# EXHIBIT B

## DRAFT CLEANUP ACTION PLAN
## BORDEAUX DUMP SITE
## HALO-KUNTUX LANE
## LITTLEROCK, WASHINGTON

**December 2009**

**PREPARED BY:**

**Washington State Department of Ecology**
**Southwest Regional Office**
**Toxics Cleanup Program**

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LIST OF ACRONYMS AND ABBREVIATIONS

| | |
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| ARARs | Applicable or Relevant and Appropriate Requirements |
| ATSDR | Agency for Toxic Substances and Disease Registry |
| bgs | Below Ground Surface |
| BTEX | Benzene, Toluene, Ethylbenzene, and Xylenes |
| COCs | Chemicals of Concern |
| cPAHs | Carcinogenic Polyaromatic Hydrocarbons |
| Ecology | Washington State Department of Ecology |
| EM | Electromagnetic Method |
| FS | Feasibility Study |
| GC/MS | Gas Chromatography/Mass Spectrometry |
| GPR | Ground Penetrating Radar |
| GPS | Global Positioning System |
| HASP | Health and Safety Plan |
| ICs | Institutional Controls |
| µg/kg | Micrograms per kilogram |
| µg/l | Micrograms per Liter |
| mg/l | Milligrams per Liter |
| MCL | Maximum Contaminant Level |
| MDL | Method Detection Limit |
| MTCA | Model Toxics Control Act |
| PAHs | Polycyclic Aromatic Hydrocarbons |
| PCBs | Polychlorinated Biphenyls |
| PID | Photo Ionization Detector |
| PLP | Potentially Liable Person |
| POC | Point of Compliance |
| ppbv | Parts per billion volume |
| QAPP | Quality Assurance Project Plan |
| QA/QC | Quality Assurance/Quality Control |
| RAO | Remedial Action Objective |
| RI | Remedial Investigation |
| RI/FS | Remedial Investigation/Feasibility Study |
| RL | Reporting Limit |
| SAP | Sampling and Analysis Plan |
| SHA | Site Hazard Assessment |
| STL | Severn Trent Laboratories |
| SVOCs | Semivolatile Organic Compounds |
| TEQ | Total Toxicity Equivalent |
| TEE | Terrestrial Ecological Evaluation |
| TEF | Toxicity Equivalence Factor |

| | |
|---|---|
| TDS | Total Dissolved Solids |
| TICs | Tentatively Identified Compounds |
| TPH | Total Petroleum Hydrocarbons |
| TPH-Dx | Total Petroleum Hydrocarbons – Diesel range |
| TPH-HCID | Total Petroleum Hydrocarbons - Hydrocarbon Identification |
| TSS | Total Suspended Solids |
| USCS | Unified Soil Classification System |
| USGS | United States Geological Survey |
| VOCs | Volatile Organic Compounds |
| WAC | Washington Administrative Code |
| WADNR | Washington State Department of Natural Resources |
| WARM | Washington Ranking Method |
| WDOH | Washington Department of Health |
| WDFW | Washington Department of Fish and Wildlife |

## 1.0 Introduction

The Washington Department of Ecology (Ecology) issued Agreed Order No. 2888 requiring the Potentially Liable Persons (PLPs) to perform a Remedial Investigation/Feasibility Study (RI/FS) and to prepare a draft CAP for the Hytec-Littlerock property. The RI/FS was finalized on August 1, 2007 and approved by Ecology on September 5, 2007. Based on the RI/FS results, Ecology concluded that there are two distinguished contaminated Sites at the property. These Sites are the Fiberglass Debris Landfill area, and the Bordeaux Dump and Rusted Drum areas.

This document presents a Cleanup Action Plan (CAP) for the Bordeaux Dump and Rusted drum, which comprise the Site for the cleanup covered by this CAP.

The CAP was prepared in accordance with the requirements of the Model Toxics Control Act (MTCA) following the procedures contained in Chapter 173-340 of the Washington Administrative Code (WAC 173-340). The final CAP will be issued by Ecology, after considering public comment.

## 1.1 Objectives of the CAP

Pursuant to the requirements of WAC 173-340-380, the objective of the CAP is to propose a cleanup action for the Site. The general objectives of the CAP are to:

- Summarize cleanup action alternatives evaluated in the RI/FS that will meet cleanup action objectives for the Site
- Provide a general description of the proposed cleanup action developed in accordance with WAC 173-340-350 through WAC 173-340-390
- Summarize the rationale for selecting the proposed alternative
- Provide a draft cleanup plan that can be reviewed and commented on by the public and allows for public participation in the selection of a cleanup action for the Site

## 1.2 Report Organization

This CAP is organized as follows:

- Section 1.0 (this section) of the CAP report presents general introductory information, objectives and report organization

- Section 2.0 presents a description of the Site
- Section 3.0 describes Soil Contamination in Bordeaux Dump and Rusted Drum Areas
- Section 4.0 identifies surface water bodies around the property
- Section 5.0 describes groundwater and identifies the nature and extent of contamination in groundwater
- Section 6.0 identifies the cleanup levels and points of compliance for soil and groundwater
- Section 7.0 provides a summary of remedial alternatives considered in the FS and the recommended cleanup actions
- Section 8.0 describes how the proposed cleanup action(s) will meet the MTCA requirements
- Section 9.0 lists references cited throughout the CAP

## 2.0 Site Description

The Site is located in a rural area of Thurston County southwest of Littlerock, Washington and is zoned residential. The Site is accessed via Halo Kuntux Lane, a private gated road connecting to Bordeaux Road on the southern boundary of the Site. The property location is shown Figure 1 in Appendix A. The legal description of the property is the East ½ of the NW ¼ of Section 9, Township 16 North, Range 3 West of the Willamette Meridian, lying northerly of the county road known as Bordeaux Road.

An old dump (generally thought to be the historic dump from the Town of Bordeaux, circa 1900-1930) is present in a wooded area east of Halo Kuntux Lane in the southeastern section of the property. The location and extent of this historical dump was determined using historical photographs, geotechnical studies, and Site characterization studies conducted during the RI. Also during the investigation, a small contaminated area was discovered close to the Bordeaux Dump area, which is called the Rusted drum area. Figure 2 in Appendix A shows the Bordeaux dump and rusted drum areas. For the purpose of this CAP, the site is defined as the combination of the Bordeaux dump and Rusted Drum areas.

## 3.0 Soil Contamination in Bordeaux Dump and Rusted Drum Areas

In 2006, the site investigation was implemented to characterize soil and groundwater at the Site. Metal and glass waste, along with burned debris, are apparent in the Bordeaux dump area, which covers an area approximately 100 feet in diameter. The objective of this investigation was to determine if hazardous substances were present in the dump area at levels exceeding the MTCA soil cleanup levels, to sample

groundwater beneath the fill area, and to establish the boundaries of the dump.

Eleven test pits were dug in and around the dump. The soil samples collected indicated that the concentrations of VOCs, SVOCs, TPH, and PCBs present were below MTCA Methods A and B cleanup levels. Lead was detected in soil samples from the Bordeaux dump at concentration of 940 mg/kg, which exceeds the MTCA soil Method A soil cleanup level.

The investigation in the area of the rusted drum (an old burn barrel which contained ashes) included digging two test pits and collecting a soil sample. One test pit was dug at the location of the drum to determine if subsurface debris was present at this location. One soil sample was collected from a shallow depth below the spot where the drum had rested. No subsurface debris or staining was observed in either test pit, and subsurface materials appeared to consist of native soil. Another test pit was dug 10 feet southwest of the rusted drum position to determine if fill or debris were present. No fill or debris was encountered. The results from the initial soil sample collected below the drum, indicated zinc concentrations exceeding the soil Ecological Criteria for unrestricted land use in Table 749-2 of the MTCA. Two additional soil samples were collected in February 2007, one approximately 10 feet north and one approximately 6 feet south of the rusted drum location to assist in characterizing the extent of zinc in soil. The results of these investigations are summarized in Table 1.

## 4.0 Surface Water

The nearest surface water bodies to the Site are Mima Creek and the Black River, which are located approximately 2,000 feet to the southwest and 6,000 feet to the east of the Site, respectively. One ephemeral creek (unnamed) flows past the property near the northeast corner. A wetland area has been observed along the west side of the Morgan property. At times of heavy precipitation, an ephemeral creek has been observed flowing from this wetland area along the bottom of the bluff on the west side of the property. The gravel pit (adjacent to Bordeaux Road) has also been observed to contain water after extended periods of heavy precipitation. Figure 3 in Appendix A shows the locations of Mima Creek, the unnamed intermittent stream and a drainage channel. There are no impacts to the surface water from the Site contamination.

## 5.0 Groundwater

### 5.1 General Overview of Geology

Glacial advance outwash gravel **(Qva)** covers the surface of the entire Site and appears to be contiguous with thick gravel deposits found on the Mima Prairie to the

east. Typically, the advance outwash deposits **(Qva)** are underlain by unconsolidated and undifferentiated deposits of quaternary and tertiary ages **(TQu)**. These deposits are of low permeability and generally contain layers of clay and dense silt. Generally beneath **TQu** is bedrock **(Tb)**. In some locations, the **TQu** transitions to interbedded layers of dense silt or silty-sand near the contact with bedrock. North of the property boundary, the basalt is covered only with a 15-foot outwash gravel layer (Vashon advance or recessional gravel). The thickness of the advance outwash gravel sequence increases down slope to the east and south towards the Mima Prairie.

## 5.2 Site Hydrogeology

The conceptual model presented in the RI/FS Report indicates that groundwater flows predominantly on the surface of a perching layer to the southeast (SE) at a hydraulic gradient of 0.06 feet/feet (of approximately 150 degrees clockwise from north). However, the groundwater flow direction experiences a change from flowing toward the SE during high water levels in April to flowing toward the South-Southeast (SSE) during low water levels in September. This change in the groundwater flow direction is plausible with the seasonal water level changes, but may also be an artifact of the different data sets used in developing the water level elevation contours.

The steep hydraulic gradient (0.06 to 0.10 foot/foot) combined with the apparent high permeability soil is indicative of a thin groundwater zone perched on an underlying and steeply dipping low permeability layer (clay/dense silt above bedrock). The steep groundwater gradient is created by the underlying surface slope of the perching low permeability layer.

## 5.3 Nature and Extent of Contamination in Groundwater

Several SVOCs were detected in the groundwater sample below the area of the Bordeaux dump. Those detected were present at levels below the applicable MTCA groundwater Methods A or B cleanup levels. However, the TEQ for cPAHs was calculated to be 0.25 µg/l, which exceeds the Method A groundwater cleanup level for benzo(a)pyrene of 0.10 µg/l TEQ. This exceedance is based on only one sample, which is suspect because the push probe sample may have had a high concentration of solids. The PLPs will install an additional monitoring well in this area to get representative groundwater samples. To get additional data, this well will be tested for cPAHs for four quarters.

## 6.0 Cleanup Levels and Points of Compliance for Soil and Groundwater

The data collected in the RI indicates that the extent of contamination at the Site is Bordeaux dump, and a limited area around the rusted drum.

Tables 1, 2, and 3 show highest soil and groundwater concentrations measured and their comparisons with the applicable soil cleanup levels.

**Table 1: Soil Cleanup Levels and Chemicals of Concern, Bordeaux Dump Area**

| Chemicals Of Concern | Highest Concentration Measured, mg/kg | MTCA Soil Cleanup level, mg/kg | 90% Natural Background, mg/kg[3] | Ecological Criteria for unrestricted land use mg/kg[4] |
|---|---|---|---|---|
| Lead | 940 | 250[1] | - | **220** |
| Copper | 110 | 577[2] | - | **100** |
| Selenium | 9.5 | 5.2[2] | **3.2** | **0.8** |
| Arsenic | 7.7 | **20**[1] | - | **20** |
| Cadmium | 4.1 | **0.69**[2][5] | - | 25 |
| Zinc | 1,200 | 5,970[2] | - | **270** |
| Antimony | 6.1 | **5.4**[2] | - | - |
| Motor Oil (>C24-C36) | 2,000 | **2,000**[1] | - | - |

[1] MTCA Method A Soil Cleanup levels for unrestricted land use.
[2] Soil-to-groundwater values calculated by equation 747-1 in the MTCA.
[3] 90% Natural Background, calculated by WAC 173-340-709.
[4] Criteria for unrestricted future use, Table 749-2 of the MTCA.
[5] The final cadmium soil cleanup level will be determined before the start of remedial action by one of the MTCA methods described in WAC 173-340-747(3):
WAC 173-340-747(3)(b), Variable parameter three-phase partitioning model;
WAC 173-340-747(3)(d), Leaching tests;
WAC 173-340-747(3)(e) Alternative fate and transport models; or
WAC 173-340-747(3)(f) Empirical demonstration.

Values presented in **Bold font** are the applicable soil cleanup levels at the Point of Compliance.

For soil cleanup levels based on protection of groundwater, the point of compliance is soil throughout the Site. For soil cleanup levels based on human exposure or ecological exposure (i.e., via direct contact or other exposure pathways where contact with the soil is required), the standard point of compliance is all soil throughout the

Site to a depth of fifteen feet bgs. This is based on the estimated depth of soil that could be excavated and distributed at the soil surface as a result of Site development activities.

**Table 2: Chemicals of Concern found in groundwater at the Bordeaux Dump Area,**
**Geoprobe sampling results.**

| Chemicals Of Concern | Highest Measured Groundwater Concentration, µg/L | MTCA Method A Groundwater Cleanup level, µg/L |
|---|---|---|
| Carcinogenic Polycyclic Aromatic Hydrocarbon (cPAHs)[(1)], (TEQ)[(2)] | 0.25[(3)] | **0.10** |

[(1)] Carcinogenic Polycyclic Aromatic Hydrocarbons (cPAHs) include Benzo(a)Pyrene, Benzo(a) Anthracene, Benzo(b)Fluoranthene, Benzo(k)Fluoranthene, Chrysene, Dibenzo(a,h) Anthracene, and Indeno(1,2,3-cd)Pyrene.
[(2)]Total Toxicity Equivalent (TEQ) was calculated by multiplying each cPAHs compound concentration by the Toxic Equivalency Factor (TEF) for that compound. The TEFs used for each cPAHs are the following: Benzo(a)pyrene =1, Benzo(a) Anthracene = 0.1, Benzo(b)Fluoranthene = 0.1, Benzo(k)Fluoranthene = 0.1, Chrysene = 0.01, Dibenzo(a,h) Anthracene = 0.1, and Indeno(1,2,3-cd)Pyrene = 0.1.
[(3)] This sample is suspect because the specific cPAHs detected (J flagged) in water were not detected in soil samples.

The value presented in **Bold font** is the applicable groundwater cleanup level at the Point of Compliance. The Point of Compliance is the groundwater monitoring well that will be installed at the Site.

**Table 3: Soil Cleanup Levels and Chemicals of Concern, Rusted Drum Area**

| Chemicals Of Concern | Highest Concentration Measured, mg/kg | MTCA Soil Cleanup level, mg/kg | Ecological Criteria for unrestricted land use, mg/kg[(2)] |
|---|---|---|---|
| Cadmium | 3.1 | **0.69**[(1)(3)] | 25 |
| Zinc | 450 | 5,970[(1)] | **270** |

[(1)] Soil-to-groundwater Concentration, µg/kg, calculated by equation 747-1 in the MTCA.
[(2)] Unrestricted land use, Table 749-2 of the MTCA
[(3)] The final cadmium soil cleanup level will be determined before the start of remedial action by one of the MTCA methods described in WAC 173-340-747(3):
WAC 173-340-747(3)(b) Variable parameter three-phase partitioning model;
WAC 173-340-747(3)(d) Leaching tests;
WAC 173-340-747(3)(e) Alternative fate and transport models; or
WAC 173-340-747(3)(f) Empirical demonstration.

Values presented in **Bold font** are the applicable soil cleanup levels at the Point of Compliance.

For soil cleanup levels based on protection of groundwater, the point of compliance is soil throughout the Site. For soil cleanup levels based on human exposure or ecological exposure (i.e., via direct contact or other exposure pathways where contact with the soil is required), the standard point of compliance is all soil throughout the Site to a depth of fifteen feet bgs. This is based on the estimated depth of soil that could be excavated and distributed at the soil surface as a result of Site development activities.

## 7.0 Summary of Remedial Action Alternatives

This section summarizes the cleanup action alternatives evaluated in the FS to meet the cleanup objectives.

A detailed discussion of the evaluation of the selected alternatives is presented in the FS (CALIBRE 2007). The remedial alternatives considered for cleanup of the Site include:

- **Alternative 1 No Action** The No Action Alternative assessed the consequences of leaving the Site in its current state.
- **Alternative 2 Institutional Controls** The Institutional Controls Alternative includes specific measures used to limit or prevent contact with affected soils. Controls include signs, access restrictions (fences), and land use restrictions.
- **Alternative 3 Containment (Capping)** The Containment Alternative for soil includes a physical barrier (soil cap) implemented to restrict direct contact with the soil. Capping involves placing a clean soil cover, asphalt, concrete or geomembrane over the contaminated soil and leaving the contaminated soil in place.
- **Alternative 4 Treatment to Remove or Immobilize the Contaminants** The Treatment Alternative includes specific technologies used to remove contaminants or to stabilize inorganic compounds. This included soil vapor extraction (typically for VOCs), enhanced bioremediation (typically for SVOCs), and stabilization of inorganic compounds. All of these technologies may be applied either in-situ or ex-situ to soils.
- **Alternative 5 Excavation and Off-Site Disposal or Recycling** The Excavation/Disposal Alternative includes excavating soil with contaminant concentrations exceeding specified soil cleanup levels and hauling the soil to an appropriate off-Site facility for disposal.

## 7.1 Proposed Remedial Action Alternative

Alternative 5 – Excavation and Off-Site Disposal or Recycling

The excavation and off-Site disposal or recycling alternative includes excavation of soils exceeding cleanup levels specified in Tables 1 and 3 and disposing of the soils off Site. The intent of the action would be to eliminate the potential for dermal contact or ingestion of the affected soil by residents, and to eliminate the potential exposure to ecological receptors.

The excavated material would be sampled and profiled for proper disposal at an appropriate landfill based on the waste designation following the procedures defined in WAC 173-303. Soils with no contaminants and soils in which all contaminants present were at levels below cleanup levels would remain on Site and would be used as fill material in areas where excavations were conducted. Backfill soil (sampled to verify that it is not contaminated) would have to be imported (or moved from another

non-impacted area of the Site) to fill the excavated areas.

As a part of the long term monitoring plan, one new well at the Bordeaux Dump area will be monitored quarterly for one year. The groundwater monitoring will begin after the remedial action is implemented to verify that groundwater does not contain chemicals of concern exceeding the applicable MTCA cleanup levels. The chemicals of concern found in groundwater at the Bordeaux Dump Area are listed in Table 2.

The volume of soil to be excavated from the Bordeaux Dump areas is estimated to be approximately 880 cubic yards. This value is only an estimate. The actual soil volume will be determined with excavation and confirmational monitoring.

## 8.0 Selection of Cleanup Action

This section provides an evaluation of the proposed cleanup actions following the MTCA selection criteria identified in WAC 173-340-360. The criteria used for evaluating and ranking the alternatives (WAC 173-340-360(2)(a)), include threshold factors that all cleanup actions must meet and additional balancing criteria/other factors used to compare cleanup alternatives which meet all threshold criteria. The MTCA criteria include the following threshold factors:

1) Protection of human health and the environment
2) Compliance with cleanup standards
3) Compliance with applicable state and federal laws
4) Provision for compliance monitoring

The other requirements for the selected alternative (contained in WAC 173-340-360), consist of:

5) Use of permanent solutions to the maximum extent practicable
6) Attaining cleanup in a reasonable time frame
7) Considering public concerns

## 8.1 Threshold Requirements

### 8.1.1 Protection of Human Health and the Environment

The proposed cleanup action for the Site meets the MTCA requirement for protection of human health and the environment by removing from the Site all soil that contains COCs at levels exceeding applicable MTCA cleanup levels.

### 8.1.2 Compliance with Cleanup Standards

The proposed cleanup action for the Site meets the MTCA cleanup standards (soil cleanup levels at the points of compliance). The RI has investigated the Site and defined specific areas where soil/fill exceeds MTCA cleanup levels based on residential land use and Ecological criteria for unrestricted land use. The cleanup action has been developed to address those areas and comply with cleanup standards.

### 8.1.3 Compliance with Applicable State and Federal Laws

The proposed cleanup action for the Site meets the requirement to comply with applicable state and federal laws. The Site RI/FS identified State and Federal requirements that are potentially applicable or relevant and appropriate requirements (ARARs) for remedial actions at the Site. A variety of state and federal laws are listed in the RI/FS as ARARs. The MTCA cleanup standards (established for protection of human health and the environment) are the foremost ARARs related to selection of the Site cleanup action. Other ARARs that may apply to this Site are:

a. Clean Air Act
b. Clean Water Act
c. Hazardous Material Transportation Act
d. Resource Conservation and Recovery Act
e. Safe Drinking Water Act
f. State Groundwater Quality Standards WAC 246-290.
g. State Environmental Policy Act
h. Minimum Standards for Construction and Maintenance of Water Wells WAC 173-160
i. Grading requirements from Thurston County

### 8.1.4 Compliance Monitoring

The proposed cleanup action for the Site includes compliance monitoring to verify that actions taken meet the MTCA requirements. The specific details of the compliance monitoring for soil and groundwater are given in Appendix B of this CAP. This excavation and off-Site disposal alternative includes protection monitoring during soil excavation to confirm human health and the environment are adequately protected. Performance monitoring is required during excavation to confirm soils remaining meet cleanup levels at the appropriate points of compliance. In addition, groundwater will be monitored for four quarters following excavation to get data on the condition of groundwater after removal of the contaminated soil.

## 8.2 Other Requirements

The other requirements contained in WAC 173-340-360(3) consist of the use of permanent solutions to the maximum extent practicable, attaining cleanup in a reasonable time frame, and addressing public concerns.

### 8.2.1 Use of Permanent Solutions to the Maximum Extent Practicable

The proposed cleanup action for the Bordeaux Dump Site will result in permanent reduction in the toxicity, mobility, and volume of hazardous substances at the Site (i.e., the contaminated soil will be excavated/characterized and transferred to an appropriate disposal facility). This alternative meets the soil cleanup levels at the point of compliance under MTCA, because it implements a permanent cleanup action for the Site.

### 8.2.2 Attaining Cleanup in a Reasonable Time

The proposed cleanup action for the Bordeaux Dump Site will attain cleanup standards in a reasonable time period. Implementation of the alternative will be most successful if the excavation/handling of soil are completed when conditions are dry. Therefore, the alternative may be limited to the summer season, but still could be accomplished in a reasonable time.

### 8.2.3 Public Concerns

This draft cleanup action plan has been prepared to solicit public input on the proposed cleanup action. Ecology will address public concerns after receipt of public comments on the proposed cleanup action.

### 8.2.4 Other Factors

MTCA 173-340-360 (2) (d) requires that for current or future residential areas, soils with concentrations of hazardous substances that exceed soil cleanup levels must be treated, removed, or contained. In this case, as stated in Alternative 5, the contaminated soil will be excavated and disposed off-Site in an appropriate disposal facility. The excavated areas will be backfilled with clean fill. Alternative 5 is a permanent solution as defined in WAC 173-340-200.

The FS included a disproportionate cost analysis to compare the capping alternative and the excavation alternative for the Bordeaux dump. Ecology prefers implementation of the excavation alternative, Alternative 5, for the Bordeaux dump. The PLPs prefer implementation of Alternative 3, containment (capping with institutional controls) for the Bordeaux dump.

WAC 173-340-360 of MTCA (3) (ii) (C) states where two or more alternatives are equal in benefits, the department shall select the less costly alternative. The soil investigation data shows the soil in the Bordeaux dump area is contaminated with

lead, zinc, antimony, copper, and selenium. This Site is zoned residential and in the future the capped area will be excavated and human and ecological receptors will be exposed to soil contaminated with these metals. Excavation and disposal of the Bordeaux dump and capping of contaminated soil in the Bordeaux dump are not equal in providing environmental benefits. Therefore, Ecology selects the remedy that excavates the Bordeaux dump and disposes of the contaminated soil off-site. The additional incremental cost to excavate and dispose of the contaminated soil is justified by the additional protection of human health and the environment it provides.

Several other factors are listed within MTCA as subfactors of the primary considerations listed above. These include: permanence, cost, effectiveness over the long term, management of short-term risks and technical/administrative implementability.

**Permanence**
The proposed cleanup action is considered permanent.

**Cost**
The cost for the proposed cleanup action is estimated at approximately $124,856.

**Effectiveness over the long term**
The proposed cleanup action is considered effective over the long term.

**Management of short-term risks**
Short-term risks to human health and the environment are associated with the cleanup action during contaminated soil excavation and handling. Potential Site risks during excavtion activities can be managed with appropriate Health and Safety procedures. Excavation and Off-Site disposal (Alternative 5) has the highest short-term risk due to unavoidable risks incurred in the transport of materials to an off-Site location.

**Technical/administrative implementability**
The proposed cleanup action is considered feasible in view of both technical and administrative factors.

## 9.0 References

CALIBRE 2007. Remedial Investigation/Feasibility Study Report, Hytec – Littlerock Site, Halo-Kuntux Land, Littlerock, Washington, August 1, 2007.

Ecology 2005. Agreed Order No. 2888.

# APPENDIX A

## LIST OF FIGURES

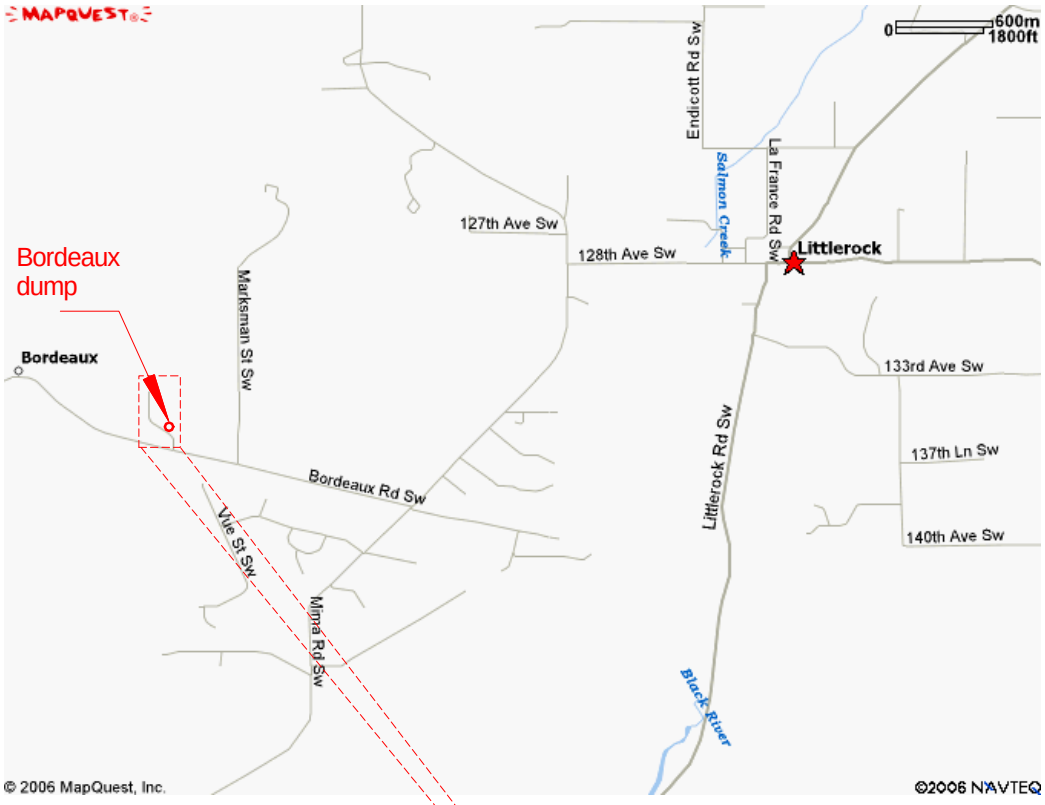
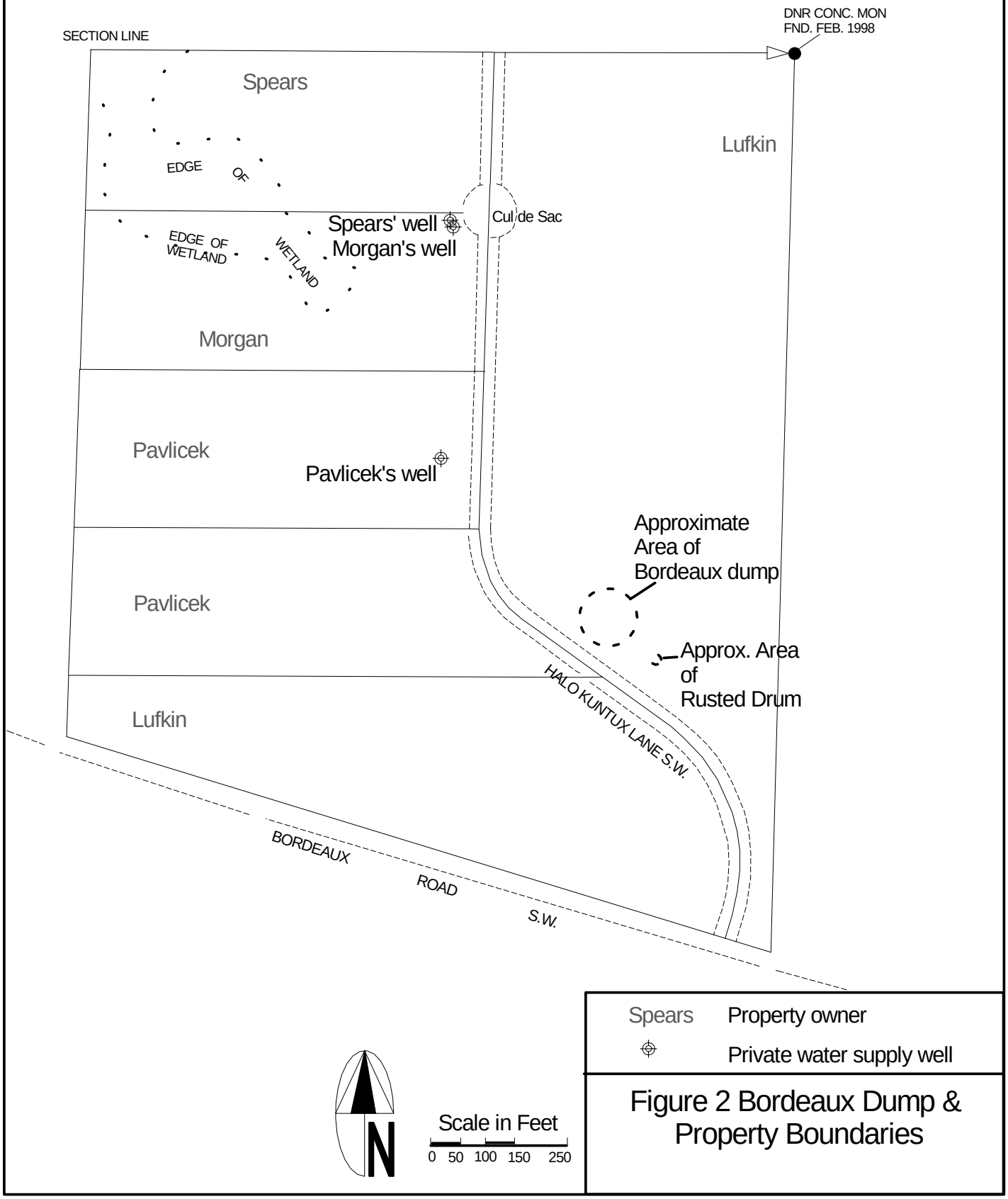




Figure 1. Site Vicinity and Location, Bordeaux Dump




# Figure 2 Bordeaux Dump & Property Boundaries

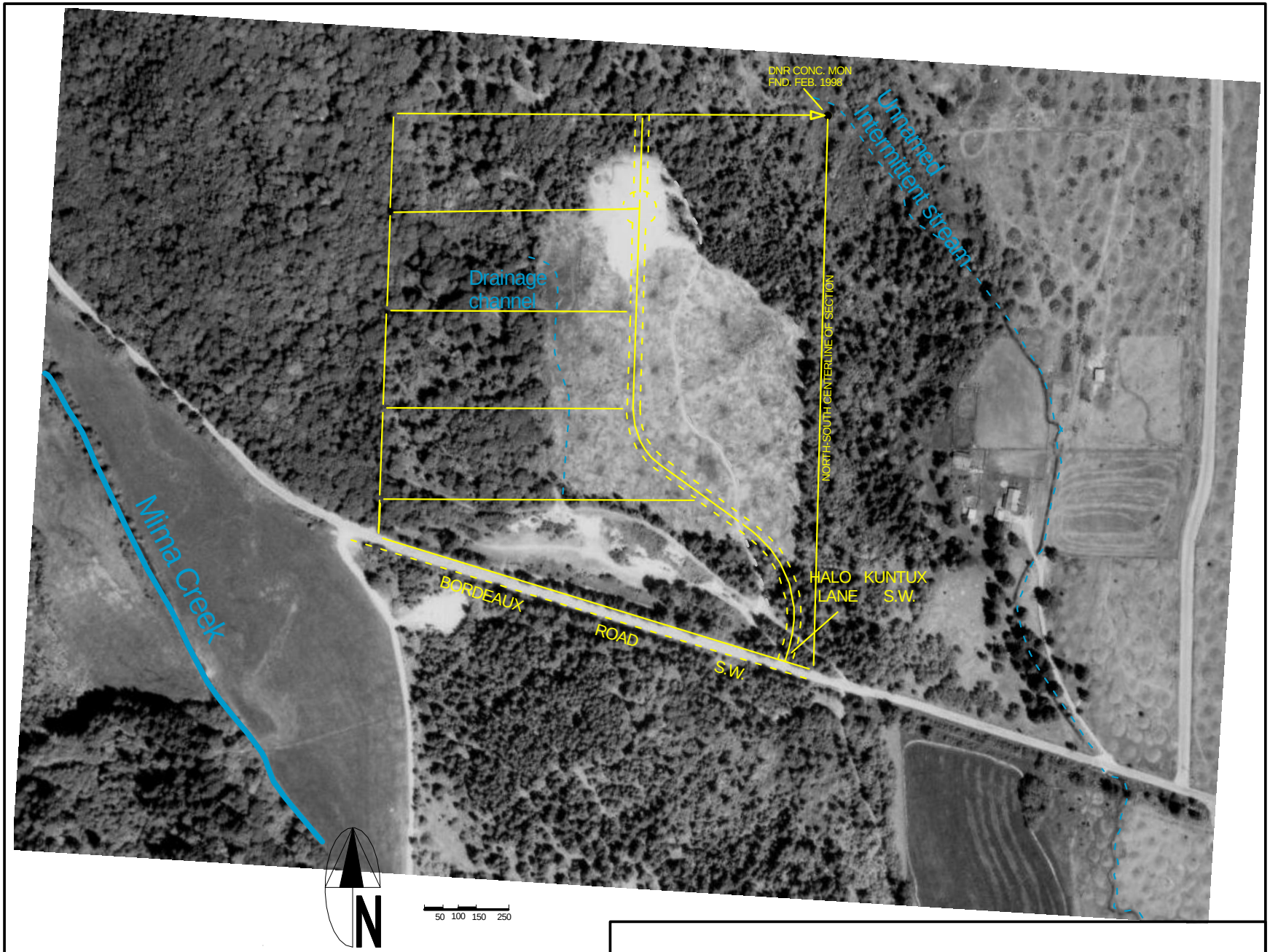



Figure 3 Mima Creek, unnamed intermittent stream, and drainage channel

# Appendix B

## Task 1 – Draft Soil Compliance Monitoring Plan

Submit a Draft Soil Compliance Monitoring Plan in accordance with the requirements of WAC 173-340-740 (7) for Ecology's review and approval.

In addition, the Draft Soil Compliance Monitoring Plan should have procedures outlined for handling of the contaminated soil from excavation. The handling includes on-Site storage and sorting/transportation and disposal. Provisions should be included that clearly describe excavated soil storage areas, procedures to control stormwater run-on and run-off to and from the soil stock pile, procedures for characterization and disposal of the contaminated soil, and procedures for testing of back fill material to ensure that the back fill soil is not contaminated. The Draft Soil Compliance Monitoring Plan will specifically describe procedures for complying with the requirements of the Dangerous Waste Regulations, Chapter 173-303 WAC during soil excavation/storage/transportation and disposal.

The Soil Compliance Monitoring Plan must include all relevant elements required in WAC 173-340-400 (4).

Schedule: Within 45 days of the effective date of the Consent Decree governing cleanup at this site.

## Task 2 – Final Soil Compliance Monitoring Plan

Submit a final Soil Compliance Monitoring Plan for Ecology's approval. The final plan will incorporate Ecology's comments on the draft plan.

Schedule: Within 20 days after Ecology provides comments on the draft plan.

## Task 3 – Draft Groundwater Compliance Monitoring Plan

Submit a Draft Groundwater Compliance Monitoring Plan in accordance with the requirements of WAC 173-340-720 (9) for Ecology's review and approval.

The groundwater monitoring well that must be included in the groundwater

compliance monitoring plan is a new shallow well in the Bordeaux Dump area.

Schedule: Within 45 days after the effective date of the Consent Decree governing cleanup at this site.

**Task 4 – Final Groundwater Compliance Monitoring Plan**

Submit a final Groundwater Compliance Monitoring Plan for Ecology's approval. The final plan will incorporate Ecology's comments on the draft plan.

Schedule: Within 45 days after Ecology provides comments on the draft plan.

**Task 5 - Health and Safety Plan**

All work, including sampling and other field data gathering activities, shall be performed under an appropriate health and safety plan for the protection of workers and the surrounding community in accordance with Ecology and Washington Industrial Safety and Health Act (WISHA) requirements. The Health and Safety Plan shall be submitted to Ecology prior to commencing any action on the Site. Mr. and Ms. Lufkin shall be solely responsible for ensuring that the plan satisfies applicable laws and regulations.

Schedule: Within 20 days after the effective date of the Consent Decree governing cleanup at this site.

**Task 6 - Draft Remedial Action Report**

The Final Remedial Action Report shall address the following:

1. Exact volume of contaminated soil excavated and disposed.
2. Description of and results of tests used to characterize the contaminated soil.
3. Where and how the contaminated soil was disposed of.
4. All the hazardous waste manifests and receipts for disposal and recycling of the excavated soil.
5. Volume and source(s) of the fill material used and tests that were used to ensure the fill material is not contaminated.
6. A map (s) showing the exact locations of the excavations.
7. A professional engineer stamp should accompany this report with a statement that, "the remedial action was executed in accordance with the final Cleanup Action Plan."
8. A statement that the monitoring well at the Site will be decommissioned in

accordance with WAC 173-160. Decommissioning of the monitoring wells will take place upon completion of the remedial action in accordance with the CAP and after a written letter from Ecology stating all the terms and conditions in the CAP have been met.

Schedule: Within 90 days after the conclusion of the remedial action at the Site.

**Task 7 - Final Remedial Action Report**

Schedule: Within 60 days after Ecology provides comments on the draft remedial action report.

# Appendix C

## Terrestrial Ecological Evaluation (TEE)

MTCA requires a TEE be conducted on all sites to make sure the cleanup action is protective of terrestrial ecological receptors from exposure to contaminated soil with the potential to cause significant adverse effects. A site may qualify for an exclusion from site specific process, or a simplified TEE.

WAC 173-340-7491 (2) (a) (iii) states if "the site is not located on a property that contains at least ten acres of native vegetation within 500 feet of the site, not including vegetation beyond the property boundaries," then a simplified TEE may be conducted.

In this case, the area within a 500 feet radius of the Bordeaux Dump within the property boundary line was calculated to be less than 10 acres. This qualifies this site for a simplified TEE. Therefore, values in Table 749-2 of MTCA were used as soil cleanup levels for the Bordeaux Dump Site consistent with WAC 173-340-7492 (d).

## Soil Cleanup Level for Selenium

A statistical analysis was conducted on 10 soil samples to determine the true upper 90th percentile of the naturally occurring value for selenium (soil samples from the gravel pit area were taken and analyzed for selenium). Based on this statistical analysis, the selenium soil cleanup level was calculated to be 3.2 mg/kg. The procedure used to arrive at this value is consistent with the method outlined in WAC 173-340-709, methods for defining background concentrations.