DEQ SITE ASSESSMENT SECTION - STRATEGY RECOMMENDATION

Site Name:	Rolland Drive Study Area
Site CERCLIS Number:	N/A
DEQ ECSI Number:	4602
Site Location:	Rolland Drive and Surrounding Area Tangent, Oregon Township 12S, Range 3W, Section 6 Linn County Tax lots 100, 103, 300, 400, 500, 600, 700, 800, and 900. 43° 6'32" N, 123°24'59.4"W
Recommendation By:	Seth Sadofsky Western Region, Eugene
Reviewed By:	Don Hanson, R.G. Western Region, Eugene
Approved By:	_____ Paul S. (Max) Rosenberg, R.G. Western Region Cleanup Manager
Date:	June 13, 2008

Note: This strategy recommendation represents a Preliminary Assessment Equivalent (PAE) per OAR 340-122-072. This evaluation is being performed as a CERCLIS Federal Screening funded under an agreement with the U.S. Environmental Protection Agency (Cooperative Agreement V-990519-02).

Background

The Rolland Road area (Site) is directly northwest of the intersection of Highways 99E and 34 in Tangent, Oregon. The Site is in a small commercial and residential enclave of an agricultural area in the Central Willamette Valley. The site was referred to the Site Assessment Section by the Oregon Department of Health Services following discovery of ethylenedibromide (EDB) in the drinking water well serving Harmony Acres Mobile Park.

The Site was added to the Department of Environmental Quality (DEQ) Environmental Cleanup Site

Information (ECSI) database in March 2006 by DEQ's Site Assessment Section (SAS). At that time, SAS recommended the Site for further evaluation to determine whether or not there is a significant environmental hazard at this Site. Groundwater samples were collected from wells used for domestic and industrial supplies on several properties in the area in June of 2006 and analyzed for suspected contaminants.

The following evaluation summarizes DEQ's review of the limited amount of Site information available as of December, 2007 and evaluates the need for further investigation or remedial action at the Site, as well as the priority for such action based on potential impacts to human health and the environment. This evaluation is not intended to be a full investigation or characterization of the Site. Conditions which are not identified in this evaluation may exist at the Site.

Preliminary investigation

In November of 2005, routine sampling of the public drinking water source(water well) at Harmony Acres Mobile Home Park by the Oregon Department of Human Services (DHS) found contaminants above safe drinking water standards (maximum contaminant levels, or MCLs). Subsequent sampling done by DHS and Linn County in March 2006, of nearby residences and businesses found additional impacted wells.

In response to these detections, Linn County sent out letters informing residents of the groundwater contamination. DEQ's Site Assessment section (SAS) worked with the county to create the letter and a survey which was sent to residents. Surveys were included in the letter asking property owners for permission for DEQ to collect groundwater samples. Of the 36 surveys sent out, 13 were returned giving DEQ permission to sample their wells.

On June 14, 2006, Mindi English and Mary Camarata of DEQ collected 13 groundwater samples from residences and businesses around the Harmony Acres Mobile Home Park. Twelve of the 13 wells were considered shallow, i.e. less than 60 feet. Well logs were not available for all wells, however DEQ staff discussed well depth with property owners.

The June 2006 well water samples were analyzed for chlorinated herbicides (method EPA 515.3) and volatile organic compounds (method EPA 524.2),. These methods were chosen to measure appropriate concentrations of chemicals previously detected in the area, including EDB, 1,2-dichloropropane (DCP), and pentachlorophenol (PCP). The samples were placed on ice and shipped under chain of custody to TestAmerica in Beaverton Oregon.

Final laboratory results were received by DEQ on June 30, 2006. The data collected in June, 2006, along with data collected by DHS, are presented in Table 1. Mindi English called property owners on July 3, 2006 to discuss results. Messages were left for contacts that were not available. Two businesses, J&H Trucking and S2F Quarries had detections of at least one chemical above the MCL.

Table 1. Contaminant detections in water wells in the Rolland Drive Area

Sample Site	Address	Date	Penta-chlorophenol mg/l	Ethylene Dibromide mg/l	1,2-Dichloro-propane mg/l	Dirbromo-chloropropane mg/l	Chloroform mg/l
Harmony Acres*	31945 Rolland Dr.	1/13/2003	ND	**0.00088**	ND	0.00015	ND
Harmony Acres*	31945 Rolland Dr.	11/10/2005	0.00009	**0.0016**	***0.002***	0.00009	ND
Western Farm	32092 Hwy. 34	1/7/1995	ND	ND	ND	0.00003	ND
Western Farm	32092 Hwy. 34	12/28/2004	ND	ND	ND	ND	ND
Bangalore-Turf Tech	33789 Hwy 99E	6/14/2006	ND	ND	ND	ND	ND
CENEX	33731 Hwy 99E	2/1/2005	ND	ND	ND	ND	ND
CENEX	33731 Hwy 99E	6/14/2006	ND	ND	ND	ND	ND
Fisher Implements	31970 Old Hwy 34	3/31/2006	ND	ND	ND	ND	ND
Fisher Implements	31970 Old Hwy 34	6/14/2006	6.16E-05	ND	ND	ND	ND
J&H Trucking	33736 Hwy. 99E	3/31/2006	***0.000485***	**0.0148**	***0.00154***	ND	***0.00171***
J&H Trucking	33736 Hwy. 99E	6/14/2006	***0.000523***	**0.0115**	***0.00178***	ND	***0.00163***
L&M Lumber & S2F Quarries (a)	31975 Rolland Drive	6/14/2006	**0.00406**	**0.103**	**0.0107**	ND	***0.00952***
L&M Lumber & S2F Quarries (b)	31975 Rolland Drive	6/14/2006	ND	ND	***0.00061***	ND	ND
PAPE Machinery	33698 McFarland Rd	6/14/2005	ND	ND	ND	ND	ND
PAPE Machinery	33693 McFarland Rd	3/31/2006	ND	ND	ND	ND	ND
Tangent Business Park	32140 Hwy. 34	11/8/2004	ND	ND	ND	ND	ND
Avery	33765 McFarland Rd	6/14/2006	ND	ND	ND	ND	ND
Brunson	33773 McFarland Rd	6/14/2006	ND	ND	ND	ND	ND
Case	33745 McFaraland Rd	6/14/2006	ND	ND	ND	ND	ND
Minshall	33774 Hwy 99E	6/14/2006	ND	ND	ND	ND	ND
Nofziger	31935 Rolland	3/31/2006	0.000388	**0.00688**	***0.00546***	ND	***0.00528***

	drive						
Summitt	33784 Hwy. 99E	6/14/2006	ND	ND	ND	ND	ND
Ullfers	33775 Hwy 99E	6/14/2006	ND	ND	ND	ND	ND
MCL for public water supplies			0.001	0.00005	0.005	0.002	0.08
DEQ Residential Tap Water RBC			0.00047	0.00005	0.000165*		0.00018
Bold - above MCL and RBC							

Bold Italic above RBC, below MCL

***DEQ has not determined an RBC for this compound, this value is the EPA Region 6 PRG for residential water.**

Evaluation of Sample Results

Since the original sampling by DHS, Harmony Acres has installed a deeper well, according to DHS the deep wells is not contaminated. Wells owned and operated by two businesses, J&H Trucking and L&M and S2F Quarries (on the same property) do contain contaminants above both MCLs and DEQ drinking water RBCs. However, neither of these businesses use their well water for drinking water. Bottled water is used for drinking. One residential well is contaminated above screening levels. This homeowner has been informed of the risks due to contamination offered to make arrangements for bottled water. They did not request an alternative supply.

Hazardous Substance Characteristics

Contaminants of potential concern to this study are Ethylenedibromide (EDB), 1, 2-Dichloropropane (DCP), and pentachlorophenol (PCP). Ethylenedibromide (EDB, also known as 1,2-Dibromethane), has been used as an additive in gasoline and also as a fumigant on various crops. 1,2-Dichloropropane has historically been used as a soil fumigant and industrial solvent, and is used as a chemical intermediate to make other chlorinated chemicals. Pentachlorophenol, a semi-volatile organic compound, is an herbicide used in wood-treatment**.** These chemicals are present at low concentrations in shallow groundwater. There are no known releases of these substances in the area, as described below. Additional hazardous substances used in several parts of the area wide study include petroleum products, agricultural chemicals, and CCA.

Site Description

The Rolland Road Area includes tax lots100-126, 1100, 1101, 1102, 1200, 1302, 1301 and 606 in Township 12S, Range 4W, Section 1 in Linn County Oregon. This area is just north of the intersection of Highways 99E and 34 in Tangent, Oregon. The area is defined by the properties adjacent to, and slightly upgradient of the Harmony Acres Mobile Home Park, where contamination was first detected.

The Site is at an elevation of approximately 240 feet above mean sea level. Reported static groundwater levels are relatively shallow, 5-19 feet below ground surface. The Site is underlain by the

Willamette Silt to a depth of approximately 20 feet, silty and sandy and gravel from ~20-40 feet, sand and gravel from ~40-50 feet. A silt layer from ~50-60 feet divides the shallow and deeper aquifers. However, differences in hydraulic head between the upper and lower aquifers are very minor, suggesting communication between the aquifers. The groundwater gradient is about 0.002 to the NW based on data from monitoring wells at Western Farm Services.

There is a small stream approximately 1000' north of the Site. This stream is a tributary of the Calapooia River. There is no municipal water supply in the area and homes and businesses in the Rolland Road Area are served by groundwater wells.

Ownership, and Operational History, and Potential Sources of Groundwater Contamination
The site is divided into several different properties including residential, industrial, retail and farming uses (see map).

Harmony Acres Mobile Home Park (Site 1, Figure 1) is located in the northwestern part of the study area. Contamination was first discovered in the well at this site due to regular testing of public water supplies. Since the contamination was first discovered a deeper well has been installed and is supplying clean water. This site is not suspected to be a source of contaminants.

J&H Trucking (Site 2, Figure 1) occupies 5.5 acres at 33736 Highway 99E, just east of Harmony Acres. This site is used for truck parking and some maintenance, and also includes a carpet store and a coffee stand. This site was undeveloped until 1979, when purchased by J&H Trucking. J&H Trucking has two storage tanks for new and waste oil inside the building on concrete pads. The only other chemicals stored on site are soaps. There is a well on site, which is used for washing. Contaminants of potential concern were detected in this well in 2006. PCP, Chloroform, and 1,2-DCP were detected below MCLs, while 1,2-dibromomethane was detected above MCLs in this well water.

L&M Steel Fabricating and Machining (Site 3, Figure 1) occupies 5.24 acres at 31975 Rolland Drive. This site has been used in the past by a drywall contractor, a lumberyard, and a farm equipment dealer. The site is completely fenced. Several of the buildings on site were built in 2002. Chemicals handled on site include solvents and paint thinners, and there have been no reported sills.

Figure 1 – Site map

Fisher Implements (Site 4, Figure 1) is a dealer of farming equipment, we have no knowledge of hazardous materials handling or spills at this site.

Lumberman's Tangent (Site 5, Figure 1) is a dealer of building supplies, we have no knowledge of hazardous materials handling or spills at this site.

Linn Benton Tractor Company (Site 6, Figure 1) occupies 2 acres at 33559 Highway 99E that is used for sales and service of farm implements and machinery. A gasoline UST and a waste oil UST were decommissioned in 1996. This site is open in the LUST program (#22-96-4168) and the cleanup is not complete. This is a possible source of EDB and has not been fully investigated. There have been no other reported spills on this site, which handles small quantities of motor oil, hydraulic fluids, transmission fluid, and batteries.

CHS Inc. (Cenex; Site 7, Figure 1) occupies 9.24 acres at 33731 Highway 99E. This site is used for multiple operations including a gas station (with 5 active underground gasoline and diesel tanks), convenience store and farm store (operated by Wilco). The land use is generally light industrial including blending and packaging grass seed, and warehousing (hay, animal feed, agricultural chemicals, and grass seed). This site has been used in this general manner for approximately 40 years, and also used to include a bulk fertilizer distribution system. In 1995 an UST was overfilled causing soil and groundwater contamination of gasoline range and diesel range organics (EDB has not been detected). Contaminated soil was removed and groundwater monitoring is continuing (see LUST file# 22-95-4158).

Turf Tech (Site 8, Figure 1) is a seed testing and research firm, we have no knowledge of hazardous materials handling or spills at this site.

Western Farm Services (WFS; ECSI #1830; Site 10, Figure 1) occupies a site of about 5 acres at 32092 Hwy. 34, including the former site of Osmose Wood Preserving (ECSI #1369). This site was previously owned by Shell Chemical Company. Western Farm Services is a supplier of fertilizers and agricultural chemicals. The WFS fertilizer plant is composed of five buildings and a tank farm. The tank farm currently has two water storage tanks and 19 liquid containment vessels for blending liquid fertilizer products onsite. The chemical warehouse stores prepackaged dry pesticides, and fertilizers in addition to housing three liquid pesticide containment vessels. The 1,200 ton, dry fertilizer impregnation warehouse that is used for making up special blends of fertilizers is under construction, being replaced by a larger 5,000 ton building. A repair shop, WFS offices, and a general storage building make up the other building on the site. The WFS site has been active in agricultural chemicals since the mid-1960s and WFS has occupied this facility since 1989 and has reported no spills. However, releases of chromium copper arsenate (CCA) have been documents at the Osmose site. Based on a remedial investigation conducted at Osmose Wood Preserving, it does not appear that contaminants from this site are effecting nearby drinking water wells.

Morse Bros Inc. (Site 11, Figure 1) runs a trucking business out of a 21 acre site at 32260 Old Highway 34 (tax lots 2201, 2202, and 2120). Hazardous material handling on the site includes materials commonly associated with automobile maintenance, such as motor oil, antifreeze, solvents, and compressed gases. Two 10,000 gallon petroleum USTs were removed in 1999. Waste oil, contaminated soil and groundwater were removed (LUST# 22-99-4025) and the site was closed under soil matrix rules. There are currently USTs present for diesel (10,000 gallons) and gasoline (6,000 gallons) and several above ground storage tanks (ASTs) containing hydraulic oil, solvents, lube oil, and waste oil. Wash water is discharged in the storm water drainage under a 1700-A permit and is monitored for oil and grease, copper, lead, zinc and pH.

UST Cleanups

There are several UST cleanups in the area, these are discussed above in reference to the individual properties. It is unlikely that the pentachlorophenol or dichloropropane are derived from petroleum-

related sources. However ethylenedibromide has sometimes been used as a gasoline additive and future work on petroleum sites in the area should include testing for this chemical.

Hazardous Waste Inspections
WFS is currently a conditionally exempt generator (CEG) of hazardous wastes. Until 2006 WFS was a large quantity generator (LQG). This is primarily due to wastes related to CCA operations. Morse Bros was a small quantity generator of wastes in 2006, primarily related to remediation wastes, and a CEG in prior years.

Areas of Concern and Pathway Information
Based on this review of available information, the following are the primary areas of concern associated with the Roland Drive Study Area site. A "pathway" is how humans or ecological receptors (e.g, fish, birds) could be exposed to hazardous substances spilled into the environment.

Surface Water Pathway:
Surface water runoff goes through swales or ditches, eventually reaching an ephemeral drainage slightly north of the area. This drainage discharges to the Calapooia River about 3.5 miles north of the Site. The contaminants in groundwater were detected at such low levels that they are unlikely to pose a significant threat to surface water bodies.

Groundwater Pathway:
Groundwater in the area is used for domestic supplies and for irrigation. Municipal water is not available in the study area. Use of contaminated groundwater as drinking water is the primary known concern for the Site.

The full extent of groundwater contamination is unclear. As the wells tested were chosen by availability and use (to understand exposure pathways), and are not all well documented or screened in well defined depths, it is difficult to conclusively document the area of contamination. All detections were in shallow wells in the area NW of the intersection of Old Highway 34 and Highway 99E. The study area includes several sites up-gradient of the known contamination (south and east).

Further investigation of the source and extent of the groundwater contamination is complicated because the contaminants of potential concern are present at low levels and may be derived from various sources. EDB has been used as an additive in gasoline and also as a fumigant on various crops. 1,2-dichloropropane has historically been used as a soil fumigant and industrial solvent, and is used as a chemical intermediate to make other chlorinated chemicals. Pentachlorophenol, a semi-volatile organic compound, is an herbicide used in wood-treatment. Therefore, it is likely that these compounds are derived from several sources. Wood treatment, gasoline spills, and storage and handling of agricultural chemicals all occurred in various locations across the site, as detailed above.

Based on the results of the sampling conducted by DEQ, and the known uses of the water wells

sampled, there are no known locations were people are drinking water contaminated above MCLs or DEQ RBCs aside from one residence which has been offered and declined an alternative water supply. However, since not all drinking water wells in the area have been sampled, and the full extent of the contamination is unknown, it is possible other water wells in the area could be impacted by these contaminants.

Direct Contact/ Soil Ingestion Pathway:
No area of soil contamination has been identified. However, it is possible some or all of the contaminants were spilled or otherwise released onto soil, and locally areas of soil contamination exist. Areas of soil containing high concentrations of these contaminants, if any, could pose a risk to people or ecological receptors that come into contact with or incidentally ingest contaminated soil (e.g., digging in the soil and then eating with dirty hands).

Air Pathway:
The Air pathway may consist of inhaling dust from contaminated soil, or inhaling vapors emanating from contaminated soil or groundwater. . If areas of contaminated soil exist, it is possible people could inhale contaminated dust or vapors. It is possible that occupants of residences and businesses located above contaminated groundwater could be exposed to vapors rising from the groundwater, through soil, and into buildings. However, based on the extremely low contaminant concentrations detected in the groundwater to date, this pathway does not appear to present a risk to area occupants.

Recommendation/Action
After reviewing available information provided by the facilities discussed above or gathered during our in-house research, the Site Assessment Section finds that further action is needed to assess groundwater contamination in the area.

There is no obvious source of all the contaminants of concern based on available data, and it is not uncommon to find low-levels of contaminants in groundwater in mixed agricultural-commercial-industrial areas.

However, based on known operations, two businesses in the area stand out as <u>potential</u> sources of the groundwater contamination and merit further investigation: the Western Farm Services site and the Cenex/CHS site. We recommend that Expanded Preliminary Assessments (XPA's) be conducted at these sites to determine whether a release or releases of the contaminants of concern have occurred there. The XPA's should include, but not necessarily be limited to, collection of groundwater, and possibly soil samples, for EDB, DCP, and PCP.

At the Western Farm Services site, the extent of pesticide contamination should be investigated, and water samples (from existing monitoring wells) should be tested for EDB, DCP, and PCP. In addition to the possible presence of contaminants discussed here, nitrate levels at WFS are elevated and, as such, additional investigative and remedial activities are recommended. Water samples from the

Cenex / CHS site, which are being monitored for a cleanup of a leaking UST should also be analyzed for EDB, DCP, and PCP, to investigate whether any of these contaminants may be derived from this site.

Depending on the results of XPA's at those facilities, additional investigation in the area may also be necessary.

Based on ODEQ's Site Assessment Prioritization System, the Rolland Drive Study Area site is ranked as medium priority for further investigation.

Coordination Within or Outside DEQ
This investigation began with a referral from the ODHS drinking water program and initial investigation was done in collaboration with this program. Several DEQ tanks program project managers were consulted in regard to LUST files 22-99-4025, 22-96-4168, and 22-95-4158

References: The Site Assessment Section has reviewed the following references in the preparation of this strategy recommendation:

- Responses to Site Assessment Information Request forms were received from: Dennis Potter, Western Farm Services; Jack Ayers, J&H trucking; L&M Steel; Vivian Kropf, Linn Benton Tractor; Don Mears, CHS Inc. (Cenex); Jeff Steyaert, Morse Bros. Inc.;
- Harmony Acres: Summary of Observations. Dennis Nelson, DHS 5/5/06.
- ODEQ Lust file #22-95-4158
- ODEQ Lust file #22-96-4168
- ODEQ Lust file #22-99-4025
- ODEQ water well sampling memo, Mindi English, July 12, 2006.

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Ownership, and Operational History, and Potential Sources of Groundwater Contamination
The site is divided into several different properties including residential, industrial, retail and farming uses (see map).

Harmony Acres Mobile Home Park (Site 1, Figure 1) is located in the northwestern part of the study area. Contamination was first discovered in the well at this site due to regular testing of public water supplies. Since the contamination was first discovered a deeper well has been installed and is supplying clean water. This site is not suspected to be a source of contaminants.

J&H Trucking (Site 2, Figure 1) occupies 5.5 acres at 33736 Highway 99E, just east of Harmony Acres. This site is used for truck parking and some maintenance, and also includes a carpet store and a coffee stand. This site was undeveloped until 1979, when purchased by J&H Trucking. J&H Trucking has two storage tanks for new and waste oil inside the building on concrete pads. The only other chemicals stored on site are soaps. There is a well on site, which is used for washing. Contaminants of potential concern were detected in this well in 2006. PCP, Chloroform, and 1,2-DCP were detected below MCLs, while 1,2-dibromomethane was detected above MCLs in this well water.

L&M Steel Fabricating and Machining (Site 3, Figure 1) occupies 5.24 acres at 31975 Rolland Drive. This site has been used in the past by a drywall contractor, a lumberyard, and a farm equipment dealer. The site is completely fenced. Several of the buildings on site were built in 2002. Chemicals handled on site include solvents and paint thinners, and there have been no reported sills.

Figure 1 – Site map

Fisher Implements (Site 4, Figure 1) is a dealer of farming equipment, we have no knowledge of hazardous materials handling or spills at this site.

Lumberman's Tangent (Site 5, Figure 1) is a dealer of building supplies, we have no knowledge of hazardous materials handling or spills at this site.

Linn Benton Tractor Company (Site 6, Figure 1) occupies 2 acres at 33559 Highway 99E that is used for sales and service of farm implements and machinery. A gasoline UST and a waste oil UST were decommissioned in 1996. This site is open in the LUST program (#22-96-4168) and the cleanup is not complete. This is a possible source of EDB and has not been fully investigated. There have been no other reported spills on this site, which handles small quantities of motor oil, hydraulic fluids, transmission fluid, and batteries.

CHS Inc. (Cenex; Site 7, Figure 1) occupies 9.24 acres at 33731 Highway 99E. This site is used for multiple operations including a gas station (with 5 active underground gasoline and diesel tanks), convenience store and farm store (operated by Wilco). The land use is generally light industrial including blending and packaging grass seed, and warehousing (hay, animal feed, agricultural chemicals, and grass seed). This site has been used in this general manner for approximately 40 years, and also used to include a bulk fertilizer distribution system. In 1995 an UST was overfilled causing soil and groundwater contamination of gasoline range and diesel range organics (EDB has not been detected). Contaminated soil was removed and groundwater monitoring is continuing (see LUST file# 22-95-4158).

Turf Tech (Site 8, Figure 1) is a seed testing and research firm, we have no knowledge of hazardous materials handling or spills at this site.

Western Farm Services (WFS; ECSI #1830; Site 10, Figure 1) occupies a site of about 5 acres at 32092 Hwy. 34, including the former site of Osmose Wood Preserving (ECSI #1369). This site was previously owned by Shell Chemical Company. Western Farm Services is a supplier of fertilizers and agricultural chemicals. The WFS fertilizer plant is composed of five buildings and a tank farm. The tank farm currently has two water storage tanks and 19 liquid containment vessels for blending liquid fertilizer products onsite. The chemical warehouse stores prepackaged dry pesticides, and fertilizers in addition to housing three liquid pesticide containment vessels. The 1,200 ton, dry fertilizer impregnation warehouse that is used for making up special blends of fertilizers is under construction, being replaced by a larger 5,000 ton building. A repair shop, WFS offices, and a general storage building make up the other building on the site. The WFS site has been active in agricultural chemicals since the mid-1960s and WFS has occupied this facility since 1989 and has reported no spills. However, releases of chromium copper arsenate (CCA) have been documents at the Osmose site. Based on a remedial investigation conducted at Osmose Wood Preserving, it does not appear that contaminants from this site are effecting nearby drinking water wells.

Morse Bros Inc. (Site 11, Figure 1) runs a trucking business out of a 21 acre site at 32260 Old Highway 34 (tax lots 2201, 2202, and 2120). Hazardous material handling on the site includes materials commonly associated with automobile maintenance, such as motor oil, antifreeze, solvents, and compressed gases. Two 10,000 gallon petroleum USTs were removed in 1999. Waste oil, contaminated soil and groundwater were removed (LUST# 22-99-4025) and the site was closed under soil matrix rules. There are currently USTs present for diesel (10,000 gallons) and gasoline (6,000 gallons) and several above ground storage tanks (ASTs) containing hydraulic oil, solvents, lube oil, and waste oil. Wash water is discharged in the storm water drainage under a 1700-A permit and is monitored for oil and grease, copper, lead, zinc and pH.

UST Cleanups

There are several UST cleanups in the area, these are discussed above in reference to the individual properties. It is unlikely that the pentachlorophenol or dichloropropane are derived from petroleum-

related sources. However ethylenedibromide has sometimes been used as a gasoline additive and future work on petroleum sites in the area should include testing for this chemical.

Hazardous Waste Inspections
WFS is currently a conditionally exempt generator (CEG) of hazardous wastes. Until 2006 WFS was a large quantity generator (LQG). This is primarily due to wastes related to CCA operations. Morse Bros was a small quantity generator of wastes in 2006, primarily related to remediation wastes, and a CEG in prior years.

Areas of Concern and Pathway Information
Based on this review of available information, the following are the primary areas of concern associated with the Roland Drive Study Area site. A "pathway" is how humans or ecological receptors (e.g, fish, birds) could be exposed to hazardous substances spilled into the environment.

Surface Water Pathway:
Surface water runoff goes through swales or ditches, eventually reaching an ephemeral drainage slightly north of the area. This drainage discharges to the Calapooia River about 3.5 miles north of the Site. The contaminants in groundwater were detected at such low levels that they are unlikely to pose a significant threat to surface water bodies.

Groundwater Pathway:
Groundwater in the area is used for domestic supplies and for irrigation. Municipal water is not available in the study area. Use of contaminated groundwater as drinking water is the primary known concern for the Site.

The full extent of groundwater contamination is unclear. As the wells tested were chosen by availability and use (to understand exposure pathways), and are not all well documented or screened in well defined depths, it is difficult to conclusively document the area of contamination. All detections were in shallow wells in the area NW of the intersection of Old Highway 34 and Highway 99E. The study area includes several sites up-gradient of the known contamination (south and east).

Further investigation of the source and extent of the groundwater contamination is complicated because the contaminants of potential concern are present at low levels and may be derived from various sources. EDB has been used as an additive in gasoline and also as a fumigant on various crops. 1,2-dichloropropane has historically been used as a soil fumigant and industrial solvent, and is used as a chemical intermediate to make other chlorinated chemicals. Pentachlorophenol, a semi-volatile organic compound, is an herbicide used in wood-treatment. Therefore, it is likely that these compounds are derived from several sources. Wood treatment, gasoline spills, and storage and handling of agricultural chemicals all occurred in various locations across the site, as detailed above.

Based on the results of the sampling conducted by DEQ, and the known uses of the water wells

sampled, there are no known locations were people are drinking water contaminated above MCLs or DEQ RBCs aside from one residence which has been offered and declined an alternative water supply. However, since not all drinking water wells in the area have been sampled, and the full extent of the contamination is unknown, it is possible other water wells in the area could be impacted by these contaminants.

Direct Contact/ Soil Ingestion Pathway:
No area of soil contamination has been identified. However, it is possible some or all of the contaminants were spilled or otherwise released onto soil, and locally areas of soil contamination exist. Areas of soil containing high concentrations of these contaminants, if any, could pose a risk to people or ecological receptors that come into contact with or incidentally ingest contaminated soil (e.g., digging in the soil and then eating with dirty hands).

Air Pathway:
The Air pathway may consist of inhaling dust from contaminated soil, or inhaling vapors emanating from contaminated soil or groundwater. . If areas of contaminated soil exist, it is possible people could inhale contaminated dust or vapors. It is possible that occupants of residences and businesses located above contaminated groundwater could be exposed to vapors rising from the groundwater, through soil, and into buildings. However, based on the extremely low contaminant concentrations detected in the groundwater to date, this pathway does not appear to present a risk to area occupants.

Recommendation/Action
After reviewing available information provided by the facilities discussed above or gathered during our in-house research, the Site Assessment Section finds that further action is needed to assess groundwater contamination in the area.

There is no obvious source of all the contaminants of concern based on available data, and it is not uncommon to find low-levels of contaminants in groundwater in mixed agricultural-commercial-industrial areas.

However, based on known operations, two businesses in the area stand out as <u>potential</u> sources of the groundwater contamination and merit further investigation: the Western Farm Services site and the Cenex/CHS site. We recommend that Expanded Preliminary Assessments (XPA's) be conducted at these sites to determine whether a release or releases of the contaminants of concern have occurred there. The XPA's should include, but not necessarily be limited to, collection of groundwater, and possibly soil samples, for EDB, DCP, and PCP.

At the Western Farm Services site, the extent of pesticide contamination should be investigated, and water samples (from existing monitoring wells) should be tested for EDB, DCP, and PCP. In addition to the possible presence of contaminants discussed here, nitrate levels at WFS are elevated and, as such, additional investigative and remedial activities are recommended. Water samples from the

Cenex / CHS site, which are being monitored for a cleanup of a leaking UST should also be analyzed for EDB, DCP, and PCP, to investigate whether any of these contaminants may be derived from this site.

Depending on the results of XPA's at those facilities, additional investigation in the area may also be necessary.

Based on ODEQ's Site Assessment Prioritization System, the Rolland Drive Study Area site is ranked as medium priority for further investigation.

Coordination Within or Outside DEQ
This investigation began with a referral from the ODHS drinking water program and initial investigation was done in collaboration with this program. Several DEQ tanks program project managers were consulted in regard to LUST files 22-99-4025, 22-96-4168, and 22-95-4158

References: The Site Assessment Section has reviewed the following references in the preparation of this strategy recommendation:

- Responses to Site Assessment Information Request forms were received from: Dennis Potter, Western Farm Services; Jack Ayers, J&H trucking; L&M Steel; Vivian Kropf, Linn Benton Tractor; Don Mears, CHS Inc. (Cenex); Jeff Steyaert, Morse Bros. Inc.;
- Harmony Acres: Summary of Observations. Dennis Nelson, DHS 5/5/06.
- ODEQ Lust file #22-95-4158
- ODEQ Lust file #22-96-4168
- ODEQ Lust file #22-99-4025
- ODEQ water well sampling memo, Mindi English, July 12, 2006.