Fact Sheet – March 2004

Rowena Oil Spill Soil and Groundwater Sampling Results

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Department of Environmental Quality

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Background

This fact sheet summarizes the results of soil and groundwater sampling at the diesel oil spill at Union Pacific Railroad's siding track in Rowena. Additional background information regarding this spill is provided in an earlier fact sheet that can be found at: http://www.deq.state.or.us/wmc/factsheets/rowenaoilspillfs.pdf.

Sampling

Soil samples were collected at five locations on February 28, 2004. Additional samples were collected from seven other locations on March 8, 2004. At each of the March 8 locations, two samples were collected, one at a depth of 0 to 6 inches, and one at a depth of 3 to 4 feet. All samples were analyzed for diesel and heavy oil, by method NWTPH-Dx. Results are summarized in Table 1. The following observations are noted:

- The sample results indicate that contamination is limited to within the top two feet of soil.
- Most contamination is within the vicinity of the spill site, although one sample, SO#3, showed 1,980 mg/kg of diesel about 110 feet away.
- The presence of heavy oil is likely the result of historic low-level contamination along the railroad track, and is not associated with the spill.

On March 1, 2004, groundwater samples were collected from four locations along the south side of Rowena River Road, and analyzed for diesel and heavy oil by method NWTPH-Dx. No petroleum was detected in any of the samples.

Table 1
Soil sample results

Sample designation/location	Sample depth	Sample date	Diesel, mg/kg	Heavy oil, mg/kg
C1/ Spill site, between siding track and main track	2 ft	2/28/04	<25	<100
C2/ Spill site, between siding track and main track	1.5 ft	2/28/04	20,300	<100
C3/ 25 ft west of spill, between siding track and main track	2 ft	2/28/04	<25	<100
C4/ 25 ft west of spill, between siding track and main track	1.5 ft	2/28/04	<25	734
C7/ stockpile of contaminated soil	--	2/28/04	7,400	<100
SO#1 0-6/ 60 feet east of spill, beneath siding track	0-6 in	3/8/04	<25	<50
SO#1 3-4/ 60 feet east of spill, beneath siding track	3-4 ft	3/8/04	<25	<50
SO#2 0-6/ 30 feet west of spill, beneath siding track	0-6 in	3/8/04	<25	157
SO#2 3-4/ 30 feet west of spill, beneath siding track	3-4 ft	3/8/04	<25	<50
SO#3 0-6/ 110 feet west of spill, beneath siding track	0-6 in	3/8/04	1,980	61.3

Next steps

Union Pacific Railroad will install two groundwater monitoring wells along the south side of Rowena River Road, immediately north of the spill site. These wells will be used to sample shallow groundwater to determine whether diesel is escaping from the spill area. We will attempt to collect four rounds of quarterly samples (one sample every three months). It is possible, however, that the wells may be dry during the summer months. The need for further remediation will be determined based on the groundwater monitoring results.

Last Updated: 3/25/04
By: Bob Schwarz
DEQ 04-ER-010

Sample designation/location	Sample depth	Sample date	Diesel, mg/kg	Heavy oil, mg/kg
SO#3 3-4/ 110 feet west of spill, beneath siding track	3-4 ft	3/8/04	<25	<50
SO#4 0-6/ 190 feet west of spill, beneath siding track	0-6 in	3/8/04	<25	79.3
SO#4 3-4/ 190 feet west of spill, beneath siding track	3-4 ft	3/8/04	<25	<50
SO#5 0-6/ 270 feet west of spill, beneath siding track	0-6 in	3/8/04	<25	<50
SO#5 3-4/ 270 feet west of spill, beneath siding track	3-4 ft	3/8/04	<25	<50
SO#6 0-6/ 360 feet west of spill, beneath siding track	0-6 in	3/8/04	<25	310
SO#6 3-4/ 360 feet west of spill, beneath siding track	3-4 ft	3/8/04	<25	<50
SO#7 0-6/ 420 feet west of spill, beneath siding track	0-6 in	3/8/04	<25	665
SO#7 3-4/ 420 feet west of spill, beneath siding track	3-4 ft	3/8/04	<25	<50

Notes:

1. mg/kg = milligrams per kilogram, which is essentially parts per million.

2. Numbers preceded by "<" indicate the laboratory reporting limit. In other words, contamination was not detected in this sample.

3. Although diesel is the contaminant of concern, heavy oil was also measured, as is always done as part of the NWTPH-Dx test.

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