

**HAZARDOUS MATERIALS SAMPLING
EXERCISES**

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Prepared By:

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EXERCISE NO. 1

1. Work with a sampling partner.
2. Open and sample each container using the designated sampling device.
3. Record each sample in the Sampling Log (see attached).
4. Complete Table I, Container Sampling, below.
5. Complete Table II, Liquid Sampling, below.

TABLE 1 - CONTAINER SAMPLING			
Sample Device	Container	Sampler Advantages	Sampler Disadvantages
Drum Thief			
Glass Coliwasa			
Plastic Coliwasa			
Vacuum Pump			
Drum Pump			

TABLE 2 - LIQUID SAMPLING			
Sample Device	Container	Sampler Advantages	Sampler Disadvantages
Small Roller Pipet			
Large Roller Pipet			
Safety Bulb Pipettor			
Pipet Filler			
Liquid Transfere Pipet			

EXERCISE NO. 2

1. Work with a sampling partner.
2. Perform the sampling tasks listed below.
3. Record each sample in the Sample Log (see attached).
4. Complete Worksheets No. 2.1, 2.2, and 2.3, below.

WORKSHEET NO. 2.1 - OPEN WATER SAMPLING

- Using a Dipper, obtain a surface water sample.
- Attempt to not cross-contaminate the outside of the sample container.
- Take one sample each from a deep water and a shallow water source.

a. What are some advantages of this sampling device? _____

b. What are some disadvantages of this sampling device? _____

c. What would be some advantages and disadvantages of this sampling device when using a 3, 6, or 9 foot extension? _____

WORKSHEET NO. 2.2 - GROUND WATER SAMPLING

- Using a Bailer, obtain a ground water sample.
- Attempt to not cross-contaminate the outside of the sample container.
- Obtain the samples out of the "mock well".

a. What are some advantages of this sampling device? _____

b. What are some disadvantages of this sampling device? _____

WORKSHEET NO. 2.3 - VOC SAMPLING

- Obtain a VOC sample from a water faucet (water supply).
- Obtain a VOC sample using a Dipper (surface water).
- Obtain a VOC sample using a Bailer (ground water).
- All samples must be free of any air bubbles.

a. What precautions should you take when obtaining a VOC sample? .

b. What observations are important and unique for each characteristic location and type of sampler used in this exercise? _____

EXERCISE NO. 3

1. Work with a sampling partner.
2. Perform the sampling tasks listed below.
3. Record each sample in the Sample Log (see attached).
4. Complete Worksheet No. 3, below.

WORKSHEET NO. 3.1 - PCB WIPE SAMPLING

- Prepare two PCB wipe samples (one with gauze pad, and one with filter paper).
- Select a sample area. Take a wipe sample using the gauze pad sample, and the 100 cm² template.
- Select a second sample area. Mark a 400 cm² area using a ruler and marker. Sample the area using the filter paper sample.
- Attempt to not cross-contaminate the outside of the sample container.

a. How would various surfaces affect the sampling procedure and results? ____

b. What possible sources of interference may be associated with the sampling procedure? _____

c. What are some advantages and disadvantages of a gauze pad sample? ____

d. What are some advantages and disadvantages of a filter paper sample? ____

EXERCISE NO. 4

1. Work in a team of six (6) samplers.
2. Perform the sampling tasks listed below.
3. Record each sample in the Sample Log (see attached).
4. Complete Worksheet No. 4.1, and the Area Map.
5. Complete a Laboratory Analysis Request/Chain of Custody Form

WORKSHEET NO. 4.1 - SOIL SAMPLING

An outdoor "site" is suspected of being contaminated as a result of previous land use and activities. The site is currently vacant, but was previously the location of an industrial shop and equipment salvage yard. No visible signs of surface contamination are observable. Preliminary site assessment information indicates the surface discharges of hazardous chemicals may have occurred at the site (i.e. PCB's, solvents, heavy metal wastes, etc.).

- Develop a sampling plan for the site.
- Map the site.
- Establish a sampling grid at the site.
- Obtain four (4) surface samples* using four different sampling devices.
 - * Polyethylene Scoop
 - * Polystyrene Spatula
 - * Stainless Steel Scoopula
 - * Wood Tongue Depressor
- Obtain three (3) subsurface samples* using three different sampling devices.
 - * Soil Sampler Tube
 - * Hand Auger
 - * Metal Sleeve Sampler

* Note: Your sampling plan may call for additional surface and subsurface samples. For the purposes of the exercise, only the samples listed need actually be taken.

EXERCISE NO. 4 - CONTINUED

SAMPLING PLAN

OBJECTIVES

SAMPLING PROCEDURE

Type

Location

Quantity

Justification

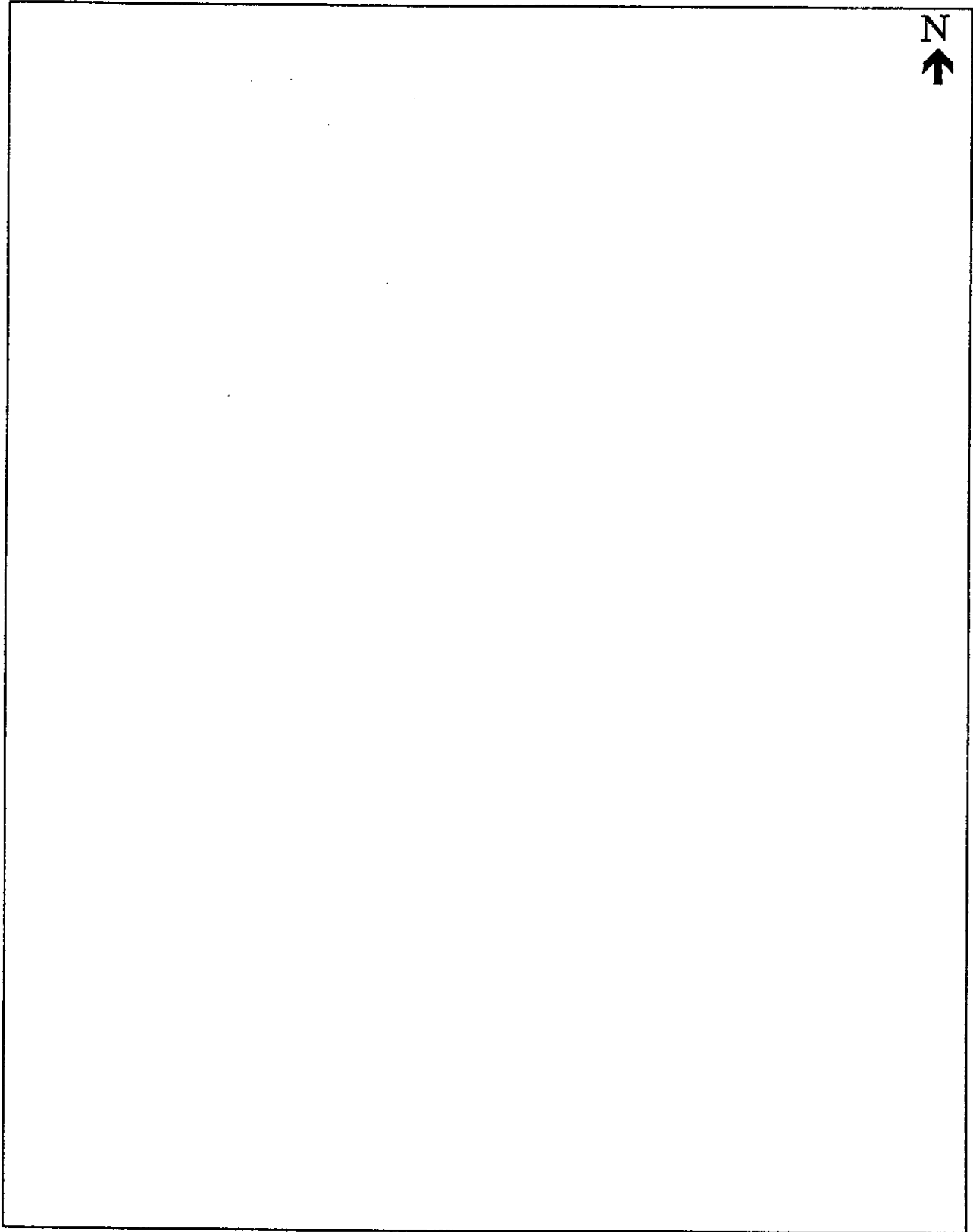
Equipment

SAFETY CONSIDERATIONS

SAMPLE HANDLING

EXERCISE NO. 4 - CONTINUED

SITE MAP



California Laboratory Services

SAMPLE I.D.	
LOCATION	
PROJECT	
SAMPLED BY	
DATE	TIME
PRESERVATIVES	

California Laboratory Services

SAMPLE I.D.	
LOCATION	
PROJECT	
SAMPLED BY	
DATE	TIME
PRESERVATIVES	

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CALIFORNIA LABORATORY SERVICES

CHAIN OF CUSTODY

LOG NO. 5093

CLIENT NAME	CLIENT JOB NUMBER	PRESERVATIVES	ANALYSIS REQUESTED				FIELD CONDITIONS:			
ADDRESS	DESTINATION LABORATORY						COMPOSITE:			
PROJECT NAME	<input type="checkbox"/> CLS						SPECIAL INSTRUCTIONS:			
PROJECT MANAGER	<input type="checkbox"/> OTHER						TURN AROUND TIME			
SAMPLED BY							24 HOURS	48 HOURS	1 WEEK	2 WEEKS
PHONE #										
JOB DESCRIPTION										
SITE LOCATION										

DATE	TIME	SAMPLE IDENTIFICATION	METHOD	MATRIX	CONTAINER NO.	TYPE					24 HOURS	48 HOURS	1 WEEK	2 WEEKS	NOTE / FIELD READINGS

SUSPECTED CONSTITUENTS: _____ SAMPLE RETENTION TIME: _____ PRESERVATIVES: (1) HCL (2) HNO3 (3) - COLD (4)

RELINQUISHED BY (SIGN)	PRINT NAME / COMPANY	DATE / TIME	REC'D BY (SIGN)	PRINT NAME / COMPANY

REC'D AT LAB BY: _____ DATE / TIME: _____ CONDITIONS / COMMENTS: _____

SHIPPED VIA FED X UPS OTHER _____ AIR BILL # _____