



River Terrace Laundromat

Alaska Department of Environmental Conservation • Division of Spill Prevention and Response

Site Description

River Terrace Laundromat, currently operated as River Terrace RV Park, is located on the bank of the Kenai River in downtown Soldotna. A dry cleaning firm operated there from the 1960's to the 1980's. In 1992, DEC investigated a complaint regarding leaking barrels at this site, and discovered 22 barrels containing used oil and other substances. One barrel was labeled Perchloroethylene (PCE) and was badly rusted and appeared to have been leaking.

Threats and Contaminants

Although some petroleum hydrocarbon contamination has been encountered in the soil and groundwater at the site, soils and water contaminated with PCE and its breakdown products are the main threat to public health and the environment.

Groundwater monitoring wells were installed on-site and in the adjacent Department of Transportation (DOT) right-of-way (ROW). The monitoring wells showed that the upper aquifer is contaminated with PCE and its degradation products. In 1998, DEC found PCE and its degradation products in the Kenai River water column in addition to Kenai River sediments. The areas where Kenai River sediment/water contamination was encountered is adjacent to the areas where contaminated soils existed. In addition, PCE and its degradation products are entering a stormwater sewer system that runs adjacent to the property, and are being directly discharged to the Kenai River.

Public Health and Environmental Concerns

PCE is listed by EPA as highly toxic, and is a suspected human carcinogen. The extent of soil contamination and the impact to the shallow groundwater aquifer have been fairly well defined. The deeper drinking water aquifer has

been tested on-site and analysis does not show any tested contaminant above its maximum contaminant level (MCL) for a public drinking water system.

Response Actions

All barrels were removed by a contractor hired by the responsible person (RP) in 1992. An investigation conducted by the RP in March 1997 showed that the soil contamination was more extensive than previously believed.

On June 25, 1997, DEC notified the RP that the RP's response actions were inadequate, and that DEC would be undertaking state led assessment and cleanup activities in accordance with State law.

During 1997, DEC installed several monitor wells on and adjacent to the River Terrace property. Under DEC's oversight the property owner began a quarterly groundwater-monitoring program at the site. The purpose was to determine the nature, extent and sources of the groundwater contamination. Contamination was detected in most of the wells installed at the River Terrace site.

In August 1997, DEC established cleanup levels for PCE and its degradation products, and for petroleum in the soil and groundwater. DEC also signed a Memorandum of Understanding (MOU) with EPA. The MOU specified that EPA would be responsible for removing the highly contaminated soils and DEC would be responsible for the long-term cleanup at the site. The RP signed an agreement with EPA in August regarding the removal of the highly contaminated soils.

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In 1997 and 1998, EPA oversaw the excavation and stockpiling of contaminated soils above a DEC-established PCE cleanup level of 11.5 milligrams/kilogram (mg/kg). The 1998 field sampling showed that several areas remained that had soils above the 11.5 mg/kg PCE cleanup level. Some of the shallower soils were excavated in 1998, while the deeper soils were further assessed and left in place. More than 4,000 cubic yards of contaminated soil was excavated and stockpiled during the 1997 and 1998 field activities.

In the fall of 1998, stockpiled soil was treated at the site using a soil vapor extraction system. Confirmatory soil sampling of the stockpiled soils was conducted in June 1999 to ensure that the levels have been reduced below cleanup levels. This report is under review to ensure that cleanup levels have been met.

Based on the results from the initial monitor well sampling activities, additional monitoring wells were installed in 1998 to further delineate the extent of groundwater contamination. In the fall of 1998, DEC conducted additional soils and groundwater sampling within the Alaska Department of Transportation & Public Facility's (ADOT&PF) right-of-way adjacent to the River Terrace site to determine the extent of contamination. The results confirm that PCE and breakdown products have migrated onto the ADOT&PF property, but were detected at levels below cleanup levels established for the River Terrace site.

In November 1998, the property owner completed an investigation of the property immediately surrounding the former dry cleaning building. Sumps beneath the building and the sewer line exiting the building were also tested. Sample results indicated levels of contamination encountered during the limited investigation were well below applicable cleanup levels.

In May 1999, sediment and surface water samples were taken in the Kenai River adjacent to the River Terrace site, as a follow-up to a May 1997 investigation. Results indicate that PCE and several of its breakdown products have migrated from the site into the Kenai River sediments and water column. Levels of PCE contamination found in the river water are about one-half the acceptable Safe Drinking Water Maximum Contaminant Levels (MCLs) and contaminant levels in the sediment are similar to what was found in 1997. The sediment results showed that one breakdown product of PCE was at levels slightly higher than its ecological benchmark.

PCE contamination is also being discharged into the Kenai River through a stormwater outfall. Assessment results indicate that contaminated groundwater is migrating from the River Terrace site under the Sterling Highway and entering the stormwater sewer system. The PCE levels at the outfall are about three times higher than the MCL and are similar to results from the 1997 sampling event.

In June 1999 a court order granted DEC full control of the long-term investigation and cleanup. DEC undertook a Remedial Investigation/Feasibility Study (RI/FS) to determine whether further soil and groundwater cleanup activities are needed. DEC also undertook on-going monitoring activities including quarterly groundwater monitoring, and monitoring of contaminant levels in the Kenai River water and sediment.

Groundwater sampling efforts through July 1999 indicated several monitoring wells continue to have elevated levels of PCE (up to 1,900 micrograms/liter (ug/l) or vinyl chloride (up to 7.6 ug/l) above the cleanup levels. Vinyl chloride is a highly toxic breakdown product of PCE. Contaminant levels continue to be detected at levels similar to those encountered during the initial sampling in 1997, indicating that little or

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no natural degradation of the contamination has occurred to date.

In June 1999, DEC began conducting the RI to fill in data gaps, and provide information about the nature and extent of contamination needed to complete the FS portion. Results of the June RI field work revealed groundwater contamination at an on-site location not previously identified as contaminated.

Additional RI work was performed in August and September 1999, in an attempt to define the extent of groundwater contamination and identify the source of the newly discovered area of contamination. This work provided additional information on the extent of the contamination, and on groundwater flow directions, but a specific, new source was not located. The information showed that not only does the groundwater contamination migrate southwest towards the Kenai River, but due to a mounding effect in the water table it also is migrating in a northwest direction from the former dry cleaning building.

Additional RI work was conducted during November 1999 on the River Terrace property and in the ADOT&PF right-of-way in an effort to learn whether a new source exists or whether the known source of contamination is responsible for the new area of groundwater contamination discovered in June. Field screening results from the November work indicate that contamination has migrated from the site, beneath the Sterling Highway and possibly onto adjoining properties.

Current Status

Once all needed RI data is obtained, the FS portion of the RI/FS will evaluate possible cleanup remedies to address remaining contamination and ensure that the Kenai River is protected. The RI/FS report is expected in February 2000. DEC will then request public

comment on the proposed remedial alternative(s) prior to implementation.

DEC is presently considering the use of a dye test to assist in determining where the contamination is migrating to and to identify additional areas where it might be entering the Kenai River.

DEC is also evaluating alternatives for a temporary wastewater treatment system to be installed at the outlet of the stormwater sewer system under the Kenai River bridge. This temporary system would be designed to decrease the level of solvent contaminants in the stormwater sewer system prior to the wastewater entering the Kenai River. The RI/FS report will present long-term alternatives to address this contamination pathway.

Once analytical sampling depicts that the soils within the remediation cell are adequately remediated DEC will coordinate with EPA about the ultimate placement of the treated soils.