

Results of Site Characterization Activities

Puget Sound Coatings Property

Seattle, Washington 9220 - 9400 8th Ave S

March 19, 1993

**For
Sebco, Inc.**

March 19, 1993

Geotechnical,
Geoenvironmental and
Geologic Services

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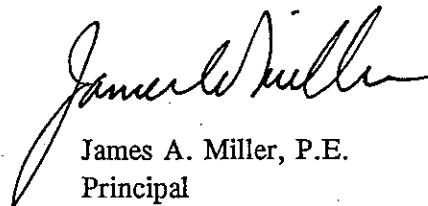
Attention: Mr. Jay F. Ayers

GeoEngineers is pleased to submit three copies of our "Results of Site Characterization Activities." Our services were performed in general accordance with the terms of our standard Service Agreement dated November 22, 1991. Mr. Jay Ayers of Sebco Inc. authorized our services on November 25, 1991.

We appreciate the opportunity to be of service to Sebco, Inc. Please call if you have questions or comments regarding this submittal or other aspects of this project.

Yours very truly,

GeoEngineers, Inc.



James A. Miller, P.E.
Principal

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Attachments

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**RESULTS OF SITE CHARACTERIZATION ACTIVITIES
PUGET SOUND COATINGS PROPERTY
SEATTLE, WASHINGTON
FOR
SEBCO, INC.**

INTRODUCTION AND SCOPE

This report presents the results of our environmental site characterization activities performed at the Puget Sound Coatings property during November 1991 and March 1992. The Puget Sound Coatings property is located at 9220 Eighth Avenue South in Seattle, Washington. The site is shown relative to surrounding features in Figure 1. A general layout of the site is shown in Figure 2.

The purpose of the site characterization activities was to evaluate the possible presence of hazardous substances in the subsurface in areas of the site judged to have the greatest potential for past releases of hazardous substances. The specific scope of services completed is listed below.

1. Excavate nine backhoe test pits in the areas where hazardous substances are used and stored.
2. Collect two surface soil samples and drill three hand-auger soil borings to evaluate subsurface conditions within the transformer area north of the baghouse.
3. Field screen selected soil samples for evidence of petroleum-related contamination using visual, water sheen and headspace vapor screening methods.
4. Collect two surface samples of spent sandblast grit to evaluate the potential presence of metals in the sandblast grit.
5. Submit soil samples collected from the test pits, hand-auger borings, and surface for one or more of the following: TPH (total petroleum hydrocarbons) by EPA Method 418.1 modified, VOCs (volatile organic compounds) by EPA Method 8240, PCBs (polychlorinated biphenyls) by EPA Method 8080, hydrocarbon identification by Ecology (Washington State Department of Ecology) Method WTPH-HCID, PAHs (polynuclear aromatic hydrocarbons) by EPA Method 8310, EPA priority metals by EPA Method 6010, and SVOCs (semivolatile organic compounds) by EPA Method 8270.
6. Evaluate the field and laboratory data with regard to current regulatory criteria.

CLEANUP CRITERIA

Ecology (Washington State Department of Ecology) has adopted soil cleanup standards under the MTCA (Model Toxics Control Act). Method A cleanup levels were developed by Ecology to provide conservative cleanup levels for sites undergoing routine cleanup actions or for sites with relatively few hazardous substances. MTCA Method A cleanup levels for selected compounds are included in Tables 1 and 2.

SUBSURFACE CONDITIONS AND RESULTS

EXPLORATION LOCATIONS

The environmental site characterization consisted of excavating nine test pits, drilling three hand-auger borings and obtaining surface soil samples to evaluate the possible presence of subsurface soil contamination. Test pits were located in areas interpreted to have a potential for subsurface contamination. Hand borings were completed within an electrical transformer area. Surface samples also were collected from inside the transformer area, and two surface samples were collected from sandblast grit near the pipe cleaning rack and near the northeast corner of the site. Details of the field exploration program are included in Appendix A.

SANDBLAST GRIT SAMPLES

Two surface samples (SG-1 and SG-2) containing spent sandblast grit were collected and analyzed for EPA priority pollutant metals. The sandblast grit used appeared to be pink and black garnet. SG-1 was collected near the baghouse and pipe cleaning rack, and SG-2 was collected from the northeast corner of the site. The approximate locations from which the sandblast grit samples were obtained are shown in Figure 2. The concentration of chromium detected in SG-1 exceeds the MTCA Method A residential soil cleanup level. The chromium concentration is less than the MTCA Method A industrial cleanup level. The concentrations of other metals detected in SG-1 are less than MTCA Method A residential and industrial soil cleanup levels. The concentrations of metals detected in samples SG-1 and SG-2 were less than MTCA Method A residential and industrial soil cleanup levels. Chemical analytical results are summarized in Table 2.

TEST PIT EXPLORATIONS

The nine test pits (TP-1 through TP-4, TP-6, and TP-8 through TP-11) were excavated by Glacier (Glacier Environmental Services) on November 26, 1991. The test pits were excavated to depths ranging from 5 to 10 feet using a rubber-tire backhoe. The approximate locations of the test pits are shown in Figure 2. Test pit logs are included in Appendix A.

Soil encountered during test pit exploration included fill material consisting of brown silty fine sand with gravel and wood fragments to a depth of approximately 5 feet below grade. Native brown silt and fine sand with silt were observed below the fill material to the maximum depths explored.

We obtained soil samples from the test pits for field screening. Sampling and screening procedures are described in Appendix A. Based on the field screening results, at least one sample from each test pit was selected for chemical analysis. TPH was detected at concentrations less than the MTCA Method A soil cleanup level in soil obtained from test pits TP-3 and TP-6 (samples TP-3-1 and TP-6-2, respectively). Diesel-range hydrocarbons (1,064 mg/kg) were detected at a concentration greater than the MTCA Method A cleanup level in sample TP-6-2. The SVOCs 2-methyl naphthalene and phenanthrene were detected in TP-6-2 at concentrations

of 0.55 mg/kg and 0.21 mg/kg, respectively. Diesel-range hydrocarbons were detected at a concentration of 12 mg/kg in sample TP-6-1. PCBs were not detected in the test pit samples that were analyzed. These chemical analytical results are summarized in Table 1.

Methylene chloride was detected in each test pit soil sample analyzed. Methylene chloride also was detected in the method blank. The concentrations detected in the soil samples are probably attributable to laboratory contamination.

Soil samples collected from five of the test pits were analyzed for EPA priority metals by EPA Method 6010. The metals concentrations detected in soil samples from four of the five test pits were less than MTCA Method A soil cleanup levels. Mercury was detected at concentrations greater than the corresponding Method A soil cleanup level in the soil sample collected from test pit TP-9.

The analytical data for chemicals of interest that were detected in soil samples were evaluated relative to soil cleanup levels using the MTCA Method B toxicity and cancer-risk equations. The analytical data used to assess compliance with Method B soil cleanup levels were from soil samples obtained from the test pits, exploratory soil borings, former diesel UST remedial excavation and the protective coating release remedial excavation and from the two sandblast grit samples.

Method B requires that the estimated excess cancer risk for carcinogenic compounds and the hazard index for noncarcinogenic substances not exceed the threshold values defined in the MTCA regulations. The hazard index calculated using the analytical data is less than the MTCA threshold value. The estimated cancer risk calculated using the analytical data is greater than the MTCA threshold value.

The estimated carcinogenic risk value for the site exceeds the cancer-risk threshold value in part due to the concentrations of arsenic detected in soil samples collected from the site. The arsenic concentrations detected are less than the average natural background concentrations that occur in soil within the state of Washington. Cleanup requirements under Method B are based on the estimated excess risk to human health above that associated with natural background conditions.

The sum of the estimated carcinogenic risk using the concentration values for the chemicals of interest, excluding arsenic, is less than the threshold value. Remediation of soil does not appear to be necessary based on the Method B risk-based equations. The results of the Method B analysis are presented in Table 3.

TRANSFORMER AREA

Two surface soil samples (SG-3 and SG-4) were obtained on November 26, 1991 in the area adjacent to the transformer, east of the painting and coatings building. The transformer is owned and maintained by Seattle City Light. Each sample was analyzed for WTPH-HCID and PCBs. PCBs were detected at concentrations less than MTCA Method A cleanup levels in surface samples SG-3 (0.10 mg/kg) and SG-4 (0.19 mg/kg) (Table 1).

Because PCBs were detected in the surface soil samples, GeoEngineers performed further explorations to evaluate whether PCB and petroleum-related contamination was present at greater depths within the transformer area. Three hand auger borings (B-1 through B-3) were completed on March 5, 1992 in the transformer area. The borings were drilled in soil around the concrete pad where the transformer is located. Soil encountered during drilling consisted of brown silty sand with gravel. Boring logs are included in Appendix A. Two to three soil samples were obtained from each hand boring from depths of 0.5 to 2 feet and were analyzed for WTPH-HCID, TPH and PCBs.

PCBs were detected at concentrations less than MTCA Method A cleanup levels in the samples analyzed from the hand borings. Gasoline, diesel and heavy oil petroleum compounds were not identified by the WTPH-HCID method in the samples analyzed.

TPH was detected at a concentration (260 mg/kg) greater than MTCA Method A soil cleanup levels in sample B1-3, which was obtained from a depth of 2 feet in boring B-1. TPH was detected in samples analyzed from borings B-2 and B-3 at concentrations less than MTCA Method A cleanup levels.

A sample of decontamination rinse water (R-1A-1C-comp) was collected and analyzed for PCBs and TPH. A PCB concentration of 2.9 $\mu\text{g/l}$ was detected. TPH was not detected in the rinseate sample.

CONCLUSIONS AND RECOMMENDATIONS

The diesel-range hydrocarbon concentration detected in soil sample TP-6-2 was greater than the MTCA Method A soil cleanup level, indicating that remedial excavation was appropriate at the former diesel tank location. GeoEngineers monitored and documented a remedial action program in the vicinity of the diesel tank area during May 1992. The results of the remedial excavation program indicate that no further excavation is necessary in the vicinity for the former diesel tank.

TPH was detected at a concentration greater than the MTCA Method A soil cleanup level in one of the soil samples collected from the transformer area. Remedial action may be necessary within the transformer area, which is owned and maintained by Seattle City Light. Personnel at Seattle City Light were contacted and made aware of the results of the site characterization program. Seattle City Light will be responsible for any remedial action within the transformer area.

Mercury was detected in one of the soil samples collected from the site at a concentration greater than the Method A Soil Cleanup Level. The soil sample analytical data were evaluated relative to soil cleanup levels using the MTCA Method B toxicity and cancer-risk equations to evaluate if further assessment and/or remediation were necessary at the site. The results of the assessment indicate that exposure to the soil and sandblast grit at the site does not pose a risk to human health beyond the level of risk deemed acceptable by Ecology (Table 3).

In our opinion, no further assessment or remedial action is appropriate with respect to risks to human health as a result of exposure to the soil and sandblast grit samples by GeoEngineers at the Puget Sound Coatings site.

LIMITATIONS

We have prepared this report for use by Sebco, Inc. This report may be made available to the prospective buyers of the property and to regulatory agencies. The report is not intended for use by others and the information contained herein is not applicable to other sites.

Our interpretations of subsurface conditions are based on data from widely spaced explorations and available analytical data. It is always possible that contamination exists in areas of the site that were not excavated, explored or tested.

Within the limitations of scope, schedule and budget, our services have been executed in accordance with generally accepted practices in this area at the time the report was prepared. No other conditions, express or implied, should be understood.



We appreciate the opportunity to be of service to Sebco, Inc. on this project. Please call if you have questions regarding this supplemental report.

Respectfully submitted,

GeoEngineers, Inc.

A handwritten signature in black ink, appearing to read "David A. Cook".

David A. Cook
Staff Geologist

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James A. Miller, P.E.
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TABLE 1 (Page 1 of 2)
SUMMARY OF FIELD SCREENING RESULTS AND SOIL CHEMICAL ANALYTICAL DATA¹
TEST PITS, SURFACE SAMPLES AND SHALLOW BORINGS

Sample Number	Date Sampled	Depth of Sample (feet)	Field Screening Results			Methylene Chloride ^{2,3} (mg/kg)	PCBs ⁴ (mg/kg)	TPH ⁵ (mg/kg)	WTPH-HCID ⁶ (mg/kg)			WTPH-D7 (mg/kg)
			Headspace Vapors (ppm)	Sheen					Gasoline	Diesel	Heavy Oil	
Sandblast/Grift Samples												
SG-3	11/26/91	surface	-	-	-	-	0.10	-	<20	<50	-	-
SG-4	11/26/91	surface	-	-	-	-	0.19	-	<20	<50	-	-
Transformer Area Samples												
B1-2	03/05/92	1.0	<100	MS	-	0.16	140	<20	<20	<50	<100	-
B1-3	03/05/92	2.0	<100	NS	-	0.072	260	<20	<20	<50	<100	-
B2-1	03/05/92	0.5	<100	MS	-	0.057	52	<20	<20	<50	<100	-
B2-2	03/05/92	1.0	<100	SS	-	<0.050	120	<20	<20	<50	<100	-
B3-1	03/05/92	0.5	<100	SS	-	0.20	57	<20	<20	<50	<100	-
B3-3	03/05/92	2.0	<100	MS	-	<0.050	36	<20	<20	<50	<100	-
R-1A-1C	03/05/92	rinseate	-	-	-	2.9 µg/l	2.7 µg/l	-	-	-	-	2.7 µg/l
Comp		water	-	-	-	-	-	-	-	-	-	-
Test Pit Samples												
TP-1-1	11/26/91	7.5	<100	NS	3.3 ³	-	-	<20	<20	<50	-	-
TP-2-1	11/26/91	8.0	<100	NS	3.5 ³	-	-	<20	<20	<50	-	-
TP-3-1	11/26/91	7.5	<100	MS	3.3 ³	-	58.8	<20	<20	<50	-	-
TP-4-1	11/26/91	6.0	100	SS	4.1 ³	<0.05	<10	<20	<20	<50	-	<5.0
TP-6-1	11/26/91	7.0	100	MS	3.7 ³	-	-	<20	<20	<50	-	12
TP-6-2	11/26/91	10.0	390	MS	4.0 ³	-	14.3	<20	<20	<50	-	1,064
TP-8-1	11/26/91	6.5	1,900	MS	4.1 ³	-	-	<20	<20	<50	-	-
TP-9-1	11/26/91	5.0	300	-	4.2 ³	-	-	<20	<20	<50	-	-
TP-10-1	11/26/91	7.0	<100	NS	3.8 ³	-	-	<20	<20	<50	-	-
TP-11-1	11/26/91	7.4	<100	SS	3.6 ³	-	-	<20	<20	<50	-	-
MTCA Method A Residential Soil Cleanup Level					0.5	1	200	NA	NA	NA	NA	200
MTCA Method A Industrial Soil Cleanup Level					0.5	10	200	NA	NA	NA	NA	200

Notes appear on page 2 of 2.

TABLE 1 (Page 2 of 2)

Notes:

¹Samples analyzed by North Creek Analytical, Inc.

²Results determined by EPA Method 8270. The SVOCs 2-methyl naphthalene and phenanthrene were also detected in sample TP-6-2 at 0.55 and 0.21 mg/kg respectively.

No other SVOCs were detected.

³Methylene chloride concentrations detected in soil samples are likely attributed to laboratory contamination.

⁴PCBs = polychlorinated biphenyls analyzed by EPA Method 8080

⁵TPH = total petroleum hydrocarbons analyzed by EPA Method 418.1

⁶WTPH-HCID = State of Washington hydrocarbon identification analysis

⁷WTPH-D = State of Washington diesel hydrocarbon analysis

ppm = parts per million

mg/kg = milligrams per kilogram

µg/l = micrograms per liter

* = sample not analyzed

Test pit and sandblast pit samples were reported on a wet weight basis. The results shown in this table may differ from the results reported in Appendix B because they have been converted to a dry weight basis for regulatory compliance.

**TABLE 3
CALCULATED HAZARD QUOTIENT AND CANCER RISK LEVEL FOR SOIL INGESTION
MTCA METHOD B SOIL CLEANUP LEVEL EQUATIONS
PUGET SOUND COATINGS, INC, SEATTLE, WASHINGTON**

ANALYTE	MAXMIUM DETECTED CONCENTRATION (ug/kg)	REFERENCE DOSE (mg/kg-day)	CALCULATED SOIL HAZARD QUOTIENT (HQ)	CARCONOGENIC POTENCY FACTOR (kg-day/mg)	CALCULATED CANCER RISK LEVEL (RISK)
Diesel Fuel	25000	0.02	1.56E-02	No Value	No Value
PCBs	200	No Value	No Value	7.700	1.54E-06
Arsenic	4200	0.0003	1.75E-01	1.750	7.35E-06
Beryllium	810	0.005	2.02E-03	4.300	3.48E-06
Cadmium	1500	0.0005	3.75E-02	No Value	No Value
Chromium	109000	0.005	2.72E-01	No Value	No Value
Copper	33000	0.037	1.11E-02	No Value	No Value
Lead	247000	No Value	No Value	No Value	No Value
Mercury	2400	0.0003	1.00E-01	No Value	No Value
Nickel	124000	No Value	No Value	No Value	No Value
Selenium	1300	0.005	3.25E-03	No Value	No Value
Silver	840	0.003	3.50E-03	No Value	No Value
Zinc	427000	0.2	2.67E-02	No Value	No Value
Dibenzo (a,h) anthracene	130	No Value	No Value	11.500	1.50E-06
Acenaphthalene	120	No Value	No Value	No Value	No Value
Fluorene	240	0.04	7.50E-05	No Value	No Value
Phenanthrene	210	No Value	No Value	No Value	No Value
Pyrene	110	0.03	4.58E-05	No Value	No Value
2-Methyl Naphthalene	550	No Value	No Value	No Value	No Value
TOTAL			6.47E-01 (equal to 0.647)		1.39E-05 (equal to 1.39 per 100,000 Increased Cancer Risk)

Notes:

No Value - Hazard quotient and/or cancer risk value could not be calculated because reference dose and/or carcinogenic potency value data are not available.

Cancer Risk Level equal to 6.52E-6 when arsenic is excluded.

This is equal to 0.65 per 100,000 increased Cancer Risk.