



ANATEC
LABORATORIES
INC.

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Scott Zaccor
Zaccor Corporation
791 Hamilton
Menlo Park, CA 94025

November 11, 1987
ANATEC Log No: 1503 (1-13)
Series No: 427/006
Client Ref: 87302C1

Subject: ASAP Analysis of 11 Soil Samples Identified as "Job #87302C1" Received October 29, 1987.

Dear Mr. Zaccor:

Analysis of the samples referenced above has been completed. This report is written to confirm results transmitted verbally on November 3, 1987.

The samples were delivered to an ANATEC field chemist under documented chain-of-custody. Samples were placed under refrigeration and transported to the laboratory. On receipt at the laboratory, 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 accord with instruction received with samples, one composite sample was created for later analysis by combination of equal-weight portions of four samples; these samples were designated as "#10, A-D" and the composite sample prepared from them named "COMP #10." Additionally, two samples ("#11" and "#13") were placed on "hold" (held in refrigerated storage, not analyzed).

In preparation for volatile hydrocarbons measurements, aliquots of samples 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, gasoline-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.

RECEIVED
NOV 13 1987
HAZARDOUS WASTE
LABORATORY



Two samples ("#7" and "#12") 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 diesel-fortified sample. Response of the chromatographic system to calibration standards prepared with diesel fuel 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 diesel, in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," U.S. EPA, SW-846, 2nd edition, revised 1984.

Oil and grease content of two samples ("#7" and "#12") was measured gravimetrically on Freon extracts in accord with Method 503D in Standard Methods for the Examination of Water and Wastewater, APHA et al., 16th edition, 1985. Extracts were produced by refluxing Freon TF through measured portions of samples in a Soxhlet apparatus. Residue remaining after evaporation of Freon under nitrogen was weighed using an analytical balance and reported as "oil and grease."

The same two samples were also analyzed to measure content of purgeable halocarbons and purgeable aromatic compounds in accord with Methods 8010 and 8020, respectively in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," U.S. EPA, SW-846, 2nd edition, revised 1984. Briefly, the methods involved the sparging of 1-gram portions of the samples 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 1-3. Attached is the sample custody document. Please feel welcome to contact us should you have questions regarding procedures or results.

Submitted by:

Approved by:

maureen Porter / for
Kim L. Hansard
Project Chemist

William G. Rotz
William G. Rotz
Project Manager

/hs
Enc: Sample Custody Document

TABLE 1. ANALYTICAL RESULTS FOR TWO SOIL SAMPLES IDENTIFIED AS "87302C1" RECEIVED OCTOBER 29, 1987 - OIL & GREASE AND EXTRACTABLE PETROLEUM HYDROCARBONS

ANATEC Lab No.	Sample I.D.	Results (mg/Kg) ^a	
		Oil & Grease	Extractable Petroleum Hydrocarbons, as Diesel Fuel
1503-7	#7	<20	<10
1503-12	#12	<20	<10

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



TABLE 2. ANALYTICAL RESULTS FOR TWO SOIL SAMPLES IDENTIFIED AS "87302C1" RECEIVED OCTOBER 29, 1987
- PURGEABLE HALOCARBONS & PURGEABLE AROMATICS

Parameter	MDL ^b (ug/Kg)	Descriptor, Lab No. & Results (ug/Kg) ^a	
		#7 (1503-7)	#12 (1503-12)
<u>Purgeable Halocarbons</u>			
Chloromethane	2.5	ND ^c	ND
Bromomethane	2.5	ND	ND
Dichlorodifluoromethane	2.5	ND	ND
Vinyl chloride	2.5	ND	ND
Chloroethane	2.5	ND	ND
Methylene chloride	0.5	2.6	2.5
Trichlorofluoromethane	1.5	ND	ND
1,1-Dichloroethene	1.0	ND	ND
1,1-Dichloroethane	1.0	ND	ND
trans-1,2-Dichloroethene	1.0	ND	ND
Chloroform	0.5	ND	ND
1,2-Dichloroethane	1.0	ND	ND
1,1,1-Trichloroethane	1.0	ND	ND
Carbon tetrachloride	2.5	ND	ND
Bromodichloromethane	1.0	ND	ND
1,2-Dichloropropane	1.0	ND	ND
cis-1,3-Dichloropropene	1.5	ND	ND
Trichloroethene	1.0	ND	ND
Dibromochloromethane	1.0	ND	ND
1,1,2-Trichloroethane	1.0	ND	ND
trans-1,3-Dichloropropene	1.0	ND	ND
2-Chloroethylvinyl ether	5	ND	ND
Bromoform	5	ND	ND
1,1,2,2-Tetrachloroethane	1.0	ND	ND
Tetrachloroethene	0.5	ND	ND
Chlorobenzene	2.5	ND	ND
1,3-Dichlorobenzene	2.5	ND	ND
1,2-Dichlorobenzene	2.5	ND	ND
1,4-Dichlorobenzene	2.5	ND	ND
<u>Purgeable Aromatic Compounds</u>			
Benzene	2.5	ND	ND
Chlorobenzene	2.5	ND	ND
1,2-Dichlorobenzene	6.0	ND	ND
1,3-Dichlorobenzene	5	ND	ND
1,4-Dichlorobenzene	10	ND	ND
Ethylbenzene	3.0	ND	ND
Toluene	2.5	ND	ND

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

^bMDL--Method detection limit.

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



TABLE 3. ANALYTICAL RESULTS FOR SOIL SAMPLES IDENTIFIED AS "87302C1" RECEIVED OCTOBER 29, 1987 - VOLATILE PETROLEUM HYDROCARBONS

<u>ANATEC Lab No.</u>	<u>Sample I.D.</u>	<u>Volatile Petroleum Hydrocarbons, as Gasoline (mg/Kg)^a</u>
1503-1	#1	<10
1503-2	#2	410
1503-3	#3	<10
1503-4	#4	<10
1503-5	#5	110
1503-6	#6	<10
1503-7	#7	NR ^b
1503-8	#8	<10
1503-9	#9	<10
1503-10	COMP #10	68
1503-11	#11	NR
1503-12	#12	NR
1503-13	#13	NR

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

^bNR--Analysis not requested.

BLAINE TECH SERVICES INC.

1370 TULLY RD., SUITE 505
SAN JOSE, CA 95122
(408) 995-5535

PROJECT NUMBER

SITE ADDRESS

87302C1

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Zaccor Corp. @
2425 Central Ave.
Alameda, CA

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

TURN-AROUND

RESULTS BY

LAB USED

Anatec
Mobile Lab

BILLING

SPECIAL INSTRUCTIONS

- () Bill Blaine Tech Services
- () Bill _____

*10A, 10B, 10C, 10D - Composite into one
sample for analysis

I.D.	ANALYSIS TO DETECT	LAB #	LAB RESULTS
#1 Soil	TPH (gas)		
#2 Soil	"		
#3 Soil	"		
#4 Soil	"		
#5 Soil	"		
#6 Soil	"		
#7 Soil	TPH (high boilers)	TOC, 8010, 8020	
#8 Soil	TPH (gas)		
#9 Soil	"		
#10A, 10B, 10C, 10D	TPH (gas)		
#11 Soil	Hold		
#12 Soil	TPH (high boilers)	TOC, 8010, 8020	

Field sampling completed 4:01 AM/10-29-87 performed by

Stephan Carter

RELEASED BY

ACCEPTED BY

4:05 AM/10-29-87

Stephan Carter

: AM/PM - -87

4:05 AM/10-29-87

Joel Kiff

: AM/PM - -87

6:10 AM/10-29-87

Joel Kiff

18:10 AM/10-29-87

Sample

BLAINE TECH SERVICES INC.

P.O. BOX 5745
SAN JOSE, CA 95150
(408) 723-3974

PROJECT NUMBER

SITE ADDRESS

87302c1

Zuccor Corp. @
2425 Central Ave,
Alameda, CA

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

TURN-AROUND

RESULTS BY

LAB USED

Awatec
Mobile lab

BILLING

SPECIAL INSTRUCTIONS

Bill Blaine Tech Services
 BILL

I.D.	TYPE	ANALYSIS TO DETECT	LAB #	LAB RESULTS
#13	Soil	Hold		
0081				
0082				
0083				
0084				
0085				
0086				
0087				
0088				
0089				
0090				
0091				
0092				
0093				
0094				
0095				
0096				
0097				
0098				
0099				
0100				

Field sampling completed 4:00 AM/PM 10-29-87 performed by Stephen Carter

RELEASED BY X ACCEPTED BY

4:05 AM/PM 10-29-87 Stephen Carter : AM/PM - -87

4:05 AM/PM 10-29-87 Jail Hill : AM/PM - -87

6:10 AM/PM 10-29-87 Jail Hill 18:10 AM/PM 10-29-87 K Temple