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RECEIVED
OCT 26 1987

HAZARDOUS WASTES/

Mr. Scott Zaccor
Zaccor Corporation
791 Hamilton
Menlo Park, CA 94025

October 21, 1987
ANATEC Log No: 1406 (1-4)
Series No: 427/003
Client Proj. #87288C1

Subject: ASAP Priority Analysis of Four Soil Samples Identified as "Project #87288C1, Automotive Auto Repair, 2425 Central Ave., Alameda, CA" Received October 15, 1987.

Dear Mr. Zaccor:

Analysis of the samples referenced above has been completed. This report is written to confirm results transmitted verbally on October 16, 1987.

Samples were delivered to the laboratory under documented chain-of-custody. On receipt, sample custody was transferred to ANATEC sample control personnel who subsequently documented receipt and condition of the samples and placed them in secured storage at 4°C until analysis commenced.

In preparation for benzene, toluene, xylene ("volatile aromatics") and volatile hydrocarbons measurements, aliquots of two samples ("87288C1 -#1, -#2") were taken from core centers with stainless steel implements, immediately weighed, and sealed in septum-capped vials. Additionally, vials were prepared in essentially the same fashion to represent method blanks, commercial gasoline standards, analyte-fortified sample spikes and sample replicates. Each vial was heated for a period of one hour at 90°C during which time light hydrocarbons (such as gasoline) were expected to equilibrate in distribution between sample and headspace. Headspace gases were subsequently analyzed by gas chromatography to measure total light hydrocarbons. Response of the chromatographic system to samples was compared with response to standards prepared with commercial gasolines, and from reagent grade volatile aromatics for purposes of qualitative and quantitative interpretation.

Remaining samples ("87288C1 -#3, -#4") were prepared for extractable hydrocarbons measurements by thorough mixing and subsequent extraction with methylene chloride; extraction, aided by sonication, was performed three successive times for each sample. Extracts were then combined, dried over sodium sulfate and concentrated in Kuderna-Danish apparatus.



Extracts were then analyzed by capillary column gas chromatography with flame ionization detection. Preparation and analysis of samples was accompanied by similar treatment of a method blank and a motor oil-fortified sample. Response of the chromatographic system to calibration standards prepared with motor oil was compared with system response to samples for purposes of qualitative and quantitative interpretation.

Details of the analytical methodology are consistent with requirements specified in Methods "I" and "II" ("Total Fuel Hydrocarbons, Low-to-medium Boiling Point Hydrocarbons" and "Total Fuel Hydrocarbons, Medium-to-high Boiling Point Hydrocarbons," respectively) in "Guidelines for Addressing Fuel Leaks," Regional Water Quality Control Board, San Francisco Bay Region, revised 1986; the preparation procedures used are described in detail in "Headspace Method," Method 5020 for gasoline, and "Sonication Extraction," Method 3550 for motor oil, in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," U.S. EPA, SW-846, 2nd edition, revised 1984.

The latter two samples were also analyzed to measure oil and grease content. Portions of the samples were extracted three times with freon, aided by sonication. The freon extracts were combined and evaporated, and the residue was weighed and reported as total oil and grease. Preparation and analysis procedures were in accord with Methods 3550 and 9071, respectively, in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," U.S. EPA, SW-846, 3rd edition, revised 1986.

Additionally, the same samples were prepared for the measurement of purgeable halocarbons and purgeable aromatic compounds. The methods employed were in accord with Method 8010 and 8020 in U.S. EPA, SW-846, 3rd edition (ibid.). Briefly, 1-gram portions of samples were sparged with reagent helium in a closed system. Volatile compounds purged from the samples were swept onto a solid sorbent "trap" from which they were subsequently desorbed and passed onto the analytical column of a gas chromatograph; column effluent was monitored by a Hall electrolytic conductivity detector (halocarbons) and a photoionization detector (aromatics). Response of the chromatographic system to samples was compared with responses generated by analysis of analytical grade standards for purposes of qualitative and quantitative interpretation.




Results of analyses are summarized in Tables 1 and 2. Attached is the sample custody document. Please feel welcome to contact us should you have questions regarding procedures or results.

Submitted by:

Approved by:


 William G. Rotz
 Project Manager


 Greg Anderson, Director
 Analytical Laboratories

/hs

Enc: Sample Custody Document

TABLE 1. ANALYTICAL RESULTS FOR SAMPLES #1 & #2 FROM THE "AUTOMOTIVE AUTO REPAIR, 2425 CENTRAL AVE., ALAMEDA, CA, PROJECT #87288C1" RECEIVED OCTOBER 15, 1987

Parameter	Descriptor, Lab No. & Results (mg/Kg) ^a	
	87288C1 #1 (1406-1)	87288C1 #2 (1406-2)
Volatile Petroleum Hydrocarbons, as Gasoline	<10	22,000
Benzene	<0.005	1.5
Toluene	<0.005	7.5
Xylenes, total	<0.015	300

^amg/Kg--Data are expressed as milligrams analyte per kilogram sample, as-received basis.



TABLE 2. ANALYTICAL RESULTS FOR SAMPLES #3 & #4 FROM THE
 "AUTOMOTIVE AUTO REPAIR, 2425 CENTRAL AVE.,
 ALAMEDA, CA, PROJECT #87288C1" RECEIVED
 OCTOBER 15, 1987

Parameter	MDL ^b (mg/Kg)	Descriptor, Lab No & Results (mg/Kg) ^a	
		87288C1 #3 (1406-3)	87288C1 #4 (1406-4)
<u>Purgeable Halocarbons</u>			
Chloromethane	0.5	ND ^c	ND
Bromomethane	0.5	ND	ND
Dichlorodifluoromethane	0.5	ND	ND
Vinyl chloride	0.5	ND	ND
Chloroethane	0.5	ND	ND
Trichlorofluoromethane	0.5	ND	ND
1,1-Dichloroethene	0.5	ND	ND
1,1-Dichloroethane	0.5	ND	ND
trans-1,2-Dichloroethene	0.5	ND	ND
Chloroform	0.5	ND	ND
1,2-Dichloroethane	0.5	ND	ND
1,1,1-Trichloroethane	0.5	ND	ND
Carbon tetrachloride	0.5	ND	ND
Bromodichloromethane	0.5	ND	ND
1,2-Dichloropropane	0.5	ND	ND
cis-1,3-Dichloropropene	0.5	ND	ND
Trichloroethene	0.5	ND	ND
Dibromochloromethane	0.5	ND	ND
1,1,2-Trichloroethane	0.5	ND	ND
trans-1,3-Dichloropropene	0.5	ND	ND
2-Chloroethylvinyl ether	0.5	ND	ND
Bromoform	0.5	ND	ND
1,1,2,2-Tetrachloroethane	0.5	ND	ND
Tetrachloroethene	0.5	ND	ND
Chlorobenzene	0.5	ND	ND
1,3-Dichlorobenzene	0.5	ND	ND
1,2-Dichlorobenzene	0.5	ND	ND
1,4-Dichlorobenzene	0.5	ND	ND
<u>Purgeable Aromatic Compounds</u>			
Benzene	1.0	ND	ND
Chlorobenzene	1.0	ND	ND
1,2-Dichlorobenzene	1.0	ND	ND
1,3-Dichlorobenzene	1.0	ND	ND
1,4-Dichlorobenzene	1.0	ND	ND
Ethylbenzene	1.0	5.8	ND
Toluene	1.0	ND	ND
Xylenes, total	1.0	6.5	ND
<u>Extractable Petroleum</u>			
Hydrocarbons, as motor oil	10	5,600	140
Oil & Grease	100	9,200	ND

^amg/Kg--Data area expressed as milligrams analyte per kilogram sample, as-received basis.

^bMDL--Method detection limit.

^cND--Not detected at the listed method detection limit.

BLAINE TECH SERVICES INC.

1370 TULLY RD., SUITE 500
SAN JOSE, CA 95128
(408) 995-5533

PROJECT NUMBER

SITE ADDRESS

1406

07288C1

Zaccor @
Automotive Auto Repair
2425 Central Avenue
Alameda, CA

PLEASE INCLUDE PROJECT NUMBER AND SITE ADDRESS ON LAB REPORTS AND INVOICES

TURN-AROUND 24 hour RESULTS BY 10-16-87 LAB USED Anatec

BILLING

SPECIAL INSTRUCTIONS

Bill Blaine Tech Services
 Bill Zaccor

I.D.	ANALYSIS TO DETECT	LAB #	LAB RESULTS
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#1	Soil TPH (gas), BTX		
#2	" "		
#3	TPH (High boiling), TOG, 0010, 0020		
#4	" " " "		

Field sampling completed 10:23 AM 10-15-87 performed by Stephan Carter

RELEASED BY

ACCEPTED BY

10:27 AM 10-15-87

10:28 AM 10-15-87

12:18 AM 10-15-87

12:18 AM 10-15-87

: AM/PM - -87

: AM/PM - -87