UNDERGROUND STORAGE TANK REMOVAL REPORT

RECEIVED

SOUTHWEST CORNER OF 5th AVENUE & BLANCHARD STREET

Seattle, Washington

Prepared For Nueffer Construction Company

W-6373-3 April, 1991



Geotechnical & Environmental Consultants





RITTENHOUSE-ZEMAN & ASSOCIATES, INC. Geotechnical & Environmental Consultants

1400 140th Avenue N.E. Bellevue, Washington 98005-4594 (206) 746-8020/FAX (206) 746-6364

12 April 1991

W-6373-3

Neuffer Construction Company 2845 N.E. 8th, Suite 334 Redmond, Washington 98004

Attention:

Mark Neuffer

Subject:

Underground Storage Tank Removal Report

Lee Court Apartments

Southwest corner of 5th Avenue and Blanchard Street

Seattle, Washington

Gentlemen:

This report presents the results of our observation and monitoring of underground storage tank (UST) removals and excavation procedures conducted at the above referenced project site. The UST removals described in this report were conducted in January, February, and March, 1991. The location of the site is shown on the Site Vicinity Map, Figure 1. Authorization to proceed with this study was provided by Mr. Mark Neuffer.

We appreciate this opportunity to be of service to you and would be pleased to discuss the contents of this report or other aspects of this study with you at your convenience.

Respectfully submitted,

RITTENHOUSE-ZEMAN & ASSOCIATES, INC.

Moinoddin M. Kadri

Environmental Geologist

Underground Storage Tank Removal Report

Lee Court Apartments
5th and Blanchard
Seattle, Washington

Prepared for

Neuffer Construction Company 22845 N.E. 8th, Suite 334 Redmond, Washington

Prepared by

RITTENHOUSE-ZEMAN & ASSOCIATES, INC.

1400 - 140th Avenue N.E. Bellevue, Washington 98005

April 1991

W-6373-3

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UNDERGROUND STORAGE TANK REMOVAL REPORT

5TH AND BLANCHARD LEE COURT APARTMENTS SEATTLE, WASHINGTON

1.0 SUMMARY

The main body of the report should be consulted for a detailed discussion of our findings. A brief summary of our observations and recommendations is presented below:

- Eight abandoned underground storage tanks were discovered and removed during the construction of an apartment complex on the site. Three of these tanks were removed on 16 January, one each on 17 January and 2 February, two on 14 February and the last one on 25 February 1991.
- Four of the tanks were of approximately 500 gallon capacity and the remaining four were of approximately twenty gallon capacity. The smaller 20 gallon tanks may have been used as sedimentation (gravity settling) tanks for the larger tanks.
- The twenty gallon tanks contained varying amounts of weathered gasoline. The four larger tanks contained water but may have contained gasoline in the past.
- All underground storage tanks appeared to be in good structural condition with only minor corrosion and pitting observed.
- Site geology is complex and consists of shear zones and several fractures where displacement of clayey silt of Lawton clay and gravelly sand of the Esperance sand member (?) of the Vashon drift are juxtaposed in small horst and graben structures.
- Some of the excavated soils displayed slight to moderate gasoline-like odor.
- All of the site soils extending to the depth of 9 to 15 feet below street level were excavated and removed from the site.
- Perched groundwater conditions occur in the northern corner of the site. The extent of the perched groundwater is restricted to the north corner of the site by a west-northwest trending fracture and by a Lawton clay aquitard at about 15 feet below the street elevation.
- Soil samples from the tank excavations were analyzed for total petroleum hydrocarbons (TPH); benzene, toluene, ethylbenzene, and xylenes (BTEX); chlorinated solvents; PCB's and lead.

- Three out of twenty-seven soil and water samples sent for laboratory analyses for TPH exhibited concentrations of TPH in excess of the Washington Model Toxics Control Act cleanup criteria.
- Soil sample STG collected from the stockpile of soils excavated from the Tank 2 and 4 cavity exhibited TPH concentrations of 205 parts per million (ppm). These soils were transported to the Cedar Hills Landfill.
- Soil sample 17S which was collected south of soldier pile #17, contained 105 ppm TPH (EPA Method 8015 modified). Soils from this area were excavated and stockpiled on site. A composite sample from the stockpile of soil and a confirmatory sample collected approximately four feet away from the sample 17S location, did not contain detectable concentrations of TPH and BTEX.
- Following the removal of Tanks 4, 5, 6, and 7, water from the excavations was pumped out and removed from the site by Northwest Enviroservices.

2.0 PROJECT AND SCOPE

RZA was present on site to observe and document environmental conditions during the removal of underground storage tanks and the excavation of associated contaminated soil. Our specific objectives were:

- 1. Observe and document the underground storage tank removal;
- 2. Observe and document the excavation of soils suspected of containing elevated concentrations of petroleum hydrocarbons;
- Conduct on-site screening of soils utilizing a portable photoionization detector (PID), olfactory sensing, and visual observations in an effort to identify soils suspected of containing elevated concentrations of petroleum hydrocarbons;
- 4. Obtain discrete and composite soil samples from the various excavations for laboratory analysis of suspected contaminants in order to establish the probable lateral and vertical limits of contamination.

3.0 SITE CONDITIONS

The subject site is located on the southwest corner of 5th Avenue and Blanchard Street in Seattle, Washington. Development plans provided to RZA by Driscoll Architects, indicate that a five story apartment complex with one level of below grade parking will be constructed on the site. A one story

office building existed on the site prior to the beginning of the new construction during winter of 1991. The portion of the site not occupied by the office building was entirely covered by a concrete slab.

The geology of the site is complex. More than three quarters of the site is underlain by clayey silt belonging to the Lawton clay member of the Vashon drift. The northeastern corner of the site and a triangular wedge shaped area near the south central portion of the site consist of fine to coarse grained sand with some gravel belonging to Esperance sand member (?) of the Vashon drift. A northwest to southeast trending shear zone and west northwest trending fracture-planes have dissected the site sediments (Figure 2) and have formed small horst and graben structures. The soils within the grabens consist of gravelly sand.

4.0 TANK REMOVAL OBSERVATIONS

Eight steel, underground storage tanks were removed from the site. For the purpose of this report, we have identified each tank by number. The location of each tank is shown in Figure 2. The type of tank, location, date discovered/removed and tank contents are summarized in Table 1. The tanks were located along the northern and eastern edge of the property along Blanchard Street and 5th Avenue, respectively. Tanks 1 and 8 were located in the clayey silt of the Lawton clay member, Tank-2 was partly located in Lawton clay and partly in gravelly sand of Esperance sand member (?). The rest of the tanks were located in gravelly sand.

			TABLE .	1				
Tank Summary								
	Location near	Date	Date	Tank	Type of	Tank		
Tank#	Soilder Pile	Found	Removed	Capacity	<u>Tank</u>	Content		
Tank 1	14	1-11-91	1-16-91	500	steel	water		
Tank 2	16	1-15-91	1-16-91	500	steel			
Tank 3	22	1-15-91	1-16-91	500	steel			
Tank 4	near 16	1-16-91	1-17-91	20	steel	gas/water		
Tank 5	21	2-6-91	2-7-91	500	steel	water		
Tank 6	reaction pile	2-14-91	2-14-91	20	steel	gas/water		
Tank 7	23	2-14-91	2-14-91	20	steel	gas/water		
Tank 8	14	2-22-91	2-25-91	20	steel	gas/water		

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All of the tanks appeared to be in good structural condition. Tank-1 was punctured during drilling activities conducted at the site. Slight corrosion was observed on the tanks located in the northern part of the site where they were encased in gravelly sand. The fill pipes of the tanks appeared to be uncapped, and at the time of observation, moderate to strong hydrocarbon-like odors were emanating from the fill pipes.

The tanks removed were of two types. Smaller, approximately 20 gallon tanks were located next to larger, approximately 500 gallon tanks. The 20 gallon tanks had four pipes attached. Presumably two of the pipes were connected to the larger tanks. The base of each 20 gallon tank was located at a lower elevation than the base of the 500 gallon tanks. The close proximity of smaller tanks to larger tanks, the presence of four pipes, and the elevation difference between the base of the two types of tanks suggests that the smaller tanks many have been used as sedimentation (gravity settling) tanks.

The contents of all of the tanks were removed and the tanks were cleaned by Northwest Enviroservices. The arrangements with Northwest Enviroservices to pump and clean the tanks, removal of the tanks, and removal of the water from the tank cavities were made by Neuffer Construction Company. To the best of our knowledge, all of the tanks were transported from the site by Northwest Enviroservices. After the removal of Tank 2, four pipes were observed extending up from the floor of the excavation. In an effort to remove these pipes, soils were excavated from around the pipes. During this process, product (old gasoline) was observed seeping from the bottom of the tank cavity. Approximately 2 to 3 gallons of product accumulated on top of the water present in the tank cavity. Northwest Enviroservices pumped the water and the product from the tank cavity. Subsequent tanks were removed without any noted release of hydrocarbons.

5.0 GROUNDWATER

Near surface groundwater at the site is in the form of a perched water table and it is confined to the northern corner of the site. The depth to groundwater varied between 5 & 6 feet below street level. The base of the water column is located at approximately 15 feet below street grade, where the top of the Lawton clay aquitard is present. A west-northwest trending fracture plane has juxtaposed gravelly sand against the relatively impermeable Lawton clay to the south, thus restricting the perched groundwater to the northern corner of the site. The perched groundwater appears to be recharged by surface runoff, and presumably outfalls either into the municipal sewer system or into Lake Union.

6.0 QUANTITATIVE LABORATORY ANALYSIS

Soil samples were collected from each excavation in order to characterize site soils with respect to petroleum hydrocarbon contamination. Soils to be submitted for laboratory analysis were collected in laboratory prepared glass sample jars fitted with Teflon-lined lids to help reduce loss of volatile analytes from the sample. After collection, the samples were stored in coolers pending transport to the laboratory for analysis. Strict chain-of-custody procedures were maintained during sampling and transport to document sample integrity.

Soil samples collected from the tank excavation were analyzed for total petroleum hydrocarbons (TPH) by EPA method 418.1 and TPH as gasoline by EPA Method 8015 modified. Selected samples were also analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA Method 8020. Several samples from the tank excavations were analyzed for BTEX and chlorinated solvents by EPA Method 8240, PCB's by EPA Method 8080 and lead. Copies of the analytical laboratory certificates documenting the testing performed are presented in Appendix A. A summary of the analytical laboratory results is shown on Table 2.

	TABLE 2 Laboratory Analytical Results											
	Sample	Analysis	ТРН by	TPH by					Chlorinat	ted		
Sampl	eMatrix	Date	8015	418.1	В	Т	E	X	Solvent		PCB	Lead
-N	Soil	1-17-91		<1								
-S	m:1	*		<1								
-E	•	n		39								
2-N				<1								
2-S				42								
2-W	•			35								
3-N	•			<1								
3-S	H			52								
3-W	-		•	<1								
3-E		4		<1								
1-W	•		<1	60	<.01	<.01	<.01	<.01				
2-E	n .		<1	<1	<.01	<.01	<.01	<.01				
ST			43	85	.31	1.17	.66	2.54				
STG		n	205	-	.62	2.66	1.71	6.52				
N-1	Water	1-28-91	6.4		102	2,00		0.00				
N-2	Water	2-21-91	<.1	<.1	<.005	<.005	.007	.009				<0.005
N-7	soil	2-15-91	<1	~	<.3	<.3	<.3	<.3				
5-N	# SUII	2-15-91	<1		<.3	<.3	<.3	<.3				
5-14 5-E	н	4-10 -9 1	<1		<.3	<.3	<.3	<.3				
		a										
5-W			<1		<.3	<.3	<.3	<.3				4
ST567		5.05.04	<1	4	<.3	<.3	<.3	<.3	ND			4
17-S	SOII	2-25-91	109	177	<.3	<.3	<.3	<.3	ND			
T8								4.0				
Comp		2-28-91	<1		<.3	.71	.255	1.2				
TBST		2-28-91	<1		<.3	<.3	<.3	<.3				
ST-3	Soil	2-27-91	<1		<.3	<.3	<.3	<.3		A (75)		4.7
Su-1	Soil	2-22-91	<1		<.005	<.005	<.005	<.005	<.005	ND	<1	1.7
18N	Soil	2-19-91	<1		_							
MTCA			100		.5	40	20	20				
	Water		1		.005	.04	.03	.02				

Analyte concentrations presented in Table 2 are contaminant concentrations measured in soil samples collected from the tank excavation limits. The results shown are assumed to be representative of contaminant concentrations in soils remaining in the vicinity of the sample locations.

Twenty-seven samples were submitted to the analytical laboratory for analyses of TPH. Of these, 18 samples did not contain detectable concentrations of TPH. Only two soil samples (STG and 17S) and one water sample (W-1) exhibited TPH concentration in excess of the Washington Model Toxics Control Act (MTCA) cleanup regulations for gasoline contaminated soil and water. The soil sample STG was collected from the stockpile of soils from the Tank 2 and Tank 4 excavations. This sample exhibited TPH concentration of 205 ppm. This sample also contained Benzene at a concentration of 0.62 ppm, which exceeds the MTCA compliance clean-up level. A soil sample collected just south of soldier pile #17, contained 109 ppm TPH by EPA Method 8015. The soil in this area was excavated and stockpiled onsite. A confirmatory soil sample collected approximately 4 feet away from and north of, the lagging (sample #18N) did not contain detectable concentrations of TPH or BTEX. The soil around soldier pile #17, where sample 17S was collected appears to represent an isolated and limited area of soil contamination.

Water sample W-1 exhibited a TPH concentration of 6.4 ppm. This sample was collected from the Tank 3 cavity. Water sample W-2 was collected near the Tank 5 cavity and did not exhibit any detectable concentrations of TPH or BTEX.

7.0 REMEDIATION

The stockpile of soil containing TPH above MTCA clean-up level concentrations, was transported to Cedar Hills Landfill (Appendix B). The stockpile of soil that included the material excavated around soldier pile 17 (sample 17S) did not exhibit detectable concentrations of TPH or BTEX. These soils were transported to Fife Sand and Gravel. A confirmatory sample (18N) collected approximately four feet away from sample 17S did not exhibit any detectable concentrations of TPH and BTEX.

The gasoline (approximately 2 to 3 gallons) accidently spilled in the tank 2 cavity was pumped-out and taken off site along with the contaminated water from the cavity by Northwest Enviroservices. Subsequent to the detection of 6.4 ppm TPH in the water from the Tank-3 cavity, Northwest Enviroservices pumped the water out. Water sample W-2 collected near the Tank 5 cavity did not contain any detectable concentrations of TPH or BTEX.

The soil sample SU-1 was collected from the base of the sump. The sump was made of concrete and was located in the western portion of the site. The depth of sludge in the sump was approximately two feet deep. Except for lead (1.7 ppm) concentration, all the analyses results indicate below detection limit concentrations of TPH, BTEX, chlorinated solvents and PCB's.

8.0 CONCLUSIONS

Eight abandoned tanks were discovered during the construction of a new apartment complex at the site. The tank contents were removed and the tanks were rinsed by Northwest Enviroservices in preparation for removal. The tanks were removed on 16 January, and 7, 14, and 25 February 1991. Petroleum impacted soils from the tank excavations and perched groundwater were removed from the site. The contaminated soils were transported to the Cedar Hills Landfill and the contaminated water was pumped out and removed from the site by Northwest Enviroservices.

9.0 CLOSURE

The information presented in this report is based on the explorations and the laboratory analyses accomplished for this study. The conclusions presented are professional opinions based on our interpretation of the analytical laboratory test results, as well as our experience and observations during the project field studies. The number, locations, and depths of explorations, including the analytical testing scope, were completed within the site and proposal constraints so as to yield the information required to formulate our conclusions.

We appreciate this opportunity to be of continued service to Neuffer Construction Company. If you have any questions regarding this report or other aspects of this project, please do not hesitate to call.

Respectfully submitted,

RITTENHOUSE-ZEMAN & ASSOCIATES, INC.

Moinoddin M. Kadri

Environmental Geologist

Daryl S. Petrarca

Enclosure:

Environmental Assessor

Figure 1 and Figure 2

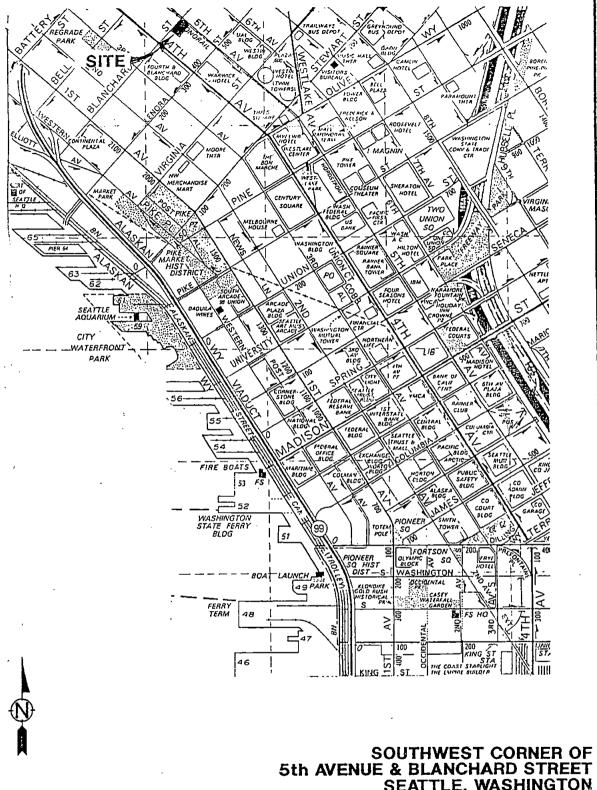
Table 1 - Tank Summary

Table 2 - Laboratory Analytical Results

Appendix A - Analytical Laboratory Certificates

Appendix B - City of Seattle Waste Clearance Certificate

Appendix C - METRO Sewer Discharge Permit



SEATTLE, WASHINGTON

SITE VICINITY MAP

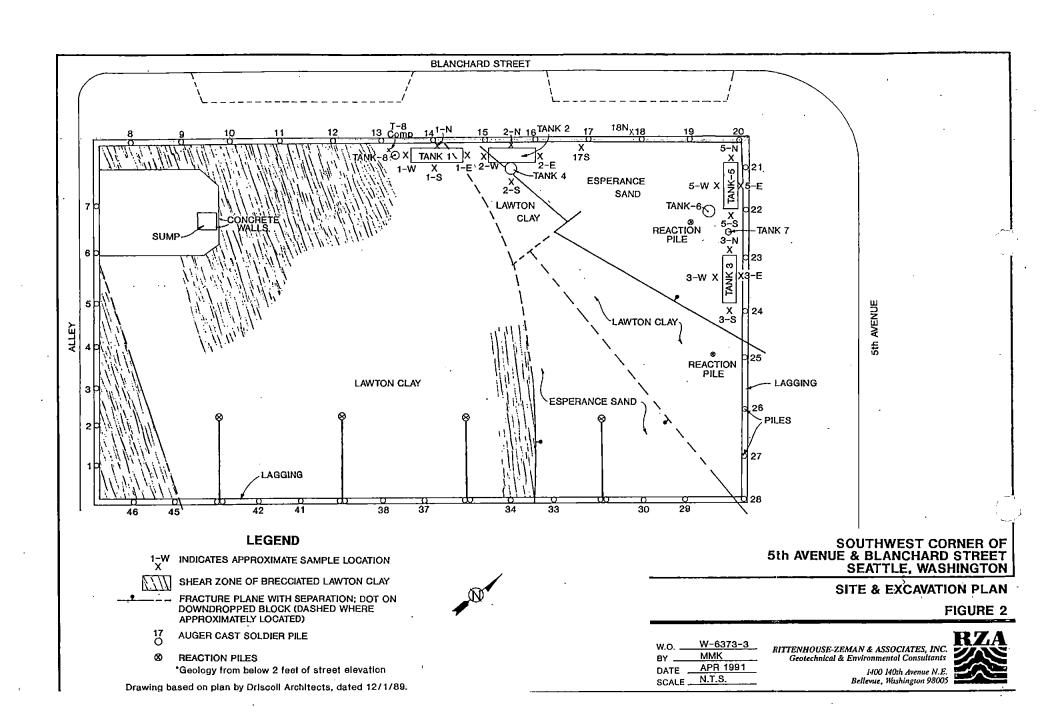
FIGURE 1

<u>W-6373-3</u> W.O. _ <u>MMK</u> BY. DATE APR 1991 SCALE _N.T.S.

RITTENHOUSE-ZEMAN & ASSOCIATES, INC. Geotechnical & Environmental Consultants

1400 140th Avenue N.E. Bellevue, WA 98005





APPENDIX A
LABORATORY CERTIFICATES
W-6373-3

2221 Ross Way •

Tacoma, WA 98421

• (206) 272-4850

January 21, 1991

Rittenhouse-Zeman & Assoc. 1400 140th Avenue Northeast Bellevue, WA 98005-4594 Customer #82053

Desc: Soil

Date Taken: 1-17-91

Site: W-6373

RUSH

Attn: Moin Kadri

Spectra #	ID	Total Petroleum Hydrocarbons ,ppm
49155	1-N	. <1
49156	1-S	<1
49157	1-E	. 39
49159	2-N	<1 .
49161	2-S	42
49162	2-W	35
49163	3-N	<1
49164	3-S	52
49165	3-W	<1
49166	3-E	<1

Total Petroleum Hydrocarbons testing performed by EPA Method 418.1

Tacoma, WA 98421 (206) 272-4850 2221 Ross Way

Sample ID: 1-W

Date Taken: 1-17-91

Desc: Soil

RUSH

<1

60

Site: W-6373 Spectra #49158

January 21, 1991

Rittenhouse-Zeman & Assoc. 1400 140th Avenue Northeast Bellevue, WA 98005-4594 Customer #82053

Attn: Moin Kadri

Hydrocarbons, ppm by Modified 8015

Total Petroleum Hydrocarbons, ppm

BIX, ppm

Benzene <0.01

Toluene <0.01

Ethyl Benzene <0.01

Total Xylenes <0.01

Total Petroleum Hydrocarbons performed by EPA Method 418.1 BTX testing performed by EPA Method 8020

SPECTRA LABORATORIES. 7 INC.

2221 Ross Way • Tacoma, WA 98421 • (206) 272-4850

January 21, 1991

Rittenhouse-Zeman & Assoc. 1400 140th Avenue Northeast Bellevue, WA 98005-4594

Customer #82053

Attn: Moin Kadri

Sample ID: 2-E Desc: Soil

Date Taken: 1-17-91

Site: W-6373 Spectra #49160

RŪSH

.

<1

Total Petroleum Hydrocarbons, ppm

Hydrocarbons, ppm by Modified 8015

<1

BTX, ppm

Benzene

<0.01

Toluene

<0.01

Ethyl Benzene

<0.01

Total Xylenes

<0.01

Total Petroleum Hydrocarbons performed by EPA Method 418.1 BTX testing performed by EPA Method 8020

SPECIRA LABORATORIES, JINC.

2221 Ross Way

Tacoma, WA 98421

(206) 272-4850

January 21, 1991

Rittenhouse-Zeman & Assoc. 1400 140th Avenue Northeast Bellevue, WA 98005-4594

Customer #82053

Attn: Moin Kadri

Sample ID: ST Desc: Soil

Date Taken: 1-17-91

Site: W-6373 Spectra #49167

RUSH

Hydrocarbons, ppm by Modified 8015 43 Hydrocarbon contamination appears to be gasoline.

Total Petroleum Hydrocarbons, ppm

85

BTX, ppm

Benzene 0.31 Toluene 1.17 Ethyl Benzene 0.66 Total Xylenes 2.54

Total Petroleum Hydrocarbons performed by EPA Method 418.1 BTX testing performed by EPA Method 8020

SPECIRA LABORATORIES; INC.

2221 Ross Way •

Tacoma, WA 98421

(206) 272-4850

January 21, 1991

Rittenhouse-Zeman & Assoc. 1400 140th Avenue Northeast Bellevue, WA 98005-4594 Customer #82053

Attn: Moin Kadri

Sample ID: STG Desc: Soil

Date Taken: 1-17-91

Site: W-6373 Spectra #49154

RUSH

Hydrocarbons, ppm by Modified 8015 205 Hydrocarbon contamination appears to be gasoline.

BTX, ppm

Benzene	0.62
Toluene	2.66
Ethyl Benzene	1.71
Total Xvlenes	6.52

BTX testing performed by EPA Method 8020

SPECIRA LABORATORIES, INC.

SOUND ANALYTICAL SERVICES, INC.

SPECIALIZING IN INDUSTRIAL & TOXIC WASTE ANALYSIS

4813 PACIFIC HIGHWAY EAST, TACOMA, WASHINGTON 98424 - TELEPHONE (206)922-2310 - FAX (206)922-5047

Report To: Rittenhouse-Zeman

Date: January 28, 1991

Report On: Analysis of Water

Lab No.: 15635

IDENTIFICATION:

Samples Received on 01-23-91 Project: W-6373-3 Neufer

Client ID: W-1

ANALYSIS:

Total Petroleum Fuel Hydrocarbons, mg/l by EPA SW-846 Modified Method 8015

6.4

TPH as

Gas

SOUND ANALYTICAL SERVICES

C LARRY ZURAW

SOUND ANALYTICAL SERVICES, INC.

SPECIALIZING IN INDUSTRIAL & TOXIC WASTE ANALYSIS 4813 PACIFIC HIGHWAY EAST, TACOMA, WASHINGTON 98424 - TELEPHONE (206)922-2310 - FAX (206)922-5047

QUALITY CONTROL REPORT

DUPLICATES

Lab No:

15635

Client ID:

W-1

Date:

January 28, 1991

atrix:

Water

Client:

Rittenhouse-Zeman

Units:

mg/l

Compound	Sample(S)	Duplicate(D)	RPD*
Total Petroleum Fuel Hydrocarbons	6.4	6.4	

*RPD = relative percent difference = [(S - D) / ((S + D) / 2)] x 100

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February 22, 1991

Rittenhouse Zeman & Associates 1400 140th Avenue N.E. Bellevue, WA 98005 Customer #82053

Attn: Moin Kadri

Sample ID: W-2 Date Taken: 2-15-91 Site: W-6373-3

Desc: Water Spectra #50650

Total Petroleum Hydrocarbons, mg/l

<0.1

Hydrocarbons, by Modified 8015, mg/l

<0.1

Total Petroleum Hydrocarbons testing performed by EPA Method 418.1

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2221 Ross Way • Tacoma, WA 98421 • (206) 272-4850

February 22, 1991

Rittenhouse-Zeman & Associates 1400 140th Avenue N.E. Bellevue, WA 98005 Attn: Moin Kadri	Sample ID: W-2 Site: Neuffer Project #W-6373-3 Sample Matrix: Water Date Sampled: 2-21-91 Date Received: 2-21-91 Spectra #50934 RUSH
BTEX, EPA Method 8240 Dilution Factor: 1	Date Analyzed: 2-21-91 Units: ug/L
Benzene	<5
Toluene	<5
Ethyl Benzene	7
Total Xylenes	9
Surrogate Percent Recoveries: Toluene-d8	99
Hydrocarbons, by Modified 8015, ppm	<0.1
Total Lead (Pb), ppm	<0.005

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February 21, 1991

Rittenhouse-Zeman & Associates

1400 140th Avenue N.E.

Bellevue, WA 98005

Sample Matrix: Soil
Date Sampled: 2-14-91
Date Received: 2-15-91
Spectra #50652

BTEX, EPA Method 8240

Date Extracted: 2-15-91

Sample ID: W-7

BTEX, EPA Method 8240 Dilution Factor: 1	Date Extracted: 2-15-91 Date Analyzed: 2-15-91 Units: mg/Kg
Benzene	<0.3
Toluene	<0.3
Ethyl Benzene	<0.3
Total Xylenes	<0.3
Surrogate Percent Recoveries: Toluene-d8	99
Hydrocarbons, by Modified 8015, ppm	<1

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February 21, 1991

Rittenhouse-Zeman & Associates 1400 140th Avenue N.E. Bellevue, WA 98005 Attn: Moin Kadri	Sample ID: 5-N Project #W-6373-3 Sample Matrix: Soil Date Sampled: 2-14-91 Date Received: 2-15-91 Spectra #50653
BTEX, EPA Method 8240 Dilution Factor: 1	Date Extracted: 2-15-91 Date Analyzed: 2-15-91 Units: mg/Kg
Benzene	<0.3
Toluene	<0.3
Ethyl Benzene	<0.3
Total Xylenes	<0.3
Surrogate Percent Recoveries: Toluene-d8	100
Hydrocarbons, by Modified 8015, ppm	<1

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2221 Ross Way • Tacoma, WA 98421 • (206) 272-4850

February 21, 1991

Rittenhouse-Zeman & Associates 1400 140th Avenue N.E. Bellevue, WA 98005 Attn: Moin Kadri	Sample ID: 5-E Project #W-6373-3 Sample Matrix: Soil Date Sampled: 2-14-91 Date Received: 2-15-91 Spectra #50654
BTEX, EPA Method 8240 Dilution Factor: 1	Date Extracted: 2-15-91 Date Analyzed: 2-15-91 Units: mg/Kg
Benzene	<0.3
Toluene	<0.3
Ethyl Benzene	<0.3
Total Xylenes	<0.3
Surrogate Percent Recoveries: Toluene-d8	100
Hydrocarbons, by Modified 8015, ppm	<1 .

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February 21, 1991

Total Xylenes

1400 140th Avenue N.E.

Rittenhouse-Zeman & Associates

Sample Matrix: Soil Bellevue, WA 98005 Date Sampled: 2-14-91 Date Received: 2-15-91 Attn: Moin Kadri Spectra #50655 BTEX, EPA Method 8240 Date Extracted: 2-15-91 Date Analyzed: 2-15-91 Dilution Factor: 1 Units: mg/Kg <0.3 Benzene <0.3 Toluene <0.3 Ethyl Benzene

Sample ID: 5-W

<0.3

102

Project #W-6373-3

Hydrocarbons, by Modified 8015, ppm <1

Toluene-d8

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Surrogate Percent Recoveries:

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February 21, 1991

Rittenhouse-Zeman & Associates 1400 140th Avenue N.E. Bellevue, WA 98005

Attn: Moin Kadri

Reagent Blank
Sample Matrix: Soil
Applies to Spectra #'s50652,
50653, 50654 and 50655

BTEX, EPA Method 8240 Dilution Factor: 1	Date Extracted: 2-15-91 Date Analyzed: 2-15-91 Units: mg/Kg
Benzene .	<0.3
Toluene	<0.3
Ethyl Benzene	<0.3
Total Xylenes	<0.3
Surrogate Percent Recoveries: Toluene-d8	100

SPECIRA LABORATORIES, INC.

2221 Ross Way • Tacoma, WA 98421 • (206) 272-4850

February 21, 1991

Rittenhouse-Zeman & Associates 1400 140th Avenue N.E. Bellevue, WA 98005

Attn: Moin Kadri

Sample Matrix: Soil EPA Method: 624/8240

Sample Spiked: Reagent Blank

Units: mg/Kg

Applies to Spectra #'s 50652

50653, 50654 & 50655

GCMS VOLATILE ORGANIC ANALYSIS QUALITY CONTROL RESULTS

<u>Compound</u>	Sample Result	Spike Amount Added	Spike Amount Found	% Recovery	Dup. Spike Amount Found	% Recovery	% RPD
1,-Dichloroethene	<0.30	2.5	1.65	66	1.62	65	2
Trichloroethene	<0.30	2.6	2.13	85	2.18	87	2
Benzene	3.5	2.5	5.58	83	4.88	55	13
Toluene	<0.30	2.5	2.41	96	2.32	93	4
Chlorobenzene	<0.30	2.5	2.12	85	2.17	87	2

SPECTRA LABORATORIES, INC.

2221 Ross Way • Tacoma, WA 98421 • (206) 272-4850

February 22, 1991

Rittenhouse-Zeman & Associates 1400 140th Avenue N.E. Bellevue, WA 98005

Attn: Moin Kadri

Sample Matrix: Water EPA Method: 624/8240

Sample Spiked: Reagent Blank

Units: ug/L

Applies to Spectra #50934

GCMS VOLATILE ORGANIC ANALYSIS QUALITY CONTROL RESULTS

Compound	Sample Result	Spike Amount Added	Spike Amount Found	% Recovery	Dup. Spike Amount Found	% Recovery	% RPD
1,-Dichloroethene	<5	50	37.8	76	39.3	79	4
Trichloroethene	<5	50	49.4	99	49.1	98	1
Benzene	<5	50	48.8	98	47.9	96	2
Toluene	<5	50	47.7	95	47.4	95	1
Chlorobenzene	<5	50	50.1	100	50.2	100	0

SPECTRA LABORATORIES, INC. .

Mike Minner, Lab Director

177/

2221 Ross Way • Tacoma, WA 98421 • (206) 272-4850

February 22, 1991

Rittenhouse-Zeman & Associates 1400 140th Avenue N.E. Bellevue, WA 98005

Attn: Moin Kadri

Reagent Blank Sample Matrix: Water Applies to Spectra #50934

BTEX, EPA Method 8240 Dilution Factor: 1		Date Analyzed: 2-21-91 Units: ug/L
Benzene		<5
Toluene		<5
Ethyl Benzene		<5
Total Xylenes		<5 ·
Surrogate Percent Recov	veries: Toluene-d8	99 .

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2221 Ross Way • Tacoma, WA 98421 • (206) 272-4850

February 15, 1991

Rittenhouse-Zeman & Associates

1400 140th Avenue N.E. Bellevue, WA 98005 Customer #82053 Attn: Moin Kadri	Site: W-6373-3 Project Project #W-6373-3 Sample Matrix: Soil Date Sampled: 2-15-91 Date Received: 2-15-91		
ALLII: MOIN KAULI	Spectra #50651 RUSH		
BTEX, EPA Method 8240 Dilution Factor: 1	Date Extracted: 2-15-91 Date Analyzed: 2-15-91 Units: mg/Kg		
Benzene	<0.3		
Toluene	<0.3		
Ethyl Benzene	<0.3		
Total Xylenes	<0.3		
Surrogate Percent Recoveries: Toluene-d8	100		
Hydrocarbons, by Modified 8015, ppm	<1		

4

Sample ID: ST.567

SPECTRA LABORATORIES, INC.

Total Lead testing is performed by EPA Method 0029

Total Lead, ppm

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February 27, 1991

Rittenhouse-Zeman & Associates 1400 140th Avenue N.E. Bellevue, WA 98005 Customer #82053

Attn: Moin Kadri

Sample ID: #17-S Project # W-6373-3 Sample Matrix: Soil Date Received: 2-25-91 Spectra #51177

RUSH

Hydrocarbons by Modified 8015, ppm

109

Hydrocarbons detected appear to be "weathered gasoline"

Total Petroleum Hydrocarbons, ppm

177

Total Petroleum Hydrocarbons performed by EPA Method 418.1

SPECTRA LABORATORIES INC

2221 Ross Way •

Tacoma, WA 98421

(206) 272-4850

February 27, 1991

Rittenhouse-Zeman & Associates

1400 140th Ave NE

Bellevue, WA 98005 Customer #82053

ATTN: Moin Kadri

Project # N/A

Client ID: N/A

Sample Matrix: Reagent Blank

Date Sampled: N/A Date Received: N/A Date Analyzed: 2-27-91

Dilution Factor:1
Date Extracted: 2-26-91

Volatiles, mg/Kg		EPA Method 8240	
COMPOUNDS	RESULTS	COMPOUNDS	RESULTS
		:	•
Chloromethane	<0.5	1,1,2,2-Tetrachloroethane	<0.3
Bromomethane	<0.5	1,2-Dichloropropane	<0.3
Vinyl Chloride	<0.5	trans-1,3-Dichloropropene	<0.3
Chloroethane	<0.5	Trichloroethene	<0.3
Methylene Chloride	<0.3	Dibromochloromethane	<0.3
Acetone	<5.0	1,1,2-Trichloroehtane	<0.3
Carbon Disulfide	<0.3	Benzene	<0.3
1,1-Dichlorethene	<0.3	cis-1,3-Dichloropropene	<0.5
1,1-Dichlorethane	<0.3	Bromoform	<0.3
trans-1,2-Dichloroethene	<0.3	2-Hexanone	<2.5
cis-1,2-Dichloroethene	<0.3	4-Methyl-2-Pentanone	<2.5
Chloroform	<0.3	Tetrachloroethene	<0.3
1,2-Dichloroethane	<0.3	Toluene	<0.3
2-Butanone	<5.0	Chlorobenzene	<0.3
1,1,1-Trichloroethane	<0.3	Ethyl Benzene	<0.3
Carbon Tetrachloride	<0.3	Styrene	<0.3
Vinyl Acetate	<2.5	Total Xylenes	<0.3
Bromodichloromethane	<0.3	•	

Surrogate Percent Recoveries:

1,2-Dichloroethane-d4 102 Toluene-d8 101 BromofluoroBenzene 99

2221 Ross Way

Tacoma, WA 98421

(206) 272-4850

February 27, 1991

Rittenhouse-Zeman & Associates 1400 140th Avenue N.E. Bellevue, WA 98005 Customer #82053

ATIN: Moin Kadri

Project # W-6373-3 Client ID:#17-S Sample Matrix: Soil Date Sampled:2-25-91 Date Received:2-25-91 Date Analyzed:2-26-91 Dilution Factor: 1 Spectra #51177

Volatiles, mg/Kg		EPA Method 8240	
COMPOUNDS	RESULTS	COMPOUNDS	RESULTS
Cl-1			
Chloromethane	<0.5	1,1,2,2-Tetrachloroethane	<0.3
Bromomethane	<0.5	1,2-Dichloropropane	<0.3
Vinyl Chloride	<0.5	trans-1,3-Dichloropropene	<0.3
Chloroethane	<0.5	Trichloroethene	<0.3
Methylene Chloride	<0.3	Dibromochloromethane	<0.3
Acetone	<5.0	1,1,2-Trichloroehtane	<0.3
Carbon Disulfide	<0.3	Benzene	<0.3
1,1-Dichlorethene	<0.3	cis-1,3-Dichloropropene	<0.5
1,1-Dichlorethane	<0.3	Bromoform	<0.3
trans-1,2-Dichloroethene	<0.3	2-Hexanone	<2.5
cis-1,2-Dichloroethene	<0.3	4-Methyl-2-Pentanone	<2.5
Chloroform	<0.3	Tetrachloroethene	<0.3
1,2-Dichloroethane	<0.3	Toluene	<0.3
2-Butanone .	<5.0	Chlorobenzene	<0.3
1,1,1-Trichloroethane	<0.3	Ethyl Benzene	<0.3
Carbon Tetrachloride	<0.3	Styrene	<0.3
Vinyl Acetate	<2.5	Total Xylenes	0.62
Bromodichloromethane	<0.3		0.02

Surrogate Percent Recoveries:

1,2-Dichloroethane-d4 100 Toluene-d8 100 BromofluoroBenzene 94

SPECTRA LABORATORIES, INC.

2221 Ross Way •

Tacoma, WA 98421

(206) 272-4850

February 27, 1991

Rittenhouse-Zeman & Associates 1400 140th Ave NE Bellevue, WA 98005

Attn: Moin Kadri

Sample Matrix: Soil EPA Method: 8240

Sample Spiked: Reagent Blank

Date Analyzed: 2-27-91

Units: mg/Kg

Applies to Spectra #51177

GCMS VOLATILE ORGANIC ANALYSIS QUALITY CONTROL RESULTS

<u>Compound</u>	Sample Result	Spike Amount Added	Spike Amount Found Re	% covery	Dup. Spike Amount Found I	% Recovery	% RPD
1,-Dichloroethene	<0.30	2.5	1.92	.77	2.14	86	11
Trichloroethene	<0.30	2.5	2.35	94	2.44	98	4
Benzene	<0.30	2.5	2.33	93	2.46	98	5
Toluene	<0.30	2.5	2.43	97	2.60	104	7
Chlorobenzene	<0.30	2.5	2.43	97	2.54	101	4

spectra gaboratories, inc.

2221 Ross Way • Tacoma, WA 98421 • (206) 272-4850

February 28, 1991

Rittenhouse-Z	emen & Associates
1400 140th Av	renue N.E.
Bellevue, WA	98005

Attn: Moin Kadri

Sample ID: T8 Comp Project # W-6373-3 Sample Matrix: Soil Date Sampled: 2/25/91 Date Received: 2/25/91 Date Analyzed: 2/28/91 Spectra # 51178

<1

	Spectra # 51178
BTEX, EPA Method 8240 Units: mg/Kg	Date Extracted: 2/26/91
Benzene	<0.3
Toluene	0.71
Ethyl Benzene	0.255
Total Xylenes	1.2
Surrogate Percent Recoveries: Toluene-d8	96

Hydrocarbons, by Modified 8015, ppm

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February 28, 1991

Rittenhouse-Zemen & Associates 1400 140th Avenue N.E. Bellevue, WA 98005

Attn: Moin Kadri

Sample ID: T8 ST Project # W-6373-3 Sample Matrix: Soil Date Sampled: 2/25/91 Date Received: 2/25/91 Date Analyzed: 2/28/91 Spectra # 51179

BTEX, EPA Method 8240 Units: mg/Kg	Date Extracted: 2/26/91
Benzene ·	<0.3
Toluene	<0.3
Ethyl Benzene	<0.3
Total Xylenes	<0.3
Surrogate Percent Recoveries: Toluene-d8	95
Hydrocarbons, by Modified 8015, ppm	<1

RA LABORATORIES, INC.

2221 Ross Way

Tacoma, WA 98421

(206) 272-4850

February 28, 1991

Ritenhouse-Zemen & Associates 1400 140th Avenue N.E. Bellevue, WA 98005 Customer #82053

Attn: Moin Kadri

Sample Matrix: Soil/Oil EPA Method: BTEX by 8240 Sample Spiked: Reagent Blank Date Extracted: 2/26/91

Units: mg/Kg Spectra # 51177-51179

GCMS VOLATILE ORGANIC ANALYSIS QUALITY CONTROL RESULTS

Compound	Sample Result	Spike Amount Added	Spike Amount % Found Reco	Dup. Spike Amount Pery Found	% Recovery	% RPD
Benzene	<0.30	2.5	2.33	93 2.46	98	5
Toluene	<0.30	2.5	2.43	2.60	104	7

2221 Ross Way

Tacoma, WA 98421

(206) 272-4850

February 28, 1991

Rittenhouse-Zemen & Associates 1400 140th Avenue N.E. Bellevue, WA 98005 Customer # 82053

Attn: Moin Kadri

Client ID: N/A
Sample Matrix: Soil
Date Sampled: N/A
Date Taken: N/A

Date Extracted: 2/26/91 Date Analyzed: 2/27/91 Dilution Factor: 1 Spectra # Reagent Blank

BTX, mg/Kg

Benzene <0.3

Toluene <0.3

Ethyl Benzene <0.3

Total Xylenes <0.3

Surrogate Percent Recoveries:

Toluene-d8

101

BTX testing performed by EPA Method 8240

2221 Ross Way . •

Tacoma, WA 98421

(206) 272-4850

February 28, 1991

Ritenhouse-Zemen & Associates 1400 140th Avenue N.E. Bellevue, WA 98005 Customer #82053

Attn: Moin Kadri

Sample Matrix: Soil/Oil EPA Method: BTEX by 8240 Sample Spiked: Reagent Blank

Date Extracted: 2/26/91

Units: mg/Kg Spectra # 51261

GCMS VOLATILE ORGANIC ANALYSIS QUALITY CONTROL RESULTS

Compound	Sample <u>Result</u>	Spike Amount Added	Spike Amount Found Re	% ecovery	Dup. Spike Amount Found	% Recovery	% RPD
Benzene	<0.30	2.5	2.33	93	2.46	98	5
Toluene	<0.30	2.5	2.43	9,7	2.60	104	7

SRECTRA/LABORATORIES, INC.

2221 Ross Way •

Tacoma, WA 98421 •

(206) 272-4850

February 28, 1991

Rittenhouse-Zemen & Associates 1400 140th Avenue N.E. Bellevue, WA 98005 Customer # 82053

Attn: Moin Kadri

Client ID: ST-3
Sample Matrix: Soil
Date Sampled: 2/26/91
Date Extracted: 2/27/91
Date Analyzed: 2-27-91
Dilution Factor: 1
Spectra # 51261
Project # W-6373-3
RUSH

BTX, mg/Kg

Benzene <0.3

Toluene <0.3

Ethyl Benzene <0.3

Total Xylenes <0.3

Surrogate Percent Recoveries:

Toluene-d8 100

BTX testing performed by EPA Method 8240

2221 Ross Way

Tacoma, WA 98421 • (206) 272-4850

February 28, 1991

Rittenhouse-Zemen & Associates 1400 140th Avenue NE Bellevue, WA 98005 Customer #82053

Attn: Moin Kadri

Client ID: ST-3 Sample Matrix: Soil Date Sampled: 2-26-91 Spectra #51261 Project #W-6373-3 RUSH

Hydrocarbons by Modified 8015, ppm

<1

SPECTRA LABORATORIES, INC.

Steven G. Hibbs,

2221 Ross Way •

Tacoma, WA 98421

(206) 272-4850

February 28, 1991

Rittenhouse-Zemen & Associate 1400 140th Avenue N.E. Bellevue, WA 98005 Customer # 82053

Attn: Moin Kadri

Date Sampled: N/A
Date Received: N/A
Date Extracted: 2/27/91
Date Analyzed: 2/27/91
Dilution Factor: 1

Spectra # Reagent Blank Sample Matrix: Soil

RUSH

BTX, mg/Kg

Benzene <0.3
Toluene <0.3

Ethyl Benzene <0.3

Total Xylenes <0.3

Surrogate Percent Recoveries:

Toluene-d8 101

BTX testing performed by EPA Method 8240

SPECTRA LABORATORIES, INC.

2221 Ross Way •

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February 28, 1991

Rittenhouse-Zemen & Associates 1400 140th Avenue N.E. Bellevue, WA 98005 Customer #82053

Attn: Moin Kadri

Sample Matrix: Soil/Oil EPA Method: BTEX By 8240 Sample Spiked: 50570 Date Analyzed: 2/14/91

Units: mg/Kg

Spectra #'s: 50933

GCMS VOLATILE ORGANIC ANALYSIS QUALITY CONTROL RESULTS

Compound	Sample <u>Result</u>	Spike Amount Added	Spike Amount Found Ro	% ecovery	Spike Amount Found	% Recovery	% RPD
Benzene	3.50	2.5	5.58	83	4.88	55	13
Toluene	<0.30	2.5	2.41	96	2.32	93	4

2221 Ross Way •

Tacoma, WA 98421

(206) 272-4850

February 28, 1991

Rittenhouse-Zemen & Associates 1400 140th Avenue N.E.

Bellevue, WA 98005 Customer # 82053

Attn: Moin Kadri

Client ID: SU-1 Sample Matrix: Soil Date Sampled: 2/21/91 Date Received: 2/21/91 Date Analyzed: 2/22/91

Project # Neuffer Dilution Factor: 1 Spectra # 50933

RUSH

BIX, mg/Kg

Benzene <0.005

Toluene <0.005

Ethyl Benzene <0.005

Total Xylenes <0.005

Surrogate Percent Recoveries:

Toluene-d8

113

BTX testing performed by EPA Method 8240 Direct Sparge

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2221 Ross Way

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February 28, 1991

Rittenhouse-Zemen & Associates 1400 140th Avenue N.E. Bellevue, WA 98005 Customer # 82053

Attn: Moin Kadri

Client ID: N/A Sample Matrix: Soil Date Sampled: N/A Date Received: N/A Date Analyzed: 2/21/91 Dilution Factor: 1 Spectra # Reagent Blank

BTX, mg/Kg

Benzene <0.005 Toluene <0.005 Ethyl Benzene <0.005 Total Xylenes <0.005

Surrogate Percent Recoveries:

Toluene-d8

105

BTX testing performed by EPA Method 8240 Direct Sparge

LABORATORIES, INC.

2221 Ross Way •

Tacoma, WA 98421

(206) 272-4850

February 28, 1991

Rittenhouse-Zeman & Associates 1400 140th Avenue N.E. Bellevue, WA 98005

Attn: Moin Kadri

Sample Matrix: Soil/Oil

EPA Method: Cl. Solv. by 8240

Sample Spiked: 50570

Units: mg/Kg

Applies to Spectra #50933

GCMS VOLATILE ORGANIC ANALYSIS QUALITY CONTROL RESULTS

Compound	Sample Result	Spike Amount Added	Spike Amount Found	% Recovery	Dup. Spike Amount Found	% Recovery	% RPD
1,-Dichloroethene	<0.30	2.5	1.65	66	1.62	65	2
Trichloroethene	<0.30	2.5	2.13	85	2.18	87	2
Chlorobenzene	<0.30	2.5	2.12	85	2.17	87	2

SPECTRA LABORATORIES, INC.

2221 Ross Way • Tacoma, WA 98421 • (206) 272-4850

February 28, 1991	Project # Neuffer
•	Client ID: SU-1
Rittenhouse-Zemen & Associates	Sample Matrix: Soil/Oil
1400 140th Avenue N.E.	Date Sampled: 2/21/91
Bellevue, WA 98005	Date Received: 2/21/91
Customer # 82053	Date Analyzed: 2/22/91
	Dilution Factor: 1
ATIN: Moin Kadri	Spectra # 50933

Clal and a shall Callerent Caller W.	TD4 1/ 11 1 20/0 B: 1 0
Chlorinated Solvent Scan, mg/Kg	EPA Method 8240 Direct Sparge
COMPOUNDS	RESULTS
Methylene Chloride	•025B*
1,1-Dichlorethene	<0.005
1,1-Dichlorethane	<0.005
trans-1,2-Dichloroethene	<0.005
cis-1,2-Dichloroethene	₹0.005
Chloroform	<0.005
1,2-Dichloroethane	<0.005
1,1,1-Trichloroethane	<0.005
Carbon Tetrachloride	<0.005
Bromodichloromethane	<0.005
1,1,2,2-Tetrachloroethane	<0.005
1,2-Dichloropropane.	<0.005
trans-1,3-Dichloropropene	<0.005
Trichloroethene	<0.005
Dibromochloromethane `	<0.005
1,1,2-Trichloroehtane	<0.005
cis-1,3-Dichloropropene	<0.005
Tetrachloroethene -	<0.005
Chlorobenzene	<0.005
	•

Surrogate Percent Recoveries:

1,2-Dichloroethane-d4 106 BromofluoroBenzene 86

* B = also found in reagent blank.

2221 Ross Way • Tacoma, WA 98421 • (206) 272-4850

February 28, 1991

Rittenhouse-Zemen & Associates 1400 140th Avenue N.E. Bellevue, WA 98005 Customer # 82053

ATTN: Moin Kadri

Project # N/A Client ID: N/A

Sample Matrix: Soil/Oil

Date Sampled: N/A
Date Received: N/A
Date Analyzed: 2/21/91
Dilution Factor: 1
Spectra # Reagent Blank

Chlorinated Solvent Scan, COMPOUNDS	mg/Kg	EPA Method 8240 Direct Sparge RESULTS
·		

CONTROUNDS	RESULTS
Methylene Chloride 1,1-Dichlorethene 1,1-Dichlorethane trans-1,2-Dichloroethene cis-1,2-Dichloroethene Chloroform 1,2-Dichloroethane 1,1,1-Trichloroethane Carbon Tetrachloride Bromodichloromethane 1,1,2,2-Tetrachloroethane 1,2-Dichloropropane trans-1,3-Dichloropropene Trichloroethene Dibromochloromethane 1,1,2-Trichloroehtane cis-1,3-Dichloropropene	0.048 <0.005 <0.005 <0.005 <0.005 0.006 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005
Tetrachloroethene Chlorobenzene	<0.005 <0.005

Surrogate Percent Recoveries:

1,2-Dichloroethane-d4 BromofluoroBenzene

94 94

SPECTRA LABORATORIES, INC.

2221 Ross Way • Tacoma, WA 98421 • (206) 272-4850

February 28, 1991

Rittenhouse-Zemen & Associates
1400 140th Avenue N.E.

Bellevue, WA 98005
Customer #82053
Attn: Moin Kadri

Project #W6373-3
Sample ID: SU-1
Date Taken: 2-21-91
Date Received: 2-21-91
Sample Matrix: Soil
Spectra #50933

Hydrocarbons by Modified 8015, ppm

<1

1.7

PCB's by EPA Method 8080 Total Metals testing by EPA Method AES 0029

SPECTRA LABORATORIES, INC.

Total Lead (Pb), ppm

Stevén G. Hibbs, Chemist

2221 Ross Way • Tacoma, WA 98421 • (206) 272-4850

March 11, 1991

Rittenhouse-Zeman & Associates 1400 140th Avenue N.E. Bellevue, WA 98005 Customer #82053

Attn: Moin Kadri

Sample ID: #18N

Desc: Soil

Date Taken: 3-5-91

Site: Neuffer Job #W-63733 Spectra #51621

Hydrocarbons, ppm by Modified 8015

<1

SPECTRA LABORATORIES, ING-

Steven G. Hibbs, Chemist

APPENDIX B
CITY OF SEATTLE WASTE CLEARANCE CERTIFICATE
W-6373-3

		Waste Clearance No. HD9101016
	<u>PE CLEARANCE FORM PART C</u> . TO BE D WASTE DIVISION.	COMPLETED BY A REPRESENTATIVE OF THE KING COUNT
	Generator: Neuffer Construct	ion Company
	22845 N.E. 8th	Suite 334, Redmond, WA 98053
	Source: 2133 - 5th Ave.	•
•	Is material described by gendenied, attach sheet explaini	nerator approved for disposal? If disposal ing reasons for denial.
	X YES	☐ See attached sheet
	Waste Type: gasoline contam	ninated soil
	Conditions for Disposal: no	ot a dangerous waste
	Specify KCSWD disposal facili	ty at which material may be disposed:
	X Cedar Hills Regional L	andfill
	Route approved for hauling ma	aterial for disposal:
	X See attached map Other (Specify):	
	Anticipated schedule for disp	oosal: 1-29-92 to 2-2-91
	Quantity approved for disposa	al: <u>five (5) cu, yds</u> ,
•	Delivery frequency: X One Time Only Monthly Other (Specify)	
	Expiration Date: March 26	1991
	Notification Instructions:	
	□ Call to requested disposal	at 296-4411 at least five (5) working days prid
	☐ Callrequested disposal dat	at 296-4490 twenty-four (24) hours prior t
,-	X Call Mel Andriesen on subsequent day of deli	morning of the first day of delivery and on each
	□ Other (Specify)	
	Marin D. Monk	Marilyn D, Monk Print Name
	Project coordinator	January 30, 1991
	Title	Date

Jim Weinbrecht, Neuffer Construction Company
Moin Kadri, Rittenhouse, Zeman & Assoc., Inc.
Steve Burke, Senior Environmental Health Specialist, Health Department
Dennis Trammell, Operations Manager, Solid Waste Division
ATTN: Mel Andriesen, Operations Supervisor
Deborah P. Lambert, Engineering Services Manager, Solid Waste Division

KING COUNTY SOLID WASTE DIVISION

WASTE CLEARANCE FORM (Please print in ink or type)

	Waste Clea	rance No
· · ·		(Agency Use)
PART A. TO BE COMPLETED BY THE GENE	RATOR:	
Generator Name and Address:		•
NEUFFER CONSTRUCTION COMPANY	Contact:	JIM WEINBRECHT
22845 N.E. 8th. SUITE 334	Tel. No:	(206) 728-1187
REDMOND WA 98053	per per .	
EPA/State Identification Number, if ava	ilable: .	
Hauler Name and Address:		
NELSON LAYMAN CONSTRUCTION	Contact:	NELSON LAYMAN
34930 NE 14th STREET	Tel. No:	(206) 392-9386
CARNATION, WA 98014	FAX No:	(206) 391-5356
Consultant Name and Address:		
RITTENHOUSE-ZEMAN & ASSOC. INC.	Contact:	MOIN KADRI
1400 140th AUE. N.E.	Tel. No:	(206) 865-9019
BELLEVUE, WA 98005-4594	Fax. No:	(206) 746-6364
If disposal fees will be paid by Solid Waaccount holder and charge account number	aste charge ac	count, please give name of
Name: N/A For information on establishing a Solid		account call 296-4448
Description of Material: GROUNE C		
Source of Material (give address and loc	ation at addr	ess):
2133 5th. AUENUE, SEATTLE, WATER	GTON. UST	EXCAUATION MATERIAL
Tan -5 1 1	I/A	
Weight or volume of material to be dispo	sed: AppRo	SIMATELY 5 CUBIC YARDS
Frequency of disposal:ONE-		STIMATECY O COSTO YARDO
Requested disposal schedule (give dates)	: 1-29-91	- 2-1-91
D	·	
Requested disposal facility: <u>COAL CE</u> (transfer	EEK LANDFIL	t Hills landfill erg \

	Waste Clearance No.
ተ ህክ!	F OF MATERIAL Places should be a second of the second of t
	E OF MATERIAL: Please check category and provide requested information. Attach extra pages if necessary.
	Animal waste
	Asbestos-containing waste Describe method of containerization:
	If PSAPCA Notice of Intent to Remove or Encapsulate is required, this form is not necessary. Refer to PUT 7-2 for asbestos guidelines.
	Containerized liquids List number and size of containers and contents of each container:
Z	Contaminated soil, or industrial waste (please circle applicable category
	of waste): Maximum daily volume to be disposed: APPROXIMATELY 5 COBIC YARDS
	Description of chemical characteristics, if known:
	TPH 205 PPM
	Have any chemical analyses been performed on this material? YES If yes, please attach copy of data from representative samples.
	If industrial waste, please describe the process which generates this waste and the ingredients of that process.
	Attach Material Safety Data Sheet, if available.
	Drum containers - empty
	Number/size:
	Contents before emptying:
	Method of emptying:
	Dusty material
	Describe method of containerization:
\neg	Infectious Waste
_	
	Describe treatment method:
	Attach documentation of treatment of infectious waste, if available.
Incl SEPA Incl to t	ude a completed environmental checklist (WAC 197-11-960) or other pertinent document for all materials in quantities greater than 50 cubic yards. ude any other pertinent reports or documents that have been prepared relating his waste.

	waste Clearance No.
ATTAC	HMENTS
Pleas	e check if enclosed:
	Material Safety Data Sheet
	Documentation of treatment of infectious waste
	Environmental checklist, other SEPA documents, reports or permits
赵	Analytical data .
	Sampling map / soil logs
under above of th Waste	, hereby certify under penalty of perjury the laws of the State of Washington, that all the information contained is true and correct and that this waste fully complies with the regulations e Seattle-King County Department of Public Health and the King County Solid Division.
<u> </u>	tenhouse-Zeman & Assoc., Inc. Loch Kadn Generator Signature LOUN KADRI

For contaminated soils or industrial waste, send completed form to:

Seattle-King County Department of Public Health

Waste Screening Program

Print Name

Title

Date

Environmental

1-23-91

172 - 20th Avenue

Telephone:

(206) 296-4633

Seattle, WA 98122

FAX*:

(206) 296-0188

For other wastes requiring clearance under this Rule, return completed form to:

King County Solid Waste Division,

Engineering Services, Waste Clearance Program

450 King County Administration Building

Geologist

500 Fourth Avenue

Telephone:

(206) 296-4411

Seattle, WA 98104 FAX*: (206) 296-0197

* Clearance Forms transmitted by FAX must be followed by mailed original.

APPENDIX C
METRO SEWER DISCHARGE PERMIT
W-6373-3

Exchange Building • 821 Second Ave. • Seattle, WA 98104-1598

REGISTERED MAIL
RETURN RECEIPT REQUESTED

March 5, 1991

Jim Weinbrecht Neuffer Construction 22845 NE. 8th, Suite 334 Redmond, WA 98053

Special Discharge Authorization for Neuffer Construction

Dear Mr. Weinbrecht:

The Metro industrial waste section has reviewed the waste discharge permit application submitted on your behalf by Rittenhouse-Zeman and Associates, for the construction dewatering project located at 2133 5th Avenue (corner of 5th and Blanchard), Seattle, Washington.

Based on the analytical results of water samples submitted with the application, we will grant special discharge authorization for the one time removal of approximately 10,000 gallons of gasoline contaminated perched groundwater into the Metro sewer system. This discharge must be in accordance with the special conditions (attached) and the provisions of Metro Resolution No. 3374 (enclosed).

If a visible sheen or pronounced odor develops, or turbidity significantly increases while discharging to the sewer at 2133 5th Avenue, Neuffer Construction must cease discharge immediately. Discharge may resume when the source of contaminants has been eliminated or analytical tests verify the discharge meets Metro's discharge limits.

Neuffer Construction shall notify Metro when discharge has been completed and shall provide Metro with an estimate of the total volume of water discharged to the sewer from this project.

Jim Weinbrecht March 5, 1991 Page Two

Metro industrial waste staff want to help you stay in compliance with our regulations. If at any time you have questions regarding this special authorization, or other questions about your discharge, please do not hesitate to call me at 684-2335.

Sincerely,

Jim Sifford

Industrial Waste Investigator Comprehensive Planning Division

JWS:mwr Enclosure

cc: Moin Kadri, Rittenhouse-Zeman & Assoc.

Doug Knutson, Department of Ecology

Victor Lee, City of Seattle Doug Hilderbrand, Metro METRO SPECIAL DISCHARGE AUTHORIZATION NEUFFER CONSTRUCTION MARCH 5, 1991

SPECIAL CONDITIONS

Discharge Limitations

Constituent	Maximum Concentration (mg/l)
Benzene	0.13
Toluene	1.5
Ethylbenzene	1.4
Non-polar (hydrocarbon) Fats. Oils and Grease	100

Application is nereby made for a permissiouscharge wastes into the Municipality of Metropolitan Seattle sewer system in accordance with RCW 90.48.165, RCW 35.58.180, RCW 35.58.200, RCW 35.50.360 and Metro Resolution 3374,

on v — gallata fillólulátóbi	1 .
company Name NEVEPER CONST	RUCTION
Mailing Address 22845 NE 844.	SUITE 334 REDMOND WA 98053
ocation of plant discharging wastes if different fro	mabove 2133 5th AVENUE SEATTLE WA
dame, title, address and telephone number of person	on to contact concerning information in this questionnaire:
RITTENHOUSE ZEMANA ASSI	TILL ENVIRONMENTAL GEOLOGIST
ddress 1400-140th Avenue	
Sity BELLETUE	State WA Zio 98005-4594
ion B Product or Service Information:	
riel description of manufacturing or service at plan	nt address:
	ation for construction of an apartment complex.
<u> </u>	•
· j	, seguar
aw materials and chemicals used in processes:	
•	ame *Quantitles Average Used per day Maximum
Not Applicable.	
escribe how raw chemicals and hezerdous meter	iale are glassed. Have about home taken to account the second transfer of the second transf
pillage or ruptured containers will not enter a water	way or sewer?
During the excaustion	underground Storage tanks were found. Soil
	be gosoline contaminated. The water is
enfined only in the northers	tern Corner of the site and it is a perched
water necessing surface new	
V - '	
•	*Ouantity and Unit
	Average Maximum
• •	
•	
ant Operations:	Number of employees per shift
Days per year	Day Night Swing
verage Not applicable	
aximum	RECEIVED
	company Name NEVEFER CONST failing Address 22845 NE 846. ocation of plant discharging wastes if different fro lame, title, address and telephone number of pers fame MOIN KADRI address 1400-1401h AUENUFF little description of manufacturing or service at plan The Sulcicut site is the law A ane Stary office hulding like Construction. aw materials and chemicals used in processes: rand Name Chemical, scientific or actual natural natural service of the construction. The Applicable rescribe how raw chemicals and hazardous mater pollage or ruptured containers will not enter a water During the excausion and curter are found to confined early in the northness and the product or processed: Product Not applicable On C Plant Operational Characteristics: lant Operations: Days per year

METRO

FEB 2 7 1991

*Please specify units. For example: tons/day, pounds/day, barrels/day, etc.	(tu y	RECEIVED
Date	ironnontal Geologist,	Ri Henhouse, Zaman & Ass.
2-27-91 = 50.00		
	MOIN KADRI Printed Name	
	Signature	
	m · V-di	
7. The information given on this application is correct and accurate to the	best of my knowledge.	
 Give any additional information or comments you feel necessary to clari questions, where additional space is necessary, as part of Exhibit 3. 	•	e all information for previous
and the property of the proper		
5. Planned waste treatment improvements should be submitted on a sensor		ditional treatment or changes
4. Describe all wastewater treatment equipment or processes in use:		
d. Evaporation	Four galler day	
c. Waste haulers	u	
b. Surface waters and storm sewers (specify)	н	
Municipal sewer (industrial and sanitary wastewater)	Average gallon/day	Maximum gallon/day
3. List discharge or water losses to:	Avacene nellon/de.	Maximum astronom
Raw water treatment (specify water conditioning chemicals used)	Mon.	
e. Other (specify)		•
d. Water incorporated into product	j.	
c. Boiler feed		
b. Cooling	t,	
a. Industrial processing	<u>~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ </u>	
	Average gallon/day	Maximum gallon/day
2. List water consumption within the plant:		
1. Source of supply <u>Perched ground</u> water		
Section D Water Consumption and Loss:	•	
4. Metal finishing and metal etching industries: Give a breakdown of crestimated dragout, Identify tanks containing significant quantities of p that concentrate heavy metals. Describe what precautions have been tall result of ruptured or leaking tanks. Include this information with your result of ruptured or leaking tanks.	pnosphorus, hitrogen, heavy metals, c kan to contain and prevent discharge	na minima a manda a babana
 Describe in detail the sources of all industrial wastes within your industriale in this description the disposal methods used for these wastes include a schematic flow diagram showing the sources of all wastes and Exhibit 1. 	i and also for any sludge collected by of their flow pattern. Include this inform	your waste treatment system. nation with your application as
5 ub sequently Soils Gortaminated by gran		
	ing 12 to tal pemleum	hydrocarbon s.
THE PERSON PERSON PARK THE PAR		
	To remnik garden	& Centemensted
a. Explain may seasonal variation you in the art waste discharge yolum and/or production;	65. Diant Opelandns, two 💀 👈 nas an	in maniferia dada iu hioceatea

INDUSTRIAL WASTE

SPECIALIZING IN INDUSTRIAL & TOXIC WASTE ANALYSIS 4813 PACIFIC HOHWAY EAST, TAGORIA, WASHINGTON 98424 - TELEPHONE (206)922-2010 - FAX (206)922-2017

Report To: Rittenhouse-Zeman

Date: January 28, 1991

Report On: Analysis of Water

Lab No.: 15635

IDENTIFICATION:

Samples Received on 01-23-91

Project: W-6373-3 Neufer

Client ID: W-1

ANALYSIS:

Total Petroleum Fuel Hydrocarbons, mg/l by EPA SW-846 Modified Method 8015

6.4

TPH as

Gas

SOUND AMALYTICAL SERVICES

C. LARRY ZURAW

RECEIVED INDUSTRIAL WASTE

FEB 2 7 1991

METRO

2221 Ross Way • Tacoma, WA 98421 • (206) 272-4850

February 22, 1991

Rittenhouse-Zeman & Associates 1400 140th Avenue N.E. Bellevue, WA 98005

Attn: Moin Kadri

Sample ID: W-2 Site: Neuffer Project #W-6373-3 Sample Matrix: Water Date Sampled: 2-21-91 Date Received: 2-21-91

Spectra #50934 RUSH

BTEX, EPA Method 8240 Dilution Factor: 1		Date Analyzed: 2-21-91 Units: ug/L	
Benzene		<5	
Toluene		<5	
Ethyl Benzene		7	
Total Xylenes		9	
Surrogate Percent Reco	veries: Toluene-d8	99	
Hydrocarbons, by Modif	ied 8015, ppm	<0.1	
Total Lead (Pb), ppm		<0.005	

SPECTRA LABORATORIES, INC.

Mike Minner, Lab Director

RECEIVED INDUSTRIAL WASTE

FEB 2 7 1991

METRO

2221 Ross Way

Tacoma, WA 98421

(206) 272-4850

February 22, 1991

Rittenhouse Zeman & Associates 1400 140th Avenue N.E. Bellevue, WA 98005 Customer #82053

Attn: Moin Kadri

Sample ID: W-2 Date Taken: 2-15-91 Site: W-6373-3

Desc: Water Spectra #50650

Total Petroleum Hydrocarbons, mg/l

<0.1

Hydrocarbons, by Modified 8015, mg/l

<0.1

Total Petroleum Hydrocarbons testing performed by EPA Method 418.1

SPECTRA LABORATORIES INC.

Steven G. Hibbs, Chemist

RECEIVED INDUSTRIAL WASTE

FEB 2 7 1991

METRO