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1999

EPA Superfund
Explanation of Significant Differences:

COMMENCEMENT BAY, SOUTH TACOMA CHANNEL
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TACOMA, WA
09/29/1999

Explanation of Significant Differences

South Tacoma Field

Record of Decision

Commencement Bay, South Tacoma Channel Superfund Site

August, 1999

1. Introduction

This document presents an Explanation of Significant Differences (ESD) from the Record of Decision (ROD) for South Tacoma Field, which was signed by the United States Environmental Protection Agency in September 1994.

Site Name and Location:

Commencement Bay South Tacoma Channel Superfund Site
South Tacoma Field Operable Unit
Tacoma, Washington

Lead and Support Agencies:

The U.S. Environmental Protection Agency (EPA) is the lead agency on this project. The Washington State Department of Ecology is involved as a milestone reviewer according to the existing agreement between Ecology and EPA regarding Superfund Sites in Washington state.

Statutory Citation for an ESD:

In Section 117(c) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), provisions are made for addressing and documenting changes to the selected remedy that occur after the ROD is signed. This ESD documents the changes to the selected remedy in accordance with CERCLA Section 117.

The ROD for the South Tacoma Field identified air sparging and vapor extraction to address groundwater contamination in the Pioneer Builder's Supply section of the site. In addition to source removal during underground storage tank (UST) excavations, groundwater contaminant levels have greatly decreased since the Remedial Investigation in the early 90's. The responsible parties have investigated the area and found that the contamination is isolated and the levels have dropped. Because of this, the responsible parties asked EPA to re-evaluate the need to install the air sparging and vapor extraction systems. EPA has determined that these systems are no longer necessary to address the groundwater contamination at Pioneer. Initial calculations indicate that cleanup levels should be reached within four years. The State of Washington has concurred with this decision.

Administrative Record:

This ESD and other relevant documents to this decision will become part of the Administrative Record for the South Tacoma Field (STF) Site pursuant to Section 300.825(a)(2) of the National Contingency Plan and will be available to the public at the following locations:

Tacoma Public Library
Main Library, Northwest Room
1102 Broadway
Tacoma, Washington 98402

U.S. Environmental Protection Agency
Region 10
Park Place Building
1200 Sixth Avenue, 7th Floor Records Center
Seattle, Washington 98101

II. Site History

The STF Site encompasses approximately 260 acres and has been used for a variety of industrial and commercial purposes for more than 100 years. The area of the site that is the subject of this ESD is property owned by Pioneer Builder's Supply. Pioneer occupies roughly one acre of property located in the southwest section of the site. This property lies within a large area that was historically called the South Tacoma Car Shops. The Car Shops operated as a railroad manufacturing and repair facility from 1892 until 1974 for Burlington Northern Rail Road. The area was used for manufacturing, repair, and maintenance of railroad equipment. Rail cars were also cleaned and dismantled.

Currently, Pioneer Builder's Supply operates a distribution center for asphalt and cedar roofing materials. In 1990, three old Burlington Northern underground storage tanks (USTs) were found during Pioneer's parking lot expansion. Pioneer removed those tanks. Contamination from these USTs was visible in soil and groundwater during tank excavation. Soils that were visibly contaminated from the USTs were removed during tank excavation. It was noted that soils were contaminated below groundwater. Soil excavation did not occur below groundwater level.

As part of their business, Pioneer installed and used two underground storage tanks (USTs) for about five years to store gasoline and diesel fuel. In 1991, Pioneer

removed their underground storage tanks in order to install new, double-lined tanks. During that tank excavation in 1991, soils that had been visibly contaminated with petroleum were removed. Reportedly, all visible contamination was removed.

Groundwater at Pioneer is found from 25 to 30 feet below ground surface. Groundwater in the entire South Tacoma Field area changes flow direction when nearby pumping wells are turned on. These wells are part of the City of Tacoma water supply system that are only used during peak demand in the summer and are located about a half mile southeast of the South Tacoma Field.

The remedy for the Pioneer addresses groundwater contamination associated with the USTs. Air sparging and soil vapor extraction were selected to address the volatile organic contamination in groundwater. Additionally, institutional controls were to be implemented that would prevent property owners from installing wells and using contaminated groundwater. Specifically, the contaminants of concern in groundwater were 1,1,2-trichloroethane, naphthalene, benzene, toluene, ethylbenzene, xylene and total petroleum hydrocarbons (TPH).

III. Description of Significant Differences and Basis

This ESD changes the selected remedy at Pioneer from air sparging and vapor extraction to monitored natural attenuation and institutional controls. This change is based on new information that was collected during groundwater investigations that were conducted prior to remedial design.

During the remedial investigation, which was conducted in 1991, the potentially responsible parties (PRPs) investigated the contamination associated with the USTs by installing a monitoring well in the location of the contaminated soils and groundwater. Sample results showed that the groundwater was contaminated with benzene, ethylbenzene, 1,1,2-trichloroethane and naphthalene above the maximum contaminant levels (MCLs). Therefore, the ROD set cleanup standards in groundwater for benzene, toluene, ethylbenzene, xylene, 1,1,2-trichloroethane and TPH.

In 1997 and 1998, additional groundwater characterizations were conducted in order to aid in remedial design for the air sparging and soil vapor extraction systems. Because of the changing groundwater motion at South Tacoma Field, the groundwater investigation was conducted using a type of hydropunch technology in order to allow proper placement of permanent groundwater monitoring wells. A StrataProbe was used to punch 10 sample points. Based on that reconnaissance, four additional monitoring wells were placed at Pioneer. Those wells (NMW 8A, NMW 9A, NMW 10A and NMW 11A) in addition to the one installed during the initial investigation (NMW 1A) have been sampled over the past year on four different occasions. This reconnaissance also

indicated that the contamination was isolated in one location at Pioneer and did not indicate a mobile contaminant plume.

The sample results from the most recent sampling events indicate that contaminant levels are decreasing. For example, the original well, NMW 1A showed benzene levels at 300, 480 and 230 micrograms per liter (ug/l) during the investigations in 1991. In May 1997 the benzene levels were not detected at 1 ug/l. In August 1997 benzene was at 11 micrograms per liter. In December 1997 benzene was at 9.8 micrograms per liter and in March 1998 it was at 6.2 micrograms per liter. Since 1991, benzene levels appear to have dropped by an order of magnitude.

Groundwater samples were analyzed for all volatile contaminants using EPA method 8020 and for TPH using Washington State analytical method WTPH-G and WTPH-D. Results for all sampling can be found in the Groundwater Monitoring Report for Pioneer Builder's Supply, July 1998. Of the original contaminants of concern identified in the ROD, only benzene, ethylbenzene, naphthalene and TPH have currently been detected above the cleanup levels from the ROD. Benzene has been detected in two wells at concentrations of 11, 10, 6, 14, 41 and 38 ug/1 over the past four sampling rounds. The cleanup level for benzene is 5 ug/l. Ethylbenzene has been detected in one well at 800 ug/l. The cleanup level for ethylbenzene is 700 ug/l. Naphthalene has been detected in one well at 390 and 340 ug/l. The cleanup level for naphthalene is 320 ug/l. Finally, TPH has been detected in one well at 16, 17 and 17, and 2.8 milligrams per liter (mg/1). The cleanup level for TPH is 1 mg/l.

Based on these results, the contractor that was hired by the potentially responsible-parties (PRPs) proposed that EPA re-evaluate the need to perform air sparging and soil vapor extraction at Pioneer Builder's Supply in October, 1998. The contractor suggested that contaminant levels are decreasing due to natural attenuation caused by microbial degradation.. EPA has reviewed the data and requested that the PRPs set up a monitoring plan that will evaluate whether or not some sort of natural attenuation of the contaminants of concern is occurring. A work plan was submitted in November, 1998 to EPA. EPA provided comments, which the PRPs incorporated and the final work plan was approved in February 1999.

The work plan proposes additional monitoring for natural attenuation indicators. In addition to monitoring the contaminants of concern, samples will be tested for pH; temperature; specific conductance; dissolved oxygen; nitrate+nitrite and ammonia; sulfate and sulfide; ferrous iron; total, carbonate, and bicarbonate alkalinity; total dissolved solids; and hardness. Currently, it appears that contaminant levels are decreasing. It is likely that levels are decreasing due to source removal and natural attenuation. When the USTs were excavated, contaminated soils were removed. It is believed that the USTs were the source of soil and groundwater contamination at Pioneer. Since the tank and soil removals, contaminant concentrations in groundwater have decreased. By monitoring for

natural attenuation indicators as well as contaminant concentrations, it is expected that a more complete picture of attenuation can be realized.

The cleanup standards for the site remain as identified in the ROD. ne PRPs' contractors believe that some sort of attenuation will occur and that the site will achieve those goals within four years. Air sparging and soil vapor extraction systems are not cost-effective in treating the current levels and quantity of contamination at the Site. The air sparging and vapor extraction systems were estimated to cost $456,000 to install and $807,000 per year to operate. It was expected that cleanup would be achieved in two years and the total cost of the project was estimated to be $1,263,000.

At this point, it is EPA's position that additional monitoring is necessary to evaluate this natural attenuation. Further, it is also EPA's position that air sparging and soil vapor extraction are not necessary since the contaminant concentrations have decreased to their current levels and appear to be on a downward trend. The current information does not suggest that aggressive measures are necessary to achieve the cleanup goals identified in the ROD.

Since waste will be left in place at South Tacoma Field, EPA will conduct a five-year review in 2003. At that time, EPA can determine whether conditions have changed at the site and if there is new information to indicate that the groundwater cleanup levels will not be met.

As the lead regulatory oversight agency at the South Tacoma Field, EPA is responsible for consulting with the Washington State Department of Ecology (Ecology). At the initial PRP proposal, Ecology was contacted and the suggested changes were discussed. Ecology agreed with the monitoring strategy and deferred evaluation to EPA.

IV. Affirmation of the Statutory Determinations

The proposed changes to the selected remedy satisfy the provisions of CERCLA Section 121 since they are still protective of human health and the environment, comply with Federal and State requirements identified in the original ROD as Applicable or Relevant and Appropriate Requirements, and is cost-effective. In addition, the revised remedy utilizes permanent solutions and alternative treatment technologies to the maximum extent practical for this site.

CONCURRENCES				
Initials:	CS	amw	MFG	
Name:	Cami Grandinetti	Ann Williamson	Mike Gearheard	
Date:	9/29/99	9/29/99	9-29-99	

Approved:

Michael F. Gearheard, Director
Environmental Cleanup Office

9-29-99
Date