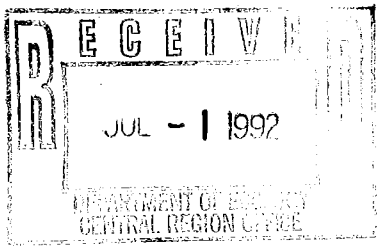
PLSA ENGINEERING & SURVEYING

BRADLEY J. CARD, P.E. LOUIE W. WISHERT, JR., PLS

June 29, 1992



Mr. Richard Hahn
Hahn Motor Company
P.O. Box 382
Yakima, WA 98907

Dear Mr. Hahn:

Engineers from PLSA Engineering and Surveying, experienced with local soil conditions, recently collected two samples from petroleum contaminated soil which is being remediated by land farming on-site at Hahn Motor Company in Yakima, Washington.

Sound Analytical Services, the analytical laboratory, WDOE accreditation C027, supplied sample containers which were clean glass with Teflon-lined, screwed caps. After collection, the samples were labeled, assigned a job-specific code and chain-of-custody form executed. The samples were shipped to the laboratory by overnight express in a refrigerated, insulated container for analysis and characterization by WTPH-HCID and tetrachloroethene. The results of laboratory analysis are enclosed.

Tetrachloroethene was not detected in either sample. Diesel and heavy oil were detected in only one of the samples. The concentrations of diesel and heavy oil were found to be 380 mg/kg and 3600 mg/kg, respectively. The samples were taken from dry, sandy soil that did not appear to be stained, have odor, or otherwise petroleum contaminated. However, the soil originated from under alphalt paving, and asphalt in the sample could account for the apparent high concentration of heavy oil. Higher molecular weight petroleum products, such as asphalt are not associated with health effects and are environmentally inert. According to Washington State Department of Ecology criteria for petroleum-contaminated soils (see enclosed), this soil would be considered a Class 3 soil which may be used for road construction or disposed of in a permitted, municipal landfill.

Sincerely,

BRAD CARD, P.E.
Principal Engineer

BC:yk
Enclosures
cc: John Fashholtz, DOE

1120 West Lincoln Avenue • Yakima, Washington 98902 • (509) 575-6990 • FAX (509) 575-6993

TABLE V. END USE CRITERIA FOR PETROLEUM-CONTAMINATED SOILS

Analyte	Analytical Method	Soil Class (ppm) 1	2	3	4
Heavy fuel hydrocarbons (C24-C30)	WTPH-418.1 mod.	<60	60-200	200-2000	>2000
Diesel (C12-C24)	WTPH-D	<25	25-200	200-500	>500
Gasoline (C6-C12)	WTPH-G	<5	5-100	100-250	>250
Benzene	8020	<0.005	0.005-0.5	≤0.5	>0.5
Ethylbenzene	8020	<0.005	0.005-20	≤20	>20
Toluene	8020	<0.005	0.005-40	≤40	>40
Xylenes (total)	8020	<0.005	0.005-20	≤20	>20

Treatment is recommended for all Class 3 and 4 soils.

NOTES:

Class 1 Soil Uses:

Any use which will not cause threat to human health or the environment.

Class 2 Soil Uses:

Backfill at the cleanup site
Fill in commercial or industrial areas
Cover or fill in permitted landfills
Road subgrade or other road construction fill
Fill in or near: wetlands, surface water, ground water, drinking water wells or utility trenches is NOT recommended. Use as residential topsoil is also NOT recommended.

Class 3 Soil Uses:

Treatment
Disposal at the original site (no solid waste diposal permit needed)
Road construction (no solid waste diposal permit needed)
Use or disposal in permitted, municipal landfills
Permitted as a new PCS landfill
(An evaluation should be made to ensure that disposal will not cause a threat to human health or the environment, e.g. use near water bodies)

Class 4 Soil Uses:

Treatment
Disposal in a permitted, municipal landfill
Permitted as a new PCS landfill

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: PLSA Engineering

Date: June 24, 1992

Report On: Analysis of Soil

Lab No.: 25058

Page 1 of 4

IDENTIFICATION:
Samples Received on 06-18-92
Project: 90113

ANALYSIS:

Lab No. 25058-1

Client ID: H-1

Volatile Organics by Method 8240
Date Extracted: 6-19-92
Date Analyzed: 6-19-92

CAS No.	Compounds	Concentration ug/kg	PQL
127-18-4	Tetrachloroethene	ND	200

ND - Not Detected

PQL - Practical Quantitation Limit - These are the detection limits for this sample. This number is based on sample size, matrix and dilution required.

Volatile Surrogates

Surrogate	Percent Recovery	Control Limits
Toluene - D8	98	81 - 117
Bromofluorobenzene	103	74 - 121
1,2-Dichloroethane D4	118	70 - 121

Continued . . . .

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PLSA Engineering
Project: 90113
Lab No. 25058
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Client ID: H-1

Lab No. 25058-1

WTPH-HCID
Date Extracted: 6-19-92
Date Analyzed: 6-22-92

Gasoline, mg/kg (C7 - C12)	< 20
Diesel, mg/kg (> C12 - C24)	> 50
Heavy Oil, mg/kg (C24+)	> 100

SURROGATE RECOVERY, %

1-chlorooctane	84
Perylene	96

Continued . . . . .

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Project: 90113
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Client ID: H-1

Lab No. 25058-1

WTPH-D
Date Extracted: 6-23-92
Date Analyzed: 6-23-92

Diesel, mg/kg (> C12 - C24)	380
SURROGATE RECOVERY, %	
Perylene	100

WTPH-418.1 MODIFIED
Date Extracted: 6-23-92
Date Analyzed: 6-23-92

Heavy petroleum oils, mg/kg (C24+)	3,600

Continued . . . . .

SOUND ANALYTICAL SERVICES, INC.

PLSA Engineering
Project: 90113
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Client ID: H-2

Lab No. 25058-2

Volatile Organics by Method 8240
Date Extracted: 6-19-92
Date Analyzed: 6-19-92

CAS No.	Compounds	Concentration ug/kg	PQL
127-18-4	Tetrachloroethene	ND	200

ND - Not Detected

PQL - Practical Quantitation Limit - These are the detection limits for this sample. This number is based on sample size, matrix and dilution required.

Volatile Surrogates

Surrogate	Percent Recovery	Control Limits
Toluene - D8	101	81 - 117
Bromofluorobenzene	103	74 - 121
1,2-Dichloroethane D4	120	70 - 121

Continued . . . .

SOUND ANALYTICAL SERVICES, INC.

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Project: 90113
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Client ID: H-2

Lab No. 25058-2

WTPH-HCID
Date Extracted: 6-19-92
Date Analyzed: 6-22-92

Gasoline, mg/kg (C7 - C12)	< 20
Diesel, mg/kg (> C12 - C24)	< 50
Heavy Oil, mg/kg (C24+)	< 100

SURROGATE RECOVERY, %

1-chlorooctane	70
Perylene	75

SOUND ANALYTICAL SERVICES

DENNIS L. BEAN

...for the due performance of analysis in accord... with