FINAL WORK PLAN
AND
FIELD OPERATIONS PLAN
SUPPLEMENTAL REMEDIAL
INVESTIGATION/FEASIBILITY STUDY

CLOTHIER SITE
GRANBY, NEW YORK
JANUARY, 1988

W.A. NO. 67-2LE9

NOTICE

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EBASCO

February 11, 1988
RMOII-88-046

Mr. Shaheer Alvi
U S Environmental Protection Agency
26 Federal Plaza
New York, NY 10278

Mr. Herb King
U S Environmental Protection Agency
26 Federal Plaza
New York, NY 10278

Subject: REM III PROGRAM - EPA CONTRACT NO. 68-01-7250
CLOTHIER SITE - WA NO. 67-2LE9
FINAL WORK PLAN AND FOP

Dear Messers Alvi and King:

Ebasco Services Incorporated is pleased to submit the Final Work Plan and Field Operations Plan for the Clothier site in Granby, New York. As we agreed during the site visit, the two documents are submitted under one cover in order to save on time and LOE.

Please sign and return a copy of the attached letter to me at the Lyndhurst, New Jersey office.

Please let me know if we can be of further assistance during the assignment. If you have any questions, please do not hesitate to call me at (201) 460-6434, Mr. Dennis Beissel at (703) 558-7519 or Mr. Jonathan Weiss at (703) 558-7535.

Very truly yours,

Michael Andrew for

Dev R Sachdev, PhD, PE
Regional Manager, Region II

DRS/mec
ENCLOSURES

cc: J Morant (w/out enc.)
D Sarno
M K Yates
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J Gushue
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Mr. M. Shaheer Alvi, P.E.
Mr. Herb King

February 11, 1988
RMO-88-046

Subject: REM III PROGRAM - EPA CONTRACT NO. 68-01-7250
CLOTHIER SITE - WA NO. 67-2LE9
FINAL WORK PLAN AND FOP

ACKNOWLEDGMENT OF RECEIPT

Please acknowledge receipt of this enclosure on the duplicate copy of this letter and return it to the sender.

_____ _____

M. Shaheer Alvi, P.E.
Regional Project Manager

Date

FINAL WORK PLAN
AND
FIELD OPERATIONS PLAN
SUPPLEMENTAL REMEDIAL INVESTIGATION
AND FEASIBILITY STUDY

CLOTHIER SITE
GRANBY, NEW YORK

EPA WORK ASSIGNMENT NO. 67-2LE9
UNDER
CONTRACT NUMBER 68-01-7250

PREPARED BY:
EBASCO SERVICES INCORPORATED
LYNDHURST, NEW JERSEY

JANUARY, 1988

Prepared By:

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Michael Andrews for

Dev S. Sachdev, PE
Regional Manager-Region II
Ebasco Services Incorporated

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1.0 WORK PLAN

Ebasco Services Incorporated has prepared this Work Plan and Field Sampling and Analysis Plan for the U.S. Environmental Protection Agency (EPA) in response to Work Assignment Number 67-2LE9 received December 30, 1987, under Contract Number 68-01-7250. The Work plan presents Ebasco's technical scope of work for collecting soil samples at the Clothier Disposal Site.

1.1 INTRODUCTION

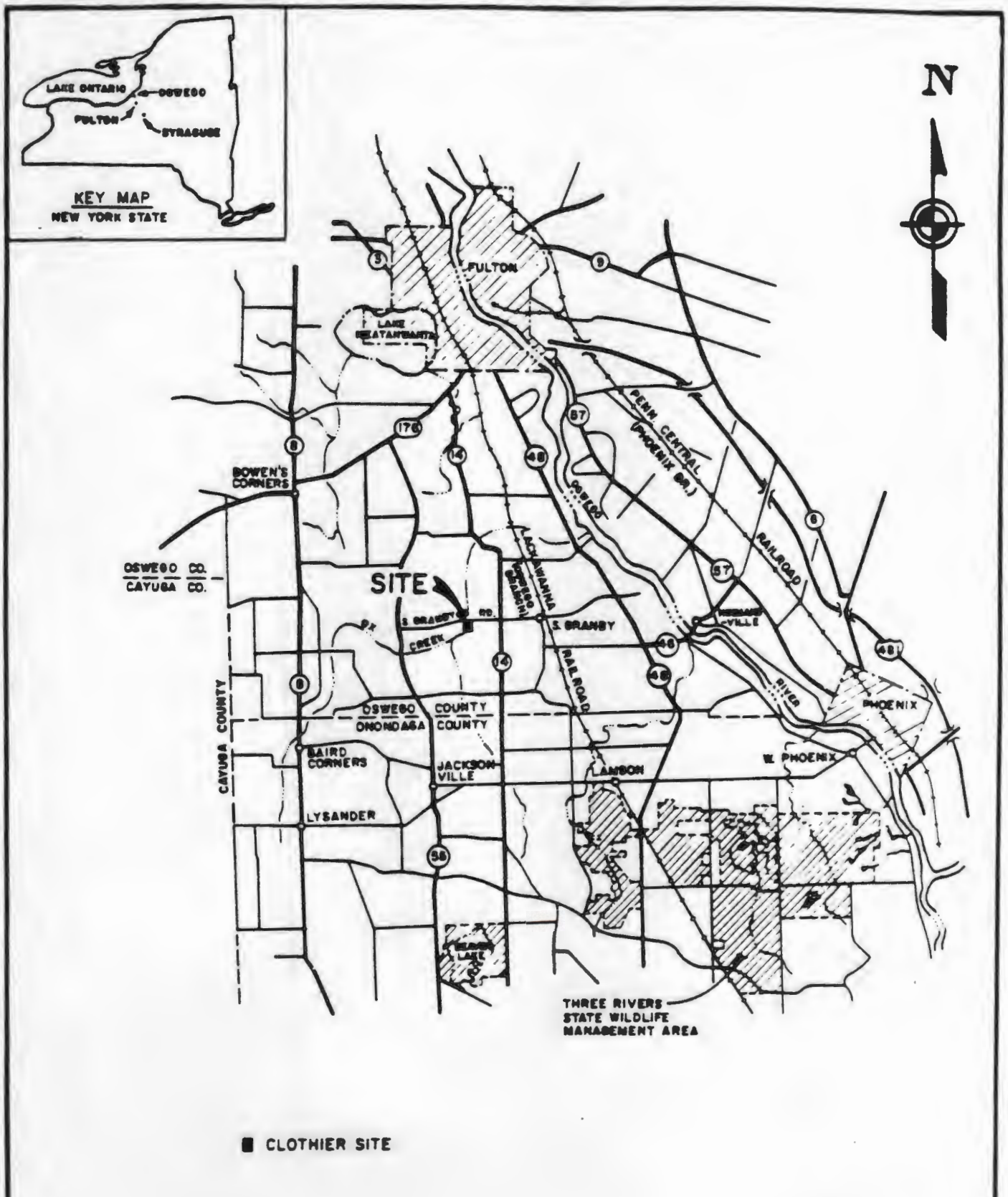
A Supplemental Remedial Investigation and Feasibility Study (RI/FS) of the Clothier Disposal Site is presently being conducted by the New York State Department of Environmental Conservation (NYSDEC). As part of that investigation, shallow soil samples were collected at the site in October, 1987. Ebasco's responsibilities are to review the results of the anaylses of the previously collected soil samples, and determine the number and locations of samples that are necessary to characterize the contamination at the site at depths below the previous sampling depths. In addition, four shallow samples are to taken for the purpose of confirming the results of the previous sampling.

1.2 SITE DESCRIPTION

The Clothier Disposal Site is located in the Town of Granby, Oswego County, New York (Figure 1-1). The site can be reached by a dirt access road on the south side of South Granby Road, near the bridge crossing Ox Creek. The site is approximately 16 miles southeast of Lake Ontario, about 18 miles northwest of the City of Syracuse, and about 7 miles south of the City of Fulton.

The Clothier site is located in a region of gently rolling hills and intervening flatlands. The topography at the site is relatively flat. Land surface elevations in the area of interest range from about 356 feet to 378 feet. Bedrock beneath the site consists of red and green sandstone and shale, with occasional thin beds of limestone. Depth to bedrock is generally from 35 to 55 feet below ground surface. Bedrock at the site is overlain by unconsolidated deposits varying in texture from a clayey silt to a sand and gravel. Depth to ground water in these deposits is approximately 15 feet below land surface, although it may be locally shallower.

The Clothier property is a 15-acre rural dumpsite, of which approximately 6 acres have been used for the disposal of demolition debris, household waste, junked vehicles, and approximately 2,200 drums of hazardous chemical waste from Pollution Abatement Services, Inc. (PAS), a now-defunct



SITE LOCATION MAP

FIGURE 1-1

hazardous waste incineration facility in the City of Oswego, New York. These drums contained a variety of waste types, most of which could be classified as phenolic tars or resins. Many of the drums had deteriorated, and spillage from them occurred directly onto the ground surface. As a result, surface soils are potentially contaminated over a large portion of the 6-acres.

The EPA issued an Action Memorandum dated March 19, 1986, identifying the need to dispose of these drums as an emergency removal. An estimated 1860 drums were removed and disposed of under a May, 1986 Consent Order. Another 211 drums of flammable liquids and solids were disposed of under an immediate removal action in July, 1987. The remaining sixty drums are awaiting acceptance at a RCRA facility that is in compliance.

1.3 PREVIOUS SUPPLEMENTARY SAMPLING RESULTS

Soil samples were collected from 27 locations at the Clothier site in October, 1987. The sampling locations are shown on the sketch map on Figure 1-2. This figure is not drawn to scale. It is provided in this plan for the purpose of discussion of the previously collected data. These locations are posted on the site with stakes and flags.

Two discrete samples were taken at each of the locations 1 through 18. Samples designated with the suffix "a" were taken from 0 to 2 feet and are referred to in this plan as shallow; samples designated with the suffix "b" were taken from 3 to 5 feet and are referred to in this plan as intermediate. A composite sample was taken from 0 to 2 feet and 3 to 5 feet at each of the locations 19 through 24. Surface composite samples were taken from 0 to 2 feet at locations 25 through 27.

All samples were analyzed for volatile organics, polynuclear aromatic hydrocarbons (PAH's), metals, cyanide, phenols, and pesticides. Bar charts of the results of the analyses are presented in Attachment A. Two charts are provided for each analysis. One chart shows the results of the inorganic analyses corresponding to the element shown on the horizontal axis. The other chart shows the results of the analyses for organic compounds shown on the front page of Attachment A, which must be cross-referenced to the numbers on the horizontal axis of each chart. For locations which had samples taken from shallow and intermediate depths, charts for inorganic analyses are combined on one page and organic analyses are combined on another page, thus allowing visual comparison of the vertical migration of contaminants.

The following discussion describes the results of the previous soil sampling, and provides the rationale for the selection of additional sampling locations.

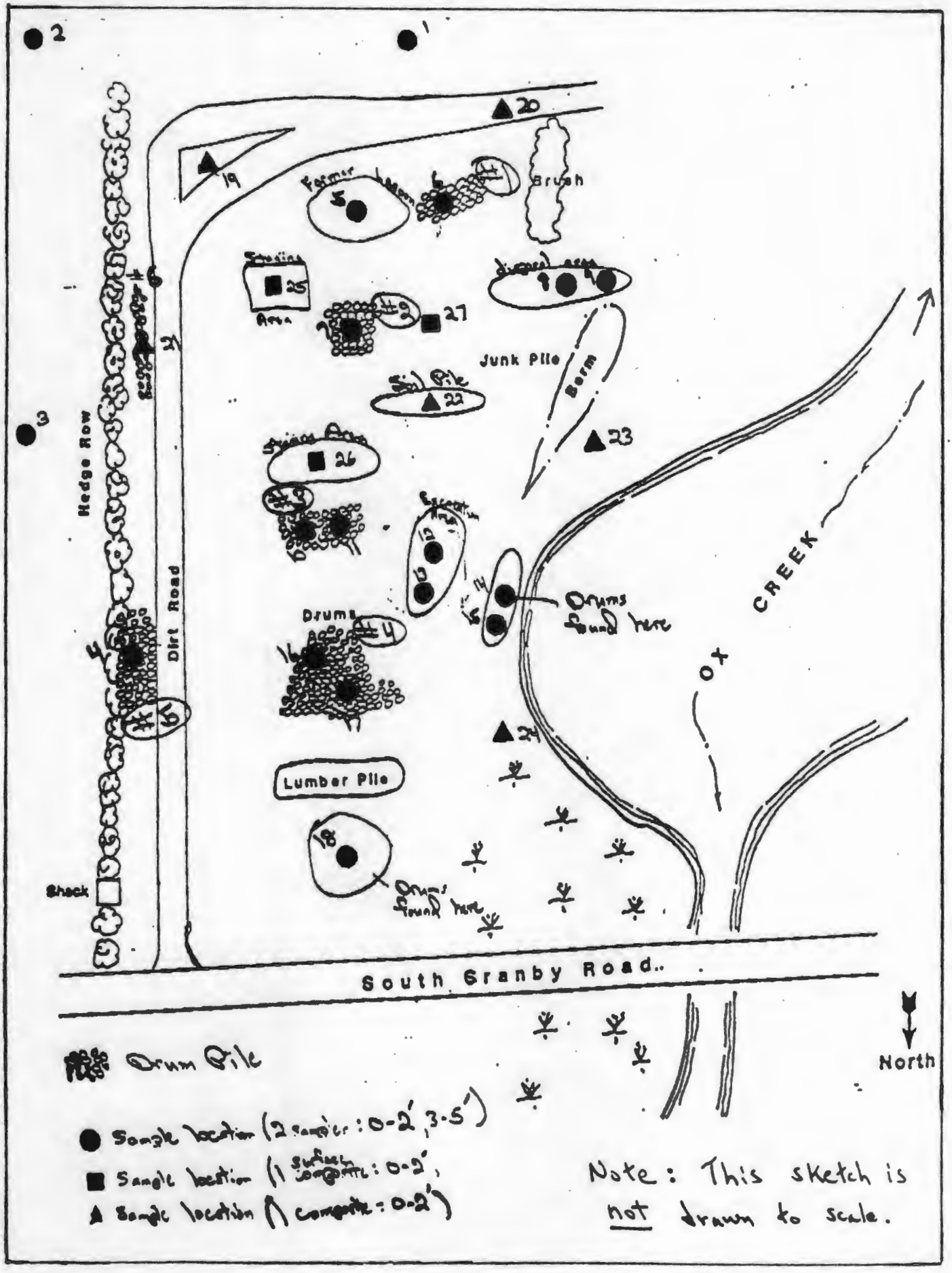


Figure 1-2 -- Sketch of proposed sampling locations and site features.

Locations 1, 2, and 3: These locations were sampled to provide background data offsite from areas of waste disposal. Location 1 is south of the site; location 2 is southeast of the site; location 3 is east of the site. Location 1 indicated the presence of barium, chromium, copper, and nickel. These metals were also present at locations 2 and 3, in addition to the occurence of zinc. At all three locations, the concentrations of these metals appears nearly unchanged with depth. These five metals were found in almost every soil sample collected at the site, and were not used for identifying additional sampling locations. Locations 1, 2, and 3 also contained phthalates, which were also not used for identifying additional sampling locations. No further sampling is proposed at these three locations.

Location 4: This location is at drum pile #5 in between the hedge row and dirt access road on the eastern side of the site. In addition to the five background metals (Ba, Cr, Cu, Ni, and Zn), the shallow sample indicated the presence of arsenic and cyanide. The arsenic concentration was significantly reduced in the intermediate depth sample, and cyanide was absent. Small amounts of acetone were found at shallow and intermediate depth. No further sampling is necessary at this location.

Location 5: This location is at a former lagoon in the southern portion of the site. The shallow sample at this location indicated the presence of lead and phenol. Both were absent at intermediate depth. No further sampling is necessary at this location.

Location 6: This location is at drum pile #1 in the southern portion of the site. The shallow sample at this location indicated the presence of silver, phenol, pthalate, and Aroclor. None of these were present at the intermediate depth. No further sampling is necessary at this location.

Location 7: This location is at drum pile #2 in the eastern portion of the site. The shallow sample at this location indicated the presence of arsenic, phenol, acetone, and butanone. Phenol was absent at the intermediate depth, although all other substances were present in approximately the same concentrations as the shallow sample. Additional sampling at greater depth is necessary to define the vertical extent of contamination at this location.

Location 8 and 9: These locations are very close to each other in a waste disposal area in the eastern portion of the site. Both locations indicated the presence of arsenic at shallow and

intermediate depths. Location 8 also indicated the presence of large amounts of nitrosodiphenylamine, phthalate, and phenol, and a lesser amount of acetone at the shallow depth. At the intermediate depth, the nitrosodiphenylamine was greatly reduced, the phthalate and phenol were absent, however, the acetone was slightly increased. Location 9 also showed the slight increase in acetone from shallow to intermediate depth. Further sampling will be performed at greater depth at location 9 for determining the vertical extent of contamination.

Locations 10 and 11: These locations are very close to each other in drum pile #3 in the central area of the site. Both locations indicated the presence of arsenic at shallow and intermediate depths. In addition, lead was found at the intermediate depth at location 11. Large amounts of phthalate and phenol were found at shallow depth at location 10, although only small amounts of butanone were found at intermediate depth. Contrastingly, only small amounts of acetone were found at shallow depth at location 11, although greater concentrations of acetone, phenol, and PAH's were found at intermediate depth. Further sampling is necessary at greater depth at location 11 to define the vertical extent of contamination. In addition, an intermediate depth sample will be taken at location 11 for the purpose of confirming the results of the previous sampling.

Locations 12 and 13: These locations are very close to each other in an excavation area in the central portion of the site. Both locations indicated the presence of lead in the shallow sample, although it was absent in the intermediate samples. Location 12 showed only the presence of acetone in both shallow and intermediate samples, although phenols and Aroclor were also present in the shallow sample at location 13. The phenols and Aroclor were absent at the intermediate depth, although acetone had increased. Further sampling at greater depth will be performed near location 13 to characterize the vertical extent of contamination.

Locations 14 and 15: These locations are very close to each other in an area where drums were found close to Ox Creek in the western portion of the site. Arsenic and lead were both found at shallow and intermediate depths at both locations. Large amounts of phthalate were found at shallow depth at location 14, but was absent at intermediate depth. PAH's were found at shallow depth at location 15, but were absent at intermediate depth. Both locations showed the presence of acetone at intermediate depth. Additional sampling at greater depth in this area will provide indication of any further possible contaminant migration. The additional borehole will be located close to location 15.

Locations 16 and 17: These locations are very close to each other at drum pile #4 in the north-central portion of the site. Arsenic and lead were found at shallow and intermediate depth at both locations, although were present in greater concentrations at shallower depths. PAH's and phthalate were found at shallow and intermediate depths at location 16. PAH's, phenols, Aroclor, and tetrachloroethane were present at shallow depth at location 17, although only minor amounts of acetone were found at intermediate depth. Further sampling at greater depth is necessary at location 16 to define the vertical extent of contamination. In addition, an intermediate depth sample will be collected at location 16 for the purpose of confirming the results of the previous sampling.

Location 18: This location is in an area where drums were found in the northern portion of the site. Lead was found at intermediate depth at this location, although was not present at shallow depth. PAH's were found at shallow depth, but not at intermediate depth. No further sampling is planned at this location.

Location 19: This location is at a bend in the dirt access road at the southeastern corner of the site. The surface composite sample taken at this location showed the presence of lead, however, no organic compounds were found. No further sampling is planned at this location.

Location 20: A surface composite sample was taken at this location on the eastern extension of the dirt access road on the southern portion of the site. Analyses indicated the sample was very similar to the offsite samples, and no further sampling is necessary.

Location 21: This location is at drum pile #6 east of the dirt access road. Although arsenic was found in the surface composite sample taken at this location, there were no organic compounds found. No further sampling is planned at this location.

Location 22: This location is at a soil pile in the central area of the site. The surface composite sample taken at this location indicated the presence of arsenic, phenols, nitrosodiphenylamine, phthalates, Aroclor, and PAH's. Because these are soils obtained from other areas of the site and moved to this location, no additional sampling is necessary.

Location 23: This location is between Ox Creek and a berm in the western portion of the site. The surface composite sample taken at this location indicated the presence of arsenic, lead,

phthalate, acetone, and selenium. Further sampling at greater depth is necessary at this location to define the vertical extent of contamination.

Location 24: This location is immediately south of a marshy area at the northwest portion of the site. The surface composite sample taken at this location indicated the presence of lead, phenols, and Aroclor. Further sampling is necessary at greater depth to define the vertical extent of contamination. In addition, a shallow sample will be collected for confirming the results of the previous sampling.

Location 25: This location is at the staging area in the southern portion of the site. The surface composite sample indicated the presence of large amounts of phthalate, arsenic and small amounts of cadmium and acetone. Further sampling at greater depth at this location will help define the vertical extent of contamination at this location. In addition, a shallow sample will be collected for confirming the results of the previous sampling.

Location 26: This location is at the staging area in the central portion of the site. The surface composite sample indicated the presence of aresenic, phenol, and acetone. Further sampling at greater depth will allow definition of the extent of vertical contamination at this location.

Location 27: This location is immediately west of drum pile #2 in the southern portion of the site, and is relatively close to sampling location 7. The surface composite sample indicated the presence of arsenic, butanone, and minor amounts of cadmium and acetone. The deeper sampling to be performed at location 7 will help to characterize the vertical extent of contamination at this location.

1.4 TECHNICAL APPROACH

Ten of the locations which were previously sampled need to be investigated at greater depth in order to determine the vertical extent of soil contamination. The ten additional borings will be installed at locations 7, 9, 11, 13, 15, 16, 23, 24, 25 and 26. The borings will be approximately 15 feet deep, although actual depths may vary depending upon subsurface conditions encountered. The intervals to be sampled are dependent upon the depth of the water table, as shown in Table 1-1. The samples taken from 3 to 5 feet at locations 11 and 16, and the samples taken from 0 to 2 feet at locations 24 and 25 are for the purpose of confirming the results of the previous sampling.

Table 1-1
Soil Sampling Plan

Sampling Depth	Rationale
0 to 5 ft depth:	
o no sample at locations 7,9,13,15	o previous data exists
o sample from 0 to 2 ft at locations 24 and 25	o confirm previous sampling
o sample from 3 to 5 ft at locations 11 and 16	o confirm previous sampling
o no additional sample at locations 23, 24, 25, 26 if water table less than 3 ft	o too close to 0 to 2 ft sample
o otherwise, sample at 3 to 5 ft at locations 23, 24, 25 and 26 (this is final sample if water table encountered during sampling)	o additional data (previous samples from 0 to 2 ft)
5 to 10 ft depth:	
Samples will be obtained from all ten locations as follows:	
o no sample if water table less than 7 ft	o too close to 3 to 5 ft sample
o sample at water table, if encountered from 7 to 8 ft	o final sample at boring
o otherwise, sample from 8 to 10 ft (this is final sample if water table encountered)	o additional data
Greater than 10 ft:	
Samples will be obtained from all ten locations as follows:	
o no sample if water table less than 13 ft	o too close to 8 to 10 ft sample
o sample from 13 to 15 ft (this is final sample if water table encountered)	o additional data
o if water table not yet encountered at 18 ft, take additional sample from 18 to 20 ft (if total number of samples exceeds 24, then discard the sample taken from 13 to 15 ft at these borings)	o final sample at boring

1.5 DATA QUALITY OBJECTIVES (DQO'S)

Data quality objectives (DQO's) are qualitative and quantitative statements which specify the quality of data required to support specific remedial response decisions or regulatory actions. The DQO's focus on the identification of the end use of the data to be collected and the degree of certainty with respect to precision, accuracy, reproducibility, completeness, and comparability (PARCC) necessary to satisfy the intended end use. Because the data are likely to be used for enforcement purposes, analytical methods and data validation will be performed at Level 4. This level is characterized by rigorous quality assurance/quality control (QA/QC) protocols and documentation and provides qualitative and quantitative analytical data. Analyses are performed by Contract Laboratory Program (CLP) Routine Analytical Services (RAS).

2.0 FIELD OPERATIONS PLAN

The Field Operations Plan (FOP) is organized into a Site Management Plan (SMP) and a Field Sampling and Analysis Plan (FSAP). The SMP describes the site control and site operation of the field investigation. The FSAP provides the technical guidelines and procedures to be followed by the field personnel.

2.1 SITE MANAGEMENT PLAN

The Site Management Plan (SMP) primarily outlines the overall project organization for the field investigation, in addition to the identification of key personnel and their responsibilities. The SMP also details site access, security, and control to be exercised during the field investigation.

2.1.1 SITE CONTROL

The study area is accessible by public roads and a dirt access road. Currently, it is secured by a fence and gate, and a security guard. A trailer already exists at the site, and will serve as a central command post through the duration of the field investigation, providing communications, shelter, office space, equipment storage and space for sampling handling. All portable equipment will be returned to the command post and secured at the end of each work day. Any equipment left at the work site will be secured to the extent possible to prevent unauthorized removal or vandalism.

No REM III Team Member will perform work at the study area until: (1) written or verbal authorization is received from the Site Manager or designee, (2) at least 24-hour notice is given to the Remedial Project Manager (RPM) before initiation of field activities, and (3) each field team member has personal identification in the form of a driver's license, company identification card, or a suitable substitute approved by the Field Operations Leader (FOL). A list of persons authorized to work on the project will be provided to the RPM by the Site Manager or the FOL. The list is intended to prevent unauthorized activities in the study area, and it will be updated, as necessary, by the Site Manager or his designee.

2.1.2 SITE OPERATION

Field work will be performed by teams made up of appropriate personnel, under the direction of the FOL. The FOL reports to the Site Manager and is responsible for coordinating and overseeing all field activities. The FOL will interface with the Health and Safety Officer (HSO) in planning and performing the RI tasks.

Specific responsibilities of key personnel involved with field operations are discussed below:

- o Site Manager. Responsible for planning and implementation of the field remedial investigation.

- o Field Operations Leader (FOL). The FOL is responsible for all day-to-day aspects of the RI field work. The responsibilities of the FOL include:

  - Assuring that all field personnel are familiar with the Field Sampling and Analysis Plan (FSAP) and HASP; ultimate responsibility for sampling operations and sampling quality control and documentation.

  - Assuring that all field personnel have completed health and safety training.

  - Reporting to the Site Manager on a regular basis regarding the status of all field work and any problems encountered.

  - Completing Field Change Orders, as necessary, for approval by the Site Manager.

- o Site Geologist. Responsible for overseeing boring activities and ensuring that approved drilling methods are followed and that pertinent information is obtained. The site geologist will also be responsible for the day-to-day inspection of boring activities, including the appropriate documentation of these activities. The FOL will serve as the site geologist during the investigation.

- o Sampling Personnel. Responsible for the proper collection, preservation, packaging, documentation, and initial chain of custody of samples until released to another party for storage or transport to the analytical laboratory. Sampling personnel will report to the FOL or his designee.

- o Health and Safety Officer (HSO). Will monitor activities so that the site work is conducted in accordance with the HASP. The HSO will have authority to stop work if conditions exceed allowable limits and, as appropriate, will assume certain sampling responsibilities.

- o Drilling Subcontractor. Responsible for drilling permits and clearances and supplying all services (including labor), equipment, and material required to perform the drilling, as well as maintenance and quality control of such required equipment. The drilling subcontractor will be responsible for following documentation procedures specified in the FSAP and HASP. Upon completion of the work, the drilling subcontractor will be responsible for demobilizing all equipment, staging drums with cuttings and waste material in an area on-site designated by Ebasco and removing all litter or debris associated with drilling and not previously drummed.

2.2 FIELD SAMPLING AND ANALYSIS PLAN

The Field Sampling and Analysis Plan (FSAP) describes the technical guidelines and procedures to be followed during the field investigation. The FSAP includes discussion of soil borings and sampling, decontamination of equipment, laboratory analysis, and project reports.

2.2.1 GENERAL SITE OPERATIONS

2.2.1.1 REM III FIELD TECHNICAL GUIDELINES (FTG's)

The basic requirement for all work conducted under REM III is that data collected maintain consistent quality. Data quality is measured in degrees of precision, accuracy, representation, completeness and comparability. To meet data quality objectives, site activities will be conducted with the guidance of Ebasco's FTGs and Health and Safety Guidelines (HSGs). These guidelines were developed for the REM III program and are intended to provide general technical guidance for project activities but are not intended to be used as standard operating procedures. A list of applicable guidelines appears below. Modifications to the FTG's aplicable to the Clothier site are discussed in the FSAP. Prcedures described in the FSAP will take precedence over the FTG's where applicable.

FT-6.01 Soil and Rock Borings

FT-6.02 Borehole and Sample Logging

FT-6.03 Decontamination of Drilling Rigs and Monitoring Well Materials

FT-7.03 Soil and Rock Sample Acquisition

FT-7.04 Management of Sampling and Preparation of Required Forms

FT-7.05 Sample Identification and Chain-of-Custody

FT-7.06 Sample Preservation

FT-7.07 Sample Packaging and Shipping

FT-12.01 Decontamination of Chemical Sampling and Field Analytical Equipment

FT-13.01 Preparation, Approval, and Submittal of Periodic Field Reports

FT-13.02 Forms Used in RI Activities

FT-13.03 Site Logbook

HS-1.02 Decontamination

HS-1.06 Control of Contaminated Material

HS-1.12 Incident Investigation and Reporting

The above guidelines are available at Ebasco's offices in Lyndhurst, New Jersey and Arlington, Virginia. One copy will be available for reference at the onsite command post. A copy of the applicable forms referenced in these guidelines is provided in Attachment B.

2.2.1.2 SAMPLE IDENTIFICATION

All samples collected during the field investigation will be labeled with a sample identification code that will identify the site, sample type, specific location and depth in accordance with REM III Guideline FT-7.05. The samples at the Clothier site will be labeled with the following system:

- Site--"C" for Clothier.
- Sample Type--Will indicate whether the sample is a soil sample ("S"), duplicate ("D") and field blank ("F") or trip blank ("T).
- Specific Location--Indicated by a 2-character boring number (i.e., 01) corresponding to the sample collection location as shown on Figure 1-2. If sample type designates a field blank or trip blank, then the specific location is a sequence number.

- o Beginning Depth--Indicated by a 2-character number (i.e., 08) which represents the beginning depth of a split-spoon sample. If sample type designates a field blank or trip blank, then the beginning depth is not entered.

- o Ending Depth-Indicated by a 2-character number (i.e., 10) which represents the ending depth of a split-spoon sample. If sample type designates a field blank or trip blank, then the ending depth is not entered.

```
 A       A   --  N  N  --  N   N   --  N   N
SITE   SAMPLE  SPECIFIC   BEGINNING   ENDING
        TYPE   LOCATION     DEPTH     DEPTH
```

Character Type:

A = Alpha
N = Numeric

Site:

C = Clothier

Sample Type:

S = Soil
D = Duplicate
F = Field blank
T = Trip blank

An example sample identification number for a split-spoon sample taken from 8 to 10 feet at soil boring 5 would be:

CS-05-08-10

An example identification number for the first field blank would be:

CF-01

2.2.1.3 QUALITY CONTROL SAMPLE REQUIREMENTS

Field blanks are obtained under representative field conditions by running analyte-free deionized water through sample collection equipment after decontamination, and placing it in the appropriate sample containers for analysis. These samples are used to determine if decontamination procedures are sufficient. The analyte-free deionized water has been purchased in glass containers from the Electrified Water Company, East Orange, New Jersey, and will be sent for laboratory analysis prior to being sent to the field.

Trip blanks are prepared in the laboratory (or in the field, in an area outside of the zone of contamination) prior to the sampling event. Analyte-free deionized water is poured directly into the sample jar and then packaged for shipment with other samples. At no time after their preparation are trip blanks opened before they reach the laboratory.

Field duplicates and field blanks should be submitted at the rate of one field duplicate or blank per matrix for every 20 samples. Trips blanks should be submitted at the rate of one per shipment.

2.2.1.4 SAMPLING HANDLING, PACKAGING, AND SHIPPING

All analytical samples will be placed in the appropriate sample containers as specified in REM III Guideline FT-7.06.

Prior to packaging any samples for shipment, the sample container will be checked for proper identification and compared to the field logbook for accuracy. The samples will then be wrapped with a cushioning material and placed in a plastic cooler (or laboratory shuttle). A sufficient amount of bagged ice will be placed in the cooler to keep the samples at approximately 4 degrees Celsius (^{o}C) until arrival at the laboratory.

All necessary documentation required to accompany the samples during shipment will be placed in a sealed plastic bag and taped to the underside of the cooler lid. The cooler will then be sealed with fiber tape, and custody seals will be placed so any opening of the cooler prior to arrival at the laboratory can be detected. Sample volume and container requirements, holding times and preservation requirements are specified in Table 2-1.

All samples requiring chemical analysis will be shipped to the appropriate laboratory in accordance with REM III team lab protocol.

TABLE 2-1. SOIL SAMPLE CONTAINER AND PRESERVATION REQUIREMENTS

	Sample Type and Concentration	Container*	Sample Size	Preservation	Analytical Method	Holding Time
Organics (GC and GC/MS)	VOA	2 x 40 mL	80 mL	Cool to 4°C	CLP-IFB	10 days
	Extractables					
	Low/Medium	8 oz or 2 x 4 oz (120 mL) wide-mouth glass	6 oz	Cool to 4°C	CLP-IFB	10 days to extraction 40 days after extraction
Inorganics	Metals	8 oz wide-mouth glass	8 oz	Cool to 4°C	CLP-IFB	6 months

*All glass containers should have Teflon cap liners or septa.

Notes:
- GC = gas chromatography.
- GC/MS = gas chromatography/mass spectrometry.
- VOA = volatile organic analysis.
- mL = milliliters.
- oz = ounces
- °C = degrees Celsius.
- CLP-IFB = According to CLP, Invitation for Bids, July, 1987 USEPA SOW for Organics, Revision 887 and SOW for Inorganics, Revision 787

Source: REM III Guidelines, 1986.

2.2.1.5 DOCUMENTATION

Each site geologist will maintain a bound, weatherproof notebook. Physical characteristics such as depth to ground water or soil type will be recorded. Pages will be sequentially numbered and referenced in the site logbook maintained by the FOL or his designee in accordance with REM III Guideline FT-13.03.

After each sampling episode is completed, sample log sheets will be compiled with a Sample Log Notebook and placed in a suitable 3-ring binder for future reference. Chain-of-custody forms, custody seals, and traffic reports will be utilized according to the appropriate section in REM III Guidelines FT-7.05 and FT-13.02. Sample labels will contain all necessary information as identified in Section 2.2.1.2.

2.2.1.6 PERFORMANCE OF FIELD AUDITS

During field activities, an Ebasco Quality Assurance/Quality Control (QA/QC) officer may accompany site personnel into the field to verify that the site FSAP is being followed. The QA/QC procedures to be performed by the Ebasco QA/QC officer are described in the Quality Assurance Project Plan for the REM III program. All findings will be documented and distributed to the SM and the RM.

2.2.1.7 FIELD CHANGES AND CORRECTIVE ACTIONS

Unanticipated site conditions may necessitate modification to the proposed site investigation program. If it becomes necessary to modify the investigation at the site, the FOL will notify the SM of the necessary changes. The SM will in turn notify the RM and EPA, if appropriate.

All changes made in the field will be documented on Field Change Request Forms. This form will be signed by the FOL and the SM. A copy will be kept on file with the affected document. The SM is responsible for controlling, tracking, and implementing program changes. Completed field change request forms will be distributed to affected parties which will include, as a minimum, the RM, SM and FOL.

2.2.2 SOIL BORINGS AND SAMPLING

Borehole drilling will be performed using conventional hollow-stem auger techniques, according to Field Technical Guidelines FT-6.01, Section 5.2.1, using 4 1/2 inch ID augers. All downhole advances of the auger string will be preceded by the insertion of an auger center-plug to prevent soil cuttings

from building up inside the augers. All cuttings will be collected in DOT Spec-17 drums. The drums will be labeled with boring number(s), date(s), and contents. Drums will be staged near the existing decontamination pad.

As many as twenty-four soil samples will be collected as described in Section 1.4, and shown in Table 1.1. Soil samples will be obtained with a standard low-carbon steel, 3-inch diameter, 24-inch long split-spoon sampler. Except for the size of the sample (3 inch) and weight of the hammer (300 pounds), the sampling procedure will conform to ASTM D-1586-84, Standard Method for Penetration Test and Split-Barrel Sampling of Soils (Attachment C) and Field Technical Guideline FT-7.03, Section 5.2.1.

Prior to disturbance of the split-spoon sample, two 40 mL glass vials will be filled for analysis of volatile organic compounds. The remainder of the sample will be homogenized in a stainless steel bucket with a trowel, for the purpose of minimizing bias introduced by natural stratification of constituents within the sample. Two 8-ounce glass bottles will then be filled from the bucket, one for analyses for semi-volatile organics, the other for inorganic substances. Any remaining sample will be containerized with the borehole cuttings. All instruments used will be decontaminated according to the procedures described in Section 2.2.3.

After sampling, all borings will be backfilled to the ground surface with grout having a mix of 94 pounds of cement, 5 to 8 gallons of water, and 5 pounds of powdered bentonite. If no water is present in a boring, the grout will be poured from the surface. Otherwise, the grout will be emplaced using the tremie method.

2.2.3 DECONTAMINATION OF EQUIPMENT

The drilling rig, auger flights, drilling rods, drill head, and grouting equipment must be decontaminated when entering or leaving the site, and between use at each boring location. The specific procedures for drilling equipment decontamination are described in Field Technical Guideline FT-6.03, Section 5.2.

Split-spoon samplers and any other sampling equipment which come in direct contact with a sample will be decontaminated between sampling in accordance with Field Technical Guideline FT -12.01, Section 5.1, with the following exception: The low carbon steel sampler will be rinsed with a 1-percent nitric acid solution, as opposed to the 10-percent rinse specified in the guideline.

Water generated during decontamination will be collected and placed in an existing water tank on-site. Decontamination waste will be collected in a separate drum.

2.2.4 CHEMICAL LABORATORY ANALYSIS

The soil samples, two duplicate samples, two field blanks and two trip blanks collected during the field investigation will be analyzed for full TCL organic and inorganic compounds via the ESE REM III Team Lab using USEPA SOW for organics, Revision 887, and SOW for inorganics, Revision 787 Protocols (Level 4 Methods). Data validation will be performed by EPA Region II concurrently with receipt of data analyses deliverables. The REM III team lab will provide EPA Region II with a data package conforming to a CLP deliverable data package.

2.2.5 PROJECT REPORTS

Upon receipt from the laboratory, the results of the soils analysis will be validated and tabulated in a report-ready form and delivered to the EPA, along with a summary of the field procedures and other pertinent information.

3.0 HEALTH AND SAFETY

All site activities will be conducted according to the requirements of the Clothier Site Specific Health and Safety Plan (Attachment D). The FOL will serve as site HSO during the field investigation. It is anticipated that all work will be in Level D.

4.0 PROJECT SCHEDULE AND BUDGET

The cost, schedule, and level of effort for performing the described work will be sent under separate cover.

ATTACHMENT A

GRAPHS OF ANALYTICAL RESULTS - OCTOBER, 1987
SELECTED CHEMICAL COMPOUNDS

NOTES:
1. Analytical results received from NYSDEC
2. Metals shown are potential contaminants
3. Organic compounds shown were selected based on presence above detection limits.

	compound
1	acetone
2	phenol
3	2,4-dimethylphenol
4	n-nitrosodiphenylamine (1)
5	di-n-butylphthalate
6	bis(2-ethlylhexyl)phthalate
7	Aroclor 1242
8	2-butanone
9	4-methylphenol
10	toluene
11	2-methylphenol
12	benzo(b)fluoranthene
13	benzo(k)fluoranthene
14	benzo(a)pyrene
15	benzo(a)anthracene
16	1,2-dichloroethene
17	tetrachloroethane
18	tetrachloroethene

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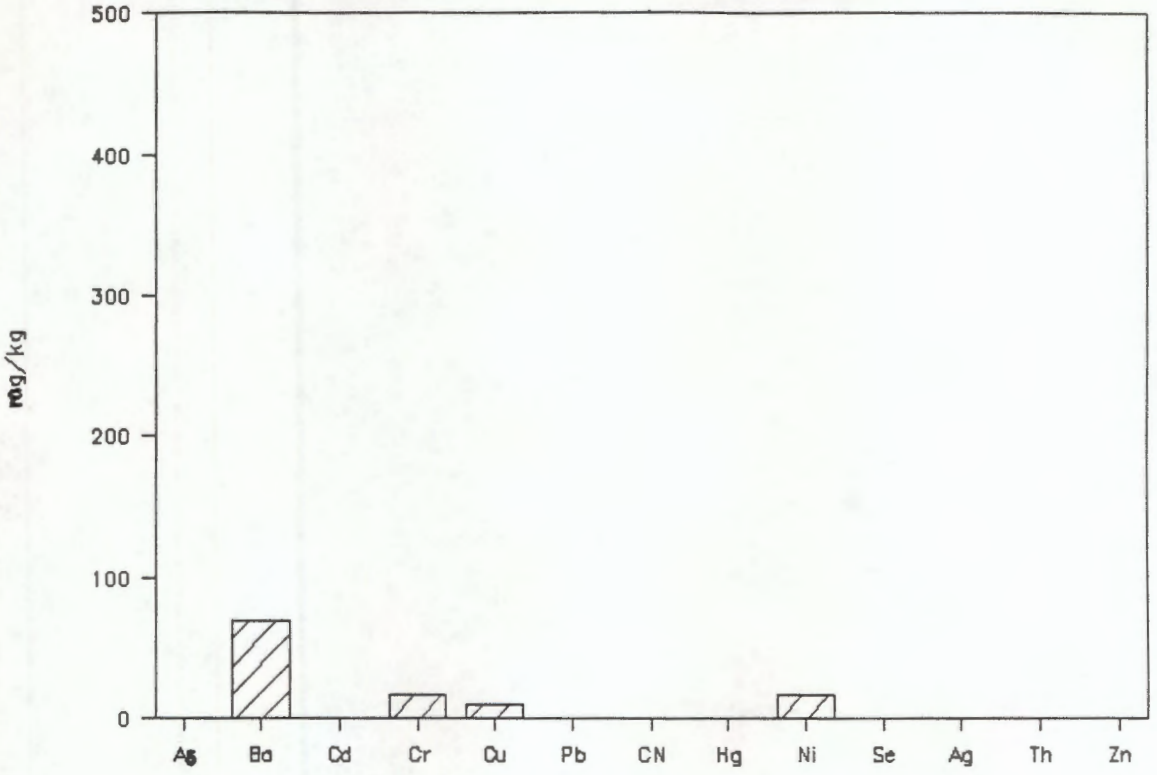

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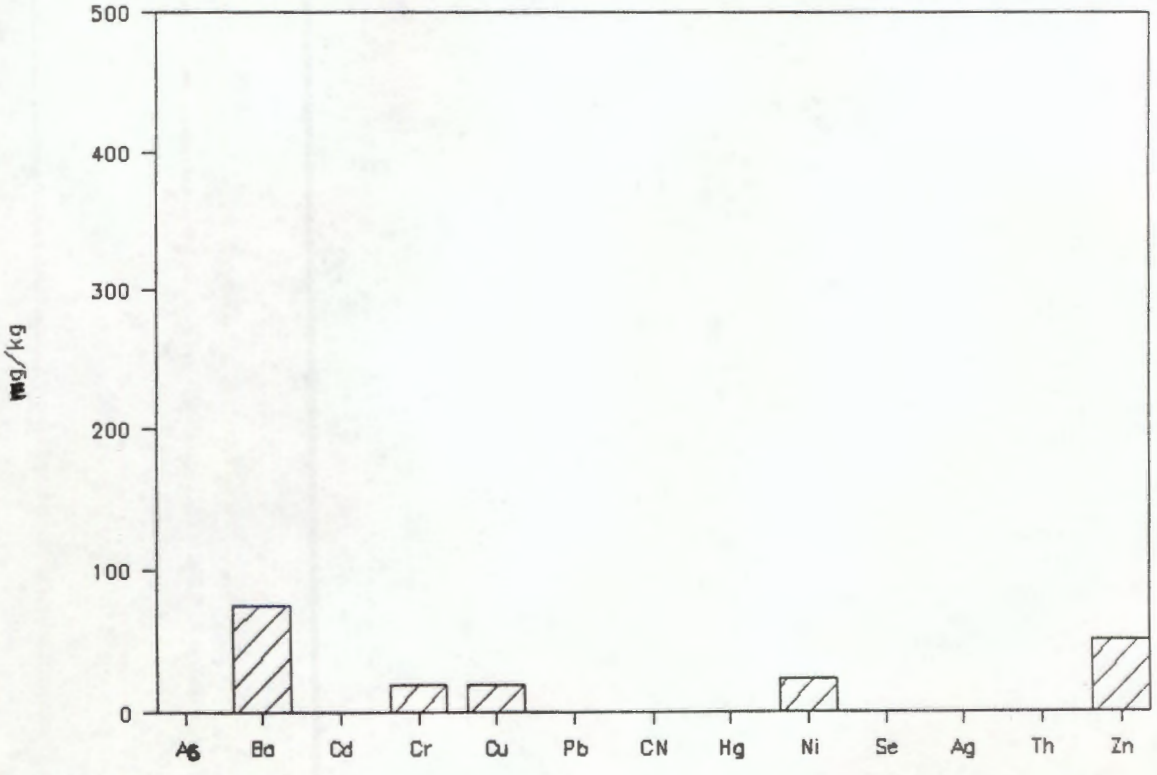

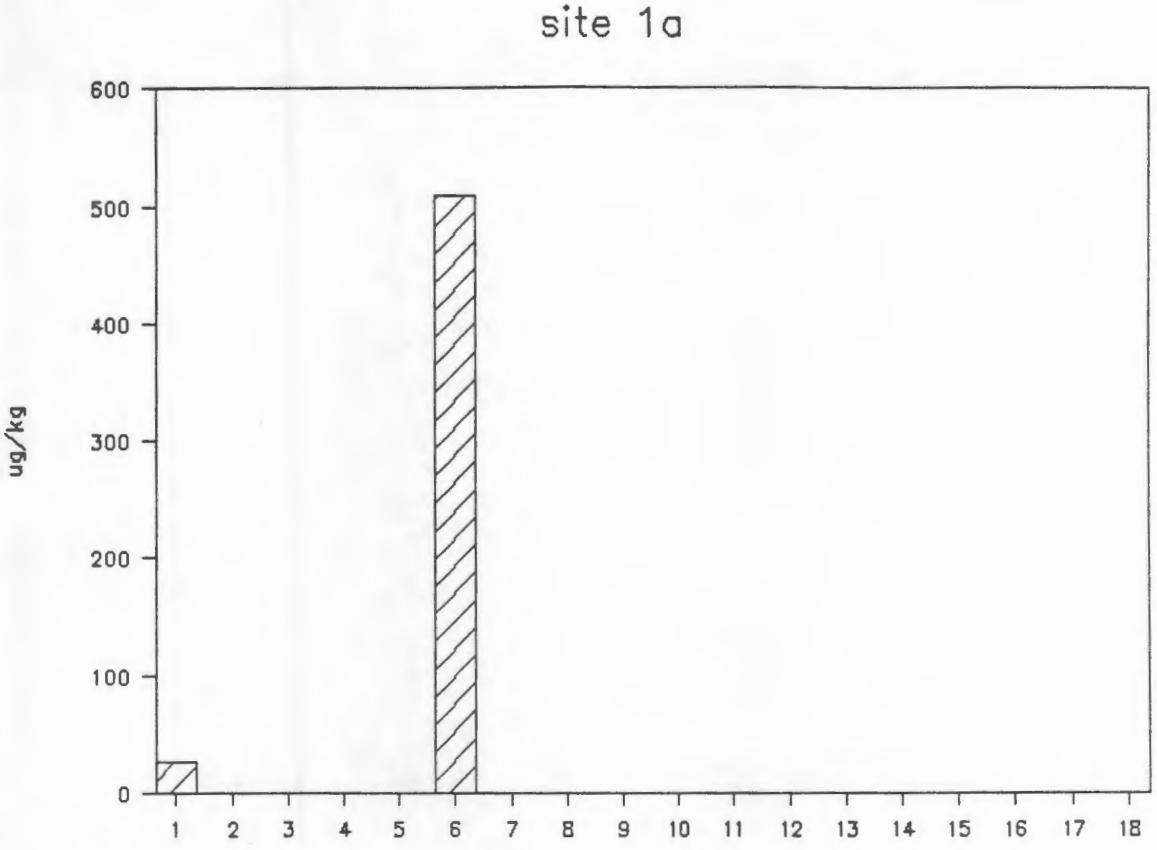
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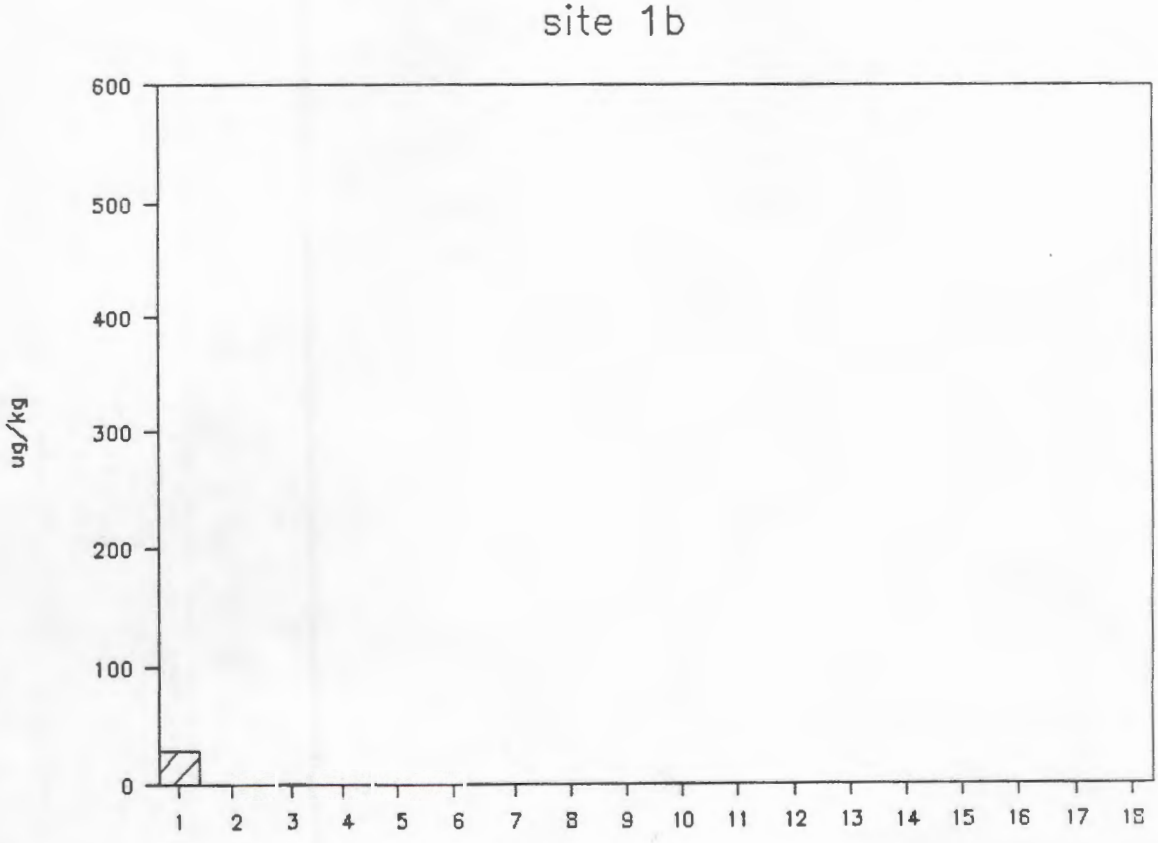
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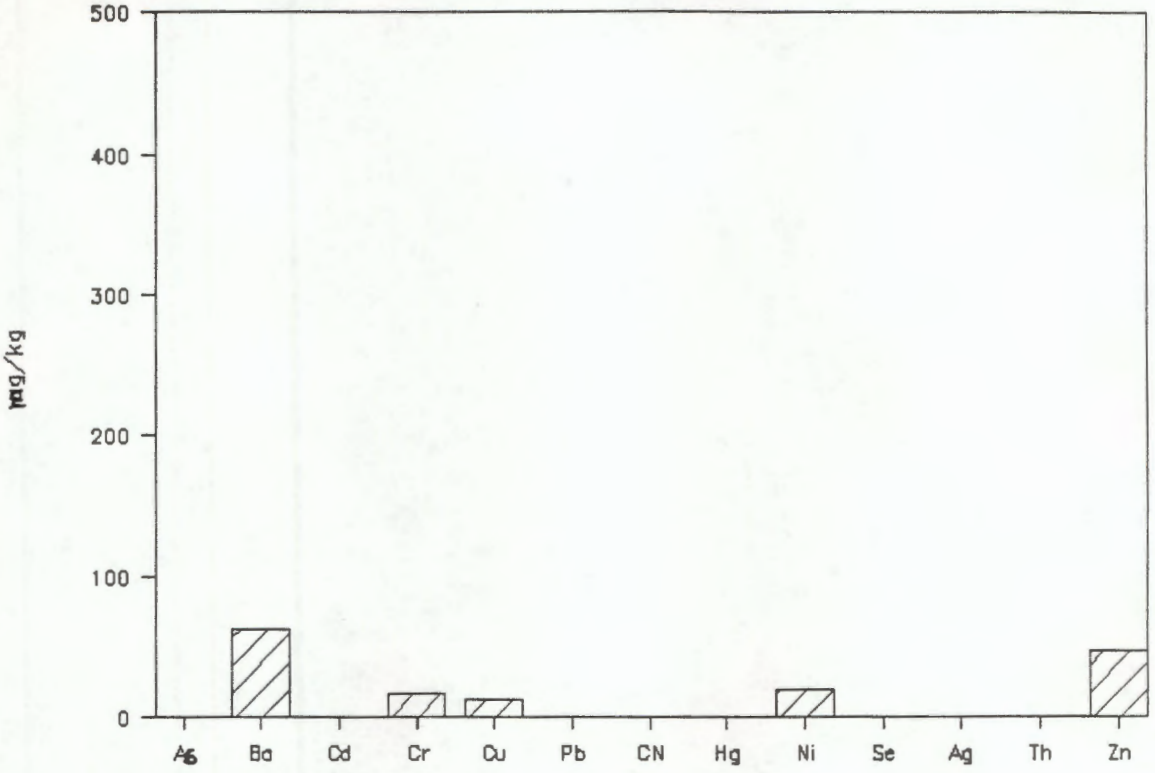

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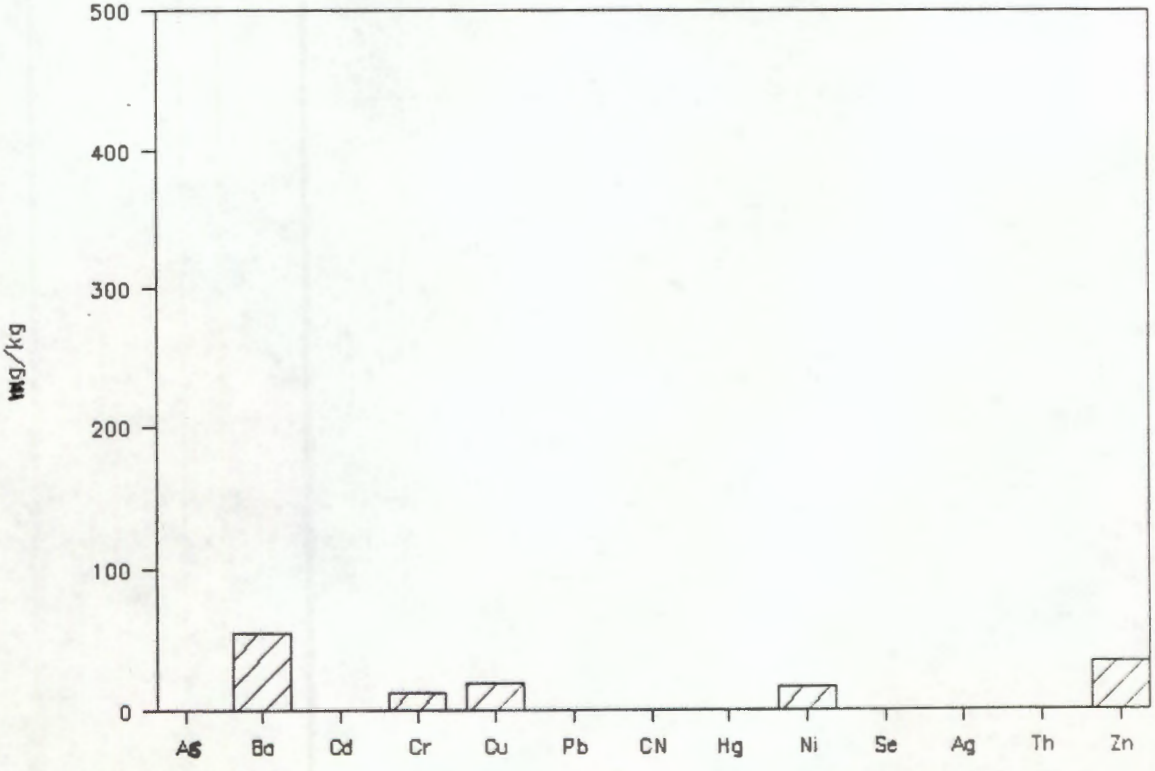

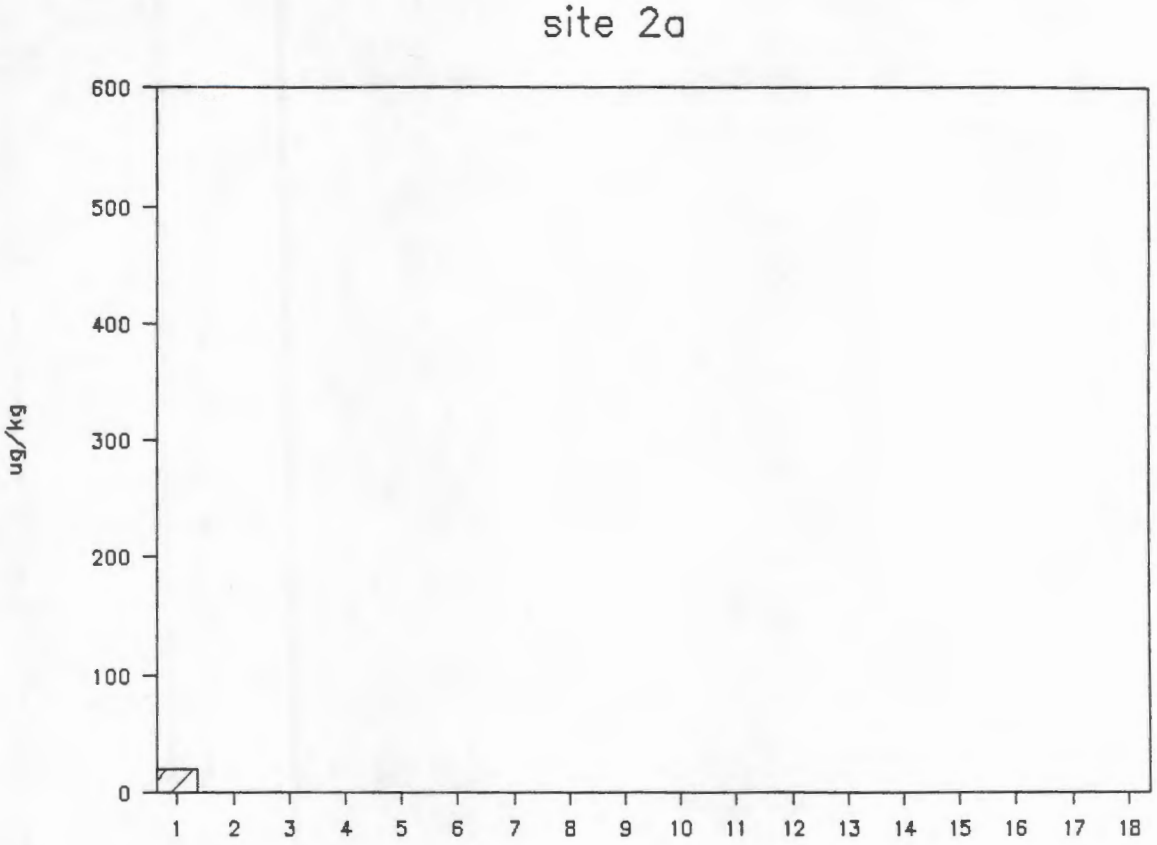
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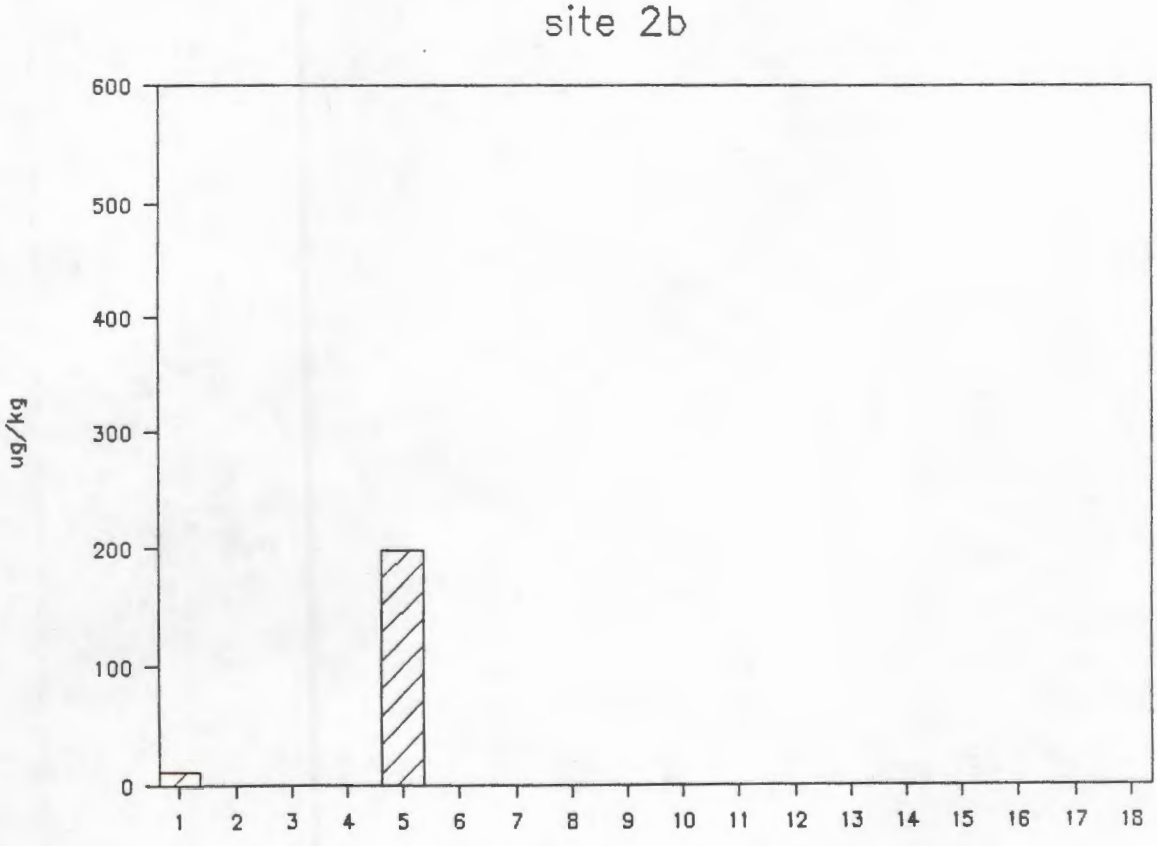
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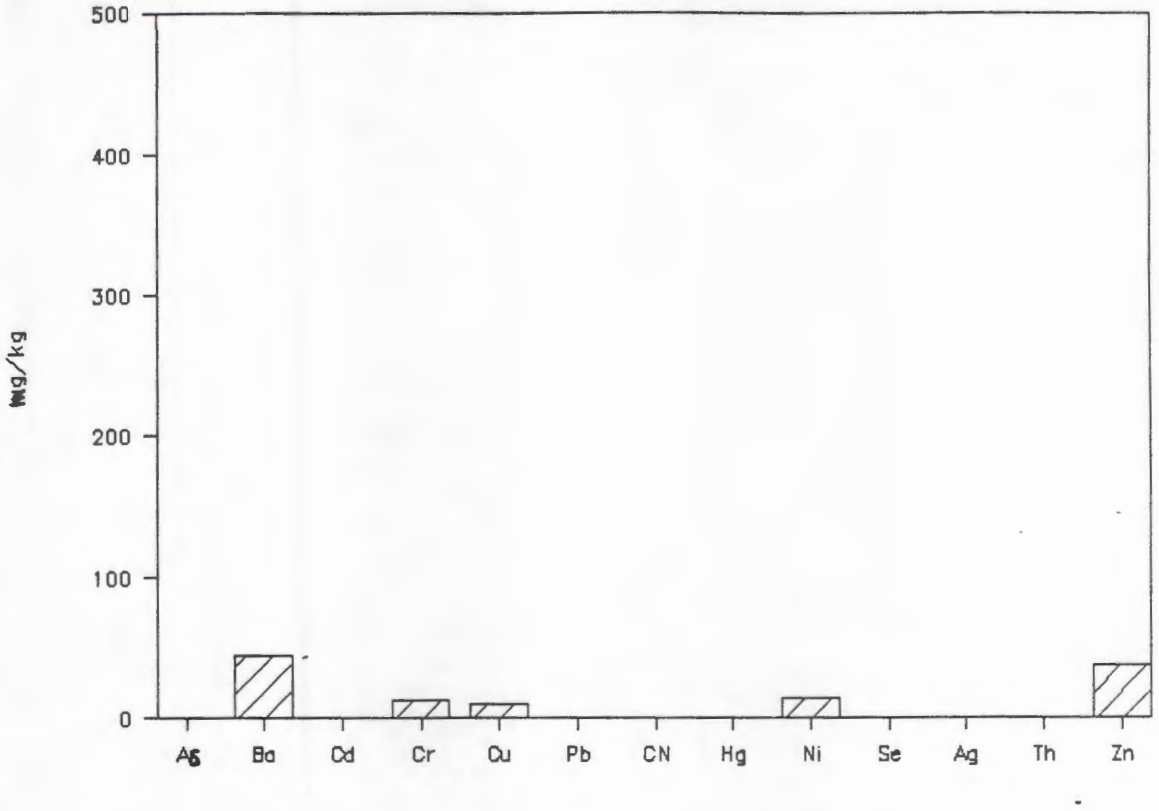

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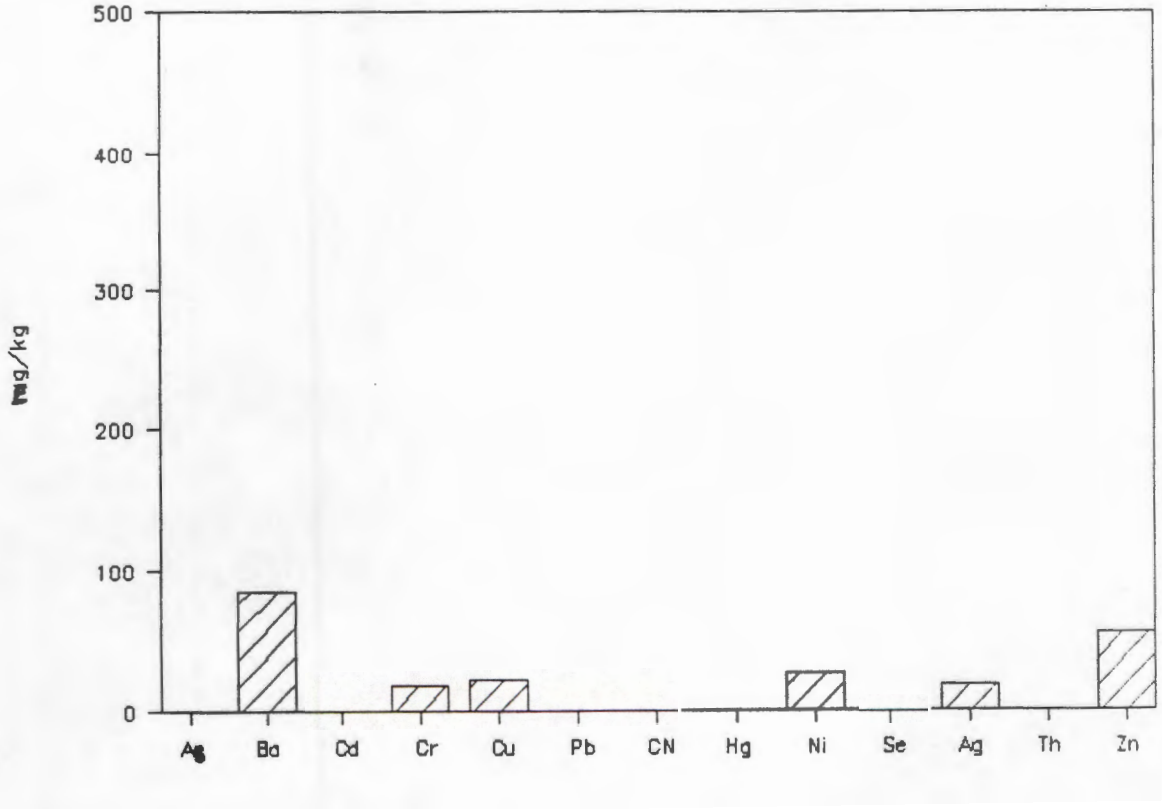

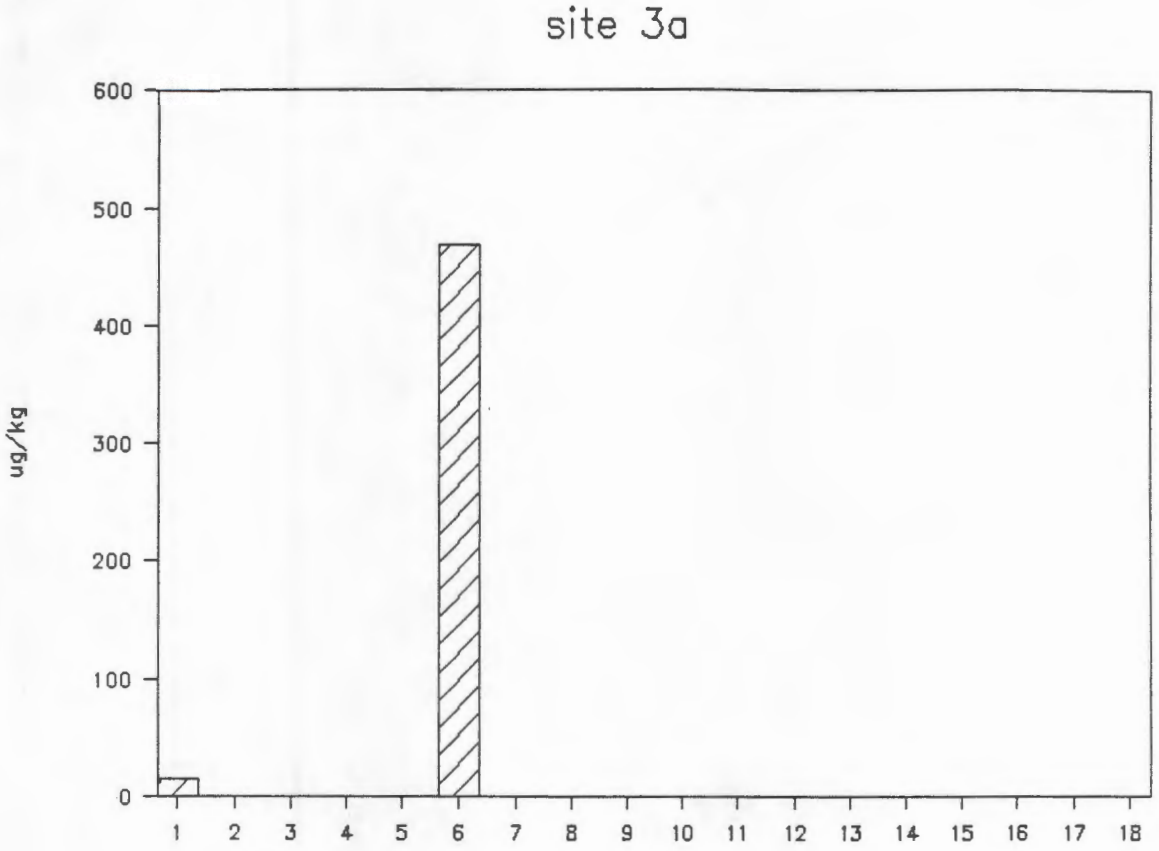
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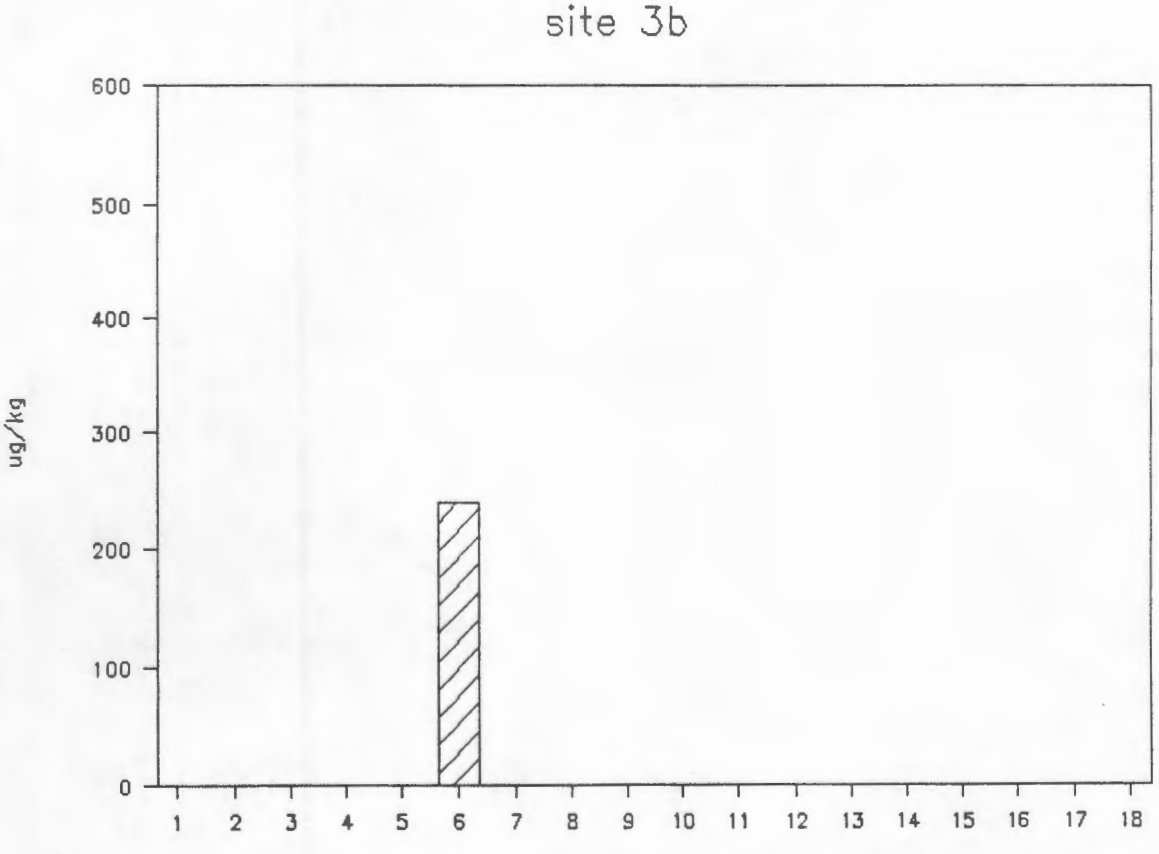
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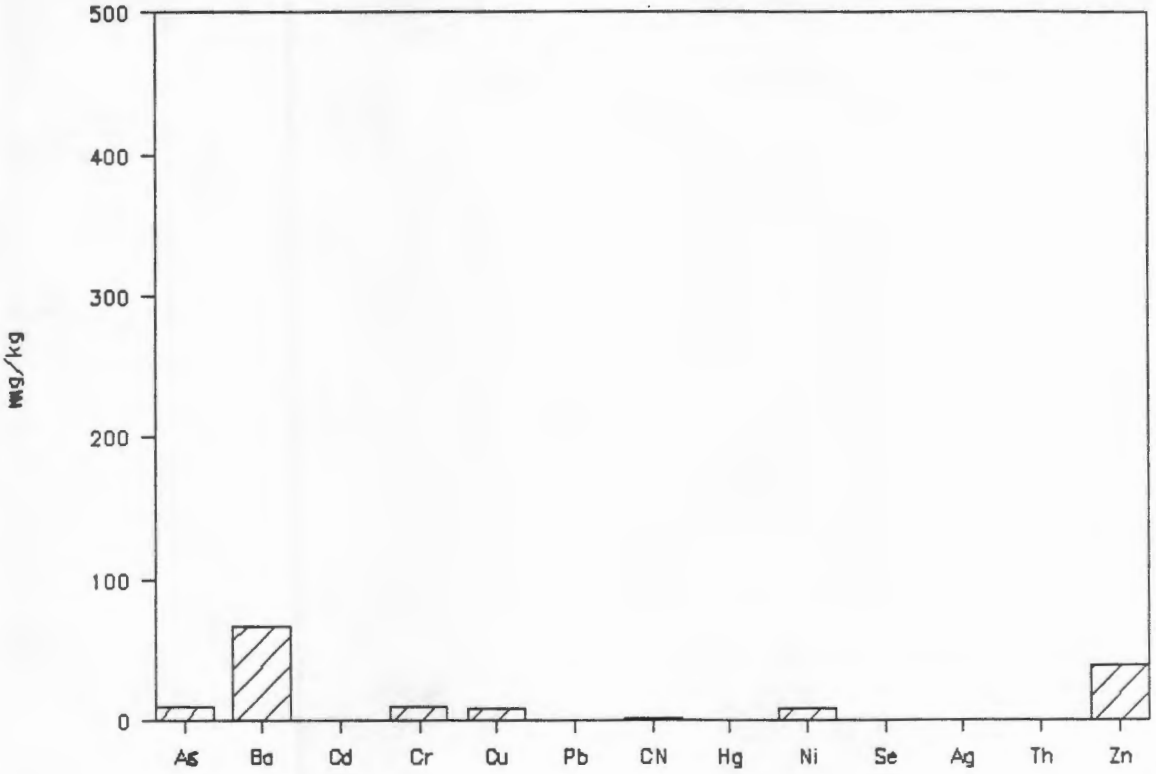

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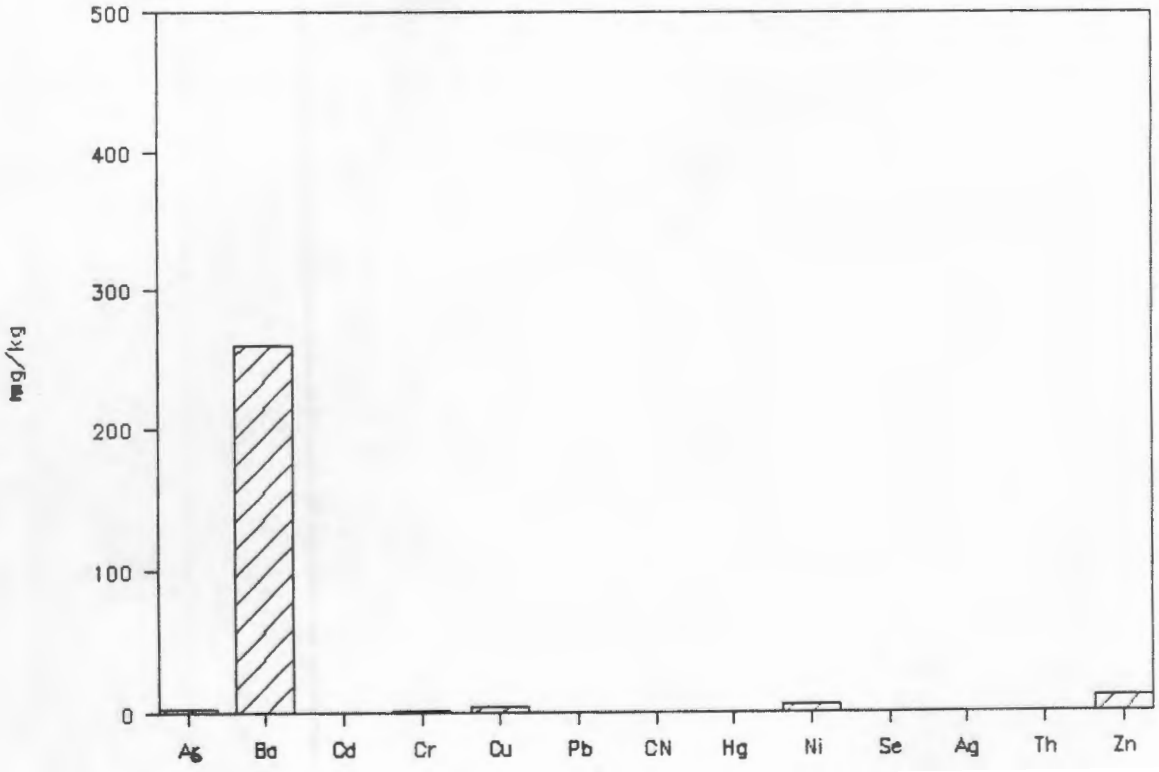

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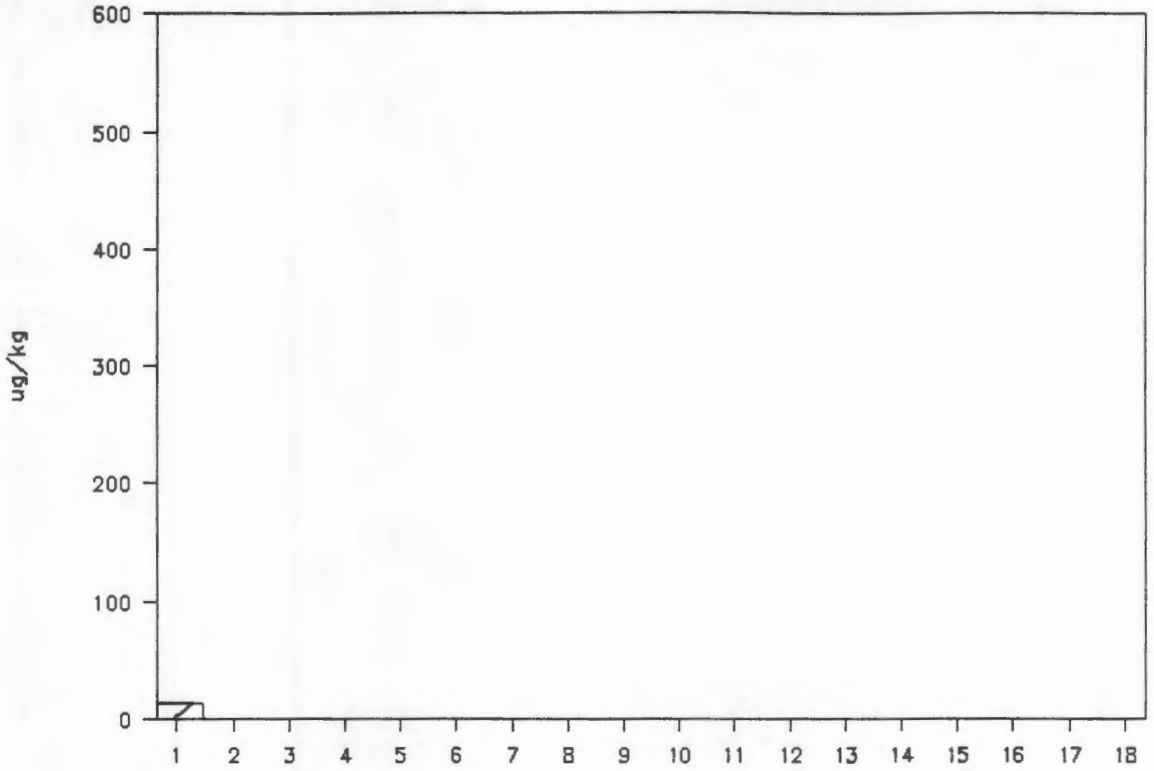

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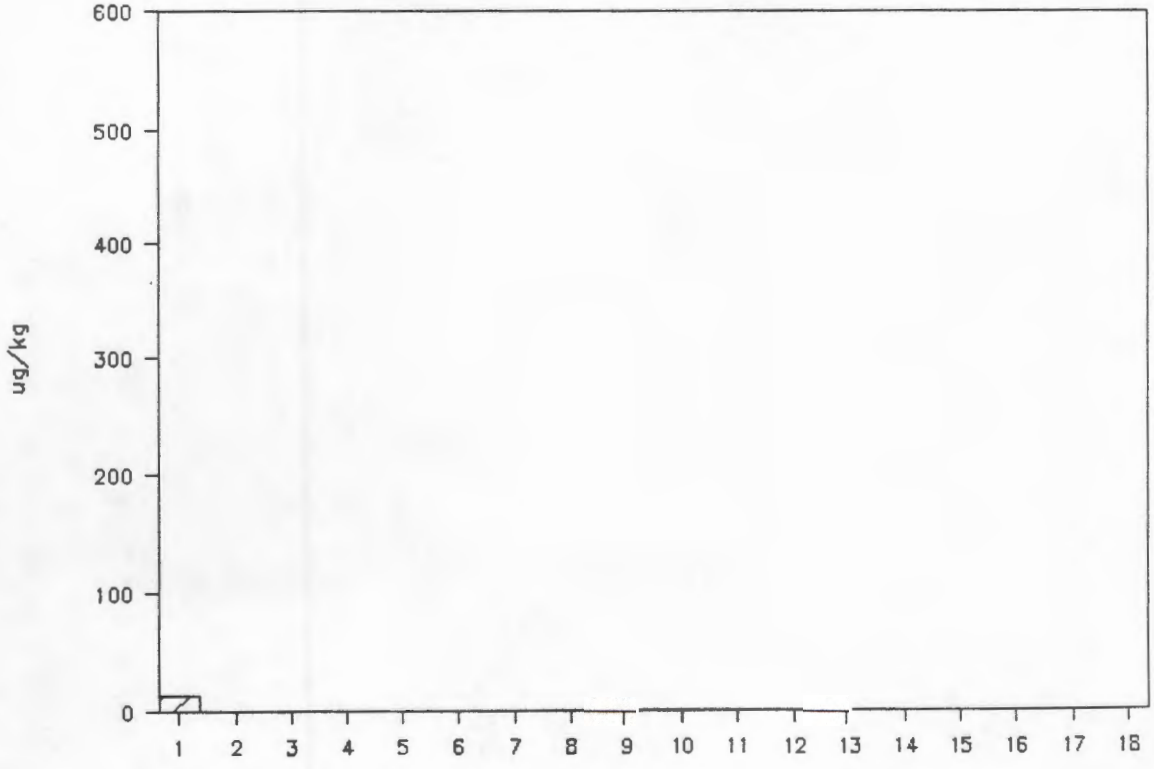

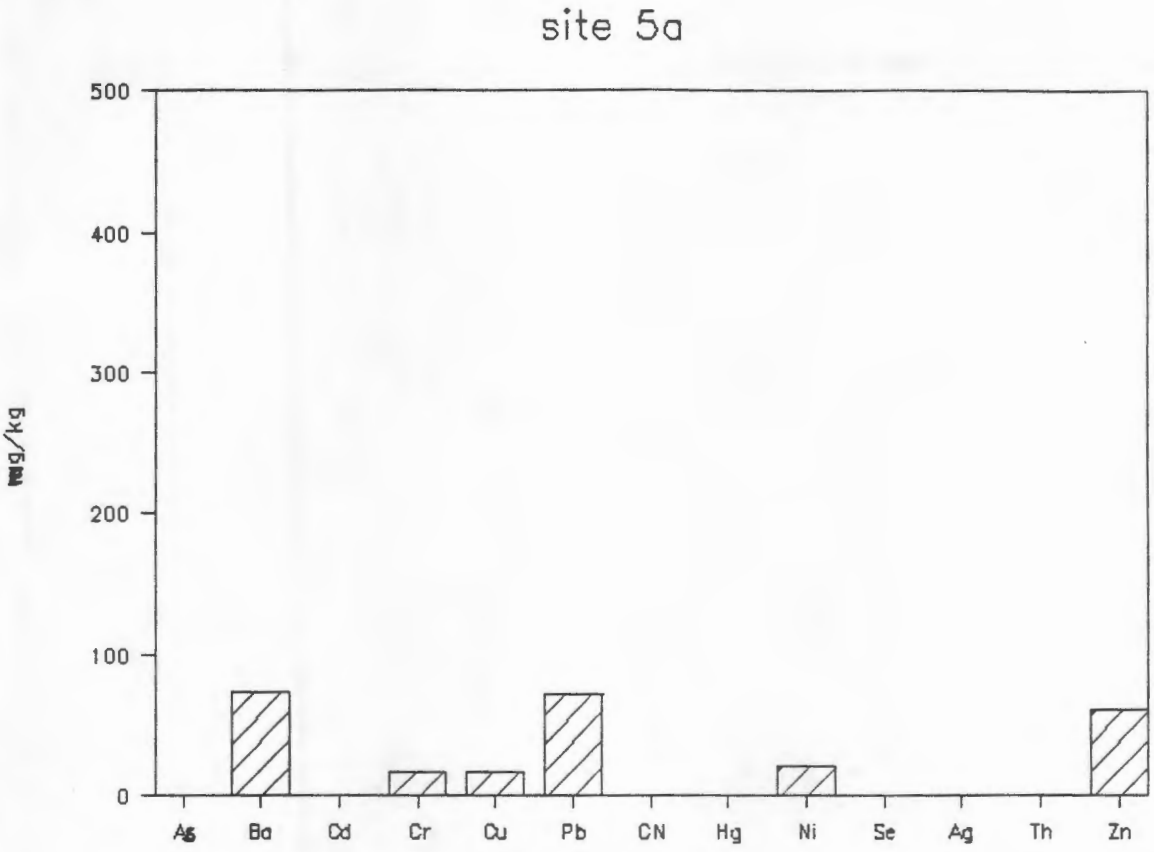
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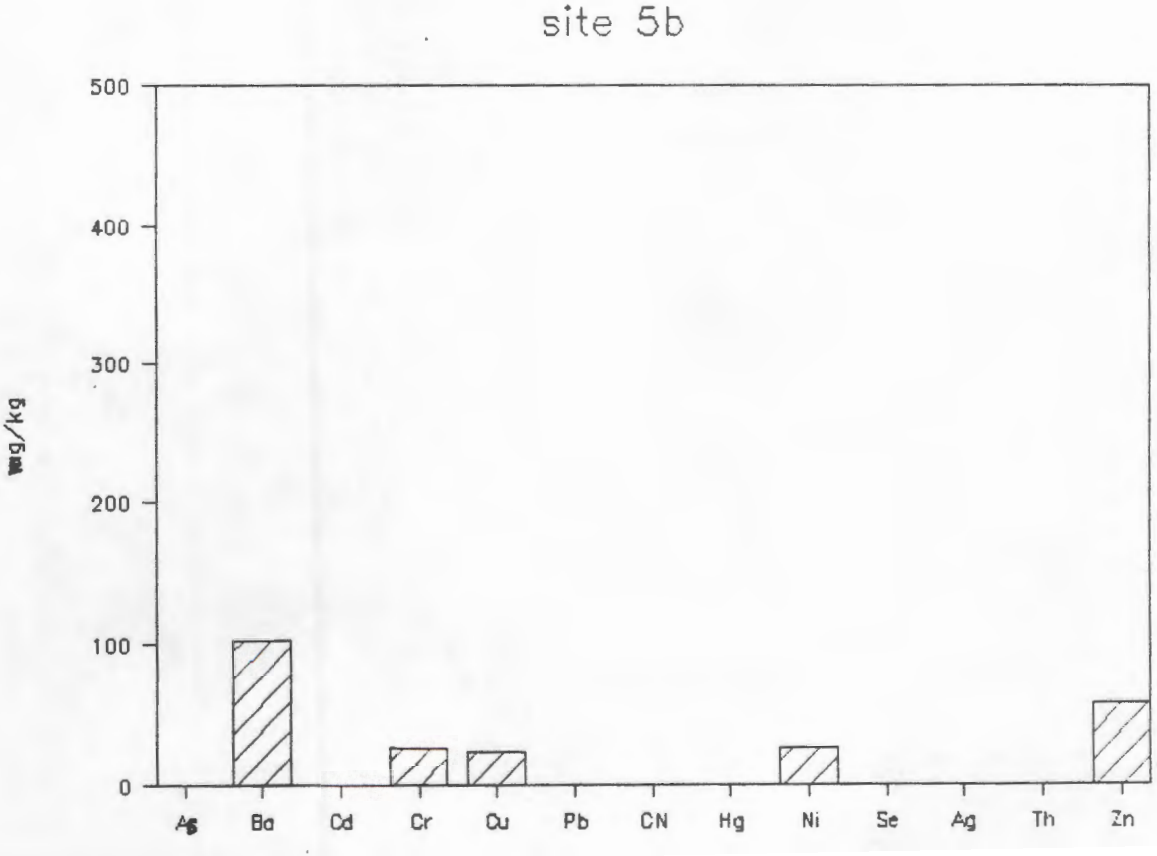
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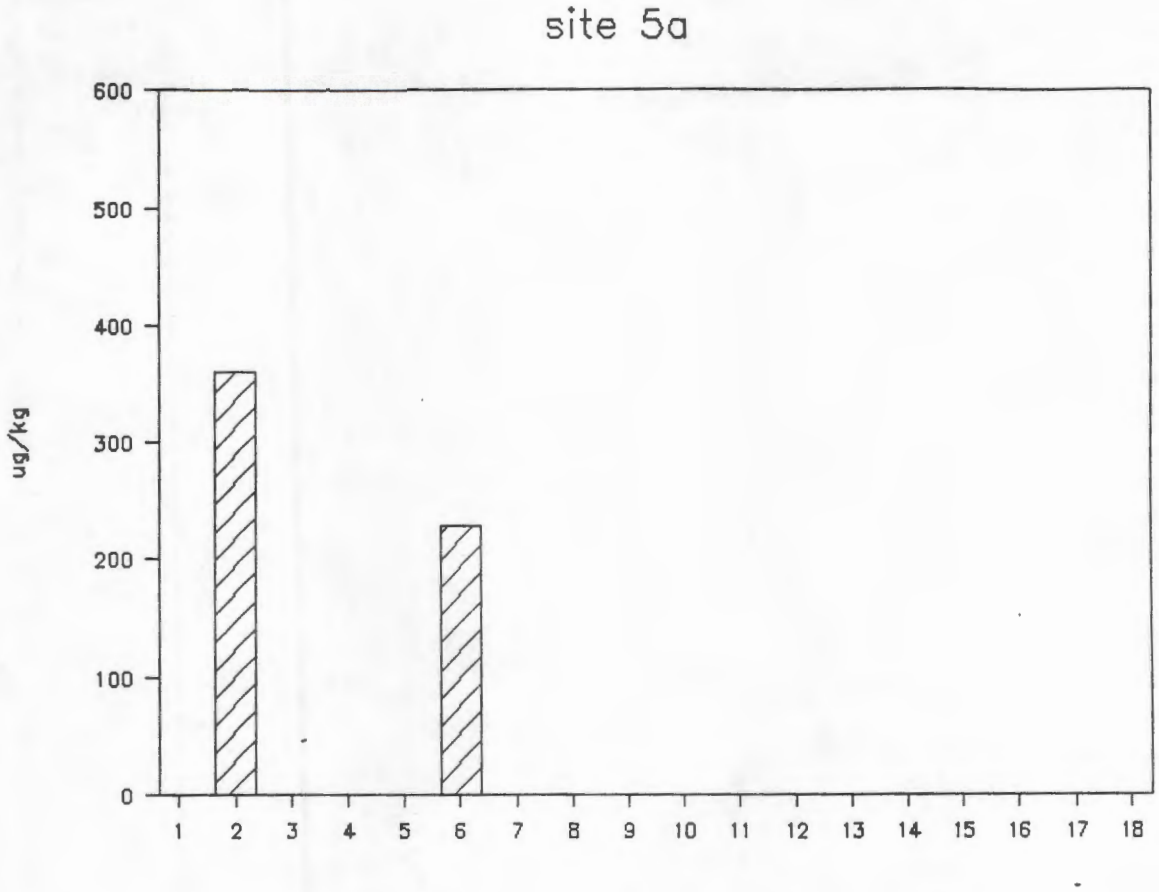
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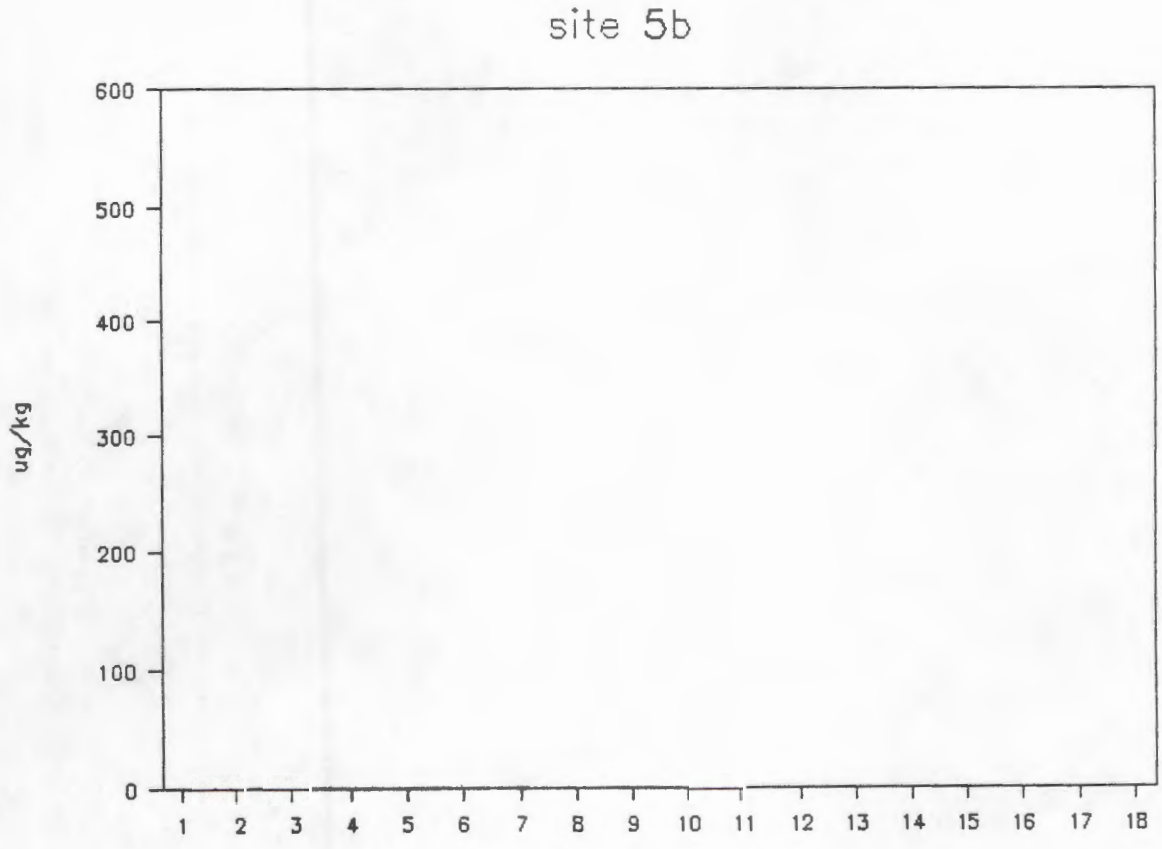
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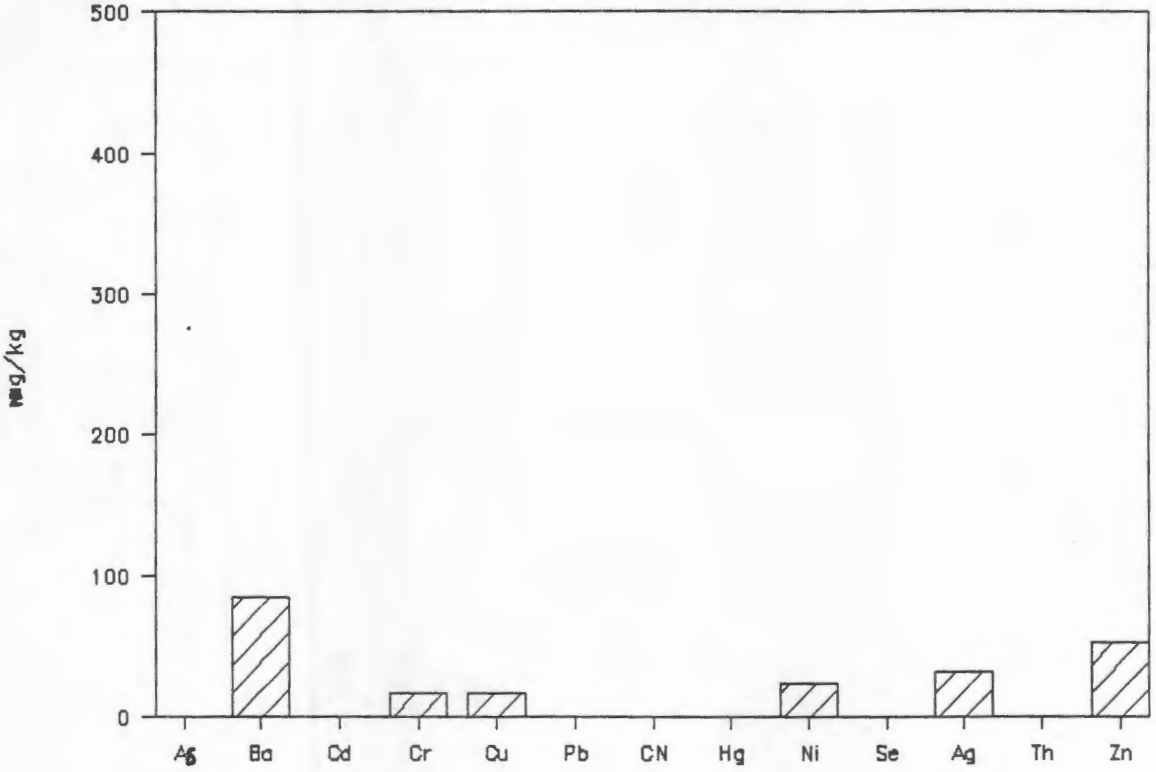

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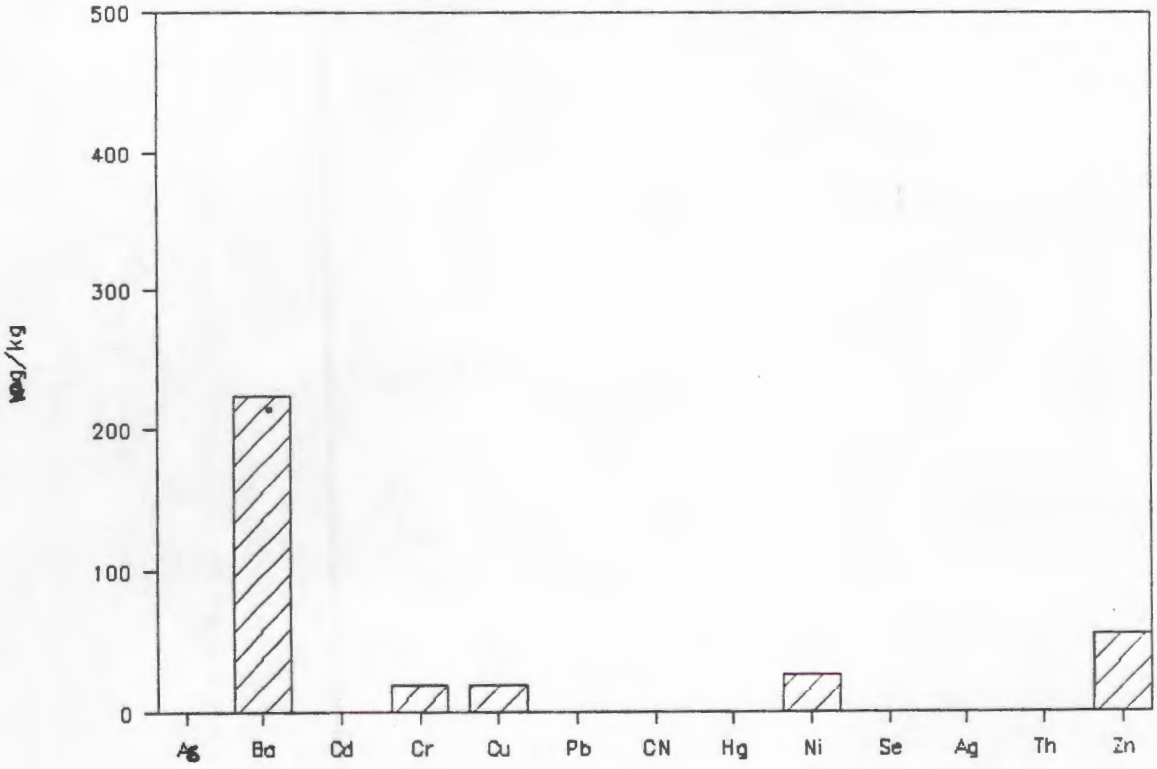

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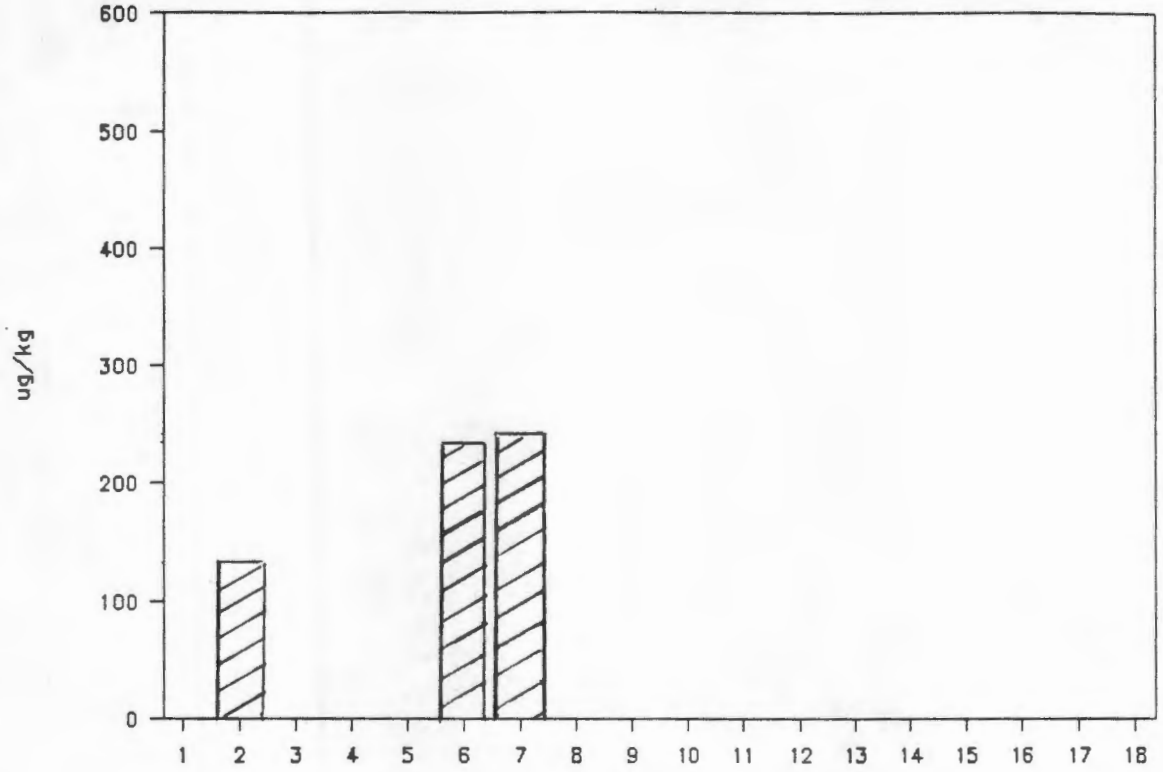

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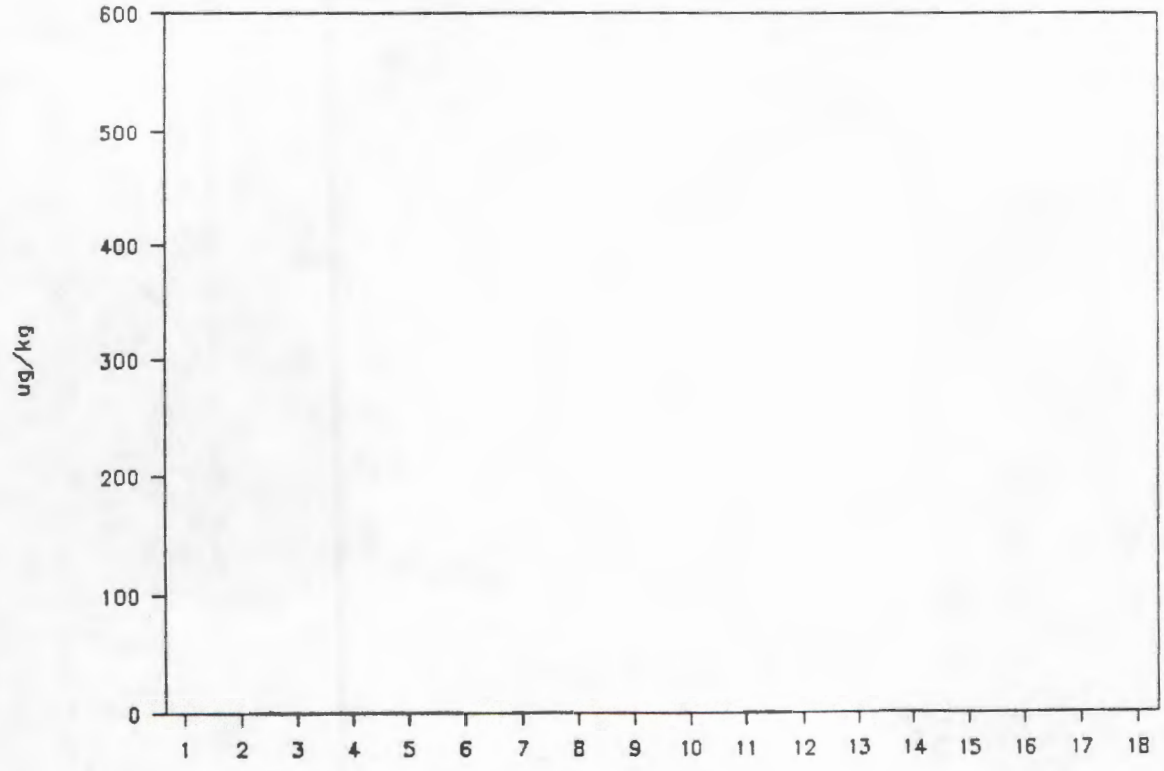

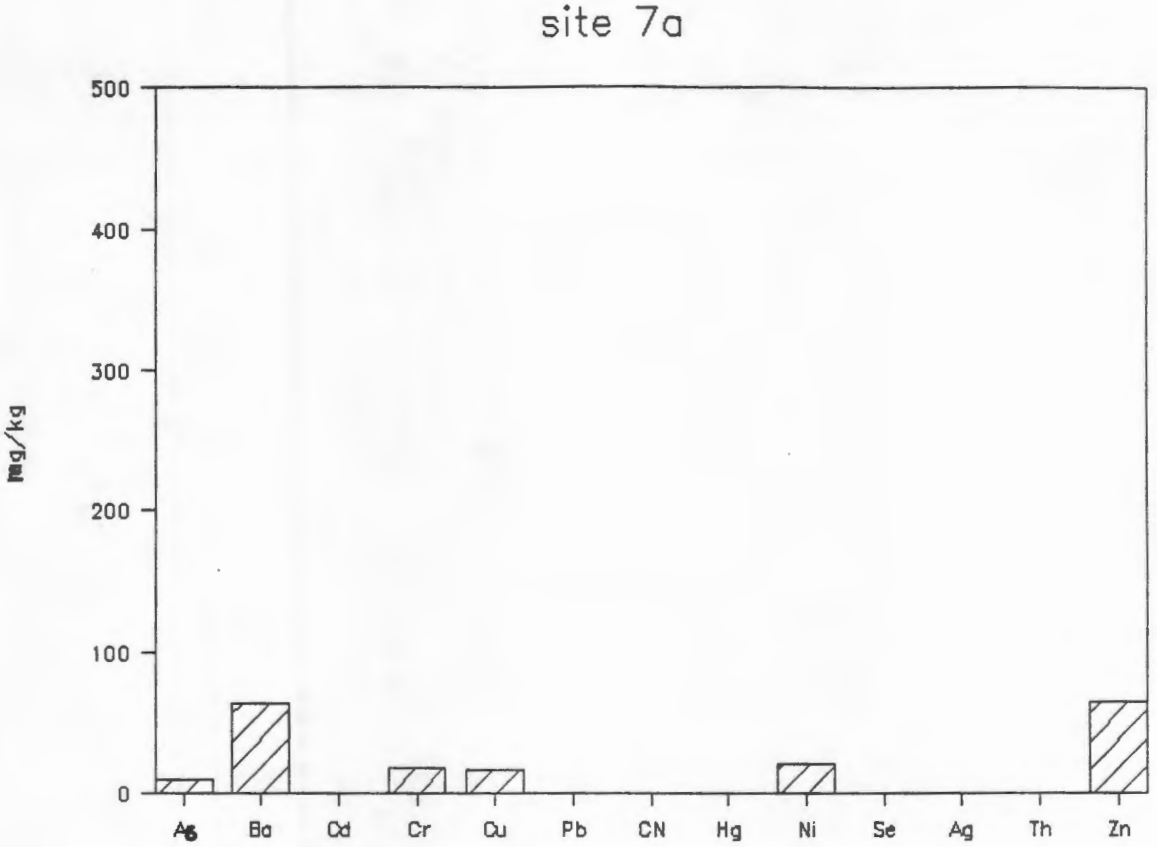
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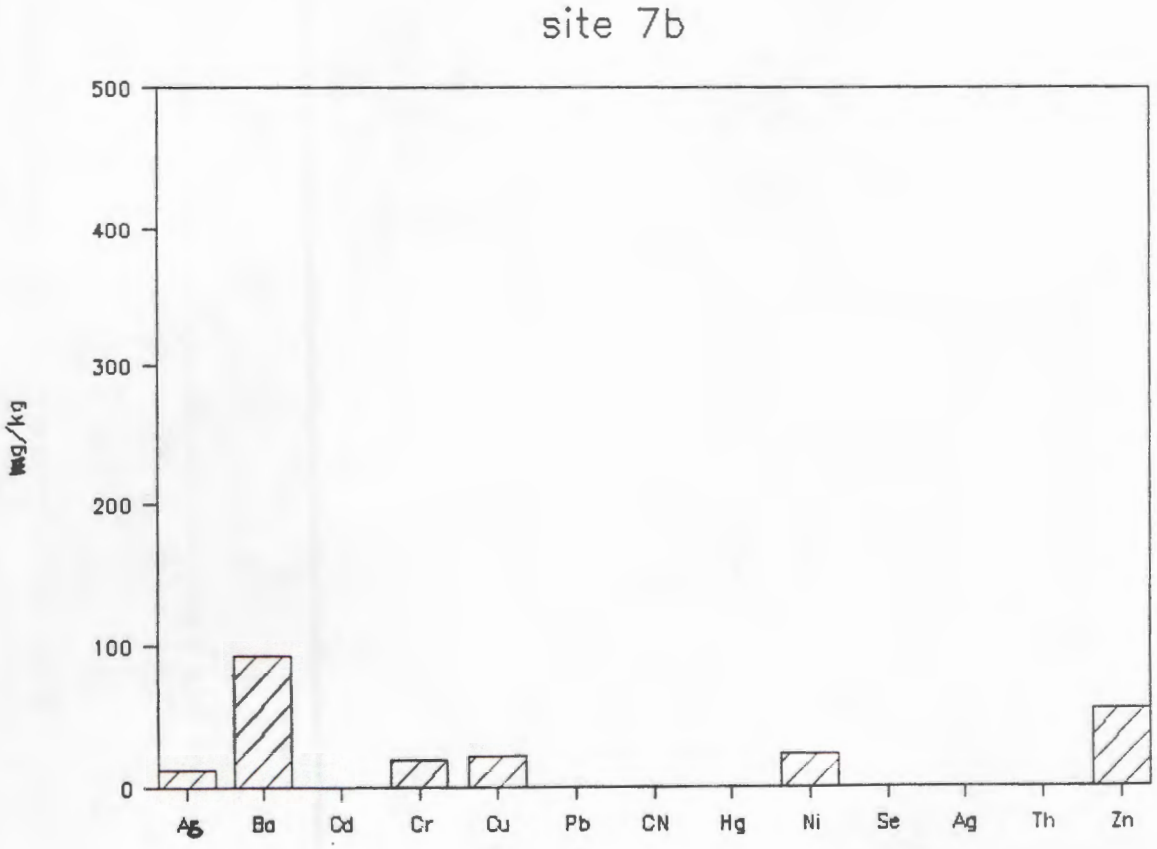
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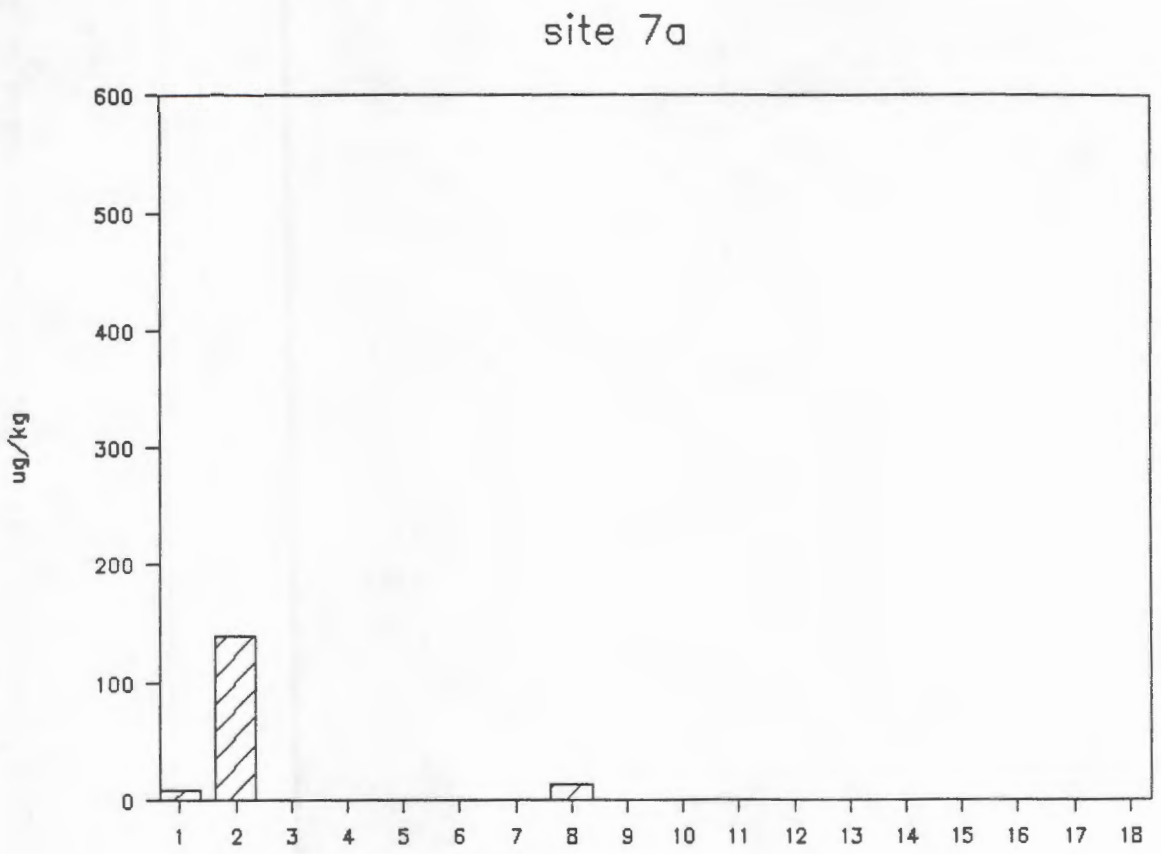
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ug/kg
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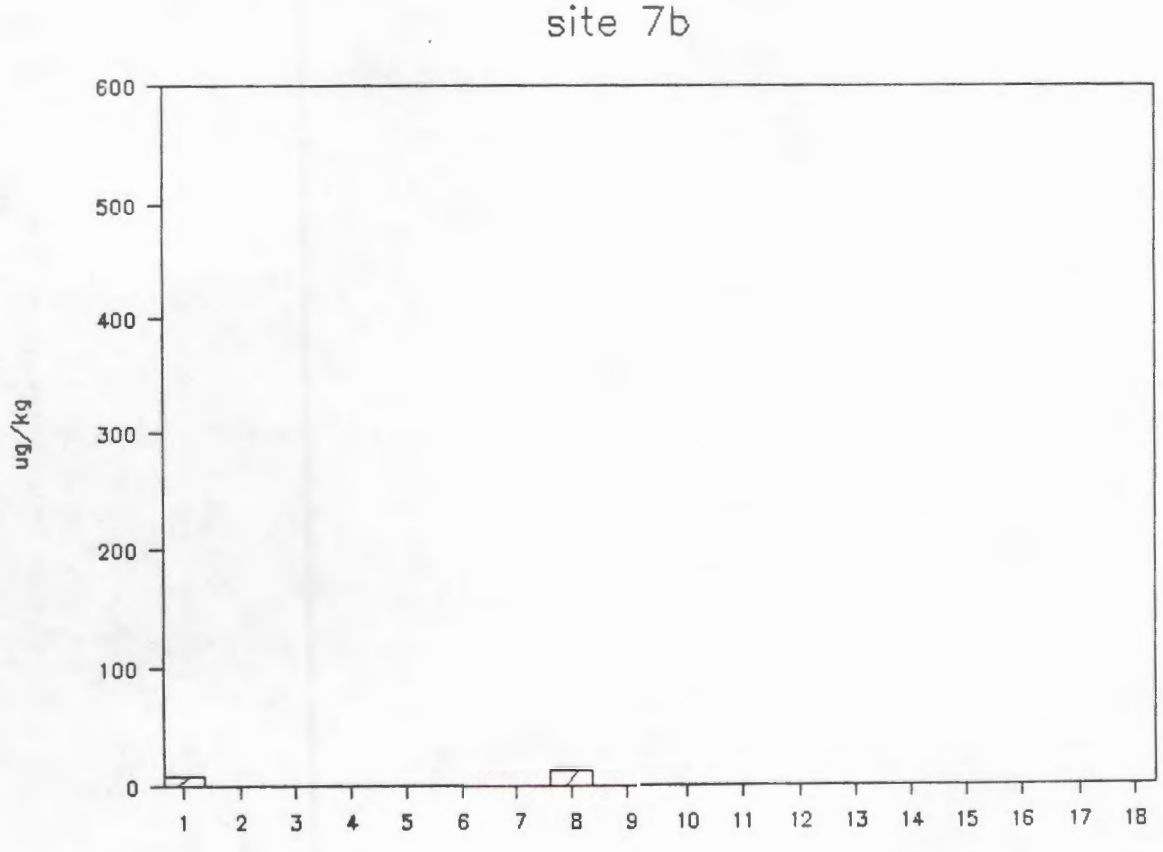
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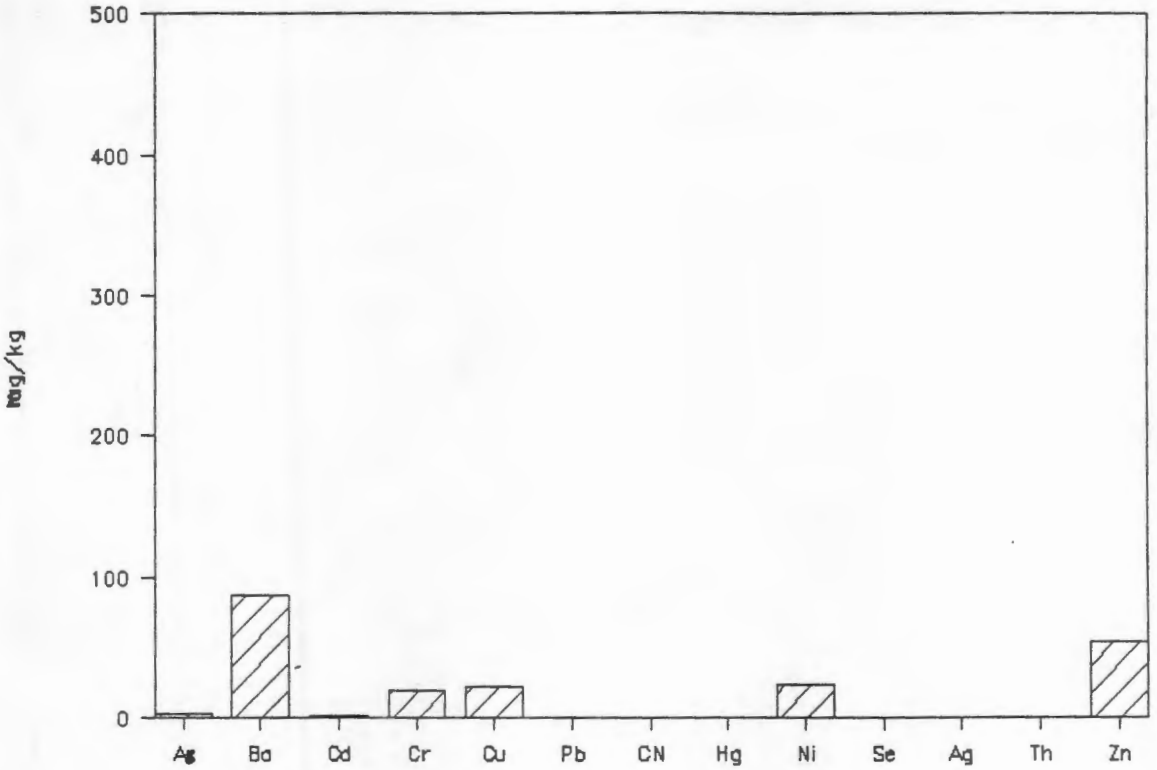

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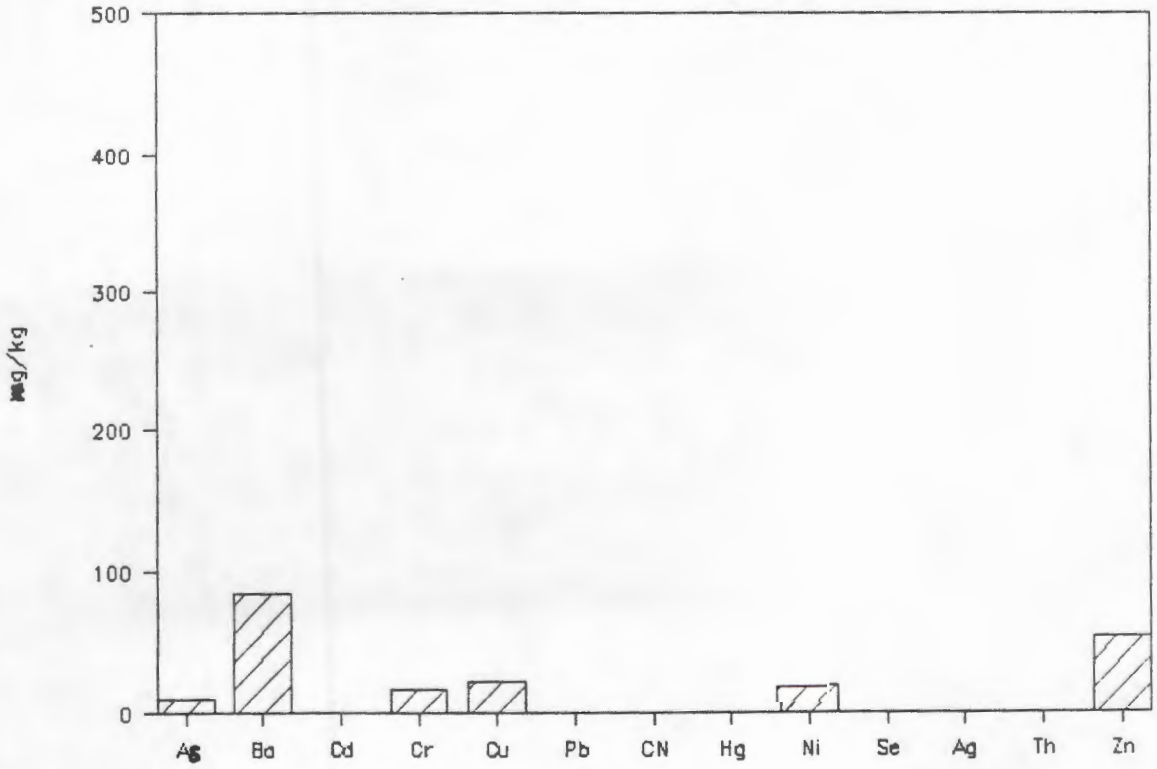

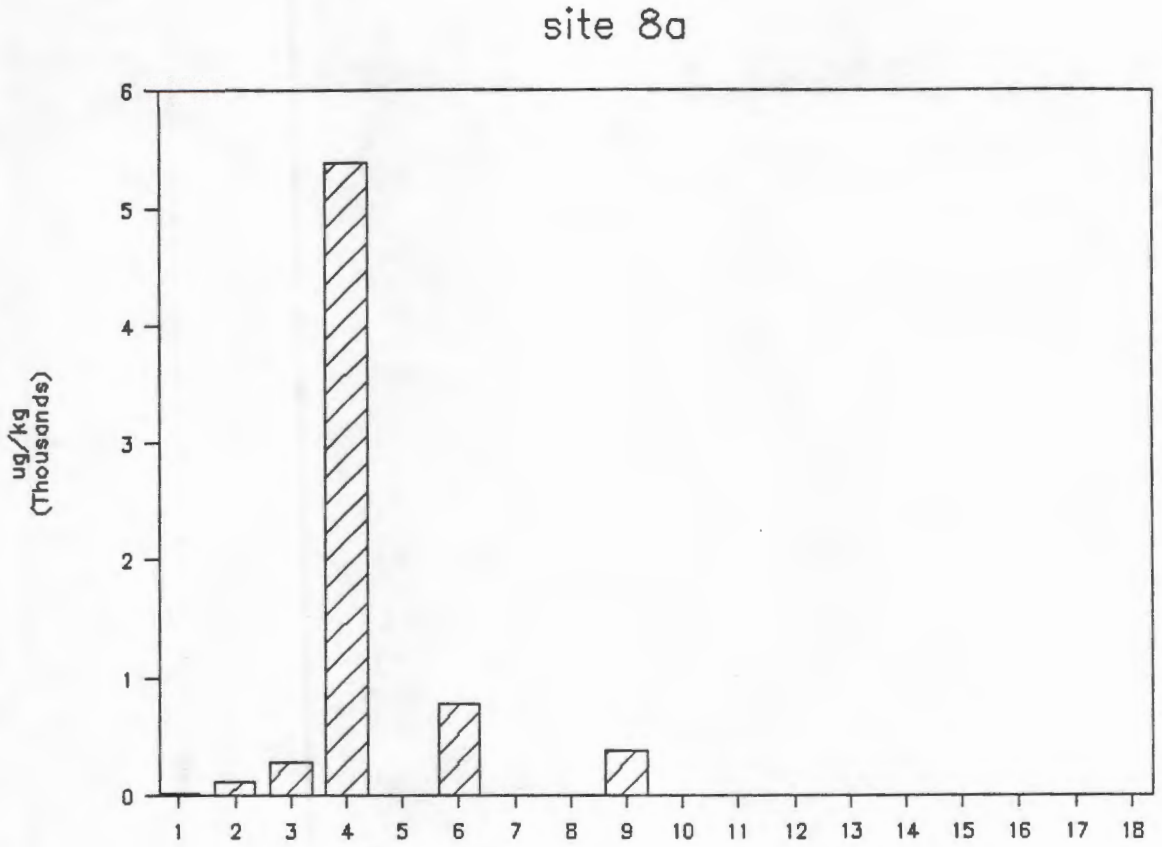
site 8a
(Thousands)
ug/kg
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3
4
5
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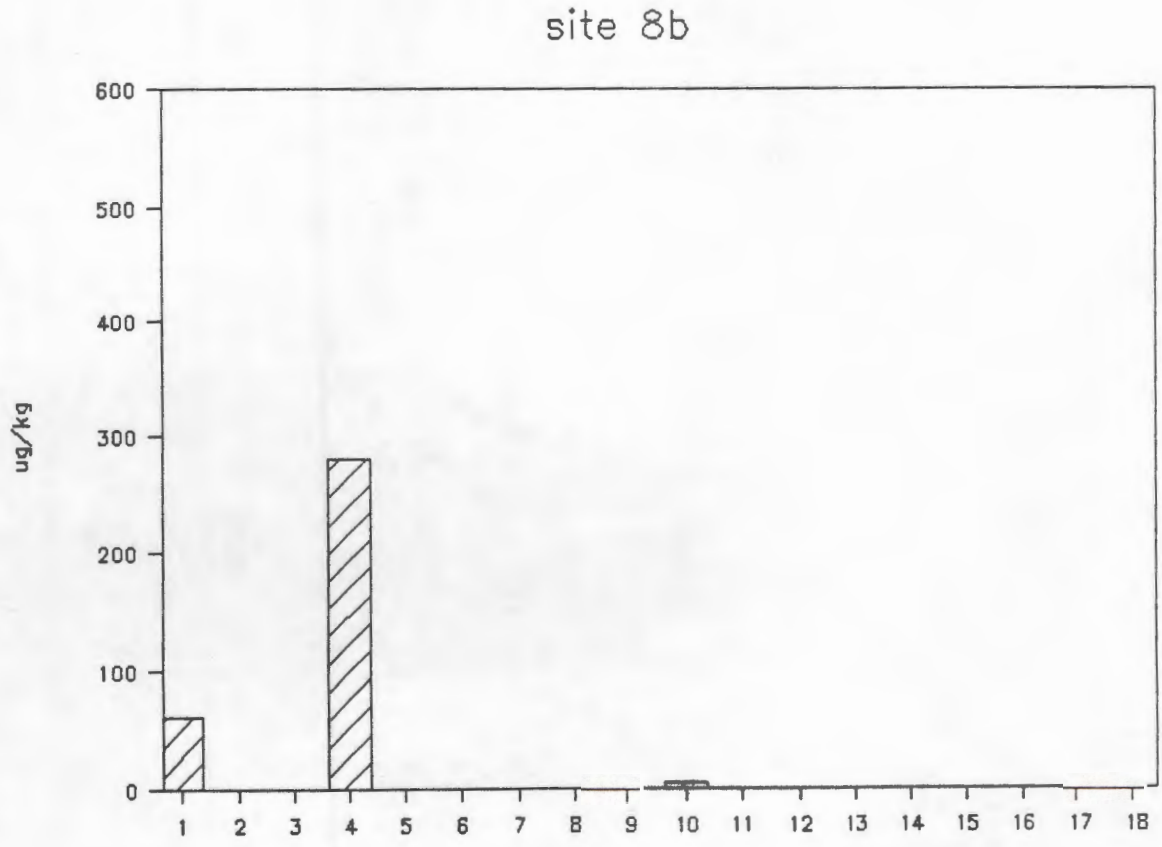
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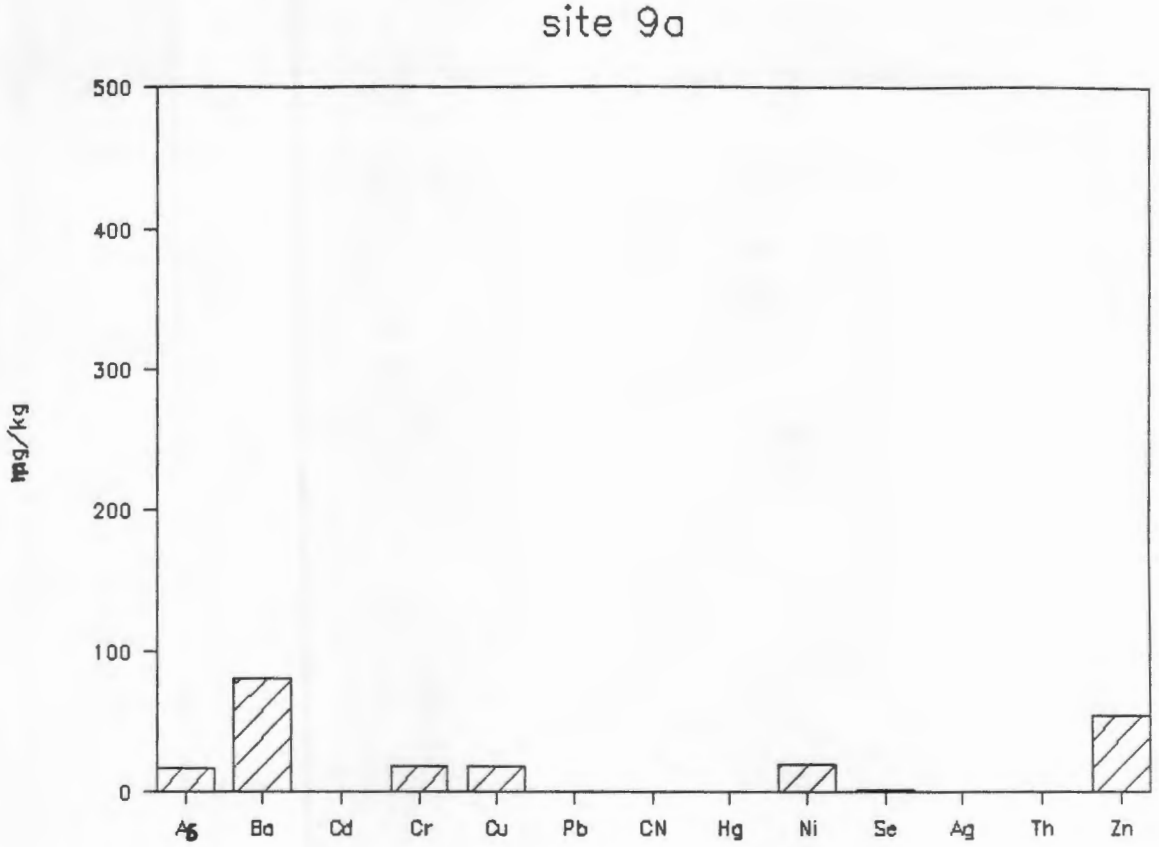
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mg/kg
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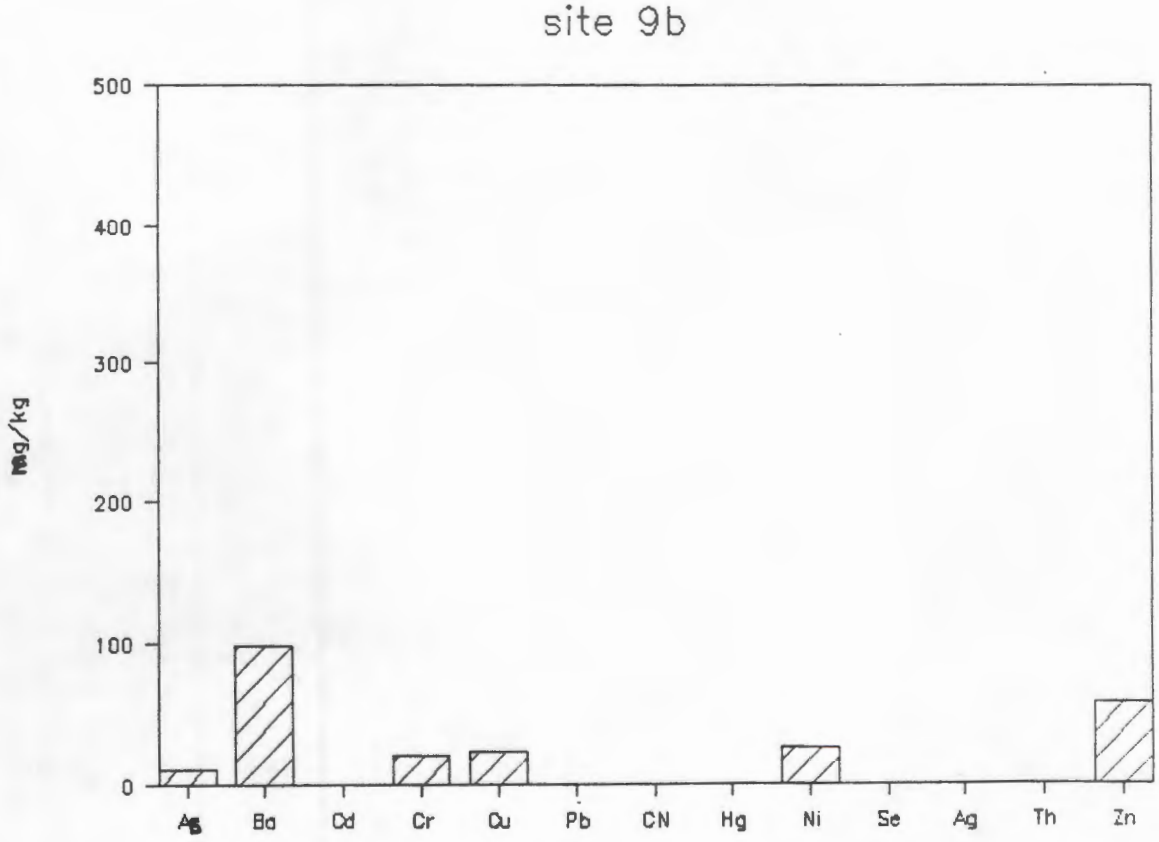
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mg/kg
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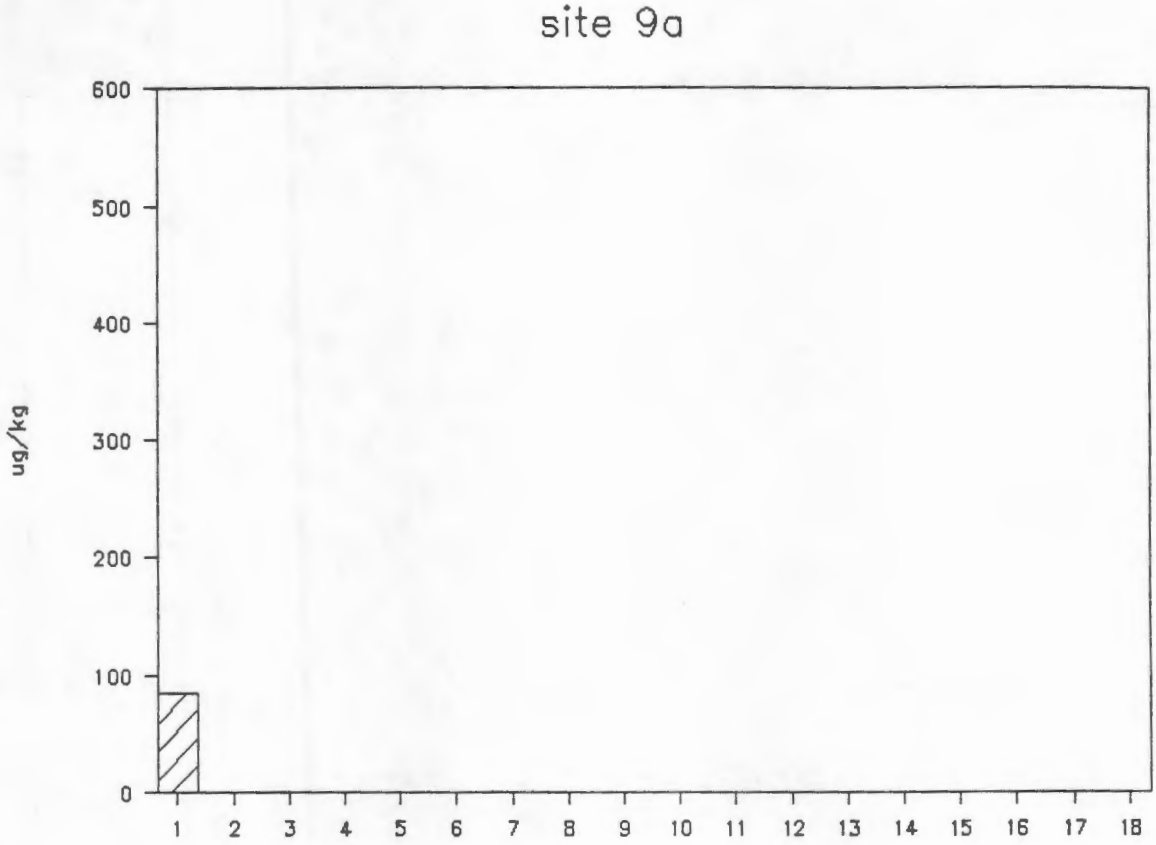
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ug/kg
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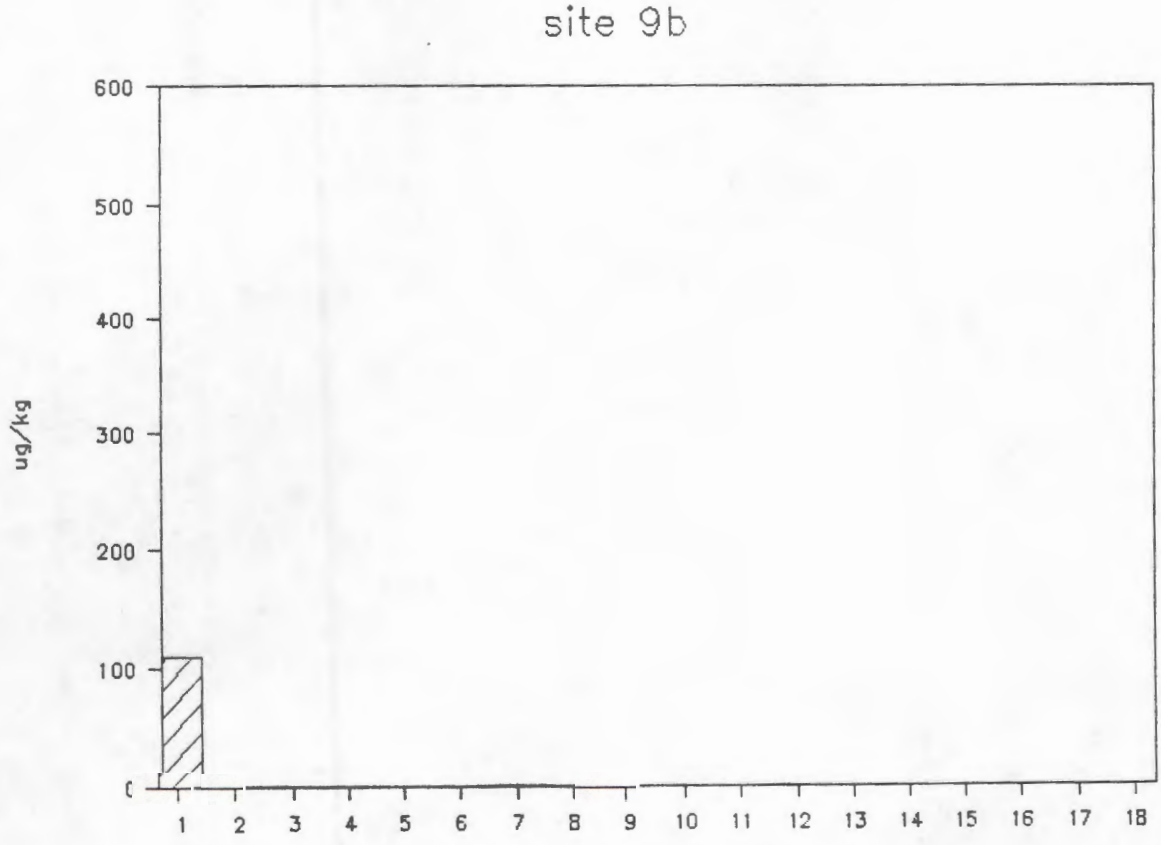
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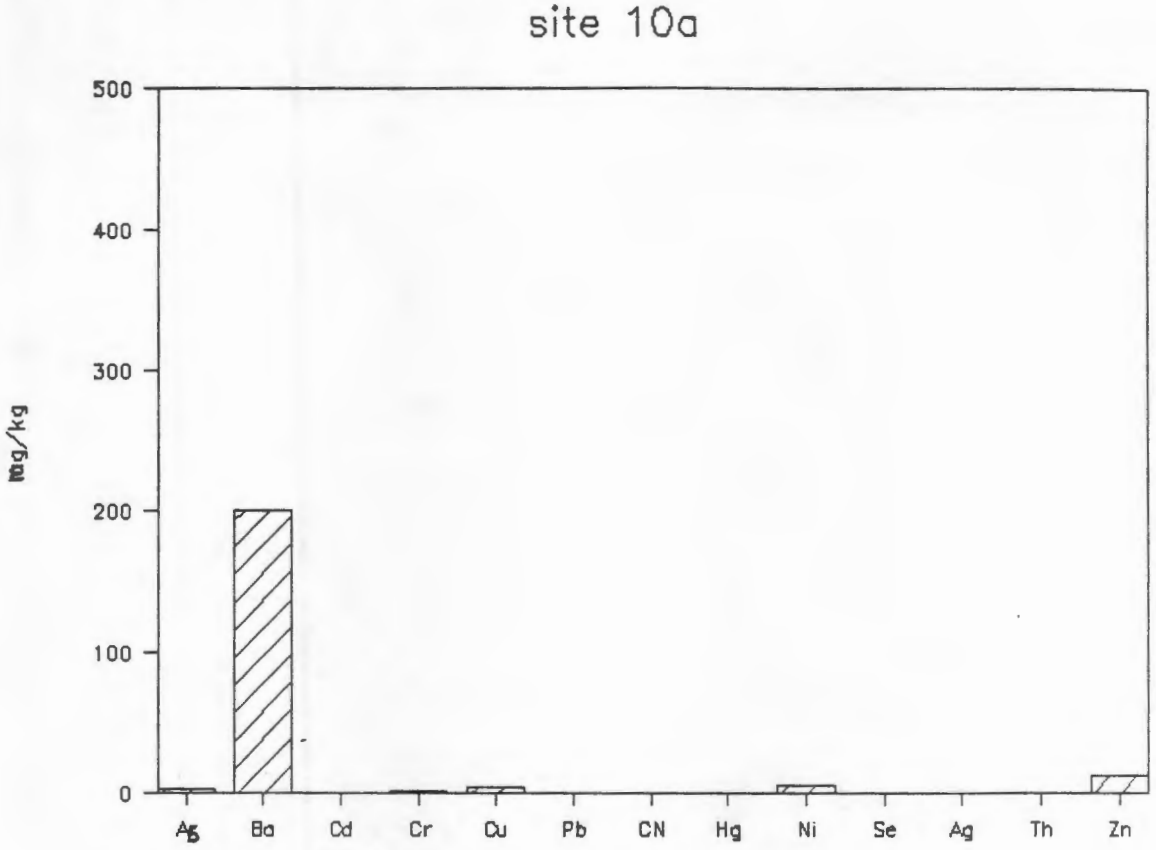
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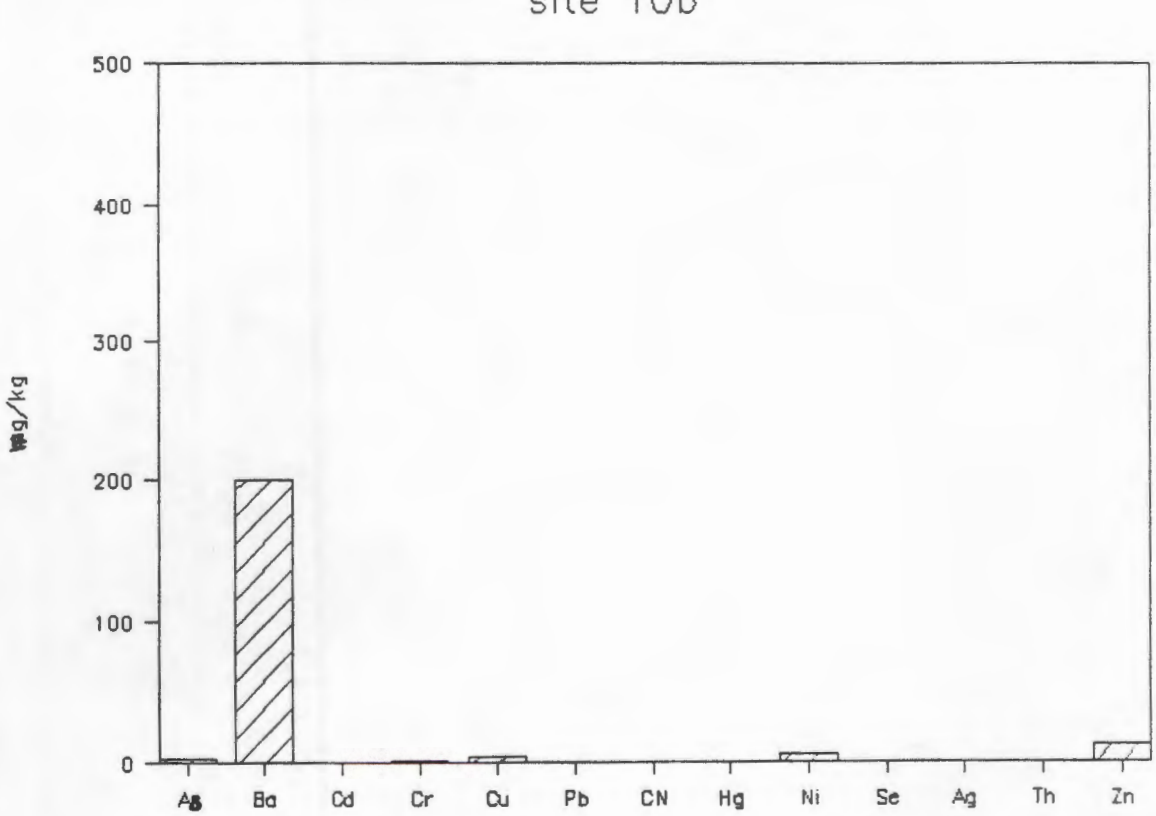
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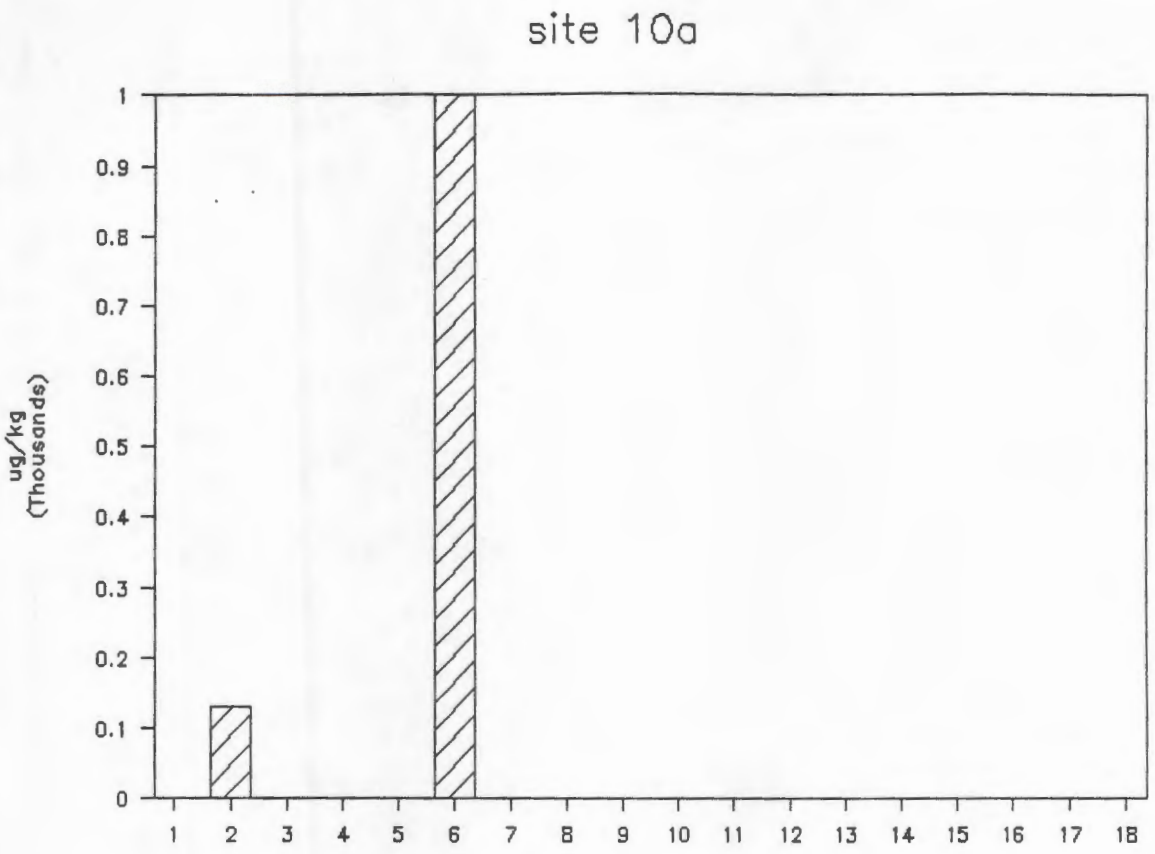
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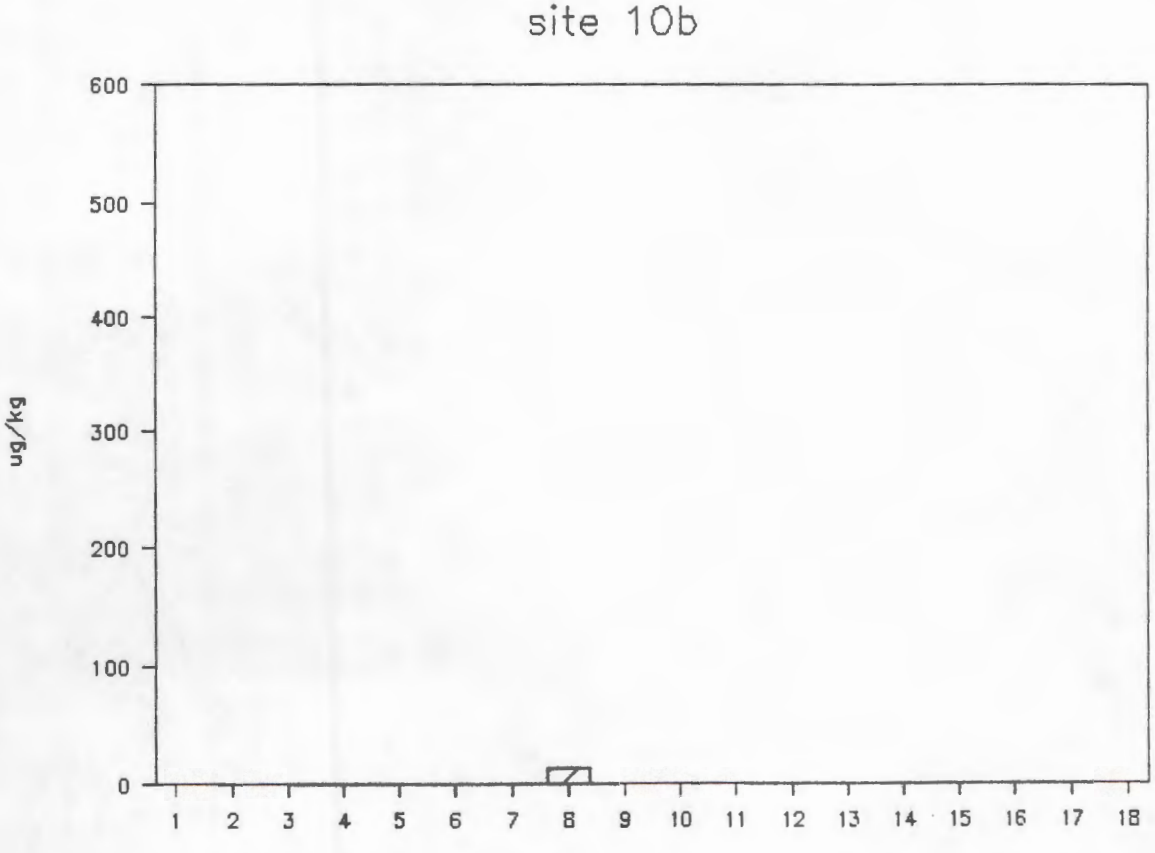
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ug/kg
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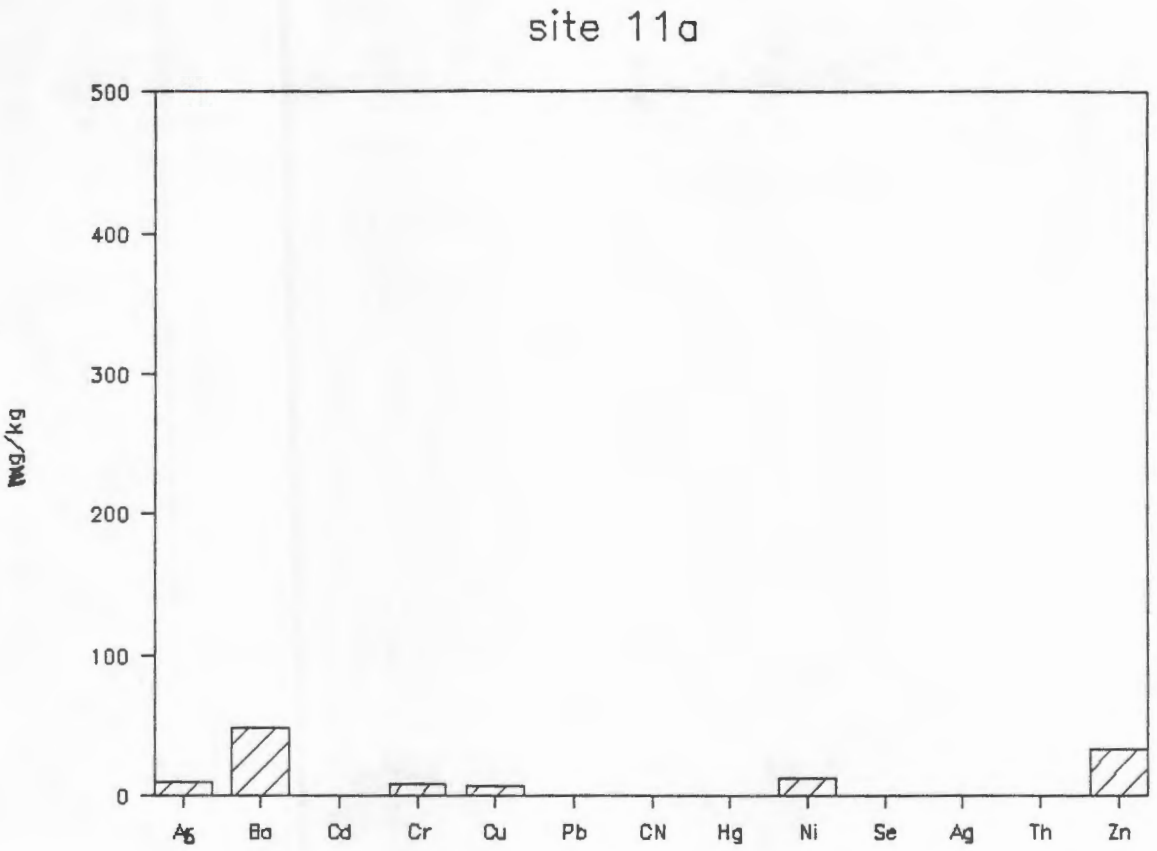
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mg/kg
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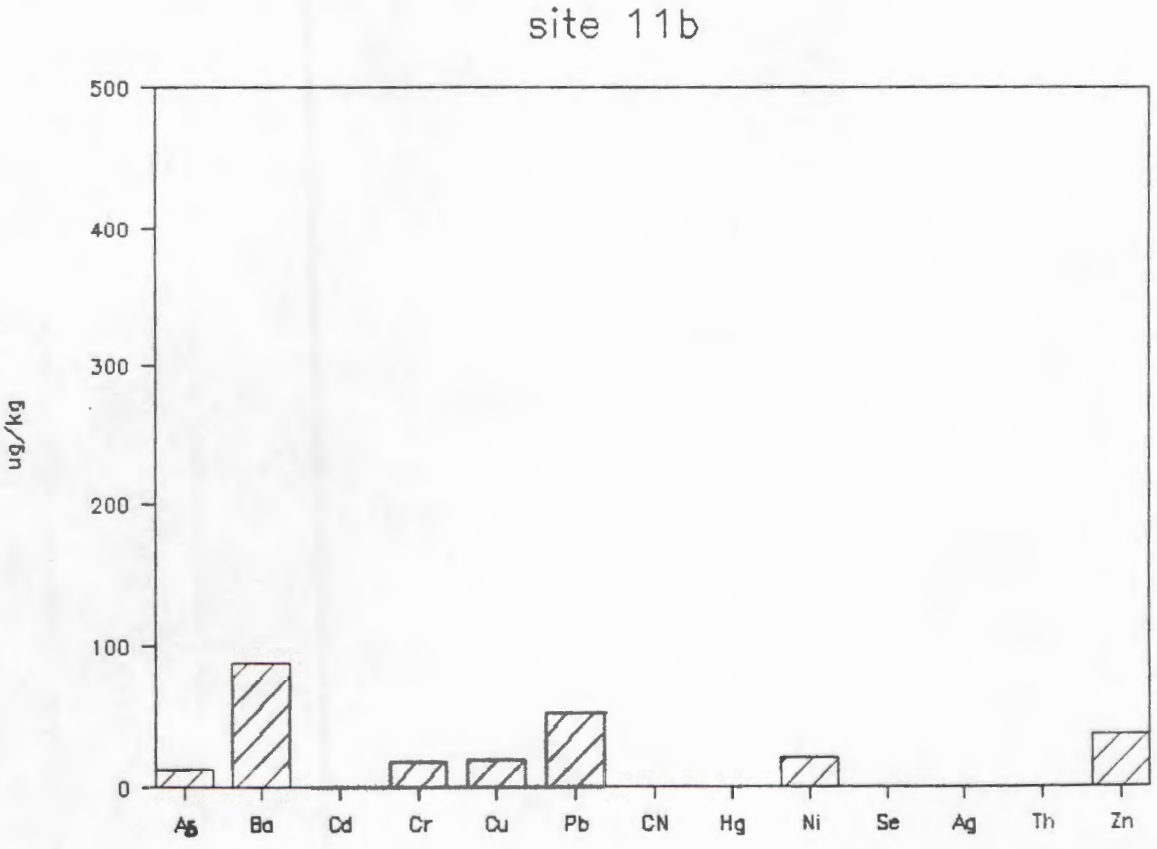
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ug/kg
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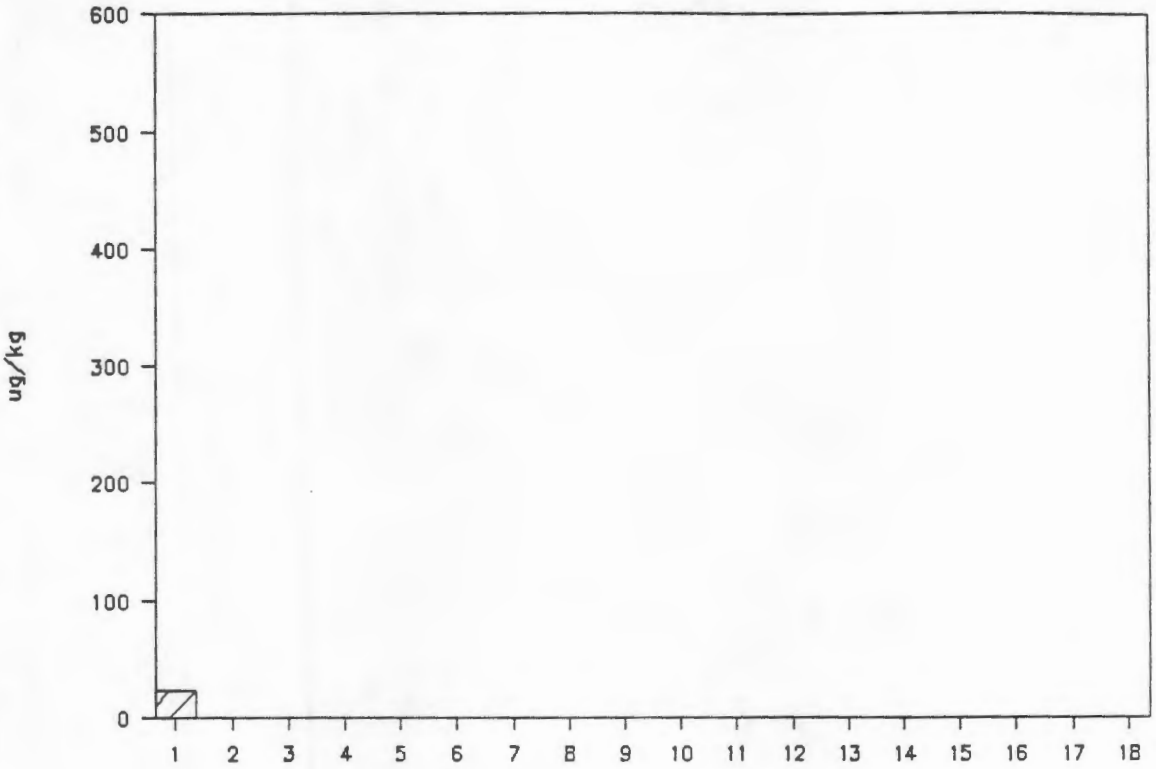
site 11a



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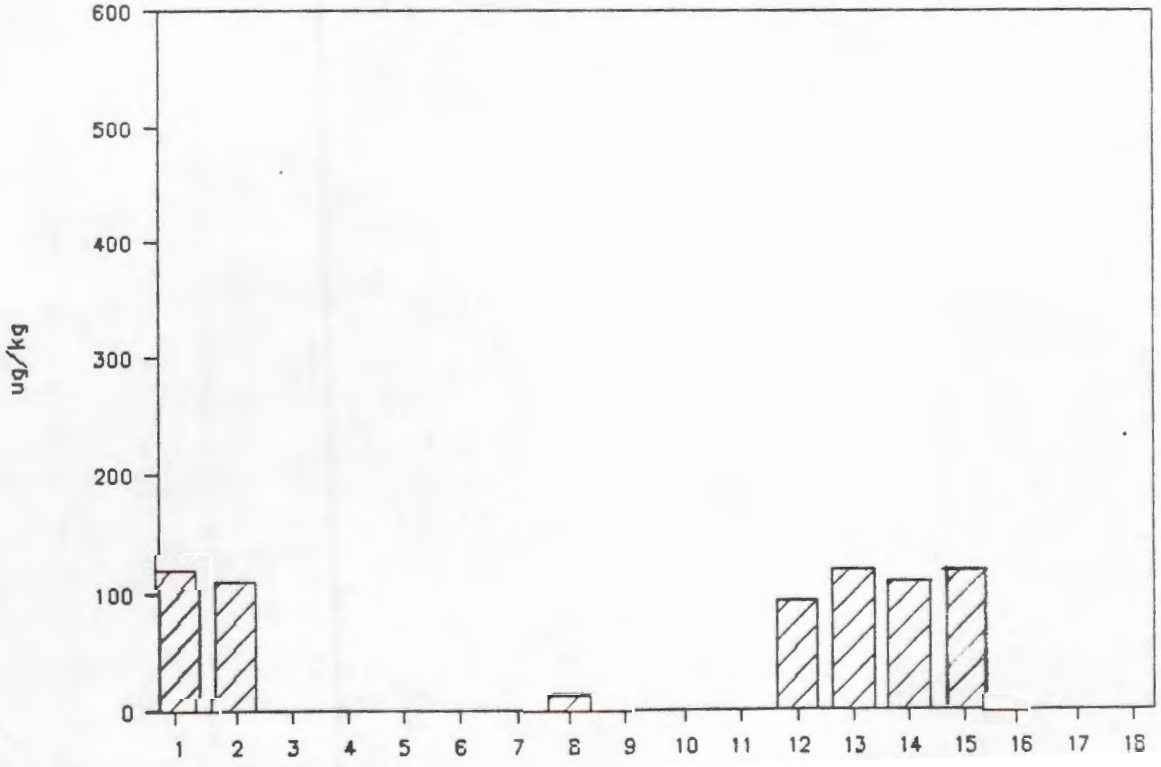

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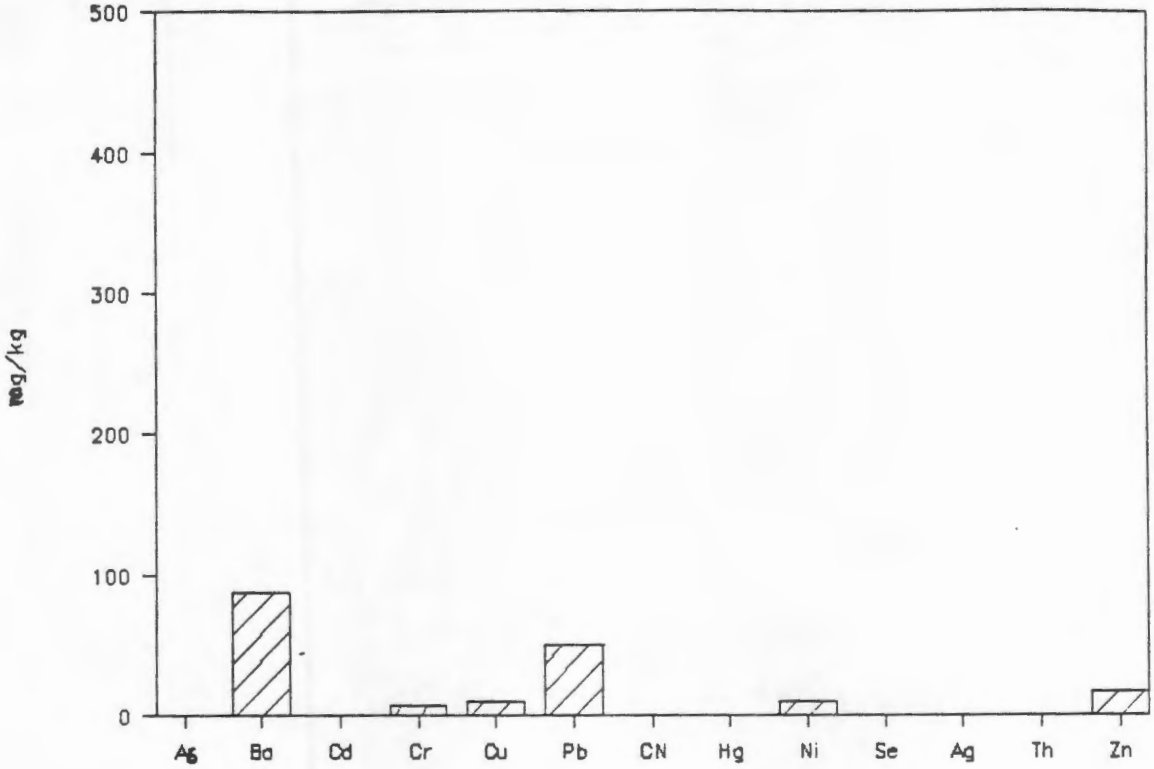

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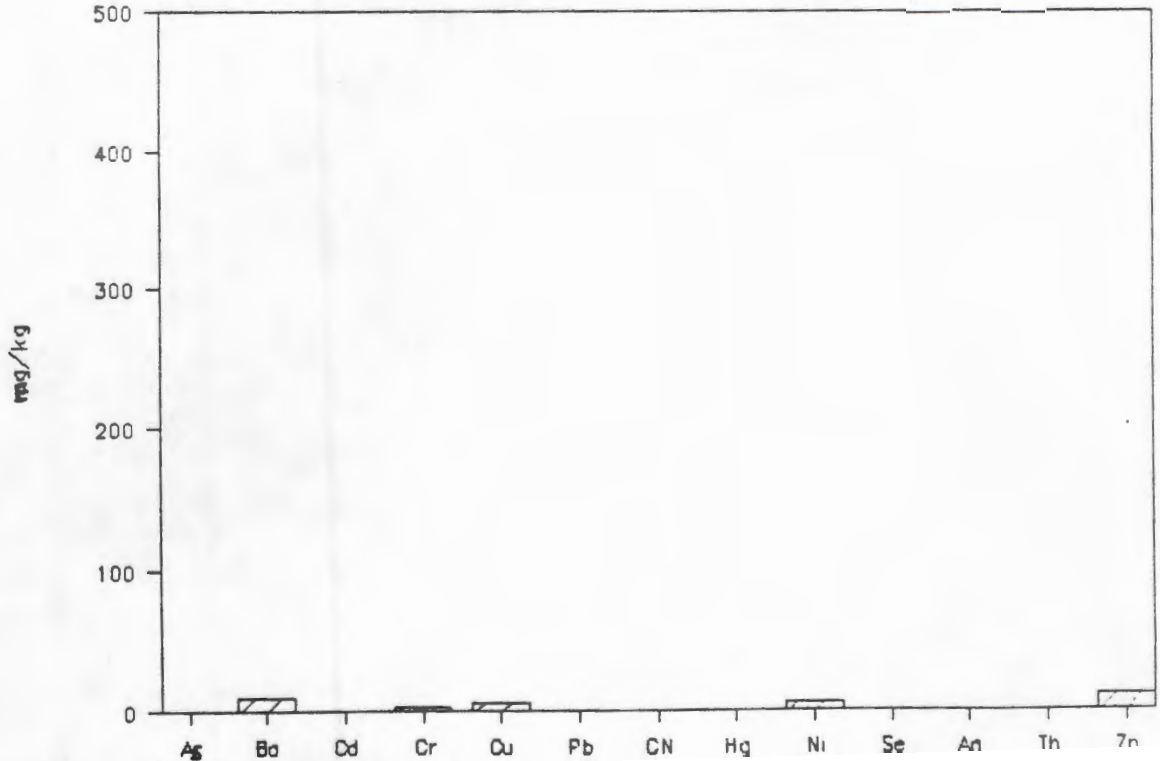

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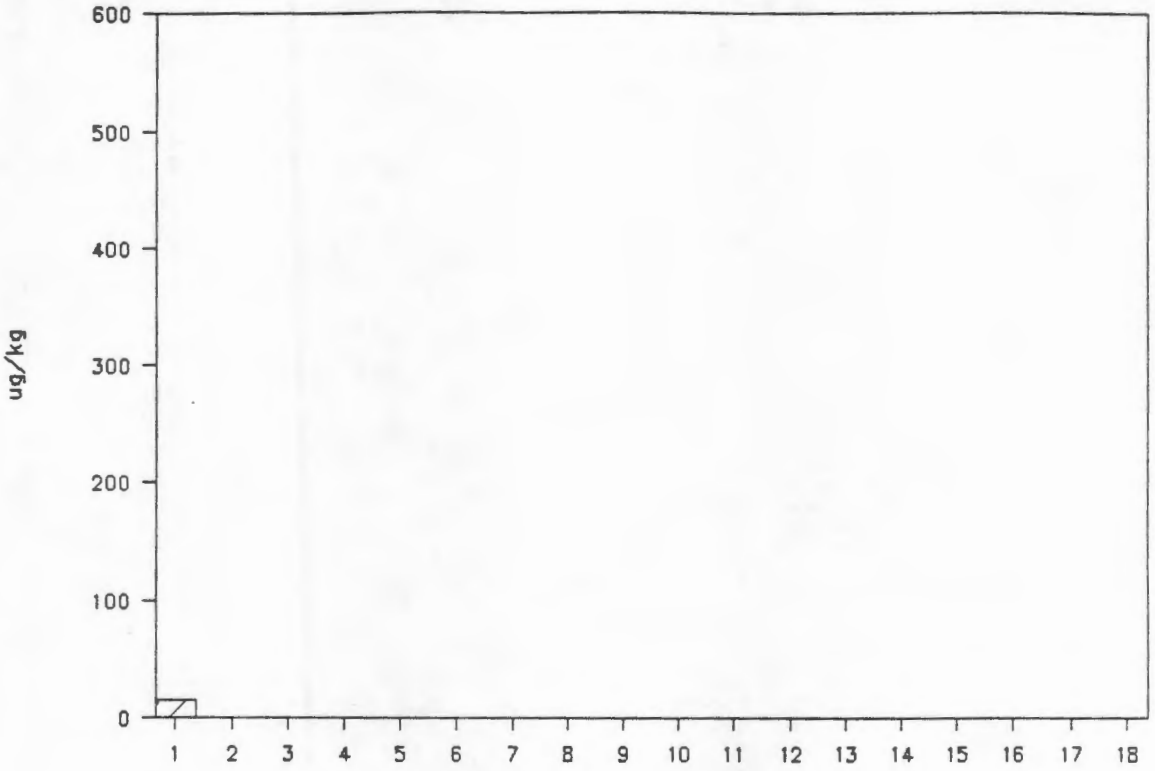

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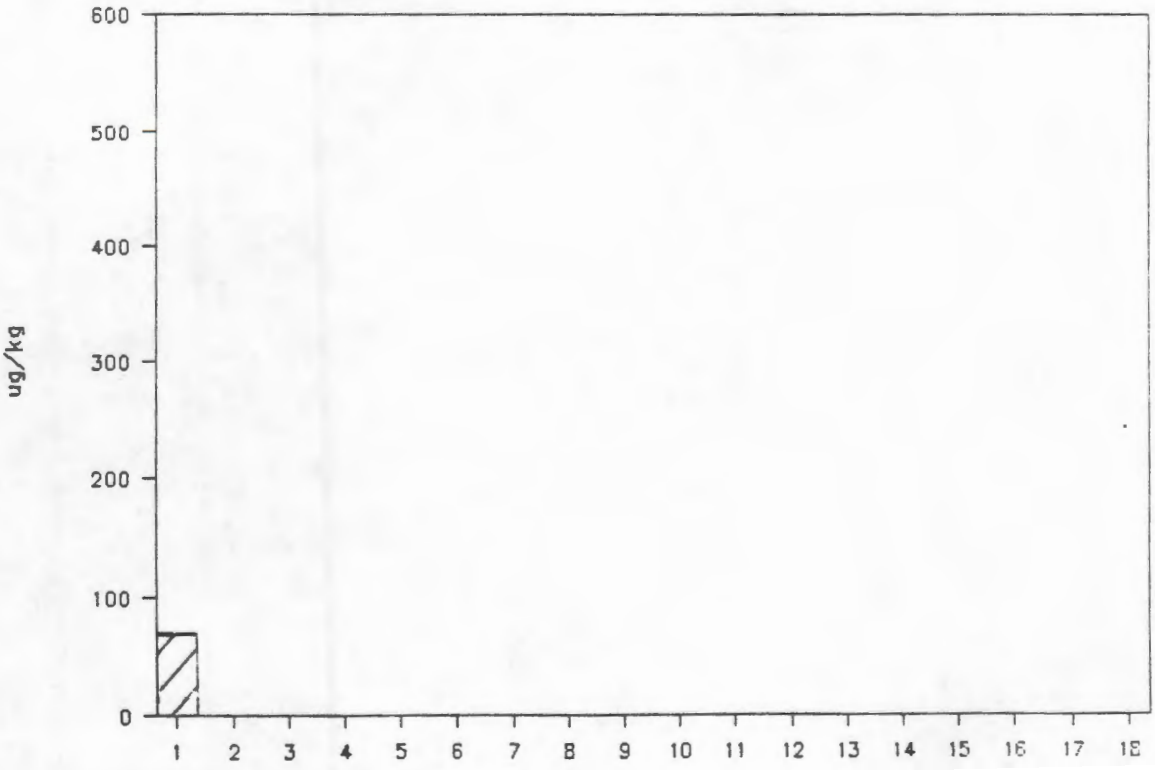

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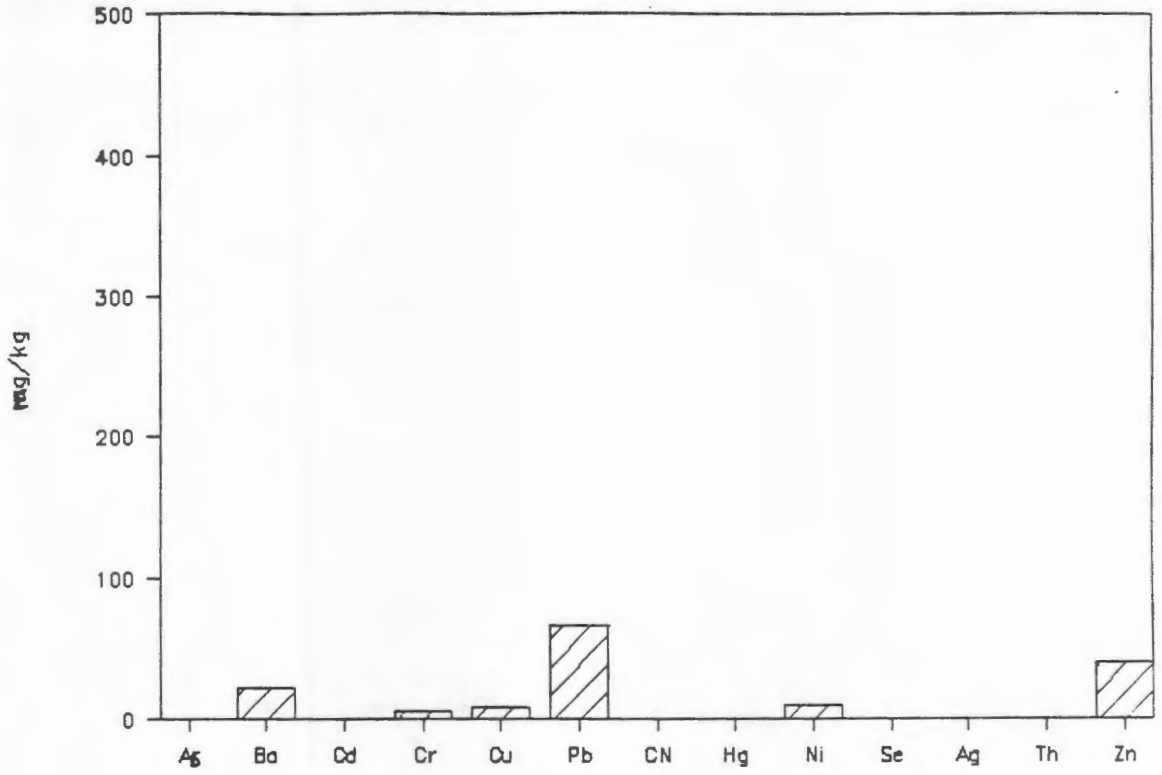

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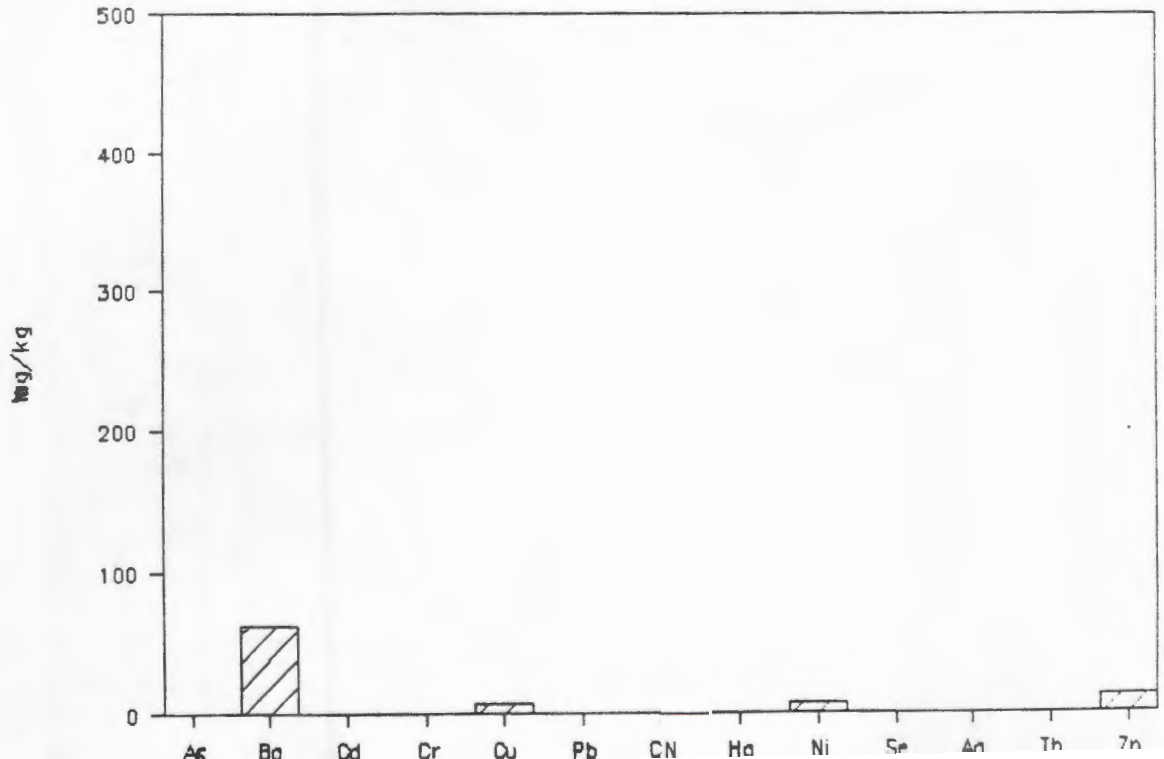

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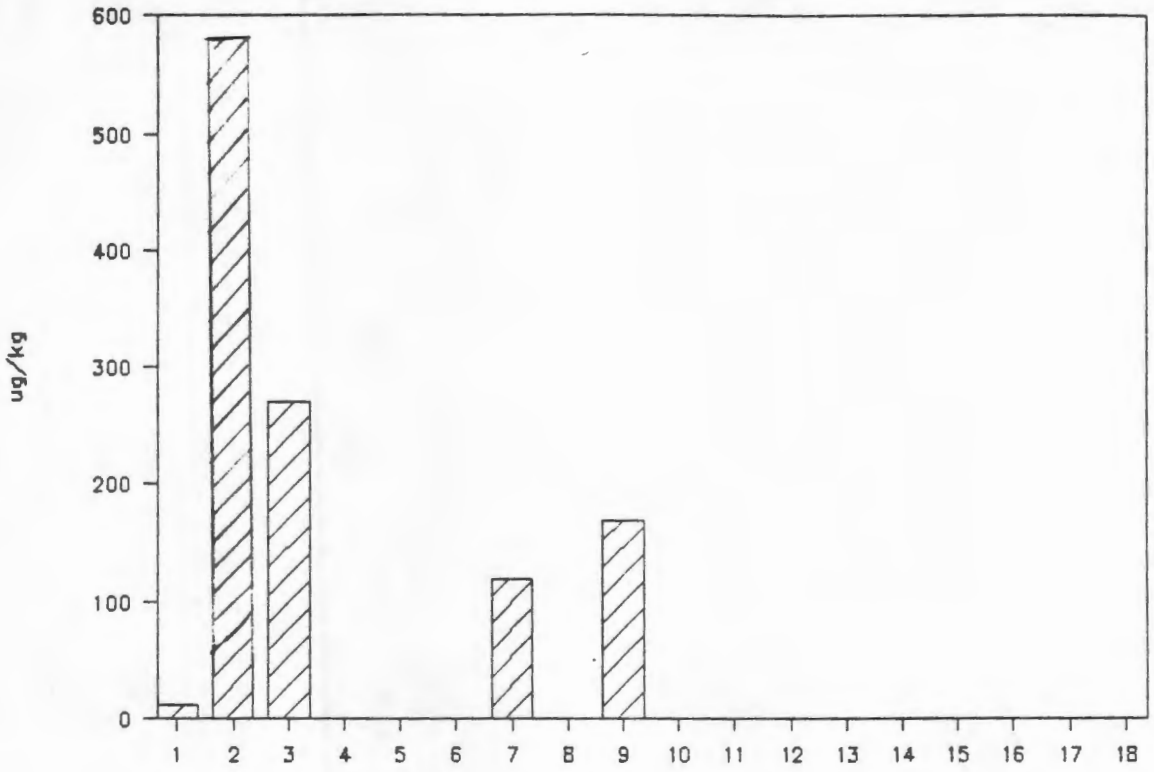

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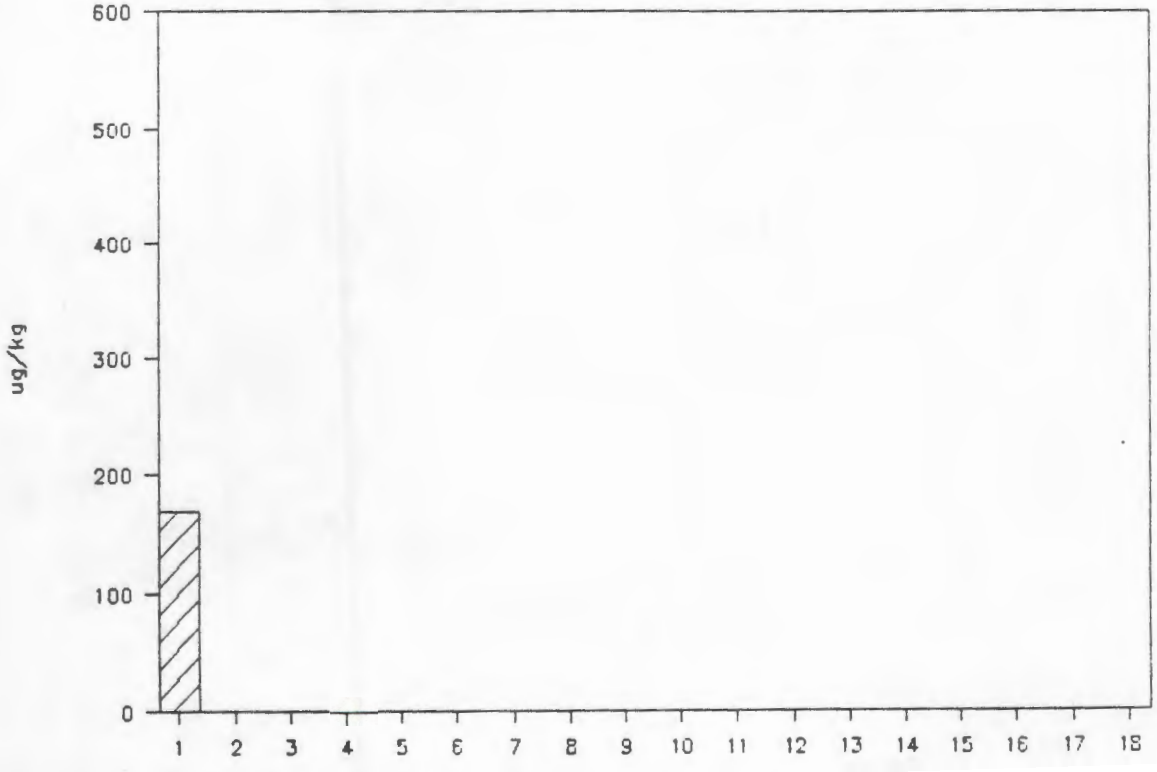

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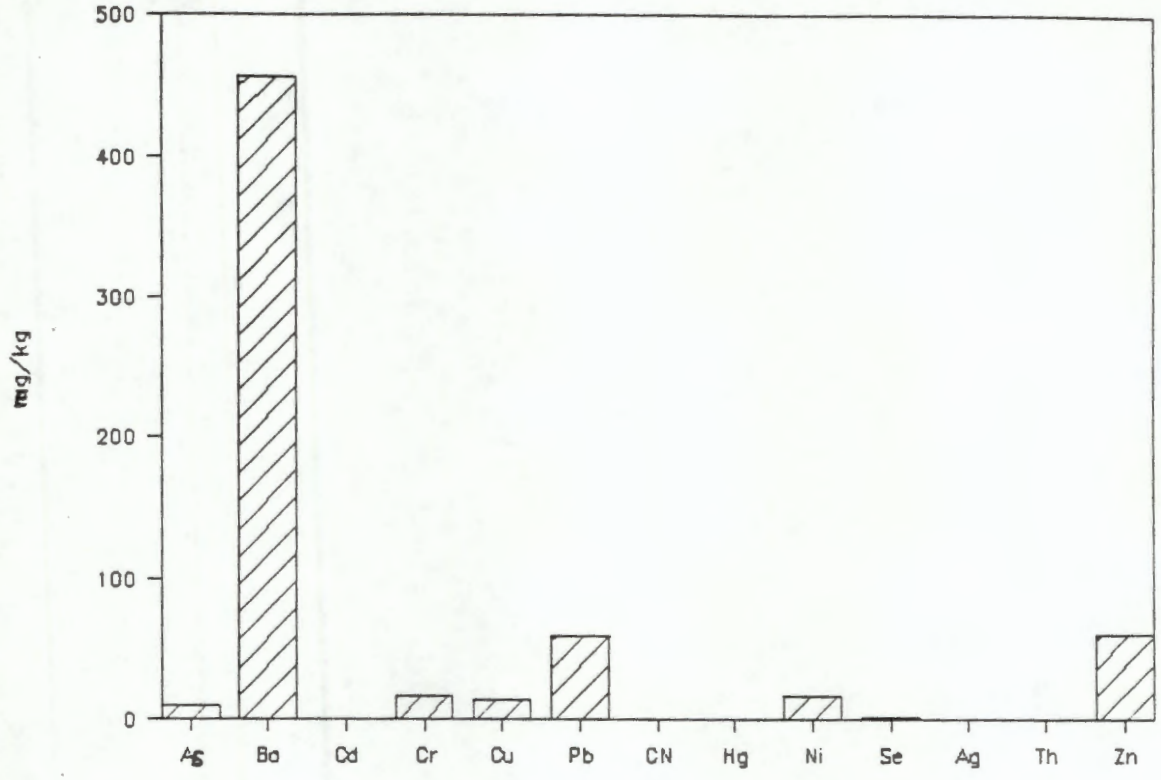

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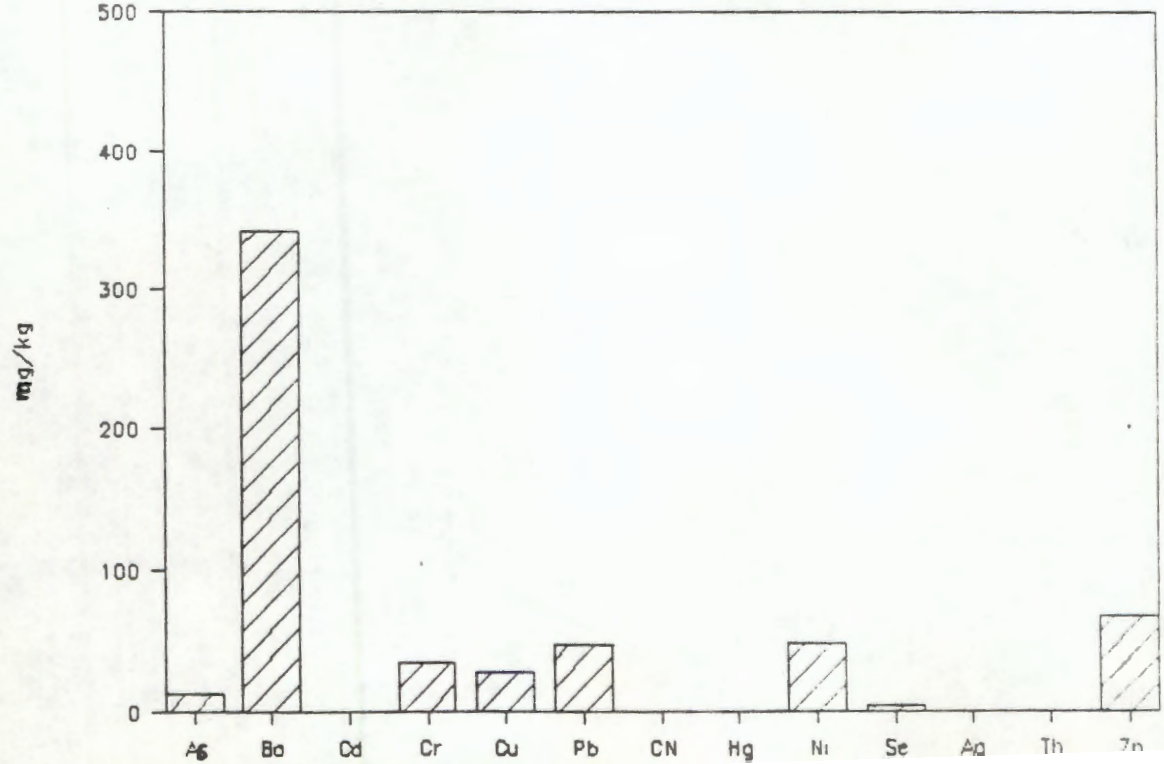

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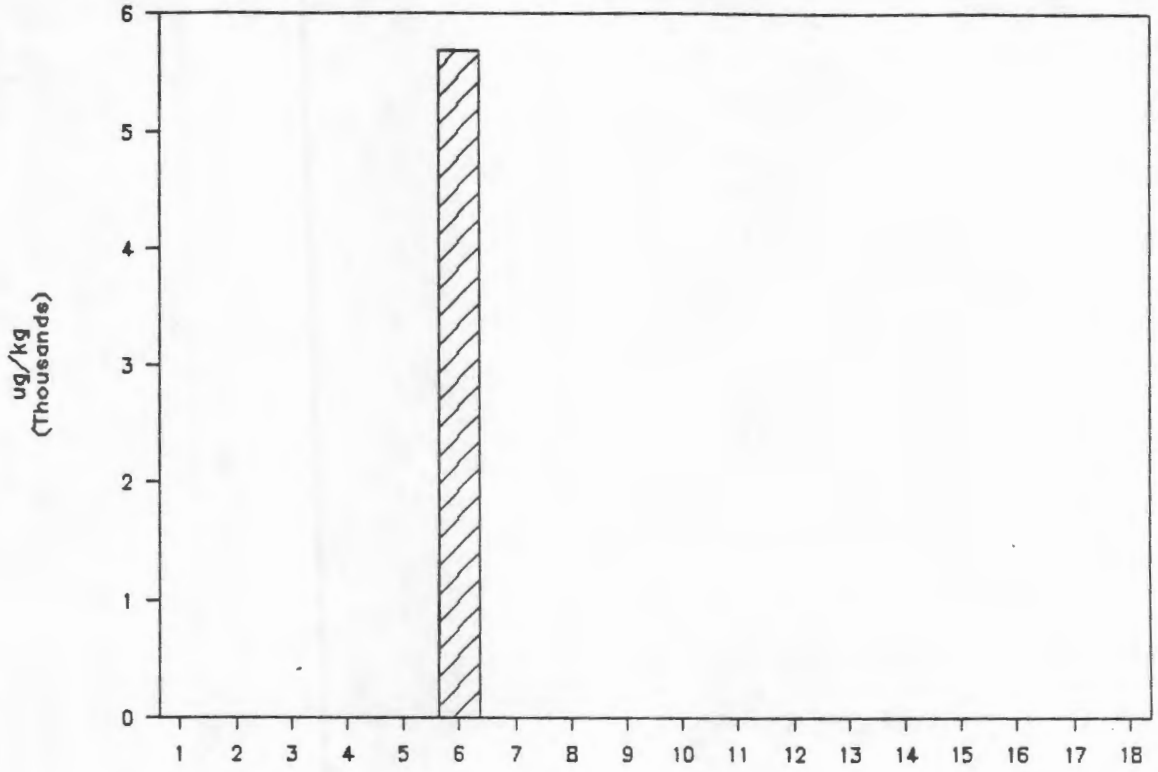

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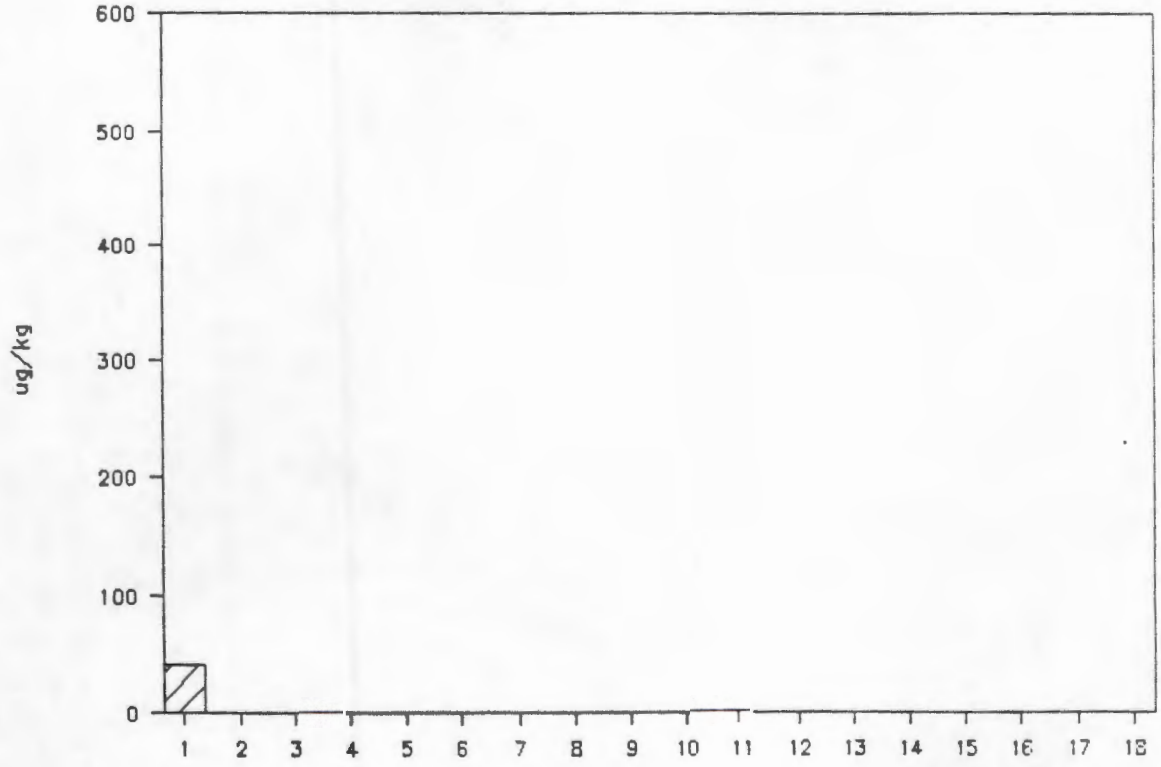

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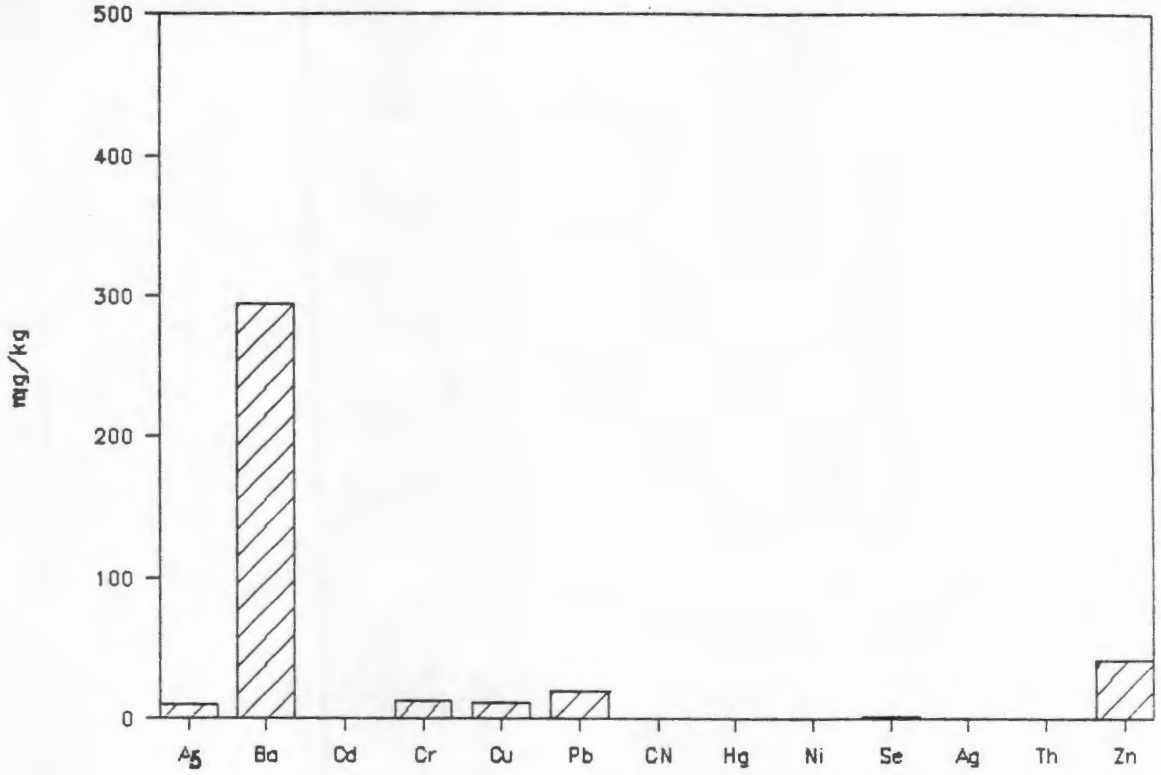

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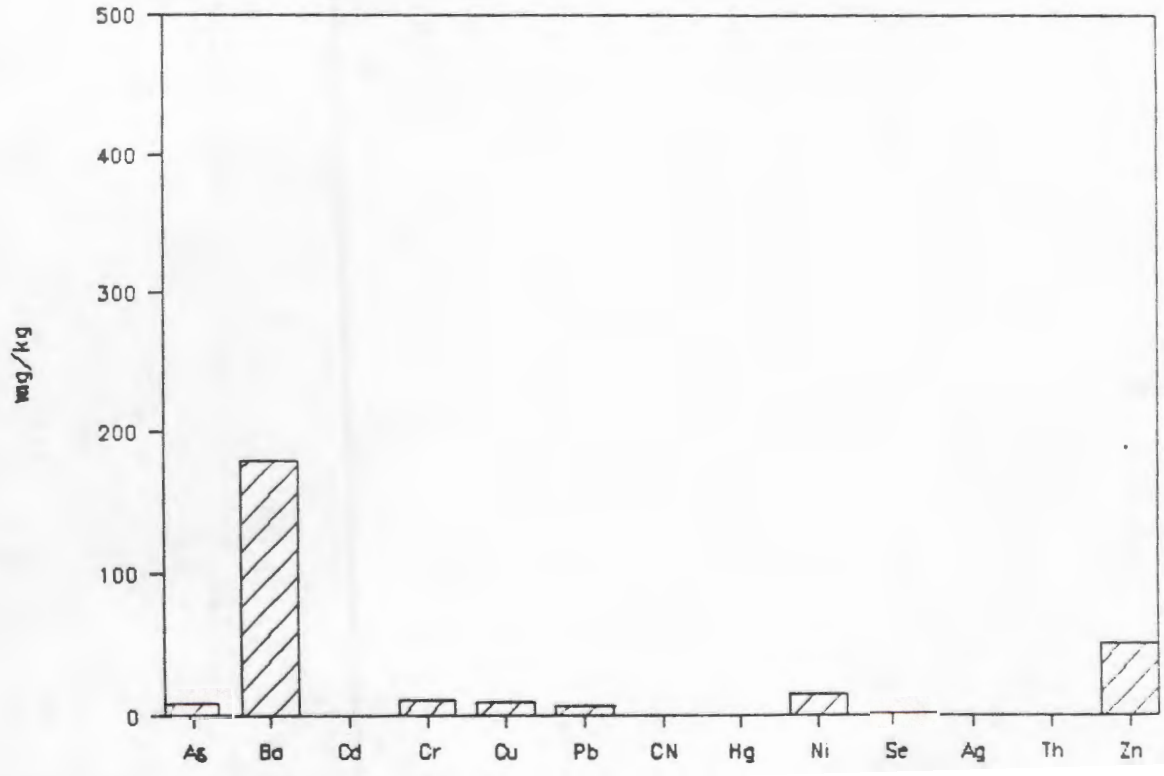

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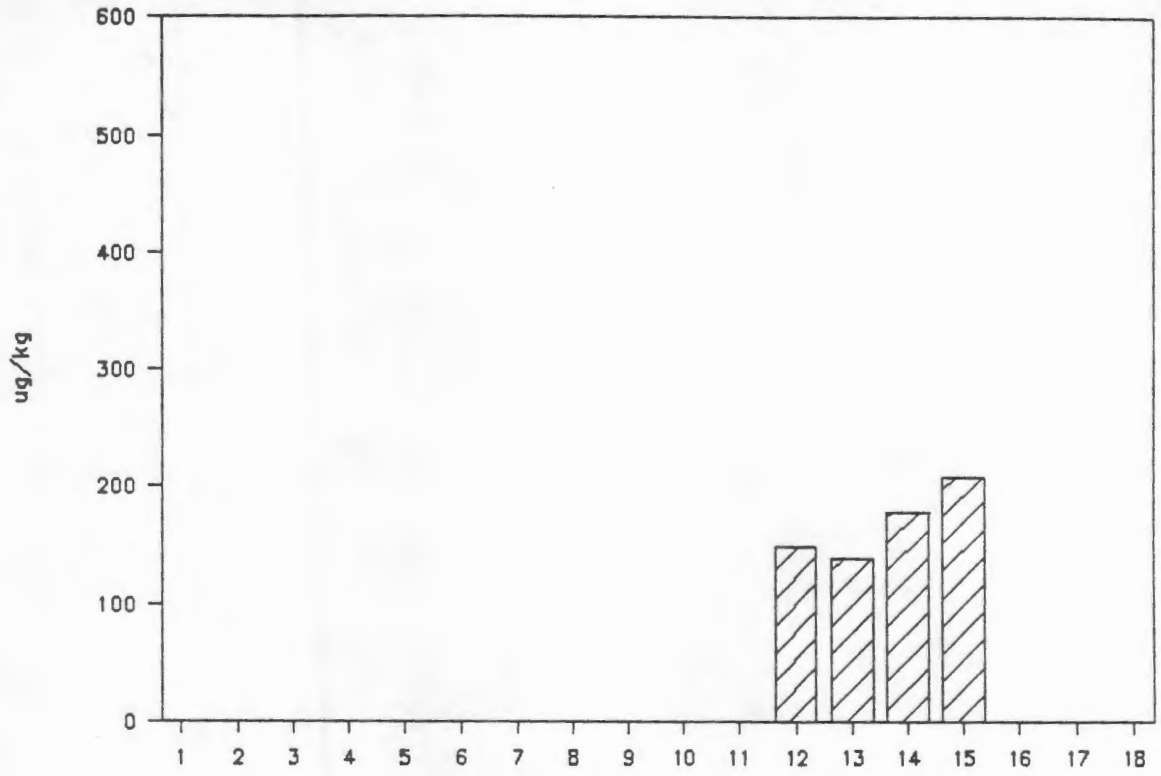

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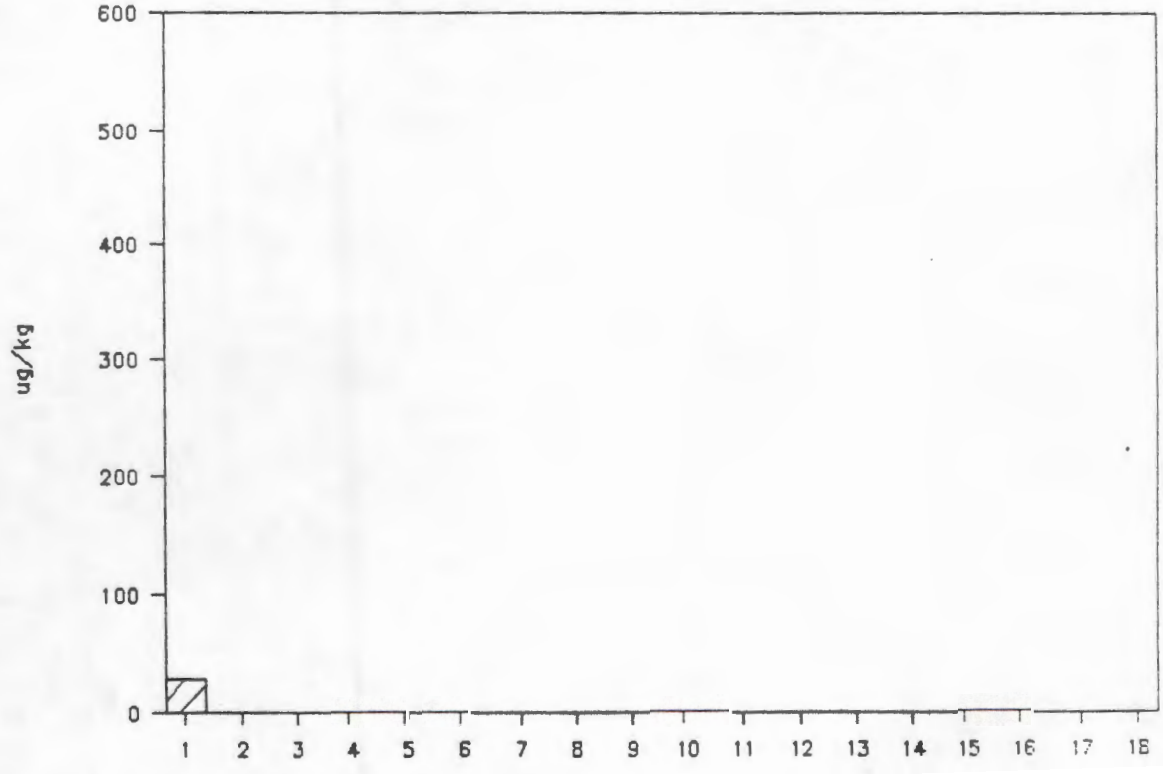

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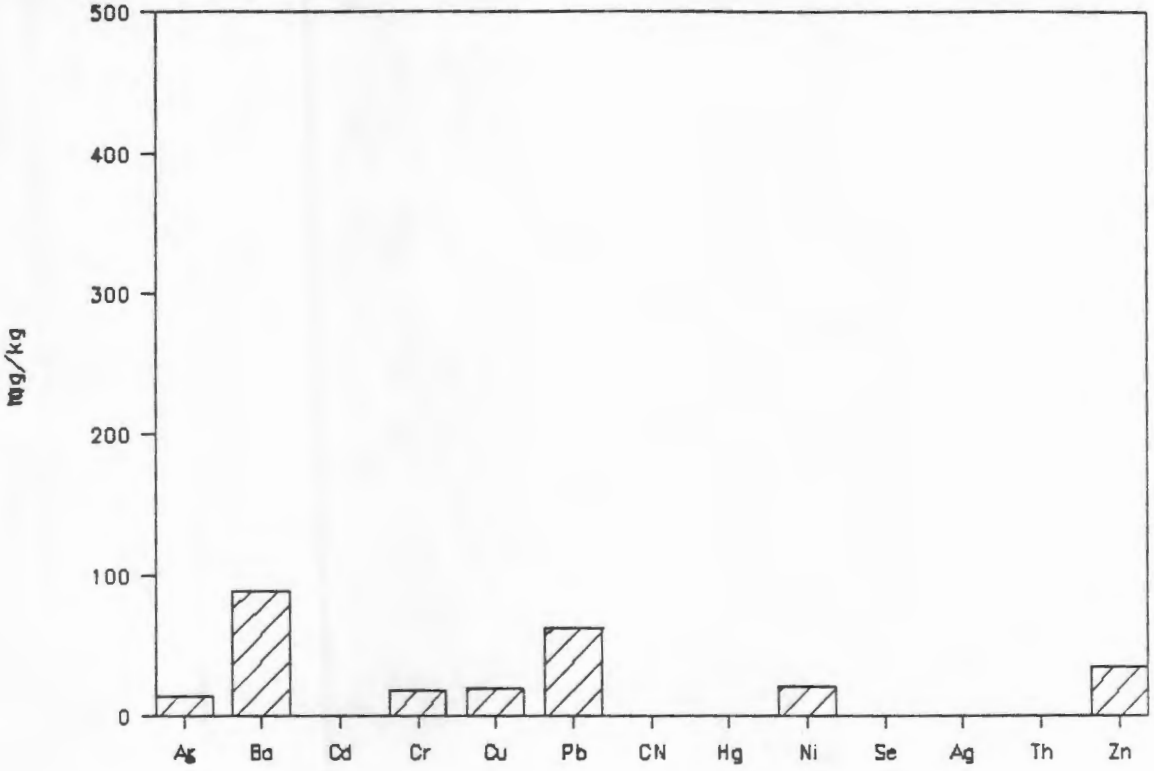

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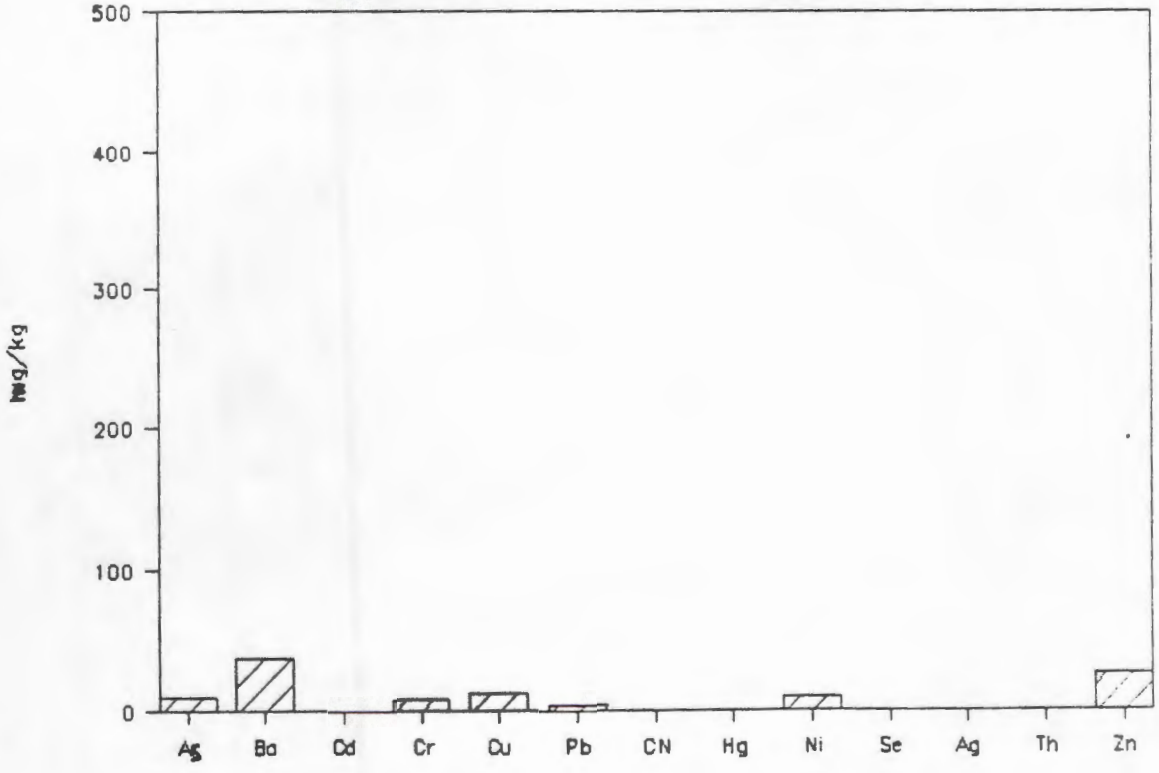

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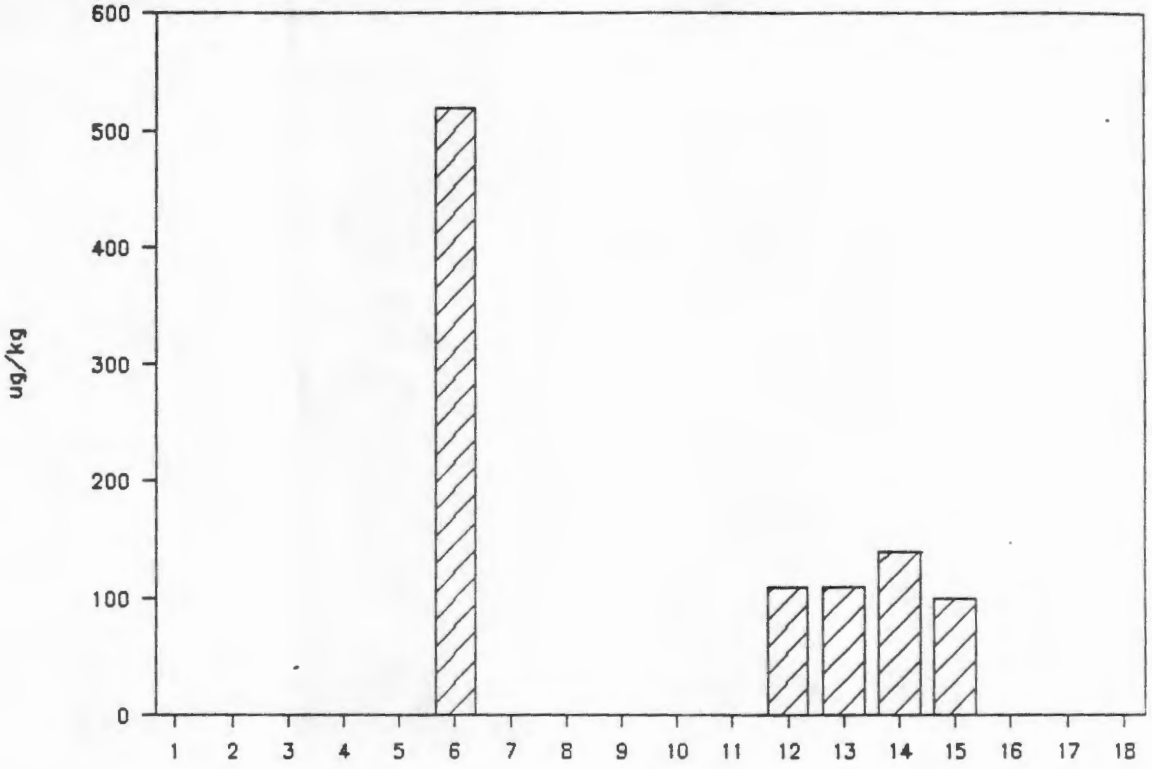

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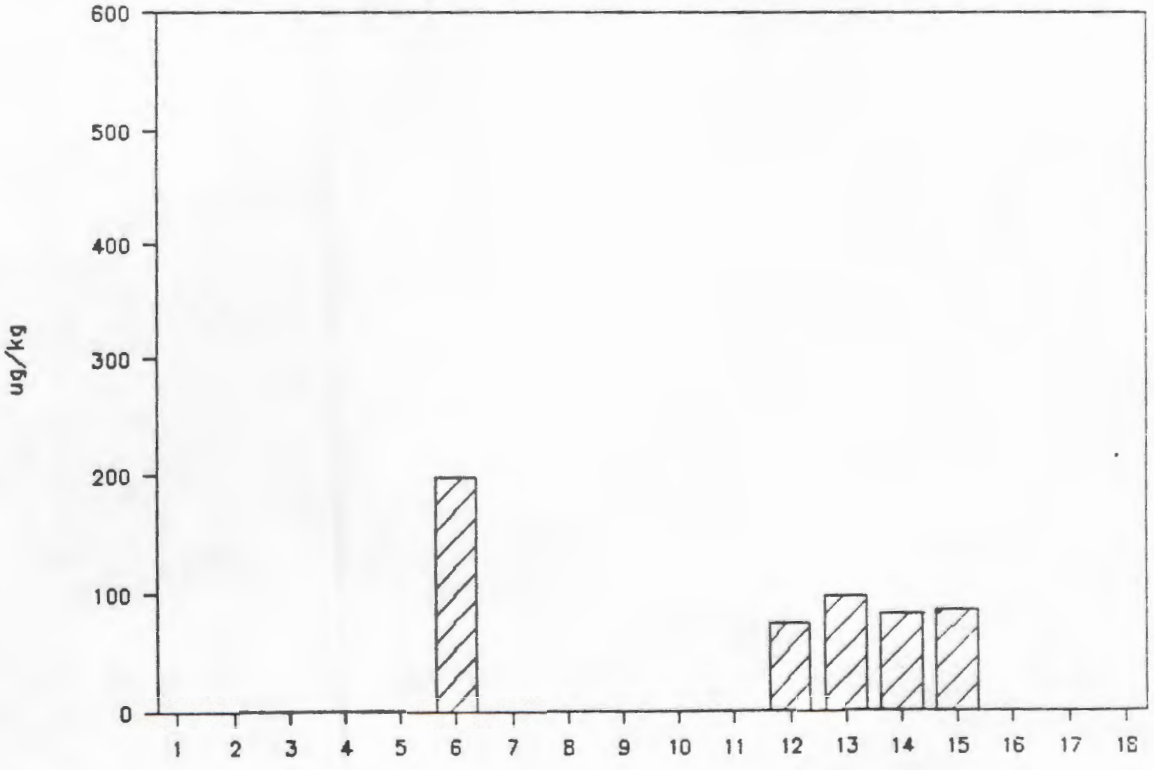

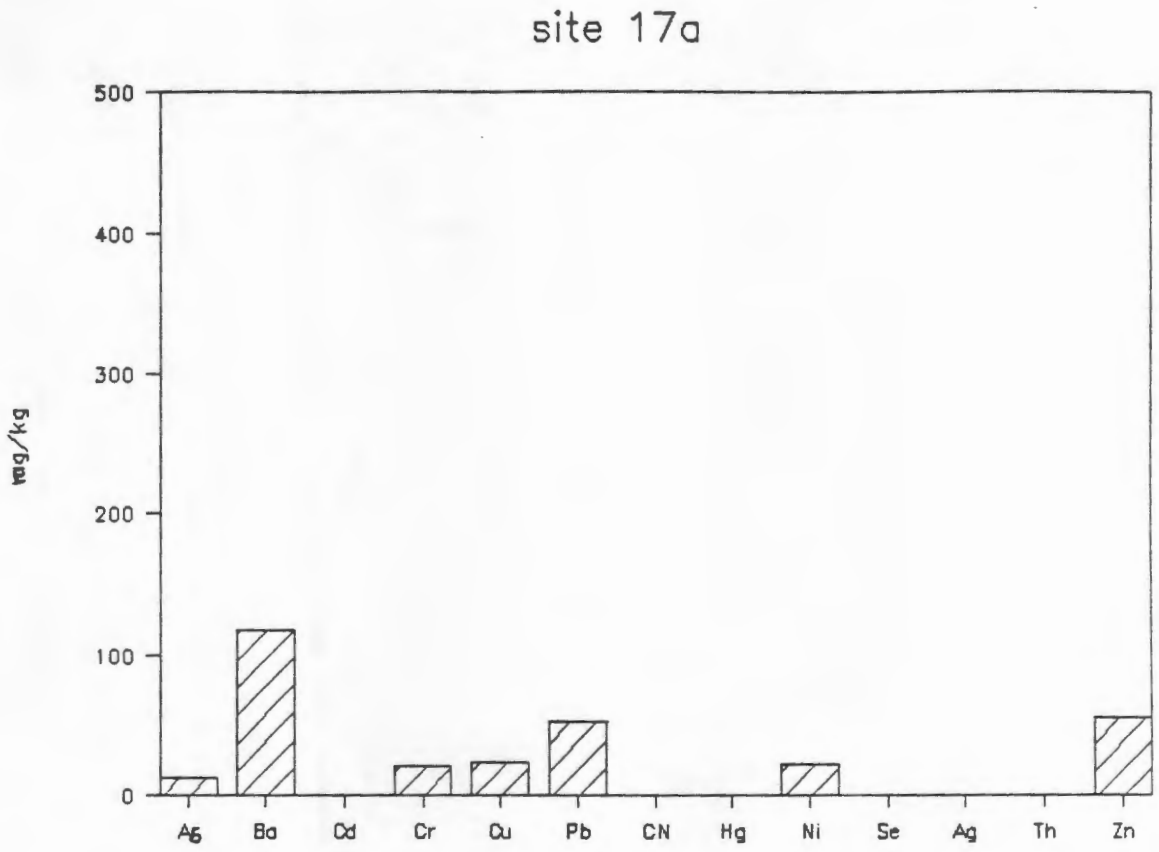
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mg/kg
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Ba
Cd
Cr
Cu
Pb
CN
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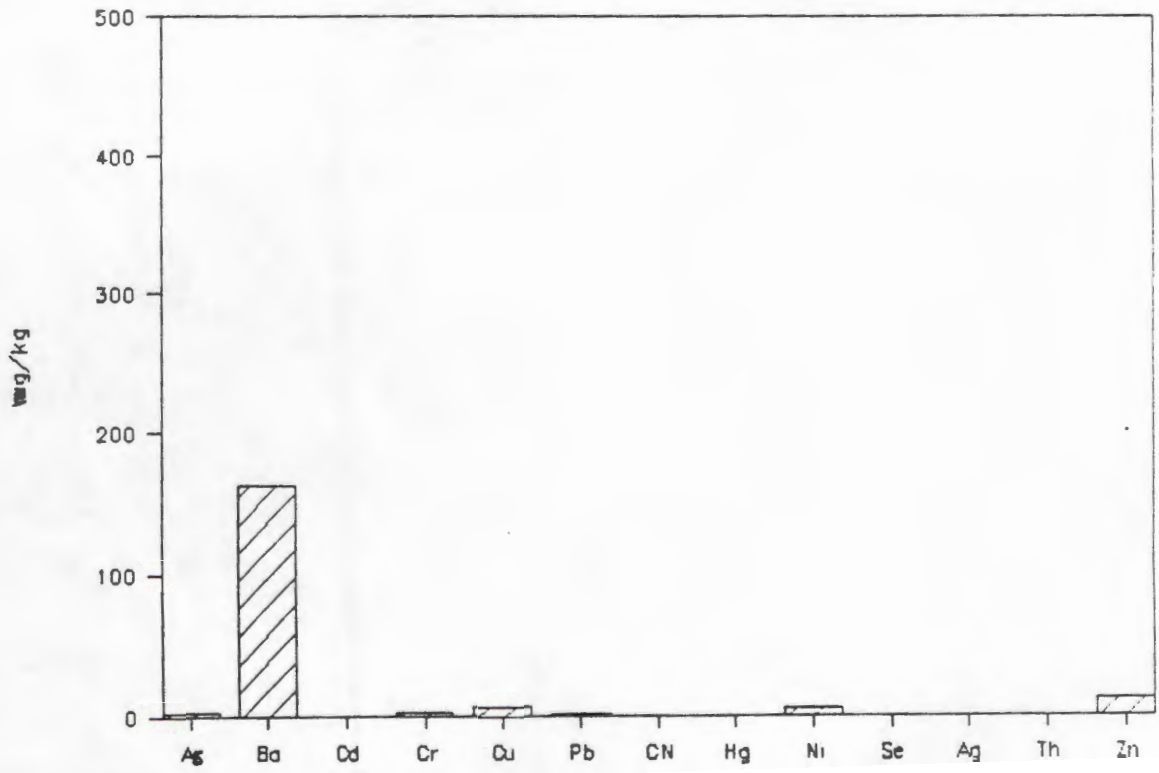
Ag
Th
Zn


site 17b
500
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300
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100
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mg/kg
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Cd
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Cu
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Ni
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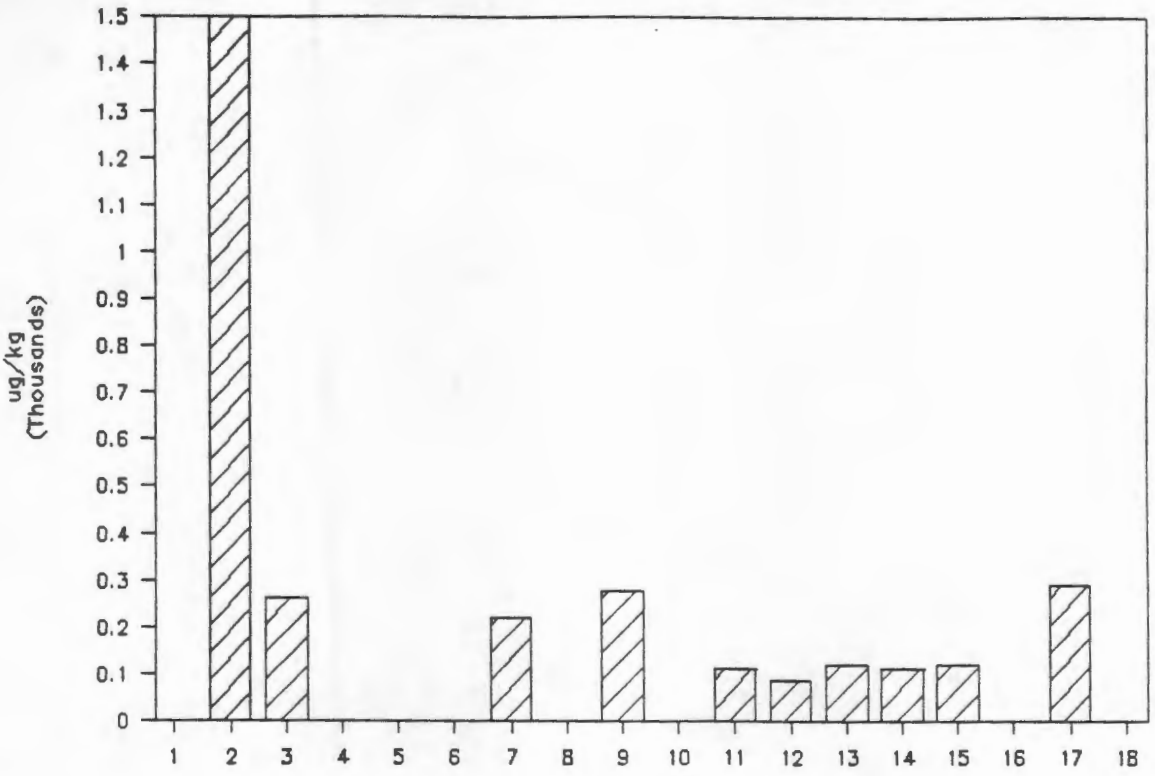
Ag
Th
Zn

site 17a



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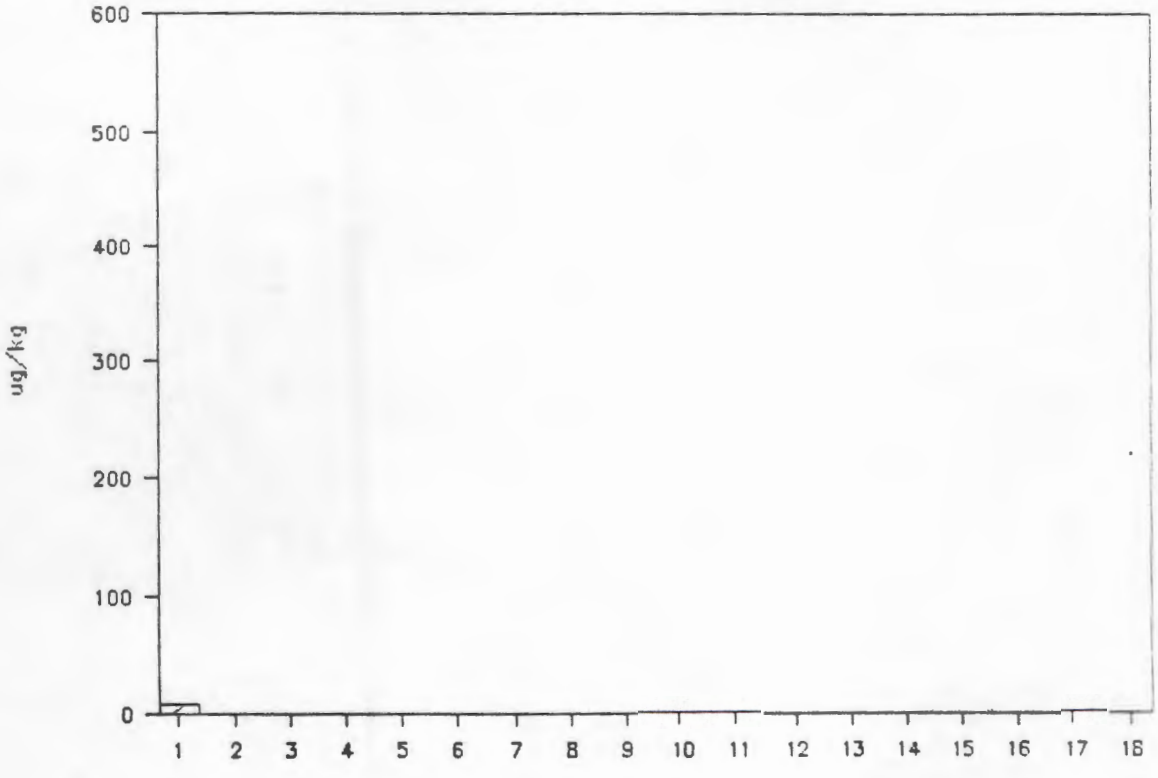

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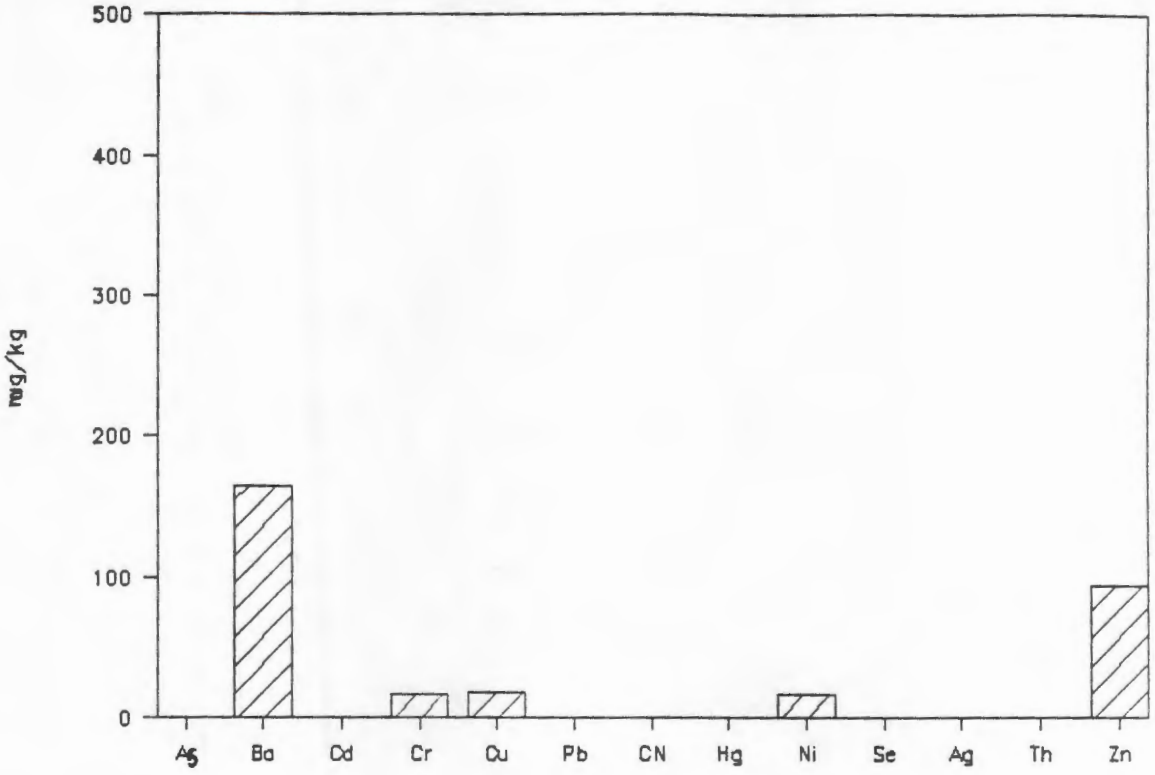

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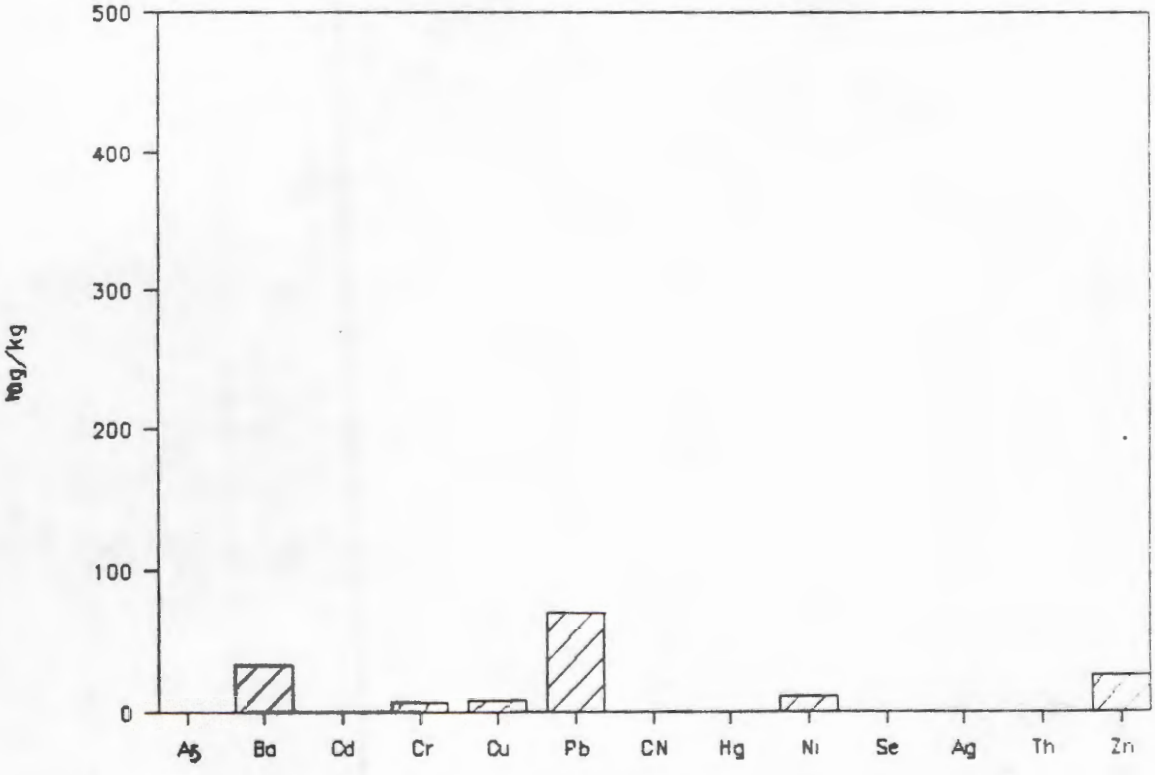

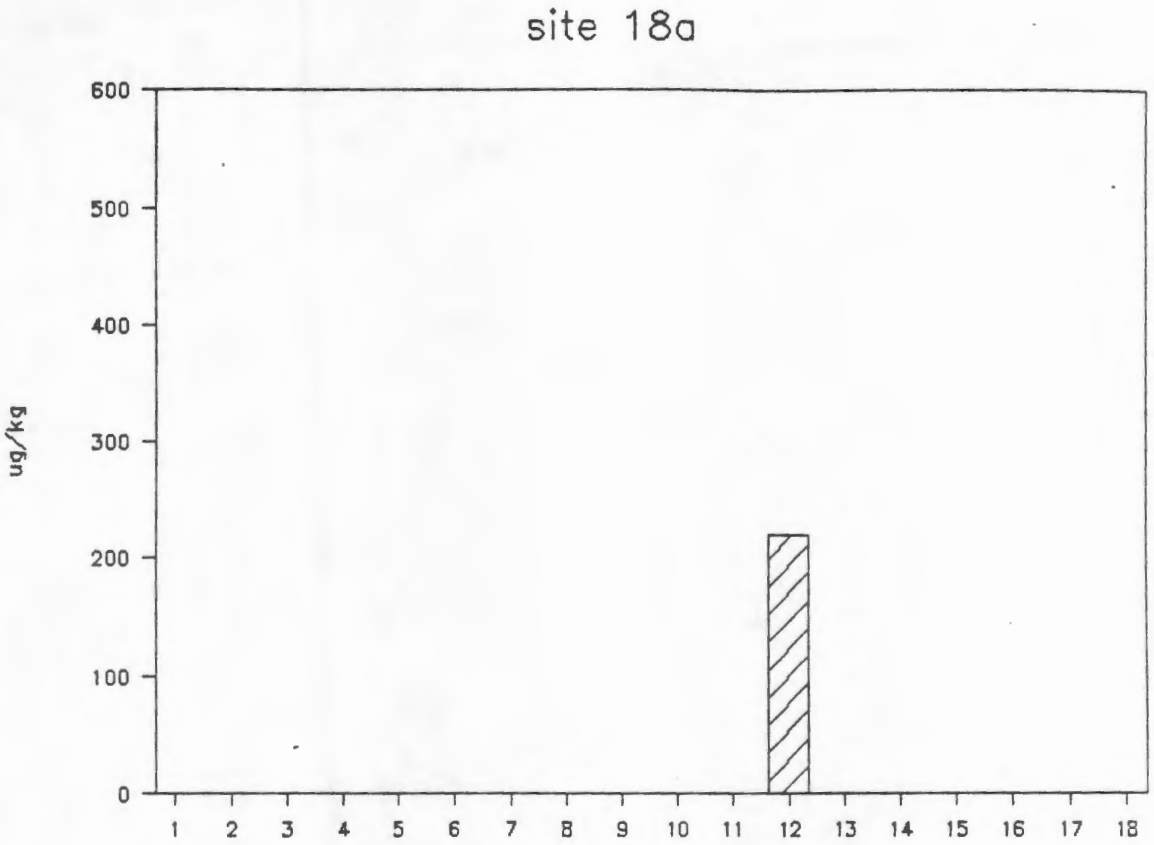
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ug/kg
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500
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300
200
100
0
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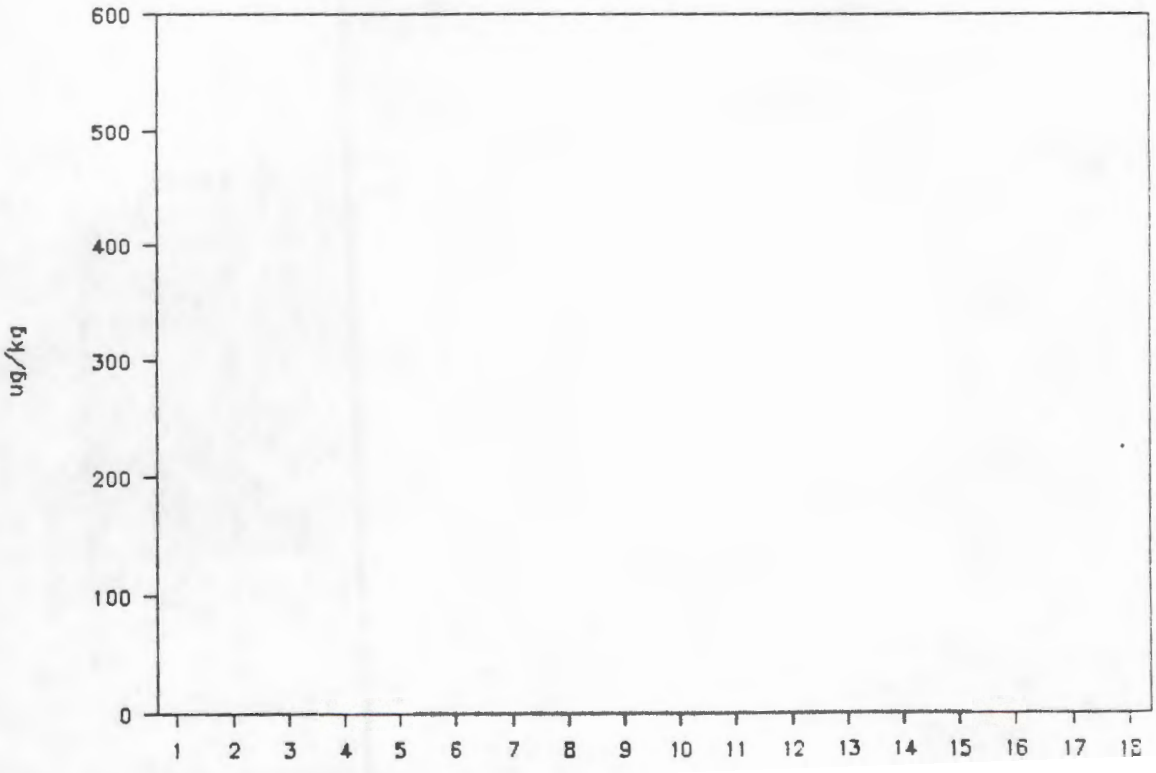
site 18b
ug/kg
600
500
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300
200
100
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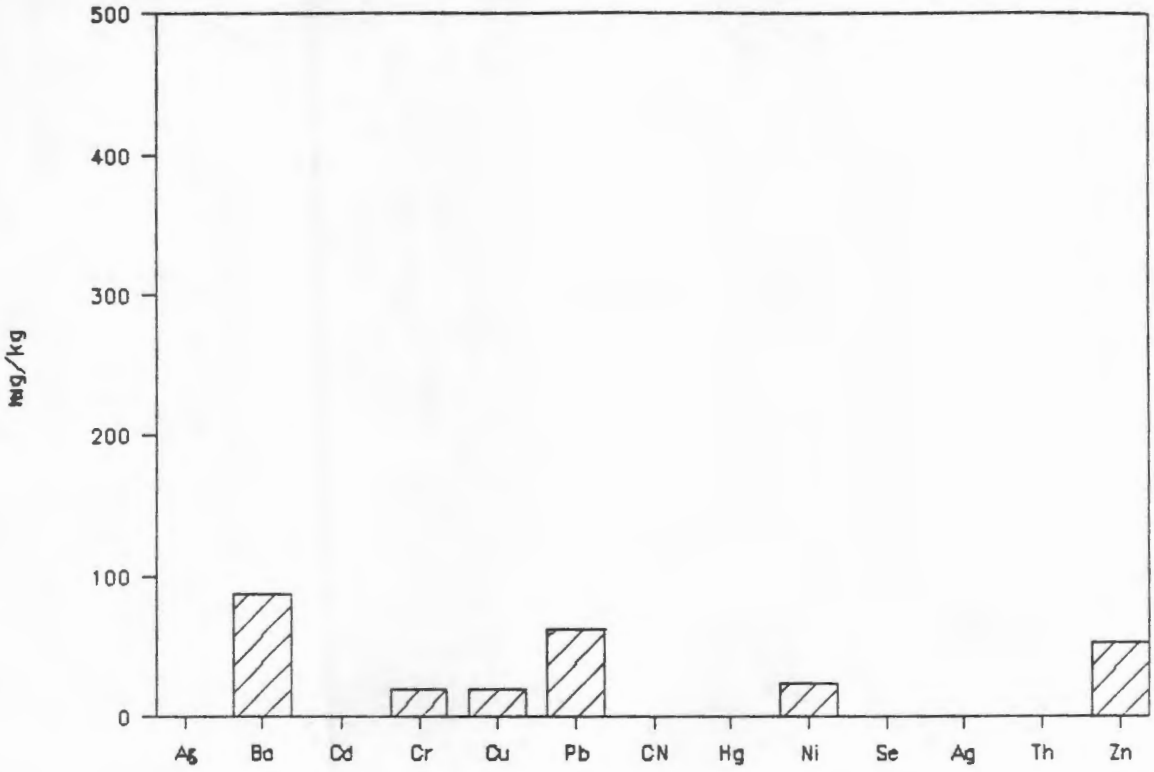
site 19



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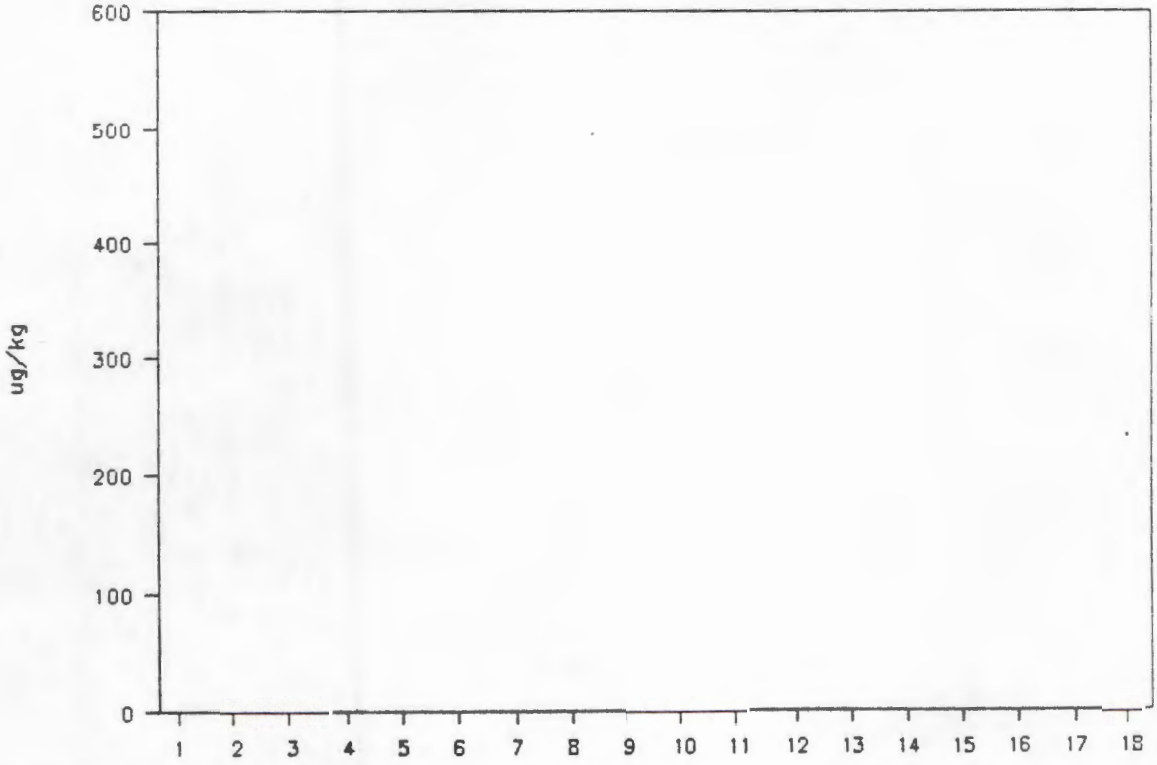

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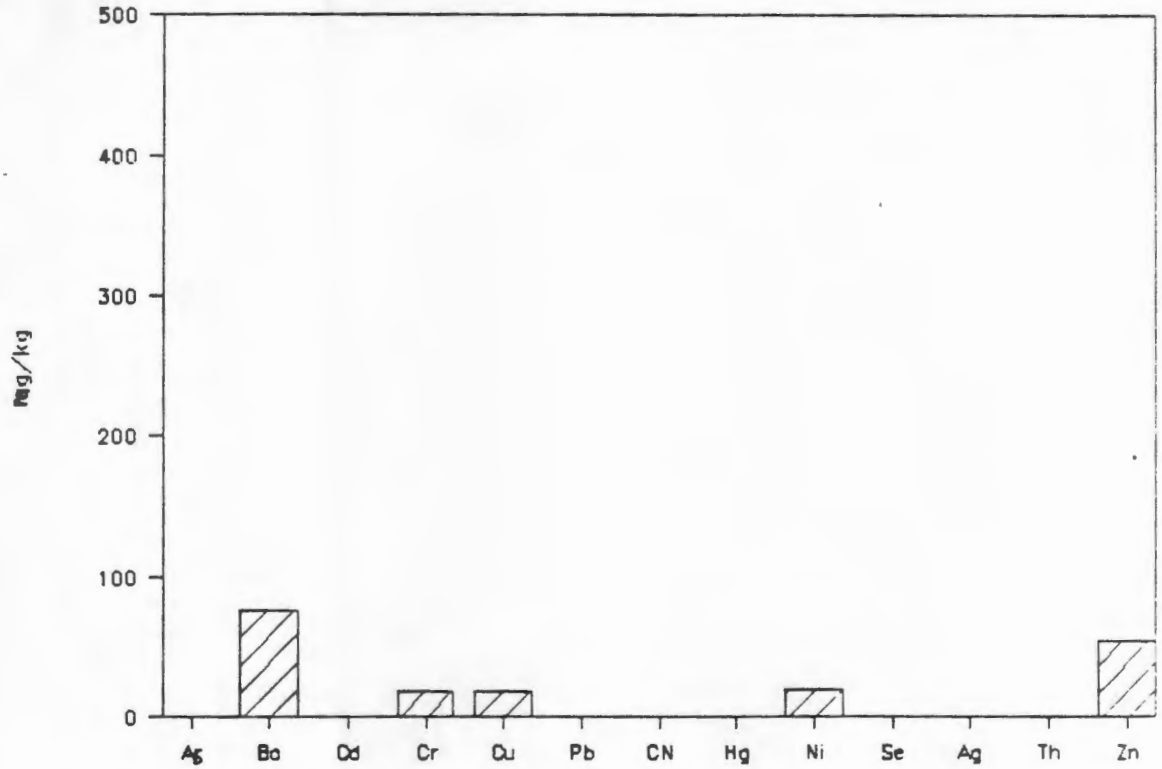

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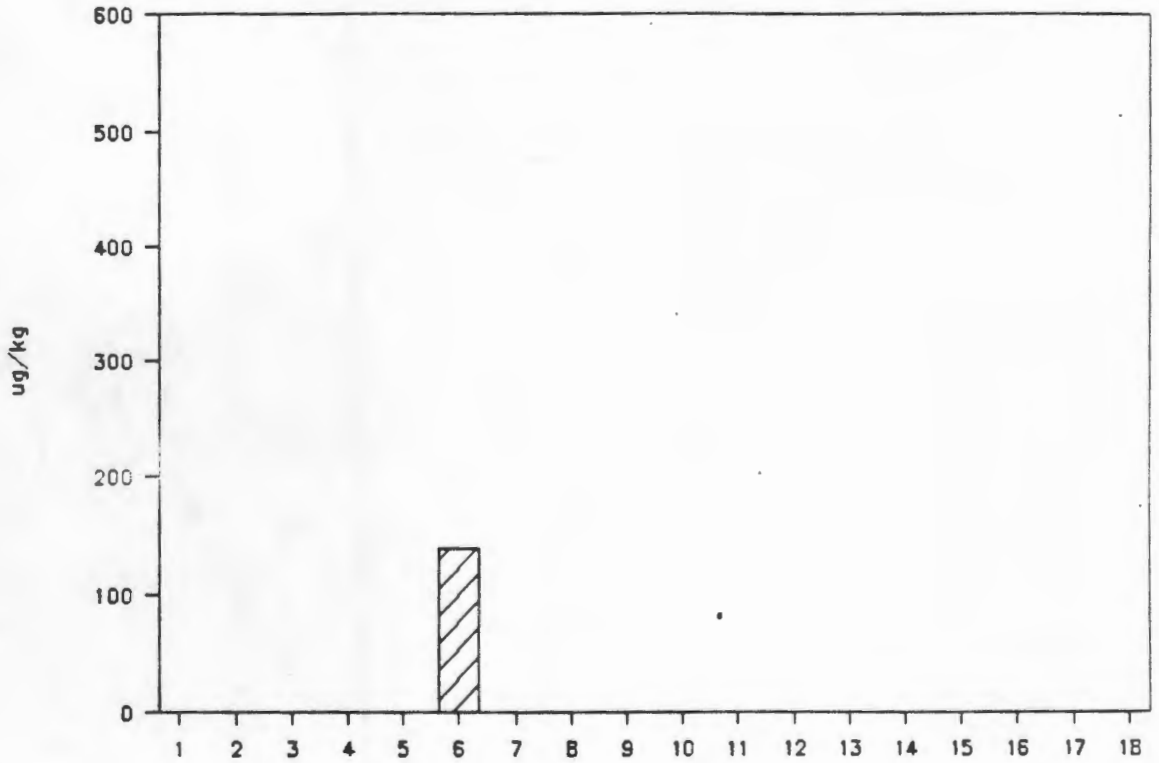

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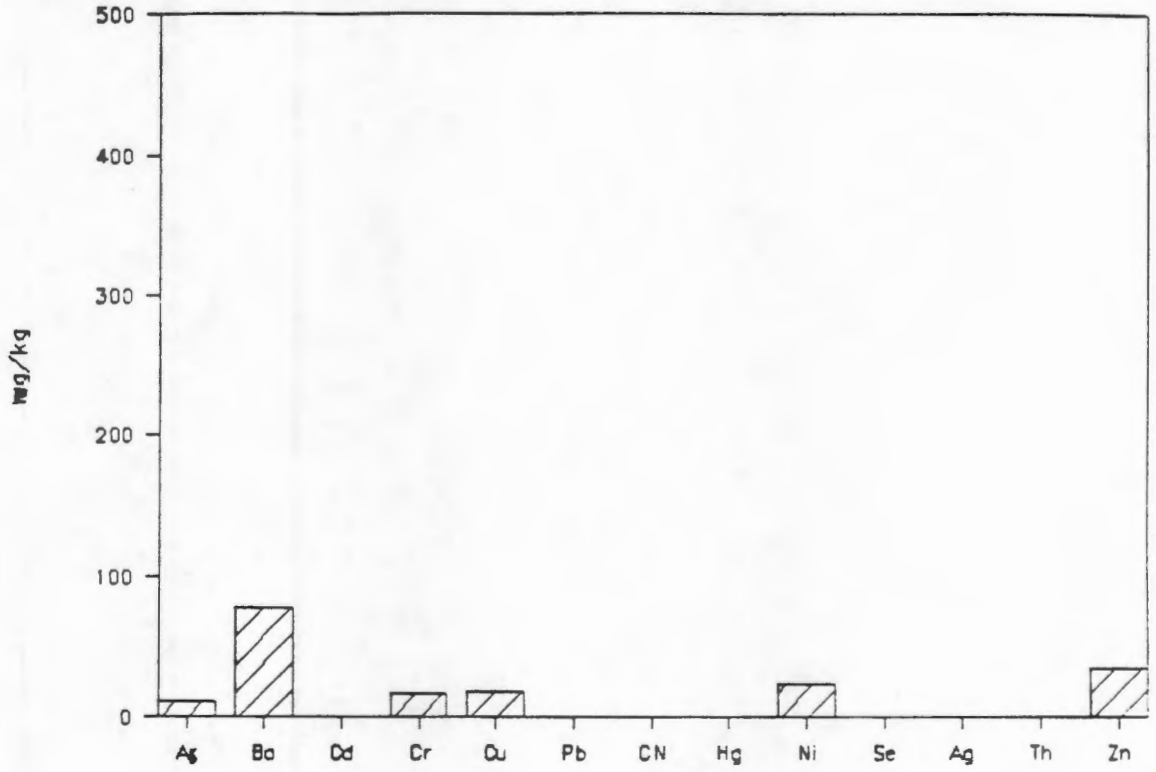

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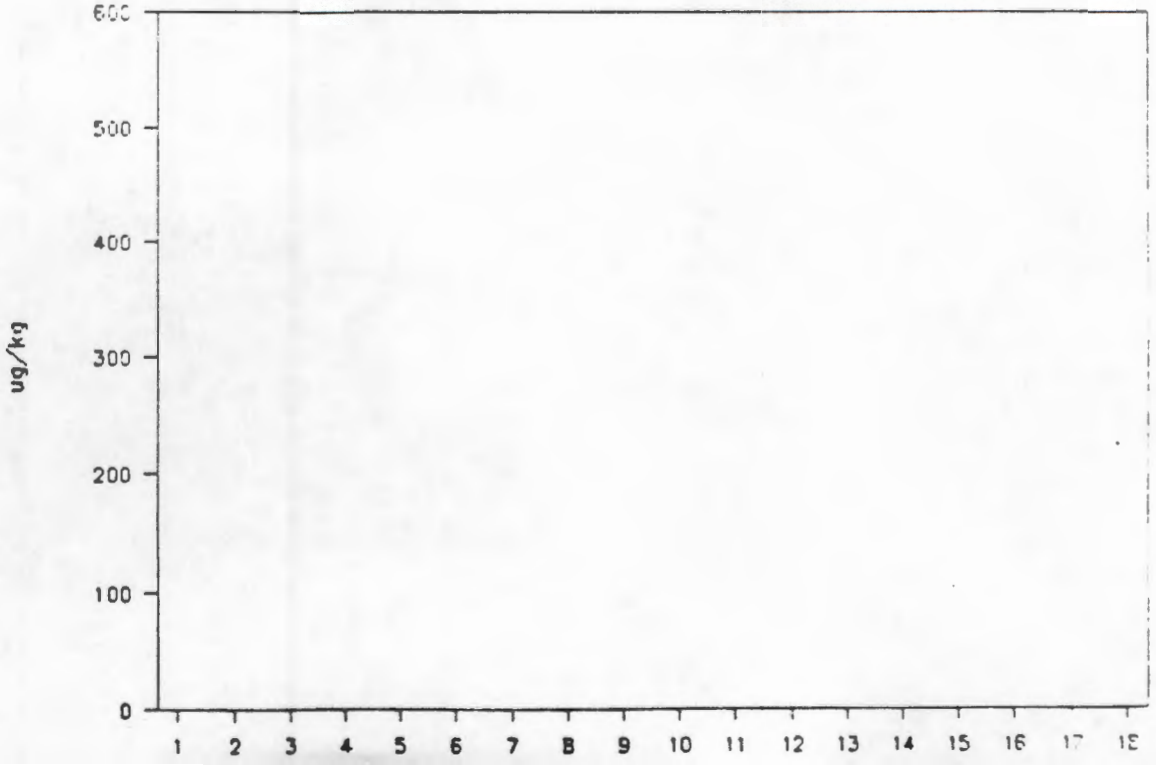

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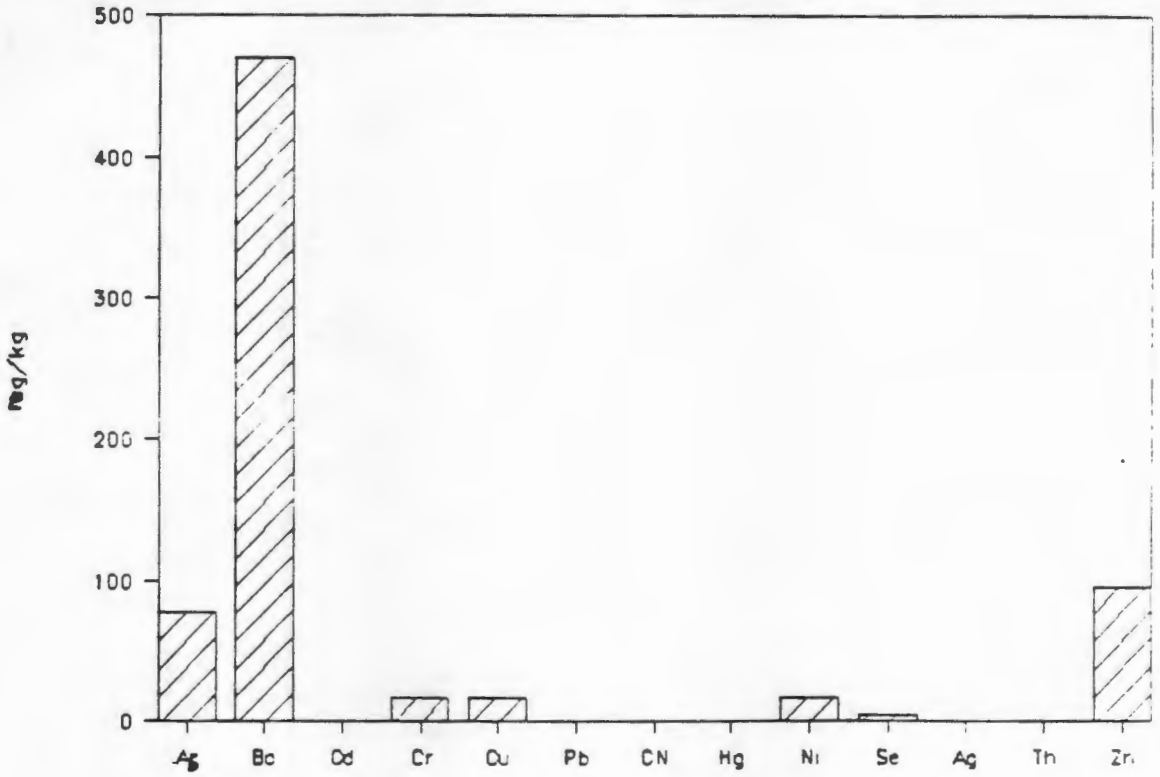

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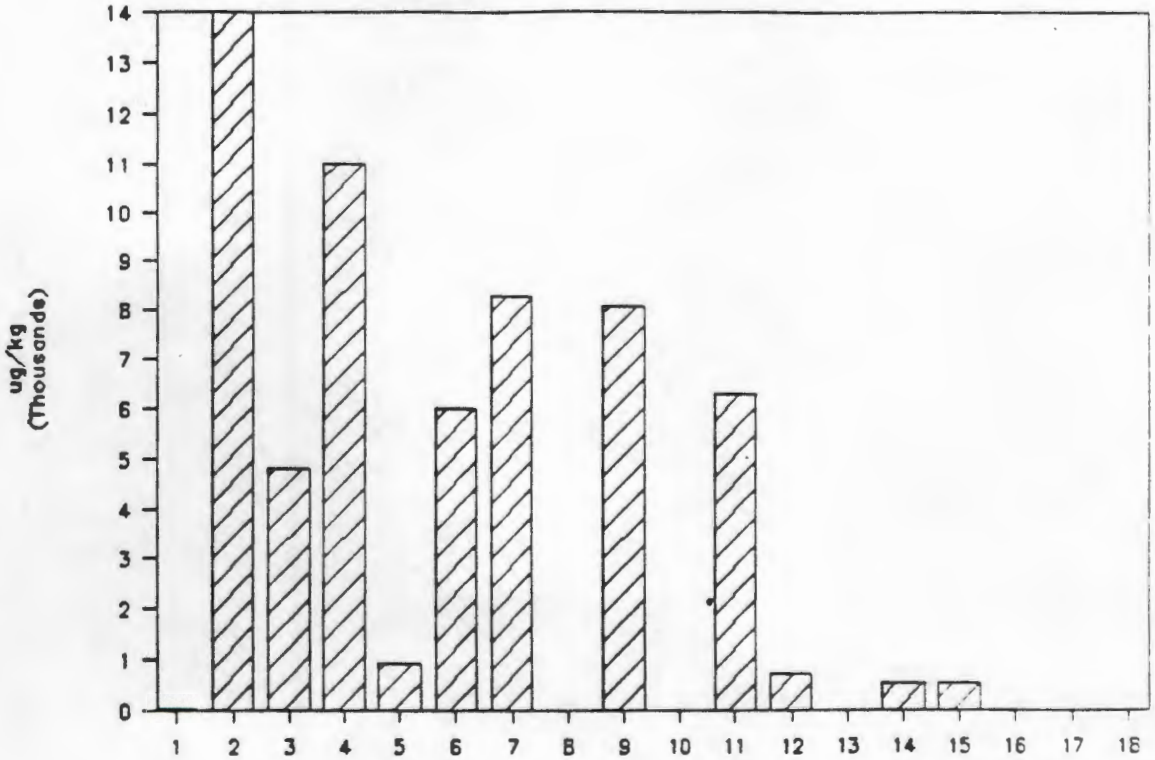

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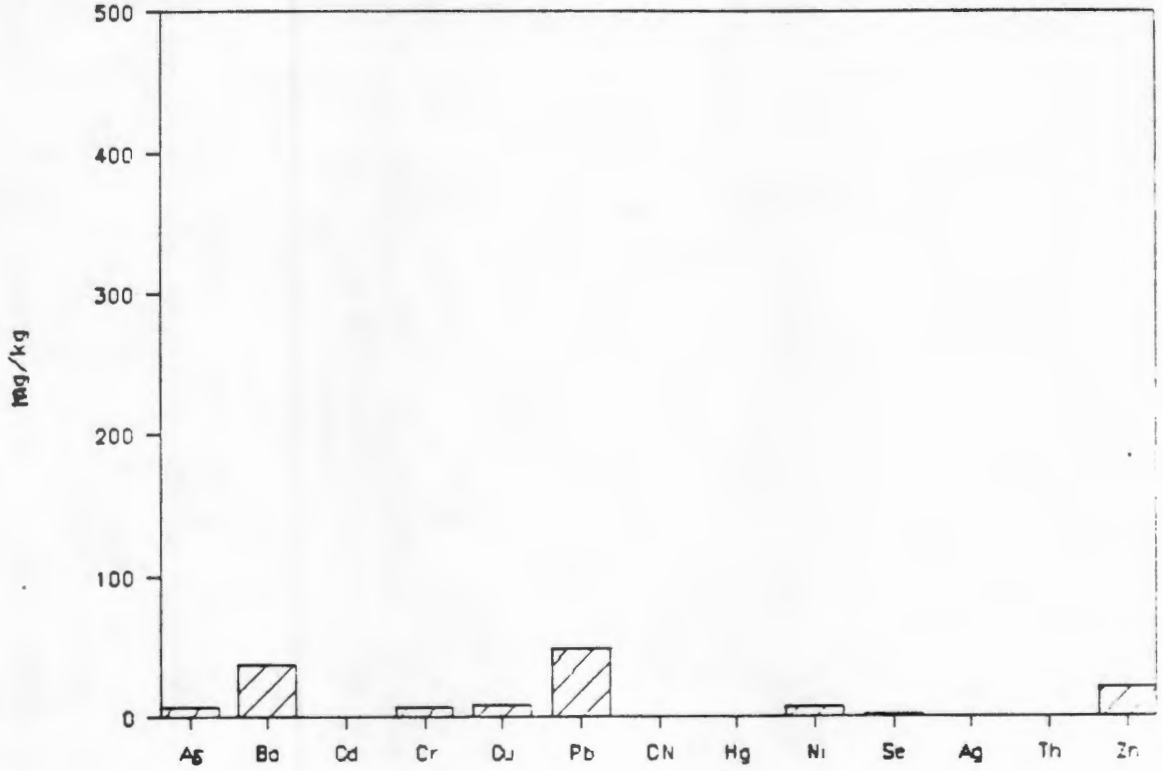

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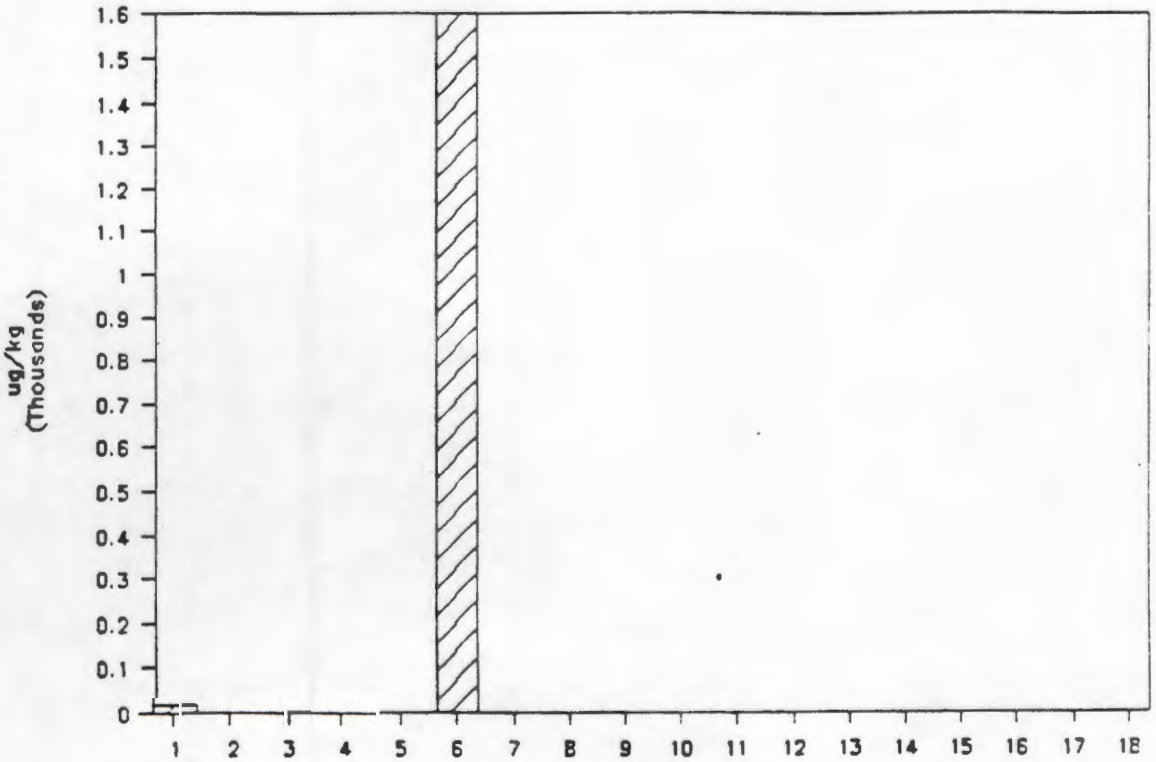

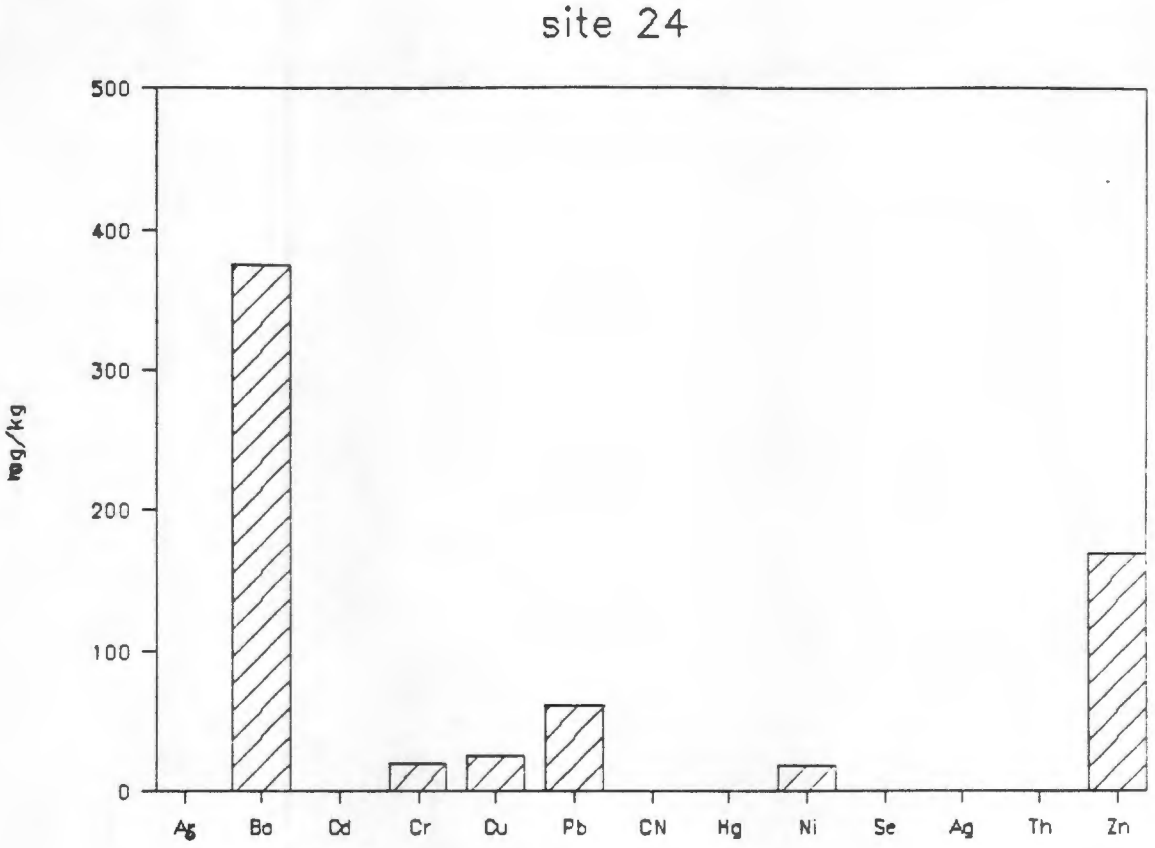
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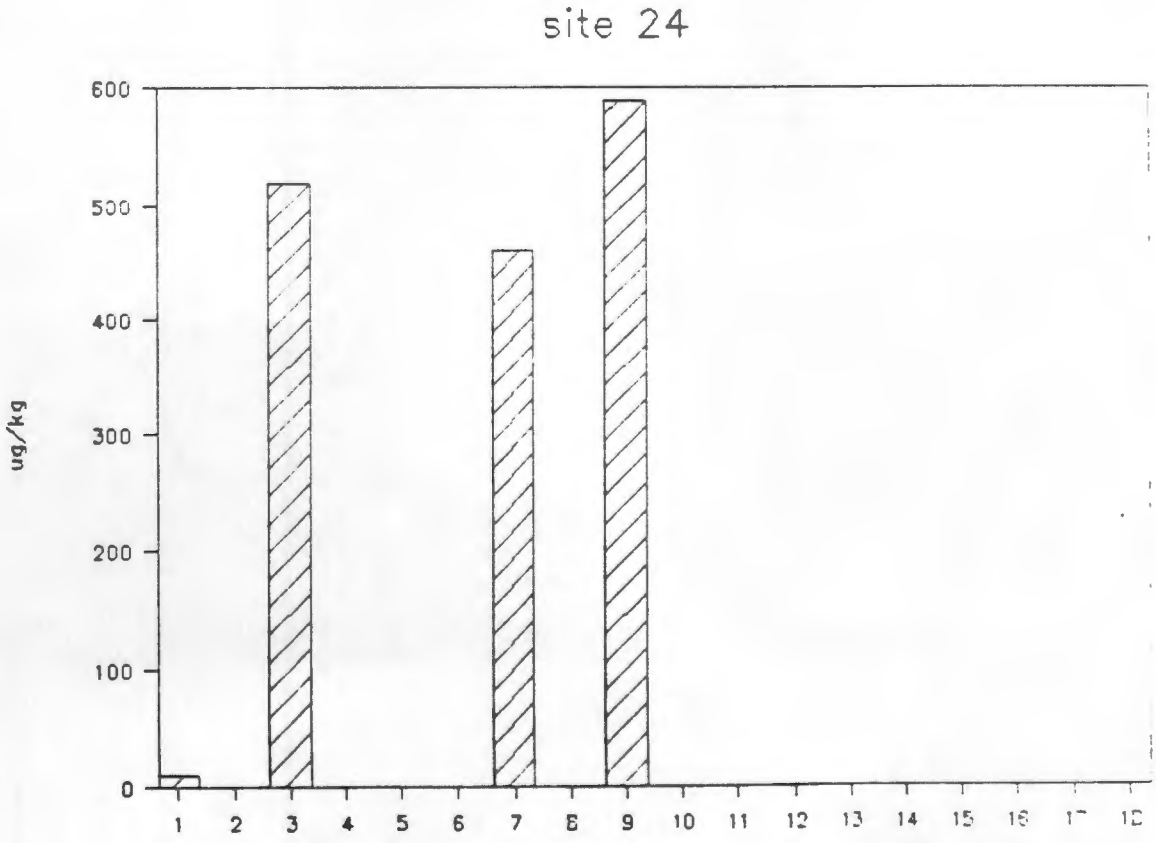
site 24
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ug/kg
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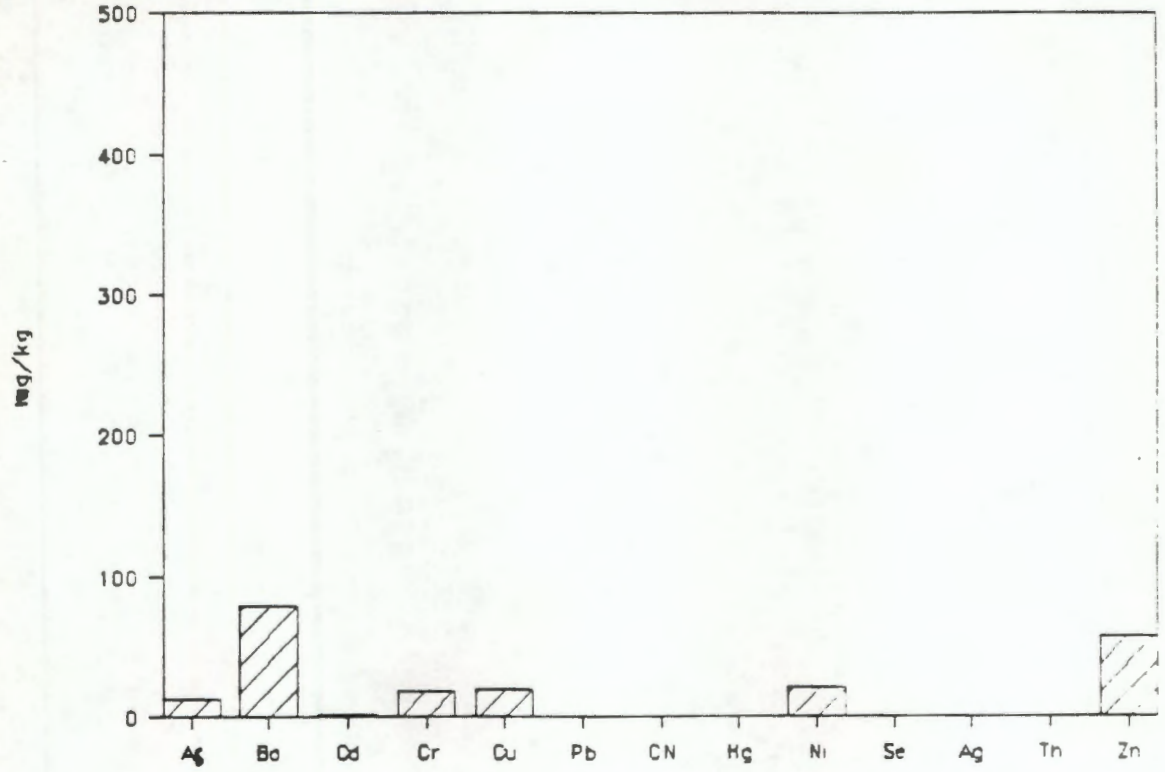
18

site 25



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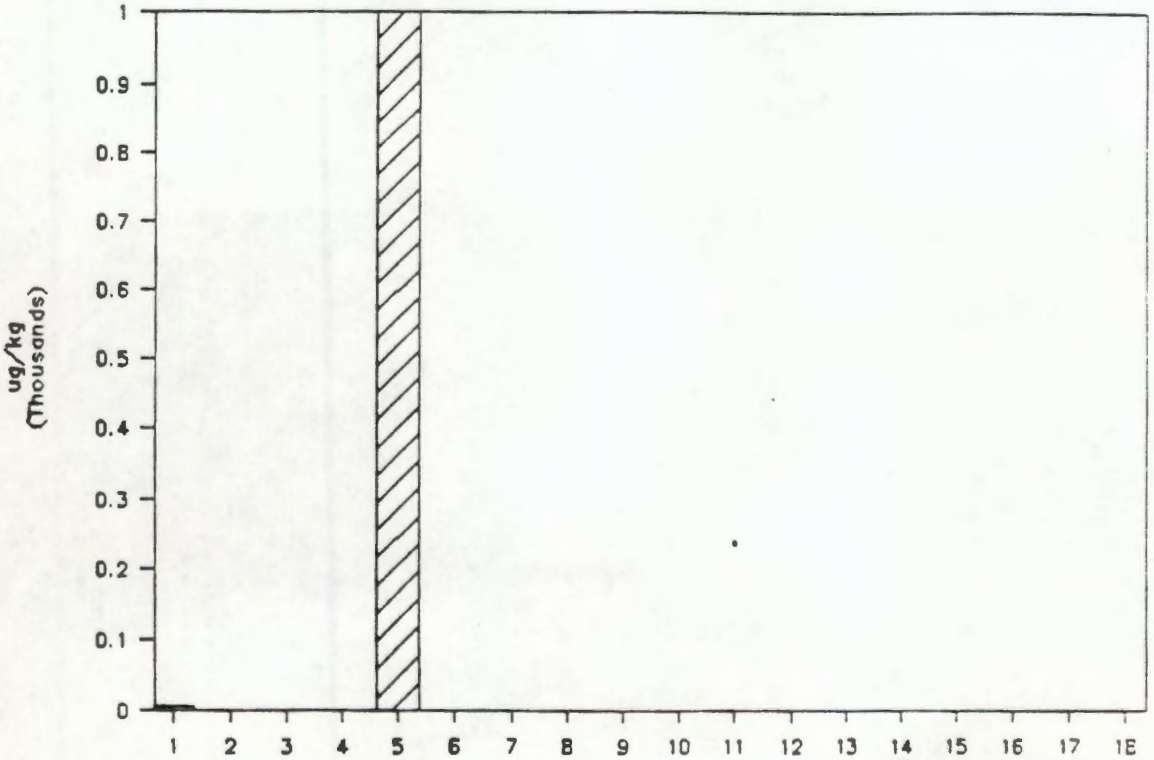

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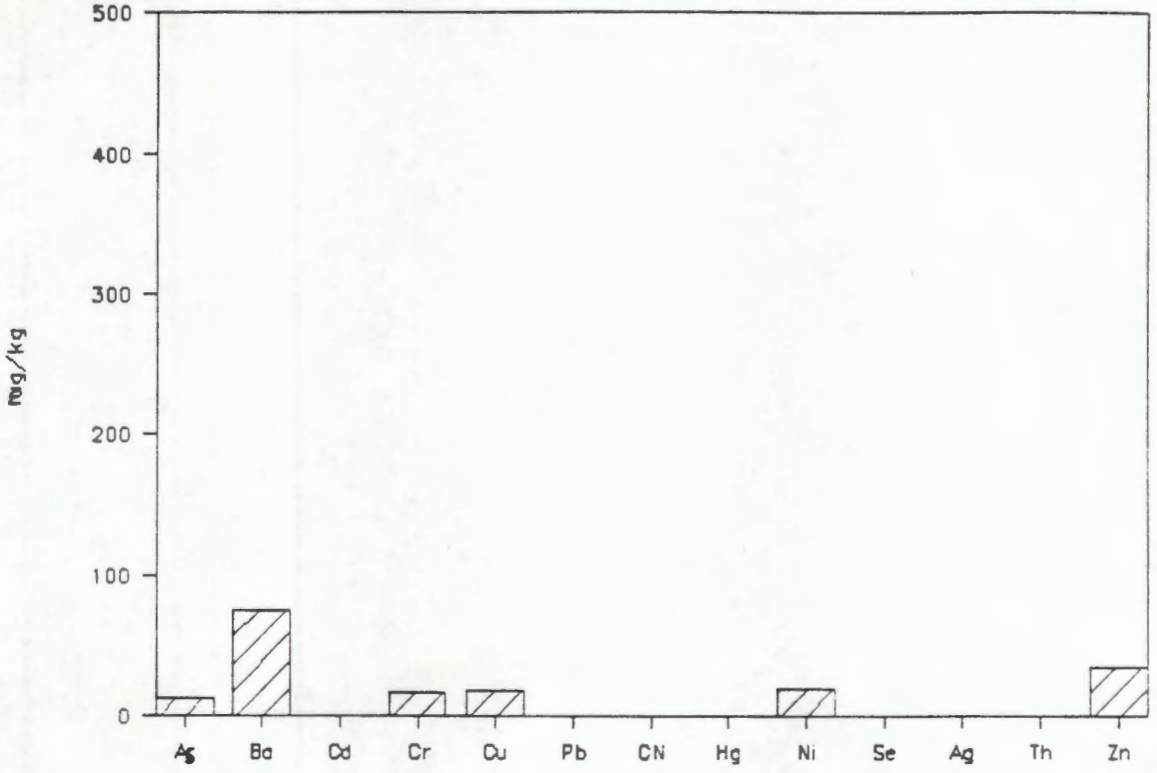

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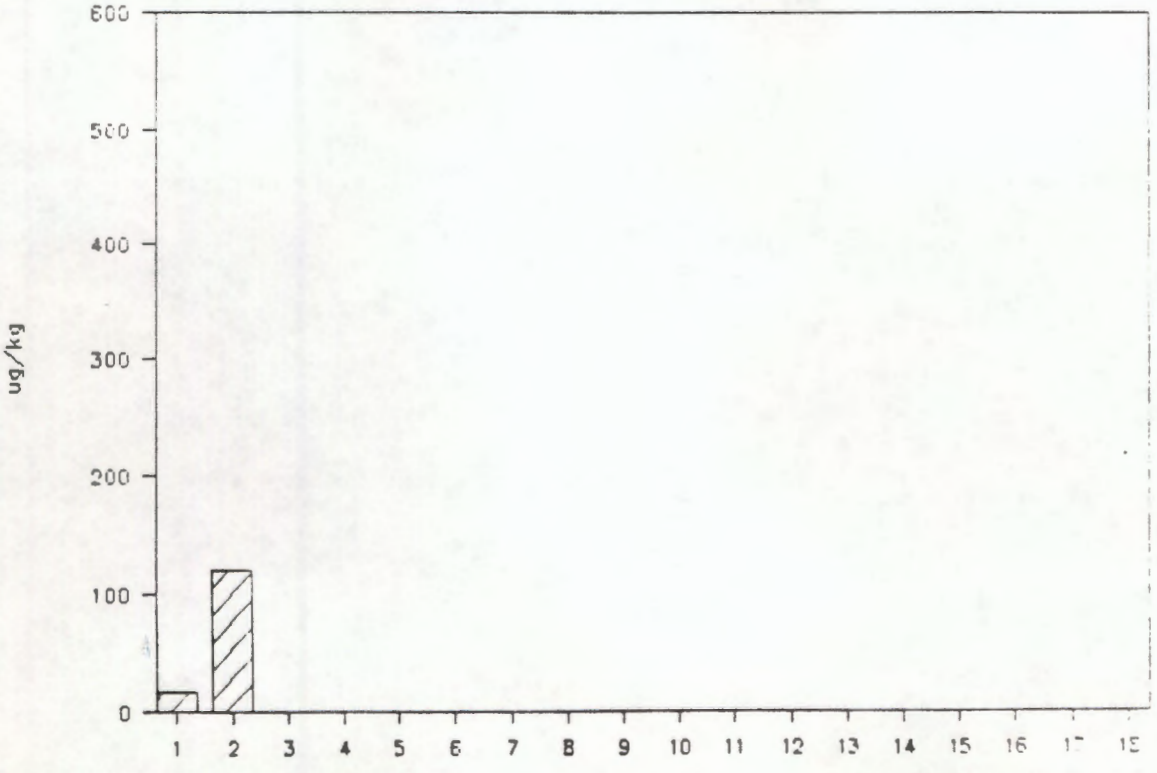

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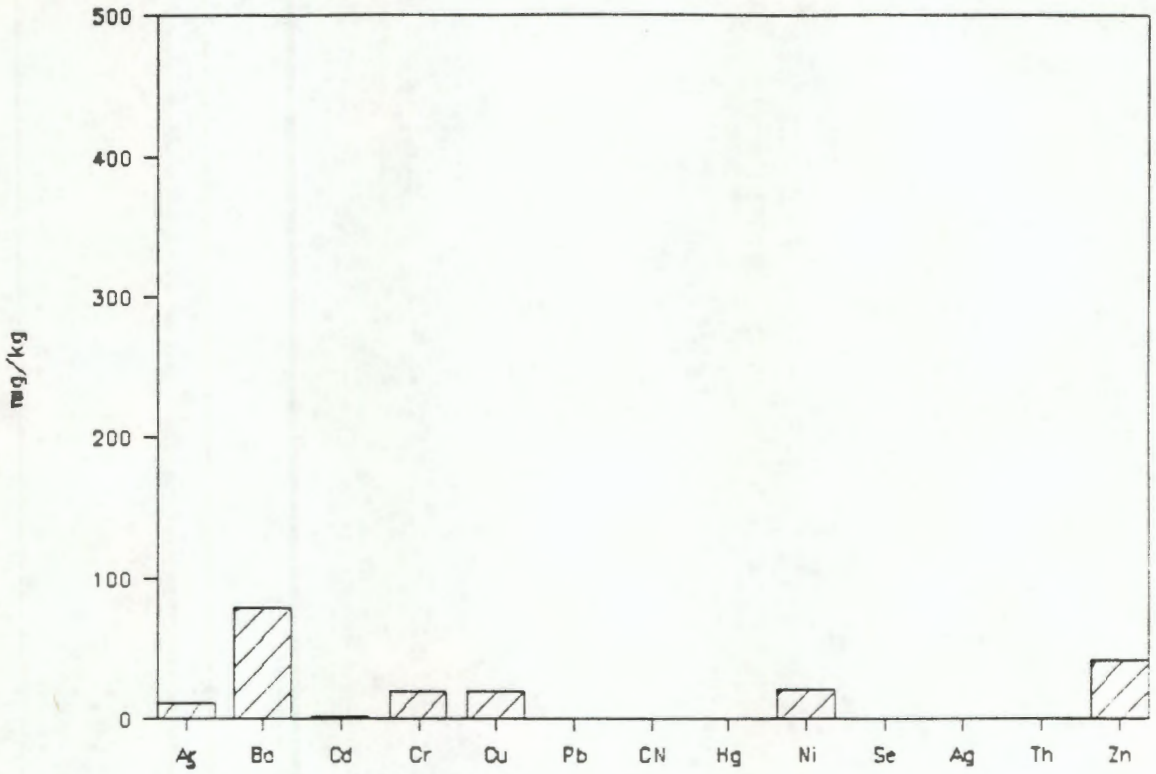

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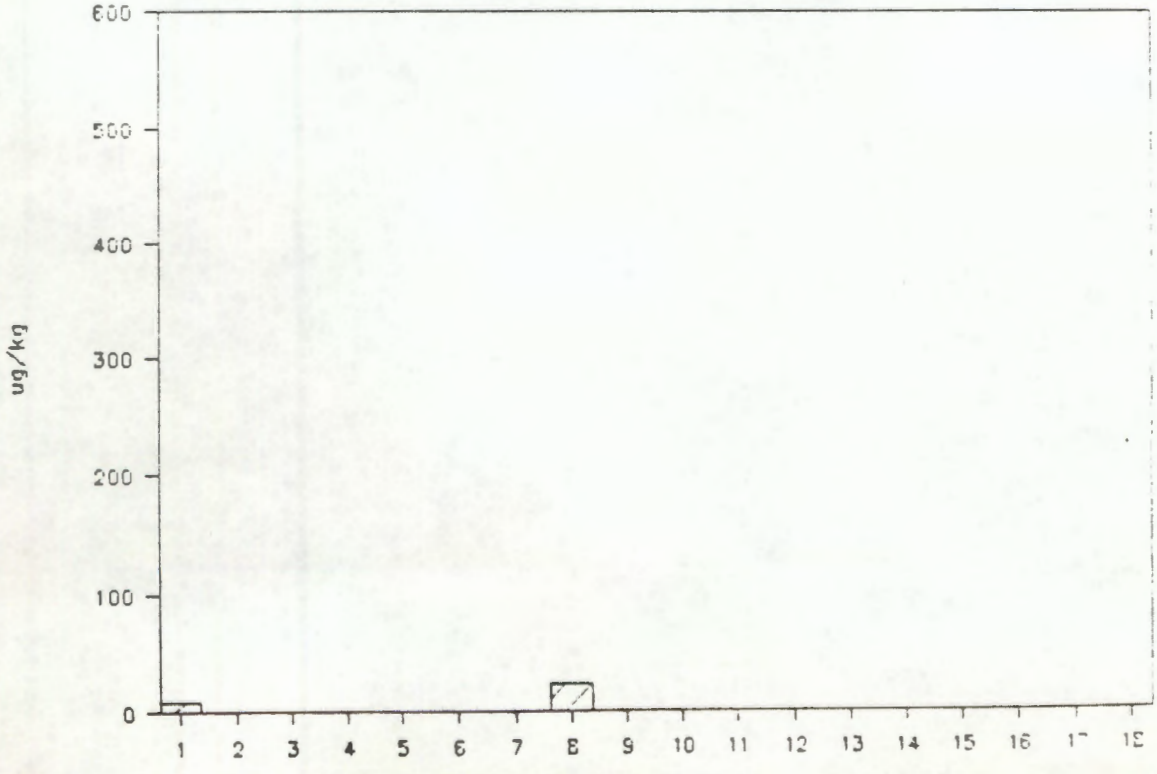


ATTACHMENT B

REM III PROGRAM FORMS

ATTACHMENT B-4
FT 13.02, REV. 1

CHAIN OF CUSTODY RECORD

ENVIRONMENTAL PROTECTION AGENCY – REGION II
SURVEILLANCE & ANALYSIS DIVISION
EDISON, NEW JERSEY 08817

Name of Unit and Address		
Sample Number	Number of Containers	Description of Sample

Person Assuming Responsibility for Sample	Time	Date

Sample Number	Relinquished By	Received By	Time	Date	Reason for Change of Custody
Sample Number	Relinquished By	Received By	Time	Date	Reason for Change of Custody
Sample Number	Relinquished By	Received By	Time	Date	Reason for Change of Custody
Sample Number	Relinquished By	Received By	Time	Date	Reason for Change of Custody

Page No.

ANALYTICAL SERVICES REQUEST NO. ____

☐ ROUTINE ☐ QUICK TURNAROUND ☐ EMERGENCY

DATE: _____ REQUESTED BY: _____

SAMPLING DATE: _____

SHIPPING DATE: _____

SITE/LOCATION: _____ PROJECT NUMBER: _____

_____

SMO CASE NUMBER: _____ RAS/SAS NUMBER: _____

TYPE OF SAMPLES AND NUMBER

HIGH HAZARD	☐	DRUM	☐	GROUNDWATER	☐
MEDIUM CONC.	☐	TANK	☐	SURFACE WATER	☐
LOW CONC.	☐	FILE		LEACHATE/SEEP	☐
		WIPE	☐	SOIL/SEDIMENT	☐
		OTHER	☐	AIR-TUBES	☐

BOTTLES REQUIRED

NO.	TYPE
___	_____
___	_____
___	_____
___	_____
___	_____

SHIP TO:

_____

_____

_____

_____

_____

BOTTLES ORDERED ☐

COOLER ☐

ANALYSIS REQUIRED

RAS (P.B)

(ORG) MSL TASK 1 ☐

(MET) 2 ☐

(CN,S,NH_3) 3 ☐

SMO CALLED ☐

OTHER CONTAINERS

SAMPLE PLAN PREPARED: Yes ☐ No ☐

OTHER: _____

_____

_____

_____

AIR BILL NUMBER: _____ CARRIER: _____

SHIPPED TO: _____

DOCUMENTS REQUIRED

OTR ☐	TAGS ☐	LOG BOOK ☐	INDEX ☐
ITR ☐	COC ☐	LOG SHEET ☐	
HHR ☐	SEALS ☐	WELL LOG ☐	
OTHER ☐			

PROJECT MANAGER SIGNATURE

_____

SAC/AR _____

SUPERFUND SAMPLE BOTTLE REPOSITORY
DELIVERY ORDER

ORDER NO.

Date of Order: _____ Type of Order:
Routine ☐
Fast Turnaround ☐ _____
Emergency ☐ _____ (date/time order called in)

FROM (Name): _____
Affiliation: _____
Telephone: _____
AR Signature: _____

TO: I-CHEM Research Corporation
23787-F Eichler St. - Hayward, CA 94545
Telephone: 415/782-3905

Ship the following items for arrival by: _____ (date)
(If applicable) Ship to arrive no earlier than: _____ (date)

Item No.	Description	No. of Items Per Case	No. of Cases Ordered	REPOSITORY USE ONLY No. of Cases Shipped
1	80 ounce amber glass bottle	6		
2	40-mL glass vial	72		
3	1-L polyethylene bottle	42		
4	120-mL wide-mouth glass vial	72		
5	16-oz wide-mouth glass jar	48		
6	8-oz wide-mouth glass jar	96		
7	4-oz wide-mouth glass jar	120		
8	1-L amber glass bottle	30		
9	32-oz wide-mouth glass jar	36		
—	_____	—		

Ship To: _____
(provide _____
street address) _____
_____
Attention: _____

REPOSITORY USE ONLY

Type of Shipment: Complete Order ☐ Partial Order ☐ Partial/Completes Order ☐
Carrier: _____ A/B, UPS No: _____
Date Shipped: _____ Signature: _____

DISTRIBUTION: White - Repository Copy
Pink - SMO Copy
Yellow - Repository Copy for Return to SMO
Gold - Requestor File Copy

Rev: 10/84

SUPERFUND SAMPLE BOTTLE REPOSITORY

PACKING LIST

REPOSITORY
I-CHEM Research
23787-F Eichler St.
Hayward, CA 94545
Telephone: 415/782-3905

Delivery Order No. _____
Type of Order: _____
Time: _____ (emergency only)

DESTINATION (from Delivery Order)

Name: _____
Address: _____
_____
_____
To be delivered by: _____
Telephone No: _____

The materials listed below have been shipped as requested.
Date Shipped: _____
Mode of Shipment: _____
UPS, BOL, A/B No: _____
Signature: _____

Type of Shipment: ☐ Partial ☐ Complete ☐ Partial/Completes Order

Item No.	Description	No. of Cases Shipped	Lot Number(s)	QC Clearance Number(s)
1	80 oz. glass			
2	40-mL glass			
3	1-L poly			
4	120-mL glass			
5	16-oz glass			
6	8-oz glass			
7	4-oz glass			
8	1-L glass			
9	32-oz glass			
_	_____			

AUTHORIZED REQUESTOR USE ONLY

Sign below and forward the pink copy to SMO within 7 days of shipment receipt. Keep the gold copy for your file.

The above order was received by the designee, inspected, and accepted.

Date of Receipt: _____ Requestor Signature: _____

Send pink PL copy to: USEPA Sample Management Office (SMO)
P.O. Box 818
Alexandria, Virginia 22313

Distribution: White - Repository Copy
Yellow - Designee Copy
Pink - Requestor Copy for Return to SMO
Gold - Requestor File Copy

Rev: 10/84

SAMPLE LOG SHEET

I. SAMPLE IDENTIFICATION

PROJECT SITE NAME: _____ EPA PROJECT SITE NO. _____

REM III CONTRACTOR: _____ SITE MANAGER: _____

SAMPLE NAME/NUMBER: _____ DATE ___/___/___ TIME: _____ HRS

SAMPLING LOCATION/DEPTH _____ TYPE: ___ GRAB ___ COMPOSITE

SAMPLE MATRIX: ___ SURFACE WATER ___ GROUNDWATER ___ SEDIMENT ___ SOIL

___ WASTE ___ OTHER (SPECIFY) _____

|___| ENVIRONMENTAL SAMPLE |___| HAZARDOUS SAMPLE

SAMPLED BY: (PRINT) _____ (SIGNATURE) _____

II. SAMPLE SOURCE

___ WELL ___ OUTFALL ___ LEACHATE ___ DRUM

___ BORING ___ RIVER/STREAM ___ BLDG/STRUCTURE ___ OTHER

___ TEST PIT/TRENCH ___ IMPOUNDMENT ___ TANK _____ (SPECIFY)

SOURCE DESCRIPTION _____

III. FIELD OBSERVATIONS/MEASUREMENTS

APPEARANCE/COLOR: _____

VOLATILE ORGANIC ANALYSIS (VOA): ____ HNU ____ OVA ____ OTHER

VOA READINGS: OFF SAMPLE _____ RESIPRATORY ZONE _____

LEL/O_2/H_2S READINGS: _____

RADIOACTIVITY (mR/hr): _____

pH: _____ CONDUCTIVITY: _____ TEMPERATURE: _____

SALINITY: _____ OTHER: _____

OBSERVATIONS: _____

IV. SAMPLE DISPOSITION

PRESERVATION: _____

LABORATORY NAME: _____

LABORATORY LOCATION: ___ ON-SITE ___ OFF-SITE

FORWARDED TO LABORATORY: DATE ___/___/___ TIME: _____ HRS

LABORATORY SAMPLE NO. _____ TR/SAS/ _____

CHAIN-OF-CUSTODY NO. _____ DSR NOS. _____

V. ADDITIONAL REMARKS

_____

SAMPLE LOG NOTEBOOK

TABLE OF CONTENTS

SAMPLE NUMBER	DATE SAMPLED	SAMPLE NAME	PAGE NO.

USEPA CONTRACT LABORATORY PROGRAM
SAMPLE MANAGEMENT OFFICE
P.O. BOX 818 ALEXANDRIA, VA 22313
703/557-2490 FTS 557-2490

CASE NO:

SAS NO:
(IF APPLICABLE)

ATTACHMENT B-14
FT-13.02, REV. 1

ORGANIC TRAFFIC REPORT
(FOR CLP USE ONLY)

TYPE OF ACTIVITY (CIRCLE ONE) ①
SUPERFUND—PA SI ESI RIFS RD RA ER NPLD O&M OTHER _____
NON-SUPERFUND—_____PROGRAM

SITE NAME:

CITY, STATE: SITE SPILL ID:

REGION NO: SAMPLING COMPANY ②

SAMPLER (NAME)

SHIP TO: ③

ATTN: _____

SAMPLING DATE: ④

BEGIN: _____ END: _____

DATE SHIPPED: _____ CARRIER: _____ ⑤

AIRBILL NO: _____

SAMPLE DESCRIPTION ⑥
(ENTER IN BOX A)
1. SURFACE WATER
2. GROUND WATER
3. LEACHATE
4. SOIL
5. SEDIMENT
6. OIL (SAS)
7. WASTE (SAS)

TRIPLE VOLUME REQUIRED FOR MATRIX SPIKE/DUPLICATE AQUEOUS SAMPLE

SHIP MEDIUM AND HIGH CONCENTRATION SAMPLES IN PAINT CANS

SEE REVERSE FOR ADDITIONAL INSTRUCTIONS

CLP SAMPLE NUMBER (FROM LABELS)	Ⓐ SAMPLE DESCRIPTION (FROM BOX 1) 1 2 3 4 5 6 7	Ⓑ CONCENTRATION L - LOW/MED H - HIGH (SAS)	Ⓒ RAS ANALYSIS: VOLATILE	BASE/NEUT /ACID	PESTICIDE /PCB's		Ⓓ SPECIAL HANDLING	Ⓔ STATION LOCATION

CM 001 - Water (Extractable)
CM 001 - Water (Extractable)
CM 001 - Water (Extractable)
CM 001 - Water (Extractable)
CM 001 - Water (VOA)
CM 001 - Water (VOA)
CM 001 - Soil Sediment (Extractable)
CM 001 - Soil Sediment (Extractable)
CM 001 - Soil Sediment (VOA)
CM 001 - Soil Sediment (VOA)

EPA Form 2075-7 (8-87)

USEPA CONTRACT LABORATORY PROGRAM
SAMPLE MANAGEMENT OFFICE
P.O. BOX 818 ALEXANDRIA, VA 22313
703/557-2490 FTS 557-2490

CASE NO:

SAS NO:
(IF APPLICABLE)

ATTACHMENT B-15
FT-13.02, REV. 1

INORGANIC TRAFFIC REPORT
(FOR CLP USE ONLY)

TYPE OF ACTIVITY (CIRCLE ONE) ①
SUPERFUND—PA SI ESI RIFS RD RA ER
NPLD O&M OTHER _____
NON-SUPERFUND—_____PROGRAM

SITE NAME:

CITY, STATE: SITE SPILL ID:

REGION NO: SAMPLING COMPANY ②

SAMPLER: (NAME)

SHIP TO: ③

ATTN:

SAMPLING DATE: ④

BEGIN: END:

DATE SHIPPED: CARRIER ⑤

AIRBILL NO:

SAMPLE DESCRIPTION ⑤
(ENTER IN BOX A)
1. SURFACE WATER
2. GROUND WATER
3. LEACHATE
4. SOIL
5. SEDIMENT
6. OIL (SAS)
7. WASTE (SAS)

DOUBLE VOLUME REQUIRED FOR MATRIX SPIKE/DUPLICATE AQUEOUS SAMPLE

SHIP MEDIUM AND HIGH CONCENTRATION SAMPLES IN PAINT CANS

SEE REVERSE FOR ADDITIONAL INSTRUCTIONS

CLP SAMPLE NUMBER (FROM LABELS)	Ⓐ SAMPLE DESCRIPTION (FROM BOX 1) 1 2 3 4 5 6 7	Ⓑ CONCENTRATION L = LOW M = MED H = HIGH (SAS)	Ⓒ RAS ANALYSIS: TOTAL METALS	CYANIDE	DISSOLVED METALS	HIGH ONLY (SAS): SULFIDE	pH	CONDUCTIVITY	OXIDANTS	Ⓓ SPECIAL HANDLING	Ⓔ STATION LOCATION	
[redacted]												MCL 751 - Total Metals
												MCL 751 - Total Metals
												MCL 751 - Cyanide
												MCL 751 - Cyanide
												MCL 751
												MCL 751
												MCL 751
[redacted]												

EPA Form 2075-S (8-87)

WHITE — SMO COPY PINK — CLIENT COPY WHITE — LAB COPY FOR RETURN TO SMO YELLOW — LAB COPY

page___ of ___ EPA SAMPLE SHIPPING LOG FOR ALL SAMPLES SENT THROUGH THE CONTRACT LAB PROGRAM (12/85 version)

CASE#_____ SAS#_____ SITE NAME:_____

Site Leader:_____ EPA Project Officer:_____

Phone:

SAS REQUEST:(details required)

QC SAMPLE INFO AND/OR COMMENTS	CONC. (low/ med/ high)	SAMPLE PHASE (aq/ sol)	TYPE OF REQUEST org,dio inor, SAS	SAMPLE TRAFFIC REPORT NUMBER	ORGANICS OR INORGANICS								SAS REQUEST:(details required)			
					LAB NAME	DATE SHIPPED	DATA RECEIVED XX out items not requested VOA	BNA	PEST	TCDD	METALS	CN	LAB NAME	SAS REQUEST (itemize)	DATE SHIPPED	DATA REC'D

ATTACHMENT B-21
FT-13.02, REV. 1

SUMMARY LOG OF BORING

PROJECT ______________________ BORING NO. ______________ SHEET ___ OF ___

ELEVATION ____________ GW DEPTH (FT) ____________ DRILLER ______________

TOTAL DEPTH ____________

DATE START ____________ DATE COMPLETE ____________ FIELD ENGINEER ______________ DATE/HOUR/AM-PM ____________

Depth	[illegible]	[illegible]	[illegible]	[illegible]	DESCRIPTION [illegible]	DESCRIPTION: MATERIAL CLASSIFICATION	FIELD INSTRUMENTATION: BOREHOLE [illegible]	FIELD INSTRUMENTATION: BOREHOLE [illegible]	FIELD INSTRUMENTATION: BOREHOLE [illegible]	FIELD INSTRUMENTATION: SAMPLE [illegible]	[illegible]	LABORATORY TESTS: RESULTS	LABORATORY TESTS: RESULTS	LABORATORY TESTS: RESULTS	LABORATORY TESTS: RESULTS	REMARKS
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1.0																
2.0																
3.0																
4.0																
5.0																
6.0																
7.0																
8.0																
9.0																
10.0																
11.0																
12.0																

BORING TERMINATE AT ________ FT (______________) BORING NO. ________

EBASCO

THIS FORM HAS BEEN DEVELOPED SPECIFICALLY TO CONSOLIDATE ALL DRILLING, SAMPLING, AND TESTING OPERATIONS ASSOCIATED WITH HAZARDOUS WASTE FIELD DRILLING OPERATIONS.

ATTACHMENT C-4
FT-13.02, REV. 1

ATTACHMENT B-1
FT-13.01, REV. 1

RIG SHIFT REPORT

SITE NAME_____ DATE_____ DRILLING CONTRACTOR_____
PROJECT NO._____ GEOLOGIST_____ RIG NO._____
SITE LOCATION_____ H/S TECHNICIAN_____ DRILLER_____
_____ H/S LEVEL_____ HELPER_____

DRILLERS ACTIVITIES	AM 5	6	7	8	9	10	11	12	PM 1	2	3	4	5	6	TOTAL HOURS
MOBILIZATION															
TRAVEL															
DRILLING															
STANDBY															
BREAK (H/S)															
BREAK (Other)															
RIG DOWN TIME															
DECON															
OTHER (Specify)															
														TOTAL	

* - not chargeable CHARGEABLE HOURS

MATERIAL USED

Item (Description)	Quantity Used	Not For Use In Field Check-As Per Spec

Reviewed/Approved by:

_____
Geologist

ATTACHMENT B-2
FT-13.01, REV. 1

SHIFT ACCOMPLISHMENTS

HOLE NO						
START DEPTH						
END						
BORING LOG #						
SAMPLE #						
DEPTH						
SAMPLE #						
DEPTH						
SAMPLE #						
DEPTH						
SAMPLE #						
DEPTH						

NO. HOLES COMPLETED _____ NO. SAMPLES _____ (Except QA)

NO. FEET DRILLED _____ NO. QA SAMPLES _____

COMMENTS:

GEOLOGISTS LOGBOOK CROSS REFERENCE:

ATTACHMENT C
(Sheet 1 of 2)
FT-13.01 REV. 1

WEEKLY FIELD SUMMARY REPORT

SUNDAY

Date :_____ Personnel_____ _____

Weather:_____ Onsite _____ _____

_____ _____

Site Activities:_____

_____

_____

_____

MONDAY

Date :_____ Personnel_____ _____

Weather:_____ Onsite _____ _____

_____ _____

Site Activities:_____

_____

_____

_____

TUESDAY

Date :_____ Personnel_____ _____

Weather:_____ Onsite _____ _____

_____ _____

Site Activities:_____

_____

_____

_____

WEDNESDAY

Date :_____ Personnel_____ _____

Weather:_____ Onsite _____ _____

_____ _____

Site Activities:_____

_____

_____

_____

THURSDAY

Date :_____ Personnel_____ _____

Weather:_____ Onsite _____ _____

_____ _____

Site Activities:_____

_____

_____

_____

FRIDAY

Date :_____ Personnel_____ _____

Weather:_____ Onsite _____ _____

_____ _____

Site Activities:_____

_____

_____

_____

SATURDAY

Date :_____ Personnel_____ _____

Weather:_____ Onsite _____ _____

_____ _____

Site Activities:_____

_____

_____

ATTACHMENT C

ASTM D-1586-84, STANDARD METHOD FOR
PENETRATION TEST AND SPLIT-BARREL
SAMPLING OF SOILS

Designation: D 1586 – 84

Standard Method for
PENETRATION TEST AND SPLIT-BARREL SAMPLING OF SOILS[1]

This standard is issued under the fixed designation D 1586; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

This method has been approved for use by agencies of the Department of Defense and for listing in the DOD Index of Specifications and Standards.

1. Scope

1.1 This method describes the procedure, generally known as the Standard Penetration Test (SPT), for driving a split-barrel sampler to obtain a representative soil sample and a measure of the resistance of the soil to penetration of the sampler.

1.2 *This standard may involve hazardous materials, operations, and equipment. This standard does not purport to address all of the safety problems associated with its use. It is the responsibility of whoever uses this standard to consult and establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.* For a specific precautionary statement, see 5.4.1.

1.3 The values stated in inch-pound units are to be regarded as the standard.

2. Applicable Documents

2.1 *ASTM Standards:*

D 2487 Test Method for Classification of Soils for Engineering Purposes[2]

D 2488 Practice for Description and Identification of Soils (Visual-Manual Procedure)[2]

D 4220 Practices for Preserving and Transporting Soil Samples[2]

3. Descriptions of Terms Specific to This Standard

3.1 *anvil*—that portion of the drive-weight assembly which the hammer strikes and through which the hammer energy passes into the drill rods.

3.2 *cathead*—the rotating drum or windlass in the rope-cathead lift system around which the operator wraps a rope to lift and drop the hammer by successively tightening and loosening the rope turns around the drum.

3.3 *drill rods*—rods used to transmit downward force and torque to the drill bit while drilling a borehole.

3.4 *drive-weight assembly*—a device consisting of the hammer, hammer fall guide, the anvil, and any hammer drop system.

3.5 *hammer*—that portion of the drive-weight assembly consisting of the 140 ± 2 lb (63.5 ± 1 kg) impact weight which is successively lifted and dropped to provide the energy that accomplishes the sampling and penetration.

3.6 *hammer drop system*—that portion of the drive-weight assembly by which the operator accomplishes the lifting and dropping of the hammer to produce the blow.

3.7 *hammer fall guide*—that part of the drive-weight assembly used to guide the fall of the hammer.

3.8 *N-value*—the blowcount representation of the penetration resistance of the soil. The *N*-value, reported in blows per foot, equals the sum of the number of blows required to drive the sampler over the depth interval of 6 to 18 in. (150 to 450 mm) (see 7.3).

3.9 ΔN—the number of blows obtained from each of the 6-in. (150-mm) intervals of sampler penetration (see 7.3).

3.10 *number of rope turns*—the total contact angle between the rope and the cathead at the

[1] This method is under the jurisdiction of ASTM Committee D-18 on Soil and Rock and is the direct responsibility of Subcommittee D18.02 on Sampling and Related Field Testing for Soil Investigations.

Current edition approved Sept. 11, 1984. Published November 1984. Originally published as D 1586 – 58 T. Last previous edition D 1586 – 67 (1974).

[2] *Annual Book of ASTM Standards*, Vol 04.08.

beginning of the operator's rope slackening to drop the hammer, divided by 360° (see Fig. 1).

3.11 *sampling rods*—rods that connect the drive-weight assembly to the sampler. Drill rods are often used for this purpose.

3.12 *SPT*—abbreviation for Standard Penetration Test, a term by which engineers commonly refer to this method.

4. Significance and Use

4.1 This method provides a soil sample for identification purposes and for laboratory tests appropriate for soil obtained from a sampler that may produce large shear strain disturbance in the sample.

4.2 This method is used extensively in a great variety of geotechnical exploration projects. Many local correlations and widely published correlations which relate SPT blowcount, or *N*-value, and the engineering behavior of earthworks and foundations are available.

5. Apparatus

5.1 *Drilling Equipment*—Any drilling equipment that provides at the time of sampling a suitably clean open hole before insertion of the sampler and ensures that the penetration test is performed on undisturbed soil shall be acceptable. The following pieces of equipment have proven to be suitable for advancing a borehole in some subsurface conditions.

5.1.1 *Drag, Chopping, and Fishtail Bits*, less than 6.5 in. (162 mm) and greater than 2.2 in. (56 mm) in diameter may be used in conjuction with open-hole rotary drilling or casing-advancement drilling methods. To avoid disturbance of the underlying soil, bottom discharge bits are not permitted; only side discharge bits are permitted.

5.1.2 *Roller-Cone Bits*, less than 6.5 in. (162 mm) and greater than 2.2 in. (56 mm) in diameter may be used in conjunction with open-hole rotary drilling or casing-advancement drilling methods if the drilling fluid discharge is deflected.

5.1.3 *Hollow-Stem Continuous Flight Augers*, with or without a center bit assembly, may be used to drill the boring. The inside diameter of the hollow-stem augers shall be less than 6.5 in. (162 mm) and greater than 2.2 in. (56 mm).

5.1.4 *Solid, Continuous Flight, Bucket and Hand Augers*, less than 6.5 in. (162 mm) and greater than 2.2 in. (56 mm) in diameter may be used if the soil on the side of the boring does not cave onto the sampler or sampling rods during sampling.

5.2 *Sampling Rods*—Flush-joint steel drill rods shall be used to connect the split-barrel sampler to the drive-weight assembly. The sampling rod shall have a stiffness (moment of inertia) equal to or greater than that of parallel wall "A" rod (a steel rod which has an outside diameter of 1⅝ in. (41.2 mm) and an inside diameter of 1⅛ in. (28.5 mm).

NOTE 1—Recent research and comparative testing indicates the type rod used, with stiffness ranging from "A" size rod to "N" size rod, will usually have a negligible effect on the *N*-values to depths of at least 100 ft (30 m).

5.3 *Split-Barrel Sampler*—The sampler shall be constructed with the dimensions indicated in Fig. 2. The driving shoe shall be of hardened steel and shall be replaced or repaired when it becomes dented or distorted. The use of liners to produce a constant inside diameter of 1⅜ in. (35 mm) is permitted, but shall be noted on the penetration record if used. The use of a sample retainer basket is permitted, and should also be noted on the penetration record if used.

NOTE 2—Both theory and available test data suggest that *N*-values may increase between 10 to 30 % when liners are used.

5.4 *Drive-Weight Assembly*:

5.4.1 *Hammer and Anvil*—The hammer shall weigh 140 ± 2 lb (63.5 ± 1 kg) and shall be a solid rigid metallic mass. The hammer shall strike the anvil and make steel on steel contact when it is dropped. A hammer fall guide permitting a free fall shall be used. Hammers used with the cathead and rope method shall have an unimpeded overlift capacity of at least 4 in. (100 mm). For safety reasons, the use of a hammer assembly with an internal anvil is encouraged.

NOTE 3—It is suggested that the hammer fall guide be permanently marked to enable the operator or inspector to judge the hammer drop height.

5.4.2 *Hammer Drop System*—Rope-cathead, trip, semi-automatic, or automatic hammer drop systems may be used, providing the lifting apparatus will not cause penetration of the sampler while re-engaging and lifting the hammer.

5.5 *Accessory Equipment*—Accessories such as labels, sample containers, data sheets, and groundwater level measuring devices shall be provided in accordance with the requirements of the project and other ASTM standards.

6. Drilling Procedure

6.1 The boring shall be advanced incrementally to permit intermittent or continuous sampling. Test intervals and locations are normally stipulated by the project engineer or geologist. Typically, the intervals selected are 5 ft (1.5 mm) or less in homogeneous strata with test and sampling locations at every change of strata.

6.2 Any drilling procedure that provides a suitably clean and stable hole before insertion of the sampler and assures that the penetration test is performed on essentially undisturbed soil shall be acceptable. Each of the following procedures have proven to be acceptable for some subsurface conditions. The subsurface conditions anticipated should be considered when selecting the drilling method to be used.

6.2.1 Open-hole rotary drilling method.

6.2.2 Continuous flight hollow-stem auger method.

6.2.3 Wash boring method.

6.2.4 Continuous flight solid auger method.

6.3 Several drilling methods produce unacceptable borings. The process of jetting through an open tube sampler and then sampling when the desired depth is reached shall not be permitted. The continuous flight solid auger method shall not be used for advancing the boring below a water table or below the upper confining bed of a confined non-cohesive stratum that is under artesian pressure. Casing may not be advanced below the sampling elevation prior to sampling. Advancing a boring with bottom discharge bits is not permissible. It is not permissible to advance the boring for subsequent insertion of the sampler solely by means of previous sampling with the SPT sampler.

6.4 The drilling fluid level within the boring or hollow-stem augers shall be maintained at or above the in situ groundwater level at all times during drilling, removal of drill rods, and sampling.

7. Sampling and Testing Procedure

7.1 After the boring has been advanced to the desired sampling elevation and excessive cuttings have been removed, prepare for the test with the following sequence of operations.

7.1.1 Attach the split-barrel sampler to the sampling rods and lower into the borehole. Do not allow the sampler to drop onto the soil to be sampled.

7.1.2 Position the hammer above and attach the anvil to the top of the sampling rods. This may be done before the sampling rods and sampler are lowered into the borehole.

7.1.3 Rest the dead weight of the sampler, rods, anvil, and drive weight on the bottom of the boring and apply a seating blow. If excessive cuttings are encountered at the bottom of the boring, remove the sampler and sampling rods from the boring and remove the cuttings.

7.1.4 Mark the drill rods in three successive 6-in. (0.15-m) increments so that the advance of the sampler under the impact of the hammer can be easily observed for each 6-in. (0.15-m) increment.

7.2 Drive the sampler with blows from the 140-lb (63.5-kg) hammer and count the number of blows applied in each 6-in. (0.15-m) increment until one of the following occurs:

7.2.1 A total of 50 blows have been applied during any one of the three 6-in. (0.15-m) increments described in 7.1.4.

7.2.2 A total of 100 blows have been applied

7.2.3 There is no observed advance of the sampler during the application of 10 successive blows of the hammer.

7.2.4 The sampler is advanced the complete 18 in. (0.45 m) without the limiting blow counts occurring as described in 7.2.1, 7.2.2, or 7.2.3.

7.3 Record the number of blows required to effect each 6 in. (0.15 m) of penetration or fraction thereof. The first 6 in. is considered to be a seating drive. The sum of the number of blows required for the second and third 6 in. of penetration is termed the "standard penetration resistance", or the "*N*-value". If the sampler is driven less than 18 in. (0.45 m), as permitted in 7.2.1, 7.2.2, or 7.2.3, the number of blows per each complete 6-in. (0.15-m) increment and per each partial increment shall be recorded on the boring log. For partial increments, the depth of penetration shall be reported to the nearest 1 in. (25 mm), in addition to the number of blows. If the sampler advances below the bottom of the boring under the static weight of the drill rods or the weight of the drill rods plus the static weight of the hammer, this information should be noted on the boring log.

7.4 The raising and dropping of the 140-

(63.5-kg) hammer shall be accomplished using either of the following two methods:

7.4.1 By using a trip, automatic, or semi-automatic hammer drop system which lifts the 140-lb (63.5-kg) hammer and allows it to drop 30 ± 1.0 in. (0.76 m ± 25 mm) unimpeded.

7.4.2 By using a cathead to pull a rope attached to the hammer. When the cathead and rope method is used the system and operation shall conform to the following:

7.4.2.1 The cathead shall be essentially free of rust, oil, or grease and have a diameter in the range of 6 to 10 in. (150 to 250 mm).

7.4.2.2 The cathead should be operated at a minimum speed of rotation of 100 RPM, or the approximate speed of rotation shall be reported on the boring log.

7.4.2.3 No more than 2¼ rope turns on the cathead may be used during the performance of the penetration test, as shown in Fig. 1.

NOTE 4—The operator should generally use either 1¾ or 2¼ rope turns, depending upon whether or not the rope comes off the top (1¾ turns) or the bottom (2¼ turns) of the cathead. It is generally known and accepted that 2¾ or more rope turns considerably impedes the fall of the hammer and should not be used to perform the test. The cathead rope should be maintained in a relatively dry, clean, and unfrayed condition.

7.4.2.4 For each hammer blow, a 30-in. (0.76-m) lift and drop shall be employed by the operator. The operation of pulling and throwing the rope shall be performed rhythmically without holding the rope at the top of the stroke.

7.5 Bring the sampler to the surface and open. Record the percent recovery or the length of sample recovered. Describe the soil samples recovered as to composition, color, stratification, and condition, then place one or more representative portions of the sample into sealable moisture-proof containers (jars) without ramming or distorting any apparent stratification. Seal each container to prevent evaporation of soil moisture. Affix labels to the containers bearing job designation, boring number, sample depth, and the blow count per 6-in. (0.15-m) increment. Protect the samples against extreme temperature changes. If there is a soil change within the sampler, make a jar for each stratum and note its location in the sampler barrel.

8. Report

8.1 Drilling information shall be recorded in the field and shall include the following:

8.1.1 Name and location of job,

8.1.2 Names of crew,

8.1.3 Type and make of drilling machine,

8.1.4 Weather conditions,

8.1.5 Date and time of start and finish of boring,

8.1.6 Boring number and location (station and coordinates, if available and applicable),

8.1.7 Surface elevation, if available,

8.1.8 Method of advancing and cleaning the boring,

8.1.9 Method of keeping boring open,

8.1.10 Depth of water surface and drilling depth at the time of a noted loss of drilling fluid, and time and date when reading or notation was made,

8.1.11 Location of strata changes,

8.1.12 Size of casing, depth of cased portion of boring,

8.1.13 Equipment and method of driving sampler,

8.1.14 Type sampler and length and inside diameter of barrel (note use of liners),

8.1.15 Size, type, and section length of the sampling rods, and

8.1.16 Remarks.

8.2 Data obtained for each sample shall be recorded in the field and shall include the following:

8.2.1 Sample depth and, if utilized, the sample number,

8.2.2 Description of soil,

8.2.3 Strata changes within sample,

8.2.4 Sampler penetration and recovery lengths, and

8.2.5 Number of blows per 6-in. (0.15-m) or partial increment.

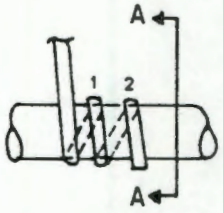
9. Precision and Bias

9.1 Variations in N-values of 100 % or more have been observed when using different standard penetration test apparatus and drillers for adjacent borings in the same soil formation. Current opinion, based on field experience, indicates that when using the same apparatus and driller, N-values in the same soil can be reproduced with a coefficient of variation of about 10 %.

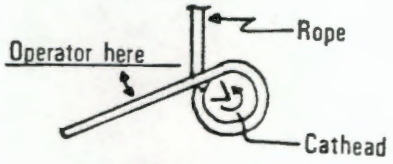
9.2 The use of faulty equipment, such as an extremely massive or damaged anvil, a rusty cathead, a low speed cathead, an old, oily rope, or massive or poorly lubricated rope sheaves can significantly contribute to differences in N-values

obtained between operator-drill rig systems.

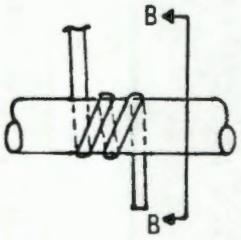
9.3 The variability in *N*-values produced by different drill rigs and operators may be reduced by measuring that part of the hammer energy delivered into the drill rods from the sampler and adjusting *N* on the basis of comparative energies. A method for energy measurement and *N*-value adjustment is currently under development.



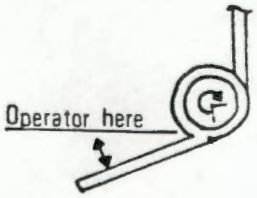
(*a*) counterclockwise rotation approximately 1¾ turns



Section A–A

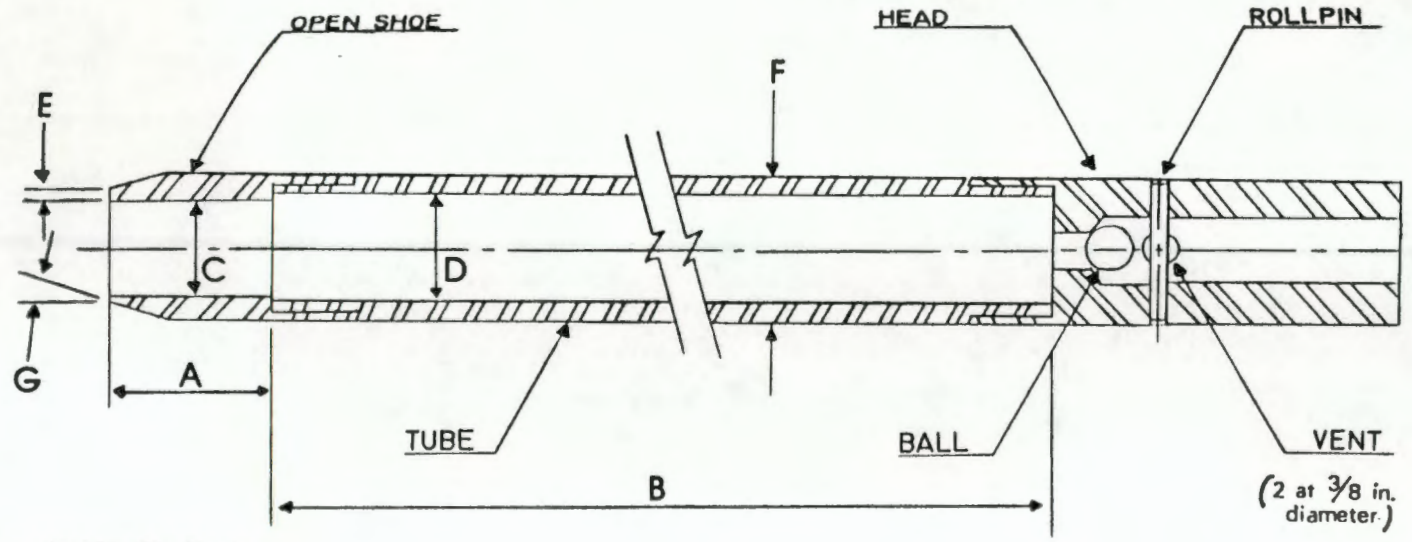


(*b*) clockwise rotation approximately 2¼ turns



Section B–B

FIG. 1 Definitions of the Number of Rope Turns and the Angle for (*a*) Counterclockwise Rotation and (*b*) Clockwise Rotation of the Cathead



A = 1.0 to 2.0 in. (25 to 50 mm)
B = 18.0 to 30.0 in. (0.457 to 0.762 m)
C = 1.375 ± 0.005 in. (34.93 ± 0.13 mm)
D = 1.50 ± 0.05 − 0.00 in. (38.1 ± 1.3 − 0.0 mm)
E = 0.10 ± 0.02 in. (2.54 ± 0.25 mm)
F = 2.00 ± 0.05 − 0.00 in. (50.8 ± 1.3 − 0.0 mm)
G = 16.0° to 23.0°

The 1½ in. (38 mm) inside diameter split barrel may be used with a 16-gage wall thickness split liner. The penetrating end of the drive shoe may be slightly rounded. Metal or plastic retainers may be used to retain soil samples.

FIG. 2 Split-Barrel Sampler

ATTACHMENT D

HEALTH AND SAFETY PLAN

SITE-SPECIFIC HEALTH AND SAFETY PLAN FOR REM III HAZARDOUS WASTE SITE ACTIVITIES

SITE: CLOTHIER

LOCATION: GRANBY, OSWEGO COUNTY, NEW YORK

DATE PREPARED: _____

PREPARED BY: VIRGINIA E. BARNETT/EBASCO
(NAME/COMPANY)

PLANNED SITE ACTIVITY DATES: February 16, 1988 to February 26, 1988

REVISION: 0

EBASCO SERVICES INCORPORATED, EBASCO SUBCONTRACTORS AND THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY DO NOT GUARANTEE THE HEALTH OR SAFETY OF ANY PERSON ENTERING THIS SITE. DUE TO THE HAZARDOUS NATURE OF THIS SITE AND THE ACTIVITY OCCURRING THEREON, IT IS NOT POSSIBLE TO DISCOVER, EVALUATE, AND PROVIDE PROTECTION FOR ALL POSSIBLE HAZARDS WHICH MAY BE ENCOUNTERED. STRICT ADHERENCE TO THE HEALTH AND SAFETY GUIDELINES SET FORTH HEREIN WILL REDUCE, BUT NOT ELIMINATE, THE POTENTIAL FOR INJURY AT THIS SITE. THE HEALTH AND SAFETY GUIDELINES IN THIS PLAN WERE PREPARED SPECIFICALLY FOR THIS SITE AND SHOULD NOT BE USED ON ANY OTHER SITE WITHOUT PRIOR RESEARCH AND EVALUATION BY TRAINED HEALTH AND SAFETY SPECIALISTS.

TABLE OF CONTENTS

SECTION I: GENERAL

This plan has been prepared in conformance to REM III Program Guideline HS-1.01. It addresses all those activities associated with RI/FS at the Clothier Site, Oswego County Granby, New York and will be implemented by the HSO during site work. Compliance with this HASP is required of all persons and third parties who enter this site. Assistance in implementing this Plan can be obtained from the REM III Health and Safety Manager (HSM), and/or the Ebasco Company Health and Safety Supervisor (CHSS). The content of this HASP may change or undergo revision based upon additional information made available to health and safety (H&S) personnel, monitoring results or changes in the technical scope of work. Any changes proposed must be reviewed by H&S staff and are subject to approval of the Ebasco CHSS, and the HSM.

SITE Clothier SITE NO. 4236-319

PLAN DATE

SCOPE OF WORK RI/FS

	SITE MANAGER	HEALTH AND SAFETY OFFICER
NAME	Dennis Beissel	Virginia Barnett
WORK PHONE	703-558-7555	201-460-6297

EMERGENCY PHONE NUMBERS

Fulton	Police Dept.	315-343-1212
Fulton	Fire Dept.	315-592-9575
Ambulance	Rescue Service	315-592-4145
Lee Memorial	Hospital	315-592-2224
	Back-up Hospital	
	National Response Center	(800) 424-8802
	Poison Control Center	
Bill Beckett	CHSS	201-460-6255
	REM III Regional Manager	
Dev Sachdev	Field Operations Leader	201-460-6454
	REM III HSM (G. Smith or J. Janous)	(703) 558-7506
	Community Relations Coordinator	
County Fire Control	Offsite Emergency Services	315-343-8571
	Site Command Post	
NY State Police		315-593-1223

SECTION II: HEALTH AND SAFETY PERSONNEL

2.0 Health and Safety Personnel Designations

The following briefly describes the health and safety designations and general responsibilities which may be employed for the Clothier Site. (When preparing plan, delete all personnel not appropriate to this site).

2.1 Company Health and Safety Supervisor

The CHSS has overall responsibility for development and implementation of this HASP. He also shall approve any changes to this plan due to modification of procedures or newly proposed site activities.

The CHSS will be responsible for the development of new company safety protocols and procedures necessary for field operations and will also be responsible for the resolution of any outstanding safety issues which arise during the conduct of site work. Health and safety-related duties and responsibilities will be assigned only to qualified individuals by the Ebasco CHSS. Before personnel may work on site, currentness of acceptable medical examination and acceptability of health and safety training must be approved by the CHSS.

2.2 Site Health and Safety Officer

The HSO will be present onsite during the conduct of all level A, or B, or high-hazard level C field operations and will be responsible for all health and safety activities and the delegation of duties to the H&S staff in the field. Where the site is identified as low-hazard level C or level D, the HSO may direct the site health and safety efforts through an assistant health and safety officer approved by the CHSS. The assistant will be responsible for implementation of the HASP. He may direct or participate in downrange activities as appropriate when this does not interfere with his primary HSO responsibility. The HSO has stop-work authorization which he will execute upon his determination of an imminent safety hazard, emergency situation, or other potentially dangerous situations, such as detrimental weather conditions. Authorization to proceed with work will be issued by the CHSS after such action. The HSO will initiate and execute all contact with support facilities and personnel when this action is appropriate.

2.3 Assistant Health and Safety Officer

An Assistant HSO may be designated. On low-hazard level C or level D site he may have collateral duties but must be qualified for the health and safety responsibility by the CHSS. At level A, B or high-hazard level C sites, he will be

the down range person who accompanies field sampling teams and will report to the HSO. Additionally, he may be required to support the HSO when multiple operations are conducted that require monitoring and HSO surveillance. His primary responsibility is to provide the appropriate monitoring to ensure the safe conduct of field operations. He will have access to continuous communications with the Command Post. The number of Assistant HSO's will be dependent upon the number of downrange operations occurring simultaneously, site level of protection designation, and the individual assignments made by the HSO. The Assistant HSO will also share responsibility with the Field Operations Lead and the HSO for ensuring that all safety practices are utilized by downrange teams and that during emergency situations appropriate procedures are immediately and effectively initiated. He will also be responsible for the control of specific field operations and all related activities such as personnel decontamination, monitoring of worker heat or cold stress, distribution of safety equipment, and conformance with all other procedures established by the HASP.

2.4 Air Monitoring Specialist

The Air Monitoring Specialist, if needed, will perform all supplemental air monitoring necessary to support specific activities as required by the HASP. These activities will include operations where special problems exist, extensive instrumentation is required, or particularly complex operations are planned. He will provide consultation to the project team where such services are necessary to ensure that appropriate monitoring, calibration, and maintenance procedures are employed. This will include specification as to type of instrumentation and procedures to be employed to make sure of its proper use.

SECTION III: SITE HISTORY AND PHYSICAL DESCRIPTION

3.1 Location

The Clothier site is located on the south side of South Granby Rd. near the bridge crossing of Ox creek in the town of Granby, Oswego County, N.Y. It is about 7 miles south of the city of Granby, 18 miles NW of the City of Syracuse and 16 miles SE of Lake Ontario. The site is near the northern edge of the Lipander, N.Y. 7-1/2 minutes U.S. Geological Survey (USGS) topographic quadrangle.

3.2 Description

The site is a privately-owned 15-acre rural dumpsite of which approximately 16 acres have been used for waste disposal. The waste includes demolition debris household waste, junked vehicles and approximately 2,000 drums from a hazardous waste facility. Pollution Abatement Services Inc. (PAS) in the town of Oswego, N.Y.

The site consists of a large swampy area along the edges of Ox Creek, and the adjacent lands to the east which lie about 5-15 feet above the swamp. A distinct slope marks the break between the swamp and higher lands to the east. The land surface rises gradually to the east of the site to two low broad hills. A gentle swale separates these two hills and passes from east to west toward the swamp through the middle of the site.

The drums on-site contained a variety of waste types most of which could be broadly classified as phenolic tars or resins. A number also contained dry powders, oils and water free-flowing liquids. Many drums had deteriorated and spillage from them onto the ground was common. As a result, the soil has become contaminated over a large portion of the 6 acre area that was used for waste disposal activities. Migration of the contaminants has also affected adjacent Ox Creek and a designated freshwater wetland area. As part of a USEPA emergency removal action in 1986 and 1987, all but sixty of the drums have been removed. The other refuse located on-site remains as does the subsurface contamination caused by leakage after spillage of the drums.

3.2 History

In 1971, the owner of the Clothier site submitted an application to the NYSDEC for a permit to establish a refuse disposal facility. Following a site inspection the NYSDOH ruled the site unsuitable for the disposal of any solid waste material and denied the landfill permit. Written notice was also sent to the site owner by the NYSDEC cautioning against landfill operations without a permit. However, the site continued to be used for dumping from the early 1970's - 1984, as was evidenced by the presence of household wastes and demolition debris. The NYSDEC brought suit against the owner of the site in November, 1976 for operating an illegal dump and

gave him one year to complete the cleanup. In 1977, an attempt to corner the materials dumped resulted in drums being broken open and drained. By the spring of 1980, an estimated 1,500 drums of chemical waste remained, many leaking and giving off solvent odors. Periodic inspections by the Oswego County Health Dept. began in 1982. Due to difficulties in gaining access to the site, investigations were limited to observations conducted from S. Granby Rd. in June 1983, a NYS SF Phase I investigation prepared for the NYSDEC recommended increased investigation of the site and installation of a groundwater monitoring system. On October 1984 inspection indicated additional dumping had occurred with no appreciable sign of drum disturbance. A very strong chemical odor was also present. Additional dumping continued and during RI field activities in the fall of 1985, a number of junked vehicles were brought to and disposed of on the site.

Refer to Section 3.2 (description) for emergency action in 1986.

SECTION IV: SITE RELATED INCIDENTS, COMPLAINTS, AND ACTIONS

1973 - Oswego County Health Dept. - found drums of PA5 chemical wastes on the Clothier property adjacent to Ox Creek and CHD requested that the NYSDEC investigate the presence of these drums.

1976 - Site inspection of the NYSDEC - no sampling occurred but a strong chemical odor present and a small pond on-site appeared to be contaminated. Refer to Section 3.3 for NYSDEC action.

1978 - NYSDOH/OCHD collected composite surface soil and water samples. Analysis indicated no contamination of surface water, but the PCB Aroclor - 1260 was identified in the soil sample.

June 1980 - residential wells sampled, no contaminants detected.

Dec. 1984 - Clothier site placed on NPL. At the present time, the site is ranked #522.

SECTION V: WASTE DESCRIPTION/CHARACTERIZATION

5.1 The following information is presented in order to identify the types of materials that may be encountered at the Clothier Site. The detailed information on these materials was obtained from NIOSH - Chemical Hazards. TLV values, Hawley - The condensed chemical dictionary, 5AX 1 Dangerous properties of industrial materials.

5.2 CERCLA Hazard Rating Definitions

Substance	Toxicity	Ignitability	Reactivity	Persistance
Benzene	MOD	High	Stable	Somewhat
1, 2-Dichloroethane	MOD-High	High	Stable	Somewhat
1,2-Trans-Dichloroethylene	Low-Mod	High	MOD	Somewhat
Ethylbenzene	MOD-High	High	Stable	High
Methylene Chloride	MOD	No	Stable	Somewhat
Toluene	MOD	High	Stable	High
Trichloroethylene	MOD-High	No	Stable	High
Xylenes	MOD	MOD-High	Stable	High
			No (Vapor	
			Form)	
Cyanide	High	High	High (Salt	Low
			Form)	
Phenol	High	MOD	Stable	High
Nickel				
Ammonia				
Sulfate	Low-Mod	No	Stable	MOD-High

5.3 Waste Types: Liquid X Solid X Gas X
Sludge X Semi-solid ____ Other ____

5.4 Characteristics: Corrosive ____ Flammable X
Explosive X Volatile X
Radioactive ____ Inert ____
Other ____

5.5 Containment: Pit ____ Pond ____ Lagoon ____
Lake ____ Process Vessel ____
Tank ____ Piping ____ Drum X
Tank Car ____ Lab Pack ____
Other X

5.6 Description of "Other" found in 5.3, 5.4 and 5.5.

Surface/Subsurface Soil groundwater contamination plume.

SECTION VI: HAZARD ASSESSMENT

Vertical contaminant migration appears to be impeded by the dense layer of clayey silt surficial soil at the site. The highest levels of soil contamination occur within 6' of the ground surface. However, lower levels of contaminants do occur at deeper depths and contaminated groundwater from the site is presently discharging into Ox Creek and its adjacent wetlands. Therefore, two primary potential health risks presently exist: direct/indirect human contact with contaminated surface water, and/or sediments in the stream and wetlands located adjacent to and downstream from the site.

Drilling activities are not expected within the area of the remaining several hundred drums on-site which will be removed shortly. Although they do not present a physical hazard, this drum area should be designated as restricted cordoned off rendering it easily visible to all in order to isolate it and further protect personnel working on-site. The refuse remaining on-site (trash, broken glass, debris) and holes in the ground is expected to present a physical hazard to all personnel working in those areas. Being aware, alert, cautions and use of the buddy system should help to minimum/alleviate the potential hazards. The operation of heavy machinery in the exclusion zone also presents a physical hazard with typical accidents resulting in head, foot and other bodily injuries to personnel. To minimize risks, sea above.

Contact with contaminated surface/subsurface soil, contaminated surface/groundwater and contact with organic vapors released during intrusive activities present the greatest potential hazard at this site.

SECTION VII: TRAINING

7.0 Basic Training Required

Completion of the REM III Fundamental Health and Safety Training or the approved equivalent is required for all employees who will perform work in areas where the potential for a toxic exposure exists. Training or training and site experience must also comform to the requirements of 29 CFR 1910.120.

7.1 Advanced Training

Advanced Training as necessary will be provided to any personnel who will be expected to perform site work utilizing Level A protection or other specialized operation to be undertaken at a site. An Emergency Response Team shall be formed and trained to carry out Level A work.

7.2 Site-Specific Training

Training will be provided that will specifically address the activities, procedures, monitoring, and equipment for the site operations. It will include site and facility layout, hazards, and emergency services at the site, and will detail all provisions contained within this HASP. This training will also allow field workers to clarify anything they do not understand and to reinforce their responsibilities regarding safety and operations for their particular activity.

7.3 Safety Briefings

Project personnel will be given briefings by the HSO or Assistant HSO on a daily or as needed basis to further assist site personnel in conducting their activities safely. It will be provided when new operations are to be conducted, changes in work practices must be implemented due to new information made available, or if site or environmental conditions change. Briefings will also be given to facilitate conformance with prescribed safety practices when performance deficiencies are identified during routine daily activities or as a result of safety audits.

7.4 First Aid and CPR

The CHSS will identify those individuals requiring this training in order to ensure emergency treatment is available at field activities. It is expected that the selected number of field workers will have First Aid training and several members of the field team will have CPR training. These courses will be consistent with the requirements of the American Red Cross Association.

7.5 Other Training

To be determined.

SECTION VIII: ZONES, PROTECTION, AND COMMUNICATION

8.1 SITE ZONES

Exclusion zone will include an area of approximately 30' around the drill rig and drilling/sampling activities. This area is to be made easily visible to all personnel on-site with use of stake markers and ropes.

Contamination Reduction Zone is an area located outside the exclusion zone, and is to contain the decontamination pad. Personal decontamination will be conducted in this area. Necessary equipment for this procedure will include: a source of water, brushes, wash tubs, an area to dry washed boots, 55-gallon waste drum, storage tank for decon waste water, and eyewash station. Support zone will be located beyond the contamination reduction zone and will include the equipment and office trailers and parking facilities. This area is a clean zone with no special protective equipment required. A first aid kit and fire extinguisher are to be located in the office trailer.

8.2 PERSONAL PROTECTION

8.2.1 General

The level of protection to be worn by field personnel will be defined and controlled by the HSO with approval of the CHSS. Basic levels of protection for general operations are outlined in the REM III Personal Protection Guidelines HS-2. Where more than one hazard area is indicated, further definition shall be provided by review of site hazards, conditions, and proposed operational requirements and by monitoring at the particular operation being conducted. Protection may be upgraded or downgraded, as appropriate, only after the HSO receives authorization from the Ebasco CHSS.

Task	Level of Protection
On-site walkthrough	D/C
Soil borings	C/D
Subsurface soil sampling	C/D
Monitoring well installation	C/D
Groundwater sampling	C/D
Decontamination-personal	D/C
Decontamination-equipment	C

8.2 PERSONAL PROTECTION (Cont'd)

Task	Level of Protection Length of Risk PPE
Description of Levels of Protection Level D protection is the basic work uniform. Protective Clothing shall include overalls, steel-toed shoes, safety glasses, hard hats and work-gloves. No respirator is required. However for the Clothier site, FF Air-purifying respirators/cartridges will be made avaialble if the HSO determines use is necessary. Level C protective clothing for the site shall include poly-coated tyvek suits, inner gloves (surgical type), Nitrile, PvC or neoprene gloves, rubber steel-toed boots. Gloves and boots to be taped to the Tyvek suit. Ful-face air-purifying respirators/ combination dust and organic vapor cartridges will be used.	

8.2.2 Initial Levels Of Protection

Initial levels of protection will be employed during the performance of the Initial Reconnaissance. The recon team is anticipated to consist of a minimum number of personnel. The HSO, the Site Manager, or Site Project Engineer, and other appropriate support personnel may be required. The team will enter hazardous areas and spill locations in conservatively-specified protection with appropriate monitoring equipment. The Initial Reconnaissance will allow for the selection of appropriate protection levels for planned operations, decontamination procedures, site layout, sampling strategies, and general safety planning. It should be noted that this HASP allows for upgrading or downgrading of protection levels to conservatively preclude any potential for contamination while not sacrificing protection or efficiency. During the Initial Reconnaissance, the team will perform various monitoring techniques to identify the presence of contaminants as well as assessing the integrity of the site in consideration of safety for the proposed site investigation, sampling, or construction operations. Careful attention shall be paid to conform to requirements of 29 CFR 1910.120(c) relating to Site Characterization and Analysis (Planned Protection and Justification. The greatest potential

for exposure to hazardous gases/vapors will be during drilling, sampling and monitoring operations. Therefore, all field personnel, within close proximity of the borehole within the exclusion zone will be required to wear Level C protection which is to include a full-face air purifying respirator/organic vapor and dust cartridges. Continuous monitoring with an organic vapor monitor will occur during all drilling and sampling operations to detect conditions that would require personnel to leave the area or upgrade the level of protection. All other personnel at the site but not involved with drilling/sampling operations will be designated as requiring Level D protective equipment, but they will also have available a full-face air purifying respirator/cartridges to be worn in the event of a sudden release of gases, entry ino the exclusion zone or when entering an area having a distinct odor. Off-site activities will be done initially at Level D which will be upgraded to Level C if vapor monitoring (or odors eminate from the borehole) indicates the need to do so because of increasing levels of contaminants. The HSO shall determine the upgrading/downgrading of the levels of protection on and off-site, using the monitoring instruments to indicae contaminant levels and based upong the detection of odors.

8.2.3 Safety Equipment

Basic emergency and first aid equipment will be available at the Support Zone and/or the CRC, as appropriate. This shall include HASP-specified communications, first aid kit, emergency eyewash or emergency shower or drench system, fire extinguishers, and other safety-related equipment. Also located in the Support Zone or the CRZ will be a backup field team when required to support downrange field teams. The Command Post will be manned during all times when teams are downrange, communications will be maintained, and personnel will be available to assist in decontamination procedures for personnal and equipment. Other safety equipment will be located at the site of specific operations, e.g., a drilling rig, as appropriate.
To be determined as work plan and work procedures develop.

8.3 COMMUNICATIONS

- Walkie-Talkies - Hand held units shall be utilized as much as possible by field teams for communication between downrange operations and the Command Post base-station.

- Telephones - A telephone may be located in the Command Post trailer in the Support Zone for communication with emergency support services/facilities. If not appropriate for a particular project, the nearest public phones shall be identified.

- Air Horns - These will be carried by downrange field teams and also will be maintained at the Support Zone for announcing emergency evacuation procedures (see Section XIV) and backup for other forms of communications.

- Hand signals - To be employed by downrange field teams along with utilizing the buddy system. These signals are also very important when working with heavy equipment. They shall be known by the entire field team before operations commence and covered during site-speciific training.

Other communications include: A signal for the immediate use of

SECTION IX: MONITORING PROCEDURES

9.1 MONITORING DURING SITE OPERATIONS

All site environmental monitoring should be accompanied by meteorological monitoring of appropriate climatic conditions.

9.1.1 Drilling Operations - Monitoring will be performed continuously by the HSO during the conduct of work. A photoionization detector (PID) and/or flame ionization detector (FID) equipped organic vapor meter will be utilized to monitor the breathing zone, the borehole, and all geological samples upon their retrieval. Drill cuttings will also be monitored. A combustible gas indicator (CGI) with oxygen alarm will be used to monitor the borehole for the presence of combustible gases. Similar monitoring of any fluids produced during well development will also be conducted.

9.1.2 Excavation Operations - Monitoring will be performed continuously during all excavation and sampling operations. A PID and/or FID organic vapor meter will be utilized to monitor the breathing zone, the excavated area, and any material taken from an excavation. Monitoring of the excavation with a CGI and oxygen meter will be conducted.

9.1.3 Other Operations - To be determined as work plan and work procedures develop.

9.2 PERSONNEL MONITORING PROCEDURES

During the conduct of site operations, personnel monitoring may be performed to establish and document the environment in which field teams have been working. This monitoring will be utilized to comply with the requirements of the REM III Health and Safety Program and with OSHA regulations. Use of cartridge respirators shall be monitored to comply with OSHA and to document compliance with acceptable exposure criteria.

If readings in the breathing zone exceed 1 ppm TWA above background or 5 ppm STEL, personal monitoring will be conducted for specific contaminants suspected on-site.

9.3 MEDICAL SURVEILLANCE PROCEDURES FOR EVIDENCE OF PERSONAL EXPOSURE

All REM III personnel and subcontractors who will be performing field work at the Clothier Site will be required to have passed a REM III's medical surveillance examination or equivalent. A release for work will be confirmed by the Ebasco CHSS before an employee can begin hazardous activities. The exam will be taken annually at a minimum and upon termination of REM III work. Additional medical testing may be required by the Ebasco CHSS in consultation with the company physician and the HSO if an overt exposure or accident occurs, or if other site conditions warrant further medical surveillance. The specific

tests that will be employed for a specific site are to be addressed here.

At the present time, none required. However, the specificity of tests, would be a direct result of specific exposure to specific toxic agents. To be determined, if necessary.

SECTION X: SAFETY CONSIDERATIONS FOR SITE OPERATIONS

10.1 GENERAL

All field sampling will be performed under the level of protection described in Section VIII. In this section all non-monitoring, safety-related procedures will be described for each site operation. Such procedures may include special additional clothing to be worn, respirator specification and modification, special safety equipment such as harnesses and non-sparking tools, need for backup teams, etc. Special considerations should also address provision for heat and cold stress, presence of water, sewer and electrical lines or underground conduits, sample handling requirements, etc. (See discussion in HS-1.01): Field personnel will be briefed on the site's history and hazards. A first aid kit will be on-site in the support zone. There shall be a 30' exclusion zone around the drilling rig and an outer support zone. Mandatory will be the use of hard hats and steel-tipped safety shoes in addition to the levels of protection as described in Section 8.2.1.

Eating, drinking etc. shall be prohibited in any area designated contaminated. Hands and face ar to be washed thoroughly upon leaving the work area before eating, drinking (or using bathroom facilities). Personnel are not to walk through puddles, mud, discolored surfaces, kneel on the ground, etc.

SECTION X: DECONTAMINATION PROCEDURES

All personnel and equipment exiting the exclusion zone shall be thoroughly decontaminated. Figures should be used to illustrate the decon procedures for personnel and portable equipment for the various protection levels indicated in Section VIII. Heavy equipment, if utilized for operations where it may be contaminated, will have prescribed decontamination procedures to prevent hazardous materials from leaving the site. They may include excavating a shallow pit to collect waste cleaning solution and screens, set up if required, to prevent the spread of air contaminants. The pit will be cleaned, wastes disposed of, filled in, and covered with clean soil when its use is terminated. The surface area of the pit shall be sufficient to accommodate the washwater generated by the largest piece of machinery. Equipment needed may include a stream generator with high pressure water, empty containers, screens, screen support structures, and shovels. (Describe layout and include figure)

The presence and level of hazardous materials will determine the level of protection to be worn by operating personnel and that level shall determine the decontamination procedures to be followed by personnel (and equipment) in order to prevent hazardous materials from leaving the site. The specifics will be implemented as information is developed. Decontamination is to follow the concept as attached Figures 3-1, 3-2.

SECTION XI: ADDITIONAL WORK PRACTICES

Specific concerns for each individual site task are included here. With proper protection and awareness of the hazards on the site by personnel, no special concerns for tasks to be conducted are anticipated at the Clothier site. Refer to Section VI (Hazard Assessment).

SECTION XII: DISPOSAL PROCEDURES

All discarded materials, waste materials, or other objects shall be handled in such a way as to preclude the potential for spreading contamination, creating a sanitary hazard, or causing litter to be left onsite. All potentially contaminated materials, e.g., clothing, gloves, etc., will be bagged or drummed as necessary and segregated for disposal. All contaminated waste materials shall be disposed of as rquired by the provisions included in the contract and consistent with REM III and regulatory provisions. All non-contaminated materials shall be collected and bagged for appropriate disposal as normal domestic waste. (Describe planned disposal procedures) All materials to include clothing, foot coverings, gloves, etc. that have been contaminated during on-site activities, are to be disposed of in such a manner so as not to create an ongoing hazardous situations. Materials are to be delivered and segregated as above.

SECTION XI: EMERGENCY PLAN

14.0 As a result of the hazards on site, and the conditions under which operations are conducted, the possibility of an emergency situation developing is very real. An emergency plan is required to be available for use at all REM III Sites.

Various individual site characteristics will determine preliminary action to be taken to assure that this emergency plan may be successfully implemented in the event of a site emergency. Careful consideration must be given to the proximity of neighborhood housing or places of employment and to the relative possibility of site fire, explosion or release of vapors or gases which will impinge on these neighbors. If there is even a remote possibility of any of these occurrences, the Site Manager must coordinate the neighborhood interface with his Regional Manager, the Community Relations Coordinator, the CHSS and the HSM.

Careful evaluation of the above factors have been made by the Site Manager. Based on this analysis, the following action will be taken prior to site activity.

There is low risk of release of contaminants from the Clothier site to neighboring areas. There will be no drilling near the area of the remaining drums left on-site. If the monitoring instruments used in the exclusion zones produce readings considered by the HSO to be near or at dangerous levels,

operations shall close immediately to further minimize risk and Sections 14.2 and 14.3 are to be implemented as quickly as possible.

14.1 The Site Emergency Coordinator is:

Field Operations Leader _____
HSO (Alternate) Virginia Barnett

The emergency coordinator shall make contact with local fire, police and other emergency units prior to beginning work on site. In these contacts the emergency coordinator will inform the emergency units about the nature and duration of work expected on the site and the type of contaminants and possible health or safety effects of emergencies involving these contaminants. Also at this time the emergency coordinator and the emergency response units shall make arrangements to handle any emergencies that might be anticipated.

Contacts have been (will be) made with the following individuals:

Name	Title	Jurisdiction

The emergency coordinator shall implement the contingency plan whenever conditions at the site warrant such action. The coordinator will be responsible for assuring the evacuation, emergency treatment, emergency transport of site personnel as necessary, and notification of emergency response units and the appropriate Management staff.

14.2 Evacuation

In the event of an emergency situation, such as fire, explosion, significant release of toxic gases, etc.; an air horn or other appropriatedevice will be sounded for approximately 10 seconds indicating the inititation of evacuation procedures. All personnel in both the restricted and nonrestricted areas will evacuate and assemble near the Support Zone or other safe area as indentified by the emergency plan. The location shall be upwind of the site as determined by the wind direction indicator. For efficient and safe site evacuation and assessment of the emergency situation, the Emergency Coordinator will have authority to initiate proper action if outside services are required. Under no circumstances will incoming personnel or visitors be allowed to proceed into the area once the emergency signal has been given. The HSO or Assistant HSO must see that access for

emergency equipment is provided and that all combustion apparatus has been shut down once the alarm has been sounded. Once the safety of all personnel is established the Fulton Fire Dept. and other emergency response groups will be notified by telephone of the emergency The site evacuation plan shall be rehearsed regularly as part of the overall training program for site operations.

14.3 Potential or Actual Fire or Explosion

Immediate evacuation of site (air horn will sound for 10 second intervals) notify local fire and police department, and other appropriate emergency response groups if LEL values are above 25% in the work zone or if an actual fire or explosion has taken place.

Fire Dept. - 315-592-9575
Police Dept. - 315-343-1212

14.4 Environmental Incident (Release or Spread of Contamination)

Control or stop spread of contamination if possible. The emergency coordinator should instruct a person on site to immediately contact local authorities to inform them of the possible or immediate need for neighborhood evacuation. If a significant release has occurred, the National Response Center should then be contacted. This group will alert National or Regional Response Teams as necessary. Following these emergency calls, the reporting individual should then notify the SM, CHSS, RM, and HSM.

		PHONE
Fulton	Fire Department	(315) 592-9575
Fulton	Police Department	(315) 343-1212
	National Response Center	(800) 424-8802
Dennis Beissel	SM	(703) 558-7555
Bill Beckett	CHSS	(201) 460-6255
Dev Sachdev	RM	(201) 460-6454
	HSM	(703) 558-7506

14.5 Personnel Injury

Emergency first aid shall be applied onsite as deemed necessary. Then, decontaminate and transport the individual to nearest medical facility if needed. The HSO will supply medical data sheets to appropriate medical personnel and complete the incident report designated in HS-1.12.

Hospital - Lee Memorial - (315) - 592-2224
Rescue - Ambulence Service - (315) - 592-4145

The ambulence/rescue squad shall be contacted for transport as necessary in an emergency. However, since some situations may require transport of an injured party by other means, a hospital route must be firmly identified. During the initial reconnaissance a primary hospital and back-up facility shall be located and route located to and from site with details of the route delineated. A hospital route location map shall also be provided in the HASP as well as conspicuously posted on site.

Primary Hospital Route: Turn right on south Granby Rd. from the Clothier site, turn left onto Route 14; make right turn onto Maurer Rd. (Route 176); make left onto Route 48; make right turn onto East Broadway across the Statebarge Canal; right turn onto State Street to Division Street (abut 3 blocks). Lee Memorial Hospital is on the right after passing Division Street.

Backup Hospital Route: To be determined.

14.6 Overt Personnel Exposure

Include generic first aid procedures in this section. Typical response includes:

SKIN CONTACT:	Use copious amounts of soap and water. Wash/rinse affected area thoroughly, then provide appropriate medical attention. Eyewash and emergency shower or drench system will be provided onsite at the CRZ and/or Support Zone as appropriate. Eyes should be rinsed for 15 minutes upon chemical contamination.
INHALATION:	Move to fresh air and/or, if necessary decon/transport to hospital.
INGESTION:	Decontamination and transport to emergency medical facility
PUNCTURE WOUND OR LACERATION:	Decontaminate and transport to emergency medical facility. HSO will provide medical data sheets to medical personnel as requested (see Section XVI)..

Hospital - (315)-592-2224 (Lee Memorial)
Rescue - (315)-592-4145 (Ambulance Service)

14.7 Adverse Weather Conditions

In the event of adverse weather conditions, the HSO will determine if work can continue without sacrificing the health and safety of all field workers. Some of the items to be considered prior to determining if work should continue are:

- Potential for heat stress and heat-related injuries
- Potential for cold stress and cold related injuries
- Treacherous weather-related working conditions
- Limited visibility
- Potential for electrical storms

SECTION XIV: AUTHORIZATIONS

Personnel authorized to enter the Clothier Site while operations are being conducted must be certified by the Ebasco CHSS. Authorization will involve completion of appropriate training courses and medical examination requirements as required by OSHA 29 CFR 1910.10 and review and sign-off of this HASP. All personnel must utilize the buddy system or trained escort, and check in with the Field Team Leader at the Command Post.

1. Ebasco Personnel Authorized to Perform Work Onsite:

1.	HSO	11.	
2.	SM	12.	
3.	FOL	13	
4.	CHSS	14.	
5.	DRILLER/RIGGER	15.	
6.	CONTRACTORS	16.	
7.	GEOLOGIST	17.	
8.	HYDROGEOLOGIST	18.	
9.		19.	
10.		20.	

2. Other Personnel Authorized to Enter Site:

1.	ZPMO Personnel	6.	
2.	REM III Regional Personnel	7.	
3.	EPA Personnel	8.	
4.	State Environmental Personnel	9.	
5.	Police, Fire, Emergency Personnel	10.	

SECTION XV: MEDICAL DATA SHEET

This brief Medical Data Sheet will be completed by all onsite personnel and will be kept in the Command Post during the conduct of site operations. Completion is required in addition to compliance with the Medical Surveillance Program requirements described in the REM III Program Health and Safety Plan. This data sheet will accompany any personnel when medical assistance is needed or if transport to hospital facilities is required.

Project Clothier Site

Name _____ Home Telephone _____

Address _____

Age _____ Height _____ Weight _____

Name of Next of Kin _____

Drug or other Allergies _____

Particular Sensitivities _____

Do You Wear Contacts? _____

Provide a Checklist of Previous Illnesses or Exposures to Hazardous Chemicals _____

_____

_____

What medications are you presently using? _____

_____

_____

Do you have any medical restrictions? _____

_____

Name, Address, and phone number of personal physician: _____

_____

_____

_____

_____

SECTION XVI: FIELD TEAM REVIEW

Each field team member shall sign this section after site-specific training is completed and before being permitted to work on site.

I have read and understand this Site-Specific Health and Safety Plan. I will comply with the provisions contained therein.

Site/Project: Clothier

Name Printed	Signature	Date

Approvals

By their signature the underesigned certify that this HASP is approved and will be utilized at the Claremont site.

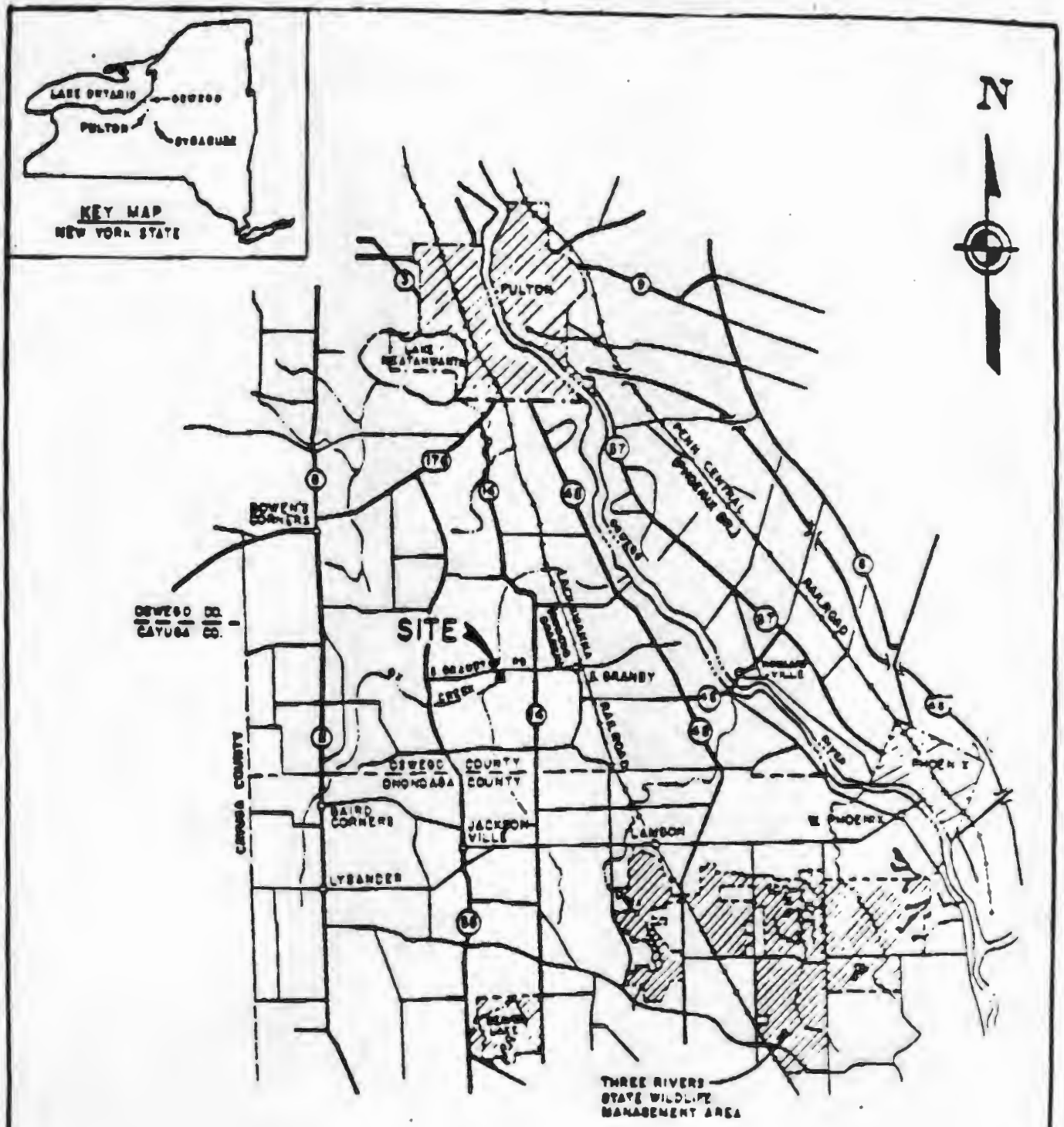
Health and Safety Officer — Date: 1/21/88

Site Manager — Date: 1/25/88

Company Health and Safety Supervisor — Date: 1/21/88

REM III Region II Manager — Date: 1-21-88

REM III Health and Safety Manager — Date: 01-25-88



SITE LOCATION MAP

FIGURE 1-1

PRIMARY HOSPITAL ROUTE

LEVEL D DECONTAMINATION PROCEDURES

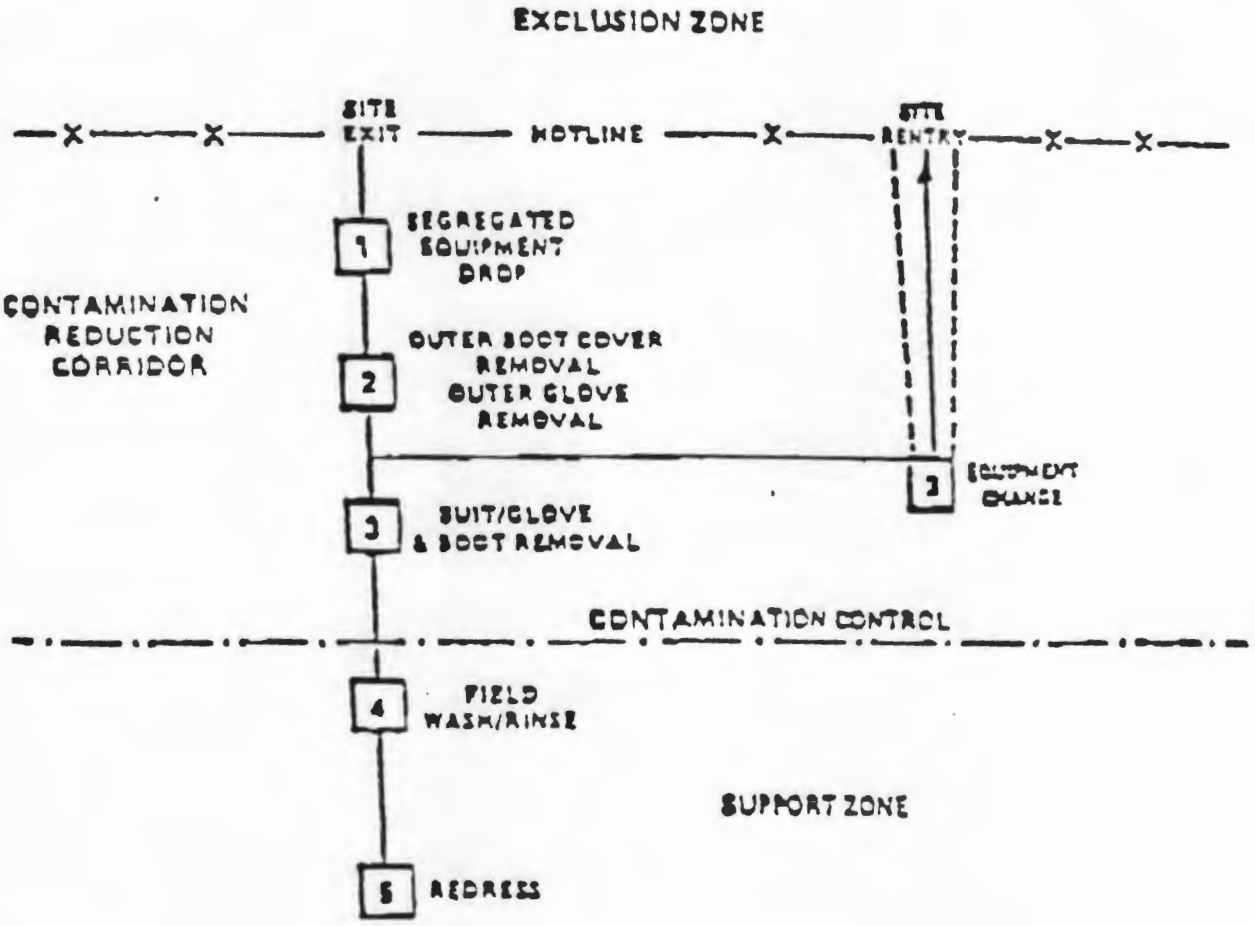


Figure 3-1
LEVEL D DECONTAMINATION PROCEDURES

LEVEL C DECONTAMINATION PROCEDURES

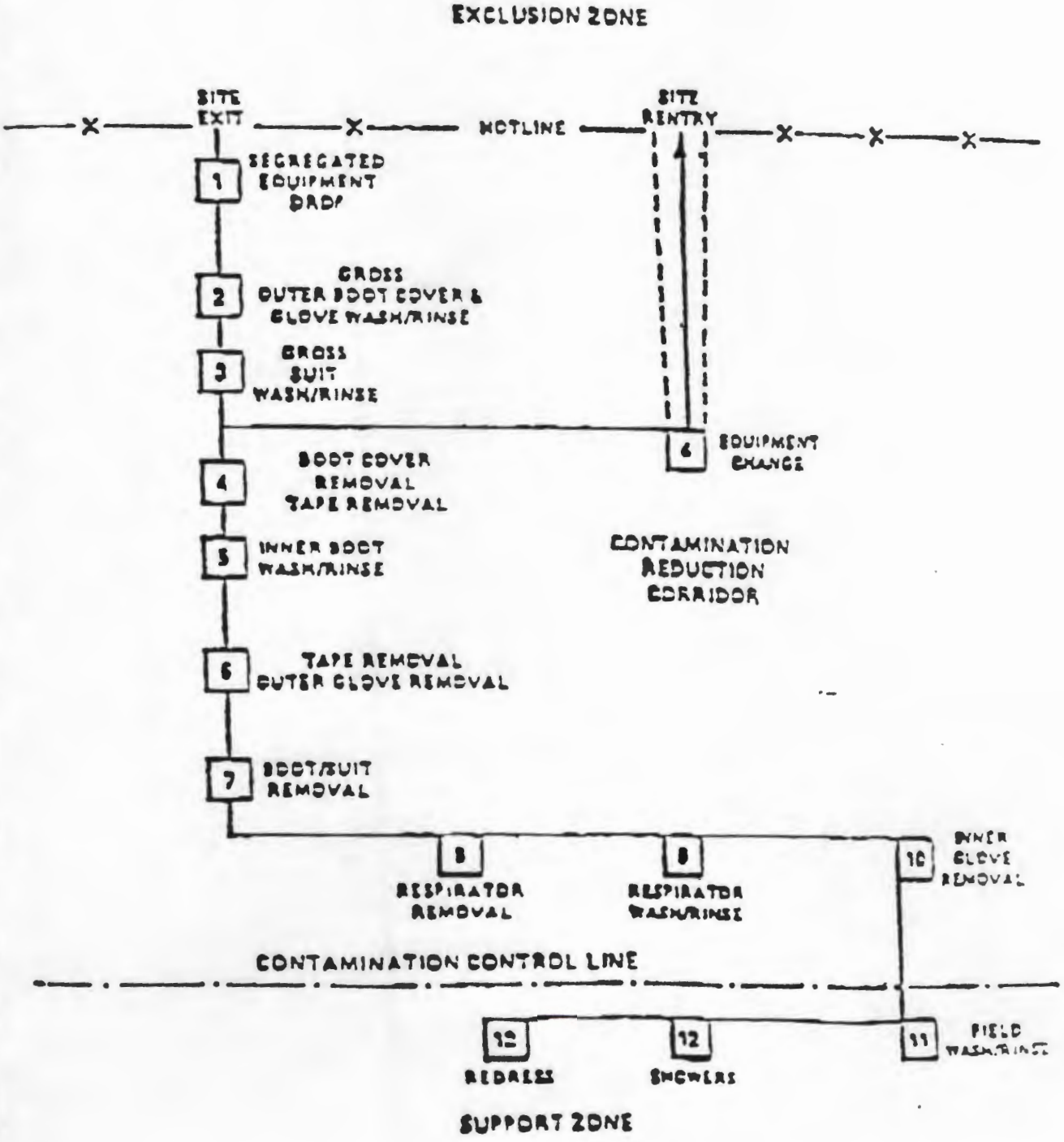


Figure 3-2
LEVEL C DECONTAMINATION PROCEDURES

ATTACHMENT E

WORK/QA PLAN SHORT FORM

WORK/QA PLAN SHORT FORM

TITLE PAGE

CLOTHIER DISPOSAL SITE
SUPPLEMENTAL REMEDIAL INVESTIGATION
AND FEASIBILITY STUDY

USEPA

(Project Officer's Signature) _____

(Project Officer's Name) EPA: M Shaheer Alvi

(Project Quality Assurance Officer's Signature) _____

(Project Quality Assurance Officer's Name) EPA: Frank Messina

1. Project Name: Clothier Disposal Site Supplemental RI/FS

2. Project Requested by: USEPA Work Assignment No. 67-2LE9

3. Date of Request: December 30, 1987

4. Date of Project Initiation: Jan. 4, 1988

5. Project Officer: EPA: M Shaheer Alvi, REM III D R Sachdev

6. Quality Assurance Officer: EPA: Frank Messina

7. Project Description

   A. Objective and Scope Statement: The Clothier supplemental RI/FS is currently being conducted by the New York State Department of Environmental Conservation. The REM III scope and objectives are: 1) review previous analytical results of shallow soil testing; 2) determine the number and locations of additional samples necessary to characterize contamination deeper than previous sampling depths; 3) obtain the samples identified under 2) above; 4) obtain and test 4 shallow soil samples to confirm previous testing results.

   B. Data Usage: Data will be transmitted to the New York State DEC to support further RI/FS activities.

   C. Monitoring Network Designs and Rationale: Subsurface soil samples will be obtained from 10 locations for further definition of the extent of previously detected contamination. Depths of sampling will be greater than those previously attained in the shallow soil sampling.

   D. Monitoring Parameters and their Frequency of Collection: See Section 1.5 and Table 1-1 of the work Plan, and Table 2-1 of the Field Operations Plan (FOP).

   E. Parameter Table - Refer to Table 2-1 and Section 2.2 of the FOP.

8. Schedule Tasks and Products

Activity	Anticipated Dates Start	End
o Mobilize, Obtain Subsurface Soil Samples	2/16/88	2/26/88
o Laboratory Analyses	2/18/88	3/18/88
o Data Validation	3/04/88	3/25/88
o Report		3/30/88

9. Project Organization and Responsibility

The following is a list of key project personnel and their corresponding responsibilities:

J Weiss	- sampling operations
J Weiss	- sampling QC
REM III Team Lab (Level IV)	- laboratory analysis
REM III Team Lab (Level IV)	- laboratory QC
REM III Team Lab (Level IV)	- data processing activities
REM III Team Lab (Level IV)	- data processing QC
REM III Team Lab (Level IV)	- data quality review
REM III Team Lab (Level IV)	- performance auditing
S Missailidis	- systems auditing
S Missailidis	- overall QA
D R Beissel	- overall project coordination

10. Data Quality Requirements and Assessments

See sections 1.5 and 2.2.1 of the Work Plan and Field Operations Plan, respectively.

Data Representativeness: Sampling will be done according to applicable portions of the REM III Field Technical Guidelines and the Field Operations Plan. Blank and duplicate samples will be taken at the rate of one duplicate or blank per 20 samples.

Data Comparability: To ensure comparability, all samples will be analyzed by similar procedures, for similar parameters and reported in the same units as those in the previous RI.

Data Completeness: Data will be obtained from enough locations and depths to enable delineation of contamination in the subsurface soil.

11. Sampling Procedures: See Section 2.2.2 of the FOP.

12. Sample Custody Procedures: See Section 2.2.1.4 of the FOP.

13. Calibration Procedures and Preventive Maintenance: See Section 2.2 of the FOP.

14. Documentation, Data Reduction, and Reporting: Standard methods and references will be utilized in data reduction.

15. Data Validation: Laboratory data will be validated by EPA Region II using standard validation procedures for Level IV analytical methods.

16. Performance and Systems Audits: At least one system audit will be performed during the work assignment.

17. Corrective Action: Non-conformance will be reported immediately with problem details, corrective action and schedule of implementation (to be immediate if possible).

18. Reports: Audit results will be reported to the Site Manager and Manager of QA with a summary of QA/QC project status.