Paxton Sales Inc

STATE OF WASHINGTON
DEPARTMENT OF WASHINGTON

In the Matter of Remedial Action by:	)	Enforcement Order
Paxton Sales Corporation 108 W. Mead Avenue Yakima, WA 98902	)	No. DE 94TC-C421

To: Paxton Sales Corporation
Mr. Kenneth Paxton
Mr. Rueben Lair
108 W. Mead Avenue
Yakima, WA 98902

I.

Jurisdiction

This Order is issued pursuant to the authority of RCW 70.105D.050(1).

II.

Introduction

2.1 This Enforcement Order is issued by the Washington State Department of Ecology ("Ecology") in the interest of expediting the Remedial Investigation required herein, and not because of recalcitrance on the part of Paxton Sales Corporation, the recipient of the Order.

II.

Statement of Facts

1. The facility, Paxton Sales Corporation, is located at 108 West Mead Avenue, Yakima, Washington. The facility is located in the NW 1/4 of the NW 1/4 of Section 31, Township

13 North, Range 19 E.W.M. The parcel number is 191331-22547. Paxton Sales Corporation has been owned and operated as a Machine Shop (metal case-hardening shop) for approximately 25 years on this property.

2. A site inspection of the facility by EPA in 1989 detected 34,000 ppb of "perc" (tetrachlorothene) in an on-site drywell.

3. On October 24, 1991 Ecology issued a final determination of Potentially Liable Person status for the Yakima Railroad Area to Paxton Sales Corporation.

III.

Ecology Determinations

1. Paxton Sales Corporation is an "owner or operator" as defined in RCW 70.105D.020(6) of a "facility" as defined in RCW 70.105D.020(3).

2. The facility is known as Paxton Sales Corporation and is located at 108 West Mead Avenue, Yakima, Washington.

3. The substances found at the facility as described above are "hazardous substances" as defined in RCW 70.105D.020(5).

4. Based on the presence of these hazardous substances at the facility and all factors known to the Department, there is a release or threatened release of hazardous substances from the facility, as defined in RCW 70.105D.020(10).

5. By letter dated October 24, 1991, Ecology notified Paxton Sales Corporation of its status as a "potentially liable person" under RCW 70.105D.040 after notice and opportunity for comment.

6. Pursuant to RCW 70.105D.030(1) and 70.105D.050, the Department may require potentially liable persons to investigate or conduct other remedial actions with respect to the release or threatened release of hazardous substances, whenever it believes such action to be in the public interest.

7. Based on the foregoing facts, Ecology believes the remedial action required by this Order is in the public interest.

IV.

Work to be Performed

Based on the foregoing Facts and Determinations, it is hereby ordered that Paxton Sales Corporation take the following remedial actions and that these actions be conducted in accordance with Chapter 173-340 WAC unless otherwise specifically provided for herein.

1. Paxton Sales Corporation will perform the Remedial Investigation/Feasibility Study ("RI/FS") actions set forth and described in the attached Work Plan and Schedule. The Work Plan and Schedule are attached to this Order as Attachment A. Attachment A is incorporated by this reference

and are integral and enforceable parts of this Order.

The RI/FS will collect, develop, and evaluate sufficient information regarding the site to enable the selection of a cleanup action under WAC 173-340-360. The RI/FS will be implemented to meet the requirements of WAC 173-340-350.

The facility history investigation will be completed and submitted to Ecology for review and approval prior to the commencement of any field investigations.

At any point within the field investigations Paxton Sales Corporation may propose, based on field data/information collected at the facility, to alter or eliminate portions of the work defined in the Scope of Work, Attachment A.

The Order in which Paxton Sales Corporation chooses to undertake the tasks identified in Attachment A, except for the Faulty History Investigation, is at the discretion of Paxton Sales Corporation.

2a. Results from sampling shall be provided to Ecology's project coordinator upon receipt from the laboratory by Paxton Sales Corporation or its consultants/representatives.

2b. Written progress reports shall be submitted to Ecology by Paxton Sales Corporation at least monthly during the RI phase of the investigation. The intent of these monthly reports is to provide a <u>brief</u> update of activities

and results undertaken at the facility. Paxton Sales Corporation shall immediately notify Ecology by telephone of any unexpected delays in work.

3. In accordance with WAC 173-340-840(5), ground water sampling data shall be submitted according to Attachment B: GROUND WATER SAMPLING DATA SUBMITTAL REQUIREMENTS. Attachment B is incorporated by this reference and is an integral and enforceable part of this order.

4. Paxton Sales Corporation shall notify Ecology of its intent to proceed or not to proceed with workplan activities within 30 days of the date of this order.

Terms and Conditions of Order

1. Definitions

Unless otherwise specified, the definitions set forth in ch. 70.105D RCW and ch. 173-340 WAC shall control the meanings of the terms used in this Order.

2. Public Notice

RCW 70.105D.030(2)(a) requires that, at a minimum, this Order be subject to concurrent public notice. Ecology shall be responsible for providing such public notice and reserves the right to modify or withdraw any provisions of this Order should public comment disclose facts or considerations which indicate to Ecology that the Order is inadequate or improper in any respect.

3. Remedial Action Costs

Paxton Sales Corporation shall pay to Ecology costs incurred by Ecology pursuant to this Order. These costs shall include work performed by Ecology or its contractors for investigations, remedial actions, and Order preparation, oversight and administration. Ecology costs shall include costs of direct activities and support costs of direct activities as defined in WAC 173-340-550(2). Paxton Sales Corporation shall pay the required amount within 90 days of receiving from Ecology an itemized statement of costs that includes a summary of costs incurred, an identification of involved staff, and the amount of time spent by involved staff members on the project. A general description of work performed will be provided upon request. Itemized statements shall be prepared quarterly. Failure to pay Ecology's costs within 90 days of receipt of the itemized statement of costs will result in interest charges.

4. Designated Project Coordinators.

The project coordinator for Ecology is:

Name: Rick Roeder, Site Manager

Address: 106 S 6th Avenue
Yakima, WA 98908

The project coordinator for Paxton Sales Corporation is:

Name: Kenneth Paxton, Paxton Sales Corporation

Address: 108 W Mead Avenue
Yakima, WA 98902

The project coordinator(s) shall be responsible for overseeing the implementation of this Order. To the maximum extent possible, communications between Ecology and Paxton Sales Corporation, and all documents, including reports, approvals, and other correspondence concerning the activities performed pursuant to the terms and conditions of this Order, shall be directed through the project coordinator(s). Should Ecology or Paxton Sales Corporation change project coordinator(s), written notification shall be provided to Ecology or Paxton Sales Corporation at least ten (10) calendar days prior to the change.

5. Performance. All work performed pursuant to this Order shall be under the direction and supervision, as necessary, of a professional engineer or hydrogeologist, or similar expert, with appropriate training, experience and expertise in hazardous waste site investigation and cleanup. Paxton Sales Corporation shall notify Ecology as to the identity of such engineer(s) or hydrogeologist(s), and of any contractors and subcontractors to be used in carrying out the terms of this Order, in advance of their involvement at the Site. Paxton Sales Corporation shall provide a copy of this Order to all agents, contractors and subcontractors retained to perform work required by this Order and shall ensure that all work undertaken by such agents, contractors and subcontractors will be in compliance with this Order.

Except when necessary to abate an emergency situation, Paxton Sales Corporation shall not perform any remedial actions at Paxton Sales Corporation outside that required by this Order unless Ecology concurs, in writing, with such additional remedial actions.

6. Access

Ecology or any Ecology authorized representative shall have the authority to enter and freely move about all property at the Site at all reasonable times for the purposes of, inter alia: inspecting records, operation logs, and contracts related to the work being performed pursuant to this Order; reviewing the progress in carrying out the terms of this Order; conducting such tests or collecting samples as Ecology or the project coordinator may deem necessary; using a camera, sound recording, or other documentary type equipment to record work done pursuant to this Order; and verifying the data submitted to Ecology by Paxton Sales Corporation. When entering the Site under ch. 70.105D RCW, Ecology shall provide reasonable notice prior to entering the Site unless an emergency prevents notice. Ecology shall allow split or replicate samples to be taken by Paxton Sales Corporation during an inspection unless doing so would interfere with Ecology's sampling. Paxton Sales Corporation shall allow split or replicate samples to be taken by Ecology and shall provide Ecology seven (7) days notice before any

sampling activity.

7. Public Participation

Paxton Sales Corporation shall prepare and/or update a public participation plan for the Site. Ecology shall maintain the responsibility for public participation at the Site.

Paxton Sales Corporation shall help coordinate and implement public participation for the Site.

8. Retention of Records

Paxton Sales Corporation shall preserve in a readily retrievable fashion, during the pendency of this Order and for ten (10) years from the date of completion of the work performed pursuant to this Order, all records, reports, documents, and underlying data in its possession relevant to this Order. Should any portion of the work performed hereunder be undertaken through contractors or agents of Paxton Sales Corporation, a record retention requirement meeting the terms of this paragraph shall be required of such contractors and/or agents.

9. Dispute Resolution

Paxton Sales Corporation may request Ecology to resolve factual or technical disputes which may arise during the implementation of this Order. Such request shall be in writing and directed to the signatory, or his/her successor(s), of this Order. Ecology resolution of the

dispute shall be binding and final. Paxton Sales Corporation is not relieved of any requirement of this Order during the pendency of the dispute and remains responsible for timely compliance with the terms of the Order unless otherwise provided by Ecology in writing.

10. Reservation of Rights

Ecology reserves all rights to issue additional orders or take any action authorized by law in the event or upon the discovery of a release or threatened release of hazardous substances not addressed by this Order, upon discovery of any factors not known at the time of issuance of this Order, in order to abate an emergency, or under any other circumstances deemed appropriate by Ecology.

Ecology also reserves all rights regarding the injury to, destruction of, or loss of natural resources resulting from the release or threatened release of hazardous substances from Paxton Sales Corporation.

In the event Ecology determines that conditions at the Site are creating or have the potential to create a danger to the health or welfare of the people on the Site or in the surrounding area or to the environment, Ecology may Order Paxton Sales Corporation to stop further implementation of this Order for such period of time as needed to abate the danger.

11. Transference of Property

No voluntary or involuntary conveyance or relinquishment of title, easement, leasehold, or other interest in any portion of the Site shall be consummated by Paxton Sales Corporation without provision for continued implementation of all requirements of this Order and implementation of any remedial actions found to be necessary as a result of this Order.

Prior to transfer of any legal or equitable interest Paxton Sales Corporation may have in the Site or any portions thereof, Paxton Sales Corporation shall serve a copy of this Order upon any prospective purchaser, lessee, transferee, assignee, or other successor in such interest. At least thirty (30) days prior to finalization of any transfer, Paxton Sales Corporation shall notify Ecology of the contemplated transfer.

12. Compliance With Other Applicable Laws

All actions carried out by Paxton Sales Corporation pursuant to this Order shall be done in accordance with all applicable federal, state, and local requirements.

VI.

Satisfaction of this Order

The provisions of this Order shall be deemed satisfied upon Paxton Sales Corporation's receipt of written

notification from Ecology that Paxton Sales Corporation has completed the remedial activity required by this Order, as amended by any modifications, and that all other provisions of this Order have been complied with.

VII.

Enforcement

1. Pursuant to RCW 70.105D.050, this Order may be enforced as follows:

A. The Attorney General may bring an action to enforce this Order in a state or federal court.

B. The Attorney General may seek, by filing an action, if necessary, to recover amounts spent by Ecology for investigative and remedial actions and orders related to the Site.

C. In the event Paxton Sales Corporation refuses, without sufficient cause, to comply with any term of this Order, Paxton Sales Corporation will be liable for:

(1) up to three times the amount of any costs incurred by the state of Washington as a result of its refusal to comply; and

(2) civil penalties of up to $25,000 per day for each day it refuses to comply.

D. This Order is not appealable to the Washington Pollution Control Hearings Board. This Order may be reviewed only as provided under RCW 70.105D.060.

Effective date of this Order: SEP 30 1994.

Anthony W. Grover
Section Manager
Toxics Cleanup Program
Central Regional Office

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ATTACHMENT

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YAKIMA RAILROAD AREA (YRRA)

WORK PLAN

REMEDIAL INVESTIGATION (RI)

TABLE OF CONTENTS

YAKIMA RAILROAD AREA WORK PLAN

REMEDIAL INVESTIGATION (RI) ACTIVITIES

I. Purpose/Scope

The purpose of the Remedial Investigation (RI) is to determine the nature and extent of releases of hazardous substances (as defined by RCW 70.105D.020(5)) from the Facility (as defined in RCW 70.105D.020(3)), and to gather all necessary data to support the Feasibility Study (FS) which will follow.

The Facility is the Yakima Railroad Area (YRRA) as shown in Figure 1. Within the YRRA are specific sources, or what will be called subfacilities. At the present time this includes the following: Agri-Tech/Yakima Steel Fabricators; Cameron Yakima, Inc.; Westco Martinizing; Nu-Way Cleaners; Paxton Sales; Frank Wear Cleaners; Hahn Motors; Fifth Wheel Truck Repair; Yakima County (Crest Linen); U-Haul Company (Yakima Valley Spray); Crop King/Woods Industries (BNRR)(Figure 2: Map of YRRA/facilities).

This Work Plan describes the strategy and tasks for conducting a Remedial Investigation of Facilities within the Yakima Railroad Area. The primary goal of this Remedial Investigation is to obtain the information necessary to enable the identification and review of potential cleanup actions through a Feasibility Study. This will be accomplished by defining the geologic and hydrologic conditions, and the nature and extent of the soil, air, and groundwater contamination.

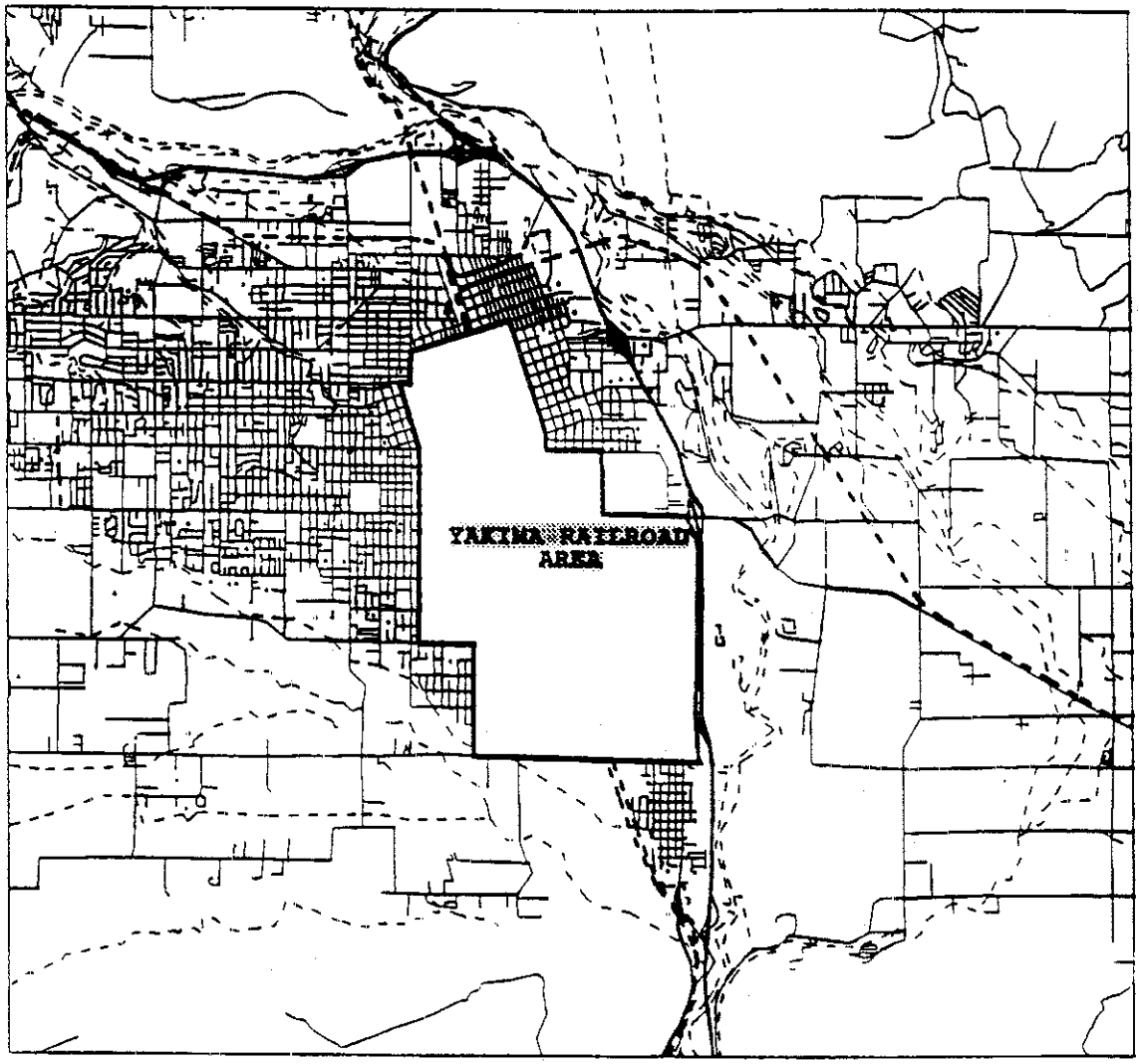
The procedures, methods, and processes defined in this document are available for use only to PLP's within the YRRA. The main intent is to provide a standardized data gathering system which provides for data of consistent quality, avoids duplication of efforts, and in general assists the PLP's within the YRRA in their efforts to fully investigate contamination at their specific subfacilities.

The Remedial Investigation will concentrate on these subfacilities as sources of Tetrachloroethylene (PCE) within the YRRA. This will then, either concurrently or subsequently, be followed by investigations which fill the "data gaps" necessary to fully understand the areawide issues including, groundwater flows, contaminant levels, and other issues.

This work plan presents a detailed discussion of the technical approach and the scope of investigations for the Yakima

Figure 1

YAKIMA RAILROAD AREA



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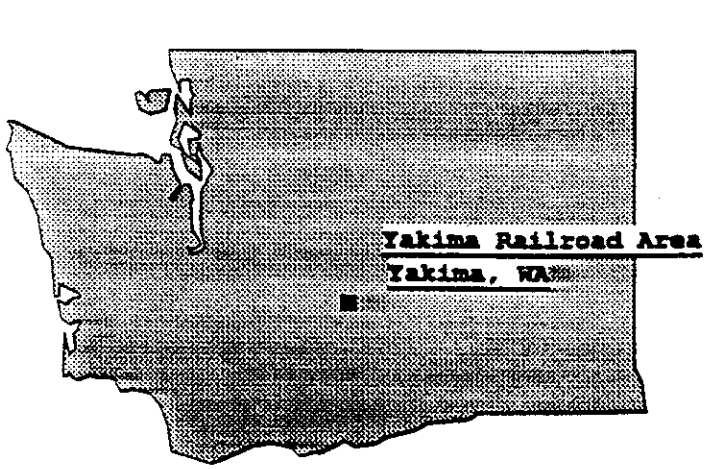
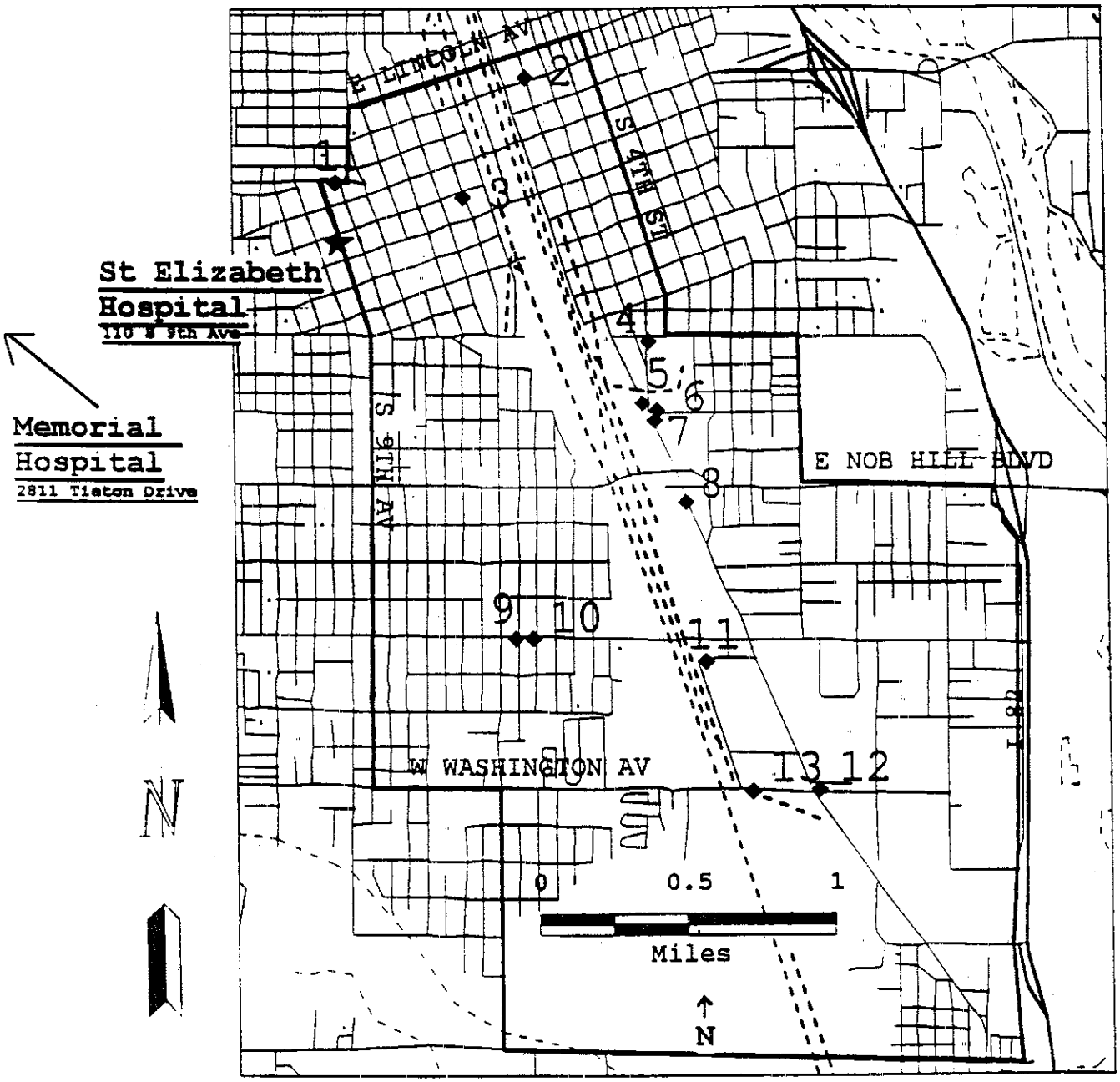


Figure 2

Yakima Railroad Area



Subfacilities within the Yakima Railroad Area

1: Westco Martinizing
2: Yakima County (Crest linen)
3: Frank Wear Cleaners
4: Nu-Way Cleaners
5: Yakima Valley Spray
6: 5th Wheel Truck Repair
7: Hahn Motor Company
8: Cameron-Yakima, Inc.
9: CMX Corporation
10: Paxton Sales
11: Crop King/Woods Ind. (BNRR)
12: Briar Development
13: Agri-Tech/Yakima Steel Fabricators

Railroad Area Facility. The organization of this work plan is as follows:

-- Facility Background Information: A brief description of the YRRA, and its subfacilities.

-- Existing Data: This section summarizes the sampling and data available presently for each subfacility and for the overall YRRA.

-- Work plan: This section presents the specific work plan to be followed for the YRRA and its subfacilities. This includes:

- Area-wide Investigations
- Subfacility Investigations
- Schedule (Project Completion Timelines)

-- Sampling and Analysis Plan

-- Quality Assurance/Quality Control Project Plan

-- Health and Safety Plan

Information developed in the early stages of the RI will be used to start the identification and consideration of cleanup actions that may be appropriate for use within the YRRA. This early screening of potential cleanup methods should help to conserve time and expenses by narrowing the focus of the Feasibility Study scheduled to follow the RI activities.

II. Facility Background Information

A. Facility Background

The Yakima Railroad Area (YRRA) was established by Ecology in response to the discovery of Tetrachloroethylene (PCE) in the shallow aquifer of the area. As shown in Figure 1, the area encompasses portions of the City of Yakima, City of Union Gap, and Yakima County.

Throughout the YRRA, groundwater is found at depths which range from 4 to 25 feet depending upon seasonal fluctuations. Flow velocities of 6-12 ft/day have been calculated for the YRRA (San Juan, 1993). The predominant flow direction is to the southeast towards the Yakima River. Depending upon specific locations, seasonal irrigation influences may cause flows to vary from nearly due south to due east.

Soils found within the YRRA include the Weirman, Zillah, Ashue, and Naches loams. Typical soil depths range from a few inches to several feet. Beneath the soils, geologic deposits include the Thorp gravels and Upper Ellensburg formations.

B. Facility Description:

The Yakima Railroad Area and its subfacilities are shown in Figure 2. In general the area is bound northerly by Lincoln Avenue; easterly by the irregular trace of 4th Street to Pacific Avenue; 10th Street to Nob Hill Boulevard; Rudkin Road to Valley Mall Boulevard; a line running due south from the southern end of Rudkin road to the point where it intersects a line running due east from the eastern end of Ahtanum road; and westerly by the irregular trace of 3rd Avenue to West Washington Avenue and 8th Avenue to Summitview Avenue; then Pierce Street to Lincoln Avenue (northern boundary).

Presently the area consists of thirteen subfacilities, three of which have completed investigations and exited the MTCA process via DeMinimis settlements (Briar Development, Yakima County, CMX). A fourth subfacility, WestCo, has indicated that they will be doing their own work plan. Because of the contaminant complexity of some of the sites; Yakima Valley Spray (U-Haul); Cameron-Yakima, Inc.; Crop King/Woods Industry (BNRR); and Agri-Tech/Yakima Steel Fabricators, they are ineligible to utilize this generic work plan. This work plan is thus applicable to five of the original thirteen, and a listing of contaminant classes known or suspected at these subfacilities are shown in Figure 3. As new subfacilities are identified within the YRRA, they will be evaluated by Ecology as to whether they are eligible to utilize this generic work plan.

Figure 3

Contaminant Classes Found at YRRA Sub-facilities

Facility	BNA	Cyanoacetic acid	Metals	SVOC	TPH	VOA
Fifth Wheel Shop			√		√	√
Frank Wear Cleaners						√
Hahn Motor Company					√	√
Nu-Way Cleaners	√					√
Paxton Sales Corp.	√	√	√	√		√

Column heading terms:	
BNA	Base/Neutral/Acid
Cyanoacetic Acid	Cyanoacetic Acid
Metals	Metals analysis
SVOC	Semi-Volatile Organic Analysis
TPH	Total Petroleum Hydrocarbon*
VOA	Volatile Organic Analysis

*See "Guidance for Remediation of Petroleum Contaminated Soils (PCS) Revised April 1994," Department of Ecology Publication #91-30.

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IV. RI Scope of Work - Work Plan

The following section presents the remedial investigation methodology for subfacilities within the YRRA. The objective of these investigations is to gather sufficient data to identify the nature and extent of contamination and the selection of a cleanup action alternative(s).

TASK 1: Site History/Soil Vapor Assessment.

Site History: The PLP for each subfacility shall submit for Ecology review and approval a site history. The information gathered from this will be used to guide soil sampling, determine probable migration pathways, and identify possible contamination sources. This site history will provide pertinent background information including:

-- Maps depicting general geographic location; property lines and all adjacent property owners; waterways, floodplains, wetlands, drainage patterns; past and present above and below ground tanks and piping; buildings, utilities, paved areas, easements, zoning, rights-of-way, sumps, trenches, vaults, storm drains, and other features; past and present known or suspected hazardous substance treatment, storage, or disposal areas; and the location of all groundwater supply and monitoring wells within a half mile radius of the subfacility. The latter may result in door to door interviews with property owners to determine if they have domestic and or irrigation wells.

   One map for each subfacility shall include the longitude and latitude, or equivalent datum, for five surveyed points at the subfacility boundaries.

-- A history/description of ownership and operation; waste generation, treatment, storage and disposal activities.

-- A description of hazardous materials handled at the subfacility including; identification of materials spilled, and dates, location, and any corrective actions taken for past product or waste spills.

-- History and description of physical changes at the subfacility. This includes backfilling, building add-ons or erection, building demolition, subsurface construction, and other physical changes.

-- The location of all private/commercial/business ground water supply and monitoring wells within a

one half mile radius. Sources for well location and construction information shall include State and local environmental and public health agencies, supplemented with oral interviews with business owners to identify unreported or undocumented wells. Information from well surveys conducted by other Yakima Railroad Area PLPs and the Department of Ecology may be used if within the one-half mile radius of the subfacility.

Soil Vapor Assessment: The following section describes the methodology to be used when conducting soil vapor assessment. Information gathered from this will be submitted to Ecology with the site history.

A soil vapor assessment of each subfacility will be completed. The objectives of these surveys will be to:

- assess the lateral extent of target volatile organic compounds (VOC's) in soil vapors of the vadose zone
- make a preliminary determination of lateral boundaries of subsurface VOC contamination
- provide data to assist in the siting of soil borings and groundwater monitoring wells
- identify potential source areas

For each subfacility the soil vapor survey will consist of the collection of soil vapor samples on a 20 foot grid system. Based on actual field conditions, the soil vapor probe survey may follow the grid of installed utilities if those utility pathways appear to be acting as a conduit for the migration of contaminants.

The direction and extent of the survey will be based on and evaluated by interpreting elevated levels of VOC's identified during the initial sampling locations. Two grid points with non-detectable concentrations of target compounds in all prime directions will complete the soil vapor survey along the respective grid line direction.

The soil vapor samples will be collected per the methodology in Section V of this Plan; Sampling and Analysis Plan.

Soil Vapor Sample Analysis: Soil vapor samples will be analyzed according to EPA method 602 or other methods approved by Ecology. All soil vapor samples will have a VOA scan run.

Tabulated results of the laboratory analysis for vapor samples shall be reported in micrograms per liter (ppb) of air. Separate site maps contouring each contaminant will be submitted to Ecology as part of the soil vapor assessment. In

addition, the following information will be submitted in the report:

- discussion of equipment applicability
- discussion of equipments' limitations and problems
- discussion of field procedures
- discussion of laboratory procedures
- discussion and interpretation of the results
- identification of proposed soil boring locations

The failure to find soil gas contaminants at any subfacility does not preclude Ecology from requiring soil sampling and/or the installation of groundwater monitoring wells.

TASK 2: Soil/Groundwater Investigation and Analysis.

A. Soil Borings

Soil borings shall be installed to assist in the collection of soil samples, characterize subsurface contaminants, characterize the subsurface soils/geology, and/or for the installation of groundwater monitoring wells.

Soil borings will be installed in areas of significant contamination based on the interpretation of the existing site data and soil gas survey results. Unless otherwise approved by Ecology, soil boring depths will be at least from 20 to 25 feet deep or until groundwater is encountered. This may vary dependent upon subsurface conditions and also if the boring will ultimately be used for a monitoring well.

The PLP shall be responsible for utility surveys prior to beginning drilling activities. Proposed soil boring and monitoring well locations will be submitted to Ecology for review/approval. Such locations will be based on the soil vapor assessment results and the site history. After Ecology approval of these locations, and a utility search, soil boring activities may commence. Boring locations will be flagged on the ground prior to drilling. These drilling locations will not be relocated more than five feet without Ecology's review and approval.

B. Soil Sampling

The objective of soil sampling is to gather enough analytical data to characterize the extent of soil contamination at each subfacility. Based on the results of the soil vapor assessment, samples at varying depths will be taken from each soil boring proposed above. For each boring, samples will be taken at 2', 5', 10', and just above the groundwater level or at completion depth. The total number of soil samples per subfacility will be dependent upon the total number of soil

borings required at the subfacility. Based on the analyses of this initial round of borings, Ecology may require additional sampling. In such cases a work plan addendum will be submitted to Ecology proposing the location of these additional samples.

C. Soil Sample Analysis

Chemical: To assist in the characterization of subsurface soil and groundwater contamination, soil samples will be collected for chemical testing. For each of the soil samples collected at each subfacility, a series of chemical tests will be conducted. Figure 4 (Analysis Method by Media of Concern) shows each subfacility, the chemicals which will be tested for, and the lab method (EPA Method).

Physical/Other: Additional testing will be conducted to assist in the selection of alternatives in the Feasibility Study. Physical testing of soil samples will include; surface soil distribution, pH, moisture content, grain size/sieve analysis, SCS soil classification, hydraulic conductivity, bulk density, porosity, soil sorptive capacity, soil organic content, and particle size distribution. The subfacility will propose to Ecology the number of soil samples to receive physical testing.

Tabulated results of the laboratory analysis of soils samples shall be reported in ug/kg (ppb). Separate subfacility site maps contouring each contaminant will be submitted in the Remedial Investigation Report. In addition, the following information will be submitted:

- discussion of equipment applicability
- discussion of the equipments' limitations and problems
- discussion of field procedures
- discussion of laboratory procedures
- discussion and interpretation of the results

Soil Sample Collection Methodology: See Section V (Sampling and Analysis Plan).

D. Groundwater Investigation

Tetrachloroethylene contamination has been documented throughout the YRRA. The objective of the groundwater investigation is to characterize the extent of contamination at each subfacility. In addition, this information will ultimately be used in determining the feasibility of groundwater remediation.

Figure 4

Analysis Method by Media of Concern

Sub-Facility	Chemical Category	Method Soil	Water
Fifth Wheel Truck Repair	Metals	EPA Method 7000 Series	EPA Method 7000 Series
	TPH	EPA WTPH 418.1	EPA WTPH 418.1
	VOA	EPA Method 8240	EPA Method 8240
		EPA Method 8260	EPA Method 8260
Frank Wear Cleaners	VOA	EPA Method 8240	EPA Method 8240
		EPA Method 8260	EPA Method 8260
Hahn Motor Company	TPH	EPA Method WTPH-D	EPA Method WTPH-D
	VOA	EPA Method 8240	
		EPA Method 8260	
Nu-Way Cleaners	BNA	EPA Method 8270	
	VOA	EPA Method 8240	
		EPA Method 8260	
Paxton Sales Corp			
	BNA	EPA Method 8270	EPA Method 8270
	Cyano acidic acid		Cyano acidic acid
	Cyanide	Cyanide	Cyanide
	Metals	EPA Method 7000 Series	EPA Method 7000 Series
	SVOC		Pulegone
	VOA	EPA Method 8240	EPA Method 8240
		EPA Method 8260	EPA Method 8260
Westco One Hour Martinizing			

Groundwater Monitoring Wells: As discussed earlier, monitoring wells will be installed in select soil borings. The soil borings and subsequent monitoring well locations will be based on the results of the soil vapor survey. Proposed soil boring and monitoring well locations will be provided to Ecology as part of the soil gas survey results. On approval of these monitoring well and soil boring locations by Ecology, well installation/soil boring activities may commence.

A minimum of one upgradient and three downgradient wells will be installed at each subfacility. Upgradient monitoring wells will be used to provide data on potential off-site sources of groundwater contamination. The wells data, from both up and down gradient, will be used to provide information on specific subfacility geologic and hydrogeologic conditions, and contamination characterization.

Monitoring wells shall be completed and screened to a depth of at least five feet below the seasonal low aquifer water level, and at least two feet above the high level. Well construction will be per Minimum Standards for Construction and maintenance of Wells Chapter 173-160 WAC. Surge Block or Air Lift well purging will occur until water is clear with no sediments.

Groundwater Sample Analysis: Groundwater samples will be collected for laboratory analysis from all wells present at each subfacility. Groundwater samples will be submitted to an Ecology or EPA certified analytical lab. For the groundwater samples collected, Figure 4 shows the chemical categories which will be analyzed for, and the lab method (EPA Method).

General water quality parameters will be measured by field personnel during collection of groundwater samples. For each monitoring well the following information will be provided: pH, temperature, conductivity, and dissolved oxygen content.

Groundwater sampling methodology: See section V, Sampling & Analysis Plan.

Hydrologic Testing: To obtain information on the physical characteristics of the shallow aquifer underlying each subfacility, hydrologic testing will be performed. Data from these tests will be used in the Feasibility Study and/or evaluation of potential cleanup technologies. A pumping test will be necessary of sufficient duration and discharge to adequately stress the aquifer such that transmissivity and storativity may be determined for the subfacility. The PLP or their representative will present the specific methodology of the pumping test to Ecology for review and approval. If the circumstances at a subfacility prevent a pump test, other information sources may be used with prior Ecology approval.

Tabulated results of the laboratory analysis of soils samples will be reported in ug/kg (ppb). Separate subfacility site maps contouring contaminant will be submitted in the Remedial Investigation report. In addition, the following information will be submitted:

- discussion of equipment applicability
- discussion of equipments' limitations and problems
- discussion of field procedures
- discussion of laboratory procedures
- discussion and interpretation of the results

E. Data Evaluation and Presentation

The PLP shall analyze all subfacility investigation data and prepare a report about the type and extent of contamination including, but not limited to:

-- Nature of contamination
-- Extent of contamination, including the volume of soil and water needing remediation
-- Pathways by which contamination has or can reach the media
-- Known or potential hazards to the public health, welfare, and the environment, including physical hazards
-- Recommendations for further investigations, a Feasibility Study, and the need for interim actions.

All sample results will be provided to Ecology on diskette and as hard copy in the Remedial Investigation report. Data submitted on diskette will be submitted according to protocol found in Attachment A: Sampling Data Submittal Requirements (A diskette is available from Ecology).

At a minimum, all YRRA subfacilities will submit the following from the gathered data:

- water level data in hydrographs
- water level contour maps
- hydrogeologic cross-section for the subfacility
- contaminant contour maps (both soil and groundwater)
- soil boring logs

Please indicate if maps, etc., are hand or computer-generated, and if the latter, what the computer software program is.

F. Timelines for Accomplishing RI

This Remedial Investigation workplan will be implemented in accordance with the schedule shown in Figure 5. This schedule shows the submittal dates for each phase of the work plan.

Figure 5. Schedule for Remedial Investigation Deliverables

	Deliverable	Day Number
(1)	Commence work under Agreed Order or Enforcement Order (date Order is signed by Ecology)	Day 1
(2)	Commence work on RI Task 1a Site History/Soil Vapor Assessment	_____
(3)	RI Task 1a completed Draft Site History/Soil Vapor Assessment completed; proposed sampling locations submitted by the PLP to Ecology	_____
(4)	RI Task 1b completed Final Site History/Soil Vapor Assessment completed	_____
(5)	Commence work on RI Task 2 Field soil/groundwater investigation and analysis	_____
(6)	Task 2 completed and submitted	_____
(7)	Task 3a completed; Draft Remedial Investigation (RI) submitted to Ecology	_____
(8)	Task 3b completed; Final Remedial Investigation (RI) submitted to Ecology	_____
	Total	365 days from date of this order

Total time for items (1) - (8) should not exceed 365 days

The schedule includes anticipated activities through completion of the final Remedial Investigation Report. The timeframe for Remedial Investigation completion (includes report) at each subfacility is expected to be completed within 18 months. Area wide investigations will take longer.

G. Final RI Submittal Requirements

Unless arrangements are made with Ecology prior to commencement of remedial investigation activities, all reports, plans, specifications and similar information will be prepared and submitted according to WAC 173-340-840:

(1) Cover letter. Include a letter describing the submittal and specifying the desired department action or response.

(2) Number of copies. Three copies of all plans or reports shall be submitted to the Ecology Project Manager for the subfacility. The department may require additional copies to meet public participation and interagency coordination needs.

(3) Certification. All engineering work submitted under this chapter shall be under the seal of a professional engineer registered with the State of Washington.

(4) Visuals. Maps, figures, photographs, and tables to clarify information or conclusions shall be legible. All maps, plan sheets, drawings, and cross-sections shall meet the following requirements:

(a) To facilitate filing and handling, be on paper no larger than 24 x 36 inches and no smaller than 8 1/2 x 11 inches. Photo-reduced copies of plan sheets may be submitted provided at least one full-sized copy of the photo-reduced sheets are included in the submittal.

(b) Identify and use appropriate and consistent scales to show all required details in sufficient clarity.

(c) Be numbered, titled, have a legend of all symbols used, and specify drafting or origination dates.

(d) Contain a north arrow.

(e) Use United States Geological Survey datum as a basis for all elevations.

(f) For planimetric views, show a survey grid based on monuments established in the field and referenced

to state plane coordinates. This requirement does not apply to conceptual diagrams or sketches when the exact location of items shown is not needed to convey the necessary information.

(g) Where grades are to be changed, show original topography in addition to showing the changed site topography. This requirement does not apply to conceptual diagrams or sketches where before and after topography is not needed to convey the necessary information.

(h) For cross-sections, identify the location and be cross-referenced to the appropriate planimetric view. A reduced diagram of a cross-section location map shall be included on the sheets with the cross-sections or on a separate sheet.

(5) Sampling data. All sampling data submitted shall be consistent with procedures specified by the Department.

(6) Appendix. This should include: A complete citation of references; applicable raw data; a description of, or where it is readily available, reference to testing and sampling procedures used; relevant calculations; and any other information needed to facilitate review. In addition, this will include the following:

(a) General field observations including:

-- Groundwater characterization, including potentiometric maps and data related to all hydraulic testing;

-- Location of nearby wells and well log information;

-- Soil conditions including locations, descriptions and photographs of soil borings;

-- Well driller and hydrogeologist logs/observations;

(b) Changes from the sampling plan, including opportunity samples and other changes.

(c) Sample location map, legibly superimposed on a subfacility map, including sample media and sample numbers.

(d) Table of principle facts related to sampling and analysis results.

V. Sampling & Analysis Plan

A. Purpose

The purpose of the RI is to provide data of sufficient quality and quantity to determine the nature/extent of contamination at the subfacility and to evaluate potential remedial actions. Within the YRRA, subfacilities have varying pathways for potential migration of constituents: air, soil, groundwater, and possibly surface water. This sampling and analysis plan presents the technical approach and procedures to be used in completing the RI. Field investigation activities and sampling procedures are presented here in detail.

B. Soil Vapor Sampling Procedures

To collect soil vapor samples, a hollow drive rod will be advanced to depths of between 3 to 10 feet. Where pavement or cement is present an electric hammer drill will be used to penetrate to underlying material. The sampling system will then be purged by evacuating 2-5 probe volumes of gas (air). Following this, another sampled volume of soil gas will be drawn through the probe and encapsulated in the pre-evacuated sample container attached to the system.

At the start of each days sampling all sampling equipment, including drive rods and probes, will be decontaminated and purged prior to sampling (See Section V). Field control samples will be collected at the beginning and end of each days sampling and after every 15th soil vapor sample. These quality control samples will be obtained by filtering ambient air through a dust and organic vapor cartridge, and collecting them in the same manner as above.

C. Soil Sampling

Physical Properties Testing: Soil samples selected for physical property analysis will be based on the geologic variability observed in the field during drilling. A minimum of two samples will be selected from each geologic unit. Samples will be analyzed for porosity, grain size, moisture content, and specific gravity.

Samples for Chemical Analysis: Soil samples will be collected by driving a split spoon sampler. The sampler will be driven 18-24 inches where possible into undisturbed soil ahead of the drill pipe. To collect samples the following procedure will be used:

1. Driller will retrieve split sampler from borehole and give to the PLP representative.

2. Split sampler will be opened.

3. Sample recovered will be measured.

4. Soil from the barrel will be transferred from sampler to appropriate sample container(s). The sample will be labeled and secured in an iced cooler.

5. Split sampler will be decontaminated according to procedures in Section V.

In the event that a split spoon sampler proves unusable, soil samples may be collected through the use of a backhoe and hand sampling. Ecology approval must be obtained prior to the use of a backhoe for sampling.

D. Groundwater Monitoring Wells

Drilling/Installation: Groundwater monitoring wells will be constructed utilizing a method approved by Ecology prior to commencement of drilling. For each groundwater monitoring well the geologic and hydrogeologic conditions will be characterized. Methods of characterization will include:

- regular examination of the drill cuttings removed from the boreholes
- obtaining driven soil samples
- observing the resistance to drilling, indicated by drilling rig behavior and rate
- depth to water measurements taken during drilling

Where practical, split spoon samples will be collected from the well boreholes at depths of 2', 5', 10', and just above the ground water level or completion depth. Samples will be collected by driving a split barrel sampler into the subsurface. The sampler will be driven 24", if possible, into the undisturbed soil ahead of the borehole bottom.

Drilling and sampling shall be monitored by a qualified geologist, or hydrogeologist. Soils will be described in the field and classified in accordance with the unified Soil Classification System. Physical property testing will be completed on one sample from each geologic unit found at the subfacility. Physical property analysis will include porosity, grain size, and moisture content.

All wells shall be constructed to meet the requirements of Chapter 173-160 WAC. Construction shall be completed by a well driller licensed by the State of Washington.

All wells shall be developed by sufficient purging of a minimum of four casing volumes. This will consist of surge block or air lift until well water is clean/no sediments.

E. Groundwater Sampling

The following field procedures will be adhered to throughout the YRRA sampling program.

Depth to Water Measurements: Prior to well development and purging, water depths will be measured to the nearest 100th of a foot (.01) using a decontaminated electric water level sounder. A control point for measuring water depth will be established on the well casing.

Purging: After initial measurements have been recorded, monitoring wells will be purged. During purging, temperature, pH, and electrical conductivity will be monitored and recorded. Indicator parameters will be considered stabilized when three successive measurements, in 5 gallon increments, vary less then 10 percent. A minimum of 4 casing volumes will be removed during purging.

Sample collection: Groundwater samples will be collected using a dedicated bailer suspended by a nylon cord. The bailer will be lowered slowly into the water, retrieved, and emptied slowly to avoid degassing the sample. The cord will be discarded after collecting each sample. The sample will then be handled according to the procedures in Section VI.

Decontamination: All sampling equipment will be decontaminated between each sampling in accordance with procedures in Section V.F. It is expected that individual bailers or pumps will be dedicated to each well, or that disposable bailers will be utilized.

F. Equipment Decontamination

The main objectives of equipment decontamination are:

-- contain all contaminated materials in such a manner that work performed for the RI does not cause the spread of any hazardous constituents within or off the site.

-- decontaminate sampling equipment such that cross contamination does not occur between drill holes or samples.

A decontamination area will be established for all sampling events. All decontamination will be performed in such a manner as to enable the capture/containment of the rinsate.

Drilling Equipment: Drilling equipment, including drill rod and casing, will be decontaminated prior to and after each use. Steps for this will be as follows:

1. Scrape any large chunks of soil or debris away.
2. If oil is visible, an appropriate cleanser will be used to cut or dissolve oil from equipment.
3. Drilling equipment will be thoroughly washed with a high-pressure steam cleaner/pressure washer.

Soil Sampling Equipment may be decontaminated by one of two methods. (1) By high-pressure steam cleaner/pressure washer with the rinsate caught and then contained, or (2) a series of four clean buckets on plastic/visqueen at each drilling location. First bucket will be clean potable water, second bucket will contain clean potable water with Alconox or equivalent, third bucket will contain clean potable water, and fourth bucket will contain clean deionized/distilled water. Water in wash buckets will be changed between each sampling location. A blank sample of the deionized water used in each sampling event shall be taken and analyzed (see QA/QC).

All sampling equipment will be decontaminated before and after each sampling event. Steps are as follows:

1. Rinse in potable water.

2. Wash in Alconox or equivalent soap and potable water. Nylon pads, bottle brushes may be used to facilitate washing if needed.

3. Rinse in potable water

4. Rinse in deionized/distilled water.

5. Air dry equipment, if possible, between sampling.

Water Sampling Equipment: Utilize the same means as described for soil sampling equipment.

Waste Disposal: Solid and liquid wastes generated during sampling will be disposed of as appropriate depending upon contamination levels and source. It is the responsibility of the sampler to identify appropriate disposal.

G. Data Submission Requirements:

Logs will be kept of all on-site activities conducted under this workplan. This will include Field Investigation Daily

Report, Well Development Records, Well Drilling/Installation Log, Soil Sampling Record, Groundwater Sampling Record, and Water Level Measurements.

A summary of the month's activities shall be submitted by the PLP to the Ecology Site Manager on the last day of the month. It shall briefly discuss the various Remedial Investigation task activities accomplished, problems encountered, and problems anticipated. A separate letter must be sent for Ecology consideration of any change in procedure or schedule in the Remedial Investigation.

All data will be submitted to Ecology per the requirements of Chapter WAC 173-340-840. In addition, data will be submitted on diskette per the format in Attachment A: Electronic Data Submittal Requirements.

VI. Quality Assurance/Quality Control Project Plan

A. Objective

The main objective of quality assurance/quality control is to develop and implement procedures which provide data of known and acceptable quality. The quality of the data to be gathered under this work plan will be assessed against the following criteria:

Representativeness: The measure of how closely the measured results reflect the actual concentration or distribution of the chemical compounds in the soil, air, or water sampled. Sampling plan design, including the number and location of samples, sampling techniques, and sample handling protocols (storage, preservation, and transportation) has been developed to provide data that are representative of the matrix samples. Documentation will be submitted as part of the RI report to establish that protocols have been followed and sample identification and integrity assured.

Comparability: Comparability of data is essential so that all information gathered at subfacilities within the YRRA can be compared and utilized. Data comparability will be maintained by use of consistent methods, detections limits, and units. These specific requirements have been identified in various sections of this work plan. Any deviations from this must have prior Ecology approval.

Accuracy: Accuracy is an assessment of the closeness of the measured values to the true values. Accuracy of chemical tests is assessed by spiking samples with known standards and establishing the average recovery, and by analyzing known standards and calculating the percent difference between the measured value and the known value of the standard.

Precision: Precision is the measure of the analytical systems ability to be reproducible. For duplicate measurements, precision can be expressed as the relative percent difference.

Completeness: Completeness is the measure of the amount of valid data obtained from the analytical measurement system. This may be defined as the ratio of the number of valid samples collected to the total number of samples collected in the field. For the laboratory, this may be defined as the ratio of the number of samples measured for a specific analyte which meets quality assurance goals to the total number of samples measured for a specific analyte. Target completeness will be 90 percent and will be reported as part of the sampling data.

B. Sample Collection Procedures

The quality of the data collected in an environmental study depends upon the quality of sampling activities. Field operations must be well conceived, carefully implemented, and completely documented. This workplan provides a detailed description of the work to be performed. To ensure that appropriate QA/QC occurs, the subfacility must provide Ecology documentation of field quality control samples, sampling containers to be used, preservations, and holding times. Such documentation shall include the use of rinsate samples, and blind duplicates. The proposed QA/QC shall be provided to Ecology for approval prior to sampling activities.

At a minimum the QA/QC will discuss the following: Analytical Procedures, Chemical Analyses/Detection Limits, Timeliness, Reagent Blanks, Matrix Spikes and Matrix Spike Duplicates, Surrogate Spikes, Data Validation, and QA Audits.

C. Custody/Shipping Plan

1. Objective

To establish chain-of-custody procedure for sample processing from collection through shipping.

2. Background

Sample custody procedures include inventory and documentation during sample collection, shipment, and laboratory processing. A sample is considered in one's possession if the sample is:

* In the physical possession or view of the responsible party, or
* Secured to prevent tampering, or
* Placed in a restricted area by the responsible party

Chain-of-custody in the field is established by unique identification of samples using sample labels, followed by recording of sample disposition data on chain-of-custody forms. The transfer of samples from the field to the laboratory and through the testing process is documented using chain-of-custody procedures.

3. Personnel Required and Responsibilities

The Field Operations Manager is responsible for ensuring that field personnel have been trained in the use of this procedure and for verification that sample custody procedures are in accordance with this procedure.

4. Equipment Required

* Sample labels & Indelible ink pens
* Sample Data & Analysis Required forms
* Sample Log form
* Request for Analysis form
* Custody Seals

5. Procedure

Sample Numbers

1. Sample vial label may be attached to sample vial either at sample collection time or in advance.
2. Assign a unique sample number to each sample collected in the field (may be done in advance).
3. Upon obtaining the sample, record the sample number and other required information on the:
   a. Sample label.
   b. "Sample Data & Analysis Required" form.
   c. Sample Log form.
4. When a cooler is ready for shipment to Manchester Laboratory (Ecology) or other acceptable laboratory, the following documents shall be sealed in a plastic bag and taped inside the lid of the cooler containing the samples:
   a. Request For Analysis
   b. Sample Data & Analysis Required

Overnight Storage/Transport to Laboratory

Should overnight storage of sample containers be necessary, PLPs or their representatives shall assure that coolers containing the sample vials are stored in a secured area. For Ecology's sampling events, sample vials shall be stored in a locked vehicle inside the secured and restricted Ecology parking area at 106 South 6th Avenue in Yakima. The coolers within the vehicles shall also be sealed with a Custody Seal. Coolers shall be similarly sealed during transport to Manchester Laboratory.

Chain of Custody Record

The Chain of Custody Record represents the official documentation for all transfers of sample custody until the samples have arrived at the laboratory. Chain of Custody Record is used to document the integrity of samples.

When relinquishing custody of samples, sign the "Chain of Custody Record" section within the "Sample Data & Analysis Required" form. The individual receiving the samples will do the same.

VII. Health and Safety Plan

Purpose

This Health and Safety Plan provides policies and procedures to protect Ecology personnel from the potential hazards posed by work at the Yakima Railroad Area and its subfacilities. The Health and Safety Plan provides measures to minimize potential exposure, accidents, and physical injuries which may occur during daily on-site activities and during adverse conditions. Steps to be taken during emergencies are also provided.

This Health and Safety Plan was developed by Ecology for Ecology employee use. The plan consists of two parts: 1) Integrated Health and Safety Policy for HWICP Field Employees, and 2) a site specific or Assignment Specific health and Safety Plan. Part 1: The Integrated Health and Safety Policy for HWICP Field Employees is available at the Ecology Yakima Regional Office. Part 2: follows with site specific information regarding the YRRA and its subfacilities.

Site specific Health and Safety Plan

A. General Information

Site Name: Yakima Railroad Area (YRRA)

Address\Facility Description: In general the YRRA area is bound northerly by Lincoln Avenue; easterly by the irregular trace of 4th Street to Pacific Avenue; 10th Street to Nob hill Boulevard; Rudkin Road to Valley mall Boulevard; a line running due south from the southern end of Rudkin road to the point where it intersects a line running due east from the eastern end of Ahtanum road; and westerly by the irregular trace of 3rd Avenue to West Washington Avenue and 8th Avenue to Summitview Avenue; then Pierce Street to Lincoln Avenue (northern boundary).

Subfacility Addresses:

Fifth Wheel Truck Repair
307 East Arlington
Yakima, WA 98901

Frank Wear Cleaners
106 South Third Street
Yakima, WA 98902

Nu-Way Dry Cleaners
801 South Third Street
Yakima, WA 98901

Hahn Motor Company
1201 South First Street
P.O. Box 382
Yakima, WA 98907

Paxton Sales Corporation
108 West Mead Avenue
Yakima, WA 98901

B. Emergency Contacts

- Fire: 911
- Police: 911
- Medical Aid: 911
- Ecology Health & Safety Officer:
  Mark Layman 454-7829
- Ecology Site Manager: Rick Roeder 454-7837
- Nearest Hospital: Memorial Hospital 575-8100
  2811 Tieton Drive, Yakima

  St. Elizabeth Hospital 575-5000
  110 S. Ninth Avenue, Yakima

Figure 2 shows the location of the medical facilities in the Yakima Railroad Area.

C. Site Activities

The objective of site activities for the YRRA and its subfacilities is to complete the Remedial Investigations and Feasibility Studies. This is followed by cleanup actions.

- **work zones:**

See Section II.

- **ingress and egress routes:**

Arrive at and depart from sampling locations through public roads/streets. For the subfacilities, ingress and egress routes will be common access roads, driveways, and alleys.

- **areas of suspected contamination:**

The major contaminant of concern for the YRRA is PCE or Perc (Tetrachloroethylene) in soils and groundwater. The PEL (Permissible Exposure Level) for PCE is 100 ppm.

For the remainder of the YRRA, ground water is suspected to be potentially contaminated with Tetrachloroethylene at concentrations which exceed the Drinking Water Limit of 5 ppb. Soils are also suspected to be potentially contaminated with Tetrachloroethylene at varying levels.

- **location of emergency equipment:**

A first-aid kit and fire extinguisher will be located at the on-site state vehicle. These vehicles are to be driven only by Ecology employees and will be at the sampling location at all times until completion of the sampling activity.

- monitoring equipment used:

Photovac TIP meter

- decontamination procedures

Decontamination procedures may be by washing/rinsing in sequential buckets or by steam cleaning. If washing is by sequential buckets, the equipment will include scrub brushes, a TSP (Tri Sodium Phosphate) cleaner (for equipment only), a portable sprayer filled with water, and disposal containers for contaminated clothing and equipment.

If decontamination is by steamcleaner, an appropriately lined area shall collect the rinse water. It will then be adequately collected and stored in containers.

In the case of employee contamination, the contaminated clothing will be removed, and any contaminated areas of the employee will be cleaned by soap pump container and flushed with water as necessary.

D. Health & Safety Hazards

Toxic Hazards/Air Monitoring

Sample locations will be throughout the YRRA. It is anticipated that potential exposure resulting from inhalation of volatile organic compounds (VOCs) is extremely minimal. A Photovac TIP meter will be carried by each sampling team and team members will be alert to potentially dangerous warning signs, such as strong odors, and irritating vapors which may prompt an immediate air measurement.

In the case of any Photovac TIP meter reading in excess of 200 ppm, all employees will evacuate the sampling area. Subsequent work will require the use of respirators.

Physical Hazards

The potential physical hazards listed below will be discussed with personnel prior to commencing field activities. Site personnel will be briefed to be constantly on the lookout for potential physical safety hazards. Physical hazards that may be encountered include:

- Animals and Insects

  Some animals and insects can and will bite if disturbed. Avoidance is the best solution to this potential problem.

- Existing Objects or Terrain

  Existing objects or terrain can present safety hazards in the form of:

  - Holes and ditches
  - Sharp objects such as nails, broken glass, and lumber
  - Slippery surfaces

- Fire and Explosion

  The most likely cause of fire or explosion on site would be the introduction of an ignition source into an explosive or flammable environment. This is an extremely remote possibility during this sampling program. Air monitoring equipment will give an indication before a LEL is reached. Field personnel will be advised that smoking is prohibited.

- Cold Stress/Heat Stress

  Cold temperatures, light to strong winds, and rain can be expected. Adequate protective clothing to ensure warmth will be necessary. Work and break schedules will be set depending on the ambient weather conditions.

- Acid Burns

  Severe burns may result from contact with 1+1 HCl preservative solution. **Extreme caution** shall be used when handling. Latex gloves and/or Nitrile gloves and goggles shall be appropriately utilized. Decontamination will be per decontamination procedures stated earlier in this Section.

- Other Physical Hazards

  Other physical hazards associated with the fieldwork in this remedial investigation may include: disturbance of underground utilities; noise produced during drilling; contact hazards associated with drilling including tripping, falling, or slipping.

E. Level of Protection Required

Level D protection will be utilized for the YRRA and its subfacilities. Elevated concentrations of organics or other contaminants may necessitate upgrading to Level C.

F. Personal Protective Equipment

The following personal protective equipment will be worn by personnel working on this sampling effort:

PP Equipment	Tasks Requiring
Safety Shoes/Boots (steel toe and shank)	All
Hard Hat	Around piping, or areas where head, facial "bumping" potential exists
Nitrile Gloves	**Sampling (optional)**
Latex Gloves	Sampling
Safety Glasses	Sampling

The above is suitable for Level D sampling

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In the unlikely event that Level C sampling is necessary, required additions to the above Level D requirements will be:

- respirator with organic vapor cartridge (GMC-H)
- poly-coated Tyvek or Tyvek/Saranex over personal garments
- nuke boots or boot covers
- latex and nitrile gloves

Also, Level C sampling must be conducted with a minimum two person team.

All personnel involved in sampling activities in which the potential for chemical exposure or physical exertion exists must be enrolled in the Ecology Medical Monitoring Program and have completed their 40 hour Health & Safety Training Course.

This plan shall be in the possession of field personnel and readily available at each sampling location.

G. Safety meetings

A presampling meeting shall occur to review the contents of this Health and Safety plan. All field participants and observers must read this plan and sign a certification stating that they agree to comply with all the Plan conditions.

H. Toxics Cleanup Program Safety Plan

In addition to the requirements of this YRRA site Health and Safety Plan, Ecology employees working in activities associated with the YRRA will meet the requirements of the Toxics Cleanup Program Safety Plan. This Plan is available at the Ecology office, 106 S. 6th Ave, Yakima, WA, 98902.