OAKLAND FIRE DEPARTMENT, OES UNDERGROUND STORAGE TANK CLOSURE/REMOVAL FIELD INSPECTION REPORT

Site Address 1720 2	Nan.	· co	理的	THE SAME		Name o	Facility: V	N/A			NAME OF		
Inspector: CAX	AC DA		Bolin	C NEWS	のけららいの	Contact	on site:		early South	A Milyana	2002 m	The Section	(0
Date and Time of Arrival:				Contact on site: CATPISH STANTON - 760									
A STATE OF THE PARTY OF THE PAR	Special Control	PM	POINT	10000	STATE OF	Contrac	COLUMN	加速 测度等	OR ROWSELL	11.70	Olive.	4	400
General Requiren	nents	10000000000000000000000000000000000000	Yes	No	N/A	1	Genera	I Require	ments		Yes/	No	N/A
Approved closure plan on site.		MRE o	Sel.	1977	37.59	Site Safety Plan properly signed.		331984 4	1	450	8 829		
Changes to approved plan noted.		100 E	1	13.	23.5	10	fire extingui	CONTRACTOR COLUMN	THE RESERVE	selection 4	1	-words	OF STREET
Residuals properly stored/transpo	orted.	V	/	10.5	1 30 31	- 36	moking" sign	AND THE REST	De Valle III.		<u> </u>	0.54	1
Receipt for adequate dry ice note	No. of Control	×	1	747		Gas detector challenged by inspector.		- INVES	1	Sinte	V		
TO A TAKE THE PERSON OF THE PROPERTY OF THE	CANCE TO STATE	MOVE			100	Cast	Charles Charles	aged by map	octor.	1 / Ca	_	300	2 2 2 2
Tank Observations	T #1	T #2	1	C #3	T #4	T	ank Observ	ations	T #1	T #2	T	#3	T #4
Tank Capacity (gallons)	600	No.		B45-	18463	_	s corrosion?	77.44	4	tife and	189	200	A 577 Sec. 1
Material last stored	605	肥い	1	-1 =	Large	Obviou	s odors from	tank?	V	5/4/630	nia A	150	0.5%
Dry ice used (pounds)	100	457.32V		44	519302		intact?	7-7-7-7-1-1-1	年度 形成	-87-627	Se	22	一次
Combustible gas concentration a		ote time	& sai	mpling	point)	_	ed backfill m		THE TR	559125	d ho	176	च्या केल
(1) 中国企业中国企业中国企业中国企业中国企业中国企业中国企业中国企业中国企业中国企业	20%	540			- 5		s discoloratio	The second second	14	200	9,00		10 MM
(2)	97 APIGEODY	150,000					s odors ex tar		14	Doctor	122	45.20	でを見り
(3) The determine which the second	(1)	No.	1		-		n excavation	, P. SV 92 T	M	Hespiral	130	(650)	2712.56
Oxygen concentration as % volu	me. (Note i	time &sa	mplir	ng poin	t.)		product on w	the second secon	N	100	A	197 P	主形
(1) 并作物的 (1)	10%	-0.7WC S.	+		_91		gged by trans	Otto de la companya del la companya de la companya	V.	1000	90	100	- 1988
(2)	1000000	£ 32.73 -	-		Till .		rapped for tri		IN	SE-SAY	5-	450	65334
(3)	生態陰差形	PATTE X	-		200		lugged w/ ver	COLUMN TO PROPERTY.	V	1685	D.	257	51.85.756
Tank Material	0.1959	718	1		2-1		ne tank haule	COLUMN TO A PROPERTY OF THE PARTY OF THE PAR		SHOAV		1100	G-1120
Wrapping/Coating, if any Obvious holes?	1146595	(C) (S)	+		200		soil samples to	Annual Control of the	2	81-1/3	1977	2.64	2000年
Covious noies?	EL HINSIN	10 12 1	1_		1511	Depth o	of soil sample	ff. bgs)	10	H-1	200	176	が作った
. Piping Remova	d	3	es	No	N/A	2	Genera	l Observa	tions	- 13	Yes	No	N/A
All piping removed hauled off w	tanks?		7			Leak f	rom any tank				1	110	1478
Obvious holes on pipes?				V	1		Report" form		e operator?	-1	~	_	-
Obvious odors from pipes?		_	-	V	1		usly contamir	Own Covers Land		-	7		-
Obvious soil discoloration in pipi	ng trench?		_	1			ockpile sampl				7		-
Obvious odors from piping trench	h?			1			ile lined ANI				/	-	
Water in piping trench?				V	-	-	in excavation	49.40				1	_
Number & depth of soil samples	from piping	trench?			-		er/depth of w		taken?	-		Ø	_
Number & depth of water sample	s from pipin	g trench	7			- 1,724 Lenna	nples properly	1-00.00-00.00	03/25/09/37	,	1		
Additional Observa	tions	T.	es	No	N/A		er	FF & CAR	OI DICE	TACRA	20		
Soil/water sampling protocols acc		- 17	4	140	IVA	1/0	17/\r	ACC SAN	IPLING I				
Sampling "chain of custody" note		- I	1			MIG	1000	10	SA	WILE			
Tank pit filled in or covered?	-				-								
Tank pit fenced or barricaded?		_	-	-	-								
Transporter a registered HW hau	ler?	_	-	-	-								
Uniform HW Manifest completes		+	-	-	-								
Contractor/Consultant reminded		-	_		-								
UST Removal Report due within													
Date/Time removal/closure opera		eted?	\neg		-								
OT hours or additional charges de	ue from cont	ractor?											
Notes/Comments:	Notes/Comments: 2 SAM PLES -												
	SUSAN FLUGO FROM ALCO												
		DAE.	_	1		01-1	100	100	010		22		_
		1	May 1	2 (1)		41 1 /	achter	41		351	11	~	_
FIRE CHARLES AND AND ALL THE CHARLES		-			/	7	US	ON	9	17 V	10	5	

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ALAMEDA COUNTY HEALTH CARE SERVICES AGENCY ENVIRONMENTAL HEALTH SERVICES 1131 HARBOR BAY PARKWAY, RM 250 ALAMEDA, CA 94502-6577 PHONE # 510/567-6700
ACCEPTED **Blorage Tents Closure Farmit Application Currenty Blyinken of Herandous Butterness Alemeda, CA 94526-657 **Harbor Say Parking, Sude 350 **Harbor Say Parking Sude 350 **Harbor Say Parking Say Sude 350 **Harbor Say Parking Say
ACCEPTED Missing County Devices of Heart of Hea
UNDERGROUND TANK CLOSURE PLAN * * * Complete plan according to attached instructions * * * * * * Marie of Business M. A. Martenson Campage 1. Name of Business M. A. Martenson M. A. Martenson Campage 1. Name of Business M. A. Martenson Campage 1. Name of Business M. A. Martenson M. Marten
Business Owner or Contact Person (PRINT) Mr. Marvin Doster
2. Site Address 229 Castro Street
City Oakland Zip 94607 Phone
3. Mailing Address 108 FIRST Avenue South
City <u>Seattle</u> , WA Zip <u>98104</u> Phone <u>206 - 748 - 783</u>
A. Property Owner M. A. Mortenson Company
Business Name (if applicable)/A
Address 700 Meadow Lane North
City, State Minneapolis, MN. Zip 55422
5. Generator name under which tank will be manifested
- Mr. A. Mortenson Company
EPA ID# under which tank will be manifested $C = 202279465$

	PEAK ENGRINC # ACZI HIC
6.	Contractor M. A. Mortenson Company
	Address 720 Second Street 1.
•	City Oakland, Ca. 94607 Phone 510-625-0201
	License Type A,B, C General ID# 411701
7.	Consultant (if applicable) Krazan & Associates, Inc.
	Address 545 Pairott Street
*.	City, State San Jose, Ca. 95/12 Phone 408-271-2200
8.	Main Contact Person for Investigation (if applicable)
	Name Alex Gallego Title Division Manager
	Company Krazan & Associates, Inc.
	Phone 408 - 271-2200
9.	Number of underground tanks being closed with this plan
	Length of piping being removed under this plan unknown
	Total number of underground tanks at this facility (**confirmed with owner or operator)
10.	State Registered Hazardous Waste Transporters/Facilities (see instructions).
	** Underground storage tanks must be handled as hazardous waste **
	a) Product/Residual Sludge/Rinsate Transporter
٠.	Name Ecology Control Industries EPA I.D. No. CAN 982030173
	Hauler License No. 1533 License Exp. Date 3-01
	Address 255 Parr Blvd.
	City Richmond State Ca. Zip 94801
	b) Product/Residual Sludge/Rinsate Disposal Site
•	Name
	Address
	City State Zip

	c)	Tank and Piping Transporter Fult Ef MARION
	,	NameEPA I.D. No. CAD 982030173
	,	Hauler License No. 4538 1264 License Exp. Date 3.01
•		Address 255 PARR Blvd. 3283 Luyung Dr.
		city Richmond Kancho Condoustate CAM zip 950/ 95742
	ď)	Tank and Piping Disposal Site
	1	Name Ecology Control IndustriesEPA I.D. No. CAD 009466392
		Address 255 Parr Blvd.
		city Richmond State Ca. Zip 94801
11.		ample Collector
		ame Alex Gallego
	Co	ompany Krazan & Associates Inc.
		Idress 545 Parrott Street
•	Ci	ty <u>San Jose</u> State <u>Ca</u> Zip 95/12 Phone 408-271-220
12.		boratory
	Na	me Entela Analytical Labs, Inc.
•	Ad	Idress 525 Del Rey Avenue, Ste. E.
		ty Sunnyvale State Ca. Zip 94086
	St	ate Certification No. CA Elap # 23410
13.	Ĥа	ve tanks or pipes leaked in the past? Yes 💢 No[] Unknown[]
	Ι£	yes, describe. Soil and Groundwater samples
	L	ollected adjacent to tank contain gasoline
	L	ompounds.
14.	De	scribe methods to be used for rendering tank(s) inert:
٠		Dry Ice

Before tanks are pumped out and inerted, all associated piping must be flushed back into the tank(s). All accessible piping must then be removed. Inaccessible piping must be permanently plugged using grout.

The Bay Area Air Quality Management District, 415/771-6000, along with local Fire and Building Departments, must also be contacted for tank removal permits. Fire departments typically require the use of a combustible gas indicator to verify tank inertness. It is the contractor's responsibility to have a functional combustible gas indicator on-site to verify that the tank(s) is inerted.

15. Tank History and Sampling Information *** (see instructions) ***

Capacity	Tank Use History include date last used (estimated)	Material to be sampled (tank contents, soil, groundwater)	Location and Depth of Samples
500 gal ±	unknown	Soil- Broundwater	Sidewalls (6') Tank Pit.

One soil sample must be collected for every 20 linear feet of piping that is removed. A ground water sample must be collected if any ground water is present in the excavation.

Excavated/S	tockpiled Soil
Stockpiled Soil Volume (estimated)	Sampling Plan
	haracterízed q reuse ef soil must have
approval from county.	

Stockpiled soil must be placed on bermed plastic and must be completely covered by plastic sheeting.

Will the excavated soil be returned to the excavation immediately after tank removal? [] yes [] no [X] unknown

If yes, explain reasoning

If unknown at this point in time, please be aware that excavated soil may not be returned to the excavation without <u>prior</u> approval from this office. This means that the contractor, consultant, or responsible party must communicate with the Specialist IN ADVANCE of backfilling activities.

16. Chemical methods and associated detection limits to be used for analyzing samples:

The Tri-Regional Board recommended minimum verification analyses and practical quantitation reporting limits should be followed. See attached Table 2.

rev. 11/01/96 ust closure plan 17. Submit Site Health and Safety Plan (See Instructions)

Contaminant Sought	EPA or Other Sample Preparation Method Number	EPA or Other Analysis Method Number	Method Detection Limit
TPH Gas	8015 M		SOIL WATER
BTEX	8020		1ррм 50ррь
TEL	DHS - LVFT		5ppb 0.5pp
			1ppm 50ppb 5ppb 0.5pp 0.5ppm 0.1 ppm
<i>;</i>			
		, 	

18. Submit Worker's Compensation Certificate copy

Name of Insurer

- 19. Submit Plot Plan */**(See Instructions)***
- 20. Enclose Deposit (See Instructions)
- 21. Report all leaks or contamination to this office within 5 days of discovery.

 The written report shall be made on an Underground Storage Tank Unauthorized Leak/Contamination Site Report (ULR) form.
- 22. Submit a closure report to this office within 60 days of the tank removal. The report must contain all information listed in item 22 of the instructions.
- 23. Submit State (Underground Storage Tank Permit Application) Forms A and B (one B form for each UST to be removed) (mark box 8 for "tank removed" in the upper right hand corner)

17. Submit Site Health and Safety Plan (See Instructions)

ı				
	Contaminant Sought	EPA or Other Sample Preparation Method Number	EPA or Other Analysis Method Number	Method Detection Limit
	TPH Gas	8015 M 8020		SOIL WATER
	JEL	DHS-LVFT		1ppm 50ppb 5ppb 0.5pp 0.5ppm 0.1
	MTBE Chlorinated So	WENTS		0.5pm 0.1
	Chlorinated So Seni VOCS Metals - Cd	O DI T M		
	metals - Ca	Cr. 10, An Mi		

18. Submit Worker's Compensation Certificate copy

Name of Insurer X Willis Corrow Corp. Minne Sota

- 19. Submit Plot Plan ***(See Instructions) ***
- 20. Enclose Deposit (See Instructions)
- 21. Report all leaks or contamination to this office within 5 days of discovery.

 The written report shall be made on an Underground Storage Tank Unauthorized Leak/Contamination Site Report (ULR) form.
- 22. Submit a closure report to this office within 60 days of the tank removal. The report must contain all information listed in item 22 of the instructions.
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I declare that to the best of my knowledge and belief that the statements and information provided above are correct and true.

I understand that information, in addition to that provided above, may be needed in order to obtain approval from the Environmental Protection Division and that no work is to begin on this project until this plan is approved.

I understand that any changes in design, materials or equipment will void this plan if prior approval is not obtained.

I understand that all work performed during this project will be done in compliance with all applicable OSHA (Occupational Safety and Health Administration) requirements concerning personnel health and safety. I understand that site and worker safety are solely the responsibility of the property owner or his agent and that this responsibility is not shared nor assumed by the County of Alameda.

Once I have received my stamped, accepted closure plan, I will contact the project Hazardous Materials Specialist at least three working days in advance of site work to schedule the required inspections.

CONTRACTOR INFORMATION

ust closure plan

Name of Business M. A. Mortenson Company
Name of Individual JIM CALL
Signature
PROPERTY OWNER OR MOST RECENT TANK OPERATOR (Circle one)
Name of Business M. A. Mortenson Company
Name of Individual \(\int \mathcal{Call} \)
Signature Date 9/18/00
. 11/01/96

INSTRUCTIONS

<u>General Instructions</u>

- * Three (3) copies of this plan plus attachments and a deposit must be submitted to this Department.
- * Any cutting into tanks requires local fire department approval.
- * One complete copy of your approved plan must be at the construction site at all times; a copy of your approved plan must also be sent to the landowner.
- * State of California Permit Application Forms A and B are to be submitted to this office. One Form A per site, one Form B for each removed tank.

Line Item Specific Instructions

- 2. <u>SITE ADDRESS</u>
 Address at which closure is taking place.
- 5. <u>EPA I.D. NO. under which the tanks will be manifested</u>
 EPA I.D. numbers may be obtained from the State Department of Toxic Substances Control, 916/324-1781.
- 6. <u>CONTRACTOR</u>
 Prime contractor for the project.

10. STATE REGISTERED HAZARDOUS WASTE TRANSPORTERS/FACILITIES

- a) All residual liquids and sludges are to be removed from tanks before tanks are inerted.
- c) Tanks must be hauled as hazardous waste.
- d) This is the place where tanks will be taken for cleaning.
- 15. TANK HISTORY AND SAMPLING INFORMATION

 Use History This information is essential and must be accurate.

 Include tank installation date, products stored in the tank, and the date when the tank was last used.

Material to be sampled - e.g. water, oil, sludge, soil, etc.

Location and depth of samples - e.g. beneath the tank a maximum of two feet below the native soil/backfill interface, side wall at the high water mark, etc.

16. CHEMICAL METHODS AND ASSOCIATED DETECTION LIMITS See attached Table 2.

17. SITE HEALTH AND SAFETY PLAN

A <u>site specific</u> Health and Safety plan must be submitted. We advocate the site health and safety plan include the following items, at a minimum:

- a) The name and responsibilities of the site health and safety officer;
- b) An outline of briefings to be held before work each day to appraise employees of site health and safety hazards;
- c) Identification of health and safety hazards of each work task. Include potential fire, explosion, physical, and chemical hazards;
- d) For each hazard, identify the action levels (contaminant concentrations in air) or physical conditions which will trigger changes in work habits to ensure workers are not exposed to unsafe chemical levels or physical conditions;
- e) Description of the work habit changes triggered by the above action levels or physical conditions;
- f) Frequency and types of air and personnel monitoring along with the environmental sampling techniques and instrumentation - to be used to detect the above action levels. Include instrumentation maintenance and calibration methods and frequencies;
- g) Confined space entry procedures (if applicable);
- h) Decontamination procedures;
- i) Measures to be taken to secure the site, excavation and stockpiled soil during and after work hours (e.g. barricades, caution tape, fencing, trench plates, plastic sheeting, security guards, etc.);
- j) Spill containment/emergency/contingency plan. Be sure to include emergency phone numbers, the location of the phone nearest the site, and directions to the hospital nearest the site;
- k) Documentation that all site workers have received the appropriate OSHA approved trainings and participate in appropriate medical surveillance per 29 CFR 1910.120; and
- A page for employees to sign acknowledging that they have read and will comply with the site health and safety plan.

The safety plan must be distributed to all employees and contractors working in hazardous waste operations on site. A complete copy of the site health and safety plan along with any standard operating procedures shall be on site and accessible at all times.

NOTE: These requirements are <u>excerpts</u> from 29 CFR Part 1910.120(b)(4), Hazardous Waste Operations and Emergency Response; Final Rule, March 6, 1989. Safety plans of certain underground tank sites may need to meet the <u>complete</u> requirements of this Rule.

19. PLOT PLAN

The plan should consist of a scaled view of the facility at which the tank(s) are located and should include the following information:

- a) Scale;
- b) North Arrow;
- c) Property Lines;
- d) Location of all Structures;
- e) Location of all relevant existing equipment including tanks and piping to be removed and dispensers;
- f) Streets;
- g) Underground conduits, sewers, water lines, utilities;
- h) Existing wells (drinking, monitoring, etc.);
- i) Depth to ground water; and
- j) All existing tank(s) and piping in addition to the tank(s) being removed.

20. <u>DEPOSIT</u>

A deposit, payable to "Treasurer of Alameda County" for the amount indicated on the Alameda County Underground Storage Tank Fee Schedule, must accompany the plans.

21. Blank Unauthorized Leak/Contamination Site Report forms may be obtained in limited quantities from this office or from the San Francisco Bay Regional Water Quality Control Board (510/286-1255). Larger quantities may be obtained directly from the State Water Resources Control Board at (916) 739-2421.

22. TANK CLOSURE REPORT

The tank closure report should contain the following information:

- a) General description of the closure activities;
- b) Description of tank, fittings and piping conditions. Indicate tank size and former contents; note any corrosion, pitting, holes, etc.;
- c) Description of the excavation itself. Include the tank and excavation depth, a log of the stratigraphic units encountered within the excavation, a description of root holes or other potential contaminant pathways, the depth to any observed ground water, descriptions and locations of stained or odor-bearing soil, and descriptions of any observed free product or sheen;
- d) Detailed description of sampling methods; i.e. backhoe bucket, drive sampler, bailer, bottle(s), sleeves
- e) Description of any remedial measures conducted at the time of tank removal;
- f) To-scale figures showing the excavation size and depth, nearby buildings, sample locations and depths, and tank and piping locations. Include a copy of the plot plan prepared for the Tank Closure Plan under item 19;
- g) Chain of custody records;
- h) Copies of signed laboratory reports;
- Copies of "TSDF to Generator" Manifests for all hazardous wastes hauled offsite (sludge, rinsate, tanks and piping, contaminated soil, etc.); and
- j) Documentation of the disposal of/and volume and final destination of all non-manifested contaminated soil disposed offsite.

ALAMEDA COUNTY ENVIRONMENTAL PROTECTION DIVISION

DECLARATION OF SITE ACCOUNT REFUND RECIPIENT

There may be excess funds remaining in the Site Account at the completion of this project. The PAYOR (person or company that issues the check) will use this form to predesignate another party to receive any funds refunded at the completion of this project. In the absence of this form, the PAYOR will receive the refund.

SITE INFORMATION:

OAKLAND TELE. ACCESS CENTER
Name of Site
720 SECOND ST
Street Address
 OAKLAND CA 94607
City, State & Zip Code

any refund due at the completion of all deposit/refund projects:

MA Mortansol
Name

720 SECOND ST

OAKLAND CA 94607

City, State & Zip Code

Signature of Payor

9/18/00 Date

Jim CAC Name of Pay

Name of Payor (PLEASE PRINT CLEARLY)

Company Name of Payor

RETURN FORM TO:

County of Alameda, Environmental Protection 1131 Harbor Bay Parkway, Rm 250 Alameda CA 94502-6577 Phone#(510) 567-6700

TABLE #2 RECOMMENDED MINIMUM VERIFICATION ANALYSES FOR UNDERGROUND TANK LEAKS

HYDROCARBON LEAK	SOIL ANALYSIS	WATER ANALYSIS
Unknown Fuel	TPH G GCFID(5030)	TPH G GCFID(5030)
	TPH D GCFID(3550)	TPH D GCFID(3510)
•	BTX&E 8020 or 8240	BTX&E 602, 624 or
	TPH AND BTX&E 8260	8260
Leaded Gas	TPH G GCFID(5030)	TPH G GCFID(5030)
	BTX&E 8020 OR 8240	BTX&E 602 or 624
	TPH AND BTX&E 8260	TOTAL LEAD AA
	TOTAL LEAD AA	
	Optional	
•	TEL DHS-LUFT EDB DHS-AB1803	TEL DHS-LUFT
	EDB DHS-AB1803	EDB DHS-AB1803
Unleaded Gas	TPH G GCFID(5030)	TPH G GCFID(5030)
•	BTX&E 8020 or 8240	BTX&E 602, 624 or
	TPH AND BTX&E 8260	8260
Diesel, Jet Fuel and	TPH D GCFID(3550)	TPH D GCFID(3510)
Kerosene	BTX&E 8020 or 8240	BTX&E 602, 624 or
	TPH AND BTX&E 8260	8260
Fuel/Heating Oil	TPH D GCFID(3550)	TPH D GCFID(3510)
• "	BTX&E 8020 or 8240	BTX&E 602, 624 or
	TPH AND BTX&E 8260	8260
Chlorinated Solvents	CL HC 8010 or 8240	CL HC 601 or 624
•	BTX&E 8020 or 8240	BTX&E 602 or 624
	CL HC AND BTX&E 8260	CL HC AND BTX&E 8260
Non-chlorinated Solvents	TPH D GCFID(3550)	TPH D. GCFID(3510)
	BTX&E 8020 or 8240	BTX&E 602 or 624
-	TPH AND BTX&E 8260	TPH and BTX&E 8260
Waste and Used Oil	TPH G GCFID(5030)	TPH G GCFID(5030)
or Unknown	TPH D GCFID(3550)	TPH D GCFID(3510
(All analyses must be	TPH AND BTX&E 8260	
completed and submitted)	O & G 5520 D & F	O & G 5520 C & F
	BTX&E 8020 or 8240	BTX&E 602, 624 or 8260
	CL HC 8010 or 8240	CL HC 601 or 624
	ICAP or AA TO DETECT MET	TALS: Cd, Cr, Pb, Zn, Ni
	METHOD 8270 FOR SOIL OR	
	PCB*	PCB
	PNA	PCP
	CREOSOTE	PNA CREOSOTE
•		CVECOCIE

^{*} If found, analyze for dibenzofurans (PCBs) or dioxins (PCP)

Reference: Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites, 10 August 1990

EXPLANATION FOR TABLE #2: MINIMUM VERIFICATION ANALYSIS

- 1. OTHER METHODOLOGIES are continually being developed and as methods are accepted by EPA or DHS, they also can be used.
- 2. For DRINKING WATER SOURCES, EPA recommends that the 500 series for volatile organics be used in preference to the 600 series because the detection limits are lower and the QA/QC is better.
- 3. APPROPRIATE STANDARDS for the materials stored in the tank are to be used for all analyses on Table #2. For instance, seasonally, there may be five different jet fuel mixtures to be considered.
- 4. To AVOID FALSE POSITIVE detection of benzene, benzene-free solvents are to be used.
- 5. TOTAL PETROLEUM HYDROCARBONS (TPH) as gasoline (G) and diesel (D) ranges (volatile and extractible, respectively) are to be analyzed and characterized by GCFID with a fused capillary column and prepared by EPA method 5030 (purge and trap) for volatile hydrocarbons, or extracted by sonication using 3550 methodology for extractable hydrocarbons. Fused capillary columns are preferred to packed columns; a packed column may be used as a "first cut" with "dirty" samples or once the hydrocarbons have been characterized and proper QA/QC is followed.
- 6. TETRAETHYL LEAD (TEL) analysis may be required if total lead is detected unless the determination is made that the total lead concentration is geogenic (naturally occurring).
- 7. CHLORINATED HYDROCARBONS (CL HC) AND BENZENE, TOLUENE, XYLENE AND ETHYLBENZENE (BTX&E) are analyzed in soil by EPA methods 8010 and 8020 respectively, (or 8240) and in water, 601 and 602, respectively (or 624).
- 8. OIL AND GREASE (O & G) may be used when heavy, straight chain hydrocarbons may be present. Infrared analysis by method 418.1 may also be acceptable for O & G if proper standards are used. Standard Methods" 17th Edition, 1989, has changed the 503 series to 5520.
- 9. PRACTICAL QUANTITATION REPORTING LIMITS are influenced by matrix problems and laboratory QA/QC procedures. Following are the Practical Quantitation Reporting Limits:

	SOIL PPM	WATER PPB
TPH G	1.0	50.0
TPH D	1.0	50.0
BTX&E	0.005	0.5
0 & G	50.0	5,000.0

Based upon a Regional Board survey of Department of Health Services Certified Laboratories, the Practical Quantitation Reporting Limits are attainable by a majority of laboratories with the exception of diesel fuel in soils. The Diesel Practical Quantitation Reporting Limits, shown by the survey, are:

ROUTINE		MODIFIED PROTOCOL
<pre>≤ 10 ppm ≤ 5 ppm ≤ 1 ppm</pre>	(19%)	<pre>≤ 10 ppm (10%) ≤ 5 ppm (21%) ≤ 1 ppm (60%)</pre>

When the Practical Quantitation Reporting Limits are not achievable, an explanation of the problem is to be submitted on the laboratory data sheets.

- 10. LABORATORY DATA SHEETS are to be signed and submitted and include the laboratory's assessment of the condition of the samples on receipt including temperature, suitable container type, air bubbles present/absent in VOA bottles, proper preservation, etc. The sheets are to include the dates sampled, submitted, prepared for analysis, and analyzed.
- 11. IF PEAKS ARE FOUND, when running samples, that do not conform to the standard, laboratories are to report the peaks, including any unknown complex mixtures that elute at times varying from the standards. Recognizing that these mixtures may be contrary to the standard, they may not be readily identified; however, they are to be reported. At the discretion of the LIA or Regional Board the following information is to be contained in the laboratory report:

The relative retention time for the unknown peak(s) relative to the reference peak in the standard, copies of the chromatogram(s), the type of column used, initial temperature, temperature program is C/minute, and the final temperature.

12. REPORTING LIMITS FOR TPH are: gasoline standard ≤ 20 carbon atoms, diesel and jet fuel (kerosene) standard ≤ 50 carbon atoms. It is not necessary to continue the chromatography beyond the limit, standard, or EPA/DHS method protocol (whichever time is greater).

EPILOGUE

ADDITIVES: Major oil companies are being encouraged or required by the federal government to reformulate gasoline as cleaner burning fuels to reduce air emissions. MTBE (Methyl-tertiary butyl ether), ETHANOL (ethyl alcohol), and other chemicals may be added to reformulate gasolines to increase the oxygen content in the fuel and thereby decrease undesirable emissions (about four percent with MTBE). MTBE and ethanol are, for practical purposes, soluble in water. The removal

from the water column will be difficult. Other compounds are being added by the oil companies for various purposes. The refinements for detection and analysis for all of these additives are still being worked out. If you have any questions about the methodology, please call your Regional Board representative.

