INDEPENDENT REMEDIAL ACTION REPORT

CASE POWER AND EQUIPMENT

SUNNYSIDE, WASHINGTON

Prepared for

Case Corporation

January 24, 1995

Prepared by

EMCON
West 7106 Will D. Alton Lane, Suite 101
Spokane, Washington 99204

Project 0914-007.02

CONTENTS

TABLES AND ILLUSTRATIONS

1 INTRODUCTION

This report summarizes the activities under independent remedial action at the Case Power and Equipment dealership located at 405 Scoon Road, in Sunnyside, Washington (site). The work was conducted by EMCON on behalf of the Case Corporation of Racine, Wisconsin, the previous operator (lessee) of the property. The current operator of the property (lessee) is JRJ Equipment of Pasco, Washington. The property is owned by Mr. Gerrit Schilperoort of Sunnyside, Washington. See Figure 1-1 for a Vicinity Map.

The subject site was reportedly developed in 1958 by Mr. Schilperoort. The site was previously operated as an International Harvester Facility from 1958 to 1976, Empire Equipment from 1976 to 1981, Deruyter Equipment from 1981 to 1987 and Case Power and Equipment from 1987 to December 1994. The site is currently leased by JRJ Equipment.

Remedial action conducted at the site consisted of the excavation and off-site disposal of petroleum impacted soils and the documentation of existing site conditions. EMCON conducted the work for Case Corporation as an independent action under the State of Washington's Model Toxic Control Act (MTCA).

This independent remedial action report has been prepared in accordance with MTCA requirements for reporting independent remedial actions (WAC 173-340-300 (4), WAC 173-340-450 (24), and WAC 173-340-450 (8)). This report generally follows the outline presented in the Washington Department of Ecology's (Ecology) *Guidance on Preparing Independent Remedial Action Reports under MTCA.*

This report summarizes the site characterization and independent remedial actions conducted at the site.

2 SITE BACKGROUND

2.1 Project Site Description/Background

The site is located at 405 Scoon Road in the City of Sunnyside, Yakima County, Washington. The property is approximately two acres in size and slopes slightly to the east with less than five feet of vertical relief across the site. See Figure 2-1 for a Vicinity Map.

There is a steel and block structure (main building) located in the north central portion of the property and a wood frame storage building located along the northern property boundary. The main building, approximately 10,400 square feet in size, houses the retail parts, sales, and service portions of the business. The storage building houses the bulk consumable storage area and is approximately 800 square feet in size. The remainder of the site is used for equipment display purposes and outdoor storage. See Figure 2-2 for a Site Map.

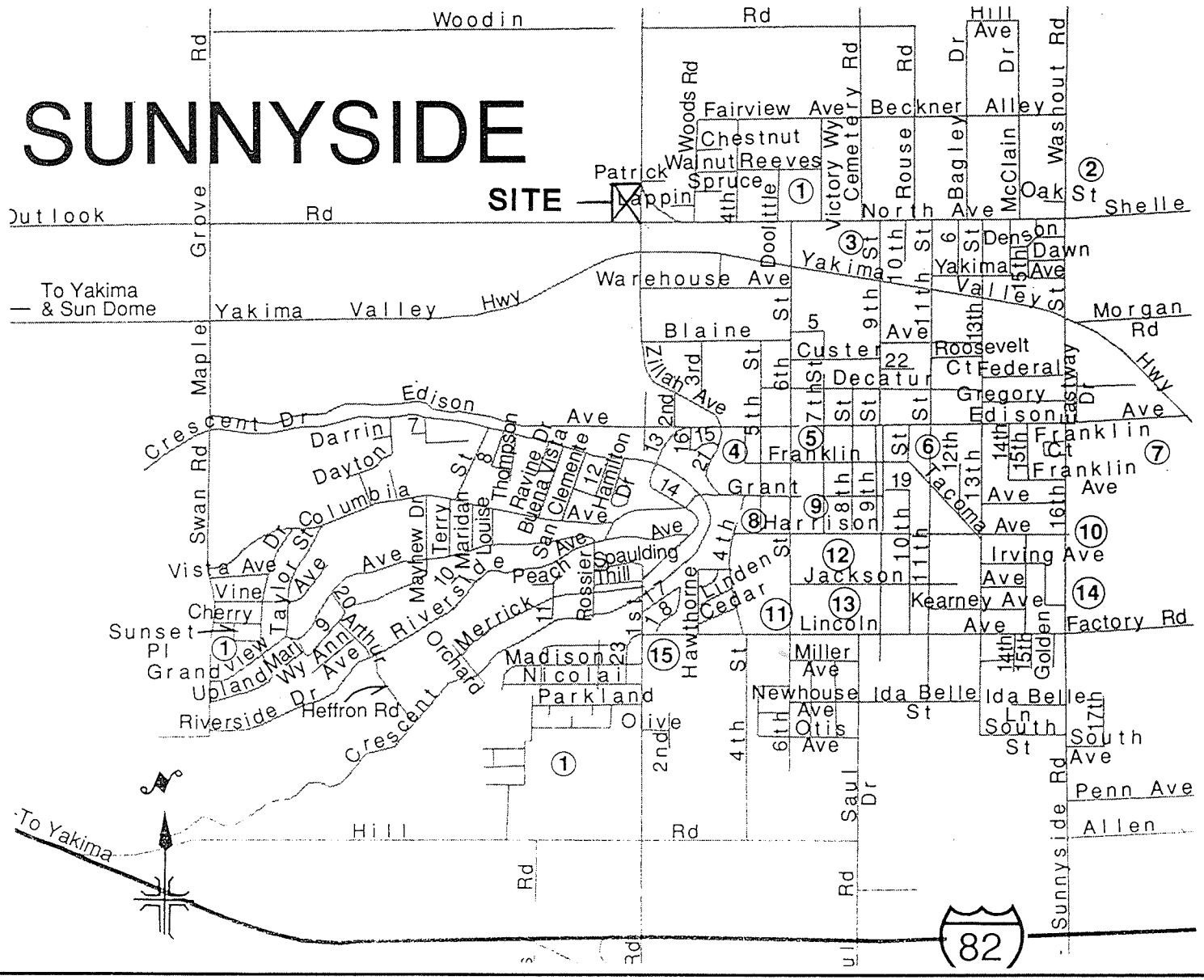
The main building has a concrete floor and is heated by overhead natural gas heaters. The storage building is not enclosed, has a soil floor, and is not heated. Natural gas is provided by Cascade Natural Gas, electrical power to the site is supplied by Pacific Power and Light via overhead connections, and the facility is connected to the Sunnyside municipal water and sanitary sewer system.

The areas immediately adjacent to the buildings and the high traffic areas are covered with crushed rock and gravel. The equipment preparation/steam cleaning pad, located west of the main building is constructed of concrete. The remainder of the site is native soil.

Sparse vegetation was noted at the site at the time of the site reconnaissance.

Land use adjacent to the site consists of a welding supply store to the north: Scoon Road, vacant land and a Washington State Patrol office to the east: a horse trailer and supply store to the south: and residential property to the west. The subject site is zoned for commercial use.

JRJ Equipment Company purchased the dealership in December 1994. Prior to Case Corporation vacating the site, a Phase 1 Environmental Assessment Update was conducted by EMCON to document site environmental conditions.



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J I CASE
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VICINITY MAP
FIGURE 2-1

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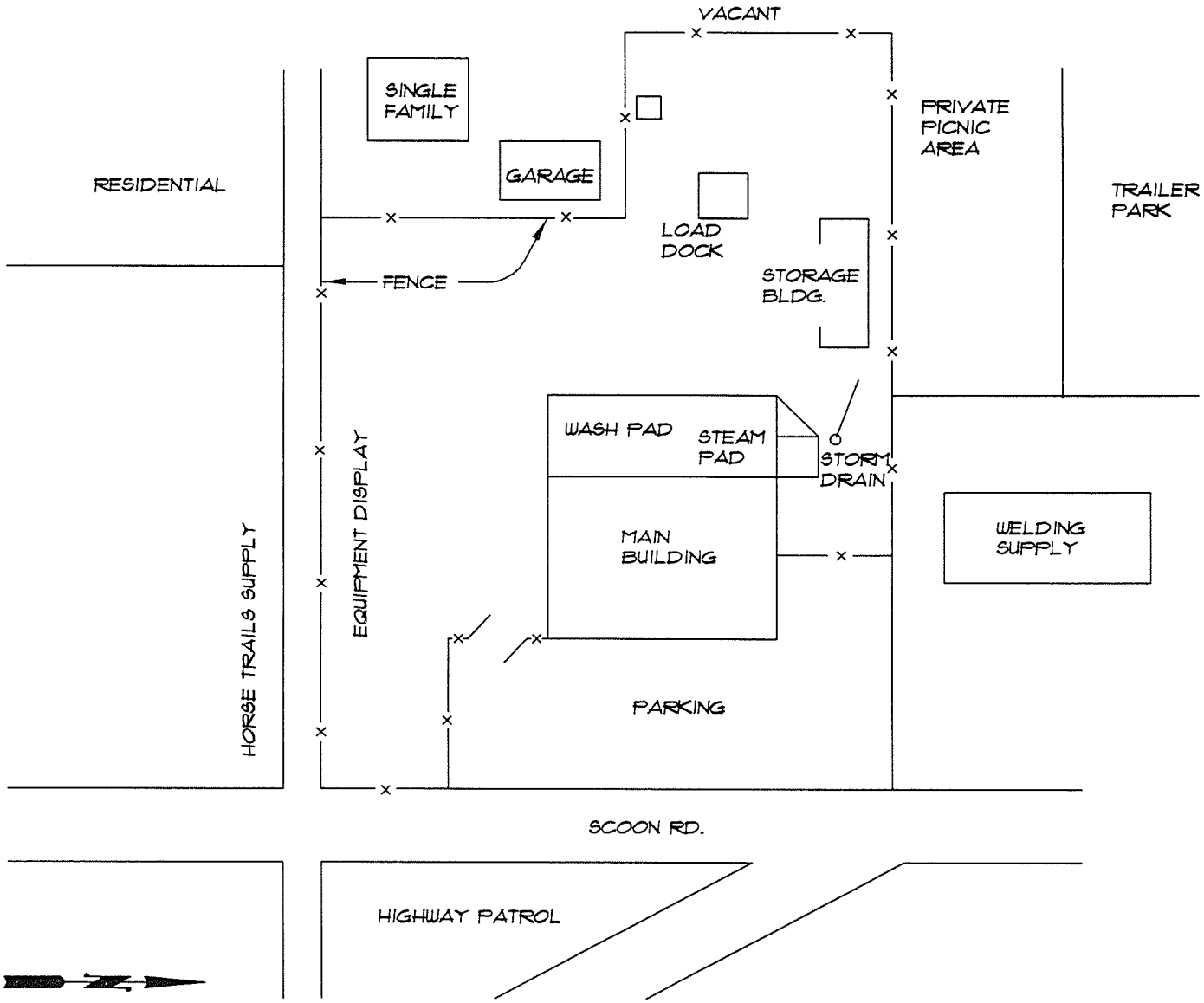

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J I CASE
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SITE PLAN
FIGURE 2-2

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The Phase 1 Environmental Assessment Update, dated September 13, 1994, identified three main areas of concern. The first area was located along the western interior of the bulk storage building. The second area was located west of the main building adjacent to the equipment preparation/steam cleaning pad. The third area was located south of the main building. All three areas were identified as having total petroleum hydrocarbon (TPH) impacted soils.

A follow up site investigation (see Section 3) was performed to evaluate these areas.

2.2 Topography and Subsurface Soil Conditions

The subject site is relatively level with less than five feet of vertical elevation difference across the site. The site is located in the ancient flood plains of the Yakima River.

Subsurface soils at the site consisted mainly of very silty sands, sandy silts, silts, and clays. These soils appeared to be alluvium in nature as they were deposited in horizontal layers of varying thickness. Ground water in the general vicinity is reportedly five to ten feet below grade. A local drainage ditch is located approximately one-quarter mile west of the site. This ditch is approximately six to seven feet below the surrounding land and was reported to contain water at all times of the year.

3 SITE INVESTIGATION

The initial site investigation, conducted on October 4, 1994, focused on the collection of surface or shallow subsurface soil samples in the three areas of concern identified in the Phase 1 report.

One soil sample from the bulk storage area, three soil samples from the area adjacent to the washpad, and three surface samples from across the site were collected for analysis. See Figure 3-1 for the initial site investigation sample locations.

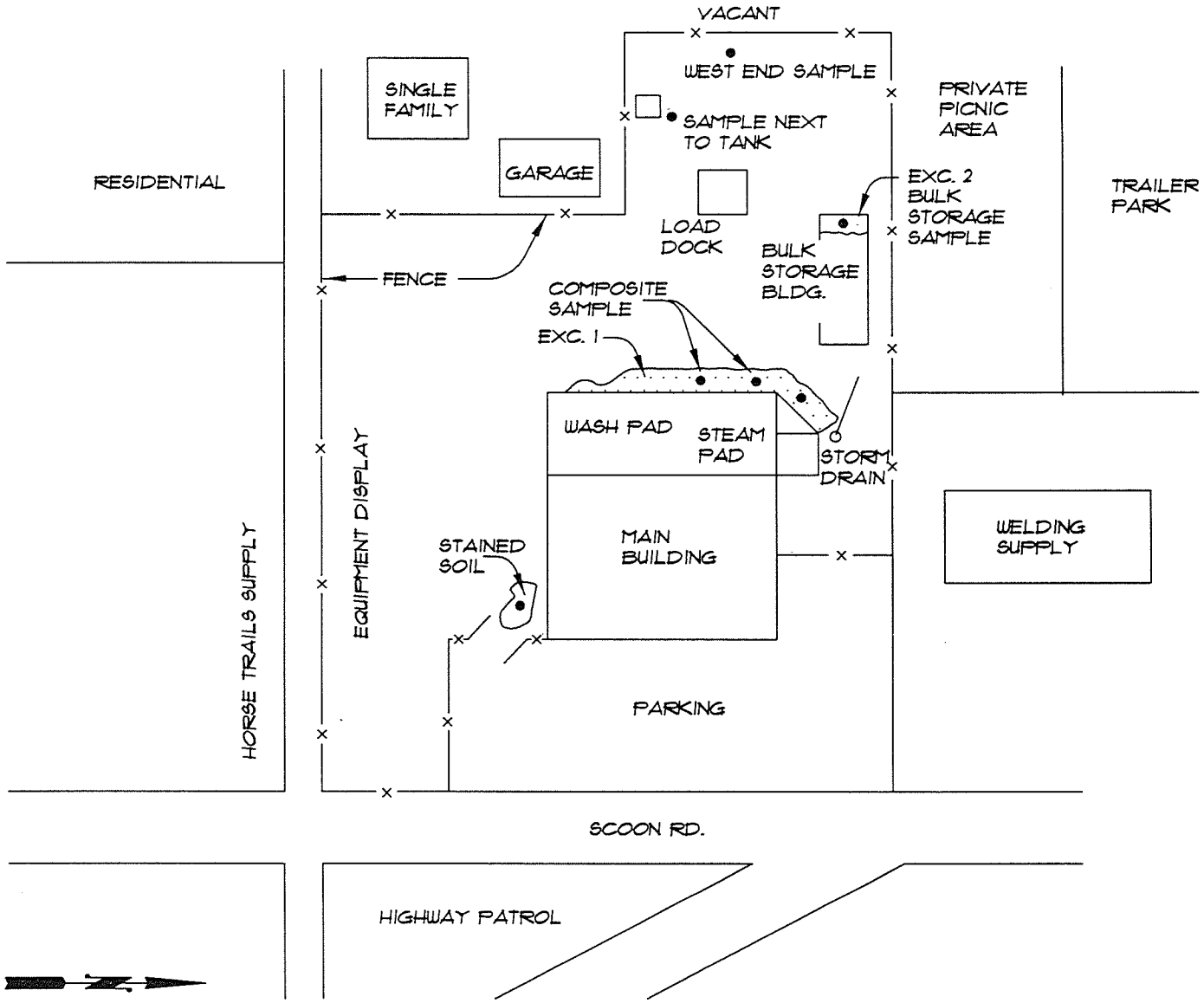
Recovered soil samples were sent to Columbia Analytical Services (CAS) in Kelso, Washington for analysis. Samples were analyzed for total petroleum hydrocarbons (TPH) by Environmental Protection Agency (EPA) Test Method 3550/8015 Modified (Hydrocarbon Scan).

Laboratory results did not indicate concentrations of gasoline, mineral spirits, jet fuel, kerosene, or diesel at or above the method reporting limits (MRLs). Test results did indicate elevated TPH levels, quantified using 30-weight motor oil as a standard, in four of the five samples tested. Laboratory test results are summarized in Table 3-1.

Table 3-1
Analytical Test Results for
Total Petroleum Hydrocarbons (mg/kg)

	TPH[a]					
	Gasoline	Mineral Spirits	Jet Fuel	Kerosene	Diesel	Other[b]
Method Reporting Limit	10	10	10	10	10	20
Sample Location						
Washpad Composite (3)	ND	ND	ND	ND	ND	56,000
Bulk Storage	ND	ND	ND	ND	ND	1,500
Surface Sample West End	ND	ND	ND	ND	ND	400
SW Corner Adjacent to Square Tank	ND	ND	ND	ND	ND	59
South of Building (STAINED Soil)	ND	ND	ND	ND	ND	15,000

Notes:
[a] = TPH (Hydrocarbon Scan) EPA Method 3550/8015M, results reported on a dry weight basis
[b] = Other quantified using 30 weight motor oil as a standard



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J I CASE
SUNNYSIDE, WASHINGTON
INITIAL SITE INVESTIGATION SAMPLING LOCATIONS
FIGURE 3-1

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Mr. Butch Heitzman, the facility manager, indicated elevated TPH results from soil sampling adjacent to the square tank and south of the main building most likely resulted from dust control measures undertaken at the site. Mr. Heitzman indicated that an outside contractor had been hired to apply a surface coating to the site soils to reduce the potential for nuisance dust. Mr. Heitzman further indicated that the area south of the building was one of the areas where surface water ponded during rainfall events. The ponding water may have concentrated some of the surface caoting in these low areas. This increased concentration accounted for the soil staining observed during the site investigation.

The other positive sample results were identified as being associated with the the bulk storage activities in the secondary building and the steam cleaning activities conducted on the concrete pad along the west end of the main building

Based on the TPH analytical test results, it was determined that soil clean-up was necessary at the site. This work would include soil removal at the following locations where TPH concentrations above MTCA Method A levels was documented:

- impacted soils in the bulk storage area,
- impacted soils adjacent to the steam cleaning pad,
- impacted soils south of the main building and along the west end of the property

In addition to the TPH analysis conducted on the composite sample from adjacent to the steam cleaning area, a total metals analysis (EPA 6000 - 7000 Method Series) was also conducted to evaluate the potential for metals contamination. This was performed due to the potential for a build up of metals in the soils adjacent to the pad as a result of the percolation of steam cleaning water through the soils. The water may have contained minor amounts of metals which were removed from equipment during the cleaning.

The test results did not indicate concentrations of antimony, beryllium, mercury, selenium, and silver at or above the MRLs. Test results did indicate concentrations of arsenic, cadmium, chromium, copper, lead, nickel, and zinc above the method reporting limits. However, with the exception of cadmium, the reported concentrations were not above the MTCA Method A cleanup values.

Cadmium was reported at a concentration of 12 mg/kg. The MTCA Method A cleanup value for cadmium is listed as 2.0 mg/kg. The footnote for the MTCA Method A listing states "cleanup level based on plant protection". Since there are no plants at this facility, cadmuim would not pose a site-specific concern. However, surface soils adjacent to the Washpad were to be excavated due to the high TPH levels noted previously in this report.

As a result of this excavation (See Section 4), soil impacted by cadmium has removed. Laboratory results for the total metal analysis are summarized in Table 3-2:

Table 3-2
Analytical Test Results for
Total Metals (mg/kg)

			Washpad Composite
Analyte	EPA Method	MRL	
Antimony	6010A	10	ND
Arsenic	7060	1	4
Beryllium	6010A	1	ND
Cadmium	6010A	1	12
Chromium	6010A	2	26
Copper	6010A	2	221
Lead	6010A	20	237
Mercury	7471	0.2	ND
Nickel	6010A	10	18
Selenium	7740	1	ND
Silver	6010A	2	ND
Thallium	7841	10	ND
Zinc	6010A	2	342
Notes: Results reported on a day weight basis.			

4 SITE REMEDIATION

Equipment was mobilized on October 27, 1994, to remediate or to further evaluate the extent of the contamination identified in the site investigation conducted on October 4, 1994. Site remediation activities included:

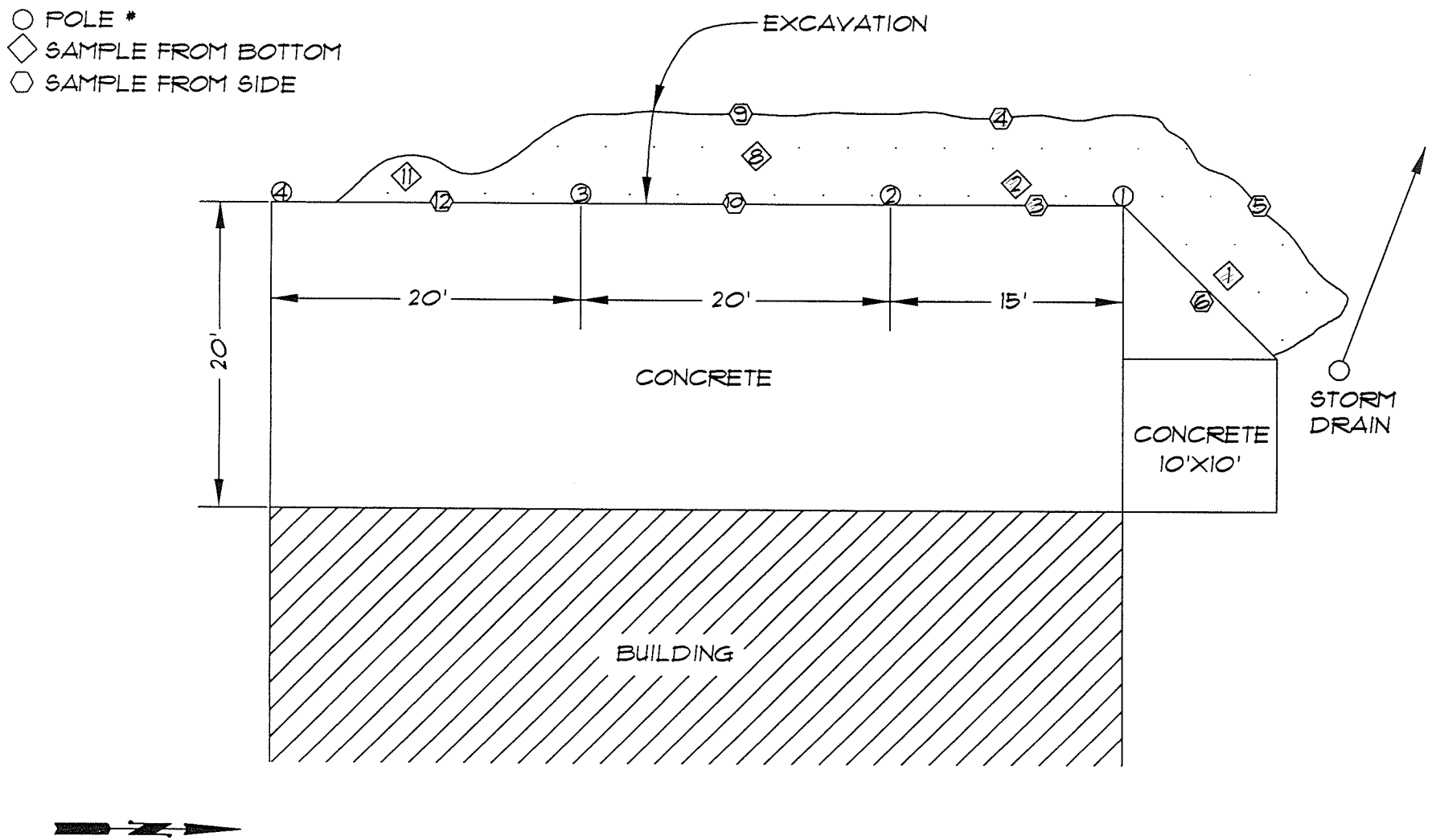
- impacted soil excavation adjacent to the steam cleaning pad
- impacted soil excavation inside the bulk storage building
- impacted soil excavation south of the main building and along the west end of the property
- Soil disposal at Columbia Ridge Landfill in Arlington, Oregon.

A summary of site remediation activities by area is presented below.

4.1 Steam Cleaning Pad Area

A backhoe was used to excavate a pit adjacent to the steam cleaning pad. Soils encountered immediately below the surface consisted of fine grained silts and sands with some clays intermingled. The soils encountered were grey, apparently stained, and exhibited an oily odor. Soils produced a sheen when mixed with water. The remainder of the area adjacent to the steam cleaning pad was going to be excavated, however, inclement weather (rain) and the potential for the excavation to fill with water creating a larger problem, forced the excavation to be backfilled with the previously excavated material.

Re-excavation of the area adjacent to the steam cleaning pad began at approximately 8:00 a.m. on October 31, 1994. The excavation began immediately west of the storm drain located along the north side of the pad. The excavation was approximately five feet in depth, 50 feet in length, and four feet in width (See Figure 4-1). Soils were excavated to just above first ground water, at which point native soils without obvious staining were encountered. Soil samples were collected from the bottom and sidewalls of the excavation and submitted to CAS for analysis. The excavation was backfilled with approximately 139 tons of clean fill and 32 tons of top coarse gravel. The site was graded and the excavation area cleaned on November 1, 1994. Approximately 150 tons of impacted soil were stockpiled on-site.



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J I CASE
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EXCAVATION AND SAMPLING MAP
FIGURE 4-1

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4.2 Bulk Storage Area

On October 27, 1994, approximately six-inches of soil from the west end of the bulk storage area was excavated and stockpiled along the west end of the property. Two composite soil samples were collected from the bottom of the 10 foot by 30 foot excavation and submitted to Columbia Analytical Services (CAS) for analysis.

4.3 Surface Soils

On December 29, 1994, the area south of the main building was scrapped with a backhoe to remove the uppermost soils which were observed to be stained. The upper two to three inches of soil were removed from this area and placed in the soil stockpile. The same process was completed along the west end of the property on January 12, 1995. The west end of the property was scrapped after the removal of the stockpiled soil.

4.4 Soil Disposal

On December 29, 1994, approximately 124 tons of the stockpiled soil was loaded into trucks and transported to Columbia Ridge Landfill. The remaining 25 tons of soil was removed and transported to Columbia Ridge Landfill on January 12, 1995. A copy of the Certificate of Disposal is presented in Appendix B.

5 CONFIRMATION TEST RESULTS

Fourteen confirmatory soil samples were collected during the site remediation activities (Figure 4-1). Two soil samples were collected from the bottom of the excavation in the bulk storage area and were analyzed for TPH by EPA Methods 3540/8015 Modified. Twelve additional samples were collected from the excavation adjacent to the steam cleaning pad. These samples were analyzed for TPH by the Washington Department of Ecology Method WTPH-HCID. Due to an elevated volatile organic vapor reading with a photoionization detector during the field screening of recovered samples, Sample 3 from this excavation was also analyzed for volatile organic compounds by EPA Method 8260.

Analysis of confirmatory samples collected from beneath the excavation in the bulk storage area did not indicate concentrations of gasoline, mineral spirits, jet fuel, kerosene or diesel above the MRL of 10 mg/kg.

TPH, quantified using 30-weight motor oil, was identified in one confirmatory sample at a concentration of 65 mg/kg. The second sample did not contain TPH above the MRL of 20 mg/kg. Sample results from the bulk storage area are summarized in Table 5-1.

Table 5-1
Confirmatory Samples
Bulk Storage Area (mg/kg)

		TPH[a]					
		Gasoline	Mineral Spirits	Jet Fuel	Kerosene	Diesel	Other
Sample	MRL	10	10	10	10	10	20
1		ND	ND	ND	ND	ND	ND
2		ND	ND	ND	ND	ND	65

Notes: ND = not detected at or above MRL
[a] = quantified by EPA Methods 3540/8015 Modified

Analytical test results of the confirmatory samples collected in from the excavation adjacent to the steam cleaning pad indicated TPH levels above the MRLs in two samples, Sample 3 collected from the east wall and Sample 7 collected from the sidewall. (See Figure 4-1 for soil sample locations.)

Further analysis using Washington Department of Ecology Method WTPH-D indicated Sample 3 had a TPH (diesel) concentration of 23,000 mg/kg and a TPH (oil) concentration of 4,200 mg/kg. Sample 7 was reported to have a TPH (diesel) concentration of 60 mg/kg and a TPH (oil) concentration of 167 mg/kg. Analytical test results from the soil samples collected during the remediation activities are summarized in Table 5-2.

Table 5-2
Confirmation Soil Samples
Excavation Adjacent to Steam Cleaning Pad (mg/kg)

		TPH[a]		
		Gasoline	Diesel	Oil
Sample	MRL	20	50	100
1-Bottom		ND	ND	ND
2-Bottom		ND	ND	ND
3-East Wall		ND	23,000[b]	4,200[b]
4-West Wall		ND	ND	ND
5-Northwest Wall		ND	ND	ND
6-Southeast Wall		ND	ND	ND
7-Side Wall		ND	60[b]	167[b]
8-Bottom		ND	ND	ND
9-West Wall		ND	ND	ND
10-East Wall		ND	ND	ND
11-Bottom		ND	ND	ND
12-East Wall		ND	ND	ND

Notes: ND = not detected at or above MRL
D = detected at or above MRL
[a] = analyzed by TPH-Hydrocarbon Identification (DOE Method WTPH-HCID)
[b] = analyzed by Washington Department of Ecology WTPH-D Method

Due to an elevated photoionization detector reading encountered while field screening Sample 3, it was also analyzed for volatile organic compounds by EPA Method 8260. The concentrations of the chemicals positively identified in the analytical testing were not above the MTCA Method A soil cleanup levels or there were no Method A soil cleanup levels for the identified chemicals. The only three analytes positively identified were xylenes (6.2 mg/kg), 1, 2, 4 - trimethylbenzene (14 mg/kg), and naphthalene (18 mg/kg). The remaining chemicals were not detected at or above the MRLs. The MRLs were slightly elevated due to matrix interferences and the elevated levels of napthalene in the sample. Complete analytical reports have been included in Appendix A for your review.

Significant quantities of impacted soil are not believed to be present at the site. This is due to the low concentration of the detected analytes in Sample 3, the lack of elevated photoionization detector readings during the field investigation, and the non detected levels of TPH in the other soil samples collected from the sides and bottom of the excavation.

6 EXPLANATION OF REMEDIAL PLAN

6.1 Selection of Cleanup Standards

This work was conducted using Washington MTCA Method A Cleanup Criteria for soil at the site. The point of compliance was the limit excavation.

6.2 Rationale for Selected Plan

Due to the change in ownership of the business at the facility, the lack of remedial options for TPH (oil) contamination, and the small volume of impacted soil, excavation and off-site disposal was selected.

Excavated soil was temporarily stockpiled on-site pending disposal characterization. Approximately 150 tons of TPH-impacted soil were disposed of at Columbia Ridge Landfill in Arlington, Oregon.

Impacted soils at the site, with the exception of the east of the excavation adjacent to the washpad, were remediated to MTCA Method A clean-up levels. Soil along the east wall of this excavation, exceeding MTCA Method A clean-up levels, was left in place since additional site remediation would impact the integrity of existing structures (i.e. the concrete pad and overhang structure west of the main building.) Proposed institutional controls are presented in the next section of this report to mitigate the potential migration of petroleum hydrocarbons at the site.

Additionally, due to the low concentration of TPH, non detected, in the soil samples collected from the bottom of the excavation, a groundwater investigation was not conducted.

7 INSTITUTIONAL CONTROLS

Work performed on behalf of the Case Corporation has identified petroleum impacted soils at this facility. Subsequent work has removed these impacted soils from the site, with the exception of the soil beneath the concrete slab and overhang of the site structure.

New operation procedures have been implemented by the current business owner which do not allow steam cleaning in the area west of the main building. Additionally, the new operator is in the proces of designing a new steam cleaning pad which will be equipped with an oil/water separator and connected to the city sewer system. This washpad will be located along the south side of the building.

Case proposes to notify the new business owner of all environmental activities at the site by copying all correspondence between the DOE and Case. Additionally, the business purchase agreement will contain the pertinent information regarding the environmental activities at the site.

8 SUMMARY

8.1 Site Investigation

Based on the information collected in a Phase 1 Environmental Assessment Update, conducted by EMCON to document site environmental conditions, an investigation consisting of soil sampling was conducted at the site. Work during the site investigation consisted of sample collection in three primary areas. The first area was located along the western interior of the bulk storage building. The second area was located west of the main building adjacent to the equipment preparation/steam cleaning pad. The third area was located south of the main building and along the western boundary of the property.

Analytical testing verified that all three areas were impacted with TPH above MTCA Method A cleanup levels.

8.2 Site Remediation

Based on the results of the site investigation, remediation of the areas impacted with TPH was deemed necessary. Site remediation activities included:

- excavation of impacted soil adjacent to the steam cleaning pad
- excavation of impacted soil inside the bulk storage building
- excavation of impacted soil adjacent to the main building and along the west end of the property.

The above work resulted in the excavation of approximately 150 tons of petroleum impacted soils. These soils were stockpiled on-site and eventually transported to Columbia Ridge Landfill, Arlington, Oregon.

8.3 Confirmation Sampling

Analytical test results of the confirmatory samples collected from the bulk storage area indicated the are has been remediated below MTCA Method A cleanup levels for TPH.

Analytical test results of the confirmatory samples from the excavation adjacent to the steam cleaning pad indicate levels of contamination in the excavation sidewalls and bottom, with the exception of Sample 3, have been reduced below MTCA Method A cleanup levels.

Excavation was conducted to the maximum extent possible given the location of existing site structures. An area of impacted soil was left in place along the east wall of the excavation adjacent to the old washpad. (The washpad is no longer used and the new Lessee is in the process of designing a washpad which will be connected to the Sunnyside sanitary sewer). TPH-oil and TPH-diesel were detected on the east sidewall at concentrations of 4,200 and 23,000 mg/kg, respectively.

Analytical test results from the soil samples collected from the bottom of the excavation did not indicate concentrations of TPH above the MRLs. Therefor, a groundwater investigation was not conducted.

In summary, the Phase I Site Assessment Update identified soils with TPH contamination above MTCA Method A cleanup values. These soils have been removed from the site (except for areas where structure integrity would be impacted).

Based on the work performed to date, the results of the confirmatory sampling and testing, and site observations, it appears that further remedial activities associated with the site are unwarranted.

LIMITATIONS

The services described in this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, nor the use of segregated portions of this report.

The purpose of an environmental assessment is to reasonably evaluate the potential for or actual impact of past practices on a given site area. In performing an environmental assessment, it is understood that a balance must be struck between a reasonable inquiry into the environmental issues and an exhaustive analysis of each conceivable issue of potential concern. The following paragraphs discuss the assumptions and parameters under which such an opinion is rendered.

No investigation is thorough enough to exclude the presence of hazardous materials at a given site. If hazardous conditions have not been identified during the assessment, such a finding should not therefore be construed as a guarantee of the absence of such materials on the site, but rather as the result of the services performed within the scope, limitations, and cost of the work performed.

Environmental conditions may exist at the site that cannot be identified by visual observation. Where subsurface work was performed, our professional opinions are based in part on interpretation of data from discrete sampling locations that may not represent actual conditions at unsampled locations.

Except where there is express concern of our client, or where specific environmental contaminants have been previously reported by others, naturally occurring toxic substances, potential environmental contaminants inside buildings, or contaminant concentrations that are not of current environmental concern may not be reflected in this document.

APPENDIX A

ANALYTICAL TEST RESULTS

Columbia Analytical Services, Inc.

October 21, 1994 Service Request No.: K946148

Jeff Lower
EMCON Northwest, Inc.
W 7106 Will D. Alton Lane, Suite 108
Spokane, WA 99204

Re: **Case Sunnyside Project**

Dear Jeff:

Enclosed are the results of the sample(s) submitted to our laboratory on October 6, 1994. For your reference, these analyses have been assigned our service request number K946148.

All analyses were performed consistent with our laboratory's quality assurance program. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the samples analyzed.

Please call if you have any questions. My extension is 260.

Respectfully submitted,

Columbia Analytical Services, Inc.

Janice M. Sedlak

Janice M. Sedlak
Project Chemist

JMS/sam

1317 South 13th Avenue • P.O. Box 479 • Kelso, Washington 98626 • Telephone 206/577-7222 • Fax 206/636-1068

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON Northwest
Project: Case Sunnyside
Matrix: Soil

Date Received: 10/6/94
Work Order No.: K946148

Total Metals
mg/kg (ppm)
Dry Weight Basis

			Sample Name:	Washpad Composite	Method Blank
Analyte	EPA Method	MRL	Lab Code:	K614804	K6148MB
Antimony	6010A	10		ND	ND
Arsenic	7060	1		4	ND
Beryllium	6010A	1		ND	ND
Cadmium	6010A	1		12	ND
Chromium	6010A	2		26	ND
Copper	6010A	2		221	ND
Lead	6010A	20		237	ND
Mercury	7471	0.2		ND	ND
Nickel	6010A	10		18	ND
Selenium	7740	1		ND	ND
Silver	6010A	2		ND	ND
Thallium	7841	10		ND	ND
Zinc	6010A	2		342	ND
Solids, Total (%)	160.3 M	-		77.6	-

M Modified

MET.S(1,2,3)/03-13-92

Approved: _____ Date: 10/19/94

COLUMBIA ANALYTICAL SERVICES, Inc.

Acronyms

ASTM	American Society for Testing and Materials
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected at or above the MRL
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Northwest, Inc.	**Date Received:**	10/6/94
Project:	Case sunnyside	**Date Analyzed:**	10/10/94
Sample Matrix:	Soil	**Work Order No.:**	K946148

Solids, Total
EPA Method Modified 160.3
Percent (%)

Sample Name	Lab Code	Result
Washpad Composite	K946148-004	77.6
4-Bulk Storage	K946148-005	88.6
5-Surface Sample West End Composite	K946148-006	88.6
6-S.W. Corner Adj. to Square Tank	K946148-007	83.8
7-South of Bldg.	K946148-008	99.1

Approved by _____ Date 10/21/94

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Northwest	**Service Request:**	K946148
Project:	Case Sunnyside	**Date Collected:**	10/4/94
Sample Matrix:	Soil	**Date Received:**	10/6/94
		Date Extracted:	10/10/94

Hydrocarbon Scan
EPA Methods 3550/8015 Modified
Units: mg/Kg (ppm)
Dry Weight Basis

Sample Name:	**Washpad Composite**	**4-Bulk Storage**	**5-Surface Sample West End Composite**
Lab Code:	K946148-004(a)	K946148-005(a)	K946148-006
Date Analyzed:	10/13/94	10/12/94	10/12/94

Analyte	**MRL**			
Gasoline	10	<20	<20	ND
Mineral Spirits	10	<20	<20	ND
Jet Fuel	10	<20	<20	ND
Kerosene	10	<20	<20	ND
Diesel	10	<20	<20	ND
Other*	20	56000(b)	1500(b)	400

* Quantified using 30-weight motor oil as a standard.
a MRL is elevated because the sample required diluting.
b Result is from the analysis of a diluted sample extract.

Approved By: _____ Date: 10/20/94

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Northwest	**Service Request:**	K946148
Project:	Case Sunnyside	**Date Collected:**	10/4/94
Sample Matrix:	Soil	**Date Received:**	10/6/94
		Date Extracted:	10/10/94

Hydrocarbon Scan
EPA Methods 3550/8015 Modified
Units: mg/Kg (ppm)
Dry Weight Basis

Sample Name:	**6-S.W. Corner Adj. to Square Tank**	**7-South of Bldg.**	**Method Blank**
Lab Code:	K946148-007	K946148-008	K941010-SB
Date Analyzed:	10/12/94	10/12/94	10/11/94

Analyte	**MRL**			
Gasoline	10	ND	<20(a)	ND
Mineral Spirits	10	ND	<20(a)	ND
Jet Fuel	10	ND	<20(a)	ND
Kerosene	10	ND	<20(a)	ND
Diesel	10	ND	<20(a)	ND
Other*	20	59	15000(a)	ND

* Quantified using 30-weight motor oil as a standard.
a MRL is elevated because the sample required diluting. Dilution factor: 1:10.

Approved By: _____ Date: 10/21/94

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: EMCON Northwest
Project: Case Sunnyside
Sample Matrix: Soil

Service Request: K946148
Date Collected: 10/4/94
Date Received: 10/6/94
Date Extracted: 10/10/94
Date Analyzed: 10/11-13/94

Surrogate Recovery Summary
Hydrocarbon Scan
EPA Methods 3550/8015 Modified

Sample Name	Lab Code	Percent Recovery o-Terphenyl
Washpad Composite	K946148-004	NA
4-Bulk Storage	K946148-005	80
5-Surface Sample West End Composite	K946148-006	75
6-S.W. Corner Adj. to Square Tank	K946148-007	64
7-South of Bldg.	K946148-008	100
Method Blank	K941010-SB	87

CAS Acceptance Limits: 55-119

NA Not Applicable because of the sample matrix. Analysis of this sample required a dilution such that the surrogate concentration was diluted below the method reporting limit.

Approved By: _____ Date: 10/21/94

IC6 -18

Sweet-Edwards / EMCON, Inc.
Kelso, WA (206) 423-3580
Bothell, WA (206) 485-5000

Chain of Custody / Laboratory Analysis Request

DATE 10/5/94 PAGE 1 OF 1

PROJECT Case Sunnyside #
CLIENT INFO. CONTACT EMCON - Northwest
ADDRESS W 7106 Alton Lane Suite 101
TELEPHONE# 509 838-1144
SAMPLERS NAME Jeff Lower PHONE# Same
SAMPLERS SIGNATURE Jeff Lower

SAMPLE I.D.	DATE	TIME	LAB I.D.	TYPE	BASE/NEU/ACID ORGAN. GC/MS/625/8270	VOLATILE ORGANICS GC/MS/624/8240	HALOGENATED VOLATILE ORGANICS 601/8010	PHENOLICS 604/8040	POLYNUCLEAR AROMATIC 610/8310	TOTAL ORGANIC CARBON (TOC) 415/9060	TOTAL ORGANIC HALIDE (TOX) 9020	EP TOX/TCLP METALS (Circle One)	METALS (TOTAL) (See Special Inst.)	TCLP ORGANICS	pH, COND ALK	NO_3/NO_2, Cl SO_4	Ca, Mg, Na, K	GENERAL CHEMISTRY (Specify): Priority Pollutant metals	GENERAL CHEMISTRY (Specify): Hydrocarbon Scan	OTHER (Specify)	NUMBER OF CONTAINERS
1. 1 - Washpad	10/4	12:45	K6148 -1	Soil														X	X		1
2. 2 - Washpad	10/4	12:45	-2	Soil														X	X	Composite	1
3. 3 - Washpad	10/4	12:45	-3	Soil														X	X		1
4. 4 - Bulk Storage	10/4	12:50	-5	Soil															X		1
5. 5 surface sample West end Composite	10/4	1:00	-6	Soil															X		1
6. 6 S.W. corner Adj to Septic tank	10/4	1:00	-7	Soil															X		1
7. 7 - South of Bldg.	10/4	1:10	-8	Soil															X		1
8.																					

Relinquished By Sweet, Edwards & Assoc.	Relinquished By	Relinquished By	PROJECT INFORMATION	SAMPLE RECEIPT
Signature Jeff Lower	Signature	Signature		
Printed Name Jeff Lower	Printed Name	Printed Name	Shipping I.D. No.	Total No. of Containers
Firm EMCON	Firm	Firm	VIA	Chain of Custody Seals
Date/Time 10/5/94 1:15	Date/Time	Date/Time	Project	Received in good condition
				LAB NO.
Received By Ruth Higley	**Received By**	**Received By**	**SPECIAL INSTRUCTIONS/COMMENTS** Composite samples 1-3 into one sample. Sample 5 is a field composite.	
Signature Ruth Higley	Signature	Signature		
Printed Name CAS	Printed Name	Printed Name		
Firm 10/6/94 1000	Firm	Firm		
Date/Time	Date/Time	Date/Time		

DISTRIBUTION: WHITE - return to originator; YELLOW - lab; PINK - retained by originator.

S-E/E 400-05

Columbia Analytical Services, Inc.

November 14, 1994 Service Request No.: K946721

Jeff Lower
EMCON Northwest, Inc.
W 7106 Will D. Alton Lane, Suite 108
Spokane, WA 99204

Re: **CASE/Project #0914-007.02**

Dear Jeff:

Enclosed are the results of the sample(s) submitted to our laboratory on October 28, 1994. For your reference, these analyses have been assigned our service request number K946721.

All analyses were performed consistent with our laboratory's quality assurance program. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the samples analyzed.

Please call if you have any questions. My extension is 260.

Respectfully submitted,

Columbia Analytical Services, Inc.

Janice M. Sedlak
Project Chemist

JMS/td

1317 South 13th Avenue • P.O. Box 479 • Kelso, Washington 98626 • Telephone 206/577-7222 • Fax 206/636-1068

COLUMBIA ANALYTICAL SERVICES, Inc.

Acronyms

ASTM	American Society for Testing and Materials
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected at or above the MRL
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON Northwest
Project: CASE/#0914-007.02
Sample Matrix: Soil

Service Request: K946721
Date Collected: 10/27/94
Date Received: 10/28/94
Date Extracted: 11/7/94

Hydrocarbon Scan
EPA Methods 3540/8015 Modified
Units: mg/Kg (ppm)
Dry Weight Basis

Sample Name:	1	2	Method Blank
Lab Code:	K946721-001	K946721-002	K941107-SB
Date Analyzed:	11/10/94	11/10/94	11/10/94

Analyte	MRL			
Gasoline	10	ND	ND	ND
Mineral Spirits	10	ND	ND	ND
Jet Fuel	10	ND	ND	ND
Kerosene	10	ND	ND	ND
Diesel	10	ND	ND	ND
Other*	20	ND	65	ND

* Quantified using 30-weight motor oil as a standard.

Approved By: _____ Date: 11/14/94

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: EMCON Northwest
Project: CASE/#0914-007.02
Sample Matrix: Soil

Service Request: K946721
Date Collected: 10/27/94
Date Received: 10/28/94
Date Extracted: 11/7/94
Date Analyzed: 11/10/94

Surrogate Recovery Summary
Hydrocarbon Scan
EPA Methods 3540/8015 Modified

Sample Name	Lab Code	Percent Recovery o-Terphenyl
1	K946721-001	91
2	K946721-002	92
Method Blank	K941107-SB	69

CAS Acceptance Limits: 55-119

Approved By: _____ Date: 11/14/94

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

Columbia Analytical Services, Inc. 1317 South 13th Ave. • Kelso, WA 98626 • (206) 577-7222 • (800) 695-7222 • FAX (206) 636-1068

DATE 10/27 PAGE 1 OF 1

PROJECT NAME CASE # 0914 007.02

PROJECT MANAGER Lower

COMPANY/ADDRESS EMCON - Spokane

PHONE 509 838-1144

SAMPLERS SIGNATURE

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	Base/Neu/Acid Organics GC/MS 625/8270	Volatile Organics GC/MS 624/8240	Halogenated or Aromatic Volatiles 601/8010 ☐ 602/8020 ☐	Pesticides/PCBs 608/8080	Total Petroleum Hydrocarbons EPA/418.1 ☐ OR/418.1 ☐ WA/418.1 ☐	TPH/Gas/BTEX 5030/8015/8020 Gas ☐ BTEX ☐	TPH/8015 Modified Diesel ☐	TPH/HCID ☐ OR/HCID ☐ WA/HCID ☐	Hydrocarbon Scan ☐	TCLP Metals ☐ VOA ☐ Semi ☐ Pest/ VOA ☐ Herb ☐	Metals (total or dissolved) List Below	Cyanide	pH, Cond, Cl, SO_4, PO_4, F, Br NO_2, NO_3, (circle)	NH_3-N, COD, Total-P, TKN, TOC (circle)	Total Organic Halides (TOX) 9020 ☐ (AOX) 1650A ☐			REMARKS
1	10/27	11:30	K6721-1								X												
2	10/27	11:35	-2								X												

RELINQUISHED BY:

Signature Jeff Lower

Printed Name Jeff Lower

Firm EMCON

Date/Time 10/27 4:45

RECEIVED BY:

Signature Lori K. Hawn

Printed Name Lori K. Hawn

Firm CAS

Date/Time 10-28-94 1000

TURNAROUND REQUIREMENTS

____ 24 hr ____ 48 hr. ____ 5 day

____ Standard (10-15 working days)

____ Provide Verbal Preliminary Results

____ Provide FAX preliminary Results

Requested Report Date ____

REPORT REQUIREMENTS

____ I. Routine Report

____ II. Report (includes DUP.MS. MSD, as required, may be charged as samples)

____ III. Data Validation Report (includes All Raw Data)

____ IV. CLP Deliverable Report

INVOICE INFORMATION:

P.O.# ____

Bill To ____

SAMPLE RECEIPT:

Shipping VIA: ____

Shipping #: ____

Condition: ____

Lab No: K94-6721

RELINQUISHED BY:

Signature

Printed Name

Firm

Date/Time

RECEIVED BY:

Signature

Printed Name

Firm

Date/Time

SPECIAL INSTRUCTIONS/COMMENTS:

DISTRIBUTION: WHITE - ... originator; YELLOW - lab; PINK - retained by originator

400-05

Columbia Analytical Services, Inc.

November 23, 1994 Service Request No.: K946828

Jeff Lower
EMCON Northwest, Inc.
W 7106 Will D. Alton Lane, Suite 108
Spokane, WA 99204

Re: **CASE/Project #914-007.02**

Dear Jeff:

Enclosed are the results of the sample(s) submitted to our laboratory on November 2, 1994. Preliminary results were transmitted via facsimile on November 18 and 22, 1994. For your reference, these analyses have been assigned our service request number K946828.

All analyses were performed consistent with our laboratory's quality assurance program. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the samples analyzed.

Please call if you have any questions. My extension is 260.

Respectfully submitted,

Columbia Analytical Services, Inc.

Richard A Cramer for JMS

Janice M. Sedlak
Project Chemist

JMS/td

COLUMBIA ANALYTICAL SERVICES, Inc.

Acronyms

ASTM	American Society for Testing and Materials
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
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NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected at or above the MRL
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON Northwest
Project: CASE/#914-007.02
Sample Matrix: Soil

Service Request: K946828
Date Collected: 10/31/94
Date Received: 11/2/94
Date Extracted: NA
Date Analyzed: 11/3/94

Solids, Total
EPA Method 160.3
Percent (%)

Sample Name	Lab Code	Result
1-Bottom	K946828-001	77.2
2-Bottom	K946828-002	75.9
3-East Wall	K946828-003	73.8
4-West Wall	K946828-004	76.7
5-Northwest Wall	K946828-005	79.4
6-Southeast Wall	K946828-006	81.2
7-Sidewall	K946828-007	83.3
8-Bottom	K946828-008	78.6
9-West Wall	K946828-009	79.0
10-East Wall	K946828-010	77.5
11-Bottom	K946828-011	78.6
12-East Wall	K946828-012	81.5

Approved By: Richard A Cisneros Date: 11/23/94

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Northwest	**Service Request:**	K946828
Project:	CASE/#914-007.02	**Date Collected:**	10/31/94
Sample Matrix:	Soil	**Date Received:**	11/2/94
		Date Extracted:	11/3/94
		Date Analyzed:	11/3-5/94

Total Petroleum Hydrocarbon - Hydrocarbon Identification
Washington DOE Method WTPH-HCID
Units: mg/Kg (ppm)
Dry Weight Basis

Analyte:	**Gasoline**	**Diesel**	**Oil**
Method Reporting Limit:	20	50	100

Sample Name	**Lab Code**			
1-Bottom	K946828-001	ND	ND	ND
2-Bottom	K946828-002	ND	ND	ND
3-East Wall	K946828-003	ND	D	D
4-West Wall	K946828-004	ND	ND	ND
5-Northwest Wall	K946828-005	ND	ND	ND
6-Southeast Wall	K946828-006	ND	ND	ND
7-Sidewall	K946828-007	ND	ND	D
8-Bottom	K946828-008	ND	ND	ND
9-West Wall	K946828-009	ND	ND	ND
10-East Wall	K946828-010	ND	ND	ND
11-Bottom	K946828-011	ND	ND	ND
12-East Wall	K946828-012	ND	ND	ND
Method Blank	K941103-SB	ND	ND	ND

D — Detected at or above the method reporting limit. Refer to the report(s) immediately following for quantitative results for the detected components.

Approved By: _____ Date: 11/8/94

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Northwest	**Service Request:**	K946828
Project:	CASE/#914-007.02	**Date Collected:**	10/31/94
Sample Matrix:	Soil	**Date Received:**	11/2/94
		Date Extracted:	11/10/94
		Date Analyzed:	11/17,18,22/94

Total Petroleum Hydrocarbons as Diesel and Oil
Washington DOE Method WTPH-D
Units: mg/Kg (ppm)
Dry Weight Basis

Analyte:	**Diesel**	**Oil**
Method Reporting Limit:	25	100

Sample Name	**Lab Code**		
3-East Wall	K946828-003	23,000(a)	4200(a)
7-Sidewall	K946828-007	60(b)	167
Method Blank	K941110-SB	ND	ND

a Result is from a diluted sample extract. Dilution factor: 1:50.
b Quantified as diesel. The sample contained an oil component that partially eluted in the diesel range.

Approved By: _____ Date: 11/22/94

2A061694
6828PHC.JW1 - 2AMRL 11/22/94

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON Northwest
Project: CASE/#914-007.02
Sample Matrix: Soil

Service Request: K946828
Date Collected: 10/31/94
Date Received: 11/2/94
Date Extracted: 11/8/94

Volatile Organic Compounds
EPA Method 8260
Units: µg/Kg (ppb)
Dry Weight Basis

		3-East Wall Between Post		
	Sample Name:	1and 2	Method Blank	Method Blank
	Lab Code:	K946828-003(a)	K946828-MB1	K946828-MB2
	Date Analyzed:	11/10/94	11/9/94	11/10/94
Analyte	**MRL**			
Dichlorodifluoromethane (CFC 12)	5	<1600	<250	ND
Chloromethane	5	<1600	<250	ND
Vinyl Chloride	5	<1600	<250	ND
Bromomethane	5	<1600	<250	ND
Chloroethane	5	<1600	<250	ND
Trichlorofluoromethane (CFC 11)	5	<1600	<250	ND
Acetone	50	<16000	<2500	ND
1,1-Dichloroethene	5	<1600	<250	ND
Carbon Disulfide	5	<1600	<250	ND
Methylene Chloride	10	<3200	<500	ND
trans -1,2-Dichloroethene	5	<1600	<250	ND
1,1-Dichloroethane	5	<1600	<250	ND
2-Butanone (MEK)	20	<6400	<1000	ND
2,2-Dichloropropane	5	<1600	<250	ND
cis -1,2-Dichloroethene	5	<1600	<250	ND
Chloroform	5	<1600	<250	ND
Bromochloromethane	5	<1600	<250	ND
1,1,1-Trichloroethane (TCA)	5	<1600	<250	ND
1,1-Dichloropropene	5	<1600	<250	ND
Carbon Tetrachloride	5	<1600	<250	ND
1,2-Dichloroethane	5	<1600	<250	ND
Benzene	5	<1600	<250	ND
Trichloroethene (TCE)	5	<1600	<250	ND
1,2-Dichloropropane	5	<1600	<250	ND
Bromodichloromethane	5	<1600	<250	ND
Dibromomethane	5	<1600	<250	ND
2-Hexanone	20	<6400	<1000	ND
cis -1,3-Dichloropropene	5	<1600	<250	ND
Toluene	5	<1600	<250	ND
trans -1,3-Dichloropropene	5	<1600	<250	ND
1,1,2-Trichloroethane	5	<1600	<250	ND
4-Methyl-2-pentanone (MIBK)	20	<6400	<1000	ND
1,3-Dichloropropane	5	<1600	<250	ND

a MRL is elevated because of matrix interferences and because the sample required diluting.
Dilution Factor:320

Approved By: Carla Lyon Date: 11/17/94

00006

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON Northwest
Project: CASE/#914-007.02
Sample Matrix: Soil

Service Request: K946828
Date Collected: 10/31/94
Date Received: 11/2/94
Date Extracted: 11/8/94

Volatile Organic Compounds
EPA Method 8260
Units: µg/Kg (ppb)
Dry Weight Basis

		3-East Wall Between Post		
	Sample Name:	**1and 2**	**Method Blank**	**Method Blank**
	Lab Code:	K946828-003(a)	K946828-MB1	K946828-MB2
	Date Analyzed:	11/10/94	11/9/94	11/10/94
Analyte	**MRL**			
Tetrachloroethene (PCE)	5	<1600	<250	ND
Dibromochloromethane	5	<1600	<250	ND
1,2-Dibromoethane (EDB)	20	<6400	<1000	ND
Chlorobenzene	5	<1600	<250	ND
1,1,1,2-Tetrachloroethane	5	<1600	<250	ND
Ethylbenzene	5	<1600	<250	ND
Total Xylenes	5	6200	<250	ND
Styrene	5	<1600	<250	ND
Bromoform	5	<1600	<250	ND
Isopropylbenzene	20	<6400	<1000	ND
1,1,2,2-Tetrachloroethane	5	<1600	<250	ND
1,2,3-Trichloropropane	5	<1600	<250	ND
Bromobenzene	5	<1600	<250	ND
n -Propylbenzene	20	<6400	<1000	ND
2-Chlorotoluene	20	<6400	<1000	ND
4-Chlorotoluene	20	<6400	<1000	ND
1,3,5-Trimethylbenzene	20	<6400	<1000	ND
tert -Butylbenzene	20	<6400	<1000	ND
1,2,4-Trimethylbenzene	20	14000	<1000	ND
sec -Butylbenzene	20	<6400	<1000	ND
1,3-Dichlorobenzene	5	<1600	<250	ND
4-Isopropyltoluene	20	<6400	<1000	ND
1,4-Dichlorobenzene	5	<1600	<250	ND
n -Butylbenzene	20	<6400	<1000	ND
1,2-Dichlorobenzene	5	<1600	<250	ND
1,2-Dibromo-3-chloropropane (DBCP)	20	<6400	<1000	ND
1,2,4-Trichlorobenzene	20	<6400	<1000	ND
1,2,3-Trichlorobenzene	20	<6400	<1000	ND
Naphthalene	20	18000	<1000	ND
Hexachlorobutadiene	20	<6400	<1000	ND

a MRL is elevated because of matrix interferences and because the sample required diluting.
Dilution Factor:320

Approved By: Carla Lyon Date: 11/17/94

3S2P/101894

00007

APPENDIX A

LABORATORY QC RESULTS

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: EMCON Northwest
Project: CASE/#914-007.02
Sample Matrix: Soil

Service Request: K946828
Date Collected: 10/31/94
Date Received: 11/2/94
Date Extracted: 11/3/94
Date Analyzed: 11/3-5/94

Surrogate Recovery Summary
Total Petroleum Hydrocarbon - Hydrocarbon Identification
Washington DOE Method WTPH-HCID

Sample Name	Lab Code	Percent Recovery o-Terphenyl
1-Bottom	K946828-001	59
2-Bottom	K946828-002	74
3-East Wall	K946828-003	NA
4-West Wall	K946828-004	72
5-Northwest Wall	K946828-005	70
6-Southeast Wall	K946828-006	70
7-Sidewall	K946828-007	68
8-Bottom	K946828-008	72
9-West Wall	K946828-009	70
10-East Wall	K946828-010	77
11-Bottom	K946828-011	72
12-East Wall	K946828-012	76
Method Blank	K941103-SB	66

CAS Acceptance Limits: 50-150

NA Not Applicable because of the sample matrix. The gas chromatogram showed target components that interfered with determination of the surrogate. The sample was not reanalyzed.

Approved By: _____ Date: 11/8/94

00009

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: EMCON Northwest
Project: CASE/#914-007.02
Sample Matrix: Soil

Service Request: K946828
Date Collected: 10/31/94
Date Received: 11/2/94
Date Extracted: 11/10/94
Date Analyzed: 11/17,18,22/94

Surrogate Recovery Summary
Total Petroleum Hydrocarbons as Diesel and Oil
Washington DOE Method WTPH-D

Sample Name	Lab Code	Percent Recovery o-Terphenyl
3-East Wall	K946828-003	126
7-Sidewall	K946828-007	102
Method Blank	K941110-SB	79

CAS Acceptance Limits: 55-119

Approved By: _____ Date: 11/22/94

SUR1X/062994
6828PHC JW1 - SUR1 11/22/94

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: EMCON Northwest
Project: CASE/#914-007.02
Sample Matrix: Soil

Service Request: K946828
Date Collected: 10/31/94
Date Received: 11/2/94
Date Extracted: 11/8/94
Date Analyzed: 11/9-10/94

Surrogate Recovery Summary
Volatile Organic Compounds
EPA Method 8260

		Percent Recovery		
Sample Name	**Lab Code**	Dibromofluoromethane	Toluene-d_8	4-Bromofluorobenzene
3-East Wall Between Post 1 and 2	K946828-003	103	100	99
Method Blank	K946828-MB1	100	99	99
Method Blank	K946828-MB2	101	98	102
CAS Acceptance Limits:		80-120	81-117	74-121

Approved By: _____ Date: 11-16-94

00011

APPENDIX B

CHAIN OF CUSTODY INFORMATION

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

Columbia Analytical Services Inc. 1317 South 13th Ave. • Kelso, WA 98626 • (206) 577-7222 • (800) 695-7222 • FAX (206) 636-1068

DATE 11/1/94 PAGE 1 OF 2

PROJECT NAME CASE # 914-00702

PROJECT MANAGER Lower

COMPANY/ADDRESS EMCON

W 7106 Alton Lane Suite 101

Spokane Wa PHONE 509 838-7147

SAMPLERS SIGNATURE Jeff Lower

NUMBER OF CONTAINERS

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	Base/Neu/Acid Organics GC/MS 625/8270	Volatile Organics GC/MS 624/8240	Halogenated or Aromatic Volatiles 601/8010 ☐ 602/8020 ☐	Pesticides/PCBs 608/8080	Total Petroleum Hydrocarbons EPA/418.1 ☐ OR/418.1 ☐ WA/418.1 ☐	TPH/Gas/BTEX 5030/8015/8020 Gas ☐ BTEX ☐	TPH/8015 Modified Diesel ☐ Hydrocarbon Scan ☐	TPH/HCID ☐ OR/HCID ☐ WA/HCID ☐	TCLP Metals ☐ VOA ☐ Semi Pest/ VOA ☐ Herb ☐	Metals (total or dissolved) List Below	Cyanide	pH, Cond, Cl, SO_4, PO_4, F, Br NO_2, NO_3, (circle)	NH_3-N, COD, Total-P, TKN, TOC (circle)	Total Organic Halides (TOX) 9020 ☐ (AOX) 1650A ☐	EPA 8260		REMARKS
1-Bottom 12' W DRAW	10/31	10:15	1	Soil							X										5' below grade
2-Bottom Between Post 1 and 2		12:00	2								X										"
3-East wall between Post 1 and 2		12:25	3								X								X		6" below Slab
4-West wall between Post 1 and 2		12:25	4								X										2-3' below Grade
5-Northeast wall between 1 and drain		12:30	5								X										"
6-Southeast wall between Post 1 and drain		12:32	6								X										"
7-Sidewall of sump		2:10	7								X										
8-Bottom Between Post 2 and 3		3.00	8								X										
9-west wall between 2 and 3		3:00	9								X										2½' below grade
10-East wall between Post 2 and 3	↓	3:00	10	↓							X										3' below grade

RELINQUISHED BY:

Jeff Lower
Signature
Jeff Lower
Printed Name
EMCON
Firm
11/1/94 3:00 p.m.
Date/Time

RECEIVED BY:

Signature
Printed Name
Firm
11/2/94 1013
Date/Time

TURNAROUND REQUIREMENTS

____ 24 hr ____ 48 hr. ____ 5 day
____ Standard (10-15 working days)
____ Provide Verbal Preliminary Results
____ Provide FAX preliminary Results
Requested Report Date ____

REPORT REQUIREMENTS

____ I. Routine Report
____ II. Report (includes DUP.MS. MSD, as required, may be charged as samples)
____ III. Data Validation Report (includes All Raw Data)
____ IV. CLP Deliverable Report

INVOICE INFORMATION:

P.O.# ____
Bill To ____

SAMPLE RECEIPT:

Shipping VIA: ____
Shipping #: ____
Condition: ____
Lab No: 9406828

RELINQUISHED BY:

Signature
Printed Name
Firm
Date/Time

RECEIVED BY:

Signature
Printed Name
Firm
Date/Time

SPECIAL INSTRUCTIONS/COMMENTS:

DISTRIBUTION: WHITE - Original YELLOW - Returned to Originator PINK - Returned by Originator

400-05

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

Columbia Analytical Services Inc. 1317 South 13th Ave. • Kelso, WA 98626 • (206) 577-7222 • (800) 695-7222 • FAX (206) 636-1068

DATE 11/1/94 PAGE 2 OF 2

PROJECT NAME CASE # 914-007.02

PROJECT MANAGER Lower

COMPANY/ADDRESS EMCON

PHONE 554 838-1144

SAMPLERS SIGNATURE Jeff Lower

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	Base/Neu/Acid Organics GC/MS 625/8270	Volatile Organics GC/MS 624/8240	Halogenated or Aromatic Volatiles 601/8010 ☐ 602/8020 ☐	Pesticides/PCBs 608/8080	Total Petroleum Hydrocarbons EPA418.1 ☐ OR418.1 ☐ WA418.1 ☐	TPH/Gas/BTEX 5030/8015/8020 Gas ☐ BTEX ☐	TPH/8015 Modified Diesel ☐	TPH/HCID ☐ Hydrocarbon Scan ☐ WA/HCID ☐ OR/HCID ☐	TCLP Metals ☐ VOA ☐	Semi Pest/ VOA ☐ Herb ☐ Metals (total or dissolved) List Below	Cyanide	pH, Cond, Cl, SO_4, PO_4, F, Br NO_2, NO_3, (circle)	NH_3-N, COD, Total-P, TKN, TOC (circle)	Total Organic Halides (TOX) 9020 ☐ (AOX) 1650A ☐	Hold		REMARKS
Bottom between Pile 3 and 4			11										X									2' below grade
12 - East wall between Pile 3 and 4			12										X									2' below grade
S-1			13																X			Stockpile Sample
S-2			14																X			"
S-3			15																X			"
S-4			16																X			"
																						"

RELINQUISHED BY:

Signature: Jeff Lower

Printed Name: Jeff Lower

Firm: EMCON

Date/Time: 11/1/94 3:00 p.m.

RECEIVED BY:

Signature: Fran Adair

Printed Name: Fran Adair

Firm: LAS

Date/Time: 11/2/94 1015

TURNAROUND REQUIREMENTS

___ 24 hr ___ 48 hr. ___ 5 day

___ Standard (10-15 working days)

___ Provide Verbal Preliminary Results

___ Provide FAX preliminary Results

Requested Report Date ___

REPORT REQUIREMENTS

___ I. Routine Report

___ II. Report (includes DUP.MS. MSD, as required, may be charged as samples)

___ III. Data Validation Report (includes All Raw Data)

___ IV. CLP Deliverable Report

INVOICE INFORMATION:

P.O.# ___

Bill To ___

SAMPLE RECEIPT:

Shipping VIA: ___

Shipping #: ___

Condition: ___

Lab No: K946828

RELINQUISHED BY:

Signature

Printed Name

Firm

Date/Time

RECEIVED BY:

Signature

Printed Name

Firm

Date/Time

SPECIAL INSTRUCTIONS/COMMENTS:

DISTR ON: - iginat LLOW PINI ned b ator

Columbia Analytical Services, Inc.

December 22, 1994 Service Request No.: K947650

Jeff Lower
EMCON Northwest, Inc.
W 7106 Will D. Alton Lane, Suite 108
Spokane, WA 99204

Re: **CASE/Project #914-007.02**

Dear Jeff:

Enclosed are the results of the sample(s) submitted to our laboratory on December 15, 1994. Preliminary results were transmitted via facsimile on December 15, 1994.
For your reference, these analyses have been assigned our service request number K947650.

All analyses were performed consistent with our laboratory's quality assurance program. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the samples analyzed.

Please call if you have any questions. My extension is 260.

Respectfully submitted,
Columbia Analytical Services, Inc.

Janice M Sedlak

Janice M. Sedlak
Project Chemist

JMS/rr

1317 South 13th Avenue • P.O. Box 479 • Kelso, Washington 98626 • Telephone 206/577-7222 • Fax 206/636-1068

COLUMBIA ANALYTICAL SERVICES, Inc.

Acronyms

ASTM	American Society for Testing and Materials
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected at or above the MRL
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON Northwest
Project: CASE/#914-007.02
Sample Matrix: Soil

Service Request: K947650
Date Collected: 10/31/94
Date Received: 11/2/94
Date Extracted: 12/13/94(a)
Date Analyzed: 12/14/94

Total Petroleum Hydrocarbons
EPA Methods 9071/418.1
Units: mg/Kg (ppm)
Dry Weight Basis

Sample Name	Lab Code	MRL	Result
S-1	K946828-013	25	721
S-2	K946828-014	25	1290
S-3	K946828-015	25	223
S-4	K946828-016	25	1660
Method Blank	K941213-SB	25	ND

a Sample analysis was requested past hold time.

Approved By: _____ Date: 12/22/94

00003

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON Northwest
Project: CASE/#914-007.02
Sample Matrix: Soil

Service Request: K947650
Date Collected: 10/31/94
Date Received: 11/2/94
Date Extracted: NA
Date Analyzed: 12/13/94

Solids, Total
EPA Method 160.3
Units: Percent (%)

Sample Name	Lab Code	Result
S-1	K946828-013	80.3
S-2	K946828-014	78.9
S-3	K946828-015	79.9
S-4	K946828-016	67.1

Approved By: Vondaner Date: 12/22/94 00004

APPENDIX B

CERTIFICATE OF DISPOSAL

Oregon Waste Systems, Inc.
Columbia Ridge Landfill & Recycling Center
18177 Cedar Springs Lane
Arlington, Oregon 97812
503/454-2030 • FAX: 503/454-2133

A Waste Management Company

January 20, 1995

CERTIFICATE OF DISPOSAL

Oregon Waste Systems, Inc. has disposed of the material listed below.
This waste was received from EMCON and landfilled December 29, 30, 1994, and January 12, 1995.
Total tons: 148.37

Ticket #	Container	Profile #	Date
136131		326374	12/29/94
136134		326374	12/29/94
136217		326374	12/30/94
136225		326374	12/30/94
137514		326374	01/16/95

Oregon Waste Systems, Inc.

Denise Dailey
for

Doug Coenen
Division President/General Manager