6.0 CONTAMINANT FATE AND TRANSPORT

6.1 Potential Migration Routes

Potential migration routes, for the PCB impacted materials deposited as fill on the MSL and Raymond Lamar, Sr. properties include:

- Airborne dust with adsorbed PCBs,
- Surface and stormwater runoff and soil erosion into drainage ditches and streams, and
- Deposition by mechanical means.

Airborne dust from the fill material is not considered a significant concern under the current conditions. The fill material on the MSL and Raymond Lamar, Sr. properties has been enclosed with an impervious 40-mil, LDPE liner. Air monitoring data collected during liner installation and other site assessment activities has not indicated the presence of dust in the work area or downwind of the work zone at concentrations at or above regulatory standards for inhalation.

Surface water runoff and soil erosion are the primary transport mechanisms for PCBs from the MSL Property to adjacent and down gradient properties. Pockets of shallow surface soils and/or sediment deposits (0-6 inches) in some low areas in the northern portion of the drainage ditch on the Raymond Lamar, Sr. property have PCB concentrations above the MDEQ maximum allowable limit of 1.0 mg/Kg.

6.2 Contaminant Concentrations

6.2.1 Mid South Leasing Property

PCB concentrations in the soils on the MSL Property range from a low of non-detect (<0.10 mg/kg) to a high of 580 mg/Kg. The occurrence of PCB concentrations above the

MDEQ maximum allowable limit of 1.0 mg/Kg extends across the entire filled area. Most surface soil samples collected from 0 to 6 inches had PCB concentrations above 1.0 mg/Kg. PCBs were detected at concentrations above 1.0 mg/Kg at a maximum depth of 18 feet bgs during the rotary auger-drilling phase of this assessment. PCB concentrations above 1.0 mg/Kg were detected at multiple depths in all five of the test pits that were placed on the MSL and Raymond Lamar, Sr. properties.

PCB concentrations above 50 mg/Kg were detected in the soils in the filled area on the MSL Property at 114 Brent Street primarily to the west and northwest of the house and at the toe of the western slope. Soil samples with PCB concentrations greater than 50 mg/Kg were collected both during the initial assessment in June 2002 and also during the installation of the test pits in May 2004. PCB concentrations above 50 mg/Kg have been detected at depths of up to eight feet bgs.

On the 114 Brent Street property, PCB concentrations varied with depth. Some sample locations show PCB concentrations greater than 1.0 mg/Kg only at the surface, while some locations show PCB concentrations increasing with depth. PCB concentrations above 1.0 mg/Kg were detected at a maximum depth of 18 feet bgs.

PCB concentrations above 1.0 mg/Kg were also detected on the 112 Brent Street property. Soil samples collected from the surface (0-6 inches) in an area near the southwest corner of the singlewide trailer on the property had PCB concentrations greater than 1.0 mg/Kg.

Since the placement of the fill material on the MSL Property, sediments suspended in stormwater runoff have been deposited into the tributary drainage ditch, main drainage ditch and floodplain to the south of the MSL Property.

6.2.2 Raymond Lamar, Sr. Property

Analytical results from samples of the fill material that was placed in the northeast corner of the Raymond Lamar, Sr. property indicate PCB concentrations that exceed the MDEQ maximum allowable concentration of 1.0 mg/Kg. No soil samples collected from the fill material on the Raymond Lamar, Sr. property had PCB concentrations greater than 50 mg/Kg.

PCB concentrations in the soil and sediment samples collected from the drainage ditch on the Raymond Lamar, Sr. property range from a low of non-detect (<0.10 mg/kg) to a high of 3.6 mg/Kg. The occurrence of PCB concentrations above the MDEQ maximum allowable limit of 1.0 mg/Kg is sporadic and appears to be limited to surface soils and sediments (0-6 inches) in or immediately adjacent to the drainage ditch. The sample locations where PCB concentrations above 1.0 mg/Kg were detected appear to be areas where soil was deposited during high water events or areas where sediments collected around tree stumps.

6.2.3 Raymond Lamar, Jr. Property

PCB concentrations in the sediment samples collected from Turkey Creek range from below the method detection limit (0.10 mg/kg) to a high of 0.24 mg/Kg and were therefore substantially less than the MDEQ maximum allowable limit of 1.0 mg/Kg.

6.3 Contaminant Migration

PCBs attached to soil particles have migrated downstream from the MSL Property and into pools and depressions in the northern portion of the drainage ditch on the Raymond Lamar, Sr. property. Based on analysis of collected samples, it does not appear that PCBs have migrated downgradient of the Raymond Lamar, Sr. property to impact the Raymond Lamar, Jr. property or Turkey Creek.