STATEMENT OF BASIS/FINAL DECISION AND RESPONSE TO COMMENTS SUMMARY

REGION IX
ID # 5435
CAD 990 665 435

John Smith Road Landfill
Hollister, California
(Signed April 18, 1996)

Facility/Unit Type:	**Non-hazardous municipal/industrial solid waste landfill**
Contaminants:	**Acetone, Benzene, Chlorobenzene, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, Cis 1,2-Dichloroethene, Trans 1,2-Dichloroethene, 1,2-Dichloropropane, Methylene Chloride, Tetrachloroethene (PCE), Toluene, 1,1,1-Trichloroethane, Trichloroethene (TCE), Trichlorofluoromethane (Freon 11), Vinyl Chloride, Total Xylenes**
Media:	**Groundwater**
Remedy:	**Interim corrective measures including installation of one on-site extraction well, two leachate extraction wells, and two off-site extraction wells were implemented. One additional on-site extraction well will be installed and contaminated groundwater will be treated at the off-site municipal wastewater treatment plant.**

FACILITY DESCRIPTION

The authority of RCRA §3008(h) was used to compel corrective action of the John Smith Road Landfill. The John Smith Road Landfill contains two distinct areas, the hazardous wastes area (Class I) and the non-hazardous municipal/industrial solid waste area (Class III). The Class I area is owned by the City of Hollister and the Class III area is owned by the County of San Benito. The Class III area is operated by the John Smith Landfill Company. In 1985, the county and the city entered into identical consent agreements with the Department of Toxic Substances Control (DTSC), then called Department of Health Services, and EPA to close the Class I portion of the facility and to characterize any soil or groundwater contamination in both the Class I and Class III portions of the landfill. In 1989, the county and the city entered into another consent agreement with EPA specifying the work to be performed at both the Class I and Class III portions of the facility. Since that consent order, the two portions of the site have been treated independently.

The site was originally opened in 1968 and was permitted to receive both hazardous waste and non-hazardous waste. During the early years of the site, existing regulation did not require the segregation of the various waste types or a liner system beneath the waste. Starting in 1974, hazardous waste discharge was limited to what is now the central portion of the Class III area. In 1977, two hazardous waste surface impoundments were constructed to the east of the Class III area, forming the Class I area, which received only hazardous waste. On July 17, 1983, the landfill stopped accepting hazardous waste and the Class I area was, at a later date, capped in accordance with an approved closure plan. The Class III area continued to accept non-hazardous municipal and industrial waste.

The John Smith Road Landfill is located on a 65 acre site which includes a small canyon and surrounding hills. The population surrounding the facility is approximately 300 within a one-mile radius and 27,000 within a 15-mile radius. The Class III area consists of approximately 57 acres of which 31 acres are permitted to receive non-hazardous municipal and industrial wastes under the existing Central Coast Regional Water Quality Control Board Waste Discharge Requirements. The landfill is located approximately 4.8 miles southeast of the center of the City of Hollister. The adjacent land is predominantly agricultural and is currently used for dry farming of grains and cattle grazing. According to the California Department of Fish and Game, several threatened or endangered flora and fauna species occur within a 15-mile radius of the site.

The site is underlain by three distinct geologic units: surficial deposits, older alluvium, and a

CONTAMINATION DETECTED AND CLEANUP GOALS

Media	Estimated Volume	Contaminant	Maximum Concentration (ug/l)	Action Level	State Cleanup Goal	Point of Compliance
Groundwater	Unknown	Acetone	33	Not given	-	Facility boundary
		Benzene	5.5		1	
		Chlorobenzene	18		70	
		1,1-Dichloroethane	3.9		5	
		1,1-Dichloroethene	6		6	
		1,2-Dichloroethane	21		0.5	
		Cis 1,2-Dichloroethene	77		6	
		Trans 1,2-Dichloroethene	86		10	
		1,2-Dichloropropane	46		5	
		Methylene Chloride	26		5	
		Tetrachloroethene (PCE)	63		5	
		Toluene	2.5		150	
		1,1,1-Trichloroethane	2		200	
		Trichloroethene (TCE)	95		5	
		Trichlorofluoromethane (Freon 11)	210		150	
		Vinyl Chloride	64		0.5	
		Total Xylenes	22		1,750	

Notes: 1- Source: *Drinking Water Regulations and Health Advisories*, May 1995
2- Source: *Drinking Water Standards and Health Advisories Table*, January 1995

Panache formation. The site is also located in a region of high seismic activity which has been subjected to several strong earthquakes. There are no major faults within the surrounding hills, however, the Calaveras fault is located approximately 3.5 miles southwest and the main trace of the San Andreas fault is located approximately 6.5 miles southwest of the site. Depths to groundwater range from 150 feet deep at the ridge tops, to about 20 feet deep near the entrance of the landfill, to zero feet deep off-site when the seasonal pond is present. Groundwater generally occurs in the alluvium and the first 30 feet of the fractured bedrock Panache formation. Groundwater beneath the site generally flows west and southwest towards the mouth of the canyon where it turns 90-degrees to the north and continues to flow northwest.

There is an aquifer under the site which is a potential source of drinking water. Due to high levels of dissolved minerals, the aquifer is not currently being used for drinking water. There is one active upgradient "domestic" well which is also not used for drinking water. In addition, there are two downgradient springs which provide water to livestock. A seasonal pond is located within the contaminated off-site area which normally forms during the wet season.

The facility is located in a semi-arid climate with a mean annual temperature of approximately 59°F. Average annual rainfall for the area is approximately 12 to 14 inches, occurring primarily between December and April.

EXPOSURE PATHWAYS

The groundwater pathway exhibits the greatest potential for future risk because it contains concentration of multiple contaminants above drinking water standards. Exposure via groundwater would include ingestion, inhalation, and dermal contact.

SELECTED REMEDY

The contaminants of concern found in the groundwater include: acetone, benzene,

chlorobenzene, 1,1-dichloroethane, 1,1-dichloroethene, 1,2-dichloroethane, cis 1,2-dichloroethene, trans 1,2-dichloroethene, 1,2-dichloropropane, methylene chloride, tetrachloroethene (PCE), toluene, 1,1,1-trichloroethane, trichloroethene (TCE), trichlorofluoromethane (freon 11), vinyl chloride, and total xylenes. The selected interim remedial measures include a groundwater extraction system, two leachate extraction wells, and two off-site extraction wells. The groundwater extraction system was installed in March 1993. It is located near the site entrance and is intended to capture and extract all contaminated groundwater before it leaves the landfill. The two leachate extraction wells, installed in April 1993, are intended to extract leachate from within the refuse to avoid additional groundwater contamination. The two off-site extraction wells began operation in June 1993. These off-site wells are located immediately adjacent the landfill and are intended to remediate existing off-site contamination.

The selected remedy includes on-site and off-site groundwater remediation. On-site groundwater remediation goals include hydraulically containing the plume on-site within the facility boundary, eliminating off-site migration, and reducing the source of future groundwater contamination (leachate). Hydraulic control was partially accomplished by the interim extraction well. An additional extraction well will be installed in the same vicinity. The combined discharge will be released into the sanitary sewer system via the existing discharge pipeline and will be treated at the municipal wastewater treatment plant. Assuming concentrations of contaminants remain low, no on-site treatment will occur. However, the system has been designed to readily accommodate the addition of an on-site treatment unit. Periodic water level measurements will be collected to confirm the hydraulic control of the extraction wells. Reduction of leachate was partially accomplished by the interim leachate extraction wells. One of the two leachate wells is to remain operable and if the contaminant concentrations increase, additional leachate wells will be installed and waste cover practices may be upgraded.

Off-site groundwater remediation goals include hydraulically containing the plume, eliminating downgradient migration, and reducing the concentration of contaminants to below health-based levels. Hydraulic control of off-site groundwater was accomplished by the interim extraction wells. The extraction wells will, however, continue to function until concentrations are consistently below cleanup levels for over three consecutive monitoring cycles and a petition to terminate extraction has been approved by the overseeing regulatory agency. The groundwater monitoring wells located within the off-site plume will continue to be monitored on a semi-annual basis.

The associated costs of the selected remedies are minimal compared to the alternative treatments evaluated. Extraction wells are the most inexpensive extraction technology feasible for implementation at this site. Also, the costs associated with the off-site discharge of groundwater to the municipal treatment plant have already been incurred.

INNOVATIVE TECHNOLOGIES CONSIDERED

There were several innovative technologies considered, however, none were selected. In-situ treatments considered include bioreclamation, natural biodegradation, chemical injection, and permeable treatment beds. Other types of on-site treatment technologies considered were activated carbon adsorption, air stripping, reverse osmosis, advanced oxidation, electrolysis, incineration, and biological processes.

PUBLIC PARTICIPATION

DTSC and EPA solicited input from the community on each of the potential cleanup methods as well as the proposed remedy. A Public Notice was issued by DTSC on April 15, 1996 advertising a 45 day public comment period and explaining that a public hearing would be held if significant public interest was noted. The public comment period lasted from April 15 to May 31, 1996. No comments were received and no requests for a public hearing were made.

NEXT STEPS

None.

KEY WORDS:
groundwater; ingestion; acetone, benzene, chlorobenzene, 1,1-dichloroethane, 1,1-dichloroethene, 1,2-dichloroethane, cis 1,2-dichloroethene, trans 1,2-dichloroethene, 1,2-dichloropropane, methylene chloride, tetrachloroethene (PCE), toluene, 1,1,1-trichloroethane, trichloroethene (TCE), trichlorofluoromethane (freon 11), vinyl chloride, and total xylenes; hydraulic control, extraction wells, leachate extraction wells, groundwater monitoring, off-site treatment, and considered innovative technologies.

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