to 1985, for the operation of an acrolein repackaging plant. (Acrolein is an herbicide traditionally used to eradicate vegetation in canals.) The Magna Corporation, which is now owned by the Baker Performance Corporation, vacated the site in 1985. No manufacturing or commercial activities have occurred on the site since that time. No waste remaining at the site could be attributed to the Magna operations.

The site is located in the San Joaquin Basin within the southern end of the Great Valley Geomorphic Province of California. The site lies in the 500-year old floodplain of the Kern River, which is more than 3 miles to the north. The closest surface waters are several irrigation ditches (including the Buena Vista Canal). The Kern River and several artificial canals are, however, the primary surface waters in the site's vicinity. Residential areas exist 150 feet from the SPTCo site, across from nearby railroad tracks. Areas to the south of the site had been used for farming of non-edible crops, and an industrial park has been proposed for that same area.

The predominant soils at the site are interbedded silty sands, sands, and clays. Groundwater depth is thought to be between 140 and 160 feet, and the flow direction is primarily influenced by groundwater pumping. Confirmation sampling for this investigation, however, found groundwater to be between 180 and 190 feet below ground surface. Three groundwater wells near the site are used for

drinking water. These wells are periodically monitored by the City of Bakersfield Department of Water and Sanitation. An underground irrigation pipeline becomes an "open siphon" (a porous tube through which liquid can be transported) for approximately 100 feet as it passes under the railroad tracks 1/4 mile west of the site.

The U.S. Fish and Wildlife Service (FWS) determined that the site area may serve as habitat for several endangered and threatened species. These species include the San Joaquin kit fox; the kangaroo rat (giant and Tipton); the blunt nosed leopard lizard; the valley elderberry longhorn beetle; and the vernal pool fairy shrimp. No functioning habitats were, however, found to exist on the SPTCo site. If a functioning habitat is found, a permit must be obtained from FWS before excavation activities may commence.

When the Magna Corporation ceased operations at the site, it applied to the California Environmental Protection Agency (Cal-EPA), Department of Toxic Substances Control (DTSC), for closure approval. In accordance with Resource Conservation and Recovery Act (RCRA) requirements, all locations where hazardous wastes had been managed needed to be investigated and cleaned up, before closure approval could occur.

During Cal-EPA's investigation of the Magna Corporation's repackaging plant, investigators noticed a dark "tar-like" substance seeping from asphalt at the site. In 1987, the U.S. EPA made a similar identification during a RCRA Facility Assessment (RFA).

It was originally believed that the contamination at the site was due to a RCRA regulated facility, the Magna Corporation, and EPA issued a unilateral RCRA section 3008(h) order under that assumption to the lessee, the Magna Corporation, and the site owner, SPTCo. However, the RCRA Facility Investigation (RFI) revealed that contamination was not from any of the Magna Corporation's RCRA regulated units. Instead, the contamination was likely caused by Agri-Chem, which is no longer in existence. While SPTCo was not obligated to take action under RCRA, it signed a revised unilateral RCRA section 3008(h) order to finance the rest of the investigation and cleanup.

The RFI expanded upon a previous sampling effort requested by Cal-EPA's DTSC. The RFI investigated three solid waste management units (SWMUs) identified as: SWMU 10 (the sump area); SWMU 12 (an area located close to nearby railroad tracks); and SWMU 13 (an area west of the site). Excavation trenches and perimeter boring samples were used to evaluate the lateral extent of contamination. Drilling samples were used to determine the vertical extent of contamination.

Early sampling results of the RFI revealed elevated levels of total petroleum hydrocarbon diesel (TPH-diesel), polyaromatic hydrocarbons (PAHs), ringed sulfur and sulfur compounds, and the following indicator chemicals: benzene, toluene, ethylbenzene, and xylene. Levels of concern were based on the State Water Resources Control Board (SWRCB) Leaking Underground Fuel Tank (LUFT) Manual and the U.S. EPA RFI Guidance. Computer modeling and groundwater sampling and analysis determined that no contaminants had, or could, leach into groundwater. At no time during RFI air monitoring activities were any targeted chemicals detected at concentrations that would pose a health risk to the public.

Because the greatest risk to human health at the site is through direct contact with contaminated soil, interim corrective measures consisted of fencing and securing the property.

EXPOSURE PATHWAYS

Pathways of concern for contamination are dermal contact with low pH contaminated soils, ingestion of soils contaminated with semi-volatile organics, and inhalation of hydrogen sulfide. There is potential for acute adverse health effects, including burns and lesions, if a person's skin were exposed to the low pH soils. Exposure to 2-methylnaphthalene, naphthalene, and phenanthrene represent chronic health concerns. Computer modeling (VLEACH), confirmed by groundwater testing, shows that the contaminants will not leach into groundwater. The closest human receptors exist 150 feet from the site. Sensitive environments may include habitats for several endangered and threatened species, but no functioning habitats have been identified.

SELECTED REMEDY

Before identifying the proposed remedy, EPA reviewed the Corrective Measure Alternatives conducted by SPTCo. These alternatives included: aerobic (ex situ and/or in situ) bioremediation; desorption; capping; off-site disposal; chemical neutralization; and no action. EPA selected the proposed remedy after evaluating the feasibility and effectiveness of proposed alternatives in light of the remedial objectives for the site. The objectives were to reduce the potential for acute and chronic human health risks.

The proposed remedy for SWMU 10 involves the following components:

- Establish air monitoring stations along the site's perimeter. Monitoring would be conducted throughout site preparation and soil excavation, loading, and neutralization. If the monitoring data indicate unsafe conditions, cleanup crews could change work patterns, implement vapor suppression and dust control, or adjust the use of the soil neutralizing agent.

- Treat the contaminated soil's low pH levels through the use of neutralization injections. During and after the injection process, crews would verify pH levels through field testing.

- Provide a layer of neutralizing material over SWMU 10 prior to capping the surface area with Class II aggregate road base asphalt paving.

- Remove debris and secure the site.

The proposed remedy for SWMU 12 involves excavating and transporting contaminated soil to an off-site hazardous waste landfill for disposal. Confirmation soil sampling would also be conducted. Crews would backfill, compact, and regrade the area as necessary.

Deed restrictions would attach to the property in order to maintain industrial use status and notify future property owners and lessees of the neutralized hazardous wastes left on site. SPTCo would be required to record the revised unilateral Corrective Action Order, the Statement of Basis, and the Corrective Measures Implementation Order with the Kern County Recorder's Office for notification purposes. The restrictions would:

- Prohibit the property from being used as a residence, hospital, school, clinic, day care center, or any permanently occupied human habitation (including a hotel or a motel) that could be used as a residence for employees. This prohibition would not apply if the site were reevaluated and remediated for a new land use scenario.

- Require periodic inspection and maintenance of the asphalt paving at the

facility. The deed would require that additional asphalt be added to accommodate any increased weight load accompanying future commercial or industrial use.

- Require that any construction, excavation, or earth moving activity on site minimize the disturbance of contaminated soil. To prevent contact with harmful contaminants, construction workers would be required to wear protective clothing when excavating or disturbing contaminated areas.

The proposed remedy does not address SWMU 13, because investigators identified no contamination above levels of concern at this unit. The total capital cost for the proposed remedy is between $300,541 and $477,968, with operation and maintenance costs of $4,000 per year.

CONTAMINATION DETECTED AND CLEANUP GOALS[1]

Because the contamination did not originate from RCRA units, the points of compliance are not located at the edge of a RCRA unit, but rather located at the boundary where soil is no longer at levels of concern. The contaminants and the maximum concentration (parts per million (ppm)) at which they were detected for SWMU 10 and SWMU 12 include: TPH-diesel (5,750.0), benzene (18.0), xylene (212.25), 2-methylnaphthalene (1000.0), naphthalene (680.0), phenanthrene (100.0), bis(2-chloroethyl)ether (21.0), aniline (300.0), toluene (not present in amounts above the level of concern), ethylbenzene (not present in amounts above the level of concern), and 4-methylphenol (231.0). A pH level of 1.4 was detected in the soil.

The contaminants present at SWMU 10 are contained in an estimated 5,700 cubic yards of soil. The cleanup goal for SWMU 10 is to neutralize the soil to between pH levels of 6 and 8 and use capping to prevent exposure to other contaminants (no cleanup of the other contaminants was proposed). There are no Maximum Contaminant Level (MCL) goals at SWMU 10 due to an absence of groundwater contamination.

The contaminants present at SWMU 12 are contained in an estimated volume of 300 cubic yards of soil. The cleanup goal for SWMU 12 is to excavate all contaminated soil to background levels. There are no MCL goals at SWMU 12 due to an absence of groundwater contamination.

INNOVATIVE TECHNOLOGIES CONSIDERED

EPA considered the following innovative technologies for the proposed remedy:

- Ex situ bioremediation procedures, including oxygenation and degradation activities, to bring the area's contamination below levels of concern;
- In situ hot air and steam stripping; and
- Chemical treatment to raise the pH of affected soils.

PUBLIC PARTICIPATION

EPA Region IX held an initial public comment period from August 1, 1994, through September 15, 1994. The Region also conducted a public hearing on August 16, 1994. In response to concerns that some members of the community lacked adequate notification,

[1] The Contamination Detected and Cleanup Goals Table usually present in a Statement of Basis summary has not been included in this summary because the information contained in the table is largely irrelevant in this case: groundwater and RCRA units are not at issue, and cleanup is excavation (for SWMU 12) and capping and neutralization (for SWMU 10) of the soil only, not the groundwater.

EPA Region IX reopened the public comment period from October 6, 1994, through November 7, 1994. EPA received one formal comment at the public hearing, and seven mailed letters during the two comment periods. The public comments focused on notification problems and present and future threats to listed species, human health, and the property values of the community.

NEXT STEPS

As of June 1996, a Correction Action Implementation Order should be issued for SPTCo to act on the selected remedy. Since Cal-EPA's DTSC has corrective action authority, it is likely it will issue the order for remedy implementation and oversee inspections, resurfacing, and replacement of the asphalt in perpetuity.

KEY WORDS:
soil, groundwater; dermal contact, inhalation; acrolein, benzene, xylene, 2-methylnaphthalene, naphthalene, phenanthrene, pH, total petroleum hydrocarbon diesel (TPH-Diesel), bis(2-chloroethyl)-ether, aniline, 4-methylphenol; capping, excavation, neutralization injection, deed, air monitoring, offsite.

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RCRA Corrective Action