

**Clackamas County
Strategic Brownfields Evaluation**

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Clackamas County Strategic Brownfields Evaluation

1.0 Executive Summary

Clackamas County has contracted Brownfield Development, LLC to conduct an evaluation of strategic Brownfield sites in Clackamas County, Oregon. Brownfield Development, LLC is a firm that acquires contaminated properties for redevelopment. The purpose of the evaluation is to help Clackamas County formulate a Brownfield utilization plan. Twenty properties were selected by the County for the brownfield evaluation. The selection criteria for this evaluation included status of active site clean up, property size, job formation, and properties located within urban areas. The Northwest Pipe & Casing Superfund site was not included in the evaluation because of the special circumstances surrounding the cleanup and ultimate use of the property.

Brownfield Development, LLC reviewed Oregon Department of Environmental (DEQ) Environmental Cleanup Site Information (ECSI) database and aerial photographs to evaluate order of magnitude cleanup costs. The site remedies were based upon Remedial Investigation/Feasibility Studies (RI/FS) data, existing activity or best professional judgement. The order of magnitude cleanup costs were compared to the Clackamas County Tax Assessor Real Market Value (RMV) or actual sale values (as stated in the County Tax Assessor's database).

The Dales Auto Wrecking, Oregon Department of Transportation (ODOT) Amble Road, and Camp Withycome Firing Range properties appear to offer the most promise for redevelopment. The remaining properties either does not require cleanup, the cleanup costs exceed the RMV, or market demand for the property will resolve any cleanup issues without any intervention from the County.

This evaluation is based on the information available at the time of the evaluation and is limited in scope and budget. This evaluation is a preliminary assessment of order of magnitude cleanup liability. This evaluation does not replace a detailed RI/FS and does not consider potential liens or other legal entanglements (such as bankruptcy) that may prevent site development. The estimated cleanup costs are largely based on reasonable assumptions, professional judgement, and actual cleanup costs for similar sites.

2.0 Introduction

Brownfield Development, LLC is a private brownfield development firm based in Salem, Oregon. We acquire abandoned brownfield sites through the DEQ Prospective Purchaser Agreement (PPA) Program. We were involved in the former P & A Auto Recycler property (Townes property) located on SE Mather Road in Clackamas. Our efforts not only cleaned up the environment it brought 12.5 acres of light industrial land back into the useable industrial land base. The site is expected to generate over 50 family wage jobs.

Brownfield Development, LLC has reviewed available public records, including information on file at the County Tax Assessor's Office (provided by the County), DEQ

ECSI database, Site Assessment Information, and RI/FS information that is currently available for review.

This report presents Brownfield Development's findings and will form the basis for the County's formulation of a utilization plan. This report contains a synoptic review of each of twenty Brownfield sites targeted by Clackamas County, and evaluates costs associated with assessment, remediation, monitoring. Finally, recommendations regarding whether or not an investment in cleanup activities would result in a marketable site are made.

3.0 Property Selection Criteria

Brownfield Development, LLC and Clackamas County established selection criteria for properties subject to this evaluation. The overall objective is to identify properties that are not developed due to perceived or actual environmental contamination. Properties listed on the DEQ confirmed release list and wrecking yards were used as a pool to select the twenty sites subject to this study. The selection criteria for this evaluation included status of active site clean up, property size, job formation, and properties located within urban areas.

The Northwest Pipe & Casing Superfund site was not included in the evaluation because of the special circumstances surrounding the cleanup and ultimate use of the property. The 32 acre site presents special development challenges to the County. The US Environmental Protection Agency (EPA) has performed significant work at the Northwest Pipe & Casing property. The EPA placed liens on the property to recover their site investigation and cleanup expenditures. At the time this evaluation was prepared, the EPA initiated removal of contaminated soil "hot spots" at the site, which adds approximately \$2.5 million to the existing liens on the property.

ODOT has plans to extend the Sunrise freeway diagonally across the site leaving two triangle shaped parcels available for development. The remaining portions of the site would have to satisfy the EPA liens in order to begin development. The groundwater remedy is expected to take many years to complete. The current land value will not support a development that can pay off the EPA liens. In order for this property to be developed, the County may consider tax increment financing or revenue bonds to pay off the EPA liens.

4.0 Site Evaluations

The ensuing narrative provides brief site histories, followed by selected remedies based upon Remedial Investigation/Feasibility Study (RI/FS) information, existing activity or best professional judgement. Cost estimates are then generated, and recommendations made pursuant to an evaluation of all compiled information.

Table 1 presents a summary of estimated cleanup costs and the RMV (according to the Clackamas County Tax Assessor's Office). Table 1 presents the sites according to promise of development with the most promising sites listed first. A complete listing of

the properties subject to this evaluation is presented in Appendix A. Ownership information and RMV data are also presented in Appendix A.

The properties are outlined below and are ranked according to development promise; the most promising sites are discussed first. The selected remedies are expected not to impact the useable land for each site. We assumed that prospective purchasers who have negotiated a PPA with DEQ will develop all of the properties.

4.1 Dale's Auto Wrecking

There are no records on file with DEQ regarding Dales Auto Wrecking. Although there are no records for the site, Brownfield Development, LLC evaluated cleanup costs based on experience with other wrecking yards located within Clackamas County. In addition, Brownfield Development, LLC performed an aerial photograph inspection where we evaluated potential point source areas for contamination. Appendix B presents an aerial photograph of the property. The goal of the aerial photograph inspection was to identify potential source areas that we have identified on other wrecking yards. Based on our past experience with wrecking yards, the following areas are considered potential point source areas:

Engine Dismantling Area Typical engine dismantling areas are generally located adjacent to a shop bay door out of public view. Most conditional use permits issued to wrecking yards require all work be shielded from public view. Vision obscuring fencing is required to hide wrecking activities from the public. The area needs to be served by both electric power and water to accommodate a steam cleaner. In addition, parts storage areas are generally located in close proximity to the engine dismantling area.

Automobile Crushing Facilities Typical automobile crushing facilities (car crushers) are located in close proximity to the engine dismantling area. If a wrecking yard does not have a car crusher there generally is a crushing facility close by in another wrecking yard.

Sanitary Waste Disposal Facilities It is important to establish where sanitary waste was disposed at the property. If a municipal water supply and sanitary sewer system serve the property, the sanitary waste disposal is generally not an issue. However, if the site uses a private water supply well and a septic system, contaminants can be disposed of through the septic system or the water supply well.

Underground Storage Tanks Underground storage tanks (USTs) are always a concern at any site. Over-spillage seems to be a common problem at wrecking yards.

Drum Storage Areas Drum storage areas often have spillage problems associated with drum handling.

Surface Water Bodies Surface water bodies can transport contaminated water and sediment off-site.

Buried Debris It is not uncommon to find burial areas in wrecking yards. Drums, tires and automotive debris are typically found in burial areas in wrecking yards. Burial areas are typically located through geophysical methods, however areas where thick berry brush and/or depressions in the ground surface are markers for burial areas.

Auto Storage The auto storage yard is a potential source area because of the volume of material that can be impacted by years of waste oil, fuel and other fluid spills. Lead is also a typical contaminant associated with automotive storage areas. The sources of the lead in surface soils are battery fluid disposal. Years of small spills create a large volume of soil requiring remediation.

During our review of Dales Auto Wrecking Yard, Brownfield Development observed significant surface staining throughout the wrecking yard. In addition, we believe the engine dismantling area is located in the central portion of the site. There are heavy stained areas adjacent to several of the out buildings at the site. The out buildings and storage vans located throughout the property can be used to store waste oil and other automotive fluids. Brownfield Development, LLC identified an area that may be a buried debris site at the rear of the property. The site is located at the top of a steep slope. If there are buried drums, off-site migration can occur down slope of the property.

The property warrants a full site investigation based on past use and issues identified in our aerial photograph evaluation. Based on our experience a site cleanup will likely be required by DEQ.

We believe removal of the impacted soils is the best remedy for the property. The remedy would also include removal of wrecked automobiles, automotive debris and demolition of the site structures. This remedy is expected to result in a no further action decision letter from DEQ. The remedy also offers no deed restrictions, which provides a site that can be easily financed. Cleanup activities are expected to be complete within 6 to 8 months. A detailed cost estimate is presented in Appendix B.

This property has equity remaining after the cleanup. The site is one of the last vacant lots along Mollala Drive and is situated adjacent to a future intersection. There is a vacant lot located to the east that can be developed along with the Dales Auto Wrecking property. This property presents the best opportunity for redevelopment.

4.2 Camp Withycome Firing Range

Camp Withycombe was used as a rifle range beginning in 1909. The camp was used to mobilize cavalry and artillery until the end of WWI. After WWI, the facility was used to repair heavy equipment and light electrical equipment.

The firing ranges are currently in use, and environmental investigations found lead in soil at levels up to 180,000 mg/kg. Lead concentrations decrease below 2 feet, but leachable lead by TCLP was present at up to 2,000 mg/L in soil. Soil sampling has also indicated the presence of nitroglycerin and 2,4,-DNT. Groundwater wells installed in June of 1996 have not shown significant groundwater impacts from lead, and monitoring well sampling in June of 1998 did not reveal the presence of metals or explosives in groundwater. The DEQ ESCI report is presented in Appendix C.

This site would require removal (stripping) of the upper 2 feet of soil contaminated with lead, which could be accomplished economically using mechanical scraping, screening and on-site treatment using a proprietary metals stabilization (mineralization) technology. This could be accomplished quickly and economically. A detailed cost estimate is presented in Appendix C.

It is our understanding that a portion of the firing range will be used for the Sunrise freeway right of way. However, it is also our understanding that a portion of the site will be available for development. The amount of land available for development is not known at this time.

Construction of the Sunrise freeway to eastern Clackamas County is expected to increase land values for commercial and industrial properties. Increased land values are key to developing contaminated sites.

4.3 Bud's Auto Wrecking

In March, 1992 an adjacent property owner complained to DEQ about oil seeping into its garden from Bud's Auto Wrecking. A subsequent DEQ inspection verified the basis of this complaint, and, in response, the wrecking yard moved its leaking rear axles containing gear oil away from the eastern fence line. The May, 1992 inspection also documented areas of contamination throughout the wrecking yard. This contamination mostly consists of spillage and releases of petroleum hydrocarbons, especially heavy oils. The DEQ ESCI report is presented in Appendix D.

This site would warrant a hot spot removal of the petroleum hydrocarbon contamination followed by offsite disposal. The fact that the site apparently does not have a groundwater problem associated with the contamination makes the remedial action fairly straightforward and relatively inexpensive. A detailed cost estimate is presented in Appendix D.

Although the RMV is lower than the estimated cleanup costs, this property shows promise. The difference between the estimated cleanup costs and the RMV is low. The actual market value is most likely greater than the RMV listed in the County database. Generally, if a wrecking yard is removed from a community, the land values for the wrecking yard property and nearby properties increase. In addition, wrecking yards offer more useable land than other brownfield properties.

4.4 82nd Auto Wrecking

There are no records on file with DEQ regarding 82nd Auto Wrecking. Although there are no records for the site Brownfield Development, LLC evaluated cleanup costs based on experience with other wrecking yards located in Clackamas County. We performed an aerial photograph inspection where we evaluated potential point source areas for contamination. The aerial photograph is presented in Appendix E. During our aerial photograph review we found that the site has been developed.

The 82nd Auto Wrecking property is currently a paved parking lot. Based on the lack of information in the DEQ files, the site most likely have never been properly investigated for environmental impacts. The current aerial photograph reviewed by Brownfield Development, LLC did not provide information regarding potential source areas at the former wrecking yard. Based on our past experience, we believe there is a strong possibility that the site has some level of environmental contamination. The property warrants a full site investigation based on past. Based on our experience a site cleanup will likely be required by DEQ.

Although this site is developed, the site warrants a full site investigation and cleanup. Based on our past experience, removal of the impacted soils is the best remedy for the property. This remedy is expected to result in a no further action decision letter from DEQ. The remedy also offers no deed restrictions, which provides a site that can be easily financed. A detailed cost estimate is presented in Appendix E.

4.5 Star Auto Wrecking

There are no records on file with DEQ regarding Star Auto Wrecking. Although there are no records for the site, Brownfield Development, LLC evaluated cleanup costs based on experience with other wrecking yards located in Clackamas County. We performed an aerial photograph inspection where we evaluated potential point source areas for contamination. The aerial photograph is presented in Appendix F. The goal of the site inspection was to identify potential source areas that we have identified on other wrecking yards.

During our review of Star Auto Wrecking Yard, Brownfield Development observed significant surface staining throughout the wrecking yard. In addition, we believe the engine dismantling area is located in the northeastern portion of the site. Brownfield Development, LLC identified an area that may be a buried debris site at the rear of the property.

The property warrants a full site investigation based on past use and issues identified in our aerial photograph evaluation. Based on our experience a site cleanup will likely be required by DEQ.

We believe removal of the impacted soils is the best remedy for the property. The remedy would also include removal of wrecked automobiles, automotive debris and demolition of the site structures. This remedy is expected to result in a no further action

decision letter from DEQ. The remedy also offers no deed restrictions, which provides a site that can be easily financed. A detailed cost estimate is presented in Appendix F.

4.6 ODOT Amble Road

Groundwater contamination was discovered on this site after similar contamination was detected on a neighboring property owned by Southern Pacific Transportation Co. An earlier environmental assessment indicated no past site practices that would have contributed to contamination. Therefore, the site may have been used for illegal dumping of industrial and dry cleaning solvents, in that volatile aromatic hydrocarbons, chlorobenzenes, dichlorobenzenes and volatile chlorinated hydrocarbons have been discovered at the site. The DEQ ESCI report is presented in Appendix G.

The unknown source of contamination at this site makes the cleanup scenario and cost estimate less certain and somewhat problematic, due to unknowns. Because the site cleanup would involve treatment of contaminated groundwater involving relatively high levels of chlorinated solvents, the site may not be a good candidate for investment, due to the cost and length of treatment process required in a pump and treat scenario. A detailed cost estimate is presented in Appendix G.

4.7 RS Davis Recycling

Prior to 1996, facility operators did not collect automotive fluids prior to crushing, resulting in vehicle fluids being released to the ground during crushing. Runoff from the site was discharged to a storm sewer in the northwest corner of the site. Oily sediments have blocked an underground culvert causing storm waters to flood adjacent properties. Site sediments contain oil (7,000-PPM TPH), PCBs (5 PPM), and total metals (lead at 1,000 PPM; mercury at 1.5 PPM; chromium at 140 PPM; and cadmium at 14 PPM). Onsite soils contain up to 100,000-PPM TPH on the surface, and subsurface soils at the northeast corner of the site contain lead at 386 PPM, and PCBs at 1.9 PPM at a depth of 1 foot. In addition, the site is believed to have impacted off-site sediment and surface water. The DEQ ESCI report is presented in Appendix H.

Hot spot removals of contaminated soils would be required to address petroleum hydrocarbon and PCB contamination, along with pumping and treatment of shallow groundwater to remediate contamination from metals. For a small site, the relative expense of this cleanup would make it a questionable investment. The County has considered this site for use as a connector road between SE Mather Road and SE Lawnfield Road. A detailed cost estimate is presented in Appendix H.

4.8 Warn Industries

Warn Industries is a manufacturer of locking hubs, bumpers and winches for trucks and recreational vehicles. Manufacturing operations include machining, degreasing of manufactured parts, welding, assembly and packaging. Manufacturing operations began at the site in 1971. Stoddard Solvent and 1,1,1 – trichloroethane (a chlorinated solvent) were used historically to clean manufacturing machines and individual parts.

During a Remedial Investigation conducted at the site volatile organic compounds (VOCs) were found to impact soil, groundwater and indoor air at the facility. Soil contaminated with VOCs was found beneath the building and in the hazardous waste storage area sump and the waste cutting oil UST, and detectable groundwater contamination is present under the Warn building and downgradient to 1,500 feet west of the Warn Building.

The selected remedial action (RA) for this site addresses the presence of VOCs in contaminated groundwater, soil and air. The DEQ ESCI report is presented in Appendix I.

The selected remedial action published in the Focused Feasibility Study by Hahn and Associates (9/15/00) consists of the following:

- Implementation and maintenance of engineering controls to address vapor migration into Warn Building.
- Environmental monitoring of groundwater contamination to confirm modeling results; monitoring of groundwater quality; and evaluation of need for indoor air quality monitoring.
- Monitoring of indoor air to confirm that implemented RA has reduced contamination to acceptable levels.
- Institutional controls including Easement and Equitable Servitude to restrict land use, groundwater use and specific activities associated with future subsurface activities.
- Periodic land and water use reviews
- Contingency Planning

Brownfield Development suggests that installation of a paved cap/vapor barrier is the least costly protective alternative for this site. The Hahn and Associates cleanup cost estimate is presented in Appendix I. Given the site is an active operation and the cleanup costs are significantly lower than the RMV, we believe the site will be cleaned up by the property owner without assistance from the County.

4.9 Catellus Development Corp

Past practices and vandalism at this former pole treating facility caused releases of creosote. The facility operated from the 1920s to 1953, and 10,000-gallons of creosote was released in 1951 when vandals opened valves on creosote vats.

Environmental investigations conducted since 1989 indicate the presence of PAH contamination in soil onsite to depths greater than 40 feet below ground surface. Offsite soil contamination exists beneath the adjacent SPTCo railroad right-of-way and on the Milwaukie Marketplace property. Milwaukie drinking water supply wells are located adjacent to the site. The DEQ ESCI report is presented in Appendix J.

Because of the presence of confirmed soil and groundwater contamination, any remedial action should involve the removal of contaminant source material in the soil (hot spot removal), and installation of a groundwater pump and treat system. The property

owner is currently cleaning up the site and plans a mixed use development. A detailed cost estimate and a recent news article are presented in Appendix J.

4.10 Southern Pacific Right of Way

An act of vandalism caused the release of 10,000 gallons of creosote from the upgradient L.D. McFarland pole treating facility in 1951. Creosote contamination resulting from the vandalism and possible other sources have been confirmed in soil along the right-of-way. The DEQ ESCI report is presented in Appendix K.

The presence of soil and groundwater contamination from creosote spillage in the vicinity of the site would require excavation and removal of impacted soil and pumping/treating groundwater. Contaminated soil would be disposed of at a licensed disposal facility. A detailed cost estimate is presented in Appendix K. The property would likely remain a right of way for Southern Pacific and not be available for development.

4.11 Marko Foam Products

In 1991, DEQ identified three separate areas of apparent contamination behind a building that Marko leased. Sampling showed up to 1,800 PPM of petroleum hydrocarbons (as gasoline) in these areas. Marko excavated and removed about 9 cubic yards of contaminated soil from the area of concern. Subsequent soil samples contained less than 500-PPM hydrocarbons (light lubricating oil). The DEQ ESCI report is presented in Appendix L.

Minimal petroleum hydrocarbon contamination at this site would render it an easy and inexpensive cleanup involving minimal contaminated soil removal and disposal, if any remediation is required at this juncture at all. A detailed cost estimate is presented in Appendix L.

4.12 Temco Metal Products

Past practices caused releases of the solvents PCE and TCE at the site prior to 1990. In March, 1990, an attorney representing Temco stated to DEQ that subsurface testing had revealed the presence of organic solvents on the property. However, there was no known spill at or exceeding a reportable quantity explaining the contamination. At DEQ's request, Temco submitted a 1990 sampling report, which revealed significant groundwater contamination with PCE and TCE.

Contamination at the site threatens beneficial uses of groundwater north and west of the site. In addition, the site is believed to have impacted off-site sediment and surface water. The DEQ ESCI report is presented in Appendix M.

A combination of soil vapor extraction and groundwater stripping systems for volatile organics in groundwater would be technologies suggested for remediation of this site. The remedy is expected to take many years to clean up groundwater. A detailed cost estimate is presented in Appendix M.

4.13 Carolina Biologic Group

Upon closure of the Carolina Biological Supply facility, it was discovered that an underground settling tank had been leaking. Solutions containing (among other constituents) chromium and formaldehyde had been discharged to the tank for years. The facility was originally built around a wetland area, and groundwater in the vicinity was shallow. Site groundwater may be contaminated with chromium and formaldehyde, and there is concern that the groundwater contamination could affect local shallow domestic wells and a nearby wetland area. Also, during facility closure, concrete flooring from a site structure that apparently contained chromium and formaldehyde contamination was demolished and buried onsite. The DEQ ESCI report is presented in Appendix N.

Due to the limited information available from current records and recognizing that fact that chromium removal from soil and groundwater is an expensive process, it appears that this site is not a likely candidate for the County to consider for their Brownfield program at this time. No cleanup costs were calculated for this property.

4.14 Surgichrome, Inc

The cause of contamination at this site is suspected to be a release of plating solutions or plating wastes from leaking plating tanks and vaults within the facility. Timing of these releases is suspected to have been between 1979 and 1995. The facility is an industrial chrome plating facility that has been in operation since 1979. A concrete vault beneath a plating tank apparently leaked, along with one or more of the plating tanks. Groundwater beneath the facility is contaminated with chromium. Surgichrome's well was affected, and contaminated groundwater migrated offsite and impacted a neighbor's well, Lithgow Creek and a nearby gravel pit.

A groundwater pump and treat system was installed as an interim remedial measure, and has been in operation since January, 2000. The DEQ ESCI report is presented in Appendix O. Chromium removal from soil and groundwater is an expensive process. It appears that this site is not a likely candidate for the County to consider for their Brownfield program at this time. No cleanup costs were calculated for this property.

4.15 Milwaukie Marketplace

In 1951 vandals caused the release of 10,000-gallons of creosote onto the adjacent L.D. McFarland property. Later in the 1950s, creosote released from the adjacent Catellus Development facility migrated to the southeastern portion of the property. Contamination was discovered during development of the shopping center as a creosote layer in soil starting at a depth of 8 feet beneath the shallow groundwater table. The DEQ ESCI report is presented in Appendix P.

This site has already experienced development with the placement of a shopping center on the property. Therefore, any remedy would involve groundwater pumping and

treating and potential institutional and engineering controls to mitigate PAH vapor migration into the shopping center. A detailed cost estimate is presented in Appendix P.

4.16 Safety Kleen Clackamas

Between 1978 and 1990, releases occurred from underground storage tanks used to hold hazardous wastes. In March of 1990, the facility initiated closure of waste management units that consisted of a drum storage area and three USTs. During UST removals in 1993, significant groundwater contamination was discovered. Safety Kleen then began a groundwater assessment, and contaminants were discovered including mineral spirits, BTEX, and chlorinated solvents.

Documented groundwater contamination at the site has affected an onsite well that supplies drinking water to the facility. The DEQ ESCI report is presented in Appendix Q.

Groundwater contamination at this site would require remediation using pump and treat technology, which is both time-consuming and costly. A detailed cost estimate is presented in Appendix Q.

4.17 Portable Equipment Salvage

Historical operations at this facility that contributed to contamination included recycling of transformers containing PBC-contaminated oils, processing and recycling of salvageable metals from internal wiring and transformer carcasses, and burning of transformers and other electrical equipment in an onsite furnace. Waste transformer oil was used to fuel the furnaces and metal smelters onsite. Ash contaminated with dioxins and furans was disposed of in an onsite pit. Spills and leaks have occurred during operations at the facility. The site may also have impacted off-site sediment and surface water. The DEQ ESCI report is presented in Appendix R.

Due to the presence of dioxins and furans and the mixture of both toxic and hazardous (TSCA and RCRA) waste materials on this site indicate that the cleanup process would be very involved and expensive. Waste stream segregation and regulations requiring incineration of dioxins and furans by incinerators located far from the Portland metropolitan area render this site unlikely for consideration as a Brownfield investment candidate. The site is currently capped with deed restrictions. The owners would most likely not develop or sell the property in its current condition. A detailed cost estimate is presented in Appendix R.

4.18 Hanna Car Wash International

This site was identified by DEQ as a potential contributor to the Milwaukie Area Groundwater contamination problem in 1992. Groundwater in the Milwaukie area has been impacted with VOCs. The sources of VOCs are most likely common cleaning solvents used by a variety of businesses. DEQ is attempting to locate the responsible parties that caused the groundwater impact. Once the responsible parties are identified, they will be liable for cleaning up the groundwater.

Environmental assessment reports submitted by Hanna to the DEQ described several potential sources of contamination including heating oil USTs, a waste oil above ground tank, 217 55-gallon drums, and four 2,500-gallon storage tanks. DEQ identified potential environmental and health threats at the site due to soil and groundwater contamination from leaking plating tanks and improperly stored hazardous wastes. The DEQ ESCI report is presented in Appendix S.

The April 19, 2001 XPA Report produced by PNG Environmental indicates that no additional investigation for oil-stained area soils was warranted, in that detected concentrations of petroleum hydrocarbons, PAHs, VOCs and metals concentrations are below contaminant action levels. Brownfield Development therefore suggests that no additional removal/remedial actions are warranted at the site. No cleanup costs were calculated for this property.

4.19 PED Manufacturing

In past practice, PED has disposed of spent wax by placing it in 55-gallon drums and landfilling it on the northern portion of the property. Spent foundry sands (with free silica and zirconium) were used as fill. Aviation motor oil was also previously used by PED, but it is not clear how the oil was disposed of. Soil samples taken in the landfill in 1988 found no hazardous levels of contaminants. Petroleum hydrocarbons, however, were not analyzed for. The DEQ ESCI report is presented in Appendix T.

All indications from current available information from the Preliminary Assessment equivalent point to a low likelihood that any cleanup effort would be required on this site, due to the fact that there is currently no evidence that contaminants have impacted soil, surface water or groundwater. No cleanup costs were calculated for this property.

4.20 Murphy Plywood Co.

This site has been a major source of citizen complaints for air emissions issues and violations since the 1960s. In August, 1973, DEQ investigators confirmed that phenolic resin from the mill's cleaning of resin delivery trucks was being discharged to the parking lot across the street from the mill. In April of 1976, DEQ investigators confirmed that the mill was discharging wastewater into the ditch by the railroad tracks to the west of the mill. Ecology & Environment (E&E) completed a Preliminary Assessment at the site for the EPA in 1990. Dark stained soil was observed in the former scrap metal and used oil storage areas. Staining was also observed around storm drains in the process building courtyard. These drains discharged runoff from the courtyard directly to the underlying soils. There was also evidence of waste streams flowing into a nearby drainage ditch. E&E completed a federal site inspection in 1991, which detected various heavy metals in the groundwater, but with only manganese exceeding federal Maximum Contaminant Levels (MCLs) for drinking water. A soil sample from the former scrap metal yard had moderate levels of semi-volatile organic compounds. Because no offsite migration of contaminants could be documented, E&E recommended no further action under Superfund guidelines. The DEQ ESCI report is presented in Appendix U.

Although various heavy metals were found in groundwater and moderate levels of semi-volatile organic compounds were detected in soil, DEQ's consultant recommended no further action under the federal Superfund program. This would indicate that there is a high probability that no cleanup action is required on the site. No cleanup costs were calculated for this property.

5.0 Brownfield Financing

The scope of this evaluation did not include research on grants and loans for brownfield projects, however, we will present limited information on brownfield financing. There are public funds available for performing site assessment work and some funds are set aside for actual cleanup. Most of these funds are limited to non-petroleum contaminated sites. We have included some information concerning brownfield financing in Appendix V.

There are non government funding sources for brownfield cleanups. Brownfield developers will acquire properties with environmental contamination on an "As Is" basis. The equity in the property is used to pay for the cleanup. Brownfield Development, LLC is one such company.

6.0 Limitations

The purpose of this evaluation is to give the reader an order of magnitude cleanup estimate based on available data. The volume of impacted media and type of contaminant drive cleanup costs. This evaluation is based on the information available at the time the work was performed and is limited in scope and budget. This evaluation is a preliminary assessment of order of magnitude cleanup liability. This evaluation does not replace a detailed RI/FS and does not consider potential liens or other legal entanglements (such as bankruptcy) that may prevent site development. The estimated cleanup costs are largely based on reasonable assumptions, professional judgement, and actual cleanup costs for similar sites.

**TABLE 1
SELECTED BROWNFIELD PROPERTIES
ESTIMATED CLEANUP COSTS & REAL MARKET VALUE**

NAME	ACRES	ESTIMATED CLEANUP COSTS (A)	REAL MARKET VALUE (B)
Dales Auto Wrecking	5.47	\$ 774,700.00	\$ 897,320.00
Camp Withycombe (C)	8.81	\$ 420,100.00	\$ 8,200,000.00
Bud's Auto Wrecking	1.84	\$ 432,250.00	\$ 410,000.00
82nd Auto Wrecking	0.46	\$ 507,250.00	\$ 262,330.00
Star Auto Wrecking	0.93	\$ 527,250.00	\$ 360,760.00
ODOT Amble Road	1.98	\$ 330,050.00	\$ 370,650.00
RS Davis Recycling (D)	2.81	\$ 864,550.00	\$ 190,450.00
Warn Industries	11.73	\$ 304,000.00	\$ 15,691,590.00
Catellus Development Corp (C)	3.36	\$ 458,550.00	\$ 930,402.00
Southern Pacific Right of Way	NO INFO	\$ 450,300.00	\$ 2,530.00
Marko Foam Products (C)	4	\$ 423,350.00	\$ 25,936,200.00
Temco Metal Products Group	1.86	\$ 2,205,100.00	\$ 240,550.00
Carolina Biological Group	0.25	High costs	\$ 1,188,000.00
Surgichrome, Inc. (D)	0.67	Off site/high costs	\$ 112,500.00
Milwaukie Marketplace	NO INFO	\$ 215,175.00	NO INFO
Safety Kleen Clackamas	NO INFO	\$ 217,100.00	NO INFO
Portable Equipment Salvage	NO INFO	\$ 453,600.00	NO INFO
Hanna Car Wash Int'l	14.67	NO ACTION	\$ 7,913,230.00
PED Manufacturing Ltd. (C)	7.29	NO ACTION	\$ 1,306,989.00
Murphy Plywood Co.	7.75	NO ACTION	\$ 2,927,670.00

- (A) Order of magnitude estimate for site cleanup based on available DEQ files at time of evaluation and best professional judgement.
- (B) Real Market Value (RMV) based on Clackamas County Tax Assessors office database.
- (C) RMV based on actual sales information listed in Clackamas County Tax Assessors office database. The actual sales value is greater than the RMV.
- (D) RMV based on actual sales information listed in Clackamas County Tax Assessors database. The actual sale value is lower than the RMV.