DEPARTMENT OF THE AIR FORCE

HEADQUARTERS 49TH FIGHTER WING (ACC)
HOLLOMAN AIR FORCE BASE, NEW MEXICO

DEC 15 1993

FROM: 49 CES/CEV
550 Tabosa Ave
Holloman AFB, NM 88330-8458

SUBJ: Holloman AFB Lagoons Phase 1 Assessment Monitoring Report

TO: New Mexico Environment Department
Hazardous and Radioactive Materials Bureau
Attn: Mr Steve Alexander
525 Camino de Los Marquez
Santa Fe, NM 87502-6610

1. The proposed agenda at Atch 1 lists topics of discussion for the 14 Dec 93 meeting to be held in your office. Attachment 2 is a draft of Phase I Groundwater Assessment Monitoring Report for the Holloman AFB sewage lagoons which will be reviewed during the 14 Dec meeting. We would also like to discuss the future of the groundwater monitoring program, including the return to some modified form of detection monitoring.

2. Please direct questions to Dr Fred Fisher or Mr Tim O'Donnell at (505) 475-3931.

HOWARD E. MOFFITT
Deputy Base Civil Engineer

2 Atchs
1. 14 Dec 93 Agenda
2. Assessment Monitoring Report 1

cc: w/Atchs

Mr Barry Feldman
US Environmental Protection Agency
Region VI, 6H-CS
First Interstate Bank Tower
1445 Ross Avenue
Dallas, TX 75202-2733

Mr Scott Ludwig
Bureau of Land Management
Las Cruces District
1800 Marquess
Las Cruces, NM 88005

cc: w/o Atch

Ms Stephanie Cruse
NM Environment Department
Hazardous & Radioactive Materials Bureau
525 Camino de Los Marquez
Santa Fe, NM 87502-6610

Mr David Morgan
NM Environment Department
Ground Water Protection & Remediation Bureau
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Mr Lowell Seaton
US EPA, Region VI, 6H-CS
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Dallas, TX 75202-2733

Mr Mark Blakeslee
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Mr Clent Bailey
Fish and Wildlife Service
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Albuquerque, NM 87107

Mr Tom Manning
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P.O. Box 116, 525 Griffin St.
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49 FW/JA

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HQ ACC/CEVRC

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Ms Kathleen Alsup
Radian Corp
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Austin, TX 78720-1088

HOLLOMAN AFB
MEETING AGENDA
SANTA FE, NM

SEWAGE LAGOONS AND LAKES INVESTIGATION
14 DECEMBER 1993

I. Project History, Objectives, and Regulatory Overview
Kathleen Alsup

II. Phase 1 Groundwater Assessment Monitoring *Tom Holcomb*

III. Phase 2 RCRA Facility Investigation
Lakes Holloman and Stinky *Tom Holcomb*

--BREAK--

IV. Risk Assessment Overview *Jane Hixson*

V. Ecological Risk Assessment *Lucy Fraiser*

--LUNCH BREAK --

VI. Human Health Risk Assessment *Lucy Fraiser*

VII. Summary *Jane Hixson*

VIII. Future Activities *Wally Hise*

LIBRARY COPY

Headquarters, Air Combat Command
Langley Air Force Base,
Virginia

Holloman Air Force Base Sewage Lagoons and Lakes Investigation

Groundwater Monitoring and Closure Presentation

Santa Fe, New Mexico

14 December 1993

49 CES/CEV
Holloman Air Force Base,
New Mexico

HOLLOMAN AFB
MEETING AGENDA
SANTA FE, NM

SEWAGE LAGOONS AND LAKES INVESTIGATION
14 DECEMBER 1993
8:00 am - 4:00 pm

		Page No.
1.	Background *Kathleen Alsup*	1-7
2.	Phase 1 Groundwater Assessment Monitoring *Tom Holcomb*	8-24
3.	Phase 2 RCRA Facility Investigation Lakes Holloman and Stinky *Tom Holcomb*	25-34
	--BREAK--	
4.	Risk Assessment Overview *Jane Hixson*	35-40
5.	Ecological Risk Assessment *Lucy Fraiser*	41-75
	--LUNCH BREAK --	
6.	Human Health Risk Assessment *Lucy Fraiser*	76-110
7.	Statistical Modeling *Jane Hixson*	111-121
8.	Summary *Jane Hixson*	122-126
9.	Future Activities *Wally Hise*	127-134

Sewage Lagoons and Lakes Investigation

Santa Fe, New Mexico

14 December 1993

Project Background

Meeting Objectives

- Provide Project History
- Provide Summary of Current Activities
- Define Future Activities

Project History

- System Components
- Past Investigations
- Current Investigations
- Key Players

Chemicals of Concern - Sludge/Soil

- 1980's - PAHs, PCBs, Inorganics
- 1992 - Limited Sampling for Appendix IX
- Conclusion - Organochlorine Pesticides and Certain Metals

Chemicals of Concern - Groundwater

- 1991 - Release Defined by Increased TOC
- 1992 - Appendix IX Sampling (8 wells)
- 1993 - Appendix IX Sampling (6 new wells)
- Conclusion - Organochlorine Pesticides

Regulatory Overview

- FFCA
- Classification of System
- Closure Plans
- Post-Closure Care Permit Application

Project Objectives

- Protect Human Health and the Environment
- Meet Applicable Regulations
- Develop and Meet Consensus of Interested Parties

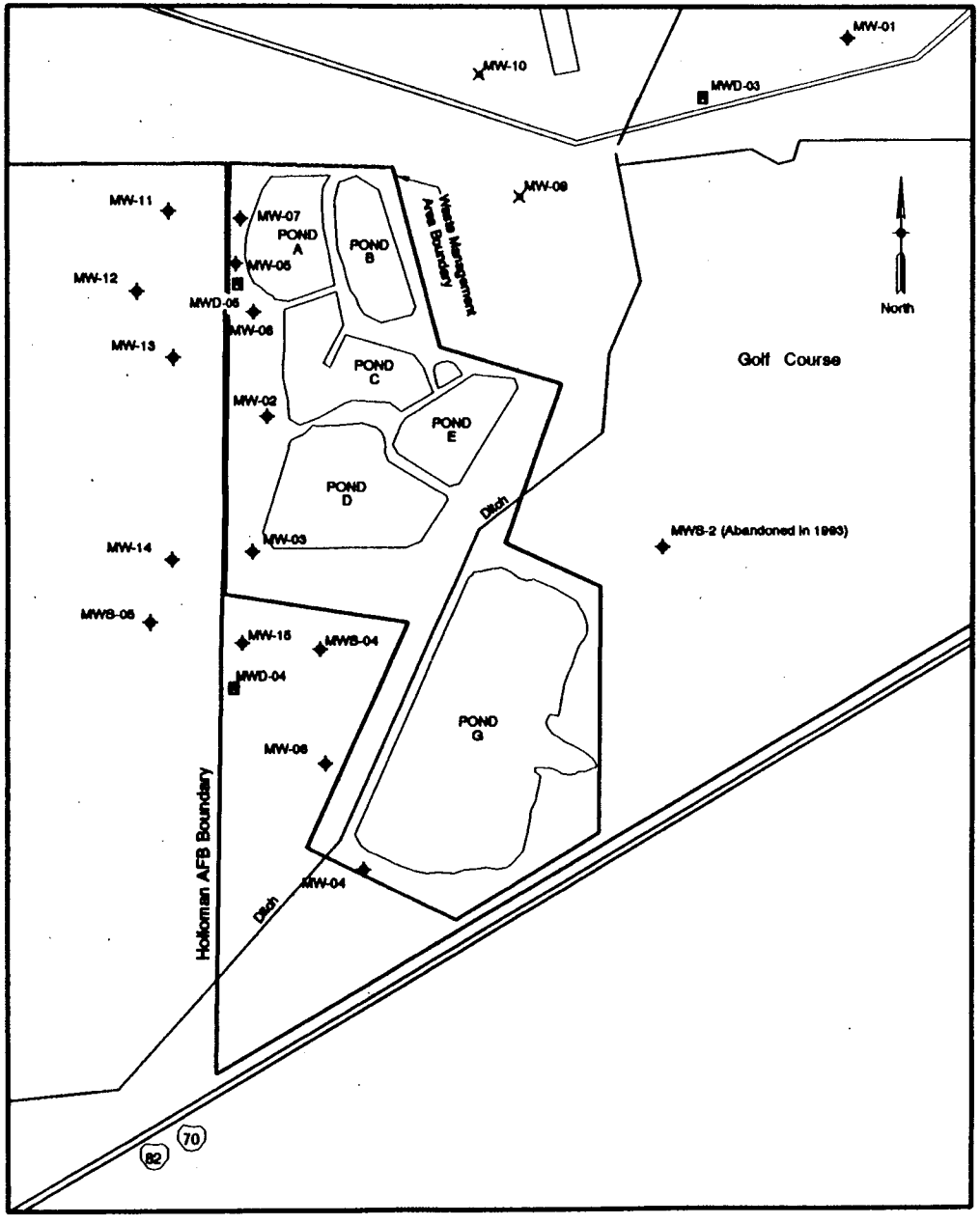
Phase 1 Groundwater Assessment Monitoring

Project Background

- Hazardous Waste Management Units
- Federal Facilities Compliance Agreement
- Detection Monitoring
- Assessment Monitoring

Phase 1 Objectives

- Determine Lateral Extent of Method 8080 Pesticides
- Determine Presence/Absence of Other Constituents
- Evaluate Potential of Vertical Migration
- Recommend Monitoring Requirements


MW-01
MW-10
MWD-03
MW-09
MW-11
MW-07
POND A
POND B
MW-05
MW-12
MWD-05
MW-08
MW-13
POND C
MW-02
POND E
POND D
MW-03
MW-14
MWS-05
MW-15
MWS-04
MWD-04
MW-06
POND G
MW-04
Waste Management Area Boundary
Holloman AFB Boundary
Ditch
Ditch
Golf Course
North
MWS-2 (Abandoned in 1993)
82
70

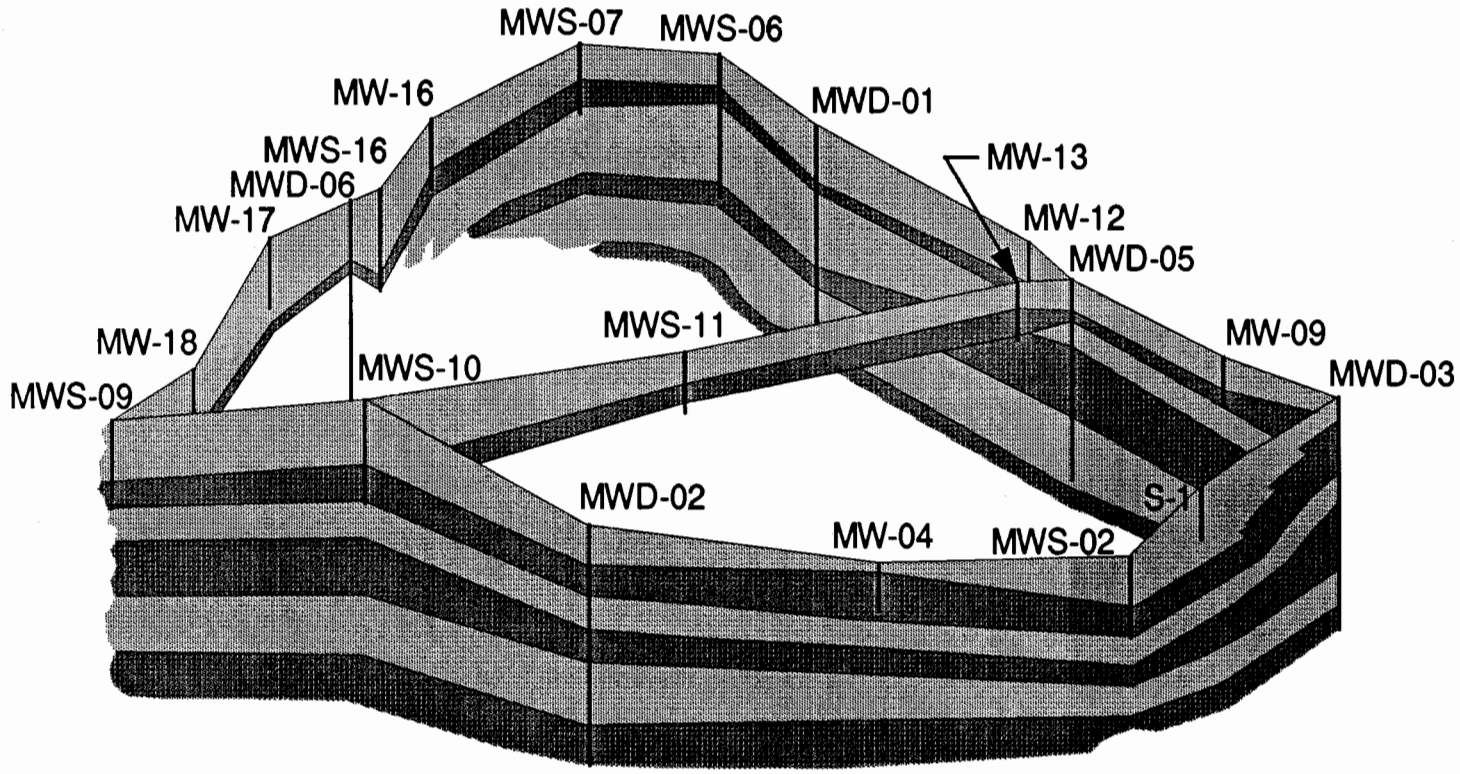
Scope of Investigation

- Conduct Geoprobe® Sampling
- Expand Monitoring Network
- Sample Deep Piezometers
- Conduct Water Level Survey
- Determine Base-wide Background Conditions

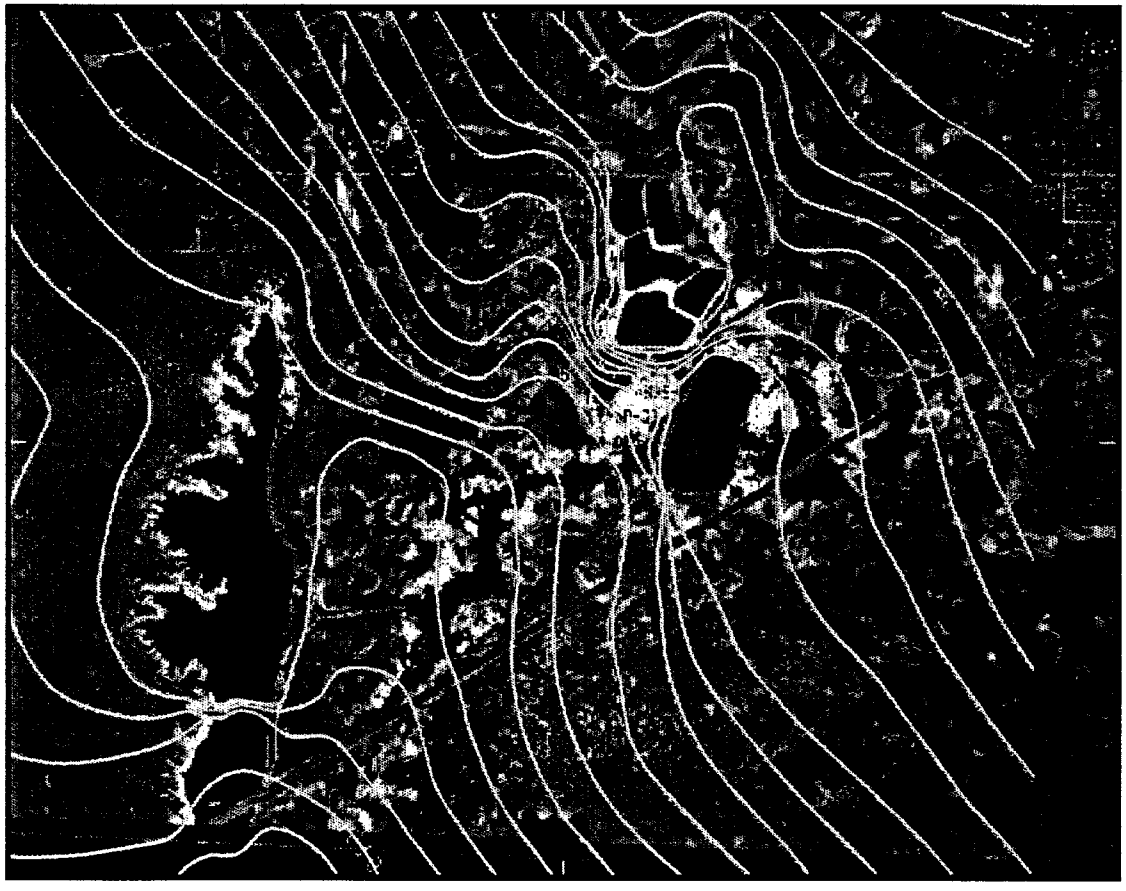
Environmental Setting

- Geology
- Hydrogeology
- Groundwater Quality

Stratigraphic Fence Diagram



PHASE 1 GROUNDWATER ASSESSMENT MONITORING



SEWAGE LAGOONS

Data Interpretation

- *Groundwater Assessment Monitoring Plan*
  - -- Method Detection Limit
  - -- Two Sampling Rounds
- Second Column Confirmation
- Base-wide Background Study
  - -- Upper Tolerance Limits
  - -- Means Comparison

Method 8080 Pesticides

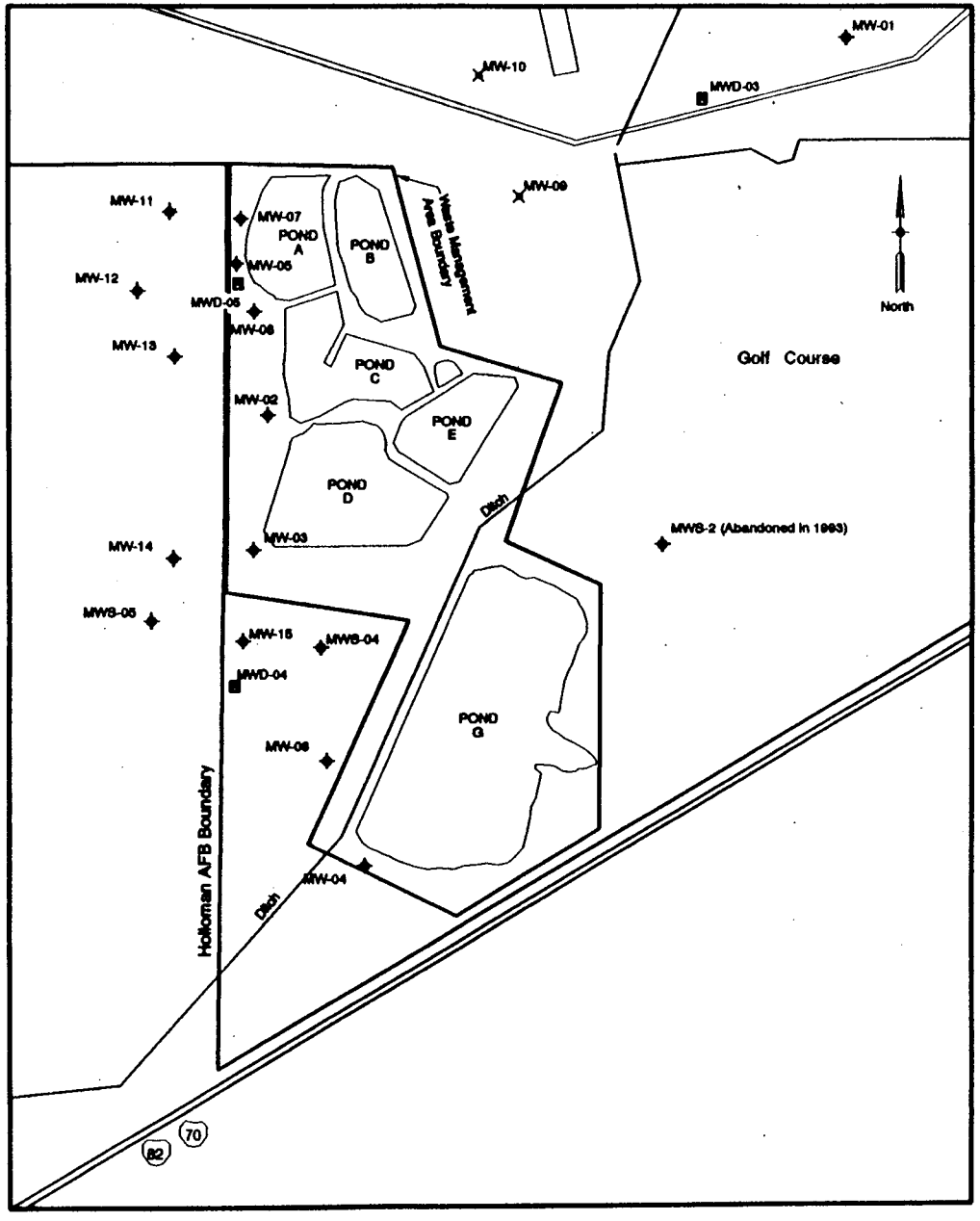
- Presence Certain
- Presence Uncertain
- Presence Unlikely

Metals

- Conclusive Release
- Inconclusive Release
- No Release

Conclusions - Method 8080 Pesticides

- Heptachlor Epoxide - MW-03
- 4,4' DDD - MW-04
- None Certain in Further Downgradient Wells
- Presence Uncertain and Unlikely


MW-01
MW-10
MWD-03
MW-09
MW-11
MW-07
POND A
POND B
Waste Management Area Boundary
MW-05
MW-12
MWD-05
MW-06
MW-13
POND C
MW-02
POND E
POND D
Ditch
MW-03
MW-14
MWS-05
MW-15
MWS-04
MWD-04
MW-08
POND G
MW-04
Holloman AFB Boundary
Ditch
82
70
North
Golf Course
MWS-2 (Abandoned in 1993)

Conclusions - Metals

- MW-11, MW-12, and MW-13
  - -- Conclusive Release - Cadmium
  - -- Inconclusive Release - Mercury and Tin
- MW-14, MW-15, and MW-05
  - -- No Conclusive Release
  - -- Inconclusive Release - Antimony, Cadmium, and Tin

Other Conclusions

- Other Constituents
- Deep Piezometers
  - -- Method 8080 Pesticides
  - -- Metals

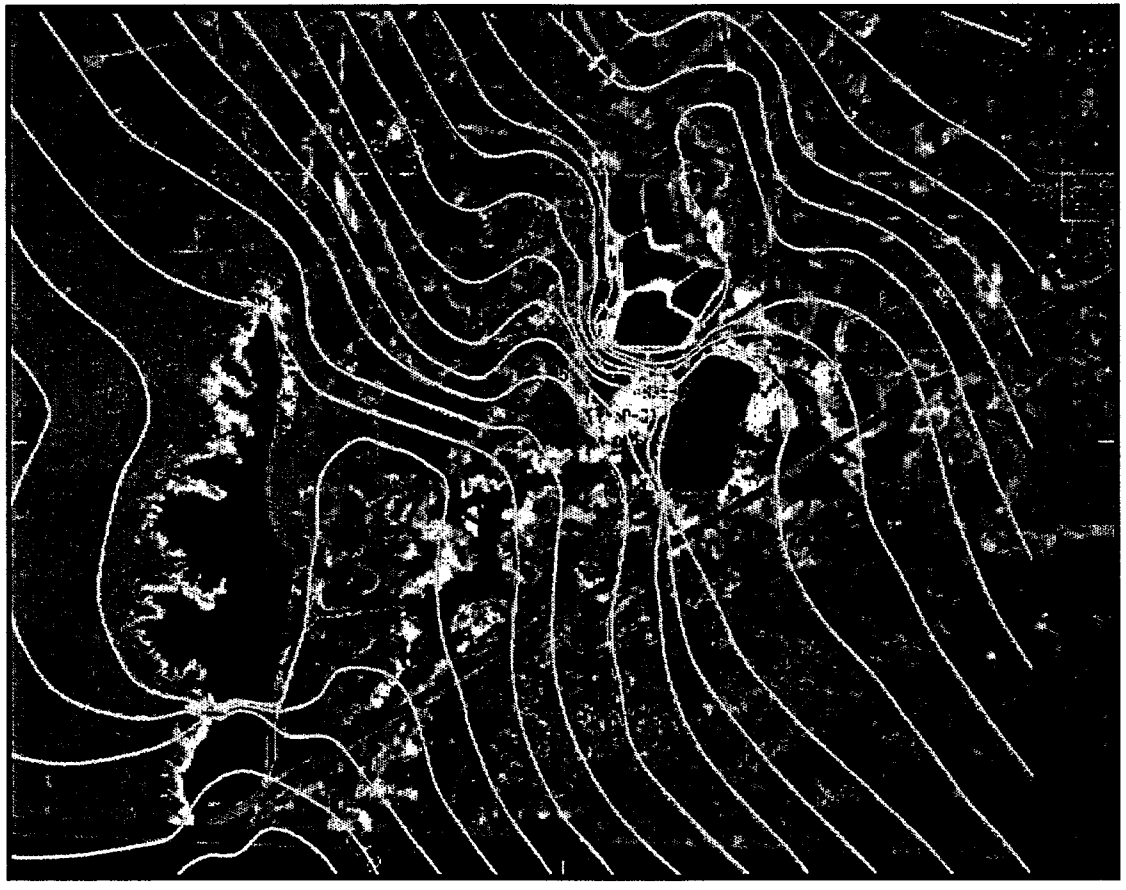
Comparison with Previous Results

- Heptachlor Epoxide and 4,4' DDD
  -- Not Detected/Certain
- Alpha-BHC in MW-05
  -- Certain/Uncertain
- Delta-BHC in MW-07
  -- Certain/Unlikely
- Pesticide/Porous Media Interaction

Recommendations

- Conduct Long Term Monitoring (LTM)
- Sample for Method 8080 and Metals
- Establish LTM Requirements Using Risk Assessment
- Evaluate Effect of New WWTP

Phase 2
RCRA Facility Investigation

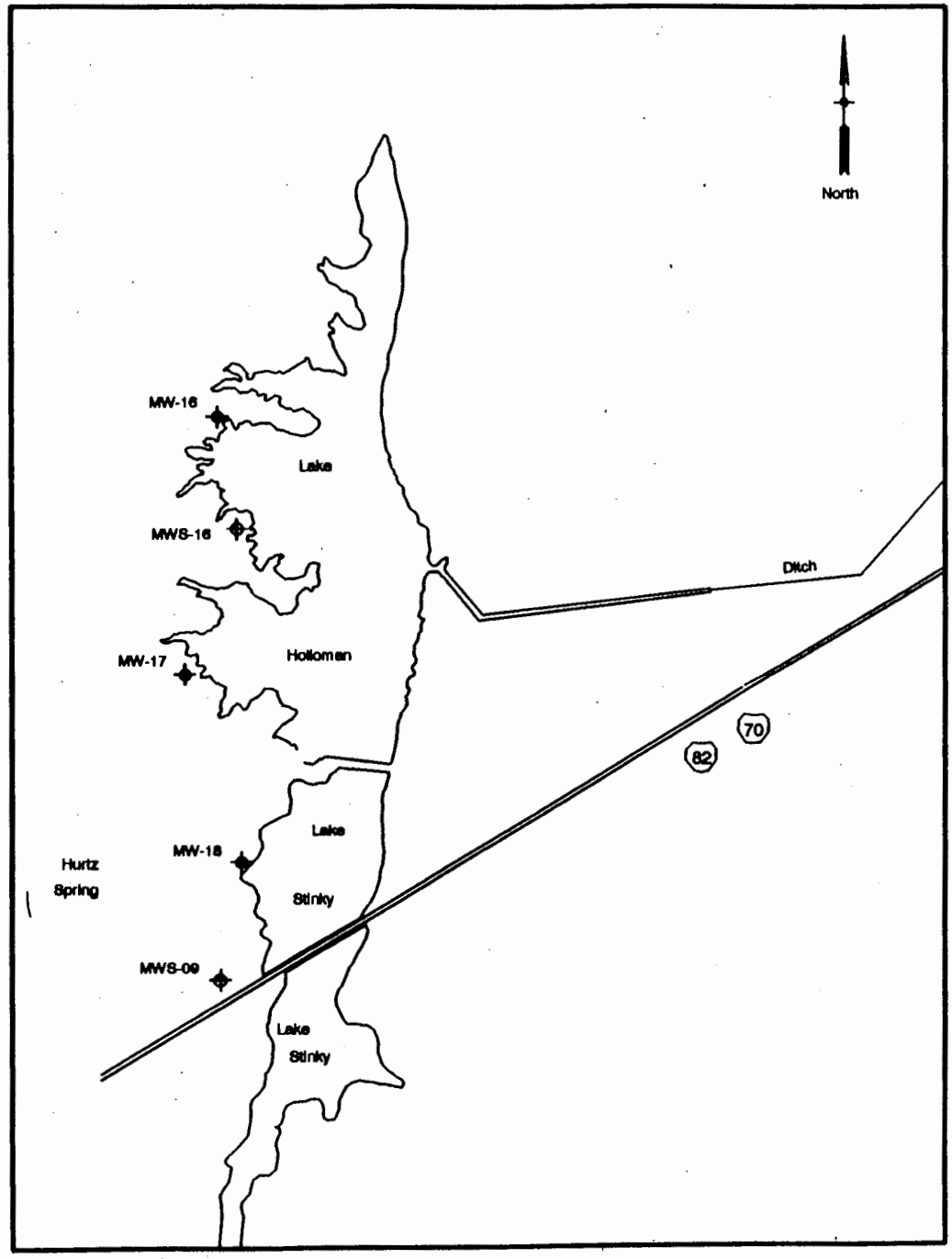


Project Background

- RCRA Hazardous and Solid Waste Ammendments Permit
  - -- Ditch and Lake Holloman - SWMU 139
  - -- Lake Stinky - SWMU 140
- Phase 1 - *Site Characterization Report*
  - -- Pesticides and Metals in Sludge
  - -- Recommend Phase 2

Phase 2 Objectives and Scope

- Determine Presence/Absence of Constituents
- Recommend Monitoring Requirements
- Install Monitoring Network
- Conduct Water Level Survey


North
MW-16
Lake
MWS-16
Ditch
MW-17
Hollomen
70
82
Lake
MW-18
Hurtz
Spring
Stinky
MWS-09
Lake
Stinky

Data Interpretation - Method 8080 Pesticides

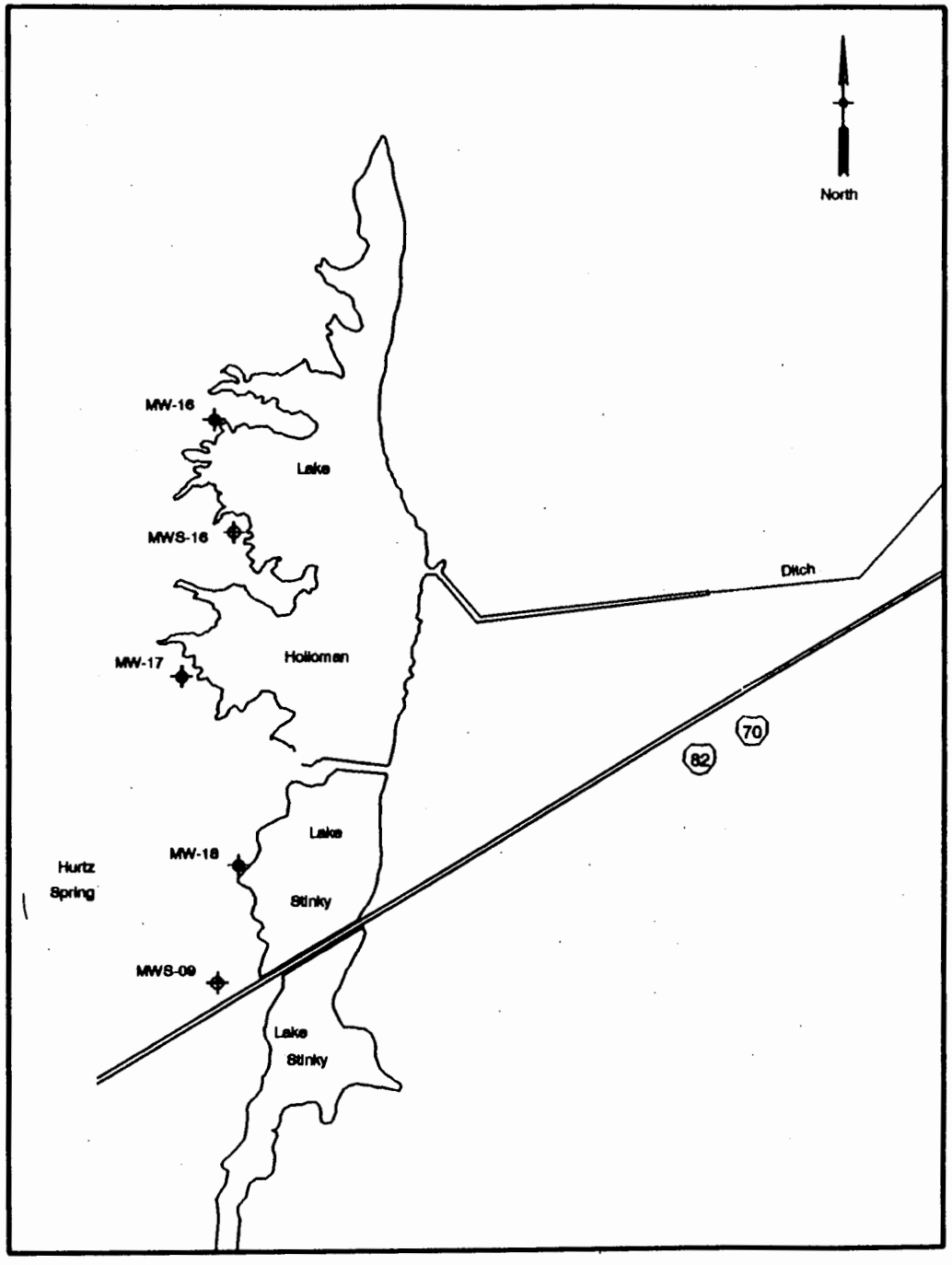
- Second Column Confirmation
  - -- Presence Certain
  - -- Presence Unlikely

Data Interpretation - Metals

- Conclusive Release
- Inconclusive Release
- No Release

Conclusions

- Presence Certain - MW-16, MW-17, and MW-18
- Presence Unlikely (All Wells)
- No Conclusive Release for Metals
- Similarities with Sewage Lagoons Results


North
MW-16
Lake
MWS-16
Ditch
MW-17
Holloman
70
82
Lake
MW-18
Hurtz
Spring
Stinky
MWS-09
Lake
Stinky

Recommendations

- Conduct Long Term Monitoring
- Sample for Method 8080 and Metals
- Establish LTM Requirements Using Risk Assessment
- Evaluate Affect of New WWTP

Risk Assessment Overview

Risk Assessment Methods
5 Steps

- Identification of Chemicals of Concern
- Exposure Assessment
- Toxicity Assessment
- Risk Characterization
- Environmental Evaluation

Identification of Chemicals of Concern

Guidance

- Risk Assessment Guidance for Superfund, Volume I
- Guidance for Data Useability in Risk Assessment
- SW - 846 Method 8080 reporting criteria

Exposure Assessment

The estimation of the magnitude, frequency, duration, and route of human exposure to the chemicals of potential concern at the site.

Toxicity Assessment

The determination of whether exposure to a chemical can increase the incidence of a particular adverse effect using toxicity values (RfDs and SFs) and dose - response relationships.

Risk Characterization

Combines the possible exposure pathways and subsequent estimated chemical intakes with the appropriate toxicity values to form quantitative expressions of potential health risks.

Ecological Risk Assessment

Objectives of Risk Assessment

- Assess risks associated with residential development of contaminated area prior to complete remediation
- Determine the potential for risks to human health and environment if contaminants are left in place
- Assess risks associated with removing the lagoon network (excluding Pond G) from service
- Provide recommendation for closure of each sewage lagoon individually

Scope of Risk Assessment

- Separate risk assessments for each of seven lagoons, the ditch, and lakes Holloman and Stinky
- Quantitative ecological risk assessment

Indicator Species

- Mallards
- Killdeer
- Mergansers
- Gambusia Affinis (fish)

Estimation of Risk

- Birds
  - -- Plankton
  - -- Fish
  - -- Benthic organisms
  - -- Surface water
- Fish
  - -- Water

Ecological Quotient (EQ) Method

- EQ = Contaminant concentration/effective concentration
- Dose response data were used as effective concentration
  - -- NOAEL was used in most cases
  - -- LOAEL extrapolated to NOAEL was used if NOAEL was unavailable
  - -- LD_{50}s were extrapolated to a NOAEL if LOAEL was not available

Intake Estimations

- Intake by Mallards
  - -- Ingestion fraction based on size of pond
  - -- Assumed exposure for six months/year
- Intake by Killdeer
  - -- Average ingestion fraction assumed to be 33% based on collection of benthos from three ponds
  - -- Assumed exposure for 12 months/year
- Intake by Mergansers
  - -- Average ingestion fraction assumed to be 33% based on presence of fish in three ponds
  - -- Assumed exposure for 6 months/year

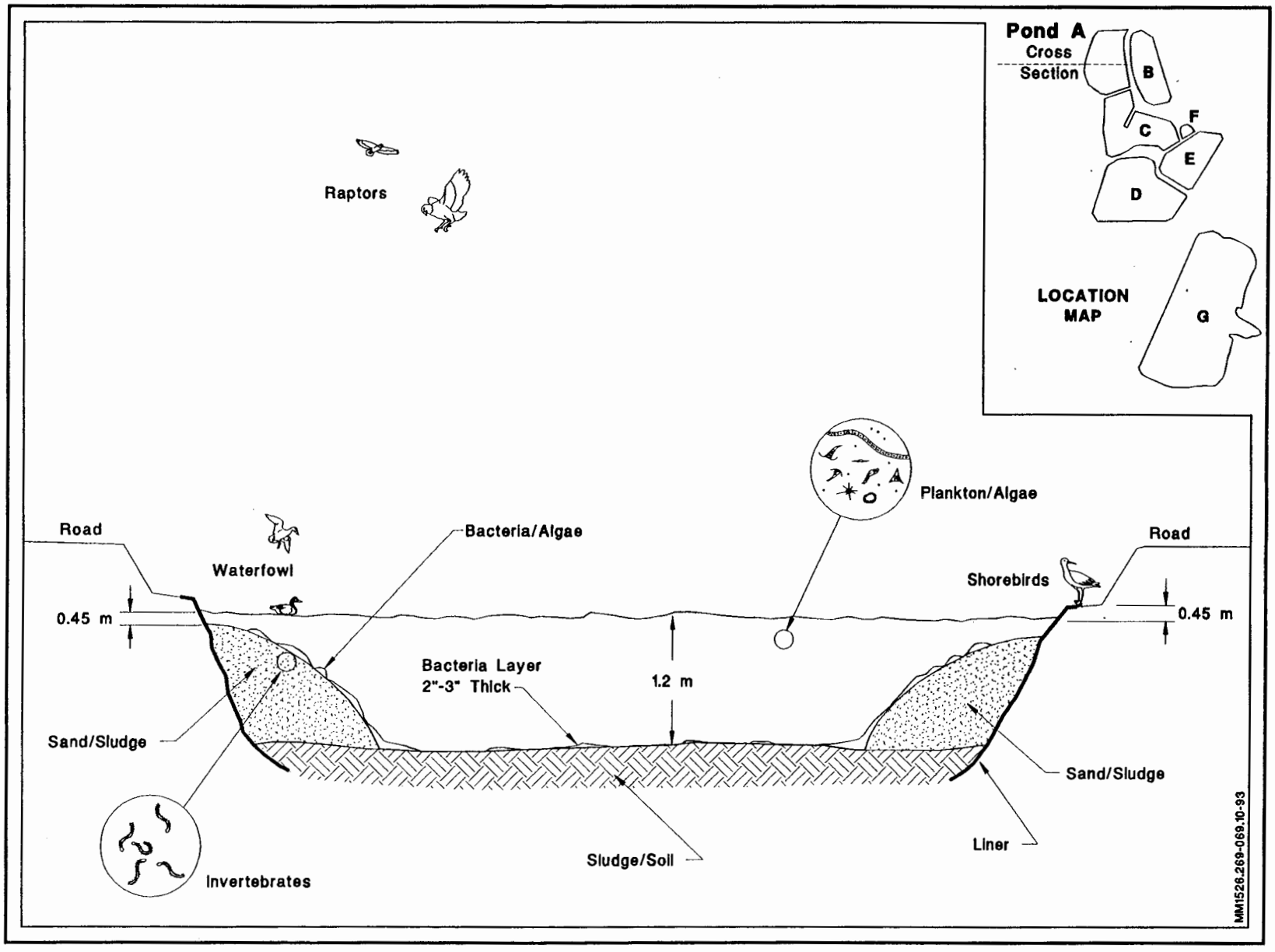
Potential Risk to Fish

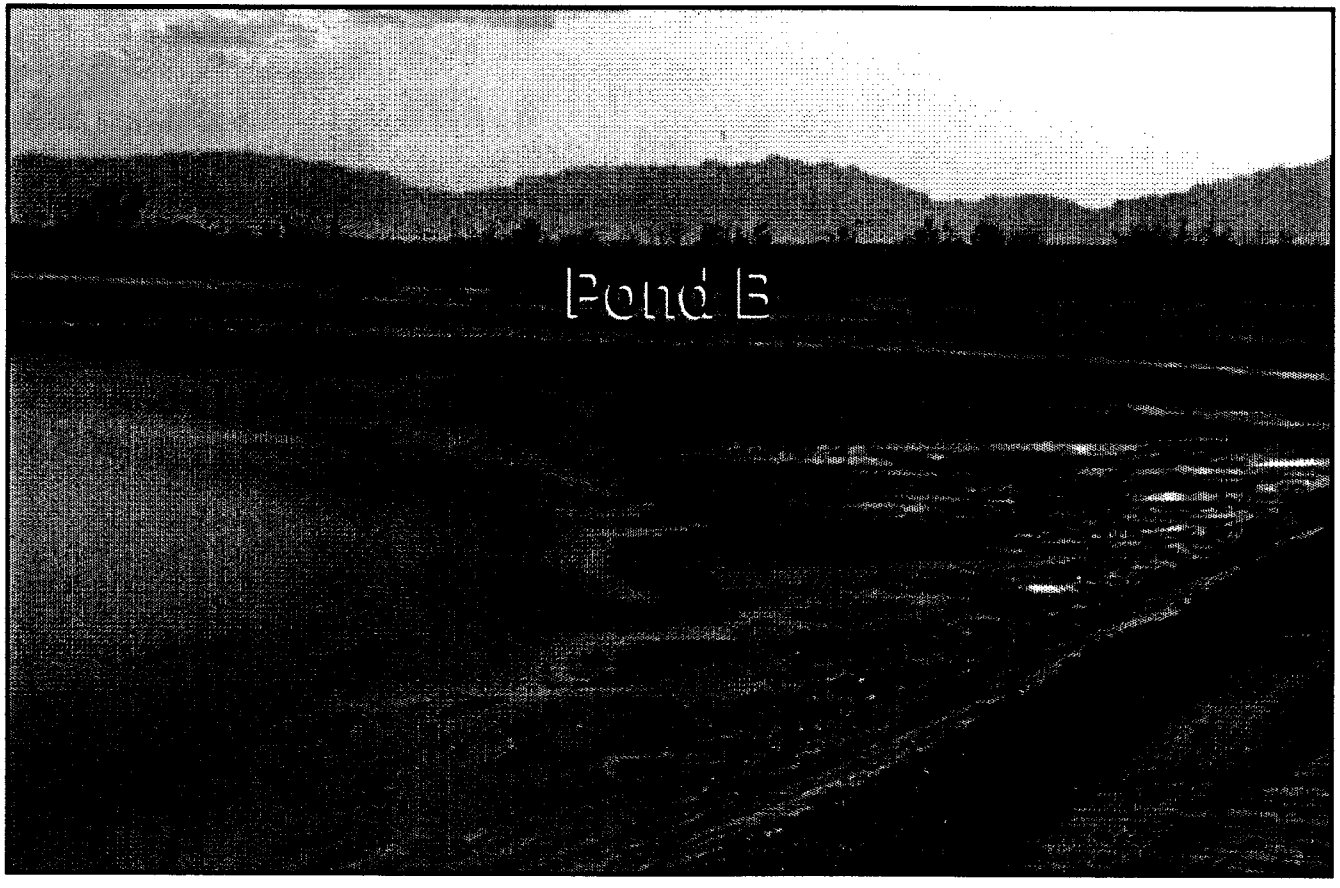
- Calculation of maximum acceptable toxicant concentrations (MATCs)
  - -- Chronic ambient water quality criteria (AWQC) were used directly as MATCs
  - -- Acute AWQCs were extrapolated to account for chronic exposure if chronic AWQC not available
  - -- LC_{50}s were extrapolated to account for chronic exposure if acute AWQC not available

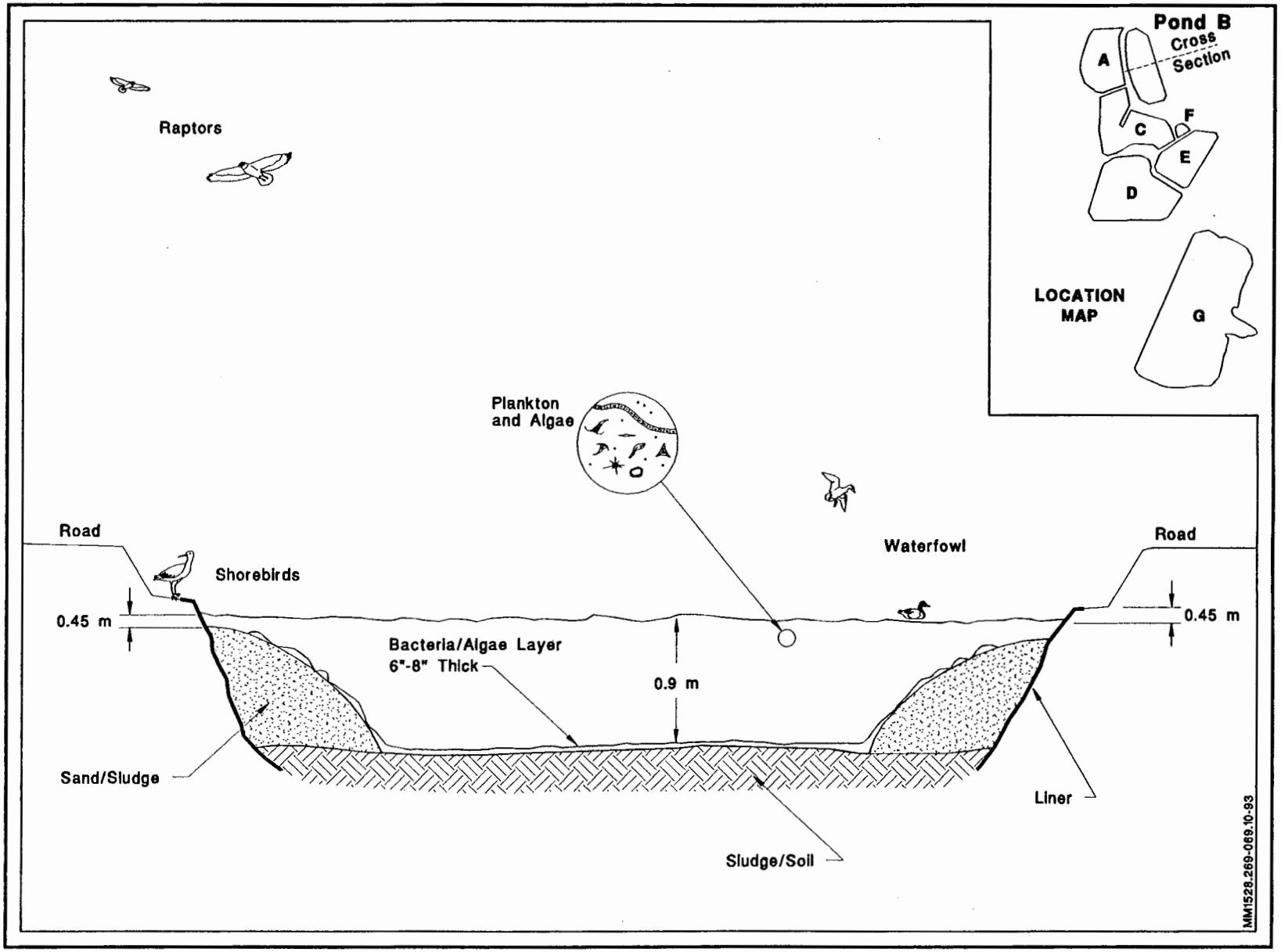
Samples Collected in Each Location

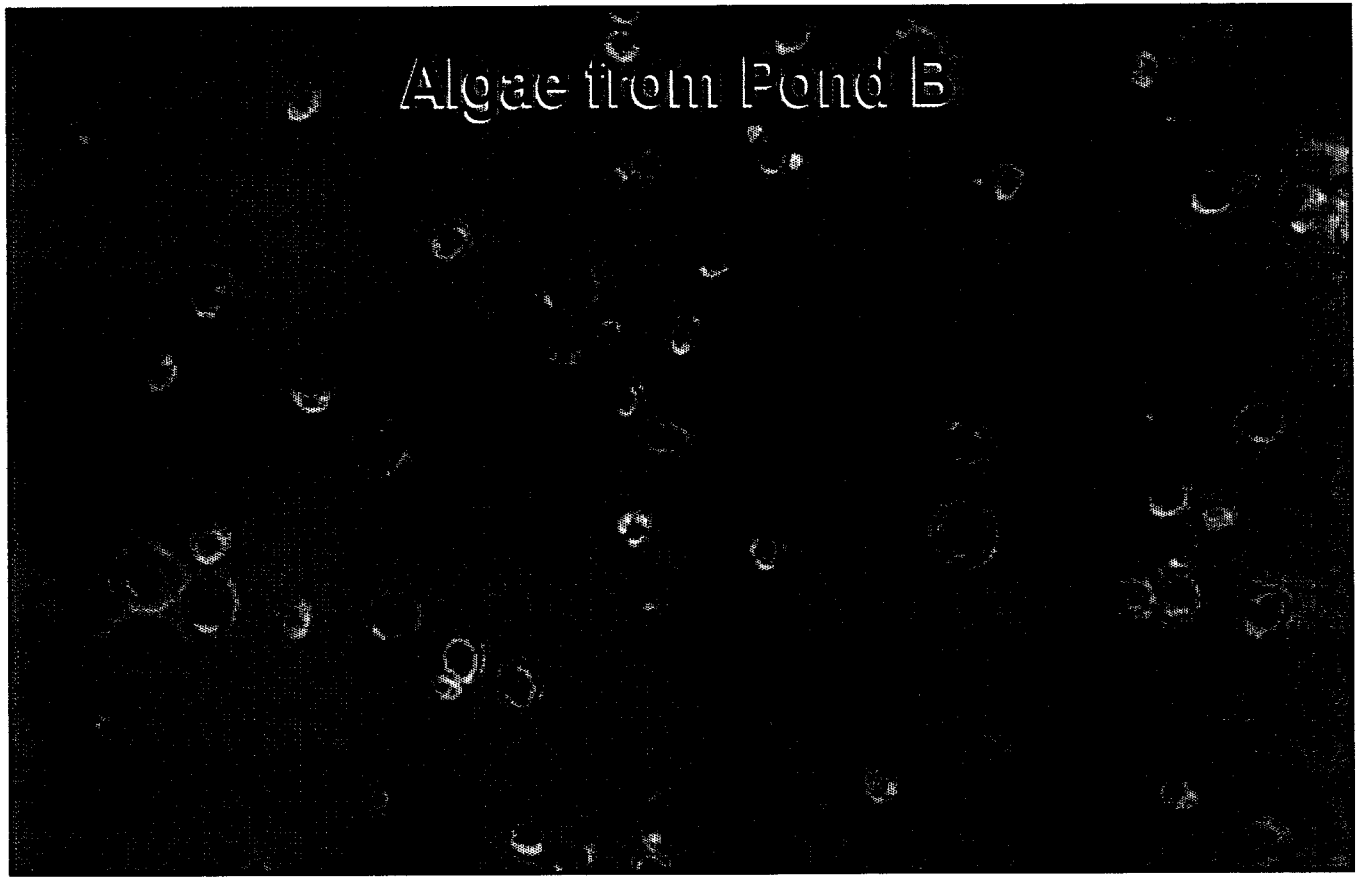
Location	Plank-ton	Inverta-brates	Insects	Fish	Widgeon Grass	Near Surface Sediment	Sludge	Surface Water
Pond A	✓	✓				✓	✓	✓
Pond B							✓	✓
Pond C	✓						✓	✓
Pond D	✓						a	✓
Pond E	✓	✓				✓	✓	✓
Pond F	✓						✓	✓
Pond G	✓			✓			✓	✓
Ditch	✓	✓	✓	✓		✓	✓	✓
Lake Holloman	✓			✓			✓	✓
Lake Stinky	✓				✓		✓	✓

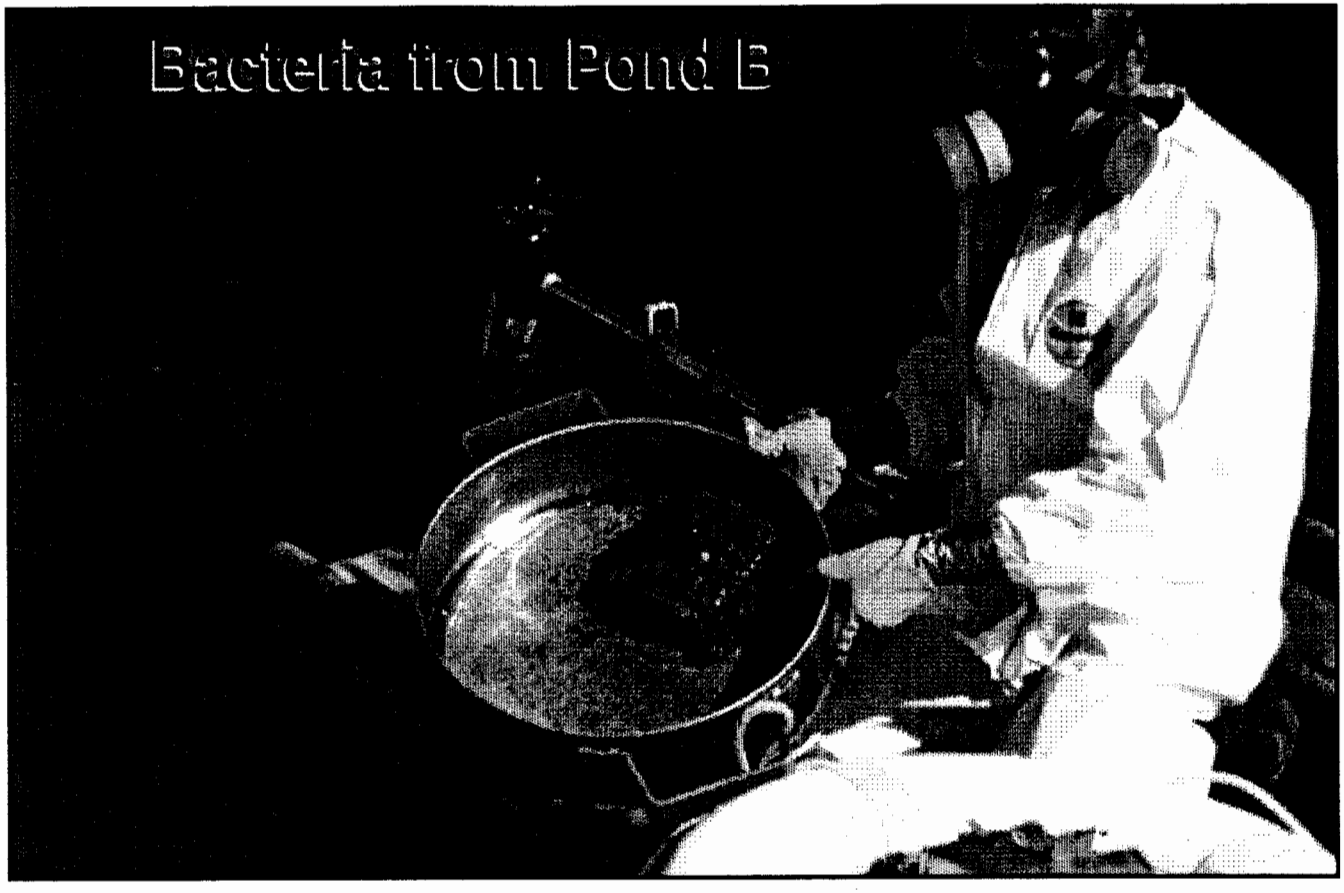
[a] Pond D was dry when sludge samples were collected.

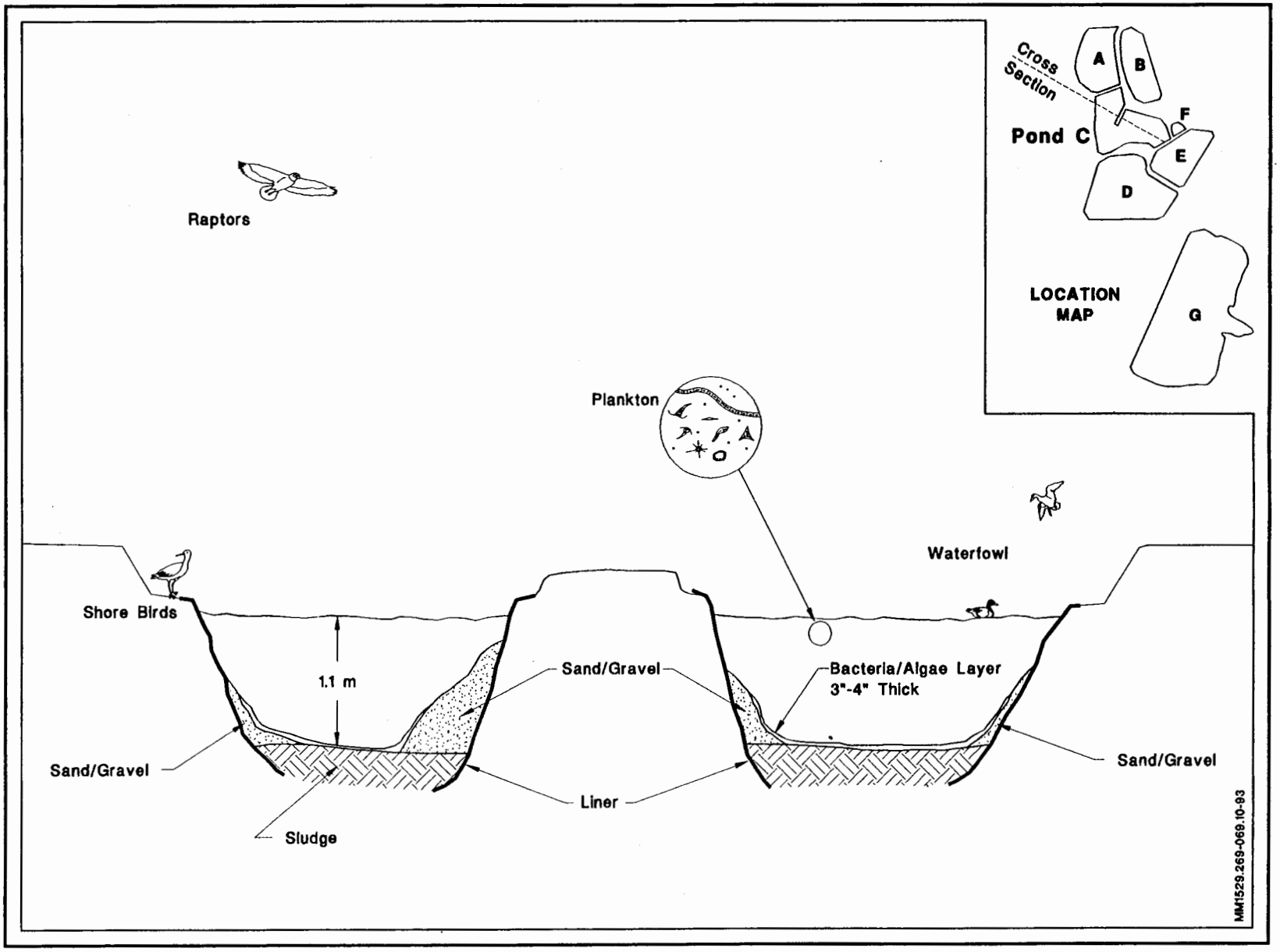

Pond A
Cross
Section
B
C
F
E
D
LOCATION
MAP
G
Raptors
Plankton/Algae
Road
Bacteria/Algae
Road
Waterfowl
Shorebirds
0.45 m
0.45 m
Bacteria Layer
2"-3" Thick
1.2 m
Sand/Sludge
Sand/Sludge
Liner
Sludge/Soil
Invertebrates
MM1526.269-069.10-93


Pond B

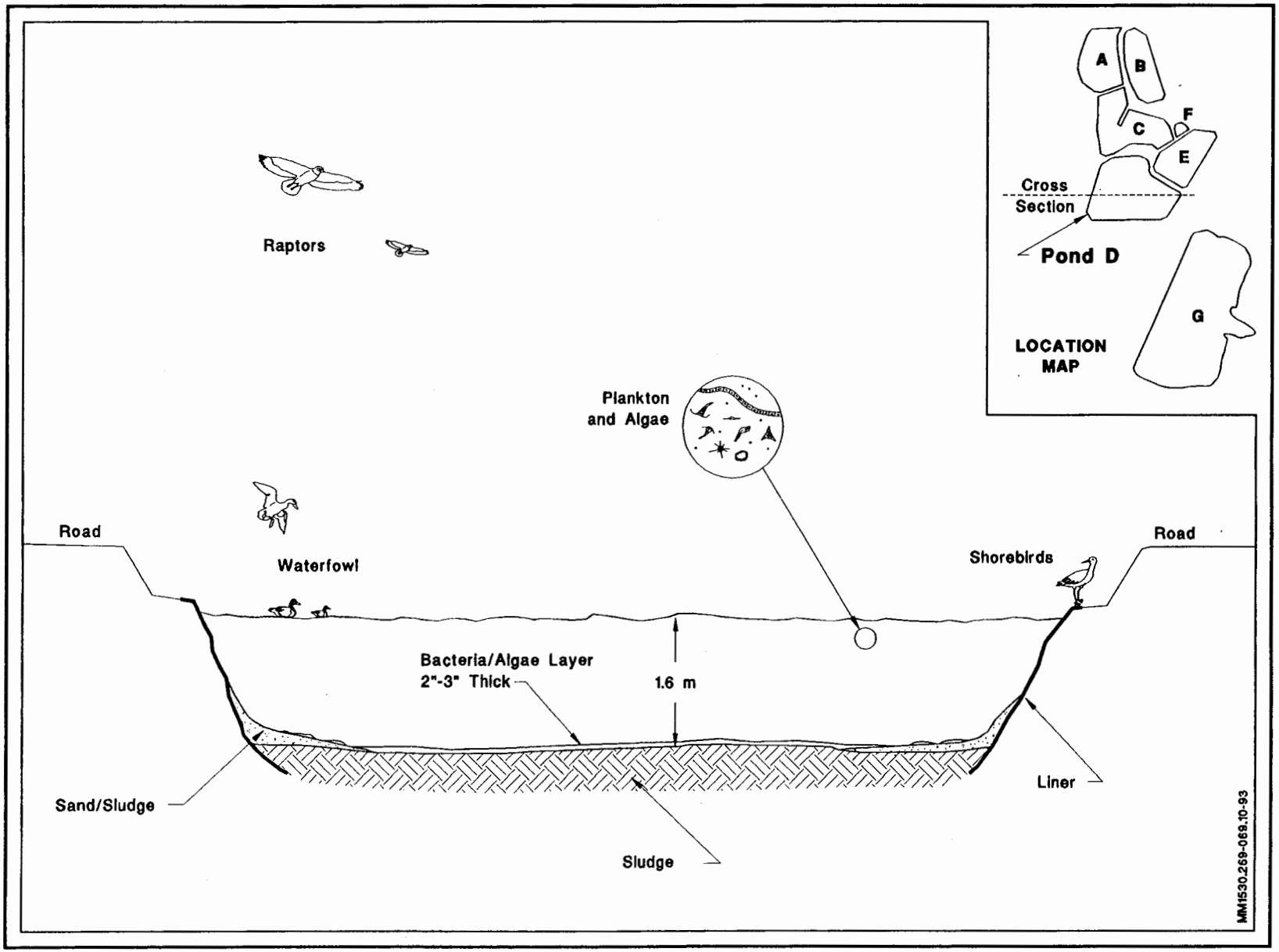

Pond B
Cross Section
A
C
F
E
D
LOCATION MAP
G
Raptors
Plankton and Algae
Waterfowl
Road
Road
Shorebirds
0.45 m
0.45 m
Bacteria/Algae Layer
6"-8" Thick
0.9 m
Sand/Sludge
Liner
Sludge/Soil
MM1528.269-069.10-93

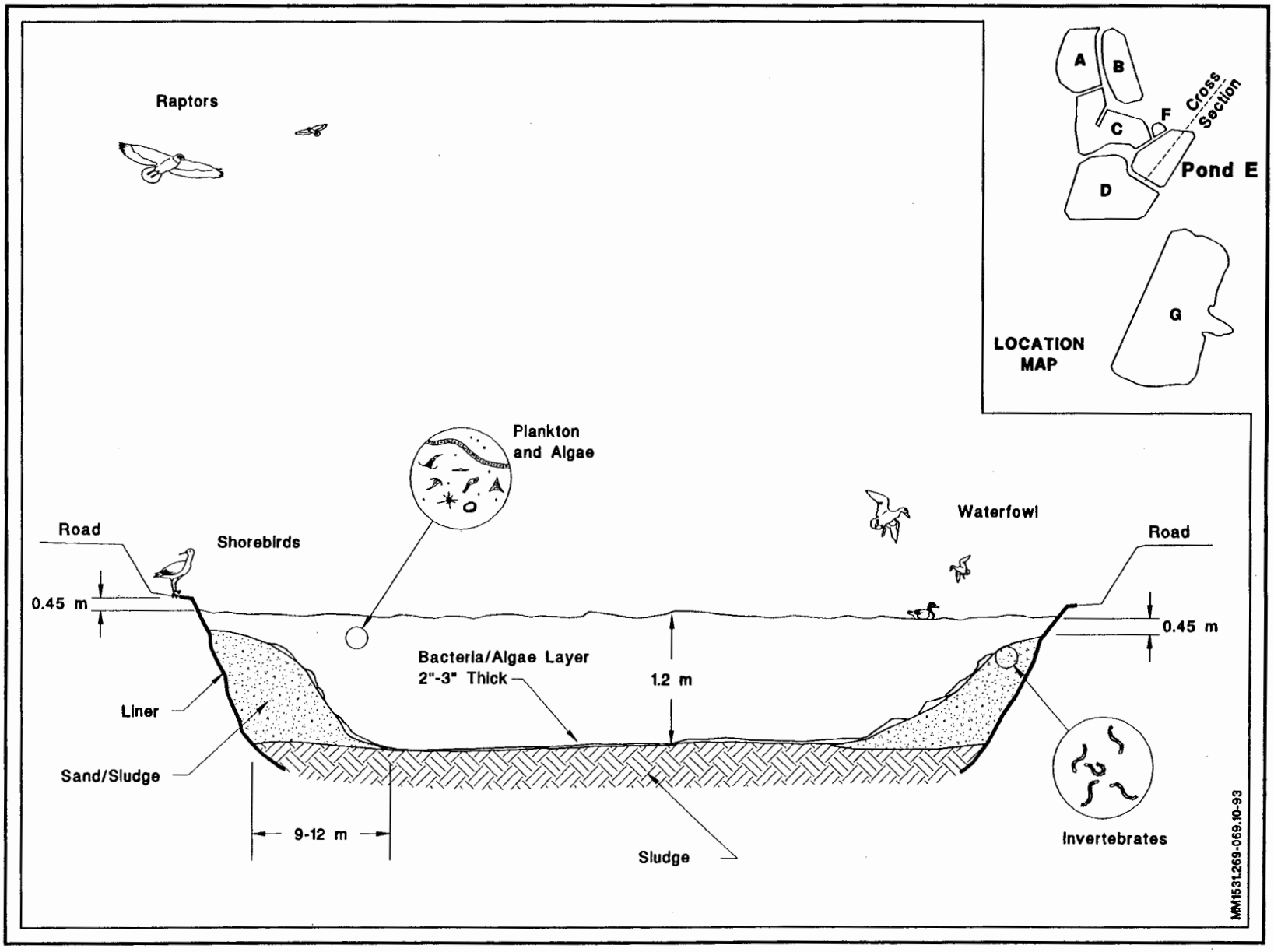

Algae from Pond B

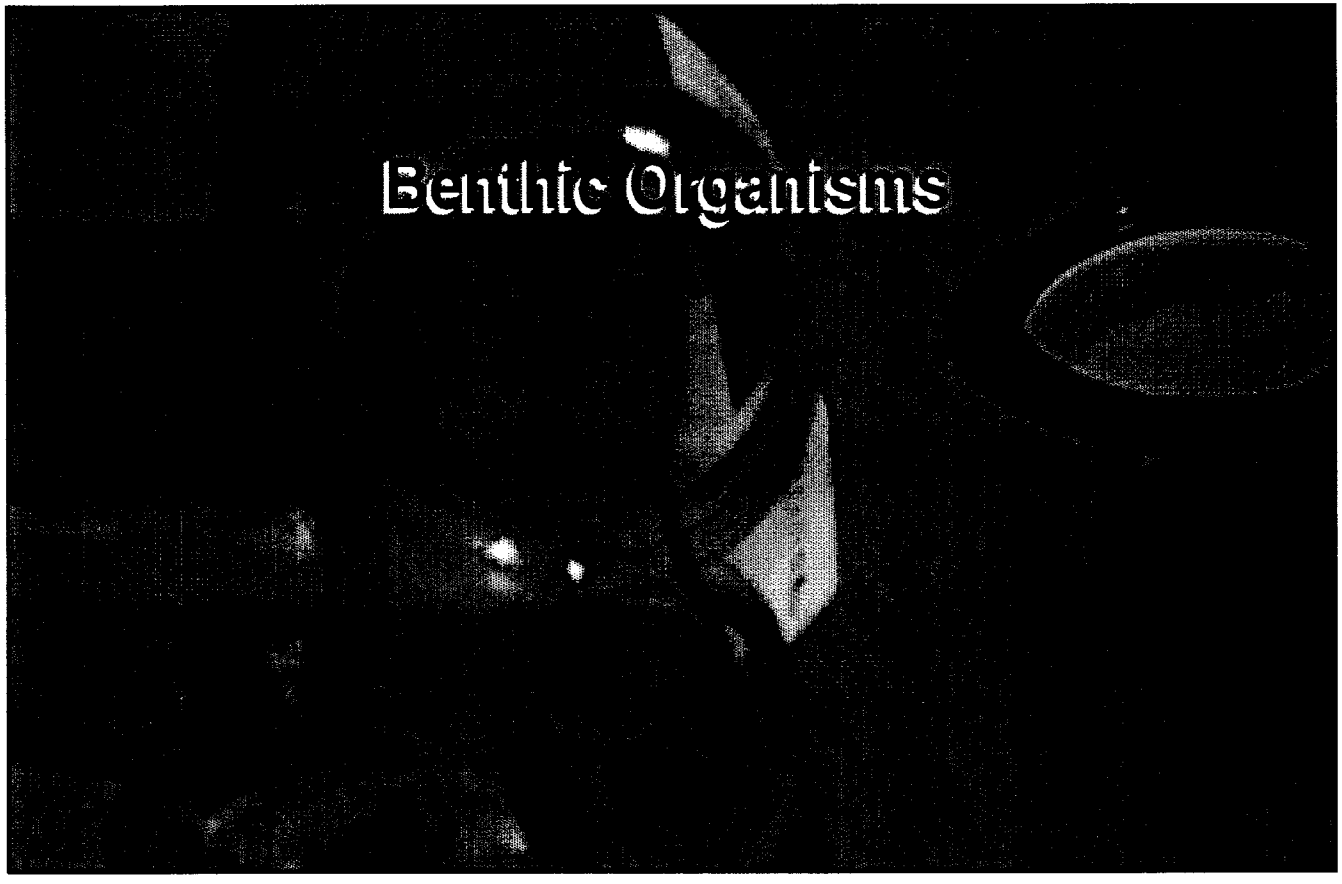

Bacteria from Pond B

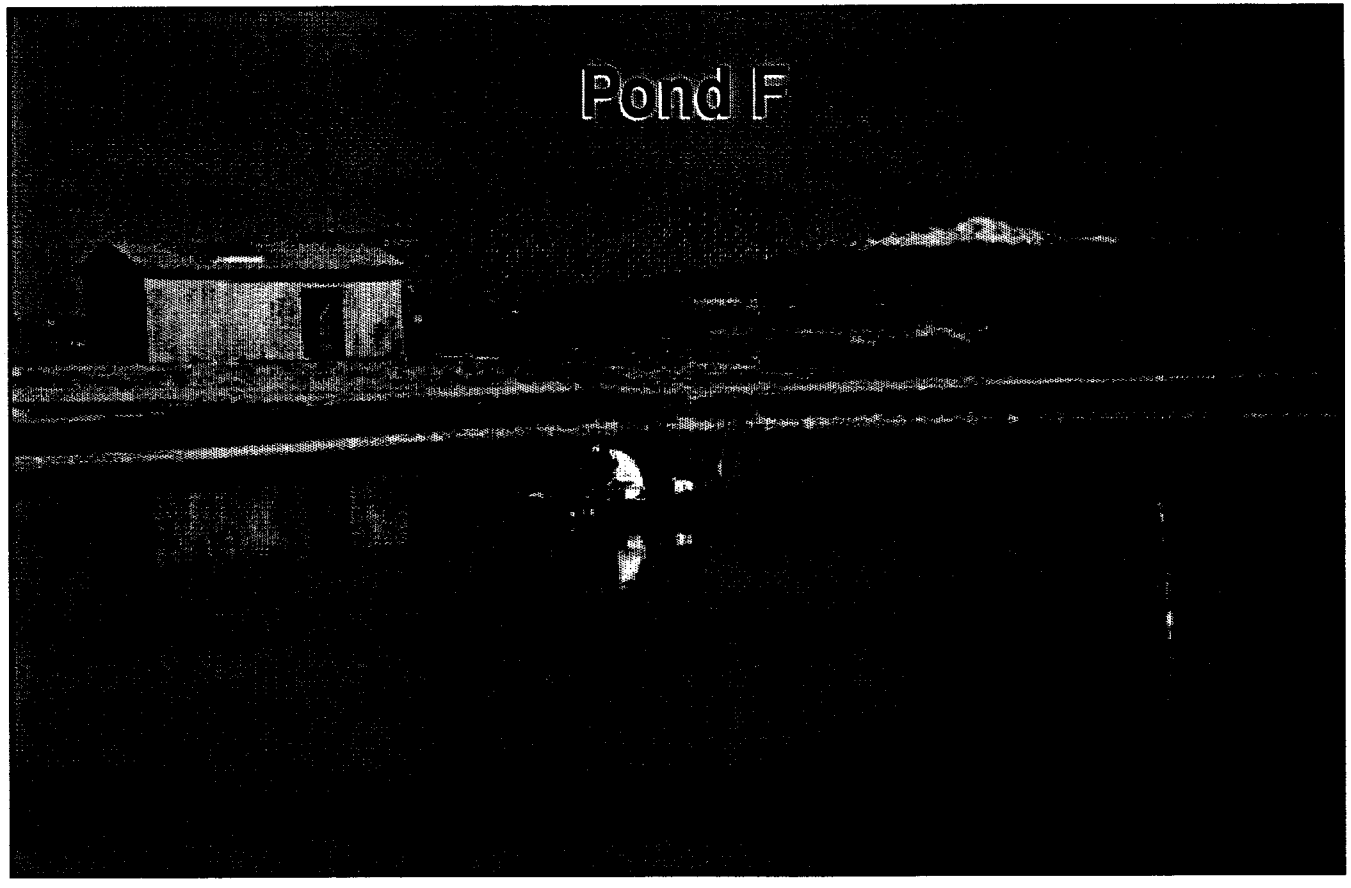

Cross Section
A
B
F
Pond C
E
D
LOCATION MAP
G
Raptors
Plankton
Waterfowl
Shore Birds
1.1 m
Sand/Gravel
Bacteria/Algae Layer
3"-4" Thick
Sand/Gravel
Sand/Gravel
Liner
Sludge
MM1529.269-069.10-93

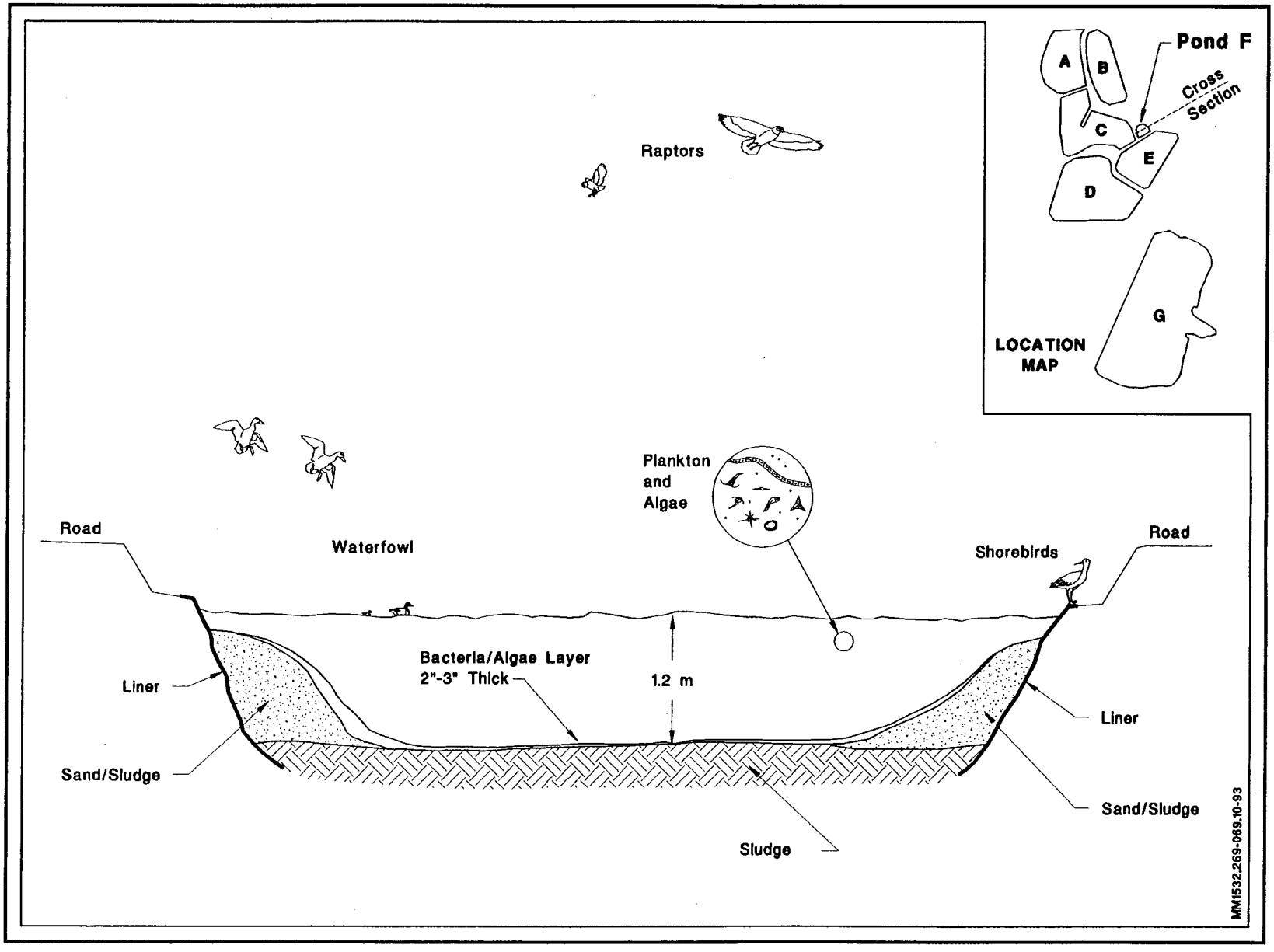
Silt from Pond C


A
B
C
F
E
Cross
Section
Pond D
G
LOCATION
MAP
Raptors
Plankton
and Algae
Road
Waterfowl
Shorebirds
Road
Bacteria/Algae Layer
2"-3" Thick
1.6 m
Sand/Sludge
Liner
Sludge
MM1530.269-069.10-93

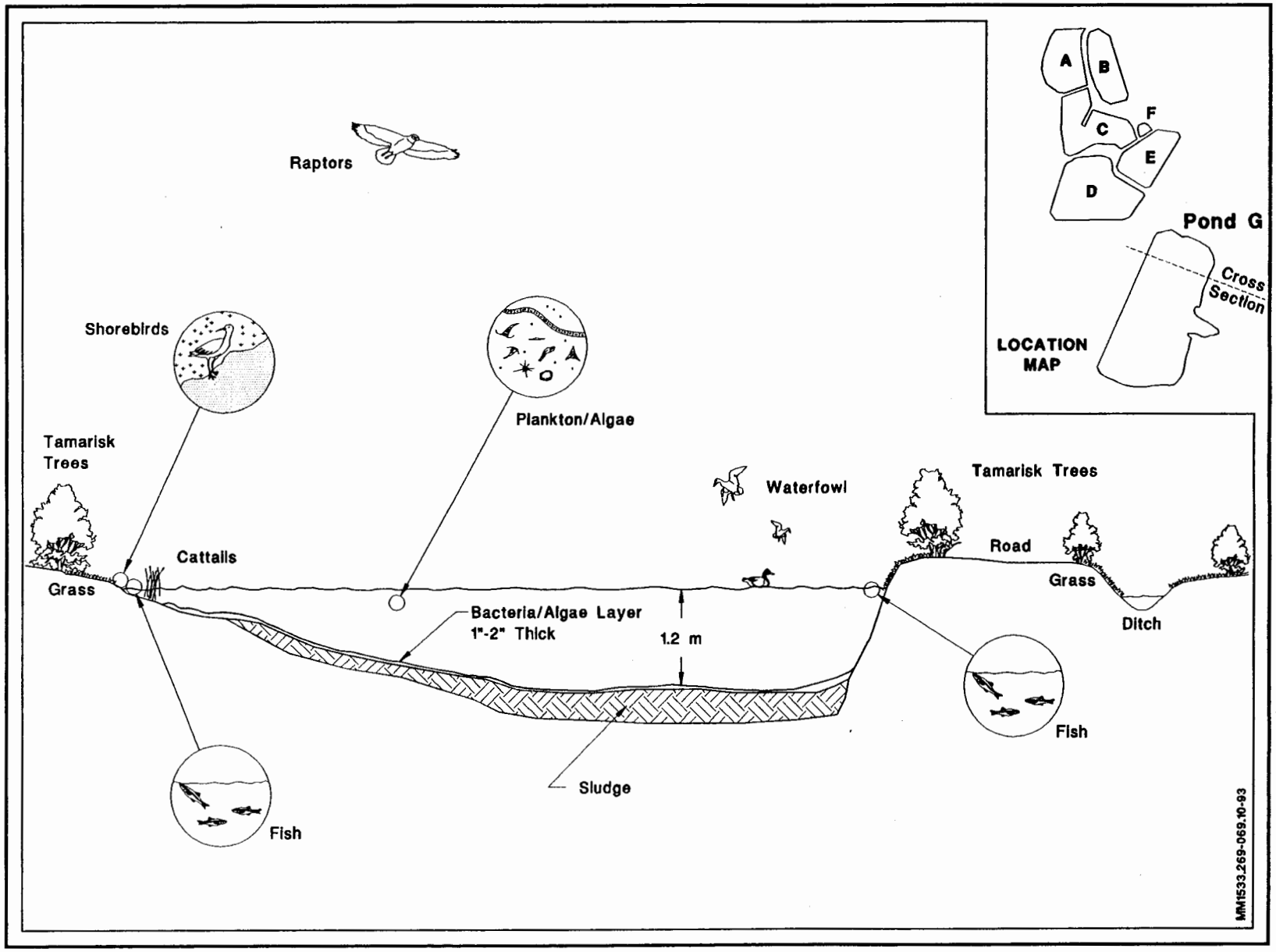

Raptors
Plankton
and Algae
Waterfowl
Road
Shorebirds
Road
0.45 m
0.45 m
Bacteria/Algae Layer
2"-3" Thick
1.2 m
Liner
Sand/Sludge
9-12 m
Sludge
Invertebrates
A
B
C
D
F
Cross
Section
Pond E
G
LOCATION
MAP
MM1531.269-069.10-93

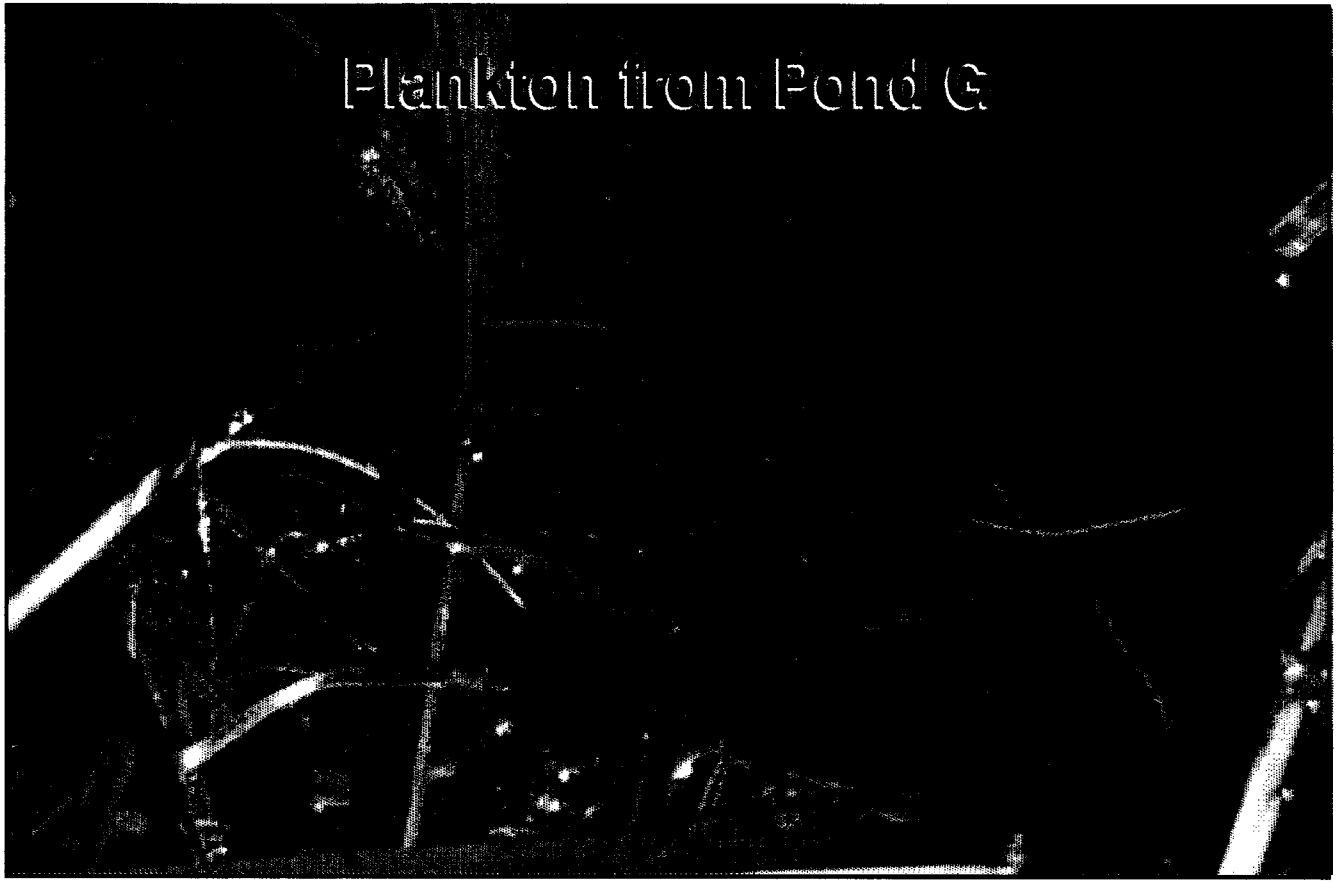

Benthic Organisms

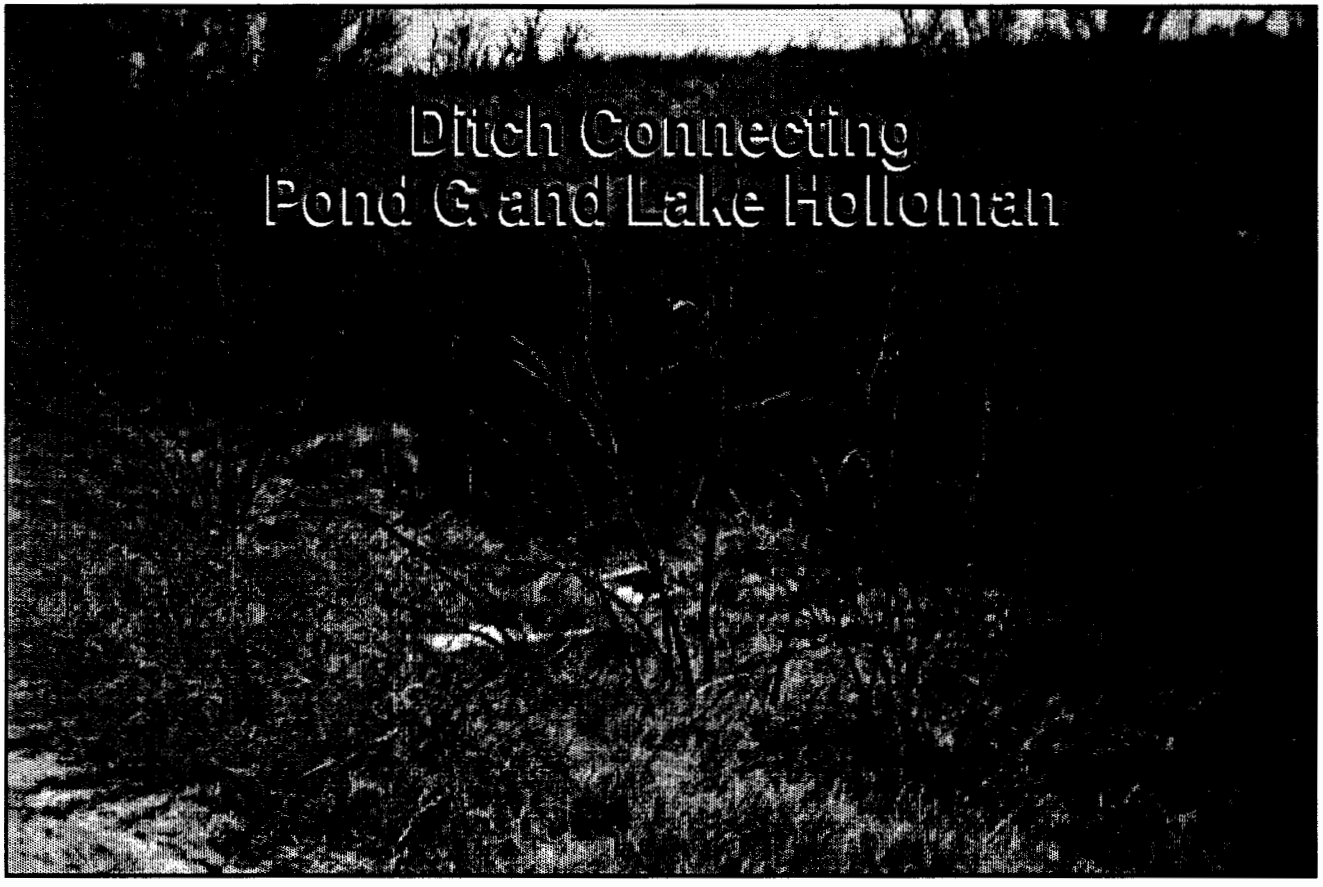

Pond F

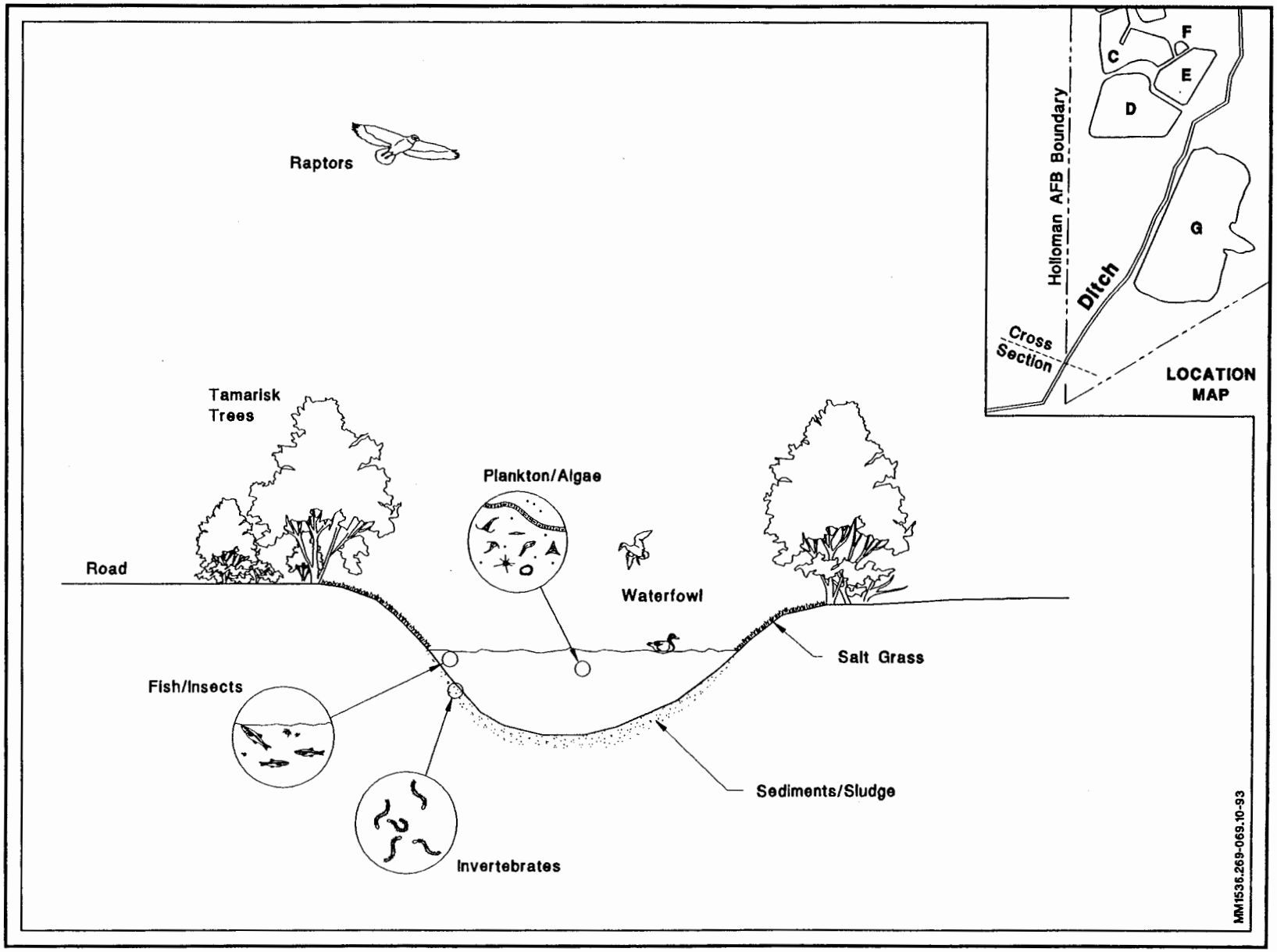

Pond F
A
B
C
D
E
G
Cross Section
LOCATION MAP
Raptors
Plankton and Algae
Waterfowl
Shorebirds
Road
Road
Liner
Liner
Bacteria/Algae Layer 2"-3" Thick
1.2 m
Sand/Sludge
Sand/Sludge
Sludge
MM1532.269-069.10-93

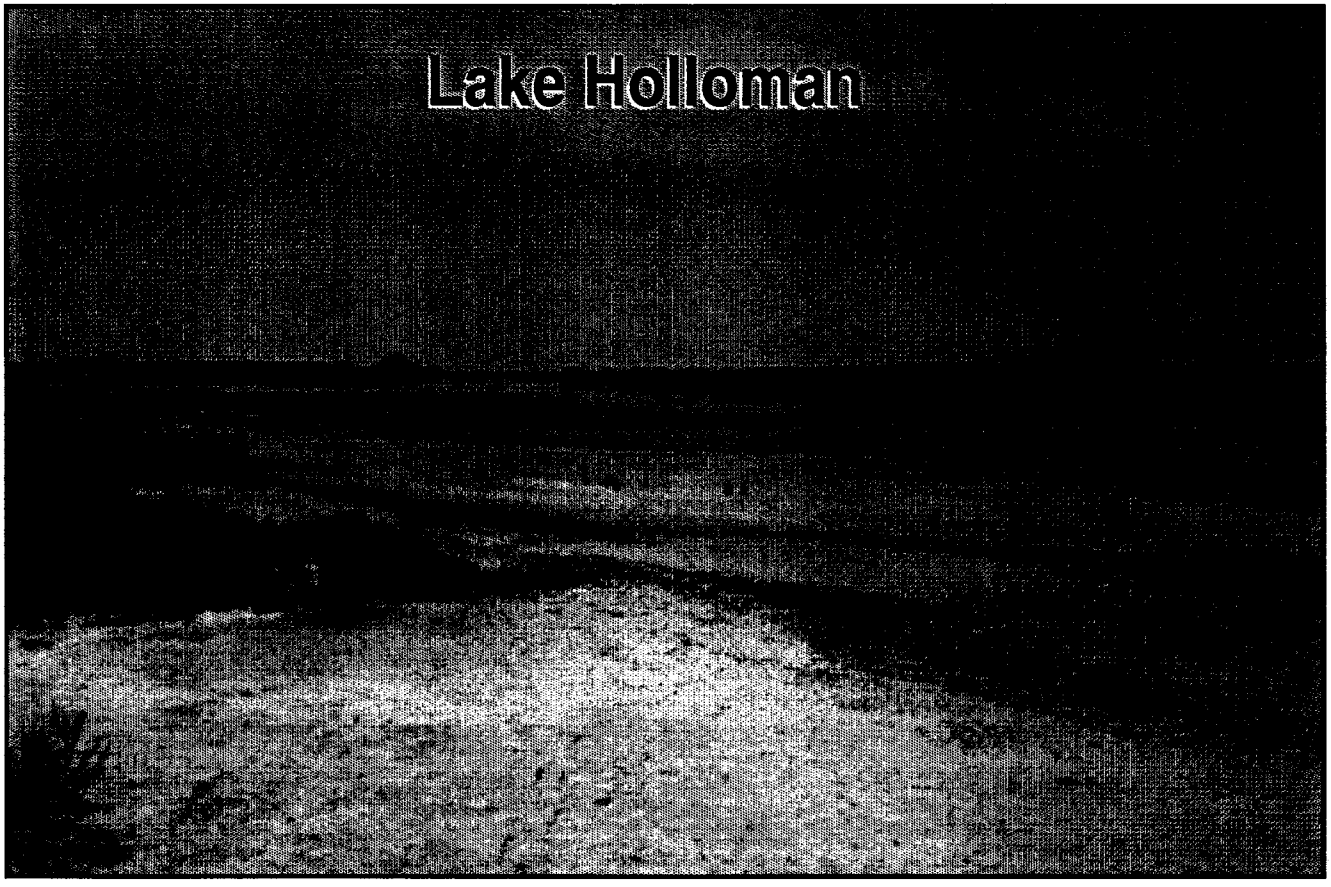
Pond G

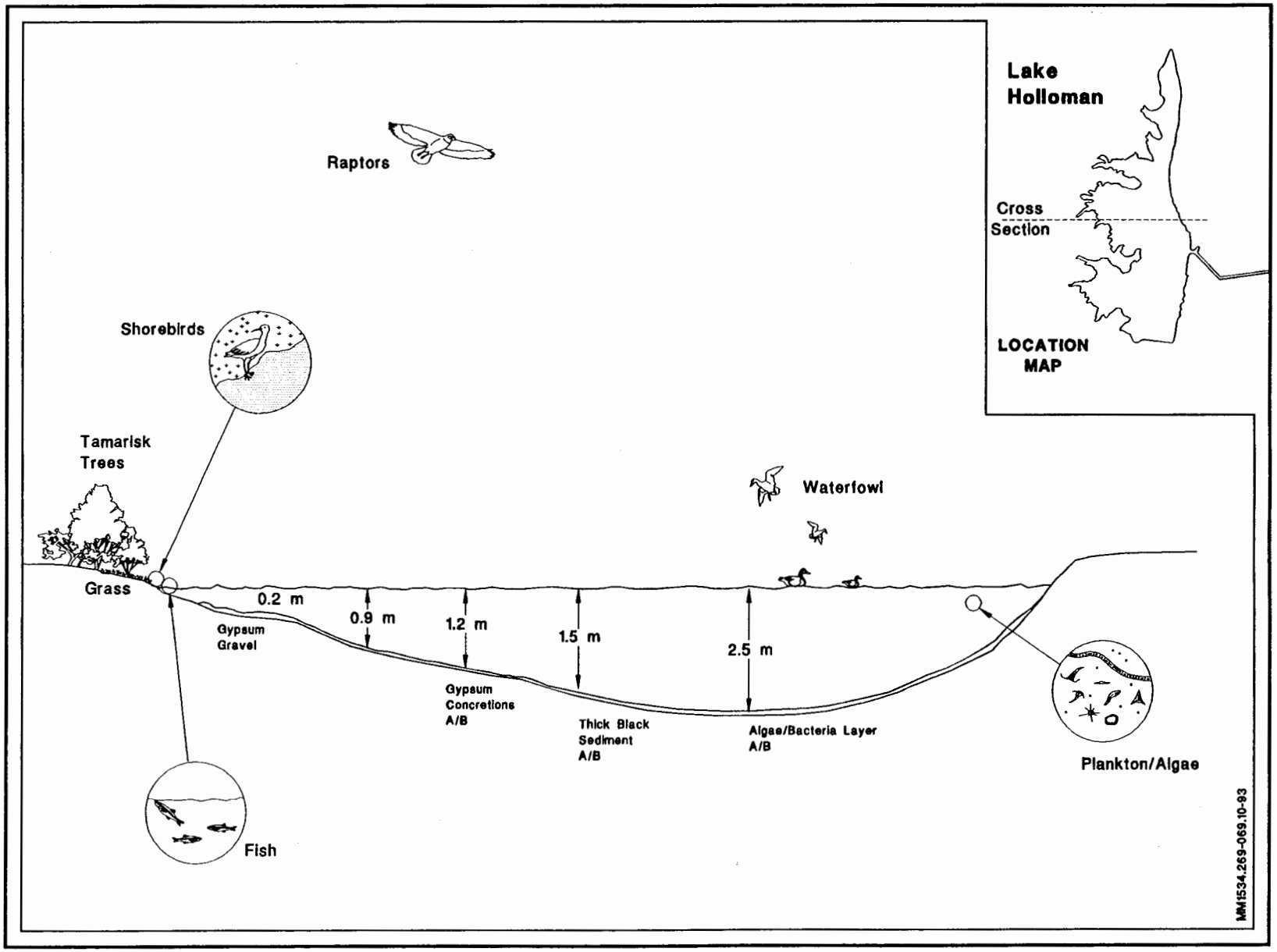

Raptors
Shorebirds
Plankton/Algae
Tamarisk Trees
Waterfowl
Tamarisk Trees
Cattails
Road
Grass
Grass
Ditch
Bacteria/Algae Layer
1"-2" Thick
1.2 m
Fish
Sludge
Fish
A
B
C
D
E
F
Pond G
Cross Section
LOCATION MAP
MM1533.269-069.10-93


Plankton from Pond G

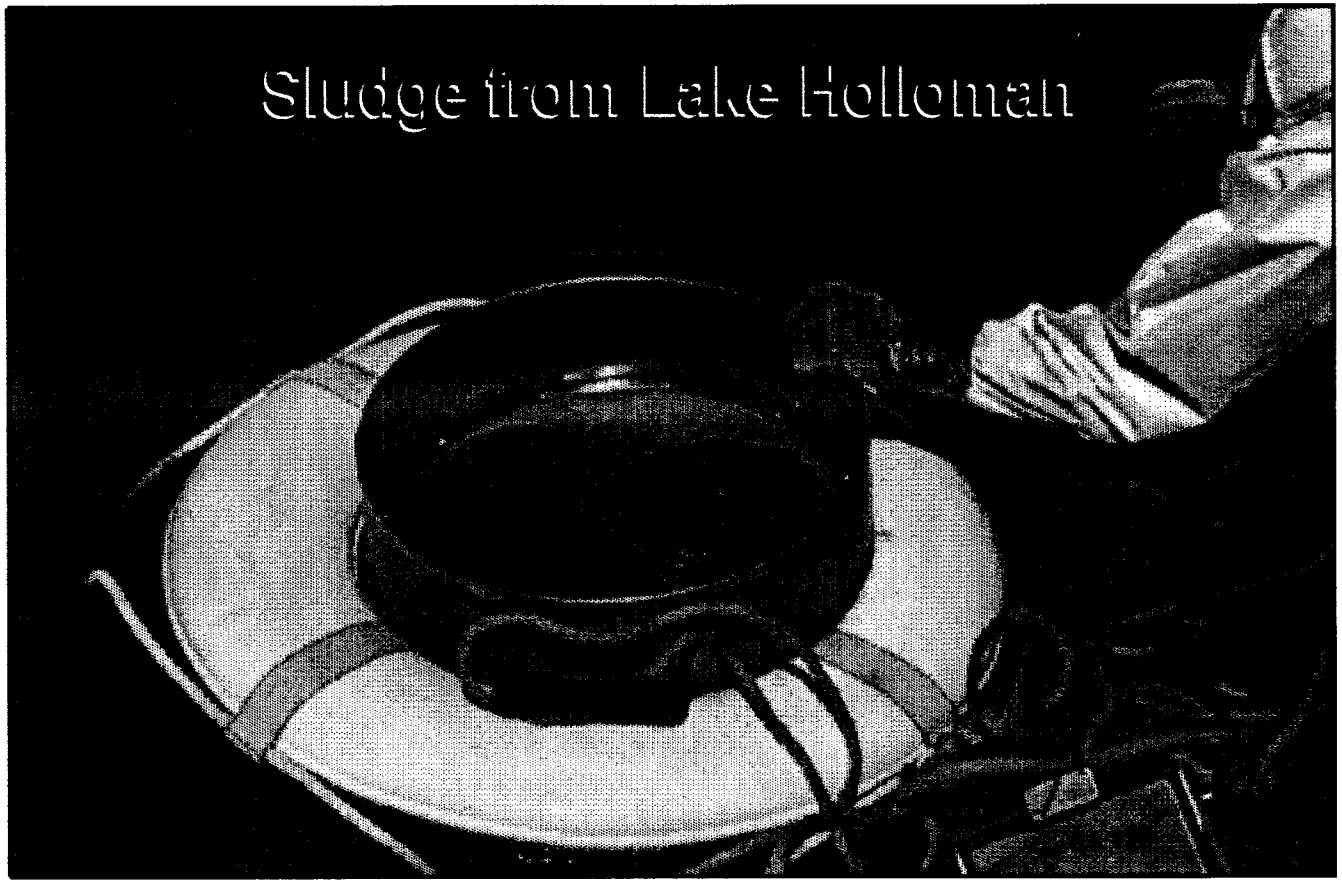

Ditch Connecting
Pond G and Lake Holloman

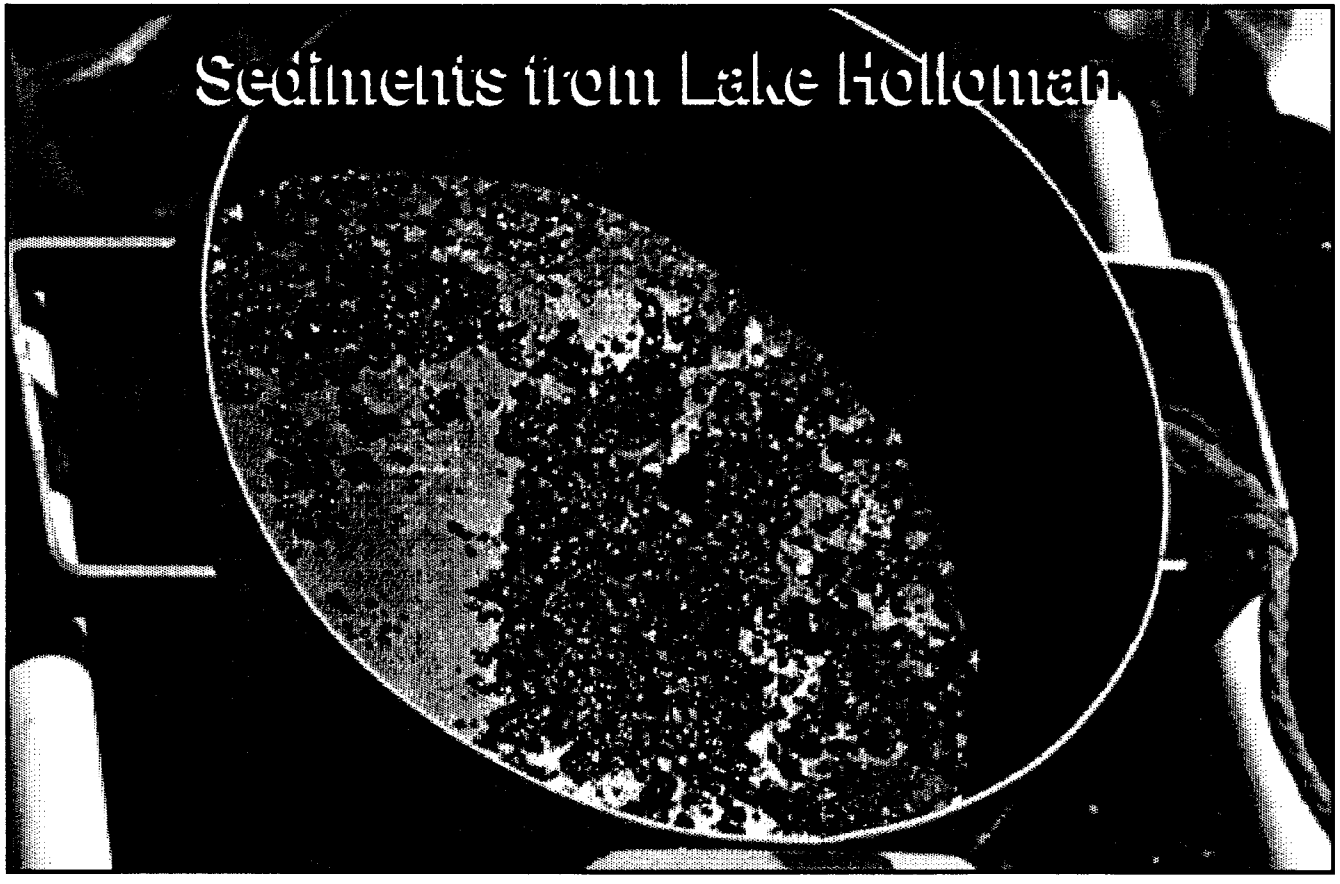

Raptors
Tamarisk Trees
Plankton/Algae
Road
Waterfowl
Salt Grass
Fish/Insects
Sediments/Sludge
Invertebrates
MM1536.269-069.10-93
F
C
E
D
G
Holloman AFB Boundary
Ditch
Cross Section
LOCATION MAP

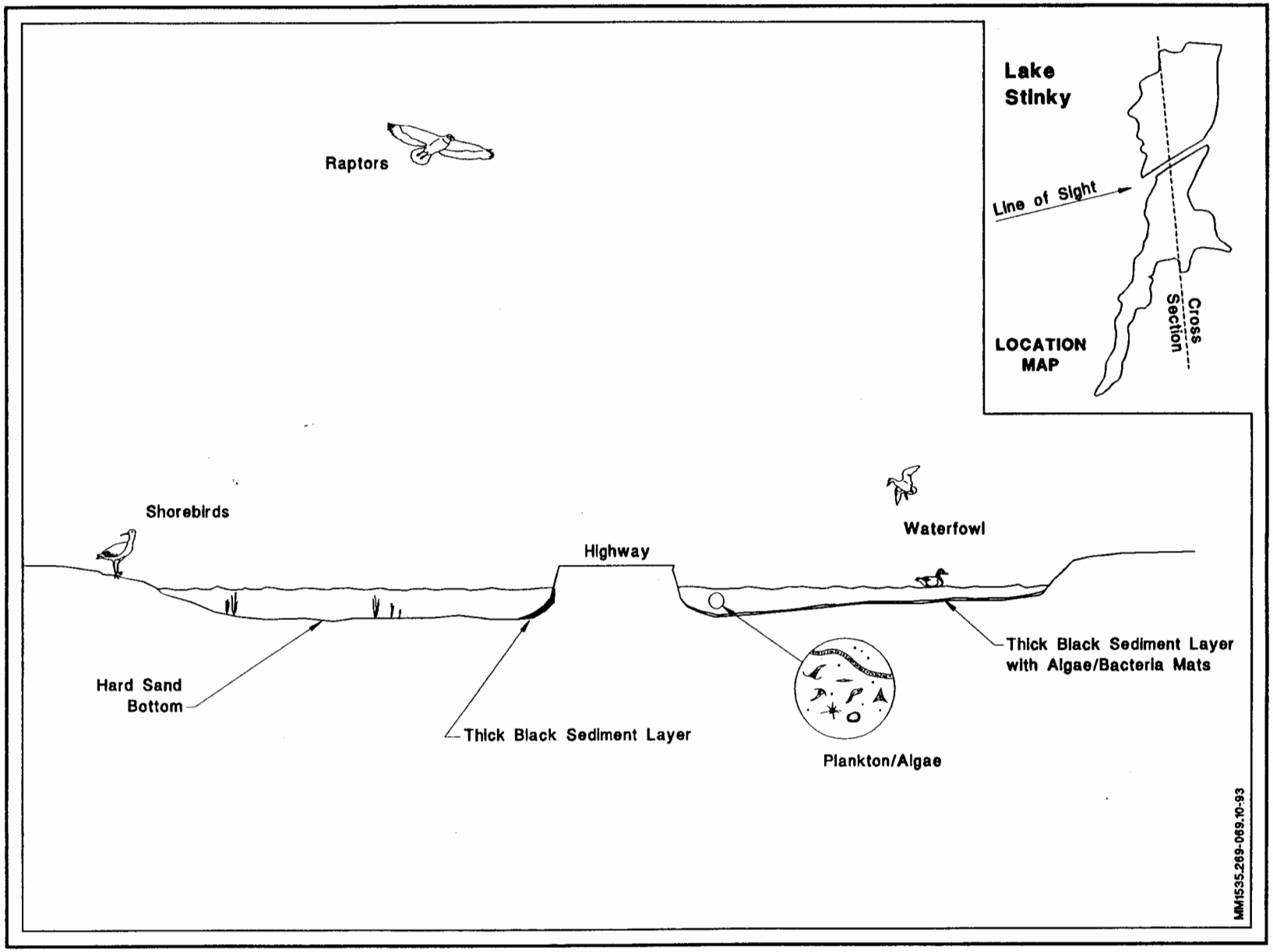

Lake Holloman


Lake
Holloman
Cross
Section
LOCATION
MAP
Raptors
Shorebirds
Tamarisk
Trees
Grass
Waterfowl
0.2 m
0.9 m
1.2 m
1.5 m
2.5 m
Gypsum
Gravel
Gypsum
Concretions
A/B
Thick Black
Sediment
A/B
Algae/Bacteria Layer
A/B
Plankton/Algae
Fish
MM1534.269-069.10-93

Gambusia Affinis from Lake Holloman


Sludge from Lake Holloman


Sediments from Lake Holloman


Lake Stinky
Line of Sight
Cross Section
LOCATION MAP
Raptors
Shorebirds
Waterfowl
Highway
Hard Sand Bottom
Thick Black Sediment Layer
Plankton/Algae
Thick Black Sediment Layer with Algae/Bacteria Mats
MM1535.269-069.10-93

Ecological Results Summary

	Adverse Effects Possible	Adverse Effects Not Expected
Birds		
Killdeer	E	A, Ditch
Mallards	LH, LS	A, B, C, D, E, F, G, Ditch
Mergansers		G, Ditch, LH
Fish	A, B, C, D, E, G, LH	F, Ditch, LS

Conclusions

- Birds
  - -- Mallards - Ecological indices are slightly above *de minimis* levels
  - -- Killdeer - Ecological indices are above *de minimis* levels
  - -- Mergansers - Ecological indices are below *de minimis* levels

Conclusions

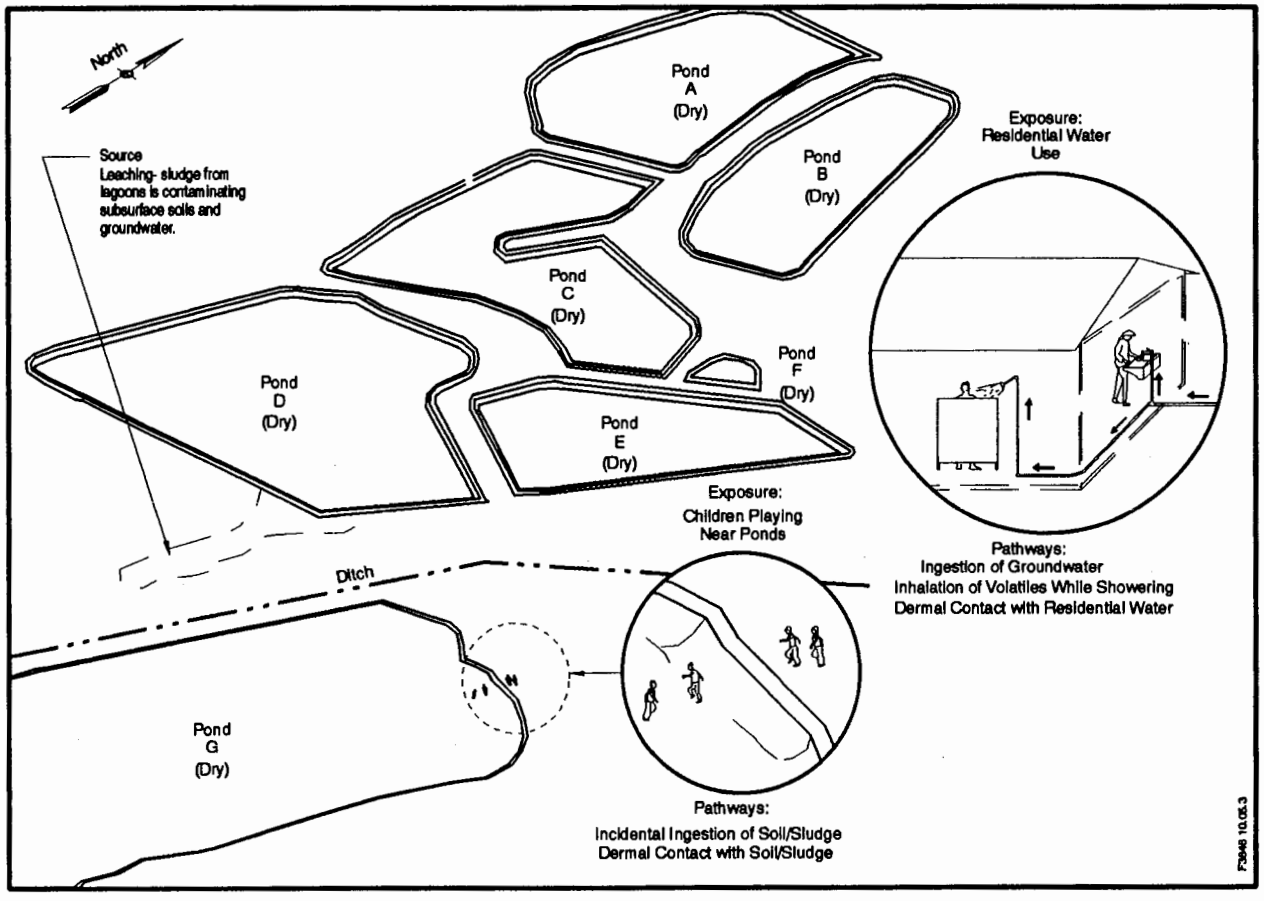
- Fish
  - -- Present in Pond G, Lake Holloman, and the ditch
  - -- Ecological hazards are above *de minimis* levels
- New data from biota sampling will be used in the Biological Assessment

Human Health Risk Assessment

Baseline Risk Assessment

- Domestic water use
- Default exposure assumptions

HUMAN HEALTH RISK ASSESSMENT



SEWAGE LAGOONS AND LAKES

Exposure Route Summary

- Ingestion
  - -- Groundwater
  - -- Sediments
  - -- Sludge
  - -- Soils

Exposure Route Summary

- Dermal Contact
  - -- Groundwater (while showering)
  - -- Sediments
  - -- Sludge
  - -- Soils
- Inhalation
  - -- Volatiles (while showering)

Proposed Subpart S Corrective Action Rule

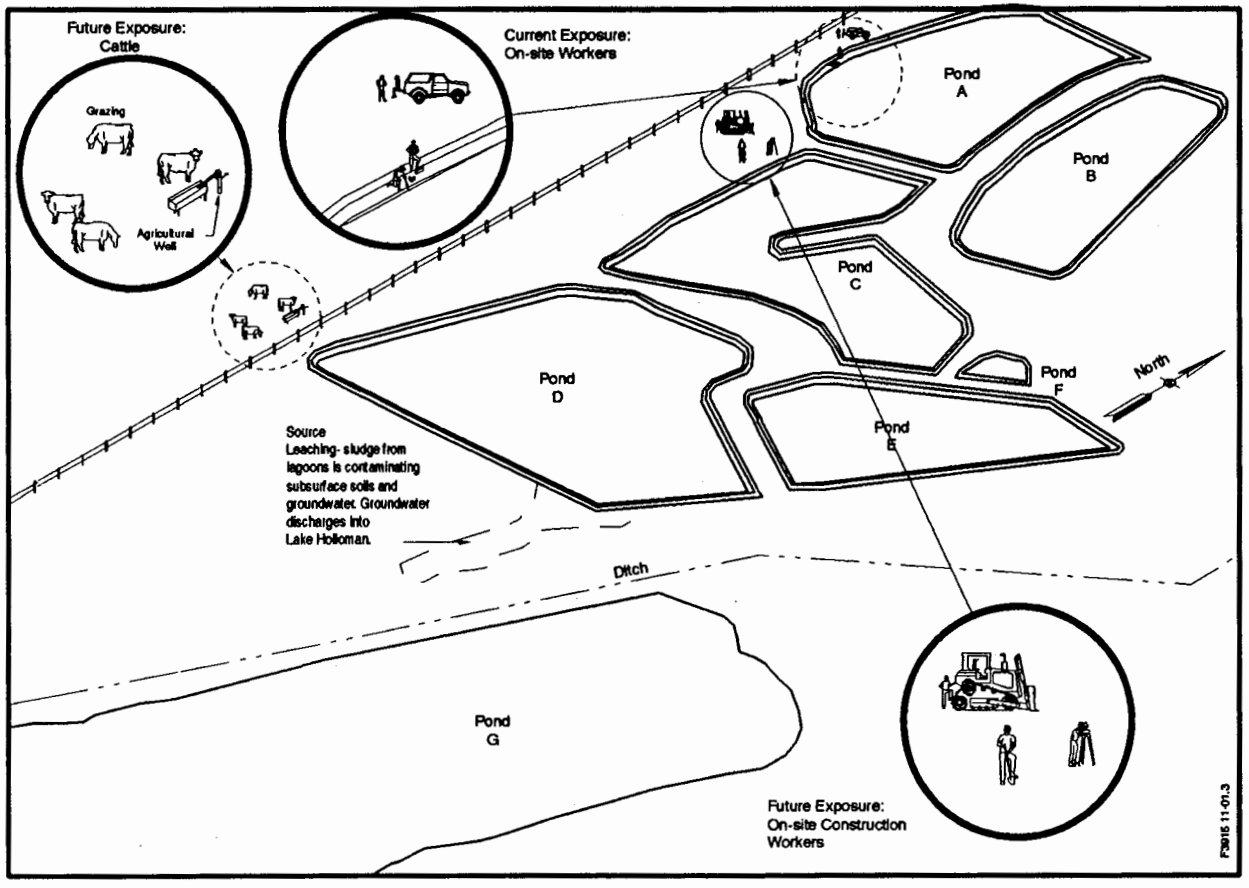
- Allows a cancer risk between 10^{-4} (one in 10,000) and 10^{-6} (one in 1,000,000)
- The ratio of exposure concentration to noncancer bench mark value should not exceed one

Results for Baseline Risk Assessment

- Carcinogenic risks exceed *de minimis* levels for all sites
- Noncancer hazards exceed *de minimis* levels for all sites except Pond D

Site Specific Risk Assessment

- Occupational exposure at lagoons and ditch
- Accidental exposure at Pond G
- Recreational exposure at ditch, Pond G and lakes
- Agricultural exposure at lagoons (future) and lakes (current)


Future Exposure:
Cattle
Grazing
Agricultural Well
Current Exposure:
On-site Workers
Pond A
Pond B
Pond C
Pond D
Pond E
Pond F
Pond G
North
Source
Leaching- sludge from lagoons is contaminating subsurface soils and groundwater. Groundwater discharges into Lake Holloman.
Ditch
Future Exposure:
On-site Construction Workers
F39115 11-01.3

Exposure Route Summary

Current Site Workers

- Dermal contact
  - -- Surface water
  - -- Sediments
  - -- Sludge
  - -- Soils

Exposure Route Summary

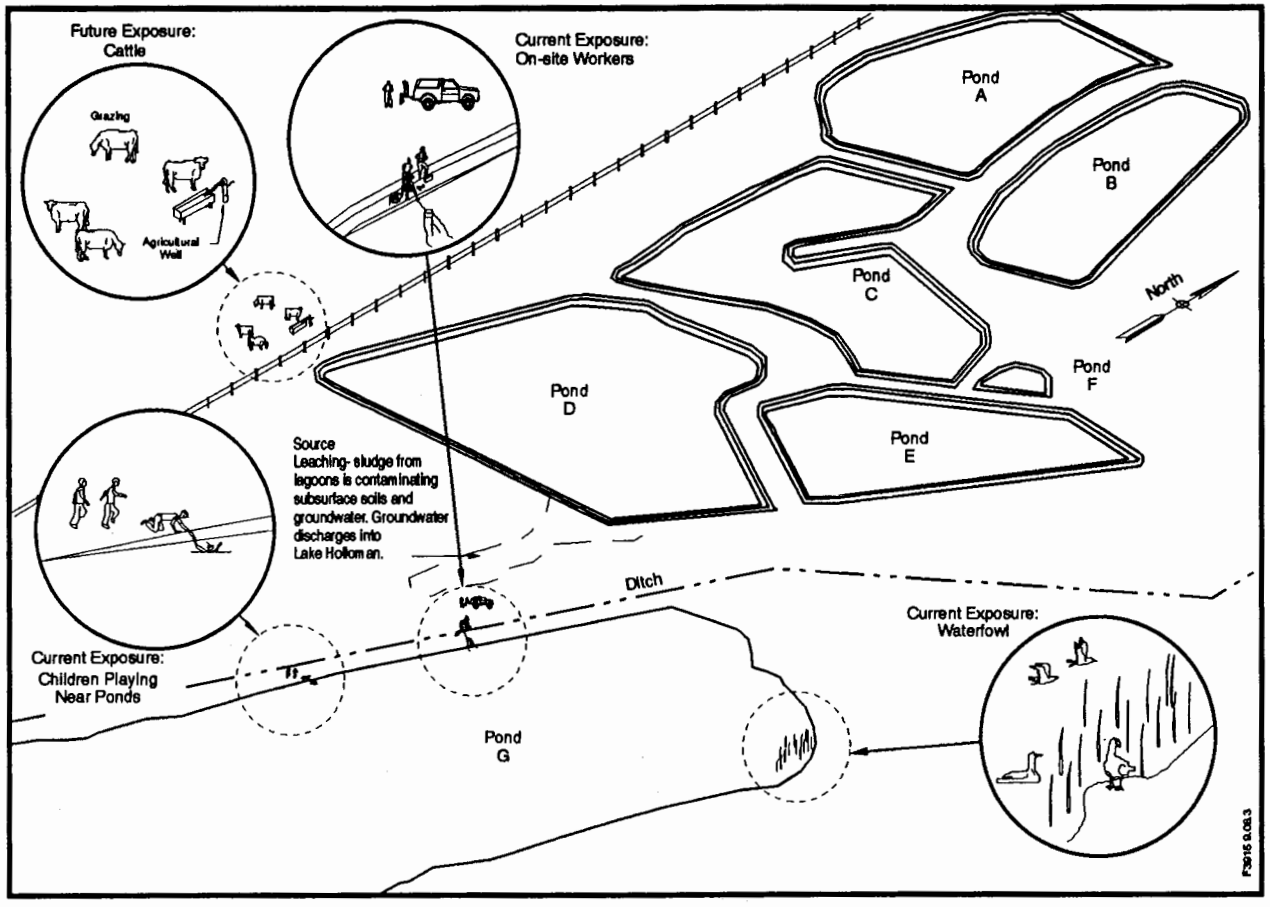
Future Construction Workers

- Incidental ingestion and dermal contact
  - -- Sediments
  - -- Sludge
  - -- Soils
- Inhalation
  - -- Volatiles
  - -- Fugitive dusts

Exposure Route Summary

Future Agricultural Consumers

- Ingestion
  - -- Beef


Future Exposure:
Cattle
Grazing
Agricultural Well
Current Exposure:
On-site Workers
Pond A
Pond B
Pond C
Pond D
Pond E
Pond F
Pond G
North
Source
Leaching- sludge from lagoons is contaminating subsurface soils and groundwater. Groundwater discharges into Lake Hollorman.
Ditch
Current Exposure:
Children Playing Near Ponds
Current Exposure:
Waterfowl

Exposure Route Summary

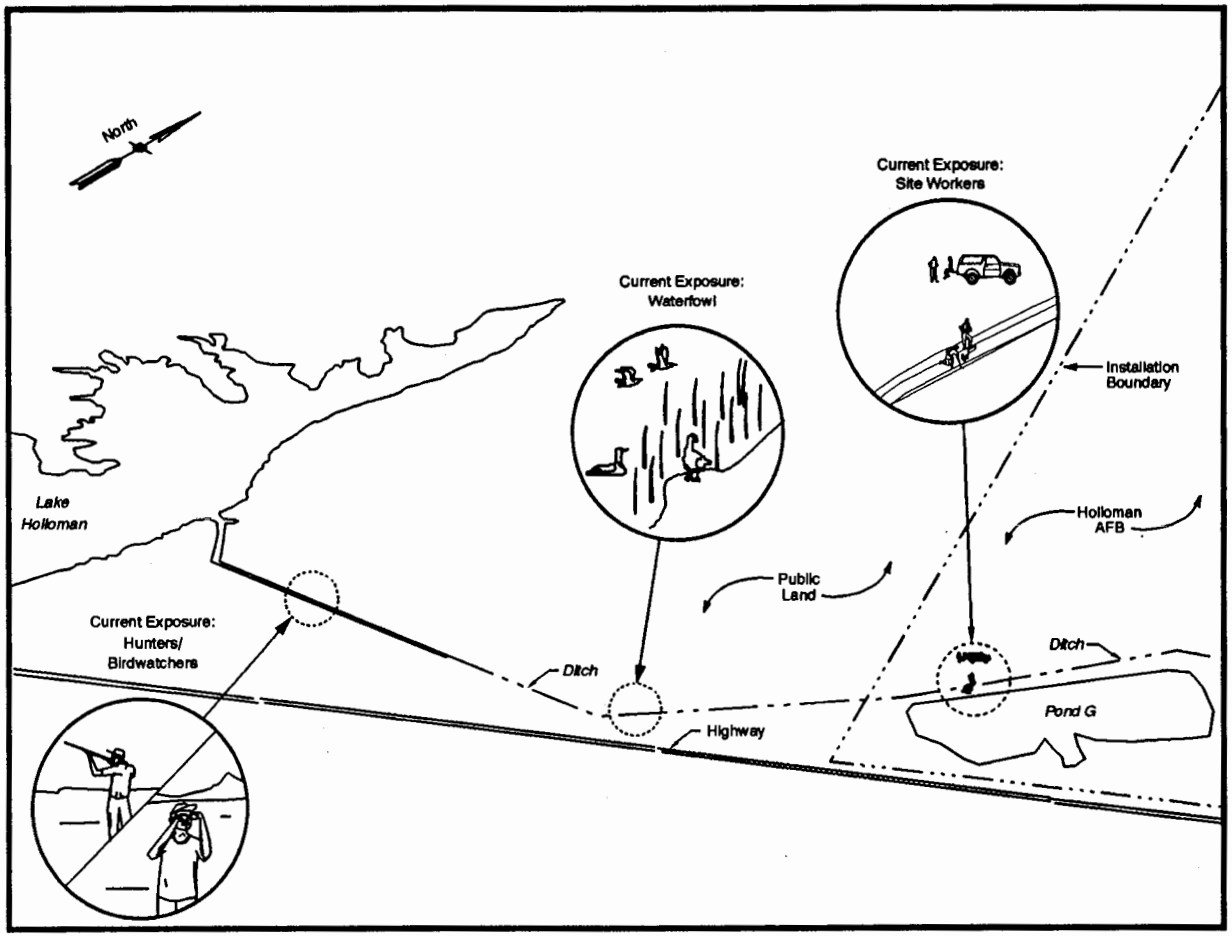
Current Hunters

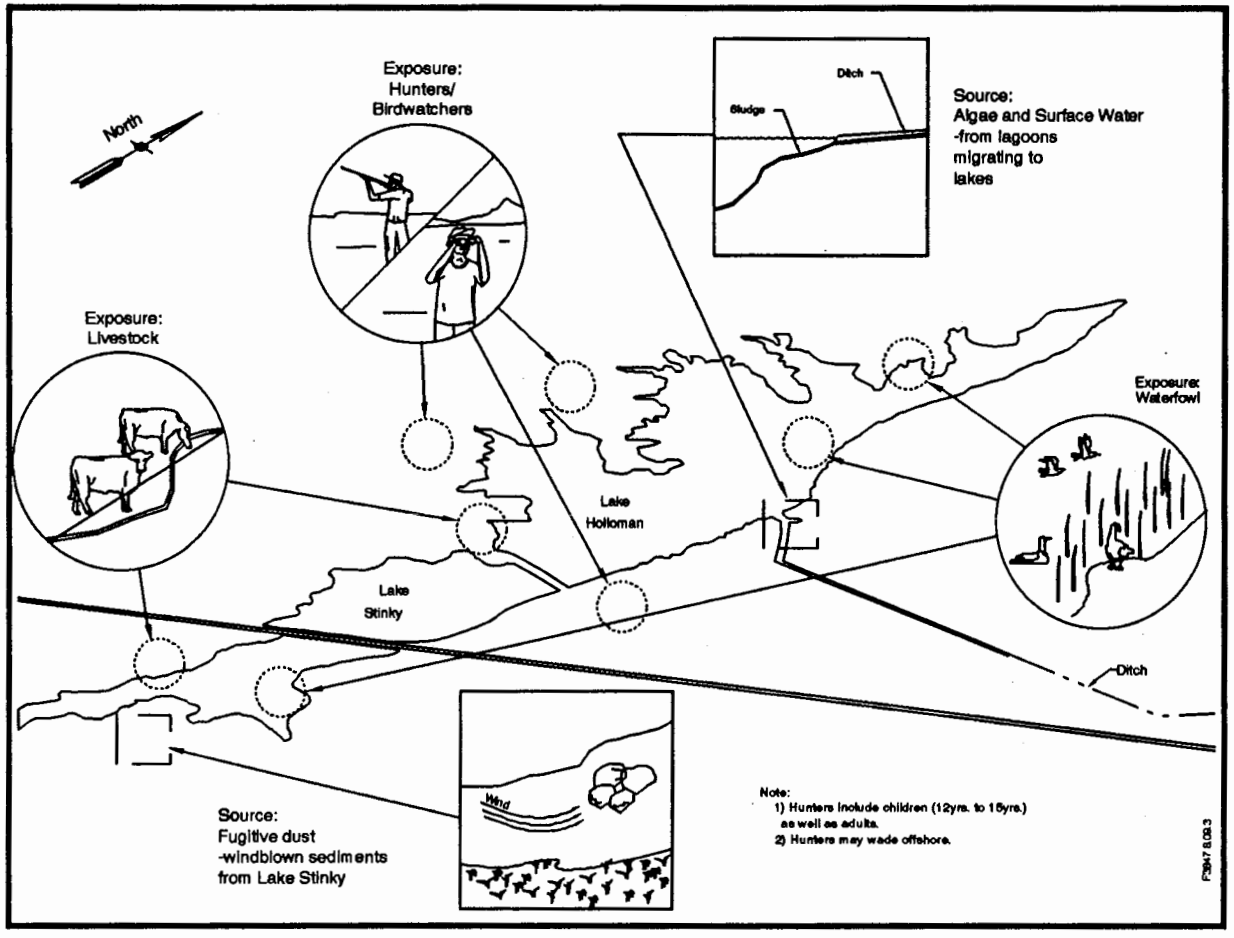
- Ingestion
  - -- Waterfowl

Exposure Route Summary

Trespassers

- Dermal contact
  - -- Surface water
  - -- Sediments
  - -- Sludge
  - -- Soils
- Incidental ingestion
  - -- Surface water


North
Current Exposure:
Site Workers
Current Exposure:
Waterfowl
Installation
Boundary
Lake
Holloman
Holloman
AFB
Public
Land
Current Exposure:
Hunters/
Birdwatchers
Ditch
Ditch
Pond G
Highway


North
Exposure:
Hunters/
Birdwatchers
Ditch
Sludge
Source:
Algae and Surface Water
-from lagoons
migrating to
lakes
Exposure:
Livestock
Exposure:
Waterfowl
Lake
Holloman
Lake
Stinky
Ditch
Wind
Source:
Fugitive dust
-windblown sediments
from Lake Stinky
Note:
1) Hunters include children (12yrs. to 15yrs.)
as well as adults.
2) Hunters may wade offshore.
F3847 8.03.3

Exposure Route Summary

Hunters and Bird Watchers

- Dermal contact
  - -- Surface water
  - -- Sediments
  - -- Sludge
  - -- Soils

Exposure Route Summary

Hunters and Bird Watchers

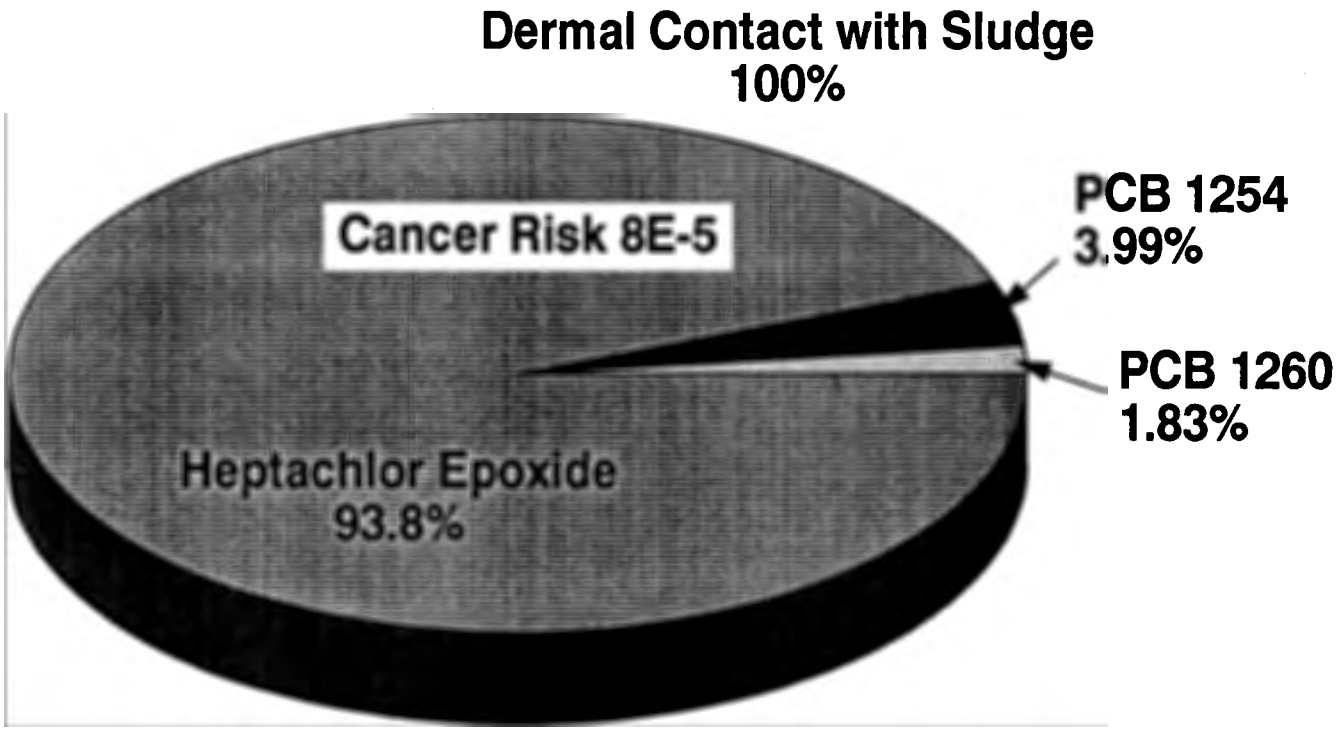
- Ingestion
  - -- Surface water (incidental)
  - -- Waterfowl
- Inhalation
  - -- Volatiles
  - -- Fugitive dusts

EXPOSURE ASSUMPTIONS SUMMARY							
Scenario	Skin Surface Area		Exposure Time (hrs/day)	Exposure Duration (yrs)	Exposure Frequency (days/yr)	Ingestion Rate	Inhalation Rate (m^3/hr)
	Water	Soil/Sludge					
Baseline (residential)	Default	Default	Default	Default	Default	Default	Default
Current Occupational							
• Ponds A-C	Hands, forearms	Hands, forearms	0.5-1.0	3, 9, 25	2-12	N/A	N/A
• Ponds D-G, ditch	Hands, forearms	Hands, forearms	0.5-1.0	3, 9, 25	1	N/A	N/A
Future Occupational (Ponds A-F only)	N/A	Hands, arms, head	2-8	0.5-1.0	100-250	480 (mg/day)	2.1-3.0
Recreational							
• Pond G	Total body	Forearms, hands, lower legs, feet	0.25-1	4	0.5-1.0	0.05 (L/day)	N/A
• Ditch	Total body	Forearms, hands, lower legs, feet	1	9, 30, 6	0.5-1.0	N/A	N/A
• Lakes	Total body	Forearms, hands, lower legs, feet	0.25-6	9, 30, 6	1-2	N/A	0.833-2.1
Agricultural	N/A	N/A	N/A	9-30	350	0.05-0.28 (kg/day)	N/A

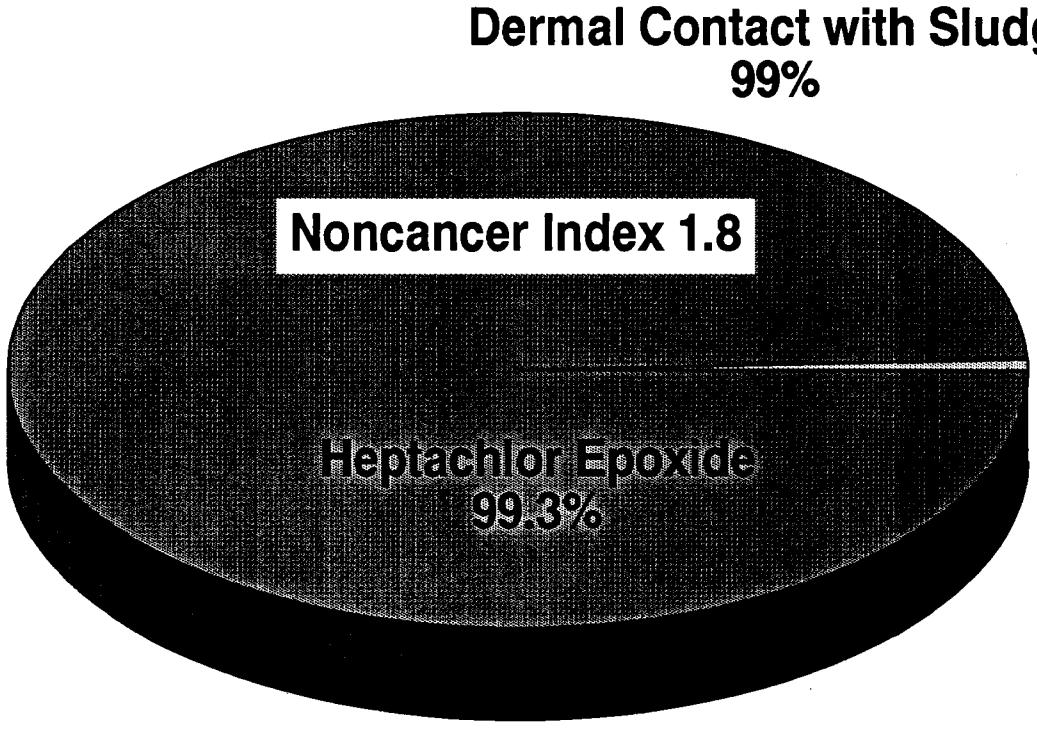
Occupational Exposure

	Carcinogenic Risk		Noncarcinogenic Risk	
	Acceptable	Unacceptable	Acceptable	Unacceptable
Pond A		current		current, future
Pond B		C	C	F
Pond C	C		C	F
Pond D	C		C, F	
Pond E		C	C	F
Pond F	C		C, F	
Pond G	C			C
Ditch	C		C, F	

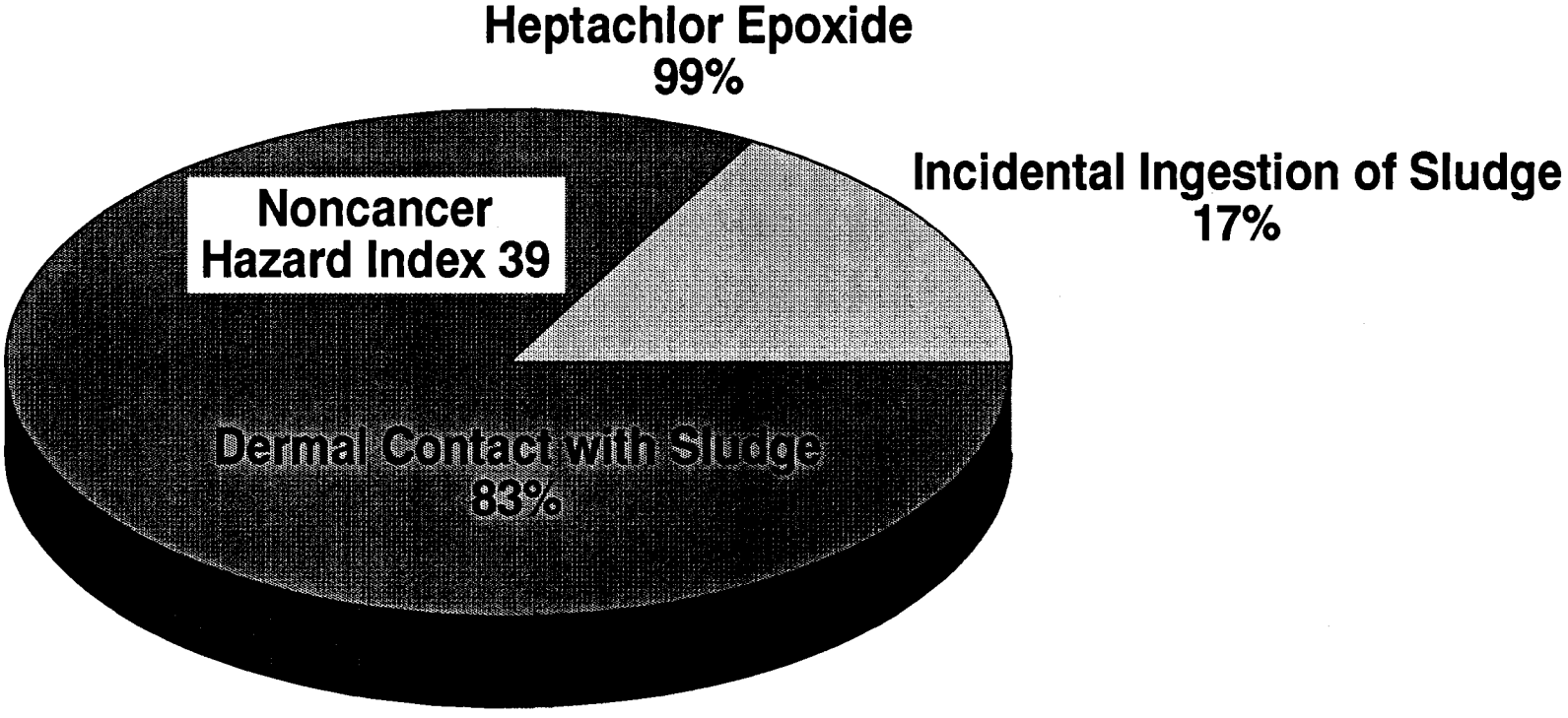
Current Occupational Scenario - Pond A



Current Occupational Scenario - Pond A



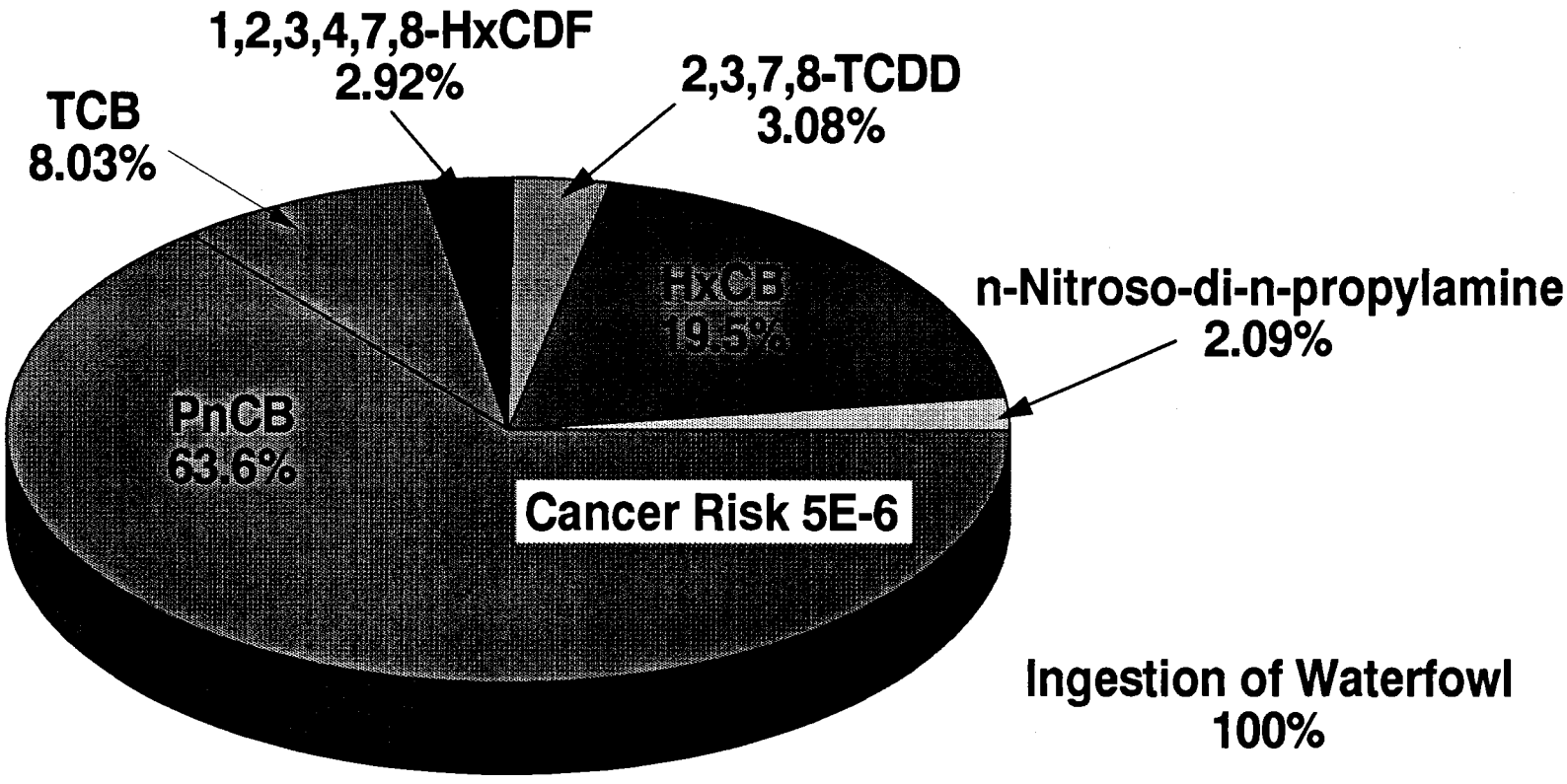
Future Occupational Scenario - Pond A



Recreational Exposure

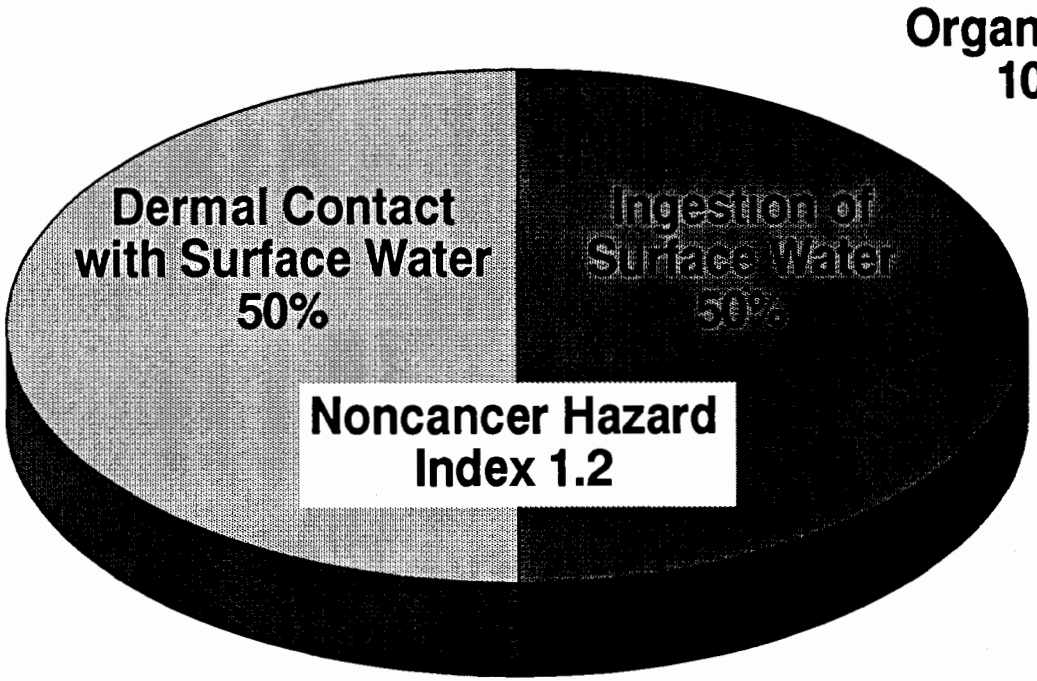
	Carcinogenic Risk		Noncarcinogenic Risk	
	Acceptable	Unacceptable	Acceptable	Unacceptable
Pond G				
Hunters		X	X	
Trespassers --		--		X
Ditch		X	X	
Lake Holloman		X		X

Adult Recreational Scenario - Pond G

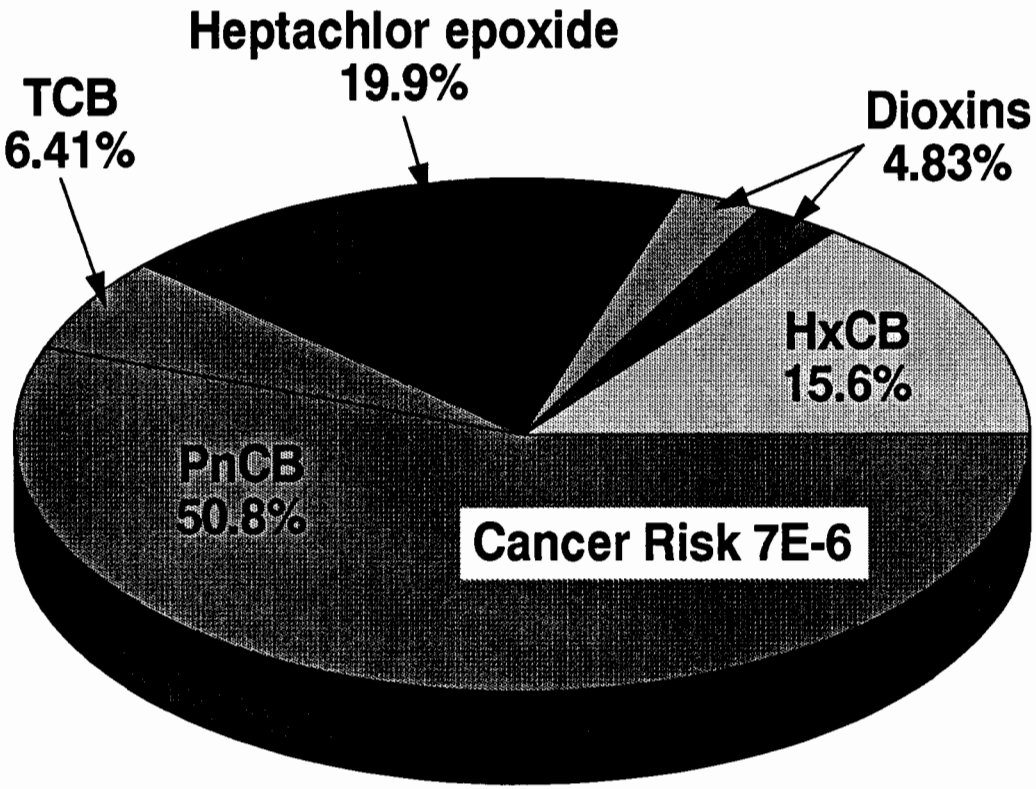


Ingestion of Waterfowl
100%

Teenage Recreational (Trespasser) Scenario - Pond G



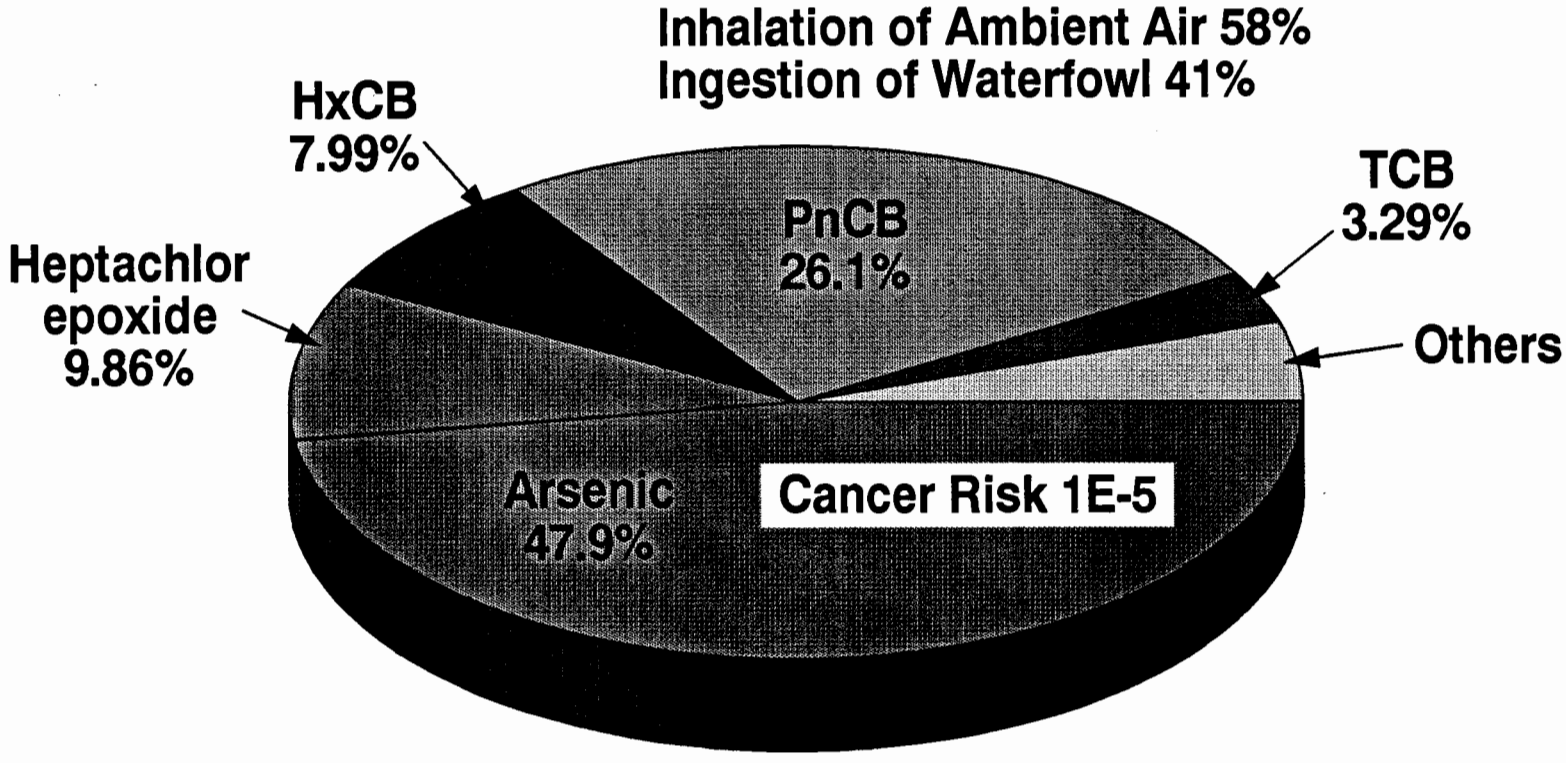
Recreational Scenario - Ditch



Dermal Contact with Soil
20%

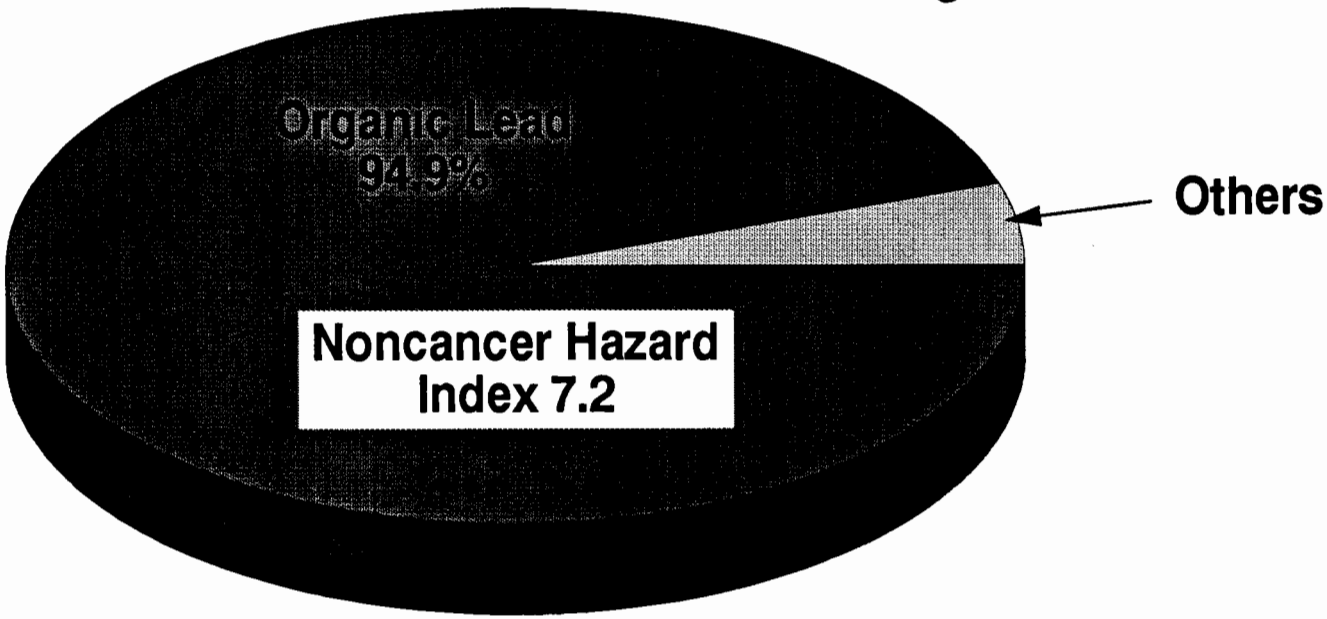
Ingestion of Waterfowl
80%

Adult Recreational Scenario - Lake Holloman



Adult Recreational Scenario - Lake Holloman

Dermal Contact with Surface Water 54%
Incidental Ingestion of Surface Water 41%

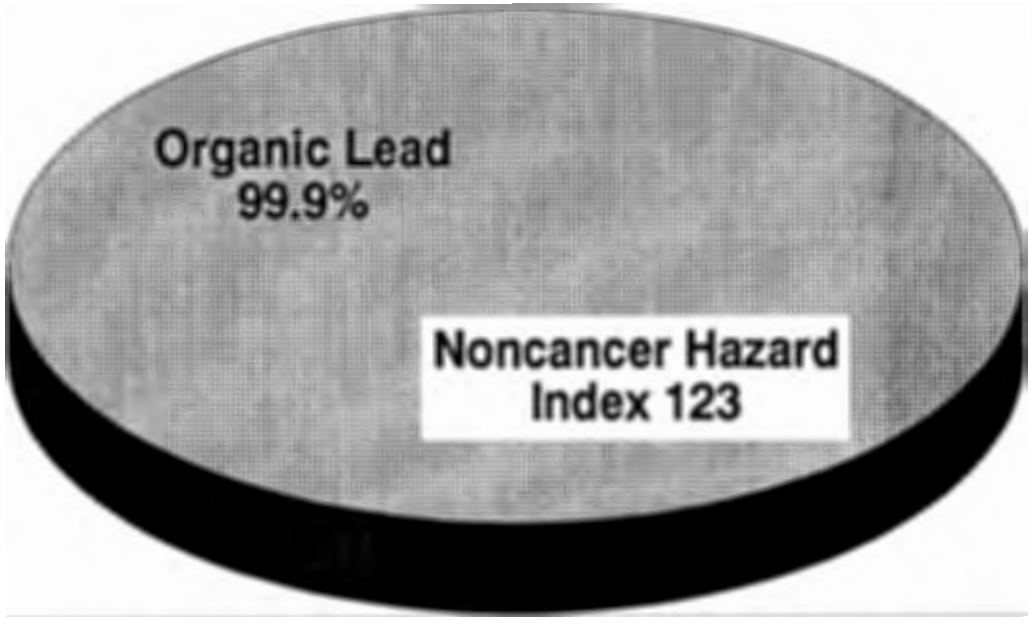


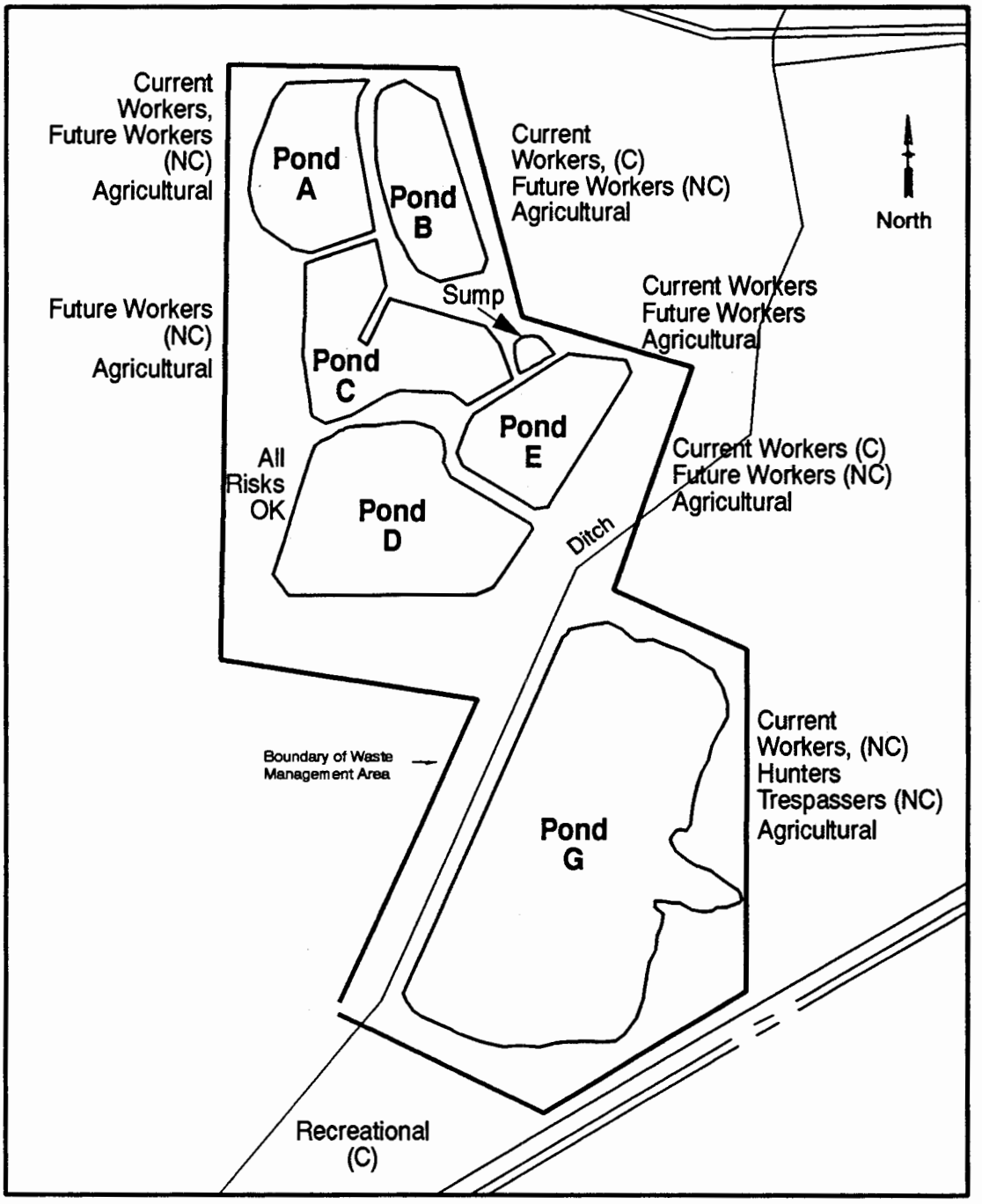
Agricultural Exposure

	Carcinogenic Risk		Noncarcinogenic Risk	
	Acceptable	Unacceptable	Acceptable	Unacceptable
Ponds A-G	X		X	
Lake Holloman	X			X
Lake Stinky	X		X	

Adult Agricultural Scenario - Lake Holloman

Ingestion of Beef
100%




Current
Workers,
Future Workers
(NC)
Agricultural
Pond
A
Pond
B
Current
Workers, (C)
Future Workers (NC)
Agricultural
North
Future Workers
(NC)
Agricultural
Sump
Current Workers
Future Workers
Agricultural
Pond
C
Pond
E
All
Risks
OK
Pond
D
Current Workers (C)
Future Workers (NC)
Agricultural
Ditch
Boundary of Waste
Management Area
Current
Workers, (NC)
Hunters
Trespassers (NC)
Agricultural
Pond
G
Recreational
(C)

108

Conclusions

- Elevated risks/hazards associated with on-site residential scenario
- Elevated risks/hazards associated with future construction worker scenario at some sites
- Additional sampling recommended at the ditch, Lake Holloman, and Lake Stinky

DATA SOURCES

- Sampling and Quality Control Summary Report (A-E SQCSR) Sewage Lagoons and Lakes Investigation Holloman Air Force Base, New Mexico (Radian, July 1993)

- Site Characterization Report, Sewage Lagoon Investigation, Holloman Air Force Base, New Mexico (Radian, August 1992)

- Assessment Monitoring Results: Appendix IX and Confirmation Sampling, Detection and Compliance Monitoring Program(Radian, April 1992)

- Sampling and Quality Control Summary Report (A-E SQCSR) for Field Investigations to Support Sewage Lagoon Closure, Holloman Air Force Base,New Mexico, (Radian, July 1991)

- Quality Control Summary Report (A-E QCSR) for Sewage Lagoon Surface Water Sampling at Holloman Air Force Base, New Mexico (Radian, June 1991)

- Summary of Sampling Activities Conducted March 1990 for Ponds B and C, letter report to Dr. Fred Fisher, Base Environmental Group, Holloman Air Force Base, New Mexico (USACE) (Radian, April 1990)

- A-E Quality Control Summary Report (A-E QCSR) for Additional Sampling, Hazardous Waste Sewage Sludge Removal, Holloman Air Force Base, new Mexico (Radian, December 1988)

Statistical Modeling

Background

- EPA Requested Additional Sludge Sampling (1991)
- 100-foot Grid Spacing Requested
- Initial Sampling Performed in 1992

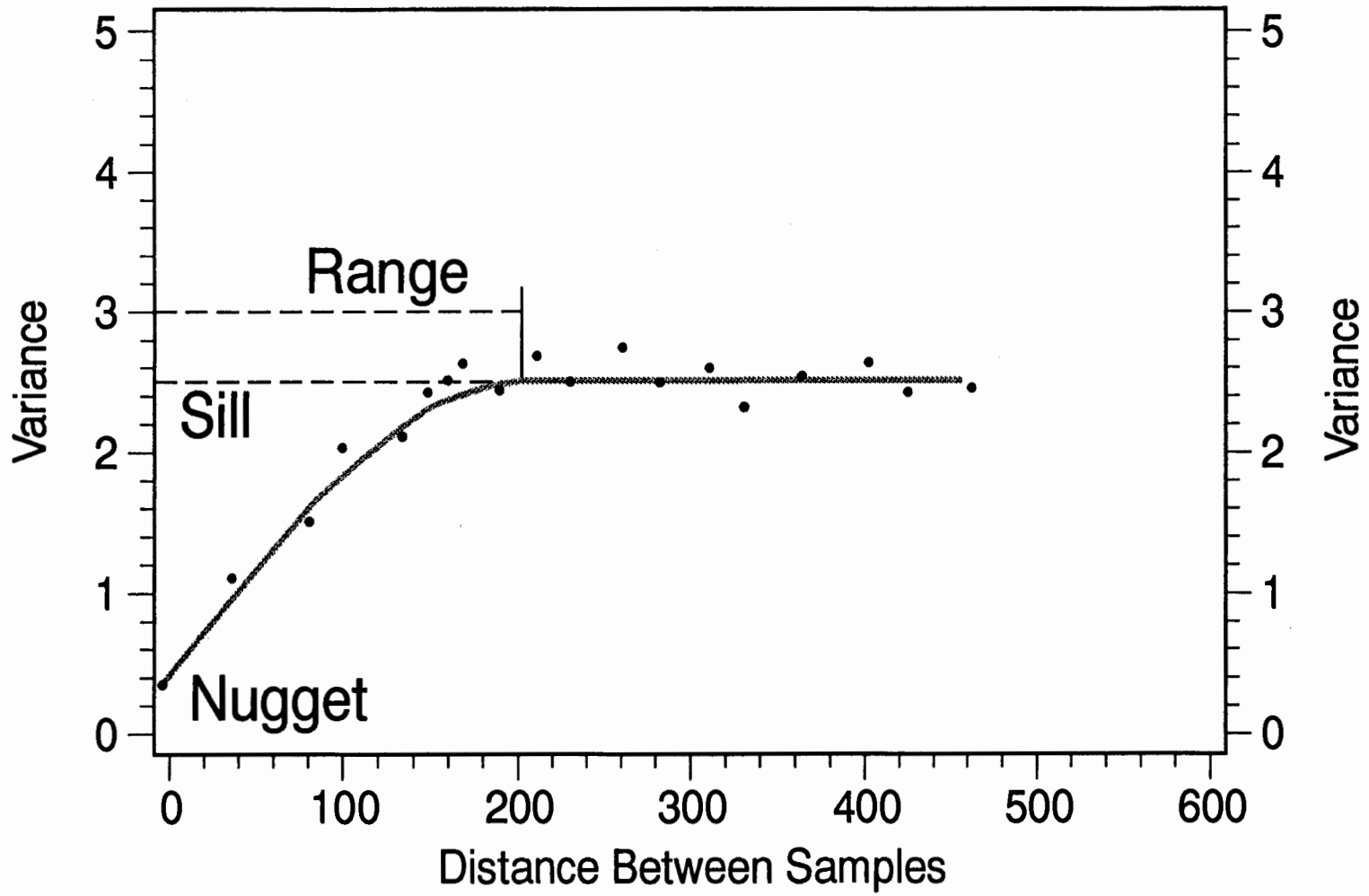
Objective - Determine Volume of Sludge to be Removed

- Use 1992 Sludge Results
- Apply Geostatistics
- Determine Grid Size Based on Available Data

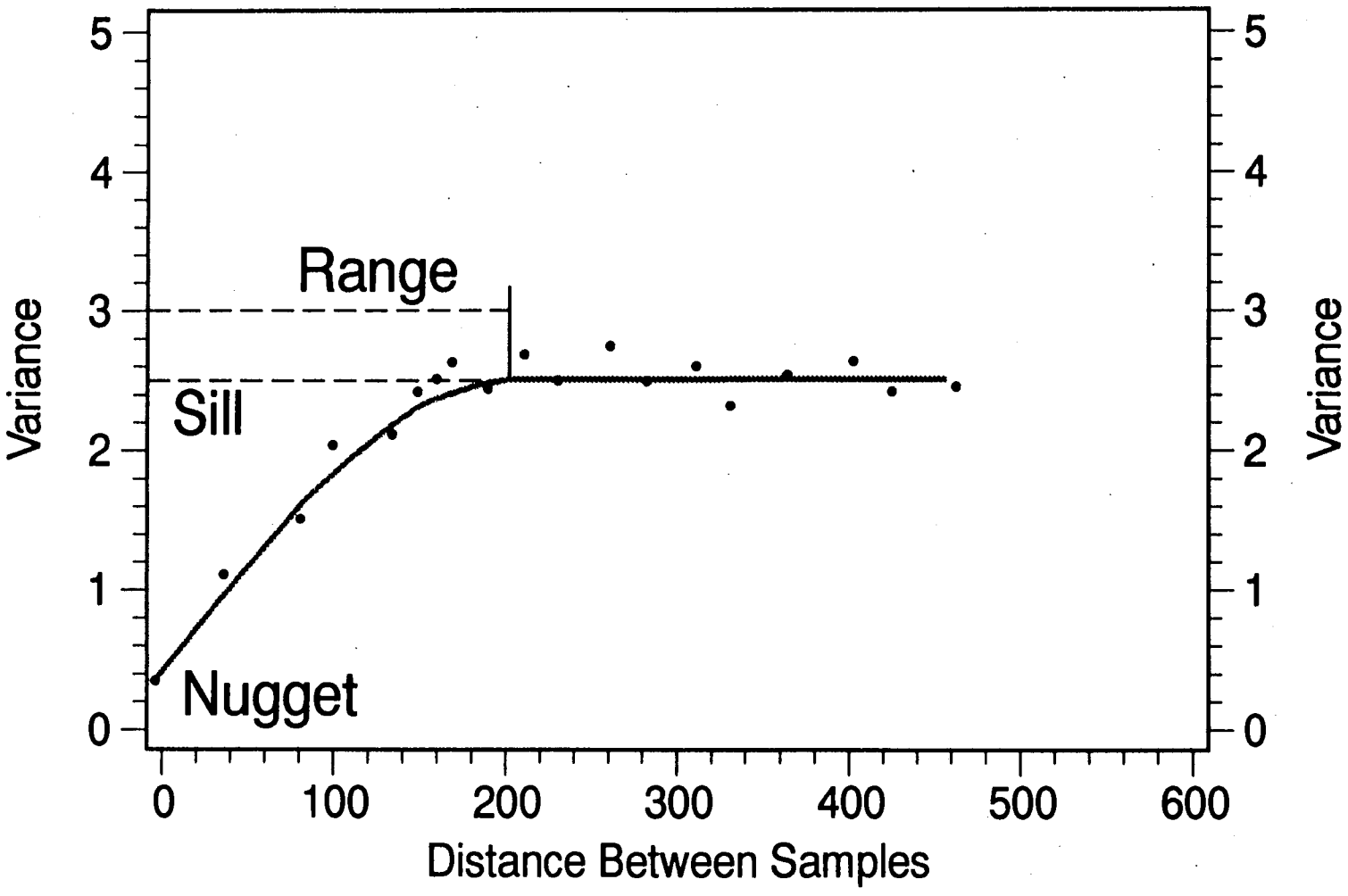
Semivariogram Analysis

- Graphical Representation of Variability Versus Sample Distance
- Plot Variance Against Distance
- Variability Increases to a Plateau
- Distance at the Plateau Defines Grid Spacing

Semivariogram Analysis

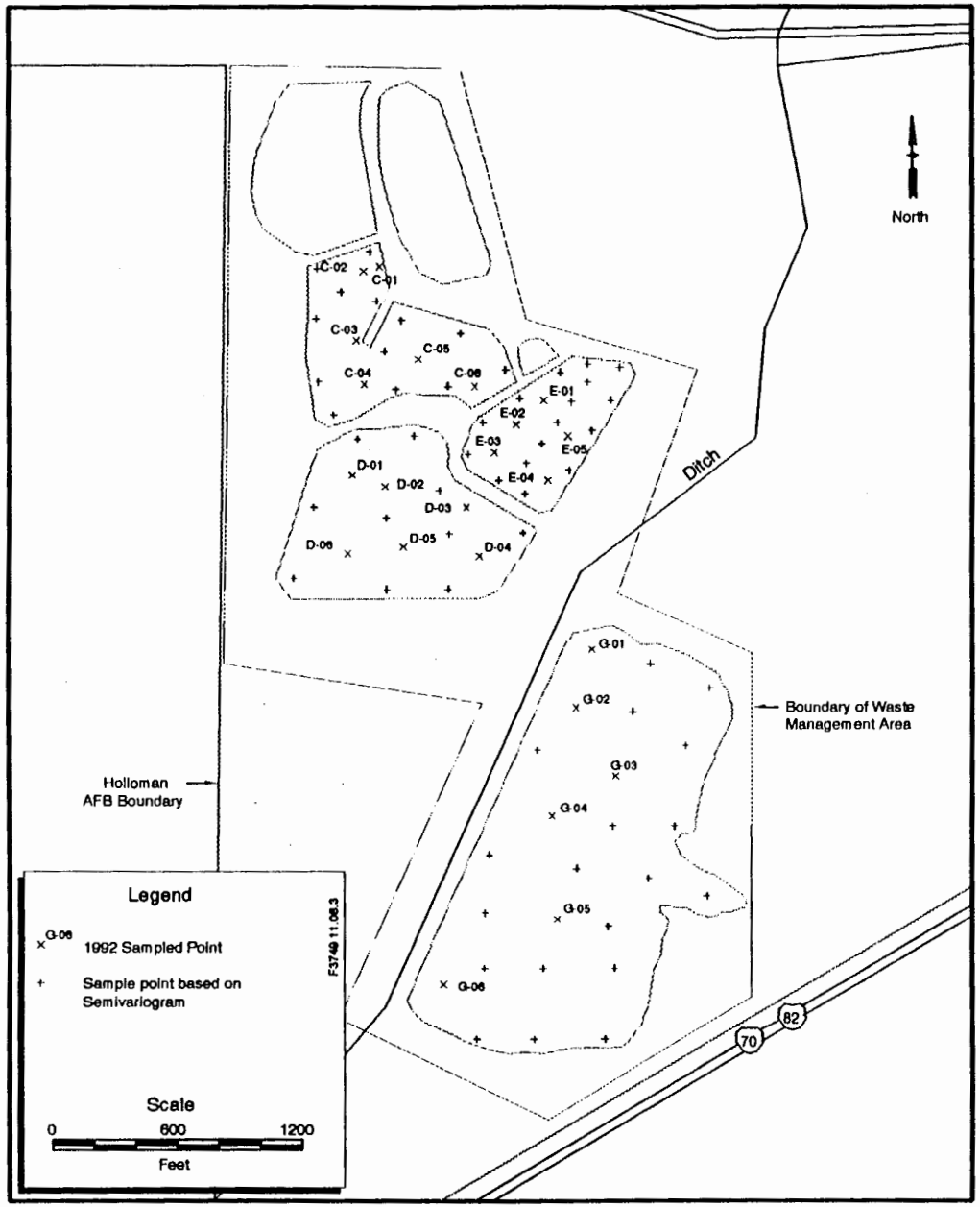


Semivariogram Analysis



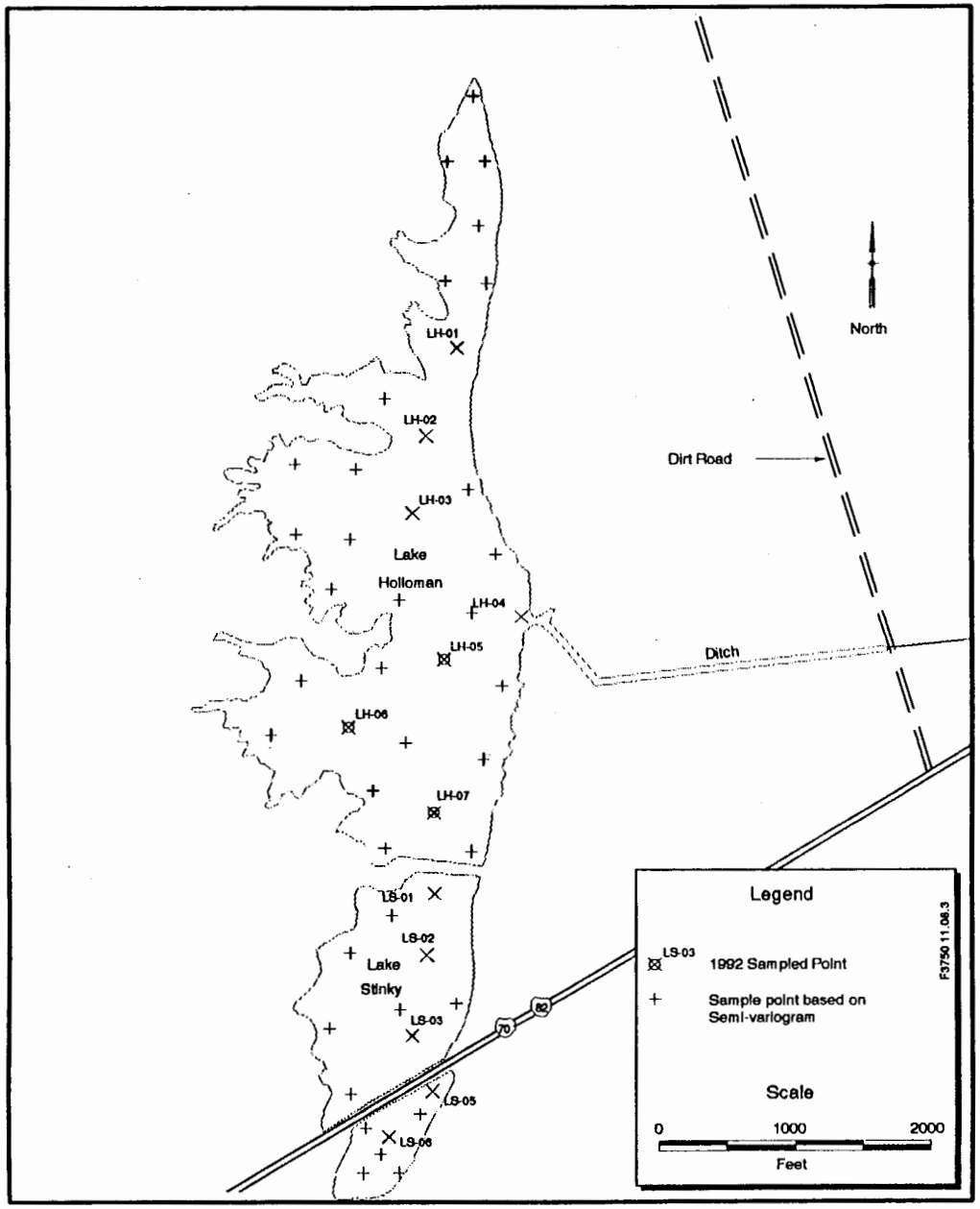
Implementation

- Selected Contaminants to Model Based on Risk Assessment
- Performed Semivariogram Analysis for Ponds C, D, E, and G and Lake Holloman for Selected Contaminants
- Used the Smallest Range to Determine Grid Spacing
- Used Grid Spacing to Determine Number of Additional Samples


North
C-02
C-01
C-03
C-05
C-04
C-06
E-01
E-02
E-03
E-05
E-04
D-01
D-02
D-03
D-05
D-06
D-04
Ditch
G-01
G-02
G-03
G-04
G-05
G-06
Boundary of Waste Management Area
Holloman AFB Boundary
Legend
G-06 1992 Sampled Point
+ Sample point based on Semivariogram
Scale
0 600 1200
Feet
F3749 11.06.3
82
70

Number of Additional Samples for Sewage Lagoons and Lakes

Location	Number of Results Available Now	Surface Area (acres)	Range (ft)	Number of Additional Samples
Pond C	6	12	300	13
Pond D	6	18	300	10
Pond E	5	8	150	16
Pond G	6	40	300	19
Lake Holloman	7	166	600	25
Lake Stinky	5	38	NA	11
Ditch from Pond G to Lake Holloman	3	NA	NA	4
Total	38	282	---	98


North
Dirt Road
Ditch
LH-01
LH-02
LH-03
Lake
Holloman
LH-04
LH-05
LH-06
LH-07
LS-01
LS-02
Lake
Stinky
LS-03
LS-05
LS-06
70
82
Legend
LS-03
1992 Sampled Point
Sample point based on
Semi-variogram
Scale
0
1000
2000
Feet
F3750 11.06.3

Number of Additional Samples for Sewage Lagoons and Lakes

Location	Number of Results Available Now	Surface Area (acres)	Range (ft)	Number of Additional Samples
Pond C	6	12	300	13
Pond D	6	18	300	10
Pond E	5	8	150	16
Pond G	6	40	300	19
Lake Holloman	7	166	600	25
Lake Stinky	5	38	NA	11
Ditch from Pond G to Lake Holloman	3	NA	NA	4
Total	38	282	---	98

Summary

Studies Proposed in 1992

- ✓ Continue Assessment Monitoring Program
- ✓ Statistical Modeling to Determine Additional Sampling
- ✓ Biological Testing to Determine Impacts on Wildlife
- ✓ Site-Specific Risk Assessment for Each Pond and Lake
- Detailed Analysis of Closure Alternatives

Significant Accomplishments:

- Identified Contaminants of Concern
- Combined Analytical Results
- Identified Extent of Groundwater Contamination

Significant Accomplishments:

- Evaluated Impacts of Contaminants on Human Health
- Focused Sludge Sampling Efforts
- Addressed Concerns of Interested Parties

First Steps Taken:

- Assess Impacts on Wildlife
- Evaluate Possible Future Uses for Lagoons
- Propose Groundwater LTM Approach

Future Activities

Additional Sampling

- Final Site Characterization
- Sample Locations and Rationale
- Soil and Sludge Analytical Requirements
- Surface Water Analytical Requirements

Biological Assessment

- Support Evaluation (Section 7 of ESA)
- Include All Biota Sample Results
- Assess Impacts of New WWTP

Corrective Measures Studies

- Recalculate Risks Based on Additional Sampling
- Develop Cleanup Standards (Remediation Goals)
- Determine Areas Requiring Remediation

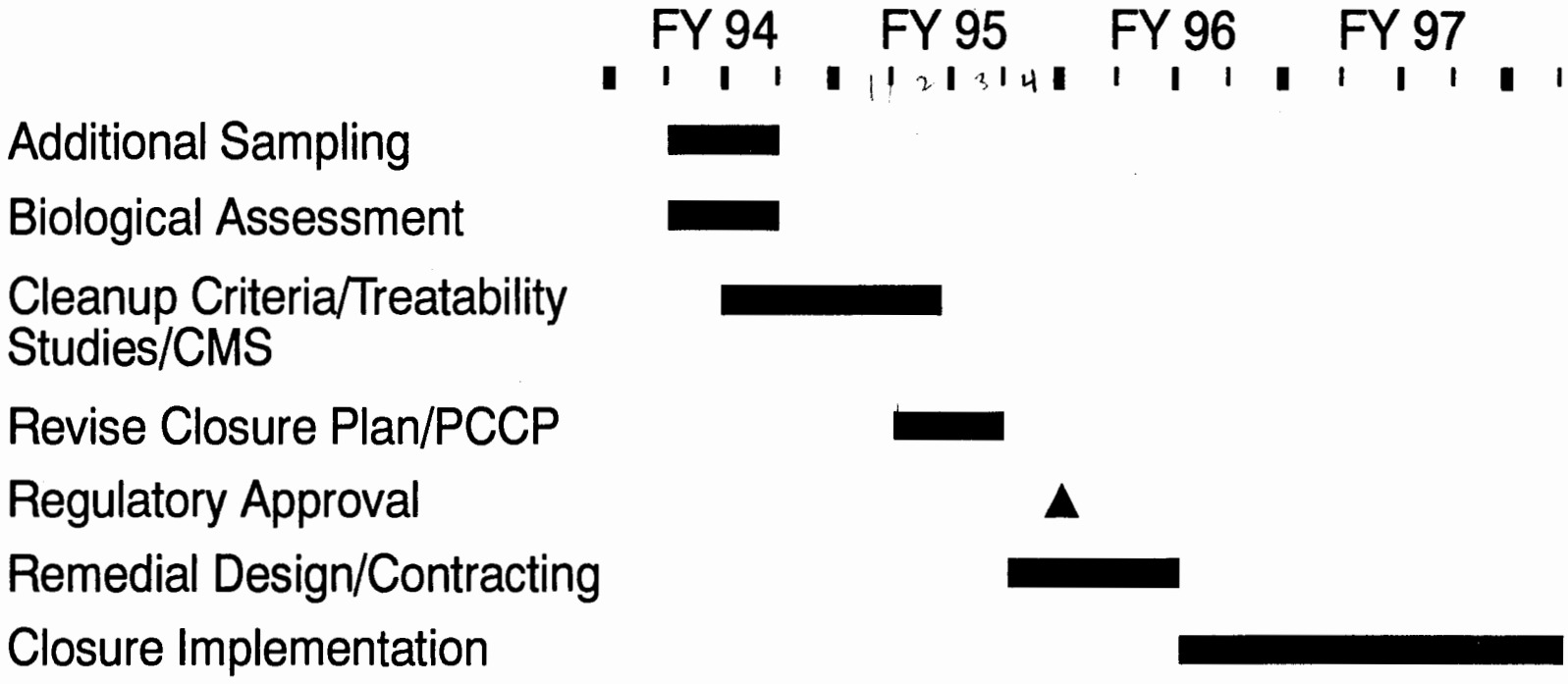
Treatability Studies

- Depend on Regulatory Decisions
- Demonstrate Applicable Technologies
- Consider Stabilization and/or Anaerobic Degradation
- Incorporate Results Into CMS

Regulatory Requirements

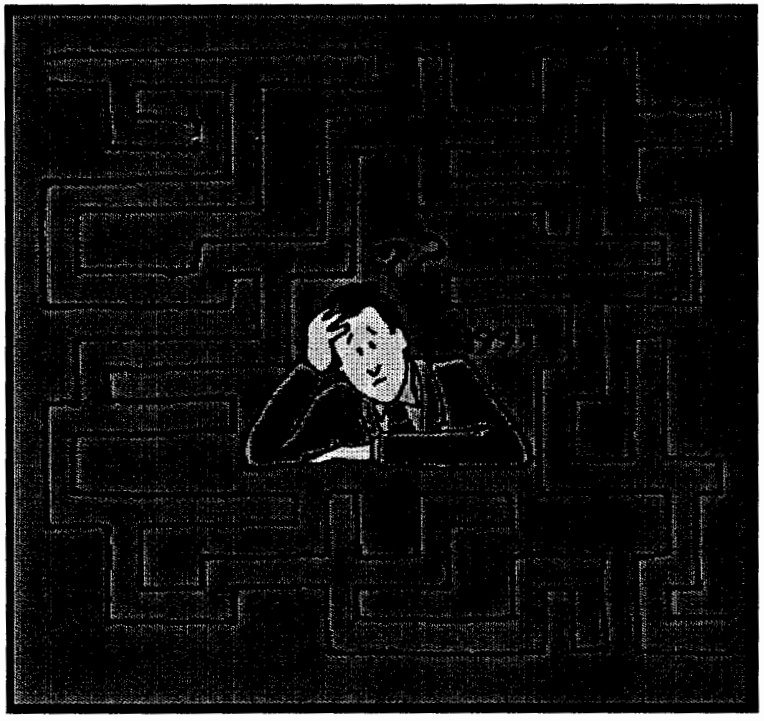
- Revise Closure Plan submit 3rd Qtr FY95
- Revise Post-Closure Care Permit Application submit 3rd Qtr FY95
- Develop Long-Term Monitoring Strategy

Preliminary Schedule



Start to Finish

Sign
FFCA
(1988)



Resolve
FFCA
(1997)

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Headquarters, Air Combat Command
Langley Air Force Base,
Virginia

Draft Final

Phase 1 - Groundwater Assessment Monitoring Report

Sewage Lagoons and Lakes Investigation

December 1993

49th FIGHTER WING

49 CES/CEV
Holloman Air Force Base,
New Mexico

PURPOSE OF DOCUMENT

A. This *Phase 1 Groundwater Assessment Monitoring Report* presents the results, conclusions, and recommendations of Phase 1 assessment monitoring for the sewage lagoons at Holloman Air Force Base (AFB), NM. The sewage lagoons are regulated as Hazardous Waste Management Units under the Resource Conservation and Recovery Act (RCRA) and the groundwater monitoring network was installed to fulfill a requirement of a Federal Facilities Compliance Agreement (FFCA). Phase 1 assessment monitoring was conducted as specified in the *Groundwater Assessment Monitoring Plan* (Radian, 1991) and the *Chemical Data Acquisition Plan* (Radian, 1993). This document was prepared for, and in cooperation with, the Base Environmental Office: 49 CES/CEV, 550 Tabosa Avenue, Holloman, AFB, NM, 88330-8458, phone 505/475-3931.

B. The primary objectives of Phase I groundwater assessment monitoring at the sewage lagoons are to define the lateral extent of Method 8080 pesticides in the uppermost aquifer and to make recommendations for future monitoring requirements. In addition, Appendix IX parameters were collected from newly installed monitor wells and deep piezometers to evaluate the potential lateral and vertical migration of other constituents.

C. The report contains data evaluation criteria, conclusions, and recommendations. Data evaluation criteria are primarily based on requirements outlined in the *Groundwater Assessment Monitoring Plan* (Radian, 1991). Using the data evaluation criteria, conclusions address the interpretation of laboratory and hydrogeologic data. Recommendations are based on the conclusions and address proposed groundwater monitoring requirements for the sewage lagoons.

DCN 93-269-069-26-06
RCN 269-069-26-50

PHASE 1

GROUNDWATER ASSESSMENT MONITORING REPORT

SEWAGE LAGOONS AND LAKES INVESTIGATION
HOLLOMAN AIR FORCE BASE, NM

DRAFT FINAL

Prepared for:

49 CES/CEV
Holloman Air Force Base, NM

and

HQ ACC/DEVC
Langley Air Force Base, VA

Prepared by:

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Austin, Texas 78720-1088
512/454-4797

Under Contract No. DACW45-91-D-0018 with:

US Army Corps of Engineers
Omaha District
Omaha, Nebraska

December 1993

Page

EXECUTIVE SUMMARY ES-1

1.0 INTRODUCTION 1-1

1.1 Project Background 1-1
1.2 Objectives 1-1
1.3 Scope of Investigation 1-1
1.4 Report Contents 1-1

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LIST OF ACRONYMS

A-E SQCSR	Architect-Engineer Sampling and Quality Control Summary Report
AFB	Air Force Base
BGL	Below Ground Level
CDAP	Chemical Data Acquisition Plan
DQOs	Data Quality Objectives
EPA	Environmental Protection Agency
GWMP	Groundwater Monitoring Plan
HHSs	Human Health Standards
HIR	Hydrogeologic Investigation Report
HSWA	Hazardous and Solid Waste Amendments
MCLs	Maximum Contaminant Levels
MDL	Method Detection Limit
MSL	Mean Sea Level
NMED	New Mexico Environment Department
NM WQCC	New Mexico Water Quality Control Commission
PCB	Polychlorinated Byphenols
ppb	Part per billion
QC	Quality Control
RCRA	Resource Conservation and Recovery Act
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
SMCLs	Secondary Maximum Contaminant Levels
SWMU	Solid Waste Management Unit
TDS	Total Dissolved Solids
UTL	Upper Tolerance Limit

EXECUTIVE SUMMARY

The *Phase 1 Groundwater Assessment Monitoring Report, Sewage Lagoons and Lakes Investigation* presents the results, conclusions, and recommendations of Phase 1 assessment monitoring for the sewage lagoons at Holloman AFB. This executive summary provides a brief overview of the purpose, scope of sampling, conclusions, and recommendations.

The sewage lagoons are a series of surface impoundments in the Base's wastewater treatment system that are regulated as Hazardous Waste Management Units under RCRA because of past waste management practices and suspected discharges of listed hazardous wastes into the wastewater treatment system. In 1989, a groundwater monitoring network was installed to fulfill a requirement of a Federal Facilities Compliance Agreement (FFCA). Monitor wells have been added or removed from the network as required to define the nature and extent of migration of constituents from the sewage lagoons. Figure 1 illustrates the monitor wells in the monitoring network. Groundwater beneath the Base is classified as nonpotable because average total dissolved solids concentrations exceed 10,000 mg/L.

The *Groundwater Assessment Monitoring Plan* (Radian, 1991) provides overall guidance for conducting assessment monitoring. Previous sampling of the groundwater monitoring network for Appendix IX parameters indicated that a few Method 8080 pesticides were present in monitor wells downgradient of Ponds A and D in MW-03, MW-05, and MW-07. Therefore, further investigation was pursued to fulfill Phase 1 assessment monitoring requirements.

The primary objectives of Phase 1 assessment monitoring are to define the lateral extent of Method 8080 pesticides in the uppermost aquifer and to make recommendations for future monitoring requirements. In addition, Appendix IX parameters were collected from newly installed monitor wells and deep piezometers to evaluate potential lateral and vertical migration of other constituents that may have gone undetected in previous sampling.

Three new monitor wells (MW-11 through MW-13) were installed downgradient of Pond A and two new monitor wells (MW-14 and MW-15) were installed and one existing piezometer (MWS-05) was added to the network downgradient of Pond D. Three deep piezometers (MWD-03 through MWD-05) were sampled to assess the potential for vertical migration of constituents. All existing monitor wells in the network were sampled twice for Method 8080 pesticides, and the new monitor wells and piezometers were sampled once for Appendix IX parameters and a second time for Method 8080 pesticides.

Data evaluation criteria to ascertain the presence or absence of constituents is based on criteria outlined in the *Groundwater Assessment Monitoring Plan* (Radian, 1991) and used for the First Determination False Positives. The presence of Method 8080 pesticides was defined as certain, uncertain, or unlikely. The presence or absence of metals were evaluated using statistical comparisons between background and downgradient concentrations.

The presence of Method 8080 pesticides is considered to be certain *only* in monitor wells (MW-03 and MW-04) immediately downgradient of the sewage lagoons. The Method 8080 pesticides detected in these wells were heptachlor epoxide and 4,4'-DDD, respectively. The presence of Method 8080 pesticides in the newly installed monitor wells further downgradient of these monitor wells is considered either uncertain or unlikely. No Method 8080 pesticides were identified as certain in the new monitor wells MW-11 through MW-15 and MWS-05. Therefore, the lateral extent of Method 8080 pesticides has been defined downgradient of monitor wells MW-05 and MW-07 (Pond A) and MW-03 (Pond D).

The extent of Method 8080 pesticides downgradient of MW-04 (Pond G) (where 4,4'-DDD

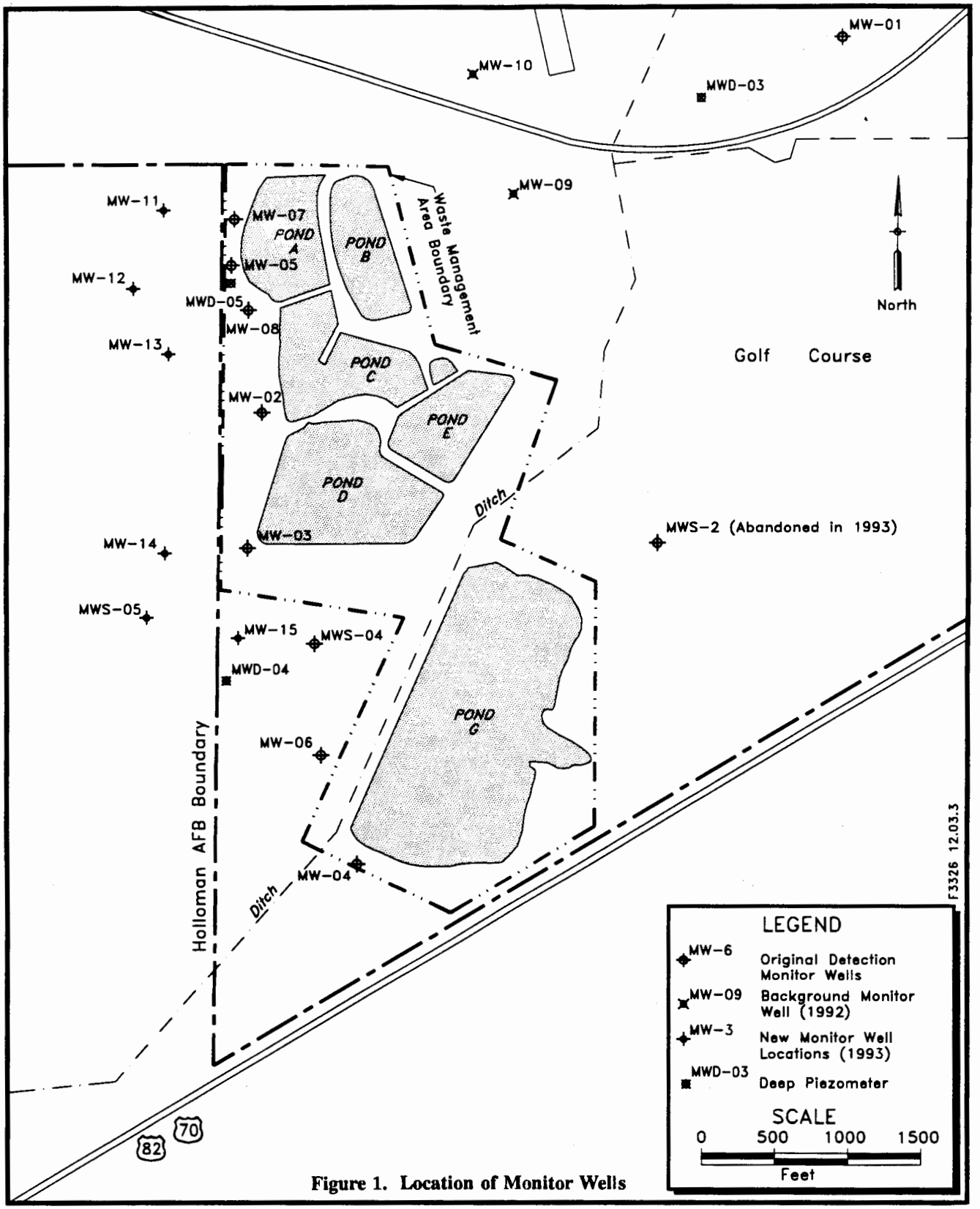

Figure 1. Location of Monitor Wells

is certain) is unknown because of the lack of monitor wells located further downgradient. However, based on results from monitor wells downgradient of Ponds A and D, it is anticipated that the presence of Method 8080 pesticides will be uncertain or unlikely further downgradient of MW-04.

The metals measurement data indicate cadmium concentrations in the wells downgradient of Pond A to be higher than background concentrations, suggesting that migration of this element may have occurred. For MW-11, MW-12, and MW-13, data for mercury and tin showed higher *average* concentrations than background, but all downgradient results were within the range of concentrations measured for background. For MW-14, MW-15, and MWS-05, data for antimony, tin, and cadmium showed lower *average* concentrations than background, but some individual concentrations were above upper tolerance limits. Additional downgradient data would be helpful in determining whether or not these results indicate migration of these elements. As indicated by this and previous investigations, the other Appendix IX parameters were not considered a concern.

Installation of additional monitor wells is not recommended because the overall nature and extent of contamination has been defined downgradient of the sewage lagoons. The current monitoring network is sufficient for the concerns identified in the First Determination False Positives and Phase 1 groundwater assessment monitoring. It is recommended that monitoring be conducted in coordination with the existing long-term monitoring program at the Base. It is recommended that samples be collected from a subset of the network monitor wells every other year for ten years and be analyzed for Method 8080 pesticides and metals.

In addition, it is recommended that sit-specific risk-based data be used to establish long-term monitoring requirements. Future groundwater monitoring requirements may need to be revised based on proposed construction activities for the new wastewater treatment plant.

Section 1
INTRODUCTION

The purpose of this document is to present the results, conclusions, and recommendations of the Phase 1 Groundwater Assessment Monitoring Program for the sewage lagoons at Holloman Air Force Base (AFB), NM. Figure 1-1 shows the location of the Base and the sewage lagoons.

1.1 Project Background

The sewage lagoons are a series of surface impoundments in Holloman AFB's wastewater treatment system. The units are regulated as Hazardous Waste Management Units under the Resource Conservation and Recovery Act (RCRA) because of past waste management practices and suspected discharges of listed hazardous wastes into the wastewater treatment system. In accordance with a Federal Facilities Compliance Agreement (FFCA), a RCRA groundwater monitoring program was initiated in accordance with 40 CFR Part 265, Subpart F.

An historical summary of the groundwater monitoring program prior to this report is provided in Figure 1-2, and the layout of the former and existing monitoring network is shown in Figure 1-3. The *Groundwater Assessment Monitoring Plan* (Radian, 1991) provides a comprehensive overview of the Groundwater Assessment Monitoring Program which is currently being conducted at the sewage lagoons. This most recent investigation, conducted during March and April 1993, addresses Phase 1 of the Groundwater Assessment Monitoring Program. Phase 1 is an effort to determine the areal extent of Method 8080 pesticides identified during the First Determination False Positives sampling. The First Determination False Positives is the first sampling round required in the *RCRA Groundwater Assessment Monitoring Plan* (Radian, 1991). It consisted of an initial round of Appendix IX analyses on all monitor wells and a second round to confirm results of the first round. The results of the First Determination False Positives are reported in *Appendix IX and Confirmation Sampling, Detection and Compliance Monitoring* (Radian, 1992).

1.2 Objectives

The primary objectives of Phase 1 assessment monitoring at the sewage lagoons are to define the lateral extent of Method 8080 pesticides in the uppermost water bearing zone and to make recommendations for future monitoring requirements. A secondary objective of Phase 1 is to determine the presence or absence of other Appendix IX parameters in newly installed monitor wells. Furthermore, additional sampling and analysis of three deep piezometers (MWD-03, MWD-04, and MWD-05) was conducted to evaluate the potential vertical migration of Appendix IX parameters. To ensure that these goals were met, Data Quality Objectives (DQOs) for data collection and data interpretation activities were developed and are presented in the *Chemical Data Acquisition Plan* (CDAP) (Radian, 1993).

1.3 Scope of Investigation

The sampling and analytical program was structured to meet the requirements of the New Mexico Environmental Department (NMED) and EPA Region VI in determining the extent of contamination hydraulically downgradient of the existing RCRA groundwater monitoring network. Field activities which began December 1992 and ended April 1993 were guided by the CDAP. Table 1-1 summarizes the purpose and scope of investigation activities. Records of all field activities are provided in Appendix A.

1.4 Report Contents

This report presents the results of the data collected during the most recent field investigation and provides recommendations for future groundwater monitoring at the sewage lagoons. Emphasis is given to the discussion of conclusions for newly acquired data and a brief comparison with the results of the First Determination False Positives.

This report contains six sections which are described below:

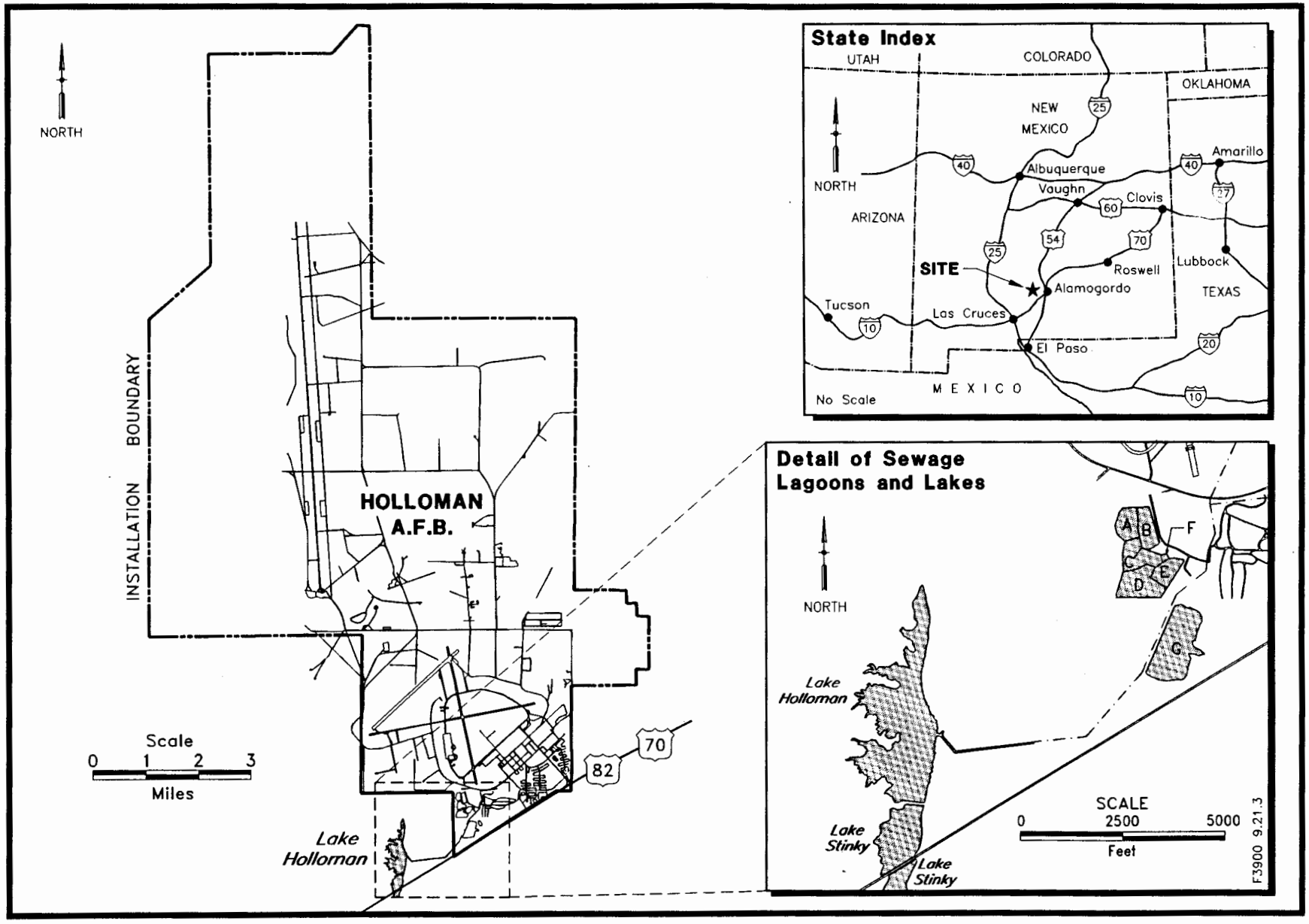

Figure 1-1. Location of the Sewage Lagoons at Holloman AFB

Detection Monitoring

(July 1989 through January 1991)

- FFCA requires Groundwater Monitoring System
- Groundwater monitoring network consists of 10 wells
  - (MW-01 through MW-08 installed in 1989)
  - (MWS-02 and MWS-04 installed in 1987)
- Quarterly and semiannual sampling of monitoring network for Appendix III consituents and indicator parameters
- EPA Region VI determines statistically significant increase in TOC concentration in downgradient wells MW-02 through MW-06

Groundwater Assessment Monitoring Plan

(September 1991)

- Potential release activates RCRA Assessment Monitoring Program
- Groundwater Assessment Monitoring Plan prepared
  - First Determination False Positives
  - **Phase 1:** Nature and areal extent of contamination
  - **Phase 2:** Identification of contamination in second aquifer and determination of vertical extent of contamination (if any)
  - **Phase 3:** Identification of preferential pathways for contamination migration (if any) and migration rates

First Determination False Positives: Appendix IX and Confirmation Sampling

(September 1991/February 1992)

- First Determination False Positives includes 2 rounds of groundwater sampling (Appendix IX and confirmation sampling)
- **Round 1:** Analyses include TOC and Appendix IX parameters
- Agreement with NMED concludes organochlorine pesticides are contaminants of concern
- **Round 2:** Confirmation analyses include organochlorine pesticides by EPA Method SW8080
- First Determination False Positives indicates:
  - alpha-BHC in MW-05
  - beta-BHC in MW-07
  - Aldrin and Dieldrin above action levels in MW-03

Installation of Two Additional Upgradient Monitor Wells

(May 1992)

- Piezometer MWS-02 not considered a representative background well
- MW-09 and MW-10 incorporated into the RCRA monitoring network in place of MWS-02 as background wells and to investigate upgradient hydrogeology

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Figure 1-2. Historical Summary of Groundwater Monitoring Program for the Sewage Lagoons

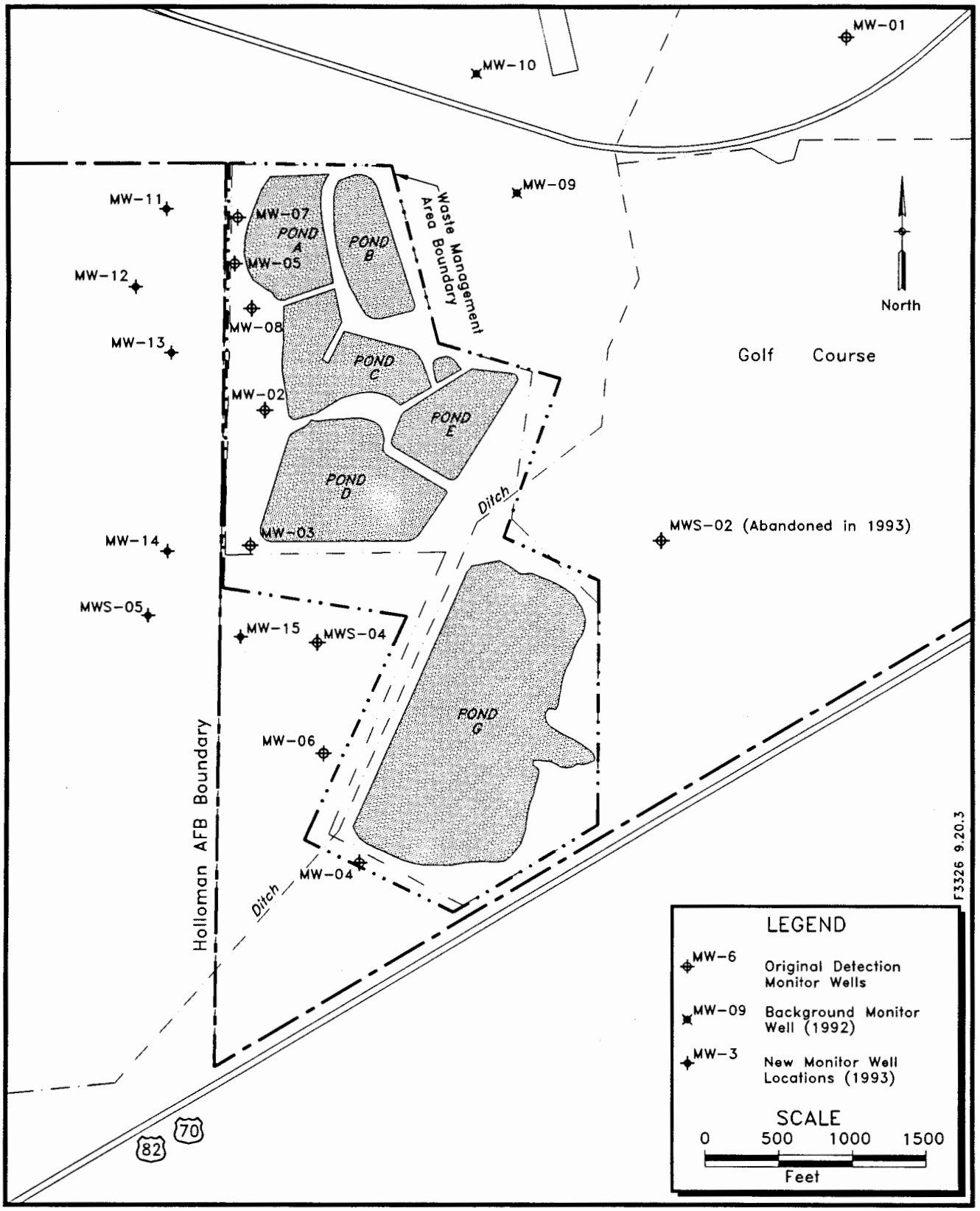


Figure 1-3. Location of New and Existing Monitoring Wells

Table 1-1

Purpose and Scope of Phase 1 Activities

Activity	Purpose and Scope
Geoprobe® Groundwater Survey	Investigate lateral extent of Method 8080 pesticides using screening techniques to determine monitor well placement: • Sample 14 locations downgradient of MW-05 and MW-07 • Sample 9 locations downgradient of MW-03
Expand Monitoring Network	Install monitor wells downgradient of locations where Method 8080 pesticides were detected: • Install 3 new monitor wells downgradient of MW-05 and MW-07 • Install 2 new monitor wells downgradient of MW-03 • Include existing piezometer, MWS-05, in groundwater monitoring network
Monitor Well Upgrade	Ensure consistent and quality sampling techniques and minimize sample turbidity: • Install dedicated, stainless steel, pneumatic bladder pumps in all network monitor wells
Abandon MWS-02	Abandon monitor well which is unrepresentative of upgradient conditions: • Remove monitor well and grout boring
Phase 1 Groundwater Sampling	Collect two rounds of groundwater samples to evaluate the lateral extent of contamination: • Round 1--Collect samples from existing monitor wells for Method 8080 pesticides analysis and from new monitor wells in monitoring network for Appendix IX parameters analysis • Round 2--Collect samples from all monitor wells for Method 8080 pesticides analysis
Deep Piezometer Investigation	Determine potential for vertical migration • Collect samples from 3 deep piezometers (MWD-03, MWD-04, and MWD-05) for Appendix IX parameters analysis
Water Elevation Surveys	Define seasonal groundwater flow, surface water/ groundwater relationship, and hydrogeology in deep piezometers • Install staff gauges in Ponds A, D and G and in Lakes Holloman and Stinky • Conduct water elevation surveys in March, April, and August

- Section 2 provides an overview of the environmental setting, focusing on the results of geologic and hydrogeologic studies conducted during the Phase 1 investigation.
- Section 3 provides the rationale for data evaluation.
- Section 4 presents the conclusions for Phase 1 results and a comparison of Phase 1 results to the results of the First Determination False Positives.
- Section 5 presents recommendations for future groundwater monitoring requirements.
- Section 6 lists the references cited in this report.

Section 2
ENVIRONMENTAL SETTING

This section presents information about the geology, hydrology, and groundwater quality using revised data collected during the most recent field investigation (Spring 1993). The *Hydrogeologic Investigation Report and Groundwater Monitoring Plan* (HIR/GWMP) (Radian, 1989) and the *Remedial Investigation Report, Investigation, Study and Recommendation for 29 Waste Sites* (Radian, June 1992) contain additional information regarding the overall environmental setting (age, structure and geologic history) at Holloman AFB. The reader is referred to these reports for a more detailed discussion of these topics.

2.1 Geology

The subsurface conditions at the site were defined by direct sampling and observation of the drilling operations of 42 monitor wells and soil borings drilled between 1987 and 1993. Figures 2-1 and 2-2 and cross sections A-A' through H-H' (shown on Plate 1) illustrate and describe the general stratigraphy of the site. Lithologic logs from the most recent field investigation are provided in Appendix A, part 1.

The near surface sediments consist of sand, silt and clay. These sediments are subdivided into six very broadly definable units which appear to be continuous across the site (see Figure 2-1). This interpretation is supported by the available data; however, irregularities may exist on a smaller scale because of the discontinuous nature of alluvial and lacustrine deposits. Data collected from further investigation at the site may serve to refine this interpretation.

2.2 Hydrology

2.2.1 Surface Water

The sewage lagoon system consists of seven aeration/evaporation lagoons which receive approximately 1.3 million gallons of residential and industrial wastewater per day. Wastewater entering the facility flows in parallel into Ponds A and B then in series through Ponds C, D, E, F, and G. The discharge from the last pond in the series (Pond G) flows through an open ditch to Lakes Holloman and Stinky for eventual evaporation and infiltration. In addition to the overflow from the ponds, this ditch receives runoff from the golf course, the flight line approach zone, lawn-irrigation, and the roadside. Water entering the ditch discharges into the lower eastern part of Lake Holloman. All ponds and lakes are unlined and surface water infiltrates into groundwater.

2.2.2 Groundwater

Groundwater elevation was surveyed in March, April, and August 1993 to determine seasonal variation associated with precipitation and evaporation rates at Holloman AFB. Actual measurements are provided in Appendix A, part 6. Monitor well completion forms are also provided in Appendix A. As part of the survey, surface water elevations were measured in Ponds A, D, and G and in Lakes Holloman and Stinky to provide data necessary to characterize local relationships between surface water and groundwater. Figures 2-3 and 2-4 illustrate the contoured groundwater surface as measured in the shallow wells during the two surveys. Figure 2-5 graphically illustrates the three-dimensional geometry of the water table and the relationship of groundwater and surface water for the April survey.

In the vicinity of the sewage lagoons and lakes, the depth to groundwater ranges from 2 ft below ground level (BGL) near the lagoons to 13 ft BGL near Lakes Holloman and Stinky. Under an average hydraulic gradient of 0.3 percent, the groundwater consistently flows from northeast to southwest. However, surface water in the unlined ponds causes groundwater mounding. Immediately to the east of Ponds A through D and Lakes Holloman and Stinky, groundwater flows toward the southeast, not southwest. This is evident in a comparison of the surface water elevation during August in Ponds A through D (4036.5 ft. MSL) to that of monitor wells MW-09 and MW-10 (4033.96 and 4034.83 ft. MSL). There is approximately a 1.5 to 2.5 ft difference in water elevations, indicating

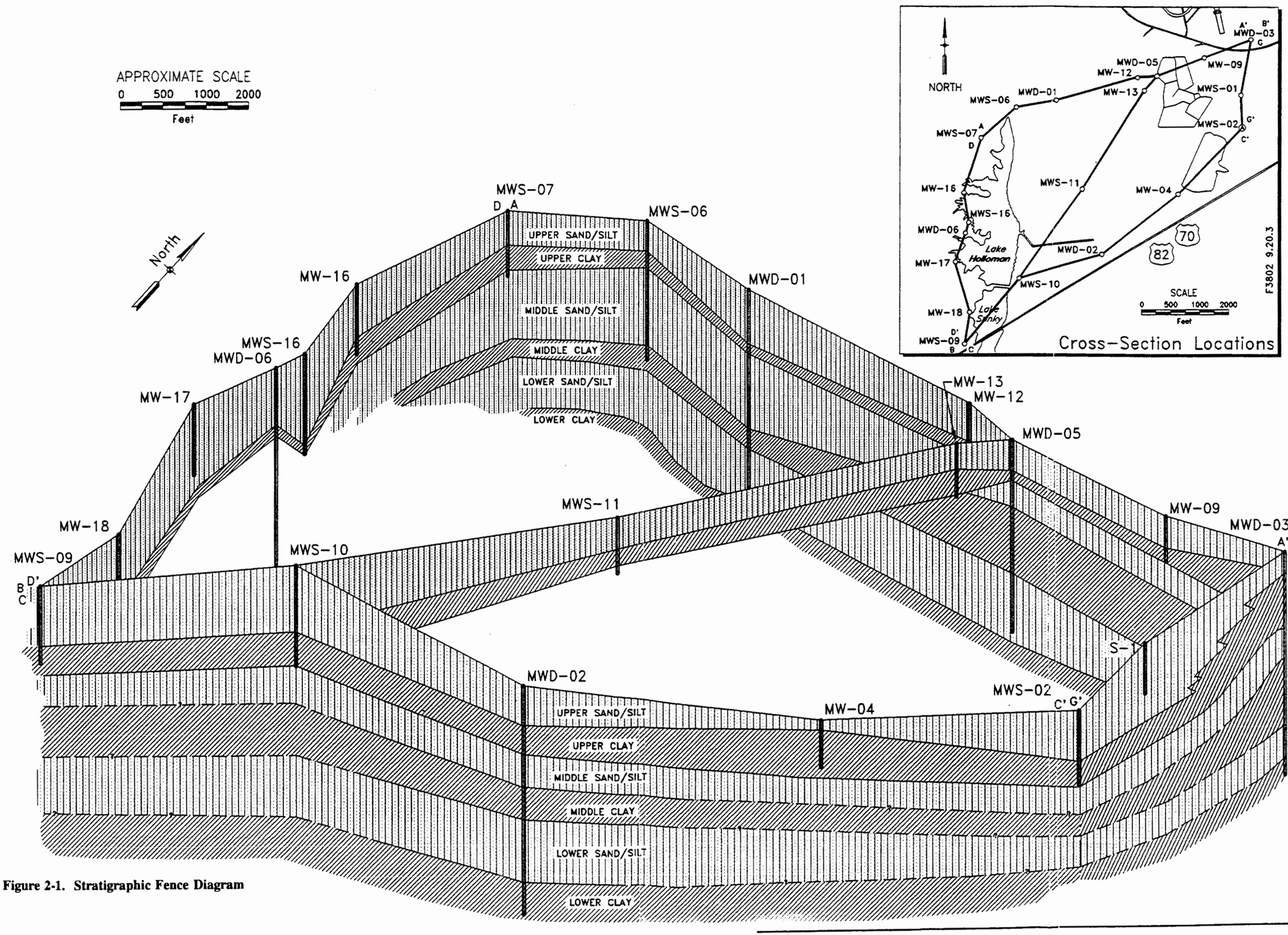


Figure 2-1. Stratigraphic Fence Diagram

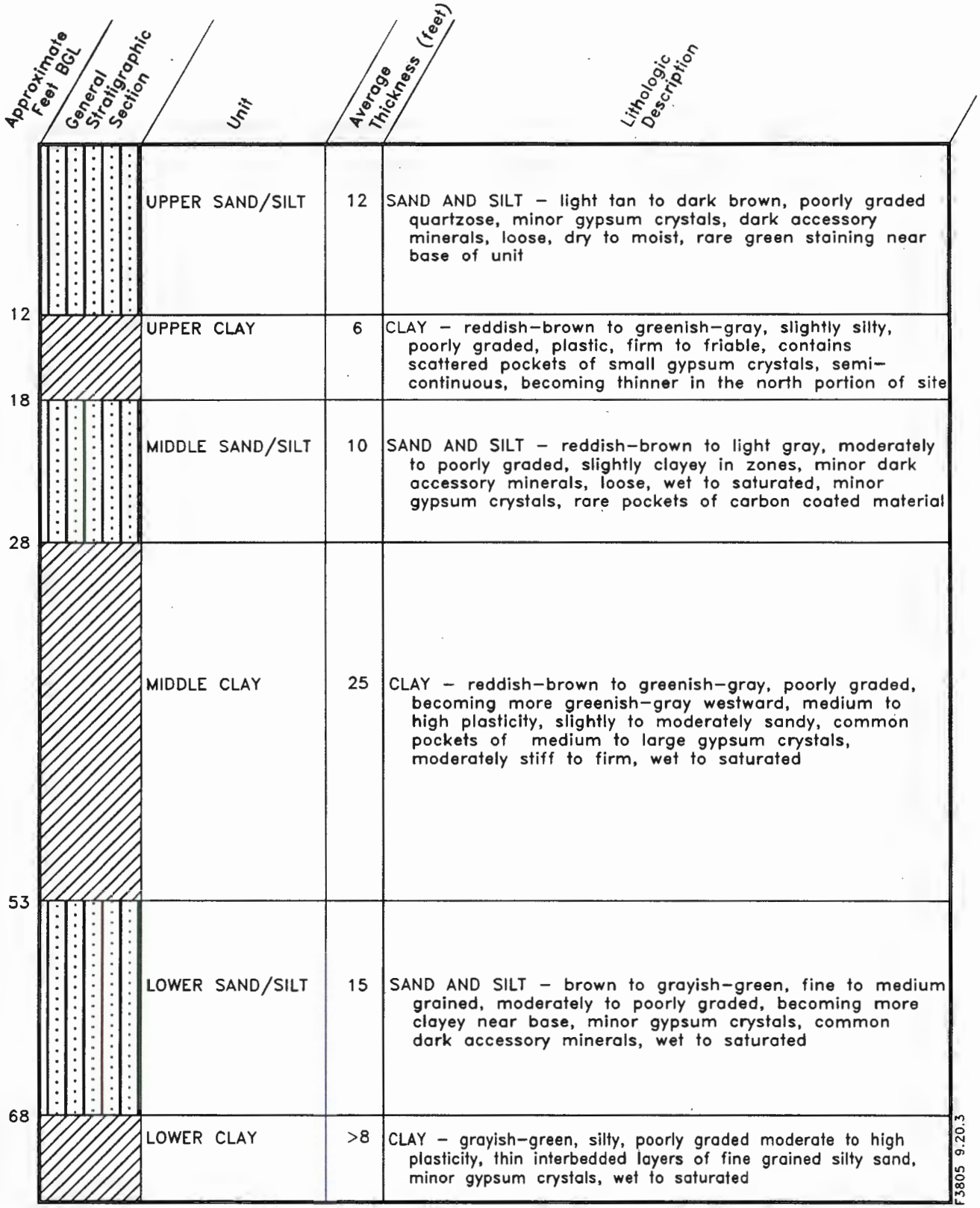


Figure 2-2. Generalized Description of Stratigraphic Section

Figure 2-3. Groundwater Contour Map (April 1993)

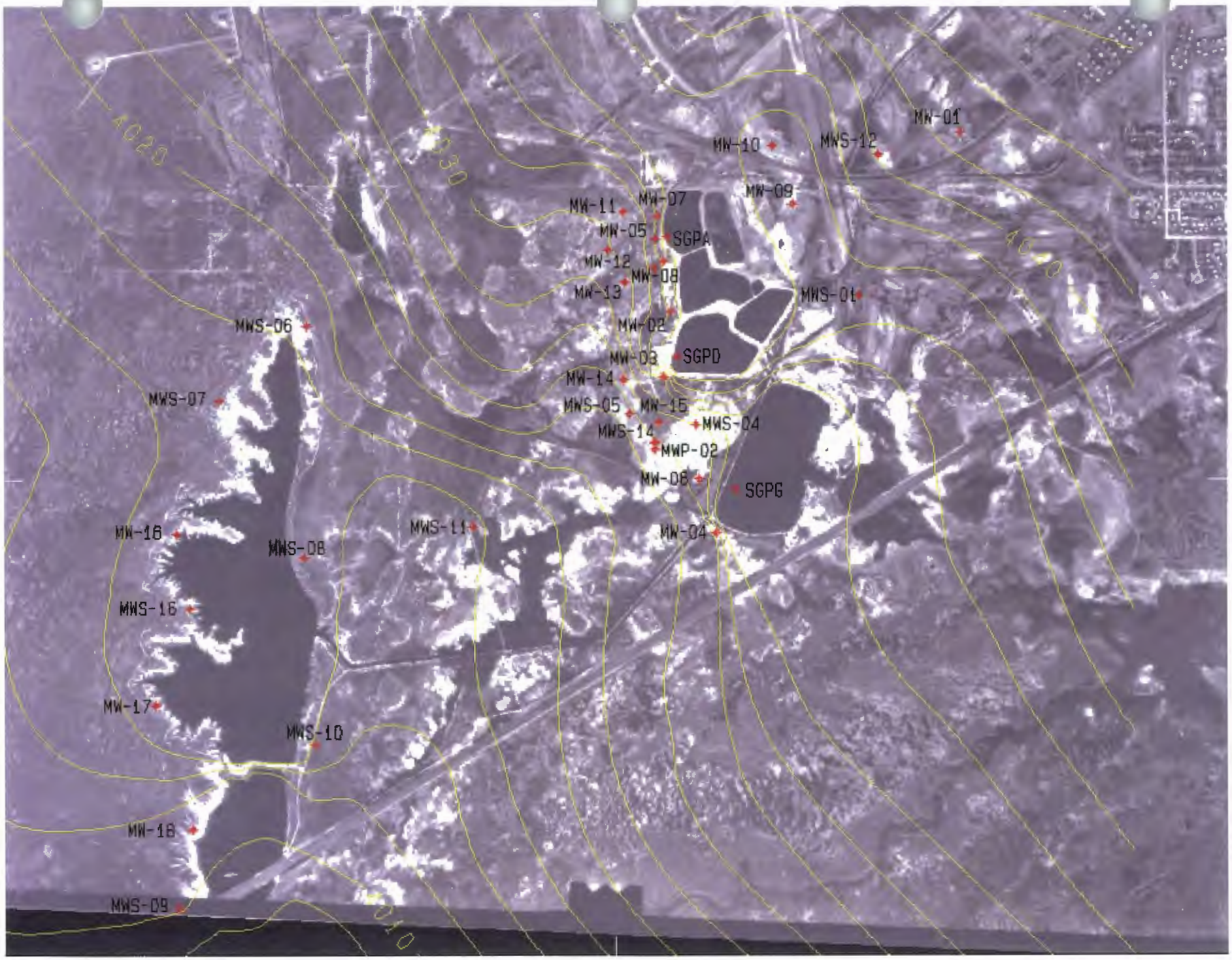
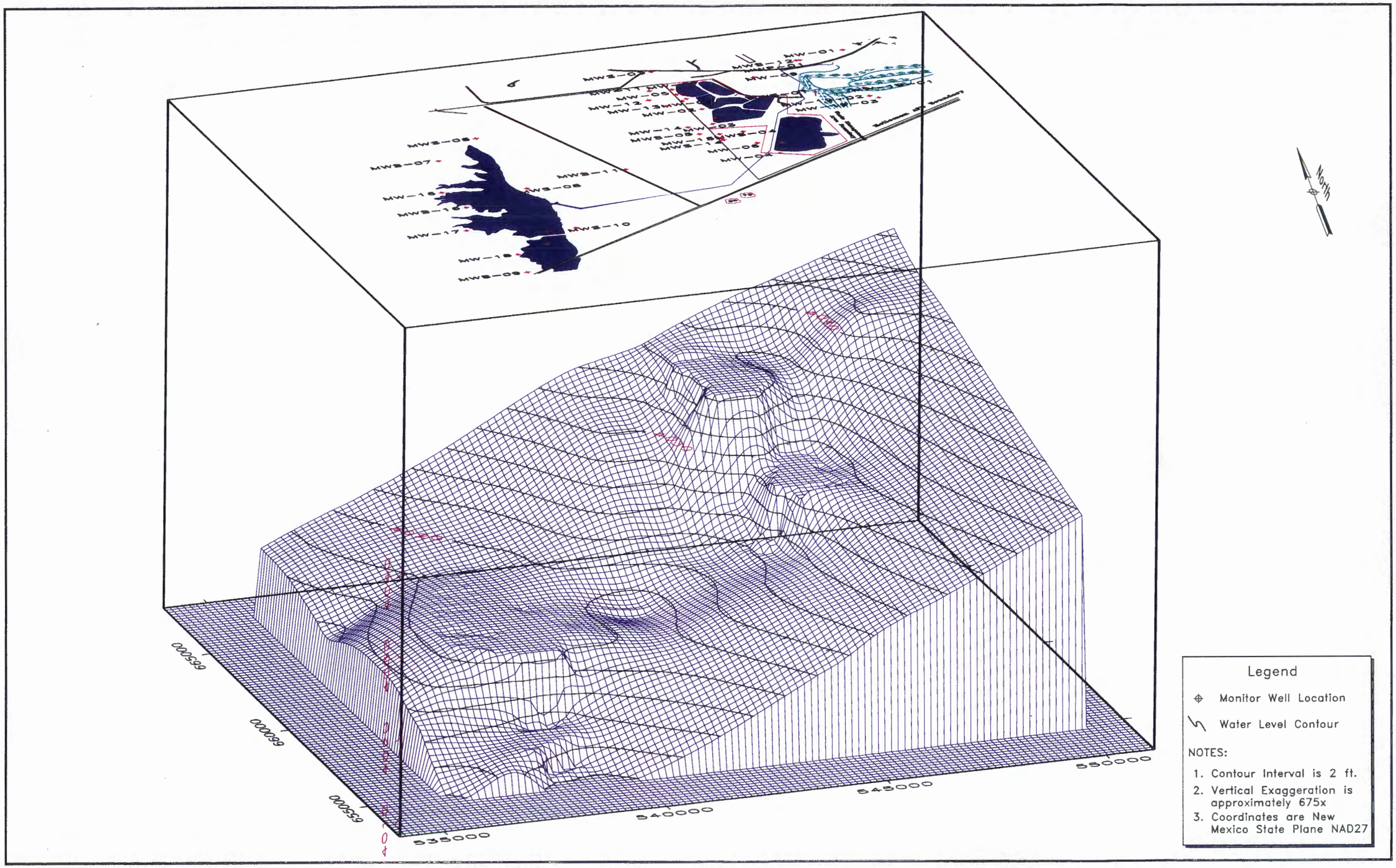


Figure 2-4. Groundwater Contour Map (August 1993)


MW-01
MWS-12
MWS-01
MWS-07
MW-15
MWS-11
MWS-05
MWS-10
MW-17
MW-18
MWS-09
MW-05
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water flows away from Ponds A through D toward monitor wells MW-09 and MW-10. Figures 2-3 and 2-4 reflect the degree of mounding caused by the ponds.

Measurement of the deep piezometers (MWD-01 through MWD-06) indicates that semiconfining conditions may exist at a depth of approximately 40 ft BGL. An upward hydraulic head exists in the deep wells where water levels are about 2 ft higher than the water levels observed in the shallow wells. Review of Figure 2-1 shows that lower sand/silt is bound above and below by the middle and lower clay units, respectively.

2.3 Groundwater Quality

Groundwater quality in the Tularosa Basin is potable to the east and west of Holloman AFB near recharge areas, but groundwater becomes progressively more mineralized as it flows downgradient toward the interior of the basin. This decrease in water quality can be attributed to slow groundwater migration from recharge to discharge areas and the presence of readily soluble minerals in the bolson sediments.

The groundwater beneath Holloman AFB is designated as unfit for human consumption based on New Mexico Water Quality Control Commission Regulations (NM WQCC 82-1, as amended through August 18, 1991, Parts 3-100 through 3-103) because it exceeds New Mexico Human Health Standards (HHSs) for total dissolved solids (TDS) and sulfate. Average values of other groundwater quality parameters (chloride, fluoride, and nitrate-nitrite) measured at Holloman AFB also exceed HHSs and, except for fluoride, also exceed federal primary and secondary drinking water maximum contaminant levels (MCLs and SMCLs) (Radian, June 1992). Water quality parameters reflect that the groundwater in this area is not potable.

Although U.S. EPA guidelines for groundwater classification are not recognized by the State of New Mexico, the U.S. EPA guidelines [*Guidelines for Groundwater Classification Under the EPA Groundwater Protection Strategy* (U.S. EPA, 1986)] classify the groundwater beneath Holloman AFB as a III B aquifer. Class III groundwater, characterized by having a TDS concentration greater than 10,000 mg/L, is not considered a source or a potential source of drinking water. Class III B groundwater is characterized by a low degree of interconnection to adjacent surface waters or groundwater of a higher class. The average measured TDS value for groundwater is greater than 10,000 mg/L (Radian, June 1992). Because the Tularosa Basin is a closed basin, its groundwater does not discharge or connect to any adjacent aquifers. Adjacent surface waters include groundwater surfacing in Malone Draw and Lake Holloman. The concentration of TDS in Lake Holloman ranges from a winter low of 12,400 mg/L to a summer high of 17,000 mg/L (Cole, et al., 1981); therefore, groundwater at Holloman AFB is not interconnected with surface water of a higher class. Recent data indicate TDS concentrations in the sewage lagoons ranges from 3800 mg/L in Pond A to 4600 mg/L in Pond D. Concentrations in the lakes range from 11,000 to 14,000 mg/L.

Section 3
DATA INTERPRETATION PROCESS

The data interpretation process involves validation of data and evaluation of results with respect to project-specific criteria. Criteria used to evaluate data are primarily requirements specified in the *Groundwater Assessment Monitoring Plan* (Radian, 1991) and used for the First Determination False Positives (Radian, April 1992). Figure 3-1 illustrates the data interpretation process and evaluation criteria for Phase 1 groundwater assessment monitoring results.

3.1 Data Validation

Data validation was performed to assess whether analytical data generated were defensible and of acceptable quality. Precision, accuracy, and completeness criteria specified in the project CDAP (Radian, January 1993) were used as the basis for validation. Results of duplicate laboratory control sample analyses, duplicate matrix spike analyses, and field duplicate samples were evaluated to estimate measurement precision. Matrix spike, surrogate spike and laboratory control sample recoveries were used to evaluate and estimate measurement accuracy. Completeness was calculated by dividing the number of valid results by the number of analyses scheduled for this investigation.

Quality control (QC) data associated with groundwater for this investigation indicate that chemical measurements are acceptable and defensible. Data show that QC mechanisms were effective in ensuring measurement data reliability within expected limits of sampling and analytical error. Detailed results of this data review and validation are presented in *Sampling and Quality Control Summary Report (A-E SQCSR), Sewage Lagoons and Lakes Investigation* (Radian, July 1993).

Data qualifier flags have been added to some sample results to note exceptions from the quality control objectives or to provide information such as an indication of analyte coelution. A listing and description of the flags is presented in Table 3-1. Understanding these flags is critical for appropriate interpretation of laboratory results. Uncensored data were requested from the laboratory to support other objectives of this project (i.e., risk assessment). Therefore, numbers presented require additional scrutiny to evaluate their applicability. The following text discusses how analyte flags and other criteria relate to data interpretation for Phase 1 groundwater assessment monitoring.

Table 3-1

Data Qualifier Flags for the Analytical Results

Flag	Description
B	Analyte was also detected in the associated laboratory method blank. (Organic Methods)
J	Estimated value because the analyte was detected at a concentration less than the reported detection limit. (Organic Methods)
G	Analyte was not confirmed. Analyte was detected using both primary and secondary columns; however, the concentrations differ by more than a factor of two. (Method SW8080)
X	Analyte was not confirmed. Analyte was detected using primary column only. (Method SW8080)
ND	Not Detected.

3.2 Evaluation of Nature and Extent of Contamination

Sampling was conducted at the sewage lagoons to determine the nature and extent of contamination in the groundwater downgradient of the existing monitoring network. This section outlines the evaluation criteria used to determine the presence or absence of contaminants.

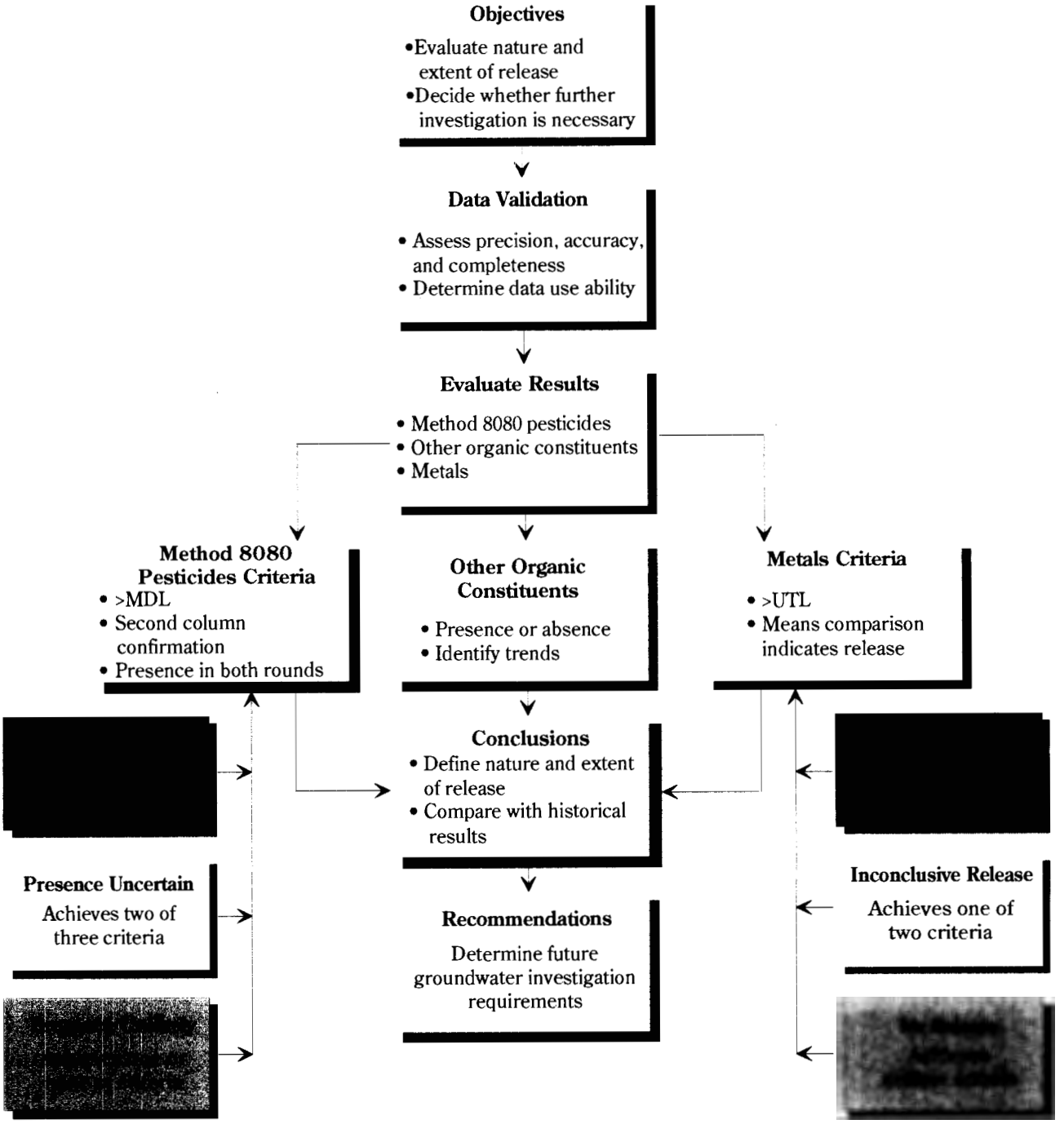

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Figure 3-1. Data Interpretation Process

3.2.1 Method 8080 Pesticides

As determined by previous sampling events, Method 8080 pesticides are the primary analytes of concern. Determination of the presence or absence of Method 8080 pesticides in the groundwater is primarily based on protocol set forth in the *Groundwater Assessment Monitoring Plan* (Radian, 1991) and on the validity and certainty of analytical results provided by the laboratory. As presented in Figure 3-1, the presence of Method 8080 pesticides are classified as certain, uncertain, or unlikely. Rationale for the three classifications are presented below:

- **Presence Certain**--According to the *Groundwater Assessment Monitoring Plan* (Radian, 1991) it can be concluded that a release has occurred when ANALYTES IN BOTH SAMPLING ROUNDS ARE above the method detection limit (MDL) (as defined in SW-846). The MDLs presented in the plan are provided in Appendix C. Finally, Method 8080 pesticides are only considered certain if, in addition to the criteria stated above, they are confirmed on both columns of the gas chromatogram and their concentrations do not differ by more than a factor of two.

- **Presence Uncertain**--The presence of Method 8080 pesticides is considered uncertain if they do not meet all the criteria specified above. According to the requirements set forth in the plan, it should be concluded that a release has not occurred if one of these criteria is not met. However, the classification "uncertain" is given when a constituent does not meet one of the three criteria. An analyte is classified uncertain when: the result is less than the MDL; it is not present in both sampling rounds; or the second column does not confirm the analyte's concentration (G-flag) or presence (X-flag). The result COMBINATION must achieve (together) at least TWO of the three criteria (i.e., each round alone does not have to meet two criteria.)

- **Presence Unlikely**--The presence of Method 8080 pesticides is considered unlikely if they do not meet two or more of the specified criteria. It can safely be concluded that a release has not occurred for this criteria.

3.2.2 Background Metals/Upper Tolerance Limits

Previous groundwater sampling at the sewage lagoons addressed only Appendix IX organic parameters [as required by the *Groundwater Assessment Monitoring Plan* (Radian, 1991)]. However, subsequent sampling of sludge from the sewage lagoons indicated concentrations of some metals above background levels. Therefore, groundwater samples also were analyzed for metals in the new monitor wells to determine if the sludge had migrated to groundwater. No background values historically have been available for metals in groundwater at Holloman AFB. Therefore, in conjunction with Phase 1 groundwater assessment monitoring, a Base-wide background study was completed to determine concentrations of naturally occurring metals in both soil and groundwater. Since metallic elements are naturally-occurring constituents of uncontaminated groundwater, conclusions as to the presence/absence or nature and extent of contamination must take into consideration naturally-occurring concentrations upgradient of the potential source areas.

Two types of statistical analyses were used to compare results from downgradient wells to upgradient "background" wells. Tests of central tendency (i.e., means comparisons) were used to determine if, on the average, concentrations of metals downgradient were greater than upgradient concentrations. Additionally, individual results were compared to upper tolerance limits (UTLs) for background (see Appendix B-1 for information regarding background and summary statistics useful for comparisons). The conclusions of these comparisons were confirmed or qualified by a graphical analysis of the results.

Results of the statistical analyses for metals were classified as a conclusive release, inconclusive release, or no release. If both the means

comparison test and UTLs indicated downgradient concentrations to be greater than background, then it was conclusive that a release occurred. If the two tests (means comparison and UTLs) contradicted each other, then existing data were not sufficient to determine if a release occurred (i.e., inconclusive release). Finally, if both tests indicated that downgradient populations were no different than background populations, it was concluded that no release had occurred.

Appendices B-1 and B-2 contain a more detailed description of the methods used for these analyses. Section 4.1.2 presents the results of these analyses.

3.2.3 Other Organic Constituents

Prior agreements with NMED concluded that Method 8080 pesticides are the primary constituents of concern, and that other organic constituents, although detected in a few monitor wells, are not a significant concern. To ensure that organic constituents other than Method 8080 pesticides had not migrated beyond the existing monitoring network, groundwater samples from the new monitor wells were analyzed for all Appendix IX parameters.

3.2.4 Comparison of Current Data to Results of First Determination False Positives

The new data and the results of the First Determination False Positives are compared to observe whether results are reproducible over time, establish long-term trends, and assist in recommending future monitoring requirements. Explanations are provided where results of the new data differ from the results of the First Determination False Positives.

3.3 Evaluation of Potential Risk

To evaluate potential risk, previous activities have included a comparison of site results with RCRA Subpart S health-based action levels. Standard default exposure factors and assumptions are used to calculate those action levels which do not account for site-specific conditions. Because they are inappropriate, they are not used for comparison with Phase 1 results.

A site-specific risk assessment, including determination of the magnitude, frequency, duration, and route of human exposure has been conducted to accurately assess the potential risks associated with the Holloman AFB sewage lagoons. To facilitate comparison with a worst-case scenario, a standard baseline risk assessment, assuming domestic use of groundwater has also been conducted. The results of the risk assessments are presented in a separate report, *Draft Final Risk Assessment Report, Sewage Lagoons and Lakes Investigation* (Radian, December 1993), and are not addressed in the context of this report.

Section 4
RESULTS AND CONCLUSIONS

This section presents the results and conclusions for Phase 1 groundwater assessment monitoring, the results of sampling and analysis of the deep piezometers, and a comparison of Phase 1 results with the results of the First Determination False Positives. The terms presented for the evaluation criteria (Section 3) are used to discuss results and conclusions. Figure 4-1 is provided to reference monitor well locations to analytical results discussed in this section. Appendix C contains a complete listing of analytical results and reported detection limits.

4.1 Phase 1 Results and Conclusions

4.1.1 Method 8080 Pesticides

The primary objective of the Phase 1 groundwater assessment monitoring is to determine the lateral extent of Method 8080 pesticides downgradient of MW-05 and MW-07 (Pond A) and MW-03 (Pond D). Monitor wells installed downgradient of MW-05, MW-07, and MW-03 (MW-11 through MW-15 and MWS-05) provide the basis for determining whether the extent of Method 8080 pesticides has been defined.

Heptachlor epoxide and 4,4'-DDD were the only Method 8080 pesticides with their presence determined to be certain for Phase 1. Heptachlor epoxide was detected in MW-03 in Rounds 1 and 2 sampling at 0.016 and 0.011 μg/L, respectively; 4,4'-DDD was detected in MW-04 in Rounds 1 and 2 sampling at 0.047 and 0.018 μg/L, respectively. The presence of Method 8080 pesticides detected further downgradient of these two monitor wells is considered either uncertain or unlikely. Tables 4-1 and 4-2 provide a summary of Method 8080 pesticides considered uncertain or unlikely. The following observations were made:

- The presence of Method 8080 pesticides was considered certain only in monitor wells immediately downgradient of the sewage lagoons (i.e., MW-03 and MW-04). No pesticides were considered certain in the newly installed monitor wells (i.e., MW-14 and MW-15) located further downgradient.

- More pesticides with their presence considered uncertain were detected in monitor wells immediately downgradient of sewage lagoons (i.e., MW-05 and MW-03) than in the newly installed monitor wells (i.e., MW-12 and MW-15).

- Concentrations of uncertain pesticides generally decreased from monitor wells immediately downgradient of the sewage lagoons to monitor wells located further downgradient.

- Pesticides with their presence considered uncertain or unlikely were detected at similar concentrations in monitor wells located upgradient of the sewage lagoons (MW-01, MW-09, and MW-10).

- The presence of the majority of detected pesticides is considered unlikely based on the criteria outlined in the Section 3. Furthermore, the concentrations for the majority of pesticides considered uncertain and unlikely were estimated (J-flag) because they were detected below the reporting limit.

Overall, these observations indicate a decrease in the number and concentration of Method 8080 pesticides detected in new monitor wells further downgradient from the sewage lagoons. No Method 8080 pesticides were identified as certain in the new monitor wells MW-11 through MW-15. Therefore, the lateral extent of Method 8080 pesticides has been defined downgradient of monitor wells MW-05 and MW-07 (Pond A), and MW-03 (Pond D).

The extent of Method 8080 pesticides downgradient of MW-04 (Pond G) (where 4,4'-DDD is certain) is unknown because of the lack of

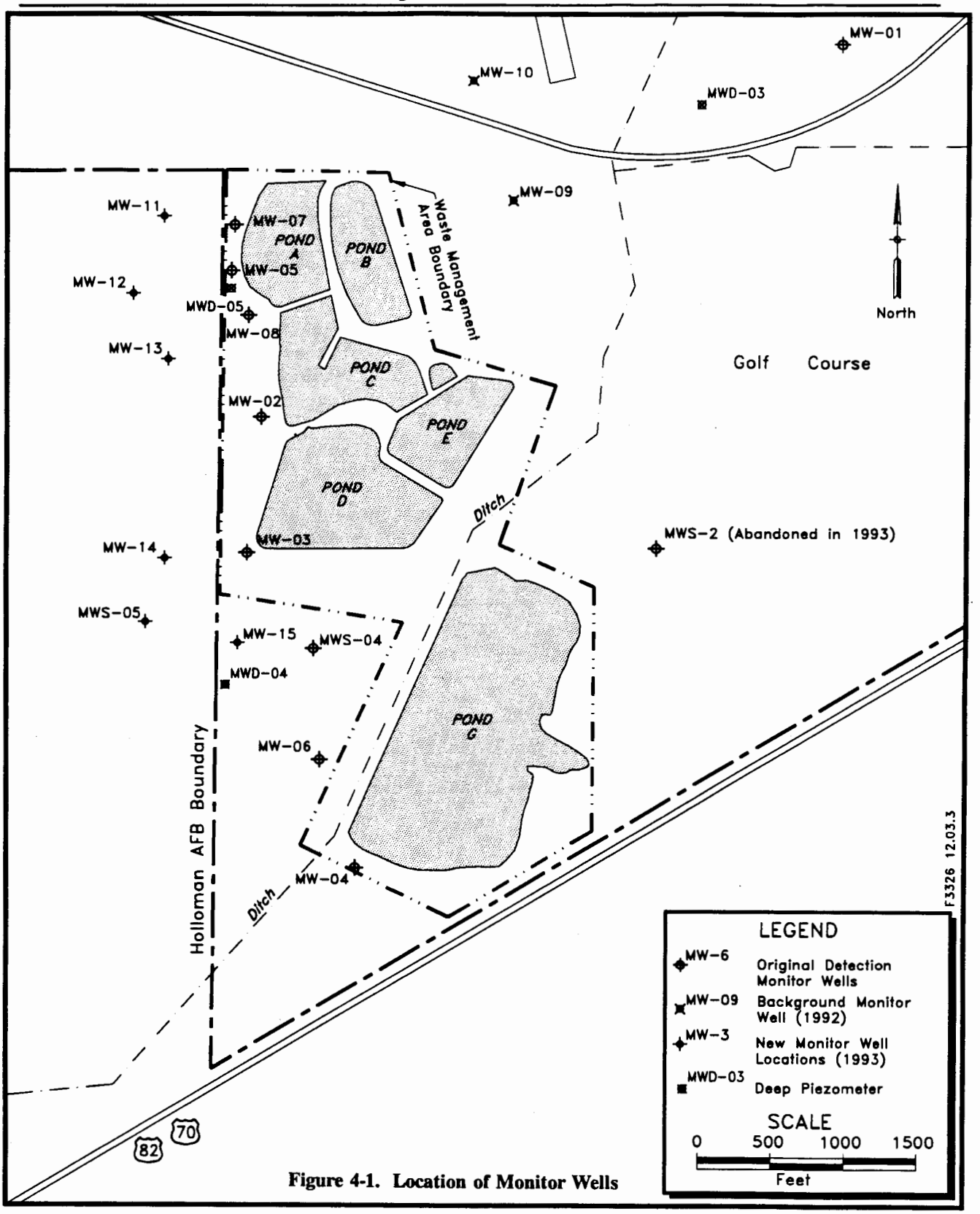


Figure 4-1. Location of Monitor Wells

Table 4-1

Presence Uncertain, Method 8080 Pesticides (μg/L)

Analyte	MDL	MW-01	MW-02	MW-03	MW-04	MW-05	MW-06	MW-07	MW-08	MW-09
Aldrin	0.01			ND/ .03						
alpha-BHC	0.01					ND/ 0.018	ND/ 0.013		0.013/ 0.0061J	
beta-BHC	0.01					0.028/ 0.0019JX				
delta-BHC	0.01					0.045/ 0.013G				
gamma-BHC	0.01			0.018X/ 0.085X		0.15/ ND				
alpha-Chlordane	0.02 [a]		0.0083 JX/ 0.062 X					0.034X/ 0.037X		
gamma-Chlordane	0.01 [a]		0.042X/ 0.74G	0.026X/ 0.16G	0.072X/ 0.016G	0.076G/ 2.7G		0.077X/ 2.5G	0.02G/ 2.2G	
4,4'-DDE	0.01					0.013G/ 0.026X				
4,4'-DDT	0.02					0.036/ 0.014J		0.034X/ 0.018JX		
Dieldrin	0.01		0.017/ ND	0.02X/ 0.012X					0.014X/ 0.0076JX	
Endosulfan I	0.01				ND/ 0.024	0.054X/ 0.0093J				
Endosulfan II	0.03		0.017J/ 0.0098JX	0.022J/ 0.067		0.031G/ 0.016J		0.029/ 0.013JX		
Endosulfan Sulfate	0.05	0.0084J/ ND	0.013J/ 0.018JX	0.018J/ 0.036JX		0.015J/ 0.018JX	0.018J/ ND	0.039J/ 0.015JX	0.0096J/ 0.019JX	
Endrin	0.01		ND/ 0.018	0.02X/ 0.15G		0.029X/ 0.056G		0.043G/ 0.035	0.021G/ 0.019	0.0023JX/ 0.016XB
Endrin Aldehyde	0.02				0.04G/ 0.0029J					
Heptachlor	0.01			ND/ 0.032		0.025X/ 0.0049J				
Heptachlor epoxide	0.01				0.37G/ 0.043	0.033/ 0.01G	0.018X/ 0.0045J	0.036/ 0.0071J		

Table 4-1

(Continued)

Analyte (µg/L)	MDL	MW-10	MW-11	MW-12	MW-13	MW-14	MW-15	MWS-04	MWS-05
Aldrin	0.01								
alpha-BHC	0.01		0.027X/ 0.0066JX	0.013X/ 0.0066JX	0.028X/ 0.06X	0.05X/ 0.064X			
beta-BHC	0.01				0.02/ 0.03X	0.013X/ 0.02X			
delta-BHC	0.01				0.014/ ND				
gamma-BHC	0.01			0.016/ 0.0052JX		0.027/ ND	0.01/ ND		
alpha-Chlordane	0.02 [a]								
gamma-Chlordane	0.01 [a]		0.0034J/ 0.12X	0.0023JX/ 0.094X					
4,4'-DDE	0.01								
4,4'-DDT	0.02								
Dieldrin	0.01								
Endosulfan I	0.01								
Endosulfan II	0.03								
Endosulfan Sulfate	0.05								0.028JB/ 0.018JX
Endrin	0.01	0.0022JX/ 0.018B			0.005JX/ 0.013B		0.0024JX/ 0.024B		
Endrin Aldehyde	0.02		0.007JX/ 0.0043JB	ND/ 0.0007JB	0.0085JX/ 0.0049J		0.0097JX/ 0.0077J		
Heptachlor	0.01		0.019G/ 0.0085J		0.018X/ 0.013G	0.02G/ 0.014G	0.025G/ 0.016G	0.0059JX/ 0.0041J	
Heptachlor epoxide	0.01								

Table 4-1

(Continued)

MDL Method Detection Limit is defined in SW-846 as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix containing the analyte.

a Protocol Required Detection Limits (PRDLs) are provided for analytes that have no method specified detection limits. PRDLs are the highest common detection limits for an analyte on multiple instruments and are based on detection limit requirements in 40 CFR Part 136.

Round 1 result/Round 2 result

B Analyte was also detected in the associated laboratory method blank (Organic Methods).

J Estimated value because the analyte was detected at a concentration less than the reporting limit (Organic Methods).

G Analyte was not confirmed. Analyte was detected using both primary and secondary columns; however, the concentrations differ by more than a factor of two (Method SW8080).

X Analyte was not confirmed. Analyte was detected using primary column only (Method SW8080).

ND Not Detected.

Table 4-2

Presence Unlikely, Method 8080 Pesticides (μg/L)

Analyte	MDL	MW-01	MW-02	MW-03	MW-04	MW-05	MW-06	MW-07	MW-08	MW-09
Aldrin	0.01					ND/ 0.018X		ND/ 0.014X		
alpha-BHC	0.01				0.1X/ ND			ND/ 0.008J		
beta-BHC	0.01			ND/ 0.017X				ND/ 0.0013JX	ND/ 0.014X	
delta-BHC	0.01		ND/ 0.012G	0.035X/ ND				ND/ 0.014X		
gamma-BHC	0.01		0.016X/ ND		0.059X/ ND			0.083X/ ND	0.014X/ ND	
alpha-Chlordane	0.02 [a]			0.015X/ 0.0011JX		ND/ 0.024G			0.013X/ 0.0028JX	
gamma-Chlordane	0.01 [a]									
4,4'-DDD	0.01					ND/ 0.019X				
4,4'-DDE	0.01		ND/ 0.016X					ND/ 0.015X	ND/ 0.01X	
4,4'-DDT	0.02	ND/ 0.018JX	ND/ 0.014J	ND/ 0.091G					ND/ 0.015J	ND/ 0.019X
Dieldrin	0.01				ND/ 0.016G	ND/ 0.036X				
Endosulfan I	0.01								ND/ 0.014G	
Endosulfan II	0.03								0.017JX/ ND	
Endosulfan Sulfate	0.05				0.038J/ ND					
Endrin Aldehyde	0.02		0.0044JX/ 0.0035JX	ND/ 0.077GB		ND/ 0.0039JB				
gamma-Chlordane	0.01 [a]									
Heptachlor	0.01				ND/ 0.008J				0.0042JX/ 0.0026JX	0.0049JX/ ND
Heptachlor epoxide	0.01	0.016X/ ND	0.0085J/ ND						1.2G/ ND	0.0053JX/ ND
Isodrin	0.01 a		ND/ 0.0051JX	ND/ 0.054X	ND/ 0.015G	ND/ 0.068X		ND/ 0.021X	ND/ 0.053X	
Methoxychlor	0.05			ND/ 0.21G	0.016JX/ ND	ND/ 0.0046JX				

Table 4-2

(Continued)

Analyte	MDL	MW-10	MW-11	MW-12	MW-13	MW-14	MW-15	MWE-84	MWE-85
Aldrin	0.01								
alpha-BHC	0.01						ND/ 0.083X		
beta-BHC	0.01		0.013X/ ND	0.0059JX/ ND			ND/ 0.018X		
delta-BHC	0.01		ND/ 0.008JX	ND/ 0.0082JX					
gamma-BHC	0.01	0.0093JX/ ND	ND/ 0.0057JX		0.0093J/ ND				
alpha-Chlordane	0.02 *		0.0022JX/ ND	0.0016JX/ ND		0.0012JX/ ND	0.0026JX/ ND		0.006JX/ ND
gamma-Chlordane	0.01 *				0.0016J/ ND	0.0024J/ ND	0.003JX/ ND		
4,4'-DDD	0.01				0.014X/ ND				ND/ 0.017X
4,4'-DDE	0.01								
4,4'-DDT	0.02	ND/ 0.026X			ND/ 0.021X	ND/ 0.023X			0.049X/ ND
Dieldrin	0.01		ND/ 0.0056JX	ND/ 0.0063JX					
Endosulfan I	0.01								
Endosulfan II	0.03								
Endosulfan Sulfate	0.05		ND/ 0.025JX	ND/ 0.026JX			ND/ 0.03J	0.0094J/ ND	
Endrin	0.02					ND/ 0.013XB		ND/ 0.0052JB	
Endrin Aldehyde	0.02	ND/ 0.0056J				ND/ 0.0041J			0.004JX/ ND
Heptachlor	0.01	0.0043JX/ ND		0.015X/ ND					
Heptachlor epoxide	0.01		0.0051JX/ ND	0.0055JX/ ND	0.0064JX/ ND			0.022X/ ND	0.0081J/ ND
Isodrin	0.01 *			0.0082JX/ ND	0.018X/ ND	0.02X/ ND			
Methoxychlor	0.05								

Table 4-2

(Continued)

MDL Method Detection Limit is defined in SW-846 as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix containing the analyte.

* Protocol Required Detection Limits (PRDLs) are provided for analytes that have no method specified detection limits. PRDLs are the highest common detection limits for an analyte on multiple instruments and are based on detection limit requirements in 40 CFR Part 136.

Round 1 result/Round 2 result

B Analyte was also detected in the associated laboratory method blank (Organic Methods).

J Estimated value because the analyte was detected at a concentration less than the reporting limit (Organic Methods).

G Analyte was not confirmed. Analyte was detected using both primary and secondary columns; however, the concentrations differ by more than a factor of two (Method SW8080).

X Analyte was not confirmed. Analyte was detected using primary column only (Method SW8080).

ND Not Detected.

monitor wells located further downgradient. However, based on results downgradient of Ponds A and D, it is anticipated that the presence of any Method 8080 pesticides will be uncertain or unlikely further downgradient of MW-04.

4.1.2 Other Appendix IX Parameters

A secondary objective of the Phase 1 sampling is to determine if the other Appendix IX parameters (besides Method 8080 pesticides) are present in the further downgradient monitor wells (MW-11 through MW-15) and in recently installed upgradient monitor wells MW-09 and MW-10. The results for metals and for all other organic and inorganic constituents are presented in the following two subsections.

Metals

Table 4-3 summarizes the conclusions reached in the statistical comparisons. As shown in the table, the measurement data indicate cadmium concentrations in the wells downgradient of Ponds A and B to be higher than background, suggesting that migration of this element may have occurred. Statistical results for metals were inconclusive when the results of the means comparison and upper tolerance limit tests were different. For MW-11, MW-12 and MW-13, mercury and tin had higher average concentrations than average background concentrations. However, all concentrations were below their respective upper tolerance limits. Therefore, the means comparison test may indicate a false positive. For MW-14, MW-15, and MWS-05, antimony, cadmium and tin had lower average concentrations than average background concentrations. However, antimony, tin, and cadmium were above their respective upper tolerance limits in MWS-05 and cadmium and tin were above their upper tolerance limits in MW-15. Therefore, the two statistical tests indicate contradictory results. Metals with results above UTLs may indicate individual monitor wells where a release may have occurred. However, additional data would be necessary to support this conclusively. Most metals were below both the UTLs and had average concentrations below average concentrations for the same background metals. Appendix B-2 contains a more detailed summary of the results and conclusions.

Other Organic and Inorganic Constituents

A summary of analytical results for these constituents is presented in Appendix C of this report. Other organic and inorganic constituents detected in upgradient monitor wells MW-09 and MW-10 and newly installed downgradient monitor wells included: cyclohexane, methyl-methacrylate, an unknown alkane, bis(2-ethylhexyl)phthalate, unknown semivolatile organic compounds, cyanide, and sulfide. No polychlorinated biphenyls (PCBs), organophosphorus pesticides, chlorinated herbicides, or dioxins and furans were detected in any monitor wells.

As concluded from previous Appendix IX samples, these other constituents were not detected at significant concentrations and were not consistently detected throughout the monitor well network. Therefore, they are not constituents of concern.

4.2 Deep Piezometers

While not officially included in the RCRA assessment monitoring network, existing piezometers MWD-03, MWD-04 and MWD-05 were sampled for Appendix IX parameters during Round 1 of Phase 1 groundwater assessment monitoring. The samples were collected to evaluate the potential of vertical migration of Appendix IX constituents.

A summary of detected Method 8080 pesticides is presented in Table 4-4. The presence of Method 8080 pesticides is uncertain in the deep piezometers. Only Endosulfan sulfate was confirmed by the second column reading; however, it was also detected below the MDL making its presence uncertain. All other pesticides are uncertain; they were not confirmed by the second column reading and were mostly detected at concentrations below the MDL.

The metals barium, cadmium, tin, and zinc were detected above their UTLs in one or more deep piezometers. However, no means comparison tests were completed because of the few number of wells. Without additional data, it is inconclusive whether metals have impacted the deep piezometers.

Table 4-3

Summary of Statistical Conclusions for Metals

Analyte	Conclusions
Monitor Wells Downgradient of Ponds A and B: MW-11, MW-12, and MW-13	
Cadmium	**Conclusive Release**--Analytes for which measurements were greater than background.
Mercury and tin	**Inconclusive Release**--Analytes for which statistical comparisons were inconclusive.
Antimony, arsenic, barium, beryllium, chromium, cobalt, copper, lead, nickel, selenium, silver, thallium, vanadium, and zinc	**No Release**--Analytes for which measurements were not significantly different from background.
Monitor Wells Downgradient of Ponds D, E and F: MW-14, MW-15, and MWS-05	
None	**Conclusive Release**--Analytes for which measurements were greater than background
Antimony, cadmium, and tin	**Inconclusive Release**--Analytes for which statistical comparisons were inconclusive.
Arsenic, barium, beryllium, chromium, cobalt, copper, lead, mercury, nickel, selenium, silver, thallium, vanadium, and zinc	**No Release**--Analytes for which measurements were not significantly different from background.

Table 4-4

Method 8080 Pesticides, Deep Piezometers (μg/L)

Analyte	MDL	MWD-03	MWD-04	MWD-05
alpha-Chlordane	0.02 [a]		0.0055JX	
delta-BHC	0.01	0.013X		
Endosulfan sulfate	0.05		0.013JB	
Endrin	0.01	0.0022JX		0.0022JX
gamma-BHC	0.01	0.015X		
gamma-Chlordane	0.01 [a]			0.0016JX
Heptachlor	0.01	0.0074JX		0.0046JX
Heptachlor epoxide	0.01	0.065X	0.0081JX	0.0051JX
Isodrin	0.01 [a]	0.0092JX		

[a] Protocol Required Detection Limits (PRDLs) are provided for analytes that have no method specified detection limits. PRDLs are the highest common detection limits for an analyte on multiple instruments and are based on detection limit requirements in 40 CFR Part 136.

B Analyte was also detected in associated laboratory method blank.

J Estimated value because the analyte was detected at a concentration less than the reporting limit (Organic Methods).

X Analyte was not confirmed. Analyte was detected using primary column only (Method SW8080).

No volatile or semivolatile organic compounds, PCBs, organophosphorus pesticides, chlorinated herbicides, or dioxins and furans were detected in any deep piezometers. A summary of analytical results for these constituents is presented in Appendix C of this report.

4.3 Comparison of Current Data to the Results of the First Determination False Positives

A comparison of the current data to the First Determination False Positives results is useful for evaluating significant trends over time and reproducibility of results. Table 4-5 summarizes the results of Method 8080 pesticides that had a certain and uncertain presence during the First Determination False Positives (Radian, April 1992). Alpha-BHC and delta-BHC (in MW-05 and MW-07, respectively) were the only Method 8080 pesticides with their presence determined to be certain. The presence of all other pesticides were either uncertain or unlikely, or were not detected during previous sampling. The presence of aldrin and dieldrin was uncertain in MW-03, but both were at concentrations above action levels; therefore, further investigation was pursued downgradient of MW-03.

The results from Phase 1 sampling did not correspond very well to the results from the First Determination False Positives. For instance:

- Heptachlor epoxide and 4,4'-DDD (detected in MW-03 and MW-04, respectively) are the only Method 8080 pesticides determined to be certain for Phase 1.
- The presence of alpha-BHC is considered uncertain in MW-05 for Phase 1.
- The presence of delta-BHC is considered unlikely in MW-07 for Phase 1.
- Aldrin and dieldrin are still considered uncertain in MW-03 for Phase 1.

The rationale for the appearance and disappearance of Method 8080 pesticides considered to be certain may be explained by the nature of pesticide/porous media interactions. It is likely that very fine soil particles, to which these hydrophobic pesticides are adsorbed, periodically are extracted during analysis of the groundwater sample. Because most of these pesticides bind tightly to soil, a relatively high concentration of pesticide can be adsorbed to the soil particles. Few particles would need to be extracted for the pesticide to be detected because of the extremely high sensitivity of the pesticide detection system used in the Method 8080 analysis (a gas chromatogram fitted with an electron capture detector).

As an example, 4,4'-DDD has a log octanol/water partition coefficient of 5.99 which means that soil-bound concentrations are nearly 10^6 of that observed in surrounding waters. A few milligrams of such a soil collected in the 1-liter water sample would be sufficient to produce an apparent increase in the pesticide level.

It is likely that some of the pesticides observed in groundwater samples collected at Holloman AFB are the consequence of the sample containing some fine soils (from groundwater sampling) from which pesticides were extracted along with those dissolved in water. The measurement is real, but reflects soil or sediment-bound analytes rather than aqueous analytes. In this sense these could be considered false positive results.

Turbidity measurements that were performed on groundwater samples indicated that the measured turbidity was very low. However, because fine soils (e.g., clays) are small particles, typically less than 2000 μm in diameter, it is possible for there to be some soil in an apparently clear groundwater sample collected from a properly developed and purged well. The way to remove these types of suspended solids is through filtration of samples prior to analysis. However, Method 8080 does not require, or recommend, that groundwater samples collected for analysis be filtered to remove particulate constituents.

Chemical breakdown of pesticides in the groundwater can also account for variable analytical

Table 4-5

Presence Certain and Uncertain for Method 8080 Pesticides (μg/L), First Determination False Positives (1991/1992)

Analyte	MW-02	MW-03	MW-05	MW-07	MWS-02
Aldrin		ND/0.097C			
alpha-BHC			0.034C/0.023C	ND/0.022C	0.049C/ND
delta-BHC	0.15X/0.030C	ND/0.032C		0.023C/0.038C	
gamma-BHC		ND/0.15C			
4,4'-DDT		ND/0.24C			
Dieldrin		ND/0.25C			
Endrin		ND/0.28C			
Heptachlor		ND/0.082C	0.022C/ND		

September 1991/March 1992

C = Presence and concentration of Method 8080 pesticide confirmed on both primary and secondary columns of gas chromatogram.

X = The presence of the analyte was not confirmed on a second column.

ND = Not Detected

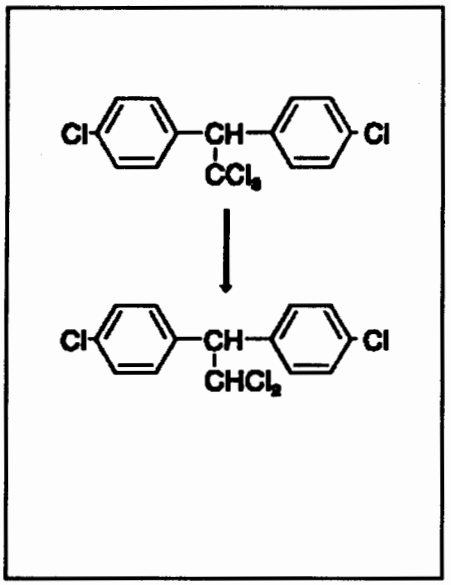
results. Some halogenated pesticides can undergo a process called reductive dehalogenation. This has been demonstrated to occur for DDT, heptachlor, lindane and methoxychlor (Bollag and Liu, 1990). The general chemical equation describing reductive dehalogenation of these halogenated pesticides is:

$$RCHCCl_3 \rightarrow RCHCHCl_2$$

where R demotes the remainder of the pesticide molecule.

DDT

DDD



DDT is reductively dechlorinated to DDD by substitution of one of the chlorine atoms on the trichloroethane portion of the DDT molecule with a hydrogen atom to form the dichloroethane isomer (DDD). This is graphically illustrated above.

Section 5
RECOMMENDATIONS

Installation of additional monitor wells is not recommended because the overall nature and extent of contamination has been defined downgradient of the sewage lagoons. The current monitoring network is sufficient for monitoring concerns identified in the First Determination False Positives and Phase 1 groundwater assessment monitoring. However, long-term monitoring is recommended with the following requirements:

- Conduct monitoring in coordination with the existing long-term monitoring program at the Base. Sample a subset of the network monitor wells every other year for a period of ten years.
- Analyze groundwater samples for constituents of concern--Method 8080 pesticides and metals.
- Use the risk assessment (Radian, December 1993) to establish long-term monitoring requirements.

Future groundwater monitoring requirements may need to be revised based on proposed construction activities for the new wastewater treatment plant at Holloman AFB. At this point, design is only 35% complete and the future of the sewage lagoons and the placement of new evaporation ponds (surface impoundments) is uncertain. When the design of the new plant is complete, these recommendations will be revisited to determine if the existing network meets the objectives of these proposed monitoring requirements.

Section 6
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APPENDIX A

FIELD LOGS AND FORMS

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A.6 Water Level Survey Data (March, April, and August 1993)

A.1 LITHOLOGIC LOGS

Key to Borehole Drilling Logs

All boreholes were drilled by Southwest Engineering Inc. (SEI) using a CME hollow-stem auger drill rig. Augers were 4-inch I.D./8-inch O.D., and samples were taken with 5-foot continuous core sampler. All boreholes were started and completed on the date listed at the top of the drilling log. The borehole location, and borehole elevation are listed in the surveying data. All measurements are recorded in feet.

GRAIN SIZE:

VF	Very fine
F	Fine
M	Medium
C	Coarse
NA	Not Applicable (ie., for clay and silt)

GRADING:

VP	Very Poorly graded
P	Poorly graded
W	Well graded

MOISTURE:

S	Saturated
W	Wet
M	Moist
D	Dry

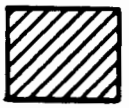
PLASTICITY

N	Non-plastic
P	Plastic (indeterminable)
L	Low plasticity
H	High plasticity

USCS CLASS (ASTM D 2487):

GW	Well-graded gravel
GP	Poorly graded gravel
GM	Silty gravel
GC	Clayey gravel
SW	Well-graded sand
SP	Poorly graded sand
SM	Silty sand
SC	Clayey sand
ML	Silt
MH	Silt (elastic)
CL	Clay (lean)
CH	Clay (fat)

GRAPHIC LOG: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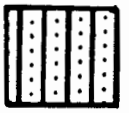
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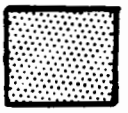
SP/SW

DRILLING LOG

Project (PROJID)	Location (LOCID)	Inspector	Company (LOGCODE)	Date (LOGDATE)	
LAKE & LAGOONS (HOLL_LL)	MW-11	DRR	RADIAN (RAD)	3/03/93	Sheet 1 of 2

Depth	Graphic Log	Lithologic Description: Main Modifier	Predominant Lithology	Color	Munsell	Grain Size	Grading	Moisture	Plasticity	USCS Class (ASTM)	[redacted] (VVL)	Sample Interval	Recovery	Observations and Comments
1		SANDY	SILT	REDDISH YELLOW	7.5YR 7/6	NA	P	M	L	ML	SILT	0-4.5	4	
2		SANDY	SILT	PINK	7.5YR 8/4	NA	P	M	L	ML	SILT	0-4.5	4	
3														
4														
5		SANDY	SILT	BROWN	7.5YR 5/4	NA	P	W	L	ML	SILT	4.5-9.5	3.5	Saturated
6														
7														
8		SILTY	SAND	BROWN	7.5YR 5/4	F	P	W	N	SM	SDSL	4.5-9.5	3.5	
9			SAND	PALE YELLOW	2.5Y 8/4	VF	P	M	N	SP	SDVF	4.5-9.5	3.5	

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DRILLING LOG

Project (PROJID)	Location (LOCID)	Inspector	Company (LOGCODE)	Date (LOGDATE)	Sheet 2 of 2
LAKE & LAGOONS (HOLL_LL)	MW-11	DRR	RADIAN (RAD)	3/03/93	

Depth	Graphic Log	Lithologic Description: Main Modifier	Predominant Lithology	Color	Munsell	Grain Size	Grading	Moisture	Plasticity	USCS Class (ASTM) [redacted]	[redacted] (VVL)	Sample Interval	Recovery	Observations and Comments
														Geotech sample from 10.0–12.0 ft.
11														
12		SILTY	SAND	STRONG BROWN	7.5YR 5/6	VF	P	M	N	SM	SDSL	9.5–14.5	5	
13														
14														
15		SILTY	SAND	STRONG BROWN	7.5YR 5/6	F	M	M	N	SM	SDSL	9.5–14.5	5	
16														
17														TD = 16.9 Ft.
18														
19														

F3691

DRILLING LOG

Project (PROJID)	Location (LOCID)	Inspector	Company (LOGCODE)	Date (LOGDATE)	Sheet
LAKE & LAGOONS (HOLL_LL)	MW-12	DRR	RADIAN (RAD)	3/03/93	1 of 2

Depth	Graphic Log	Lithologic Description: Main Modifier	Predominant Lithology	Color	Munsell	Grain Size	Grading	Moisture	Plasticity	USCS Class (ASTM) [redacted]	[redacted] (VVL)	Sample Interval	Recovery	Observations and Comments
1, 2, 3, 4		SANDY	SILT	LT. YELLOW BRN	10YR 6/4	NA	P	D	N	ML	SDSL	0-4.5	3.9	ROOTS FROM 3.5 TO 4.0 FT.
4, 5, 6, 7, 8, 9			SAND	BROWN	7.5YR 5/4	F	P	M	N	SP	SD	0-4.5	3.9	
9			SAND	BROWN YELLOW	10YR 6/6	F	P	M	N	SP	SDVF	4.5-9.5	5	

F3692

DRILLING LOG

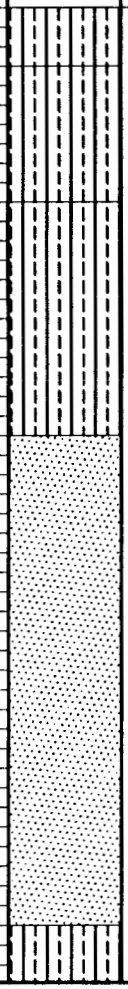
Project (PROJID)	Location (LOCID)	Inspector	Company (LOGCODE)	Date (LOGDATE)	Sheet 2 of 2
LAKE & LAGOONS (HOLL_LL)	MW-12	DRR	RADIAN (RAD)	3/03/93	

Depth	Graphic Log	Lithologic Description: Main Modifier	Predominant Lithology	Color	Munsell	Grain Size	Grading	Moisture	Plasticity	USCS Class (ASTM) [redacted]	[redacted] (VVL)	Sample Interval	Recovery	Observations and Comments
11														GREENISH STAIN FROM 11.3 TO 12.6. RED, GREEN, BLACK SPECKS.
12														
13														
14														INTERBEDDED CALICHE FROM 13.0-14.5 FT.
15		SILTY	CLAY	LIGHT GRAY	10YR 7/2	NA	P	M	M	CL	STCL	14.5-17.8	3.3	
16														
17		SILTY	SAND	BROWN	7.5YR 5/4	F	P	M	N	SM	SDSL	14.5-17.8	3.3	GEOTECH SAMPLE FROM 17.2-17.5 FT.
18														TD = 17.8 FT.
19														

F3692

DRILLING LOG

Project (PROJID)	Location (LOCID)	Inspector	Company (LOGCODE)	Date (LOGDATE)	Sheet 1 of 2
LAKE & LAGOONS (HOLL_LL)	MW-13	DRR	RADIAN (RAD)	3/03/93	



Depth	Lithologic Description: Main Modifier	Predominant Lithology	Color	Munsell	Grain Size	Grading	Moisture	Plasticity	USCS Class (ASTM) [redacted]	[redacted] (VVL)	Sample Interval	Recovery	Observations and Comments
		SILT	DARK BROWN	10YR 3/3	NA	P	Y	N	ML	SILT	0-4.5	3.8	DRY TOPSOIL FOR FIRST 0.6 FT. INTERBEDDED CALICHE FROM 1.8-2.0 FT.
1		SILT	V. PALE BROWN	10YR 7/4	NA	P	D	N	ML	SILT	0-4.5	3.8	
2	CLAYEY	SILT	PALE YELLOW	2.5Y 8/2	NA	P	D	L	ML	STCL	0-4.5	3.8	
3													
4													CONTAINS GREENISH STAIN.
		SAND	BROWN YELLOW	10YR 6/6	VF	VP	M	N	SW	SDVF	0-4.5	3.8	
5													
6													
7													
8													
9													
		SILT	LIGHT GRAY	2.5Y 7/2	NA	P	M	N	ML	SILT	9.5-14.5	4.3	

F3693

DRILLING LOG

Project (PROJID)	Location (LOCID)	Inspector	Company (LOGCODE)	Date (LOGDATE)	Sheet 2 of 2
LAKE & LAGOONS (HOLL_LL)	MW-13	DRR	RADIAN (RAD)	3/03/93	

Depth	Graphic Log	Lithologic Description: Main Modifier	Predominant Lithology	Color	Munsell	Grain Size	Grading	Moisture	Plasticity	USCS Class (ASTM) [redacted]	[redacted] (VVL)	Sample Interval	Recovery	Observations and Comments
11														
12		SILTY	CLAY	LIGHT GRAY	2.5Y 7/2	NA	P	M	L	CL	STCL	9.5-14.5	4.3	
13		CLAYEY	SILT	YELLOW BROWN	10YR 5/4	NA	P	M	L	ML	STCL	9.5-14.5	4.3	RUSTY BROWN STAIN FROM 12.1 TO 12.4, GYPSUM IN LOWER 1.5 FT.
14		SILTY	CLAY	LIGHT GRAY	2.5Y 7/2	NA	P	W	L	CL	STCL	9.5-15.5	4.3	
15														
16														
17														GEOTECH SAMPLE FROM 17.3-17.6 FT.
18			SILT	REDDISH BROWN	5YR 5/4	NA	P	W	L	ML	SILT	14.5-18.1	3.6	TD = 18.1 FT.
19														

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DRILLING LOG

Project (PROJID)	Location (LOCID)	Inspector	Company (LOGCODE)	Date (LOGDATE)	Sheet
LAKE & LAGOONS (HOLL_LL)	MW-14	DRR	RADIAN (RAD)	3/05/93	1 of 2

Depth	Graphic Log	Main Modifier	Predominant Lithology	Color	Munsell	Grain Size	Grading	Moisture	Plasticity	USCS Class (ASTM)	(VVL)	Sample Interval	Recovery	Observations and Comments
1, 2		CLAYEY	SILT	PALE YELLOW	2.5YR 8/3	NA	P	D	N	ML	SILT	0-4.5	4.5	
3, 4		SILTY	SAND	BRN. YELLOW	10YR 6/6	VF	P	M	N	SM	SDSL	0-4.5	4.5	CALICHE FROM 3.8 TO 4.0. LOWER CONTACT GRADATIONAL.
5, 6, 7, 8, 9			SAND	BRN. YELLOW	10YR 6/6	VF	P	M	N	SW	SDVF	4.5-9.5	5	SATURATED AT 10.0 FT.

F3694

DRILLING LOG

Project (PROJID)	Location (LOCID)	Inspector	Company (LOGCODE)	Date (LOGDATE)	Sheet 2 of 2
LAKE & LAGOONS (HOLL_LL)	MW-14	DRR	RADIAN (RAD)	3/05/93	

Depth	Graphic Log	Lithologic Description: Main Modifier	Predominant Lithology	Color	Munsell	Grain Size	Grading	Moisture	Plasticity	USCS Class (ASTM) [redacted]	[redacted] (VVL)	Sample Interval	Recovery	Observations and Comments
		SILTY	CLAY	BROWN	7.5YR 5/4	NA	P	W	M	CL	STCL	9.5-14.5	5	
11														INTERBEDDED SILT (11.5-12.1).
12														GEOTECH SAMPLE FROM 12.1-13.3 RUSTY STAIN. RED, GREEN, BLACK SPECKS.
13														
14														
15														
16														
		SILTY	SAND	LIGHT GRAY	2.5Y 7/2	F	P	W	N	SM	SDSL	14.5-17.5	3	
17														TD = 17.5 FT.
18														
19														

F3694

DRILLING LOG

Project (PROJID)	Location (LOCID)	Inspector	Company (LOGCODE)	Date (LOGDATE)	Sheet 1 of 2
LAKE & LAGOONS (HOLL_LL)	MW-15	DRR	RADIAN (RAD)	3/05/93	

Depth	Graphic Log	Lithologic Description: Main Modifier	Predominant Lithology	Color	Munsell	Grain Size	Grading	Moisture	Plasticity	USCS Class (ASTM) [redacted]	[redacted] (VVL)	Sample Interval	Recovery	Observations and Comments
1, 2			SILT	LIGHT BROWN	7.5YR 6/4	NA	P	D	L	ML	SILT	0-4.5	3.5	
3, 4, 5, 6		CLAYEY	SILT	V. PALE BROWN	10YR 8/4	NA	P	M	L	ML	STCL	0-4.5	3.5	LOWER CONTACT GRADATIONAL WITH SAND UNIT BELOW.
7, 8, 9			SAND	BRN. YELLOW	10YR 6/6	VF	P	M	N	SW	SDVF	4.5-9.5	4.5	

F3695

DRILLING LOG

Project (PROJID)	Location (LOCID)	Inspector	Company (LOGCODE)	Date (LOGDATE)	Sheet 2 of 2
LAKE & LAGOONS (HOLL_LL)	MW-15	DRR	RADIAN (RAD)	3/05/93	

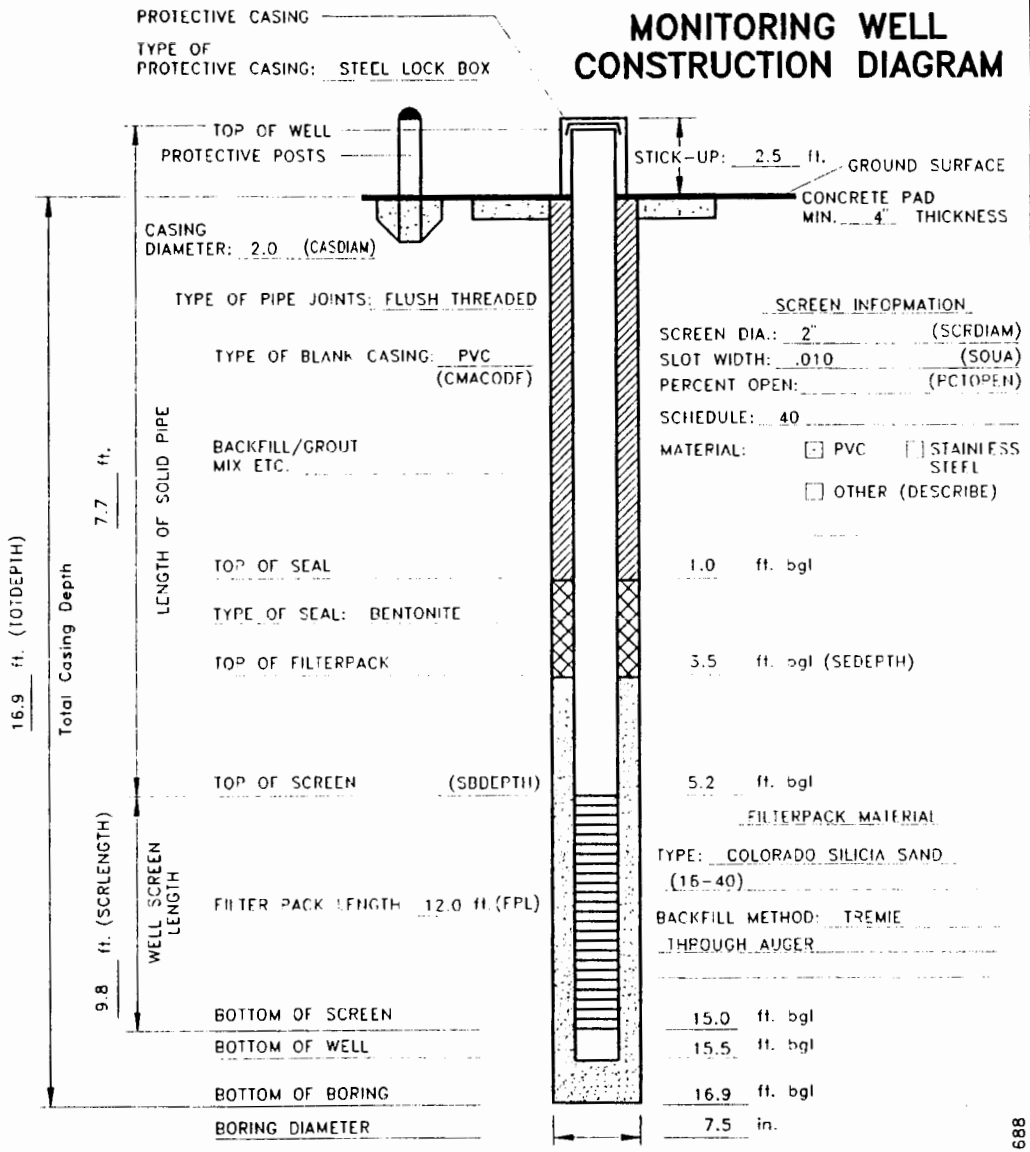
Depth	Graphic Log	Lithologic Description: Main Modifier	Predominant Lithology	Color	Munsell	Grain Size	Grading	Moisture	Plasticity	USCS Class (ASTM)	(VVL)	Sample Interval	Recovery	Observations and Comments
														GEOTECH SAMPLE FROM 10.0-10.7 FT.
11		SANDY	SILT	BROWN	7.5YR 5/4	NA	P	M	N	ML	SILT	9.5-14.5	5	
12		CLAYEY	SILT	BROWN	7.5YR 5/4	NA	P	M	N	ML	STCL	9.5-14.5	5	
13														
14		CLAYEY	SAND	REDDISH BROWN	5YR 5/4	F	L	M	N	SC	SDSL	9.5-14.5	5	
15		CLAYEY	SAND	LIGHT GRAY	2.5Y 7/2	VF	L	M	N	SC	SDSL	9.5-14.5	5	
16		SILTY	CLAY	REDDISH BROWN	5YR 5/4	VA	P	W	P	ML	STCL	14.5-17.1	2.6	
17														TD = 17.1 FT.
18														
19														

F3695

A.2 WELL COMPLETION FORMS

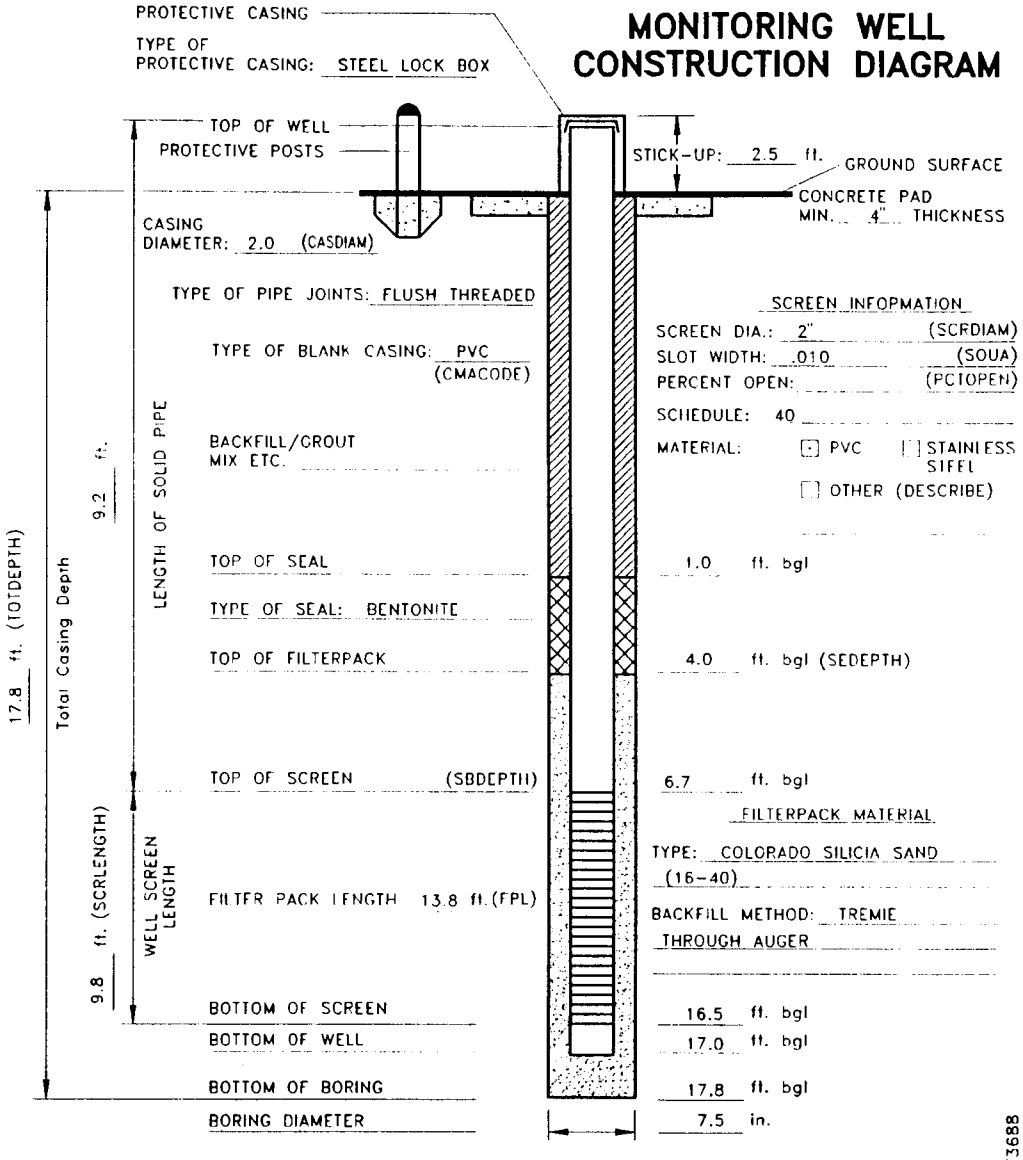
Project (PROJID) HOLLOMAN LAKES AND LAGOONS (HOLL_LL)	Well I.D. (LOCID) MW-11
Well Owner (VVL WELCODE) USAF	Well Type (WL WTCODE) MONITOR WELL (MNW)
Installer DRR	Date Started (INSDATE) 3/03/93 — Date Completed 3/04/93
Location Coordinates: (NCORD) (North) 665207.0	(ECORD) (East) 543896.9
Elevation Top of Casing (MPELV) 4039.71	Completion Method (VVL WCMCODE) GRAVEL PACK W/ SCREEN (GS)
Sole Source Aquifer Code (VVL SAQCODE) N/A	
Drilling Method HOLLOW STEM AUGER	Completion Zone (VVL GZCODE) WATER TABLE AQUIFER (W)
Remarks (REMARKS)	

MONITORING WELL CONSTRUCTION DIAGRAM



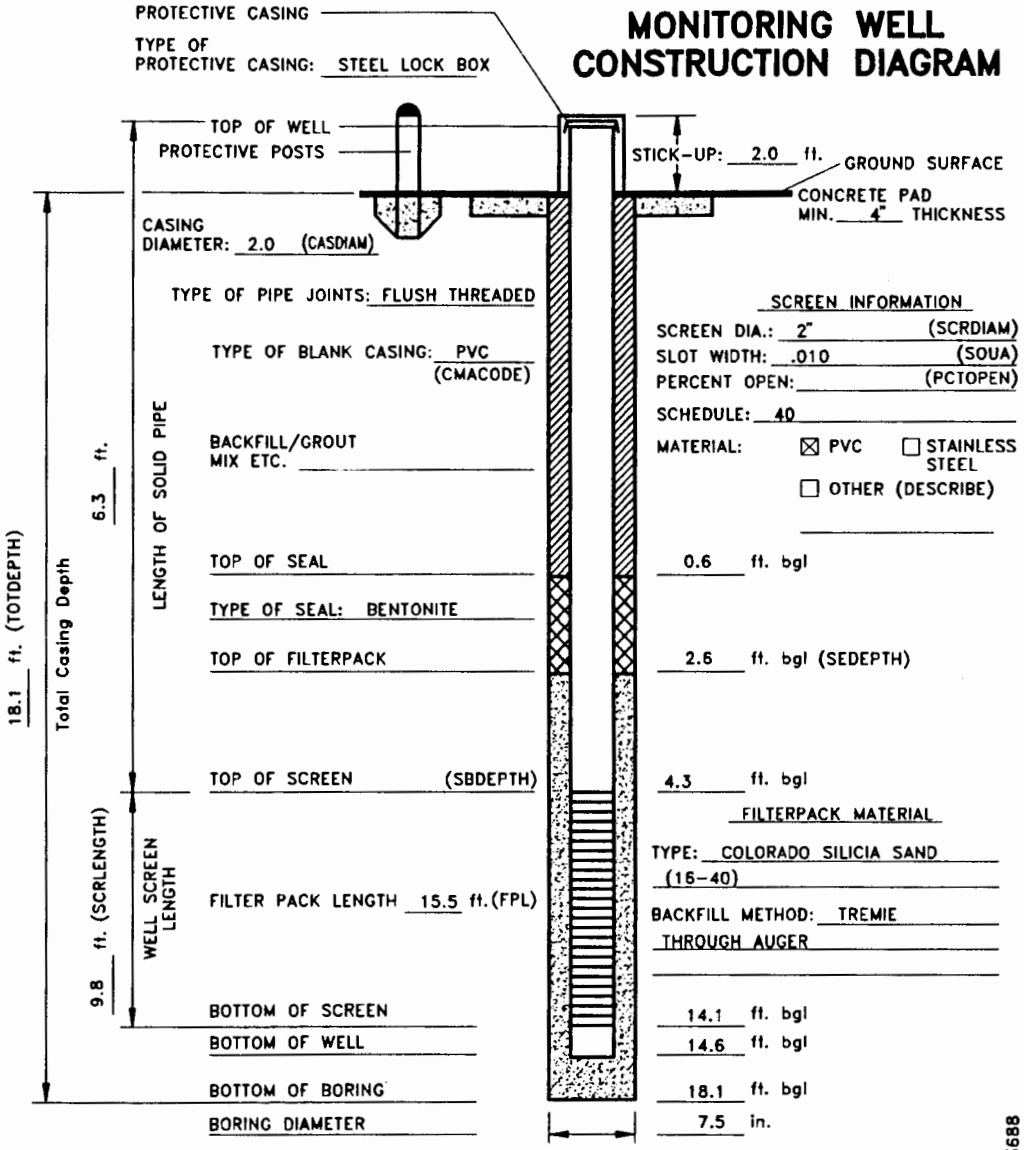
Project (PROJID) HOLLOMAN LAKES AND LAGOONS (HOLL_LL)	Well I.D. (LOCID) MW-12
Well Owner (VVL WELCODE) USAF	Well Type (WL WTCODE) MONITOR WELL (MNW)
Installer DFR	Date Started (INSDATE) 3/04/93 — Date Completed 3/04/93
Location Coordinates: (NCORD) (North) 664672.2	(ECORD) (East) 543686.8
Elevation Top of Casing (MPELV) 4040.25	Completion Method (VVL WCMCODE) GRAVEL PACK W/ SCREEN (GS)
Sole Source Aquifer Code (VVL SAQCODE) N/A	
Drilling Method HOLLOW STEM AUGER	Completion Zone (VVL GZCODE) WATER TABLE AQUIFER (W)
Remarks (REMARKS)	

MONITORING WELL CONSTRUCTION DIAGRAM



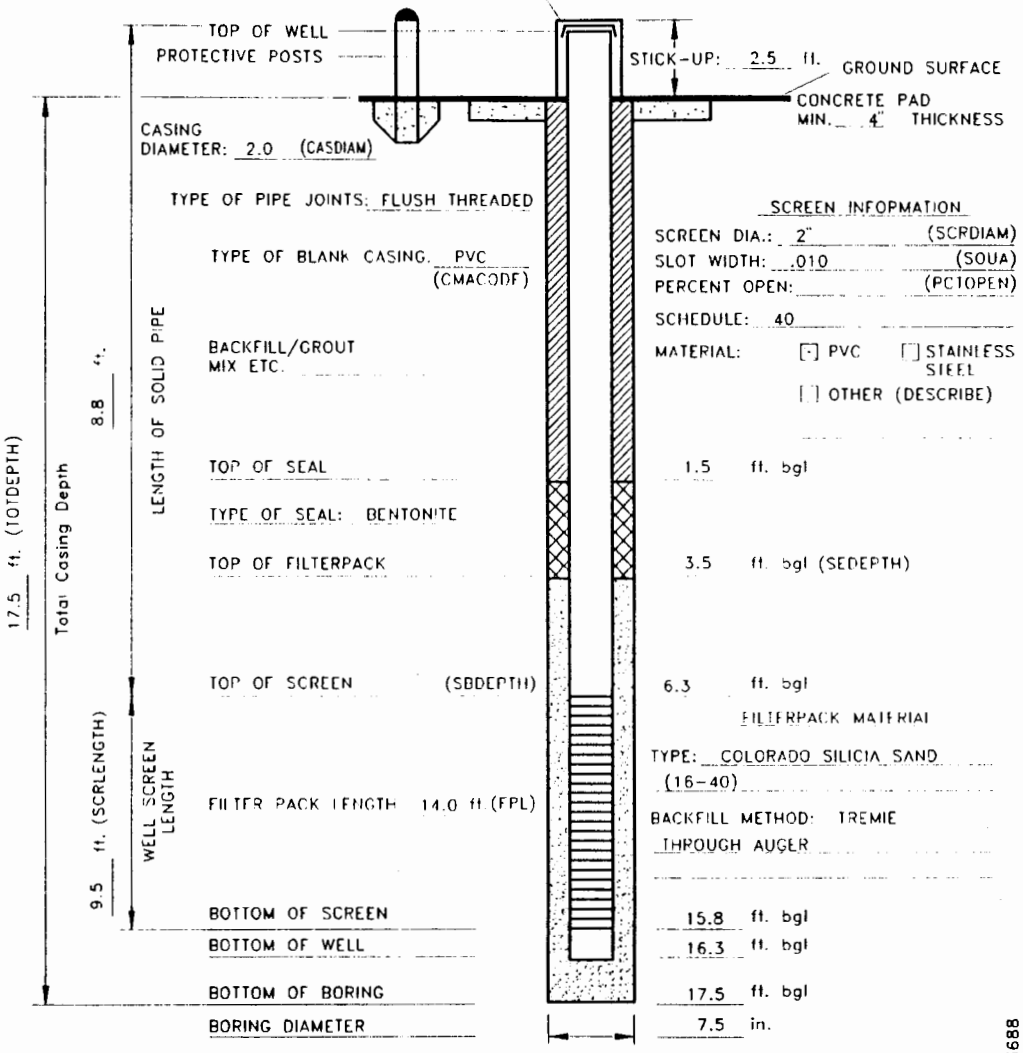
MONITORING WELL CONSTRUCTION DIAGRAM

Project (PROJID) HOLLOMAN LAKES AND LAGOONS (HOLL_LL)	Well I.D. (LOCID) MW-13
Well Owner (VVL WELCODE) USAF	Well Type (WL WTCODE) MONITOR WELL (MNW)
Installer DRR	Date Started (INSDATE) 3/04/93 / Date Completed 3/04/93
Location Coordinates: (NCORD) (North) 664216.1	(ECORD) (East) 543927.9
Elevation Top of Casing (MPELV) 4036.49	Completion Method (VVL WCMCODE) GRAVEL PACK W/ SCREEN (GS)
Sole Source Aquifer Code (VVL SAQCODE) N/A	
Drilling Method HOLLOW STEM AUGER	Completion Zone (VVL GZCODE) WATER TABLE AQUIFER (W)
Remarks (REMARKS)	



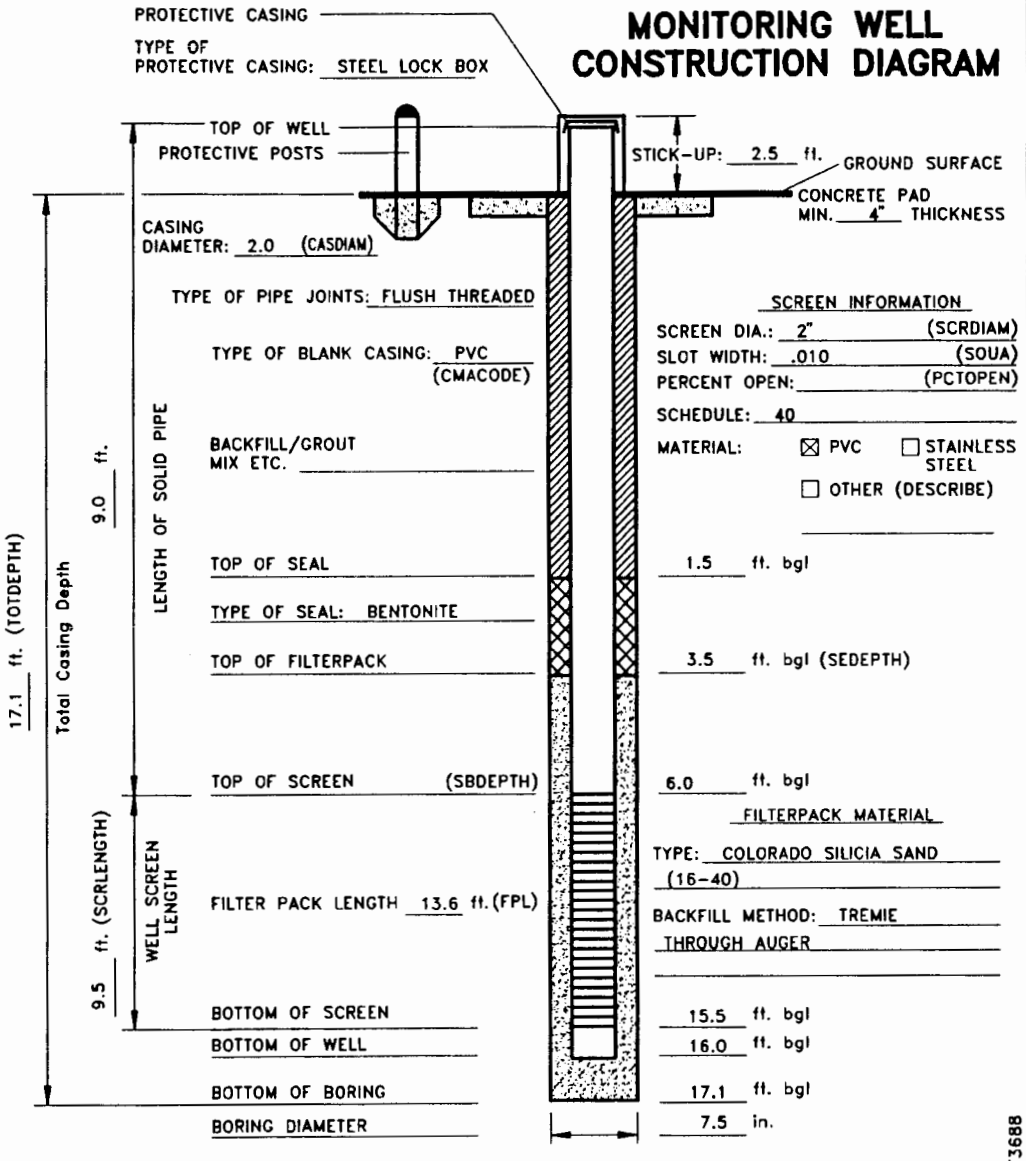
Project (PROJID) HOLLOMAN LAKES AND LAGOONS (HOLL_LL)	Well I.D. (LOCID) MW-14
Well Owner (VVL WELCODE) USAF	Well Type (WL WTCODE) MONITOR WELL (MNW)
Installer DRR	Date Started (INSDATE) 3/05/93 — Date Completed 3/05/93
Location Coordinates: (NCORD) (North) 662841.7	(ECORD) (East) 543904.8
Elevation Top of Casing (MPELV) 4034.13	Completion Method (VVL WCMCODE) GRAVEL PACK W/ SCREEN (GS)
Sole Source Aquifer Code (VVL SAOCODE) N/A	
Drilling Method HOLLOW STEM AUGER	Completion Zone (VVL GZCODE) WATER TABLE AQUIFER (W)
Remarks (REMARKS)	

MONITORING WELL CONSTRUCTION DIAGRAM



MONITORING WELL CONSTRUCTION DIAGRAM

Project (PROJID) HOLLOMAN LAKES AND LAGOONS (HOLL_LL)	Well I.D. (LOCID) MW-15
Well Owner (VVL WELCODE) USAF	Well Type (WL WTCODE) MONITOR WELL (MNW)
Installer DRR	Date Started (INSDATE) 3/05/93 / Date Completed 3/05/93
Location Coordinates: (NCORD) (North) 662252.2	(ECORD) (East) 544403.8
Elevation Top of Casing (MPELV) 4032.70	Completion Method (VVL WCMCODE) GRAVEL PACK W/ SCREEN (GS)
Sole Source Aquifer Code (VVL SAQCODE) N/A	
Drilling Method HOLLOW STEM AUGER	Completion Zone (VVL GZCODE) WATER TABLE AQUIFER (W)
Remarks (REMARKS)	



A.3 ROUND 1 GROUNDWATER SAMPLING LOGS

TITLE: IRP Groundwater Sampling Log

PROJECT Lakes and Lagoons **DATE** 21 March 1993

SUBJECT **SHEET** 1 **OF** 1 **SHEETS**

INSTALLATION ID (AFID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
HOLMN	MW-01	21 Mar 93	0800

PERFORMED BY (LOGCODE)	WATER LEVEL (STATDEP) INITIAL / FINAL	TOTAL DEPTH (SOUNDING) INITIAL / FINAL
RAD	9.92 / 10.86	~20

SATURATED THICKNESS	WELL VOLUME	AMOUNT TO PURGE
10.08	6.5 gallons	32 gallons

PURGE METHOD: Bladder Pump

Time (LOGTIME)	Cum. Volume (gal)	Water Quality: Temp	pH	Cond.	Turb.	Water Level	Comments
0842	0	16.9°C	6.50	40,100 µS			Start purging
0845	5	16.4°C	6.78	32,900			
0853	10	16.1°C	6.75	44,600			
0859	15	16.5°C	6.67	45,600			
0907	20	16.8°C	6.52	46,900	1.83	NTU	Alkalinity = 650 mg/L as $CaCO_3$
0925	25	16.9°C	6.54	47,200			Change controller - discharge inc from 250 m to 500 m
0934	30	16.9°C	6.65	46,800			Sample at 32.5
0938	32.5	16.9°C	6.68	46,800			
0948	FINAL	17.2°C	6.62	48,300			
Final Measurements:							

SAMPLING METHOD (SMCODE)

Sample ID	(MATRIX)	Preservative	Analysis	Sample Type Code (SACode)	Comments
9303-MW-01-01	L/WG	—	SW 8050	N	

Figure 5-13. IRP Groundwater Sampling Log

TITLE: IRP Groundwater Sampling Log

PROJECT LAKES AND LAGOONS

DATE 3-23-93

SUBJECT

SHEET 1 OF 1 SHEETS

INSTALLATION ID (AFID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
~~RAD~~ HOLMN	MW-02	3-23-93	0800

PERFORMED BY (LOGCODE)	WATER LEVEL (STATDEP) INITIAL / FINAL	TOTAL DEPTH (SOUNDING) INITIAL / FINAL
RAD	5.51 / 5.91	17.72

SATURATED THICKNESS	WELL VOLUME	AMOUNT TO PURGE
12.21	7.9 gal	40 gal

PURGE METHOD:

Bladder Pump

Time (LOGTIME)	Cum. Volume (gal)	Water Quality				Water Level	Comments
		Temp	pH	Cond.	Turb.		
0825	7	57°F	8.28	7,200			clear
0845	16	60°F	7.48	7,200			clear
0900	24	61°F	7.26	7,400			clear
0915	32	61°F	7.22	7,400			clear
0945	40	61°F	7.18	7,300			clear
0950	FINAL	62°F	7.15	7,300	4.0 NTU		clear
Final Measurements:							

SAMPLING METHOD (SMCODE)

Sample ID	(MATRIX)	Preservative	Analysis	Sample Type Code (SACode)	Comments
9303-MW-02-01	L/WG	—	SW8080	N	

Figure 5-13. IRP Groundwater Sampling Log

TITLE: IRP Groundwater Sampling Log

PROJECT Holloman Lakes & Lagoons DATE 3-23-93

SUBJECT Water Sampling SHEET 1 OF 1 SHEETS

INSTALLATION ID (AFID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
	MW-03	3-23-93	8:20

PERFORMED BY (LOGCODE)	WATER LEVEL (STATDEP)	TOTAL DEPTH (SOUNDING)
RAD	INITIAL 8.14' 10.44' FINAL	INITIAL 17.75' 17.75' FINAL

SATURATED THICKNESS	WELL VOLUME	AMOUNT TO PURGE
9.61'	6.15 gallons	30.75 gallons

PURGE METHOD:

Time (LOGTIME)	Cum. Volume (gal)	Water Quality				Water Level	Comments
		Temp	pH	Cond.	Turb.		
8:20	1	15.5	6.84	11.5			Clear
8:25	6	15.4	6.86	11.4			Clear
8:35	12	15.6	6.94	11.5			Clear
8:45	18	15.8	6.91	11.5			Clear
8:55	24	15.9	6.99	11.5			Clear
9:05	31	16.1	7.02	11.5			Clear
	Final	16.3	7.05	11.5			Clear
							Turbidity = 1.28
Final Measurements:							

SAMPLING METHOD (SMCODE)

Sample ID	(MATRIX)	Preservative	Analysis	Sample Type Code (SACode)	Comments
9303-MW-03-01	L/WG	—		N	SW 8080

Figure 5-13. IRP Groundwater Sampling Log

TITLE: IRP Groundwater Sampling Log

PROJECT Hollman Lakes & Lagoon

DATE 3-23-93

SUBJECT water Sampling

SHEET 1 OF 1 SHEETS

INSTALLATION ID (AFID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
	MW-04	3-23-93	10:20

PERFORMED BY (LOGCODE)	WATER LEVEL (STATDEP)	TOTAL DEPTH (SOUNDING)
RAD	INITIAL 5.90' 6.02' FINAL	INITIAL 17.80' 17.80' FINAL

SATURATED THICKNESS	WELL VOLUME	AMOUNT TO PURGE
11.9 Ft	7.61 gallons	38.05 gallons

PURGE METHOD:

Time (LOGTIME)	Cum. Volume (gal)	Water Quality				Water Level	Comments
		Temp	pH	Cond.	Turb.		
10:30	1	16.0	7.35	10.9			Clear
10:40	8	15.7	7.06	11.0			Clear
10:55	16	15.8	7.02	11.0			Clear
10:10	24	16.0	7.04	11.1			Clear
11:25	32	16.1	7.03	11.1			Clear
11:35	38.5	16.1	7.03	11.0			Clear
	FINAL	16.1	7.03	11.1			
							Turbidity = 3.50
Final Measurements:							

SAMPLING METHOD (SMCODE)

Sample ID	(MATRIX)	Preservative	Analysis	Sample Type Code (SACode)	Comments
9303-MW-04-01	L-WG	—		N	SW8080

Figure 5-13. IRP Groundwater Sampling Log

TITLE: IRP Groundwater Sampling Log

PROJECT Holloman Lakes & Lagoons DATE 3-22

SUBJECT Water Sampling SHEET 1 OF 1 SHEETS

INSTALLATION ID (AFID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
	MW-05	3-22-93	1:00

PERFORMED BY (LOGCODE)	WATER LEVEL (STATDEP)	TOTAL DEPTH (SOUNDING)
RAD	INITIAL 5.24 ft 5.35' FINAL	INITIAL 17.73 FINAL 17.73

SATURATED THICKNESS	WELL VOLUME	AMOUNT TO PURGE
12.49'	7.99 gallons	40 gallons

PURGE METHOD:

Time (LOGTIME)	Cum. Volume (gal)	Water Quality				Water Level	Comments
		Temp.	pH	Cond.	Turb.		
1:00	4 gallons	15.9	6.85	11.4			water Clear
1:06	8 gallons	15.4	6.79	10.8			water Clear
1:20	16 gallons	15.5	6.74	10.5			water Clear
1:32	24 gal	15.5	6.74	10.2			Clear
1:50	32 gal	15.4	6.74	10.0			Clear
2:05	40 gal	15.6	6.72	9.8			Clear
2:25	Final	15.9	6.74	9.7			Clear
							Alkalinity = 730
							Turbidity = 2.52 NTU
Final Measurements:							

SAMPLING METHOD (SMCODE)

Sample ID	(MATRIX)	Preservative	Analysis	Sample Type Code (SACode)	Comments
9303-MW-05-01	L/WG	—	SW8080	N	Duplicate
9303-MW-05-02	L/WG	—	SW8080	FD	MS/MSD
					MRD

Figure 5-13. IRP Groundwater Sampling Log

TITLE: IRP Groundwater Sampling Log

PROJECT Lakes and Lagoons

DATE 21 March 1993

SUBJECT

SHEET 1 OF 1 SHEETS

INSTALLATION ID (AFID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
HOLMN	MW-08	21 Mar 93	1015

PERFORMED BY (LOGCODE)	WATER LEVEL (STATDEP) INITIAL / FINAL	TOTAL DEPTH (SOUNDING) INITIAL / FINAL
RAD	5.92 / 6.98	17.72

SATURATED THICKNESS	WELL VOLUME	AMOUNT TO PURGE
11.8	7.6 gallons	38 gallons

PURGE METHOD:

Bladder Pump

Time (LOGTIME)	Cum. Volume (gal)	Water Quality Temp.	pH	Cond. (mhos)	Turb.	Water Level	Comments
1115	5	17.0	7.33	10.3	—	—	Clear
1125	12	17.1	7.10	10.3	—	—	
1145	19	17.1	7.12	10.1	—	—	
1155	26	17.0	7.08	10.2	—	—	
1210	33	17.0	7.07	10.0	—	—	
1225	40	17.0	7.07	10.1	—	—	
Final	—	17.0	7.04	10.2	47.4	6.98'	Alkalinity = 40.0
							Turbidity = 47.4
Final Measurements:							

SAMPLING METHOD (SMCODE)

Sample ID	(MATRIX)	Preservative	Analysis	Sample Type Code (SACode)	Comments
9303-MW-08-01	L/WG	—	SW8080	N	

Figure 5-13. IRP Groundwater Sampling Log

TITLE: IRP Groundwater Sampling Log

PROJECT Holloman Lakes/Lagoons **DATE** 3-17-93

SUBJECT Water Sampling **SHEET** 1 **OF** 1 **SHEETS**

INSTALLATION ID (AFID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
	9303-MW-09	3-17-93	9:30

PERFORMED BY (LOGCODE)	WATER LEVEL (STATDEP) (F)	TOTAL DEPTH (SOUNDING)
DRR	INITIAL 7.95 Ft FINAL 8.01 ~~8.61~~	INITIAL 20.0 Ft FINAL 20.0 Ft

SATURATED THICKNESS	WELL VOLUME	AMOUNT TO PURGE
12.05 Ft	1.93 gallons	9.64 gallons (5 well vol)

PURGE METHOD: QED - Purge Pump

Time (LOGTIME)	Cum. Volume (gal)	Water Quality Temp	pH	Cond.	Turb.	Water Level	Comments
9:30	2.0	15.7°C	6.92	40,200			Clear
9:37	6.0	15.5°C	6.95	40,100			Clear
9:47	8.0	15.5°C	6.92	40400			Clear
9:55	10.0	15.6°C	6.97	40,200			Clear
11:00	Final	15.5°C	6.98	40500			Clear
							Alkalinity = 175
							Turbidity = 1.62 NTU
Final Measurements:							

SAMPLING METHOD (SMCODE)

Sample ID	(MATRIX)	Preservative	Analysis	Sample Type Code (SACode)	Comments
9303-MW-~~12~~ 09	L/WG				Appendix IX

Figure 5-13. IRP Groundwater Sampling Log

TITLE: IRP Groundwater Sampling Log

PROJECT Holloman Lakes/Lagoons **DATE** 3-17-93

SUBJECT Water Sampling **SHEET** ___ **OF** ___ **SHEETS**

INSTALLATION ID (AFID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
	MW-10	3-17-93	11:30

PERFORMED BY (LOGCODE)	WATER LEVEL (STATDEP)	TOTAL DEPTH (SOUNDING)
RAD	INITIAL 7.84 ft FINAL	INITIAL 20.0 ft FINAL

SATURATED THICKNESS	WELL VOLUME	AMOUNT TO PURGE
12.16 ft	1.95 gallons	9.72 gallons (5 wellcase)

PURGE METHOD: QED Purge Pump

µU

Time (LOGTIME)	Cum. Volume (gal)	Water Quality Temp	pH	Cond.	Turb.	Water Level	Comments
11:38	3.0	16.4°C	6.76	49 900			Clear
11:40	5.0	16.4°C	6.72	49 800			Clear
11:47	7.0	16.4°C	6.67	49 700			Clear
11:53	9.0	16.3°C	6.66	41,100			Clear
11:58	12.0	16.5°C	6.66	41,100			Clear
12:45	Final	16.3°C	6.67	49,100			Clear
							Alkalinity = 210
							Turbidity = 0.82 NTU
Final Measurements:							

SAMPLING METHOD (SMCODE)

Sample ID	(MATRIX)	Preservative	Analysis	Sample Type Code (SACode)	Comments
9303-MW-10-01	L/WG				

Figure 5-13. IRP Groundwater Sampling Log

TITLE: IRP Groundwater Sampling Log

PROJECT Holloman Lakes / Lagoons DATE 3-18

SUBJECT Water Sampling SHEET 1 OF 1 SHEETS

INSTALLATION ID (AFID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
	MW-11	3-18	10:30

PERFORMED BY (LOGCODE)	WATER LEVEL (STATDEP)	TOTAL DEPTH (SOUNDING)
RAD	INITIAL 7.78 8.08 FINAL	INITIAL 15.5 15.5 FINAL

SATURATED THICKNESS	WELL VOLUME	AMOUNT TO PURGE
7.72	1.24 gallons	6.22 gallons

PURGE METHOD:

mP

Time (LOGTIME)	Cum. Volume (gal)	Water Quality				Water Level	Comments
		Temp	pH	Cond.	Turb.		
10:40	4	16.7	6.72	39.5			Clear
10:45	6	16.7	6.70	39.6			clear
10:50	8	16.8	6.69	39.7			clear
11:30	Final	16.9	6.74	39.8	3.87		clear
							Alkalinity 330 mg/kg $CaCO_3$
Final Measurements:							

SAMPLING METHOD (SMCODE)

Sample ID	(MATRIX)	Preservative	Analysis	Sample Type Code (SACode)	Comments
9303-MW-11-01	L-WG				Appendix IX

Figure 5-13. IRP Groundwater Sampling Log

TITLE: IRP Groundwater Sampling Log

PROJECT Holloman Lakes / Lagoons **DATE** 3-18

SUBJECT Water Sampling **SHEET** 1 **OF** 1 **SHEETS**

INSTALLATION ID (AFID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
	MW-12	3-18	12:00

PERFORMED BY (LOGCODE)	WATER LEVEL (STATDEP)	TOTAL DEPTH (SOUNDING)
RAD	INITIAL 9.75 FINAL 9.83	INITIAL 17 FINAL 17

SATURATED THICKNESS	WELL VOLUME	AMOUNT TO PURGE
7.25	1.16 gallons	5.8 gallons

PURGE METHOD: QED - Bladder Pump

Time (LOGTIME)	Cum. Volume (gal)	Water Quality				Water Level	Comments
		Temp	pH	Cond.	Turb.		
12:10	2.0	16.9	6.85	36.2			Clear
12:20	5.0	16.7	6.79	36.2			Clear
12:25	7.0	16.7	6.78	36.3			Clear
	Final	16.6	6.86	37.7			clear
Final Measurements:							

SAMPLING METHOD (SMCODE)

Sample ID	(MATRIX)	Preservative	Analysis	Sample Type Code (SACode)	Comments
9303-MW-12-01	L / WG			Normal Duplicates MS/MSD	Appendix IX

Figure 5-13. IRP Groundwater Sampling Log

TITLE: IRP Groundwater Sampling Log

PROJECT Holloman Lakes/ Lagoons DATE 3-18-93

SUBJECT Water Sampling SHEET 1 OF 1 SHEETS

INSTALLATION ID (AFID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
	MW-13	3-18-93	9:00
PERFORMED BY (LOGCODE)	**WATER LEVEL (STATDEP)**	**TOTAL DEPTH (SOUNDING)**	
RAD	INITIAL 6.0 Ft FINAL 6.18	INITIAL 14.6 Ft FINAL 14.6	
SATURATED THICKNESS	**WELL VOLUME**	**AMOUNT TO PURGE**	
8.6 Ft			

PURGE METHOD:

MT

Time (LOGTIME)	Cum. Volume (gal)	Water Quality				Water Level	Comments
		Temp	pH	Cond.	Turb.		
9:00	5	16.4	6.89	39.1			Clear
9:05	8	16.4	6.93	39.1			Clear
9:07	10	16.4	6.92	39.0			Clear
10:10	FINAL	16.7	7.06	38.6			
							Alkalinity = 390
							Turbidity = 1.01 NTU
Final Measurements:							

SAMPLING METHOD (SMCODE)

Sample ID	(MATRIX)	Preservative	Analysis	Sample Type Code (SACode)	Comments
9303-MW-13-01	L/WG				Appendix IX

Figure 5-13. IRP Groundwater Sampling Log

TITLE: IRP Groundwater Sampling Log

PROJECT Holloman Lakes / Lagoons

DATE 3-17-93

SUBJECT Water Sampling

SHEET 1 OF 1 SHEETS

INSTALLATION ID (AFID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
	MW-14	3-17-93	16:40

PERFORMED BY (LOGCODE)	WATER LEVEL (STATDEP) INITIAL	FINAL	TOTAL DEPTH (SOUNDING) INITIAL	FINAL
RAD	7.52	7.82	16.33	16.33

SATURATED THICKNESS	WELL VOLUME	AMOUNT TO PURGE
8.81	1.41	7.05

PURGE METHOD:

MU

Time (LOGTIME)	Cum. Volume (gal)	Water Quality Temp	pH	Cond.	Turb.	Water Level	Comments
16:40	2.0	16.6°C	6.65	36.2			Clear
16:44	6.0	16.4°C	6.61	36.3			Clear
16:59	8.0	16.4°C	6.60	36.3			Clear
17:25	Final	16.2°C	6.63	36.2			Clear
							Alkalinity = 680
							Turbidity = 2.85 NTU
Final Measurements:							

SAMPLING METHOD (SMCODE)

Sample ID	(MATRIX)	Preservative	Analysis	Sample Type Code (SACode)	Comments
9303-MW-14-01	L / WG				Appendix IX

Figure 5-13. IRP Groundwater Sampling Log

TITLE: IRP Groundwater Sampling Log

PROJECT Holloman Lakes/Lagoons **DATE** 3-17-93

SUBJECT Water Sampling **SHEET** 1 **OF** 1 **SHEETS**

INSTALLATION ID (AFID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
	MW-15	3-17-93	18:00

PERFORMED BY (LOGCODE)	WATER LEVEL (STATDEP) BTC	TOTAL DEPTH (SOUNDING)
RAD	INITIAL 7.49 Ft FINAL 8.42 Ft	INITIAL 16.0 FINAL 16.0

SATURATED THICKNESS	WELL VOLUME	AMOUNT TO PURGE
8.51	1.36 gallons	6.81 gallons (5 well casings)

PURGE METHOD: mV

Time (LOGTIME)	Cum. Volume (gal)	Water Quality Temp	pH	Cond.	Turb.	Water Level	Comments
17:55	2.0	16.3	6.76	42.4			Clear
17:59	4.0	16.1	6.65	42.6			
18:04	8.0	16.0	6.60	42.6			
18:35	Final	16.2	6.21	42.6			
							Turbidity = 4.0 NTU
							Alkalinity = 235
Final Measurements:							

SAMPLING METHOD (SMCODE)

Sample ID	(MATRIX)	Preservative	Analysis	Sample Type Code (SACode)	Comments
9303-MW-15-01	L-WG				Appendix IX

Figure 5-13. IRP Groundwater Sampling Log

TITLE: IRP Groundwater Sampling Log

PROJECT Holloman Lakes & Lagoons

DATE 3-22-93

SUBJECT Water Sampling

SHEET 1 OF 1 SHEETS

INSTALLATION ID (AFID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
	MWS-04	3-22-93	16:45

PERFORMED BY (LOGCODE)	WATER LEVEL (STATDEP) INITIAL / FINAL	TOTAL DEPTH (SOUNDING) INITIAL / FINAL
RAD	8.68 ft / 8.70 ft	14.04

SATURATED THICKNESS	WELL VOLUME	AMOUNT TO PURGE
5.32 ft	0.85 gallons	4.25 gallons

PURGE METHOD:

Time (LOGTIME)	Cum. Volume (gal)	Water Quality: Temp	pH	Cond.	Turb.	Water Level	Comments
16:20	2.0 gallons	16.3	7.51	45.7			Clear, well drawing down (0.2')
16:25	4.0 gallons	16.7	7.41	46.1			Clear, Discharge slow
16:30	5.0 gallons	17.0	7.36	46.2			Clear, Discharge slow
	Final	17.1	7.28	46.3			Clear, Discharge slow
							Turbidity = 2.52 NTU
							Alkalinity = 525
Final Measurements:							

SAMPLING METHOD (SMCODE)

Sample ID	(MATRIX)	Preservative	Analysis	Sample Type Code (SACode)	Comments
9303-MWS-04-01	L/WG				SW 8080

Figure 5-13. IRP Groundwater Sampling Log

TITLE: IRP Groundwater Sampling Log

PROJECT Holloman Lakes / Lagoons DATE 3-22-93

SUBJECT Water Sampling SHEET 1 OF 1 SHEETS

INSTALLATION ID (AFID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
	MWS-05	3-22-93	

PERFORMED BY (LOGCODE)	WATER LEVEL (STATDEP)	TOTAL DEPTH (SOUNDING)
	INITIAL 9.20 ft FINAL	INITIAL 12.85 ft FINAL

SATURATED THICKNESS	WELL VOLUME	AMOUNT TO PURGE
3.65 Ft	.494 gal	~~3.65~~ 2.47 gal

PURGE METHOD: Began with QED Purge Pump. Very little discharge so transferred to bailer. All samples collected w/ bailer.

Time (LOGTIME)	Cum. Volume (gal)	Water Quality				Water Level	Comments
		Temp	pH	Cond.	Turb.		
10:10	1 gallon	17.9	6.82	46.0			water Going through YSI
10:20	1.5 gal	17.4	6.85	46.4			water moving slowly
10:40	2.5 gal	17.7	6.79	51.6			
11:00	3.5 gal	18.0	6.80	53.0			
11:45	Final	16.0	6.93	52.5			Alkalinity = 520
							Turbidity = 8.47 NTU
Final Measurements:							

SAMPLING METHOD (SMCODE)

Sample ID	(MATRIX)	Preservative	Analysis	Sample Type Code (SACode)	Comments
9303-MWS-05-01	L/WG				Appendix TX

Figure 5-13. IRP Groundwater Sampling Log

TITLE: IRP Groundwater Sampling Log

PROJECT Lagoons and Lakes **DATE** 19 Mar 93

SUBJECT **SHEET** 1 **OF** 1 **SHEETS**

INSTALLATION ID (AFID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
HOLMN	MWD-03	3/19/93	1140

PERFORMED BY (LOGCODE)	WATER LEVEL (STATDEP)	TOTAL DEPTH (SOUNDING)
RAO	INITIAL 4.99 FINAL 6.64	INITIAL 70.36 FINAL
SATURATED THICKNESS	**WELL VOLUME**	**AMOUNT TO PURGE**
65.37 ft.	10.65 gallons	53.5 gallons

PURGE METHOD: teflon bailer

Time (LOGTIME)	Cum. Volume (gal)	Water Quality				Water Level	Comments
		Temp	pH	Cond.	Turb.		
1205	3	68°F	7.42	14600			turbid. Lt. yellow/brown color
1230	10	67°F	7.62	14200			tan/yellow; cloudy
1245	15	67°F	7.49	14300			as above
1255	20	67°F	7.63	14200			
1309	25	67°F	7.66	14300			Slightly cloudy, tan/yellow
1319	30	68°F	7.52	14400			slightly turbid
1333	35	67°F	7.55	14500			As above.
1349	40	68°F	7.60	14300			As above
1357	45	68°F	7.59	13800			
1405	53	68°F	7.56	14000			Slightly turbid; tan/yellow
		67°F	7.56	14200			FINAL SAMPLE
Final Measurements:	Alkalinity:	305					(mg/L as $CaCO_3$)

SAMPLING METHOD (SMCODE)

Sample ID	(MATRIX)	Preservative	Analysis	Sample Type Code (SACode)	Comments
9303-MWD-04-01	L/WG	As required	Appendix IX parameters	N	

Figure 5-13. IRP Groundwater Sampling Log

TITLE: IRP Groundwater Sampling Log

PROJECT Lakes and Lagoons

DATE 22 March 1993

SUBJECT

SHEET 1 OF 1 SHEETS

INSTALLATION ID (AFID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
HOLMN	MWD-4	22 Mar 93	9:51

PERFORMED BY (LOGCODE)	WATER LEVEL (STATDEP) INITIAL / FINAL	TOTAL DEPTH (SOUNDING) INITIAL / FINAL
RAD	6.81 / 8.30	51.85 / 51.78

SATURATED THICKNESS	WELL VOLUME	AMOUNT TO PURGE
45.04	7.2 gallons	36 gallons

PURGE METHOD:

Teflon Bailer

Time (LOGTIME)	Cum. Volume (gal)	Water Quality: Temp	pH	Cond.	Turb.	Water Level	Comments
1020	5	65°C	7.50	16,400			
1032	12	64°C	7.65	15,690			
1041	17	65°C	7.62	1214			Conductivity meter appears
1047	21	65°C	7.69	14,640			to be malfunctioning
1055	26	66°C	7.71	18360			[discovered air bubble
1105	32	65°C	7.59	18940			in probe. Now working]
1113	36	65.5°C	7.56	18250			
1135	AFTER	62.0°C	7.49	18960	920 NTU		
Final Measurements:							

SAMPLING METHOD (SMCODE)

Sample ID	(MATRIX)	Preservative	Analysis	Sample Type Code (SACode)	Comments
9303-MWD-04-01	W/WG	As required	Appendix IX	N	

Figure 5-13. IRP Groundwater Sampling Log

TITLE: IRP Groundwater Sampling Log

PROJECT Holloman - Lakes/Lagoons **DATE** 3-19-93

SUBJECT water sampling **SHEET** 1 **OF** 1 **SHEETS**

INSTALLATION ID (AFID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
	MWD-05	3-19-93	8:35

PERFORMED BY (LOGCODE)	WATER LEVEL (STATDEP)	TOTAL DEPTH (SOUNDING)
RAD	INITIAL 6.11 Ft FINAL 6.42	INITIAL 60.78 ft ~~61.86 Ft~~ FINAL 60.78

SATURATED THICKNESS	WELL VOLUME	AMOUNT TO PURGE
55.75 Ft	8.92 gallons	44.6 ~~44.86~~ gallons

PURGE METHOD:

Micromhos 200,000

Time (LOGTIME)	Cum. Volume (gal)	Water Quality Temp	pH	Cond.	Turb.	Water Level	Comments
8:50	4.0 gal	64.0°C	8.72	226			Fairly Turbid
9:05	6.0 gal	63.0°C	7.80	20.7			Slightly clearer, sample shallower
9:20	13.0 gal	63.5°C	7.47	21.2			water Fairly turbid
9:35	20.0 gal	65°C	7.52	20.2			Fairly turbid
9:55	31.0 gal	65°C	7.53	19.9			Fairly turbid
10:10	40.0 gal	65°C	7.51	19.5			Slightly clearer sample deep
10:50	Final	65°C	7.50	19.0			Fair Clear
							Alkalinity = 590
							Turbidity = 8.34
Final Measurements:							

SAMPLING METHOD (SMCODE)

Sample ID	(MATRIX)	Preservative	Analysis	Sample Type Code (SACode)	Comments
9303-MWD-05-01	L/WG				Appendix IX

Figure 5-13. IRP Groundwater Sampling Log

A.4 ROUND 2 GROUNDWATER SAMPLING LOGS

TITLE: IRP Groundwater Sampling Log

PROJECT Holloman Lakes & Lagoons DATE 3-31-93

SUBJECT Water Sampling SHEET 1 OF 1 SHEETS

INSTALLATION ID (AFID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
HOLMN	MW-01	3-31-93	10:45

PERFORMED BY (LOGCODE)	WATER LEVEL (STATDEP) INITIAL / FINAL	TOTAL DEPTH (SOUNDING) INITIAL / FINAL
RAD	10.04' / 11.42 ft	17.84 ft / 17.84 ft

SATURATED THICKNESS	WELL VOLUME	AMOUNT TO PURGE
7.80 ft	~~1.25 g.~~ 5.00 gal	25.0 gal

PURGE METHOD: QED Purge Pump / Bladder Pump

Time (LOGTIME)	Cum. Volume (gal)	Water Quality: Temp.	pH	Cond.	Turb.	Water Level	Comments
10:55	1	17.6	6.67	48.7			Clear
11:05	5	16.7	7.00	46.5			Clear
11:15	10	16.6	6.69	46.9			Clear
11:25	15	16.7	6.67	47.4			Clear
11:35	20	16.8	6.64	47.5			Clear
11:45	25	16.8	6.64	47.8			Clear
12:00	Final	16.9	6.71	47.6	~~1.63N~~ DRY		Clear
							Turbidity = 2.3 NTU
Final Measurements:							

SAMPLING METHOD (SMCODE)

Sample ID	(MATRIX)	Preservative	Analysis	Sample Type Code (SACode)	Comments
9304-MW-01-01	L/WG	—		N	SW 8080

Figure 5-13. IRP Groundwater Sampling Log

TITLE: IRP Groundwater Sampling Log

PROJECT Holloman Lakes : Lagoons **DATE** 3-30-93

SUBJECT **SHEET** 1 **OF** 1 **SHEETS**

INSTALLATION ID (AFID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
HOLMN	MW-02	3-30-93	12:00

PERFORMED BY (LOGCODE)	WATER LEVEL (STATDEP)	TOTAL DEPTH (SOUNDING)
RAD	INITIAL 5.70 ft 6.35 ft FINAL	INITIAL ~~63~~ 17.77 ft FINAL 17.77 ft

SATURATED THICKNESS	WELL VOLUME	AMOUNT TO PURGE
12.07	7.72 gal	38 gal

PURGE METHOD: Bladder pump

Time (LOGTIME)	Cumu. Volume (gal)	Water Quality Temp.	pH	Cond.	Turb.	Water Level	Comments
12:05	1.0	16.2	7.37	5.7			Clear
12:15	7.5	16.1	7.38	5.7			Clear
12:35	20.0	16.2	7.28	5.7			Clear
12:50	28.0	16.1	7.20	5.7			Clear
1:00	35.0	16.1	7.19	5.7			Clear
1:05	40.0	16.1	7.18	5.7			Clear
1:20	Final	16.1	7.19	5.7	1.63	NTU	Clear
Final Measurements:							

SAMPLING METHOD (SMCODE)

Sample ID	(MATRIX)	Preservative	Analysis	Sample Type Code (SACode)	Comments
9304-MW-02-01	L/WG	—		N	SW 8260

Figure 5-13. IRP Groundwater Sampling Log

TITLE: IRP Groundwater Sampling Log

PROJECT Holloman Lakes / Lagoons

DATE 3-30-93

SUBJECT Ground Water Sampling.

SHEET 1 OF 1 SHEETS

INSTALLATION ID (AFID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
HOLMN	MW-03	3-30-93	2:15

PERFORMED BY (LOGCODE)	WATER LEVEL (STATDEP)	TOTAL DEPTH (SOUNDING)
RAD	INITIAL 8.17 ft FINAL	INITIAL 17.75 ft FINAL

SATURATED THICKNESS	WELL VOLUME	AMOUNT TO PURGE
9.58	6.13 gal	30.66

PURGE METHOD: Bladder pump

Time (LOGTIME)	Cum. Volume (gal)	Water Quality Temp.	pH	Cond.	Turb.	Water Level	Comments
2:15	1	16.1	6.97	11.5			Clear
2:32	12.5	16.0	6.95	11.5			Clear
2:45	20.0	16.1	6.95	11.5			Clear
2:55	25.0	16.3	6.93	11.4			Clear
3:05	30.0	16.3	6.93	11.5			Clear
3:10	32.5	16.3	6.93	11.5			Clear
	Final	16.5	6.95	11.5	2.58 NTU		Clear
Final Measurements:							

SAMPLING METHOD (SMCODE)

Sample ID	(MATRIX)	Preservative	Analysis	Sample Type Code (SACode)	Comments
9305-MW-~~05~~ 03-01 04 ~~04~~	L/WG	—		N	SW 8080

Figure 5-13. IRP Groundwater Sampling Log

TITLE: IRP Groundwater Sampling Log

PROJECT Holloman AFB - Lagoons and Lakes Investigation **DATE** 31 Mar 93

SUBJECT **SHEET** 1 **OF** 1 **SHEETS**

INSTALLATION ID (AFID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
HOLMN	MW-04	31 Mar 93	1450

PERFORMED BY (LOGCODE)	WATER LEVEL (STATDEP) INITIAL / FINAL	TOTAL DEPTH (SOUNDING) INITIAL / FINAL
RAD	6.06 / 6.12	17.80 / 17.80

SATURATED THICKNESS	WELL VOLUME	AMOUNT TO PURGE
11.74'	7.5 gallons	37.6 gallons

PURGE METHOD: Bladder pump

Time (LOGTIME)	Cum. Volume (gal)	Water Quality Temp.	pH	Cond.	Turb.	Water Level	Comments
1510	5	62.0 F	6.82	13,120			Very clear; non-turbid
1516	10	61.0°F	6.81	13,270			As above
1521	15	61.5°F	6.81	13,170			A/A
1525	20	61.0°F	6.84	13,040			A/A
1530	25	61.0°F	6.83	13,120			A/A
1535	30	61.0°F	6.82	13,100			A/A
1540	35	61.0°F	6.86	12,900			A/A
1543	38	61.5°F	6.83	13,030			A/A
1550	AFTER	61.5°F	6.79	13,000	0.76 NTU		A/A
Final Measurements:							

SAMPLING METHOD (SMCODE)

Sample ID	(MATRIX)	Preservative	Analysis	Sample Type Code (SACode)	Comments
9304-MW-04-01	L/WG	—	SW 8010	N	

Figure 5-13. IRP Groundwater Sampling Log

TITLE: IRP Groundwater Sampling Log

PROJECT Holloman AFB - Lagoons and Lakes Investigation

DATE 3/30/93

SUBJECT

SHEET 1 OF 1 SHEETS

INSTALLATION ID (AFID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
HOLMN	MW-05	30 March 93	0850

PERFORMED BY (LOGCODE)	WATER LEVEL (STATDEP) INITIAL / FINAL	TOTAL DEPTH (SOUNDING) INITIAL / FINAL
RAD	5.31 / 5.76	17.71 / 17.71

SATURATED THICKNESS	WELL VOLUME	AMOUNT TO PURGE
12.40'	7.94 gallons	39.5 gallons

PURGE METHOD: Bladder pump

Time (LOGTIME)	Purge Volume (Gal)	Temp	pH	Cond	Turb	Other (Units)	Comments
0907	5	60.0°F	7.00	12,480			Clear; non-turbid
0925	15	60.0°F	6.93	11,860			as above
0940	28	60.5°F	6.90	11,770			A/A
0950	32	60.5°F	6.70	11,740			A/A
1003	39	60.5°F	6.38	11,540			A/A
1006	AFTER	60.5°F	6.87	11,320	4.00 NTU		A/A
Final Measurements:							

SAMPLING METHOD (SMCODE)

Sample ID	(MATRIX)	Preservative	Analysis	Sample Type Code (SACode)	Comments
9304-MW-05-01	L/WG	—	SW8080	N	

Figure 5-13. IRP Groundwater Sampling Log

TITLE: IRP Groundwater Sampling Log

PROJECT Holloman AFB Lagoons and Lakes Investigation **DATE** 31 March 95

SUBJECT _____ **SHEET** 1 **OF** 1 **SHEETS**

INSTALLATION ID (AFID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
HOLMN	MW-06	31 March 95	1630

PERFORMED BY (LOGCODE)	WATER LEVEL (STATDEP) INITIAL / FINAL	TOTAL DEPTH (SOUNDING) INITIAL / FINAL
RAD	7.28 / 7.81	14.70 / 17.7

SATURATED THICKNESS	WELL VOLUME	AMOUNT TO PURGE
10.42	6.67 gallons	33.3 gallons

PURGE METHOD: Bladder pump

Time (LOGTIME)	Cum. Volume (gal)	Water Quality: Temp.	pH	Cond.	Turb.	Water Level	Comments
1635	5	61.0°F	7.06	76,600			Very clear; non-turbid
1642	10	62.0°F	6.88	76,500			as above
1649	15	62.0°F	6.85	76,600			as above
1656	20	62.0°F	6.80	76,000			as above; well wizard stopped working
1715	25	62.0°F	6.82	75,500			as above; replaced w/ other controller
1721	30	62.0°F	6.82	75,300			as above
1730	34	62.0°F	6.78	75,100			a/a
	AFTER	62.0°F	6.80	75,300	1.30 NTU		a/a
Final Measurements:							

SAMPLING METHOD (SMCODE)

Sample ID	(MATRIX)	Preservative	Analysis	Sample Type Code (SACode)	Comments
9304-MW-06-01	L/WG	—	SW 8080	N	

Figure 5-13. IRP Groundwater Sampling Log

TITLE: IRP Groundwater Sampling Log

PROJECT Holloman Lakes & Lagoons

DATE 3-30-93

SUBJECT

SHEET 1 OF 1 SHEETS

INSTALLATION ID (AFID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
HOLMN	MW-07	3-30-93	8:30

PERFORMED BY (LOGCODE)	WATER LEVEL (STATDEP) INITIAL	FINAL	TOTAL DEPTH (SOUNDING) INITIAL	FINAL
RAD	5.85 Feet	7.38 Ft	17.68	17.68

SATURATED THICKNESS	WELL VOLUME	AMOUNT TO PURGE
~~37.86~~ 11.83 Ft	7.57 gal	37.96 gal

PURGE METHOD: Bladder pump

Time (LOGTIME)	Cumu. Volume (gal)	Water Quality Temp.	pH	Condt.	Turb.	Water Level	Comments
8:30	1.0	15.9	7.05	7.5			Water Clear
8:45	7.5	15.9	6.97	7.6			Water Clear
9:00	15.0	15.9	6.97	7.6			Water Clear
9:12	22.5	15.8	6.95	7.7			Water Clear
9:25	30.0	15.8	6.95	7.7			Water Clear
9:35	39.0	15.9	6.94	7.7			Water Clear
9:55	Final	16.0	6.94	7.7	3.28 NTU		Water Clear
Final Measurements:							

SAMPLING METHOD (SMCODE)

Sample ID	(MATRIX)	Preservative	Analysis	Sample Type Code (SACode)	Comments
9304-MW-07-01	L/WG	—		N	SW 8080

Figure 5-13. IRP Groundwater Sampling Log

TITLE: IRP Groundwater Sampling Log

PROJECT Holloman Lakes & Lagoons **DATE** 3-30-93

SUBJECT Ground Water Sampling **SHEET** 1 **OF** 1 **SHEETS**

INSTALLATION ID (AFID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
HOLMN	MW-08	3-30-93	10:25

PERFORMED BY (LOGCODE)	WATER LEVEL (STATDEP) INITIAL	FINAL	TOTAL DEPTH (SOUNDING) INITIAL	FINAL
RAD	6.20 Ft	6.82 Ft	17.73 Ft	17.73

SATURATED THICKNESS	WELL VOLUME	AMOUNT TO PURGE
11.53	7.38 gal	39.90 gal

PURGE METHOD: Bladder pump

Time (LOGTIME)	Cum. Volume (gal)	Water Quality Temp.	pH	Cond.	Turb.	Water Level	Comments
10.35	1	16.8	7.30	10.3			water clear
10.45	7.5	16.5	7.17	10.1			water clear
10.55	15	16.4	7.09	10.0			water clear
11:08	22.5	16.4	7.05	9.9			water clear
11:20	30.0	16.5	7.02	9.9			water clear
11:30	37.5	16.5	7.05	9.9			water clear
11:40	Final	16.4	7.12	9.9	4.57 NTU		water clear
Final Measurements:							

SAMPLING METHOD (SMCODE)

Sample ID	(MATRIX)	Preservative	Analysis	Sample Type Code (SACode)	Comments
9304-MW-08-01	L/WG	—		N	SW 8080

Figure 5-13. IRP Groundwater Sampling Log

TITLE: IRP Groundwater Sampling Log

PROJECT Holloman Lakes & Lagoons DATE 3-31-93

SUBJECT Water Samplins SHEET 1 OF 1 SHEETS

INSTALLATION ID (AFID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
HOLMN	MW-09	3-31-93	9:45

PERFORMED BY (LOGCODE)	WATER LEVEL (STATDEP) INITIAL / FINAL	TOTAL DEPTH (SOUNDING) INITIAL / FINAL
RAD	8.06 Ft / 8.17 Ft	20.0 ft

SATURATED THICKNESS	WELL VOLUME	AMOUNT TO PURGE
11.94 Ft	1.91 gal	9.55 gal

PURGE METHOD: QED Purge Pump / Bladder pump

Time (LOGTIME)	Cum. Volume (gal)	Water Quality Temp.	pH	Cond.	Turb.	Water Level	Comments
9:50	1	15.7	7.04	39.8			Clear
9:55	2.5	15.6	7.03	39.9			Clear
10:00	5.0	15.6	7.01	40.0			Clear
10:05	7.5	15.6	7.01	38.8			Clear
10:10	10.0	15.6	7.01	40.0			Clear
10:25	Final	15.6	7.01	39.8			Clear
							Turbidity = 3.7 NTU
Final Measurements:							

SAMPLING METHOD (SMCODE)

Sample ID	(MATRIX)	Preservative	Analysis	Sample Type Code (SACode)	Comments
9304-MW-09-01	L/WG	—		N	SW 8080

Figure 5-13. IRP Groundwater Sampling Log

TITLE: IRP Groundwater Sampling Log

PROJECT Holloman Lakes & Lagoons — DATE 3-31-93

SUBJECT Water Sampling — SHEET 1 OF 1 SHEETS

INSTALLATION ID (AFID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
HOLMN	MW-10	3-31-93	8:45

PERFORMED BY (LOGCODE)	WATER LEVEL (STATDEP)	TOTAL DEPTH (SOUNDING)
RAD	INITIAL 8.0 feet / FINAL 8.30 Ft	INITIAL 20 Ft / FINAL 20 Ft
SATURATED THICKNESS	**WELL VOLUME**	**AMOUNT TO PURGE**
12 Ft	1.92 gal	9.6 gal.

PURGE METHOD: QED Purge Pump

Time (LOGTIME)	Cum. Volume (gal)	Water Quality Temp.	pH	Cond.	Turb.	Water Level	Comments
8:50	1	16.0	6.96	48.7			Clear
8:55	2.5	16.0	6.93	48.4			Clear
9:00	5.0	16.0	6.91	48.3			Clear
9:05	7.5	16.0	6.93	48.3			Clear
9:10	10.0	16.0	6.91	48.2			Clear
9:20	Final	16.0	6.92	48.3			Clear
							Turbidity = 1.8 NTU
Final Measurements:							

SAMPLING METHOD (SMCODE)

Sample ID	(MATRIX)	Preservative	Analysis	Sample Type Code (SACode)	Comments
9304-MW-10-01	L/WG	—		N	SW 8080

Figure 5-13. IRP Groundwater Sampling Log

TITLE: IRP Groundwater Sampling Log

PROJECT Holloman AFB- Lagoons and Lakes Investigation DATE 3/30/93

SUBJECT SHEET 1 OF 1 SHEETS

INSTALLATION ID (AFID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
HOLMN	MW-11	30 Mar 93	0850

PERFORMED BY (LOGCODE)	WATER LEVEL (STATDEP) INITIAL / FINAL	TOTAL DEPTH (SOUNDING) INITIAL / FINAL
RAD	5.31 / 5.76	17.71 / 17.71

SATURATED THICKNESS	WELL VOLUME	AMOUNT TO PURGE
12.40 feet	7.9 gallons	39.5 gallons

PURGE METHOD: Bladder pump

Time (LOGTIME)	Cum. Volume (gal)	Water Quality Temp.	pH	Cond.	Turb.	Water Level	Comments
0907	5	60.0°F	7.00	12480			Very clear, non-turbid
0925	15	60.0°	6.93	11860			As above
0940	28	60.5°	6.90	11770			A/A
0950	32	60.5°	6.90	11740			A/A
1003	39	60.5°	6.88	11540			A/A
1006	AFTER	60.5°	6.87	11320	4.00 NTU		A/A
Final Measurements:							

SAMPLING METHOD (SMCODE)

Sample ID	(MATRIX)	Preservative	Analysis	Sample Type Code (SACode)	Comments
9304-MW11-01	L/WG	—	SW8080	N	

Figure 5-13. IRP Groundwater Sampling Log

TITLE: IRP Groundwater Sampling Log

PROJECT Holloman AFB Lagoons and Lakes Investigation **DATE** 3/30/93

SUBJECT **SHEET** 1 **OF** 1 **SHEETS**

INSTALLATION ID (AFID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
HOLMN	MW-12	30 Mar 93	1145

PERFORMED BY (LOGCODE)	WATER LEVEL (STATDEP)	TOTAL DEPTH (SOUNDING)
RAD	INITIAL 9.94 FINAL 10.2	INITIAL 19.55 FINAL 19.55
SATURATED THICKNESS	**WELL VOLUME**	**AMOUNT TO PURGE**
9.61'	1.57 gallons	7.8 gallons

PURGE METHOD: Bladder pump

Time (LOGTIME)	Cum. Volume (gal)	Water Quality Temp.	pH	Cond.	Turb.	Water Level	Comments
1153	2	63°F	7.11	44200			Clear, no sediment; non-turbid
1158	4	61.5°F	7.05	44200			As above.
1203	6	61.5°F	7.03	44200			A/A
1206	8	61.5°F	7.04	44200			A/A
1210	AFTER	61.0°F	7.05	44400	1.1 NTU		A/A
Final Measurements:							

SAMPLING METHOD (SMCODE)

Sample ID	(MATRIX)	Preservative	Analysis	Sample Type Code (SACode)	Comments
9304-MW-12-01	L/WG	—	8080	N	

Figure 5-13. IRP Groundwater Sampling Log

TITLE: IRP Groundwater Sampling Log

PROJECT Holloman AFB Lagoons and Lakes Investigation **DATE** 31 Mar 93

SUBJECT _____ **SHEET** 1 **OF** 1 **SHEETS**

INSTALLATION ID (AFID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
HOLMN	MW-13	31 Mar 93	1340

PERFORMED BY (LOGCODE)	WATER LEVEL (STATDEP) INITIAL / FINAL	TOTAL DEPTH (SOUNDING) INITIAL / FINAL
RAD	6.21 / 6.25	17.14 / 17.14

SATURATED THICKNESS	WELL VOLUME	AMOUNT TO PURGE
10.93	1.78 gallons	8.9 gallons

PURGE METHOD: Bladder pump

Time (LOGTIME)	Cum. Volume (gal)	Water Quality: Temp	pH	Cond.	Turb.	Water Level	Comments
1345	2.0	64.0°F	7.10	46,000			Very clear; non-turbid
1350	4.0	63.5°F	7.11	45,500			As above.
1355	6.0	62.5°F	7.09	44,700			A/A
1400	8.0	62.0°F	7.10	44,600			A/A
	AFTER	62.0°F	7.11	45,500	1.52 NTU		
Final Measurements:							

SAMPLING METHOD (SMCODE)

Sample ID	(MATRIX)	Preservative	Analysis	Sample Type Code (SACode)	Comments
9304-MW-13-01	L/WG	—	SW 8080	N	

Figure 5-13. IRP Groundwater Sampling Log

TITLE: IRP Groundwater Sampling Log

PROJECT Holloman AFB Lagoons and Lakes Investigation **DATE** 3/31/93

SUBJECT _____ **SHEET** 1 **OF** 1 **SHEETS**

INSTALLATION ID (AFID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
HOLMN	MW-14	3-31-93	1000

PERFORMED BY (LOGCODE)	WATER LEVEL (STATDEP)	TOTAL DEPTH (SOUNDING)
RAD	INITIAL 7.71 FINAL 7.76	INITIAL 16.6 FINAL 16.6

SATURATED THICKNESS	WELL VOLUME	AMOUNT TO PURGE
8.89'	1.45 gallons	7.25 gallons

PURGE METHOD: Bladder pump

Time (LOGTIME)	Cum. Volume (gal)	Water Quality: Temp.	pH	Cond.	Turb.	Water Level	Comments
1005	2	61°F	6.96	40,600			Non-turbid
1010	4	61.0°F	6.86	40,200			As above
1015	6	61.0°F	6.86	40,200			A/A
1020	8	61.0°F	6.87	40,700			A/A
1035	AFTER	61.0°F	6.87	40,400	1.60 NTU		A/A
Final Measurements:							

SAMPLING METHOD (SMCODE)

Sample ID	(MATRIX)	Preservative	Analysis	Sample Type Code (SACode)	Comments
9304-MW-14-01	L/WG	—	SW 8080	N	
9304-MW-14-02	L/WG	—	SW 8080	FD	

Figure 5-13. IRP Groundwater Sampling Log

TITLE: IRP Groundwater Sampling Log

PROJECT Holloman AFB - Lagoons and Lakes Investigation **DATE** 31 March 93

SUBJECT **SHEET** 1 **OF** 1 **SHEETS**

INSTALLATION ID (AFID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
HOLMN	MW-15	31 March 93	1110

PERFORMED BY (LOGCODE)	WATER LEVEL (STATDEP)	TOTAL DEPTH (SOUNDING)
RAD	INITIAL 7.81 FINAL	INITIAL 18.5 FINAL 18.5

SATURATED THICKNESS	WELL VOLUME	AMOUNT TO PURGE
10.69 ft	1.74 gallons	8.7 gallons

PURGE METHOD: Bladder pump

Time (LOGTIME)	Cum. Volume (gal)	Water Quality Temp.	pH	Cond.	Turb.	Water Level	Comments
1115	1.5	63.5°F	6.78	48,300			Non-turbid
1120	4.0	62.0°F	6.74	47,800			As above
1125	6.0	61.0°F	6.72	48,900			A/A
1130	8.0	62.0°F	6.74	48,800			A/A
1135	9.0	61.5°F	6.74	48,600			A/A
	AFTER	61.5°F	6.80	48,800	2.02 NTU		A/A
Final Measurements:							

SAMPLING METHOD (SMCODE)

Sample ID	(MATRIX)	Preservative	Analysis	Sample Type Code (SACode)	Comments
9304-MW-15-01	L/WG	—	SW8080 MS/MSD	N	
9304-MW-15-02	L/WG	—	SW8080	FD	

Figure 5-13. IRP Groundwater Sampling Log

TITLE: IRP Groundwater Sampling Log

PROJECT Holloman AFB - Lagoons & Lakes Project **DATE** 3-31-93

SUBJECT Water Sampling **SHEET** 1 **OF** 1 **SHEETS**

INSTALLATION ID (AFID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
HOLMN	MWS-04	3-31-93	17.55

PERFORMED BY (LOGCODE)	WATER LEVEL (STATDEP) INITIAL / FINAL	TOTAL DEPTH (SOUNDING) INITIAL / FINAL
RAD	8.19 Ft / 9.85 Ft	14.25 Ft / 14.25 Ft

SATURATED THICKNESS	WELL VOLUME	AMOUNT TO PURGE
5.44 Ft	0.87 gal	4.39 gal.

PURGE METHOD: BAILER - QED Pump was not working properly

Time (LOGTIME)	Purge Volume (gal)	Water Quality Temp	pH	Cond.	Turb.	Water Level	Comments
18:00	0.8	15.4	8.32	44.2			Slightly turbid
18:02	1.6	15.0	7.75	43.6			Slightly turbid
18:04	2.4	15.0	7.57	43.5			Slightly turbid
18:06	3.2	14.8	7.36	43.5			Slightly turbid
18:15	FINAL	14.4	7.31	43.2			Slightly turbid.
					154NTU		
Final Measurements:							

SAMPLING METHOD (SMCODE)

Sample ID	(MATRIX)	Preservative	Analysis	Sample Type Code (SACode)	Comments
9304-MWS-04-01	L/WC	—		N	SW 9060

Figure 5-13. IRP Groundwater Sampling Log

TITLE: IRP Groundwater Sampling Log

PROJECT Sewage Lagoons and Lakes

DATE 3-31-93

SUBJECT Round 2 Sampling

SHEET 1 OF 1 SHEETS

INSTALLATION ID (AFID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
~~HAFB~~ HOLMN	MWS-05	3-31-93	1715

PERFORMED BY (LOGCODE)	WATER LEVEL (STATDEP) INITIAL / FINAL	TOTAL DEPTH (SOUNDING) INITIAL / FINAL
RAD	9.30 / ~~12.86~~ 9.23	12.86 / 12.86

SATURATED THICKNESS	WELL VOLUME	AMOUNT TO PURGE
3.56	0.6	3.0

PURGE METHOD: Bailer, Bladder pump broken
COND = 48.3 @ ~~17.8~~ 21°C
m hos

Time (LOGTIME)	Cum. Volume (gal)	Water Quality Temp.	pH	Cond.	Turb.	Water Level	Comments
1715	0.75	16.4	7.70	49.0	—	—	
1725	1.5	15.9	7.26	48.8	—	—	
1728	2.25	15.7	7.11	48.8	—	—	
1730	3.00	15.3	6.87	48.9	—	—	
1733	3.75	15.0	6.91	48.8	—	—	
Final	—	14.9	6.92	49.1		9.23	
							Turbidity = 91 NTU
Final Measurements:							

SAMPLING METHOD (SMCODE) B

Sample ID	(MATRIX)	Preservative	Analysis	Sample Type Code (SACode)	Comments
9304-MWS-05-01	L/WG	—	8080	N	Collected with Bailer

Figure 5-13. IRP Groundwater Sampling Log

A.5 WELL DEVELOPMENT FORMS

WELL DEVELOPMENT LOG

SHEET 1 OF 1

PROJECT (PROJ_ID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
HOLLOMAN LAKES AND LAGOONS (HOLL_LL)	MW-12	3-6-93	1120

PERFORMED BY (LOGCODE)	DEVELOPMENT METHOD	SURGE TECHNIQUE
RAD	Purge Pump	Purge Pump

WATER LEVEL (STATDEP) INITIAL	FINAL	TOTAL DEPTH (SOUNDING) INITIAL	FINAL	LOWEST WATER LEVEL DURING DEVELOPMENT (PUMPDEP)
9.66'	9.64	19.5	19.5	10.5

TOTAL VOL. REMOVED 185 GALLONS ÷ TIME ELAPSED 5.8 HRS = PRODUCTION RATE (PRODRATE) 32

PRODUCTION RATE (PRODRATE)
RECOVERY DEPTH (DEPWAT) N/A
RECOVERY TIME (RECTIME) N/A

Time	Cum. Volume (gal)	Water Quality Temp.	pH	Cond.	Turb.	Comments
1145	0					Began Pumping
1210	10	17.4	~~6.94~~	~~37200~~ 36900	630	Cloudy; lt. tan/brown color. Pump @ bottom. 0.7 GPM
1240	25	17.4	7.01	37200	430	Light tan brown; slightly cloudy; pump @ bottom. 0.7 GPM
1255	40	17.3	7.01	37300	2000	Tan brown after surging. 0.6 GPM
1355	72	17.1	7.00	36800	2520	slightly cloudy after surging; light tan brown. 0.66 GPM
1410	82	16.9	6.97	37000	—	slightly cloudy and tan/brown.
1430	90	17.7	6.99	38000	200	Purged upper portion of screen.
1445	93	17.5	6.95	38000		As above. Yellow-reddish brown color.
1515	100	17.2	6.99	37600	640	Light tan after purging.
1535	110	16.6	6.95	36800	400	Rate = 1.33 GPM; light tan-yellow water.
1550	122	16.8	6.98	36500		1.6 GPM Light tan/brown, slightly cloudy after purge.
1620	140	16.7	6.97	36800	166	Very light tan color. Pump 0.5 ft above bottom. 1.3 GPM
1640	160	16.7	6.97	36700		As above. Rate = 0.5 GPM
1700	170	16.3	6.96	36600	230	Very light tan color. Turbidity increase slightly w/ surging. 0.5 GPM
1735	185	16.7	6.97	36700		As above 0.6 GPM
Field Measurements:						Time

Remarks (Remarks)
Total Volume Removed 185 gallons

Time for Removal 5 hrs 50 min hrs/min

D1872B

WELL DEVELOPMENT LOG

SHEET 1 OF 2

PROJECT (PROJ_ID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
HOLLOMAN LAKES AND LAGOONS (HOLL_LL)	MW-13	3-7-93	0940

PERFORMED BY (LOGCODE)	DEVELOPMENT METHOD	SURGE TECHNIQUE
RAD	Purge pump	Purge pump

WATER LEVEL (STATDEP)	TOTAL DEPTH (SOUNDING)	LOWEST WATER LEVEL DURING DEVELOPMENT (PUMPDEP)
INITIAL 5.88 FINAL 5.96	INITIAL 17.14 FINAL 17.14	

TOTAL VOL. REMOVED 230 GALLONS - TIME ELAPSED 4.9 HRS = PRODUCTION RATE (PRODRATE) 48

PRODUCTION RATE (PRODRATE)
RECOVERY DEPTH (DEPWAT) N/A
RECOVERY TIME (RECTIME) N/A

Time	Cum. Volume (gal)	Water Quality Temp.	pH	Cond.	Turb.	Comments
0940	13	16.2	6.96	38200	3920	Light tan yellow; cloudy. 0.66 GPM
1000	20	16.3	7.02	38200		Tan reddish brown. Surged top of screen
1020	28	16.3	7.06	38300	4920	As above 0.5 GPM
1040	39	16.5	7.08	38200		0.6 GPM
1100	48	16.4	7.12	37900	3360	Tan/brown after surging. WC = 6 GST 0.6 GPM
1115	60	16.5	7.11	38500		1.7 GPM color as above.
1130	83	16.6	7.12	38500	1220	Tan/brown and cloudy after purging. Water level = 8.4 ft. Pump @ bottom
1145	105	16.6	7.13	39100		As above. 1.7 GPM
1205	120	16.5	7.13	38200	1420	Slowed rate to 0.55 GPM Surged length of screen vigorously. Color a/a.
1225	130	16.6	7.14	38800		As above. Cleans up quickly after surging.
1245	144	16.6	7.12	38500	1140	Slightly cloudy after purging Stopped for lunch @ 1300
1430	160	16.5	7.13	38500		Resumed pumping @ 1415 Surged entire length of screen
1445	176	16.6	7.15	38600		Very light tan after purge. 1.25 GPM
1505	190	16.7	7.15	38800	900	1.2 GPM Very light yellow tan
1525	204	16.6	7.14	38600		0.6 GPM color as above.
1545	215	16.6	7.13	38400	86	0.6 GPM V. light yellow - tan color.
Field Measurements:						Time

Remarks (Remarks)
Total Volume Removed 230 gallons

Time for Removal 4hr 50 hrs/min

U1872B

WELL DEVELOPMENT LOG

PROJECT (PROJ_ID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
HOLLOMAN LAKES AND LAGOONS (HOLL_LL)	MW-13	3-7-93	0940

PERFORMED BY (LOGCODE)	DEVELOPMENT METHOD	SURGE TECHNIQUE
RAD	Purge Pump	Purge Pump

WATER LEVEL (STATDEP)	TOTAL DEPTH (SOUNDING)	LOWEST WATER LEVEL DURING DEVELOPMENT (PUMPDEP)
INITIAL 5.88 FINAL 5.96	INITIAL 17.14 FINAL ~~5.96~~ 17.14	8.5

TOTAL VOL. REMOVED 230 GALLONS ÷ TIME ELAPSED 4.8 HRS = PRODUCTION RATE (PRODRATE) 48

PRODUCTION RATE (PRODRATE)
RECOVERY DEPTH (DEPWAT) N/A
RECOVERY TIME (RECTIME) N/A

Time	Cum. Volume (gal)	Water Quality				Comments
		Temp.	pH	Cond.	Turb.	
1605	228	16.6	7.14	38800	95	water only slightly turbid after purging.
1615	230					Stopped pumping
Field Measurements:						Time

Remarks (Remarks)
Total Volume Removed 230 gallons

Time for Removal 4 hrs 50 min hrs/min

U1872B

WELL DEVELOPMENT LOG

SHEET 1 OF 1

PROJECT (PROJ_ID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
HOLLOMAN LAKES AND LAGOONS (HOLL_LL)	MW-14	8 Mar 93	0845

PERFORMED BY (LOGCODE)	DEVELOPMENT METHOD	SURGE TECHNIQUE
RAD	Purge pump	Purge pump

WATER LEVEL (STATDEP) INITIAL	FINAL	TOTAL DEPTH (SOUNDING) INITIAL	FINAL	LOWEST WATER LEVEL DURING DEVELOPMENT (PUMPDEP)
7.68'	7.74'	18.64'	18.70'	

TOTAL VOL. REMOVED 110 GALLONS - TIME ELAPSED 4.5 HRS = PRODUCTION RATE (PRODRATE) 24.5 gph

PRODUCTION RATE (PRODRATE)
RECOVERY DEPTH (DEPWAT) N/A
RECOVERY TIME (RECTIME) N/A

Time	Cum. Volume (gal)	Water Quality Temp.	pH	Cond.	Turb.	Comments
0915	8	59°F	7.02	52,200	6940	reddish brown, cloudy, 0.5gpm
1010	35	61°F	6.94	50,400	6600	brown, cloudy 1.0gpm
1030	42	61°F	6.93	49,900	2080	" " 0.2gpm
1055	52	62°F	6.93	48,500	1486	lt. brown, cloudy 0.5gpm
1120	57	61°F	6.92	47,800	1848	" " " 0.2gpm
1140	69	63°F	6.95	49,000	2500	lt. reddish brn, cloudy 0.6gpm
1200-1300	~~78~~					Pump shut off for lunch
1320	78	64°F	6.93	46,600	5250	lt brn, cloudy 0.6gpm
1345	90	63°F	6.91	46,400	1800	lt. brown, cloudy 0.5 gpm
~~13~~1410	102	63°F	6.90	47,000	724	slightly cloudy 0.5gpm
1425	107	62°F	6.90	47,000	390	" " 0.4gpm
Field Measurements:						Time

Remarks (Remarks)
Total Volume Removed 110 gallons

Time for Removal 4 hrs 30 min hrs/min

01872B

WELL DEVELOPMENT LOG

SHEET 1 OF 1

PROJECT (PROJ_ID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
HOLLOMAN LAKES AND LAGOONS (HOLL_LL)	MW-15	3-8-93	1000

PERFORMED BY (LOGCODE)	DEVELOPMENT METHOD	SURGE TECHNIQUE
RAD	Purge pump	Purge pump

WATER LEVEL (STATDEP) INITIAL / FINAL	TOTAL DEPTH (SOUNDING) INITIAL / FINAL	LOWEST WATER LEVEL DURING DEVELOPMENT (PUMPDEP)
7.43 / 9.3	18.32 / 18.36	10.5

TOTAL VOL. REMOVED 145 GALLONS ÷ TIME ELAPSED 5.2 HRS = PRODUCTION RATE (PRODRATE) 28

PRODUCTION RATE (PRODRATE)
RECOVERY DEPTH (DEPWAT) N/A
RECOVERY TIME (RECTIME) N/A

Time	Cum. Volume (gal)	Water Quality Temp.	pH	Cond.	Turb.	Comments
1010	15	16.3	6.69	42300	>8000	Very cloudy, chocolate brown color. Abundant sediment in pumped water
1025	20	16.9	6.75	43000		as above. 1.0 GPM
1045	26	16.8	6.76	43300	6040	Slightly clearer. 0.4 GPM. Pump @ bottom.
1105	35	17.0	6.80	43700		as above. 0.4 GPM
1125	42	17.1	6.81	43700	2280	Color as above. Surged vigorously. 0.6 GPM
1145	50	16.8	6.80	43800		Light chocolate brown; cloudy. Clears up quickly after surging.
1305	80	17.1	6.73	43800	920	0.5 GPM. lt. tan/brown color. Water level: 10.4 ft.
1325	90	17.2	6.75	43700		Color as above. 0.5 GPM
1340	97	17.1	6.73	43700	840	Light tan/brown, clears up quickly after surging.
1405	108	16.9	6.73	43500		Color as above. Increased pumping rate and surged vigorously.
1425	120	17.3	6.74	43700	2400	Color as above. Surged at water level (10.5 ft). 0.5 GPM
1450	126	17.0	6.75	44000		Light tan/brown after surging. Clears up after 1-2 gallons.
1520	145	17.0	6.75	43700	800	Slightly tan/brown after vigorous surge. END pumping.
Field Measurements:						Time

Remarks (Remarks)
Total Volume Removed 145 gallons

Time for Removal 5 hrs 10 min hrs/min

D1872B

WELL DEVELOPMENT LOG

SHEET 1 OF 1

PROJECT (PROJ_ID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
HOLLOMAN LAKES AND LAGOONS (HOLL_LL)	MWS-05	2/19/93	10:00

PERFORMED BY (LOGCODE)	DEVELOPMENT METHOD	SURGE TECHNIQUE
RAD	Purge pump	Purge pump

WATER LEVEL (STATDEP) INITIAL	FINAL	TOTAL DEPTH (SOUNDING) INITIAL	FINAL	LOWEST WATER LEVEL DURING DEVELOPMENT (PUMPDEPT)
7.2	7.2	13'	13'	N/A

TOTAL VOL. REMOVED ~31 GALLONS - TIME ELAPSED 2 HRS = PRODUCTION RATE (PRODRATE) 15.5 gal/hr

PRODUCTION RATE (PRODRATE)
RECOVERY DEPTH (DEPWAT) N/A
RECOVERY TIME (RECTIME) N/A

Time	Cum. Volume (gal)	Water Quality Temp.	pH	Cond.	Turb.	Comments
10:05	2.5	15.5°C	6.69	49.1		Conductivity meter not calibrated
10:20	6.5	16.1	6.71	52.1		
10:32	9.56	16.3	6.72	52.9		Pump turned off for approx. 8 min.
10:45	10.89	16.7	6.72	53.0		
11:00	14.~~34~~98	16.6	6.71	53.7		
11:15	15.86	16.7	6.71	54.0		
11:30	22.7	16.9	6.70	54.4		
11:45	26.6	17.1	6.70	54.6		
12:00	30.48	17.2	6.70	54.2		
12:17	31	17.4	6.69	55.1		
Field Measurements:						Time

Remarks (Remarks)
Total Volume Removed 31 gallons
Time for Removal 2 hrs 12 min hrs/min

Turbid'ty meter not working properly - all samples were clear.

018728

WELL DEVELOPMENT LOG

SHEET ____ OF ____

PROJECT (PROJ_ID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
HOLLOMAN LAKES AND LAGOONS (HOLL_LL)	MW D-03	2-20-93	1035

PERFORMED BY (LOGCODE)	DEVELOPMENT METHOD	SURGE TECHNIQUE
RAD	Purge pump	Purge pump

WATER LEVEL (STATDEP) INITIAL	FINAL	TOTAL DEPTH (SOUNDING) INITIAL	FINAL	LOWEST WATER LEVEL DURING DEVELOPMENT (PUMPDEP)
4.7'	7.9'	71'	72.5'	24'

TOTAL VOL. REMOVED 117 GALLONS - TIME ELAPSED 2.75 HRS = PRODUCTION RATE (PRODRATE) 42.9 gal/hr

PRODUCTION RATE (PRODRATE)

RECOVERY DEPTH (DEPWAT) N/A

RECOVERY TIME (RECTIME) N/A

Time	Cum. Volume (gal)	Water Quality Temp.	pH	mS/cm Cond.	NTU Turb.	Comments
10:45		20.6	7.28	13.21	>2000	clear, then very turbid, 0.75 gpm
11:05		20.3	7.3	13.28	>2000	pump clogged - had tube cleaned
12:10		19.8	7.2	13.26	>2000	0.5 gpm
12:20					>2000	pump clogged again
15:00		19.8	7.26	13.26	>2000	pumping lots of sand
15:15	72	19.9	7.24	13.32	>2000	0.7 gpm
15:25		19.8	7.23	13.33	>2000	0.6 gpm
15:55	94	19.2	7.3	13.02	>2000	
16:40	106	19.0	7.15	13.26	>2000	still pumping lots of sand
17:00	117	19.6	7.31	12.9		
Field Measurements:						Time

Remarks (Remarks)

Total Volume Removed 117 gallons

Time for Removal 2 hrs 15 min hrs/min

01872B

WELL DEVELOPMENT LOG

SHEET 1 OF 1

PROJECT (PROJ_ID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
HOLLOMAN LAKES AND LAGOONS (HOLL_LL)	MWD-04	3/1/93	1300

PERFORMED BY (LOGCODE)	DEVELOPMENT METHOD	SURGE TECHNIQUE
RAD	PURGE PUMP	PURGE PUMP

WATER LEVEL (STATDEP)	TOTAL DEPTH (SOUNDING)	LOWEST WATER LEVEL DURING DEVELOPMENT (PUMPDEP)
INITIAL 6.50' FINAL 9.2'	INITIAL 50.1 FINAL 50.82	

TOTAL VOL. REMOVED 210 GALLONS ÷ TIME ELAPSED 4.17 HRS = PRODUCTION RATE (PRODRATE) 50.4

PRODUCTION RATE (PRODRATE)
RECOVERY DEPTH (DEPWAT) N/A
RECOVERY TIME (RECTIME) N/A

Time	Cum. Volume (gal)	Water Quality				Comments
		Temp.	pH	Cond.	Turb.	
1415	35	17.2	7.16	15850	~~>800~~ 700 (ATR)	Dark grey, very silty.
1500	60	17.7	7.18	15820	542	Pump rate = 1.1 GPM
1525	80	17.4	7.13	15850	>8000	Pump at bottom.
1550	110	17.7	7.10	16060		
1610	130	17.6	7.10	15950	560	Some sediment after purging. 1.5 GPM
1635	150	17.4	7.02	15850		pump at bottom
1700	175	17.2	7.00	15660	1612	GPM = .73
1725	195	17.5	7.04	15900		
1740	210	17.6	7.04	15980	330	Still some sediment after vigorous purging.
Field Measurements:						Time

Remarks (Remarks)
Total Volume Removed 210 gallons

Time for Removal 4 hr 10 min hrs/min

01872B

WELL DEVELOPMENT LOG

SHEET ____ OF ____

PROJECT (PROJ_ID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
HOLLOMAN LAKES AND LAGOONS (HOLL_LL)	MW D-05	2-21-13	1900

PERFORMED BY (LOGCODE)	DEVELOPMENT METHOD	SURGE TECHNIQUE
KAD	Purge pump	Purge pump

WATER LEVEL (STATDEP) BMP		TOTAL DEPTH (SOUNDING) BMP		LOWEST WATER LEVEL DURING DEVELOPMENT (PUMPDEP) BMP
INITIAL	FINAL	INITIAL	FINAL	
5.98'	16'	57.4'	64'	15.5'

TOTAL VOL. REMOVED 281 GALLONS – TIME ELAPSED 5.4 HRS = PRODUCTION RATE (PRODRATE) 52 gal/hr

PRODUCTION RATE (PRODRATE)

RECOVERY DEPTH (DEPWAT) N/A

RECOVERY TIME (RECTIME) N/A

Time	Cum. Volume (gal)	Water Quality				Comments
		Temp.	pH	Cond.	Turb.	
10:35	19.2	18.9	7.19	19.06	>3000	0.7 gpm
10:45	31.6	18.7	7.2	19.31	>2000	0.75 gpm
11:02	39.9	18.8	7.17	18.7	>3300	0.75 gpm
11:24	46	19.1	7.22	19.28	>3500	0.3 gpm
11:45	52.2	–	–	–	>2000	0.83 gpm
12:00	67.2	19.2	7.18	19.16	–	
12:25	87.8	–	–	–	–	
12:40	104.4	19.0	7.24	17.74	–	
13:05	119.4	–	–	–	–	0.7 gpm
15:30	140	–	–	–	–	0.7 gpm
16:04	–	–	–	–	>2400	1 gpm
16:30	–	18.5	6.6	17.1	–	1 gpm
16:50	220					1 gpm
17:30	241	18.4	6.77	17.2		1.5 gpm
17:35	249.5	17.9	6.78	17.45		1 gpm
1745	260	18.2	6.55	17.59		
Field Measurements:						Time

Remarks (Remarks)

Total Volume Removed 281 gallons

Time for Removal 5.4 hrs/min

D1872B

MW-

BEFORE

MW - 12

BEFORE AFTER

MW

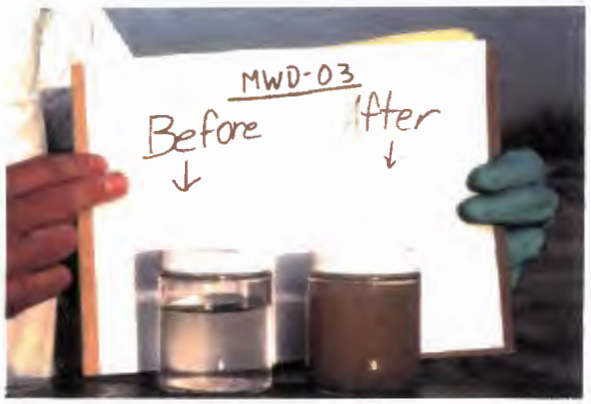
BEFORE

MW

BEFORE AFTER

MW - 15

BEFORE AFTER



MW

BEFORE

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BEFORE

A.6 WATER LEVEL SURVEY DATA (MARCH, APRIL, AND AUGUST 1993)

WATER LEVEL SURVEY DATA (March, 1993)

Location id	Easting	Northing	Ground elev.	TOC elev.	GW from TOC	GW above MSL
MWD-01	540864.68	663846.28	4028.34	4030.66	8.39	4022.27
MWD-02	542460.08	658545.00	4021.37	4023.30	5.46	4017.84
MWD-03	547567.44	665970.87	4045.48	4047.41	5.05	4042.36
MWD-04	544323.08	661959.63	4030.19	4031.86	6.84	4025.02
MWD-05	544355.80	664707.96	4036.86	4039.34	6.19	4033.15
MWD-06	537661.05	659274.14	4027.98	4030.20	11.45	4018.75
MWP-01	547500.04	666007.62	4045.09	4047.51	5.16	4042.35
MWS-01	547227.86	664038.39	4038.99	4041.72	5.33	4036.39
MWS-03	544339.44	666310.26	4040.93	4042.66	6.68	4035.98
MWS-04	544926.56	662213.66	4031.49	4034.46	8.72	4025.74
MWS-05	543989.31	662360.64	4031.32	4033.47	9.15	4024.32
MWS-06	539431.65	663611.00	4029.44	4031.52	11.83	4019.69
MWS-07	538199.17	662546.27	4028.22	4030.24	12.02	4018.22
MWS-08	539393.41	660347.18	4031.02	4033.15	14.8	4018.35
MWS-09	537626.78	655436.28	4018.42	4020.67	9.60	4011.07
MWS-10	539545.00	657713.58	4027.85	4030.00	13.65	4016.35
MWS-11	541772.11	660788.59	4025.17	4027.23	9.8	4017.43
MWS-12	547576.02	665999.05	4046.01	4048.31	7.43	4040.88
MWS-13	544352.88	661961.13	4030.05	4032.34	8.53	4023.81
MWS-14	544338.74	661960.52	4030.20	4032.43	8.27	4024.16
MWS-15	544342.86	664406.43	4034.86	4037.71	4.59	4033.12
MWS-16	537775.86	659637.61	4027.46	4029.46	10.92	4018.54
MW-01	548658.60	666311.53	4050.54	4053.42	9.95	4043.47
MW-02	544566.85	663814.83	4037.08	4039.78	5.50	4034.28
MW-03	544469.13	662878.19	4034.71	4037.38	8.06	4029.32
MW-04	545215.83	660699.42	4027.65	4030.30	5.90	4024.40
MW-05	544358.30	664830.97	4036.55	4039.30	5.19	4034.11
MW-06	544970.02	661445.18	4028.45	4031.21	6.98	4024.23
MW-07	544379.85	665147.61	4037.37	4039.88	5.74	4034.14
MW-08	544474.40	664520.54	4037.90	4040.50	6.01	4034.49
MW-09	546285.88	665312.37	4040.34	4042.59	8.00	4034.59
MW-10	546007.93	666135.76	4040.97	4043.39	7.94	4035.45
MW-11	543896.90	665207.00	4037.76	4039.71	7.90	4031.81
MW-12	543686.80	664672.20	4038.36	4040.25	9.85	4030.40
MW-12-01	556211.81	667903.12	4064.54	4066.39	3.74	4062.65
MW-12-02	556217.94	667768.80	4066.22	4068.06	5.48	4062.58
MW-12-03	555883.96	667716.05	4070.44	4069.85	6.70	4063.15
MW-13	543927.90	664216.10	4035.13	4036.49	6.10	4030.39
MW-14	543904.80	662841.70	4031.95	4034.13	7.70	4026.43
MW-15	544403.80	662252.20	4030.85	4032.70	7.66	4025.04
MW-16	537886.90	660473.00	4029.71	4031.84	13.24	4018.60
MW-17	537585.90	658079.30	4030.17	4032.17	14.08	4018.09
MW-18	538105.10	656338.20	4018.60	4019.42	8.13	4011.29

Continued

MW-19-01	548304.90	663965.58	4046.60	4048.74	7.38	4041.36
MW-21-01	542925.39	667762.04	4044.18	4046.59	7.29	4039.30
MW-22-01	540855.91	666347.26	4037.70	4038.99	11.58	4027.41
MW-23-01	540402.02	666077.69	4035.79	4037.11	10.62	4026.49
MW-24-01	538127.51	669683.22	4047.97	4049.39	14.36	4035.03
MW-24-05	538414.96	666973.60	4040.24	4041.24	11.86	4029.38
MW-26-01	543091.72	673624.04	4060.45	4062.28	6.56	4055.72
MW-28-01	548805.65	676265.66	4091.19	4092.94	12.53	4080.41
MW-29-01	549358.09	677999.61	4102.16	4103.37	24.33	4079.04
MW-30&33-01	552710.92	676333.33	4103.31	4104.70	23.48	4081.22
MW-36-01	546510.67	684691.59	4102.13	4105.03	31.24	4073.79
MW-36-03	545646.31	684024.58	4097.34	4099.71	28.07	4071.64
MW-37-01	537843.13	686025.10	4076.08	4077.22	31.53	4045.69
MW-37-03	538441.26	687430.86	4077.62	4079.66	28.69	4050.97
MW-37-06	539149.29	688953.52	4084.13	4085.29	35.76	4049.53
MW-BG-01	554457.10	708995.70	4206.10	4207.73	36.57	4171.16
MW-BG-02	556491.90	703541.40	4197.40	4199.28	43.80	4155.48
MW-BG-03	554937.20	695648.90	4136.14	4138.28	11.83	4126.45
MW-BG-04	546283.20	690009.90	4072.65	4074.51	4.62	4069.89

'WATER LEVEL SURVEY DATA (April, 1993)

Location id	Easting	Northing	Ground Elev.	TOC Elev.	GW from TOC	GW above MSL
MWD-01	540864.68	663846.28	4028.34	4030.66	8.48	4022.18
MWD-02	542460.08	658545.00	4021.37	4023.30	5.52	4017.78
MWD-03	547567.44	665970.87	4045.48	4047.41	5.12	4042.29
MWD-04	544323.08	661959.63	4030.19	4031.86	6.93	4024.93
MWD-05	544355.80	664707.96	4036.86	4039.34	6.24	4033.10
MWD-06	537661.05	659274.14	4027.98	4030.20	11.49	4018.71
MWP-01	547500.04	666007.62	4045.09	4047.51	5.22	4042.29
MWP-02	544350.06	661861.42	4030.25	4032.11	7.06	4025.05
MWS-01	547227.86	664038.39	4038.99	4041.72	5.64	4036.08
MWS-03	544339.44	666310.26	4040.93	4042.66	6.78	4035.88
MWS-04	544926.56	662213.66	4031.49	4034.46	8.72	4025.74
MWS-05	543989.31	662360.64	4031.32	4033.47	9.21	4024.26
MWS-06	539431.65	663611.00	4029.44	4031.52	11.86	4019.66
MWS-07	538199.17	662546.27	4028.22	4030.24	12.05	4018.19
MWS-08	539393.41	660347.18	4031.02	4033.15	14.82	4018.33
MWS-09	537626.78	655436.28	4018.42	4020.67	9.62	4011.05
MWS-10	539545.00	657713.58	4027.85	4030.00	13.68	4016.32
MWS-11	541772.11	660788.59	4025.17	4027.23	9.88	4017.35
MWS-12	547576.02	665999.05	4046.01	4048.31	7.48	4040.83
MWS-13	544352.88	661961.13	4030.05	4032.34	8.62	4023.72
MWS-14	544338.74	661960.52	4030.20	4032.43	8.37	4024.06
MWS-15	544342.86	664406.43	4034.86	4037.71	4.87	4032.84
MWS-16	537775.86	659637.61	4027.46	4029.46	10.97	4018.49
MW-01	548658.60	666311.53	4050.54	4053.42	10.05	4043.37
MW-02	544566.85	663814.83	4037.08	4039.78	5.73	4034.05
MW-03	544469.13	662878.19	4034.71	4037.38	8.24	4029.14
MW-04	545215.83	660699.42	4027.65	4030.30	6.09	4024.21
MW-05	544358.30	664830.97	4036.55	4039.30	5.36	4033.94
MW-06	544970.02	661445.18	4028.45	4031.21	7.33	4023.88
MW-07	544379.85	665147.61	4037.37	4039.88	5.88	4034.00
MW-08	544474.40	664520.54	4037.90	4040.50	6.26	4034.24
MW-09	546285.88	665312.37	4040.34	4042.59	8.06	4034.53
MW-10	546007.93	666135.76	4040.97	4043.39	N/A	N/A
MW-11	543896.90	665207.00	4037.76	4039.71	8.01	4031.70
MW-12	543686.80	664672.20	4038.36	4040.25	9.96	4030.29
MW-13	543927.90	664216.10	4035.13	4036.49	6.26	4030.23
MW-14	543904.80	662841.70	4031.95	4034.13	7.82	4026.31
MW-15	544403.80	662252.20	4030.85	4032.70	7.80	4024.90
MW-16	537886.90	660473.00	4029.71	4031.84	13.27	4018.57
MW-17	537585.90	658079.30	4030.17	4032.17	14.10	4018.07
MW-18	538105.10	656338.20	4018.60	4019.42	8.15	4011.27
MW-19-01	548304.90	663965.58	4046.60	4048.74	7.68	4041.06

WATER LEVEL SURVEY DATA (August, 1993)

Location id	Easting	Northing	Ground Elev.	TOC Elev.	GW from TOC	GW above MSL
MWD-01	540864.68	663846.28	4028.34	4030.66	9.7	4020.96
MWD-02	542460.08	658545.00	4021.37	4023.30	6.62	4016.68
MWD-03	547567.44	665970.87	4045.48	4047.41	5.83	4041.58
MWD-04	544323.08	661959.63	4030.19	4031.86	7.68	4024.18
MWD-05	544355.80	664707.96	4036.86	4039.34	7.19	4032.15
MWD-06	537661.05	659274.14	4027.98	4030.20	13.15	4017.05
MWP-01	547500.04	666007.62	4045.09	4047.51	N/A	N/A
MWP-02	544350.06	661861.42	4030.25	4032.11	7.86	4024.25
MWS-01	547227.86	664038.39	4038.99	4041.72	6.06	4035.66
MWS-03	544339.44	666310.26	4040.93	4042.66	N/A	N/A
MWS-04	544926.56	662213.66	4031.49	4034.46	9.36	4025.10
MWS-05	543989.31	662360.64	4031.32	4033.47	10.03	4023.44
MWS-06	539431.65	663611.00	4029.44	4031.52	12.65	4018.87
MWS-07	538199.17	662546.27	4028.22	4030.24	12.68	4017.56
MWS-08	539393.41	660347.18	4031.02	4033.15	16.03	4017.12
MWS-09	537626.78	655436.28	4018.42	4020.67	10.6	4010.07
MWS-10	539545.00	657713.58	4027.85	4030.00	15.32	4014.68
MWS-11	541772.11	660788.59	4025.17	4027.23	11.42	4015.81
MWS-12	547576.02	665999.05	4046.01	4048.31	8.07	4040.24
MWS-13	544352.88	661961.13	4030.05	4032.34	9.18	4023.16
MWS-14	544338.74	661960.52	4030.20	4032.43	9.97	4022.46
MWS-15	544342.86	664406.43	4034.86	4037.71	5.25	4032.46
MWS-16	537775.86	659637.61	4027.46	4029.46	12.75	4016.71
MW-01	548658.60	666311.53	4050.54	4053.42	10.82	4042.60
MW-02	544566.85	663814.83	4037.08	4039.78	5.92	4033.86
MW-03	544469.13	662878.19	4034.71	4037.38	9.95	4027.43
MW-04	545215.83	660699.42	4027.65	4030.30	6.95	4023.35
MW-05	544358.30	664830.97	4036.55	4039.30	5.94	4033.36
MW-06	544970.02	661445.18	4028.45	4031.21	6.76	4024.45
MW-07	544379.85	665147.61	4037.37	4039.88	6.63	4033.25
MW-08	544474.40	664520.54	4037.90	4040.50	6.63	4033.87
MW-09	546285.88	665312.37	4040.34	4042.59	8.63	4033.96
MW-10	546007.93	666135.76	4040.97	4043.39	8.56	4034.83
MW-11	543896.90	665207.00	4037.76	4039.71	9.91	4029.80
MW-12	543686.80	664672.20	4038.36	4040.25	10.73	4029.52
MW-13	543927.90	664216.10	4035.13	4036.49	7.45	4029.04
MW-14	543904.80	662841.70	4031.95	4034.13	9.3	4024.83
MW-15	544403.80	662252.20	4030.85	4032.70	8.63	4024.07
MW-16	537886.90	660473.00	4029.71	4031.84	14.9	4016.94
MW-17	537585.90	658079.30	4030.17	4032.17	15.42	4016.75
MW-18	538105.10	656338.20	4018.60	4019.42	9.48	4009.94
MW-21-01	542925.39	667762.04	4044.18	4046.59	8.28	4038.31

APPENDIX B

STATISTICAL RESULTS REPORTS

APPENDIX B-1

HOLLOMAN AFB BASE-WIDE BACKGROUND STUDY

DCN 93-269-069-26-06
RCN 269-069-26-50

BASE-WIDE BACKGROUND STUDY

SEWAGE LAGOONS AND LAKES INVESTIGATION
HOLLOMAN AIR FORCE BASE, NM

DRAFT FINAL

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December 1993

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GLOSSARY OF TERMS

Censored Data	A data set in which numerical measurement results below a specified concentration are replaced with a qualitative descriptor such as "not detected" or "less than." Censored data complicates statistical analyses and data interpretation because an important part of the information about measurement variability is lost or hidden from consideration.
F-Pseudosigma	A nonparametric measure of dispersion (i.e., measurement variability), analogous to the standard deviation.
Fourth-Spread Outlier Test	A statistical procedure to test extreme values as possible outliers. The test uses a multiple of (three times) the observed range of measurement values falling between the 25th and 75th percentiles (the interquartile range) of the data set to derive upper and lower bounds for "expected" measurement results. The bounds are set at the median plus and minus three times the interquartile range. Results falling outside these bounds are considered possible outliers.
Kolmogorov-Smirnov Test	A nonparametric statistical test used to determine if a data set has been drawn from a population represented by another data set. In this study the Kolmogorov-Smirnov test was used to determine if the results for background samples could be assumed to be from the same underlying population as the blanks.
Non-Parametric Upper Tolerance Limit	Upper tolerance limit calculated based on the highest observed concentration in a sample data set. Used when the sample data do not support the assumption of normality (i.e., when the sample results do not appear to be random samples from a normally distributed population).
Non-Parametric	Refers to that class of statistical methods which does not require prior knowledge or assumptions about the nature of the underlying distribution of the population of interest. Non-parametric methods generally require larger sample sizes to achieve the same level of certainty

as corresponding parametric methods. (See Parametric.)

Parametric — Refers to that class of statistical methods that are based on underlying assumptions about certain distributional characteristics of the populations of interest. Parametric methods are appropriate when the population is known or can be assumed to follow a normal (i.e., Guassian) distribution, or when it can be modeled by some other distribution (such as the lognormal) that allows the data to be transformed to a normal distribution. Parametric methods take advantage of the known or assumed distributional information to achieve greater certainty in conclusions with smaller numbers of samples than required for corresponding non-parametric methods. (See Non-Parametric.)

Parametric Upper Tolerance Limit — Upper tolerance limit calculated based on the mean and standard deviation of sample data that are known or assumed to have come from a parent population for which concentrations are normally distributed.

Population — A population is what is characterized by sample data. For example, "base-wide background" is (conceptually) the population of all possible measurement results for all possible samples that could be collected at all uncontaminated areas at Holloman AFB. "Site data," which is compared to background data, is considered to respresent the population that includes all possible measurement results for all possible samples from a particular area of interest. Because we can usually not look at every member of a population (indeed, the two examples here represent infinite populations), the *true* values for the population mean, standard deviation, 95th percentile, and other parameters cannot be determined. Statistical methods allow us to develop estimates of these parameters and have some understinging of the probable uncertainty in these estimates.

Robust — Relatively insensitive to distributional assumptions or other underlying assumptions.

Shapiro-Wilk *W* Test — A statistical test for determining if a data set has been drawn from an underlying normal distribution. It may also be used as a test for lognormality by applying the

test to logarithms of the data.

Transformation	Mathematical manipulation of results used to convert non-normally distributed data to normally-distributed data to enable the use of parametric statistical tests. Log transformation is commonly used for environmental data, which can often be modeled using a log-normal distribution. Log transformation involves substituting each measurement result with the natural logarithm of the result prior to perfoming the statistical test. After performing the test, results are back-transformed to their original scale by exponentiation.
Uncensored Data	A data set in which all measurement results are reported, without screening based on concentration. (See Censored Data)
Upper Tolerance Limit (UTL)	The upper boundary for an interval that has a defined probability of containing a specified proportion of a population of interest. Parametric upper tolerance limits used in this study were calculated at a 95% confidence level to contain 95% of the population. This is interpreted to mean that there is a 95% probablilty that fewer than 5% of future samples collected from background locations would exceed the calculated UTL (providing that the samples used to derive the UTL are representative of base-wide background). Conversely, if a sample result exceeds the UTL, (we can be 95% confident that) there is only approximately a 5% chance that the sample came from an uncontaminated area.

1.0 INTRODUCTION

Environmental investigations conducted at Holloman Air Force Base (AFB), New Mexico, often must evaluate whether metals concentrations in soil and groundwater exceed naturally occurring background concentrations in those media. This study was conducted to generate Base-wide background data for metals and establish background concentrations for metals in soil and groundwater that will be used for ongoing environmental investigations at the Base. For example, the data will help determine the presence or absence, or nature and extent of contamination at sites under investigation. This report presents the results of the background study and illustrates the potential uses and limitations of these data.

1.1 Project Background

Previous investigations at Holloman AFB have attempted to compare data from waste sites to background concentrations. A background study of soil and unfiltered groundwater was conducted for the *Remedial Investigation: Investigation, Study and Recommendation for 29 Waste Sites* (Radian, 1993). For that study, data for soils were sufficient to determine background concentrations for most metals; however, because of the large number of groundwater samples reported as not detected, it was not possible to conduct meaningful statistical analyses. The effectiveness of the earlier investigations was limited by the standard laboratory practice of censoring data at analytical detection limits. The practice of censoring data at a detection limit was especially troublesome because high levels of total dissolved solids (TDS) in groundwater at Holloman AFB caused detection limits to be elevated; thus many sample results were reported as "not detected" (ND). Frequent ND results limit quantitative characterizations of, and comparisons between, background and sites under investigation.

1.2 Objective

The objectives of this study were to:

- Collect additional samples to represent background metals concentrations in soil and groundwater;
- Develop summary statistics that represent background;
- Present guidance for the use of these summary statistics; and,
- Identify and evaluate potential analytical method limitations to guide future chemical analyses of soil and groundwater samples.

1.3 Scope of Study

To meet the objectives of this study, the following activities were scoped and implemented:

- Sampling of the Holloman Land Gypsum-Yesum soil complex and groundwater in areas unaffected by historical waste management practices;
- An evaluation of the potential for interference by cations and TDS in analytical methods requiring inductively coupled plasma atomic emission spectroscopy (ICPES) and atomic absorption spectroscopy (AA);
- Statistical analysis of measurements of metals in soil and groundwater samples to develop summary statistics to represent background concentrations; and,
- Develop an approach for the use of these summary statistics in future investigations at Holloman AFB.

Additional detail for the scope of sampling and chemical analysis activities is described below. Additional detail for the scope and technical approach to be used for activities

related to a statistical characterization of background is provided in Section 3, Technical Approach and Section 4, Use of Background Data in Future Investigations.

To characterize background soil conditions, 10 sampling locations were selected from within the Holloman Land Gypsum-Yesum soil complex. This complex is representative of the surface soil throughout the Base. To minimize the risk of sampling a contaminated area, each location was carefully selected and situated in an area of the Base unaffected by historical waste management practices (Figure 1-1). In February 1993, shallow subsurface soil samples were collected at each location with a stainless steel hand auger. Soil samples were analyzed using EPA Method SW6010 for 29 metals, SW7041 for antimony, SW7471 for mercury, and SW7841 for thallium.

Four new monitor wells were installed on the Base in areas upgradient of potential contamination and areas unaffected by historical waste management practices. Samples were collected from the new monitor wells, along with 10 existing background monitor wells, in March 1993. Each background monitor well was sampled for total metals using unfiltered groundwater and dissolved metals using groundwater filtered through a 0.45-micron filter. The background monitor wells are listed in Table 1-1 and shown in Figure 1-2. Groundwater samples were analyzed by EPA Method SW6010 for 13 metals, SW7060 for arsenic, SW7421 for lead, SW7740 for selenium, and SW7470 for mercury. Attachment 1 contains records of sampling activities, lithologic logs for borings of new monitor wells, well completion diagrams, and well development records.

1.4 Contents of Report

The remainder of this report contains information regarding the evaluation of analytical chemistry methods for measuring metals concentrations in soil and groundwater, methods used to conduct statistical tests, statistical results, alternative methods for evaluating background conditions, and overall conclusions.

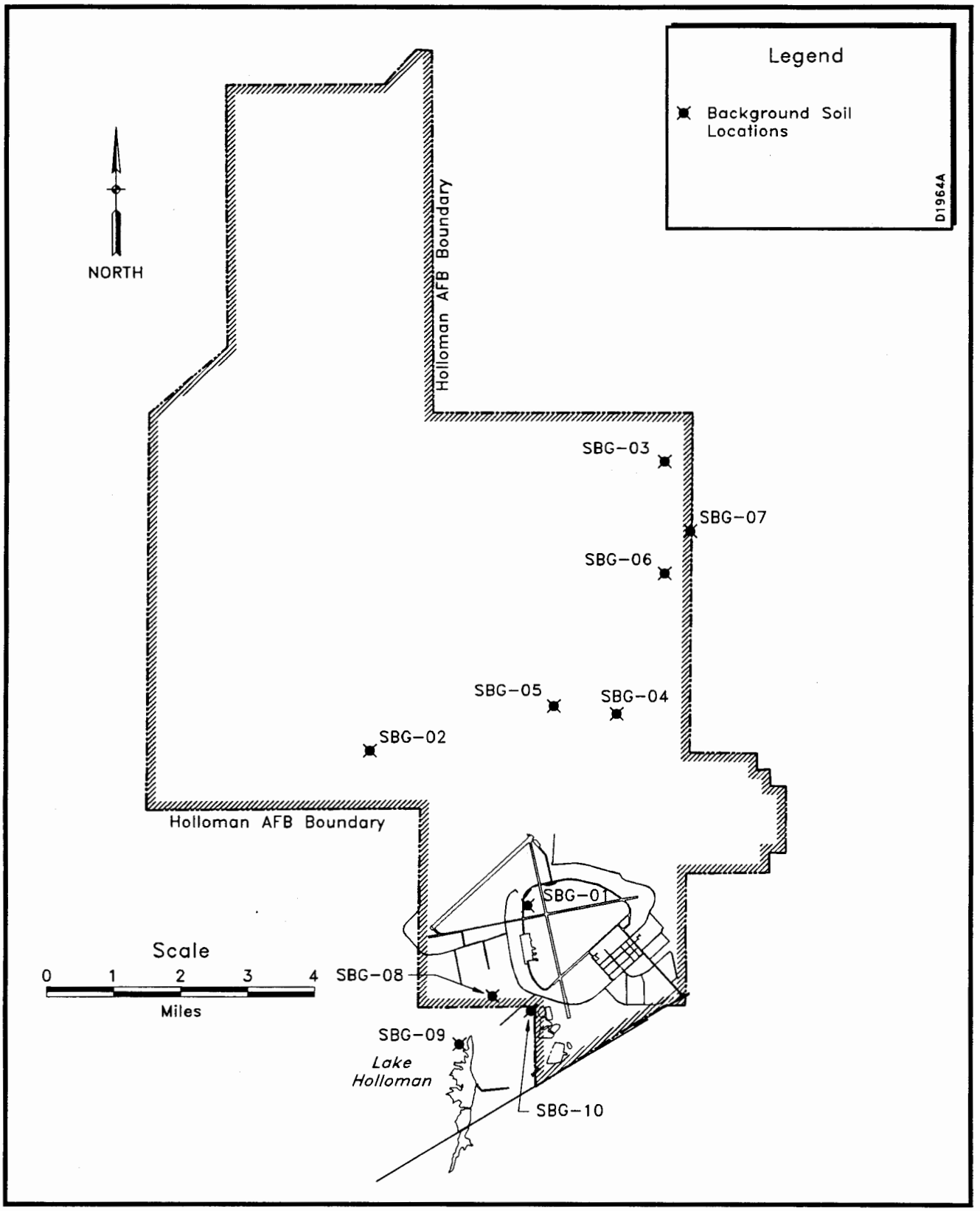

Figure 1-1. Location of Background Soil Samples

Table 1-1

Existing and New Background Monitor Well Locations

Well ID	Date of Establishment
MW-04-01	September, 1991
MW-09-01	August, 1991
MW-21-01	August, 1991
MW-22-01	August, 1991
MW-23-01	September, 1991
MW-26-01	September, 1991
MW-29-01	September, 1991
MW-30&33-01	August,1991
MW-36-01	September, 1991
MW-39-01	September, 1991
MW-BG-01	March, 1993
MW-BG-02	February, 1993
MW-BG-03	March, 1993
MW-BG-04	March, 1993

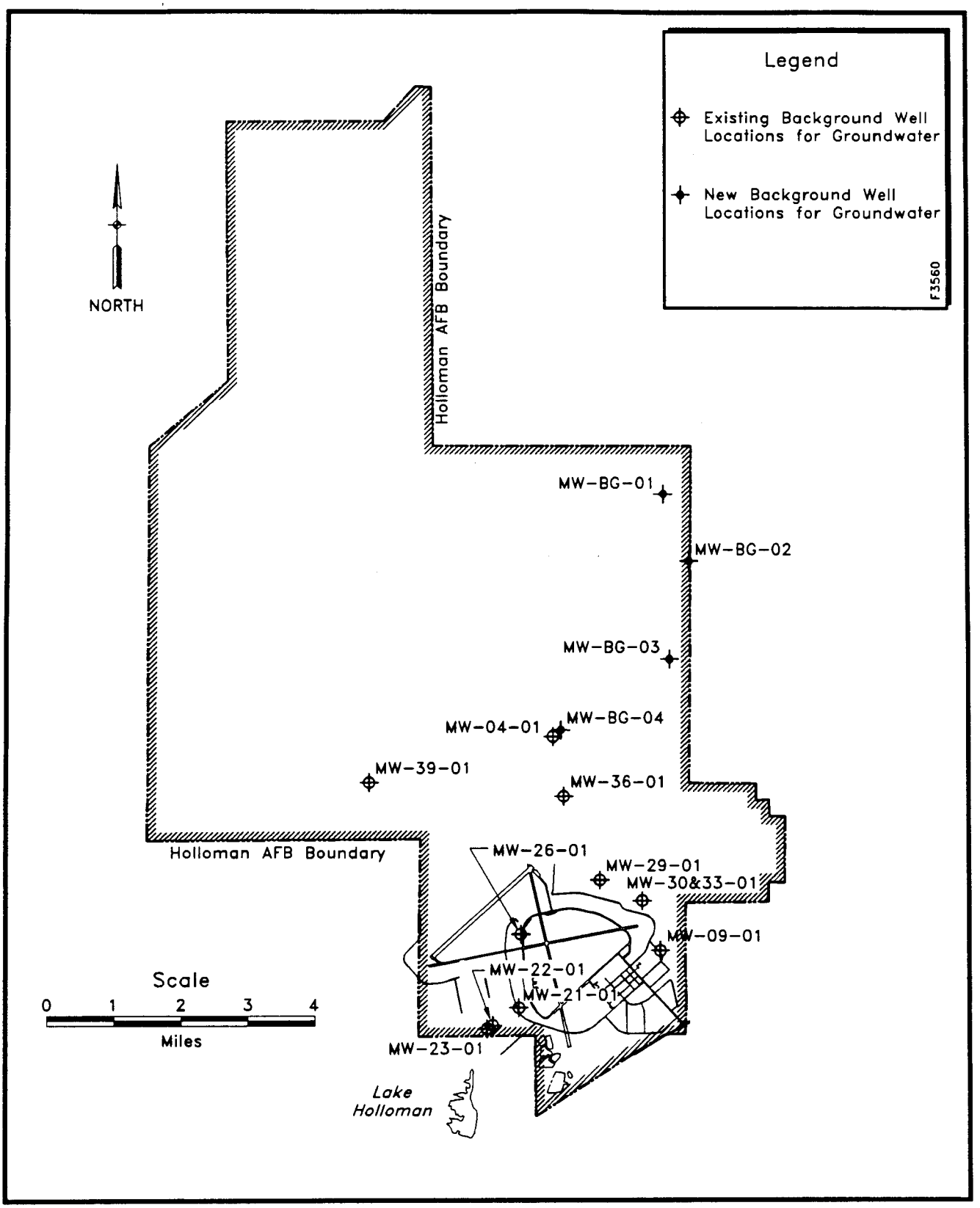

Figure 1-2. Location of Background Monitor Wells

2.0 SUMMARY OF METHODS AND RESULTS

This section summarizes the results of the analytical methods evaluation and the methods and results of the statistical characterization of background. Details for the results of these activities are provided in Sections 3 and 4.

The potential for interference from major cations and TDS in analyses by AA and ICPES methods was evaluated to determine whether future investigations at Holloman AFB should restrict their use of these analytical methods. Elements that cause interferences in ICPES will also interfere with AA analysis; however, AA detection limits are significantly lower than those of ICPES. Samples can therefore be analyzed by AA at a fairly high dilution to minimize the effects of the interfering element while maintaining a low detection limit in samples with high levels of calcium, iron, or TDS. AA analysis is a good choice when low detection limits are required for low-level analytes such as lead, arsenic, selenium, and thallium.

The approach used for the statistical characterization of background is summarized as follows:

- Review raw data for representativeness and to identify outliers;
- Determine if measurements for environmental background samples were different from measurements for laboratory method blanks (i.e., determine if naturally occurring concentrations can be resolved using standard sampling and analytical methods);
- Choose the data set most appropriate for calculating summary statistics and upper tolerance limits (UTLs) (i.e., background data, method blank data, or a combination);
- Determine if the appropriate data set was normally distributed (which determines which statistical method is appropriate for calculating tolerance limits); and
- Calculate summary statistics, warning limits, and tolerance limits using the appropriate statistical method.

Tables 2-1, 2-2, and 2-3 present a summary of the results for metals in soil, dissolved metals in groundwater, and total metals in groundwater, respectively. Each table presents the following statistics: minimum, maximum, and mean concentration; the standard deviation; median concentration, and pseudosigma (an estimate of the variability for nonparametric methods). All statistics are presented to allow future investigations the flexibility to choose whichever statistic is most appropriate for the comparisons planned for that project. Calculated warning limits and UTLs are also presented for those instances in which decisions must be made on the basis of a comparison of individual sample results to background.

A discussion of the applicability of individual comparisons and the more powerful tests of central tendency (e.g., means comparisons) is provided in Section 4.0. This discussion is provided to assist future users of this background data with advantages and disadvantages of two of the more popular statistical comparison methodologies. In general, Radian recommends that wherever feasible, both comparisons of individuals and means be used to determine if metals concentrations at a site are greater than those expected in background.

Table 2-1

Summary Statistics for Soil

Analayte	Method	Summary Statistics (units = mg/Kg)						Warning Limit	Upper Tolerance Limit	Basis
		Minimum	Maximum	Mean	Standard Deviation	Median	Pseudosigma			
Aluminum	SW6010	260.0000	6200.0000	3106.6667	1866.6548	2800.0000	.	4855.6696	8764.4972	Combine
Antimony	SW6010	-9.2980	7.8410	-0.6770	3.9327	-0.2114	.	2.6865	7.2844	Field
Antimony	SW7041	-0.0490	0.1400	0.0674	0.0613	0.0640	.	0.1249	0.2533	Combine
Arsenic	SW6010	-9.2120	8.2380	0.1165	3.3548	0.1520	.	2.9842	6.8833	Field
Barium	SW6010	14.0000	65.0000	35.7778	16.0295	30.0000	.	50.7970	84.3632	Field
Beryllium	SW6010	-0.0410	0.4000	0.1323	0.1152	0.1100	0.0371	0.1500	0.4000	Field
Boron	SW6010	5.2000	11.0000	8.8444	2.0348	8.5000	.	10.7510	15.0118	Combine
Cadmium	SW6010	-0.3762	0.5600	0.1832	0.0929	0.0036	.	0.2538	1.0359	Field
Calcium	SW6010	160000.000	250000.000	223333.333	25495.0976	230000.000	7412.8984	240000.000	250000.000	Field
Chromium	SW6010	0.3600	4.8000	2.3400	1.4071	2.2000	.	3.6584	6.6049	Field
Cobalt	SW6010	0.2600	1.7000	0.9156	0.5179	0.7600	.	1.4008	2.4852	Field
Copper	SW6010	1.8000	3.8000	2.9222	0.6340	3.1000	.	3.5163	4.8438	Field
Iron	SW6010	180.0000	4500.0000	2275.5556	1348.1015	2000.0000	.	3538.6887	6361.6513	Field
Lead	SW6010	-22.0000	-9.8000	-14.0889	3.8822	-13.0000	.	-10.4514	-2.3221	Field
Lithium	SW6010	3.6000	15.0000	7.7778	3.3063	7.2000	.	10.8757	17.7993	Field
Magnesium	SW6010	1700.0000	12000.0000	5411.1111	3050.1821	4500.0000	.	8269.0458	14656.2132	Field
Manganese	SW6010	7.5000	120.0000	46.1667	33.2378	37.0000	.	77.3095	146.9104	Field
Mercury	SW7471	-0.0640	-0.0080	-0.0270	0.0123	-0.0250	.	-0.0164	-0.0006	Combine
Molybdenum	SW6010	0.2500	4.2000	1.7289	1.2197	1.7000	.	2.8717	5.4258	Field

Table 2-1

(Continued)

Analayte	Method	Summary Statistics (units = mg/Kg)						Warning Limit	Upper Tolerance Limit	Basis
		Minimum	Maximum	Mean	Standard Deviation	Median	Pseudosigma			
Nickel	SW6010	1.2000	4.7000	2.3889	1.0635	2.4000	.	3.3854	5.6125	Field
Potassium	SW6010	91.0000	1800.0000	917.8889	522.4343	800.0000	.	1407.3951	2501.3873	Field
Selenium	SW6010	-12.0000	12.9100	-0.4608	5.4684	-0.9654	.	4.2112	10.5310	Combine
Silicon	SW6010	180.0000	400.0000	276.6667	68.3740	280.0000	.	340.7312	483.9082	Field
Silver	SW6010	-1.5130	1.1560	-0.2009	0.4628	-0.1800	.	0.1948	0.7342	Combine
Sodium	SW6010	590.0000	5000.0000	1550.0000	1564.5207	900.0000	363.2320	3400.0000	5000.0000	Field
Strontium	SW6010	800.0000	2600.0000	1600.0000	487.3397	1600.0000	.	2056.6236	3077.1267	Field
Thallium	SW6010	-9.9230	12.3300	0.9036	5.1710	0.7436	.	5.3226	11.3153	Combine
Thallium	SW7841	-0.0620	0.1600	0.0425	0.0030	-0.0098	.	0.0670	0.4977	Field
Tin	SW6010	-3.7470	4.0780	-0.0122	1.5741	-0.0173	.	1.3340	3.1743	Combine
Titanium	SW6010	0.6000	140.0000	73.8444	40.7666	75.0000	.	112.0416	197.4081	Field
Uranium	SW6010	-15.0000	12.9200	-1.0999	6.6739	-1.2175	.	4.6080	12.4107	Combine
Vanadium	SW6010	1.3000	11.0000	6.6333	2.9120	6.7000	.	9.3618	15.4597	Field
Zinc	SW6010	0.3200	15.0000	6.7244	4.4612	5.6000	.	10.9045	20.2464	Field

Field = statistics based on field samples only.
Combine = statistics based on combination field and blank data.

Table 2-2

Summary Statistics for Dissolved Metals in Groundwater

Analyte	Method	Summary Statistics (units = mg/L)						Warning Limit	Upper Tolerance Limit	Basis
		Minimum	Maximum	Mean	Standard Deviation	Median	Pseudosigma			
Antimony	SW6010	-0.0850	0.1048	0.0057	0.0410	0.0036	.	0.0407	0.0871	Combine
Arsenic	SW7060	-0.0600	0.0150	-0.0116	0.0180	-0.0087	.	0.0046	0.0354	Field
Barium	SW6010	0.0089	0.0720	0.0243	0.0002	0.0190	.	0.0344	0.0852	Field
Beryllium	SW6010	-0.0007	0.0013	0.0001	0.0004	0.0000	0.0003	0.0006	0.0013	Combine
Cadmium	SW6010	0.0015	0.0062	0.0036	0.0015	0.0035	.	0.0049	0.0074	Combine
Chromium	SW6010	-0.0070	0.0070	0.0011	0.0031	0.0008	.	0.0037	0.0072	Combine
Cobalt	SW6010	-0.0083	0.0109	0.0002	0.0037	0.0007	0.0025	0.0039	0.0109	Blank
Copper	SW6010	-0.0125	0.0106	-0.0005	0.0049	0.0002	.	0.0037	0.0093	Combine
Lead	SW7421	-0.0180	0.0035	0.0013	0.0000	-0.0006	.	0.0019	0.0056	Blank
Mercury	SW7470	-0.00013	0.00005	-0.00006	0.00004	-0.00006	.	-0.00002	0.00003	Combine
Nickel	SW6010	-0.0191	0.0165	-0.0001	0.0073	0.0003	.	0.0061	0.0145	Combine
Selenium	SW7740	-0.0840	0.0470	-0.0092	0.0361	-0.0047	.	0.0233	0.0853	Field
Silver	SW6010	-0.0080	0.0092	0.0001	0.0033	-0.0001	.	0.0029	0.0067	Combine
Thallium	SW6010	-0.1012	0.1177	0.0095	0.0410	0.0077	.	0.0444	0.0904	Combine
Thallium	SW7841	-0.0013	0.0050	0.0009	0.0016	0.0004	.	0.0024	0.0053	Field
Tin	SW6010	-0.0403	0.0476	0.0008	0.0155	0.0000	.	0.0140	0.0314	Combine
Vanadium	SW6010	0.0062	0.1500	0.0442	0.0011	0.0325	.	0.0664	0.2224	Field
Zinc	SW6010	0.0110	0.0280	0.0187	0.0042	0.0190	.	0.0225	0.0297	Field

Table 2-3

Summary Statistics for Total Metals in Groundwater

Analyte	Method	Summary Statistics (units = mg/L)						Warning Limit	Upper Tolerance Limit	Basis
		Minimum	Maximum	Mean	Standard Deviation	Median	Pseudosigma			
Antimony	SW6010	-0.0729	0.1048	0.0084	0.0410	0.0024	.	0.0433	0.0896	Combine
Arsenic	SW7060	-0.0770	0.0400	-0.0054	0.0297	-0.0060	.	0.0213	0.0723	Field
Barium	SW6010	0.0290	0.4800	0.1449	0.0170	0.1100	.	0.2237	0.9293	Field
Beryllium	SW6010	-0.0002	0.0034	0.0010	0.0011	0.0007	.	0.0019	0.0038	Field
Cadmium	SW6010	0.0010	0.0062	0.0045	0.0014	0.0051	.	0.0058	0.0083	Field
Chromium	SW6010	0.0039	0.0960	0.0264	0.0009	0.0160	.	0.0414	0.2340	Field
Cobalt	SW6010	-0.0083	0.0200	0.0014	0.0050	0.0011	0.0031	0.0062	0.0200	Combine
Copper	SW6010	0.0040	0.0300	0.0145	0.0092	0.0105	.	0.0228	0.0386	Field
Lead	SW7421	-0.0100	0.0120	0.0012	0.0070	0.0000	.	0.0075	0.0199	Field
Mercury	W7470	-0.00013	0.00005	-0.00006	0.00004	-0.00006	.	-0.00002	0.00003	Combine
Nickel	SW6010	-0.0079	0.0400	0.0094	0.0131	0.0062	.	0.0212	0.0436	Combine
Selenium	SW7740	-0.0290	0.0600	0.0089	0.0257	0.0076	.	0.0323	0.0793	Field
Silver	SW6010	-0.0080	0.0100	0.0003	0.0035	0.0002	.	0.0033	0.0073	Combine
Thallium	SW6010	-0.1012	0.1177	0.0105	0.0425	0.0073	.	0.0467	0.0943	Combine
Thallium	SW7841	-0.0016	0.0036	0.0008	0.0016	0.0008	.	0.0022	0.0050	Field
in	SW6010	-0.0403	0.0476	0.0001	0.0155	-0.0013	.	0.0133	0.0307	Combine
Vanadium	SW6010	0.0270	0.2000	0.0897	0.0042	0.0565	.	0.1341	0.4344	Field
Zinc	SW6010	0.0120	0.1600	0.0458	0.0014	0.0310	.	0.0697	0.2534	Field

Field = statistics based on field samples only.
Combine = statistics based on combination field and blank data.

3.0 TECHNICAL APPROACH

As discussed above, the primary objective of the background study was to develop estimates of background concentrations of metals in background soil and groundwater. These estimates would then be used for comparison with data collected in ongoing investigations to help distinguish between naturally occurring concentrations of metals and elevated levels that might be attributable to contamination. Analytical data from soil and groundwater samples collected from background locations around Holloman AFB were used in conjunction with results for laboratory blanks analyzed during the same time period as the Holloman AFB investigations to develop estimates of background metals concentrations. This section presents an overview of the study design and describes the data assessment and interpretation process.

3.1 Study Design

The fundamental idea in a background study is to characterize the range of naturally occurring concentrations of a constituent of interest. This study was designed to characterize background in terms of estimates of the UTLs for background metals concentrations. These estimates represent upper bounds for concentrations that might be expected in samples collected from uncontaminated areas of Holloman AFB. In addition to these UTLs, the measurement data were also used to develop "warning limits." These are concentrations that are less than the upper bounds represented by the UTLs, but near enough that they suggest the need for additional data to classify an area as contaminated or uncontaminated.

For estimates of background concentrations to be useful in helping to distinguish between contaminated and uncontaminated areas on the basis of future sample data, it is important that the background estimates are based on results that are statistically representative of actual background concentrations. This means primarily that the data on which the estimates are based should fairly depict the range of actual background

concentrations. For example, they should include samples from different soil series and different groundwater aquifers, if appropriate. Naturally occurring concentrations may also exhibit seasonal fluctuations. Representativeness also means that the data should adequately represent those sources of uncontrollable variation that give rise to measurement variability. For example, a certain amount of variability would be expected between results for multiple analyses of the same sample by different laboratories or even by the same laboratory at different times. Finally, representativeness means that the data used to develop estimates should not include extraneous sources of variation or inflate natural variability by combining results from statistically divergent populations.

In practice, it is often not feasible to include all possible sources of variation in a sampling design. In these cases, it is important to understand the limitations in the resulting estimates based on the potential sources of variation that may not be represented adequately. The technical approach used for this study was designed to consider and include the following sources of variability:

- Spatial variability in the soil complex chosen for this study;
- Spatial variability in groundwater concentrations;
- Sampling variability attributable to standard sampling methods; and,
- Short-term analytical variability.

The study design did not address variation among different groundwater aquifers or temporal (i.e., seasonal) variability in background concentrations. Therefore, confirming background samples that include these sources of variability (where appropriate) should be used to confirm the estimates developed in this study when these estimates to evaluate future sample results for indications of contamination.

A key element of the Holloman AFB background study design was the use of blank samples to augment background sample data. For some elements, measured

concentrations in background samples essentially reflect "analytical background" or measurement system "noise." In other words, the true concentrations of these elements are outside of (below) the working measurement range of the analytical methods used. Concentrations for these elements in background samples are therefore comparable to concentrations for method blank samples analyzed as part of the analytical quality control effort. For these elements, blank data are useful to supplement background sample data, giving a larger overall data set that would be expected to reduce overall uncertainty in the background estimates. For other elements, naturally occurring metals concentrations are higher than the analytical background and blank data cannot be used to supplement background sample data. Since blank data were available for all elements as a normal part of the analytical process, the data assessment process was structured to specifically address the suitability of using results for blank samples to augment the background sample data for each element and sample matrix.

Another important consideration in the study design was the specification of an uncensored data reporting convention for sample and blank results. Often, numerical measurement results below a specified concentration are reported with a qualitative descriptor such as "not detected" or "less than" rather than as a numerical value. This practice, called censoring, complicates statistical analyses and data interpretation because an important part of the information about measurement variability is unavailable for consideration. This introduces another source of uncertainty in estimates derived from censored data sets. Uncensored data were used for this study to preserve all available information in the data about the natural variability of measurements of background concentrations.

3.2 Data Analysis and Interpretation

As indicated above, the overall goal of the data analysis and interpretation process was to characterize background metals concentrations in terms of estimates of the upper bounds for concentrations that might be expected in samples collected from

uncontaminated areas of Holloman AFB. This was done by using the measurement results to calculate UTLs and warning limits for background metals concentrations. Descriptive statistics pertaining to the background sample data were also developed as part of the data analysis process. In general, this process included the following steps:

- Review raw data for representativeness and to identify outliers;
- Determine if data for blanks can be used to augment background sample data;
- Choose the data set most appropriate for calculating summary statistics and UTLs (i.e., background data, method blank data, or a combination);
- Determine if the selected data set can be modeled using the normal (Guassian) distribution;
- Select appropriate statistical methods (parametric or nonparametric) based on distributional information; and
- Calculate summary statistics, warning limits, and tolerance limits.

This process is described in more detail in the remainder of this section.

3.2.1 Outlier Testing and Graphical Data Review

The first steps in the data analysis were to conduct outlier tests to identify anomalous measurement results and to review histograms of the raw measurement data. The fourth-spread outlier test (Hoaglin, Mosteller, and Tukey; 1983) was used to determine if any individual results were statistically different from the rest of the sample population for both background and blanks. Field and laboratory log books were reviewed for each potential outlier to determine whether causes could be identified that would support discarding the outlier from the original data set. Histograms were reviewed throughout the outlier test process to confirm that the measurements used in subsequent analyses were

reasonable representations of the background and blank populations. Attachments 2 and 3 present the raw data and histograms used at this stage, respectively.

3.2.2 Comparison of Background Results with Blank Results

The next step in the data analysis process was to compare background data with blank data to determine if the data sets could be combined and used together in calculating tolerance limits. As a general rule, the more data available for statistical analyses, the less uncertainty there is in resulting estimates. For this reason, it was desirable in this study to combine the two different sets of data where appropriate. As mentioned previously, this was considered appropriate when the two sets of data showed comparable results, indicating that measured concentrations in background samples essentially reflected "analytical background." A statistical test known as the Kolmogorov-Smirnov test (SAS, 1989) was used, together with the graphical data review described above, to assess the comparability of blank and background results for each of the elements of interest. Tables 3-1, 3-2, and 3-3 present results of the Kolmogorov-Smirnov test for metals in soil, dissolved metals in groundwater, and total metals in groundwater, respectively. Where background measurements were not statistically different from blank data, measurements were combined to create a larger data set. Where background measurements were statistically different, only the background data set was used in further analyses and calculations.

3.2.3 Normality Testing and Calculation of Summary Statistics

After determining whether or not to combine background sample data with blank data, the next step in the statistical analysis was to evaluate whichever was chosen as the most appropriate data set to see if the data appeared to be normally distributed. The assumption of normality is a fundamental tenet of statistical tests involving parametric methods. Therefore, the extent to which the data supported this assumption determined the direction of subsequent analyses. A statistical test known as the Shapiro-Wilk W test (Shapiro and Wilk, 1965) was used to test the results for normality. Tables 3-4, 3-5, and 3-6

Table 3-1

Kolmogorov-Smirnov (K-S) Test for Soil

Method	Analyte	Number of Background Results	Number of Method Blank Results	K-S test p-value	Significant	Comment
SW6010	Aluminum	10	51	0.0001	S	
SW6010	Antimony	10	53	0.0407	S	Combine
SW7041	Antimony	10	2	0.7990	NS	Field
SW6010	Arsenic	10	51	0.0093	S	Combine
SW6010	Barium	10	51	0.0001	S	
SW6010	Beryllium	10	52	0.0001	S	
SW6010	Boron	10	50	0.0001	S	
SW6010	Cadmium	10	49	0.9601	NS	
SW6010	Calcium	10	60	0.0001	S	
SW6010	Chromium	10	46	0.0001	S	
SW6010	Cobalt	10	50	0.0022	S	
SW6010	Copper	10	51	0.0001	S	
SW6010	Iron	10	49	0.0001	S	
SW6010	Lead	10	50	0.0001	S	Field
SW6010	Lithium	10	50	0.0001	S	
SW6010	Magnesium	10	51	0.0001	S	
SW6010	Manganese	10	42	0.0001	S	
SW7471	Mercury	10	28	0.0002	S	Combine
SW6010	Molybdenum	10	50	0.0001	S	
SW6010	Nickel	10	49	0.0001	S	
SW6010	Potassium	10	49	0.0001	S	
SW6010	Selenium	10	53	0.8689	NS	
SW6010	Silicon	10	50	0.0001	S	
SW6010	Silver	10	50	0.4413	NS	
SW6010	Sodium	10	51	0.0001	S	
SW6010	Strontium	10	48	0.0001	S	
SW6010	Thallium	10	52	0.7631	NS	

Table 3-1

(Continued)

Method	Analyte	Number of Background Results	Number of Method Blank Results	K-S test p-value	Significant	Comment
SW7841	Thallium	10	4	0.1216	NS	Field
SW6010	Tin	10	49	0.9138	NS	
SW6010	Titanium	10	43	0.0001	S	
SW6010	Uranium	10	49	0.0001	S	Combined
SW6010	Vanadium	10	50	0.0001	S	
SW6010	Zinc	10	47	0.0001	S	

NOTE: Significance level equals 0.05

S = Significant

NS = Not significant

Blank = Blank results only

Table 3-2

Kolmogorov-Smirnov (K-S) Test for Dissolved Metals in Groundwater

Method	Analyte	Number of Background Results	Number of Method Blank Results	K-S Test p-value	Significance	Comment
SW6010	Antimony	14	60	0.0094	S	Combine
SW7060	Arsenic	14	30	0.0001	S	
SW6010	Barium	14	60	0.0001	S	
SW6010	Beryllium	14	59	0.7441	NS	
SW6010	Cadmium	14	59	0.0001	S	
SW6010	Chromium	14	59	0.0001	S	Combine
SW6010	Cobalt	14	60	0.1022	NS	
SW6010	Copper	14	55	0.8544	NS	
SW7421	Lead	14	26	0.0014	S	Blank
SW7470	Mercury	14	36	0.6172	NS	
SW6010	Nickel	14	56	0.0457	S	Combine
SW7740	Selenium	14	29	0.0086	S	
SW6010	Silver	14	53	0.0002	S	Combine
SW6010	Thallium	14	61	0.0105	S	Combine
SW7841	Thallium	14	16	0.5358	NS	Field
SW6010	Tin	14	61	0.2192	NS	
SW6010	Vanadium	14	61	0.0001	S	
SW6010	Zinc	14	56	0.0001	S	

NOTE: Significance level equals 0.05

S = Significant

NS = Not significant

Blank = Blank results only

Table 3-3

Kolmogorov-Smirnov (K-S) Test for Total Metals in Groundwater

Method	Analyte	Number of Background Results	Number of Method Blank Results	K-S Test p-value	Significance	Comment
SW6010	Antimony	14	60	0.0110	S	Combine
SW7060	Arsenic	14	30	0.0039	S	
SW6010	Barium	14	60	0.0001	S	
SW6010	Beryllium	14	59	0.0126	S	
SW6010	Cadmium	14	59	0.0001	S	
SW6010	Chromium	14	59	0.0001	S	
SW6010	Cobalt	14	60	0.0577	NS	
SW6010	Copper	14	55	0.0001	S	
SW7421	Lead	14	26	0.4474	NS	Field
SW7470	Mercury	14	36	0.6597	NS	
SW6010	Nickel	14	56	0.0110	S	Combine
SW7740	Selenium	14	29	0.0086	S	
SW6010	Silver	14	53	0.0001	S	Combine
SW6010	Thallium	14	61	0.0291	S	Combine
SW7841	Thallium	14	16	0.0904	NS	Field
SW6010	Tin	14	61	0.3199	NS	
SW6010	Vanadium	14	61	0.0001	S	
SW6010	Zinc	14	56	0.0001	S	

NOTE: Significance level equals 0.05

S = Significant

NS = Not significant

Blank = Blank results only

Table 3-4

Test for Normality and Univariate Statistics, Soil

Analyte	Method	Number of Results	S-W test p-value	Distribution Type	Minimum Concentration (mg/kg)	Maximum Concentration (mg/kg)	Mean Concentration (mg/kg)	Standard Deviation (mg/kg)	Median Concentration (mg/kg)	F-pseudosigma (mg/kg)
Aluminum	SW6010	10	0.0003	NP	260.00	21000.0	4896.0	5925.7	2900.0	2446.3
Antimony	SW6010	53	0.4121	N	-9.2980	7.8410	-0.8767	4.0036	-0.3326	.
Antimony	SW7041	10	0.5084	N	-0.0490	0.1400	0.0634	0.0592	0.0560	.
Arsenic	SW6010	61	0.0000	NP	-23.0000	8.2380	-0.2625	4.4528	0.1142	2.9718
Barium	SW6010	10	0.0015	NP	14.0000	150.00	47.2000	39.1544	33.0000	21.4974
Beryllium	SW6010	10	0.0007	NP	-0.0410	0.8700	0.2061	0.2573	0.1150	0.0371
Boron	SW6010	10	0.5347	N	5.2000	15.0000	9.4600	2.7330	9.2500	.
Cadmium	SW6010	59	0.0800	N	-0.3762	0.5600	0.0186	0.1969	0.0088	.
Calcium	SW6010	10	0.0003	NP	52000.0	250000.	206200.	59273.0	230000.	7412.9
Chromium	SW6010	10	0.0002	NP	0.3600	16.0000	3.7060	4.5188	2.3000	1.9274
Cobalt	SW6010	10	0.0001	NP	0.2600	6.4000	1.4640	1.8017	0.9800	0.6672
Copper	SW6010	10	0.0000	NP	1.8000	12.0000	3.8300	2.9322	3.1500	0.6672
Iron	SW6010	10	0.0002	NP	180.00	16000.0	3648.0	4522.3	2150.0	1779.1
Lead	SW6010	50	0.0966	N	-4.4150	8.8600	1.3899	2.9904	0.9169	.
Lithium	SW6010	10	0.0086	NP	3.6000	25.0000	9.5000	6.2752	7.6500	2.9652
Magnesium	SW6010	10	0.1213	N	1700.0	13000.0	6170.0	3745.5	4750.0	.
Manganese	SW6010	10	0.0001	NP	7.5000	400.00	81.5500	116.20	40.5000	30.3929
Mercury	SW7471	38	0.0648	N	-0.0640	-0.0080	-0.0271	0.0121	-0.0250	.
Molybdenum	SW6010	10	0.7544	N	0.2500	4.2000	1.8760	1.2405	1.8000	.
Nickel	SW6010	10	0.0001	NP	1.2000	14.0000	3.5500	3.8062	2.4500	1.1119

Table 3-4

(Continued)

Analyte	Method	Number of Results	S-W test p-value	Distribution Type	Minimum Concentration (mg/kg)	Maximum Concentration (mg/kg)	Mean Concentration (mg/kg)	Standard Deviation (mg/kg)	Median Concentration (mg/kg)	F-pseudosigma (mg/kg)
Potassium	SW6010	10	0.0007	NP	91.0000	5200.0	1346.1	1440.9	900.0	704.2
Selenium	SW6010	63	0.2169	N	-12.0000	12.9100	-0.5043	5.4351	-1.0000	.
Silicon	SW6010	10	0.7180	N	180.00	470.00	296.00	88.8444	285.00	.
Silver	SW6010	60	0.0540	N	-1.5130	1.1560	-0.1792	0.4886	-0.1694	.
Sodium	SW6010	10	0.0007	NP	240.0	5000.0	1419.0	1532.1	860.0	378.1
Strontium	SW6010	10	0.5343	N	220.00	2600.0	1462.0	633.68	1500.0	.
Thallium	SW6010	62	0.4640	N	-9.9230	12.3300	0.8390	5.1536	0.7168	.
Thallium	SW7841	14	0.0099	NP	-0.0630	0.1600	-0.0043	0.0584	-0.0199	0.0378
Tin	SW6010	59	0.6740	N	-3.7470	4.0780	-0.0730	1.6288	-0.0175	.
Titanium	SW6010	10	0.0034	NP	0.6000	350.00	101.46	95.412	77.000	48.1838
Uranium	SW6010	59	0.6630	N	-22.0000	12.9200	-1.4542	7.1538	-1.4350	.
Vanadium	SW6010	10	0.0047	NP	1.3000	26.0000	8.5700	6.7115	6.8000	3.5582
Zinc	SW6010	10	0.0002	NP	0.3200	50.0000	11.0520	14.3167	5.6500	5.1149

S-W = Shapiro-Wilk test
N = Normal distribution
NP = Nonparametric

Table 3-5

Test for Normality and Univariate Statistics, Dissolved Metals in Groundwater

Analyte	Method	Number of Results	S-W Test p-value	Distribution Type	Minimum Concentration (mg/L)	Maximum Concentration (mg/L)	Mean Concentration (mg/L)	Standard Deviation (mg/L)	Median Concentration (mg/L)	F-pseudosigma (mg/L)
Antimony	SW6010	60	0.4994	N	-0.0729	0.1048	0.0104	0.0415	0.0093	.
Arsenic	SW7060	14	0.0804	N	-0.0600	0.0150	-0.0116	0.0180	-0.0087	.
Barium	SW6010	14	0.0018	NP	0.0089	0.0720	0.0246	0.0159	0.0190	0.0119
Beryllium	SW6010	73	0.0090	NP	-0.0007	0.0013	0.0001	0.0004	0.0000	0.0003
Cadmium	SW6010	14	0.5781	N	0.0015	0.0062	0.0036	0.0015	0.0035	.
Chromium	SW6010	14	0.0000	NP	-0.0017	0.0290	0.0058	0.0071	0.0046	0.0029
Cobalt	SW6010	74	0.0440	NP	-0.0083	0.0109	0.0002	0.0037	0.0007	0.0025
Copper	SW6010	69	0.4931	N	-0.0125	0.0106	-0.0005	0.0049	0.0002	.
Lead	SW7421	26	0.5569	N	-0.0031	0.0021	-0.0004	0.0014	0.0000	.
Mercury	SW7470	50	0.2028	N	-0.0001	0.0001	-0.0001	0.0000	-0.0001	.
Nickel	SW6010	70	0.5160	N	-0.0191	0.0165	-0.0001	0.0073	0.0003	.
Selenium	SW7740	14	0.3269	N	-0.0840	0.0470	-0.0092	0.0361	-0.0047	.
Silver	SW6010	67	0.8783	N	-0.0080	0.0092	0.0001	0.0033	-0.0001	.
Thallium	SW6010	75	0.9275	N	-0.1012	0.1177	0.0095	0.0410	0.0077	.
Thallium	SW7841	14	0.0041	NP	-0.0084	0.0050	0.0002	0.0029	0.0003	0.0018
Tin	SW6010	75	0.5937	N	-0.0403	0.0476	0.0008	0.0155	0.0000	.
Vanadium	SW6010	14	0.0004	NP	0.0062	0.1500	0.0439	0.0343	0.0325	0.0222
Zinc	SW6010	14	0.6750	N	0.0110	0.0280	0.0187	0.0042	0.0190	.

S-W = Shapiro-Wilk test
N = Normal distribution
NP = Nonparametric

Table 3-6

Test for Normality and Univariate Statistics, Total Metals in Groundwater

Analyte	Method	Number of Results	S-W Test p-value	Distribution Type	Minimum Concentration (mg/L)	Maximum Concentration (mg/L)	Mean Concentration (mg/L)	Standard Deviation (mg/L)	Median Concentration (mg/L)	F-pseudosigma (mg/L)
Antimony	SW6010	60	0.4994	N	-0.0729	0.1048	0.0104	0.0415	0.0093	.
Arsenic	SW7060	14	0.4299	N	-0.0770	0.0400	-0.0054	0.0297	-0.0060	.
Barium	SW6010	14	0.0045	NP	0.0290	0.4800	0.1461	0.1298	0.1100	0.1001
Beryllium	SW6010	14	0.1604	N	-0.0002	0.0034	0.0010	0.0011	0.0007	.
Cadmium	SW6010	14	0.1187	N	0.0010	0.0062	0.0045	0.0014	0.0051	.
Chromium	SW6010	14	0.0039	NP	0.0039	0.0960	0.0267	0.0275	0.0160	0.0242
Cobalt	SW6010	74	0.0029	NP	-0.0083	0.0200	0.0014	0.0050	0.0011	0.0031
Copper	SW6010	14	0.0913	N	0.0040	0.0300	0.0145	0.0092	0.0105	.
Lead	SW7421	14	0.1637	N	-0.0240	0.0120	-0.0006	0.0095	0.0000	.
Mercury	SW7470	50	0.2028	N	-0.0001	0.0001	-0.0001	0.0000	-0.0001	.
Nickel	SW6010	14	0.2043	N	-0.0079	0.0400	0.0094	0.0131	0.0062	.
Selenium	SW7740	14	0.0993	N	-0.1170	0.0600	-0.0068	0.0468	-0.0035	.
Silver	SW6010	67	0.7013	N	-0.0080	0.0100	0.0003	0.0035	0.0002	.
Thallium	SW6010	75	0.8869	N	-0.1012	0.1177	0.0105	0.0425	0.0073	.
Thallium	SW7841	14	0.0001	NP	-0.0140	0.0036	-0.0003	0.0042	0.0007	0.0016
Tin	SW6010	75	0.0000	NP	-0.0403	0.6000	0.0083	0.0710	-0.0010	0.0131
Vanadium	SW6010	14	0.0192	NP	0.0270	0.2000	0.0899	0.0607	0.0565	0.0801
Zinc	SW6010	14	0.0028	NP	0.0120	0.1600	0.0468	0.0404	0.0310	0.0311

S-W = Shapiro-Wilk test
N = Normal distribution
NP = Nonparametric

present the results of the Shapiro-Wilk test for metals in soil, dissolved metals in groundwater, and total metals in groundwater, respectively. Summary statistics are also included in these tables. These include minimum and maximum measured concentrations, as well as estimates of the mean, median, and standard deviation. Where the Shapiro-Wilk test showed that the assumption of normality was not appropriate, the summary statistics tables also show a value for F-pseudosigma, which is a nonparametric measure of dispersion. (The standard deviation is the analogous parametric measure of dispersion.) Although means and standard deviations are also shown in the tables for these nonnormally distributed data, as well as for the other results, users are cautioned against using these estimates for these elements in applications where the assumption of normality is implicit.

3.2.4 Calculation of Warning Limits and UTLs

Tables 3-7, 3-8 and 3-9 present calculated warning limits and UTLs for metals in soil, dissolved metals in groundwater, and total metals in groundwater, respectively.

The results of the Shapiro-Wilk tests were used to determine whether parametric or nonparametric statistical methods were most appropriate for calculating the warning limits and UTLs shown in the summary tables. Parametric methods are usually used when the population is known or can be assumed to follow a normal distribution. They can also be used when the population of interest can be modeled by some other distribution (such as the log normal) that allows the measurement data to be transformed to a normal distribution. Parametric methods offer the advantage of achieving greater statistical certainty using smaller numbers of samples than required for corresponding non-parametric methods. For those elements and matrices in which the Shapiro-Wilk tests did not indicate a significant departure from normality, a parametric UTL (U.S. EPA, 1992) for 95% coverage with 95% confidence was calculated. This represents an upper 95% confidence bound for the 95th percentile concentration.

Table 3-7

Upper Tolerance Limit and Warning Limit, Soil

Analyte	Method	Distribution Type	Rank for 75%	Coverage for WL	Warning Limit (mg/Kg)	Rank for 95%	Coverage for UTL	Upper Tolerance Limit (mg/Kg)
Aluminum	SW6010	N	.	80.0	4855.6696	.	95.0	8764.4972
Antimony	SW6010	N	.	80.0	2.6865	.	95.0	7.2844
Antimony	SW7041	N	.	80.0	0.1249	.	95.0	0.2533
Arsenic	SW6010	N	.	80.0	2.9842	.	95.0	6.8833
Barium	SW6010	N	.	80.0	50.7970	.	95.0	84.3632
Beryllium	SW6010	NP	8.0	57.1	0.1500	9.0	71.7	0.4000
Boron	SW6010	N	.	80.0	10.7510	.	95.0	15.0118
Cadmium	SW6010	LN	.	80.0	0.2538	.	95.0	1.0359
Calcium	SW6010	NP	8.0	57.1	240000.000	9.0	71.7	250000.000
Chromium	SW6010	N	.	80.0	3.6584	.	95.0	6.6049
Cobalt	SW6010	N	.	80.0	1.4008	.	95.0	2.4852
Copper	SW6010	N	.	80.0	3.5163	.	95.0	4.8438
Iron	SW6010	N	.	80.0	3538.6887	.	95.0	6361.6513
Lead	SW6010	N	.	80.0	-10.4514	.	95.0	-2.3221
Lithium	SW6010	N	.	80.0	10.8757	.	95.0	17.7993
Magnesium	SW6010	N	.	80.0	8269.0458	.	95.0	14656.2132
Manganese	SW6010	N	.	80.0	77.3095	.	95.0	146.9104
Mercury	SW7471	N	.	80.0	-0.0164	.	95.0	-0.0006
Molybdenum	SW6010	N	.	80.0	2.8717	.	95.0	5.4258
Nickel	SW6010	N	.	80.0	3.3854	.	95.0	5.6125
Potassium	SW6010	N	.	80.0	1407.3951	.	95.0	2501.3873

Table 3-7

(Continued)

Analyte	Method	Distribution Type	Rank for 75%	Coverage for WL	Warning Limit (mg/Kg)	Rank for 95%	Coverage for UTL	Upper Tolerance Limit (mg/Kg)
Selenium	SW6010	N	.	80.0	4.2112	.	95.0	10.5310
Silicon	SW6010	N	.	80.0	340.7312	.	95.0	483.9082
Silver	SW6010	N	.	80.0	0.1948	.	95.0	0.7342
Sodium	SW6010	NP	8.0	57.1	3400.0000	9.0	71.7	5000.0000
Strontium	SW6010	N	.	80.0	2056.6236	.	95.0	3077.1267
Thallium	SW6010	N	.	80.0	5.3226	.	95.0	11.3153
Thallium	SW7841	LN	.	80.0	0.0670	.	95.0	0.4977
Tin	SW6010	N	.	80.0	1.3340	.	95.0	3.1743
Titanium	SW6010	N	.	80.0	112.0416	.	95.0	197.4081
Uranium	SW6010	N	.	80.0	4.6080	.	95.0	12.4107
Vanadium	SW6010	N	.	80.0	9.3618	.	95.0	15.4597
Zinc	SW6010	N	.	80.0	10.9045	.	95.0	20.2464

WL = Warning Limit
UTL = Upper Tolerance Limit
N = Normal Distribution
LN = Lognormal Distribution
NP = Nonparametric

Table 3-8

Upper Tolerance Limit and Warning Limit, Dissolved Metals in Groundwater

Analyte	Method	Distribution Type	Rank for 75%	Coverage for WL	Warning Limit (mg/L)	Rank for 95%	Coverage for UTL	Upper Tolerance Limit (mg/L)
Antimony	SW6010	N	.	80.0	0.0407	.	95.0	0.0871
Arsenic	SW7060	N	.	80.0	0.0046	.	95.0	0.0354
Barium	SW6010	LN	.	80.0	0.0344	.	95.0	0.0852
Beryllium	SW6010	NP	65.0	81.1	0.0006	73.0	96.0	0.0013
Cadmium	SW6010	N	.	80.0	0.0049	.	95.0	0.0074
Chromium	SW6010	N	.	80.0	0.0037	.	95.0	0.0072
Cobalt	SW6010	NP	66.0	81.3	0.0039	74.0	96.0	0.0109
Copper	SW6010	N	.	80.0	0.0037	.	95.0	0.0093
Lead	SW7421	LN	.	80.0	0.0019	.	95.0	0.0056
Mercury	SW7470	N	.	80.0	-0.00002	.	95.0	0.00003
Nickel	SW6010	N	.	80.0	0.0061	.	95.0	0.0145
Selenium	SW7740	N	.	80.0	0.0233	.	95.0	0.0853
Silver	SW6010	N	.	80.0	0.0029	.	95.0	0.0067
Thallium	SW6010	N	.	80.0	0.0444	.	95.0	0.0904
Thallium	SW7841	N	.	80.0	0.0024	.	95.0	0.0053
Tin	SW6010	N	.	80.0	0.0140	.	95.0	0.0314
Vanadium	SW6010	LN	.	80.0	0.0664	.	95.0	0.2224
Zinc	SW6010	N	.	80.0	0.0225	.	95.0	0.0297

WL = Warning Limit
UTL = Upper Tolerance Limit
N = Normal Distribution
LN = Lognormal Distribution
NP = Nonparametric

Table 3-9

Upper Tolerance Limit and Warning Limit, Total Metals in Groundwater

Analyte	Method	Distribution Type	Rank for 75%	Coverage for WL	Warning Limit (mg/L)	Rank for 95%	Coverage for UTL	Upper Tolerance Limit (mg/L)
Antimony	SW6010	N	.	80.0	0.0433	.	95.0	0.0896
Arsenic	SW7060	N	.	80.0	0.0213	.	95.0	0.0723
Barium	SW6010	LN	.	80.0	0.2237	.	95.0	0.9293
Beryllium	SW6010	N	.	80.0	0.0019	.	95.0	0.0038
Cadmium	SW6010	N	.	80.0	0.0058	.	95.0	0.0083
Chromium	SW6010	LN	.	80.0	0.0414	.	95.0	0.2340
Cobalt	SW6010	NP	66.0	81.3	0.0062	74.0	96.0	0.0200
Copper	SW6010	N	.	80.0	0.0228	.	95.0	0.0386
Lead	SW7421	N	.	80.0	0.0075	.	95.0	0.0199
Mercury	SW7470	N	.	80.0	-0.00006	.	95.0	0.00003
Nickel	SW6010	N	.	80.0	0.0212	.	95.0	0.0436
Selenium	SW7740	N	.	80.0	0.0323	.	95.0	0.0793
Silver	SW6010	N	.	80.0	0.0033	.	95.0	0.0073
Thallium	SW6010	N	.	80.0	0.0467	.	95.0	0.0943
Thallium	SW7841	N	.	80.0	0.0022	.	95.0	0.0050
Tin	SW6010	N	.	80.0	0.0133	.	95.0	0.0307
Vanadium	SW6010	LN	.	80.0	0.1341	.	95.0	0.4344
Zinc	SW6010	LN	.	80.0	0.0697	.	95.0	0.2534

WL = Warning Limit
UTL = Upper Tolerance Limit
N = Normal Distribution
LN = Lognormal Distribution
NP = Nonparametric

For those cases in which the Shapiro-Wilk tests indicated significant departure from normality, the next step was to see if a log transformation could be used to produce a more normally distributed data set. This involved taking the natural logarithms of the results, and repeating the Shapiro-Wilk test on the transformed data. In cases where negative results were included in the data set, the transformation included a step in which the results were shifted upward by a fixed amount to eliminate negative values before calculating logarithms (because the logarithm of a negative value is undefined). Parametric UTLs were calculated using transformed data in those cases in which the Shapiro-Wilk results indicated that the transformation was effective in achieving normality.

Nonparametric methods were used for subsequent analyses when the Shapiro-Wilk tests indicated that the assumption of normality was not supported by either the raw or transformed data. Nonparametric methods are not based on the assumption of normality, and are sometimes referred to as distribution-free methods. The nonparametric method used to calculate UTLs for this study uses the ranks of the measured values. The UTL is simply the highest observed concentration in the data set. However, unlike parametric tolerance limits which are calculated to include a specified proportion of the parent population, the proportion included in these nonparametric UTLs varies as a function of the number of observations in the sample set. The coverage of the UTL is indicated in the summary tables.

Tolerance limits are notoriously conservative and indicate only when a measurement is *very* different from background. Thus, if only UTLs are used as decision criteria for determining whether a sample result indicates the presence of contamination, there is a chance of concluding that an individual measurement is not different background when in fact the average concentration at the site of interest *is* different from the average, or typical, background concentration. For this reason, warning limits were calculated for this study in addition to UTLs. These warning limit concentrations are intended to be used in conjunction with the UTLs to help in determining when available data may be insufficient to distinguish adequately between background and contaminated areas. For example, if the

concentration of a particular element in a sample from a potentially contaminated area was found to be above the warning limit, but below the UTL, it might be desirable to collect additional samples before concluding that the area was not contaminated. Other factors, such as the potential toxicity and/or levels of concern from a risk standpoint, would also likely factor into the use of warning limits and UTLs in making these types of decisions.

For those elements and matrices in which parametric methods were used, warning limits were calculated in the same manner as UTLs, except that they were calculated to provide 80% coverage with 95% confidence (i.e; the upper 95% confidence bound for the 80th percentile concentration). For the nonparametric warning limits, if 80% coverage was not possible because of too few results, then the next largest concentration was used and the corresponding coverage calculated.

4.0 USE OF BACKGROUND DATA IN FUTURE INVESTIGATIONS

Two types of statistical comparisons may be used to compare results from different sample populations. Means comparisons may be used to compare the average background concentration with a corresponding average concentration for a site of interest (e.g., downgradient monitoring wells). Additionally, individual results from each of the wells may be compared with calculated UTLs for background concentration.

4.1 Comparison of Average Concentrations

Means comparisons (also referred to as tests of central tendency) are the preferred approach to testing whether or not measurement results indicate a difference between two populations of interest. For future use of the background characterization performed as part of this study, the two populations would be "background" and "site of interest." Conceptually, a means comparison tests the measurement results from the two different sample sets (site and background) to determine the likelihood that they actually came from a single parent population, rather than from two different populations. The test assumes that there is no difference between the two populations (i.e., that site data are not different from background data) as long as the observed difference between their averages is within the range that could be attributed to chance.

The amount of difference attributable to chance in a means comparison is a function of variability in the sample data and the number of sample results available. The difference attributable to chance reflects the uncertainty in the statistical test and becomes smaller as the sample size increases. It also becomes smaller as the variability among results within each of the two populations decreases. The uncertainty due to sample size and variability directly affects what is known as the power of the statistical comparison. As the power increases, it becomes possible to detect smaller and smaller differences between the true population means (i.e., between site and background). Thus, with increased power there is less risk of failing to detect a difference that actually exists. This should not be

confused with the confidence level of the test, which is related to the probability of erroneously concluding that a difference exists between the population means when in fact the population means are not different. (As the confidence level increases, the probability of incorrectly indicating a difference decreases.)

4.2 Comparison of Sample Results to UTLs

The comparison of individual results with UTLs of a given population is another way of testing the difference between two sample populations. The UTL represents an estimate of the upper 95th percentile of the true background concentration of the analyte of interest. Thus, there is a relatively small chance, on the order of 1 in 20, of an uncontaminated sample (i.e., site data that are no different from background) having a metal concentration greater than the UTL. When individual sample results are compared with UTLs, they are interpreted to indicate the presence of contamination when they exceed the UTLs. On the other hand, samples are considered not to be different from background as long as they do not exceed the UTL.

4.3 Advantages and Disadvantages of the Two Approaches

In most cases, means comparisons offer significant advantages over comparisons using individual results compared with UTLs. However, both types of comparisons are useful and they provide different information about the data and the parent populations. Mean comparisons offer greater statistical power than comparisons based on the UTL. Thus, means comparisons can detect smaller differences between two populations and are less likely to fail to detect a difference that actually exists. Used to compare site data with background data, means comparisons can detect lower levels of contamination and are less likely to fail to detect contamination when it actually exists. Comparisons using individual results compared with UTLs are less sensitive and more likely to fail to detect contamination because of the inherent uncertainty in individual measurements. Much of this

uncertainty is attributable to random measurement error, which is effectively "averaged out" in means comparisons in which multiple results are considered together as a set.

The strength of means comparisons can also be their weakness. In the same way that random measurement error gets averaged out in the calculation of a sample mean, so can actual, nonrandom effects be diluted and overlooked. For example, four monitor wells might be grouped together on the basis of available hydrogeologic information. Whereas comparing average results for the four wells offers more power, it is important not to overlook cases in which results from one member of the initial group stand out as appreciably different from the others. When this is seen, comparison of this single anomalous result to the UTL for background offers an approach for evaluating it separately. Comparisons based on the UTL are also useful when, for whatever reason, there is only one result available for comparison. However, a conclusion that a downgradient well is not different from background on the basis of a single downgradient result must acknowledge the significant risk that there actually is a difference that was not detected simply because of the paucity of downgradient data.

5.0 CONCLUSIONS

Some general conclusions learned from this study are presented below.

- UTLs and warning limits are useful for individual comparisons when data are not sufficient to complete more powerful tests of central tendency. Use of UTLs and tests of central tendency together will provide the best information for comparison with background data.

- Results and conclusions for this study are based on the soil series and groundwater system sampled to represent background. Future studies in different soil or groundwater regimes should determine whether it is appropriate to use this background data or whether alternate background conditions must be characterized.

- UTLs are inherently conservative and only indicate when a measurement is significantly different from background. The warning limit provides a less conservative background value that will help determine when a comparison of an individual value to background is inconclusive.

- AA is the preferred method for thallium, lead, arsenic, and selenium analyses because of its greater sensitivity and less potential for interference from major cations and TDS.

- Because of their toxicity, some metals must be detected at very low concentrations to assess the likelihood of risk. The technical approach for this project did not pursue comparisons with risk-based thresholds to determine whether customized analytical approaches might be useful in the future, but rather used the most appropriate data set to calculate summary statistics, warning limits, and tolerance limits.

In addition to these general conclusions, comparison of the study results with data from previous studies suggests that there may yet be limitations in applying some of the background study results to future investigations. Specifically, results for previous studies at Holloman AFB have shown background sample concentrations for six of the soil metals (beryllium, chromium, copper, lead, nickel, and zinc) that exceed the UTLs developed in this study. This may indicate that some of the sources of variability that were not included in this study design may, in fact, be significant. It might also indicate the

presence of other sources of variability that were not considered but are important in characterizing the full range of possible background concentrations. Attachment 4 contains summary statistics for soils from the previous study. These results are included as a basis for comparison of the two studies.

6.0 REFERENCES

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ATTACHMENT 1

FIELD LOGS AND FORMS

Key to Borehole Drilling Logs

All boreholes were drilled by Southwest Engineering Inc. (SEI) using a CME hollow-stem auger drill rig. Augers were 4-inch I.D./8-inch O.D., and samples were taken with 5-foot continuous core sampler. All boreholes were started and completed on the date listed at the top of the drilling log. The borehole location, and borehole elevation are listed in the surveying data. All measurements are recorded in feet.

GRAIN SIZE:

VF	Very fine
F	Fine
M	Medium
C	Coarse
NA	Not Applicable (ie., for clay and silt)

GRADING:

VP	Very Poorly graded
P	Poorly graded
W	Well graded

MOISTURE:

S	Saturated
W	Wet
M	Moist
D	Dry

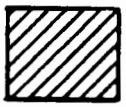
PLASTICITY

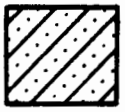
N	Non-plastic
P	Plastic (indeterminable)
L	Low plasticity
H	High plasticity

USCS CLASS (ASTM D 2487):

GW	Well-graded gravel
GP	Poorly graded gravel
GM	Silty gravel
GC	Clayey gravel
SW	Well-graded sand
SP	Poorly graded sand
SM	Silty sand
SC	Clayey sand
ML	Silt
MH	Silt (elastic)
CL	Clay (lean)
CH	Clay (fat)

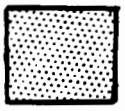
GRAPHIC LOG:


CL


SC

ML

SM


SP/SW

DRILLING LOG

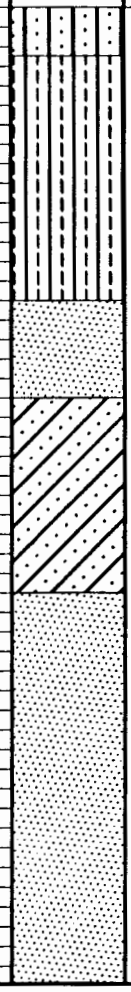
Project (PROJID): LAKE & LAGOONS (HOLL_LL)
Location (LOCID): MW-BG-01
Inspector: LEM
Company (LOGCODE): RADIAN (RAD)
Date (LOGDATE): 3/02/93

Depth	Graphic Log	Lithologic Description: Main Modifier	Predominant Lithology	Color	Munsell	Grain Size	Grading	Moisture	Plasticity	USCS Class (ASTM)	(VVL)	Sample Interval	Recovery	Observations and Comments
1		SILTY	SAND	PALE YELLOW	2.5Y 8/4	F	P	D	N	SM	SDSL	0-5	4.2	CALICHE
2														
3		CLAYEY	SILT	LT. YELLOW BRN	10YR 6/4	NA	P	D	H	MH	STCL	0-5	4.2	
4														
5		SILTY	SAND	LT. YELLOW BRN	10YR 6/4	VF	P	D	N	SM	SDSL	5-10	3.5	
6														
7														
8														
9														

F3999

DRILLING LOG

Project (PROJID)	Location (LOCID)	Inspector	Company (LOGCODE)	Date (LOGDATE)	Sheet 2 of 5
LAKE & LAGOONS (HOLL_LL)	MW-BG-01	LEM	RADIAN (RAD)	3/02/93	



Depth	Lithologic Description: Main Modifier	Predominant Lithology	Color	Munsell	Grain Size	Grading	Moisture	Plasticity	USCS Class (ASTM) [redacted]	[redacted] (VVL)	Sample Interval	Recovery	Observations and Comments
11	SANDY	SILT	BROWN	7.5YR5/4	F	P	D	L	ML	SDSL	10-15	5	
12													GYPSUM CRYSTALS
13		SAND	YELLOWISH BRN	10YR 5/4	VF	P	D	N	SP	SD	10-15	5	
14	CLAYEY	SAND	LT. YELLOW BRN	10YR 6/4	F	P	D	L	SC	SDCL	10-15	5	
15													CALICHE
16		SAND	V. PALE BRN	10YR 7/4	VF	P	D	N	SP	SD	15-20	4	
17													
18													
19													

F3699

DRILLING LOG

Project (PROJID)	Location (LOCID)	Inspector	Company (LOGCODE)	Date (LOGDATE)	Sheet 3 of 5
LAKE & LAGOONS (HOLL_LL)	MW-BG-01	LEM	RADIAN (RAD)	3/02/93	

Depth	Graphic Log	Lithologic Description: Main Modifier	Predominant Lithology	Color	Munsell	Grain Size	Grading	Moisture	Plasticity	USCS Class (ASTM)	(VVL)	Sample Interval	Recovery	Observations and Comments
21														
22														
23														
24														
25			CLAY	YELLOWISH RED	5YR 4/6	NA	P	M	H	CH	CLAY	25-30	5	
26														
27														GYPSUM CRYSTALS
28														
29														
		CLAYEY	SILT	LIGHT BROWN	7.5YR6/4	NA	P	M	H	MH	STCL	25-30	5	GYPSUM CRYSTALS

F3699

DRILLING LOG

Project (PROJID)	Location (LOCID)	Inspector	Company (LOGCODE)	Date (LOGDATE)	Sheet 4 of 5
LAKE & LAGOONS (HOLL_LL)	MW-BG-01	LEM	RADIAN (RAD)	3/02/93	

Depth	Graphic Log	Lithologic Description: Main Modifier	Predominant Lithology	Color	Munsell	Grain Size	Grading	Moisture	Plasticity	USCS Class (ASTM) [redacted]	[redacted] (VVL)	Sample Interval	Recovery	Observations and Comments
31			CLAY	YELLOWISH RED	5YR 5/6	NA	P	M	H	CH	CLAY	30-35	5	
32		SILTY	CLAY	LT. YELLOW BRN	10YR 6/4	NA	P	M	H	CH	STCL	30-35	5	
		SILTY	CLAY	BROWN	7.5YR5/4	NA	P	M	H	CH	STCL	30-35	5	
33														
34														
35		SANDY	CLAY	REDDISH BROWN	5YR 4/4	VF	P	M	L	CL	SDCL	35-40	1.5	
36		SILTY	CLAY	REDDISH BROWN	5YR 5/4	NA	P	M	H	CH	STCL	35-40	1.5	
37														
38														
39														GYPSUM CRYSTALS; WATER AT 39 FT.

F3699

DRILLING LOG

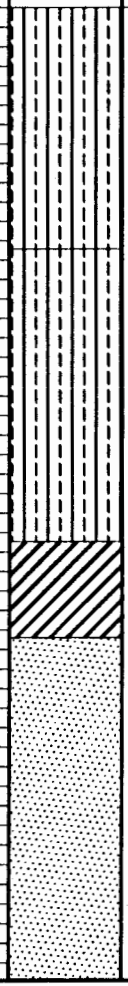
Project (PROJID)	Location (LOCID)	Inspector	Company (LOGCODE)	Date (LOGDATE)	Sheet 5 of 5
LAKE & LAGOONS (HOLL_LL)	MW-BG-01	LEM	RADIAN (RAD)	3/02/93	

Depth	Graphic Log	Lithologic Description: Main Modifier	Predominant Lithology	Color	Munsell	Grain Size	Grading	Moisture	Plasticity	USCS Class (ASTM) [redacted]	[redacted] (VVL)	Sample Interval	Recovery	Observations and Comments
41		CLAYEY	SILT	PINK	7.5YR7/4	NA	P	M	H	MH	STCL	40-45	5	
42			SILT	YELLOWISH RED	5YR 4/6	NA	P	M	L	ML	SILT	40-45	5	
		CLAYEY	SILT	LIGHT BROWN	7.5YR6/4	NA	P	M	L	ML	STCL	40-45	5	
43														
		SANDY	SILT	STRONG BROWN	7.5YR5/6	VF	P	S	L	ML	SDSL	40-45	5	
44														
45														
46														
47														
48														
49														TD = 49 FT.

F3699

DRILLING LOG

Project (PROJID)	Location (LOCID)	Inspector	Company (LOGCODE)	Date (LOGDATE)	Sheet 1 of 6
LAKE & LAGOONS (HOLL_LL)	MW-BG-02	LEM	RADIAN (RAD)	2/23/93	



Depth	Lithologic Description: Main Modifier	Predominant Lithology	Color	Munsell	Grain Size	Grading	Moisture	Plasticity	USCS Class (ASTM) [redacted]	[redacted] (VVL)	Sample Interval	Recovery	Observations and Comments
	SANDY	SILT	LT. YELLOW BRN	10YR 6/4	VF	P	D	L	ML	SDSL	0-5	3.5	
1													
2													CALICHE FROM 2 TO 2.5
	CLAYEY	SILT	REDDISH YELLOW	7.5YR6/6	NA	P	D	L	ML	STCL	0-5	3.5	
3													
4													SOME SAND
5													
		CLAY	BROWN	7.5YR5/4	NA	P	D	H	CH	CLAY	5-10	2.7	
6													ABUNDANT GYPSUM CRYSTALS
		SAND	LT. YELLOW BRN	10YR 6/4	VF	P	D	N	SP	SD	5-10	2.7	
7													
8													
9													

F3700

DRILLING LOG

Project (PROJNO)	Excavation (LOCID)	Inspector	Company (LOGCODE)	Date (LOGDATE)	Sheet 2 of 6
LAKE & LAGOONS (HOLL_LL)	MW-BG-02	LEM	RADIAN (RAD)	2/23/93	

Depth	Graphic Log	Lithologic Description: Main Modifier	Predominant Lithology	Color	Munsell	Grain Size	Grading	Moisture	Plasticity	USCS Class (ASTM) [redacted]	[redacted] (VVL)	Sample Interval	Recovery	Observations and Comments
11														
12														
13		SANDY	SILT	V. PALE BRN	10YR 7/4	VF	P	D	N	ML	SDSL	10-15	5	
14														
15														
16														
17														
18		CLAYEY	SILT	PALE BROWN	10YR 6/3	NA	P	D	H	MH	STCL	15-20	3	
19														

F3700

DRILLING LOG

Project (PROJID)	Location (LOCID)	Inspector	Company (LOGCODE)	Date (LOGDATE)	Sheet 3 of 6
LAKE & LAGOONS (HOLL_LL)	MW-BG-02	LEM	RADIAN (RAD)	2/23/93	

Depth	Graphic Log	Lithologic Description: Main Modifier	Predominant Lithology	Color	Munsell	Grain Size	Grading	Moisture	Plasticity	USCS Class (ASTM) [redacted]	[redacted] (VVL)	Sample Interval	Recovery	Observations and Comments
21		CLAYEY	SILT	LT. YELLOW BRN	10YR 6/4	NA	P	D	L	ML	STCL	20-25	4	
22		SILTY	SAND	YELLOWISH BRN	10YR 5/4	VF	P	D	N	SM	SDSL	20-25	4	
23														
24														
25		CLAYEY	SILT	STRONG BROWN	7.5YR5/6	NA	P	D	H	MH	STCL	20-25	4	SOME SAND
26		CLAYEY	SAND	LIGHT BROWN	7.5YR6/4	VF	P	D	N	SC	SDCL	25-30	5	
27														
28		SILTY	SAND	LT. YELLOW BRN	2.5Y 6/3	VF	P	D	N	SM	SDSL	25-30	5	
29		SILTY	CLAY	BROWN	7.5YR5/4	NA	P	D	H	CH	STCL	25-30	5	
			CLAY	BROWN	7.5YR5/4	NA	P	D	H	CH	CLAY	25-30	5	

F3700

DRILLING LOG

Project (PROJID)	Location (LOCID)	Inspector	Company (LOGCODE)	Date (LOGDATE)	Sheet 4 of 6
LAKE & LAGOONS (HOLL_LL)	MW-BG-02	LEM	RADIAN (RAD)	2/23/93	

Depth	Graphic Log	Lithologic Description: Main Modifier	Predominant Lithology	Color	Munsell	Grain Size	Grading	Moisture	Plasticity	USCS Class (ASTM) [redacted]	[redacted] (VVL)	Sample Interval	Recovery	Observations and Comments
31														
32														
33														
34														
35														
36														
37		SILTY	SAND	BROWN	7.5YR5/4	VF	P	M	N	SM	SDSL	35-40	4.2	
38			CLAY	BROWN	7.5YR5/4	NA	P	M	H	CH	CLAY	35-40	4.2	
39		SILTY	SAND	YELLOWISH BRN	10YR 5/4	VF	P	M	N	SM	SDSL	35-40	4.2	

F3700

DRILLING LOG

Project (PROJID)	Location (LOCID)	Inspector	Company (LOGCODE)	Date (LOGDATE)	Sheet 5 of 6
LAKE & LAGOONS (HOLL_LL)	MW-BG-02	LEM	RADIAN (RAD)	2/23/93	

Depth	Graphic Log	Lithologic Description: Main Modifier	Predominant Lithology	Color	Munsell	Grain Size	Grading	Moisture	Plasticity	USCS Class (ASTM) [redacted]	[redacted] (VVL)	Sample Interval	Recovery	Observations and Comments
41														
42														
43														
44														
45														
46														SWITCH TO SPLIT SPOONS; WATER AT 46 FT.
47		SANDY	CLAY	YELLOWISH BRN	10YR 5/4	VF	P	S	H	CH	SDCL	45-47	2	
48														
49			CLAY	REDDISH BRN	5YR 4/4	NA	P	S	H	CH	CLAY	47-50	3	

F3700

DRILLING LOG

Project (PROJID)	Location (LOCID)	Inspector	Company (LOGCODE)	Date (LOGDATE)	Sheet 6 of 6
LAKE & LAGOONS (HOLL_LL)	MW-BG-02	LEM	RADIAN (RAD)	2/23/93	

Depth	Graphic Log	Lithologic Description: Main Modifier	Predominant Lithology	Color	Munsell	Grain Size	Grading	Moisture	Plasticity	USCS Class (ASTM) [redacted]	[redacted] (VVL)	Sample Interval	Recovery	Observations and Comments
51														
52														
53														
54														TD = 54 FT.
55														
56														
57														
58														
59														

F3700

DRILLING LOG

Project (PROJID)	Location (LOCID)	Inspector	Company (LOGCODE)	Date (LOGDATE)	Sheet 1 of 2
LAKE & LAGOONS (HOLL_LL)	MW-BG-03	DRR	RADIAN (RAD)	3/07/93	

Depth	Graphic Log	Lithologic Description: Main Modifier	Predominant Lithology	Color	Munsell	Grain Size	Grading	Moisture	Plasticity	USCS Class (ASTM)	(VVL)	Sample Interval	Recovery	Observations and Comments
			SILT	PALE BROWN	10YR 6/3	NA	P	Y	P	ML	SILT	0-4.5	4.2	
1		SANDY	SILT	PALE BROWN	10YR 6/3	NA	P	D	P	ML	SDSL	4.5-9.5	5	
2														
3														
4														
5														
6														
7														SATURATED INTERVAL BEGINS AT 7.8 FT.
8			SAND	PALE BROWN	10YR 6/3	VF	P	M	P	SW	SD	4.5-9.5	5	
9			SAND	PALE BROWN	10YR 6/3	F	P	W	P	SW	SD	4.5-9.5	5	

F3701

DRILLING LOG

Project (PROJID)	Location (LOCID)	Inspector	Company (LOGCODE)	Date (LOGDATE)	
LAKE & LAGOONS (HOLL_LL)	MW-BG-03	DRR	RADIAN (RAD)	3/07/93	Sheet 2 of 2

Depth	Graphic Log	Lithologic Description: Main Modifier	Predominant Lithology	Color	Munsell	Grain Size	Grading	Moisture	Plasticity	USCS Class (ASTM) [redacted]	[redacted] (VVL)	Sample Interval	Recovery	Observations and Comments
11		SILTY	SAND	DARK RED BROWN	5YR 5/6	M	M	W	N	SM	SDSL	9.5-14.5	5	SOME GRAINS ARE COARSER THAN MEDIUM.
12														
13														
14														
15		CLAYEY	SAND	DARK RED BROWN	5YR 5/6	F	M	W	N	SC	SDCL	14.5-18.4	3.7	
16		CLAYEY	SAND	REDDISH YELLOW	7.5YR 6/6	F	P	W	N	SC	SDCL	14.5-18.4	3.7	
17														
18		SANDY	CLAY	REDDISH YELLOW	7.5YR 6/6	F	P	W	L	CL	SDCL	14.5-18.4	3.7	TD = 18.4 FT.
19														

F3701

DRILLING LOG

Project (PROJID)	Location (LOCID)	Inspector	Company (LOGCODE)	Date (LOGDATE)	Sheet 1 of 2
LAKE & LAGOONS (HOLL_LL)	MW-BG-04	LEM	RADIAN (RAD)	3/02/93	

Depth	Graphic Log	Lithologic Description: Main Modifier	Predominant Lithology	Color	Munsell	Grain Size	Grading	Moisture	Plasticity	USCS Class (ASTM) [redacted]	[redacted] (VVL)	Sample Interval	Recovery	Observations and Comments
1, 2, 3		SILTY	SAND	YELLOW	10YR 7/6	VF	P	M	N	SM	SDSL	0-5	4	
4, 5, 6, 7, 8, 9		SANDY	SILT	V. PALE BROWN	10YR 7/4	VF	P	M	L	ML	SDSL	0-5	4	CALICHE; WATER AT 8 FT.

F3702

DRILLING LOG

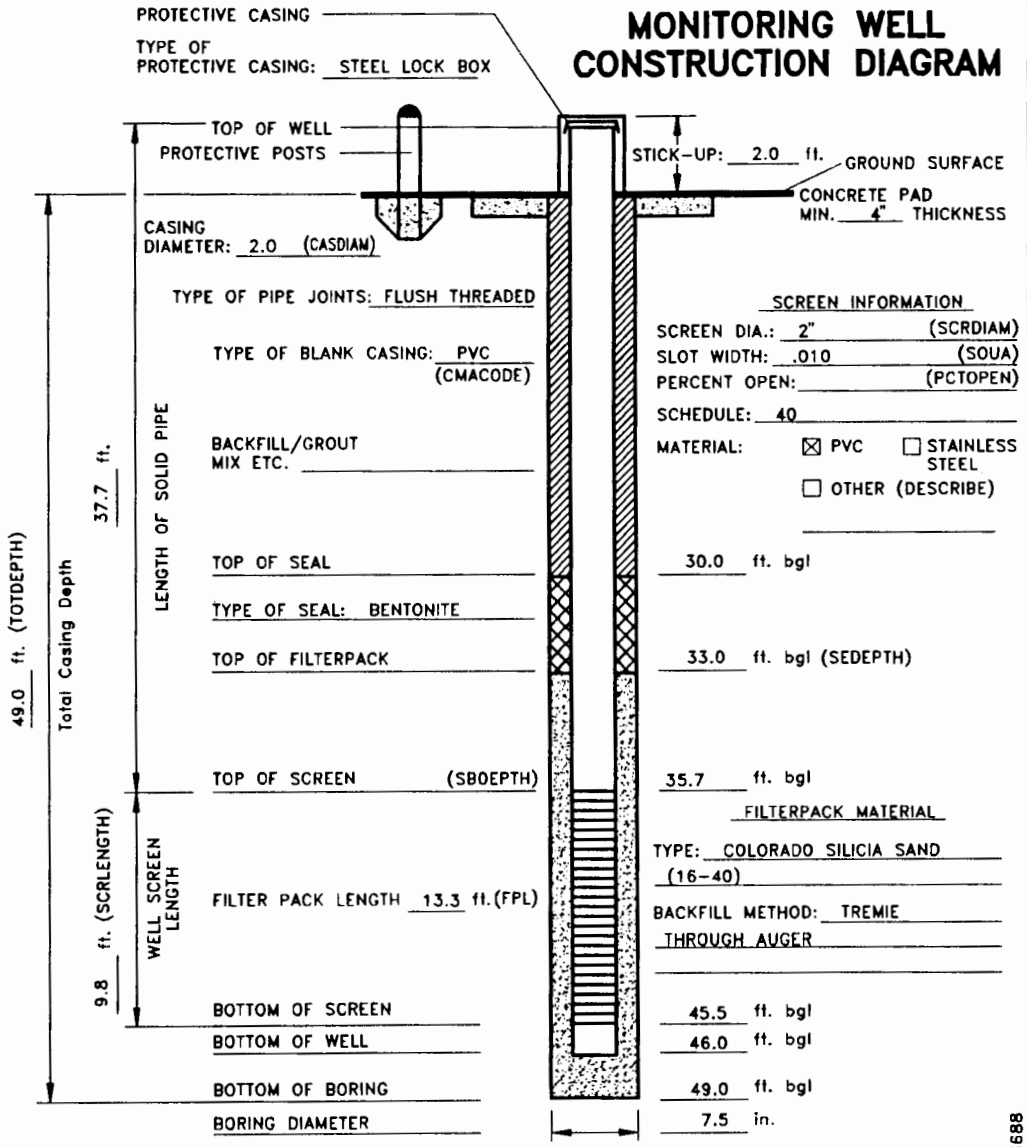
Project (PROJID)	Location (LOCID)	Inspector	Company (LOGCODE)	Date (LOGDATE)	Sheet 2 of 2
LAKE & LAGOONS (HOLL_LL)	MW-BG-04	LEM	RADIAN (RAD)	3/02/93	

Depth	Graphic Log	Lithologic Description: Main Modifier	Predominant Lithology	Color	Munsell	Grain Size	Grading	Moisture	Plasticity	USCS Class (ASTM) [redacted]	[redacted] (VVL)	Sample Interval	Recovery	Observations and Comments
11		SILTY	SAND	V. PALE BROWN	10YR 7/4	VF	P	S	N	SM	SDSL	10-15	5	
12			SAND	V. PALE BROWN	10YR 7/4	VF	P	S	N	SP	SD	10-15	5	INTERBEDDED WITH CLAY LAYERS
13														
14		SILTY	SAND	REDDISH YELLOW	7.5YR 7/6	VF	P	S	N	SM	SDSL	10-15	5	
15			SAND	V. PALE BROWN	10YR 7/4	VF	P	S	N	SP	SD	15-17	2	INTERBEDDED WITH CLAY LAYERS
16		SILTY	SAND	REDDISH YELLOW	7.5YR 6/6	VF	P	S	M	SM	SDSL	15-17	2	
17														TD = 17 FT.
18														
19														

F3702

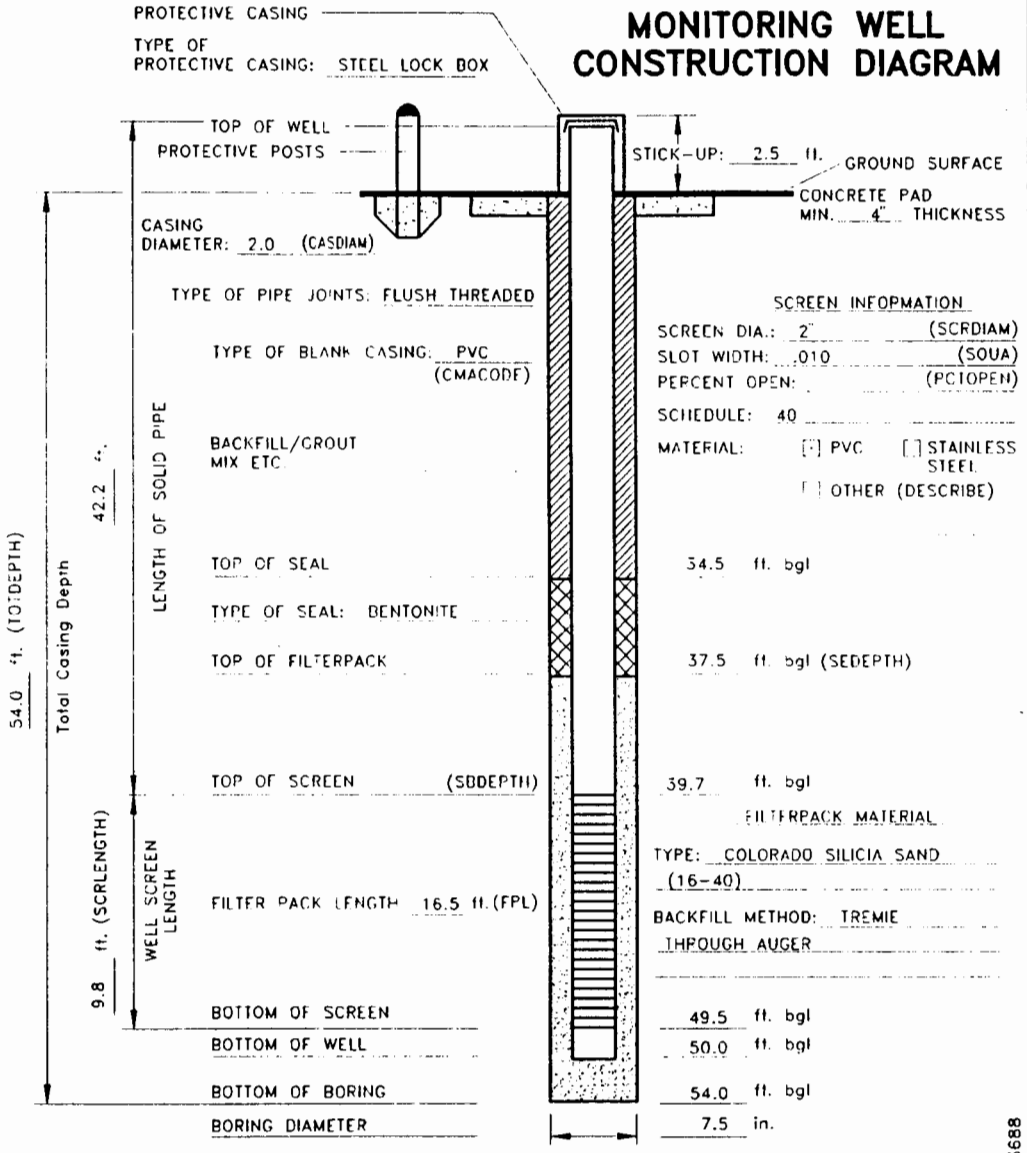
Project (PROJID) HOLLOMAN LAKES AND LAGOONS (HOLL_LL)	Well I.D. (LOCID) MW-BG-01
Well Owner (VVL WELCODE) USAF	Well Type (WL WTCODE) MONITOR WELL (MNW)
Installer LEM	Date Started (INSDATE) 3/02/93 — Date Completed 3/03/93
Location Coordinates: (NCORD) (North) 708995.7	(ECORD) (East) 554457.1
Elevation Top of Casing (MPELV) 4207.73	Completion Method (VVL WCMCODE) GRAVEL PACK W/ SCREEN (GS)
Sole Source Aquifer Code (VVL SAQCODE) N/A	
Drilling Method HOLLOW STEM AUGER	Completion Zone (VVL GZCODE) WATER TABLE AQUIFER (W)
Remarks (REMARKS)	

MONITORING WELL CONSTRUCTION DIAGRAM



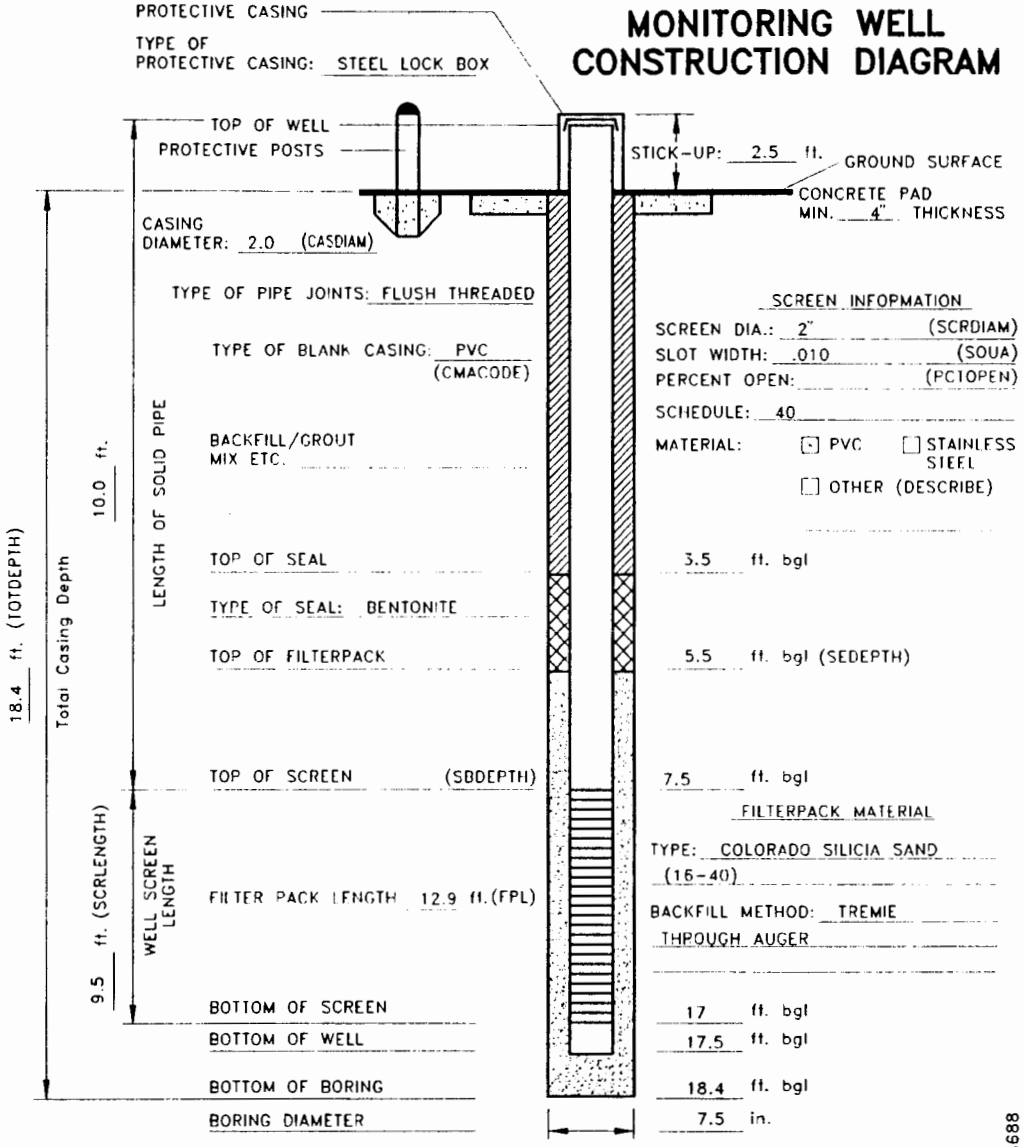
Project (PROJID) HOLLOMAN LAKES AND LAGOONS (HOLL_LL)	Well I.D. (LOCID) MW-BG-02
Well Owner (VVL WELCODE) USAF	Well Type (WL WTCODE) MONITOR WELL (MNW)
Installer LEM	Date Started (INSDATE) 2/23/93 — Date Completed 2/24/93
Location Coordinates: (NCORD) (North) 703541.4	(ECORD) (East) 556491.9
Elevation Top of Casing (MPELV) 4199.28	Completion Method (VVL WCMCODE) GRAVEL PACK W/ SCREEN (GS)
Sole Source Aquifer Code (VVL SAQCODE) N/A	
Drilling Method HOLLOW STEM AUGER	Completion Zone (VVL GZCODE) WATER TABLE AQUIFER (W)
Remarks (REMARKS)	

MONITORING WELL CONSTRUCTION DIAGRAM



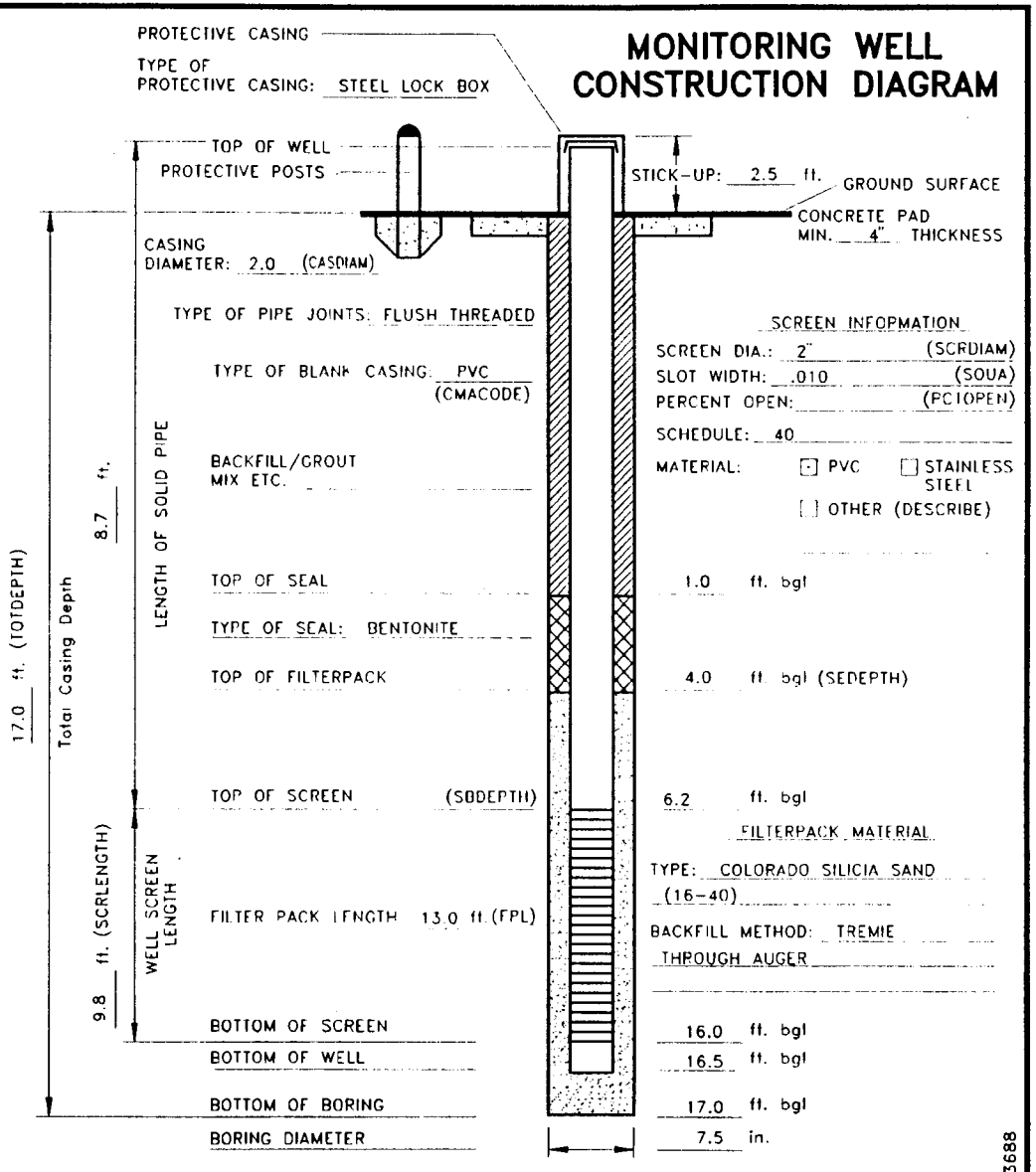
Project (PROJID) HOLLOMAN LAKES AND LAGOONS (HOLL_LL)	Well I.D. (LOCID) MW-BG-03
Well Owner (VVL WELCODE) USAF	Well Type (WL WTCODE) MONITOR WELL (MNW)
Installer DRR	Date Started (INSDATE) 3/07/93 — Date Completed 3/07/93
Location Coordinates: (NCORD) (North) 695648.9	(ECORD) (East) 554937.2
Elevation Top of Casing (MPELV) 4138.28	Completion Method (VVL WCMCODE) GRAVEL PACK W/ SCREEN (GS)
Sole Source Aquifer Code (VVL SAQCODE) N/A	
Drilling Method HOLLOW STEM AUGER	Completion Zone (VVL GZCODE) WATER TABLE AQUIFER (W)
Remarks (REMARKS)	

MONITORING WELL CONSTRUCTION DIAGRAM



Project (PROJID) HOLLOMAN LAKES AND LAGOONS (HOLL_LL)	Well I.D. (LOCID) MW-BG-04
Well Owner (VVL WELCODE) USAF	Well Type (WL WTCODE) MONITOR WELL (MNW)
Installer LEM	Date Started (INSDATE) 3/02/93 — Date Completed 3/02/93
Location Coordinates: (NCORD) (North) 689873.8	(ECORD) (East) 544874.4
Elevation Top of Casing (MPELV) 4074.51	Completion Method (VVL WCMCODE) GRAVEL PACK W/ SCREEN (GS)
Sole Source Aquifer Code (VVL SAQCODE) N/A	
Drilling Method HOLLOW STEM AUGER	Completion Zone (VVL GZCODE) WATER TABLE AQUIFER (W)
Remarks (REMARKS)	

MONITORING WELL CONSTRUCTION DIAGRAM



WELL DEVELOPMENT LOG

SHEET 1 OF 1

PROJECT (PROJ. ID) BACKGROUND WELL HOLLOMAN LAKES AND LAGOONS (HOLL_LL)	WELL ID (LOCID) MW-BG-01	(LOGDATE) 5 March 93	(LOGTIME) 0930
PERFORMED BY (LOGCODE) RAD	DEVELOPMENT METHOD Purge pump	SURGE TECHNIQUE Purge pump	

WATER LEVEL (STATDEP) (TOC) INITIAL	FINAL	TOTAL DEPTH (SOUNDING) (TOC) INITIAL	FINAL	LOWEST WATER LEVEL DURING DEVELOPMENT (PUMPDEP)
37.18'	37.3	48'	48.04'	

TOTAL VOL. REMOVED 60 GALLONS - TIME ELAPSED 4.5 HRS = PRODUCTION RATE (PRODRATE) 13.3 gph
PRODUCTION RATE (PRODRATE)
RECOVERY DEPTH (DEPWAT) N/A
RECOVERY TIME (RECTIME) N/A

Time	Cum. Volume (gal)	Water Quality Temp.	pH	Cond.	Turb.	Comments
1030						Start pumping
1115	8	~~[illegible]~~ 18.1	6.78	10,040	4400	
1120-1215						Compressor broken - ~~fixed~~
1215						Compressor fixed
1335	13	17.9	6.86	10,060	>8000	0.5 gpm, cloudy, reddish brown
1405	20	18.5	6.94	10,300		
1425	25	18.7	6.76	10,900	2320	cloudy, light brown, 0.3gpm
1449	29	18.7	6.81	10,980		water level 40.2' (TOC) 0.3 GPM; cloudy, light brown
1505	33	18.6	6.76	10,790	880	cloudy, lt. brown; 0.5 gpm
1535	40	18.6	6.81	10,800		cloudy, reddish brown, 0.5gpm
1600	46	18.6	6.79	10,770	4600	" " " "
1630	53	18.7	6.75	10,820		slightly cloudy, lt. brown, 0.4gpm
1645	60	18.4	6.77	10,910	120	slightly cloudy
Field Measurements:						Time

Remarks (Remarks)
Total Volume Removed 60 gallons

Time for Removal 4.5 hrs/min

U1872B

WELL DEVELOPMENT LOG

SHEET 1 OF 1

PROJECT (PROJ_ID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
HOLLOMAN LAKES AND LAGOONS (HOLL_LL)	MW-BE-02	3/4/93	0830

PERFORMED BY (LOGCODE)	DEVELOPMENT METHOD	SURGE TECHNIQUE
RAD	Purge Pump	Purge Pump

WATER LEVEL (STATDEP)	TOTAL DEPTH (SOUNDING)	LOWEST WATER LEVEL DURING DEVELOPMENT (PUMPDEP)
INITIAL 43.9 FINAL 44.46	INITIAL ~~47.46~~ 52.36 FINAL 52.6	48'

TOTAL VOL. REMOVED 95 GALLONS ÷ TIME ELAPSED 6 HRS = PRODUCTION RATE (PRODRATE) 16

PRODUCTION RATE (PRODRATE)
RECOVERY DEPTH (DEPWAT) N/A
RECOVERY TIME (RECTIME) N/A

Time	Cum. Volume (gal)	Water Quality Temp.	pH	Cond.	Turb.	Comments
0930	15	15.7	7.18	2370	5000	Reddish brown after surging, well very slow to recover; sediment in water
0956	18	17.7	7.20	2520		0.17 GPM. Pump @ bottom. Color as above
1025	25	17.9	7.18	2550	2400	Increased discharge rate (0.33 GPM)
1045	29	17.6	7.28	2520		Reddish brown color; sediment in water.
1050						Stopped pumping — hose blew off connection
1107	34	17.8	7.19	2540	3340	No change in water color. 0.24 GPM
1137	39	18.1	7.28	2560		Pump at bottom; 0.26 GPM
1155	45	18.4	7.21	2570	460	Light brown-red color.
1220	52	18.6	7.28	2580		Same color as above. Clears up more quickly after purging.
1350	62	18.5	7.17	2570	1900	Dark red-brown after purging. 0.33 GPM
1410	67	18.6	7.12	2580		0.35 GPM
1440	72	18.6	7.10	2580	1200	Light red-brown; less turbid after surging.
1505	78	18.5	7.13	2570		0.35 GPM, Red-brown after purging
1530	86	17.9	7.12	2540	680	0.166 GPM
1600	90	18.0	7.13	2560		Pump @ bottom
1630	95	17.7	7.10	2530	440	Rate = 0.25 GPM, lt. red/brown after vigorous surging
Field Measurements:						Time

Remarks (Remarks)
Total Volume Removed 95 gallons

Time for Removal 6 hrs/min

D18728

WELL DEVELOPMENT LOG

SHEET 1 OF 1

PROJECT (PROJ_ID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
HOLLOMAN LAKES AND LAGOONS (HOLL_LL)	MW-BG-03	3-20-93	11:00

PERFORMED BY (LOGCODE)	DEVELOPMENT METHOD	SURGE TECHNIQUE
RAD	Purge Pump	

WATER LEVEL (STATDEP) INITIAL	FINAL	TOTAL DEPTH (SOUNDING) INITIAL	FINAL	LOWEST WATER LEVEL DURING DEVELOPMENT (PUMPDEP)
11.82 Ft	12.50 Ft	20.0 Ft	20.0 Ft	13.42 Ft BTC

TOTAL VOL. REMOVED 128 GALLONS – TIME ELAPSED 3.75 HRS = PRODUCTION RATE (PRODRATE) 34.13 gal/hr

PRODUCTION RATE (PRODRATE)
RECOVERY DEPTH (DEPWAT) N/A
RECOVERY TIME (RECTIME) N/A

Time	Cum. Volume (gal)	Water Quality Temp.	pH	Cond.	Turb.	Comments
12:00	16.9	23.5	7.23	13.1	581	Water turbid
12:30	24.9	20.4	7.22	12.5	477	water turbid while surge / Clear when static
13:00	36.5	20.3	7.13	1.2	194	Not surged - Fairly non turbid
13:30	51.5	20.3	7.09	9.6	581	Surged / turbid
14:00	69.7	20.6	7.26	11.7	791	Turbid
14:30	83.3	20.4	7.21	8.7	411	Turbid
15:00	97.9	20.8	7.28	1.22	97	Clearing up
15:30	110.0	20.1	7.25	1.27	91	Clearing up
15:45	128.0	19.8	7.30	1.18	73	Clear Water
Field Measurements:						Time

Remarks (Remarks)
Total Volume Removed _____ gallons

Time for Removal _____ hrs/min

018728

WELL DEVELOPMENT LOG

SHEET 1 OF 1

PROJECT (PROJ. ID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
HOLLOMAN LAKES AND LAGOONS (HOLL_LL)	MW-BG-04	032093	11:15

PERFORMED BY (LOGCODE)	DEVELOPMENT METHOD	SURGE TECHNIQUE
RAD	PURGE PUMP	

WATER LEVEL (STATDEP) INITIAL	FINAL	TOTAL DEPTH (SOUNDING) INITIAL	FINAL	LOWEST WATER LEVEL DURING DEVELOPMENT (PUMPDEPT)
4.62	4.78	18.07	18.80	8.5

TOTAL VOL. REMOVED 156 GALLONS - TIME ELAPSED 2.75 HRS = PRODUCTION RATE (PRODRATE) 57 GAL/HR

PRODUCTION RATE (PRODRATE)
RECOVERY DEPTH (DEPWAT) N/A
RECOVERY TIME (RECTIME) N/A

Time	Cum. Volume (gal)	Water Quality Temp.	pH	Cond.	Turb.	Comments
11:30	6.4	17.3	6.78	49.2	1286	water level 6.1 gpm=0.75
11:45	17.4	17.7	6.93	50.0		water level 6.75 gpm=1.0
12:05	28.8	18.2	7.02	50.4	2238	water level 6.36 gpm=1.0
12:20	40.8	19.0	6.94	51.4		water level 6.16 gpm=1.0
12:40	55.0	18.5	6.95	50.4	178	8.25 gpm=2.0
13:00	80.6	18.2	6.95	49.0		– gpm=2.0
13:25	93.4	18.0	7.01	49.7	826	7.70 gpm=1.75
13:33	104.6	18.2	6.98	50.2		7.80 2.0
13:45	117.6	17.7	6.95	50.1	260	8.5 2.0
13:50	128.4	17.7	6.95	49.7		8.3 2.0
14:05	143.6	16.9	6.92	49.8	266	7.0 1.0
14:15	153.2	17.2	6.95	49.5	120	7.1 1.0
Field Measurements:						Time

Remarks (Remarks)
Total Volume Removed 156 gallons

Time for Removal 2 HRS 45 MIN hrs/min

D1872B

TITLE: IRP Groundwater Sampling Log

PROJECT Lakes and Lagoons - Background

DATE 22 March 1993

SUBJECT

SHEET 1 OF 1 SHEETS

INSTALLATION ID (AFID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
HOLMN	MW-04-01	22Mar93	1710

PERFORMED BY (LOGCODE)	WATER LEVEL (STATDEP) INITIAL / FINAL	TOTAL DEPTH (SOUNDING) INITIAL / FINAL
RAD	40.33 / 44.38	51.53 / 51.62

SATURATED THICKNESS	WELL VOLUME	AMOUNT TO PURGE
11.2	1.8 gallons	9 gallons

PURGE METHOD:

Teflon bailer

Time (LOGTIME)	Cum. Volume (gal)	Water Quality: Temp	pH	Cond.	Turb.	Water Level	Comments
1721	2	67°F	7.30	25,200			
1727	4	66°F	7.31	25,300			Well bails dry after 6'
1740	FINAL	65°F	7.30	25,500	920 NTU		
Final Measurements:							

SAMPLING METHOD (SMCODE)

Sample ID	(MATRIX)	Preservative	Analysis	Sample Type Code (SACode)	Comments
9303-MW-04-01-01	4/WG	HNO_3	Total Metals	N	2MRD Dup. taken
9303-MW-04-01-01D	4/WG	HNO_3	Dissolved Metals	N	
9303-MW-04-01-02	4/WG	HNO_3	Total Metals	FD	
9303-MW-04-01-02D	4/WG	HNO_3	Dissolved Metals	FD	

Figure 5-13. IRP Groundwater Sampling Log

TITLE: IRP Groundwater Sampling Log

PROJECT Lagoons & Lakes Investigation **DATE** 20 Mar 93

SUBJECT Background **SHEET** 1 **OF** 1 **SHEETS**

INSTALLATION ID (AFID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
HOLMN	MW-09-01	20Mar93	1600

PERFORMED BY (LOGCODE)	WATER LEVEL (STATDEP)	TOTAL DEPTH (SOUNDING)
RAD	INITIAL 7.94' FINAL 10.26'	INITIAL 16.88' FINAL 16.90'

SATURATED THICKNESS	WELL VOLUME	AMOUNT TO PURGE
8.94'	1.46 Gallons	7.3 gallons

PURGE METHOD: Teflon Bailer

Time (LOGTIME)	Cum. Volume (gal)	Water Quality				Water Level	Comments
		Temp	pH	Cond.	Turb.		
# 1610	2	19.3°C	7.03	>20,000			Turbid. Reddish/tan. Bailed dry.
1630		18.4°C		>20,000	1300 NTU		AFTER SAMPLE
Final Measurements:							

SAMPLING METHOD (SMCODE)

Sample ID	(MATRIX)	Preservative	Analysis	Sample Type Code (SACode)	Comments
9303-MW-09-01-01	L/WG	HNO_3	Total Metals	N	
9303 MW-09-01-DD	L/WG	HNO_3	Dissolved metal	N	

Figure 5-13. IRP Groundwater Sampling Log

TITLE: IRP Groundwater Sampling Log

PROJECT Lakes and Lagoon - Background Study

DATE 20 March 1993

SUBJECT

SHEET 1 OF 1 SHEETS

INSTALLATION ID (AFID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
HOLMN	MW-21-01	20 Mar 93	1030

PERFORMED BY (LOGCODE)	WATER LEVEL (STATDEP) INITIAL / FINAL	TOTAL DEPTH (SOUNDING) INITIAL / FINAL
RAD	7.26' / 9.20'	16.40' / 16.38'

SATURATED THICKNESS	WELL VOLUME	AMOUNT TO PURGE
9.14'	1.5 gallons	7.5 gallons

PURGE METHOD:

Teflon Bailer

Time (LOGTIME)	Cum. Volume (gal)	Water Quality: Temp	pH	Cond.	Turb.	Water Level	Comments
1100	3	17.8°C	7.26	13800			Bailed dry in 3
		~~17.7°C~~	7.26				gallons
1120		17.7°C	~~7.50~~	12900	186 NTU		After Sample
Final Measurements:							

SAMPLING METHOD (SMCODE)

Sample ID	(MATRIX)	Preservative	Analysis	Sample Type Code (SACode)	Comments
9303-MW-21-01-01D	L/WG	HNO_3	Dissolved Metals	N	
9303-MW-21-01-01	L/WG	HNO_3	Total Metals	N	

Figure 5-13. IRP Groundwater Sampling Log

TITLE: IRP Groundwater Sampling Log

PROJECT Lakes and Lagoons - Background Study **DATE** 20 March 1993

SUBJECT _____ **SHEET** 1 **OF** 1 **SHEETS**

INSTALLATION ID (AFID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
HOLMN	MW-22-01	20 Mar 93	1140

PERFORMED BY (LOGCODE)	WATER LEVEL (STATDEP) INITIAL / FINAL	TOTAL DEPTH (SOUNDING) INITIAL / FINAL
RAD	11.44' / 11.84'	17.48' / 17.48'

SATURATED THICKNESS	WELL VOLUME	AMOUNT TO PURGE
6.04	1 gallon	5 gallons

PURGE METHOD:

Teflon Bailer

Time (LOGTIME)	Cum. Volume (gal)	Water Quality: Temp	pH	Cond.	Turb.	Water Level	Comments
1150	2	18.7	6.76	>20,000			Grass on water surface
							Well bails dry
1221		18.7	6.79	>20,000	560 NTU		After sampling
Final Measurements:							

SAMPLING METHOD (SMCODE)

Sample ID	(MATRIX)	Preservative	Analysis	Sample Type Code (SACode)	Comments
9303-MW-22-01-01D	w/wG	HNO3	Dissolved Metals	N	
9303-MW-22-01-01	w/wG	HNO3	Total Metals	N	

Figure 5-13. IRP Groundwater Sampling Log

TITLE: IRP Groundwater Sampling Log

PROJECT Lagoons & Lakes Background wells **DATE** 20 Mar 93

SUBJECT **SHEET** 1 **OF** 1 **SHEETS**

INSTALLATION ID (AFID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
HOLMIN	MW-23-01	20 Mar 93	1245

PERFORMED BY (LOGCODE)	WATER LEVEL (STATDEP)	TOTAL DEPTH (SOUNDING)
RAD	INITIAL 10.60' FINAL 10.86'	INITIAL 16.50' FINAL 16.48
SATURATED THICKNESS	**WELL VOLUME**	**AMOUNT TO PURGE**
5.90'	1.0 gallons	5 gallons

PURGE METHOD: Teflon bailer

Time (LOGTIME)	Cum. Volume (gal)	Water Quality				Water Level	Comments
		Temp	pH	Cond.	Turb.		
1300							light tan roots/grass on top of bailer.
1305	3	19.2	6.84	>20,000			Well bailed dry
1330	AFTER	18.0	6.90	>20,000	540 NTU		AFTER SAMPLE
Final Measurements:							

SAMPLING METHOD (SMCODE)

Sample ID	(MATRIX)	Preservative	Analysis	Sample Type Code (SACode)	Comments
9303-MW-23-01-01	L/WG	HNO_3	Dissolved metals	N	MS/MSD & MRD Dup
9303-MW-23-01-01	L/WG	HNO_3	Total metals	N	
9303-MW-23-01-02	L/WG	HNO_3	Dissolved metals	N	
9303-MW-23-01-02	L/WG	HNO_3	Total metals	N	

Figure 5-13. IRP Groundwater Sampling Log

TITLE: IRP Groundwater Sampling Log

PROJECT Lakes and Lagoons- Background Study **DATE** 20 March 1993

SUBJECT _____ **SHEET** ___ **OF** ___ **SHEETS**

INSTALLATION ID (AFID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
HOLMN	MW-26-01	20 Mar 93	1510

PERFORMED BY (LOGCODE)	WATER LEVEL (STATDEP)	TOTAL DEPTH (SOUNDING)
RAD	INITIAL 6.42' FINAL 6.54	INITIAL 16.00' FINAL 16.00'
SATURATED THICKNESS	**WELL VOLUME**	**AMOUNT TO PURGE**
9.58	1.5 gallons	7.5 gallons

PURGE METHOD:

Teflon Bailer

Time (LOGTIME)	Cum. Volume (gal)	Water Quality				Water Level	Comments
		Temp	pH	Cond.	Turb.		
1518	2	18.8	7.22	14,100			
1521	4	18.1	7.24	15,200			
1523	6	18.0	7.25	13,300			
1525	8	18.1	7.22	12,600			
1540		19.2	7.18	14,600	410 NTU		AFTER SAMPLING
Final Measurements:							

SAMPLING METHOD (SMCODE)

Sample ID	(MATRIX)	Preservative	Analysis	Sample Type Code (SACode)	Comments
9303-MW-26-01-010	4WG	HNO3	Dissolved Metals	N	who designed this form?
9309-MW-26-01-01	4WG		Total Metals	N	

Figure 5-13. IRP Groundwater Sampling Log

TITLE: IRP Groundwater Sampling Log

PROJECT Lakes and Lagoons - Background

DATE 22 March 1993

SUBJECT

SHEET 1 OF 1 SHEETS

INSTALLATION ID (AFID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
HOLMN	MW-29-01	22 Mar 93	1245

PERFORMED BY (LOGCODE)	WATER LEVEL (STATDEP) INITIAL / FINAL	TOTAL DEPTH (SOUNDING) INITIAL / FINAL
RAD	24.4 / 28.36	36.32 / 36.40

SATURATED THICKNESS	WELL VOLUME	AMOUNT TO PURGE
11.92	1.9 gallons	9.5 gallons

PURGE METHOD:

Teflon Bailer

Time (LOGTIME)	Cum. Volume (gal)	Water Quality: Temp.	pH	Cond.	Turb.	Water Level	Comments
1252	2	65°C	7.52	28,200			
1259	4	65°C	7.53	28,200			Well bailed dry
1305	FINAL	65°C	7.53	28,000	320 NTU		AFTER SAMPLING
Final Measurements:							

SAMPLING METHOD (SMCODE)

Sample ID	(MATRIX)	Preservative	Analysis	Sample Type Code (SACode)	Comments
9303-MW-29-01-01	4/WG	HNO_3	Total Metals	N	
9303-MW-29-01-01D	4/WG	HNO_3	Dissolved Metals	N	

Figure 5-13. IRP Groundwater Sampling Log

TITLE: IRP Groundwater Sampling Log

PROJECT Lagoons and Lakes Investigation **DATE** 20 Mar 93

SUBJECT Background Wells **SHEET** 1 **OF** 1 **SHEETS**

INSTALLATION ID (AFID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
HOLMN	MW-30 & 33-01	20 Mar 93	1645

PERFORMED BY (LOGCODE)	WATER LEVEL (STATDEP)	TOTAL DEPTH (SOUNDING)
RAD	INITIAL 23.50 FINAL 23.52	INITIAL 31.15 FINAL 31.14
SATURATED THICKNESS	**WELL VOLUME**	**AMOUNT TO PURGE**
7.65	1.2 gallons	6.1 gallons

PURGE METHOD: Teflon Bailer

Time (LOGTIME)	Cum. Volume (gal)	Water Quality Temp	pH	Cond.	Turb.	Water Level	Comments
1700	2	18.8	7.05	>20,000			
1705	4	18.1	7.10	>20,000			
1708	6	18.1	7.03	>20,000			
1726		17.3	7.08	>20,000	1880 NTU		AFTER SAMPLING
Final Measurements:							

SAMPLING METHOD (SMCODE)

Sample ID	(MATRIX)	Preservative	Analysis	Sample Type Code (SACode)	Comments
9303-MW-30/33-01-01D	W/WG	HNO_3	Dissolved Metals	N	
9303-MW-30/33-01-01		HNO_3	~~Dissolved~~ Total Metals	N	

Figure 5-13. IRP Groundwater Sampling Log

TITLE: IRP Groundwater Sampling Log

PROJECT Lakes and Lagoons Investigations **DATE** 22 March 93

SUBJECT **SHEET** 1 **OF** 1 **SHEETS**

INSTALLATION ID (AFID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
HOLMN	MW-~~34~~ (STP) -36-01	22 Mar 93	1325

PERFORMED BY (LOGCODE)	WATER LEVEL (STATDEP)	TOTAL DEPTH (SOUNDING)
RAD	INITIAL 31.25' FINAL 32.94	INITIAL 42.50' FINAL 42.46'
SATURATED THICKNESS	**WELL VOLUME**	**AMOUNT TO PURGE**
11.25	1.83	9.2 gallons

PURGE METHOD: Teflon Bailer

Time (LOGTIME)	Cum. Volume (gal)	Water Quality				Water Level	Comments
		Temp	pH	Cond.	Turb.		
1340	2	66°F	7.67	13500			slightly turbid; reddish brown
1347	4	65°F	7.69	13200			as above
1351	6	65.5°F	7.64	13400	760 NTU		Bailed Dry
	AFTER						
Final Measurements:							

SAMPLING METHOD (SMCODE)

Sample ID	(MATRIX)	Preservative	Analysis	Sample Type Code (SACode)	Comments
9303-MW-36-01-01	4/WG	HNO_3	Total Metals	N	
9303 MW-36-01-01D	4/WG	HNO_3	Dissolved Metals	N	
9303 MW-36-01-03	4/WQ	HNO_3	Total Metals	EB ~~EB~~	
9303-MW-36-01-03D	4/WQ	HNO_3	Dissolved Metals	EB	

Figure 5-13. IRP Groundwater Sampling Log

TITLE: IRP Groundwater Sampling Log

PROJECT Lagoons and Lakes Investigations DATE 21 March 93

SUBJECT SHEET 1 OF 1 SHEETS

INSTALLATION ID (AFID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
HOLMN	MW-39-01	21 March 93	1230

PERFORMED BY (LOGCODE)	WATER LEVEL (STATDEP) INITIAL / FINAL	TOTAL DEPTH (SOUNDING) INITIAL / FINAL
RAD	23.25 / 27.69	29.70 / 29.50

SATURATED THICKNESS	WELL VOLUME	AMOUNT TO PURGE
6.45'	1.05	5.25

PURGE METHOD:

Teflon bailer

Time (LOGTIME)	Cum. Volume (gal)	Water Quality: Temp	pH	Cond.	Turb.	Water Level	Comments
1245	2	20.2	7.51	8030			slightly turbid, bailed dry
	AFTER	19.7	7.52	7610	120 NTU		
Final Measurements:							

SAMPLING METHOD (SMCODE)

Sample ID	(MATRIX)	Preservative	Analysis	Sample Type Code (SACode)	Comments
9303-MW-39-01-01	L/WG	HNO_3	Total Metals	N	
9303 MW-39-01-01D	L/WG	HNO_3	Dissolved metals	N	

Figure 5-13. IRP Groundwater Sampling Log

TITLE: IRP Groundwater Sampling Log

PROJECT Lagoons and Lakes Investigation

DATE 21 Mar 93

SUBJECT

SHEET 1 OF 1 SHEETS

INSTALLATION ID (AFID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
HCLMN	MW-BG-01	21 Mar 93	1120

PERFORMED BY (LOGCODE)	WATER LEVEL (STATDEP) INITIAL / FINAL	TOTAL DEPTH (SOUNDING) INITIAL / FINAL
RAD	36.50 / 36.48	48.04 / 48.10

SATURATED THICKNESS	WELL VOLUME	AMOUNT TO PURGE
11.54 ft.	1.85 gallons	9.23 gallons

PURGE METHOD: Teflon bailers.

Time (LOGTIME)	Cum. Volume (gal)	Water Quality: Temp.	pH	Cond.	Turb.	Water Level	Comments
1135	1.5	20.9	6.90	11,500			turbid, brown/reddish color
1142	4.0	19.3	6.95	11,500			turbid
1147	6.5	19.1		11,100			turbid
1154	9.0	20.1	6.84	11,700			turbid
	FINAL	20.5	6.88	11,100	4040 NTU		
Final Measurements:							

SAMPLING METHOD (SMCODE)

Sample ID	(MATRIX)	Preservative	Analysis	Sample Type Code (SACode)	Comments
9303-MW-BG-01	-01 L/WG	HNO_3	Total metals	N	
9303-MW-BG-01-	01D L/WG	HNO_3	Dissolved metals	N	

Figure 5-13. IRP Groundwater Sampling Log

TITLE: IRP Groundwater Sampling Log

PROJECT Lagoons and Lakes Investigation

DATE 21 Mar 93

SUBJECT

SHEET 1 OF 1 SHEETS

INSTALLATION ID (AFID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
HOLMN	MW-BG-02	21 March 93	0900

PERFORMED BY (LOGCODE)	WATER LEVEL (STATDEP) INITIAL / FINAL	TOTAL DEPTH (SOUNDING) INITIAL / FINAL
RAD	43.78 / 43.94	52.70 / 52.70

SATURATED THICKNESS	WELL VOLUME	AMOUNT TO PURGE
9.92 ft.	1.59 gallons	7.94 gallons

PURGE METHOD: Teflon bailer

Time (LOGTIME)	Cum. Volume (gal)	Water Quality Temp	pH	Cond.	Turb.	Water Level	Comments
0905	1	19.3	7.04	784			turbid, red brown
0910	3	17.9	7.13	414			turbid
0915	6	18.5	7.08	1846			turbid
0920	8	18.6	7.09	1366			turbid.
1050	AFTER	19.9	7.21	1240	1360 NTU		
Final Measurements:							

SAMPLING METHOD (SMCODE)

Sample ID	(MATRIX)	Preservative	Analysis	Sample Type Code (SACode)	Comments
9303-MW-BG-02-01	W/WG	HNO_3	Total metals	N	
9303-MW-BG-02-01D	W/WG	HNO_3	Dissolved metals	N	

Figure 5-13. IRP Groundwater Sampling Log

TITLE: IRP Groundwater Sampling Log

PROJECT Holloman Lakes / Lagoons **DATE** 3-20-93

SUBJECT Background Water Sampling **SHEET** 1 **OF** 1 **SHEETS**

INSTALLATION ID (AFID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
	MW-BG-03	3-20-93	16:15

PERFORMED BY (LOGCODE)	WATER LEVEL (STATDEP)	TOTAL DEPTH (SOUNDING)
RAD	INITIAL 11.82 Ft FINAL 12.50 Ft	INITIAL 20.0 Ft FINAL 20.0 Ft
SATURATED THICKNESS	**WELL VOLUME**	**AMOUNT TO PURGE**
8.18 Ft.	1.3 gallons	6.5 gallons

PURGE METHOD: HAND BAILER

Time (LOGTIME)	Cum. Volume (gal)	Water Quality Temp.	pH	Cond. (mhoms)	Turb.	Water Level	Comments
16:15	1.0	16.8	7.04	12.2			Cloudy / Turbid
16:20	2.0	16.8	7.01	11.3			Cloudy / Turbid
16:25	3.0	16.7	7.04	11.7			Cloudy / Turbid
16:30	4.0	16.4	7.00	11.7			Cloudy / Turbid
16:35	5.0	16.5	6.93	11.4			Cloudy / Turbid
16:40	6.0	16.5	6.94	11.4			Cloudy / Turbid
16:45	7.0	16.4	6.92	11.5			Cloudy / Turbid
							Turbidity ≈ 500
Final Measurements:							

SAMPLING METHOD (SMCODE)

Sample ID	(MATRIX)	Preservative	Analysis	Sample Type Code (SACode)	Comments
9303-MW-BG-03-01	L/WG	HNO_3	Total Metals	N	SW Metals
9303-MW-BG-03-01D	L/WG	HNO_3	Dissolved metals	N	

Figure 5-13. IRP Groundwater Sampling Log

TITLE: IRP Groundwater Sampling Log

PROJECT Holloman Lakes / Lagoons **DATE** 3-20-93

SUBJECT Background Water Sampling **SHEET** 1 **OF** 1 **SHEETS**

INSTALLATION ID (AFID)	WELL ID (LOCID)	(LOGDATE)	(LOGTIME)
	MW-BG-04	3-20-93	17:15

PERFORMED BY (LOGCODE)	WATER LEVEL (STATDEP) INITIAL / FINAL	TOTAL DEPTH (SOUNDING) INITIAL / FINAL
RAD	4.61 Ft / 4.77 Ft	18.80 Ft / 18.80 Ft

SATURATED THICKNESS	WELL VOLUME	AMOUNT TO PURGE
14.19	2.27 gallons	11.35 gallons

PURGE METHOD:

mohms

Time (LOGTIME)	Cum. Volume (gal)	Water Quality Temp.	pH	Cond.	Turb.	Water Level	Comments
17:15	2.5	16.4	6.87	46.3			Slightly Turbid
17:25	5.5	15.0	6.94	44.4			Turbid
17:35	8.25	15.4	6.89	45.3			Turbid
17:45	11.0	15.7	6.84	46.8			Turbid
17:55	12.30	15.6	6.82	46.2	140 NTU		Turbid
Final Measurements:							

SAMPLING METHOD (SMCODE)

Sample ID	(MATRIX)	Preservative	Analysis	Sample Type Code (SACode)	Comments
9303-MW-BG-04-01	L/WG	HNO_3	Total Metals	N	Metals
9303-MW-BG04-01D	L/WG	HNO_3	Dissolved metals	N	

Figure 5-13. IRP Groundwater Sampling Log

ATTACHMENT 2

RAW DATA USED FOR BACKGROUND CHARACTERIZATION

The raw data used for this background report is presented in this attachment. For background data (i.e., environmental matrix samples), the location from which samples were collected, the type of sample collected (i.e., original or duplicate), the date a sample was collected, the laboratory measurement, detection limit, units, and a laboratory flag are listed. The laboratory flag indicates whether the measured value was less than or greater than the sample specific detection limit. Because uncensored data was used for this report, many results have a "less than" flag. The data points flagged with "less than" flags are valid and useable for the purposes of this background report and should not be considered any less valid than the "greater than" flagged data. For the blank data used in this report, the type of blank (i.e., method or equipment blank), the laboratory measurement, and the units are listed. Sample specific detection limits were not provided.

------ MATRIX=L D_OR_T=Dissolved Metals METHOD=SW6010 ANALYTE=Antimony -------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
MW-22-01	N	20MAR93	-0.0850	<	0.1	mg/L
MW-29-01	N	22MAR93	-0.0430	<	0.1	mg/L
MW-04-01	FD	22MAR93	-0.0300	<	0.1	mg/L
MW-21-01	N	20MAR93	-0.0260	<	0.1	mg/L
MW-26-01	N	20MAR93	-0.0250	<	0.1	mg/L
MW-36-01	N	22MAR93	-0.0250	<	0.1	mg/L
MW-BG-03	N	20MAR93	-0.0210	<	0.1	mg/L
MW-04-01	N	22MAR93	-0.0130	<	0.1	mg/L
MW-39-01	N	21MAR93	-0.0120	<	0.1	mg/L
MW-BG-02	FD	21MAR93	-0.0011	<	0.1	mg/L
MW-30&33	N	20MAR93	0.0036	<	0.1	mg/L
MW-BG-01	N	21MAR93	0.0099	<	0.1	mg/L
MW-BG-02	N	21MAR93	0.0160	<	0.1	mg/L

------- MATRIX=L D_OR_T=Dissolved Metals METHOD=SW6010 ANALYTE=Barium --------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
MW-30&33	N	20MAR93	0.0089	<	0.01	mg/L
MW-26-01	N	20MAR93	0.0120	>	0.01	mg/L
MW-39-01	N	21MAR93	0.0140	>	0.01	mg/L
MW-23-01	N	20MAR93	0.0150	>	0.01	mg/L
MW-23-01	FD	20MAR93	0.0160	>	0.01	mg/L
MW-29-01	N	22MAR93	0.0170	>	0.01	mg/L
MW-36-01	N	22MAR93	0.0180	>	0.01	mg/L
MW-21-01	N	20MAR93	0.0180	>	0.01	mg/L
MW-09-01	N	20MAR93	0.0200	>	0.01	mg/L
MW-22-01	N	20MAR93	0.0240	>	0.01	mg/L
MW-BG-01	N	21MAR93	0.0260	>	0.01	mg/L
MW-04-01	N	22MAR93	0.0310	>	0.01	mg/L
MW-04-01	FD	22MAR93	0.0310	>	0.01	mg/L
MW-BG-04	N	20MAR93	0.0330	>	0.01	mg/L
MW-BG-03	N	20MAR93	0.0360	>	0.01	mg/L
MW-BG-02	N	21MAR93	0.0720	>	0.01	mg/L
MW-BG-02	FD	21MAR93	0.0790	>	0.01	mg/L

------ MATRIX=L D_OR_T=Dissolved Metals METHOD=SW6010 ANALYTE=Beryllium ------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
MW-22-01	N	20MAR93	-.00052	<	.002	mg/L
MW-29-01	N	22MAR93	-.00015	<	.002	mg/L
MW-BG-04	N	20MAR93	-.00004	<	.002	mg/L
MW-04-01	FD	22MAR93	-.00004	<	.002	mg/L
MW-39-01	N	21MAR93	-.00003	<	.002	mg/L
MW-21-01	N	20MAR93	0.00000	<	.002	mg/L
MW-BG-02	FD	21MAR93	0.00004	<	.002	mg/L
MW-23-01	FD	20MAR93	0.00005	<	.002	mg/L
MW-09-01	N	20MAR93	0.00007	<	.002	mg/L
MW-04-01	N	22MAR93	0.00010	<	.002	mg/L
MW-26-01	N	20MAR93	0.00013	<	.002	mg/L
MW-BG-03	N	20MAR93	0.00013	<	.002	mg/L
MW-BG-01	N	21MAR93	0.00023	<	.002	mg/L
MW-30&33	N	20MAR93	0.00025	<	.002	mg/L
MW-36-01	N	22MAR93	0.00030	<	.002	mg/L
MW-BG-02	N	21MAR93	0.00110	<	.002	mg/L
MW-23-01	N	20MAR93	0.00130	<	.002	mg/L

------- MATRIX=L D_OR_T=Dissolved Metals METHOD=SW6010 ANALYTE=Cadmium -------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
MW-BG-03	N	20MAR93	.0015	<	.005	mg/L
MW-BG-02	N	21MAR93	.0016	<	.005	mg/L
MW-BG-02	FD	21MAR93	.0018	<	.005	mg/L
MW-BG-01	N	21MAR93	.0021	<	.005	mg/L
MW-39-01	N	21MAR93	.0024	<	.005	mg/L
MW-30&33	N	20MAR93	.0025	<	.005	mg/L
MW-09-01	N	20MAR93	.0027	<	.005	mg/L
MW-26-01	N	20MAR93	.0031	<	.005	mg/L
MW-23-01	FD	20MAR93	.0038	<	.005	mg/L
MW-21-01	N	20MAR93	.0039	<	.005	mg/L
MW-36-01	N	22MAR93	.0043	<	.005	mg/L
MW-04-01	N	22MAR93	.0043	<	.005	mg/L
MW-04-01	FD	22MAR93	.0044	<	.005	mg/L
MW-29-01	N	22MAR93	.0047	<	.005	mg/L
MW-22-01	N	20MAR93	.0051	>	.005	mg/L
MW-23-01	N	20MAR93	.0053	>	.005	mg/L
MW-BG-04	N	20MAR93	.0062	>	.005	mg/L

------ MATRIX=L D_OR_T=Dissolved Metals METHOD=SW6010 ANALYTE=Chromium -------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
MW-BG-04	N	20MAR93	-.0017	<	0.01	mg/L
MW-23-01	FD	20MAR93	0.0012	<	0.01	mg/L
MW-BG-02	N	21MAR93	0.0022	<	0.01	mg/L
MW-09-01	N	20MAR93	0.0022	<	0.01	mg/L
MW-23-01	N	20MAR93	0.0024	<	0.01	mg/L
MW-29-01	N	22MAR93	0.0025	<	0.01	mg/L
MW-BG-02	FD	21MAR93	0.0041	<	0.01	mg/L
MW-39-01	N	21MAR93	0.0043	<	0.01	mg/L
MW-26-01	N	20MAR93	0.0044	<	0.01	mg/L
MW-21-01	N	20MAR93	0.0048	<	0.01	mg/L
MW-04-01	FD	22MAR93	0.0048	<	0.01	mg/L
MW-04-01	N	22MAR93	0.0058	<	0.01	mg/L
MW-BG-03	N	20MAR93	0.0061	<	0.01	mg/L
MW-30&33	N	20MAR93	0.0063	<	0.01	mg/L
MW-36-01	N	22MAR93	0.0063	<	0.01	mg/L
MW-BG-01	N	21MAR93	0.0070	<	0.01	mg/L

------- MATRIX=L D_OR_T=Dissolved Metals METHOD=SW6010 ANALYTE=Cobalt --------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
MW-36-01	N	22MAR93	-.00210	<	0.01	mg/L
MW-04-01	FD	22MAR93	-.00190	<	0.01	mg/L
MW-BG-02	N	21MAR93	-.00130	<	0.01	mg/L
MW-09-01	N	20MAR93	-.00120	<	0.01	mg/L
MW-21-01	N	20MAR93	-.00092	<	0.01	mg/L
MW-30&33	N	20MAR93	-.00087	<	0.01	mg/L
MW-39-01	N	21MAR93	-.00086	<	0.01	mg/L
MW-26-01	N	20MAR93	-.00068	<	0.01	mg/L
MW-BG-04	N	20MAR93	-.00038	<	0.01	mg/L
MW-29-01	N	22MAR93	-.00016	<	0.01	mg/L
MW-BG-01	N	21MAR93	0.00058	<	0.01	mg/L
MW-04-01	N	22MAR93	0.00078	<	0.01	mg/L
MW-BG-03	N	20MAR93	0.00130	<	0.01	mg/L
MW-23-01	N	20MAR93	0.00140	<	0.01	mg/L
MW-BG-02	FD	21MAR93	0.00150	<	0.01	mg/L
MW-23-01	FD	20MAR93	0.00220	<	0.01	mg/L
MW-22-01	N	20MAR93	0.00320	<	0.01	mg/L

------- MATRIX=L D_OR_T=Dissolved Metals METHOD=SW6010 ANALYTE=Copper --------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
MW-36-01	N	22MAR93	-.00540	<	0.02	mg/L
MW-21-01	N	20MAR93	-.00520	<	0.02	mg/L
MW-30&33	N	20MAR93	-.00510	<	0.02	mg/L
MW-BG-04	N	20MAR93	-.00420	<	0.02	mg/L
MW-BG-02	N	21MAR93	-.00230	<	0.02	mg/L
MW-26-01	N	20MAR93	-.00210	<	0.02	mg/L
MW-BG-01	N	21MAR93	-.00130	<	0.02	mg/L
MW-09-01	N	20MAR93	0.00005	<	0.02	mg/L
MW-BG-03	N	20MAR93	0.00061	<	0.02	mg/L
MW-23-01	FD	20MAR93	0.00089	<	0.02	mg/L
MW-BG-02	FD	21MAR93	0.00095	<	0.02	mg/L
MW-04-01	N	22MAR93	0.00110	<	0.02	mg/L
MW-23-01	N	20MAR93	0.00190	<	0.02	mg/L
MW-22-01	N	20MAR93	0.00280	<	0.02	mg/L
MW-04-01	FD	22MAR93	0.00690	<	0.02	mg/L
MW-39-01	N	21MAR93	0.00690	<	0.02	mg/L
MW-29-01	N	22MAR93	0.00750	<	0.02	mg/L

------- MATRIX=L D_OR_T=Dissolved Metals METHOD=SW6010 ANALYTE=Nickel --------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
MW-BG-03	N	20MAR93	-0.01500	<	0.02	mg/L
MW-30&33	N	20MAR93	-0.01200	<	0.02	mg/L
MW-BG-01	N	21MAR93	-0.00610	<	0.02	mg/L
MW-BG-02	N	21MAR93	-0.00580	<	0.02	mg/L
MW-BG-04	N	20MAR93	-0.00450	<	0.02	mg/L
MW-23-01	N	20MAR93	-0.00450	<	0.02	mg/L
MW-36-01	N	22MAR93	-0.00310	<	0.02	mg/L
MW-09-01	N	20MAR93	-0.00260	<	0.02	mg/L
MW-39-01	N	21MAR93	-0.00260	<	0.02	mg/L
MW-26-01	N	20MAR93	-0.00150	<	0.02	mg/L
MW-04-01	FD	22MAR93	0.00072	<	0.02	mg/L
MW-21-01	N	20MAR93	0.00090	<	0.02	mg/L
MW-04-01	N	22MAR93	0.00330	<	0.02	mg/L
MW-BG-02	FD	21MAR93	0.00340	<	0.02	mg/L
MW-29-01	N	22MAR93	0.00380	<	0.02	mg/L
MW-23-01	FD	20MAR93	0.00410	<	0.02	mg/L
MW-22-01	N	20MAR93	0.01300	<	0.02	mg/L

------- MATRIX=L D_OR_T=Dissolved Metals METHOD=SW6010 ANALYTE=Silver --------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
MW-21-01	N	20MAR93	-.00600	<	0.01	mg/L
MW-26-01	N	20MAR93	-.00540	<	0.01	mg/L
MW-39-01	N	21MAR93	-.00520	<	0.01	mg/L
MW-23-01	FD	20MAR93	-.00450	<	0.01	mg/L
MW-BG-04	N	20MAR93	-.00420	<	0.01	mg/L
MW-09-01	N	20MAR93	-.00400	<	0.01	mg/L
MW-04-01	FD	22MAR93	-.00340	<	0.01	mg/L
MW-BG-01	N	21MAR93	-.00320	<	0.01	mg/L
MW-36-01	N	22MAR93	-.00300	<	0.01	mg/L
MW-22-01	N	20MAR93	-.00300	<	0.01	mg/L
MW-BG-02	FD	21MAR93	-.00280	<	0.01	mg/L
MW-BG-03	N	20MAR93	-.00260	<	0.01	mg/L
MW-BG-02	N	21MAR93	-.00190	<	0.01	mg/L
MW-23-01	N	20MAR93	-.00110	<	0.01	mg/L
MW-29-01	N	22MAR93	-.00082	<	0.01	mg/L
MW-04-01	N	22MAR93	-.00043	<	0.01	mg/L
MW-30&33	N	20MAR93	-.00011	<	0.01	mg/L

------ MATRIX=L D_OR_T=Dissolved Metals METHOD=SW6010 ANALYTE=Thallium -------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
MW-22-01	N	20MAR93	-0.00360	<	0.1	mg/L
MW-39-01	N	21MAR93	-0.00002	<	0.1	mg/L
MW-BG-01	N	21MAR93	0.01000	<	0.1	mg/L
MW-04-01	N	22MAR93	0.01100	<	0.1	mg/L
MW-30&33	N	20MAR93	0.01200	<	0.1	mg/L
MW-BG-02	N	21MAR93	0.02300	<	0.1	mg/L
MW-BG-03	N	20MAR93	0.02800	<	0.1	mg/L
MW-BG-04	N	20MAR93	0.02900	<	0.1	mg/L
MW-26-01	N	20MAR93	0.03100	<	0.1	mg/L
MW-04-01	FD	22MAR93	0.03300	<	0.1	mg/L
MW-36-01	N	22MAR93	0.03500	<	0.1	mg/L
MW-09-01	N	20MAR93	0.03500	<	0.1	mg/L
MW-21-01	N	20MAR93	0.04000	<	0.1	mg/L
MW-23-01	FD	20MAR93	0.04700	<	0.1	mg/L
MW-29-01	N	22MAR93	0.05000	<	0.1	mg/L
MW-23-01	N	20MAR93	0.05200	<	0.1	mg/L

--------- MATRIX=L D_OR_T=Dissolved Metals METHOD=SW6010 ANALYTE=Tin ---------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
MW-22-01	N	20MAR93	-0.01B00	<	0.6	mg/L
MW-04-01	N	22MAR93	-0.01600	<	0.6	mg/L
MW-23-01	FD	20MAR93	-0.00660	<	0.6	mg/L
MW-23-01	N	20MAR93	-0.00420	<	0.6	mg/L
MW-04-01	FD	22MAR93	-0.00410	<	0.6	mg/L
MW-29-01	N	22MAR93	-0.00390	<	0.6	mg/L
MW-09-01	N	20MAR93	-0.00370	<	0.6	mg/L
MW-BG-02	FD	21MAR93	-0.00120	<	0.6	mg/L
MW-BG-01	N	21MAR93	-0.00084	<	0.6	mg/L
MW-BG-02	N	21MAR93	-0.00079	<	0.6	mg/L
MW-BG-03	N	20MAR93	0.00110	<	0.6	mg/L
MW-39-01	N	21MAR93	0.00160	<	0.6	mg/L
MW-36-01	N	22MAR93	0.00190	<	0.6	mg/L
MW-26-01	N	20MAR93	0.00280	<	0.6	mg/L
MW-21-01	N	20MAR93	0.00500	<	0.6	mg/L
MW-BG-04	N	20MAR93	0.00800	<	0.6	mg/L
MW-30&33	N	20MAR93	0.00850	<	0.6	mg/L

------ MATRIX=L D_OR_T=Dissolved Metals METHOD=SW6010 ANALYTE=Vanadium -------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
MW-BG-02	N	21MAR93	0.0062	<	0.02	mg/L
MW-BG-02	FD	21MAR93	0.0079	<	0.02	mg/L
MW-BG-01	N	21MAR93	0.0240	>	0.02	mg/L
MW-BG-03	N	20MAR93	0.0260	>	0.02	mg/L
MW-39-01	N	21MAR93	0.0260	>	0.02	mg/L
MW-04-01	FD	22MAR93	0.0270	>	0.02	mg/L
MW-BG-04	N	20MAR93	0.0270	>	0.02	mg/L
MW-36-01	N	22MAR93	0.0280	>	0.02	mg/L
MW-04-01	N	22MAR93	0.0320	>	0.02	mg/L
MW-29-01	N	22MAR93	0.0330	>	0.02	mg/L
MW-09-01	N	20MAR93	0.0380	>	0.02	mg/L
MW-23-01	FD	20MAR93	0.0430	>	0.02	mg/L
MW-23-01	N	20MAR93	0.0480	>	0.02	mg/L
MW-30&33	N	20MAR93	0.0560	>	0.02	mg/L
MW-21-01	N	20MAR93	0.0560	>	0.02	mg/L
MW-26-01	N	20MAR93	0.0640	>	0.02	mg/L
MW-22-01	N	20MAR93	0.1500	>	0.02	mg/L

-------- MATRIX=L D_OR_T=Dissolved Metals METHOD=SW6010 ANALYTE=Zinc ---------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
MW-36-01	N	22MAR93	0.011	<	0.02	mg/L
MW-BG-02	FD	21MAR93	0.013	<	0.02	mg/L
MW-BG-02	N	21MAR93	0.015	<	0.02	mg/L
MW-22-01	N	20MAR93	0.015	<	0.02	mg/L
MW-26-01	N	20MAR93	0.016	<	0.02	mg/L
MW-09-01	N	20MAR93	0.016	<	0.02	mg/L
MW-39-01	N	21MAR93	0.018	<	0.02	mg/L
MW-30&33	N	20MAR93	0.019	<	0.02	mg/L
MW-04-01	N	22MAR93	0.019	<	0.02	mg/L
MW-29-01	N	22MAR93	0.019	<	0.02	mg/L
MW-04-01	FD	22MAR93	0.019	<	0.02	mg/L
MW-BG-04	N	20MAR93	0.019	<	0.02	mg/L
MW-23-01	FD	20MAR93	0.021	>	0.02	mg/L
MW-BG-03	N	20MAR93	0.022	>	0.02	mg/L
MW-23-01	N	20MAR93	0.022	>	0.02	mg/L
MW-BG-01	N	21MAR93	0.023	>	0.02	mg/L
MW-21-01	N	20MAR93	0.028	>	0.02	mg/L

------- MATRIX=L D_OR_T=Dissolved Metals METHOD=SW7060 ANALYTE=Arsenic -------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
MW-BG-04	N	20MAR93	-0.0600	<	0.016	mg/L
MW-23-01	FD	20MAR93	-0.0340	<	0.016	mg/L
MW-23-01	N	20MAR93	-0.0300	<	0.016	mg/L
MW-39-01	N	21MAR93	-0.0190	<	0.016	mg/L
MW-04-01	FD	22MAR93	-0.0180	<	0.016	mg/L
MW-30&33	N	20MAR93	-0.0170	<	0.008	mg/L
MW-04-01	N	22MAR93	-0.0160	<	0.016	mg/L
MW-21-01	N	20MAR93	-0.0140	<	0.016	mg/L
MW-09-01	N	20MAR93	-0.0087	<	0.032	mg/L
MW-BG-01	N	21MAR93	-0.0086	<	0.008	mg/L
MW-BG-02	N	21MAR93	-0.0060	<	0.008	mg/L
MW-BG-03	N	20MAR93	-0.0028	<	0.016	mg/L
MW-BG-02	FD	21MAR93	-0.0023	<	0.008	mg/L
MW-26-01	N	20MAR93	-0.0014	<	0.008	mg/L
MW-29-01	N	22MAR93	-0.0012	<	0.016	mg/L
MW-36-01	N	22MAR93	0.0076	<	0.008	mg/L
MW-22-01	N	20MAR93	0.0150	>	0.008	mg/L

-------- MATRIX=L D_OR_T=Dissolved Metals METHOD=SW7421 ANALYTE=Lead ---------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
MW-BG-04	N	20MAR93	-0.0180	<	.006	mg/L
MW-23-01	N	20MAR93	-0.0100	<	.006	mg/L
MW-29-01	N	22MAR93	-0.0080	<	.006	mg/L
MW-09-01	N	20MAR93	-0.0060	<	.006	mg/L
MW-23-01	FD	20MAR93	-0.0040	<	.006	mg/L
MW-04-01	FD	22MAR93	-0.0040	<	.006	mg/L
MW-BG-01	N	21MAR93	-0.0040	<	.003	mg/L
MW-22-01	N	20MAR93	-0.0031	<	.003	mg/L
MW-30&33	N	20MAR93	-0.0024	<	.003	mg/L
MW-04-01	N	22MAR93	-0.0020	<	.006	mg/L
MW-39-01	N	21MAR93	-0.0020	<	.006	mg/L
MW-21-01	N	20MAR93	-0.0020	<	.006	mg/L
MW-BG-03	N	20MAR93	-0.0020	<	.006	mg/L
MW-BG-02	FD	21MAR93	0.0000	<	.003	mg/L
MW-26-01	N	20MAR93	0.0000	<	.003	mg/L
MW-36-01	N	22MAR93	0.0022	<	.003	mg/L
MW-BG-02	N	21MAR93	0.0035	>	.003	mg/L

------- MATRIX=L D_OR_T=Dissolved Metals METHOD=SW7470 ANALYTE=Mercury -------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
MW-26-01	N	20MAR93	-.00011	<	.00018	mg/L
MW-30&33	N	20MAR93	-.00010	<	.00018	mg/L
MW-22-01	N	20MAR93	-.00009	<	.00018	mg/L
MW-36-01	N	22MAR93	-.00009	<	.00018	mg/L
MW-09-01	N	20MAR93	-.00009	<	.00018	mg/L
MW-BG-02	N	21MAR93	-.00008	<	.00018	mg/L
MW-BG-02	FD	21MAR93	-.00008	<	.00018	mg/L
MW-BG-03	N	20MAR93	-.00007	<	.00018	mg/L
MW-BG-01	N	21MAR93	-.00007	<	.00018	mg/L
MW-04-01	N	22MAR93	-.00006	<	.00018	mg/L
MW-04-01	FD	22MAR93	-.00005	<	.00018	mg/L
MW-23-01	N	20MAR93	-.00005	<	.00018	mg/L
MW-39-01	N	21MAR93	-.00004	<	.00018	mg/L
MW-BG-04	N	20MAR93	-.00003	<	.00018	mg/L
MW-29-01	N	22MAR93	-.00003	<	.00018	mg/L
MW-23-01	FD	20MAR93	-.00002	<	.00018	mg/L
MW-21-01	N	20MAR93	-.00001	<	.00018	mg/L

------ MATRIX=L D_OR_T=Dissolved Metals METHOD=SW7740 ANALYTE=Selenium -------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
MW-09-01	N	20MAR93	-0.0840	<	0.01	mg/L
MW-BG-04	N	20MAR93	-0.0730	<	0.01	mg/L
MW-22-01	N	20MAR93	-0.0330	<	0.01	mg/L
MW-30&33	N	20MAR93	-0.0220	<	0.01	mg/L
MW-23-01	N	20MAR93	-0.0124	<	0.01	mg/L
MW-23-01	FD	20MAR93	-0.0096	<	0.01	mg/L
MW-BG-03	N	20MAR93	-0.0094	<	0.01	mg/L
MW-29-01	N	22MAR93	-0.0066	<	0.01	mg/L
MW-26-01	N	20MAR93	-0.0028	<	0.01	mg/L
MW-04-01	FD	22MAR93	-0.0016	<	0.01	mg/L
MW-04-01	N	22MAR93	-0.0002	<	0.01	mg/L
MW-BG-02	N	21MAR93	0.0006	<	0.01	mg/L
MW-BG-02	FD	21MAR93	0.0014	<	0.01	mg/L
MW-BG-01	N	21MAR93	0.0130	>	0.01	mg/L
MW-39-01	N	21MAR93	0.0210	>	0.01	mg/L
MW-21-01	N	20MAR93	0.0330	>	0.01	mg/L
MW-36-01	N	22MAR93	0.0470	>	0.01	mg/L

------ MATRIX=L D_OR_T=Dissolved Metals METHOD=SW7841 ANALYTE=Thallium -------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
MW-23-01	FD	20MAR93	-.0044	<	0.020	mg/L
MW-30&33	N	20MAR93	-.0013	<	0.005	mg/L
MW-21-01	N	20MAR93	-.0004	<	0.020	mg/L
MW-22-01	N	20MAR93	-.0004	<	0.010	mg/L
MW-BG-01	N	21MAR93	-.0001	<	0.005	mg/L
MW-26-01	N	20MAR93	0.0000	<	0.005	mg/L
MW-36-01	N	22MAR93	0.0002	<	0.005	mg/L
MW-BG-04	N	20MAR93	0.0004	<	0.020	mg/L
MW-BG-02	FD	21MAR93	0.0004	<	0.005	mg/L
MW-39-01	N	21MAR93	0.0008	<	0.020	mg/L
MW-04-01	N	22MAR93	0.0012	<	0.020	mg/L
MW-23-01	N	20MAR93	0.0020	<	0.020	mg/L
MW-BG-03	N	20MAR93	0.0020	<	0.020	mg/L
MW-29-01	N	22MAR93	0.0024	<	0.020	mg/L
MW-04-01	FD	22MAR93	0.0032	<	0.020	mg/L
MW-BG-02	N	21MAR93	0.0050	ND	0.005	mg/L

-------- MATRIX=L D_OR_T=Total Metals METHOD=SW6010 ANALYTE=Antimony ---------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
MW-29-01	N	22MAR93	-0.04900	<	0.1	mg/L
MW-22-01	N	20MAR93	-0.03600	<	0.1	mg/L
MW-BG-02	FD	21MAR93	-0.02600	<	0.1	mg/L
MW-26-01	N	20MAR93	-0.02200	<	0.1	mg/L
MW-04-01	FD	22MAR93	-0.01600	<	0.1	mg/L
MW-04-01	N	22MAR93	-0.01100	<	0.1	mg/L
MW-21-01	N	20MAR93	-0.00880	<	0.1	mg/L
MW-BG-01	N	21MAR93	-0.00870	<	0.1	mg/L
MW-36-01	N	22MAR93	-0.00099	<	0.1	mg/L
MW-39-01	N	21MAR93	0.00140	<	0.1	mg/L
MW-BG-02	N	21MAR93	0.00240	<	0.1	mg/L
MW-BG-03	N	20MAR93	0.00350	<	0.1	mg/L
MW-30&33	N	20MAR93	0.10000	NO	0.1	mg/L

--------- MATRIX=L D_OR_T=Total Metals METHOD=SW6010 ANALYTE=Barium ----------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
MW-21-01	N	20MAR93	0.029	>	0.01	mg/L
MW-23-01	N	20MAR93	0.041	>	0.01	mg/L
MW-29-01	N	22MAR93	0.045	>	0.01	mg/L
MW-39-01	N	21MAR93	0.045	>	0.01	mg/L
MW-09-01	N	20MAR93	0.074	>	0.01	mg/L
MW-22-01	N	20MAR93	0.081	>	0.01	mg/L
MW-26-01	N	20MAR93	0.090	>	0.01	mg/L
MW-23-01	FD	20MAR93	0.120	>	0.01	mg/L
MW-04-01	N	22MAR93	0.130	>	0.01	mg/L
MW-BG-04	N	20MAR93	0.130	>	0.01	mg/L
MW-04-01	FD	22MAR93	0.160	>	0.01	mg/L
MW-BG-02	FD	21MAR93	0.170	>	0.01	mg/L
MW-BG-02	N	21MAR93	0.170	>	0.01	mg/L
MW-BG-03	N	20MAR93	0.180	>	0.01	mg/L
MW-36-01	N	22MAR93	0.190	>	0.01	mg/L
MW-30&33	N	20MAR93	0.360	>	0.01	mg/L
MW-BG-01	N	21MAR93	0.480	>	0.01	mg/L

-------- MATRIX=L D_OR_T=Total Metals METHOD=SW6010 ANALYTE=Beryllium --------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
MW-22-01	N	20MAR93	-.00021	<	.002	mg/L
MW-29-01	N	22MAR93	-.00007	<	.002	mg/L
MW-26-01	N	20MAR93	0.00001	<	.002	mg/L
MW-21-01	N	20MAR93	0.00005	<	.002	mg/L
MW-39-01	N	21MAR93	0.00016	<	.002	mg/L
MW-04-01	FD	22MAR93	0.00043	<	.002	mg/L
MW-04-01	N	22MAR93	0.00052	<	.002	mg/L
MW-BG-04	N	20MAR93	0.00056	<	.002	mg/L
MW-09-01	N	20MAR93	0.00076	<	.002	mg/L
MW-BG-02	N	21MAR93	0.00130	<	.002	mg/L
MW-BG-03	N	20MAR93	0.00140	<	.002	mg/L
MW-23-01	N	20MAR93	0.00150	<	.002	mg/L
MW-BG-02	FD	21MAR93	0.00160	<	.002	mg/L
MW-30&33	N	20MAR93	0.00200	ND	.002	mg/L
MW-23-01	FD	20MAR93	0.00200	=	.002	mg/L
MW-36-01	N	22MAR93	0.00240	>	.002	mg/L
MW-BG-01	N	21MAR93	0.00340	>	.002	mg/L

--------- MATRIX=L D_OR_T=Total Metals METHOD=SW6010 ANALYTE=Cadmium ---------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
MW-BG-02	N	21MAR93	.0010	<	.005	mg/L
MW-BG-02	FD	21MAR93	.0014	<	.005	mg/L
MW-BG-03	N	20MAR93	.0030	<	.005	mg/L
MW-29-01	N	22MAR93	.0032	<	.005	mg/L
MW-26-01	N	20MAR93	.0037	<	.005	mg/L
MW-04-01	N	22MAR93	.0038	<	.005	mg/L
MW-04-01	FD	22MAR93	.0040	<	.005	mg/L
MW-36-01	N	22MAR93	.0042	<	.005	mg/L
MW-30&33	N	20MAR93	.0050	ND	.005	mg/L
MW-BG-01	N	21MAR93	.0051	>	.005	mg/L
MW-39-01	N	21MAR93	.0053	>	.005	mg/L
MW-23-01	N	20MAR93	.0054	>	.005	mg/L
MW-21-01	N	20MAR93	.0056	>	.005	mg/L
MW-22-01	N	20MAR93	.0057	>	.005	mg/L
MW-BG-04	N	20MAR93	.0059	>	.005	mg/L
MW-09-01	N	20MAR93	.0062	>	.005	mg/L
MW-23-01	FD	20MAR93	.0080	>	.005	mg/L

-------- MATRIX=L D_OR_T=Total Metals METHOD=SW6010 ANALYTE=Chromium ---------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
MW-23-01	N	20MAR93	0.0039	<	0.01	mg/L
MW-29-01	N	22MAR93	0.0057	<	0.01	mg/L
MW-09-01	N	20MAR93	0.0067	<	0.01	mg/L
MW-21-01	N	20MAR93	0.0074	<	0.01	mg/L
MW-BG-04	N	20MAR93	0.0074	<	0.01	mg/L
MW-39-01	N	21MAR93	0.0087	<	0.01	mg/L
MW-26-01	N	20MAR93	0.0160	>	0.01	mg/L
MW-BG-02	N	21MAR93	0.0160	>	0.01	mg/L
MW-BG-03	N	20MAR93	0.0160	>	0.01	mg/L
MW-BG-02	FD	21MAR93	0.0170	>	0.01	mg/L
MW-23-01	FD	20MAR93	0.0200	>	0.01	mg/L
MW-22-01	N	20MAR93	0.0330	>	0.01	mg/L
MW-04-01	FD	22MAR93	0.0370	>	0.01	mg/L
MW-04-01	N	22MAR93	0.0400	>	0.01	mg/L
MW-36-01	N	22MAR93	0.0560	>	0.01	mg/L
MW-30&33	N	20MAR93	0.0610	>	0.01	mg/L
MW-BG-01	N	21MAR93	0.0960	>	0.01	mg/L

--------- MATRIX=L D_OR_T=Total Metals METHOD=SW6010 ANALYTE=Cobalt ----------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
MW-09-01	N	20MAR93	-0.00018	<	0.01	mg/L
MW-39-01	N	21MAR93	0.00039	<	0.01	mg/L
MW-21-01	N	20MAR93	0.00041	<	0.01	mg/L
MW-29-01	N	22MAR93	0.00100	<	0.01	mg/L
MW-26-01	N	20MAR93	0.00120	<	0.01	mg/L
MW-04-01	N	22MAR93	0.00160	<	0.01	mg/L
MW-04-01	FD	22MAR93	0.00190	<	0.01	mg/L
MW-22-01	N	20MAR93	0.00320	<	0.01	mg/L
MW-23-01	N	20MAR93	0.00440	<	0.01	mg/L
MW-23-01	FD	20MAR93	0.00580	<	0.01	mg/L
MW-BG-04	N	20MAR93	0.00780	<	0.01	mg/L
MW-BG-02	N	21MAR93	0.00840	<	0.01	mg/L
MW-BG-02	FD	21MAR93	0.00850	<	0.01	mg/L
MW-36-01	N	22MAR93	0.01100	>	0.01	mg/L
MW-BG-03	N	20MAR93	0.01100	>	0.01	mg/L
MW-BG-01	N	21MAR93	0.01300	>	0.01	mg/L
MW-30&33	N	20MAR93	0.02000	>	0.01	mg/L

--------- MATRIX=L D_OR_T=Total Metals METHOD=SW6010 ANALYTE=Copper ----------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
MW-09-01	N	20MAR93	0.0040	<	0.02	mg/L
MW-23-01	N	20MAR93	0.0041	<	0.02	mg/L
MW-21-01	N	20MAR93	0.0049	<	0.02	mg/L
MW-22-01	N	20MAR93	0.0057	<	0.02	mg/L
MW-29-01	N	22MAR93	0.0093	<	0.02	mg/L
MW-23-01	FD	20MAR93	0.0096	<	0.02	mg/L
MW-26-01	N	20MAR93	0.0097	<	0.02	mg/L
MW-BG-02	N	21MAR93	0.0100	<	0.02	mg/L
MW-BG-04	N	20MAR93	0.0110	<	0.02	mg/L
MW-BG-02	FD	21MAR93	0.0160	<	0.02	mg/L
MW-30&33	N	20MAR93	0.0200	ND	0.02	mg/L
MW-36-01	N	22MAR93	0.0200	=	0.02	mg/L
MW-BG-03	N	20MAR93	0.0210	>	0.02	mg/L
MW-04-01	N	22MAR93	0.0250	>	0.02	mg/L
MW-04-01	FD	22MAR93	0.0260	>	0.02	mg/L
MW-BG-01	N	21MAR93	0.0280	>	0.02	mg/L
MW-39-01	N	21MAR93	0.0300	>	0.02	mg/L

--------- MATRIX=L D_OR_T=Total Metals METHOD=SW6010 ANALYTE=Nickel ----------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
MW-39-01	N	21MAR93	-0.0079	<	0.02	mg/L
MW-21-01	N	20MAR93	-0.0053	<	0.02	mg/L
MW-29-01	N	22MAR93	-0.0014	<	0.02	mg/L
MW-04-01	FD	22MAR93	0.0027	<	0.02	mg/L
MW-23-01	N	20MAR93	0.0029	<	0.02	mg/L
MW-22-01	N	20MAR93	0.0030	<	0.02	mg/L
MW-BG-04	N	20MAR93	0.0036	<	0.02	mg/L
MW-09-01	N	20MAR93	0.0037	<	0.02	mg/L
MW-04-01	N	22MAR93	0.0086	<	0.02	mg/L
MW-26-01	N	20MAR93	0.0110	<	0.02	mg/L
MW-8G-02	N	21MAR93	0.0120	<	0.02	mg/L
MW-BG-03	N	20MAR93	0.0120	<	0.02	mg/L
MW-BG-02	FD	21MAR93	0.0160	<	0.02	mg/L
MW-23-01	FD	20MAR93	0.0200	=	0.02	mg/L
MW-36-01	N	22MAR93	0.0240	>	0.02	mg/L
MW-30&33	N	20MAR93	0.0260	>	0.02	mg/L
MW-BG-01	N	21MAR93	0.0400	>	0.02	mg/L

--------- MATRIX=L D_OR_T=Total Metals METHOD=SW6010 ANALYTE=Silver ----------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
MW-04-01	FD	22MAR93	-0.01100	<	0.01	mg/L
MW-BG-04	N	20MAR93	-0.00640	<	0.01	mg/L
MW-09-01	N	20MAR93	-0.00510	<	0.01	mg/L
MW-22-01	N	20MAR93	-0.00480	<	0.01	mg/L
MW-21-01	N	20MAR93	-0.00420	<	0.01	mg/L
MW-BG-03	N	20MAR93	-0.00410	<	0.01	mg/L
MW-23-01	FD	20MAR93	-0.00370	<	0.01	mg/L
MW-26-01	N	20MAR93	-0.00310	<	0.01	mg/L
MW-29-01	N	22MAR93	-0.00310	<	0.01	mg/L
MW-BG-02	FD	21MAR93	-0.00240	<	0.01	mg/L
MW-23-01	N	20MAR93	-0.00200	<	0.01	mg/L
MW-BG-01	N	21MAR93	-0.00180	<	0.01	mg/L
MW-39-01	N	21MAR93	-0.00140	<	0.01	mg/L
MW-BG-02	N	21MAR93	-0.00120	<	0.01	mg/L
MW-36-01	N	22MAR93	-0.00099	<	0.01	mg/L
MW-04-01	N	22MAR93	0.00160	<	0.01	mg/L
MW-30&33	N	20MAR93	0.01000	ND	0.01	mg/L

-------- MATRIX=L D_OR_T=Total Metals METHOD=SW6010 ANALYTE=Thallium ---------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
MW-BG-02	N	21MAR93	-0.0065	<	0.1	mg/L
MW-BG-03	N	20MAR93	-0.0040	<	0.1	mg/L
MW-BG-02	FD	21MAR93	-0.0020	<	0.1	mg/L
MW-26-01	N	20MAR93	0.0073	<	0.1	mg/L
MW-39-01	N	21MAR93	0.0130	<	0.1	mg/L
MW-29-01	N	22MAR93	0.0170	<	0.1	mg/L
MW-36-01	N	22MAR93	0.0230	<	0.1	mg/L
MW-BG-01	N	21MAR93	0.0240	<	0.1	mg/L
MW-22-01	N	20MAR93	0.0270	<	0.1	mg/L
MW-04-01	N	22MAR93	0.0340	<	0.1	mg/L
MW-09-01	N	20MAR93	0.0370	<	0.1	mg/L
MW-23-01	FD	20MAR93	0.0380	<	0.1	mg/L
MW-21-01	N	20MAR93	0.0480	<	0.1	mg/L
MW-04-01	FD	22MAR93	0.0520	<	0.1	mg/L
MW-BG-04	N	20MAR93	0.0540	<	0.1	mg/L
MW-23-01	N	20MAR93	0.0570	<	0.1	mg/L
MW-30&33	N	20MAR93	0.1000	ND	0.1	mg/L

---------- MATRIX=L D_OR_T=Total Metals METHOD=SW6010 ANALYTE=Tin ----------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
MW-22-01	N	20MAR93	-0.01100	<	0.6	mg/L
MW-04-01	N	22MAR93	-0.01100	<	0.6	mg/L
MW-36-01	N	22MAR93	-0.01000	<	0.6	mg/L
MW-BG-02	N	21MAR93	-0.01000	<	D.6	mg/L
MW-09-01	N	20MAR93	-0.00980	<	0.6	mg/L
MW-04-01	FD	22MAR93	-0.00760	<	0.6	mg/L
MW-BG-02	FD	21MAR93	-0.00710	<	0.6	mg/L
MW-29-01	N	22MAR93	-0.00630	<	0.6	mg/L
MW-23-01	FD	20MAR93	-0.00560	<	0.6	mg/L
MW-23-01	N	20MAR93	-0.00510	<	0.6	mg/L
MW-BG-01	N	21MAR93	-0.00230	<	0.6	mg/L
MW-39-01	N	21MAR93	-0.00100	<	0.6	mg/L
MW-BG-03	N	20MAR93	-0.00055	<	0.6	mg/L
MW-21-01	N	20MAR93	0.00094	<	0.6	mg/L
MW-26-01	N	20MAR93	0.00110	<	0.6	mg/L
MW-BG-04	N	20MAR93	0.00530	<	0.6	mg/L
MW-30&33	N	20MAR93	-0.01120	<	.	mg/L

-------- MATRIX=L D_OR_T=Total Metals METHOD=SW6010 ANALYTE=Vanadium ---------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
MW-BG-02	N	21MAR93	0.027	>	0.02	mg/L
MW-BG-02	FD	21MAR93	0.029	>	0.02	mg/L
MW-29-01	N	22MAR93	0.034	>	0.02	mg/L
MW-39-01	N	21MAR93	0.038	>	0.02	mg/L
MW-09-01	N	20MAR93	0.042	>	0.02	mg/L
MW-BG-04	N	20MAR93	0.047	>	0.D2	mg/L
MW-BG-03	N	20MAR93	0.050	>	0.02	mg/L
MW-23-01	N	20MAR93	0.052	>	0.02	mg/L
MW-21-01	N	20MAR93	0.061	>	0.02	mg/L
MW-26-01	N	20MAR93	0.087	>	0.02	mg/L
MW-23-01	FD	20MAR93	0.093	>	0.02	mg/L
MW-04-01	N	22MAR93	0.130	>	0.02	mg/L
MW-04-01	FD	22MAR93	0.130	>	0.02	mg/L
MW-22-01	N	20MAR93	0.150	>	0.02	mg/L
MW-36-01	N	22MAR93	0.170	>	0.02	mg/L
MW-BG-01	N	21MAR93	0.170	>	0.02	mg/L
MW-30&33	N	20MAR93	0.200	>	0.02	mg/L

---------- MATRIX=L D_OR_T=Total Metals METHOD=SW6010 ANALYTE=Zinc ----------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
MW-29-01	N	22MAR93	0.012	<	0.02	mg/L
MW-22-01	N	20MAR93	0.015	<	0.02	mg/L
MW-39-01	N	21MAR93	0.016	<	0.02	mg/L
MW-23-01	N	20MAR93	0.020	=	0.02	mg/L
MW-09-01	N	20MAR93	0.025	>	0.02	mg/L
MW-26-01	N	20MAR93	0.026	>	0.02	mg/L
MW-21-01	N	20MAR93	0.027	>	0.02	mg/L
MW-04-01	N	22MAR93	0.035	>	0.02	mg/L
MW-BG-04	N	20MAR93	0.038	>	0.02	mg/L
MW-23-01	FD	20MAR93	0.046	>	0.02	mg/L
MW-04-01	FD	22MAR93	0.047	>	0.02	mg/L
MW-BG-02	N	21MAR93	0.051	>	0.02	mg/L
MW-BG-02	FD	21MAR93	0.059	>	0.02	mg/L
MW-BG-03	N	20MAR93	0.062	>	0.02	mg/L
MW-36-01	N	22MAR93	0.084	>	0.02	mg/L
MW-30&33	N	20MAR93	0.084	>	0.02	mg/L
MW-BG-01	N	21MAR93	0.160	>	0.02	mg/L

--------- MATRIX=L D_OR_T=Total Metals METHOD=SW7060 ANALYTE=Arsenic ---------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
MW-09-01	N	20MAR93	-0.0770	<	0.032	mg/L
MW-BG-04	N	20MAR93	-0.0420	<	0.016	mg/L
MW-39-01	N	21MAR93	-0.0210	<	0.016	mg/L
MW-23-01	FD	20MAR93	-0.0190	<	0.016	mg/L
MW-29-01	N	22MAR93	-0.0170	<	0.016	mg/L
MW-04-01	N	22MAR93	-0.0140	<	0.016	mg/L
MW-04-01	FD	22MAR93	-0.0120	<	0.016	mg/L
MW-21-01	N	20MAR93	-0.0092	<	0.016	mg/L
MW-23-01	N	20MAR93	-0.0072	<	0.016	mg/L
MW-BG-03	N	20MAR93	-0.0048	<	0.032	mg/L
MW-BG-02	N	21MAR93	0.0004	<	0.008	mg/L
MW-BG-02	FD	21MAR93	0.0016	<	0.008	mg/L
MW-26-01	N	20MAR93	0.0130	>	0.008	mg/L
MW-36-01	N	22MAR93	0.0180	>	0.008	mg/L
MW-22-01	N	20MAR93	0.0210	>	0.008	mg/L
MW-30&33	N	20MAR93	0.0240	>	0.008	mg/L
MW-BG-01	N	21MAR93	0.0400	>	0.008	mg/L

---------- MATRIX=L D_OR_T=Total Metals METHOD=SW7421 ANALYTE=Lead ----------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
MW-29-01	N	22MAR93	-0.0100	<	.006	mg/L
MW-23-01	N	20MAR93	-0.0060	<	.006	mg/L
MW-09-01	N	20MAR93	-0.0060	<	.006	mg/L
MW-04-01	N	22MAR93	-0.0020	<	.006	mg/L
MW-22-01	N	20MAR93	-0.0016	<	.003	mg/L
MW-23-01	FD	20MAR93	0.0000	<	.006	mg/L
MW-39-01	N	21MAR93	0.0000	<	.006	mg/L
MW-21-01	N	20MAR93	0.0000	<	.006	mg/L
MW-26-01	N	20MAR93	0.0008	<	.003	mg/L
MW-30&33	N	20MAR93	0.0013	<	.003	mg/L
MW-04-01	FD	22MAR93	0.0020	<	.006	mg/L
MW-BG-03	N	20MAR93	0.0040	<	.006	mg/L
MW-36-01	N	22MAR93	0.0110	>	.003	mg/L
MW-BG-02	N	21MAR93	0.0120	>	.003	mg/L
MW-BG-01	N	21MAR93	0.0120	>	.003	mg/L
MW-BG-02	FD	21MAR93	0.0140	>	.003	mg/L

--------- MATRIX=L D_OR_T=Total Metals METHOD=SW7470 ANALYTE=Mercury ---------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
MW-22-01	N	20MAR93	-.00011	<	.00018	mg/L
MW-36-01	N	22MAR93	-.00010	<	.00018	mg/L
MW-26-01	N	20MAR93	-.00010	<	.00018	mg/L
MW-30&33	N	20MAR93	-.00009	<	.00018	mg/L
MW-BG-01	N	21MAR93	-.00009	<	.00018	mg/L
MW-BG-02	FD	21MAR93	-.00007	<	.00018	mg/L
MW-BG-02	N	21MAR93	-.00007	<	.00018	mg/L
MW-21-01	N	20MAR93	-.00006	<	.00018	mg/L
MW-39-01	N	21MAR93	-.00005	<	.00018	mg/L
MW-04-01	FD	22MAR93	-.00005	<	.00018	mg/L
MW-BG-03	N	20MAR93	-.00005	<	.00018	mg/L
MW-29-01	N	22MAR93	-.00005	<	.00018	mg/L
MW-09-01	N	20MAR93	-.00005	<	.00018	mg/L
MW-23-01	FD	20MAR93	-.00004	<	.00018	mg/L
MW-BG-04	N	20MAR93	-.00004	<	.00018	mg/L
MW-04-01	N	22MAR93	-.00003	<	.00018	mg/L
MW-23-01	N	20MAR93	0.00000	<	.00018	mg/L

-------- MATRIX=L D_OR_T=Total Metals METHOD=SW7740 ANALYTE=Selenium ---------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
MW-22-01	N	20MAR93	-0.0290	<	0.01	mg/L
MW-23-01	FD	20MAR93	-0.0196	<	0.01	mg/L
MW-29-01	N	22MAR93	-0.0180	<	0.01	mg/L
MW-30&33	N	20MAR93	-0.0160	<	0.01	mg/L
MW-23-01	N	20MAR93	-0.0054	<	0.01	mg/L
MW-BG-03	N	20MAR93	-0.0042	<	0.01	mg/L
MW-BG-02	N	21MAR93	-0.0028	<	0.01	mg/L
MW-BG-02	FD	21MAR93	0.0010	<	0.01	mg/L
MW-04-01	FD	22MAR93	0.0110	>	0.01	mg/L
MW-04-01	N	22MAR93	0.0180	>	0.01	mg/L
MW-26-01	N	20MAR93	0.0180	>	0.01	mg/L
MW-39-01	N	21MAR93	0.0240	>	0.01	mg/L
MW-36-01	N	22MAR93	0.0280	>	0.01	mg/L
MW-21-01	N	20MAR93	0.0340	>	0.01	mg/L
MW-BG-01	N	21MAR93	0.0600	>	0.01	mg/L

-------- MATRIX=L D_OR_T=Total Metals METHOD=SW7841 ANALYTE=Thallium ---------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
MW-23-01	FD	20MAR93	-.0024	<	0.020	mg/L
MW-23-01	N	20MAR93	-.0016	<	0.020	mg/L
MW-BG-04	N	20MAR93	-.0016	<	0.020	mg/L
MW-04-01	FD	22MAR93	-.0008	<	0.020	mg/L
MW-22-01	N	20MAR93	-.0008	<	0.010	mg/L
MW-29-01	N	22MAR93	0.0000	<	0.020	mg/L
MW-36-01	N	22MAR93	0.0005	<	0.005	mg/L
MW-BG-01	N	21MAR93	0.0006	<	0.005	mg/L
MW-26-01	N	20MAR93	0.0008	<	0.005	mg/L
MW-BG-02	FD	21MAR93	0.0010	<	0.005	mg/L
MW-BG-02	N	21MAR93	0.0010	<	0.005	mg/L
MW-04-01	N	22MAR93	0.0012	<	0.020	mg/L
MW-30&33	N	20MAR93	0.0014	<	0.005	mg/L
MW-21-01	N	20MAR93	0.0024	<	0.020	mg/L
MW-39-01	N	21MAR93	0.0028	<	0.020	mg/L
MW-BG-03	N	20MAR93	0.0036	<	0.020	mg/L

------ MATRIX=S D_OR_T=Dissolved Metals METHOD=SW6010 ANALYTE=Aluminum -------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
SBG-09	N	23FEB93	260	>	0	mg/kg
SBG-03	FD	23FEB93	1500	>	0	mg/kg
SBG-03	N	23FEB93	1700	>	0	mg/kg
SBG-07	N	23FEB93	2100	>	0	mg/kg
SBG-04	N	23FEB93	2300	>	0	mg/kg
SBG-07	FD	23FEB93	2400	>	0	mg/kg
SBG-01	FD	23FEB93	2800	>	0	mg/kg
SBG-05	N	24FEB93	2800	>	0	mg/kg
SBG-01	N	23FEB93	3000	>	0	mg/kg
SBG-10	N	23FEB93	4200	>	0	mg/kg
SBG-08	N	23FEB93	5400	>	0	mg/kg
SBG-02	N	23FEB93	6200	>	0	mg/kg

------ MATRIX=S D_OR_T=Dissolved Metals METHOD=SW6010 ANALYTE=Antimony -------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
SBG-07	FD	23FEB93	-88.0	<	0.0	mg/kg
SBG-01	N	23FEB93	-68.0	<	0.0	mg/kg
SBG-03	N	23FEB93	-56.0	<	0.0	mg/kg
SBG-09	N	23FEB93	-49.0	<	0.0	mg/kg
SBG-01	FD	23FEB93	-48.0	<	0.0	mg/kg
SBG-03	FD	23FEB93	-45.0	<	0.0	mg/kg
SBG-07	N	23FEB93	-38.0	<	0.0	mg/kg
SBG-10	N	23FEB93	-2.8	<	0.0	mg/kg
SBG-08	N	23FEB93	1.6	<	0.3	mg/kg
SBG-02	N	23FEB93	2.7	<	0.0	mg/kg
SBG-05	N	24FEB93	2.8	<	0.0	mg/kg
SBG-04	N	23FEB93	2.9	<	0.0	mg/kg

------- MATRIX=S D_OR_T=Dissolved Metals METHOD=SW6010 ANALYTE=Arsenic -------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
SBG-01	FD	23FEB93	0.28	<	0	mg/kg
SBG-02	N	23FEB93	0.81	<	0	mg/kg
SBG-07	N	23FEB93	0.90	<	0	mg/kg
SBG-01	N	23FEB93	1.30	<	0	mg/kg
SBG-03	FD	23FEB93	1.50	<	0	mg/kg
SBG-10	N	23FEB93	1.70	<	0	mg/kg
SBG-07	FD	23FEB93	2.10	<	0	mg/kg
SBG-03	N	23FEB93	2.30	<	0	mg/kg
SBG-04	N	23FEB93	2.80	<	0	mg/kg
SBG-05	N	24FEB93	2.80	<	0	mg/kg
SBG-09	N	23FEB93	4.30	<	0	mg/kg
SBG-08	N	23FEB93	4.50	<	0	mg/kg

------- MATRIX=S D_OR_T=Dissolved Metals METHOD=SW6010 ANALYTE=Barium --------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
SBG-09	N	23FEB93	14	>	0.00	mg/kg
SBG-03	FD	23FEB93	24	>	0.00	mg/kg
SBG-04	N	23FEB93	25	>	0.10	mg/kg
SBG-01	FD	23FEB93	26	>	0.10	mg/kg
SBG-03	N	23FEB93	26	>	0.99	mg/kg
SBG-01	N	23FEB93	28	>	0.10	mg/kg
SBG-07	N	23FEB93	30	>	0.00	mg/kg
SBG-07	FD	23FEB93	32	>	0.10	mg/kg
SBG-05	N	24FEB93	36	>	0.00	mg/kg
SBG-02	N	23FEB93	43	>	0.10	mg/kg
SBG-10	N	23FEB93	55	>	0.10	mg/kg
SBG-08	N	23FEB93	65	>	0.93	mg/kg

------ MATRIX=S D_OR_T=Dissolved Metals METHOD=SW6010 ANALYTE=Beryllium ------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
SBG-09	N	23FEB93	-0.041	<	0.21	mg/kg
SBG-03	FD	23FEB93	0.046	<	0.20	mg/kg
SBG-03	N	23FEB93	0.092	<	0.20	mg/kg
SBG-05	N	24FEB93	0.100	<	0.20	mg/kg
SBG-07	N	23FEB93	0.110	<	0.21	mg/kg
SBG-07	FD	23FEB93	0.110	<	0.21	mg/kg
SBG-01	N	23FEB93	0.110	<	0.21	mg/kg
SBG-04	N	23FEB93	0.120	<	0.22	mg/kg
SBG-01	FD	23FEB93	0.140	<	0.22	mg/kg
SBG-08	N	23FEB93	0.150	<	0.19	mg/kg
SBG-10	N	23FEB93	0.150	<	0.22	mg/kg
SBG-02	N	23FEB93	0.400	>	0.21	mg/kg

-------- MATRIX=S D_OR_T=Dissolved Metals METHOD=SW6010 ANALYTE=Boron --------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
SBG-09	N	23FEB93	5.2	<	0	mg/kg
SBG-01	FD	23FEB93	6.8	<	0	mg/kg
SBG-01	N	23FEB93	7.5	<	0	mg/kg
SBG-04	N	23FEB93	7.6	<	0	mg/kg
SBG-03	N	23FEB93	7.8	<	0	mg/kg
SBG-08	N	23FEB93	8.5	<	0	mg/kg
SBG-03	FD	23FEB93	8.8	<	0	mg/kg
SBG-07	FD	23FEB93	9.9	<	0	mg/kg
SBG-05	N	24FEB93	10.0	<	0	mg/kg
SBG-02	N	23FEB93	11.0	<	0	mg/kg
SBG-07	N	23FEB93	11.0	<	0	mg/kg
SBG-10	N	23FEB93	11.0	<	0	mg/kg

------- MATRIX=S D_OR_T=Dissolved Metals METHOD=SW6010 ANALYTE=Cadmium -------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
SBG-08	N	23FEB93	-0.320	<	0.46	mg/kg
SBG-03	FD	23FEB93	-0.240	<	0.50	mg/kg
SBG-10	N	23FEB93	-0.180	<	0.54	mg/kg
SBG-07	FD	23FEB93	-0.140	<	0.53	mg/kg
SBG-09	N	23FEB93	-0.120	<	0.52	mg/kg
SBG-03	N	23FEB93	-0.095	<	0.50	mg/kg
SBG-07	N	23FEB93	-0.043	<	0.52	mg/kg
SBG-04	N	23FEB93	-0.026	<	0.54	mg/kg
SBG-05	N	24FEB93	0.110	<	0.51	mg/kg
SBG-01	FD	23FEB93	0.140	<	0.56	mg/kg
SBG-02	N	23FEB93	0.210	<	0.53	mg/kg
SBG-01	N	23FEB93	0.240	<	0.53	mg/kg

------- MATRIX=S D_OR_T=Dissolved Metals METHOD=SW6010 ANALYTE=Calcium -------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
SBG-08	N	23FEB93	160000	>	0	mg/kg
SBG-03	N	23FEB93	220000	>	0	mg/kg
SBG-03	FD	23FEB93	220000	>	0	mg/kg
SBG-01	N	23FEB93	220000	>	0	mg/kg
SBG-10	N	23FEB93	230000	>	0	mg/kg
SBG-01	FD	23FEB93	230000	>	0	mg/kg
SBG-02	N	23FEB93	230000	>	0	mg/kg
SBG-05	N	24FEB93	230000	>	0	mg/kg
SBG-09	N	23FEB93	230000	>	0	mg/kg
SBG-07	FD	23FEB93	240000	>	0	mg/kg
SBG-07	N	23FEB93	240000	>	0	mg/kg
SBG-04	N	23FEB93	250000	>	0	mg/kg

------ MATRIX=S D_OR_T=Dissolved Metals METHOD=SW6010 ANALYTE=Chromium -------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
SBG-09	N	23FEB93	0.36	<	0.00	mg/kg
SBG-03	N	23FEB93	1.10	>	0.99	mg/kg
SBG-04	N	23FEB93	1.50	>	0.10	mg/kg
SBG-07	FD	23FEB93	1.50	>	0.10	mg/kg
SBG-03	FD	23FEB93	1.60	>	0.00	mg/kg
SBG-07	N	23FEB93	1.80	>	0.00	mg/kg
SBG-01	FD	23FEB93	2.20	>	0.10	mg/kg
SBG-01	N	23FEB93	2.20	>	0.10	mg/kg
SBG-05	N	24FEB93	2.40	>	0.00	mg/kg
SBG-10	N	23FEB93	2.80	>	0.10	mg/kg
SBG-08	N	23FEB93	4.10	>	0.93	mg/kg
SBG-02	N	23FEB93	4.80	>	0.10	mg/kg

------- MATRIX=S D_OR_T=Dissolved Metals METHOD=SW6010 ANALYTE=Cobalt --------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
SBG-07	N	23FEB93	0.26	<	0.00	mg/kg
SBG-09	N	23FEB93	0.40	<	0.00	mg/kg
SBG-03	N	23FEB93	0.50	<	0.99	mg/kg
SBG-03	FD	23FEB93	0.50	<	0.00	mg/kg
SBG-05	N	24FEB93	0.62	<	0.00	mg/kg
SBG-01	N	23FEB93	0.76	<	0.10	mg/kg
SBG-07	FD	23FEB93	0.78	<	0.10	mg/kg
SBG-01	FD	23FEB93	0.91	<	0.10	mg/kg
SBG-04	N	23FEB93	1.20	>	0.10	mg/kg
SBG-02	N	23FEB93	1.40	>	0.10	mg/kg
SBG-10	N	23FEB93	1.40	>	0.10	mg/kg
SBG-08	N	23FEB93	1.70	>	0.93	mg/kg

------- MATRIX=S O_OR_T=Oissolved Metals METHOD=SW6010 ANALYTE=Copper --------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
SBG-09	N	23FEB93	1.8	<	0.1	mg/kg
SBG-01	N	23FEB93	2.2	>	0.1	mg/kg
SBG-05	N	24FEB93	2.5	>	0.0	mg/kg
SBG-03	FD	23FEB93	3.0	>	0.0	mg/kg
SBG-10	N	23FEB93	3.0	>	0.2	mg/kg
SBG-01	FD	23FEB93	3.1	>	0.2	mg/kg
SBG-07	N	23FEB93	3.1	>	0.1	mg/kg
SBG-04	N	23FEB93	3.2	>	0.2	mg/kg
SBG-08	N	23FEB93	3.3	>	0.9	mg/kg
SBG-03	N	23FEB93	3.4	>	0.0	mg/kg
SBG-07	FD	23FEB93	3.5	>	0.1	mg/kg
SBG-02	N	23FEB93	3.8	>	0.1	mg/kg

-------- MATRIX=S O_OR_T=Oissolved Metals METHOD=SW6010 ANALYTE=Iron ---------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
SBG-09	N	23FEB93	180	>	0.2	mg/kg
SBG-03	FD	23FEB93	1200	>	0.0	mg/kg
SBG-03	N	23FEB93	1300	>	0.0	mg/kg
SBG-07	N	23FEB93	1700	>	0.2	mg/kg
SBG-04	N	23FEB93	1700	>	0.4	mg/kg
SBG-07	FD	23FEB93	1800	>	0.3	mg/kg
SBG-05	N	24FEB93	2000	>	0.1	mg/kg
SBG-01	FD	23FEB93	2100	>	0.6	mg/kg
SBG-01	N	23FEB93	2300	>	0.3	mg/kg
SBG-10	N	23FEB93	2700	>	0.4	mg/kg
SBG-08	N	23FEB93	4100	>	0.6	mg/kg
SBG-02	N	23FEB93	4500	>	0.3	mg/kg

-------- MATRIX=S D_OR_T=Dissolved Metals METHOD=SW6010 ANALYTE=Lead ---------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
SBG-01	N	23FEB93	-22.0	<	0.3	mg/kg
SBG-05	N	24FEB93	-18.0	<	0.1	mg/kg
SBG-07	FD	23FEB93	-18.0	<	0.3	mg/kg
SBG-01	FD	23FEB93	-17.0	<	0.6	mg/kg
SBG-03	FD	23FEB93	-16.0	<	0.0	mg/kg
SBG-04	N	23FEB93	-15.0	<	0.4	mg/kg
SBG-09	N	23FEB93	-14.0	<	0.2	mg/kg
SBG-02	N	23FEB93	-13.0	<	0.3	mg/kg
SBG-10	N	23FEB93	-13.0	<	0.4	mg/kg
SBG-08	N	23FEB93	-12.0	<	0.6	mg/kg
SBG-07	N	23FEB93	-10.0	<	0.2	mg/kg
SBG-03	N	23FEB93	-9.8	<	0.0	mg/kg

------- MATRIX=S D_OR_T=Dissolved Metals METHOD=SW6010 ANALYTE=Lithium -------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
SBG-09	N	23FEB93	3.6	>	0.1	mg/kg
SBG-03	FD	23FEB93	4.3	>	0.0	mg/kg
SBG-03	N	23FEB93	5.3	>	0.0	mg/kg
SBG-01	FD	23FEB93	6.0	>	0.2	mg/kg
SBG-04	N	23FEB93	6.0	>	0.2	mg/kg
SBG-07	N	23FEB93	6.2	>	0.1	mg/kg
SBG-07	FD	23FEB93	6.2	>	0.1	mg/kg
SBG-01	N	23FEB93	7.2	>	0.1	mg/kg
SBG-05	N	24FEB93	8.1	>	0.0	mg/kg
SBG-08	N	23FEB93	8.6	>	0.9	mg/kg
SBG-10	N	23FEB93	10.0	>	0.2	mg/kg
SBG-02	N	23FEB93	15.0	>	0.1	mg/kg

------ MATRIX=S D_OR_T=Dissolved Metals METHOD=SW6010 ANALYTE=Magnesium ------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
SBG-09	N	23FEB93	1700	>	0	mg/kg
SBG-04	N	23FEB93	3400	>	0	mg/kg
SBG-03	FD	23FEB93	3700	>	0	mg/kg
SBG-03	N	23FEB93	3800	>	0	mg/kg
SBG-07	N	23FEB93	3800	>	0	mg/kg
SBG-07	FD	23FEB93	4100	>	0	mg/kg
SBG-01	N	23FEB93	4500	>	0	mg/kg
SBG-01	FD	23FEB93	4600	>	0	mg/kg
SBG-08	N	23FEB93	5000	>	0	mg/kg
SBG-05	N	24FEB93	6900	>	0	mg/kg
SBG-02	N	23FEB93	7600	>	0	mg/kg
SBG-10	N	23FEB93	12000	>	0	mg/kg

------ MATRIX=S D_OR_T=Dissolved Metals METHOD=SW6010 ANALYTE=Manganese ------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
SBG-09	N	23FEB93	7.5	>	0.00	mg/kg
SBG-03	FD	23FEB93	20.0	>	0.00	mg/kg
SBG-03	N	23FEB93	21.0	>	0.99	mg/kg
SBG-04	N	23FEB93	30.0	>	0.10	mg/kg
SBG-07	N	23FEB93	31.0	>	0.00	mg/kg
SBG-07	FD	23FEB93	34.0	>	0.10	mg/kg
SBG-05	N	24FEB93	37.0	>	0.00	mg/kg
SBG-01	FD	23FEB93	42.0	>	0.10	mg/kg
SBG-01	N	23FEB93	44.0	>	0.10	mg/kg
SBG-10	N	23FEB93	54.0	>	0.10	mg/kg
SBG-08	N	23FEB93	71.0	>	0.93	mg/kg
SBG-02	N	23FEB93	120.0	>	0.10	mg/kg

----- MATRIX=S D_OR_T=Dissolved Metals METHOD=SW6010 ANALYTE=Molybdenum ------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
SBG-09	N	23FEB93	0.25	<	0.2	mg/kg
SBG-03	FD	23FEB93	0.30	<	0.0	mg/kg
SBG-08	N	23FEB93	0.75	<	0.6	mg/kg
SBG-04	N	23FEB93	0.76	<	0.4	mg/kg
SBG-03	N	23FEB93	1.10	<	0.0	mg/kg
SBG-07	FD	23FEB93	1.30	<	0.3	mg/kg
SBG-01	FD	23FEB93	1.30	<	0.6	mg/kg
SBG-01	N	23FEB93	1.70	<	0.3	mg/kg
SBG-07	N	23FEB93	1.90	<	0.2	mg/kg
SBG-05	N	24FEB93	2.10	<	0.1	mg/kg
SBG-02	N	23FEB93	2.80	<	0.3	mg/kg
SBG-10	N	23FEB93	4.20	<	0.4	mg/kg

------- MATRIX=S D_OR_T=Dissolved Metals METHOD=SW6010 ANALYTE=Nickel --------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
SBG-03	FD	23FEB93	1.0	<	0.0	mg/kg
SBG-01	N	23FEB93	1.2	<	0.1	mg/kg
SBG-09	N	23FEB93	1.5	<	0.1	mg/kg
SBG-05	N	24FEB93	1.7	<	0.0	mg/kg
SBG-02	N	23FEB93	1.8	<	0.1	mg/kg
SBG-01	FD	23FEB93	2.2	=	0.2	mg/kg
SBG-03	N	23FEB93	2.4	>	0.0	mg/kg
SBG-04	N	23FEB93	2.5	>	0.2	mg/kg
SBG-07	N	23FEB93	2.5	>	0.1	mg/kg
SBG-07	FD	23FEB93	2.9	>	0.1	mg/kg
SBG-08	N	23FEB93	3.2	>	0.9	mg/kg
SBG-10	N	23FEB93	4.7	>	0.2	mg/kg

------ MATRIX=S D_OR_T=Dissolved Metals METHOD=SW6010 ANALYTE=Potassium ------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
SBG-09	N	23FEB93	91	<	0	mg/kg
SBG-03	FD	23FEB93	490	>	0	mg/kg
SBG-03	N	23FEB93	550	>	0	mg/kg
SBG-05	N	24FEB93	650	>	0	mg/kg
SBG-04	N	23FEB93	770	>	0	mg/kg
SBG-07	N	23FEB93	800	>	0	mg/kg
SBG-07	FD	23FEB93	900	>	0	mg/kg
SBG-01	FD	23FEB93	920	>	0	mg/kg
SBG-10	N	23FEB93	1000	>	0	mg/kg
SBG-01	N	23FEB93	1000	>	0	mg/kg
SBG-08	N	23FEB93	1600	>	0	mg/kg
SBG-02	N	23FEB93	1800	>	0	mg/kg

------ MATRIX=S D_OR_T=Dissolved Metals METHOD=SW6010 ANALYTE=Selenium -------

LOCID	TYPE	LOGOATE	LAB_RES	FLAG	DETLIM	UNITS
SBG-04	N	23FEB93	-12.00	<	0	mg/kg
SBG-02	N	23FEB93	-10.00	<	0	mg/kg
SBG-03	N	23FEB93	-6.90	<	0	mg/kg
SBG-07	FD	23FEB93	-5.80	<	0	mg/kg
SBG-01	FD	23FEB93	-1.70	<	0	mg/kg
SBG-01	N	23FEB93	-1.50	<	0	mg/kg
SBG-07	N	23FEB93	-0.44	<	0	mg/kg
SBG-05	N	24FEB93	-0.18	<	0	mg/kg
SBG-08	N	23FEB93	0.40	<	0	mg/kg
SBG-10	N	23FEB93	3.00	<	0	mg/kg
SBG-09	N	23FEB93	4.50	<	0	mg/kg
SBG-03	FD	23FEB93	7.90	<	0	mg/kg

------- MATRIX=S D_OR_T=Dissolved Metals METHOD=SW6010 ANALYTE=Silicon -------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
SBG-09	N	23FEB93	180	>	0	mg/kg
SBG-07	N	23FEB93	200	>	0	mg/kg
SBG-03	FD	23FEB93	230	>	0	mg/kg
SBG-08	N	23FEB93	240	>	0	mg/kg
SBG-04	N	23FEB93	250	>	0	mg/kg
SBG-05	N	24FEB93	280	>	0	mg/kg
SBG-03	N	23FEB93	290	>	0	mg/kg
SBG-07	FD	23FEB93	300	>	0	mg/kg
SBG-10	N	23FEB93	320	>	0	mg/kg
SBG-01	N	23FEB93	330	>	0	mg/kg
SBG-01	FD	23FEB93	340	>	0	mg/kg
SBG-02	N	23FEB93	400	>	0	mg/kg

------- MATRIX=S D_OR_T=Dissolved Metals METHOD=SW6010 ANALYTE=Silver --------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
SBG-09	N	23FEB93	-0.83	<	0.00	mg/kg
SBG-07	N	23FEB93	-0.52	<	0.00	mg/kg
SBG-01	FD	23FEB93	-0.52	<	0.10	mg/kg
SBG-04	N	23FEB93	-0.44	<	0.10	mg/kg
SBG-07	FD	23FEB93	-0.38	<	0.10	mg/kg
SBG-10	N	23FEB93	-0.37	<	0.10	mg/kg
SBG-05	N	24FEB93	-0.36	<	0.00	mg/kg
SBG-01	N	23FEB93	-0.27	<	0.10	mg/kg
SBG-03	FD	23FEB93	-0.23	<	0.00	mg/kg
SBG-03	N	23FEB93	-0.19	<	0.99	mg/kg
SBG-08	N	23FEB93	-0.13	<	0.93	mg/kg
SBG-02	N	23FEB93	0.20	<	0.10	mg/kg

------- MATRIX=S D_OR_T=Dissolved Metals METHOD=SW6010 ANALYTE=Sodium --------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
SBG-02	N	23FEB93	590	>	0	mg/kg
SBG-09	N	23FEB93	590	>	0	mg/kg
SBG-03	N	23FEB93	610	>	0	mg/kg
SBG-03	FD	23FEB93	620	>	0	mg/kg
SBG-07	FD	23FEB93	810	>	0	mg/kg
SBG-07	N	23FEB93	820	>	0	mg/kg
SBG-04	N	23FEB93	900	>	0	mg/kg
SBG-08	N	23FEB93	940	>	0	mg/kg
SBG-05	N	24FEB93	1100	>	0	mg/kg
SBG-01	N	23FEB93	3400	>	0	mg/kg
SBG-01	FD	23FEB93	3700	>	0	mg/kg
SBG-10	N	23FEB93	5000	>	0	mg/kg

------ MATRIX=S D_OR_T=Dissolved Metals METHOD=SW6010 ANALYTE=Strontium ------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
SBG-08	N	23FEB93	800	>	0.28	mg/kg
SBG-02	N	23FEB93	1300	>	0.32	mg/kg
SBG-05	N	24FEB93	1400	>	0.31	mg/kg
SBG-01	N	23FEB93	1400	>	0.32	mg/kg
SBG-01	FD	23FEB93	1400	>	0.33	mg/kg
SBG-04	N	23FEB93	1600	>	0.33	mg/kg
SBG-10	N	23FEB93	1700	>	0.32	mg/kg
SBG-03	N	23FEB93	1800	>	0.30	mg/kg
SBG-03	FD	23FEB93	1800	>	0.30	mg/kg
SBG-07	N	23FEB93	1800	>	0.31	mg/kg
SBG-07	FD	23FEB93	1900	>	0.32	mg/kg
SBG-09	N	23FEB93	2600	>	0.31	mg/kg

------ MATRIX=S D_OR_T=Dissolved Metals METHOD=SW6010 ANALYTE=Thallium -------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
SBG-05	N	24FEB93	-3.50	<	0.0	mg/kg
SBG-02	N	23FEB93	-2.80	<	0.0	mg/kg
SBG-07	N	23FEB93	-2.30	<	0.0	mg/kg
SBG-03	N	23FEB93	0.69	<	0.9	mg/kg
SBG-07	FD	23FEB93	0.85	<	0.0	mg/kg
SBG-04	N	23FEB93	2.80	<	0.0	mg/kg
SBG-01	FD	23FEB93	2.90	<	0.0	mg/kg
SBG-08	N	23FEB93	5.30	<	0.3	mg/kg
SBG-09	N	23FEB93	6.60	<	0.0	mg/kg
SBG-01	N	23FEB93	7.10	<	0.0	mg/kg
SBG-10	N	23FEB93	7.90	<	0.0	mg/kg
SBG-03	FD	23FEB93	9.80	<	0.0	mg/kg

--------- MATRIX=S D_OR_T=Dissolved Metals METHOD=SW6010 ANALYTE=Tin ---------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
SBG-02	N	23FEB93	-0.940	<	0	mg/kg
SBG-08	N	23FEB93	-0.470	<	0	mg/kg
SBG-04	N	23FEB93	-0.340	<	0	mg/kg
SBG-01	N	23FEB93	-0.017	<	0	mg/kg
SBG-05	N	24FEB93	0.600	<	0	mg/kg
SBG-09	N	23FEB93	0.750	<	0	mg/kg
SBG-10	N	23FEB93	0.900	<	0	mg/kg
SBG-03	N	23FEB93	1.900	<	0	mg/kg
SBG-01	FD	23FEB93	1.900	<	0	mg/kg
SBG-07	N	23FEB93	2.300	<	0	mg/kg
SBG-07	FD	23FEB93	3.300	<	0	mg/kg
SBG-03	FD	23FEB93	5.700	<	0	mg/kg

------ MATRIX=S D_OR_T=Dissolved Metals METHOD=SW6010 ANALYTE=Titanium -------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
SBG-09	N	23FEB93	0.6	<	0.0	mg/kg
SBG-03	FD	23FEB93	48.0	>	0.0	mg/kg
SBG-03	N	23FEB93	51.0	>	0.0	mg/kg
SBG-04	N	23FEB93	55.0	>	0.4	mg/kg
SBG-07	N	23FEB93	56.0	>	0.0	mg/kg
SBG-07	FD	23FEB93	61.0	>	0.0	mg/kg
SBG-05	N	24FEB93	75.0	>	0.1	mg/kg
SBG-10	N	23FEB93	79.0	>	0.4	mg/kg
SBG-01	N	23FEB93	88.0	>	0.0	mg/kg
SBG-01	FD	23FEB93	90.0	>	0.0	mg/kg
SBG-08	N	23FEB93	120.0	>	0.6	mg/kg
SBG-02	N	23FEB93	140.0	>	0.3	mg/kg

------- MATRIX=S D_OR_T=Dissolved Metals METHOD=SW6010 ANALYTE=Uranium -------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
SBG-03	FD	23FEB93	-18.0	<	0.1	mg/kg
SBG-10	N	23FEB93	-15.0	<	0.3	mg/kg
SBG-07	N	23FEB93	-14.0	<	0.2	mg/kg
SBG-01	FD	23FEB93	-14.0	<	0.4	mg/kg
SBG-01	N	23FEB93	-11.0	<	0.3	mg/kg
SBG-09	N	23FEB93	-10.0	<	0.2	mg/kg
SBG-08	N	23FEB93	-9.9	<	0.9	mg/kg
SBG-05	N	24FEB93	-8.6	<	0.2	mg/kg
SBG-07	FD	23FEB93	-8.6	<	0.3	mg/kg
SBG-03	N	23FEB93	-8.5	<	0.1	mg/kg
SBG-04	N	23FEB93	-7.5	<	0.4	mg/kg
SBG-02	N	23FEB93	-6.5	<	0.3	mg/kg

------ MATRIX=S D_OR_T=Dissolved Metals METHOD=SW6010 ANALYTE=Vanadium -------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
SBG-09	N	23FEB93	1.3	<	0.1	mg/kg
SBG-03	FD	23FEB93	4.3	>	0.0	mg/kg
SBG-03	N	23FEB93	4.9	>	0.0	mg/kg
SBG-07	N	23FEB93	5.0	>	0.1	mg/kg
SBG-07	FD	23FEB93	5.4	>	0.1	mg/kg
SBG-04	N	23FEB93	5.6	>	0.2	mg/kg
SBG-01	FD	23FEB93	6.1	>	0.2	mg/kg
SBG-05	N	24FEB93	6.7	>	0.0	mg/kg
SBG-01	N	23FEB93	6.9	>	0.1	mg/kg
SBG-02	N	23FEB93	8.5	>	0.1	mg/kg
SBG-08	N	23FEB93	9.8	>	0.9	mg/kg
SBG-10	N	23FEB93	11.0	>	0.2	mg/kg

-------- MATRIX=S D_OR_T=Dissolved Metals METHOD=SW6010 ANALYTE=Zinc ---------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
SBG-09	N	23FEB93	0.32	<	0.1	mg/kg
SBG-03	N	23FEB93	3.20	>	0.0	mg/kg
SBG-03	FD	23FEB93	3.40	>	0.0	mg/kg
SBG-04	N	23FEB93	5.10	>	0.2	mg/kg
SBG-07	FD	23FEB93	5.20	>	0.1	mg/kg
SBG-05	N	24FEB93	5.30	>	0.0	mg/kg
SBG-01	FD	23FEB93	5.50	>	0.2	mg/kg
SBG-07	N	23FEB93	5.60	>	0.1	mg/kg
SBG-01	N	23FEB93	5.70	>	0.1	mg/kg
SBG-10	N	23FEB93	8.30	>	0.2	mg/kg
SBG-08	N	23FEB93	12.00	>	0.9	mg/kg
SBG-02	N	23FEB93	15.00	>	0.1	mg/kg

------ MATRIX=S D_OR_T=Dissolved Metals METHOD=SW7041 ANALYTE=Antimony -------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
SBG-07	FD	23FEB93	-0.063	<	0.63	mg/kg
SBG-03	N	23FEB93	-0.049	<	0.59	mg/kg
SBG-04	N	23FEB93	0.022	<	0.65	mg/kg
SBG-05	N	24FEB93	0.040	<	0.60	mg/kg
SBG-08	N	23FEB93	0.048	<	0.58	mg/kg
SBG-10	N	23FEB93	0.064	<	0.64	mg/kg
SBG-02	N	23FEB93	0.082	<	0.62	mg/kg
SBG-03	FD	23FEB93	0.091	<	0.61	mg/kg
SBG-01	FD	23FEB93	0.096	<	0.64	mg/kg
SBG-09	N	23FEB93	0.130	<	0.63	mg/kg
SBG-07	N	23FEB93	0.130	<	0.61	mg/kg
SBG-01	N	23FEB93	0.140	<	0.63	mg/kg

------- MATRIX=S D_OR_T=Dissolved Metals METHOD=SW7471 ANALYTE=Mercury -------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
SBG-10	N	23FEB93	-0.064	<	0.064	mg/kg
SBG-03	FD	23FEB93	-0.053	<	0.060	mg/kg
SBG-07	FD	23FEB93	-0.049	<	0.059	mg/kg
SBG-09	N	23FEB93	-0.045	<	0.048	mg/kg
SBG-07	N	23FEB93	-0.045	<	0.058	mg/kg
SBG-04	N	23FEB93	-0.044	<	0.057	mg/kg
SBG-01	FD	23FEB93	-0.042	<	0.054	mg/kg
SBG-03	N	23FEB93	-0.040	<	0.051	mg/kg
SBG-02	N	23FEB93	-0.039	<	0.058	mg/kg
SBG-01	N	23FEB93	-0.036	<	0.049	mg/kg
SBG-08	N	23FEB93	-0.035	<	0.044	mg/kg
S8G-05	N	24FEB93	-0.031	<	0.050	mg/kg

------ MATRIX=S D_OR_T=Dissolved Metals METHOD=SW7841 ANALYTE=Thallium -------

LOCID	TYPE	LOGDATE	LAB_RES	FLAG	DETLIM	UNITS
SBG-02	N	23FEB93	-0.0620	<	0.52	mg/kg
SBG-01	FD	23FEB93	-0.0540	<	0.54	mg/kg
SBG-07	N	23FEB93	-0.0300	<	0.51	mg/kg
SBG-03	N	23FE893	-0.0098	<	0.49	mg/kg
SBG-08	N	23FEB93	0.0096	<	0.48	mg/kg
SBG-09	N	23FEB93	0.0100	<	0.52	mg/kg
SBG-05	N	24FEB93	0.0110	<	0.57	mg/kg
SBG-10	N	23FEB93	0.0210	<	0.54	mg/kg
SBG-07	FD	23FEB93	0.0210	<	0.52	mg/kg
SBG-03	FD	23FEB93	0.0410	<	0.51	mg/kg
SBG-01	N	23FEB93	0.0530	<	0.53	mg/kg
SBG-04	N	23FEB93	0.1600	<	0.54	mg/kg

---------- MATRIX=L METHOD=SW6010 ANALYTE=Aluminum ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	-0.08364		.	mg/L
Lab	MB	-0.07346		.	mg/L
Lab	MB	-0.06533		.	mg/L
Lab	MB	-0.05231		.	mg/L
Lab	MB	-0.04972		.	mg/L
Lab	MB	-0.04712		.	mg/L
Lab	MB	-0.04487		.	mg/L
Lab	MB	-0.03876		.	mg/L
Lab	MB	-0.03541		.	mg/L
Lab	MB	-0.03250		.	mg/L
Lab	MB	-0.03047		.	mg/L
Lab	MB	-0.03010		.	mg/L
Lab	MB	-0.02955		.	mg/L
Lab	MB	-0.02833		.	mg/L
Lab	MB	-0.02064		.	mg/L
Lab	MB	-0.01844		.	mg/L
Lab	MB	-0.01621		.	mg/L
Lab	MB	-0.01540		.	mg/L
Lab	MB	-0.01148		.	mg/L
Lab	MB	-0.00977		.	mg/L
Lab	MB	-0.00967		.	mg/L
Lab	MB	-0.00964		.	mg/L
Lab	MB	-0.00931		.	mg/L
Lab	MB	-0.00865		.	mg/L
Lab	MB	-0.00712		.	mg/L
Lab	MB	-0.00546		.	mg/L
Lab	MB	-0.00467		.	mg/L
Lab	MB	-0.00302		.	mg/L
Lab	MB	0.00279		.	mg/L
Lab	MB	0.00338		.	mg/L
Lab	MB	0.00428		.	mg/L
Lab	MB	0.00498		.	mg/L
Lab	MB	0.00545		.	mg/L
Lab	MB	0.00647		.	mg/L
Lab	MB	0.00701		.	mg/L
Lab	MB	0.00709		.	mg/L
Lab	MB	0.00749		.	mg/L
Lab	MB	0.01127		.	mg/L
Lab	MB	0.01162		.	mg/L
Lab	MB	0.01509		.	mg/L
Lab	MB	0.01721		.	mg/L
Lab	MB	0.01737		.	mg/L
Lab	MB	0.02081		.	mg/L
Lab	MB	0.02121		.	mg/L
Lab	MB	0.02164		.	mg/L
Lab	MB	0.02201		.	mg/L
Lab	MB	0.02368		.	mg/L
Lab	MB	0.02431		.	mg/L
Lab	MB	0.02524		.	mg/L
Lab	MB	0.02694		.	mg/L
Lab	MB	0.03209		.	mg/L
Lab	MB	0.03779		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Aluminum ----------
(continued)

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	0.04405		.	mg/L
Lab	MB	0.05721		.	mg/L
Lab	MB	0.07486		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Antimony ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
MW-36-01	EB	0.01800	<	0.1	mg/L
MW-36-01	EB	0.01700	<	0.1	mg/L
Lab	MB	-0.07288		.	mg/L
Lab	MB	-0.06371		.	mg/L
Lab	MB	-0.06281		.	mg/L
Lab	MB	-0.05925		.	mg/L
Lab	MB	-0.05245		.	mg/L
Lab	MB	-0.04792		.	mg/L
Lab	MB	-0.04167		.	mg/L
Lab	MB	-0.03791		.	mg/L
Lab	M8	-0.03497		.	mg/L
Lab	MB	-0.03168		.	mg/L
Lab	MB	-0.02271		.	mg/L
Lab	MB	-0.01887		.	mg/L
Lab	MB	-0.01782		.	mg/L
Lab	MB	-0.01769		.	mg/L
Lab	MB	-0.01733		.	mg/L
Lab	MB	-0.01672		.	mg/L
Lab	MB	-0.01393		.	mg/L
Lab	MB	-0.01390		.	mg/L
Lab	MB	-0.01049		.	mg/L
Lab	MB	-0.00976		.	mg/L
Lab	MB	-0.00792		.	mg/L
Lab	MB	-0.00604		.	mg/L
Lab	MB	-0.00405		.	mg/L
Lab	MB	-0.00211		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00040		.	mg/L
Lab	MB	0.00190		.	mg/L
Lab	MB	0.00536		.	mg/L
Lab	MB	0.00858		.	mg/L
Lab	MB	0.00880		.	mg/L
Lab	MB	0.00976		.	mg/L
Lab	MB	0.01007		.	mg/L
Lab	MB	0.01146		.	mg/L
Lab	MB	0.01490		.	mg/L
Lab	MB	0.01604		.	mg/L
Lab	MB	0.01642		.	mg/L
Lab	MB	0.01825		.	mg/L
Lab	MB	0.01851		.	mg/L
Lab	MB	0.01994		.	mg/L
Lab	MB	0.02255		.	mg/L
Lab	MB	0.02730		.	mg/L
Lab	MB	0.02753		.	mg/L
Lab	MB	0.03280		.	mg/L
Lab	MB	0.03315		.	mg/L
Lab	MB	0.03317		.	mg/L
Lab	MB	0.03937		.	mg/L
Lab	MB	0.04093		.	mg/L
Lab	MB	0.04156		.	mg/L
Lab	MB	0.04878		.	mg/L
Lab	MB	0.05138		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Antimony ----------
(continued)

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	0.05360		.	mg/L
Lab	MB	0.05425		.	mg/L
Lab	MB	0.05450		.	mg/L
Lab	MB	0.06080		.	mg/L
Lab	MB	0.06586		.	mg/L
Lab	MB	0.07799		.	mg/L
Lab	MB	0.08040		.	mg/L
Lab	MB	0.09748		.	mg/L
Lab	MB	0.10240		.	mg/L
Lab	MB	0.10480		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Arsenic ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	-0.07352		.	mg/L
Lab	MB	-0.07300		.	mg/L
Lab	MB	-0.06693		.	mg/L
Lab	MB	-0.05129		.	mg/L
Lab	MB	-0.04664		.	mg/L
Lab	MB	-0.03576		.	mg/L
Lab	MB	-0.03486		.	mg/L
Lab	MB	-0.03418		.	mg/L
Lab	MB	-0.02670		.	mg/L
Lab	MB	-0.02608		.	mg/L
Lab	MB	-0.02570		.	mg/L
Lab	MB	-0.01887		.	mg/L
Lab	MB	-0.01404		.	mg/L
Lab	MB	-0.01191		.	mg/L
Lab	MB	-0.01128		.	mg/L
Lab	MB	-0.01092		.	mg/L
Lab	MB	-0.01009		.	mg/L
Lab	MB	-0.00969		.	mg/L
Lab	MB	-0.00655		.	mg/L
Lab	MB	-0.00552		.	mg/L
Lab	MB	-0.00502		.	mg/L
Lab	MB	-0.00451		.	mg/L
Lab	MB	-0.00363		.	mg/L
Lab	MB	-0.00301		.	mg/L
Lab	MB	-0.00213		.	mg/L
Lab	MB	0.00034		.	mg/L
Lab	MB	0.00083		.	mg/L
Lab	MB	0.00108		.	mg/L
Lab	MB	0.00174		.	mg/L
Lab	MB	0.00182		.	mg/L
Lab	MB	0.00317		.	mg/L
Lab	MB	0.00322		.	mg/L
Lab	MB	0.00390		.	mg/L
Lab	MB	0.00492		.	mg/L
Lab	MB	0.00537		.	mg/L
Lab	MB	0.00596		.	mg/L
Lab	MB	0.00662		.	mg/L
Lab	MB	0.00752		.	mg/L
Lab	MB	0.00837		.	mg/L
Lab	MB	0.00917		.	mg/L
Lab	MB	0.00961		.	mg/L
Lab	MB	0.01065		.	mg/L
Lab	MB	0.01130		.	mg/L
Lab	MB	0.01374		.	mg/L
Lab	MB	0.01635		.	mg/L
Lab	MB	0.01826		.	mg/L
Lab	MB	0.02170		.	mg/L
Lab	MB	0.02362		.	mg/L
Lab	MB	0.02805		.	mg/L
Lab	MB	0.03061		.	mg/L
Lab	MB	0.03129		.	mg/L
Lab	MB	0.03130		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Arsenic ----------
(continued)

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	0.03530		.	mg/L
Lab	MB	0.03699		.	mg/L
Lab	MB	0.04336		.	mg/L
Lab	MB	0.04500		.	mg/L
Lab	MB	0.04682		.	mg/L
Lab	MB	0.05930		.	mg/L
Lab	MB	0.05978		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Barium ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
MW-36-01	EB	0.00044	<	0.01	mg/L
MW-36-01	EB	0.00014	<	0.01	mg/L
Lab	MB	-.00114		.	mg/L
Lab	MB	-.00106		.	mg/L
Lab	MB	-.00091		.	mg/L
Lab	MB	-.00080		.	mg/L
Lab	MB	-.00078		.	mg/L
Lab	MB	-.00077		.	mg/L
Lab	MB	-.00075		.	mg/L
Lab	MB	-.00073		.	mg/L
Lab	MB	-.00059		.	mg/L
Lab	MB	-.00052		.	mg/L
Lab	MB	-.00045		.	mg/L
Lab	MB	-.00040		.	mg/L
Lab	MB	-.00039		.	mg/L
Lab	MB	-.00034		.	mg/L
Lab	MB	-.00034		.	mg/L
Lab	MB	-.00031		.	mg/L
Lab	MB	-.00029		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00010		.	mg/L
Lab	MB	0.00015		.	mg/L
Lab	MB	0.00026		.	mg/L
Lab	MB	0.00029		.	mg/L
Lab	MB	0.00029		.	mg/L
Lab	MB	0.00029		.	mg/L
Lab	MB	0.00029		.	mg/L
Lab	MB	0.00030		.	mg/L
Lab	MB	0.00030		.	mg/L
Lab	MB	0.00030		.	mg/L
Lab	MB	0.00034		.	mg/L
Lab	MB	0.00056		.	mg/L
Lab	MB	0.00058		.	mg/L
Lab	MB	0.00059		.	mg/L
Lab	MB	0.00060		.	mg/L
Lab	MB	0.00060		.	mg/L
Lab	MB	0.00060		.	mg/L
Lab	MB	0.00061		.	mg/L
Lab	MB	0.00068		.	mg/L
Lab	MB	0.00068		.	mg/L
Lab	MB	0.00068		.	mg/L
Lab	MB	0.00073		.	mg/L
Lab	MB	0.00078		.	mg/L
Lab	MB	0.00087		.	mg/L
Lab	MB	0.00088		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Barium ----------
(continued)

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	.00089		.	mg/L
Lab	MB	.00091		.	mg/L
Lab	MB	.00092		.	mg/L
Lab	MB	.00102		.	mg/L
Lab	MB	.00105		.	mg/L
Lab	MB	.00116		.	mg/L
Lab	MB	.00116		.	mg/L
Lab	MB	.00132		.	mg/L
Lab	MB	.00136		.	mg/L
Lab	MB	.00145		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Beryllium ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
MW-36-01	EB	0.00026	<	.002	mg/L
MW-36-01	EB	0.00010	<	.002	mg/L
Lab	MB	-.00072		.	mg/L
Lab	MB	-.00066		.	mg/L
Lab	MB	-.00058		.	mg/L
Lab	MB	-.00052		.	mg/L
Lab	MB	-.00042		.	mg/L
Lab	MB	-.00033		.	mg/L
Lab	MB	-.00030		.	mg/L
Lab	MB	-.00025		.	mg/L
Lab	MB	-.00019		.	mg/L
Lab	MB	-.00018		.	mg/L
Lab	MB	-.00018		.	mg/L
Lab	MB	-.00016		.	mg/L
Lab	MB	-.00015		.	mg/L
Lab	MB	-.00009		.	mg/L
Lab	MB	-.00008		.	mg/L
Lab	MB	-.00008		.	mg/L
Lab	MB	-.00007		.	mg/L
Lab	MB	-.00001		.	mg/L
Lab	MB	-.00001		.	mg/L
Lab	MB	-.00001		.	mg/L
Lab	MB	-.00001		.	mg/L
Lab	MB	-.00001		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	M8	0.00001		.	mg/L
Lab	MB	0.00008		.	mg/L
Lab	MB	0.00017		.	mg/L
Lab	MB	0.00018		.	mg/L
Lab	MB	0.00019		.	mg/L
Lab	MB	0.00020		.	mg/L
Lab	MB	0.00020		.	mg/L
Lab	MB	0.00021		.	mg/L
Lab	MB	0.00021		.	mg/L
Lab	MB	0.00022		.	mg/L
Lab	MB	0.00026		.	mg/L
Lab	MB	0.00034		.	mg/L
Lab	MB	0.00034		.	mg/L
Lab	MB	0.00041		.	mg/L
Lab	MB	0.00045		.	mg/L
Lab	MB	0.00046		.	mg/L
Lab	MB	0.00048		.	mg/L
Lab	MB	0.00060		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Beryllium ----------
(continued)

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	.00061		.	mg/L
Lab	MB	.00063		.	mg/L
Lab	MB	.00063		.	mg/L
Lab	MB	.00066		.	mg/L
Lab	MB	.00070		.	mg/L
Lab	MB	.00070		.	mg/L
Lab	MB	.00080		.	mg/L
Lab	MB	.00103		.	mg/L
Lab	MB	.00112		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Boron ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	-0.02574		.	mg/L
Lab	MB	-0.01404		.	mg/L
Lab	MB	-0.01076		.	mg/L
Lab	MB	-0.01039		.	mg/L
Lab	MB	-0.01003		.	mg/L
Lab	MB	-0.00926		.	mg/L
Lab	MB	-0.00753		.	mg/L
Lab	MB	-0.00675		.	mg/L
Lab	MB	-0.00670		.	mg/L
Lab	MB	-0.00670		.	mg/L
Lab	MB	-0.00463		.	mg/L
Lab	MB	-0.00365		.	mg/L
Lab	MB	-0.00350		.	mg/L
Lab	MB	-0.00244		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00180		.	mg/L
Lab	MB	0.00239		.	mg/L
Lab	MB	0.00256		.	mg/L
Lab	MB	0.0034B		.	mg/L
Lab	MB	0.0035B		.	mg/L
Lab	MB	0.00464		.	mg/L
Lab	MB	0.00479		.	mg/L
Lab	MB	0.00647		.	mg/L
Lab	MB	0.00717		.	mg/L
Lab	MB	0.00726		.	mg/L
Lab	MB	0.00752		.	mg/L
Lab	MB	0.0076B		.	mg/L
Lab	MB	0.00853		.	mg/L
Lab	MB	0.00906		.	mg/L
Lab	MB	0.00945		.	mg/L
Lab	MB	0.00971		.	mg/L
Lab	MB	0.01137		.	mg/L
Lab	MB	0.01137		.	mg/L
Lab	MB	0.01137		.	mg/L
Lab	MB	0.01190		.	mg/L
Lab	MB	0.01421		.	mg/L
Lab	MB	0.01466		.	mg/L
Lab	MB	0.01474		.	mg/L
Lab	MB	0.01535		.	mg/L
Lab	MB	0.01582		.	mg/L
Lab	MB	0.01694		.	mg/L
Lab	MB	0.01694		.	mg/L
Lab	MB	0.01793		.	mg/L
Lab	MB	0.02058		.	mg/L
Lab	MB	0.02160		.	mg/L
Lab	MB	0.02257		.	mg/L
Lab	MB	0.02703		.	mg/L
Lab	MB	0.03126		.	mg/L
Lab	MB	0.03774		.	mg/L
Lab	MB	0.03931		.	mg/L
Lab	MB	0.04263		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Boron ----------
(continued)

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	0.04514		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Cadmium ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
MW-36-01	EB	0.00130	<	.005	mg/L
MW-36-01	EB	0.00010	<	.005	mg/L
Lab	MB	-.00538		.	mg/L
Lab	MB	-.00483		.	mg/L
Lab	MB	-.00433		.	mg/L
Lab	MB	-.00427		.	mg/L
Lab	MB	-.00377		.	mg/L
Lab	MB	-.00368		.	mg/L
Lab	MB	-.00359		.	mg/L
Lab	MB	-.00346		.	mg/L
Lab	MB	-.00318		.	mg/L
Lab	MB	-.00285		.	mg/L
Lab	MB	-.00249		.	mg/L
Lab	MB	-.00175		.	mg/L
Lab	MB	-.00147		.	mg/L
Lab	MB	-.00147		.	mg/L
Lab	MB	-.00101		.	mg/L
Lab	MB	-.00080		.	mg/L
Lab	MB	-.00071		.	mg/L
Lab	MB	-.00070		.	mg/L
Lab	MB	-.00068		.	mg/L
Lab	MB	-.00055		.	mg/L
Lab	M8	-.00042		.	mg/L
Lab	MB	-.00019		.	mg/L
Lab	MB	0.00011		.	mg/L
Lab	MB	0.00016		.	mg/L
Lab	MB	0.00019		.	mg/L
Lab	MB	0.00020		.	mg/L
Lab	MB	0.00020		.	mg/L
Lab	MB	0.00024		.	mg/L
Lab	MB	0.00035		.	mg/L
Lab	MB	0.00048		.	mg/L
Lab	MB	0.00054		.	mg/L
Lab	MB	0.00058		.	mg/L
Lab	MB	0.00060		.	mg/L
Lab	MB	0.00064		.	mg/L
Lab	MB	0.00066		.	mg/L
Lab	MB	0.00078		.	mg/L
Lab	MB	0.00084		.	mg/L
Lab	MB	0.00090		.	mg/L
Lab	MB	0.00094		.	mg/L
Lab	MB	0.00100		.	mg/L
Lab	MB	0.00103		.	mg/L
Lab	MB	0.00106		.	mg/L
Lab	MB	0.00107		.	mg/L
Lab	MB	0.00107		.	mg/L
Lab	MB	0.00114		.	mg/L
Lab	MB	0.00125		.	mg/L
Lab	MB	0.00127		.	mg/L
Lab	MB	0.00130		.	mg/L
Lab	MB	0.00154		.	mg/L
Lab	MB	0.00161		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Cadmium ----------
(continued)

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	.00163		.	mg/L
Lab	MB	.00219		.	mg/L
Lab	MB	.00230		.	mg/L
Lab	MB	.00250		.	mg/L
Lab	MB	.00257		.	mg/L
Lab	MB	.00382		.	mg/L
Lab	MB	.00415		.	mg/L
Lab	MB	.00453		.	mg/L
Lab	MB	.00481		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Calcium ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	-0.03205		.	mg/L
Lab	MB	-0.00830		.	mg/L
Lab	MB	-0.00233		.	mg/L
Lab	MB	0.00237		.	mg/L
Lab	MB	0.00261		.	mg/L
Lab	MB	0.00456		.	mg/L
Lab	MB	0.00574		.	mg/L
Lab	MB	0.00681		.	mg/L
Lab	MB	0.00776		.	mg/L
Lab	MB	0.00841		.	mg/L
Lab	MB	0.00946		.	mg/L
Lab	MB	0.00962		.	mg/L
Lab	MB	0.01156		.	mg/L
Lab	MB	0.01460		.	mg/L
Lab	MB	0.01536		.	mg/L
Lab	MB	0.01572		.	mg/L
Lab	MB	0.01595		.	mg/L
Lab	MB	0.01620		.	mg/L
Lab	MB	0.01628		.	mg/L
Lab	MB	0.01650		.	mg/L
Lab	MB	0.01741		.	mg/L
Lab	MB	0.01941		.	mg/L
Lab	MB	0.02137		.	mg/L
Lab	MB	0.02200		.	mg/L
Lab	MB	0.02209		.	mg/L
Lab	MB	0.02243		.	mg/L
Lab	MB	0.02314		.	mg/L
Lab	MB	0.02555		.	mg/L
Lab	MB	0.02707		.	mg/L
Lab	MB	0.02837		.	mg/L
Lab	MB	0.02894		.	mg/L
Lab	MB	0.02906		.	mg/L
Lab	MB	0.03010		.	mg/L
Lab	MB	0.03074		.	mg/L
Lab	MB	0.03177		.	mg/L
Lab	MB	0.03296		.	mg/L
Lab	MB	0.03500		.	mg/L
Lab	MB	0.03711		.	mg/L
Lab	MB	0.04019		.	mg/L
Lab	MB	0.04680		.	mg/L
Lab	MB	0.04686		.	mg/L
Lab	MB	0.04843		.	mg/L
Lab	MB	0.04845		.	mg/L
Lab	MB	0.04882		.	mg/L
Lab	MB	0.04999		.	mg/L
Lab	MB	0.05083		.	mg/L
Lab	MB	0.05415		.	mg/L
Lab	MB	0.06029		.	mg/L
Lab	MB	0.06300		.	mg/L
Lab	MB	0.09145		.	mg/L
Lab	MB	0.09985		.	mg/L
Lab	MB	0.09987		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Calcium ----------
(continued)

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	0.1047		.	mg/L
Lab	MB	0.1063		.	mg/L
Lab	MB	0.1083		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Chromium ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
MW-36-01	EB	0.00071	<	0.01	mg/L
MW-36-01	EB	-.00100	<	0.01	mg/L
Lab	MB	-.00696		.	mg/L
Lab	MB	-.00541		.	mg/L
Lab	MB	-.00489		.	mg/L
Lab	MB	-.00424		.	mg/L
Lab	MB	-.00396		.	mg/L
Lab	MB	-.00363		.	mg/L
Lab	MB	-.00357		.	mg/L
Lab	MB	-.00356		.	mg/L
Lab	MB	-.00319		.	mg/L
Lab	MB	-.00287		.	mg/L
Lab	MB	-.00227		.	mg/L
Lab	MB	-.00222		.	mg/L
Lab	MB	-.00134		.	mg/L
Lab	MB	-.00084		.	mg/L
Lab	MB	-.00050		.	mg/L
Lab	MB	-.00048		.	mg/L
Lab	MB	-.00044		.	mg/L
Lab	MB	-.00038		.	mg/L
Lab	MB	-.00029		.	mg/L
Lab	MB	-.00026		.	mg/L
Lab	MB	-.00020		.	mg/L
Lab	MB	-.00013		.	mg/L
Lab	MB	-.00010		.	mg/L
Lab	MB	0.00003		.	mg/L
Lab	MB	0.00012		.	mg/L
Lab	MB	0.00020		.	mg/L
Lab	MB	0.00026		.	mg/L
Lab	MB	0.00033		.	mg/L
Lab	MB	0.00040		.	mg/L
Lab	MB	0.00064		.	mg/L
Lab	MB	0.00070		.	mg/L
Lab	MB	0.00074		.	mg/L
Lab	MB	0.00075		.	mg/L
Lab	MB	0.00076		.	mg/L
Lab	MB	0.00082		.	mg/L
Lab	MB	0.00083		.	mg/L
Lab	MB	0.00144		.	mg/L
Lab	MB	0.00147		.	mg/L
Lab	MB	0.00165		.	mg/L
Lab	MB	0.00173		.	mg/L
Lab	MB	0.00186		.	mg/L
Lab	MB	0.00188		.	mg/L
Lab	MB	0.00193		.	mg/L
Lab	MB	0.00195		.	mg/L
Lab	MB	0.00208		.	mg/L
Lab	MB	0.00210		.	mg/L
Lab	MB	0.00242		.	mg/L
Lab	MB	0.00253		.	mg/L
Lab	MB	0.00277		.	mg/L
Lab	MB	0.00287		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Chromium ----------
(continued)

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	.00320		.	mg/L
Lab	MB	.00358		.	mg/L
Lab	MB	.00372		.	mg/L
Lab	MB	.00388		.	mg/L
Lab	MB	.00459		.	mg/L
Lab	MB	.00460		.	mg/L
Lab	MB	.00546		.	mg/L
Lab	MB	.00603		.	mg/L
Lab	MB	.00628		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Cobalt ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
MW-36-01	EB	-.00240	<	0.01	mg/L
MW-36-01	EB	0.00220	<	0.01	mg/L
Lab	MB	-.00825		.	mg/L
Lab	MB	-.00816		.	mg/L
Lab	MB	-.00786		.	mg/L
Lab	MB	-.00760		.	mg/L
Lab	MB	-.00625		.	mg/L
Lab	MB	-.00612		.	mg/L
Lab	MB	-.00544		.	mg/L
Lab	MB	-.00522		.	mg/L
Lab	MB	-.00521		.	mg/L
Lab	MB	-.00516		.	mg/L
Lab	MB	-.00448		.	mg/L
Lab	MB	-.00365		.	mg/L
Lab	MB	-.00295		.	mg/L
Lab	MB	-.00219		.	mg/L
Lab	MB	-.00219		.	mg/L
Lab	MB	-.00102		.	mg/L
Lab	MB	-.00076		.	mg/L
Lab	MB	-.00073		.	mg/L
Lab	MB	-.00050		.	mg/L
Lab	MB	-.00001		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00001		.	mg/L
Lab	MB	0.00073		.	mg/L
Lab	MB	0.00080		.	mg/L
Lab	MB	0.00093		.	mg/L
Lab	MB	0.00098		.	mg/L
Lab	MB	0.00102		.	mg/L
Lab	MB	0.00107		.	mg/L
Lab	MB	0.00124		.	mg/L
Lab	MB	0.00146		.	mg/L
Lab	MB	0.00148		.	mg/L
Lab	MB	0.00158		.	mg/L
Lab	MB	0.00182		.	mg/L
Lab	MB	0.00185		.	mg/L
Lab	MB	0.00205		.	mg/L
Lab	MB	0.00206		.	mg/L
Lab	MB	0.00236		.	mg/L
Lab	MB	0.00237		.	mg/L
Lab	MB	0.00252		.	mg/L
Lab	MB	0.00256		.	mg/L
Lab	MB	0.00276		.	mg/L
Lab	MB	0.00302		.	mg/L
Lab	MB	0.00310		.	mg/L
Lab	MB	0.00364		.	mg/L
Lab	MB	0.00370		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Cobalt ----------
(continued)

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	0.00371		.	mg/L
Lab	MB	0.00387		.	mg/L
Lab	MB	0.00389		.	mg/L
Lab	MB	0.00463		.	mg/L
Lab	MB	0.00463		.	mg/L
Lab	MB	0.00479		.	mg/L
Lab	MB	0.00512		.	mg/L
Lab	MB	0.00619		.	mg/L
Lab	MB	0.00890		.	mg/L
Lab	MB	0.01087		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Copper ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
MW-36-01	EB	0.00630	<	0.02	mg/L
MW-36-01	EB	0.00300	<	0.02	mg/L
Lab	MB	-0.01252		.	mg/L
Lab	MB	-0.01153		.	mg/L
Lab	MB	-0.01058		.	mg/L
Lab	MB	-0.01055		.	mg/L
Lab	MB	-0.00817		.	mg/L
Lab	MB	-0.00753		.	mg/L
Lab	MB	-0.00750		.	mg/L
Lab	MB	-0.00738		.	mg/L
Lab	MB	-0.00731		.	mg/L
Lab	MB	-0.00582		.	mg/L
Lab	MB	-0.00410		.	mg/L
Lab	MB	-0.00394		.	mg/L
Lab	MB	-0.00391		.	mg/L
Lab	MB	-0.00366		.	mg/L
Lab	MB	-0.00345		.	mg/L
Lab	MB	-0.00261		.	mg/L
Lab	MB	-0.00241		.	mg/L
Lab	MB	-0.00205		.	mg/L
Lab	MB	-0.00154		.	mg/L
Lab	MB	-0.00135		.	mg/L
Lab	MB	-0.00119		.	mg/L
Lab	MB	-0.00078		.	mg/L
Lab	MB	-0.00051		.	mg/L
Lab	MB	-0.00049		.	mg/L
Lab	MB	-0.00042		.	mg/L
Lab	MB	-0.00002		.	mg/L
Lab	MB	0.00016		.	mg/L
Lab	MB	0.00037		.	mg/L
Lab	MB	0.00040		.	mg/L
Lab	MB	0.00045		.	mg/L
Lab	MB	0.00054		.	mg/L
Lab	MB	0.00060		.	mg/L
Lab	MB	0.00079		.	mg/L
Lab	MB	0.00103		.	mg/L
Lab	MB	0.00142		.	mg/L
Lab	MB	0.00150		.	mg/L
Lab	MB	0.00155		.	mg/L
Lab	MB	0.00190		.	mg/L
Lab	MB	0.00204		.	mg/L
Lab	MB	0.00213		.	mg/L
Lab	MB	0.00252		.	mg/L
Lab	MB	0.00292		.	mg/L
Lab	MB	0.00308		.	mg/L
Lab	MB	0.00364		.	mg/L
Lab	MB	0.00393		.	mg/L
Lab	MB	0.00393		.	mg/L
Lab	MB	0.00396		.	mg/L
Lab	MB	0.00435		.	mg/L
Lab	MB	0.00437		.	mg/L
Lab	MB	0.00439		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Copper ----------
(continued)

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	0.00575		.	mg/L
Lab	MB	0.00779		.	mg/L
Lab	MB	0.00791		.	mg/L
Lab	MB	0.00917		.	mg/L
Lab	MB	0.01060		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Iron ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	-0.00931		.	mg/L
Lab	MB	-0.00616		.	mg/L
Lab	MB	-0.00608		.	mg/L
Lab	MB	-0.00401		.	mg/L
Lab	MB	-0.00085		.	mg/L
Lab	MB	-0.00029		.	mg/L
Lab	MB	-0.00024		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00027		.	mg/L
Lab	MB	0.00029		.	mg/L
Lab	MB	0.00159		.	mg/L
Lab	MB	0.00162		.	mg/L
Lab	MB	0.00172		.	mg/L
Lab	MB	0.00191		.	mg/L
Lab	MB	0.00194		.	mg/L
Lab	MB	0.00220		.	mg/L
Lab	MB	0.00222		.	mg/L
Lab	MB	0.00232		.	mg/L
Lab	MB	0.00249		.	mg/L
Lab	MB	0.00267		.	mg/L
Lab	MB	0.00276		.	mg/L
Lab	MB	0.00312		.	mg/L
Lab	MB	0.00323		.	mg/L
Lab	MB	0.00330		.	mg/L
Lab	MB	0.00336		.	mg/L
Lab	MB	0.00345		.	mg/L
Lab	MB	0.00346		.	mg/L
Lab	MB	0.00358		.	mg/L
Lab	MB	0.00370		.	mg/L
Lab	MB	0.00420		.	mg/L
Lab	MB	0.00456		.	mg/L
Lab	MB	0.00478		.	mg/L
Lab	MB	0.00490		.	mg/L
Lab	MB	0.00522		.	mg/L
Lab	MB	0.00536		.	mg/L
Lab	MB	0.00537		.	mg/L
Lab	MB	0.00549		.	mg/L
Lab	MB	0.00554		.	mg/L
Lab	MB	0.00589		.	mg/L
Lab	MB	0.00656		.	mg/L
Lab	MB	0.00675		.	mg/L
Lab	MB	0.00713		.	mg/L
Lab	MB	0.00756		.	mg/L
Lab	MB	0.00850		.	mg/L
Lab	MB	0.00881		.	mg/L
Lab	MB	0.00914		.	mg/L
Lab	MB	0.00946		.	mg/L
Lab	MB	0.00954		.	mg/L
Lab	MB	0.00957		.	mg/L
Lab	MB	0.00963		.	mg/L
Lab	MB	0.01009		.	mg/L
Lab	MB	0.01010		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Iron ----------
(continued)

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	0.01040		.	mg/L
Lab	MB	0.01180		.	mg/L
Lab	MB	0.01562		.	mg/L
Lab	MB	0.01730		.	mg/L
Lab	MB	0.01860		.	mg/L
Lab	MB	0.02047		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Lead ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	-0.05000		.	mg/L
Lab	MB	-0.03758		.	mg/L
Lab	MB	-0.03157		.	mg/L
Lab	MB	-0.03132		.	mg/L
Lab	MB	-0.02861		.	mg/L
Lab	MB	-0.02836		.	mg/L
Lab	MB	-0.02175		.	mg/L
Lab	MB	-0.02140		.	mg/L
Lab	MB	-0.02070		.	mg/L
Lab	MB	-0.01925		.	mg/L
Lab	MB	-0.01903		.	mg/L
Lab	MB	-0.01719		.	mg/L
Lab	MB	-0.01528		.	mg/L
Lab	MB	-0.01423		.	mg/L
Lab	MB	-0.01328		.	mg/L
Lab	MB	-0.01174		.	mg/L
Lab	MB	-0.01073		.	mg/L
Lab	MB	-0.01022		.	mg/L
Lab	MB	-0.00607		.	mg/L
Lab	MB	-0.00600		.	mg/L
Lab	MB	-0.00590		.	mg/L
Lab	MB	-0.00470		.	mg/L
Lab	MB	-0.00174		.	mg/L
Lab	MB	-0.00136		.	mg/L
Lab	MB	-0.00006		.	mg/L
Lab	MB	0.00001		.	mg/L
Lab	MB	0.00020		.	mg/L
Lab	MB	0.00140		.	mg/L
Lab	MB	0.00163		.	mg/L
Lab	MB	0.00371		.	mg/L
Lab	MB	0.00390		.	mg/L
Lab	MB	0.00644		.	mg/L
Lab	MB	0.00831		.	mg/L
Lab	MB	0.00844		.	mg/L
Lab	MB	0.00918		.	mg/L
Lab	MB	0.00945		.	mg/L
Lab	MB	0.00949		.	mg/L
Lab	MB	0.01098		.	mg/L
Lab	MB	0.01245		.	mg/L
Lab	MB	0.01352		.	mg/L
Lab	MB	0.01400		.	mg/L
Lab	MB	0.01439		.	mg/L
Lab	MB	0.01594		.	mg/L
Lab	MB	0.01734		.	mg/L
Lab	MB	0.02142		.	mg/L
Lab	MB	0.02200		.	mg/L
Lab	MB	0.02331		.	mg/L
Lab	MB	0.02445		.	mg/L
Lab	MB	0.02560		.	mg/L
Lab	MB	0.02757		.	mg/L
Lab	MB	0.02811		.	mg/L
Lab	MB	0.03050		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Lead ----------
(continued)

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	0.03520		.	mg/L
Lab	MB	0.03753		.	mg/L
Lab	MB	0.03762		.	mg/L
Lab	MB	0.05354		.	mg/L
Lab	MB	0.06311		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Lithium ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	-.00714		.	mg/L
Lab	MB	-.00682		.	mg/L
Lab	MB	-.00542		.	mg/L
Lab	MB	-.00482		.	mg/L
Lab	MB	-.00294		.	mg/L
Lab	MB	-.00187		.	mg/L
Lab	MB	-.00164		.	mg/L
Lab	MB	-.00125		.	mg/L
Lab	MB	-.00090		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00010		.	mg/L
Lab	MB	0.00026		.	mg/L
Lab	MB	0.00033		.	mg/L
Lab	MB	0.00050		.	mg/L
Lab	MB	0.00050		.	mg/L
Lab	MB	0.00057		.	mg/L
Lab	MB	0.00060		.	mg/L
Lab	MB	0.00080		.	mg/L
Lab	MB	0.00099		.	mg/L
Lab	MB	0.00101		.	mg/L
Lab	MB	0.00106		.	mg/L
Lab	MB	0.00110		.	mg/L
Lab	MB	0.00152		.	mg/L
Lab	MB	0.00154		.	mg/L
Lab	MB	0.00164		.	mg/L
Lab	MB	0.00175		.	mg/L
Lab	MB	0.00196		.	mg/L
Lab	MB	0.00218		.	mg/L
Lab	MB	0.00226		.	mg/L
Lab	MB	0.00248		.	mg/L
Lab	MB	0.00275		.	mg/L
Lab	MB	0.00285		.	mg/L
Lab	MB	0.00302		.	mg/L
Lab	MB	0.00325		.	mg/L
Lab	MB	0.00353		.	mg/L
Lab	MB	0.00361		.	mg/L
Lab	MB	0.00370		.	mg/L
Lab	MB	0.00372		.	mg/L
Lab	MB	0.00404		.	mg/L
Lab	MB	0.00409		.	mg/L
Lab	MB	0.00421		.	mg/L
Lab	MB	0.00443		.	mg/L
Lab	MB	0.00512		.	mg/L
Lab	MB	0.00555		.	mg/L
Lab	MB	0.00556		.	mg/L
Lab	MB	0.00658		.	mg/L
Lab	MB	0.00731		.	mg/L
Lab	MB	0.00793		.	mg/L
Lab	MB	0.00815		.	mg/L
Lab	MB	0.00832		.	mg/L
Lab	MB	0.00858		.	mg/L
Lab	MB	0.00966		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Lithium ----------
(continued)

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	0.00981		.	mg/L
Lab	MB	0.01083		.	mg/L
Lab	MB	0.01284		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Magnesium ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	-0.03908		.	mg/L
Lab	MB	-0.03679		.	mg/L
Lab	MB	-0.03459		.	mg/L
Lab	MB	-0.02107		.	mg/L
Lab	MB	-0.01927		.	mg/L
Lab	MB	-0.01780		.	mg/L
Lab	MB	-0.01637		.	mg/L
Lab	MB	-0.01194		.	mg/L
Lab	MB	-0.00681		.	mg/L
Lab	MB	-0.00574		.	mg/L
Lab	MB	-0.00533		.	mg/L
Lab	MB	-0.00489		.	mg/L
Lab	MB	-0.00354		.	mg/L
Lab	MB	-0.00334		.	mg/L
Lab	MB	-0.00179		.	mg/L
Lab	MB	-0.00169		.	mg/L
Lab	MB	-0.00164		.	mg/L
Lab	MB	0.00018		.	mg/L
Lab	MB	0.00050		.	mg/L
Lab	MB	0.00124		.	mg/L
Lab	MB	0.00176		.	mg/L
Lab	MB	0.00223		.	mg/L
Lab	MB	0.00228		.	mg/L
Lab	MB	0.00232		.	mg/L
Lab	MB	0.00234		.	mg/L
Lab	MB	0.00431		.	mg/L
Lab	MB	0.00447		.	mg/L
Lab	MB	0.00470		.	mg/L
Lab	MB	0.00479		.	mg/L
Lab	MB	0.00550		.	mg/L
Lab	MB	0.00646		.	mg/L
Lab	MB	0.00711		.	mg/L
Lab	MB	0.00738		.	mg/L
Lab	MB	0.00957		.	mg/L
Lab	MB	0.01046		.	mg/L
Lab	MB	0.01070		.	mg/L
Lab	MB	0.01105		.	mg/L
Lab	MB	0.01130		.	mg/L
Lab	MB	0.01182		.	mg/L
Lab	MB	0.01300		.	mg/L
Lab	MB	0.01306		.	mg/L
Lab	MB	0.01479		.	mg/L
Lab	MB	0.01624		.	mg/L
Lab	MB	0.01876		.	mg/L
Lab	MB	0.01910		.	mg/L
Lab	MB	0.02049		.	mg/L
Lab	MB	0.02076		.	mg/L
Lab	MB	0.02092		.	mg/L
Lab	MB	0.02423		.	mg/L
Lab	MB	0.02459		.	mg/L
Lab	MB	0.02532		.	mg/L
Lab	MB	0.03243		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Magnesium ----------
(continued)

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	0.03425		.	mg/L
Lab	MB	0.03466		.	mg/L
Lab	MB	0.03764		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Manganese ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	-.00201		.	mg/L
Lab	MB	-.00176		.	mg/L
Lab	MB	-.00149		.	mg/L
Lab	MB	-.00138		.	mg/L
Lab	MB	-.00127		.	mg/L
Lab	MB	-.00117		.	mg/L
Lab	MB	-.00108		.	mg/L
Lab	MB	-.00105		.	mg/L
Lab	MB	-.00100		.	mg/L
Lab	MB	-.00091		.	mg/L
Lab	MB	-.00079		.	mg/L
Lab	MB	-.00059		.	mg/L
Lab	MB	-.00053		.	mg/L
Lab	MB	-.00049		.	mg/L
Lab	MB	-.00049		.	mg/L
Lab	MB	-.00049		.	mg/L
Lab	MB	-.00039		.	mg/L
Lab	MB	-.00038		.	mg/L
Lab	MB	-.00020		.	mg/L
Lab	MB	-.00019		.	mg/L
Lab	MB	-.00019		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00010		.	mg/L
Lab	MB	0.00019		.	mg/L
Lab	MB	0.00019		.	mg/L
Lab	MB	0.00038		.	mg/L
Lab	MB	0.00040		.	mg/L
Lab	MB	0.00045		.	mg/L
Lab	MB	0.00050		.	mg/L
Lab	MB	0.00060		.	mg/L
Lab	MB	0.00061		.	mg/L
Lab	MB	0.00062		.	mg/L
Lab	MB	0.00062		.	mg/L
Lab	MB	0.00063		.	mg/L
Lab	MB	0.00090		.	mg/L
Lab	MB	0.00100		.	mg/L
Lab	MB	0.00107		.	mg/L
Lab	MB	0.00107		.	mg/L
Lab	MB	0.00110		.	mg/L
Lab	MB	0.00120		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Manganese ----------
(continued)

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	.00121		.	mg/L
Lab	MB	.00121		.	mg/L
Lab	MB	.00121		.	mg/L
Lab	MB	.00121		.	mg/L
Lab	MB	.00128		.	mg/L
Lab	MB	.00131		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Molybdenum ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	-0.01020		.	mg/L
Lab	MB	-0.00852		.	mg/L
Lab	MB	-0.00804		.	mg/L
Lab	MB	-0.00750		.	mg/L
Lab	MB	-0.00601		.	mg/L
Lab	MB	-0.00521		.	mg/L
Lab	MB	-0.00438		.	mg/L
Lab	MB	-0.00433		.	mg/L
Lab	MB	-0.00397		.	mg/L
Lab	MB	-0.00322		.	mg/L
Lab	MB	-0.00275		.	mg/L
Lab	MB	-0.00210		.	mg/L
Lab	MB	-0.00194		.	mg/L
Lab	MB	-0.00185		.	mg/L
Lab	MB	-0.00120		.	mg/L
Lab	MB	-0.00109		.	mg/L
Lab	MB	-0.00101		.	mg/L
Lab	MB	-0.00089		.	mg/L
Lab	MB	-0.00067		.	mg/L
Lab	MB	-0.00053		.	mg/L
Lab	MB	-0.00034		.	mg/L
Lab	MB	-0.00030		.	mg/L
Lab	MB	-0.00028		.	mg/L
Lab	MB	-0.00026		.	mg/L
Lab	MB	-0.00019		.	mg/L
Lab	MB	-0.00001		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00034		.	mg/L
Lab	MB	0.00051		.	mg/L
Lab	MB	0.00075		.	mg/L
Lab	MB	0.00097		.	mg/L
Lab	MB	0.00129		.	mg/L
Lab	MB	0.00140		.	mg/L
Lab	MB	0.00151		.	mg/L
Lab	MB	0.00162		.	mg/L
Lab	MB	0.00190		.	mg/L
Lab	MB	0.00193		.	mg/L
Lab	MB	0.00195		.	mg/L
Lab	MB	0.00197		.	mg/L
Lab	MB	0.00200		.	mg/L
Lab	MB	0.00200		.	mg/L
Lab	MB	0.00221		.	mg/L
Lab	MB	0.00225		.	mg/L
Lab	MB	0.00245		.	mg/L
Lab	MB	0.00245		.	mg/L
Lab	MB	0.00270		.	mg/L
Lab	MB	0.00308		.	mg/L
Lab	MB	0.00407		.	mg/L
Lab	MB	0.00488		.	mg/L
Lab	MB	0.00704		.	mg/L
Lab	MB	0.00735		.	mg/L
Lab	MB	0.00798		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Molybdenum ----------
(continued)

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	.00814		.	mg/L
Lab	MB	.00895		.	mg/L
Lab	MB	.00970		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Nickel ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
MW-36-01	EB	-0.00280	<	0.02	mg/L
MW-36-01	EB	-0.00042	<	0.02	mg/L
Lab	MB	-0.01906		.	mg/L
Lab	MB	-0.01666		.	mg/L
Lab	MB	-0.01135		.	mg/L
Lab	MB	-0.01090		.	mg/L
Lab	MB	-0.01000		.	mg/L
Lab	MB	-0.00984		.	mg/L
Lab	MB	-0.00975		.	mg/L
Lab	MB	-0.00869		.	mg/L
Lab	MB	-0.00622		.	mg/L
Lab	MB	-0.00613		.	mg/L
Lab	MB	-0.00537		.	mg/L
Lab	MB	-0.00402		.	mg/L
Lab	MB	-0.00305		.	mg/L
Lab	MB	-0.00259		.	mg/L
Lab	MB	-0.00242		.	mg/L
Lab	MB	-0.00219		.	mg/L
Lab	MB	-0.00207		.	mg/L
Lab	MB	-0.00190		.	mg/L
Lab	MB	-0.00185		.	mg/L
Lab	MB	-0.00173		.	mg/L
Lab	MB	-0.00153		.	mg/L
Lab	MB	-0.00132		.	mg/L
Lab	MB	-0.00125		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00010		.	mg/L
Lab	MB	0.00041		.	mg/L
Lab	MB	0.00051		.	mg/L
Lab	MB	0.00052		.	mg/L
Lab	MB	0.00068		.	mg/L
Lab	MB	0.00070		.	mg/L
Lab	MB	0.00081		.	mg/L
Lab	MB	0.00104		.	mg/L
Lab	MB	0.00121		.	mg/L
Lab	MB	0.00125		.	mg/L
Lab	MB	0.00204		.	mg/L
Lab	MB	0.00238		.	mg/L
Lab	MB	0.00252		.	mg/L
Lab	MB	0.00260		.	mg/L
Lab	MB	0.00264		.	mg/L
Lab	MB	0.00332		.	mg/L
Lab	MB	0.00356		.	mg/L
Lab	MB	0.00379		.	mg/L
Lab	MB	0.00418		.	mg/L
Lab	MB	0.00570		.	mg/L
Lab	MB	0.00799		.	mg/L
Lab	MB	0.00799		.	mg/L
Lab	MB	0.00830		.	mg/L
Lab	MB	0.00910		.	mg/L
Lab	MB	0.00939		.	mg/L
Lab	MB	0.00970		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Nickel ----------
(continued)

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	0.00990		.	mg/L
Lab	MB	0.01083		.	mg/L
Lab	MB	0.01088		.	mg/L
Lab	MB	0.01210		.	mg/L
Lab	MB	0.01606		.	mg/L
Lab	MB	0.01650		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Potassium ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	-0.76430		.	mg/L
Lab	MB	-0.60780		.	mg/L
Lab	MB	-0.33360		.	mg/L
Lab	MB	-0.32960		.	mg/L
Lab	MB	-0.25940		.	mg/L
Lab	MB	-0.25640		.	mg/L
Lab	MB	-0.24270		.	mg/L
Lab	MB	-0.19810		.	mg/L
Lab	MB	-0.19710		.	mg/L
Lab	MB	-0.18200		.	mg/L
Lab	MB	-0.16140		.	mg/L
Lab	MB	-0.15580		.	mg/L
Lab	MB	-0.15270		.	mg/L
Lab	MB	-0.13090		.	mg/L
Lab	MB	-0.12470		.	mg/L
Lab	MB	-0.12330		.	mg/L
Lab	MB	-0.10940		.	mg/L
Lab	MB	-0.08040		.	mg/L
Lab	MB	-0.03025		.	mg/L
Lab	MB	-0.02532		.	mg/L
Lab	MB	-0.00617		.	mg/L
Lab	MB	0.01827		.	mg/L
Lab	MB	0.01995		.	mg/L
Lab	MB	0.02271		.	mg/L
Lab	MB	0.04316		.	mg/L
Lab	MB	0.05202		.	mg/L
Lab	MB	0.05911		.	mg/L
Lab	MB	0.06456		.	mg/L
Lab	MB	0.08771		.	mg/L
Lab	MB	0.09723		.	mg/L
Lab	MB	0.14480		.	mg/L
Lab	MB	0.16430		.	mg/L
Lab	MB	0.17010		.	mg/L
Lab	MB	0.18520		.	mg/L
Lab	MB	0.18740		.	mg/L
Lab	MB	0.23410		.	mg/L
Lab	MB	0.23570		.	mg/L
Lab	MB	0.25540		.	mg/L
Lab	MB	0.26520		.	mg/L
Lab	MB	0.28740		.	mg/L
Lab	MB	0.29600		.	mg/L
Lab	MB	0.32460		.	mg/L
Lab	MB	0.33450		.	mg/L
Lab	MB	0.33560		.	mg/L
Lab	MB	0.33920		.	mg/L
Lab	MB	0.38670		.	mg/L
Lab	MB	0.39890		.	mg/L
Lab	MB	0.42260		.	mg/L
Lab	MB	0.43520		.	mg/L
Lab	MB	0.46990		.	mg/L
Lab	MB	0.48470		.	mg/L
Lab	MB	0.52830		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Potassium ----------
(continued)

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	0.5489		.	mg/L
Lab	MB	0.5982		.	mg/L
Lab	MB	0.6029		.	mg/L
Lab	MB	0.6358		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Selenium ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	-0.10960		.	mg/L
Lab	MB	-0.10380		.	mg/L
Lab	MB	-0.08515		.	mg/L
Lab	MB	-0.06240		.	mg/L
Lab	MB	-0.05386		.	mg/L
Lab	MB	-0.04553		.	mg/L
Lab	MB	-0.04118		.	mg/L
Lab	MB	-0.03985		.	mg/L
Lab	MB	-0.03820		.	mg/L
Lab	MB	-0.03483		.	mg/L
Lab	MB	-0.03075		.	mg/L
Lab	MB	-0.03053		.	mg/L
Lab	MB	-0.02865		.	mg/L
Lab	MB	-0.02419		.	mg/L
Lab	MB	-0.01900		.	mg/L
Lab	MB	-0.01799		.	mg/L
Lab	MB	-0.01689		.	mg/L
Lab	MB	-0.01633		.	mg/L
Lab	MB	-0.01424		.	mg/L
Lab	MB	-0.01249		.	mg/L
Lab	MB	-0.00909		.	mg/L
Lab	MB	-0.00877		.	mg/L
Lab	MB	-0.00716		.	mg/L
Lab	MB	-0.00675		.	mg/L
Lab	MB	-0.00466		.	mg/L
Lab	MB	-0.00251		.	mg/L
Lab	MB	-0.00108		.	mg/L
Lab	MB	0.00150		.	mg/L
Lab	MB	0.00271		.	mg/L
Lab	MB	0.00520		.	mg/L
Lab	MB	0.00606		.	mg/L
Lab	MB	0.00663		.	mg/L
Lab	MB	0.00750		.	mg/L
Lab	MB	0.00893		.	mg/L
Lab	MB	0.00987		.	mg/L
Lab	MB	0.01050		.	mg/L
Lab	MB	0.01458		.	mg/L
Lab	MB	0.01543		.	mg/L
Lab	MB	0.01729		.	mg/L
Lab	MB	0.01800		.	mg/L
Lab	MB	0.01923		.	mg/L
Lab	MB	0.02095		.	mg/L
Lab	MB	0.02860		.	mg/L
Lab	MB	0.03005		.	mg/L
Lab	MB	0.03150		.	mg/L
Lab	MB	0.04018		.	mg/L
Lab	MB	0.04250		.	mg/L
Lab	MB	0.04666		.	mg/L
Lab	MB	0.05249		.	mg/L
Lab	MB	0.06254		.	mg/L
Lab	MB	0.06883		.	mg/L
Lab	MB	0.07022		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Selenium ----------
(continued)

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	0.07763		.	mg/L
Lab	MB	0.07780		.	mg/L
Lab	MB	0.07822		.	mg/L
Lab	MB	0.08050		.	mg/L
Lab	MB	0.08857		.	mg/L
Lab	MB	0.09100		.	mg/L
Lab	MB	0.10660		.	mg/L
Lab	MB	0.11130		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Silicon ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	-0.20750		.	mg/L
Lab	MB	-0.12210		.	mg/L
Lab	MB	-0.12100		.	mg/L
Lab	MB	-0.11910		.	mg/L
Lab	MB	-0.11890		.	mg/L
Lab	MB	-0.11730		.	mg/L
Lab	MB	-0.11130		.	mg/L
Lab	MB	-0.10440		.	mg/L
Lab	MB	-0.09109		.	mg/L
Lab	MB	-0.08856		.	mg/L
Lab	MB	-0.08600		.	mg/L
Lab	MB	-0.08273		.	mg/L
Lab	MB	-0.07905		.	mg/L
Lab	MB	-0.07463		.	mg/L
Lab	MB	-0.07103		.	mg/L
Lab	MB	-0.03024		.	mg/L
Lab	MB	-0.02147		.	mg/L
Lab	MB	-0.01904		.	mg/L
Lab	MB	-0.01863		.	mg/L
Lab	MB	-0.01657		.	mg/L
Lab	MB	-0.01540		.	mg/L
Lab	MB	-0.01372		.	mg/L
Lab	MB	-0.00868		.	mg/L
Lab	MB	-0.00620		.	mg/L
Lab	MB	-0.00484		.	mg/L
Lab	MB	-0.00297		.	mg/L
Lab	MB	0.00222		.	mg/L
Lab	MB	0.01012		.	mg/L
Lab	MB	0.01071		.	mg/L
Lab	MB	0.01119		.	mg/L
Lab	MB	0.01407		.	mg/L
Lab	MB	0.01414		.	mg/L
Lab	MB	0.01650		.	mg/L
Lab	MB	0.01668		.	mg/L
Lab	MB	0.01822		.	mg/L
Lab	MB	0.02023		.	mg/L
Lab	MB	0.02032		.	mg/L
Lab	MB	0.02936		.	mg/L
Lab	MB	0.03161		.	mg/L
Lab	MB	0.03338		.	mg/L
Lab	MB	0.03470		.	mg/L
Lab	MB	0.03524		.	mg/L
Lab	MB	0.03716		.	mg/L
Lab	MB	0.03938		.	mg/L
Lab	MB	0.04749		.	mg/L
Lab	MB	0.05286		.	mg/L
Lab	MB	0.05852		.	mg/L
Lab	MB	0.06073		.	mg/L
Lab	MB	0.06214		.	mg/L
Lab	MB	0.08993		.	mg/L
Lab	MB	0.10340		.	mg/L
Lab	MB	0.13420		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Silicon ----------
(continued)

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	0.1739		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Silver ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
MW-36-01	EB	0.00000	<	0.01	mg/L
MW-36-01	EB	-.00140	<	0.01	mg/L
Lab	MB	-.00795		.	mg/L
Lab	MB	-.00668		.	mg/L
Lab	MB	-.00644		.	mg/L
Lab	MB	-.00339		.	mg/L
Lab	MB	-.00246		.	mg/L
Lab	MB	-.00212		.	mg/L
Lab	MB	-.00209		.	mg/L
Lab	MB	-.00193		.	mg/L
Lab	MB	-.00096		.	mg/L
Lab	MB	-.00096		.	mg/L
Lab	MB	-.00093		.	mg/L
Lab	MB	-.00081		.	mg/L
Lab	MB	-.00079		.	mg/L
Lab	MB	-.00067		.	mg/L
Lab	MB	-.00064		.	mg/L
Lab	MB	-.00055		.	mg/L
Lab	MB	-.00051		.	mg/L
Lab	MB	-.00050		.	mg/L
Lab	MB	-.00020		.	mg/L
Lab	MB	-.00019		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00022		.	mg/L
Lab	MB	0.00041		.	mg/L
Lab	MB	0.00042		.	mg/L
Lab	MB	0.00046		.	mg/L
Lab	MB	0.00059		.	mg/L
Lab	MB	0.00082		.	mg/L
Lab	MB	0.00088		.	mg/L
Lab	MB	0.00094		.	mg/L
Lab	MB	0.00095		.	mg/L
Lab	MB	0.00102		.	mg/L
Lab	MB	0.00138		.	mg/L
Lab	MB	0.00151		.	mg/L
Lab	MB	0.00168		.	mg/L
Lab	MB	0.00176		.	mg/L
Lab	MB	0.00180		.	mg/L
Lab	MB	0.00181		.	mg/L
Lab	MB	0.00239		.	mg/L
Lab	MB	0.00266		.	mg/L
Lab	MB	0.00320		.	mg/L
Lab	MB	0.00320		.	mg/L
Lab	MB	0.00329		.	mg/L
Lab	MB	0.00330		.	mg/L
Lab	MB	0.00385		.	mg/L
Lab	MB	0.00386		.	mg/L
Lab	MB	0.00414		.	mg/L
Lab	MB	0.00498		.	mg/L
Lab	MB	0.00502		.	mg/L
Lab	MB	0.00503		.	mg/L
Lab	MB	0.00532		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Silver ----------
(continued)

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	.00562		.	mg/L
Lab	MB	.00570		.	mg/L
Lab	MB	.00919		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Sodium ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	-0.05562		.	mg/L
Lab	MB	-0.05323		.	mg/L
Lab	MB	-0.04393		.	mg/L
Lab	MB	-0.02318		.	mg/L
Lab	MB	-0.01008		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00217		.	mg/L
Lab	MB	0.00587		.	mg/L
Lab	MB	0.00657		.	mg/L
Lab	MB	0.00903		.	mg/L
Lab	MB	0.01015		.	mg/L
Lab	MB	0.01091		.	mg/L
Lab	MB	0.01669		.	mg/L
Lab	MB	0.01715		.	mg/L
Lab	MB	0.01805		.	mg/L
Lab	MB	0.01896		.	mg/L
Lab	MB	0.01941		.	mg/L
Lab	MB	0.02425		.	mg/L
Lab	MB	0.02429		.	mg/L
Lab	MB	0.02476		.	mg/L
Lab	MB	0.02542		.	mg/L
Lab	MB	0.02568		.	mg/L
Lab	MB	0.02784		.	mg/L
Lab	MB	0.03017		.	mg/L
Lab	MB	0.03101		.	mg/L
Lab	MB	0.03130		.	mg/L
Lab	MB	0.03304		.	mg/L
Lab	MB	0.03390		.	mg/L
Lab	MB	0.03600		.	mg/L
Lab	MB	0.03610		.	mg/L
Lab	MB	0.03740		.	mg/L
Lab	MB	0.04064		.	mg/L
Lab	MB	0.04428		.	mg/L
Lab	MB	0.04751		.	mg/L
Lab	MB	0.04914		.	mg/L
Lab	MB	0.04919		.	mg/L
Lab	MB	0.04990		.	mg/L
Lab	MB	0.05110		.	mg/L
Lab	MB	0.05260		.	mg/L
Lab	MB	0.05470		.	mg/L
Lab	MB	0.05949		.	mg/L
Lab	MB	0.06203		.	mg/L
Lab	MB	0.06435		.	mg/L
Lab	MB	0.06456		.	mg/L
Lab	MB	0.06615		.	mg/L
Lab	MB	0.07650		.	mg/L
Lab	MB	0.08477		.	mg/L
Lab	MB	0.09013		.	mg/L
Lab	MB	0.09407		.	mg/L
Lab	MB	0.10360		.	mg/L
Lab	MB	0.12280		.	mg/L
Lab	MB	0.15190		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Sodium ----------
(continued)

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	0.1566		.	mg/L
Lab	MB	0.1668		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Strontium ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	-.00042		.	mg/L
Lab	MB	-.00042		.	mg/L
Lab	MB	-.00030		.	mg/L
Lab	MB	-.00015		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00013		.	mg/L
Lab	MB	0.00015		.	mg/L
Lab	MB	0.00015		.	mg/L
Lab	MB	0.00020		.	mg/L
Lab	MB	0.00027		.	mg/L
Lab	MB	0.00030		.	mg/L
Lab	MB	0.00030		.	mg/L
Lab	MB	0.00030		.	mg/L
Lab	MB	0.00033		.	mg/L
Lab	MB	0.00035		.	mg/L
Lab	MB	0.00041		.	mg/L
Lab	MB	0.00042		.	mg/L
Lab	MB	0.00047		.	mg/L
Lab	MB	0.00047		.	mg/L
Lab	MB	0.00050		.	mg/L
Lab	MB	0.00060		.	mg/L
Lab	MB	0.00062		.	mg/L
Lab	MB	0.00064		.	mg/L
Lab	MB	0.00067		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Sulfur ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	-0.06591		.	mg/L
Lab	MB	-0.03333		.	mg/L
Lab	MB	-0.03269		.	mg/L
Lab	MB	-0.03186		.	mg/L
Lab	MB	-0.02941		.	mg/L
Lab	MB	-0.02631		.	mg/L
Lab	MB	-0.02450		.	mg/L
Lab	MB	-0.01902		.	mg/L
Lab	MB	-0.01683		.	mg/L
Lab	MB	-0.01420		.	mg/L
Lab	MB	-0.01408		.	mg/L
Lab	MB	-0.01391		.	mg/L
Lab	MB	-0.01389		.	mg/L
Lab	MB	-0.01164		.	mg/L
Lab	MB	-0.00656		.	mg/L
Lab	MB	-0.00656		.	mg/L
Lab	MB	-0.00654		.	mg/L
Lab	MB	-0.00277		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00502		.	mg/L
Lab	MB	0.00553		.	mg/L
Lab	MB	0.00629		.	mg/L
Lab	MB	0.00869		.	mg/L
Lab	MB	0.01408		.	mg/L
Lab	MB	0.01420		.	mg/L
Lab	MB	0.01487		.	mg/L
Lab	MB	0.01505		.	mg/L
Lab	MB	0.01562		.	mg/L
Lab	MB	0.01562		.	mg/L
Lab	MB	0.01572		.	mg/L
Lab	MB	0.01683		.	mg/L
Lab	MB	0.02179		.	mg/L
Lab	MB	0.03124		.	mg/L
Lab	MB	0.03130		.	mg/L
Lab	MB	0.03474		.	mg/L
Lab	MB	0.03520		.	mg/L
Lab	MB	0.03621		.	mg/L
Lab	MB	0.03766		.	mg/L
Lab	MB	0.04094		.	mg/L
Lab	MB	0.04516		.	mg/L
Lab	MB	0.04516		.	mg/L
Lab	MB	0.04597		.	mg/L
Lab	MB	0.04742		.	mg/L
Lab	MB	0.04913		.	mg/L
Lab	MB	0.04976		.	mg/L
Lab	MB	0.05017		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Sulfur ----------
(continued)

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	0.05559		.	mg/L
Lab	MB	0.05774		.	mg/L
Lab	MB	0.05900		.	mg/L
Lab	MB	0.07056		.	mg/L
Lab	MB	0.08318		.	mg/L
Lab	MB	0.11820		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Thallium ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
MW-36-01	EB	-0.00160	<	0.1	mg/L
MW-36-01	EB	0.00170	<	0.1	mg/L
Lab	MB	-0.10120		.	mg/L
Lab	MB	-0.08954		.	mg/L
Lab	MB	-0.07985		.	mg/L
Lab	MB	-0.06203		.	mg/L
Lab	MB	-0.05424		.	mg/L
Lab	MB	-0.04884		.	mg/L
Lab	MB	-0.04811		.	mg/L
Lab	MB	-0.03827		.	mg/L
Lab	MB	-0.03448		.	mg/L
Lab	MB	-0.03197		.	mg/L
Lab	MB	-0.03171		.	mg/L
Lab	MB	-0.03081		.	mg/L
Lab	MB	-0.02814		.	mg/L
Lab	MB	-0.02778		.	mg/L
Lab	MB	-0.02391		.	mg/L
Lab	MB	-0.01965		.	mg/L
Lab	MB	-0.01396		.	mg/L
Lab	MB	-0.01289		.	mg/L
Lab	MB	-0.01253		.	mg/L
Lab	MB	-0.00979		.	mg/L
Lab	MB	-0.00880		.	mg/L
Lab	MB	-0.00837		.	mg/L
Lab	MB	-0.00522		.	mg/L
Lab	MB	-0.00468		.	mg/L
Lab	MB	-0.00450		.	mg/L
Lab	MB	-0.00392		.	mg/L
Lab	MB	-0.00255		.	mg/L
Lab	MB	-0.00246		.	mg/L
Lab	MB	-0.00218		.	mg/L
Lab	MB	0.00187		.	mg/L
Lab	MB	0.00414		.	mg/L
Lab	MB	0.00468		.	mg/L
Lab	MB	0.00540		.	mg/L
Lab	MB	0.00621		.	mg/L
Lab	MB	0.00674		.	mg/L
Lab	MB	0.00765		.	mg/L
Lab	MB	0.00777		.	mg/L
Lab	MB	0.00815		.	mg/L
Lab	MB	0.01703		.	mg/L
Lab	MB	0.01983		.	mg/L
Lab	MB	0.01986		.	mg/L
Lab	MB	0.02284		.	mg/L
Lab	MB	0.02284		.	mg/L
Lab	MB	0.02528		.	mg/L
Lab	MB	0.03170		.	mg/L
Lab	MB	0.03360		.	mg/L
Lab	MB	0.03611		.	mg/L
Lab	MB	0.03621		.	mg/L
Lab	MB	0.03924		.	mg/L
Lab	MB	0.04300		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Thallium ----------
(continued)

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	0.05223		.	mg/L
Lab	MB	0.05224		.	mg/L
Lab	MB	0.05890		.	mg/L
Lab	MB	0.06107		.	mg/L
Lab	MB	0.06201		.	mg/L
Lab	MB	0.06207		.	mg/L
Lab	MB	0.07097		.	mg/L
Lab	MB	0.08049		.	mg/L
Lab	MB	0.08636		.	mg/L
Lab	MB	0.09477		.	mg/L
Lab	MB	0.11770		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Tin ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
MW-36-01	EB	-0.00220	<	0.6	mg/L
MW-36-01	EB	-0.01100	<	0.6	mg/L
Lab	MB	-0.04028		.	mg/L
Lab	MB	-0.03278		.	mg/L
Lab	MB	-0.03227		.	mg/L
Lab	MB	-0.02314		.	mg/L
Lab	MB	-0.02304		.	mg/L
Lab	MB	-0.02239		.	mg/L
Lab	MB	-0.02155		.	mg/L
Lab	MB	-0.01751		.	mg/L
Lab	MB	-0.01553		.	mg/L
Lab	MB	-0.01455		.	mg/L
Lab	MB	-0.01359		.	mg/L
Lab	MB	-0.01242		.	mg/L
Lab	MB	-0.00847		.	mg/L
Lab	MB	-0.00773		.	mg/L
Lab	MB	-0.00755		.	mg/L
Lab	MB	-0.00700		.	mg/L
Lab	MB	-0.00560		.	mg/L
Lab	MB	-0.00549		.	mg/L
Lab	MB	-0.00530		.	mg/L
Lab	MB	-0.00509		.	mg/L
Lab	MB	-0.00508		.	mg/L
Lab	MB	-0.00448		.	mg/L
Lab	MB	-0.00445		.	mg/L
Lab	MB	-0.00280		.	mg/L
Lab	MB	-0.00198		.	mg/L
Lab	MB	-0.00174		.	mg/L
Lab	MB	-0.00168		.	mg/L
Lab	MB	-0.00138		.	mg/L
Lab	MB	-0.00125		.	mg/L
Lab	MB	-0.00018		.	mg/L
Lab	MB	0.00004		.	mg/L
Lab	MB	0.00005		.	mg/L
Lab	MB	0.00012		.	mg/L
Lab	MB	0.00080		.	mg/L
Lab	MB	0.00099		.	mg/L
Lab	MB	0.00161		.	mg/L
Lab	MB	0.00183		.	mg/L
Lab	MB	0.00336		.	mg/L
Lab	MB	0.00366		.	mg/L
Lab	MB	0.00477		.	mg/L
Lab	MB	0.00528		.	mg/L
Lab	MB	0.00730		.	mg/L
Lab	MB	0.00979		.	mg/L
Lab	MB	0.01015		.	mg/L
Lab	MB	0.01054		.	mg/L
Lab	MB	0.01356		.	mg/L
Lab	MB	0.01556		.	mg/L
Lab	MB	0.01819		.	mg/L
Lab	MB	0.01840		.	mg/L
Lab	MB	0.01861		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Tin ----------
(continued)

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	0.02000		.	mg/L
Lab	MB	0.02066		.	mg/L
Lab	MB	0.02089		.	mg/L
Lab	MB	0.02115		.	mg/L
Lab	MB	0.02157		.	mg/L
Lab	MB	0.02306		.	mg/L
Lab	MB	0.02447		.	mg/L
Lab	MB	0.02549		.	mg/L
Lab	MB	0.02610		.	mg/L
Lab	MB	0.02996		.	mg/L
Lab	MB	0.04759		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Titanium ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	-.00374		.	mg/L
Lab	MB	-.00242		.	mg/L
Lab	MB	-.00230		.	mg/L
Lab	MB	-.00201		.	mg/L
Lab	MB	-.00201		.	mg/L
Lab	MB	-.00184		.	mg/L
Lab	MB	-.00184		.	mg/L
Lab	MB	-.00183		.	mg/L
Lab	MB	-.00183		.	mg/L
Lab	MB	-.00128		.	mg/L
Lab	MB	-.00120		.	mg/L
Lab	MB	-.00114		.	mg/L
Lab	MB	-.00114		.	mg/L
Lab	MB	-.00113		.	mg/L
Lab	MB	-.00112		.	mg/L
Lab	MB	-.00101		.	mg/L
Lab	MB	-.00093		.	mg/L
Lab	MB	-.00090		.	mg/L
Lab	MB	-.00089		.	mg/L
Lab	MB	-.00071		.	mg/L
Lab	MB	-.00070		.	mg/L
Lab	MB	-.00070		.	mg/L
Lab	MB	-.00055		.	mg/L
Lab	MB	-.00054		.	mg/L
Lab	MB	-.00054		.	mg/L
Lab	MB	-.00053		.	mg/L
Lab	MB	-.00052		.	mg/L
Lab	MB	-.00051		.	mg/L
Lab	MB	-.00036		.	mg/L
Lab	MB	-.00016		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00039		.	mg/L
Lab	MB	0.00042		.	mg/L
Lab	MB	0.00050		.	mg/L
Lab	MB	0.00053		.	mg/L
Lab	MB	0.00060		.	mg/L
Lab	MB	0.00068		.	mg/L
Lab	MB	0.00076		.	mg/L
Lab	MB	0.00076		.	mg/L
Lab	MB	0.00082		.	mg/L
Lab	MB	0.00093		.	mg/L
Lab	MB	0.00101		.	mg/L
Lab	MB	0.00106		.	mg/L
Lab	MB	0.00130		.	mg/L
Lab	MB	0.00144		.	mg/L
Lab	MB	0.00158		.	mg/L
Lab	MB	0.00158		.	mg/L
Lab	MB	0.00160		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Titanium ----------
(continued)

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	.00169		.	mg/L
Lab	MB	.00189		.	mg/L
Lab	MB	.00197		.	mg/L
Lab	MB	.00226		.	mg/L
Lab	MB	.00230		.	mg/L
Lab	MB	.00310		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Tungsten ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	-0.04807		.	mg/L
Lab	MB	-0.04278		.	mg/L
Lab	MB	-0.04125		.	mg/L
Lab	MB	-0.04024		.	mg/L
Lab	MB	-0.03906		.	mg/L
Lab	MB	-0.02515		.	mg/L
Lab	MB	-0.02012		.	mg/L
Lab	MB	-0.01912		.	mg/L
Lab	MB	-0.01734		.	mg/L
Lab	MB	-0.01222		.	mg/L
Lab	MB	-0.01192		.	mg/L
Lab	MB	-0.01188		.	mg/L
Lab	MB	-0.01071		.	mg/L
Lab	MB	-0.01006		.	mg/L
Lab	MB	-0.00946		.	mg/L
Lab	MB	-0.00865		.	mg/L
Lab	MB	-0.00762		.	mg/L
Lab	MB	-0.00755		.	mg/L
Lab	MB	-0.00754		.	mg/L
Lab	MB	-0.00580		.	mg/L
Lab	MB	-0.00575		.	mg/L
Lab	MB	-0.00503		.	mg/L
Lab	MB	-0.00503		.	mg/L
Lab	MB	-0.00490		.	mg/L
Lab	MB	-0.00358		.	mg/L
Lab	MB	-0.00204		.	mg/L
Lab	MB	-0.00045		.	mg/L
Lab	MB	-0.00006		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00159		.	mg/L
Lab	MB	0.00230		.	mg/L
Lab	MB	0.00411		.	mg/L
Lab	MB	0.00488		.	mg/L
Lab	MB	0.00600		.	mg/L
Lab	MB	0.00614		.	mg/L
Lab	MB	0.00967		.	mg/L
Lab	MB	0.01119		.	mg/L
Lab	MB	0.01201		.	mg/L
Lab	MB	0.01225		.	mg/L
Lab	MB	0.01387		.	mg/L
Lab	MB	0.01930		.	mg/L
Lab	MB	0.01933		.	mg/L
Lab	MB	0.02508		.	mg/L
Lab	MB	0.02646		.	mg/L
Lab	MB	0.02657		.	mg/L
Lab	MB	0.03017		.	mg/L
Lab	MB	0.03046		.	mg/L
Lab	MB	0.04021		.	mg/L
Lab	MB	0.04910		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Uranium ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	-0.11280		.	mg/L
Lab	MB	-0.09207		.	mg/L
Lab	MB	-0.09205		.	mg/L
Lab	MB	-0.07971		.	mg/L
Lab	MB	-0.06370		.	mg/L
Lab	MB	-0.06145		.	mg/L
Lab	MB	-0.05787		.	mg/L
Lab	MB	-0.05567		.	mg/L
Lab	MB	-0.05198		.	mg/L
Lab	MB	-0.04468		.	mg/L
Lab	MB	-0.03634		.	mg/L
Lab	MB	-0.03614		.	mg/L
Lab	MB	-0.03070		.	mg/L
Lab	MB	-0.02480		.	mg/L
Lab	MB	-0.02172		.	mg/L
Lab	MB	-0.02121		.	mg/L
Lab	MB	-0.02118		.	mg/L
Lab	MB	-0.02090		.	mg/L
Lab	MB	-0.02047		.	mg/L
Lab	MB	-0.01796		.	mg/L
Lab	MB	-0.01531		.	mg/L
Lab	MB	-0.01526		.	mg/L
Lab	MB	-0.01406		.	mg/L
Lab	MB	-0.01303		.	mg/L
Lab	MB	-0.00895		.	mg/L
Lab	MB	-0.00382		.	mg/L
Lab	MB	0.00512		.	mg/L
Lab	MB	0.00690		.	mg/L
Lab	MB	0.00784		.	mg/L
Lab	MB	0.00857		.	mg/L
Lab	MB	0.00878		.	mg/L
Lab	MB	0.01214		.	mg/L
Lab	MB	0.01568		.	mg/L
Lab	MB	0.01740		.	mg/L
Lab	MB	0.02655		.	mg/L
Lab	MB	0.02707		.	mg/L
Lab	MB	0.03493		.	mg/L
Lab	MB	0.04130		.	mg/L
Lab	MB	0.04218		.	mg/L
Lab	MB	0.04555		.	mg/L
Lab	MB	0.05082		.	mg/L
Lab	MB	0.05422		.	mg/L
Lab	MB	0.05915		.	mg/L
Lab	MB	0.06047		.	mg/L
Lab	MB	0.06078		.	mg/L
Lab	MB	0.06314		.	mg/L
Lab	MB	0.06569		.	mg/L
Lab	MB	0.07463		.	mg/L
Lab	MB	0.07505		.	mg/L
Lab	MB	0.09621		.	mg/L
Lab	MB	0.09746		.	mg/L
Lab	MB	0.11440		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Uranium ----------
(continued)

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	0.1254		.	mg/L
Lab	MB	0.1643		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Vanadium ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
MW-36-01	EB	-.00120	<	0.02	mg/L
MW-36-01	EB	-.00440	<	0.02	mg/L
Lab	MB	-.00517		.	mg/L
Lab	MB	-.00469		.	mg/L
Lab	MB	-.00417		.	mg/L
Lab	MB	-.00353		.	mg/L
Lab	MB	-.00287		.	mg/L
Lab	MB	-.00269		.	mg/L
Lab	MB	-.00259		.	mg/L
Lab	MB	-.00238		.	mg/L
Lab	MB	-.00236		.	mg/L
Lab	MB	-.00208		.	mg/L
Lab	MB	-.00197		.	mg/L
Lab	MB	-.00165		.	mg/L
Lab	MB	-.00162		.	mg/L
Lab	MB	-.00151		.	mg/L
Lab	MB	-.00145		.	mg/L
Lab	MB	-.00119		.	mg/L
Lab	MB	-.00084		.	mg/L
Lab	MB	-.00074		.	mg/L
Lab	MB	-.00071		.	mg/L
Lab	MB	-.00050		.	mg/L
Lab	MB	-.00045		.	mg/L
Lab	MB	-.00041		.	mg/L
Lab	MB	-.00035		.	mg/L
Lab	MB	-.00029		.	mg/L
Lab	MB	-.00024		.	mg/L
Lab	MB	-.00016		.	mg/L
Lab	MB	0.00004		.	mg/L
Lab	MB	0.00007		.	mg/L
Lab	MB	0.00017		.	mg/L
Lab	MB	0.00021		.	mg/L
Lab	MB	0.00026		.	mg/L
Lab	MB	0.00054		.	mg/L
Lab	MB	0.00055		.	mg/L
Lab	MB	0.00057		.	mg/L
Lab	MB	0.00085		.	mg/L
Lab	MB	0.00085		.	mg/L
Lab	MB	0.00109		.	mg/L
Lab	MB	0.00114		.	mg/L
Lab	MB	0.00128		.	mg/L
Lab	MB	0.00135		.	mg/L
Lab	MB	0.00173		.	mg/L
Lab	MB	0.00185		.	mg/L
Lab	MB	0.00204		.	mg/L
Lab	MB	0.00216		.	mg/L
Lab	MB	0.00220		.	mg/L
Lab	MB	0.00224		.	mg/L
Lab	MB	0.00240		.	mg/L
Lab	MB	0.00251		.	mg/L
Lab	MB	0.00266		.	mg/L
Lab	MB	0.00273		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Vanadium ----------
(continued)

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	.00304		.	mg/L
Lab	MB	.00307		.	mg/L
Lab	MB	.00321		.	mg/L
Lab	MB	.00340		.	mg/L
Lab	MB	.00341		.	mg/L
Lab	MB	.00433		.	mg/L
Lab	MB	.00510		.	mg/L
Lab	MB	.00541		.	mg/L
Lab	MB	.00560		.	mg/L
Lab	MB	.00580		.	mg/L
Lab	MB	.00820		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Zinc ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
MW-36-01	EB	0.01200	<	0.02	mg/L
MW-36-01	EB	0.00450	<	0.02	mg/L
Lab	MB	-0.00292		.	mg/L
Lab	MB	-0.00230		.	mg/L
Lab	MB	-0.00221		.	mg/L
Lab	MB	-0.00212		.	mg/L
Lab	MB	-0.00194		.	mg/L
Lab	MB	-0.00156		.	mg/L
Lab	MB	-0.00155		.	mg/L
Lab	MB	-0.00145		.	mg/L
Lab	MB	-0.00122		.	mg/L
Lab	MB	-0.00057		.	mg/L
Lab	MB	-0.00056		.	mg/L
Lab	MB	-0.00039		.	mg/L
Lab	MB	-0.00033		.	mg/L
Lab	MB	-0.00030		.	mg/L
Lab	MB	-0.00011		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00001		.	mg/L
Lab	MB	0.00002		.	mg/L
Lab	MB	0.00002		.	mg/L
Lab	MB	0.00013		.	mg/L
Lab	MB	0.00013		.	mg/L
Lab	MB	0.00025		.	mg/L
Lab	MB	0.00061		.	mg/L
Lab	MB	0.00073		.	mg/L
Lab	MB	0.00083		.	mg/L
Lab	MB	0.00100		.	mg/L
Lab	MB	0.00132		.	mg/L
Lab	MB	0.00136		.	mg/L
Lab	MB	0.00140		.	mg/L
Lab	MB	0.00160		.	mg/L
Lab	MB	0.00160		.	mg/L
Lab	MB	0.00166		.	mg/L
Lab	MB	0.00170		.	mg/L
Lab	MB	0.00182		.	mg/L
Lab	MB	0.00193		.	mg/L
Lab	MB	0.00204		.	mg/L
Lab	MB	0.00212		.	mg/L
Lab	MB	0.00212		.	mg/L
Lab	MB	0.00216		.	mg/L
Lab	MB	0.00235		.	mg/L
Lab	MB	0.00237		.	mg/L
Lab	MB	0.00240		.	mg/L
Lab	MB	0.00242		.	mg/L
Lab	MB	0.00252		.	mg/L
Lab	MB	0.00257		.	mg/L
Lab	MB	0.00306		.	mg/L
Lab	MB	0.00317		.	mg/L
Lab	MB	0.00329		.	mg/L
Lab	MB	0.00346		.	mg/L
Lab	MB	0.00353		.	mg/L

---------- MATRIX=L METHOD=SW6010 ANALYTE=Zinc ----------
(continued)

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	.00384		.	mg/L
Lab	MB	.00384		.	mg/L
Lab	MB	.00475		.	mg/L
Lab	MB	.00478		.	mg/L
Lab	MB	.00612		.	mg/L
Lab	MB	.00683		.	mg/L

---------- MATRIX=L METHOD=SW7060 ANALYTE=Arsenic ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
MW-36-01	EB	-.00180	<	.008	mg/L
MW-36-01	EB	-.00180	<	.008	mg/L
Lab	MB	-.00230		.	mg/L
Lab	MB	-.00229		.	mg/L
Lab	MB	-.00220		.	mg/L
Lab	MB	-.00194		.	mg/L
Lab	MB	-.00170		.	mg/L
Lab	MB	-.00160		.	mg/L
Lab	MB	-.00150		.	mg/L
Lab	MB	-.00140		.	mg/L
Lab	MB	-.00110		.	mg/L
Lab	MB	-.00100		.	mg/L
Lab	MB	-.00100		.	mg/L
Lab	MB	-.00100		.	mg/L
Lab	MB	-.00090		.	mg/L
Lab	MB	-.00090		.	mg/L
Lab	MB	-.00090		.	mg/L
Lab	MB	-.00090		.	mg/L
Lab	MB	-.00080		.	mg/L
Lab	MB	-.00070		.	mg/L
Lab	MB	-.00070		.	mg/L
Lab	MB	-.00070		.	mg/L
Lab	MB	-.00060		.	mg/L
Lab	MB	-.00060		.	mg/L
Lab	MB	-.00060		.	mg/L
Lab	MB	-.00060		.	mg/L
Lab	MB	-.00050		.	mg/L
Lab	MB	-.00050		.	mg/L
Lab	MB	-.00050		.	mg/L
Lab	MB	-.00010		.	mg/L
Lab	MB	-.00010		.	mg/L
Lab	MB	0.00030		.	mg/L

---------- MATRIX=L METHOD=SW7421 ANALYTE=Lead ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
MW-36-01	EB	0.00330	>	.003	mg/L
MW-36-01	EB	0.00390	>	.003	mg/L
Lab	MB	-.00306		.	mg/L
Lab	MB	-.00280		.	mg/L
Lab	MB	-.00271		.	mg/L
Lab	MB	-.00219		.	mg/L
Lab	MB	-.00181		.	mg/L
Lab	MB	-.00166		.	mg/L
Lab	MB	-.00110		.	mg/L
Lab	MB	-.00100		.	mg/L
Lab	MB	-.00100		.	mg/L
Lab	MB	-.00060		.	mg/L
Lab	MB	-.00060		.	mg/L
Lab	MB	-.00057		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00013		.	mg/L
Lab	MB	0.00024		.	mg/L
Lab	MB	0.00046		.	mg/L
Lab	MB	0.00063		.	mg/L
Lab	MB	0.00100		.	mg/L
Lab	MB	0.00100		.	mg/L
Lab	MB	0.00140		.	mg/L
Lab	MB	0.00190		.	mg/L
Lab	MB	0.00210		.	mg/L

MATRIX=L METHOD=SW7470 ANALYTE=Mercury

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
MW-36-01	EB	-.00011	<	.00018	mg/L
MW-36-01	EB	-.00009	<	.00018	mg/L
Lab	MB	-.00013		.	mg/L
Lab	MB	-.00013		.	mg/L
Lab	MB	-.00011		.	mg/L
Lab	MB	-.00011		.	mg/L
Lab	MB	-.00010		.	mg/L
Lab	MB	-.00010		.	mg/L
Lab	MB	-.00009		.	mg/L
Lab	MB	-.00009		.	mg/L
Lab	MB	-.00008		.	mg/L
Lab	MB	-.00008		.	mg/L
Lab	MB	-.00008		.	mg/L
Lab	MB	-.00008		.	mg/L
Lab	MB	-.00006		.	mg/L
Lab	MB	-.00006		.	mg/L
Lab	MB	-.00006		.	mg/L
Lab	MB	-.00006		.	mg/L
Lab	MB	-.00006		.	mg/L
Lab	MB	-.00006		.	mg/L
Lab	MB	-.00005		.	mg/L
Lab	MB	-.00005		.	mg/L
Lab	MB	-.00004		.	mg/L
Lab	MB	-.00004		.	mg/L
Lab	MB	-.00004		.	mg/L
Lab	MB	-.00004		.	mg/L
Lab	MB	-.00003		.	mg/L
Lab	MB	-.00003		.	mg/L
Lab	MB	-.00003		.	mg/L
Lab	MB	-.00003		.	mg/L
Lab	MB	-.00002		.	mg/L
Lab	MB	-.00002		.	mg/L
Lab	MB	-.00001		.	mg/L
Lab	MB	-.00001		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00000		.	mg/L
Lab	MB	0.00005		.	mg/L
Lab	MB	0.00005		.	mg/L

MATRIX=L METHOD=SW7740 ANALYTE=Selenium

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
MW-36-01	EB	-.00120	<	0.01	mg/L
MW-36-01	EB	0.00000	<	0.01	mg/L
Lab	MB	-.00300		.	mg/L
Lab	MB	-.00250		.	mg/L
Lab	MB	-.00220		.	mg/L
Lab	MB	-.00210		.	mg/L
Lab	MB	-.00190		.	mg/L
Lab	MB	-.00180		.	mg/L
Lab	MB	-.00170		.	mg/L
Lab	MB	-.00160		.	mg/L
Lab	MB	-.00150		.	mg/L
Lab	MB	-.00150		.	mg/L
Lab	MB	-.00140		.	mg/L
Lab	MB	-.00130		.	mg/L
Lab	M8	-.00123		.	mg/L
Lab	MB	-.00120		.	mg/L
Lab	MB	-.00100		.	mg/L
Lab	MB	-.00100		.	mg/L
Lab	MB	-.00091		.	mg/L
Lab	MB	-.00070		.	mg/L
Lab	MB	-.00070		.	mg/L
Lab	MB	-.00054		.	mg/L
Lab	MB	-.00030		.	mg/L
Lab	MB	-.00030		.	mg/L
Lab	MB	0.00040		.	mg/L
Lab	MB	0.00060		.	mg/L
Lab	MB	0.00080		.	mg/L
Lab	MB	0.00080		.	mg/L
Lab	MB	0.00090		.	mg/L
Lab	MB	0.00110		.	mg/L
Lab	MB	0.00110		.	mg/L

---------- MATRIX=L METHOD=SW7841 ANALYTE=Thallium ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
MW-36-01	EB	0.0015	<	.005	mg/L
MW-36-01	EB	0.0010	<	.005	mg/L
Lab	MB	-.0009		.	mg/L
Lab	MB	-.0009		.	mg/L
Lab	MB	-.0008		.	mg/L
Lab	MB	-.0006		.	mg/L
Lab	MB	-.0005		.	mg/L
Lab	MB	-.0001		.	mg/L
Lab	MB	0.0000		.	mg/L
Lab	MB	0.0000		.	mg/L
Lab	MB	0.0002		.	mg/L
Lab	MB	0.0003		.	mg/L
Lab	MB	0.0004		.	mg/L
Lab	MB	0.0004		.	mg/L
Lab	MB	0.0004		.	mg/L
Lab	MB	0.0008		.	mg/L
Lab	MB	0.0010		.	mg/L
Lab	MB	0.0016		.	mg/L

---------- MATRIX=S METHOD=SW6010 ANALYTE=Aluminum ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	-7.5770		.	mg/kg
Lab	MB	-7.5490		.	mg/kg
Lab	MB	-6.3830		.	mg/kg
Lab	MB	-6.0430		.	mg/kg
Lab	MB	-5.2860		.	mg/kg
Lab	MB	-3.3190		.	mg/kg
Lab	MB	-3.0100		.	mg/kg
Lab	MB	-2.8310		.	mg/kg
Lab	MB	-1.7090		.	mg/kg
Lab	MB	-1.5090		.	mg/kg
Lab	MB	-1.2190		.	mg/kg
Lab	MB	-0.8768		.	mg/kg
Lab	MB	-0.7034		.	mg/kg
Lab	MB	-0.6881		.	mg/kg
Lab	MB	-0.4336		.	mg/kg
Lab	MB	-0.2066		.	mg/kg
Lab	MB	-0.0763		.	mg/kg
Lab	MB	0.0020		.	mg/kg
Lab	MB	0.0097		.	mg/kg
Lab	MB	0.0820		.	mg/kg
Lab	MB	0.0901		.	mg/kg
Lab	MB	0.2528		.	mg/kg
Lab	MB	0.2600		.	mg/kg
Lab	MB	0.3750		.	mg/kg
Lab	MB	0.6432		.	mg/kg
Lab	MB	0.7328		.	mg/kg
Lab	MB	0.9678		.	mg/kg
Lab	MB	0.9763		.	mg/kg
Lab	MB	1.0250		.	mg/kg
Lab	MB	1.8920		.	mg/kg
Lab	MB	1.9280		.	mg/kg
Lab	MB	1.9980		.	mg/kg
Lab	MB	2.4410		.	mg/kg
Lab	MB	2.6700		.	mg/kg
Lab	MB	2.7190		.	mg/kg
Lab	MB	3.2150		.	mg/kg
Lab	MB	3.2420		.	mg/kg
Lab	MB	3.2740		.	mg/kg
Lab	MB	3.3910		.	mg/kg
Lab	MB	3.3920		.	mg/kg
Lab	MB	3.4810		.	mg/kg
Lab	MB	3.6240		.	mg/kg
Lab	MB	3.8890		.	mg/kg
Lab	MB	3.9750		.	mg/kg
Lab	MB	4.4720		.	mg/kg
Lab	MB	5.0730		.	mg/kg
Lab	MB	5.1600		.	mg/kg
Lab	MB	5.4150		.	mg/kg
Lab	MB	7.0330		.	mg/kg
Lab	MB	9.1510		.	mg/kg
Lab	MB	10.3200		.	mg/kg

---------- MATRIX=S METHOD=SW6010 ANALYTE=Antimony ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	-9.29800		.	mg/kg
Lab	MB	-8.25800		.	mg/kg
Lab	MB	-7.81100		.	mg/kg
Lab	MB	-6.89200		.	mg/kg
Lab	MB	-6.76600		.	mg/kg
Lab	MB	-6.44300		.	mg/kg
Lab	MB	-6.01000		.	mg/kg
Lab	MB	-5.45900		.	mg/kg
Lab	MB	-5.22800		.	mg/kg
Lab	MB	-5.05600		.	mg/kg
Lab	MB	-4.85700		.	mg/kg
Lab	MB	-4.19000		.	mg/kg
Lab	MB	-3.88600		.	mg/kg
Lab	MB	-3.78500		.	mg/kg
Lab	MB	-3.09700		.	mg/kg
Lab	MB	-2.81800		.	mg/kg
Lab	MB	-2.62800		.	mg/kg
Lab	MB	-2.57700		.	mg/kg
Lab	MB	-2.21200		.	mg/kg
Lab	MB	-1.78600		.	mg/kg
Lab	MB	-1.11000		.	mg/kg
Lab	MB	-1.00000		.	mg/kg
Lab	MB	-0.96370		.	mg/kg
Lab	MB	-0.70590		.	mg/kg
Lab	MB	-0.68600		.	mg/kg
Lab	MB	-0.48060		.	mg/kg
Lab	MB	-0.33260		.	mg/kg
Lab	MB	-0.23020		.	mg/kg
Lab	MB	-0.19260		.	mg/kg
Lab	MB	-0.14000		.	mg/kg
Lab	MB	0.00616		.	mg/kg
Lab	MB	0.04611		.	mg/kg
Lab	MB	0.07980		.	mg/kg
Lab	MB	0.17970		.	mg/kg
Lab	MB	0.24500		.	mg/kg
Lab	MB	0.32340		.	mg/kg
Lab	MB	0.51350		.	mg/kg
Lab	MB	0.98260		.	mg/kg
Lab	MB	1.04800		.	mg/kg
Lab	MB	1.07700		.	mg/kg
Lab	MB	1.28100		.	mg/kg
Lab	MB	1.32400		.	mg/kg
Lab	MB	1.71200		.	mg/kg
Lab	MB	2.42300		.	mg/kg
Lab	MB	2.89700		.	mg/kg
Lab	MB	3.15800		.	mg/kg
Lab	MB	3.87000		.	mg/kg
Lab	MB	3.87100		.	mg/kg
Lab	MB	5.81200		.	mg/kg
Lab	MB	5.81400		.	mg/kg
Lab	MB	6.53900		.	mg/kg
Lab	MB	7.39000		.	mg/kg

---------- MATRIX=S METHOD=SW6010 ANALYTE=Antimony ----------
(continued)

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	7.841		.	mg/kg

MATRIX=S METHOD=SW6010 ANALYTE=Arsenic

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	-9.21200		.	mg/kg
Lab	MB	-7.84500		.	mg/kg
Lab	MB	-6.79600		.	mg/kg
Lab	MB	-6.35900		.	mg/kg
Lab	MB	-4.86200		.	mg/kg
Lab	MB	-4.54700		.	mg/kg
Lab	MB	-3.80900		.	mg/kg
Lab	MB	-3.45500		.	mg/kg
Lab	MB	-3.16500		.	mg/kg
Lab	MB	-3.15700		.	mg/kg
Lab	MB	-2.98900		.	mg/kg
Lab	MB	-2.93000		.	mg/kg
Lab	MB	-2.40300		.	mg/kg
Lab	MB	-1.93400		.	mg/kg
Lab	MB	-1.91600		.	mg/kg
Lab	MB	-1.00000		.	mg/kg
Lab	MB	-0.94480		.	mg/kg
Lab	MB	-0.94260		.	mg/kg
Lab	MB	-0.50780		.	mg/kg
Lab	MB	-0.37030		.	mg/kg
Lab	MB	-0.35330		.	mg/kg
Lab	MB	-0.27680		.	mg/kg
Lab	MB	-0.17750		.	mg/kg
Lab	MB	-0.17480		.	mg/kg
Lab	MB	-0.13600		.	mg/kg
Lab	MB	-0.04526		.	mg/kg
Lab	MB	-0.01880		.	mg/kg
Lab	MB	-0.00002		.	mg/kg
Lab	MB	0.02617		.	mg/kg
Lab	MB	0.11420		.	mg/kg
Lab	MB	0.18980		.	mg/kg
Lab	MB	0.28290		.	mg/kg
Lab	MB	0.33980		.	mg/kg
Lab	MB	0.53420		.	mg/kg
Lab	MB	0.86950		.	mg/kg
Lab	MB	1.33000		.	mg/kg
Lab	MB	1.36500		.	mg/kg
Lab	MB	1.81600		.	mg/kg
Lab	MB	1.95800		.	mg/kg
Lab	MB	2.07800		.	mg/kg
Lab	MB	2.09300		.	mg/kg
Lab	MB	2.28100		.	mg/kg
Lab	MB	2.54100		.	mg/kg
Lab	MB	2.69500		.	mg/kg
Lab	MB	3.18000		.	mg/kg
Lab	MB	3.34000		.	mg/kg
Lab	MB	3.73700		.	mg/kg
Lab	MB	4.24000		.	mg/kg
Lab	MB	5.94000		.	mg/kg
Lab	MB	6.71800		.	mg/kg
Lab	MB	8.23800		.	mg/kg

MATRIX=S METHOD=SW6010 ANALYTE=Barium

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	-0.15320		.	mg/kg
Lab	MB	-0.15320		.	mg/kg
Lab	MB	-0.15320		.	mg/kg
Lab	MB	-0.13400		.	mg/kg
Lab	MB	-0.07625		.	mg/kg
Lab	MB	-0.07084		.	mg/kg
Lab	MB	-0.06700		.	mg/kg
Lab	MB	-0.06700		.	mg/kg
Lab	MB	-0.06158		.	mg/kg
Lab	MB	-0.05720		.	mg/kg
Lab	MB	-0.04004		.	mg/kg
Lab	MB	-0.03853		.	mg/kg
Lab	MB	-0.03717		.	mg/kg
Lab	MB	-0.03717		.	mg/kg
Lab	MB	-0.03717		.	mg/kg
Lab	MB	-0.03553		.	mg/kg
Lab	MB	-0.03541		.	mg/kg
Lab	MB	-0.02915		.	mg/kg
Lab	MB	-0.00062		.	mg/kg
Lab	MB	-0.00039		.	mg/kg
Lab	MB	-0.00035		.	mg/kg
Lab	MB	-0.00009		.	mg/kg
Lab	MB	-0.00008		.	mg/kg
Lab	MB	-0.00001		.	mg/kg
Lab	MB	0.00000		.	mg/kg
Lab	MB	0.00000		.	mg/kg
Lab	MB	0.00000		.	mg/kg
Lab	MB	0.00000		.	mg/kg
Lab	MB	0.00000		.	mg/kg
Lab	MB	0.00000		.	mg/kg
Lab	MB	0.00000		.	mg/kg
Lab	MB	0.00000		.	mg/kg
Lab	MB	0.00001		.	mg/kg
Lab	MB	0.00001		.	mg/kg
Lab	MB	0.00001		.	mg/kg
Lab	MB	0.00134		.	mg/kg
Lab	MB	0.02000		.	mg/kg
Lab	MB	0.02400		.	mg/kg
Lab	MB	0.02595		.	mg/kg
Lab	MB	0.02652		.	mg/kg
Lab	MB	0.02711		.	mg/kg
Lab	MB	0.02750		.	mg/kg
Lab	MB	0.02814		.	mg/kg
Lab	MB	0.03537		.	mg/kg
Lab	MB	0.03538		.	mg/kg
Lab	MB	0.05910		.	mg/kg
Lab	MB	0.06053		.	mg/kg
Lab	MB	0.06634		.	mg/kg
Lab	MB	0.07077		.	mg/kg
Lab	MB	0.07288		.	mg/kg
Lab	MB	0.09036		.	mg/kg

---------- MATRIX=S METHOD=SW6010 ANALYTE=Beryllium ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	-0.10630		.	mg/kg
Lab	MB	-0.10320		.	mg/kg
Lab	MB	-0.09994		.	mg/kg
Lab	MB	-0.08300		.	mg/kg
Lab	MB	-0.08036		.	mg/kg
Lab	MB	-0.07175		.	mg/kg
Lab	MB	-0.06128		.	mg/kg
Lab	MB	-0.04312		.	mg/kg
Lab	MB	-0.03941		.	mg/kg
Lab	MB	-0.03922		.	mg/kg
Lab	MB	-0.03353		.	mg/kg
Lab	MB	-0.02288		.	mg/kg
Lab	MB	-0.02268		.	mg/kg
Lab	MB	-0.02260		.	mg/kg
Lab	MB	-0.02175		.	mg/kg
Lab	MB	-0.02106		.	mg/kg
Lab	MB	-0.02074		.	mg/kg
Lab	MB	-0.01851		.	mg/kg
Lab	MB	-0.01830		.	mg/kg
Lab	MB	-0.01090		.	mg/kg
Lab	MB	-0.00176		.	mg/kg
Lab	MB	-0.00073		.	mg/kg
Lab	MB	-0.00027		.	mg/kg
Lab	MB	-0.00022		.	mg/kg
Lab	MB	0.00000		.	mg/kg
Lab	MB	0.00032		.	mg/kg
Lab	MB	0.00101		.	mg/kg
Lab	MB	0.00315		.	mg/kg
Lab	MB	0.00870		.	mg/kg
Lab	MB	0.00900		.	mg/kg
Lab	M8	0.01460		.	mg/kg
Lab	MB	0.01935		.	mg/kg
Lab	MB	0.02000		.	mg/kg
Lab	MB	0.02492		.	mg/kg
Lab	MB	0.02673		.	mg/kg
Lab	MB	0.04208		.	mg/kg
Lab	MB	0.04220		.	mg/kg
Lab	MB	0.04285		.	mg/kg
Lab	MB	0.04399		.	mg/kg
Lab	MB	0.04456		.	mg/kg
Lab	MB	0.05007		.	mg/kg
Lab	MB	0.05900		.	mg/kg
Lab	MB	0.06341		.	mg/kg
Lab	MB	0.07149		.	mg/kg
Lab	MB	0.07800		.	mg/kg
Lab	MB	0.08354		.	mg/kg
Lab	MB	0.08401		.	mg/kg
Lab	MB	0.09000		.	mg/kg
Lab	MB	0.09440		.	mg/kg
Lab	MB	0.12680		.	mg/kg
Lab	MB	0.14460		.	mg/kg
Lab	MB	0.16750		.	mg/kg

---------- MATRIX=S METHOD=SW6010 ANALYTE=Boron ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	-2.91500		.	mg/kg
Lab	MB	-1.12600		.	mg/kg
Lab	MB	-1.09600		.	mg/kg
Lab	MB	-1.04900		.	mg/kg
Lab	MB	-1.00000		.	mg/kg
Lab	MB	-0.68240		.	mg/kg
Lab	MB	-0.66320		.	mg/kg
Lab	MB	-0.44320		.	mg/kg
Lab	MB	-0.37550		.	mg/kg
Lab	MB	-0.34710		.	mg/kg
Lab	MB	-0.27380		.	mg/kg
Lab	MB	-0.25610		.	mg/kg
Lab	MB	-0.01870		.	mg/kg
Lab	MB	-0.00005		.	mg/kg
Lab	MB	0.00000		.	mg/kg
Lab	MB	0.00028		.	mg/kg
Lab	MB	0.00564		.	mg/kg
Lab	MB	0.08991		.	mg/kg
Lab	MB	0.09612		.	mg/kg
Lab	MB	0.23830		.	mg/kg
Lab	MB	0.32390		.	mg/kg
Lab	MB	0.33190		.	mg/kg
Lab	MB	0.34160		.	mg/kg
Lab	MB	0.34250		.	mg/kg
Lab	MB	0.34670		.	mg/kg
Lab	MB	0.34690		.	mg/kg
Lab	MB	0.37540		.	mg/kg
Lab	MB	0.38180		.	mg/kg
Lab	MB	0.47620		.	mg/kg
Lab	MB	0.50230		.	mg/kg
Lab	MB	0.66360		.	mg/kg
Lab	MB	0.66370		.	mg/kg
Lab	MB	0.66380		.	mg/kg
Lab	MB	0.69120		.	mg/kg
Lab	MB	0.72160		.	mg/kg
Lab	MB	1.04100		.	mg/kg
Lab	MB	1.12700		.	mg/kg
Lab	MB	1.18300		.	mg/kg
Lab	MB	1.26700		.	mg/kg
Lab	MB	1.40900		.	mg/kg
Lab	MB	1.50000		.	mg/kg
Lab	MB	1.77300		.	mg/kg
Lab	MB	1.77500		.	mg/kg
Lab	MB	2.07800		.	mg/kg
Lab	MB	2.18700		.	mg/kg
Lab	MB	2.62400		.	mg/kg
Lab	MB	3.17700		.	mg/kg
Lab	MB	3.41400		.	mg/kg
Lab	MB	3.76100		.	mg/kg
Lab	MB	5.62800		.	mg/kg

---------- MATRIX=S METHOD=SW6010 ANALYTE=Cadmium ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	-0.37620		.	mg/kg
Lab	MB	-0.29630		.	mg/kg
Lab	MB	-0.26330		.	mg/kg
Lab	MB	-0.21300		.	mg/kg
Lab	MB	-0.17230		.	mg/kg
Lab	MB	-0.16830		.	mg/kg
Lab	MB	-0.16710		.	mg/kg
Lab	MB	-0.16660		.	mg/kg
Lab	MB	-0.15790		.	mg/kg
Lab	MB	-0.14120		.	mg/kg
Lab	MB	-0.13780		.	mg/kg
Lab	MB	-0.13300		.	mg/kg
Lab	MB	-0.12380		.	mg/kg
Lab	MB	-0.08989		.	mg/kg
Lab	MB	-0.07868		.	mg/kg
Lab	MB	-0.06885		.	mg/kg
Lab	MB	-0.05690		.	mg/kg
Lab	MB	-0.05030		.	mg/kg
Lab	MB	-0.04738		.	mg/kg
Lab	MB	-0.04713		.	mg/kg
Lab	MB	-0.04559		.	mg/kg
Lab	MB	-0.01429		.	mg/kg
Lab	MB	-0.00160		.	mg/kg
Lab	MB	0.00883		.	mg/kg
Lab	MB	0.01198		.	mg/kg
Lab	MB	0.01342		.	mg/kg
Lab	MB	0.01728		.	mg/kg
Lab	MB	0.02000		.	mg/kg
Lab	MB	0.02268		.	mg/kg
Lab	MB	0.03960		.	mg/kg
Lab	MB	0.03967		.	mg/kg
Lab	MB	0.04418		.	mg/kg
Lab	M8	0.05325		.	mg/kg
Lab	MB	0.06800		.	mg/kg
Lab	MB	0.08368		.	mg/kg
Lab	MB	0.08546		.	mg/kg
Lab	MB	0.09268		.	mg/kg
Lab	MB	0.09937		.	mg/kg
Lab	MB	0.11020		.	mg/kg
Lab	MB	0.13700		.	mg/kg
Lab	MB	0.14470		.	mg/kg
Lab	MB	0.19480		.	mg/kg
Lab	MB	0.26650		.	mg/kg
Lab	M8	0.28150		.	mg/kg
Lab	MB	0.32650		.	mg/kg
Lab	MB	0.43690		.	mg/kg
Lab	MB	0.45230		.	mg/kg
Lab	M8	0.50640		.	mg/kg
Lab	MB	0.56000		.	mg/kg

---------- MATRIX=S METHOD=SW6010 ANALYTE=Calcium ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	0.1015		.	mg/kg
Lab	MB	0.1756		.	mg/kg
Lab	MB	0.1893		.	mg/kg
Lab	MB	0.2138		.	mg/kg
Lab	MB	0.5430		.	mg/kg
Lab	MB	1.0830		.	mg/kg
Lab	MB	2.0520		.	mg/kg
Lab	MB	2.1580		.	mg/kg
Lab	MB	2.3320		.	mg/kg
Lab	MB	2.8190		.	mg/kg
Lab	MB	2.9430		.	mg/kg
Lab	MB	3.3780		.	mg/kg
Lab	MB	3.3900		.	mg/kg
Lab	MB	3.4700		.	mg/kg
Lab	MB	3.8200		.	mg/kg
Lab	MB	3.9280		.	mg/kg
Lab	MB	3.9920		.	mg/kg
Lab	MB	4.0330		.	mg/kg
Lab	MB	4.3640		.	mg/kg
Lab	MB	4.5740		.	mg/kg
Lab	MB	5.1000		.	mg/kg
Lab	MB	5.1650		.	mg/kg
Lab	MB	5.3300		.	mg/kg
Lab	MB	5.5770		.	mg/kg
Lab	MB	5.9890		.	mg/kg
Lab	MB	6.1380		.	mg/kg
Lab	MB	6.7600		.	mg/kg
Lab	MB	8.0820		.	mg/kg
Lab	MB	13.9100		.	mg/kg
Lab	MB	13.9900		.	mg/kg
Lab	MB	14.2000		.	mg/kg
Lab	MB	14.3000		.	mg/kg
Lab	MB	14.4500		.	mg/kg
Lab	MB	14.5600		.	mg/kg
Lab	MB	16.4600		.	mg/kg
Lab	MB	17.2300		.	mg/kg
Lab	MB	17.2700		.	mg/kg
Lab	MB	19.3400		.	mg/kg
Lab	MB	20.1400		.	mg/kg
Lab	MB	21.2500		.	mg/kg
Lab	MB	22.3500		.	mg/kg
Lab	MB	22.4800		.	mg/kg
Lab	MB	22.5000		.	mg/kg
Lab	MB	25.8300		.	mg/kg
Lab	MB	26.6100		.	mg/kg
Lab	MB	26.9900		.	mg/kg
Lab	MB	27.3400		.	mg/kg
Lab	MB	28.9400		.	mg/kg
Lab	MB	29.1600		.	mg/kg
Lab	MB	30.1500		.	mg/kg
Lab	MB	30.5400		.	mg/kg
Lab	MB	32.2100		.	mg/kg

---------- MATRIX=S METHOD=SW6010 ANALYTE=Calcium ----------
(continued)

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	36.62		.	mg/kg
Lab	MB	46.17		.	mg/kg
Lab	MB	47.50		.	mg/kg
Lab	MB	48.51		.	mg/kg
Lab	MB	51.11		.	mg/kg
Lab	MB	54.36		.	mg/kg
Lab	MB	56.63		.	mg/kg
Lab	MB	60.28		.	mg/kg

---------- MATRIX=S METHOD=SW6010 ANALYTE=Chromium ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	-0.41060		.	mg/kg
Lab	MB	-0.37000		.	mg/kg
Lab	MB	-0.36680		.	mg/kg
Lab	MB	-0.31830		.	mg/kg
Lab	MB	-0.18330		.	mg/kg
Lab	MB	-0.13570		.	mg/kg
Lab	MB	-0.13020		.	mg/kg
Lab	MB	-0.12950		.	mg/kg
Lab	MB	-0.03646		.	mg/kg
Lab	MB	-0.00777		.	mg/kg
Lab	MB	-0.00380		.	mg/kg
Lab	MB	0.00254		.	mg/kg
Lab	MB	0.00632		.	mg/kg
Lab	MB	0.01760		.	mg/kg
Lab	MB	0.06490		.	mg/kg
Lab	MB	0.08349		.	mg/kg
Lab	MB	0.09822		.	mg/kg
Lab	MB	0.09867		.	mg/kg
Lab	MB	0.11030		.	mg/kg
Lab	MB	0.11080		.	mg/kg
Lab	MB	0.12200		.	mg/kg
Lab	MB	0.12500		.	mg/kg
Lab	MB	0.13740		.	mg/kg
Lab	MB	0.16000		.	mg/kg
Lab	MB	0.17400		.	mg/kg
Lab	MB	0.19360		.	mg/kg
Lab	MB	0.29070		.	mg/kg
Lab	MB	0.29210		.	mg/kg
Lab	MB	0.29970		.	mg/kg
Lab	MB	0.33000		.	mg/kg
Lab	MB	0.36460		.	mg/kg
Lab	MB	0.39430		.	mg/kg
Lab	MB	0.40100		.	mg/kg
Lab	MB	0.43190		.	mg/kg
Lab	MB	0.48100		.	mg/kg
Lab	MB	0.49350		.	mg/kg
Lab	MB	0.50390		.	mg/kg
Lab	MB	0.52400		.	mg/kg
Lab	MB	0.53850		.	mg/kg
Lab	MB	0.55520		.	mg/kg
Lab	MB	0.60140		.	mg/kg
Lab	MB	0.60680		.	mg/kg
Lab	MB	0.65260		.	mg/kg
Lab	MB	0.80600		.	mg/kg
Lab	MB	0.85040		.	mg/kg
Lab	MB	0.95030		.	mg/kg

---------- MATRIX=S METHOD=SW6010 ANALYTE=Cobalt ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	-0.62670		.	mg/kg
Lab	MB	-0.53010		.	mg/kg
Lab	MB	-0.51280		.	mg/kg
Lab	MB	-0.40200		.	mg/kg
Lab	MB	-0.36120		.	mg/kg
Lab	MB	-0.21650		.	mg/kg
Lab	MB	-0.21480		.	mg/kg
Lab	MB	-0.20720		.	mg/kg
Lab	MB	-0.20630		.	mg/kg
Lab	MB	-0.20610		.	mg/kg
Lab	MB	-0.20520		.	mg/kg
Lab	MB	-0.16710		.	mg/kg
Lab	MB	-0.14830		.	mg/kg
Lab	MB	-0.10230		.	mg/kg
Lab	MB	-0.09688		.	mg/kg
Lab	MB	-0.07716		.	mg/kg
Lab	MB	-0.06802		.	mg/kg
Lab	MB	-0.00181		.	mg/kg
Lab	MB	0.00009		.	mg/kg
Lab	MB	0.00027		.	mg/kg
Lab	MB	0.00035		.	mg/kg
Lab	MB	0.00174		.	mg/kg
Lab	MB	0.04742		.	mg/kg
Lab	MB	0.09633		.	mg/kg
Lab	MB	0.09839		.	mg/kg
Lab	MB	0.18200		.	mg/kg
Lab	MB	0.19040		.	mg/kg
Lab	MB	0.19870		.	mg/kg
Lab	MB	0.20160		.	mg/kg
Lab	MB	0.22380		.	mg/kg
Lab	MB	0.22820		.	mg/kg
Lab	MB	0.22930		.	mg/kg
Lab	MB	0.30420		.	mg/kg
Lab	MB	0.30780		.	mg/kg
Lab	MB	0.32720		.	mg/kg
Lab	MB	0.40000		.	mg/kg
Lab	MB	0.41480		.	mg/kg
Lab	MB	0.45400		.	mg/kg
Lab	MB	0.48620		.	mg/kg
Lab	MB	0.49240		.	mg/kg
Lab	MB	0.50240		.	mg/kg
Lab	MB	0.54160		.	mg/kg
Lab	MB	0.54600		.	mg/kg
Lab	MB	0.54670		.	mg/kg
Lab	MB	0.58230		.	mg/kg
Lab	MB	0.59690		.	mg/kg
Lab	MB	0.64900		.	mg/kg
Lab	MB	0.72830		.	mg/kg
Lab	MB	0.91000		.	mg/kg
Lab	MB	1.00700		.	mg/kg

---------- MATRIX=S METHOD=SW6010 ANALYTE=Copper ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	-1.08700		.	mg/kg
Lab	MB	-0.63490		.	mg/kg
Lab	MB	-0.20660		.	mg/kg
Lab	MB	-0.14010		.	mg/kg
Lab	MB	-0.09985		.	mg/kg
Lab	MB	-0.09414		.	mg/kg
Lab	MB	-0.04924		.	mg/kg
Lab	MB	-0.04893		.	mg/kg
Lab	MB	-0.01449		.	mg/kg
Lab	MB	-0.00200		.	mg/kg
Lab	MB	-0.00120		.	mg/kg
Lab	MB	0.00136		.	mg/kg
Lab	MB	0.02092		.	mg/kg
Lab	MB	0.04723		.	mg/kg
Lab	MB	0.05045		.	mg/kg
Lab	MB	0.05401		.	mg/kg
Lab	MB	0.09891		.	mg/kg
Lab	MB	0.10380		.	mg/kg
Lab	MB	0.14140		.	mg/kg
Lab	MB	0.16000		.	mg/kg
Lab	MB	0.19370		.	mg/kg
Lab	MB	0.26080		.	mg/kg
Lab	MB	0.28660		.	mg/kg
Lab	MB	0.29220		.	mg/kg
Lab	MB	0.31800		.	mg/kg
Lab	MB	0.33530		.	mg/kg
Lab	MB	0.51890		.	mg/kg
Lab	MB	0.53650		.	mg/kg
Lab	MB	0.63010		.	mg/kg
Lab	MB	0.65450		.	mg/kg
Lab	MB	0.72170		.	mg/kg
Lab	MB	0.87630		.	mg/kg
Lab	MB	0.96220		.	mg/kg
Lab	MB	1.01200		.	mg/kg
Lab	MB	1.05600		.	mg/kg
Lab	MB	1.23500		.	mg/kg
Lab	MB	1.32500		.	mg/kg
Lab	MB	1.40500		.	mg/kg
Lab	MB	1.45400		.	mg/kg
Lab	MB	1.52200		.	mg/kg
Lab	MB	1.55700		.	mg/kg
Lab	MB	1.66000		.	mg/kg
Lab	MB	1.76200		.	mg/kg
Lab	MB	1.78200		.	mg/kg
Lab	MB	1.82700		.	mg/kg
Lab	MB	2.37700		.	mg/kg
Lab	MB	2.73900		.	mg/kg
Lab	MB	3.13700		.	mg/kg
Lab	MB	3.22900		.	mg/kg
Lab	MB	3.77600		.	mg/kg
Lab	MB	4.75200		.	mg/kg

---------- MATRIX=S METHOD=SW6010 ANALYTE=Iron ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	-3.91100		.	mg/kg
Lab	MB	-1.22100		.	mg/kg
Lab	MB	-0.84180		.	mg/kg
Lab	MB	-0.60780		.	mg/kg
Lab	MB	-0.35080		.	mg/kg
Lab	MB	-0.29050		.	mg/kg
Lab	MB	-0.10490		.	mg/kg
Lab	MB	-0.04237		.	mg/kg
Lab	MB	0.00010		.	mg/kg
Lab	MB	0.01291		.	mg/kg
Lab	MB	0.05024		.	mg/kg
Lab	MB	0.08720		.	mg/kg
Lab	MB	0.10630		.	mg/kg
Lab	MB	0.21190		.	mg/kg
Lab	MB	0.43060		.	mg/kg
Lab	MB	0.50850		.	mg/kg
Lab	MB	0.78280		.	mg/kg
Lab	MB	1.06600		.	mg/kg
Lab	MB	1.08100		.	mg/kg
Lab	MB	1.09700		.	mg/kg
Lab	MB	1.16500		.	mg/kg
Lab	MB	1.33700		.	mg/kg
Lab	MB	1.36900		.	mg/kg
Lab	MB	1.44100		.	mg/kg
Lab	MB	1.46500		.	mg/kg
Lab	MB	1.51800		.	mg/kg
Lab	MB	1.57700		.	mg/kg
Lab	MB	1.60200		.	mg/kg
Lab	MB	1.62900		.	mg/kg
Lab	MB	1.63200		.	mg/kg
Lab	MB	1.63300		.	mg/kg
Lab	MB	1.70900		.	mg/kg
Lab	MB	1.71900		.	mg/kg
Lab	MB	1.77900		.	mg/kg
Lab	MB	1.79100		.	mg/kg
Lab	MB	1.87800		.	mg/kg
Lab	MB	1.88000		.	mg/kg
Lab	MB	2.09300		.	mg/kg
Lab	MB	2.09300		.	mg/kg
Lab	MB	2.10700		.	mg/kg
Lab	MB	2.46000		.	mg/kg
Lab	MB	2.46500		.	mg/kg
Lab	MB	2.89800		.	mg/kg
Lab	MB	3.01200		.	mg/kg
Lab	MB	4.06800		.	mg/kg
Lab	MB	4.19800		.	mg/kg
Lab	MB	4.66400		.	mg/kg
Lab	MB	6.00600		.	mg/kg
Lab	MB	6.08600		.	mg/kg

---------- MATRIX=S METHOD=SW6010 ANALYTE=Lead ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	-4.41500		.	mg/kg
Lab	MB	-3.57400		.	mg/kg
Lab	MB	-3.43000		.	mg/kg
Lab	MB	-3.38400		.	mg/kg
Lab	MB	-1.40000		.	mg/kg
Lab	MB	-1.39600		.	mg/kg
Lab	MB	-1.37200		.	mg/kg
Lab	MB	-1.02600		.	mg/kg
Lab	MB	-1.00000		.	mg/kg
Lab	MB	-1.00000		.	mg/kg
Lab	MB	-0.98170		.	mg/kg
Lab	MB	-0.88100		.	mg/kg
Lab	MB	-0.33880		.	mg/kg
Lab	MB	-0.20170		.	mg/kg
Lab	MB	-0.09700		.	mg/kg
Lab	M8	-0.04921		.	mg/kg
Lab	MB	-0.02470		.	mg/kg
Lab	MB	0.02238		.	mg/kg
Lab	MB	0.03384		.	mg/kg
Lab	M8	0.09643		.	mg/kg
Lab	MB	0.12110		.	mg/kg
Lab	MB	0.24770		.	mg/kg
Lab	MB	0.56010		.	mg/kg
Lab	M8	0.73340		.	mg/kg
Lab	MB	0.82580		.	mg/kg
Lab	MB	1.00800		.	mg/kg
Lab	MB	1.06500		.	mg/kg
Lab	MB	1.16900		.	mg/kg
Lab	MB	1.22500		.	mg/kg
Lab	MB	1.44600		.	mg/kg
Lab	M8	1.52100		.	mg/kg
Lab	MB	1.74900		.	mg/kg
Lab	MB	1.96600		.	mg/kg
Lab	MB	2.15900		.	mg/kg
Lab	MB	2.21300		.	mg/kg
Lab	MB	2.64700		.	mg/kg
Lab	MB	2.64900		.	mg/kg
Lab	MB	3.25000		.	mg/kg
Lab	MB	3.45800		.	mg/kg
Lab	MB	3.61800		.	mg/kg
Lab	MB	3.67500		.	mg/kg
Lab	MB	3.97300		.	mg/kg
Lab	MB	4.69500		.	mg/kg
Lab	MB	4.92400		.	mg/kg
Lab	MB	5.66100		.	mg/kg
Lab	MB	5.90000		.	mg/kg
Lab	MB	7.09400		.	mg/kg
Lab	MB	7.69600		.	mg/kg
Lab	MB	7.80200		.	mg/kg
Lab	MB	8.86000		.	mg/kg

MATRIX=S METHOD=SW6010 ANALYTE=Lithium

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	-1.22600		.	mg/kg
Lab	MB	-1.11700		.	mg/kg
Lab	MB	-1.09900		.	mg/kg
Lab	MB	-1.02600		.	mg/kg
Lab	MB	-1.00000		.	mg/kg
Lab	MB	-0.98660		.	mg/kg
Lab	MB	-0.88240		.	mg/kg
Lab	MB	-0.87010		.	mg/kg
Lab	MB	-0.84780		.	mg/kg
Lab	MB	-0.83520		.	mg/kg
Lab	MB	-0.80350		.	mg/kg
Lab	MB	-0.74000		.	mg/kg
Lab	MB	-0.64840		.	mg/kg
Lab	MB	-0.62020		.	mg/kg
Lab	MB	-0.60960		.	mg/kg
Lab	MB	-0.59100		.	mg/kg
Lab	MB	-0.56370		.	mg/kg
Lab	MB	-0.55570		.	mg/kg
Lab	MB	-0.46800		.	mg/kg
Lab	MB	-0.40600		.	mg/kg
Lab	MB	-0.36170		.	mg/kg
Lab	MB	-0.36020		.	mg/kg
Lab	MB	-0.34830		.	mg/kg
Lab	MB	-0.28190		.	mg/kg
Lab	MB	-0.23200		.	mg/kg
Lab	MB	-0.21940		.	mg/kg
Lab	MB	-0.19220		.	mg/kg
Lab	MB	-0.16680		.	mg/kg
Lab	MB	-0.14520		.	mg/kg
Lab	MB	-0.12660		.	mg/kg
Lab	MB	-0.08888		.	mg/kg
Lab	MB	-0.05931		.	mg/kg
Lab	MB	-0.05931		.	mg/kg
Lab	MB	-0.05925		.	mg/kg
Lab	MB	-0.00170		.	mg/kg
Lab	MB	0.00174		.	mg/kg
Lab	MB	0.02566		.	mg/kg
Lab	MB	0.02895		.	mg/kg
Lab	MB	0.02920		.	mg/kg
Lab	MB	0.02965		.	mg/kg
Lab	MB	0.09275		.	mg/kg
Lab	MB	0.09872		.	mg/kg
Lab	MB	0.10920		.	mg/kg
Lab	MB	0.17780		.	mg/kg
Lab	MB	0.17800		.	mg/kg
Lab	MB	0.17800		.	mg/kg
Lab	MB	0.24870		.	mg/kg
Lab	MB	0.40730		.	mg/kg
Lab	MB	0.78840		.	mg/kg
Lab	MB	1.21800		.	mg/kg

MATRIX=S METHOD=SW6010 ANALYTE=Magnesium

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	-4.68000		.	mg/kg
Lab	MB	-4.18700		.	mg/kg
Lab	MB	-4.18100		.	mg/kg
Lab	MB	-2.42300		.	mg/kg
Lab	MB	-2.39200		.	mg/kg
Lab	MB	-2.34300		.	mg/kg
Lab	MB	-1.74700		.	mg/kg
Lab	MB	-1.67200		.	mg/kg
Lab	MB	-1.33800		.	mg/kg
Lab	MB	-1.00000		.	mg/kg
Lab	MB	-0.87220		.	mg/kg
Lab	MB	-0.81840		.	mg/kg
Lab	MB	-0.72000		.	mg/kg
Lab	MB	-0.68820		.	mg/kg
Lab	MB	-0.64360		.	mg/kg
Lab	MB	-0.25960		.	mg/kg
Lab	MB	-0.11480		.	mg/kg
Lab	MB	-0.11480		.	mg/kg
Lab	MB	0.00104		.	mg/kg
Lab	MB	0.13560		.	mg/kg
Lab	MB	0.14530		.	mg/kg
Lab	MB	0.16950		.	mg/kg
Lab	MB	0.34910		.	mg/kg
Lab	MB	0.38830		.	mg/kg
Lab	MB	0.45260		.	mg/kg
Lab	MB	0.67810		.	mg/kg
Lab	MB	0.69710		.	mg/kg
Lab	MB	0.70400		.	mg/kg
Lab	MB	0.75000		.	mg/kg
Lab	MB	0.81970		.	mg/kg
Lab	MB	0.85160		.	mg/kg
Lab	MB	0.86460		.	mg/kg
Lab	MB	0.94960		.	mg/kg
Lab	MB	1.00500		.	mg/kg
Lab	MB	1.02700		.	mg/kg
Lab	MB	1.04300		.	mg/kg
Lab	MB	1.43800		.	mg/kg
Lab	MB	1.76400		.	mg/kg
Lab	MB	1.79600		.	mg/kg
Lab	MB	1.85500		.	mg/kg
Lab	MB	1.86300		.	mg/kg
Lab	MB	2.26100		.	mg/kg
Lab	MB	2.27300		.	mg/kg
Lab	MB	2.41900		.	mg/kg
Lab	MB	2.88900		.	mg/kg
Lab	MB	3.07900		.	mg/kg
Lab	MB	3.41000		.	mg/kg
Lab	MB	3.82000		.	mg/kg
Lab	MB	4.13400		.	mg/kg
Lab	MB	4.18800		.	mg/kg
Lab	MB	4.22400		.	mg/kg

---------- MATRIX=S METHOD=SW6010 ANALYTE=Manganese ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	-0.20130		.	mg/kg
Lab	MB	-0.11600		.	mg/kg
Lab	MB	-0.10840		.	mg/kg
Lab	MB	-0.07340		.	mg/kg
Lab	MB	-0.05818		.	mg/kg
Lab	MB	-0.04000		.	mg/kg
Lab	MB	-0.03794		.	mg/kg
Lab	MB	-0.03535		.	mg/kg
Lab	MB	-0.01980		.	mg/kg
Lab	MB	-0.01953		.	mg/kg
Lab	MB	-0.01782		.	mg/kg
Lab	MB	-0.00060		.	mg/kg
Lab	MB	-0.00059		.	mg/kg
Lab	MB	-0.00043		.	mg/kg
Lab	MB	0.00000		.	mg/kg
Lab	MB	0.00000		.	mg/kg
Lab	MB	0.00029		.	mg/kg
Lab	MB	0.00039		.	mg/kg
Lab	MB	0.00043		.	mg/kg
Lab	MB	0.00046		.	mg/kg
Lab	MB	0.00058		.	mg/kg
Lab	MB	0.00097		.	mg/kg
Lab	MB	0.00105		.	mg/kg
Lab	MB	0.00207		.	mg/kg
Lab	MB	0.01830		.	mg/kg
Lab	MB	0.01880		.	mg/kg
Lab	MB	0.02731		.	mg/kg
Lab	MB	0.04870		.	mg/kg
Lab	MB	0.06366		.	mg/kg
Lab	MB	0.0643B		.	mg/kg
Lab	MB	0.06477		.	mg/kg
Lab	MB	0.09630		.	mg/kg
Lab	MB	0.10230		.	mg/kg
Lab	MB	0.10600		.	mg/kg
Lab	MB	0.10610		.	mg/kg
Lab	MB	0.12070		.	mg/kg
Lab	MB	0.12420		.	mg/kg
Lab	MB	0.12530		.	mg/kg
Lab	MB	0.12870		.	mg/kg
Lab	MB	0.13320		.	mg/kg
Lab	MB	0.21140		.	mg/kg
Lab	MB	0.29050		.	mg/kg

---------- MATRIX=S METHOD=SW6010 ANALYTE=Molybdenum ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	-1.25800		.	mg/kg
Lab	MB	-1.04000		.	mg/kg
Lab	MB	-1.01800		.	mg/kg
Lab	MB	-1.00000		.	mg/kg
Lab	MB	-0.90150		.	mg/kg
Lab	MB	-0.74950		.	mg/kg
Lab	MB	-0.68370		.	mg/kg
Lab	MB	-0.62130		.	mg/kg
Lab	MB	-0.61830		.	mg/kg
Lab	MB	-0.56000		.	mg/kg
Lab	MB	-0.54600		.	mg/kg
Lab	MB	-0.47290		.	mg/kg
Lab	MB	-0.40960		.	mg/kg
Lab	MB	-0.39730		.	mg/kg
Lab	MB	-0.38590		.	mg/kg
Lab	MB	-0.38550		.	mg/kg
Lab	MB	-0.37720		.	mg/kg
Lab	MB	-0.36000		.	mg/kg
Lab	MB	-0.34960		.	mg/kg
Lab	MB	-0.32670		.	mg/kg
Lab	MB	-0.28920		.	mg/kg
Lab	MB	-0.27680		.	mg/kg
Lab	MB	-0.27300		.	mg/kg
Lab	MB	-0.22910		.	mg/kg
Lab	MB	-0.15940		.	mg/kg
Lab	MB	-0.11820		.	mg/kg
Lab	MB	-0.07452		.	mg/kg
Lab	MB	-0.01000		.	mg/kg
Lab	MB	-0.00929		.	mg/kg
Lab	M8	0.00476		.	mg/kg
Lab	MB	0.02313		.	mg/kg
Lab	MB	0.06891		.	mg/kg
Lab	MB	0.09927		.	mg/kg
Lab	MB	0.10050		.	mg/kg
Lab	MB	0.12360		.	mg/kg
Lab	MB	0.16120		.	mg/kg
Lab	MB	0.19010		.	mg/kg
Lab	MB	0.21320		.	mg/kg
Lab	MB	0.22270		.	mg/kg
Lab	MB	0.27330		.	mg/kg
Lab	MB	0.29080		.	mg/kg
Lab	MB	0.40870		.	mg/kg
Lab	MB	0.48000		.	mg/kg
Lab	MB	0.66800		.	mg/kg
Lab	MB	0.70250		.	mg/kg
Lab	MB	0.78570		.	mg/kg
Lab	MB	1.01700		.	mg/kg
Lab	MB	1.08300		.	mg/kg
Lab	MB	1.26700		.	mg/kg
Lab	MB	1.47200		.	mg/kg

---------- MATRIX=S METHOD=SW6010 ANALYTE=Nickel ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	-3.14700		.	mg/kg
Lab	MB	-1.63300		.	mg/kg
Lab	MB	-1.39300		.	mg/kg
Lab	MB	-1.34200		.	mg/kg
Lab	MB	-1.33600		.	mg/kg
Lab	MB	-1.09200		.	mg/kg
Lab	MB	-1.03400		.	mg/kg
Lab	MB	-1.00000		.	mg/kg
Lab	MB	-1.00000		.	mg/kg
Lab	MB	-0.99990		.	mg/kg
Lab	MB	-0.99950		.	mg/kg
Lab	MB	-0.87430		.	mg/kg
Lab	MB	-0.75730		.	mg/kg
Lab	MB	-0.72610		.	mg/kg
Lab	MB	-0.70600		.	mg/kg
Lab	MB	-0.62400		.	mg/kg
Lab	MB	-0.47620		.	mg/kg
Lab	MB	-0.45200		.	mg/kg
Lab	MB	-0.40800		.	mg/kg
Lab	MB	-0.40760		.	mg/kg
Lab	MB	-0.36000		.	mg/kg
Lab	MB	-0.33500		.	mg/kg
Lab	MB	-0.23380		.	mg/kg
Lab	MB	-0.20310		.	mg/kg
Lab	MB	-0.10890		.	mg/kg
Lab	MB	-0.05969		.	mg/kg
Lab	MB	-0.01376		.	mg/kg
Lab	MB	-0.00057		.	mg/kg
Lab	MB	0.00072		.	mg/kg
Lab	MB	0.04365		.	mg/kg
Lab	MB	0.12260		.	mg/kg
Lab	MB	0.12390		.	mg/kg
Lab	MB	0.42800		.	mg/kg
Lab	MB	0.46870		.	mg/kg
Lab	MB	0.51120		.	mg/kg
Lab	MB	0.56380		.	mg/kg
Lab	MB	0.58860		.	mg/kg
Lab	MB	0.60280		.	mg/kg
Lab	MB	0.63800		.	mg/kg
Lab	MB	0.69880		.	mg/kg
Lab	MB	0.71590		.	mg/kg
Lab	MB	0.95620		.	mg/kg
Lab	MB	0.97050		.	mg/kg
Lab	MB	1.06000		.	mg/kg
Lab	MB	1.32400		.	mg/kg
Lab	MB	1.43300		.	mg/kg
Lab	MB	1.47200		.	mg/kg
Lab	MB	2.12000		.	mg/kg
Lab	MB	2.53200		.	mg/kg

---------- MATRIX=S METHOD=SW6010 ANALYTE=Potassium ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	-63.2400		.	mg/kg
Lab	MB	-50.6600		.	mg/kg
Lab	MB	-47.2700		.	mg/kg
Lab	MB	-43.3200		.	mg/kg
Lab	MB	-29.9900		.	mg/kg
Lab	MB	-25.6900		.	mg/kg
Lab	MB	-25.5600		.	mg/kg
Lab	MB	-24.1900		.	mg/kg
Lab	MB	-22.4200		.	mg/kg
Lab	MB	-20.5500		.	mg/kg
Lab	MB	-19.1500		.	mg/kg
Lab	MB	-12.0000		.	mg/kg
Lab	MB	-9.2520		.	mg/kg
Lab	MB	-9.1290		.	mg/kg
Lab	MB	-8.0300		.	mg/kg
Lab	MB	-6.4050		.	mg/kg
Lab	MB	-5.4441		.	mg/kg
Lab	MB	-4.2880		.	mg/kg
Lab	MB	-1.0000		.	mg/kg
Lab	MB	-1.0000		.	mg/kg
Lab	MB	-1.0000		.	mg/kg
Lab	MB	-0.0000		.	mg/kg
Lab	MB	0.2112		.	mg/kg
Lab	MB	4.6660		.	mg/kg
Lab	MB	4.9790		.	mg/kg
Lab	MB	5.8430		.	mg/kg
Lab	MB	5.8760		.	mg/kg
Lab	MB	9.6750		.	mg/kg
Lab	MB	11.2900		.	mg/kg
Lab	MB	13.1300		.	mg/kg
Lab	MB	13.6600		.	mg/kg
Lab	MB	14.4500		.	mg/kg
Lab	MB	15.2000		.	mg/kg
Lab	MB	17.2900		.	mg/kg
Lab	MB	20.7600		.	mg/kg
Lab	MB	23.6300		.	mg/kg
Lab	MB	24.7300		.	mg/kg
Lab	MB	25.6800		.	mg/kg
Lab	MB	27.1300		.	mg/kg
Lab	MB	28.5700		.	mg/kg
Lab	MB	29.1700		.	mg/kg
Lab	MB	32.1800		.	mg/kg
Lab	MB	47.2000		.	mg/kg
Lab	MB	58.5900		.	mg/kg
Lab	MB	60.8100		.	mg/kg
Lab	MB	62.6900		.	mg/kg
Lab	MB	69.1100		.	mg/kg
Lab	MB	74.5400		.	mg/kg
Lab	MB	93.7500		.	mg/kg

---------- MATRIX=S METHOD=SW6010 ANALYTE=Selenium ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	-10.9200		.	mg/kg
Lab	MB	-9.4130		.	mg/kg
Lab	MB	-7.9640		.	mg/kg
Lab	MB	-7.6030		.	mg/kg
Lab	MB	-7.4790		.	mg/kg
Lab	MB	-6.6910		.	mg/kg
Lab	MB	-6.3590		.	mg/kg
Lab	MB	-5.9590		.	mg/kg
Lab	MB	-5.3410		.	mg/kg
Lab	MB	-5.3330		.	mg/kg
Lab	MB	-4.4710		.	mg/kg
Lab	MB	-3.7010		.	mg/kg
Lab	MB	-3.1130		.	mg/kg
Lab	MB	-3.0690		.	mg/kg
Lab	MB	-2.9640		.	mg/kg
Lab	M8	-2.7300		.	mg/kg
Lab	MB	-2.4470		.	mg/kg
Lab	MB	-2.0970		.	mg/kg
Lab	M8	-1.8340		.	mg/kg
Lab	MB	-1.4300		.	mg/kg
Lab	MB	-1.2470		.	mg/kg
Lab	MB	-1.2340		.	mg/kg
Lab	MB	-1.2340		.	mg/kg
Lab	M8	-1.2310		.	mg/kg
Lab	MB	-1.2000		.	mg/kg
Lab	MB	-1.0170		.	mg/kg
Lab	MB	-1.0000		.	mg/kg
Lab	MB	-0.9308		.	mg/kg
Lab	MB	-0.7435		.	mg/kg
Lab	MB	-0.6598		.	mg/kg
Lab	MB	0.0601		.	mg/kg
Lab	MB	0.0956		.	mg/kg
Lab	MB	0.3310		.	mg/kg
Lab	MB	0.4992		.	mg/kg
Lab	MB	1.0170		.	mg/kg
Lab	MB	1.1690		.	mg/kg
Lab	MB	1.3370		.	mg/kg
Lab	MB	1.9510		.	mg/kg
Lab	MB	2.5910		.	mg/kg
Lab	MB	3.3070		.	mg/kg
Lab	MB	3.3710		.	mg/kg
Lab	MB	3.5610		.	mg/kg
Lab	MB	3.7710		.	mg/kg
Lab	MB	3.9430		.	mg/kg
Lab	MB	4.5940		.	mg/kg
Lab	MB	4.8050		.	mg/kg
Lab	MB	7.1240		.	mg/kg
Lab	MB	7.5560		.	mg/kg
Lab	MB	7.6750		.	mg/kg
Lab	MB	9.5610		.	mg/kg
Lab	MB	12.2560		.	mg/kg
Lab	MB	12.4800		.	mg/kg

---------- MATRIX=S METHOD=SW6010 ANALYTE=Selenium ----------
(continued)

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	12.91		.	mg/kg

---------- MATRIX=S METHOD=SW6010 ANALYTE=Silicon ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	-55.6400		.	mg/kg
Lab	MB	-33.5900		.	mg/kg
Lab	MB	-23.7000		.	mg/kg
Lab	MB	-15.5500		.	mg/kg
Lab	MB	-8.5410		.	mg/kg
Lab	MB	-7.7330		.	mg/kg
Lab	MB	-5.7870		.	mg/kg
Lab	MB	-4.9320		.	mg/kg
Lab	MB	-4.8650		.	mg/kg
Lab	MB	-4.6130		.	mg/kg
Lab	MB	-4.3020		.	mg/kg
Lab	MB	-4.1830		.	mg/kg
Lab	MB	-1.4620		.	mg/kg
Lab	MB	-0.6901		.	mg/kg
Lab	MB	-0.5387		.	mg/kg
Lab	MB	-0.4617		.	mg/kg
Lab	MB	-0.4257		.	mg/kg
Lab	MB	-0.0789		.	mg/kg
Lab	MB	0.0000		.	mg/kg
Lab	MB	0.0733		.	mg/kg
Lab	MB	0.0917		.	mg/kg
Lab	MB	0.2368		.	mg/kg
Lab	MB	0.6595		.	mg/kg
Lab	MB	0.8471		.	mg/kg
Lab	MB	1.1990		.	mg/kg
Lab	M8	1.5220		.	mg/kg
Lab	MB	2.1630		.	mg/kg
Lab	MB	3.1890		.	mg/kg
Lab	MB	3.2980		.	mg/kg
Lab	MB	3.3120		.	mg/kg
Lab	MB	5.2030		.	mg/kg
Lab	MB	5.5510		.	mg/kg
Lab	MB	7.0400		.	mg/kg
Lab	MB	7.6700		.	mg/kg
Lab	MB	7.7070		.	mg/kg
Lab	MB	8.9030		.	mg/kg
Lab	MB	9.3790		.	mg/kg
Lab	MB	9.9720		.	mg/kg
Lab	MB	11.5700		.	mg/kg
Lab	MB	11.6900		.	mg/kg
Lab	MB	12.5400		.	mg/kg
Lab	MB	13.0800		.	mg/kg
Lab	MB	15.4700		.	mg/kg
Lab	MB	21.4700		.	mg/kg
Lab	MB	50.6800		.	mg/kg
Lab	MB	51.5100		.	mg/kg
Lab	MB	52.5700		.	mg/kg
Lab	MB	57.4000		.	mg/kg
Lab	MB	61.5200		.	mg/kg
Lab	MB	67.5300		.	mg/kg

---------- MATRIX=S METHOD=SW6010 ANALYTE=Silver ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	-1.51300		.	mg/kg
Lab	MB	-1.37900		.	mg/kg
Lab	MB	-1.12600		.	mg/kg
Lab	MB	-1.00000		.	mg/kg
Lab	MB	-1.00000		.	mg/kg
Lab	MB	-1.00000		.	mg/kg
Lab	MB	-0.66920		.	mg/kg
Lab	MB	-0.61660		.	mg/kg
Lab	MB	-0.58610		.	mg/kg
Lab	MB	-0.50200		.	mg/kg
Lab	MB	-0.40790		.	mg/kg
Lab	MB	-0.37910		.	mg/kg
Lab	MB	-0.33170		.	mg/kg
Lab	MB	-0.28710		.	mg/kg
Lab	MB	-0.28650		.	mg/kg
Lab	MB	-0.25270		.	mg/kg
Lab	MB	-0.24350		.	mg/kg
Lab	MB	-0.23600		.	mg/kg
Lab	MB	-0.23500		.	mg/kg
Lab	MB	-0.20390		.	mg/kg
Lab	MB	-0.19400		.	mg/kg
Lab	MB	-0.19340		.	mg/kg
Lab	MB	-0.18000		.	mg/kg
Lab	MB	-0.15880		.	mg/kg
Lab	MB	-0.15110		.	mg/kg
Lab	MB	-0.10910		.	mg/kg
Lab	MB	-0.10170		.	mg/kg
Lab	MB	-0.00233		.	mg/kg
Lab	MB	-0.00133		.	mg/kg
Lab	MB	-0.00120		.	mg/kg
Lab	MB	-0.00085		.	mg/kg
Lab	MB	0.00210		.	mg/kg
Lab	MB	0.00324		.	mg/kg
Lab	MB	0.04197		.	mg/kg
Lab	MB	0.04234		.	mg/kg
Lab	MB	0.04920		.	mg/kg
Lab	MB	0.09995		.	mg/kg
Lab	MB	0.10030		.	mg/kg
Lab	MB	0.10240		.	mg/kg
Lab	MB	0.12720		.	mg/kg
Lab	MB	0.15050		.	mg/kg
Lab	MB	0.18900		.	mg/kg
Lab	MB	0.20240		.	mg/kg
Lab	MB	0.24410		.	mg/kg
Lab	MB	0.25520		.	mg/kg
Lab	MB	0.33040		.	mg/kg
Lab	MB	0.38350		.	mg/kg
Lab	MB	0.46120		.	mg/kg
Lab	MB	0.46380		.	mg/kg
Lab	MB	1.15600		.	mg/kg

---------- MATRIX=S METHOD=SW6010 ANALYTE=Sodium ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	-3.68700		.	mg/kg
Lab	MB	-3.30200		.	mg/kg
Lab	MB	-1.66000		.	mg/kg
Lab	MB	-1.64200		.	mg/kg
Lab	MB	-1.64200		.	mg/kg
Lab	MB	-1.52400		.	mg/kg
Lab	MB	-0.37940		.	mg/kg
Lab	MB	-0.04820		.	mg/kg
Lab	MB	0.00551		.	mg/kg
Lab	MB	0.45470		.	mg/kg
Lab	MB	0.54000		.	mg/kg
Lab	MB	0.55520		.	mg/kg
Lab	MB	0.86620		.	mg/kg
Lab	MB	0.99070		.	mg/kg
Lab	MB	1.01200		.	mg/kg
Lab	MB	1.07100		.	mg/kg
Lab	MB	1.14200		.	mg/kg
Lab	MB	1.20800		.	mg/kg
Lab	MB	1.31000		.	mg/kg
Lab	MB	1.35000		.	mg/kg
Lab	MB	1.42800		.	mg/kg
Lab	MB	1.55800		.	mg/kg
Lab	MB	1.93000		.	mg/kg
Lab	MB	2.20200		.	mg/kg
Lab	MB	2.21100		.	mg/kg
Lab	MB	2.26100		.	mg/kg
Lab	MB	2.55100		.	mg/kg
Lab	MB	2.55900		.	mg/kg
Lab	MB	2.56300		.	mg/kg
Lab	MB	2.59300		.	mg/kg
Lab	MB	2.99500		.	mg/kg
Lab	MB	3.01500		.	mg/kg
Lab	MB	3.52500		.	mg/kg
Lab	MB	3.68200		.	mg/kg
Lab	MB	3.71300		.	mg/kg
Lab	MB	3.86100		.	mg/kg
Lab	MB	3.88300		.	mg/kg
Lab	MB	4.09500		.	mg/kg
Lab	MB	4.11800		.	mg/kg
Lab	MB	4.39000		.	mg/kg
Lab	MB	4.62300		.	mg/kg
Lab	MB	4.92500		.	mg/kg
Lab	MB	5.08600		.	mg/kg
Lab	MB	5.19800		.	mg/kg
Lab	MB	5.42400		.	mg/kg
Lab	MB	5.56400		.	mg/kg
Lab	MB	5.67000		.	mg/kg
Lab	MB	6.08900		.	mg/kg
Lab	MB	6.36300		.	mg/kg
Lab	MB	9.16100		.	mg/kg
Lab	MB	9.35200		.	mg/kg

---------- MATRIX=S METHOD=SW6010 ANALYTE=Strontium ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	-0.10370		.	mg/kg
Lab	MB	-0.04273		.	mg/kg
Lab	MB	-0.04204		.	mg/kg
Lab	MB	-0.04204		.	mg/kg
Lab	MB	-0.03207		.	mg/kg
Lab	MB	0.00000		.	mg/kg
Lab	MB	0.00000		.	mg/kg
Lab	MB	0.00000		.	mg/kg
Lab	MB	0.00000		.	mg/kg
Lab	MB	0.00000		.	mg/kg
Lab	MB	0.00000		.	mg/kg
Lab	MB	0.00000		.	mg/kg
Lab	MB	0.00000		.	mg/kg
Lab	MB	0.00000		.	mg/kg
Lab	MB	0.00000		.	mg/kg
Lab	MB	0.00000		.	mg/kg
Lab	MB	0.00000		.	mg/kg
Lab	MB	0.00000		.	mg/kg
Lab	MB	0.00000		.	mg/kg
Lab	MB	0.00000		.	mg/kg
Lab	MB	0.00000		.	mg/kg
Lab	MB	0.00000		.	mg/kg
Lab	MB	0.00000		.	mg/kg
Lab	MB	0.00000		.	mg/kg
Lab	MB	0.00000		.	mg/kg
Lab	MB	0.00000		.	mg/kg
Lab	MB	0.00000		.	mg/kg
Lab	MB	0.00000		.	mg/kg
Lab	MB	0.00000		.	mg/kg
Lab	MB	0.00000		.	mg/kg
Lab	MB	0.00000		.	mg/kg
Lab	MB	0.00000		.	mg/kg
Lab	MB	0.01230		.	mg/kg
Lab	MB	0.01577		.	mg/kg
Lab	MB	0.02000		.	mg/kg
Lab	MB	0.02260		.	mg/kg
Lab	MB	0.02503		.	mg/kg
Lab	MB	0.02973		.	mg/kg
Lab	MB	0.03052		.	mg/kg
Lab	MB	0.03630		.	mg/kg
Lab	MB	0.04112		.	mg/kg
Lab	MB	0.04112		.	mg/kg
Lab	MB	0.04112		.	mg/kg
Lab	MB	0.05427		.	mg/kg
Lab	MB	0.05448		.	mg/kg
Lab	MB	0.05580		.	mg/kg
Lab	MB	0.06810		.	mg/kg
Lab	MB	0.07036		.	mg/kg
Lab	MB	0.07524		.	mg/kg
Lab	MB	0.07524		.	mg/kg
Lab	MB	0.11290		.	mg/kg
Lab	MB	0.15050		.	mg/kg

---------- MATRIX=S METHOD=SW6010 ANALYTE=Sulfur ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	-3.92000		.	mg/kg
Lab	MB	-2.85400		.	mg/kg
Lab	MB	-2.57600		.	mg/kg
Lab	MB	-2.39700		.	mg/kg
Lab	MB	-1.28800		.	mg/kg
Lab	MB	-1.20900		.	mg/kg
Lab	MB	-0.95830		.	mg/kg
Lab	MB	-0.92820		.	mg/kg
Lab	MB	-0.92230		.	mg/kg
Lab	MB	-0.77280		.	mg/kg
Lab	MB	-0.53260		.	mg/kg
Lab	MB	0.00000		.	mg/kg
Lab	MB	0.00000		.	mg/kg
Lab	MB	0.00000		.	mg/kg
Lab	MB	0.00000		.	mg/kg
Lab	MB	0.00000		.	mg/kg
Lab	MB	0.00000		.	mg/kg
Lab	MB	0.00000		.	mg/kg
Lab	MB	0.02382		.	mg/kg
Lab	MB	0.16720		.	mg/kg
Lab	MB	0.21880		.	mg/kg
Lab	MB	0.32370		.	mg/kg
Lab	MB	0.54050		.	mg/kg
Lab	MB	0.69490		.	mg/kg
Lab	MB	0.79890		.	mg/kg
Lab	MB	1.32300		.	mg/kg
Lab	MB	1.50700		.	mg/kg
Lab	MB	1.54000		.	mg/kg
Lab	MB	1.84900		.	mg/kg
Lab	MB	1.90700		.	mg/kg
Lab	MB	2.14400		.	mg/kg
Lab	MB	2.57600		.	mg/kg
Lab	MB	2.87400		.	mg/kg
Lab	MB	3.03200		.	mg/kg
Lab	MB	3.07400		.	mg/kg
Lab	MB	3.07400		.	mg/kg
Lab	MB	3.34900		.	mg/kg
Lab	MB	3.43200		.	mg/kg
Lab	MB	3.92000		.	mg/kg
Lab	MB	3.99600		.	mg/kg
Lab	MB	4.17500		.	mg/kg
Lab	MB	4.27200		.	mg/kg
Lab	MB	4.75200		.	mg/kg
Lab	MB	4.93500		.	mg/kg
Lab	MB	5.22100		.	mg/kg
Lab	MB	6.12500		.	mg/kg
Lab	MB	6.65800		.	mg/kg
Lab	MB	6.93000		.	mg/kg
Lab	MB	7.14800		.	mg/kg
Lab	MB	8.16800		.	mg/kg

---------- MATRIX=S METHOD=SW6010 ANALYTE=Thallium ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	-9.9230		.	mg/kg
Lab	MB	-8.9340		.	mg/kg
Lab	MB	-8.9130		.	mg/kg
Lab	MB	-8.1660		.	mg/kg
Lab	MB	-6.8230		.	mg/kg
Lab	MB	-6.4260		.	mg/kg
Lab	MB	-6.3840		.	mg/kg
Lab	MB	-5.8030		.	mg/kg
Lab	MB	-4.0140		.	mg/kg
Lab	MB	-3.4430		.	mg/kg
Lab	MB	-3.3010		.	mg/kg
Lab	MB	-2.8090		.	mg/kg
Lab	MB	-2.4410		.	mg/kg
Lab	MB	-2.2560		.	mg/kg
Lab	MB	-2.0050		.	mg/kg
Lab	MB	-1.2710		.	mg/kg
Lab	MB	-1.1340		.	mg/kg
Lab	MB	-1.0000		.	mg/kg
Lab	MB	-0.6885		.	mg/kg
Lab	MB	-0.3934		.	mg/kg
Lab	MB	-0.2431		.	mg/kg
Lab	MB	-0.1117		.	mg/kg
Lab	MB	-0.0982		.	mg/kg
Lab	MB	0.0300		.	mg/kg
Lab	MB	0.0854		.	mg/kg
Lab	MB	0.3219		.	mg/kg
Lab	MB	0.7436		.	mg/kg
Lab	MB	0.8500		.	mg/kg
Lab	MB	1.1890		.	mg/kg
Lab	MB	1.2210		.	mg/kg
Lab	MB	1.3460		.	mg/kg
Lab	MB	1.4380		.	mg/kg
Lab	MB	1.5860		.	mg/kg
Lab	MB	1.9620		.	mg/kg
Lab	MB	2.0090		.	mg/kg
Lab	MB	2.3620		.	mg/kg
Lab	MB	2.5790		.	mg/kg
Lab	MB	2.6090		.	mg/kg
Lab	MB	2.9340		.	mg/kg
Lab	MB	3.5840		.	mg/kg
Lab	MB	3.6450		.	mg/kg
Lab	MB	4.1850		.	mg/kg
Lab	MB	4.6360		.	mg/kg
Lab	MB	5.5420		.	mg/kg
Lab	MB	6.1030		.	mg/kg
Lab	MB	7.3430		.	mg/kg
Lab	MB	7.9430		.	mg/kg
Lab	MB	8.3700		.	mg/kg
Lab	MB	9.7640		.	mg/kg
Lab	MB	11.6000		.	mg/kg
Lab	MB	11.6000		.	mg/kg
Lab	MB	12.3300		.	mg/kg

---------- MATRIX=S METHOD=SW6010 ANALYTE=Tin ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	-3.74700		.	mg/kg
Lab	MB	-3.30600		.	mg/kg
Lab	MB	-2.96200		.	mg/kg
Lab	MB	-2.55800		.	mg/kg
Lab	MB	-2.27600		.	mg/kg
Lab	MB	-2.17500		.	mg/kg
Lab	MB	-1.99900		.	mg/kg
Lab	MB	-1.81800		.	mg/kg
Lab	MB	-1.58400		.	mg/kg
Lab	MB	-1.40000		.	mg/kg
Lab	MB	-1.20600		.	mg/kg
Lab	MB	-1.11400		.	mg/kg
Lab	MB	-1.05000		.	mg/kg
Lab	MB	-1.00000		.	mg/kg
Lab	MB	-0.80310		.	mg/kg
Lab	MB	-0.75990		.	mg/kg
Lab	MB	-0.75250		.	mg/kg
Lab	MB	-0.48320		.	mg/kg
Lab	MB	-0.44330		.	mg/kg
Lab	MB	-0.36320		.	mg/kg
Lab	MB	-0.25220		.	mg/kg
Lab	MB	-0.22230		.	mg/kg
Lab	MB	-0.20660		.	mg/kg
Lab	MB	-0.04546		.	mg/kg
Lab	MB	-0.03710		.	mg/kg
Lab	MB	-0.01750		.	mg/kg
Lab	MB	-0.00698		.	mg/kg
Lab	MB	0.01128		.	mg/kg
Lab	MB	0.01185		.	mg/kg
Lab	MB	0.11040		.	mg/kg
Lab	MB	0.23200		.	mg/kg
Lab	MB	0.23540		.	mg/kg
Lab	MB	0.35190		.	mg/kg
Lab	MB	0.48500		.	mg/kg
Lab	MB	0.67720		.	mg/kg
Lab	MB	0.68880		.	mg/kg
Lab	MB	0.78550		.	mg/kg
Lab	MB	0.78700		.	mg/kg
Lab	MB	0.83920		.	mg/kg
Lab	MB	1.24500		.	mg/kg
Lab	MB	1.27700		.	mg/kg
Lab	MB	1.38000		.	mg/kg
Lab	MB	1.70200		.	mg/kg
Lab	MB	1.94200		.	mg/kg
Lab	MB	2.05200		.	mg/kg
Lab	MB	2.32000		.	mg/kg
Lab	MB	2.33700		.	mg/kg
Lab	MB	3.64900		.	mg/kg
Lab	MB	4.07800		.	mg/kg

---------- MATRIX=S METHOD=SW6010 ANALYTE=Titanium ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	-0.31500		.	mg/kg
Lab	MB	-0.19910		.	mg/kg
Lab	MB	-0.13300		.	mg/kg
Lab	MB	-0.11300		.	mg/kg
Lab	MB	-0.11280		.	mg/kg
Lab	MB	-0.10910		.	mg/kg
Lab	MB	-0.10670		.	mg/kg
Lab	MB	-0.05239		.	mg/kg
Lab	MB	-0.04575		.	mg/kg
Lab	MB	-0.04495		.	mg/kg
Lab	MB	-0.04000		.	mg/kg
Lab	MB	-0.02832		.	mg/kg
Lab	MB	-0.01641		.	mg/kg
Lab	MB	-0.00270		.	mg/kg
Lab	MB	-0.00160		.	mg/kg
Lab	MB	0.00001		.	mg/kg
Lab	MB	0.00043		.	mg/kg
Lab	MB	0.00108		.	mg/kg
Lab	MB	0.00153		.	mg/kg
Lab	MB	0.00266		.	mg/kg
Lab	MB	0.00360		.	mg/kg
Lab	MB	0.04141		.	mg/kg
Lab	MB	0.04746		.	mg/kg
Lab	MB	0.05151		.	mg/kg
Lab	MB	0.05843		.	mg/kg
Lab	MB	0.07628		.	mg/kg
Lab	MB	0.07852		.	mg/kg
Lab	MB	0.09076		.	mg/kg
Lab	MB	0.09661		.	mg/kg
Lab	MB	0.09669		.	mg/kg
Lab	MB	0.09852		.	mg/kg
Lab	MB	0.09983		.	mg/kg
Lab	MB	0.09996		.	mg/kg
Lab	MB	0.10050		.	mg/kg
Lab	MB	0.10910		.	mg/kg
Lab	MB	0.12060		.	mg/kg
Lab	MB	0.12360		.	mg/kg
Lab	MB	0.14530		.	mg/kg
Lab	MB	0.15070		.	mg/kg
Lab	MB	0.15070		.	mg/kg
Lab	MB	0.15080		.	mg/kg
Lab	MB	0.15350		.	mg/kg
Lab	MB	0.38770		.	mg/kg

---------- MATRIX=S METHOD=SW6010 ANALYTE=Tungsten ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	-10.6700		.	mg/kg
Lab	MB	-9.9500		.	mg/kg
Lab	MB	-8.9830		.	mg/kg
Lab	MB	-8.2580		.	mg/kg
Lab	MB	-6.8280		.	mg/kg
Lab	MB	-4.4740		.	mg/kg
Lab	MB	-3.5600		.	mg/kg
Lab	MB	-2.0200		.	mg/kg
Lab	MB	-1.1150		.	mg/kg
Lab	MB	-1.0000		.	mg/kg
Lab	MB	-0.0149		.	mg/kg
Lab	MB	0.0000		.	mg/kg
Lab	MB	0.2374		.	mg/kg
Lab	MB	0.2426		.	mg/kg
Lab	MB	0.2786		.	mg/kg
Lab	MB	0.3614		.	mg/kg
Lab	MB	0.8399		.	mg/kg
Lab	MB	0.8822		.	mg/kg
Lab	MB	0.9348		.	mg/kg
Lab	MB	1.0710		.	mg/kg
Lab	MB	1.5860		.	mg/kg
Lab	MB	1.6070		.	mg/kg
Lab	MB	1.6880		.	mg/kg
Lab	MB	1.9900		.	mg/kg
Lab	MB	2.1360		.	mg/kg
Lab	MB	2.1830		.	mg/kg
Lab	MB	2.2290		.	mg/kg
Lab	MB	2.3680		.	mg/kg
Lab	MB	2.3760		.	mg/kg
Lab	MB	3.3330		.	mg/kg
Lab	MB	3.6220		.	mg/kg
Lab	MB	3.8390		.	mg/kg
Lab	MB	4.3200		.	mg/kg
Lab	MB	4.5180		.	mg/kg
Lab	MB	4.7360		.	mg/kg
Lab	MB	5.0150		.	mg/kg
Lab	MB	5.6220		.	mg/kg
Lab	MB	6.1210		.	mg/kg
Lab	MB	6.2170		.	mg/kg
Lab	MB	6.3070		.	mg/kg
Lab	MB	6.3070		.	mg/kg
Lab	MB	6.3290		.	mg/kg
Lab	MB	7.1120		.	mg/kg
Lab	MB	7.1290		.	mg/kg
Lab	MB	7.4850		.	mg/kg
Lab	MB	7.9360		.	mg/kg
Lab	MB	8.0040		.	mg/kg
Lab	MB	8.9550		.	mg/kg
Lab	MB	9.3230		.	mg/kg
Lab	MB	12.1000		.	mg/kg
Lab	MB	12.8300		.	mg/kg

---------- MATRIX=S METHOD=SW6010 ANALYTE=Uranium ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	-10.1500		.	mg/kg
Lab	MB	-9.1080		.	mg/kg
Lab	MB	-8.1780		.	mg/kg
Lab	MB	-7.6750		.	mg/kg
Lab	MB	-6.4180		.	mg/kg
Lab	MB	-6.3550		.	mg/kg
Lab	MB	-5.6800		.	mg/kg
Lab	MB	-5.5190		.	mg/kg
Lab	MB	-5.0490		.	mg/kg
Lab	MB	-4.8690		.	mg/kg
Lab	MB	-4.6580		.	mg/kg
Lab	MB	-4.2300		.	mg/kg
Lab	MB	-3.9340		.	mg/kg
Lab	MB	-3.1400		.	mg/kg
Lab	MB	-2.3550		.	mg/kg
Lab	MB	-2.2050		.	mg/kg
Lab	MB	-1.9150		.	mg/kg
Lab	MB	-1.8000		.	mg/kg
Lab	MB	-1.7380		.	mg/kg
Lab	MB	-1.4350		.	mg/kg
Lab	MB	-1.0000		.	mg/kg
Lab	MB	-1.0000		.	mg/kg
Lab	MB	-0.0255		.	mg/kg
Lab	MB	0.1154		.	mg/kg
Lab	MB	0.3826		.	mg/kg
Lab	MB	0.7100		.	mg/kg
Lab	MB	1.0750		.	mg/kg
Lab	MB	1.2630		.	mg/kg
Lab	MB	1.4510		.	mg/kg
Lab	MB	1.7410		.	mg/kg
Lab	MB	1.7950		.	mg/kg
Lab	MB	2.1490		.	mg/kg
Lab	MB	2.4320		.	mg/kg
Lab	MB	3.3230		.	mg/kg
Lab	MB	3.3970		.	mg/kg
Lab	MB	3.5680		.	mg/kg
Lab	MB	3.6130		.	mg/kg
Lab	MB	3.9420		.	mg/kg
Lab	MB	4.1200		.	mg/kg
Lab	MB	4.3430		.	mg/kg
Lab	MB	4.6040		.	mg/kg
Lab	MB	5.0780		.	mg/kg
Lab	MB	6.9790		.	mg/kg
Lab	MB	10.1600		.	mg/kg
Lab	MB	10.5100		.	mg/kg
Lab	MB	11.8300		.	mg/kg
Lab	MB	11.8900		.	mg/kg
Lab	M8	12.2500		.	mg/kg
Lab	MB	12.9200		.	mg/kg

---------- MATRIX=S METHOD=SW6010 ANALYTE=Vanadium ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	-0.65370		.	mg/kg
Lab	MB	-0.61530		.	mg/kg
Lab	MB	-0.57710		.	mg/kg
Lab	MB	-0.56280		.	mg/kg
Lab	MB	-0.55930		.	mg/kg
Lab	MB	-0.51630		.	mg/kg
Lab	MB	-0.37390		.	mg/kg
Lab	MB	-0.32290		.	mg/kg
Lab	MB	-0.31310		.	mg/kg
Lab	MB	-0.30640		.	mg/kg
Lab	MB	-0.24770		.	mg/kg
Lab	MB	-0.23580		.	mg/kg
Lab	MB	-0.21070		.	mg/kg
Lab	MB	-0.21050		.	mg/kg
Lab	MB	-0.19380		.	mg/kg
Lab	MB	-0.15350		.	mg/kg
Lab	MB	-0.11090		.	mg/kg
Lab	MB	-0.10300		.	mg/kg
Lab	MB	-0.09792		.	mg/kg
Lab	MB	-0.09456		.	mg/kg
Lab	MB	-0.06697		.	mg/kg
Lab	MB	-0.04412		.	mg/kg
Lab	MB	-0.02558		.	mg/kg
Lab	MB	-0.01130		.	mg/kg
Lab	MB	-0.00956		.	mg/kg
Lab	MB	0.00442		.	mg/kg
Lab	MB	0.00453		.	mg/kg
Lab	MB	0.01350		.	mg/kg
Lab	MB	0.01536		.	mg/kg
Lab	MB	0.02171		.	mg/kg
Lab	MB	0.03830		.	mg/kg
Lab	MB	0.05967		.	mg/kg
Lab	MB	0.11090		.	mg/kg
Lab	MB	0.12130		.	mg/kg
Lab	MB	0.13600		.	mg/kg
Lab	MB	0.13690		.	mg/kg
Lab	MB	0.15050		.	mg/kg
Lab	MB	0.15250		.	mg/kg
Lab	MB	0.15620		.	mg/kg
Lab	MB	0.16430		.	mg/kg
Lab	MB	0.17870		.	mg/kg
Lab	MB	0.24000		.	mg/kg
Lab	MB	0.27000		.	mg/kg
Lab	MB	0.30310		.	mg/kg
Lab	MB	0.33290		.	mg/kg
Lab	MB	0.36450		.	mg/kg
Lab	MB	0.38600		.	mg/kg
Lab	MB	0.41020		.	mg/kg
Lab	MB	0.66000		.	mg/kg
Lab	MB	0.98780		.	mg/kg

---------- MATRIX=S METHOD=SW6010 ANALYTE=Zinc ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	-0.47860		.	mg/kg
Lab	MB	-0.27550		.	mg/kg
Lab	MB	-0.18340		.	mg/kg
Lab	MB	-0.17250		.	mg/kg
Lab	MB	-0.16620		.	mg/kg
Lab	MB	-0.16130		.	mg/kg
Lab	MB	-0.15650		.	mg/kg
Lab	MB	-0.15590		.	mg/kg
Lab	MB	-0.09040		.	mg/kg
Lab	MB	-0.06738		.	mg/kg
Lab	MB	-0.03000		.	mg/kg
Lab	MB	-0.02778		.	mg/kg
Lab	MB	-0.01660		.	mg/kg
Lab	MB	-0.01286		.	mg/kg
Lab	MB	-0.01054		.	mg/kg
Lab	MB	-0.00700		.	mg/kg
Lab	MB	-0.00180		.	mg/kg
Lab	MB	-0.00006		.	mg/kg
Lab	MB	0.00800		.	mg/kg
Lab	MB	0.00870		.	mg/kg
Lab	MB	0.00940		.	mg/kg
Lab	MB	0.01107		.	mg/kg
Lab	MB	0.01634		.	mg/kg
Lab	MB	0.01870		.	mg/kg
Lab	MB	0.03000		.	mg/kg
Lab	MB	0.03493		.	mg/kg
Lab	MB	0.04765		.	mg/kg
Lab	MB	0.06751		.	mg/kg
Lab	MB	0.11200		.	mg/kg
Lab	MB	0.12280		.	mg/kg
Lab	MB	0.16850		.	mg/kg
Lab	MB	0.17000		.	mg/kg
Lab	MB	0.18540		.	mg/kg
Lab	MB	0.20550		.	mg/kg
Lab	MB	0.21000		.	mg/kg
Lab	MB	0.21410		.	mg/kg
Lab	MB	0.23740		.	mg/kg
Lab	MB	0.28590		.	mg/kg
Lab	MB	0.31040		.	mg/kg
Lab	MB	0.32450		.	mg/kg
Lab	MB	0.34850		.	mg/kg
Lab	MB	0.35310		.	mg/kg
Lab	MB	0.42030		.	mg/kg
Lab	MB	0.49940		.	mg/kg
Lab	MB	0.50970		.	mg/kg
Lab	MB	0.51520		.	mg/kg
Lab	MB	0.65520		.	mg/kg

---------- MATRIX=S METHOD=SW7060 ANALYTE=Arsenic ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	-0.190		.	mg/kg
Lab	MB	-0.130		.	mg/kg
Lab	MB	-0.126		.	mg/kg
Lab	MB	-0.120		.	mg/kg
Lab	MB	-0.120		.	mg/kg
Lab	MB	-0.120		.	mg/kg
Lab	MB	-0.116		.	mg/kg
Lab	MB	-0.110		.	mg/kg
Lab	MB	-0.110		.	mg/kg
Lab	MB	-0.100		.	mg/kg
Lab	MB	-0.090		.	mg/kg
Lab	MB	-0.090		.	mg/kg
Lab	MB	-0.090		.	mg/kg
Lab	MB	-0.086		.	mg/kg
Lab	MB	-0.080		.	mg/kg
Lab	MB	-0.080		.	mg/kg
Lab	MB	-0.060		.	mg/kg
Lab	MB	-0.050		.	mg/kg
Lab	MB	-0.040		.	mg/kg
Lab	MB	-0.030		.	mg/kg

---------- MATRIX=S METHOD=SW7421 ANALYTE=Lead ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	-0.315		.	mg/kg
Lab	MB	-0.195		.	mg/kg
Lab	MB	-0.180		.	mg/kg
Lab	MB	-0.172		.	mg/kg
Lab	MB	-0.123		.	mg/kg
Lab	MB	-0.122		.	mg/kg
Lab	MB	-0.120		.	mg/kg
Lab	MB	-0.100		.	mg/kg
Lab	MB	-0.100		.	mg/kg
Lab	MB	-0.099		.	mg/kg
Lab	MB	-0.027		.	mg/kg
Lab	MB	-0.010		.	mg/kg
Lab	MB	-0.010		.	mg/kg
Lab	MB	-0.004		.	mg/kg
Lab	MB	0.010		.	mg/kg
Lab	MB	0.030		.	mg/kg
Lab	MB	0.040		.	mg/kg
Lab	MB	0.070		.	mg/kg
Lab	MB	0.100		.	mg/kg
Lab	MB	0.140		.	mg/kg

---------- MATRIX=S METHOD=SW7470 ANALYTE=Mercury ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	-0.0375		.	mg/kg
Lab	MB	-0.0375		.	mg/kg
Lab	MB	-0.0375		.	mg/kg
Lab	MB	-0.0375		.	mg/kg
Lab	MB	-0.0300		.	mg/kg
Lab	MB	-0.0300		.	mg/kg
Lab	MB	-0.0250		.	mg/kg
Lab	MB	-0.0250		.	mg/kg
Lab	MB	-0.0250		.	mg/kg
Lab	MB	-0.0250		.	mg/kg
Lab	MB	-0.0250		.	mg/kg
Lab	MB	-0.0250		.	mg/kg
Lab	MB	-0.0250		.	mg/kg
Lab	MB	-0.0250		.	mg/kg
Lab	MB	-0.0175		.	mg/kg
Lab	MB	-0.0175		.	mg/kg
Lab	MB	-0.0175		.	mg/kg
Lab	MB	-0.0175		.	mg/kg
Lab	MB	-0.0175		.	mg/kg
Lab	MB	-0.0175		.	mg/kg
Lab	MB	-0.0175		.	mg/kg
Lab	MB	-0.0175		.	mg/kg
Lab	MB	-0.0150		.	mg/kg
Lab	MB	-0.0150		.	mg/kg
Lab	MB	-0.0125		.	mg/kg
Lab	MB	-0.0125		.	mg/kg
Lab	MB	-0.0080		.	mg/kg
Lab	MB	-0.0080		.	mg/kg

---------- MATRIX=S METHOD=SW7740 ANALYTE=Selenium ----------

LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	-0.2900		.	mg/kg
Lab	MB	-0.2400		.	mg/kg
Lab	MB	-0.2080		.	mg/kg
Lab	MB	-0.1900		.	mg/kg
Lab	MB	-0.1800		.	mg/kg
Lab	MB	-0.1600		.	mg/kg
Lab	MB	-0.1500		.	mg/kg
Lab	MB	-0.1500		.	mg/kg
Lab	MB	-0.1300		.	mg/kg
Lab	MB	-0.1300		.	mg/kg
Lab	MB	-0.1300		.	mg/kg
Lab	MB	-0.1200		.	mg/kg
Lab	MB	-0.1200		.	mg/kg
Lab	MB	-0.1100		.	mg/kg
Lab	MB	-0.1000		.	mg/kg
Lab	MB	-0.1000		.	mg/kg
Lab	MB	-0.0900		.	mg/kg
Lab	MB	-0.0800		.	mg/kg
Lab	MB	-0.0700		.	mg/kg
Lab	MB	-0.0500		.	mg/kg
Lab	MB	-0.0400		.	mg/kg
Lab	MB	-0.0300		.	mg/kg
Lab	MB	-0.0300		.	mg/kg
Lab	MB	-0.0300		.	mg/kg
Lab	MB	-0.0160		.	mg/kg
Lab	MB	-0.0012		.	mg/kg
Lab	MB	0.0005		.	mg/kg
Lab	MB	0.0300		.	mg/kg
Lab	MB	0.0400		.	mg/kg
Lab	MB	0.0500		.	mg/kg
Lab	MB	0.1000		.	mg/kg

---------- MATRIX=S METHOD=SW7841 ANALYTE=Thallium ----------

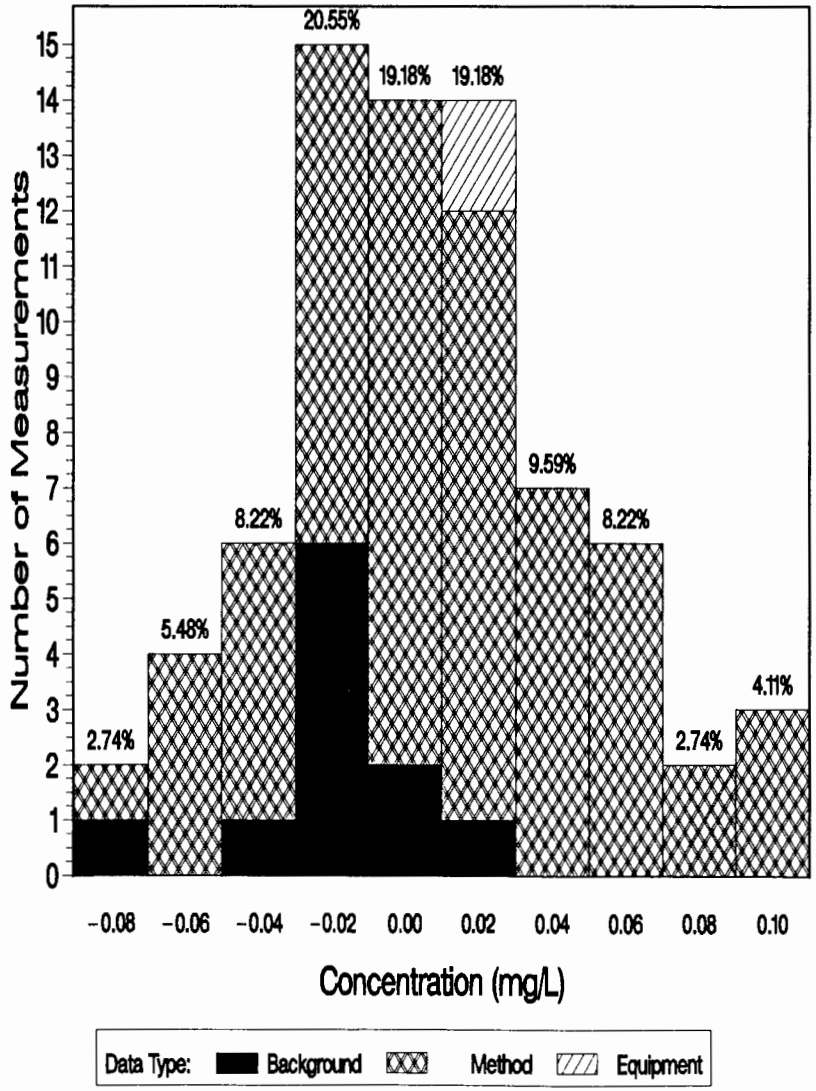
LOCID	TYPE	LAB_RES	FLAG	DETLIM	UNITS
Lab	MB	-0.05		.	mg/kg
Lab	MB	-0.04		.	mg/kg
Lab	MB	-0.04		.	mg/kg
Lab	MB	-0.03		.	mg/kg

ATTACHMENT 3

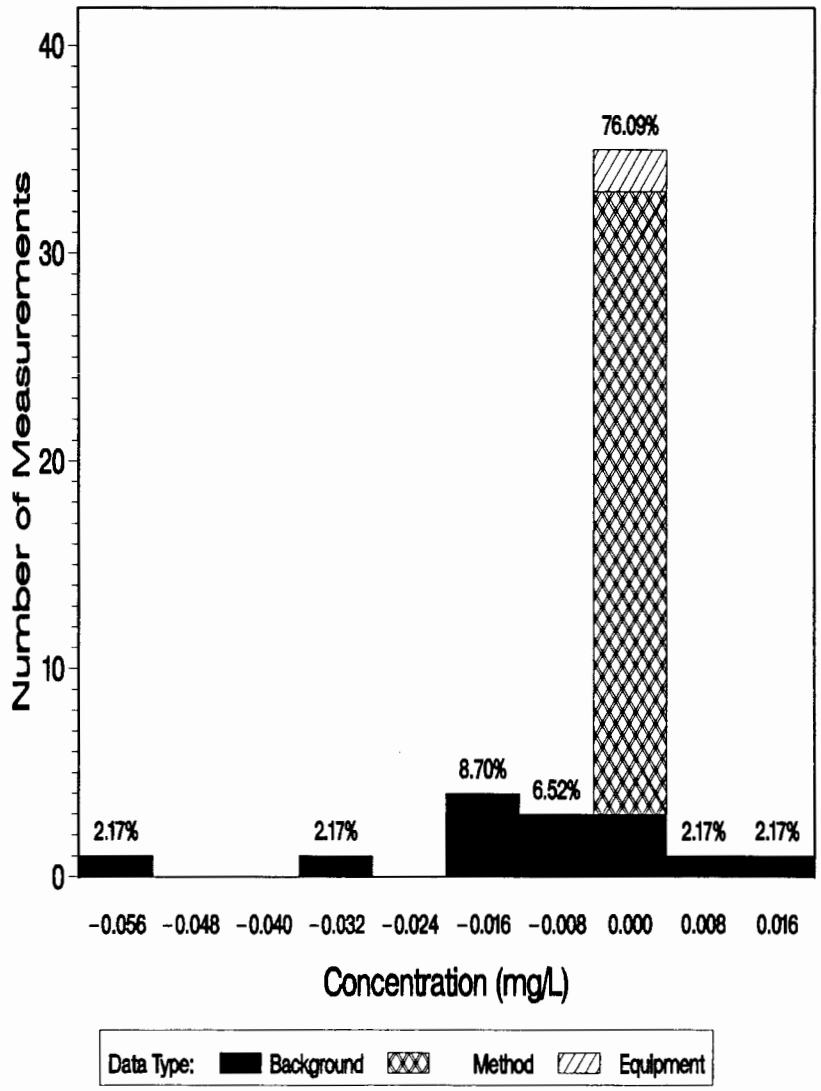
HISTOGRAMS USED FOR GRAPHICAL ANALYSIS

Holloman AFB Background Data
Frequency Distribution

Antimony -- SW6010
Groundwater -- Dissolved

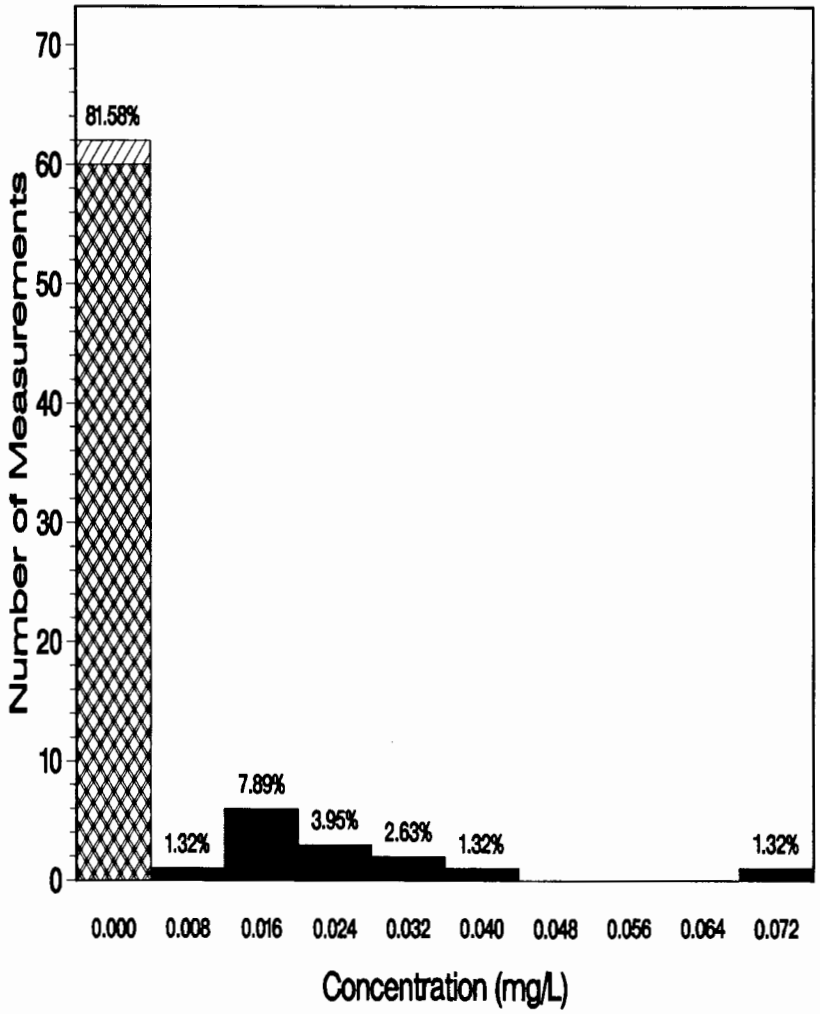


Arsenic -- SW7060
Groundwater -- Dissolved



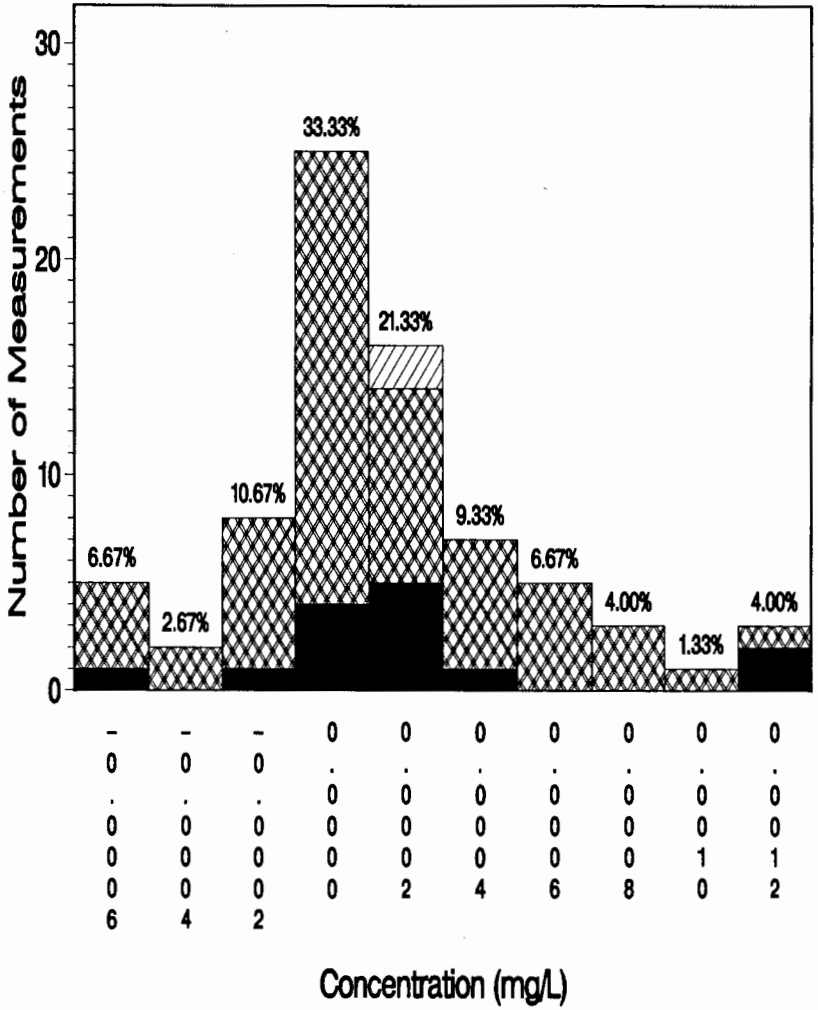
Holloman AFB Background Data
Frequency Distribution

Barium -- SW6010
Groundwater -- Dissolved



Data Type: Background Method Equipment

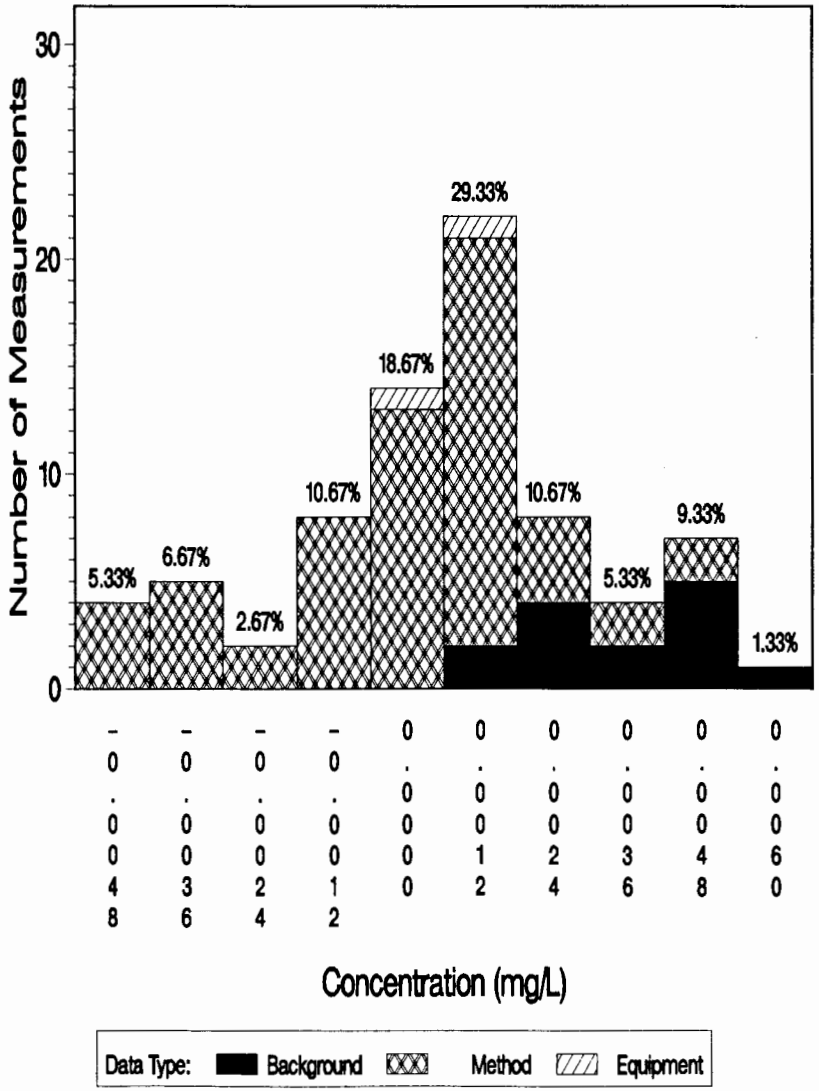
Beryllium -- SW6010
Groundwater -- Dissolved



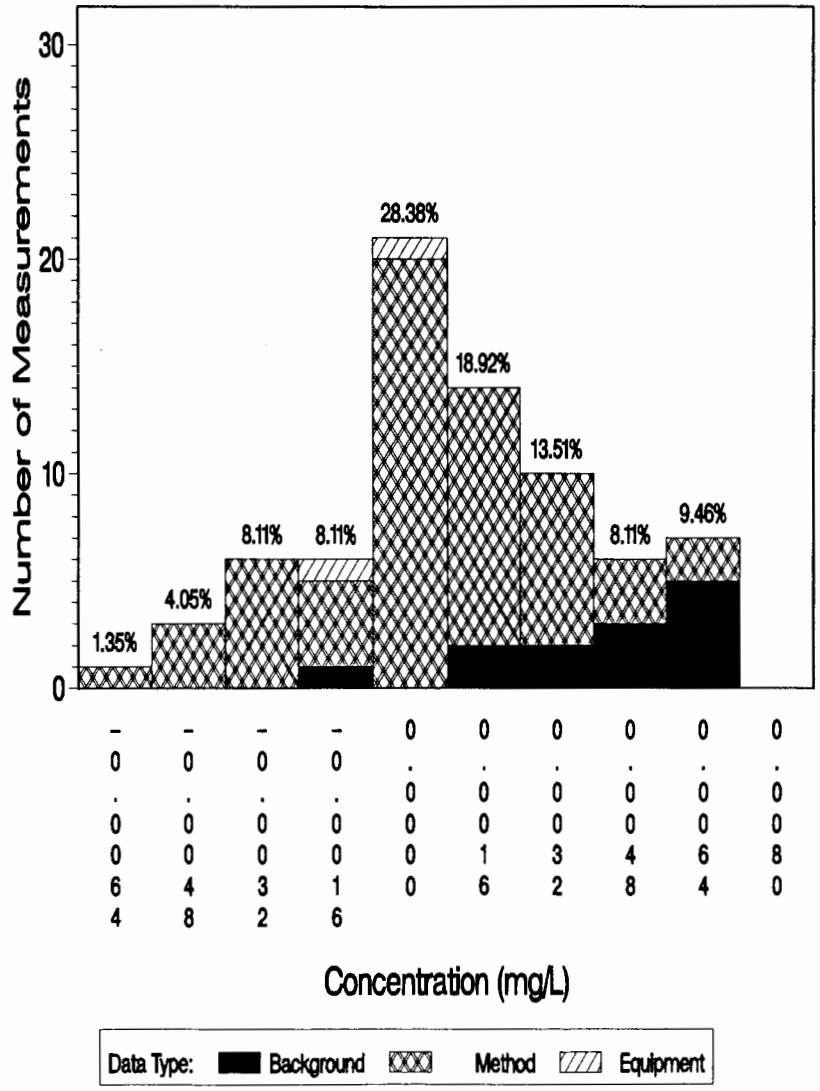
Data Type: Background Method Equipment

Holloman AFB Background Data
Frequency Distribution

Cadmium -- SW6010
Groundwater -- Dissolved

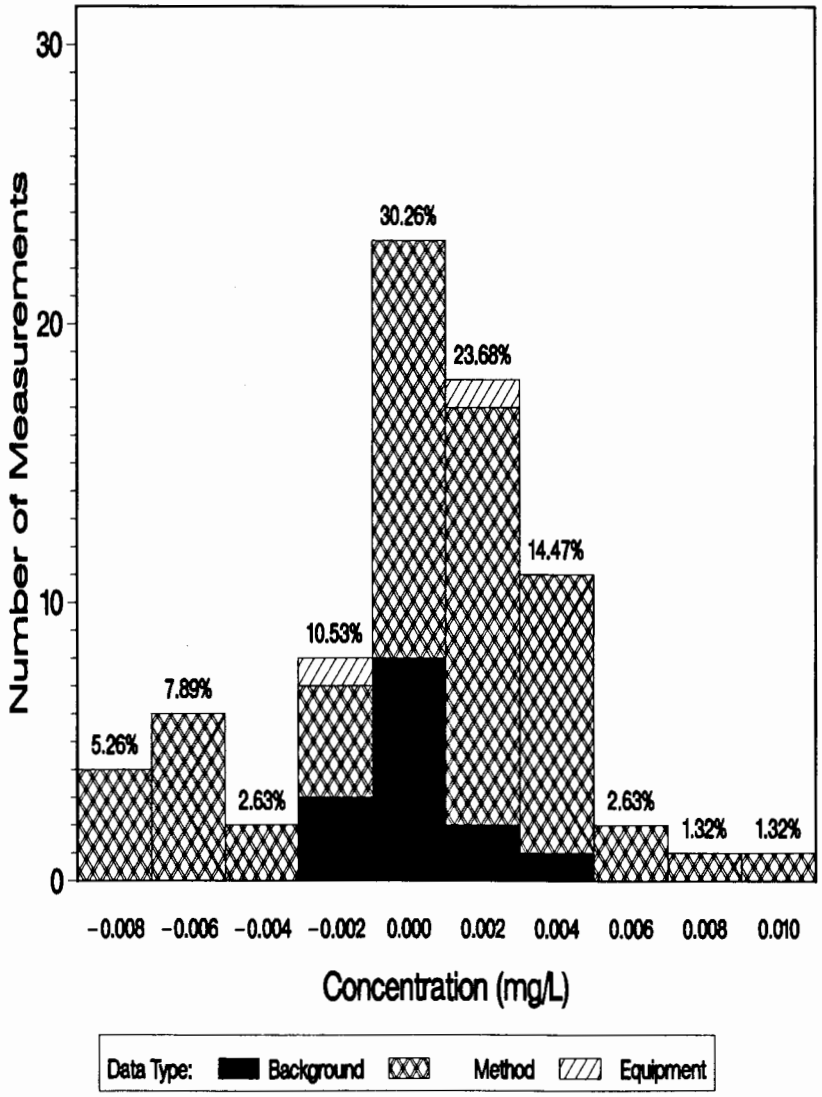


Chromium -- SW6010
Groundwater -- Dissolved

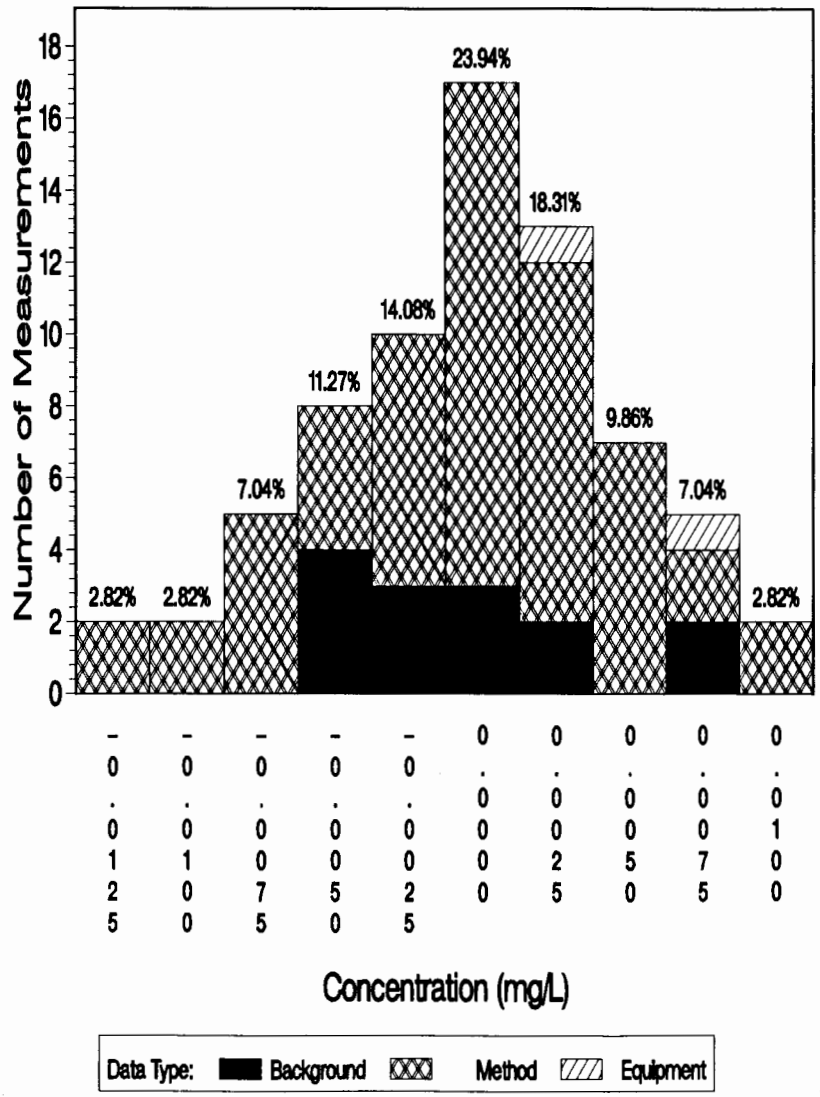


Holloman AFB Background Data
Frequency Distribution

Cobalt -- SW6010
Groundwater -- Dissolved

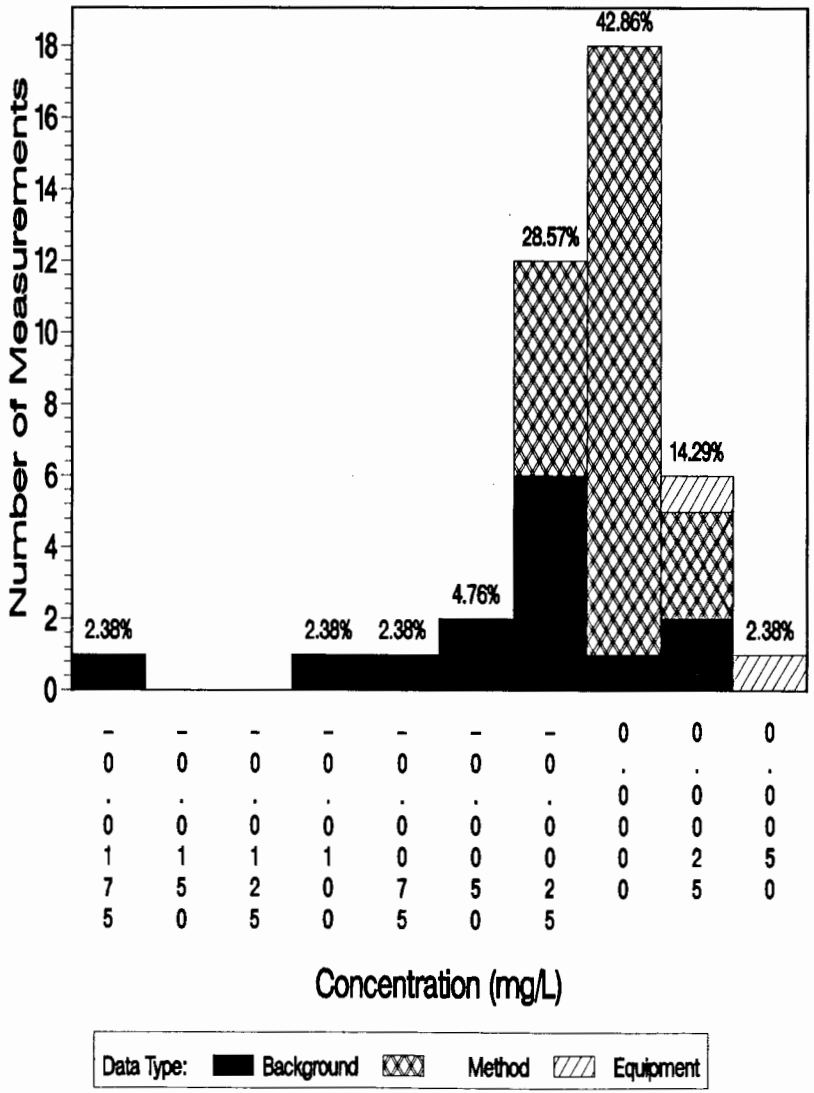


Copper -- SW6010
Groundwater -- Dissolved

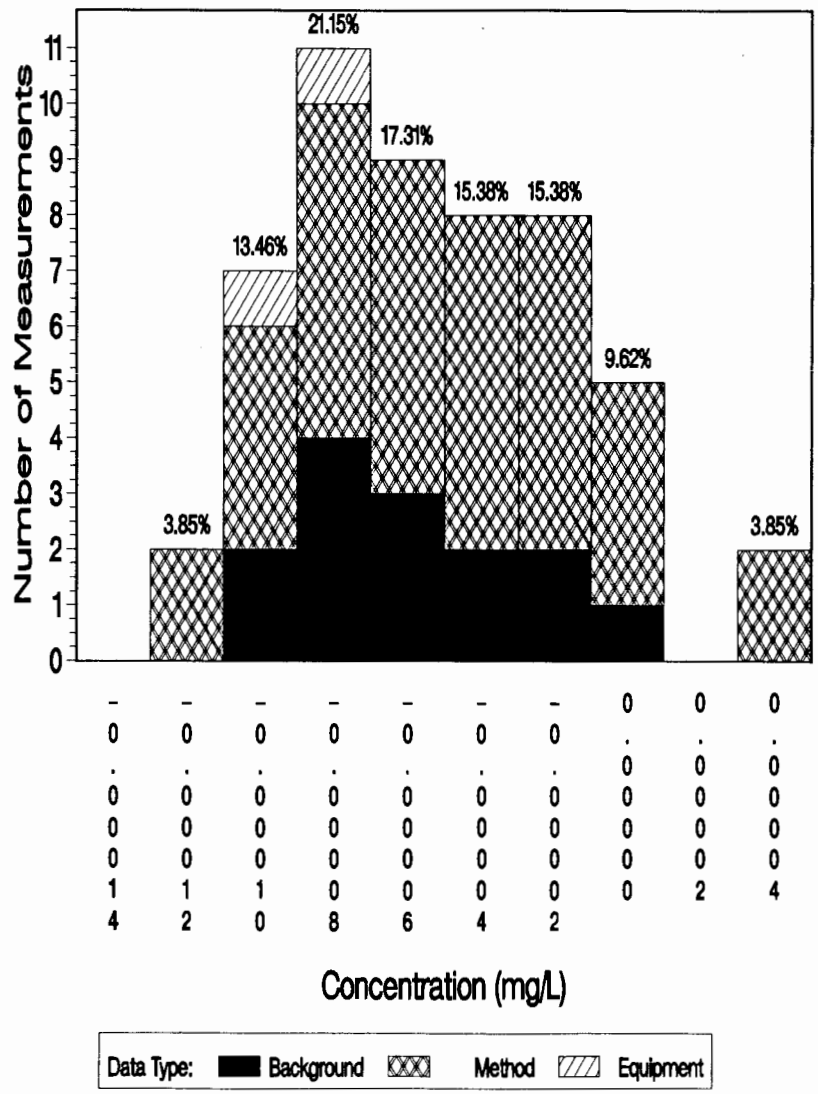


Holloman AFB Background Data
Frequency Distribution

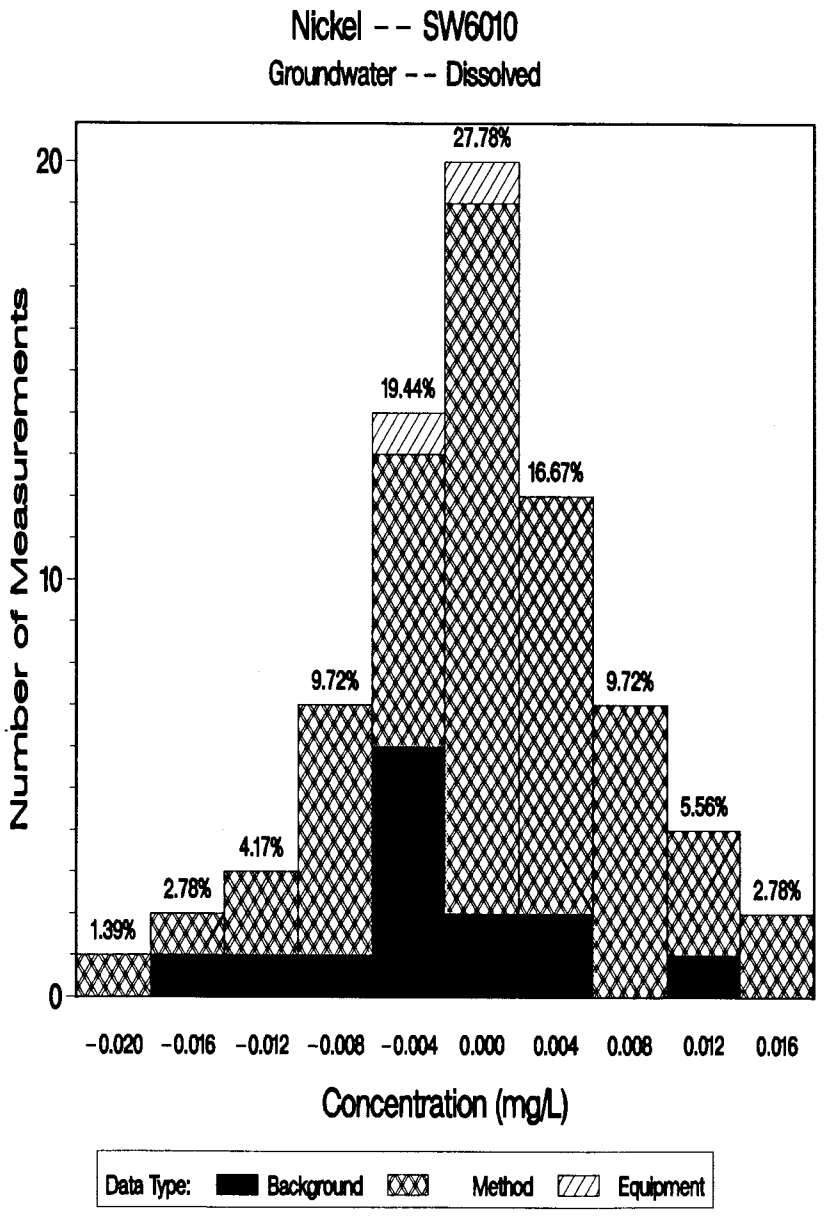
Lead -- SW7421
Groundwater -- Dissolved

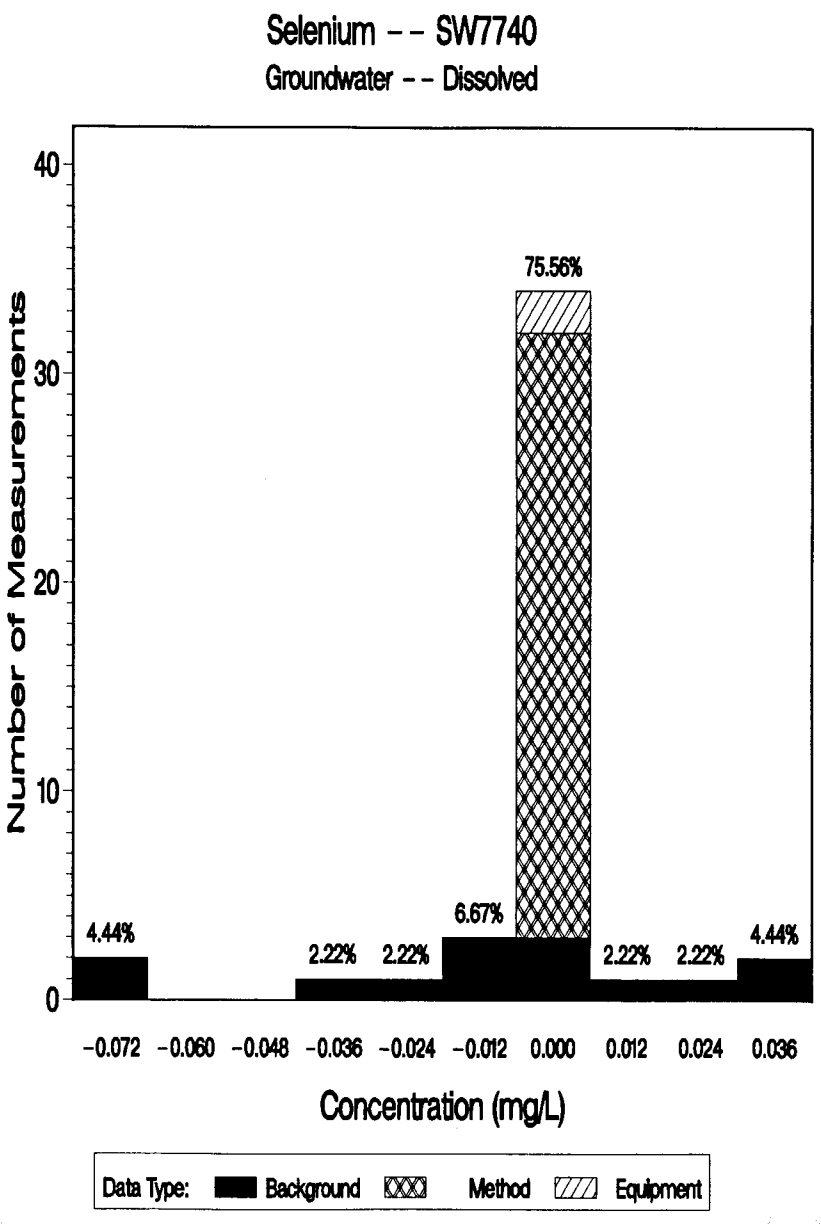


Mercury -- SW7470
Groundwater -- Dissolved



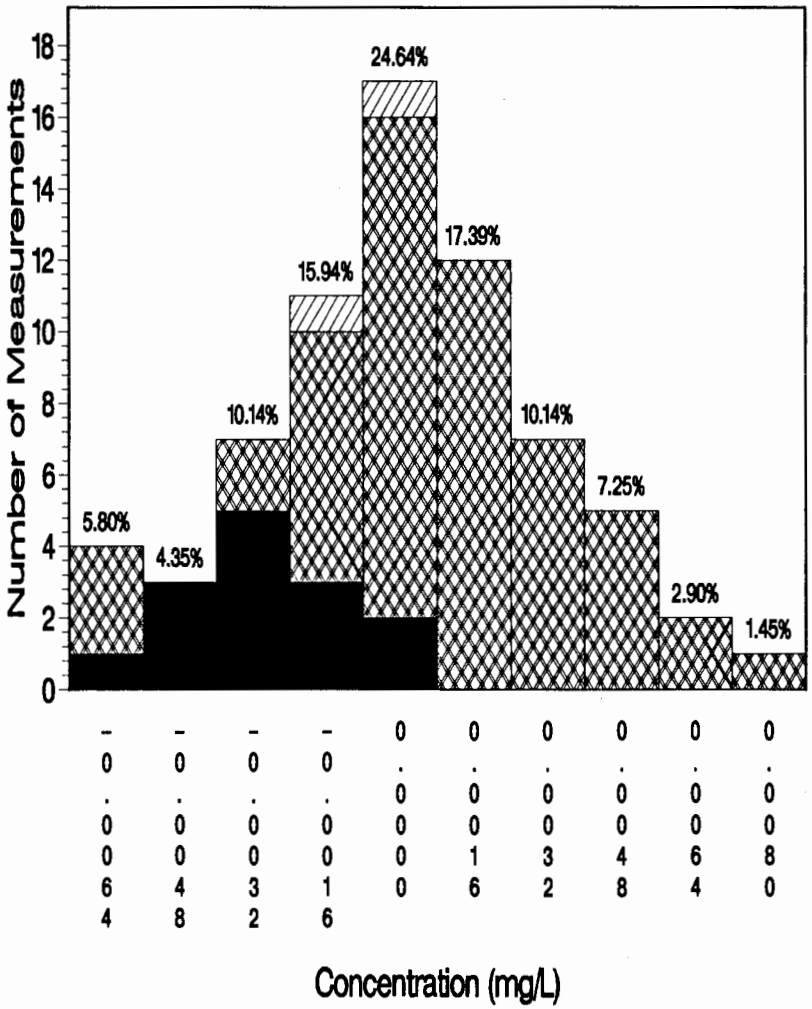
Holloman AFB Background Data
Frequency Distribution





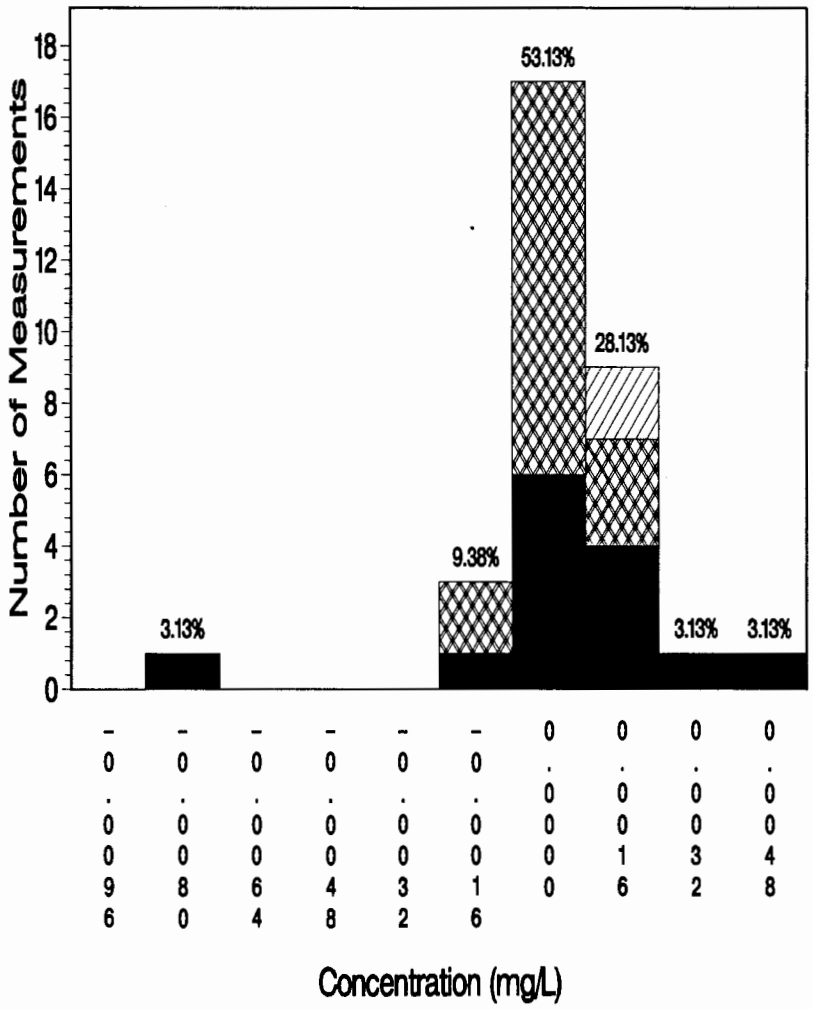
Holloman AFB Background Data
Frequency Distribution

Silver -- SW6010
Groundwater -- Dissolved



Data Type: Background Method Equipment

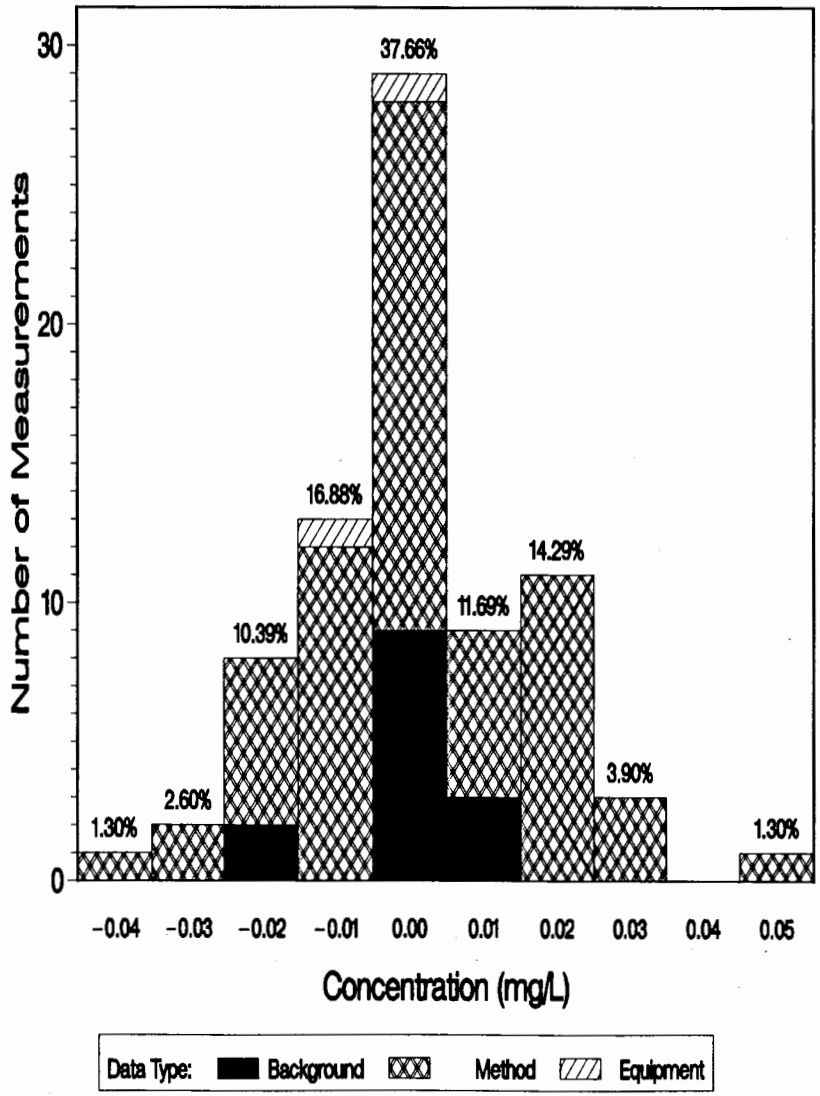
Thallium -- SW7841
Groundwater -- Dissolved



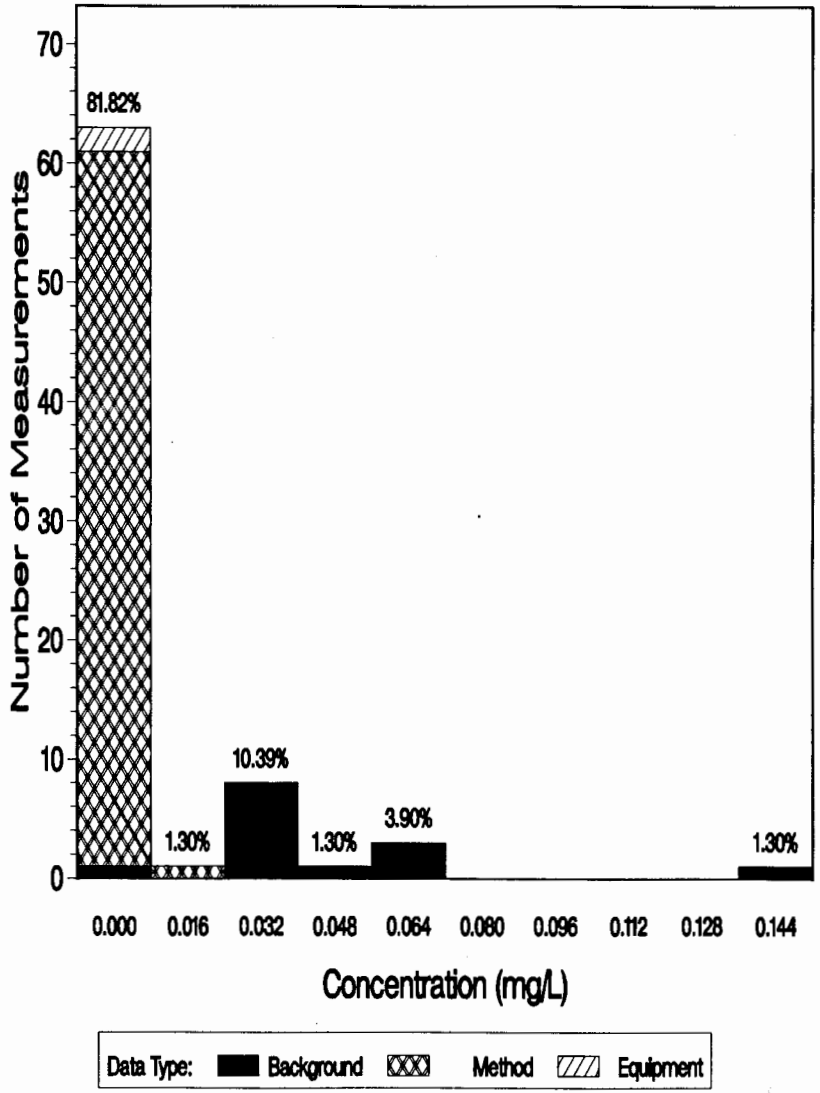
Data Type: Background Method Equipment

Holloman AFB Background Data
Frequency Distribution

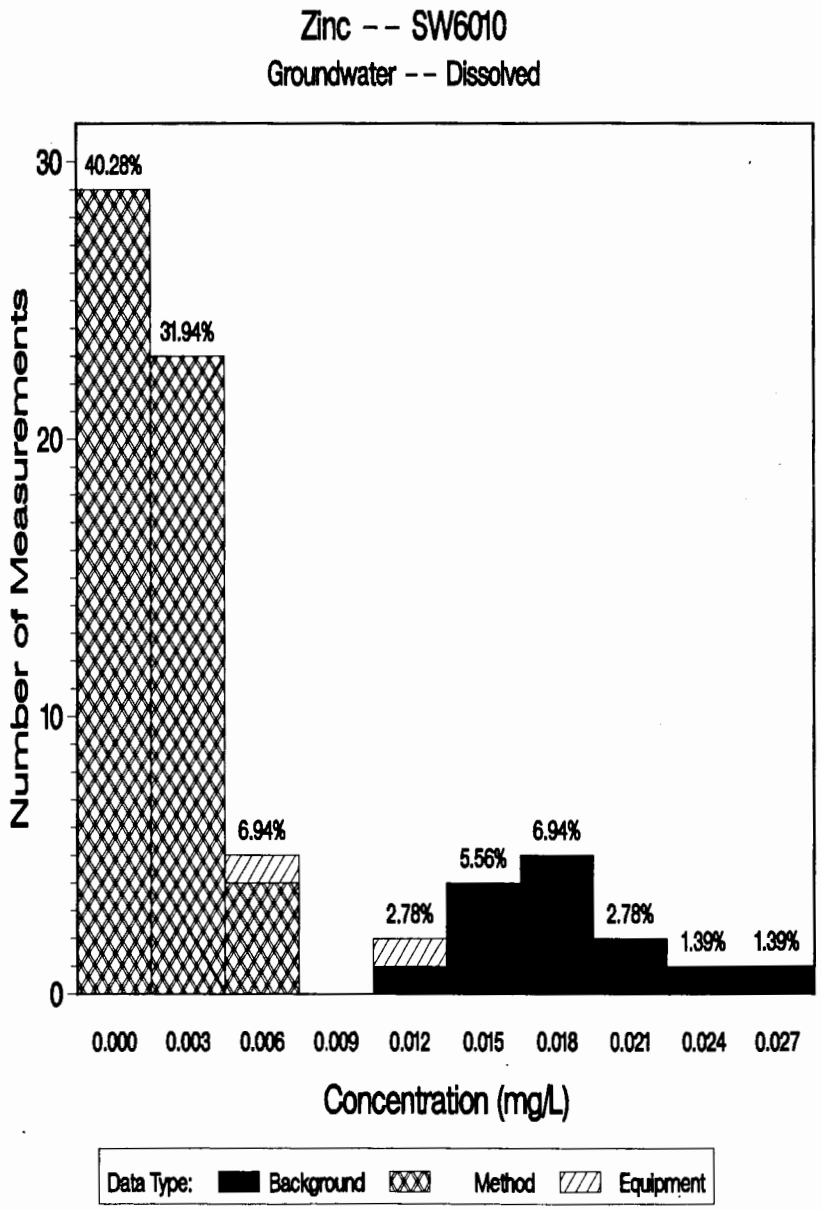
Tin -- SW6010
Groundwater -- Dissolved



Vanadium -- SW6010
Groundwater -- Dissolved

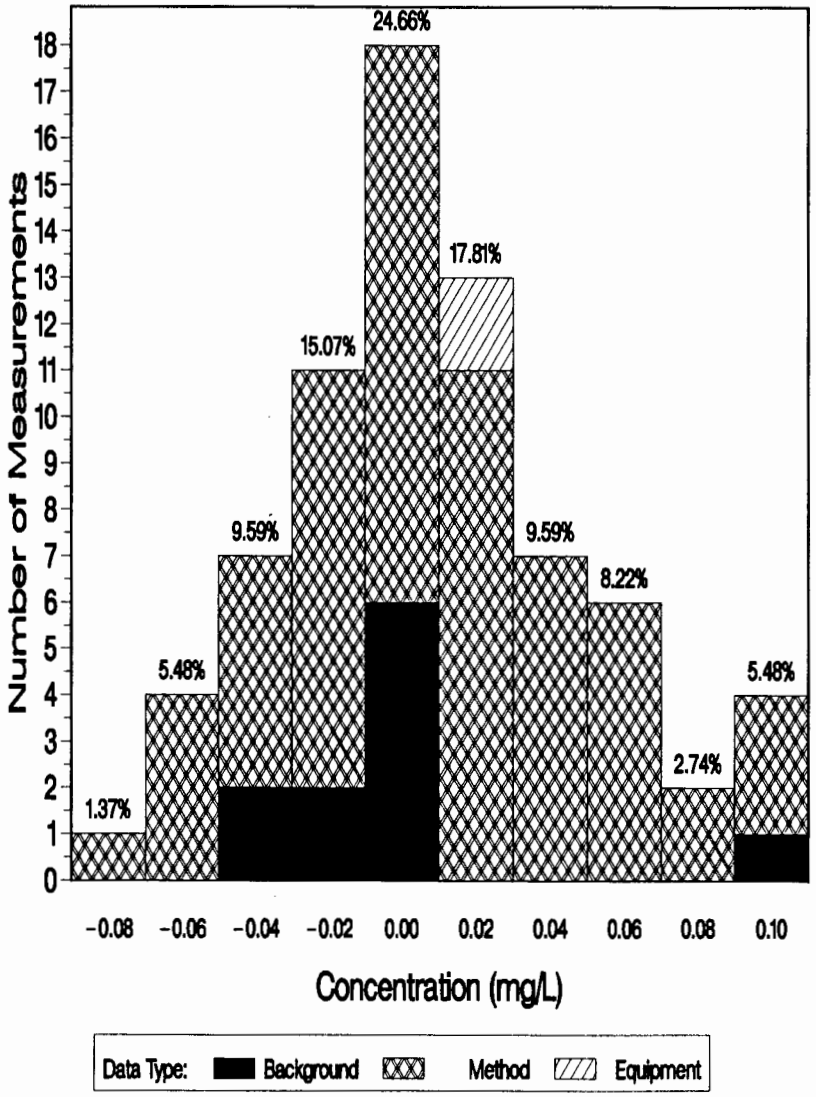


Holloman AFB Background Data
Frequency Distribution

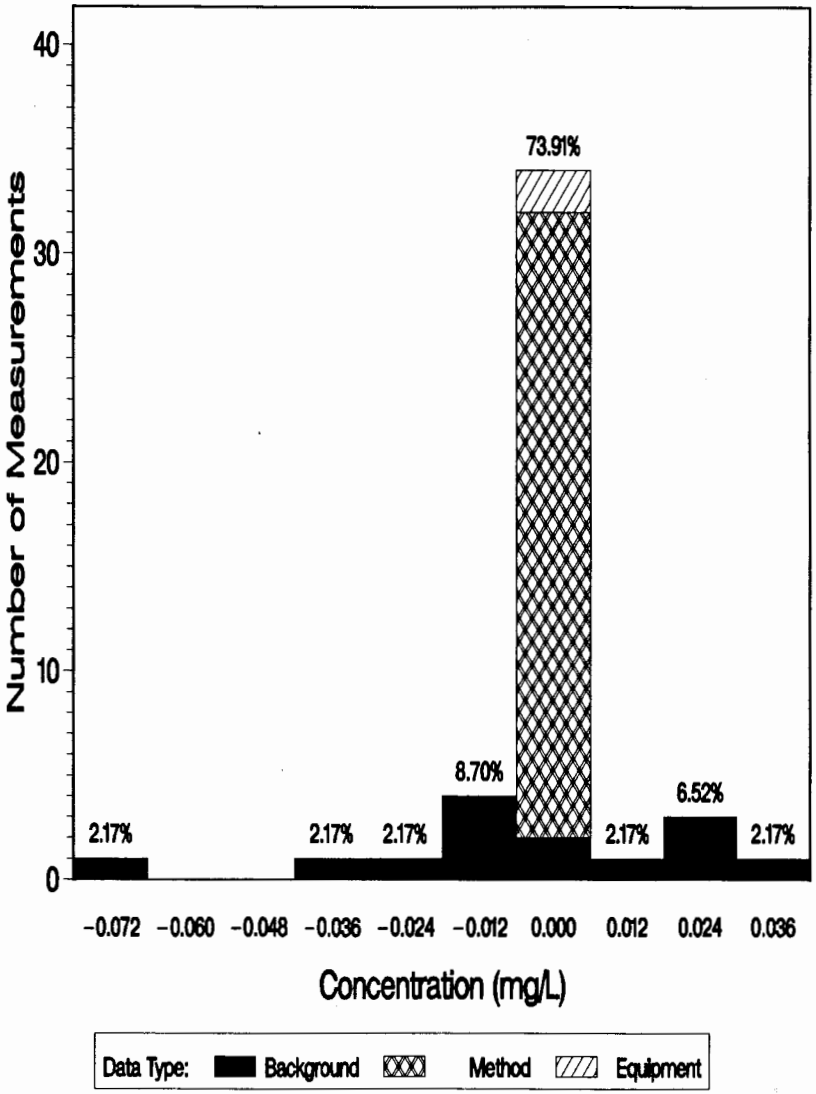


Holloman AFB Background Data
Frequency Distribution

Antimony -- SW6010
Groundwater -- Total

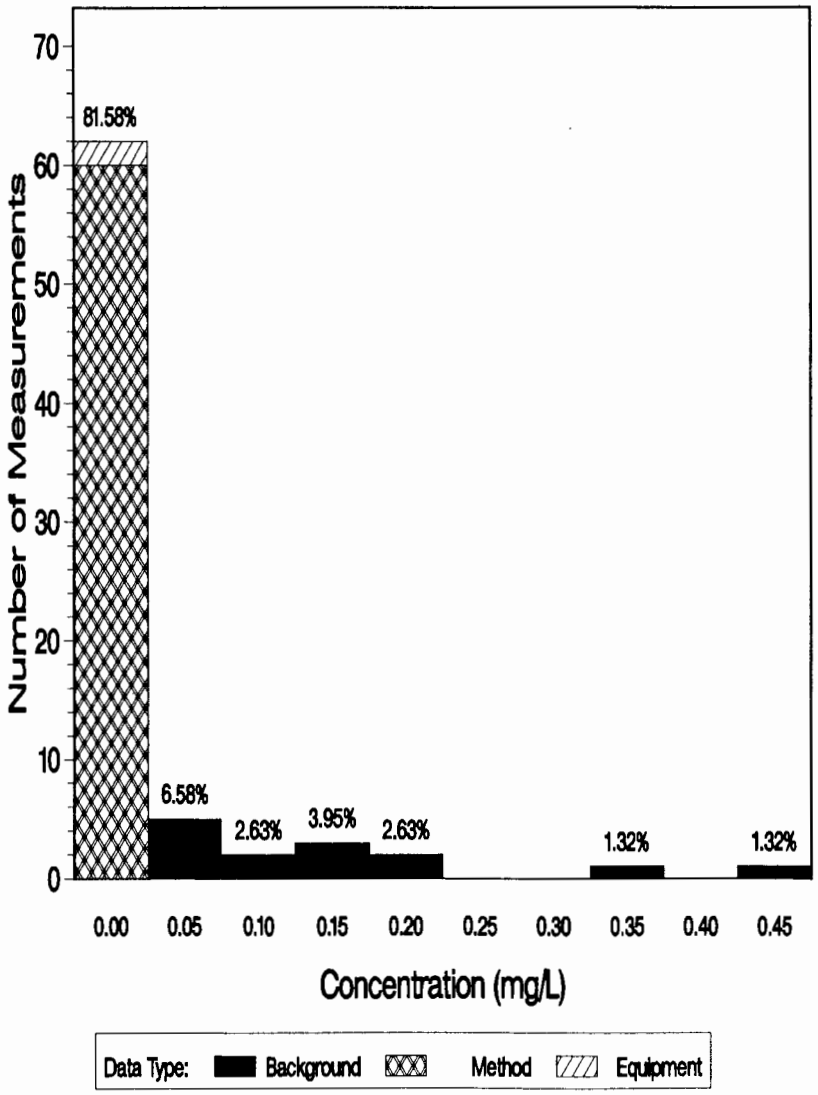


Arsenic -- SW7060
Groundwater -- Total

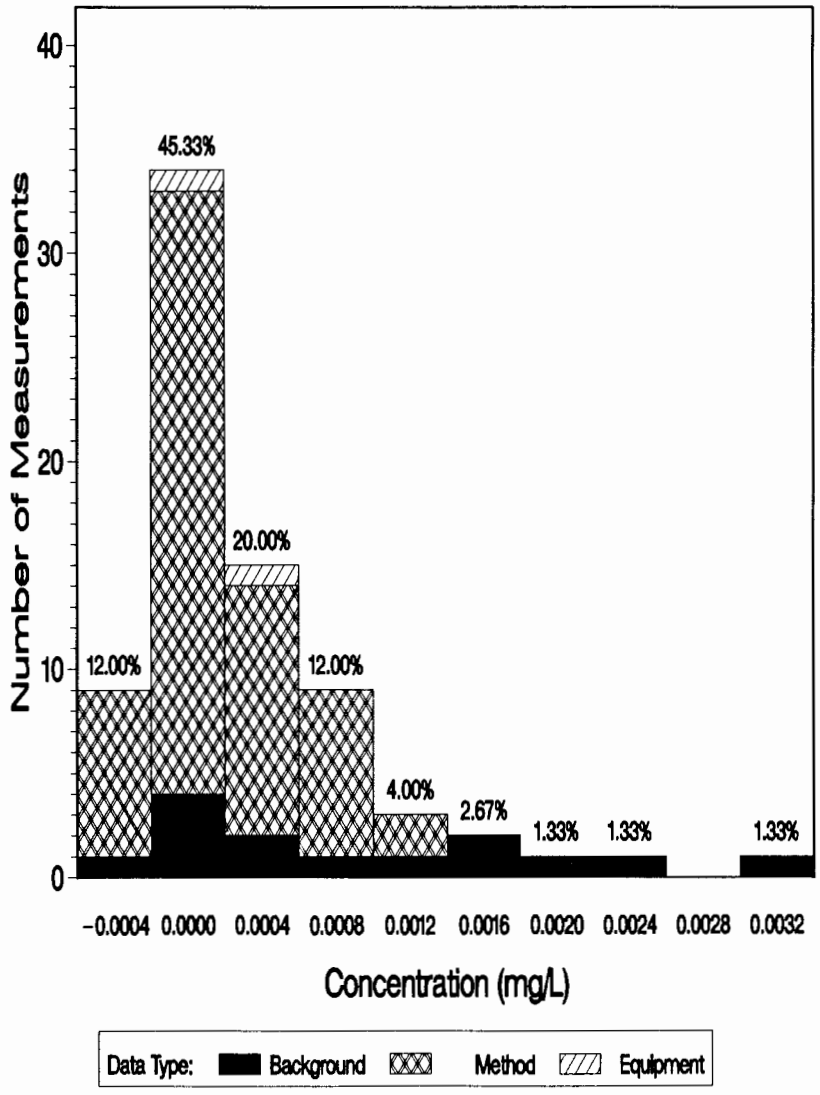


Holloman AFB Background Data
Frequency Distribution

Barium -- SW6010
Groundwater -- Total

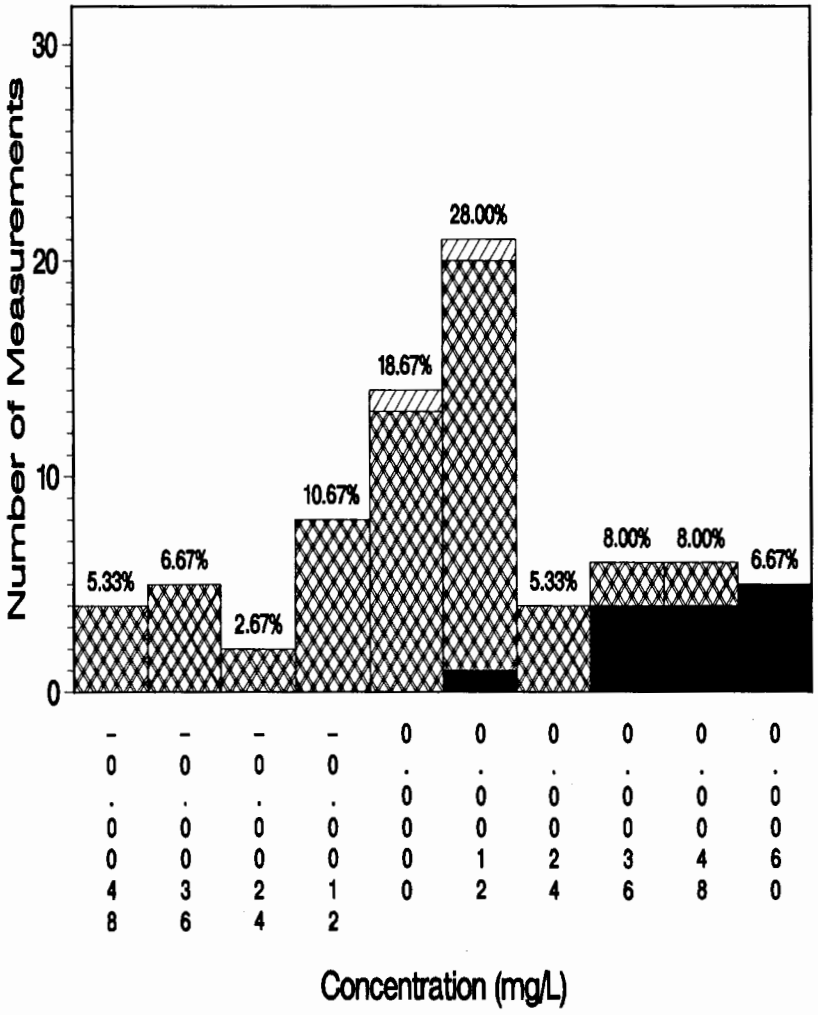


Beryllium -- SW6010
Groundwater -- Total



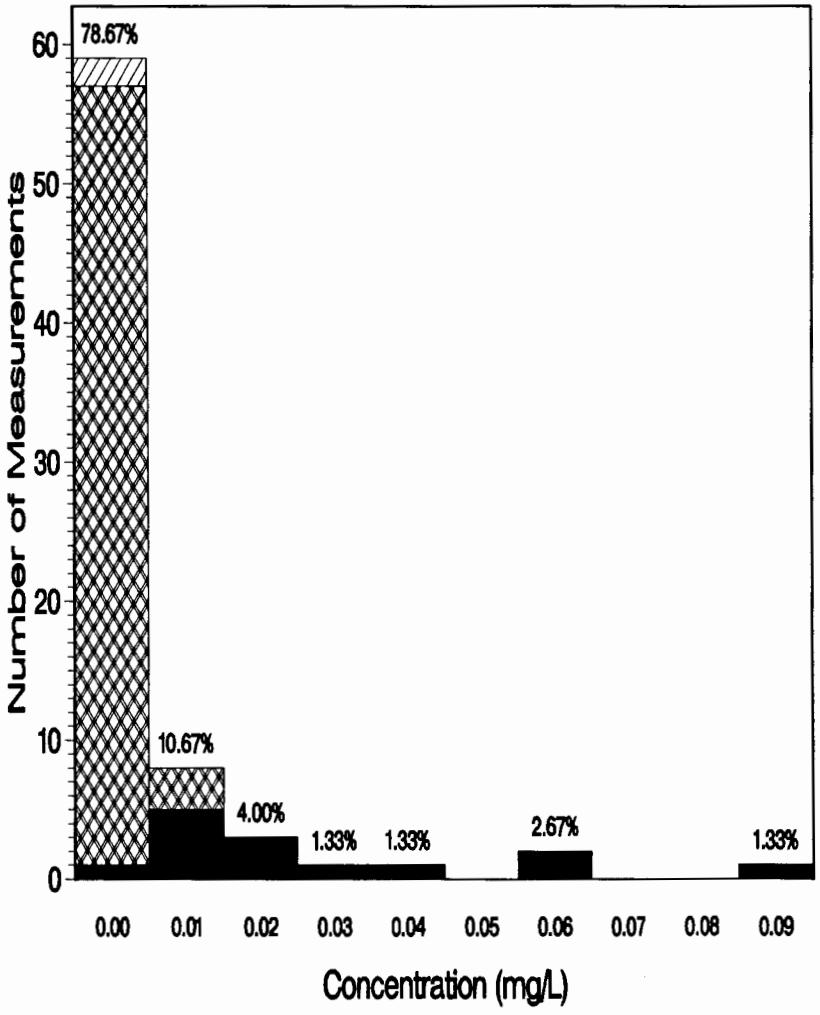
Holloman AFB Background Data
Frequency Distribution

Cadmium -- SW6010
Groundwater -- Total



Data Type: Background Method Equipment

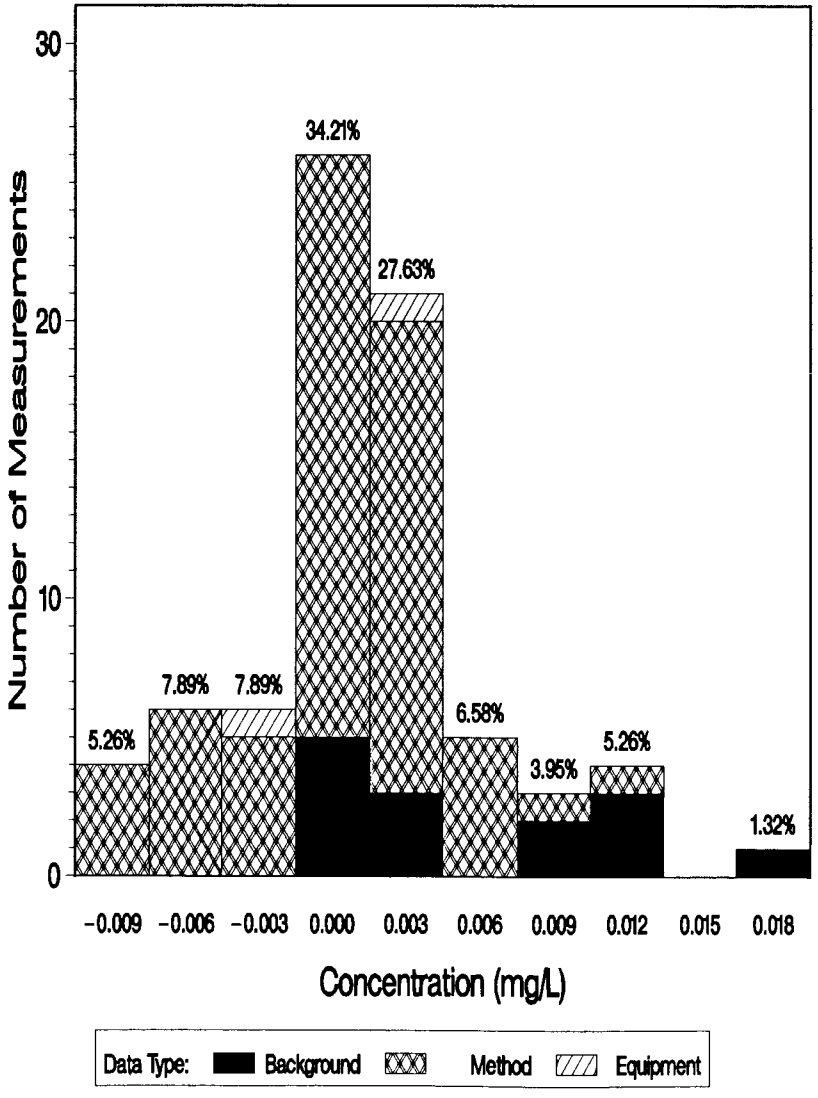
Chromium -- SW6010
Groundwater -- Total



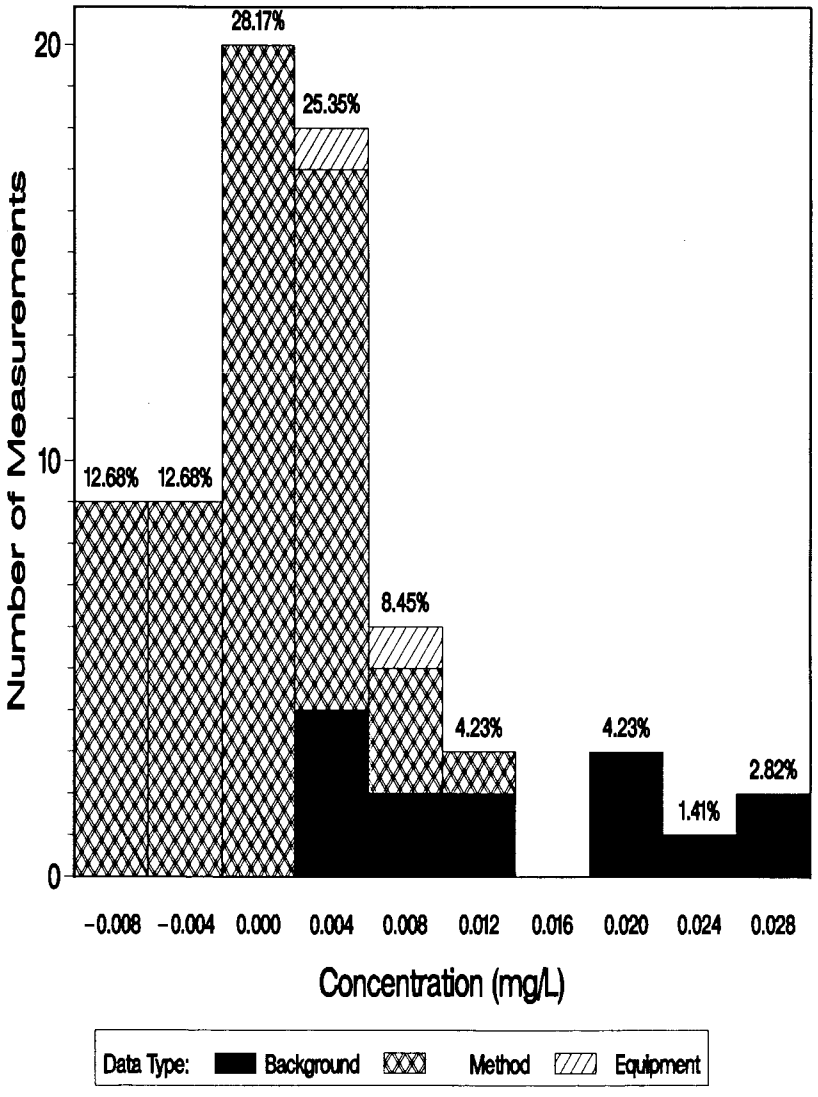
Data Type: Background Method Equipment

Holloman AFB Background Data
Frequency Distribution

Cobalt -- SW6010
Groundwater -- Total

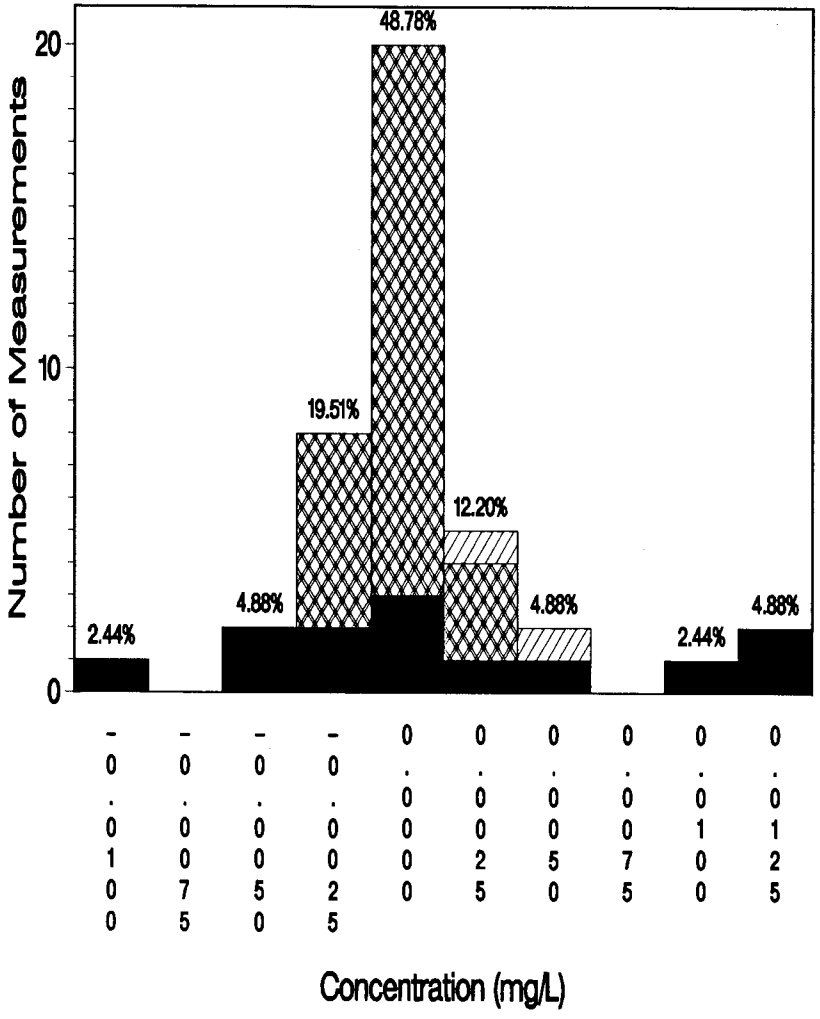


Copper -- SW6010
Groundwater -- Total



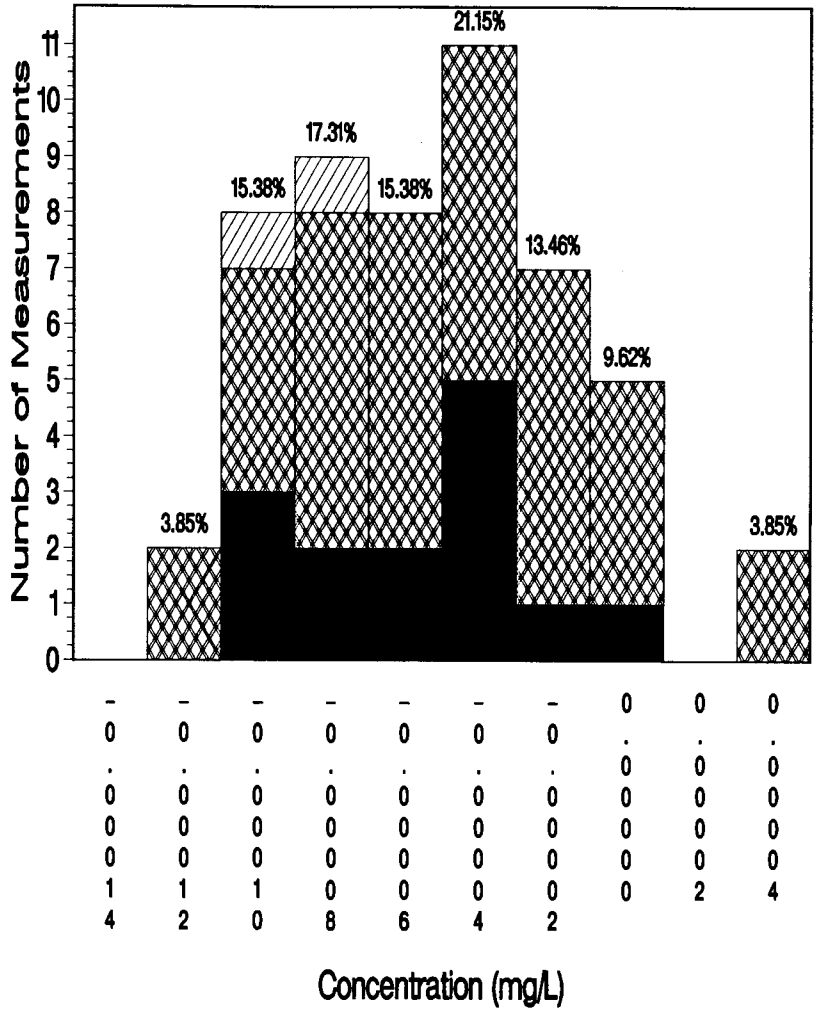
Holloman AFB Background Data
Frequency Distribution

Lead -- SW7421
Groundwater -- Total



Data Type: Background Method Equipment

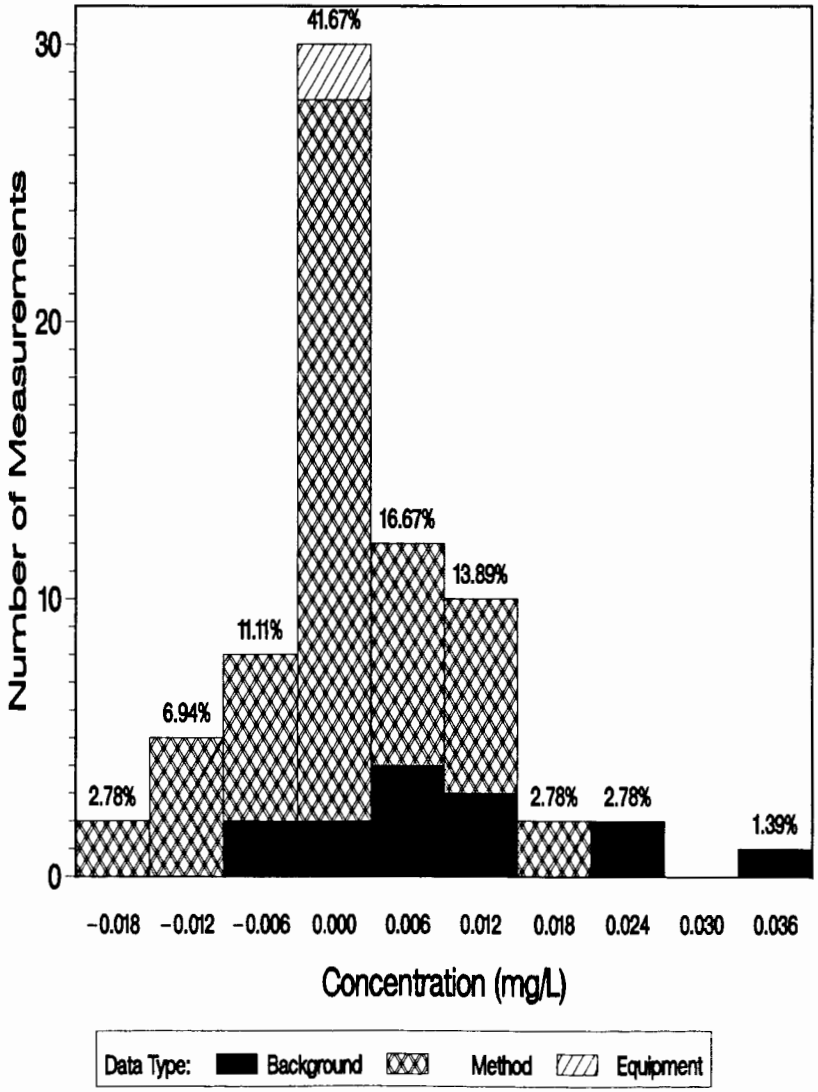
Mercury -- SW7470
Groundwater -- Total



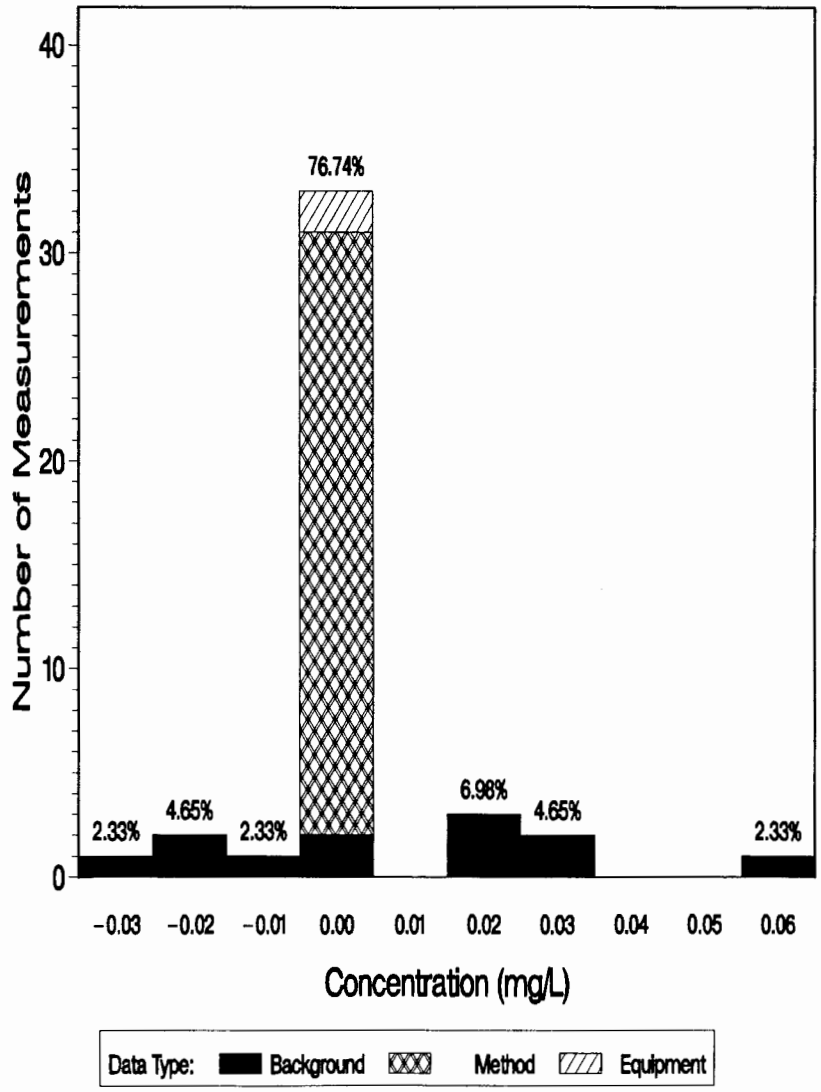
Data Type: Background Method Equipment

Holloman AFB Background Data
Frequency Distribution

Nickel -- SW6010
Groundwater -- Total

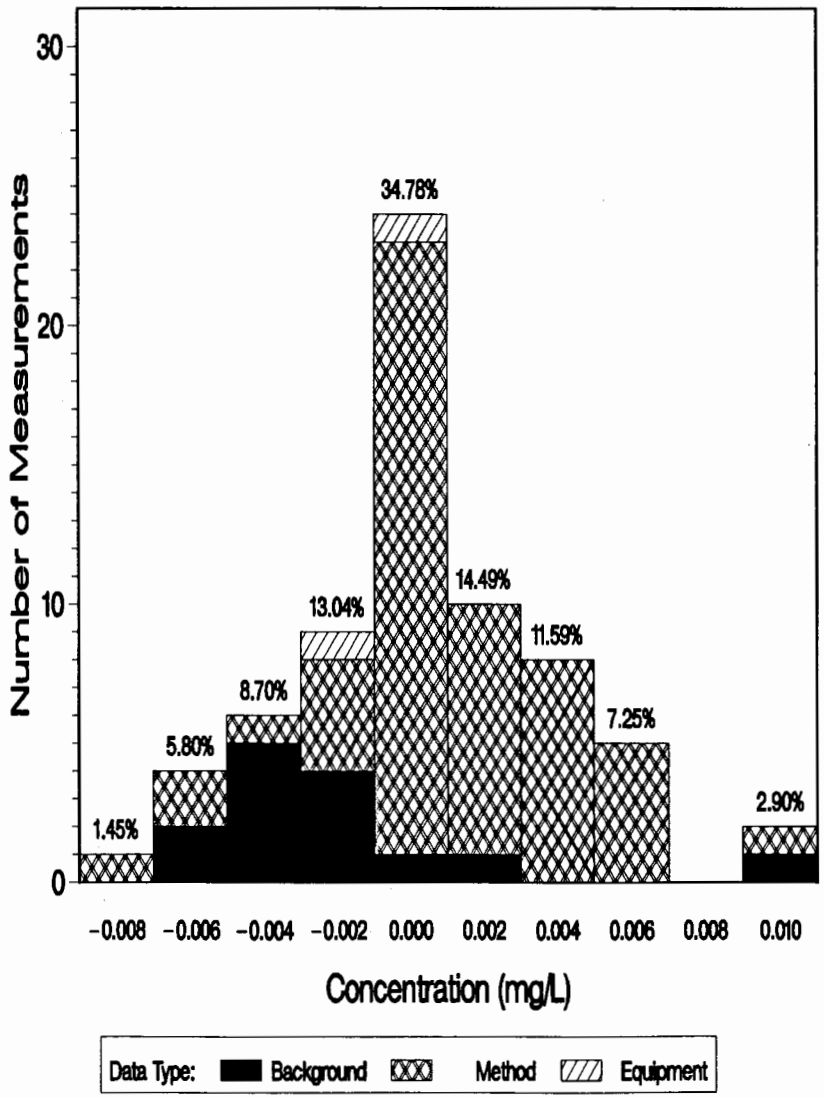


Selenium -- SW7740
Groundwater -- Total

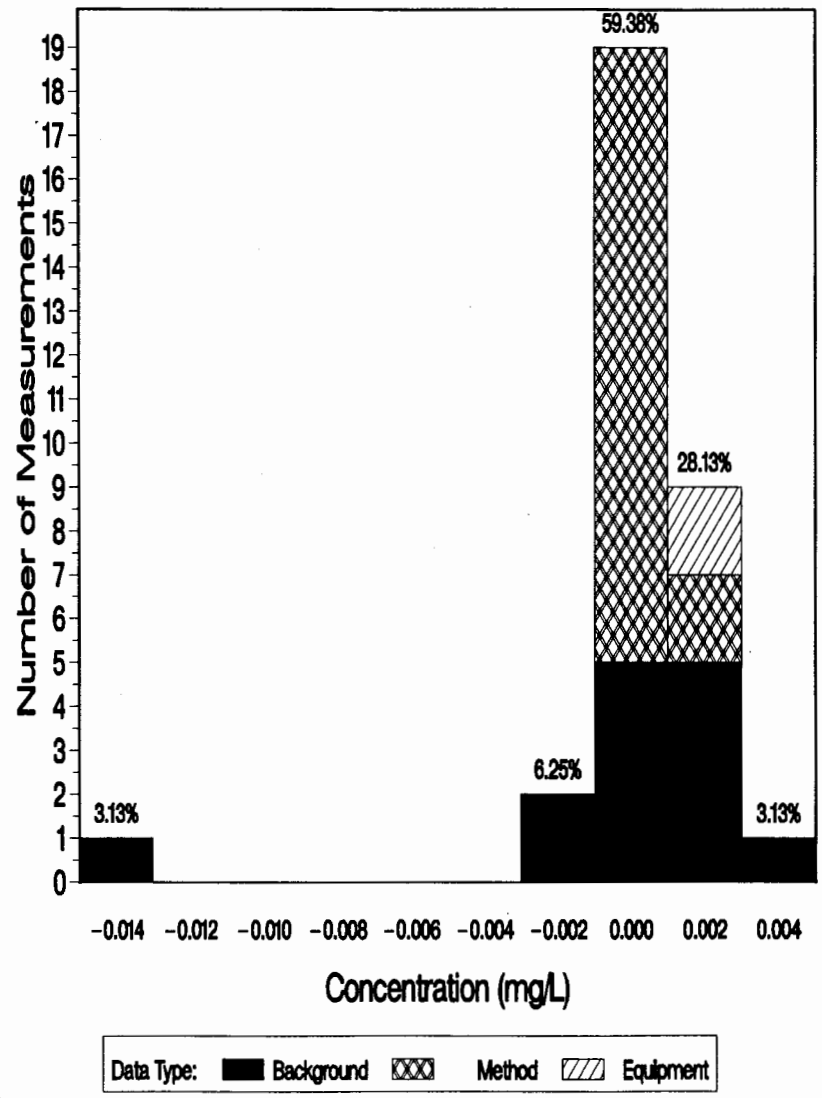


Holloman AFB Background Data
Frequency Distribution

Silver -- SW6010
Groundwater -- Total

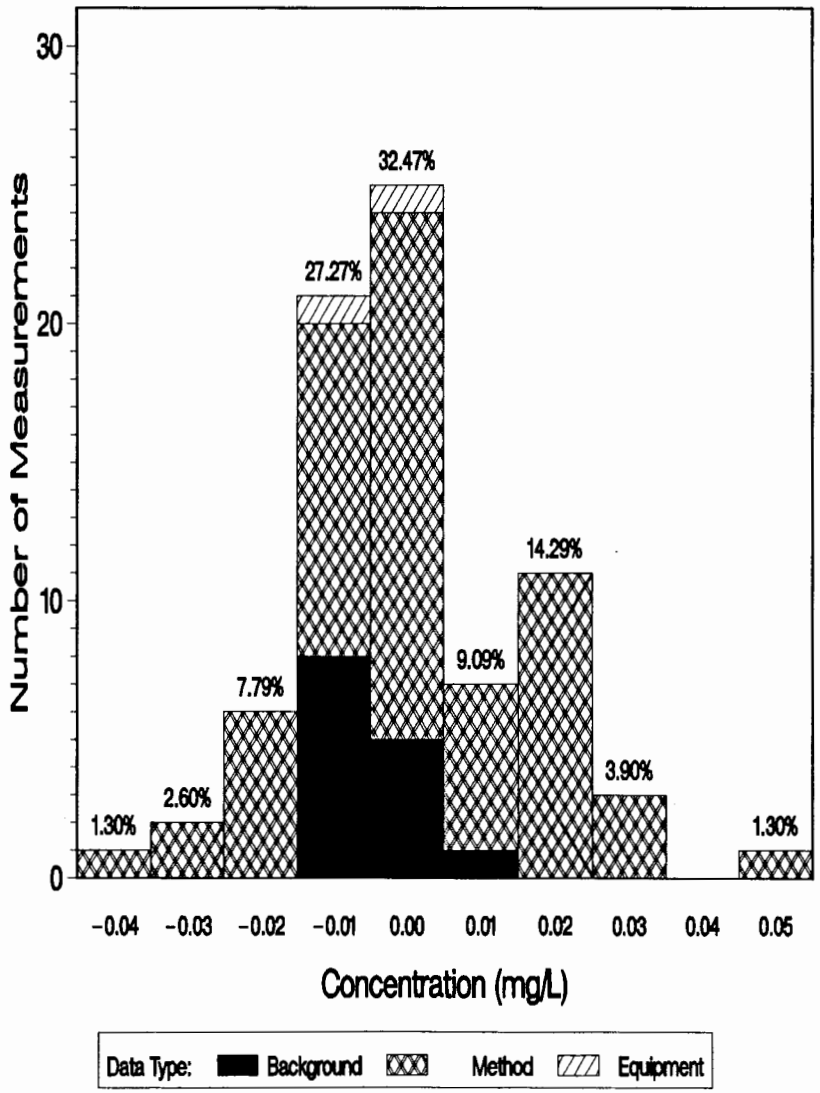


Thallium -- SW7841
Groundwater -- Total

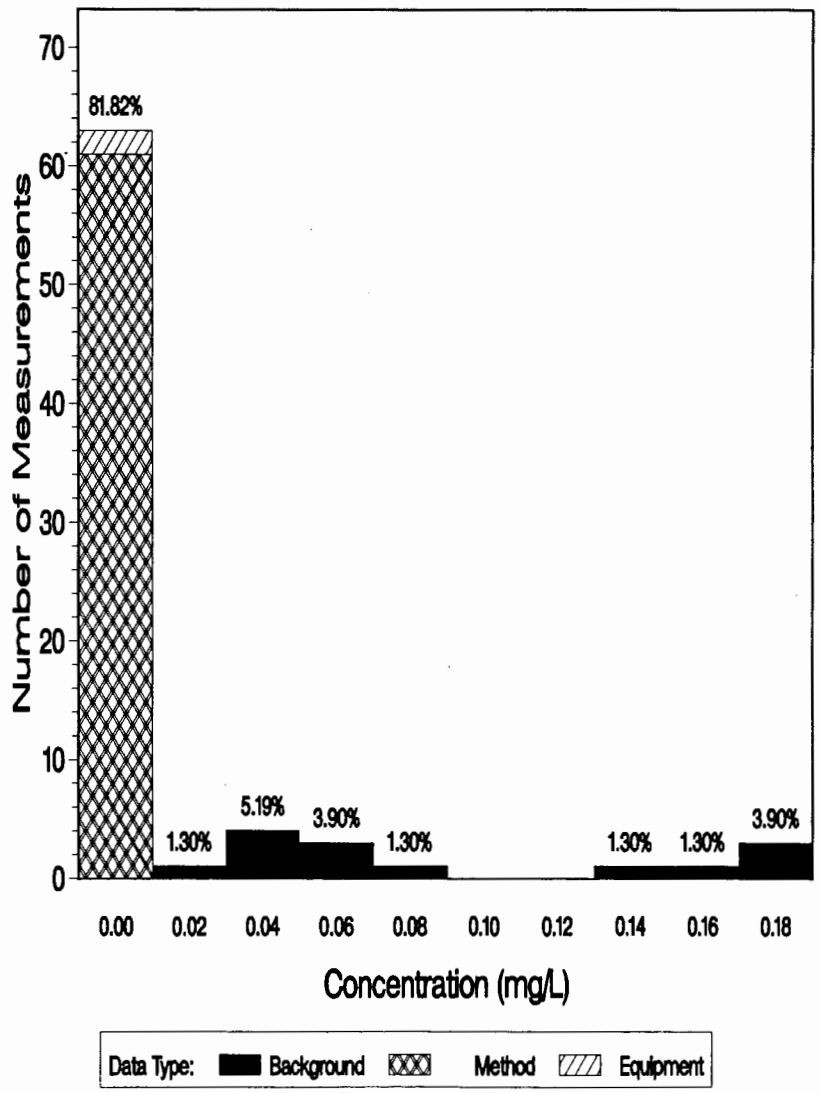


Holloman AFB Background Data
Frequency Distribution

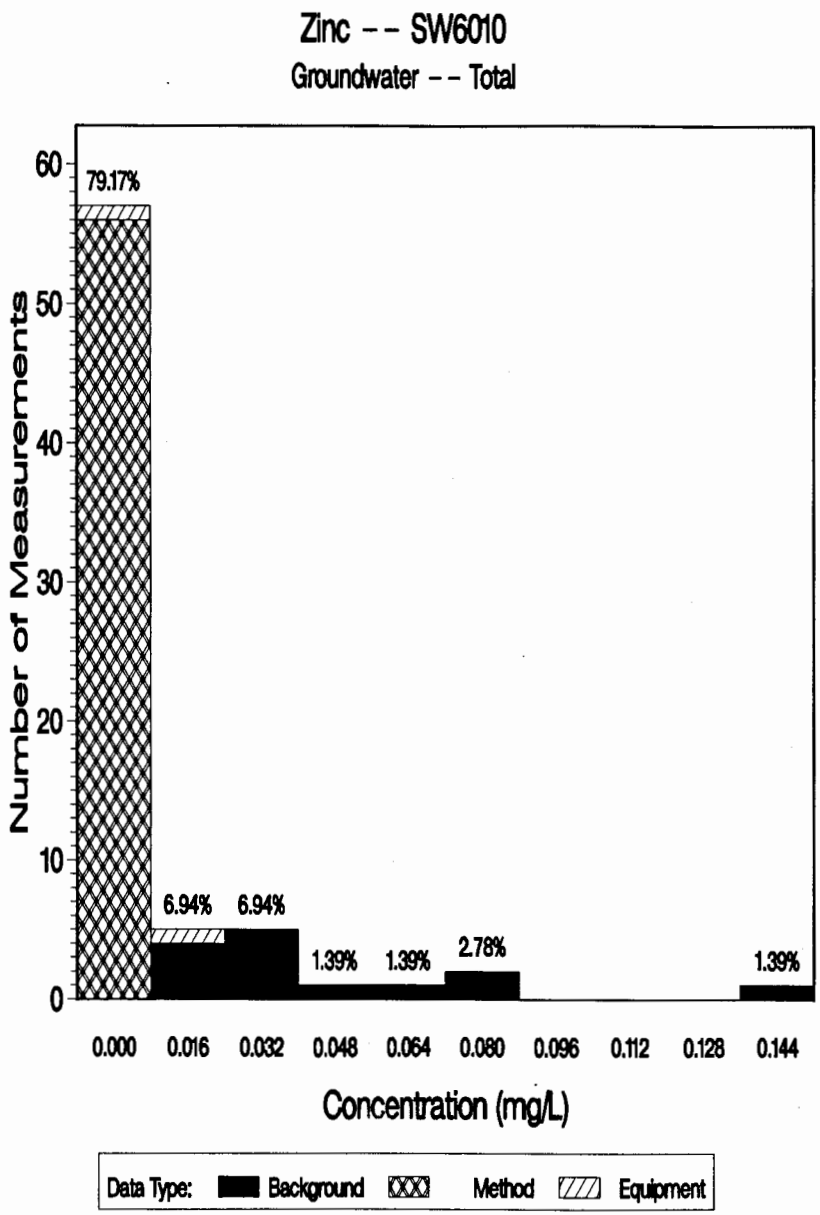
Tin -- SW6010
Groundwater -- Total



Vanadium -- SW6010
Groundwater -- Total

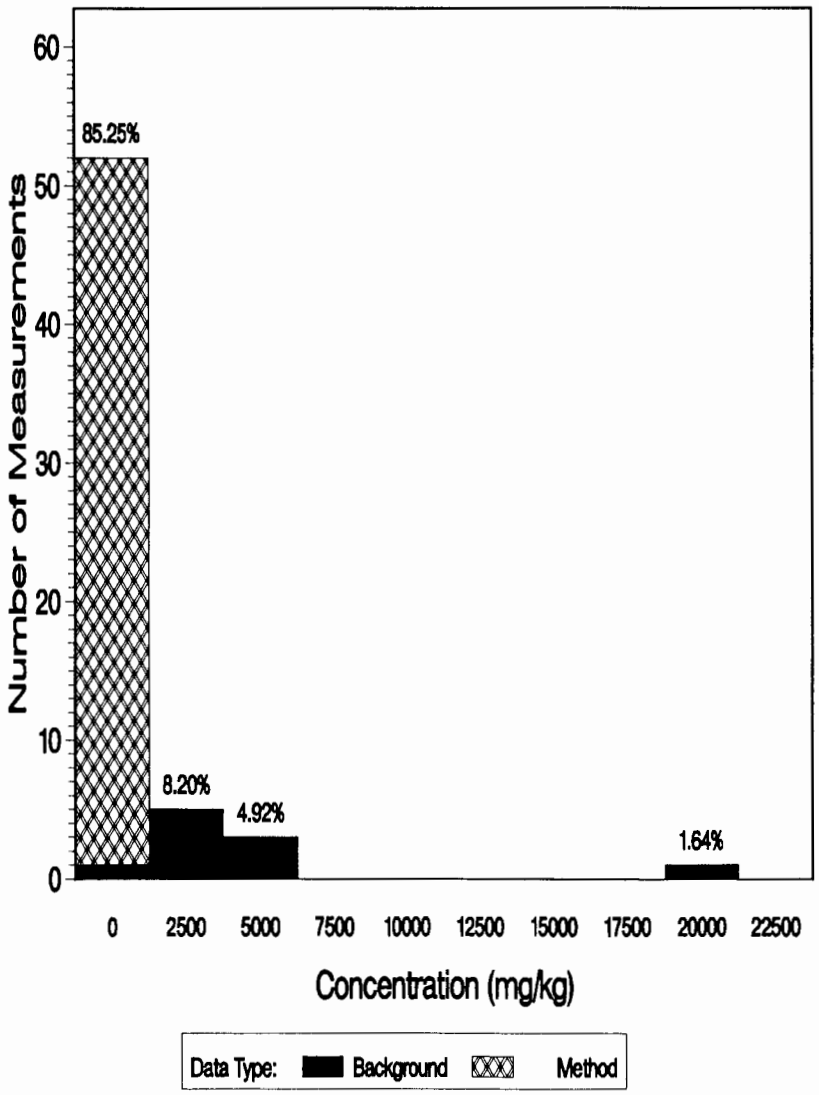


Holloman AFB Background Data
Frequency Distribution

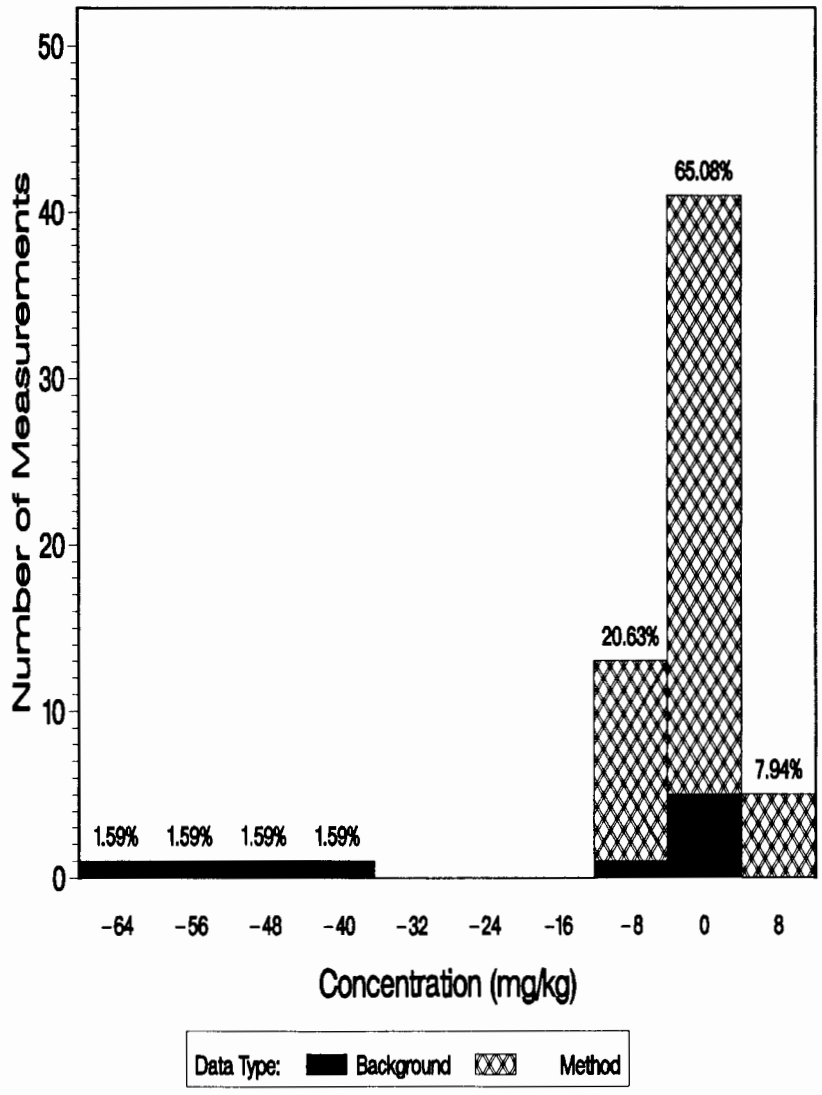


Holloman AFB Background Data
Frequency Distribution

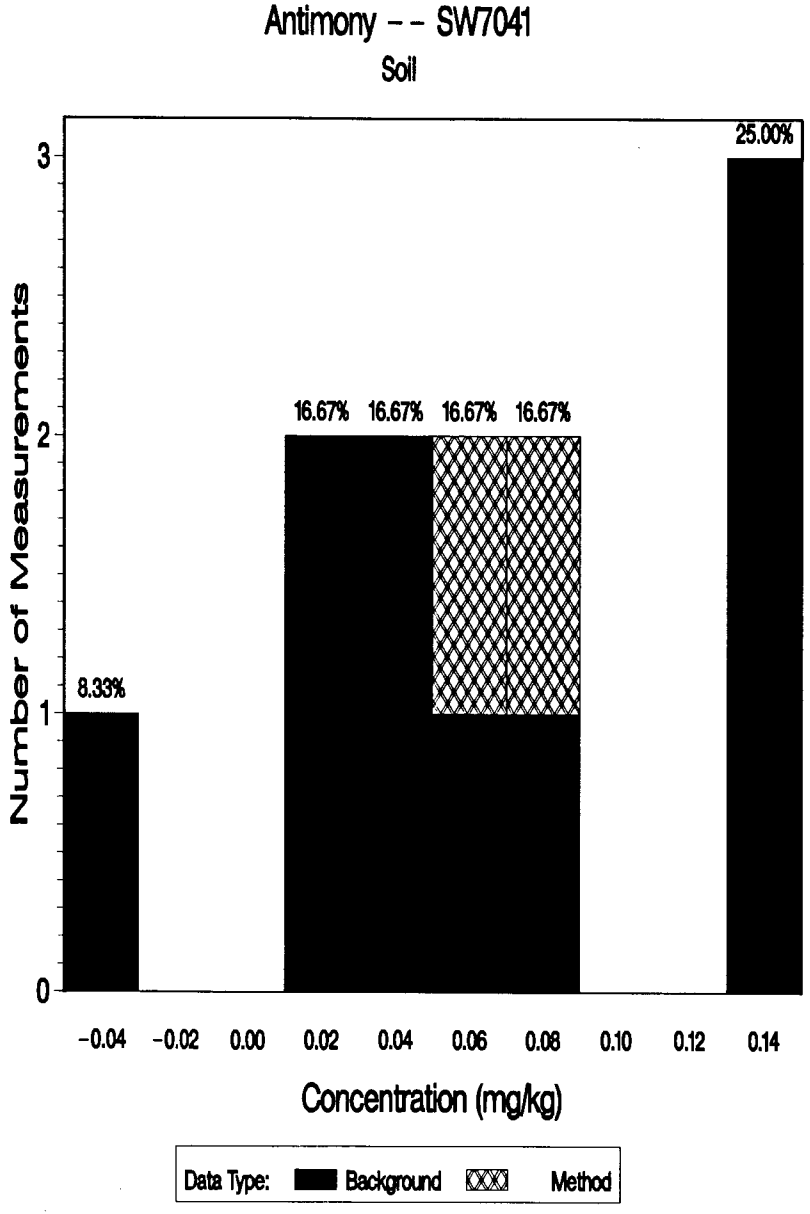
Aluminum -- SW6010
Soil

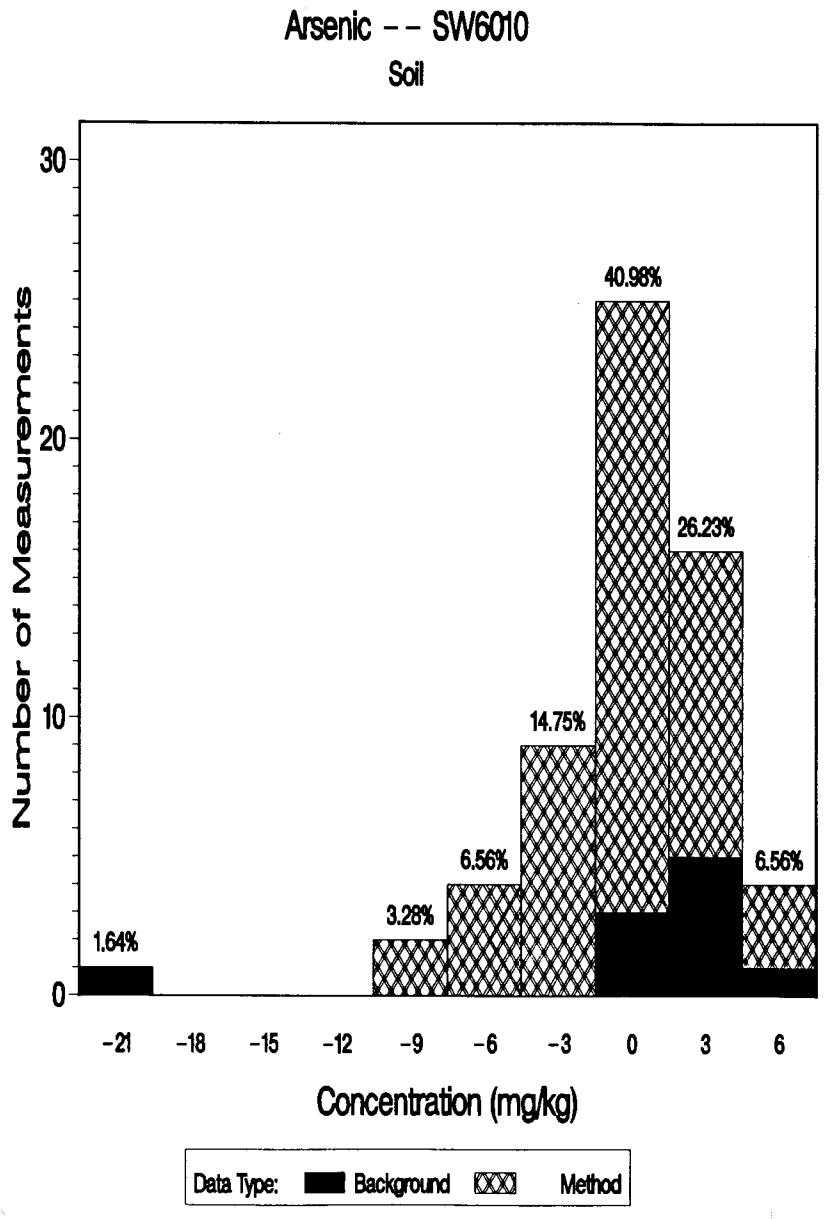


Antimony -- SW6010
Soil



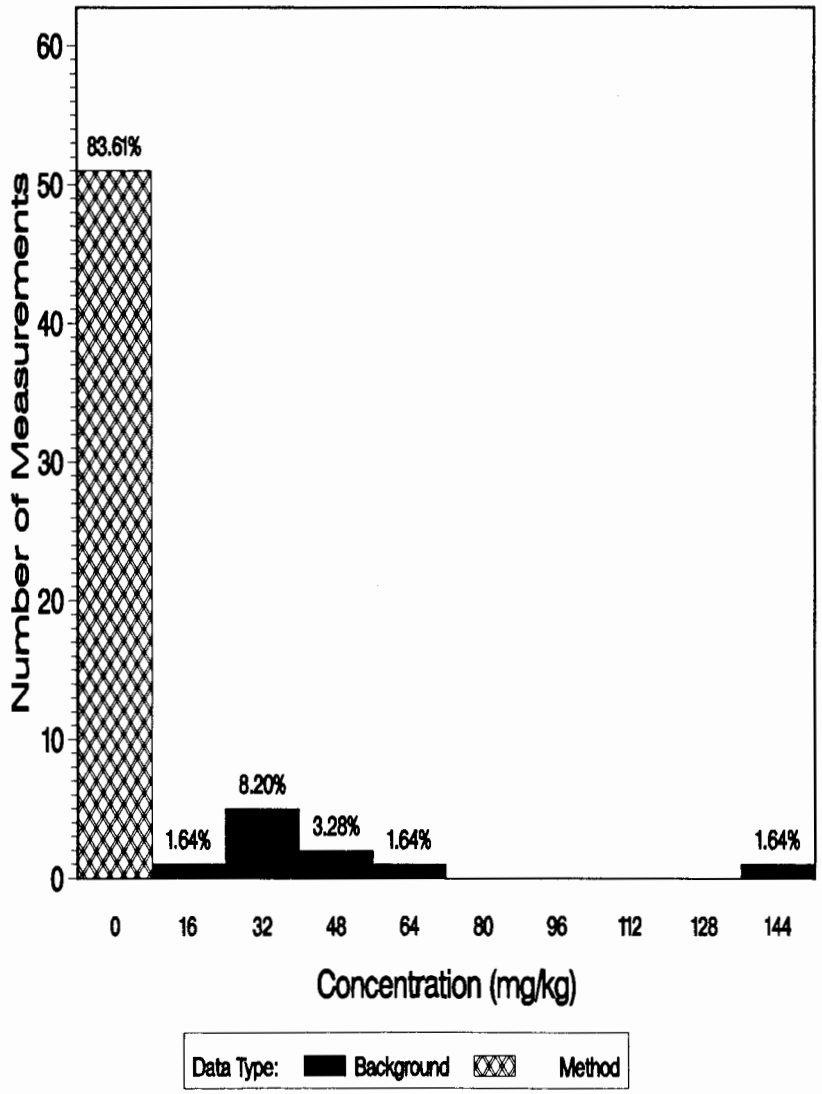
Holloman AFB Background Data
Frequency Distribution



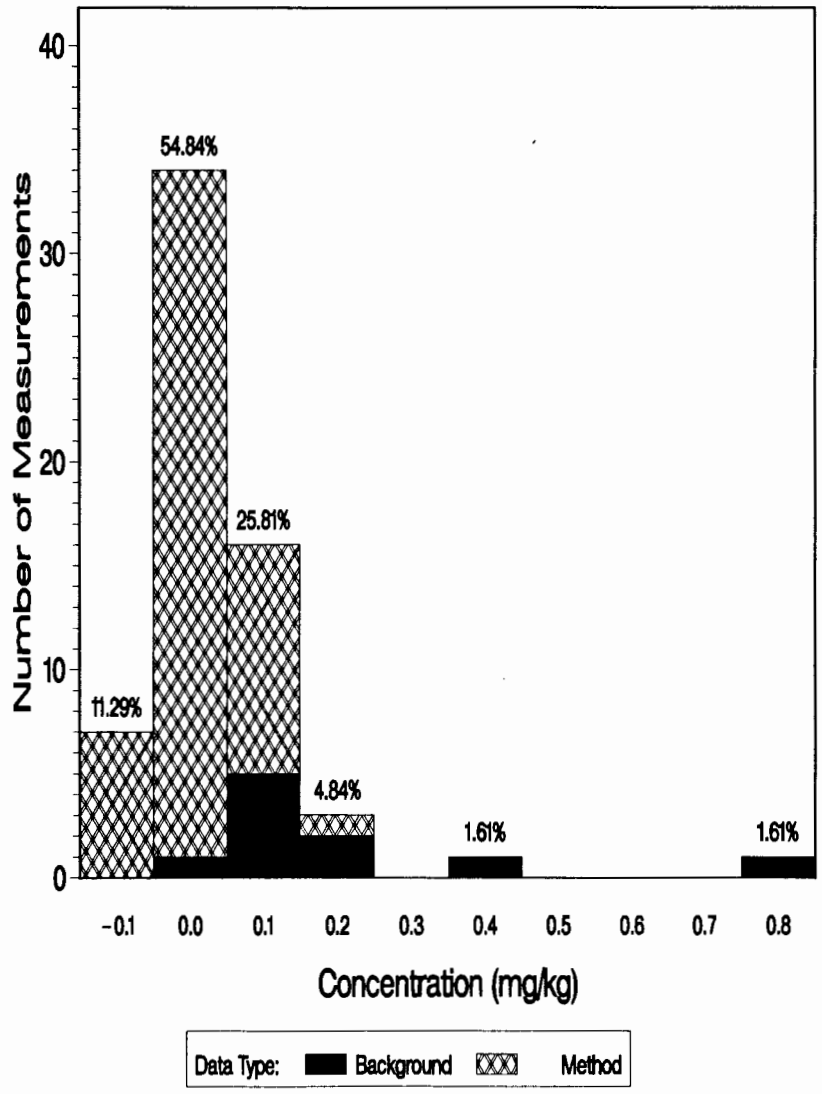


Holloman AFB Background Data
Frequency Distribution

Barium -- SW6010
Soil

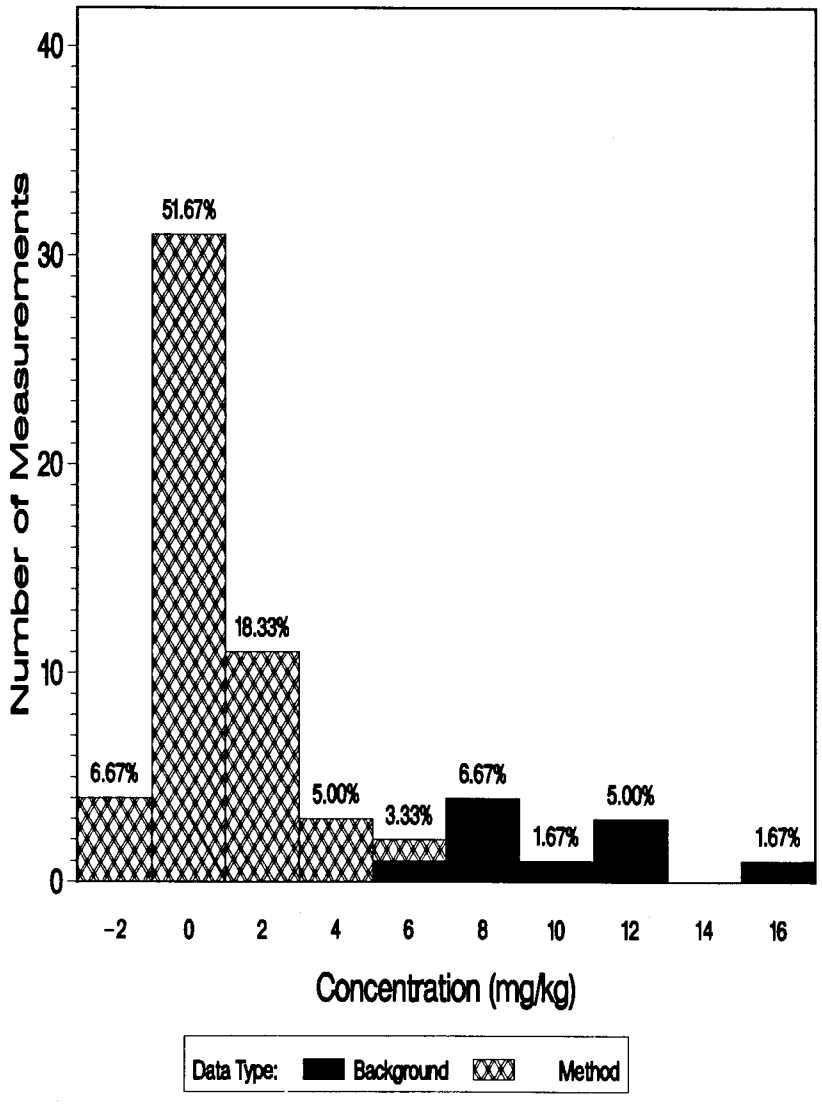


Beryllium -- SW6010
Soil

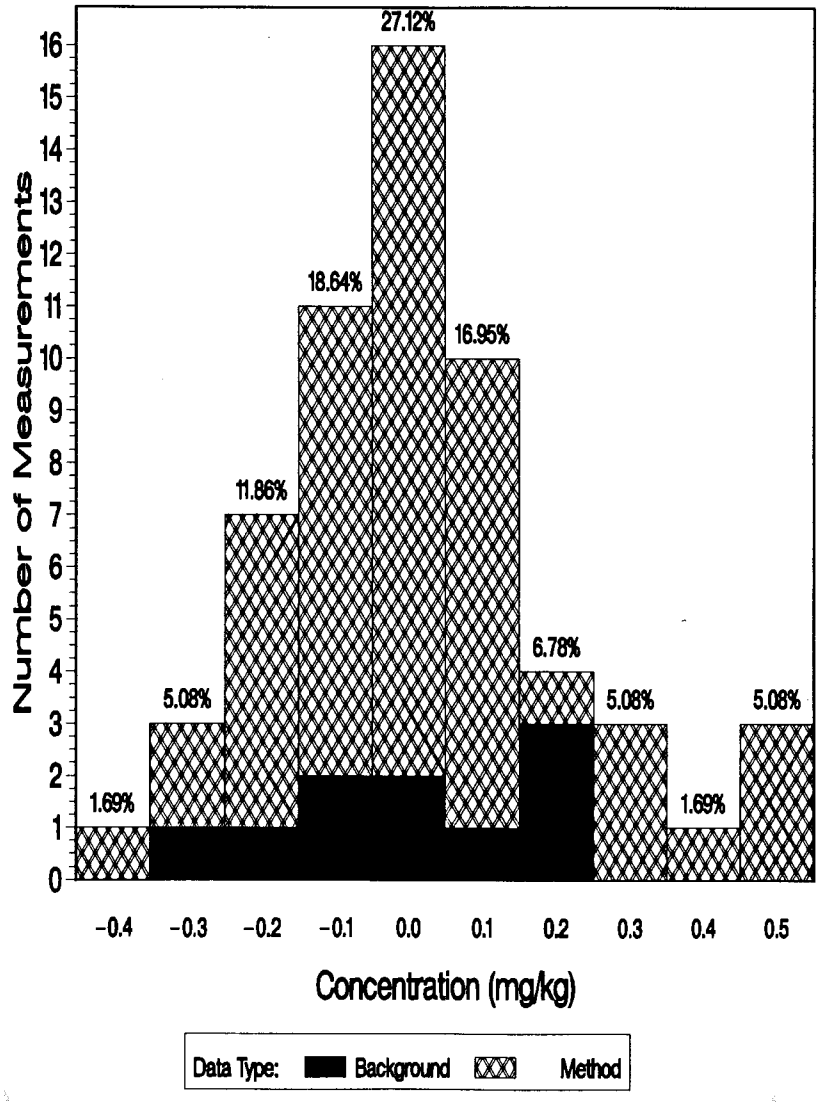


Holloman AFB Background Data
Frequency Distribution

Boron -- SW6010
Soil

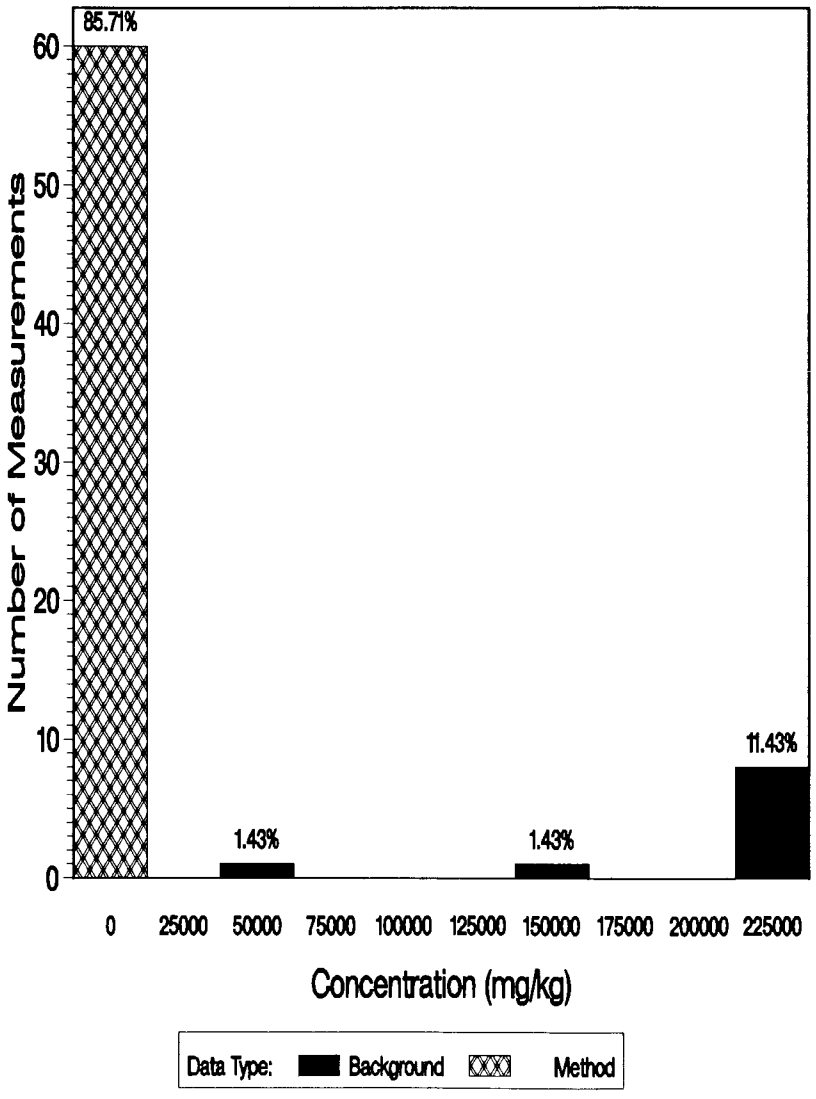


Cadmium -- SW6010
Soil

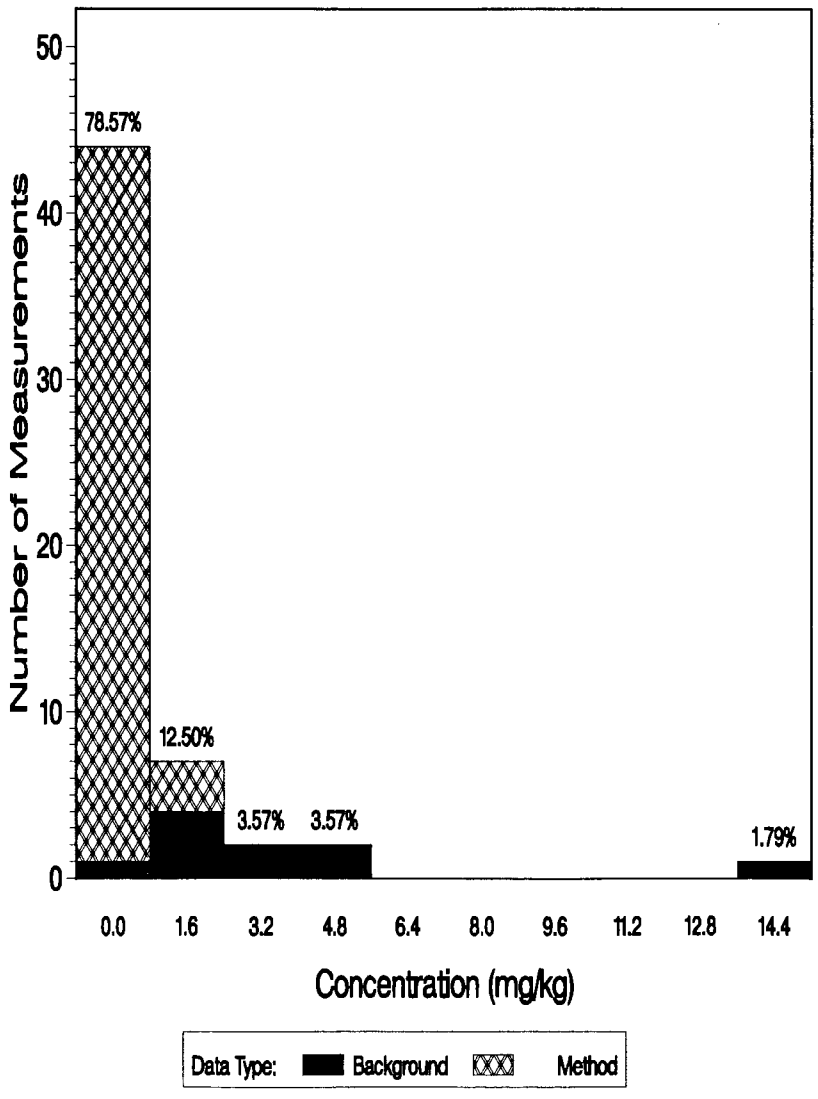


Holloman AFB Background Data
Frequency Distribution

Calcium -- SW6010
Soil

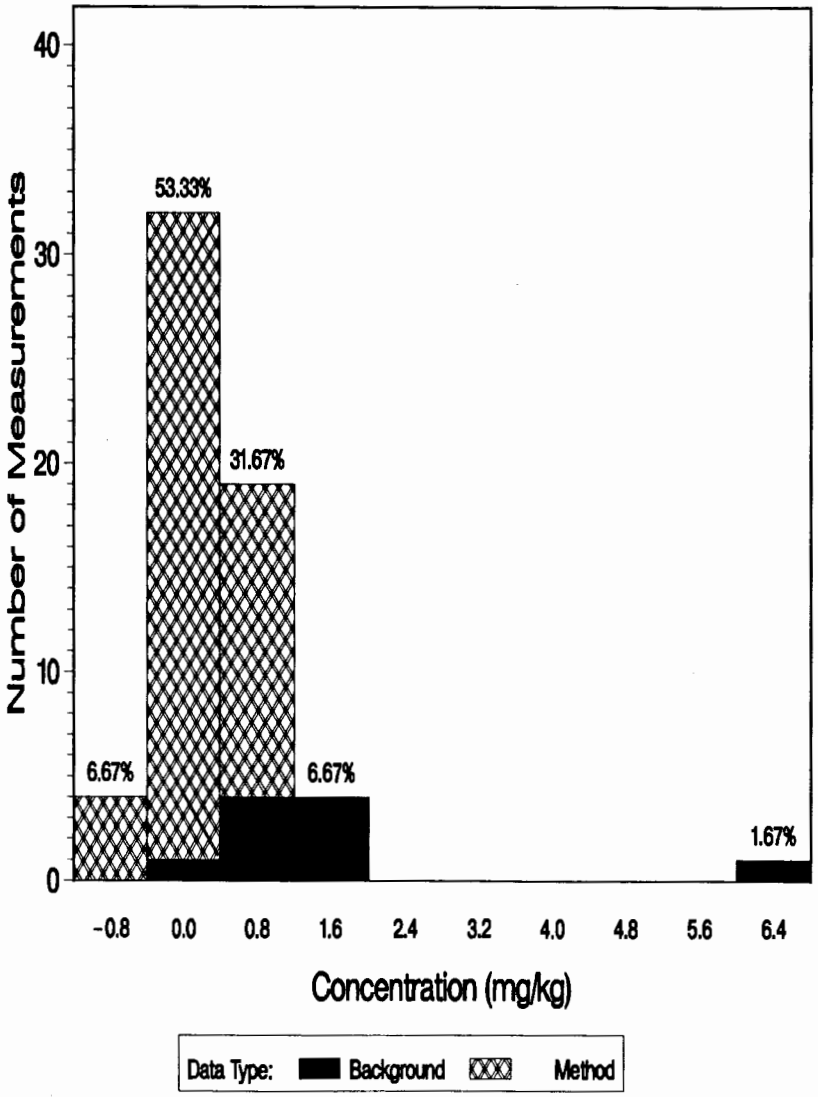


Chromium -- SW6010
Soil

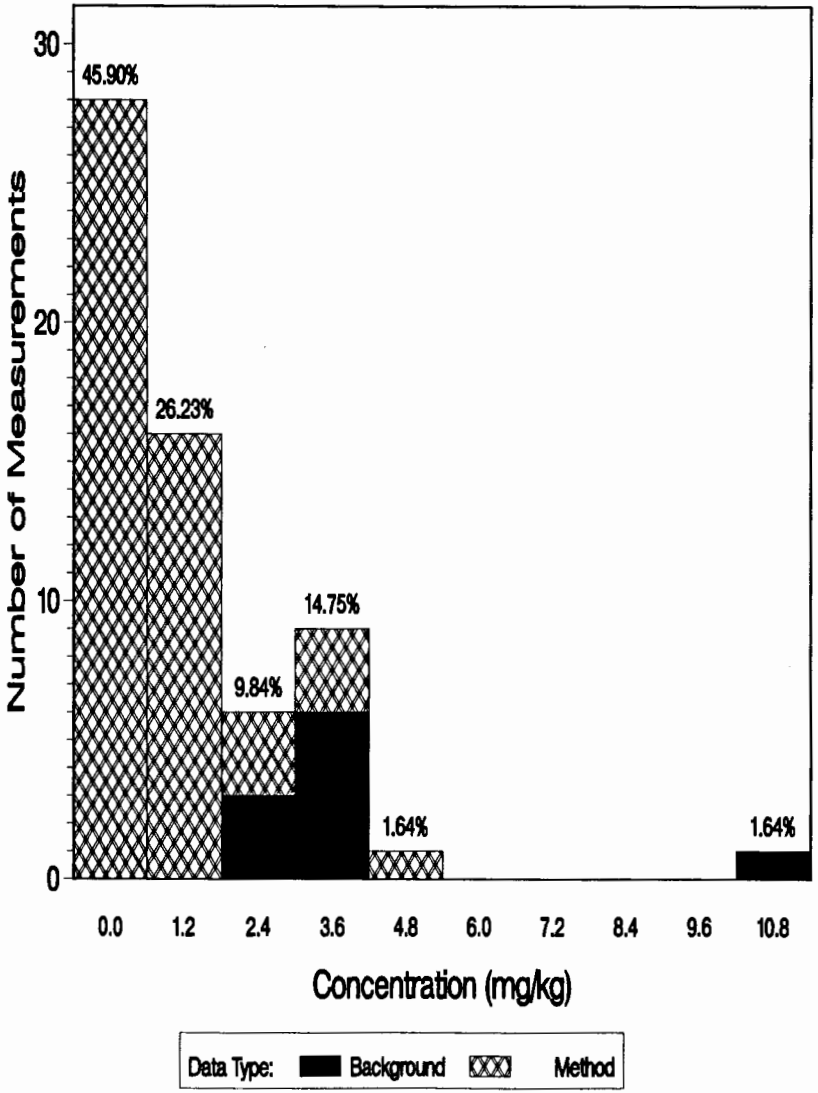


Holloman AFB Background Data
Frequency Distribution

Cobalt -- SW6010
Soil

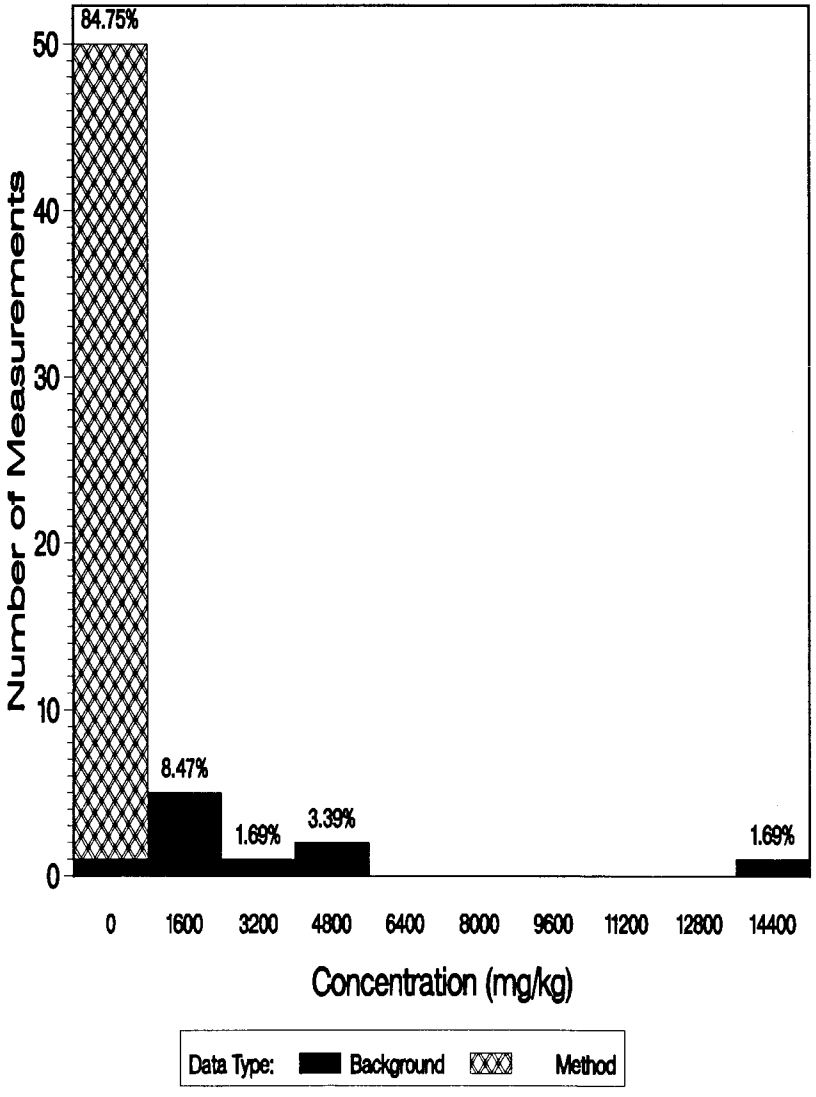


Copper -- SW6010
Soil

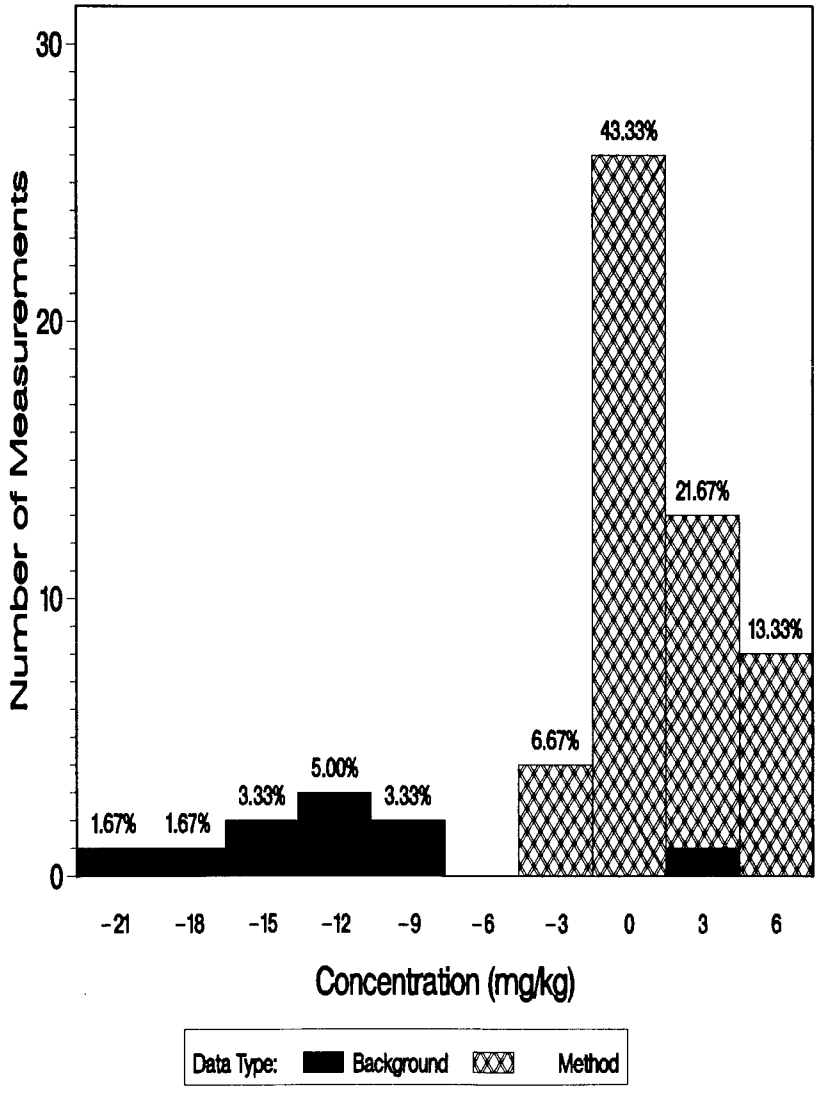


Holloman AFB Background Data
Frequency Distribution

Iron -- SW6010
Soil

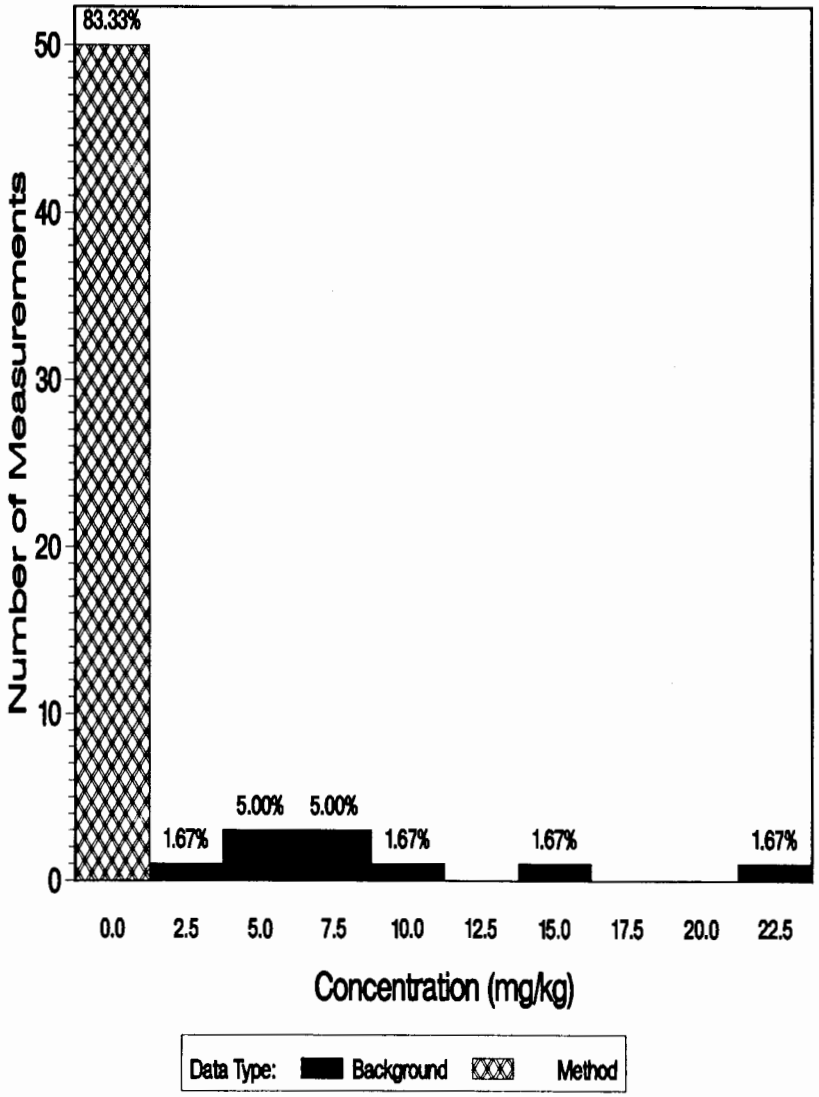


Lead -- SW6010
Soil

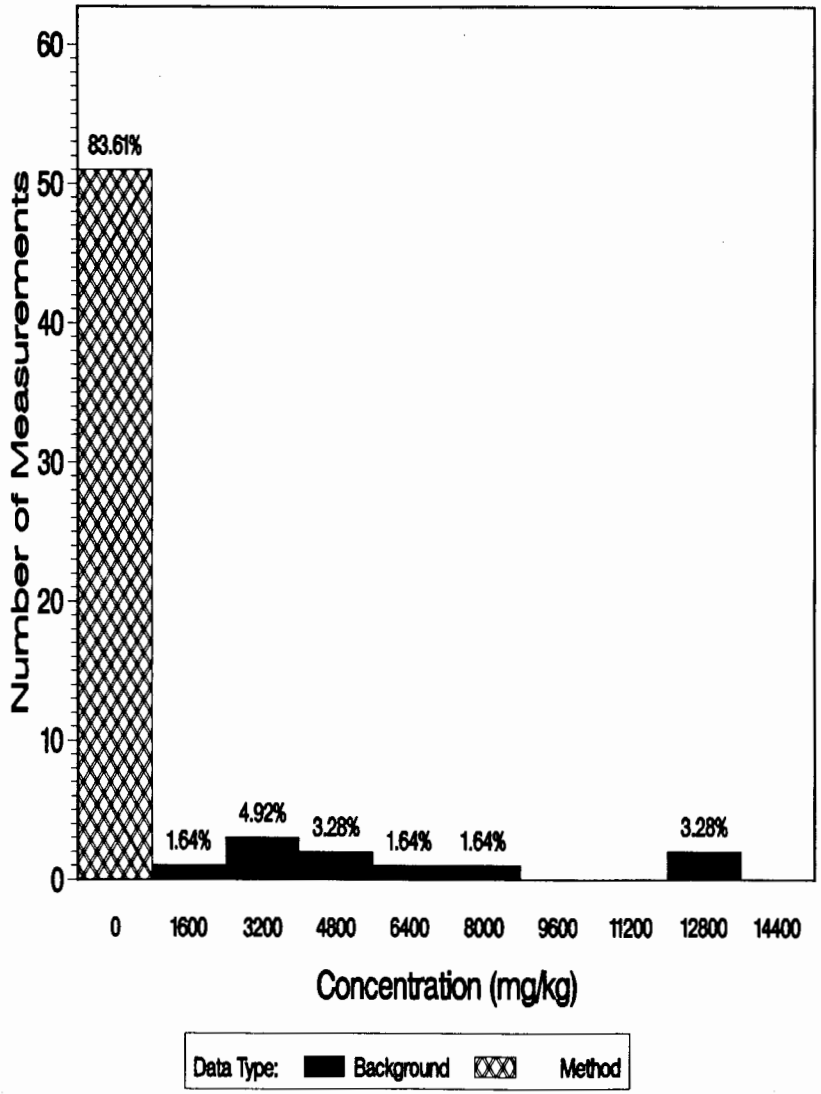


Holloman AFB Background Data
Frequency Distribution

Lithium -- SW6010
Soil

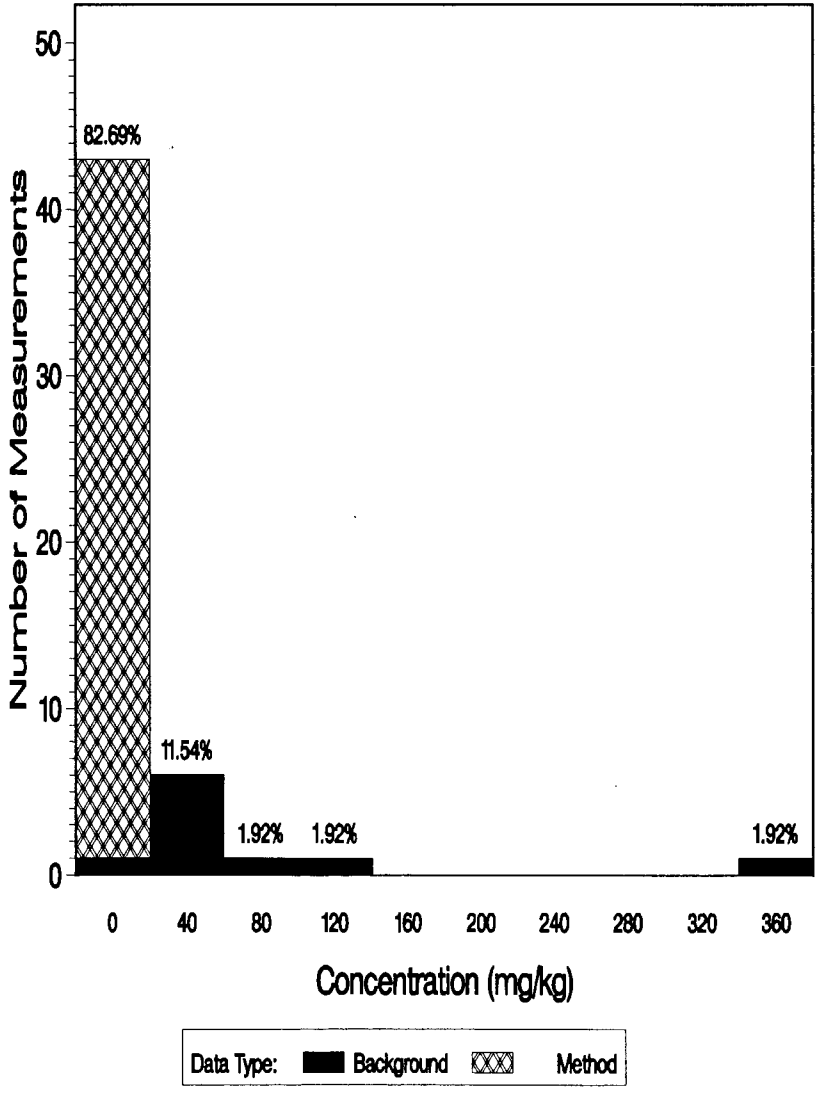


Magnesium -- SW6010
Soil

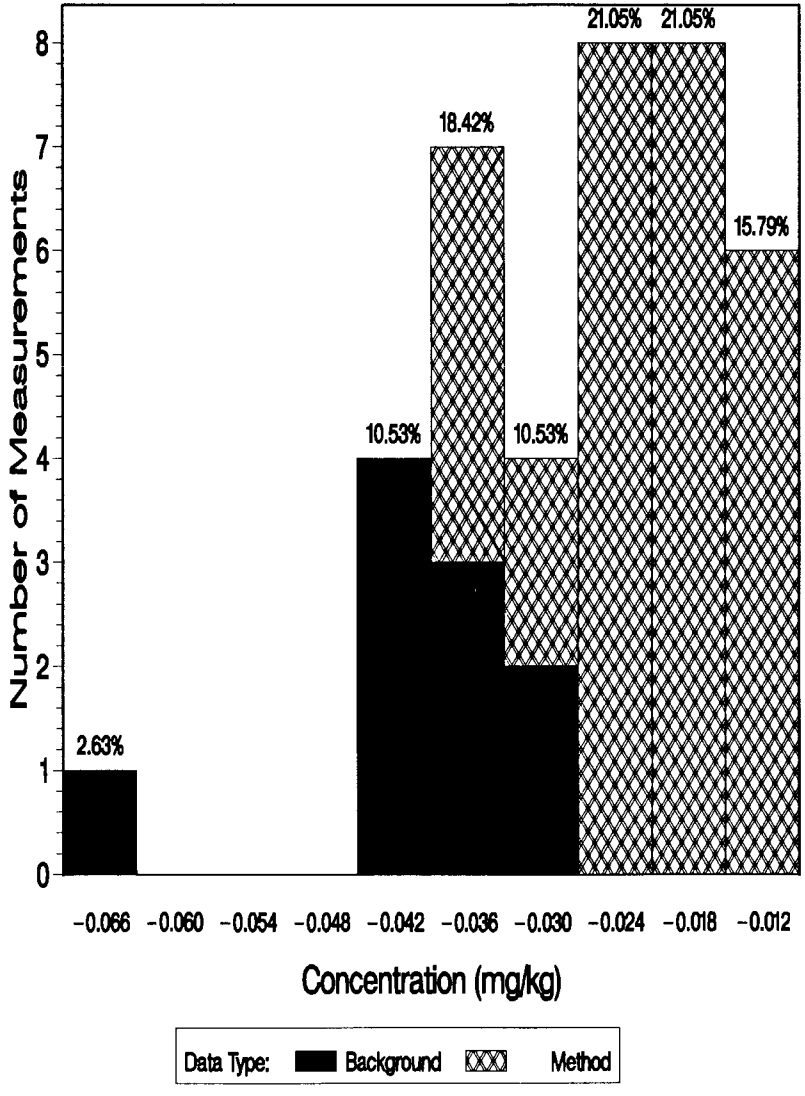


Holloman AFB Background Data
Frequency Distribution

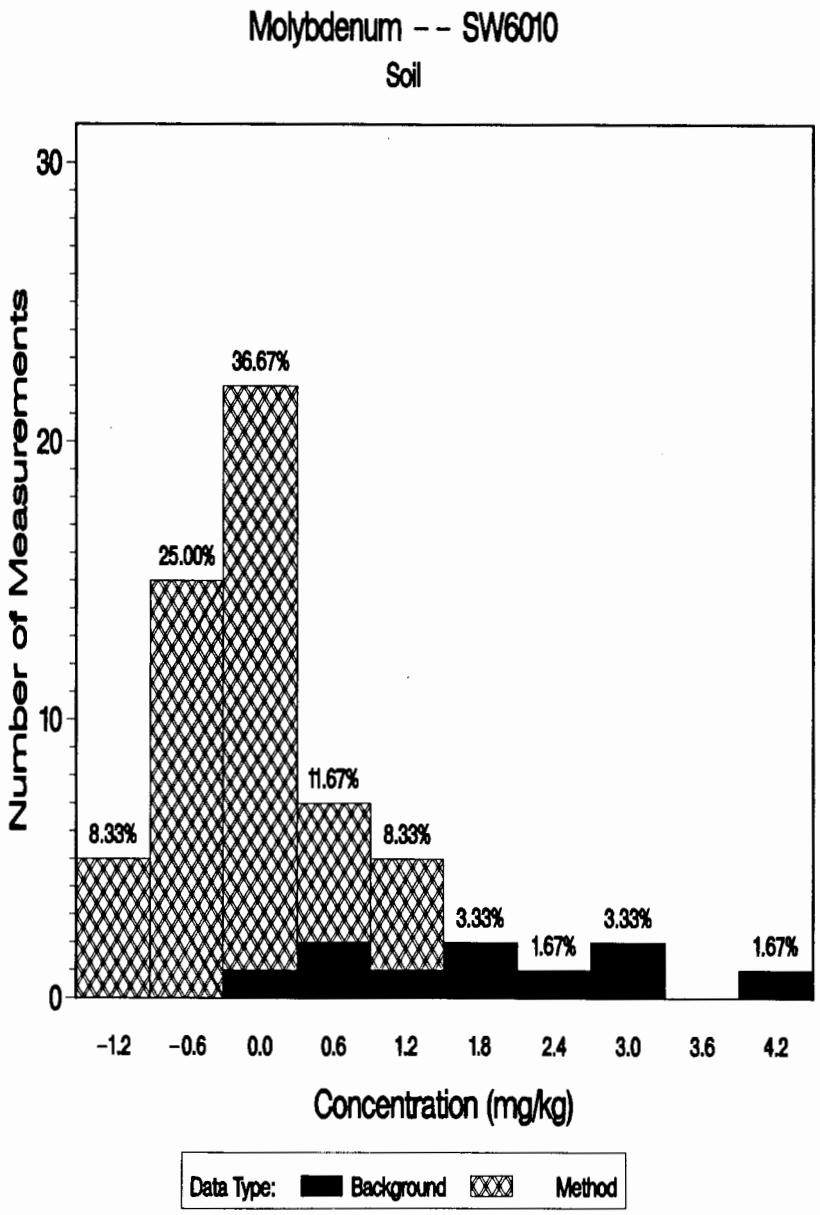
Manganese -- SW6010
Soil

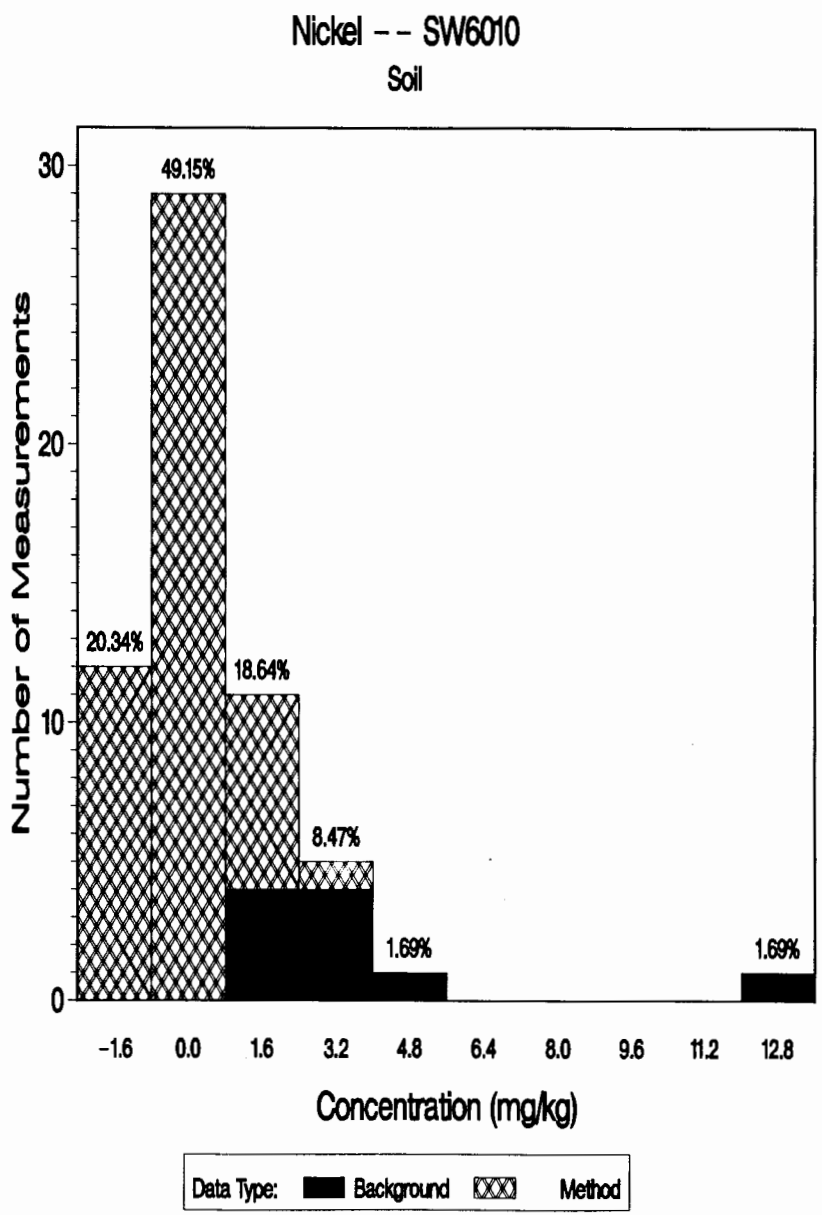


Mercury -- SW7471
Soil

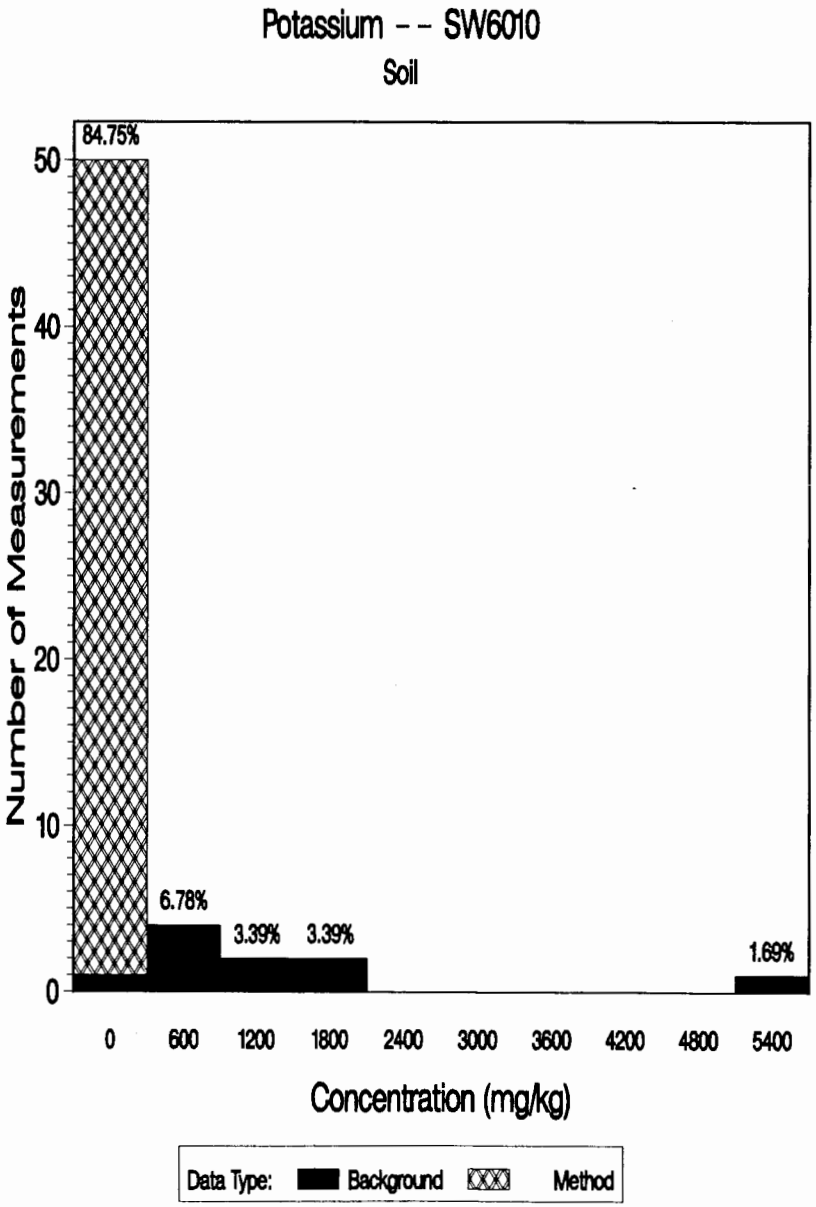


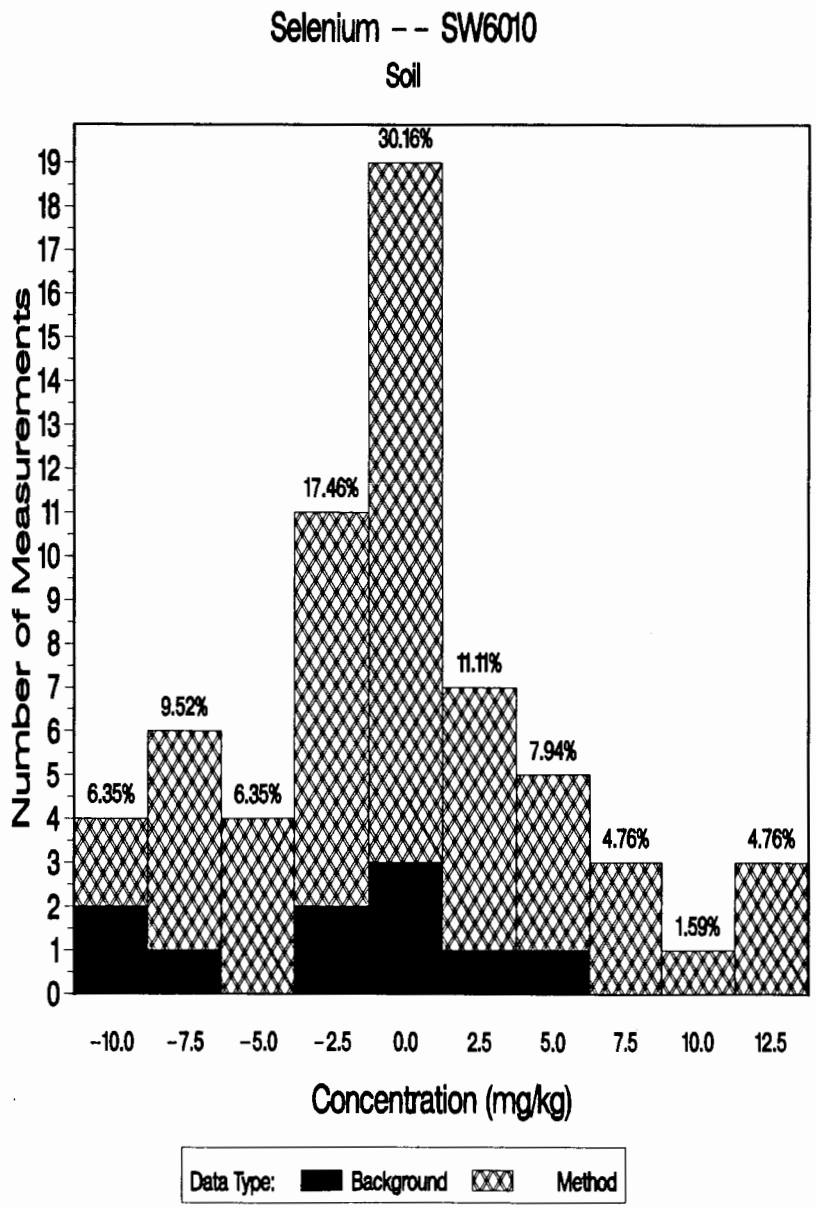
Holloman AFB Background Data
Frequency Distribution





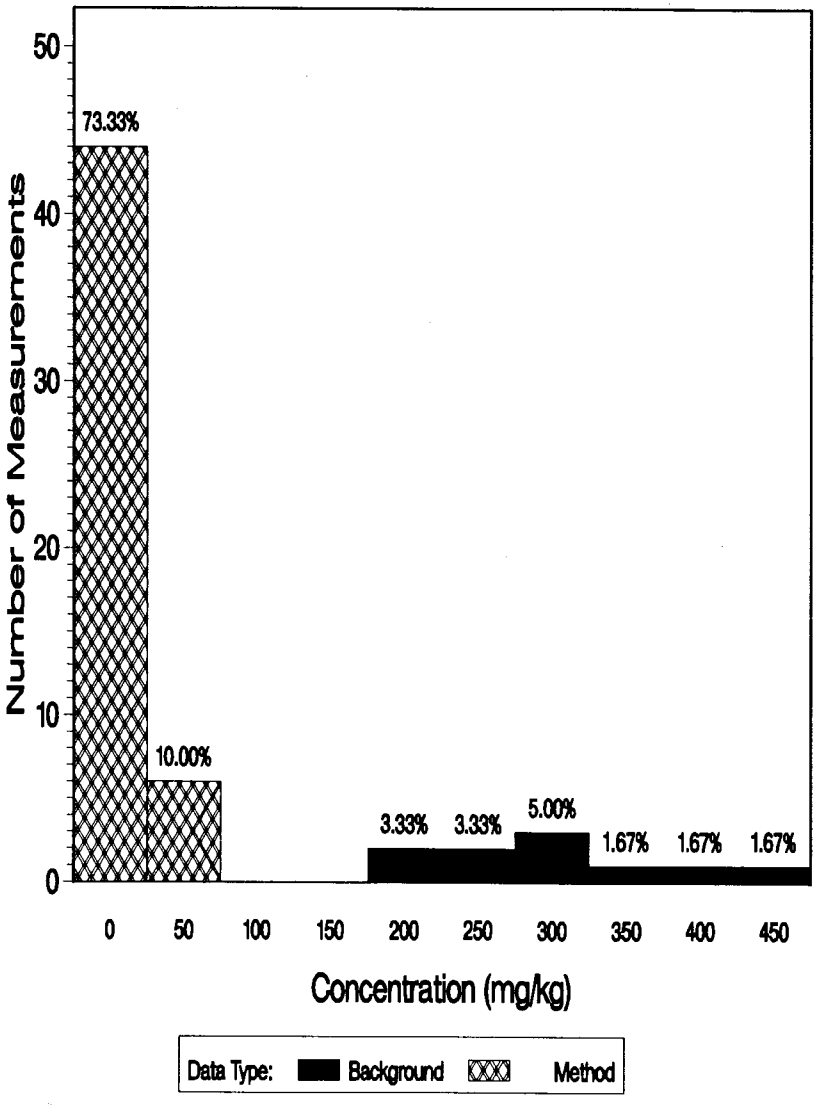
Holloman AFB Background Data
Frequency Distribution



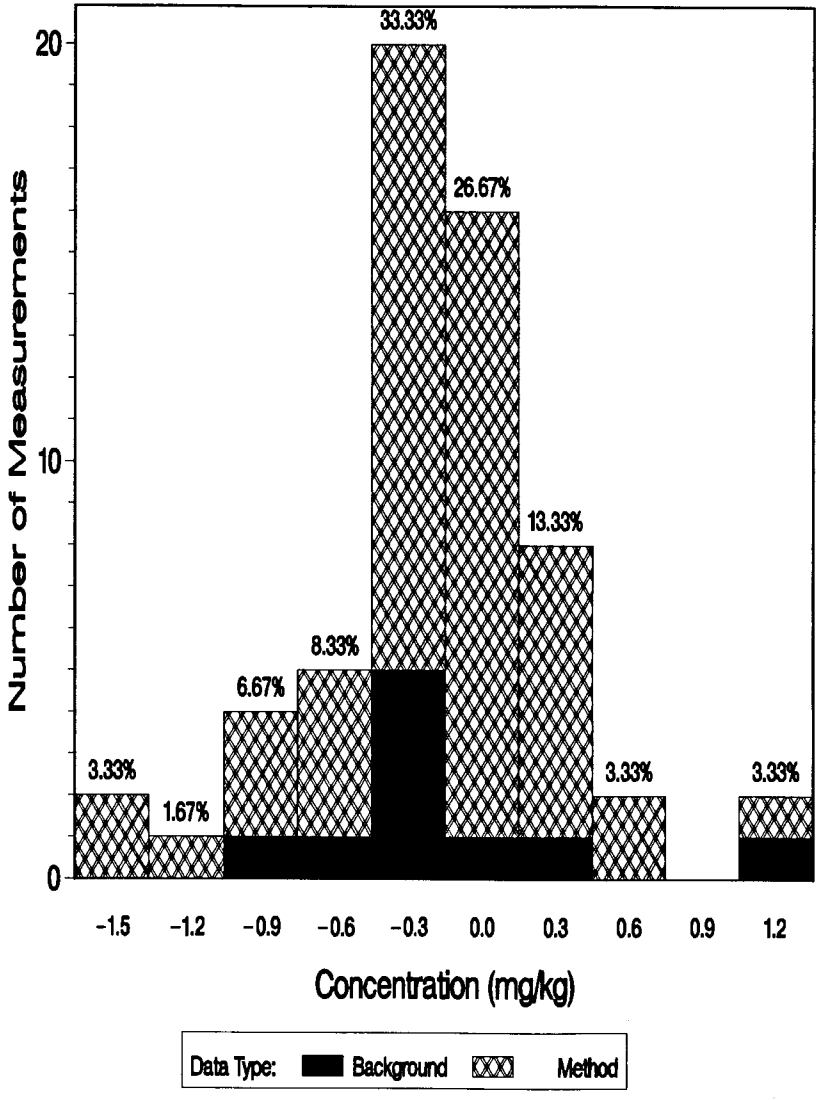


Holloman AFB Background Data
Frequency Distribution

Silicon -- SW6010
Soil

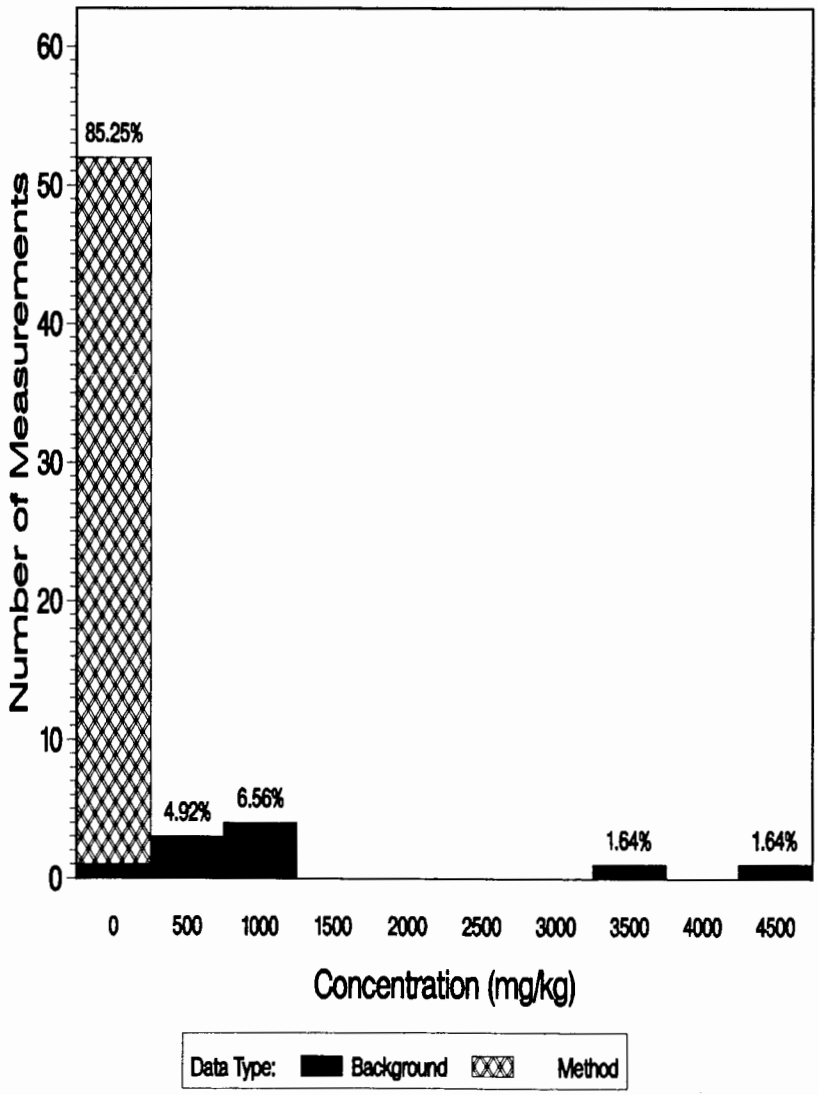


Silver -- SW6010
Soil

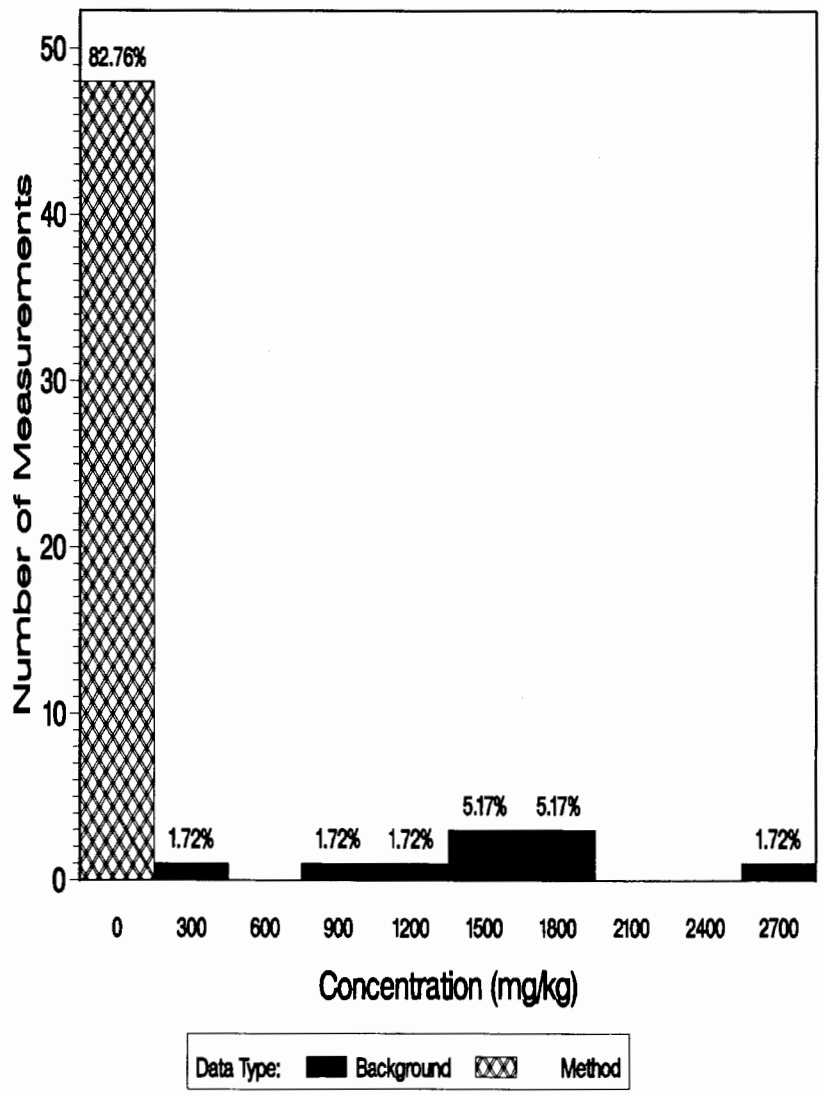


Holloman AFB Background Data
Frequency Distribution

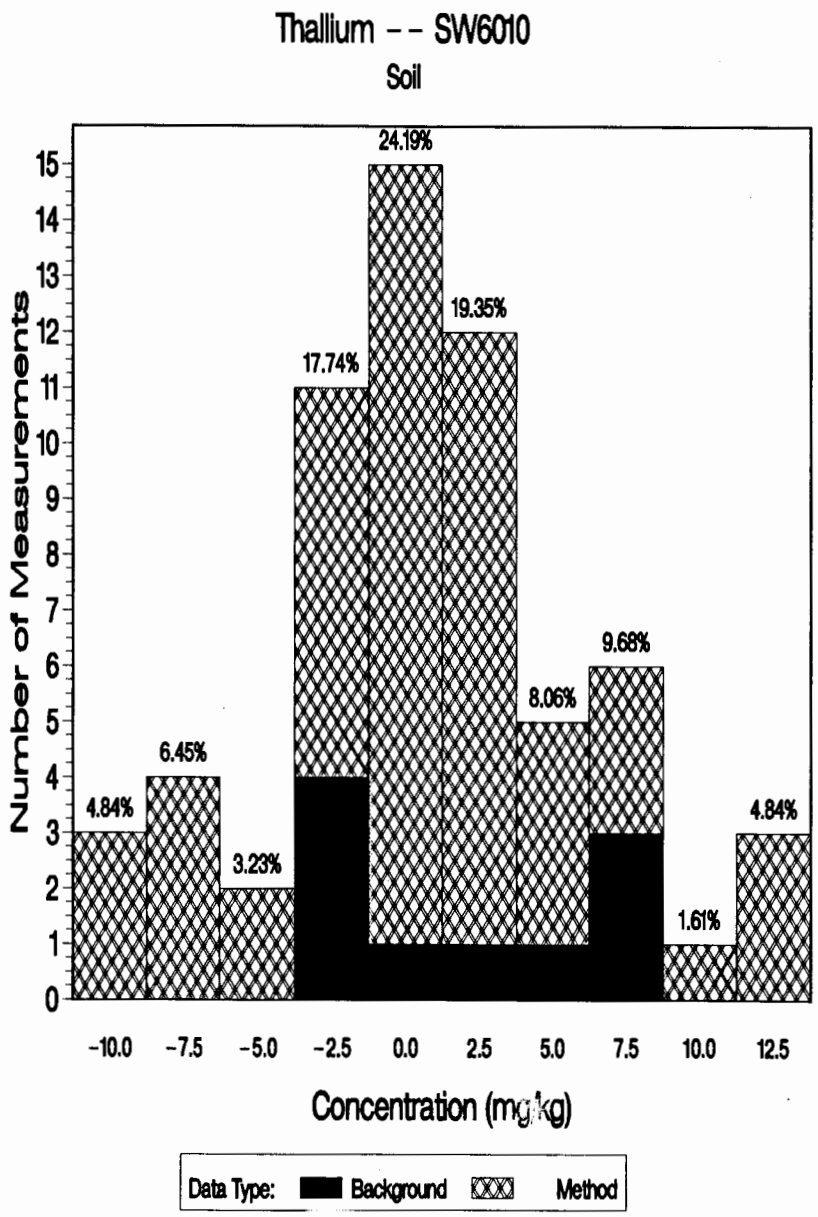
Sodium -- SW6010
Soil

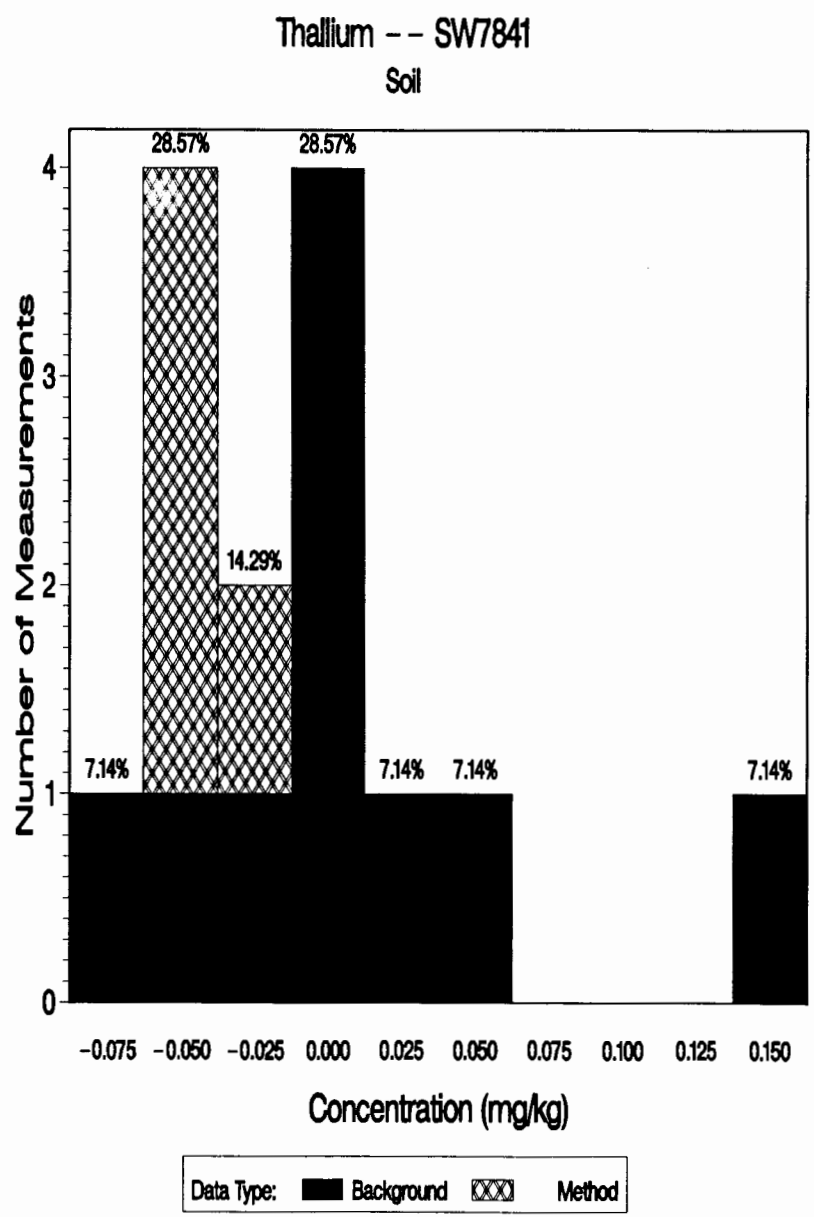


Strontium -- SW6010
Soil



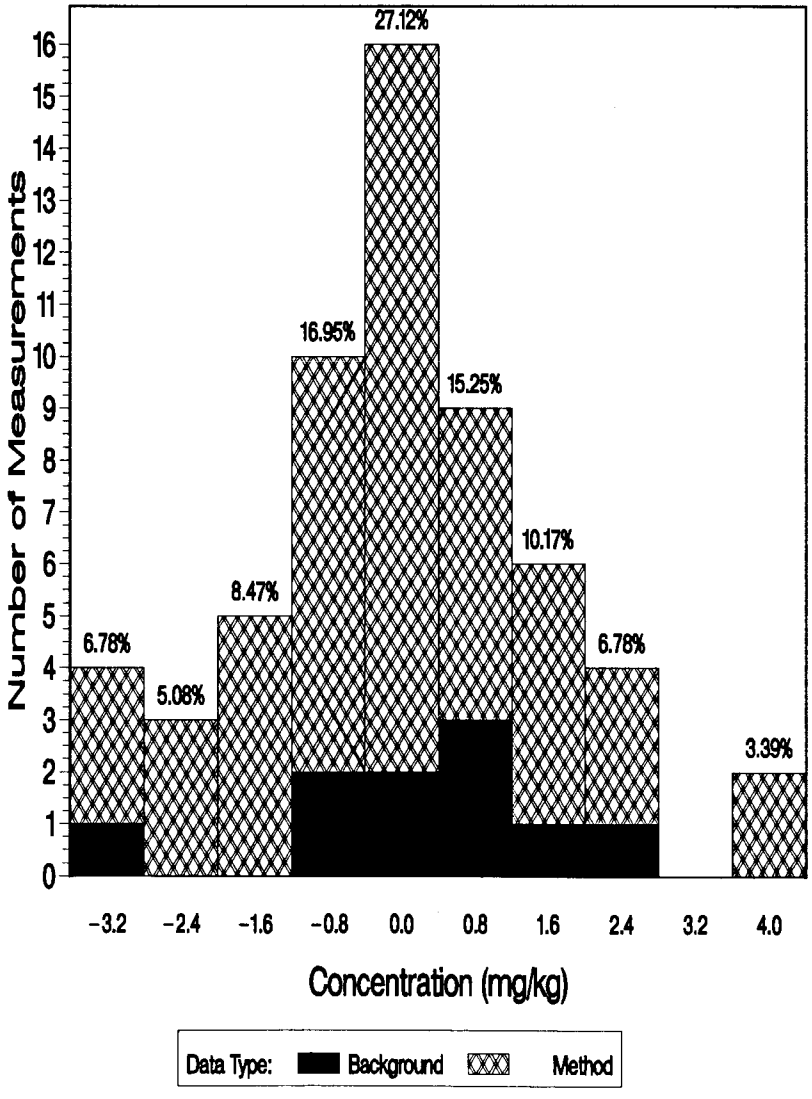
Holloman AFB Background Data
Frequency Distribution



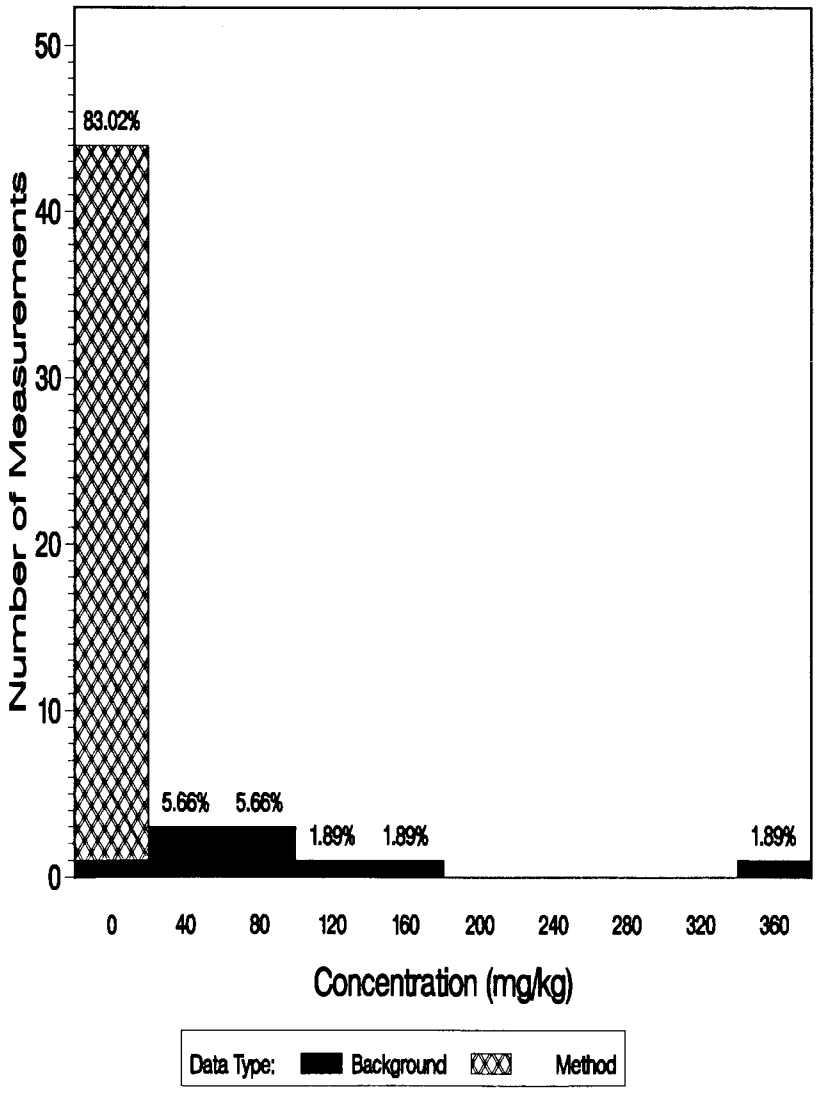


Holloman AFB Background Data
Frequency Distribution

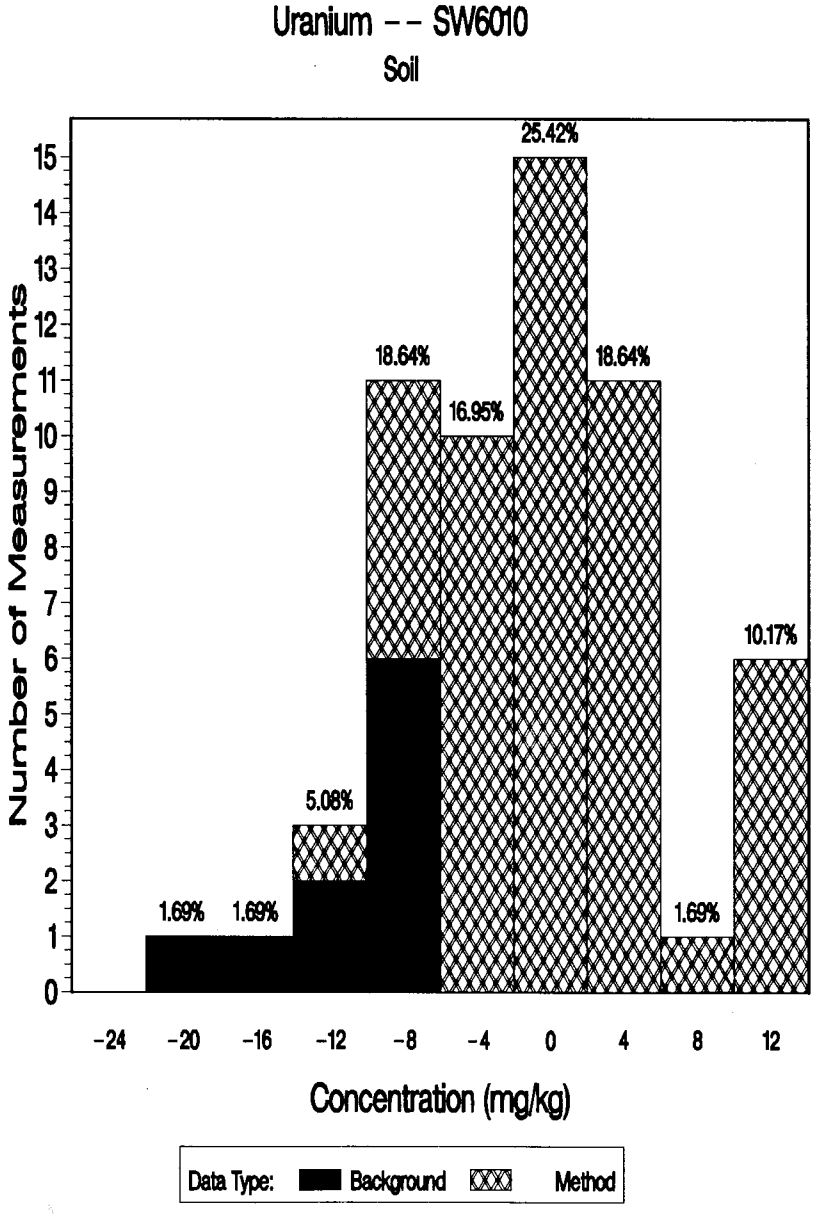
Tin -- SW6010
Soil

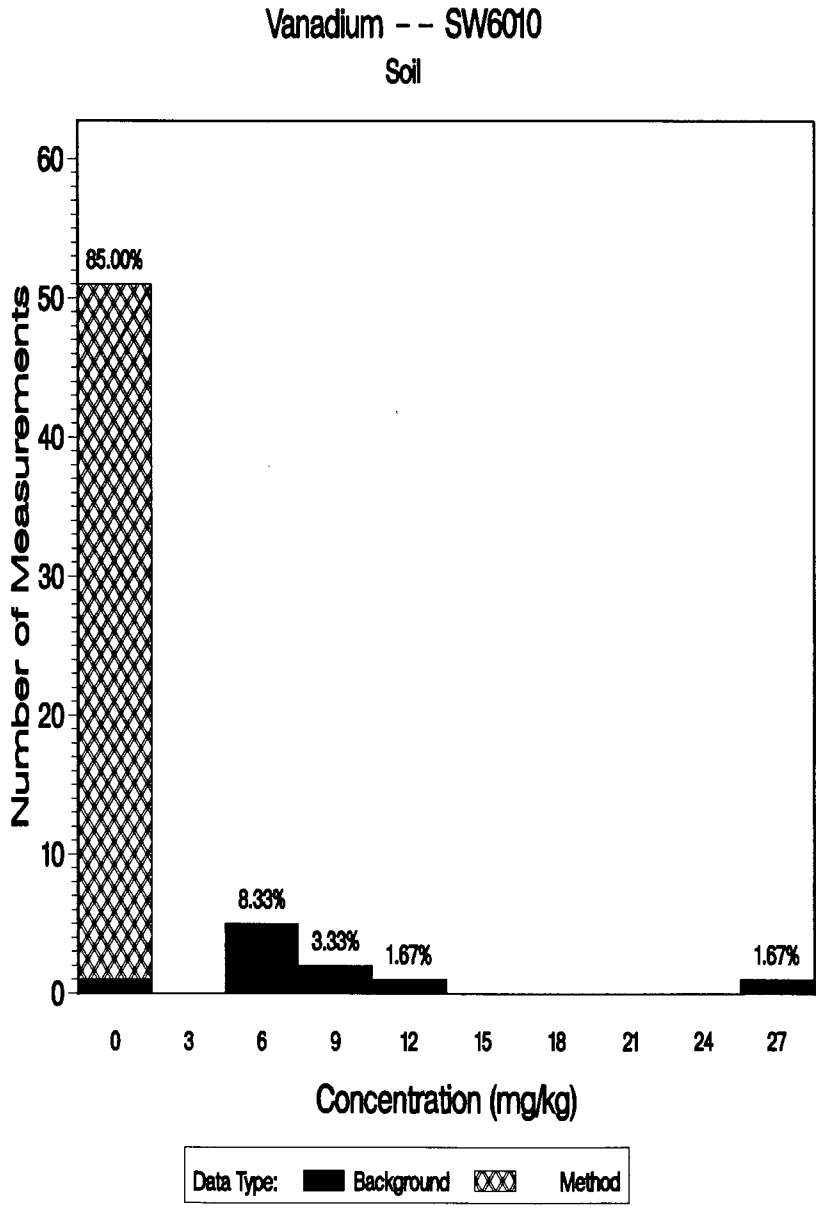


Titanium -- SW6010
Soil



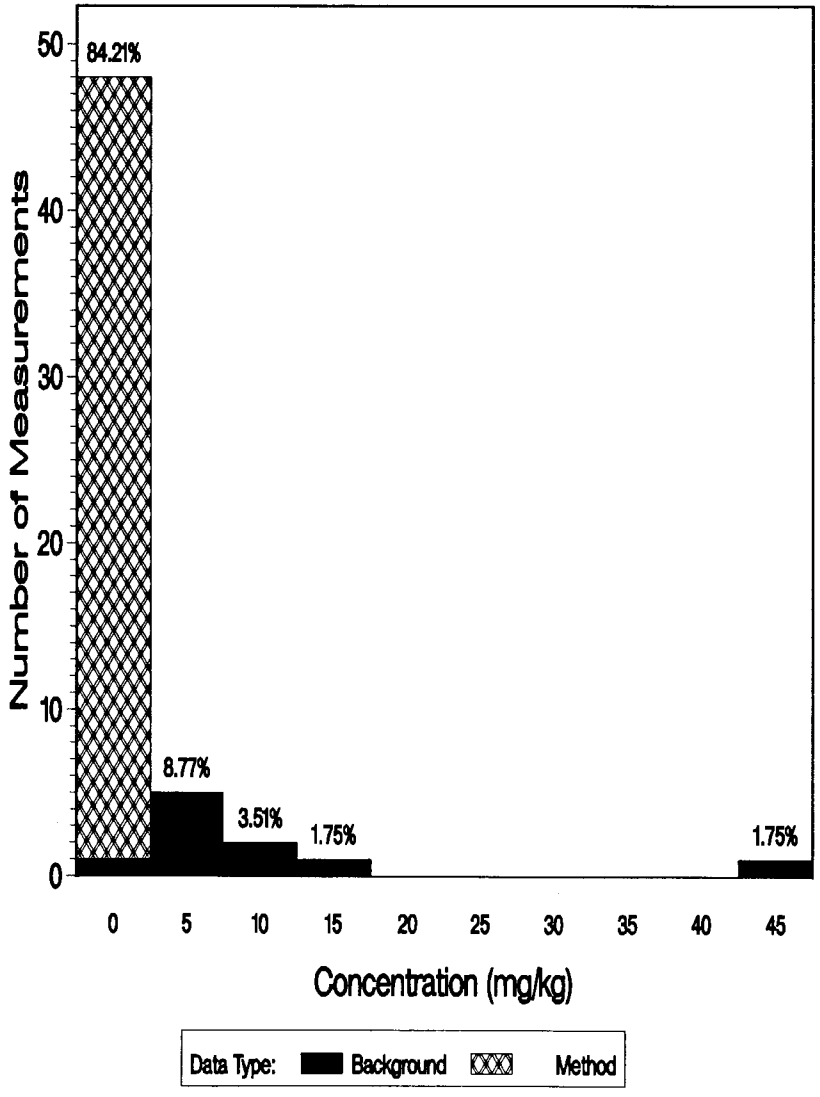
Holloman AFB Background Data
Frequency Distribution





Holloman AFB Background Data
Frequency Distribution

Zinc -- SW6010
Soil



ATTACHMENT 4

BACKGROUND RESULTS FOR SOIL FROM THE RI (1992)

Background Results for Soil from the RI (1992)

Analyte	Number Detected	Total Number of Analyses	Percent Detected (%)	Mean (mg/kg)	Standard Deviation (mg/kg)	K-Factor	Upper Tolerance Limit (mg/kg)
Antimony	0	8	0	3.975	2.390	3.732	NC
Arsenic	6	8	75	2.272	0.904	3.732	5.646
Beryllium	3	8	37.5	0.342	0.254	3.732	1.290
Cadmium	0	8	0	0.710	0.271	3.732	NC
Chromium	8	8	100	6.963	4.728	3.732	24.606
Copper	5	8	62.5	5.082	4.327	3.732	21.230
Lead	7	7	100	2.686	2.402	4.007	12.303
Mercury	0	8	0	0.049	0.026	3.732	NC
Nickel	5	8	62.5	5.336	3.421	3.732	18.104
Selenium	2	8	25	0.436	0.169	3.732	1.068
Silver	0	8	0	0.587	0.512	3.732	NC
Thallium	0	4	0	8.544	5.528	6.37	NC
Zinc	8	8	100	18.913	7.970	3.732	48.656

NC = Not Calculated.

APPENDIX B.2

STATISTICAL ANALYSIS OF METALS DATA FOR PHASE I GROUNDWATER ASSESSMENT MONITORING

1.0 INTRODUCTION

One objective of the Phase I Groundwater Assessment Monitoring Program was to determine if metallic elements from lagoon sludges and soil had migrated to groundwater. This objective was met by collecting groundwater samples from wells downgradient of the lagoons, analyzing the samples for total metals, and conducting a statistical analysis to determine if metals were detected at concentrations that indicated migration to groundwater.

Metallic elements are naturally-occurring constituents of uncontaminated soils and of groundwater. Therefore, when investigating suspected metals contamination in soils or groundwater, any conclusions regarding the presence/absence or nature and extent of contamination must consider naturally-occurring background concentrations of the metals of interest. The conclusions presented in this report regarding metals contamination are based on statistical comparisons of samples collected from background locations to samples from areas of potential concern. For the Phase 1 assessment monitoring, this involved comparison of data from monitor wells downgradient of the sewage lagoons to data collected in a Base-wide background study (see Appendix B.1).

The measurement data has been grouped to represent three potentially different populations. One population is background, represented by metals results for the 50 samples collected in the Base-wide background study. The other two populations are groups of the downgradient monitor wells. For the purposes of this investigation, the downgradient monitor wells were grouped into two clusters: MW-11, MW-12, and MW-13 downgradient of Ponds A, B, and C (named Group 11); and MW-14, MW-15, and MWS-05 downgradient of Ponds D,E, and G(named Group 14). Since only one sample was collected from each monitor well during this assessment, these groupings allowed the calculation of summary statistics and comparisons of average concentrations. Average comparisons are a more powerful type of comparison than comparisons of individuals as explained later in this appendix.

2.0 SUMMARY OF RESULTS

Two types of statistical comparisons were used to compare background metals data to results from the monitor wells downgradient of the sewage lagoons--means comparisons and individual comparisons. Table 2-1 summarizes the conclusions reached for all statistical comparisons. As shown in the table, the measurement data indicate that cadmium concentrations in downgradient wells are higher than background concentrations, suggesting migration of this element to groundwater. Comparisons for other elements were inconclusive because means comparisons did not agree with individuals or graphical comparisons. The number of times individual results exceeded upper tolerance limits (UTLs) for background is summarized in Table 2-2. Data for mercury and tin showed higher *average* concentrations than background, but all downgradient results were within the range of concentrations measured for background even though a few results exceeded the UTLs for background. Additional downgradient data would be helpful in determining whether or not these results indicate migration for these two elements. Results for antimony were also inconclusive. Although the means comparison for antimony did not detect a significant difference in average concentrations, individual results for some wells exceeded the calculated UTL for background, suggesting elevated antimony at these locations. Here again, additional downgradient data would be helpful in reaching more definitive conclusions for this element.

Tables 2-3 through 2-5 present additional results of statistical analyses. Table 2-3 presents a summary of the results for chemical analyses. Table 2-4 presents a summary of the conclusions reached from the tests of central tendency. Table 2-5 presents a summary of the individual measurements which exceeded warning limits and UTLs for background. The figures in Attachment 1 graphically depict the measurements for total metals in downgradient samples, upgradient (i.e., background) samples, equipment blanks collected during the program, and laboratory blanks analyzed throughout the program as part of the ongoing QA program.

Table 2-1

Summary of Statistical Analyses

Group	Analyte	Method	Conclusion
11	Antimony	SW6010	Not significantly different than background.
	Arsenic	SW7060	Not significantly different than background.
	Barium	SW6010	Not significantly different than background.
	Beryllium	SW6010	Not significantly different than background.
	Cadmium	SW6010	Average downgradient concentration significantly higher than average background concentration.
	Chromium	SW6010	Not significantly different than background.
	Cobalt	SW6010	Not significantly different than background.
	Copper	SW6010	Not significantly different than background.
	Lead	SW7421	Not significantly different than background.
	Mercury	SW7470	Means comparison indicated the average conc. downgradient was greater than the average background concentration. However, all downgradient results were within the range of background and laboratory blank results. The means comparison conclusion may indicate a false-positive conclusion.
	Nickel	SW6010	Not significantly different than background.
	Selenium	SW7740	Not significantly different than background.
	Silver	SW6010	Not significantly different than background.
	Thallium	SW7841	Not significantly different than background.

Table 2-1

(Continued)

Group	Analyte	Method	Conclusion
11 (Continued)	Tin	SW6010	Means comparison indicated the average concentration downgradient was greater than the average background concentration However, all downgradient results were within the range of background and laboratory blank results. The means comparison may indicate a potential false-positive conclusion.
	Vanadium	SW6010	Not significantly different than background.
14	Zinc	SW6010	Not significantly different than background.
	Antimony	SW6010	Means comparison indicated the average downgradient concentration was not greater than the average background concentration. However, the result from MWS-05 exceeded the UTL. It is not conclusive that antimony has or has not migrated downgradient to the new wells.
	Arsenic	SW7060	Not significantly different than background.
	Barium	SW6010	Not significantly different than background.
	Beryllium	SW6010	Not significantly different than background.
	Cadmium	SW6010	Means comparison indicated the average downgradient concentration was not greater than the average background concentration. However, the result from MW-15 and MWS-05 exceeded the UTL. The conclusion of the means comparison may indicate a false-negative and cadmium may have migrated to downgradient monitor wells.
	Chromium	SW6010	Not significantly different than background.
	Cobalt	SW6010	Not significantly different than background.
	Copper	SW6010	Not significantly different than background.

Table 2-1

(Continued)

Group	Analyte	Method	Conclusion
14 (Continued)	Lead	SW7421	Not significantly different than background.
	Mercury	SW7470	Not significantly different than background.
	Nickel	SW6010	Not significantly different than background.
	Selenium	SW7740	Not significantly different than background.
	Silver	SW6010	Not significantly different than background.
	Thallium	SW7841	Not significantly different than background.
	Tin	SW6010	Means comparison indicated that the averaged downgradient concentration was not greater than the average background concentration. However, the result from MW-15 and MWS-05 exceeded the UTL. The means comparison conclusion may be a false-negative and tin may have migrated to downgradient monitor wells.
	Vanadium	SW6010	Not significantly different than background.
	Zinc	SW6010	Not significantly different than background.

Table 2-2

Locations with Analytes Exceeding Warning Limits and UTLs

Group	Well ID	Number of Analytes With Concentration Exceeding Warning Limit	Number of Analytes with Concentration Exceeding UTL
11	MW-11	6	2
11	MW-12	4	2
11	MW-13	3	2
14	MW-14	1	0
14	MW-15	3	2
14	MWS-05	3	3

Table 2-3

Summary Statistics for Downgradient and Background Measurements

Group	Analyte	Method	# of Site Samples	Site Mean	Site Std. Dev.	Site Median	Min. RL	Max. RL	# of Background Samples	Background Mean	Background Std. Dev.	Background Median
11	Antimony	SW6010	3	-0.13233	0.74255	0.05300	1.000	1.000	71	0.00841	0.04096	0.00240
14	Antimony	SW6010	3	-0.09667	0.38760	-0.23000	1.000	1.000	71	0.00841	0.04096	0.00240
11	Arsenic	SW7060	3	-0.02500	0.01217	-0.03100	0.016	0.016	14	-0.00541	0.02971	-0.00600
14	Arsenic	SW7060	3	-0.01493	0.01940	-0.02300	0.016	0.016	14	-0.00541	0.02971	-0.00600
11	Barium	SW6010	3	0.02500	0.00656	0.02600	0.010	0.010	14	0.14607	0.12985	0.11000
14	Barium	SW6010	3	0.03267	0.01069	0.03500	0.010	0.010	14	0.14607	0.12985	0.11000
11	Beryllium	SW6010	3	-0.00038	0.00048	-0.00057	0.002	0.002	14	0.00098	0.00107	0.00066
14	Beryllium	SW6010	3	0.00003	0.00030	-0.00004	0.002	0.002	14	0.00098	0.00107	0.00066
11	Cadmium	SW6010	3	0.01300	0.00100	0.01300	0.005	0.005	14	0.00451	0.00144	0.00505
14	Cadmium	SW6010	3	0.01013	0.00437	0.01100	0.005	0.005	14	0.00451	0.00144	0.00505
11	Chromium	SW6010	3	-0.00950	0.00303	-0.00780	0.010	0.010	14	0.02670	0.02749	0.01600
14	Chromium	SW6010	3	-0.01233	0.00058	-0.01200	0.010	0.010	14	0.02670	0.02749	0.01600
11	Cobalt	SW6010	3	-0.00223	0.00867	-0.00550	0.010	0.010	74	0.00137	0.00498	0.00114
14	Cobalt	SW6010	3	-0.00412	0.00358	-0.00550	0.010	0.010	74	0.00137	0.00498	0.00114
11	Copper	SW6010	3	-0.01033	0.00058	-0.01000	0.020	0.020	14	0.01448	0.00922	0.01050
14	Copper	SW6010	3	-0.01047	0.00136	-0.01000	0.020	0.020	14	0.01448	0.00922	0.01050
11	Lead	SW7421	3	-0.01000	0.00200	-0.01000	0.006	0.006	13	0.00119	0.00700	0.00000
14	Lead	SW7421	3	-0.01667	0.00757	-0.02000	0.006	0.012	13	0.00119	0.00700	0.00000
11	Mercury	SW7470	3	0.00001	0.00001	0.00001	0.00018	0.00018	50	-0.00006	0.00004	-0.00006
14	Mercury	SW7470	3	-0.00001	0.00004	0.00001	0.00018	0.00036	50	-0.00006	0.00004	-0.00006

Table 2-3

(Continued)

Group	Analyte	Method	# of Site Samples	Site Mean	Site Std. Dev.	Site Median	Min. RL	Max. RL	# of Background Samples	Background Mean	Background Std. Dev.	Background Median
11	Nickel	SW6010	3	-0.01947	0.02591	-0.01300	0.020	0.020	14	0.00944	0.01308	0.00615
14	Nickel	SW6010	3	-0.03433	0.01106	-0.03300	0.020	0.020	14	0.00944	0.01308	0.00615
11	Selenium	SW7740	3	-0.00340	0.01917	-0.00920	0.010	0.010	12	0.00888	0.02575	0.00760
14	Selenium	SW7740	3	-0.00140	0.01181	0.00460	0.010	0.010	12	0.00888	0.02575	0.00760
11	Silver	SW6010	3	-0.00613	0.00261	-0.00700	0.010	0.010	67	0.00030	0.00351	0.00022
14	Silver	SW6010	3	-0.00887	0.00189	-0.00820	0.010	0.010	67	0.00030	0.00351	0.00022
11	Thallium	SW7841	3	-0.00093	0.00295	-0.00200	0.020	0.020	13	0.00079	0.00158	0.00080
14	Thallium	SW7841	3	-0.00253	0.00300	-0.00080	0.010	0.020	13	0.00079	0.00158	0.00080
11	Tin	SW6010	3	0.03133	0.00907	0.03500	0.600	0.600	74	0.00026	0.01554	-0.00113
14	Tin	SW6010	3	0.02833	0.05150	0.04000	0.600	0.600	74	0.00026	0.01554	-0.00113
11	Vanadium	SW6010	3	0.01700	0.00608	0.01400	0.020	0.020	14	0.08986	0.06074	0.05650
14	Vanadium	SW6010	3	0.00983	0.00995	0.00660	0.020	0.020	14	0.08986	0.06074	0.05650
11	Zinc	SW6010	3	0.00200	0.00623	0.00370	0.020	0.020	14	0.04679	0.04042	0.03100
14	Zinc	SW6010	3	0.00570	0.00516	0.00540	0.020	0.020	14	0.04679	0.04042	0.03100

Table 2-4

Conclusions for Statistical Tests of Central Tendancy

Group	Analyte	Method	Statistical Comparison	P value	Conclusion
11	Antimony	SW6010	Student's t-Test	0.61305	NS
11	Arsenic	SW7060	Student's t-Test	0.92405	NS
11	Barium	SW6010	Wilcoxon Rank Test	0.98715	NS
11	Beryllium	SW6010	Student's t-Test	0.9747	NS
11	Cadmium	SW6010	Student's t-Test	0.0019	S
11	Chromium	SW6010	Wilcoxon Rank Test	0.99015	NS
11	Cobalt	SW6010	Wilcoxon Rank Test	0.84305	NS
11	Copper	SW6010	Wilcoxon Rank Test	0.99005	NS
11	Lead	SW7421	Student's t-Test	0.991	NS
11	Mercury	SW7470	Student's t-Test	0.00355	S
11	Nickel	SW6010	Student's t-Test	0.995	NS
11	Selenium	SW7740	Student's t-Test	0.78295	NS
11	Silver	SW6010	Student's t-Test	0.9747	NS
11	Thallium	SW7841	Student's t-Test	0.78715	NS
11	Tin	SW6010	Student's t-Test	0.0005	S
11	Vanadium	SW6010	Wilcoxon Rank Test	0.99	NS
11	Zinc	SW6010	Wilcoxon Rank Test	0.99	NS
14	Antimony	SW6010	Student's t-Test	0.65755	NS
14	Arsenic	SW7060	Student's t-Test	0.696	NS
14	Barium	SW6010	Wilcoxon Rank Test	0.9789	NS
14	Beryllium	SW6010	Student's t-Test	0.92305	NS
14	Cadmium	SW6010	Student's t-Test	0.0781	NS
14	Chromium	SW6010	Wilcoxon Rank Test	0.9902	NS
14	Cobalt	SW6010	Wilcoxon Rank Test	0.98135	NS
14	Copper	SW6010	Student's t-Test	0.99985	NS
14	Lead	SW7421	Student's t-Test	0.99925	NS
14	Mercury	SW7470	Student's t-Test	0.079	NS

Table 2-4

(Continued)

Group	Analyte	Method	Statistical Comparison	P value	Conclusion
14	Nickel	SW6010	Student's t-Test	0.99995	NS
14	Selenium	SW7740	Student's t-Test	0.73965	NS
14	Silver	SW6010	Student's t-Test	0.9934	NS
14	Thallium	SW7841	Wilcoxon Rank Test	0.9609	NS
14	Tin	SW6010	Student's t-Test	0.22265	NS
14	Vanadium	SW6010	Wilcoxon Rank Test	0.99	NS
14	Zinc	SW6010	Wilcoxon Rank Test	0.99	NS

NS = Not significant

S = Significant

Table 2-5

Downgradient Measurements Which Exceed Background Warning Limits and UTLs

Group	Well ID	Analyte	Method	Sample Measurement	Background Warning Limit	Background UTL
11	MW-11	Antimony	SW6010	0.500000	0.043341	0.089630
11	MW-11	Cadmium	SW6010	0.012000	0.005804	0.008272
11	MW-12	Cadmium	SW6010	0.013000	0.005804	0.008272
11	MW-12	Tin	SW6010	0.035000	0.013509	0.030957
11	MW-13	Cadmium	SW6010	0.014000	0.005804	0.008272
11	MW-13	Tin	SW6010	0.038000	0.013509	0.030957
14	MW-15	Cadmium	SW6010	0.011000	0.005804	0.008272
14	MW-15	Tin	SW6010	0.073000	0.013509	0.030957
14	MWS-05	Antimony	SW6010	0.340000	0.043341	0.089630
14	MWS-05	Cadmium	SW6010	0.014000	0.005804	0.008272
14	MWS-05	Tin	SW6010	0.040000	0.013509	0.030957

3.0 TECHNICAL APPROACH

As previously mentioned, two types of statistical comparisons were used. Means comparisons were used to compare the average background concentration of each of the metals to the corresponding average concentrations reported for each of the two different groups of downgradient monitor wells. The second type of statistical comparison compared individual results from each of the wells to calculated UTLs for background concentration. Since both Type I and Type II errors (see any standard statistics text book for descriptions of these error types) may occur in both means and individuals comparisons, all statistical conclusions were confirmed or qualified by a graphical analysis of the results.

3.1 Means Comparisons

Tests of central tendency are the preferred approach to testing whether or not measurement results indicate a difference between two "sample populations" of interest. In this investigation, as in other similar studies, the sample populations are "background" and "downgradient." Conceptually, a means comparison tests the measurement results to determine the likelihood that they actually came from a single parent population rather than from two different populations. The test assumes that there is no difference between the two populations (i.e., that downgradient is not different from background) as long as the observed difference between their averages is within the range that could be attributed to chance.

The amount of difference attributable to chance in a means comparison is a function of variability in the sample data and the number of sample results available. The difference attributable to chance reflects the uncertainty in the statistical test and becomes smaller as the sample size increases. It also becomes smaller as the variability among results within each of the two populations decreases. The uncertainty due to sample size and variability directly affects what is known as the power of the statistical comparison. As the power increases, it becomes possible to detect smaller and smaller differences between

the true population means. Thus, with increased power there is less risk of failing to detect a difference that actually exists. This should not be confused with the confidence level of the test, which is related to the probability of erroneously concluding that a difference exists between the population means, when in fact the population means are not different. (As the confidence level increases, the probability of incorrectly indicating a difference decreases.)

3.2 Individual Comparisons

The comparison of individual results to UTLs of a given population is another way of testing the difference between two sample populations. The UTL represents an estimate of the upper 95th percentile of the true background concentration of the analyte of interest. Thus, there is a relatively small chance, on the order of one in twenty, of a sample of uncontaminated groundwater (i.e., groundwater that is no different from background) having a metal concentration greater than the UTL. When individual sample results are compared to UTLs they are interpreted to indicate the presence of contamination when they exceed the UTLs. On the other hand, samples are considered not to be different from background as long as they do not exceed the UTL. The UTL calculations in Appendix B.1 of this report were used for the comparisons of individual results in this analysis.

3.3 Advantages/Disadvantages and Uses of Each Statistical Comparison

Both means comparisons and comparisons of individual results to UTLs are useful because they provide different information about the data and the parent population. However, in most cases, means comparisons offer significant advantages over comparisons of individual results to UTLs because they offer greater statistical power. Thus, means comparisons can detect smaller differences between two populations when used to compare monitoring well results to background data, means comparisons can detect lower levels of contamination and are less likely to not detect contamination when it actually exists.

Comparisons using individual results compared to UTLs are less sensitive and more likely to not detect contamination because of the inherent uncertainty in individual measurements. Much of this uncertainty is attributable to random measurement error, which is effectively "averaged out" in means comparisons where multiple results are considered together as a set.

The strength of means comparisons can also be their weakness. In the same way that random measurement error gets averaged out in the calculation of a sample mean, so can actual, non-random effects be diluted and overlooked. For example, four wells might be grouped together based on available hydrogeologic information. Whereas comparing average results for the four wells offers more power, it is important to not overlook cases in which results from one member of the initial group stand out as appreciably different from the others. When this occurs, the single anomalous result should be compared to the UTL for background to evaluate it separately and to decide if the initial well grouping should be reconsidered. Comparisons based on the UTL are also useful when only one result is available for comparison. However, a conclusion that a downgradient well is not different from background based on a single downgradient result must acknowledge the significant risk that there actually is a difference that was not detected simply because of the paucity of downgradient data.

3.4 Statistical Tests Used

For this program, the Student's t-Test and the Wilcoxon Test were used to compare the central tendency of downgradient and background sample sets (i.e., were used for means comparisons). The Student's t-Test was used when both the downgradient and background sample data sets were normally distributed. This test explicitly compares the means of the two data sets. The Wilcoxon Test was used when the data sets were not normally distributed and compares the medians of the data sets rather than the means. Additional detail about these two methods and their application in statistical comparisons may be found in Snedecor and Cochran, 1989.

4.0 REFERENCES

Snedecor, G.W. and W.G. Cochran, *Statistical Methods*, Iowa State University Press, Ames, Iowa, 1989, Chapters 6 and 8.

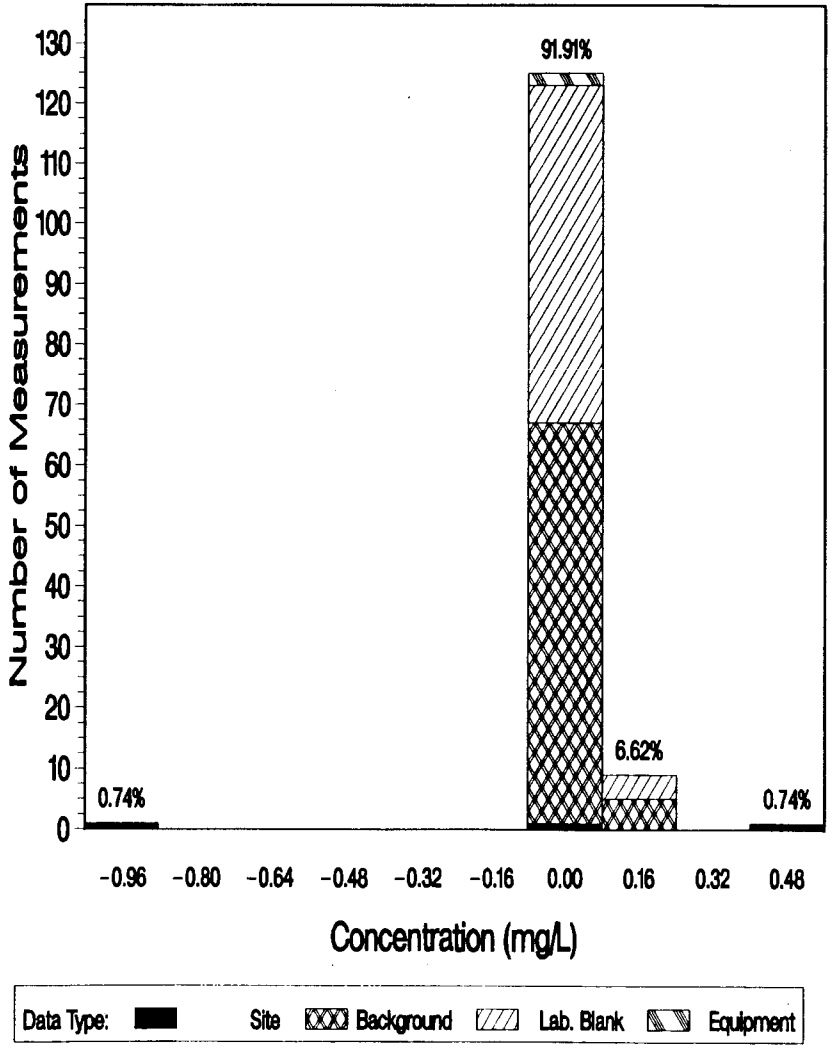
ATTACHMENT 1

Holloman AFB L&L Site and Background Data

Frequency Distribution

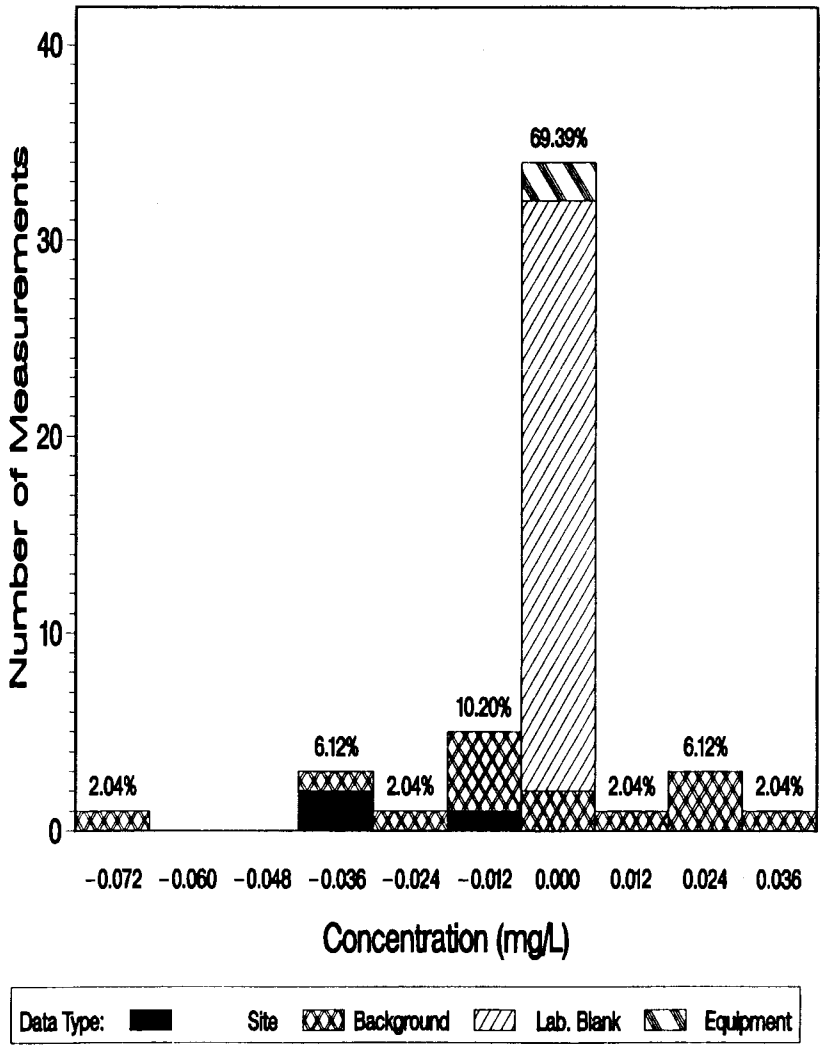
Group 11 -- Antimony -- SW6010

Groundwater -- Total Metals



Group 11 -- Arsenic -- SW7060

Groundwater -- Total Metals

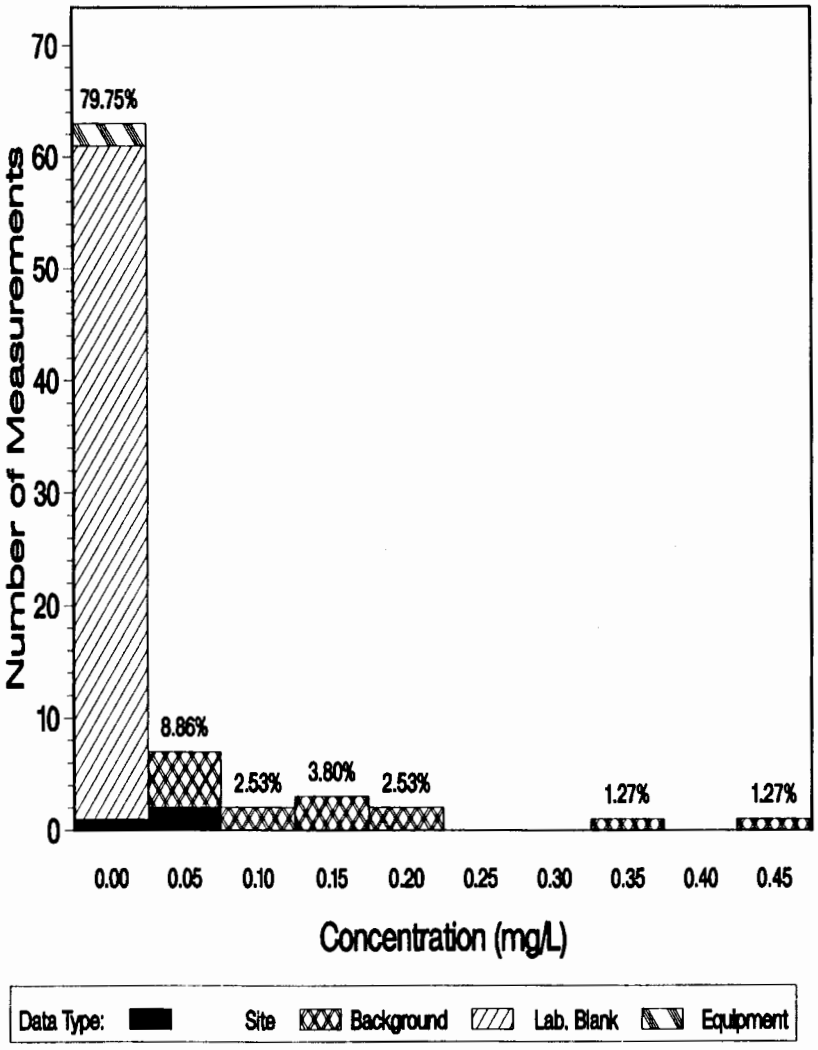


Holloman AFB L&L Site and Background Data

Frequency Distribution

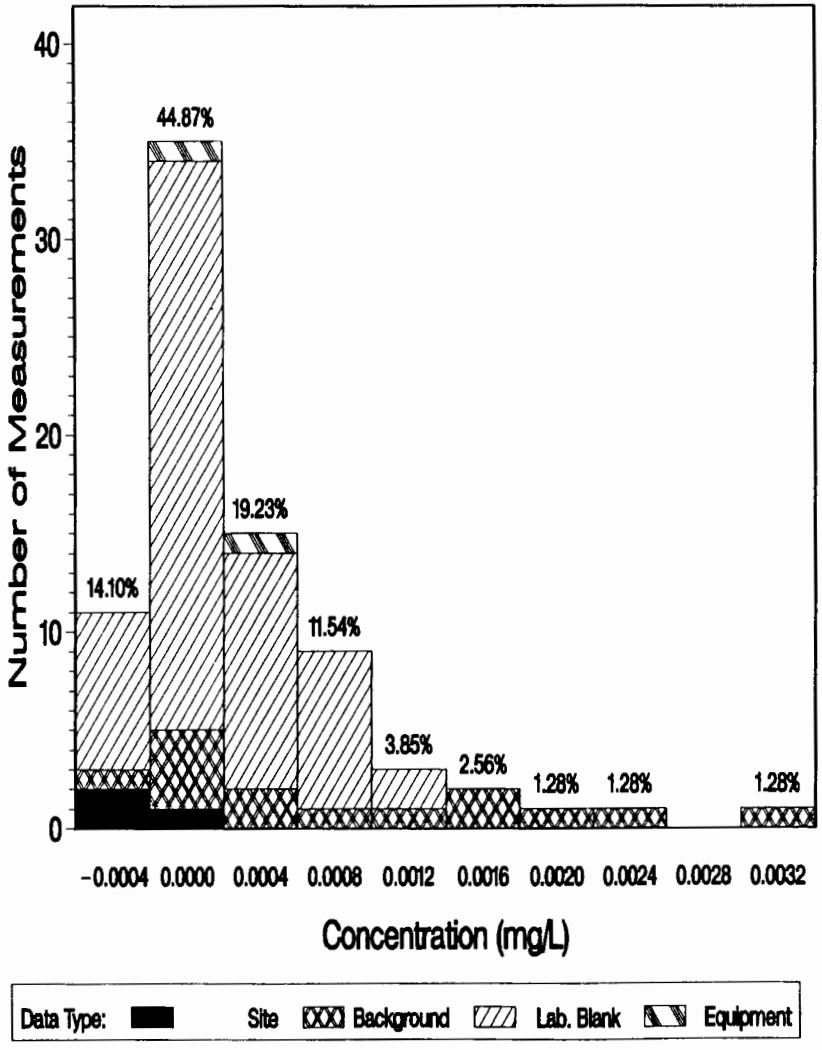
Group 11 -- Barium -- SW6010

Groundwater -- Total Metals



Group 11 -- Beryllium -- SW6010

Groundwater -- Total Metals

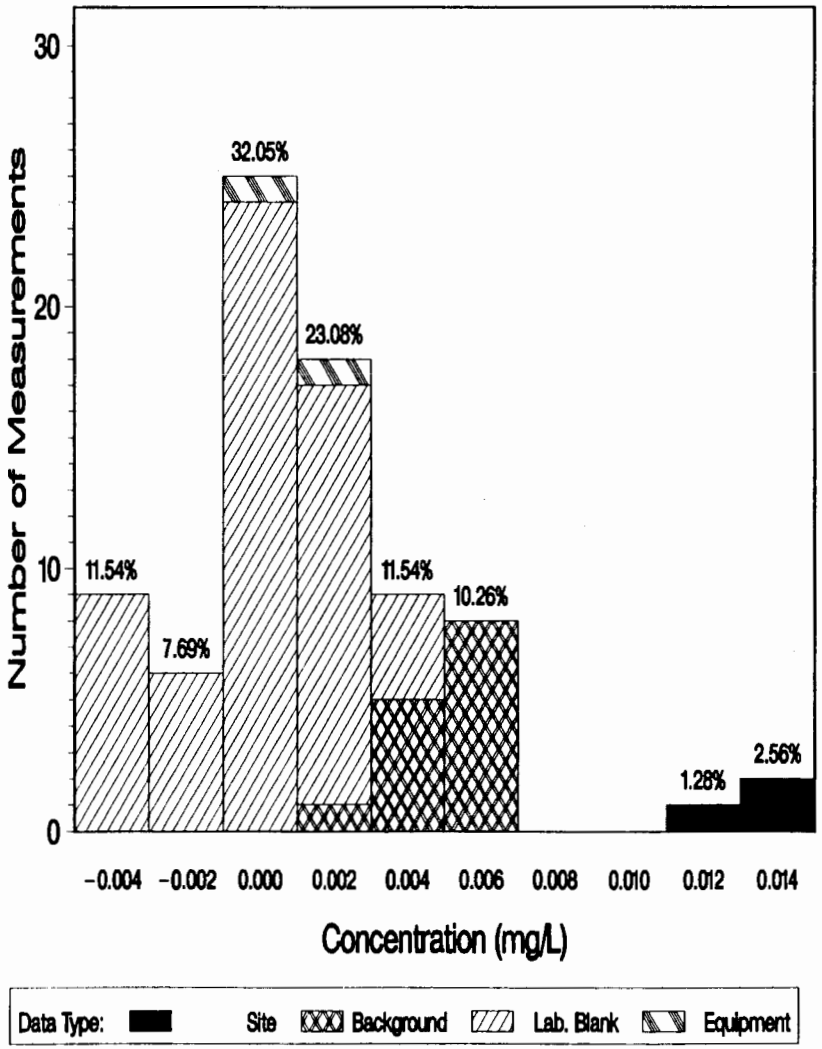


Holloman AFB L&L Site and Background Data

Frequency Distribution

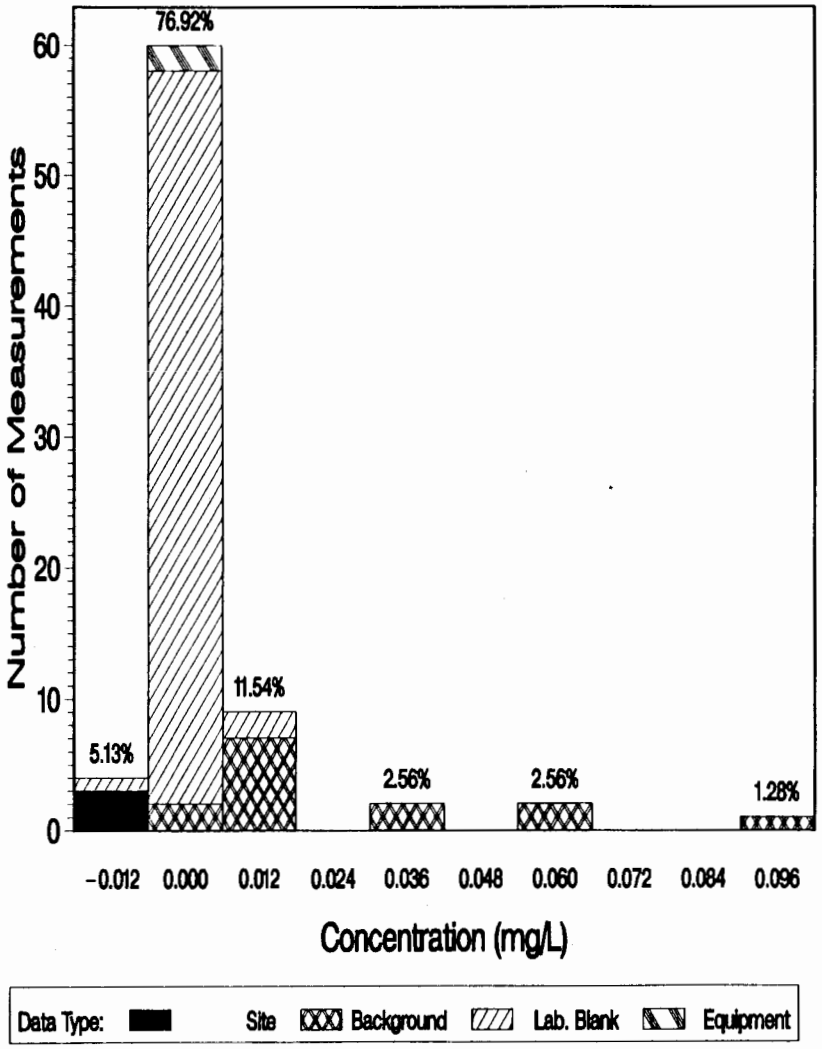
Group 11 -- Cadmium -- SW6010

Groundwater -- Total Metals



Group 11 -- Chromium -- SW6010

Groundwater -- Total Metals

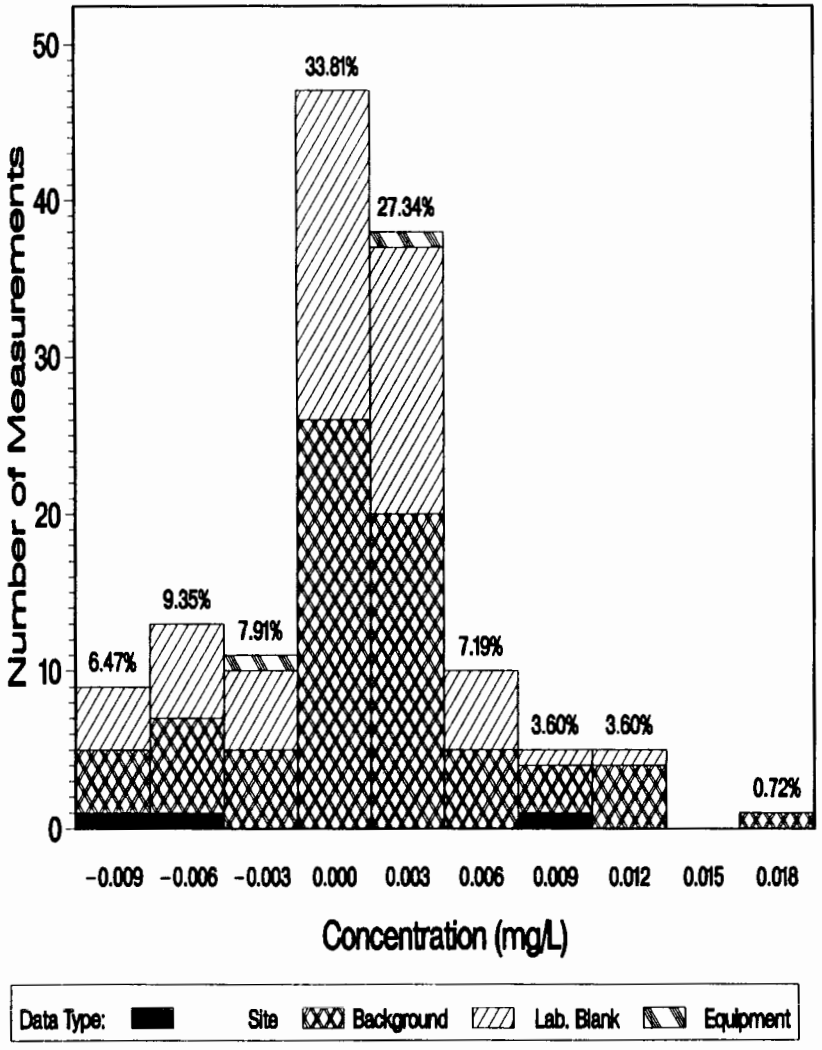


Holloman AFB L&L Site and Background Data

Frequency Distribution

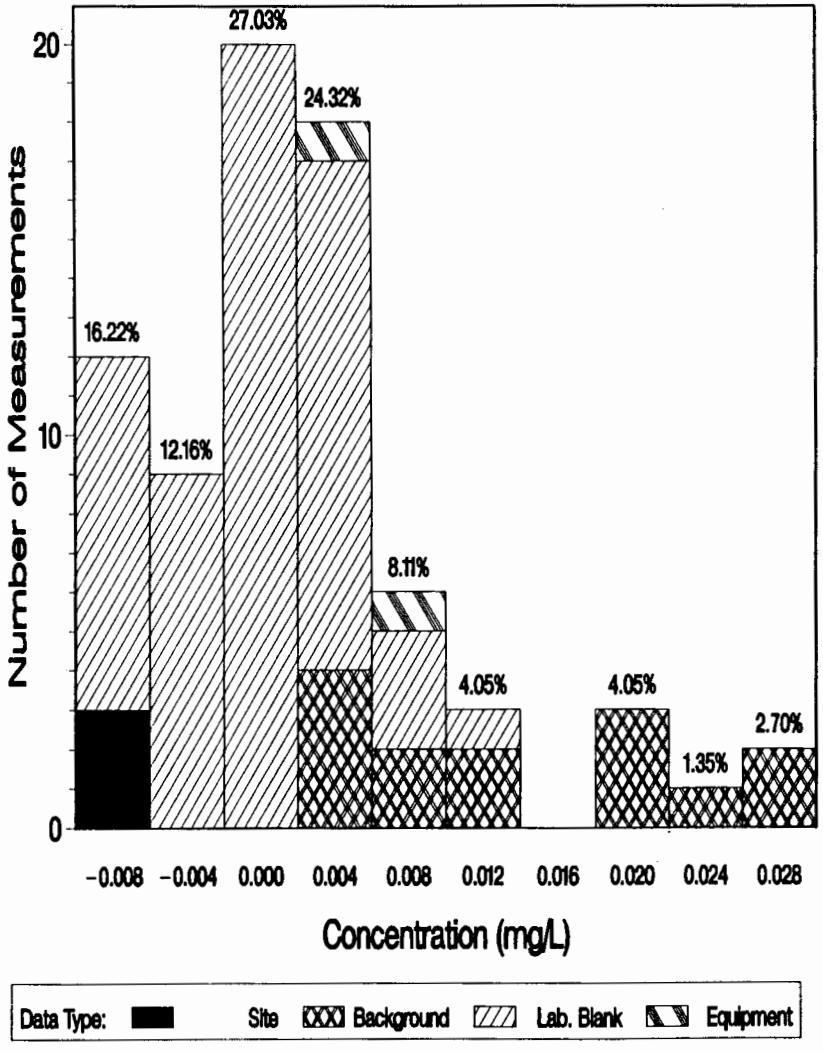
Group 11 -- Cobalt -- SW6010

Groundwater -- Total Metals



Group 11 -- Copper -- SW6010

Groundwater -- Total Metals

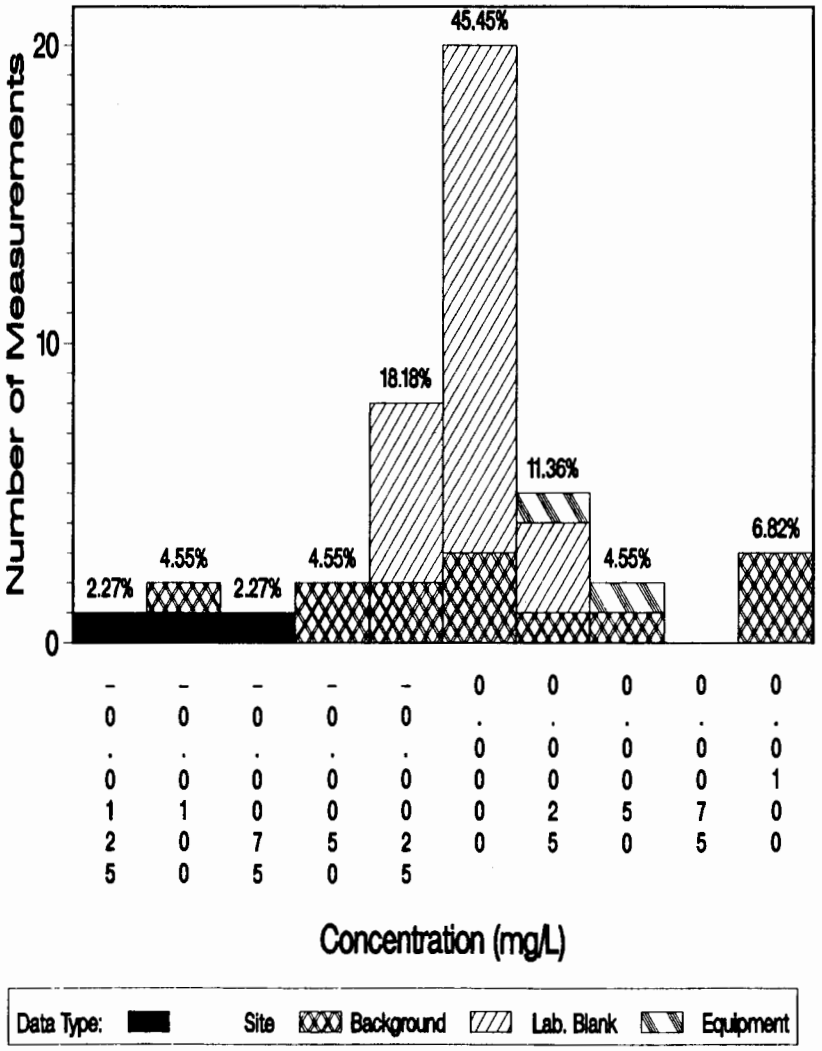


Holloman AFB L&L Site and Background Data

Frequency Distribution

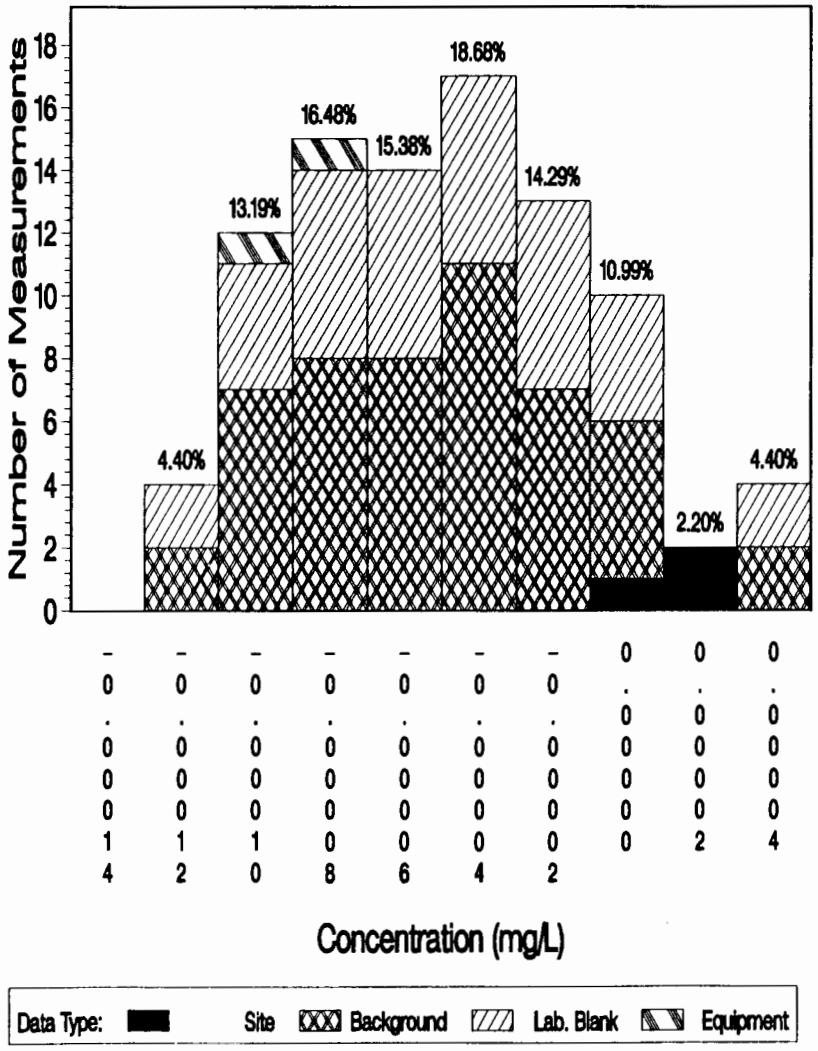
Group 11 -- Lead -- SW7421

Groundwater -- Total Metals



Group 11 -- Mercury -- SW7470

Groundwater -- Total Metals

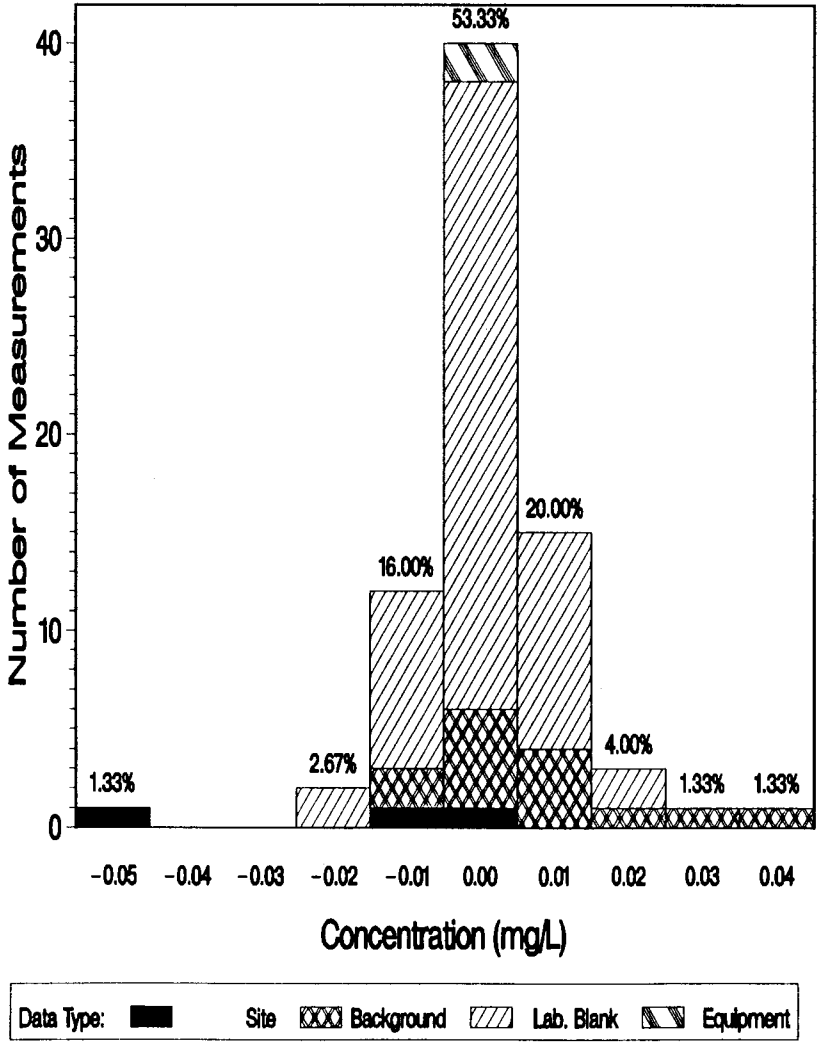


Holloman AFB L&L Site and Background Data

Frequency Distribution

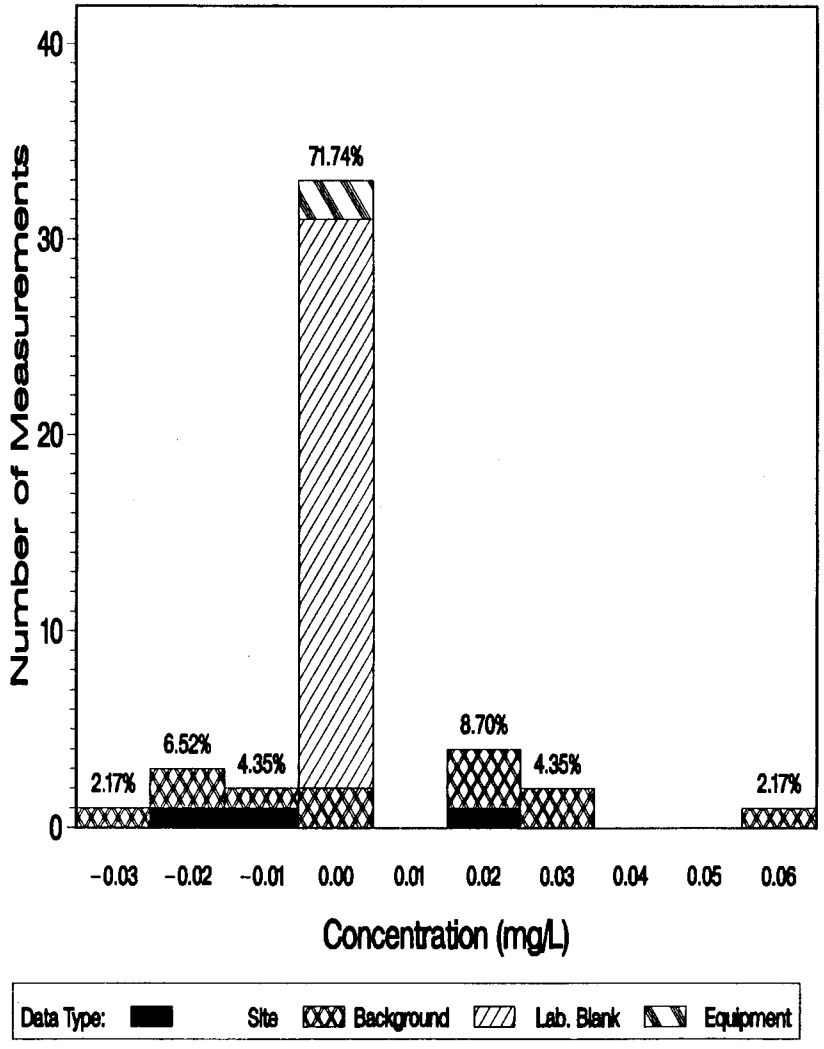
Group 11 -- Nickel -- SW6010

Groundwater -- Total Metals



Group 11 -- Selenium -- SW7740

Groundwater -- Total Metals

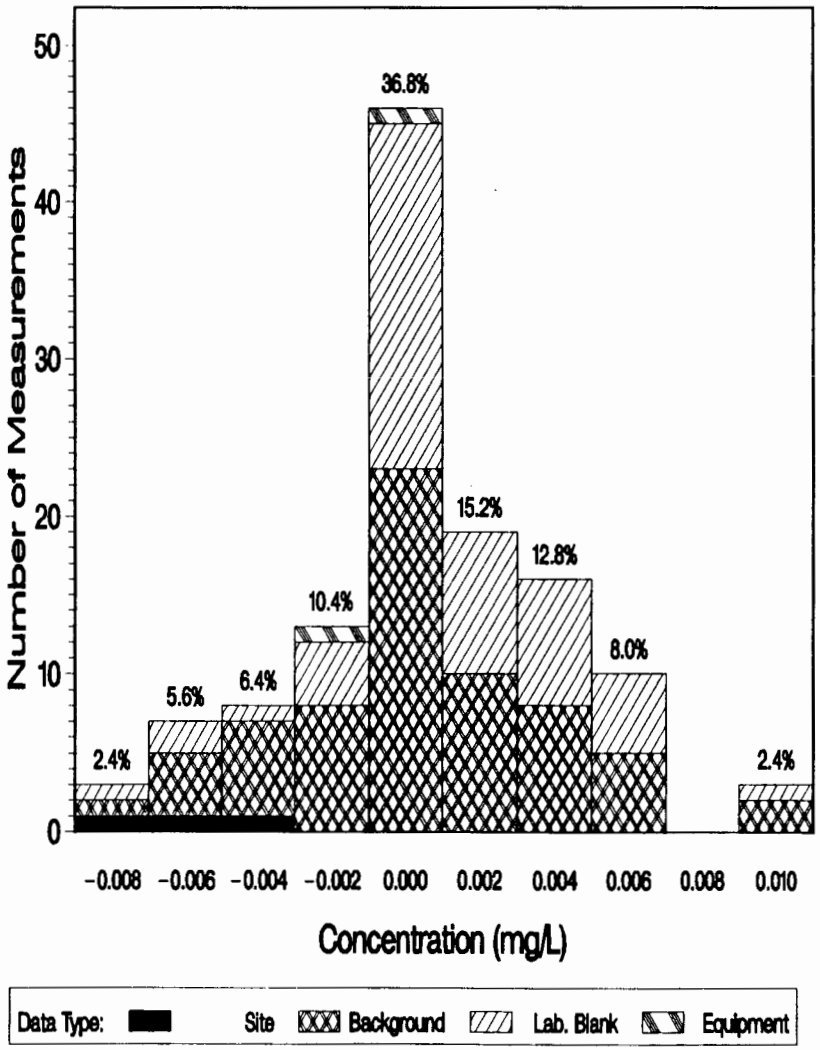


Holloman AFB L&L Site and Background Data

Frequency Distribution

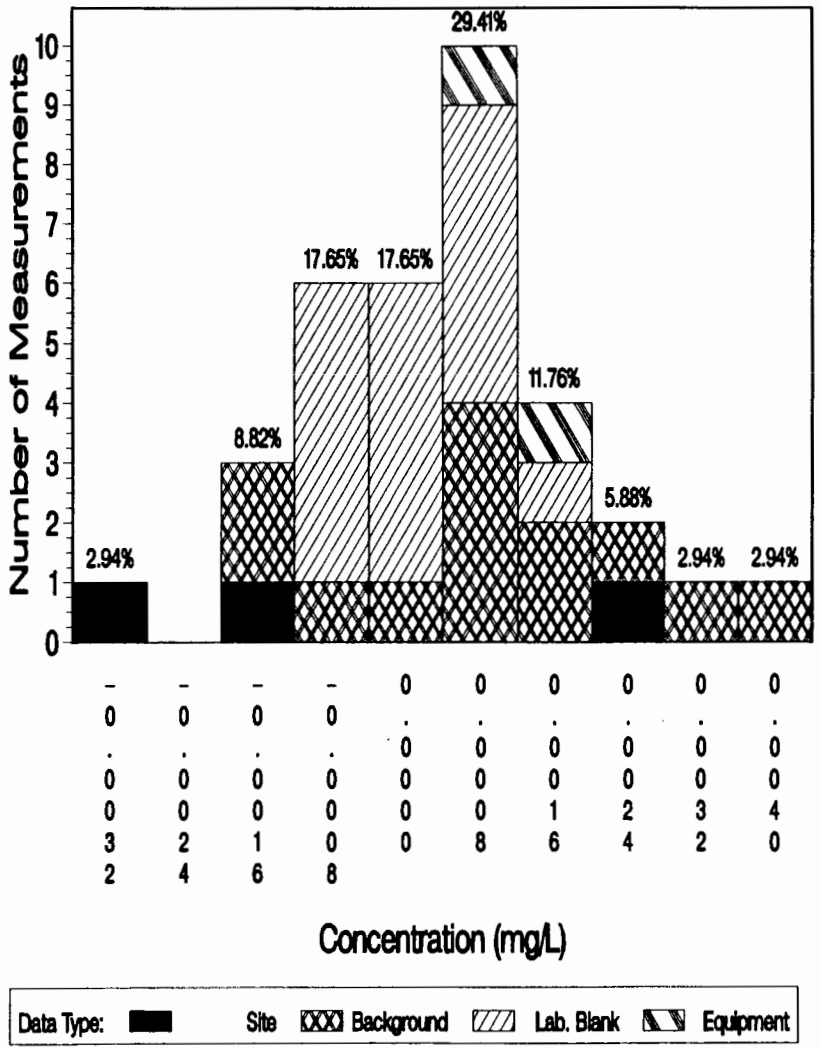
Group 11 -- Silver -- SW6010

Groundwater -- Total Metals



Group 11 -- Thallium -- SW7841

Groundwater -- Total Metals

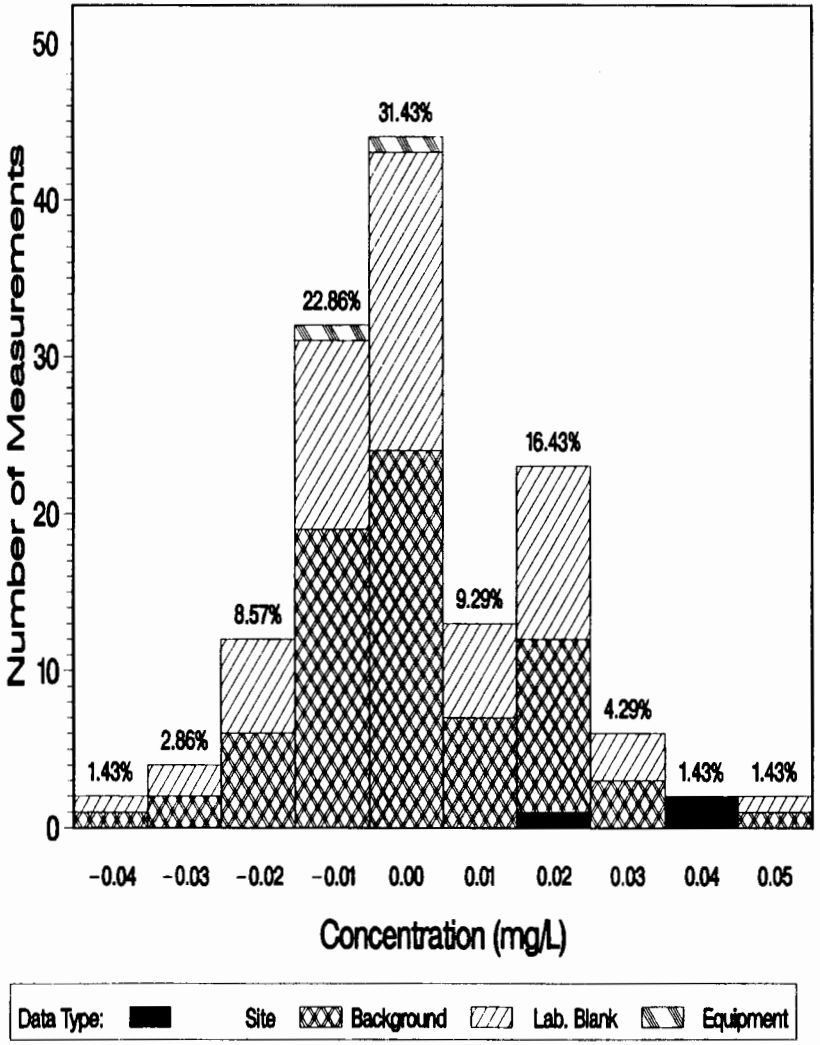


Holloman AFB L&L Site and Background Data

Frequency Distribution

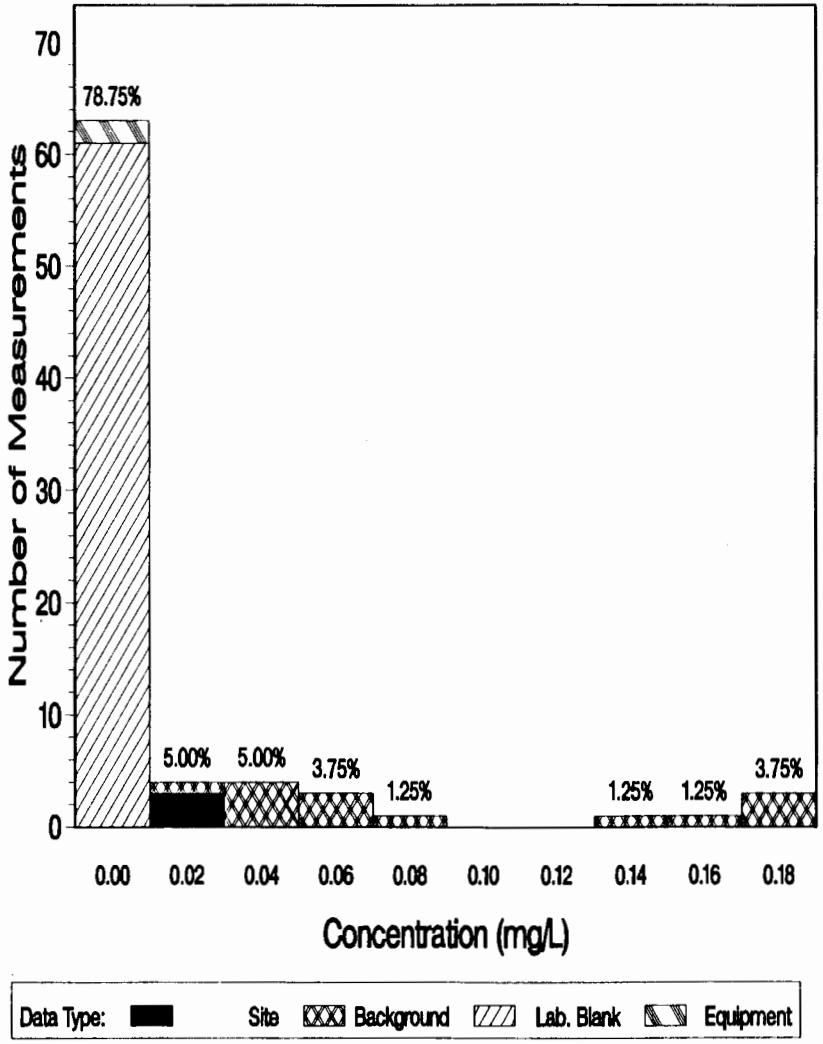
Group 11 -- Tin -- SW6010

Groundwater -- Total Metals



Group 11 -- Vanadium -- SW6010

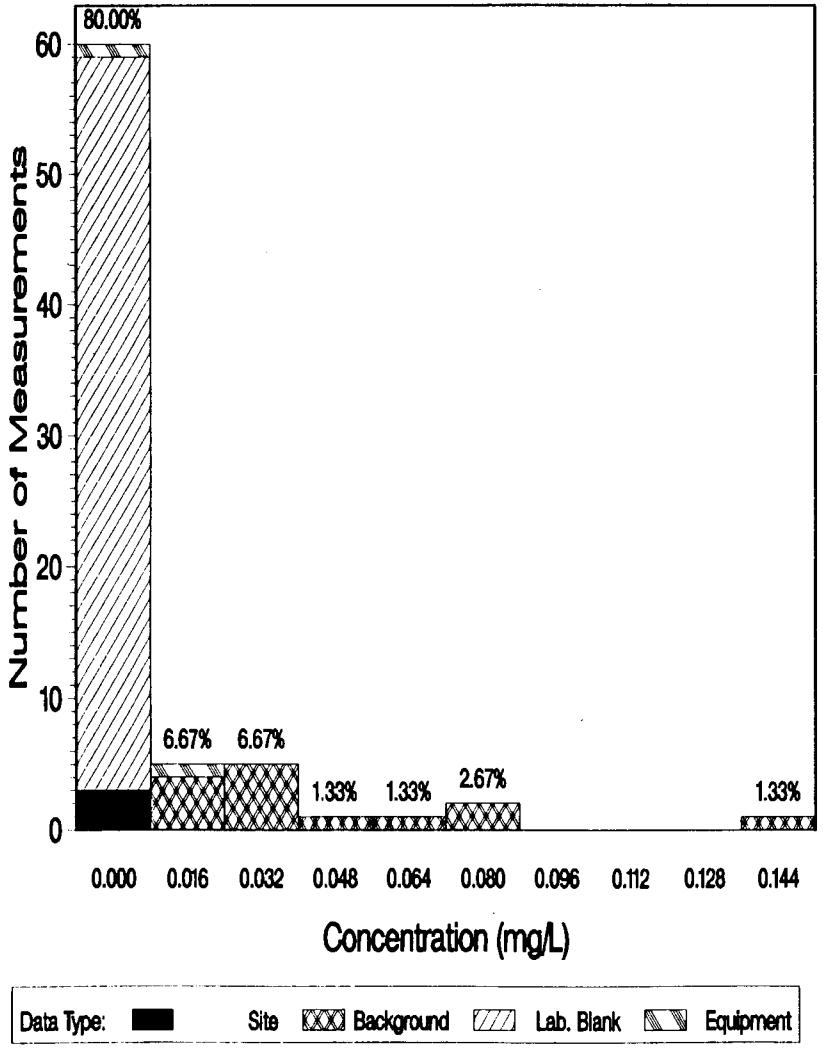
Groundwater -- Total Metals



Holloman AFB L&L Site and Background Data
Frequency Distribution

Group 11 -- Zinc -- SW6010

Groundwater -- Total Metals

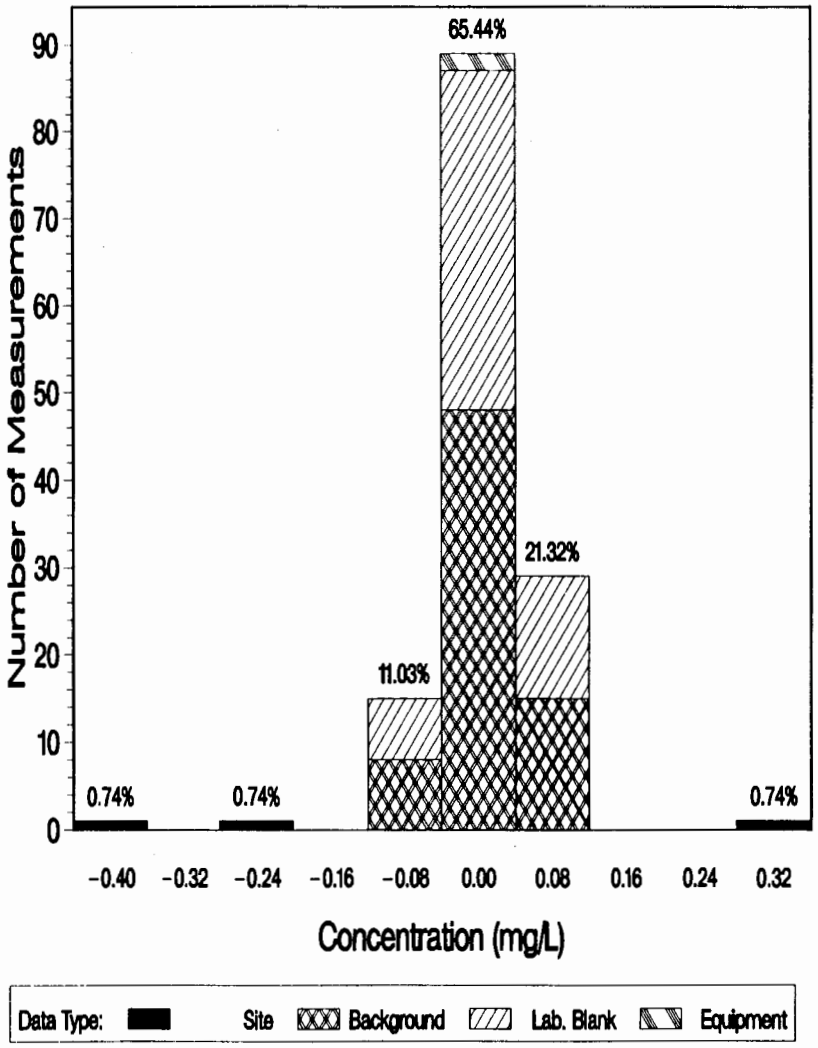


Holloman AFB L&L Site and Background Data

Frequency Distribution

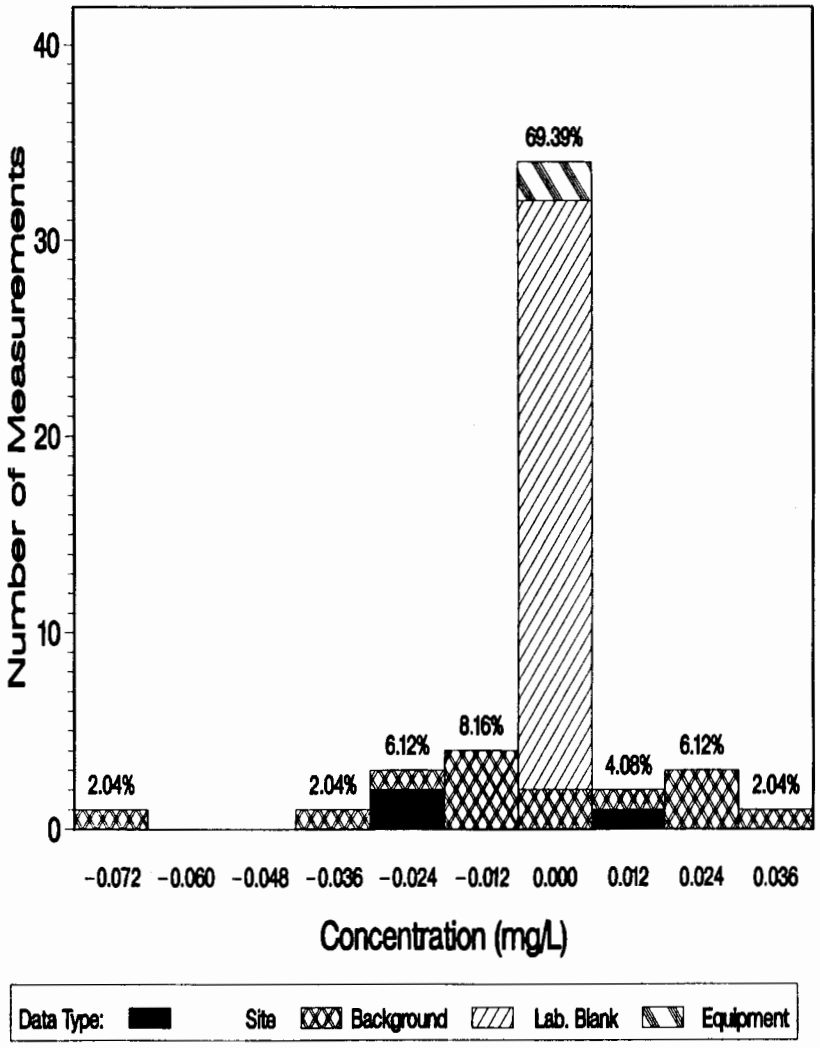
Group 14 -- Antimony -- SW6010

Groundwater -- Total Metals



Group 14 -- Arsenic -- SW7060

Groundwater -- Total Metals

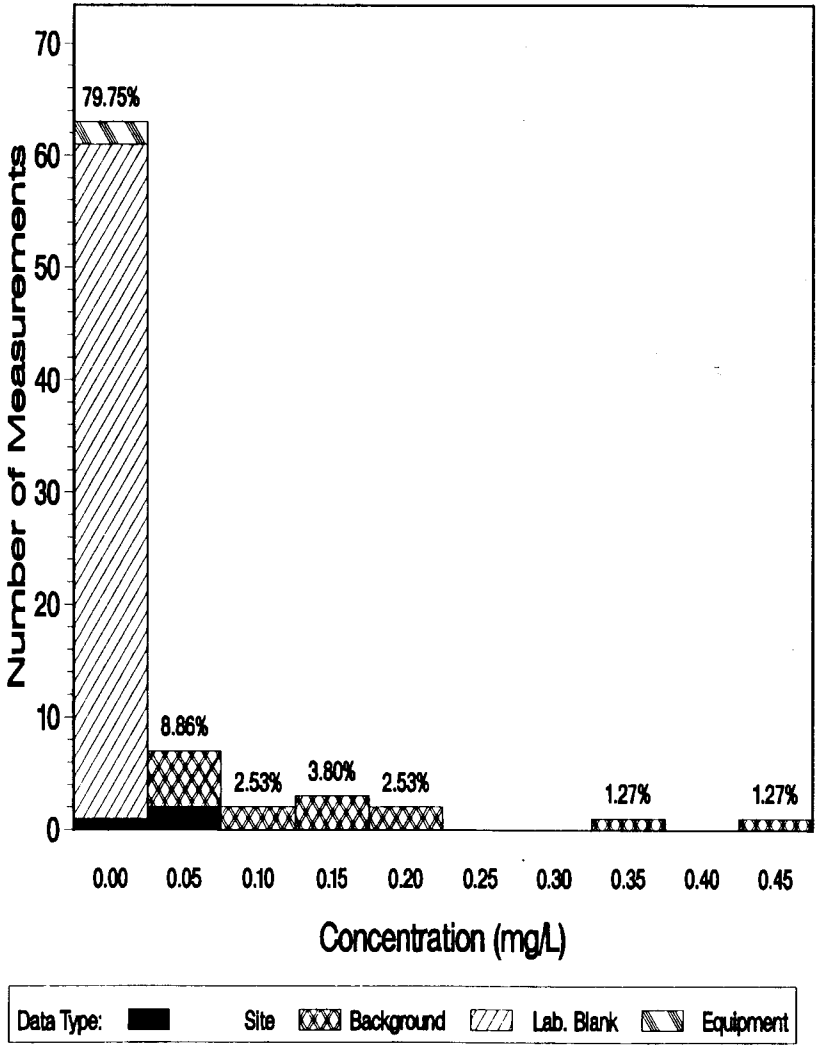


Holloman AFB L&L Site and Background Data

Frequency Distribution

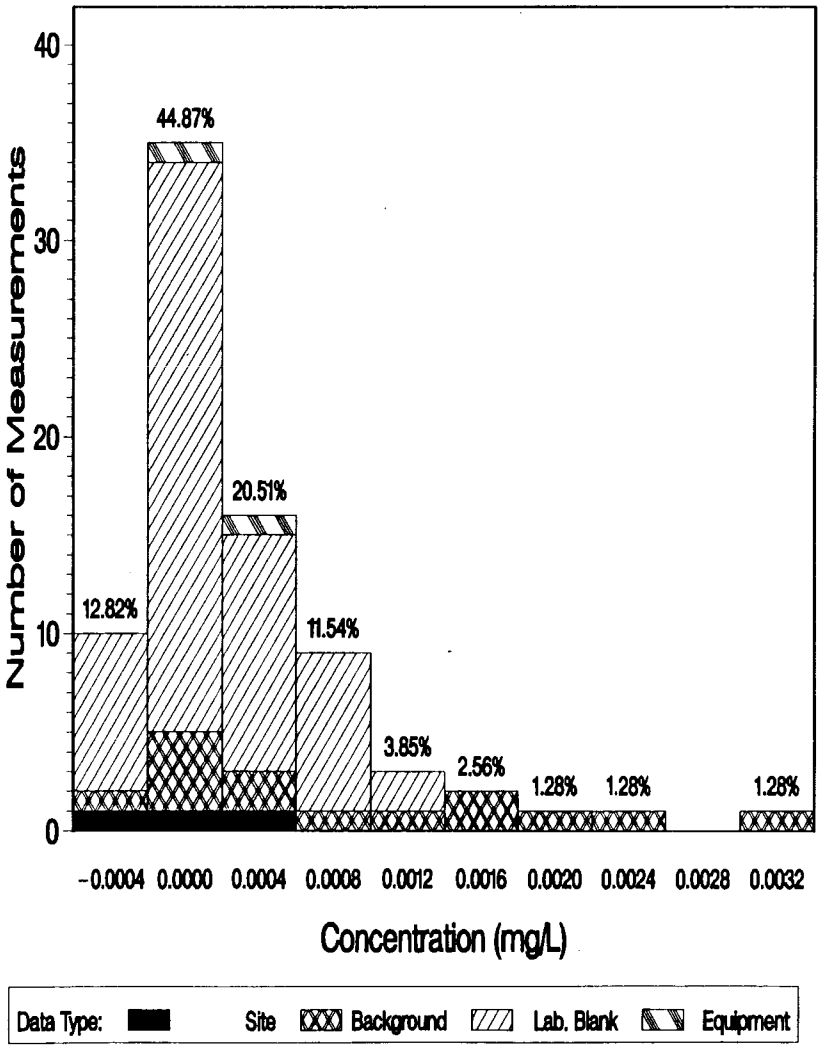
Group 14 -- Barium -- SW6010

Groundwater -- Total Metals



Group 14 -- Beryllium -- SW6010

Groundwater -- Total Metals

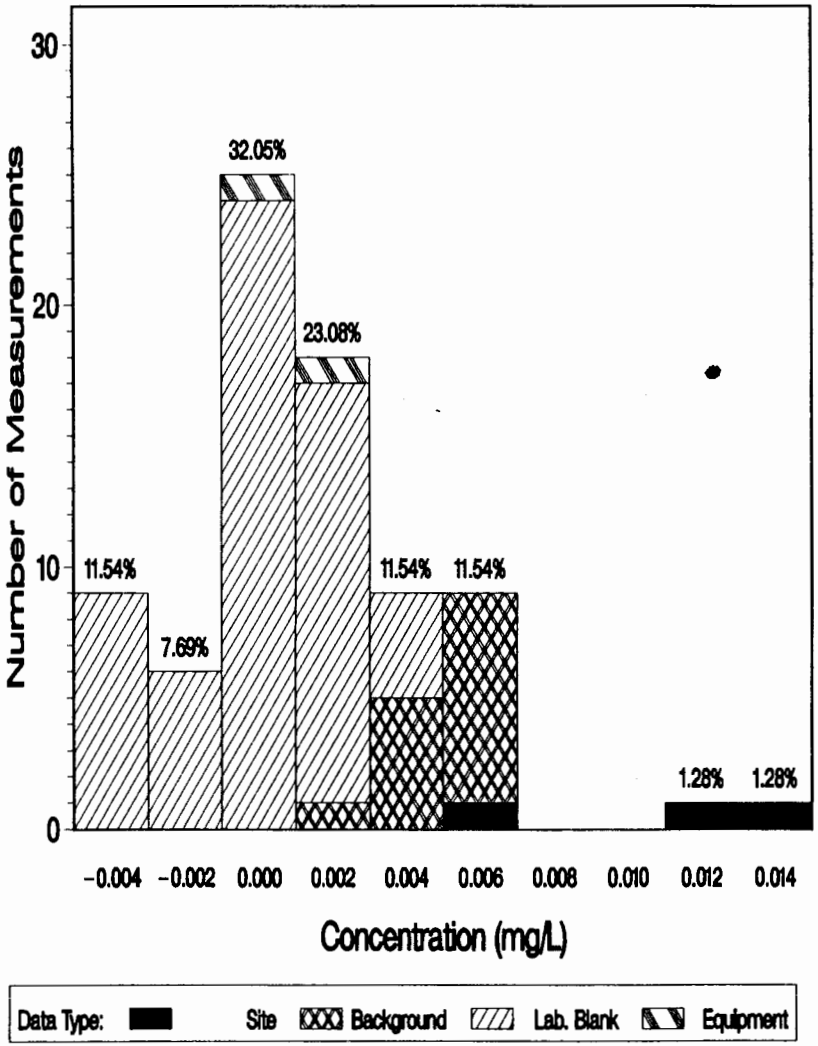


Holloman AFB L&L Site and Background Data

Frequency Distribution

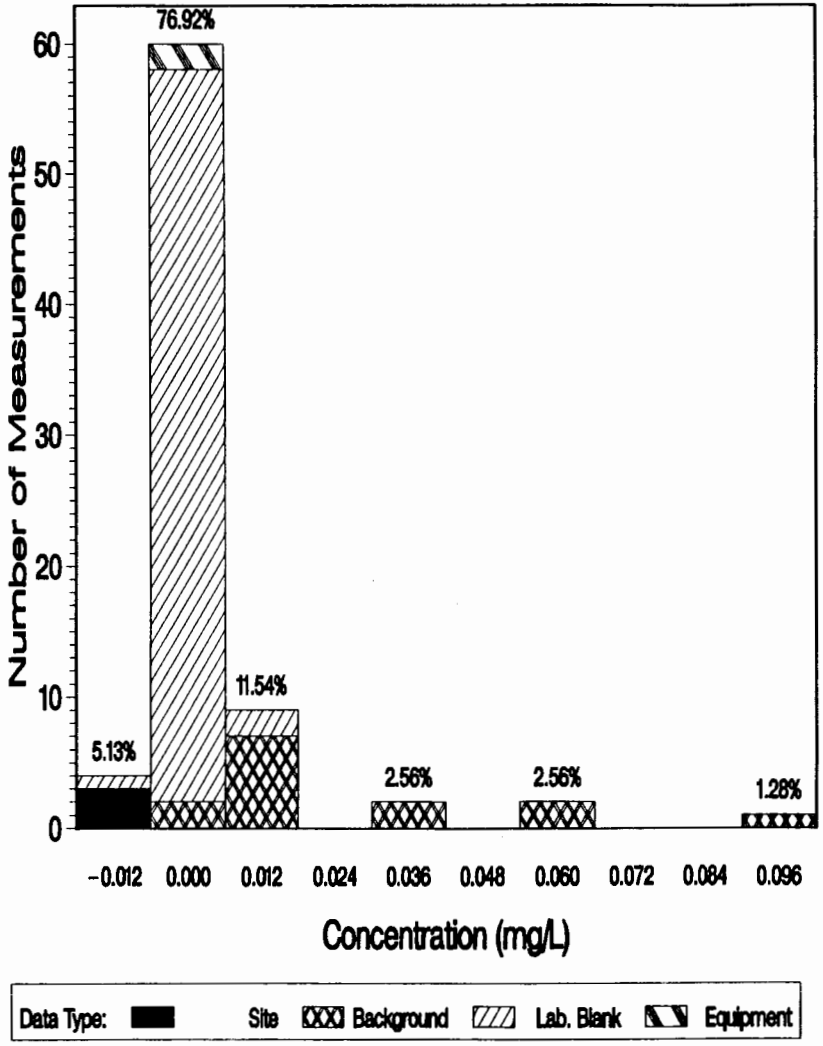
Group 14 -- Cadmium -- SW6010

Groundwater -- Total Metals



Group 14 -- Chromium -- SW6010

Groundwater -- Total Metals

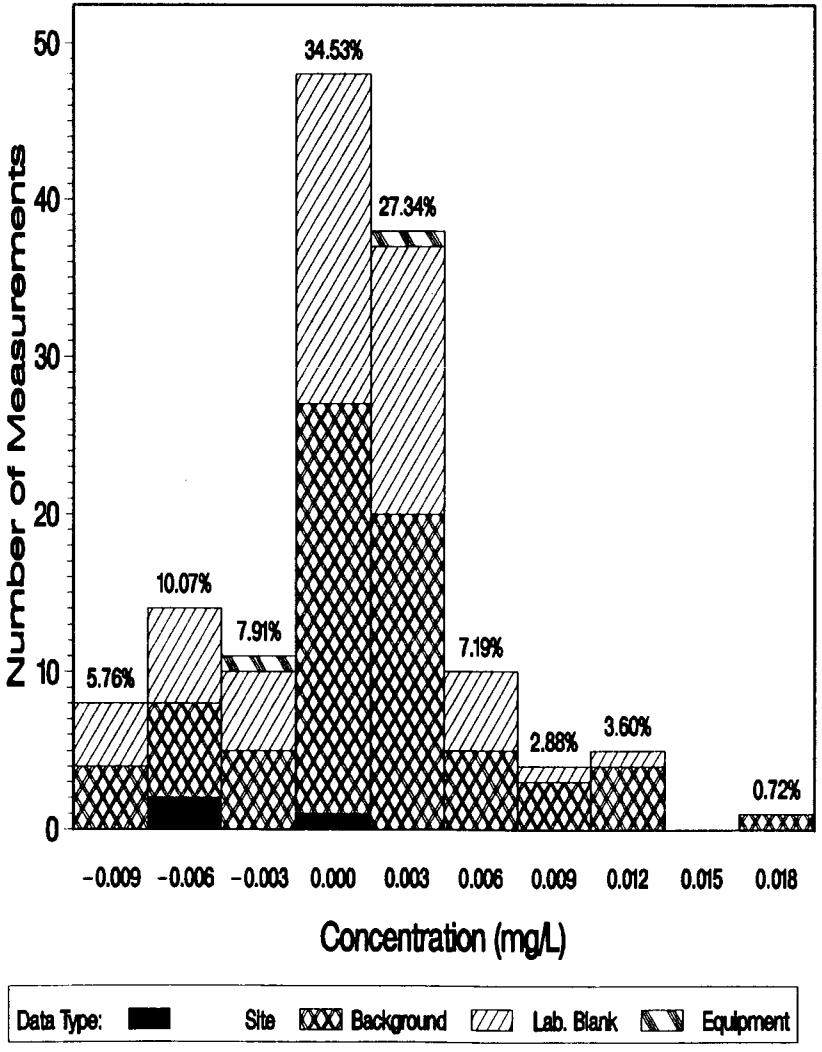


Holloman AFB L&L Site and Background Data

Frequency Distribution

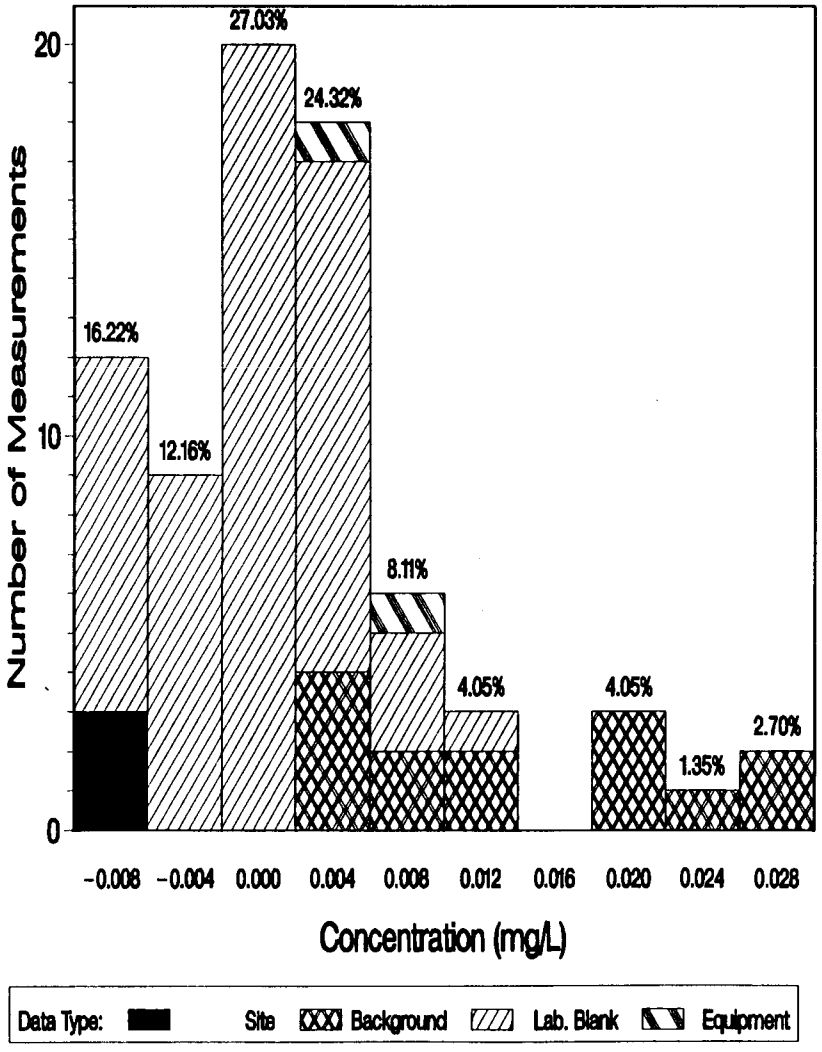
Group 14 -- Cobalt -- SW6010

Groundwater -- Total Metals



Group 14 -- Copper -- SW6010

Groundwater -- Total Metals

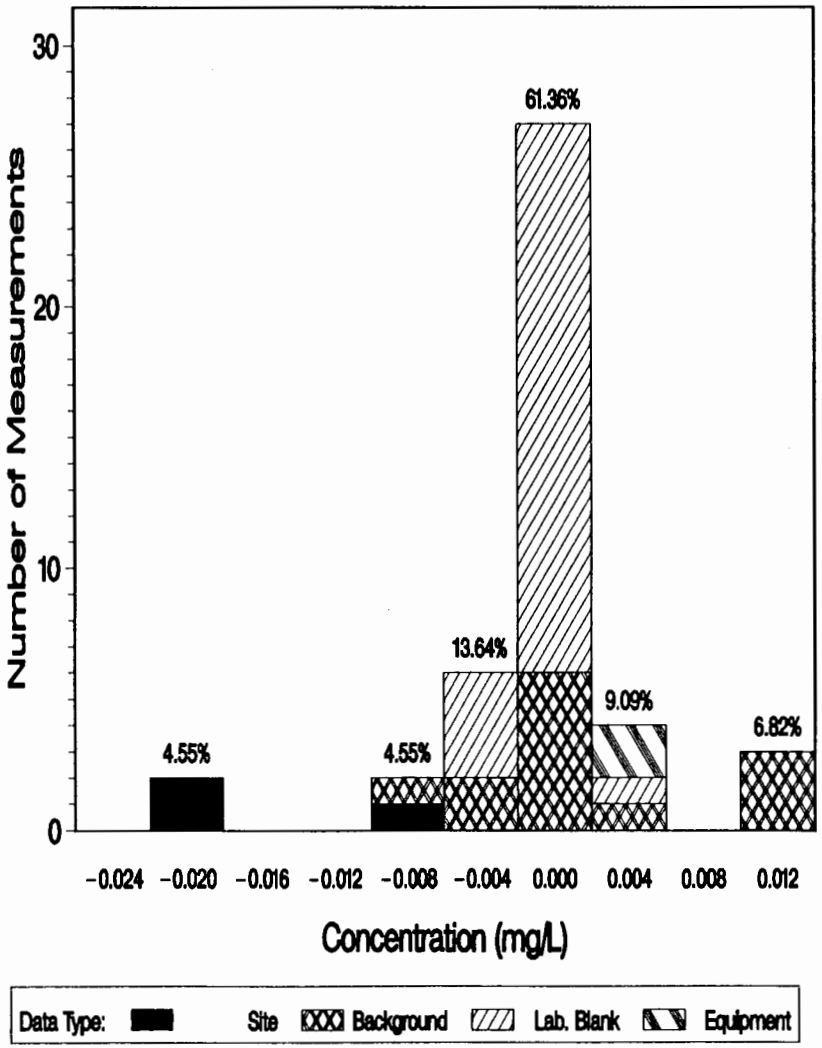


Holloman AFB L&L Site and Background Data

Frequency Distribution

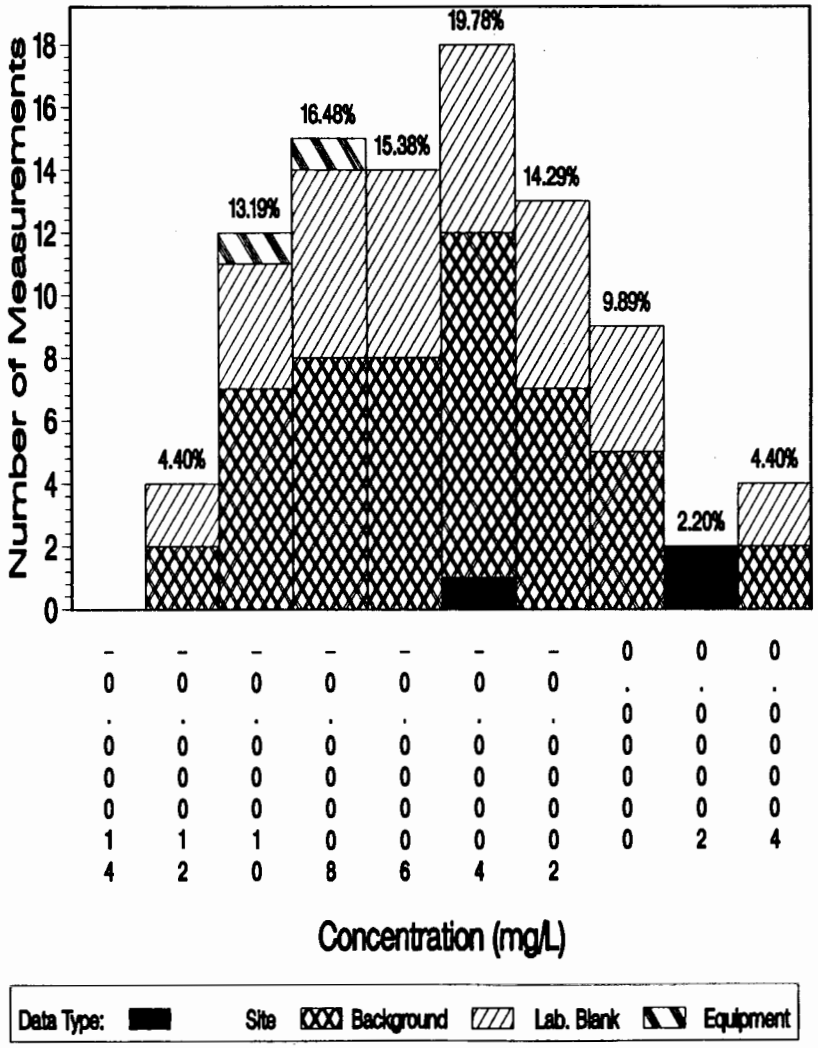
Group 14 -- Lead -- SW7421

Groundwater -- Total Metals



Group 14 -- Mercury -- SW7470

Groundwater -- Total Metals

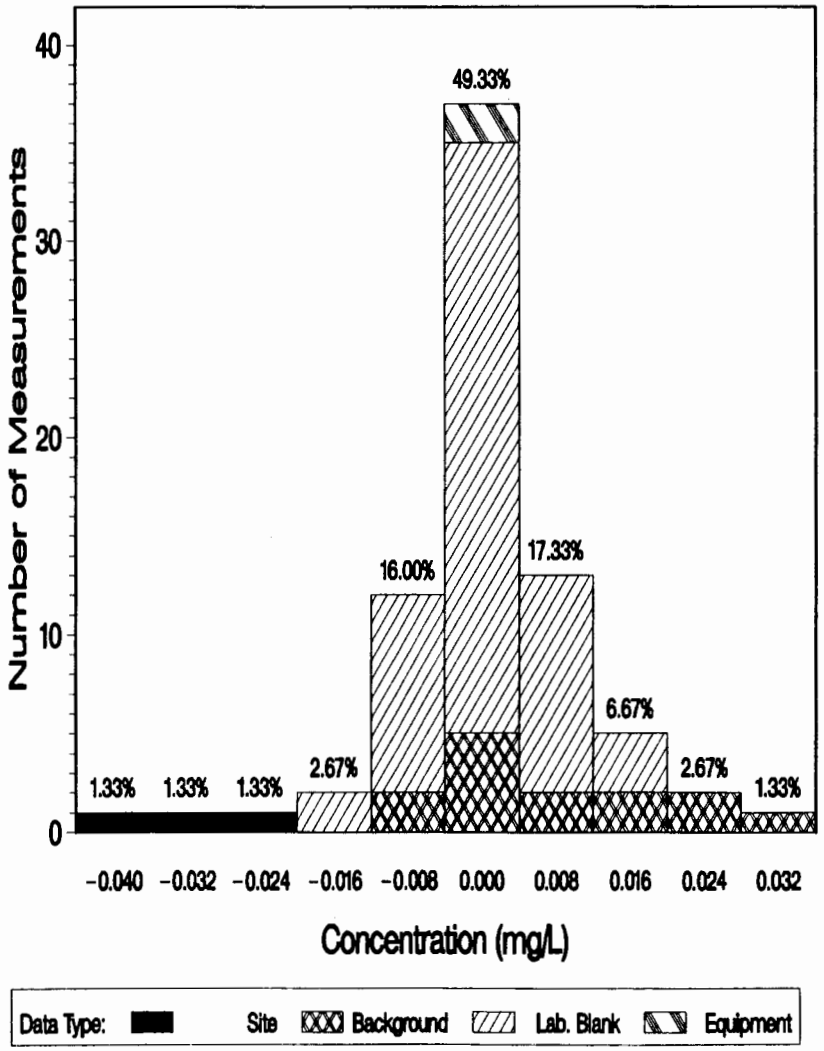


Holloman AFB L&L Site and Background Data

Frequency Distribution

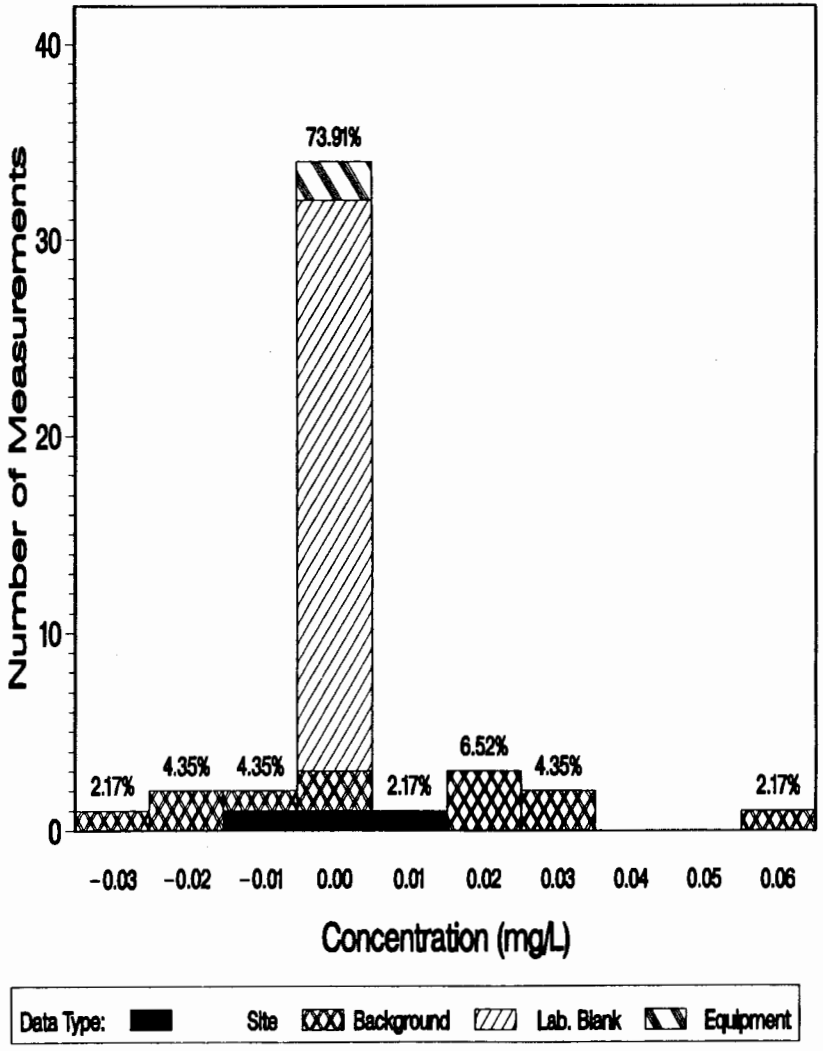
Group 14 -- Nickel -- SW6010

Groundwater -- Total Metals



Group 14 -- Selenium -- SW7740

Groundwater -- Total Metals

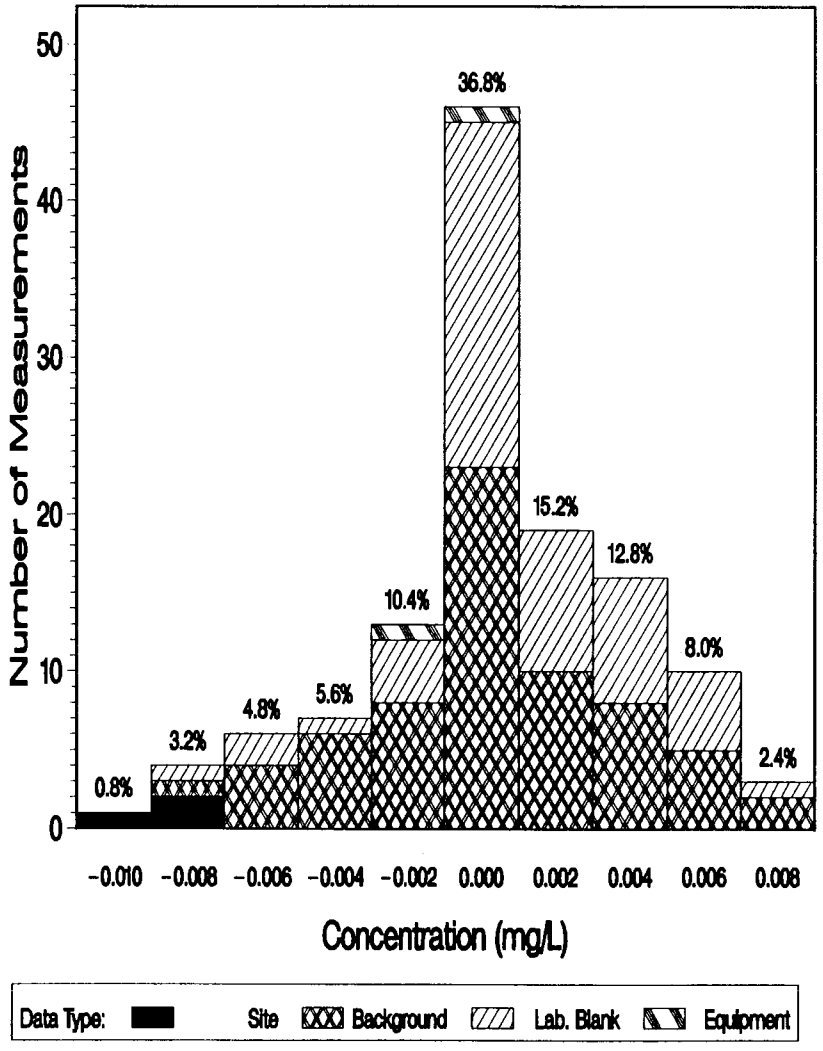


Holloman AFB L&L Site and Background Data

Frequency Distribution

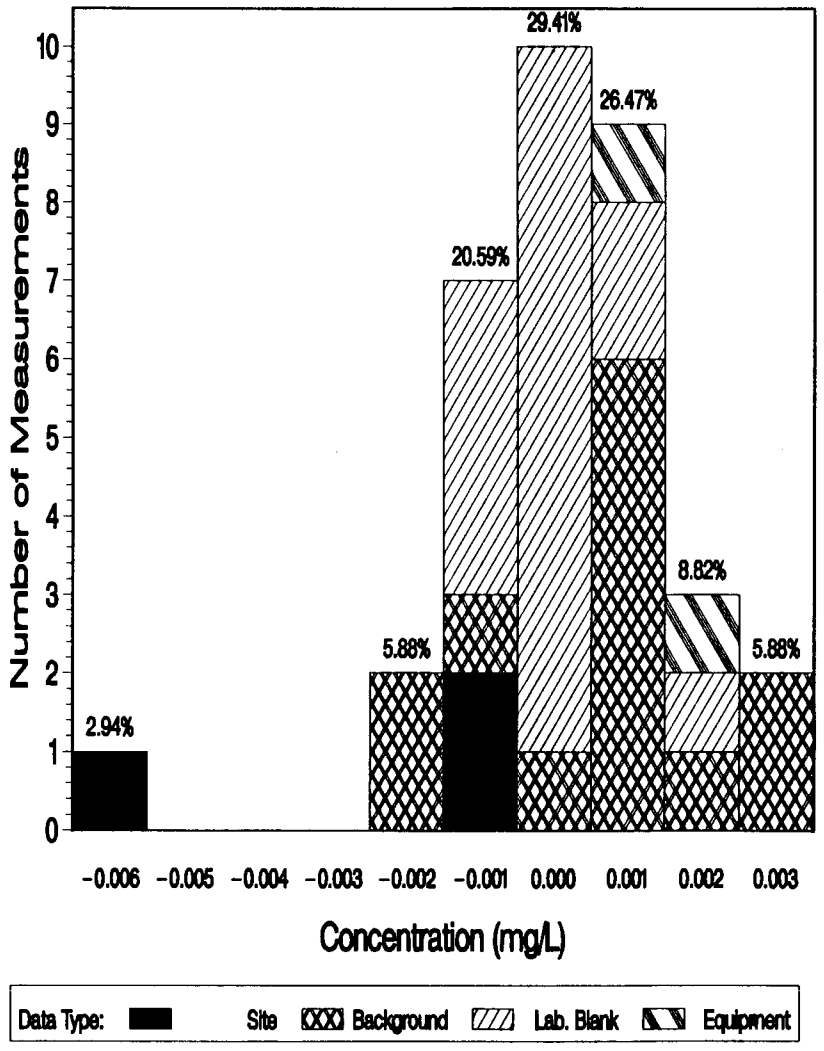
Group 14 -- Silver -- SW6010

Groundwater -- Total Metals



Group 14 -- Thallium -- SW7841

Groundwater -- Total Metals

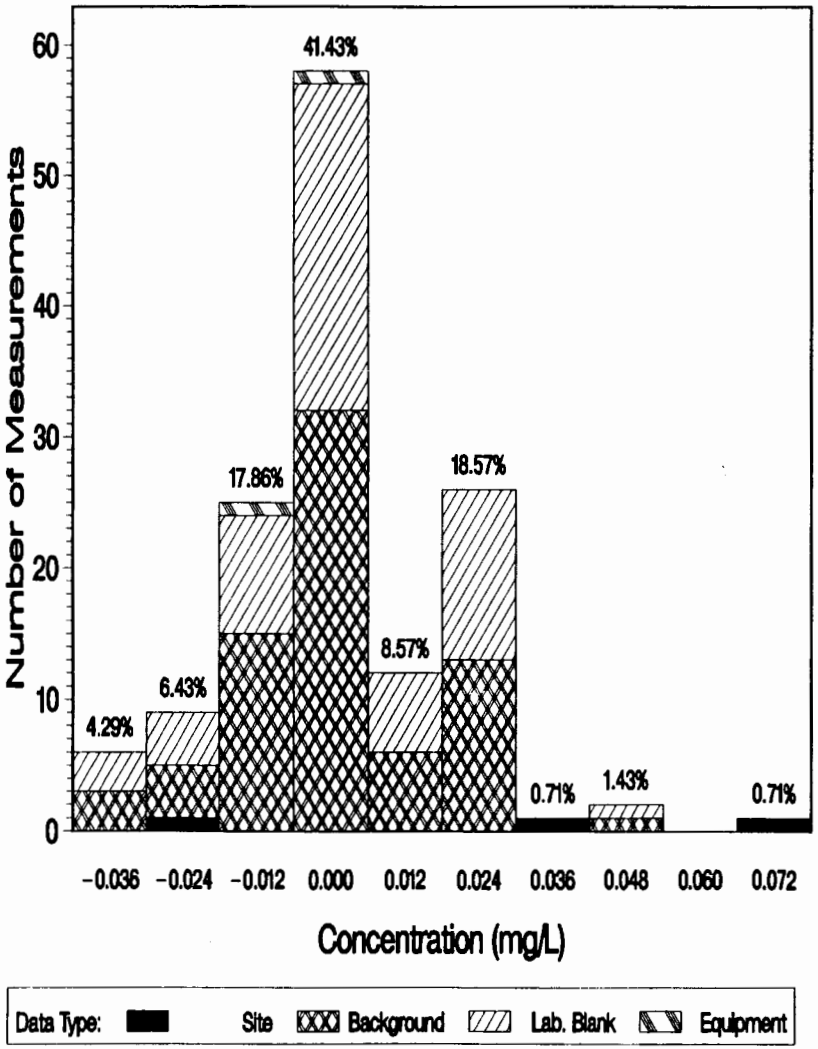


Holloman AFB L&L Site and Background Data

Frequency Distribution

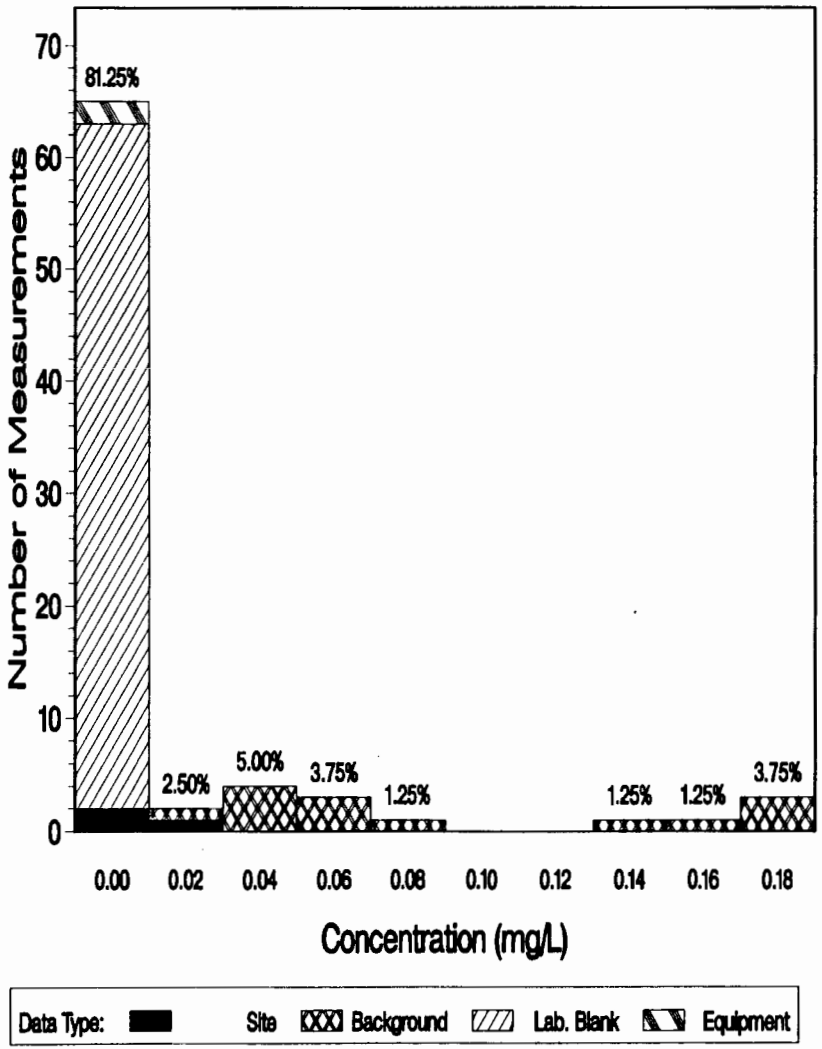
Group 14 -- Tin -- SW6010

Groundwater -- Total Metals



Group 14 -- Vanadium -- SW6010

Groundwater -- Total Metals

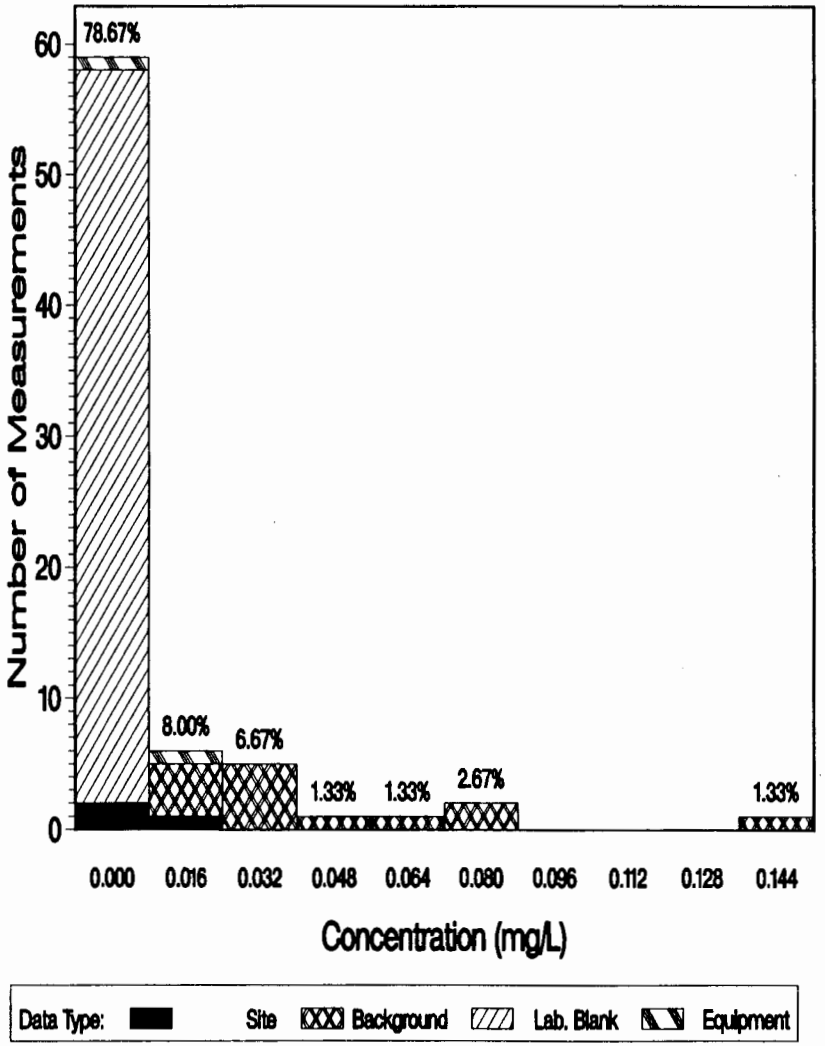


Holloman AFB L&L Site and Background Data

Frequency Distribution

Group 14 -- Zinc -- SW6010

Groundwater -- Total Metals



APPENDIX C

ANALYTICAL RESULTS AND METHOD DETECTION LIMITS

APPENDIX C.1

ANALYTICAL RESULTS

TABLE B6 RESULTS OF ORGANIC ANALYSES FOR WATER SAMPLES, HOLLOMAN SEWAGE LAGOONS AND LAKES INVESTIGATION.

	SITE ID											
	LOCATION ID											
	SAMPLE ID											
PARAMETER	MW-01				MW-02				MW-03				MW-04			
	9303-MW-01-01				9303-MW-02-01				9303-MW-03-01				9303-MW-04-01			
SW8080 - Organochlorine Pesticides and PCBs (ug/L)																
4,4'-DDD	ND		(0.0095)	[0.952380]	ND		(0.0096)	[0.956937]	ND		(0.0095)	[0.952380]	0.047	@	(0.0095)	[0.952380]
4,4'-DDE	ND		(0.0095)	[0.952380]	ND		(0.0096)	[0.956937]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]
4,4'-DDT	ND		(0.019)	[0.952380]	ND		(0.019)	[0.956937]	ND		(0.019)	[0.952380]	ND		(0.019)	[0.952380]
Aldrin	ND		(0.0095)	[0.952380]	ND		(0.0096)	[0.956937]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]
Dieldrin	ND		(0.0095)	[0.952380]	0.017	@	(0.0096)	[0.956937]	0.02	X@	(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]
Endosulfan I	ND		(0.0095)	[0.952380]	ND		(0.0096)	[0.956937]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]
Endosulfan II	ND		(0.029)	[0.952380]	0.017	J	(0.029)	[0.956937]	0.022	J	(0.029)	[0.952380]	ND		(0.029)	[0.952380]
Endosulfan Sulfate	0.0084	J	(0.048)	[0.952380]	0.013	J	(0.048)	[0.956937]	0.018	J	(0.048)	[0.952380]	0.038	J	(0.048)	[0.952380]
Endrin	ND		(0.0095)	[0.952380]	ND		(0.0096)	[0.956937]	0.02	X@	(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]
Endrin Aldehyde	ND		(0.019)	[0.952380]	0.0044	JX	(0.019)	[0.956937]	ND		(0.019)	[0.952380]	0.04	G@	(0.019)	[0.952380]
Heptachlor	ND		(0.0095)	[0.952380]	ND		(0.0096)	[0.956937]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]
Heptachlor epoxide	0.016	X@	(0.0095)	[0.952380]	0.0085	J	(0.0096)	[0.956937]	0.016	@	(0.0095)	[0.952380]	0.37	G	(0.0095)	[0.952380]
Isodrin	ND		(0.0095)	[0.952380]	ND		(0.0096)	[0.956937]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]
Kepone	ND		(0.0095)	[0.952380]	ND		(0.0096)	[0.956937]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]
Methoxychlor	ND		(0.048)	[0.952380]	ND		(0.048)	[0.956937]	ND		(0.048)	[0.952380]	0.016	JX	(0.048)	[0.952380]
Toxaphene	ND		(0.48)	[0.952380]	ND		(0.48)	[0.956937]	ND		(0.48)	[0.952380]	ND		(0.48)	[0.952380]
alpha-BHC	ND		(0.0095)	[0.952380]	ND		(0.0096)	[0.956937]	ND		(0.0095)	[0.952380]	0.1	X	(0.0095)	[0.952380]
alpha-Chlordane	ND		(0.0095)	[0.952380]	0.0083	JX	(0.0096)	[0.956937]	0.015	X@	(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]
beta-BHC	ND		(0.0095)	[0.952380]	ND		(0.0096)	[0.956937]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]
delta-BHC	ND		(0.0095)	[0.952380]	ND		(0.0096)	[0.956937]	0.035	X@	(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]
gamma-BHC	ND		(0.0095)	[0.952380]	0.016	X@	(0.0096)	[0.956937]	0.018	X@	(0.0095)	[0.952380]	0.059	X	(0.0095)	[0.952380]
gamma-Chlordane	ND		(0.0095)	[0.952380]	0.042	X@	(0.0096)	[0.956937]	0.026	X@	(0.0095)	[0.952380]	0.072	X	(0.0095)	[0.952380]

Compiled: 14 September 1993 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable * - Value considered suspect, Refer to QC Report

NOTE: Reported results for sample IDs ending with a 'D' represent dissolved metals concentrations.

TABLE B6 RESULTS OF ORGANIC ANALYSES FOR WATER SAMPLES, HOLLOMAN SEWAGE LAGOONS AND LAKES INVESTIGATION.

PARAMETER	MW-05 9303-MW-05-01				MW-05 9303-MW-05-02 Dup of 9303-MW-05-01				MW-06 9303-MW-06-01				MW-07 9303-MW-07-01			
SW8080 - Organochlorine Pesticides and PCBs (ug/L)																
4,4'-DDD	ND		(0.0098)	[0.980392]	ND		(0.0098)	[0.980392]	ND		(0.0095)	[0.952380]	ND		(0.0098)	[0.980392]
4,4'-DDE	0.013	G@	(0.0098)	[0.980392]	0.036	G@	(0.0098)	[0.980392]	ND		(0.0095)	[0.952380]	ND		(0.0098)	[0.980392]
4,4'-DDT	0.036	@	(0.02)	[0.980392]	0.063	@	(0.02)	[0.980392]	ND		(0.019)	[0.952380]	0.034	X@	(0.02)	[0.980392]
Aldrin	ND		(0.0098)	[0.980392]	ND		(0.0098)	[0.980392]	ND		(0.0095)	[0.952380]	ND		(0.0098)	[0.980392]
Dieldrin	ND		(0.0098)	[0.980392]	ND		(0.0098)	[0.980392]	ND		(0.0095)	[0.952380]	ND		(0.0098)	[0.980392]
Endosulfan I	0.054	X	(0.0098)	[0.980392]	ND		(0.0098)	[0.980392]	ND		(0.0095)	[0.952380]	ND		(0.0098)	[0.980392]
Endosulfan II	0.031	G@	(0.029)	[0.980392]	0.056	@	(0.029)	[0.980392]	ND		(0.029)	[0.952380]	0.029	@	(0.029)	[0.980392]
Endosulfan Sulfate	0.015	J	(0.049)	[0.980392]	0.038	J	(0.049)	[0.980392]	0.018	J	(0.048)	[0.952380]	0.039	J	(0.049)	[0.980392]
Endrin	0.029	X@	(0.0098)	[0.980392]	0.064		(0.0098)	[0.980392]	0.018	X@	(0.0095)	[0.952380]	0.043	G@	(0.0098)	[0.980392]
Endrin Aldehyde	ND		(0.02)	[0.980392]	ND		(0.02)	[0.980392]	ND		(0.019)	[0.952380]	ND		(0.02)	[0.980392]
Heptachlor	0.025	X@	(0.0098)	[0.980392]	0.037	X@	(0.0098)	[0.980392]	ND		(0.0095)	[0.952380]	ND		(0.0098)	[0.980392]
Heptachlor epoxide	0.033	@	(0.0098)	[0.980392]	0.059		(0.0098)	[0.980392]	0.018	X@	(0.0095)	[0.952380]	0.036	@	(0.0098)	[0.980392]
Isodrin	ND		(0.0098)	[0.980392]	ND		(0.0098)	[0.980392]	ND		(0.0095)	[0.952380]	ND		(0.0098)	[0.980392]
Kepone	ND		(0.0098)	[0.980392]	ND		(0.0098)	[0.980392]	ND		(0.0095)	[0.952380]	ND		(0.0098)	[0.980392]
Methoxychlor	ND		(0.049)	[0.980392]	ND		(0.049)	[0.980392]	ND		(0.048)	[0.952380]	ND		(0.049)	[0.980392]
Toxaphene	ND		(0.49)	[0.980392]	ND		(0.49)	[0.980392]	ND		(0.48)	[0.952380]	ND		(0.49)	[0.980392]
alpha-BHC	ND		(0.0098)	[0.980392]	0.029	@	(0.0098)	[0.980392]	ND		(0.0095)	[0.952380]	ND		(0.0098)	[0.980392]
alpha-Chlordane	ND		(0.0098)	[0.980392]	0.077	G	(0.0098)	[0.980392]	ND		(0.0095)	[0.952380]	0.034	X@	(0.0098)	[0.980392]
beta-BHC	0.028	@	(0.0098)	[0.980392]	0.051		(0.0098)	[0.980392]	ND		(0.0095)	[0.952380]	ND		(0.0098)	[0.980392]
delta-BHC	0.045	@	(0.0098)	[0.980392]	ND		(0.0098)	[0.980392]	ND		(0.0095)	[0.952380]	ND		(0.0098)	[0.980392]
gamma-BHC	0.15	G	(0.0098)	[0.980392]	0.018	@	(0.0098)	[0.980392]	ND		(0.0095)	[0.952380]	0.083	X	(0.0098)	[0.980392]
gamma-Chlordane	0.076	G	(0.0098)	[0.980392]	0.12	X	(0.0098)	[0.980392]	ND		(0.0095)	[0.952380]	0.077	X	(0.0098)	[0.980392]

Compiled: 14 September 1993 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable * - Value considered suspect, Refer to QC Report

NOTE: Reported results for sample IDs ending with a 'D' represent dissolved metals concentrations.

TABLE B6 RESULTS OF ORGANIC ANALYSES FOR WATER SAMPLES, HOLLOMAN SEWAGE LAGOONS AND LAKES INVESTIGATION.

PARAMETER	MW-08 9303-MW-08-01				MW-09 9303-MW-09-01				MW-10 9303-MW-10-01				MW-11 9303-MW-11-01			
SW8080 - Organochlorine Pesticides and PCBs (ug/L)																
4,4'-DDD	ND		(0.0096)	[0.956937]	ND		(0.0096)	[0.961538]	ND		(0.0096)	[0.961538]	ND		(0.0098)	[0.980392]
4,4'-DDE	ND		(0.0096)	[0.956937]	ND		(0.0096)	[0.961538]	ND		(0.0096)	[0.961538]	ND		(0.0098)	[0.980392]
4,4'-DDT	ND		(0.019)	[0.956937]	ND		(0.019)	[0.961538]	ND		(0.019)	[0.961538]	ND		(0.02)	[0.980392]
Aldrin	ND		(0.0096)	[0.956937]	ND		(0.0096)	[0.961538]	ND		(0.0096)	[0.961538]	ND		(0.0098)	[0.980392]
Dieldrin	0.014	X@	(0.0096)	[0.956937]	ND		(0.0096)	[0.961538]	ND		(0.0096)	[0.961538]	ND		(0.0098)	[0.980392]
Endosulfan I	ND		(0.0096)	[0.956937]	ND		(0.0096)	[0.961538]	ND		(0.0096)	[0.961538]	ND		(0.0098)	[0.980392]
Endosulfan II	0.017	JX	(0.029)	[0.956937]	ND		(0.029)	[0.961538]	ND		(0.029)	[0.961538]	ND		(0.029)	[0.980392]
Endosulfan Sulfate	0.0096	J	(0.048)	[0.956937]	ND		(0.048)	[0.961538]	ND		(0.048)	[0.961538]	ND		(0.049)	[0.980392]
Endrin	0.021	G@	(0.0096)	[0.956937]	0.0023	JX	(0.0096)	[0.961538]	0.0022	JX	(0.0096)	[0.961538]	ND		(0.0098)	[0.980392]
Endrin Aldehyde	ND		(0.019)	[0.956937]	ND		(0.019)	[0.961538]	ND		(0.019)	[0.961538]	0.007	JX	(0.02)	[0.980392]
Heptachlor	0.0042	JX	(0.0096)	[0.956937]	0.0049	JX	(0.0096)	[0.961538]	0.0043	JX	(0.0096)	[0.961538]	0.019	G@	(0.0098)	[0.980392]
Heptachlor epoxide	1.2	G	(0.0096)	[0.956937]	0.0053	JX	(0.0096)	[0.961538]	ND		(0.0096)	[0.961538]	0.0051	JX	(0.0098)	[0.980392]
Isodrin	ND		(0.0096)	[0.956937]	ND		(0.0096)	[0.961538]	ND		(0.0096)	[0.961538]	ND		(0.0098)	[0.980392]
Kepone	ND		(0.0096)	[0.956937]	ND		(0.0096)	[0.961538]	ND		(0.0096)	[0.961538]	ND		(0.0098)	[0.980392]
Methoxychlor	ND		(0.048)	[0.956937]	ND		(0.048)	[0.961538]	ND		(0.048)	[0.961538]	ND		(0.049)	[0.980392]
PCB-1016	NA				ND		(0.096)	[0.961538]	ND		(0.096)	[0.961538]	ND		(0.098)	[0.980392]
PCB-1221	NA				ND		(0.19)	[0.961538]	ND		(0.19)	[0.961538]	ND		(0.2)	[0.980392]
PCB-1232	NA				ND		(0.19)	[0.961538]	ND		(0.19)	[0.961538]	ND		(0.2)	[0.980392]
PCB-1242	NA				ND		(0.096)	[0.961538]	ND		(0.096)	[0.961538]	ND		(0.098)	[0.980392]
PCB-1248	NA				ND		(0.096)	[0.961538]	ND		(0.096)	[0.961538]	ND		(0.098)	[0.980392]
PCB-1254	NA				ND		(0.19)	[0.961538]	ND		(0.19)	[0.961538]	ND		(0.2)	[0.980392]
PCB-1260	NA				ND		(0.19)	[0.961538]	ND		(0.19)	[0.961538]	ND		(0.2)	[0.980392]
Toxaphene	ND		(0.48)	[0.956937]	ND		(0.48)	[0.961538]	ND		(0.48)	[0.961538]	ND		(0.49)	[0.980392]
alpha-BHC	0.013	@	(0.0096)	[0.956937]	ND		(0.0096)	[0.961538]	ND		(0.0096)	[0.961538]	0.027	X@	(0.0098)	[0.980392]
alpha-Chlordane	0.013	X@	(0.0096)	[0.956937]	ND		(0.0096)	[0.961538]	ND		(0.0096)	[0.961538]	0.0022	JX	(0.0098)	[0.980392]
beta-BHC	ND		(0.0096)	[0.956937]	ND		(0.0096)	[0.961538]	ND		(0.0096)	[0.961538]	0.013	X@	(0.0098)	[0.980392]
delta-BHC	ND		(0.0096)	[0.956937]	ND		(0.0096)	[0.961538]	ND		(0.0096)	[0.961538]	ND		(0.0098)	[0.980392]
gamma-BHC	0.014	X@	(0.0096)	[0.956937]	ND		(0.0096)	[0.961538]	0.0093	JX	(0.0096)	[0.961538]	ND		(0.0098)	[0.980392]

Compiled: 14 September 1993 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable * - Value considered suspect, Refer to QC Report

NOTE: Reported results for sample IDs ending with a 'D' represent dissolved metals concentrations.

TABLE B6 RESULTS OF ORGANIC ANALYSES FOR WATER SAMPLES, HOLLOMAN SEWAGE LAGOONS AND LAKES INVESTIGATION.

PARAMETER	MW-08 9303-MW-08-01	MW-09 9303-MW-09-01	MW-10 9303-MW-10-01	MW-11 9303-MW-11-01
	SITE ID LOCATION ID SAMPLE IO			
gamma-Chlordane	0.02 G@ (0.0096) [0.956937]	ND (0.0096) [0.961538]	ND (0.0096) [0.961538]	0.0034 J (0.0098) [0.980392]
SW8140 - Organophosphorus Pesticides (ug/L)				
Dimethoate	NA	ND (0.19) [0.970873]	ND (0.19) [0.952380]	ND (0.19) [0.952380]
Disulfoton	NA	ND (0.19) [0.970873]	ND (0.19) [0.952380]	ND (0.19) [0.952380]
Ethyl parathion	NA	ND (0.15) [0.970873]	ND (0.14) [0.952380]	ND (0.14) [0.952380]
Famphur	NA	ND (0.49) [0.970873]	ND (0.48) [0.952380]	ND (0.48) [0.952380]
Methyl parathion	NA	ND (0.029) [0.970873]	ND (0.029) [0.952380]	ND (0.029) [0.952380]
Phorate	NA	ND (0.15) [0.970873]	ND (0.14) [0.952380]	ND (0.14) [0.952380]
Sulfotepp	NA	ND (0.097) [0.970873]	ND (0.095) [0.952380]	ND (0.095) [0.952380]
Thionazin	NA	ND (0.97) [0.970873]	ND (0.95) [0.952380]	ND (0.95) [0.952380]
o,o,o-Triethylphosphorthioate	NA	ND (0.97) [0.970873]	ND (0.95) [0.952380]	ND (0.95) [0.952380]
SW8150 - Chlorinated Herbicides (ug/L)				
2,4,5-T	NA	ND (0.19) [0.970873]	ND (0.19) [0.961538]	ND (0.19) [0.934579]
2,4,5-TP (Silvex)	NA	ND (0.17) [0.970873]	ND (0.16) [0.961538]	ND (0.16) [0.934579]
2,4-D	NA	ND (1.2) [0.970873]	ND (1.2) [0.961538]	ND (1.1) [0.934579]
Dinoseb	NA	ND (0.15) [0.970873]	ND (0.14) [0.961538]	ND (0.14) [0.934579]
SW8240 - Volatile Organics (ug/L)				
1,1,1,2-Tetrachloroethane	NA	ND (5) [1]	ND (5) [1]	ND (5) [1]
1,1,1-Trichloroethane	NA	ND (5) [1]	ND (5) [1]	ND (5) [1]
1,1,2,2-Tetrachloroethane	NA	ND (5) [1]	ND (5) [1]	ND (5) [1]
1,1,2-Trichloroethane	NA	ND (5) [1]	ND (5) [1]	ND (5) [1]
1,1-Dichloroethane	NA	ND (5) [1]	ND (5) [1]	ND (5) [1]
1,1-Dichloroethene	NA	ND (5) [1]	ND (5) [1]	ND (5) [1]
1,2,3-Trichloropropane	NA	ND (5) [1]	ND (5) [1]	ND (5) [1]
1,2-Dibromo-3-chloropropane	NA	ND (20) [1]	ND (20) [1]	ND (20) [1]
1,2-Dibromoethane	NA	ND (5) [1]	ND (5) [1]	ND (5) [1]
1,2-Dichloroethane	NA	ND (5) [1]	ND (5) [1]	ND (5) [1]
1,2-Dichloropropane	NA	NO (5) [1]	ND (5) [1]	ND (5) [1]
2-Chloro-1,3-butadiene	NA	ND (25) [1]	ND (25) [1]	ND (25) [1]

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NOTE: Reported results for sample IDs ending with a 'D' represent dissolved metals concentrations.

TABLE B6 RESULTS OF ORGANIC ANALYSES FOR WATER SAMPLES, HOLLOMAN SEWAGE LAGOONS AND LAKES INVESTIGATION.

PARAMETER	SITE ID / LOCATION ID / SAMPLE ID: MW-08 9303-MW-08-01	MW-09 9303-MW-09-01			MW-10 9303-MW-10-01			MW-11 9303-MW-11-01		
2-Hexanone	NA	ND	(50)	[1]	ND	(50)	[1]	ND	(50)	[1]
3-Chloropropene	NA	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
4-Methyl-2-pentanone(MIBK)	NA	ND	(50)	[1]	ND	(50)	[1]	ND	(50)	[1]
Acetone	NA	ND	(100)	[1]	ND	(100)	[1]	ND	(100)	[1]
Acetonitrile	NA	ND	(100)	[1]	ND	(100)	[1]	ND	(100)	[1]
Acrolein	NA	ND	(75)	[1]	ND	(75)	[1]	ND	(75)	[1]
Acrylonitrile	NA	ND	(50)	[1]	ND	(50)	[1]	ND	(50)	[1]
Benzene	NA	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
Bromodichloromethane	NA	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
Bromomethane	NA	ND	(10)	[1]	ND	(10)	[1]	ND	(10)	[1]
Carbon disulfide	NA	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
Carbon tetrachloride	NA	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
Chlorobenzene	NA	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
Chloroethane	NA	ND	(10)	[1]	ND	(10)	[1]	ND	(10)	[1]
Chloroform	NA	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
Chloromethane	NA	ND	(10)	[1]	ND	(10)	[1]	ND	(10)	[1]
Dibromochloromethane	NA	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
Dibromomethane	NA	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
Dichlorodifluoromethane	NA	ND	(20)	[1]	ND	(20)	[1]	ND	(20)	[1]
Ethyl benzene	NA	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
Ethyl methacrylate	NA	ND	(15)	[1]	ND	(15)	[1]	ND	(15)	[1]
Iodomethane	NA	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
Methyl ethyl ketone	NA	ND	(100)	[1]	ND	(100)	[1]	ND	(100)	[1]
Methyl methacrylate	NA	2.3 J	(10)	[1]	ND	(10)	[1]	ND	(10)	[1]
Methylene chloride	NA	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
Propanenitrile	NA	ND	(100)	[1]	ND	(100)	[1]	ND	(100)	[1]
Styrene	NA	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
Tetrachloroethene	NA	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
Toluene	NA	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]

Compiled: 14 September 1993 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable * - Value considered suspect, Refer to QC Report

NOTE: Reported results for sample IDs ending with a 'D' represent dissolved metals concentrations.

TABLE B6 RESULTS OF ORGANIC ANALYSES FOR WATER SAMPLES, HOLLOMAN SEWAGE LAGOONS AND LAKES INVESTIGATION.

PARAMETER	SITE ID LOCATION ID SAMPLE ID MW-08 9303-MW-08-01	MW-09 9303-MW-09-01			MW-10 9303-MW-10-01			MW-11 9303-MW-11-01		
Tribromomethane(Bromoform)	NA	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
Trichloroethene	NA	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
Trichlorofluoromethane	NA	ND	(10)	[1]	ND	(10)	[1]	ND	(10)	[1]
Unknown alkane	NA	NA			NA			9	()	[1]
Vinyl acetate	NA	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
Vinyl chloride	NA	ND	(10)	[1]	ND	(10)	[1]	ND	(10)	[1]
Xylenes	NA	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
cis-1,3-Dichloropropene	NA	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
trans-1,2-Dichloroethene	NA	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
trans-1,3-Dichloropropene	NA	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
trans-1,4-Dichloro-2-butene	NA	ND	(10)	[1]	ND	(10)	[1]	ND	(10)	[1]
SW8240DI - Volatile Organics, Direct Injection (ug/mL)										
1,4-Dioxane	NA	ND	(10)	[1]	ND	(10)	[1]	ND	(10)	[1]
Isobutanol	NA	ND	(10)	[1]	ND	(10)	[1]	ND	(10)	[1]
Methacrylonitrile	NA	ND	(10)	[1]	ND	(10)	[1]	ND	(10)	[1]
SW8270 - Semivolatile Organics (ug/L)										
1,2,4,5-Tetrachlorobenzene	NA	ND	(9.7)	[0.970873]	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]
1,2,4-Trichlorobenzene	NA	ND	(9.7)	[0.970873]	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]
1,2-Dichlorobenzene	NA	ND	(9.7)	[0.970873]	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]
1,3-Dichlorobenzene	NA	ND	(9.7)	[0.970873]	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]
1,3-Dinitrobenzene	NA	ND	(9.7)	[0.970873]	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]
1,4-Dichlorobenzene	NA	ND	(9.7)	[0.970873]	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]
1,4-Napthoquinone	NA	ND	(9.7)	[0.970873]	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]
1-Naphthylamine	NA	ND	(9.7)	[0.970873]	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]
2,3,4,6-Tetrachlorophenol	NA	ND	(9.7)	[0.970873]	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]
2,4,5-Trichlorophenol	NA	ND	(9.7)	[0.970873]	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]
2,4,6-Trichlorophenol	NA	ND	(9.7)	[0.970873]	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]
2,4-Dichlorophenol	NA	ND	(9.7)	[0.970873]	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]
2,4-Dimethylphenol	NA	ND	(9.7)	[0.970873]	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]

Compiled: 14 September 1993 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable * - Value considered suspect, Refer to QC Report

NOTE: Reported results for sample IDs ending with a 'D' represent dissolved metals concentrations.

TABLE B6 RESULTS OF ORGANIC ANALYSES FOR WATER SAMPLES, HOLLOMAN SEWAGE LAGOONS AND LAKES INVESTIGATION.

PARAMETER	SITE ID / LOCATION ID / SAMPLE ID: MW-08 9303-MW-08-01	MW-09 9303-MW-09-01			MW-10 9303-MW-10-01			MW-11 9303-MW-11-01		
2,4-Dinitrophenol	NA	ND	(19)	[0.970873]	ND	(19)	[0.961538]	ND	(19)	[0.952380]
2,4-Dinitrotoluene	NA	ND	(9.7)	[0.970873]	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]
2,6-Dichlorophenol	NA	ND	(9.7)	[0.970873]	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]
2,6-Dinitrotoluene	NA	ND	(9.7)	[0.970873]	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]
2-Acetylaminofluorene	NA	ND	(9.7)	[0.970873]	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]
2-Chloronaphthalene	NA	ND	(9.7)	[0.970873]	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]
2-Chlorophenol	NA	ND	(9.7)	[0.970873]	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]
2-Methylnaphthalene	NA	ND	(9.7)	[0.970873]	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]
2-Methylphenol(o-cresol)	NA	ND	(9.7)	[0.970873]	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]
2-Naphthylamine	NA	ND	(9.7)	[0.970873]	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]
2-Nitroaniline	NA	ND	(9.7)	[0.970873]	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]
2-Nitrophenol	NA	ND	(9.7)	[0.970873]	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]
2-Picoline	NA	ND	(9.7)	[0.970873]	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]
3,3'-Dichlorobenzidine	NA	ND	(9.7)	[0.970873]	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]
3,3'-Dimethylbenzidine	NA	ND	(19)	[0.970873]	ND	(19)	[0.961538]	ND	(19)	[0.952380]
3-Methylcholanthrene	NA	ND	(9.7)	[0.970873]	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]
3-Methylphenol(m-cresol)	NA	ND	(9.7)	[0.970873]	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]
3-Nitroaniline	NA	ND	(19)	[0.970873]	ND	(19)	[0.961538]	ND	(19)	[0.952380]
4,6-Dinitro-2-methylphenol	NA	ND	(9.7)	[0.970873]	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]
4-Aminobiphenyl	NA	ND	(9.7)	[0.970873]	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]
4-Bromophenyl phenyl ether	NA	ND	(9.7)	[0.970873]	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]
4-Chloro-3-methylphenol	NA	ND	(9.7)	[0.970873]	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]
4-Chlorophenyl phenyl ether	NA	ND	(9.7)	[0.970873]	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]
4-Methylphenol(p-cresol)	NA	ND	(9.7)	[0.970873]	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]
4-Nitroaniline	NA	ND	(19)	[0.970873]	ND	(19)	[0.961538]	ND	(19)	[0.952380]
4-Nitrophenol	NA	ND	(9.7)	[0.970873]	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]
4-Nitroquinoline-N-oxide	NA	ND	(78)	[0.970873]	ND	(77)	[0.961538]	ND	(76)	[0.952380]
5-Nitro-o-toluidine	NA	ND	(9.7)	[0.970873]	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]
7,12-Dimethylbenz(a)anthracene	NA	ND	(9.7)	[0.970873]	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]

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NOTE: Reported results for sample IDs ending with a 'D' represent dissolved metals concentrations.

TABLE B6 RESULTS OF ORGANIC ANALYSES FOR WATER SAMPLES, HOLLOMAN SEWAGE LAGOONS AND LAKES INVESTIGATION.

PARAMETER	MW-08 9303-MW-08-01	MW-09 9303-MW-09-01	MW-10 9303-MW-10-01	MW-11 9303-MW-11-01
	SITE ID LOCATION ID SAMPLE ID			
Acenaphthene	NA	ND (9.7) [0.970873]	ND (9.6) [0.961538]	ND (9.5) [0.952380]
Acenaphthylene	NA	ND (9.7) [0.970873]	ND (9.6) [0.961538]	ND (9.5) [0.952380]
Acetophenone	NA	ND (9.7) [0.970873]	ND (9.6) [0.961538]	ND (9.5) [0.952380]
Aniline	NA	ND (9.7) [0.970873]	ND (9.6) [0.961538]	ND (9.5) [0.952380]
Anthracene	NA	ND (9.7) [0.970873]	ND (9.6) [0.961538]	ND (9.5) [0.952380]
Aramite	NA	ND (9.7) [0.970873]	ND (9.6) [0.961538]	ND (9.5) [0.952380]
Benzo(a)anthracene	NA	ND (9.7) [0.970873]	ND (9.6) [0.961538]	ND (9.5) [0.952380]
Benzo(a)pyrene	NA	ND (9.7) [0.970873]	ND (9.6) [0.961538]	ND (9.5) [0.952380]
Benzo(b)fluoranthene	NA	ND (9.7) [0.970873]	ND (9.6) [0.961538]	ND (9.5) [0.952380]
Benzo(g,h,i)perylene	NA	ND (9.7) [0.970873]	ND (9.6) [0.961538]	ND (9.5) [0.952380]
Benzo(k)fluoranthene	NA	ND (9.7) [0.970873]	ND (9.6) [0.961538]	ND (9.5) [0.952380]
Benzyl alcohol	NA	ND (9.7) [0.970873]	ND (9.6) [0.961538]	ND (9.5) [0.952380]
Butylbenzylphthalate	NA	ND (9.7) [0.970873]	ND (9.6) [0.961538]	ND (9.5) [0.952380]
Chlorobenzilate	NA	ND (9.7) [0.970873]	ND (9.6) [0.961538]	ND (9.5) [0.952380]
Chrysene	NA	ND (9.7) [0.970873]	ND (9.6) [0.961538]	ND (9.5) [0.952380]
Cyclohexene	NA	NA	NA	4.8 () [0.952380]
Di-n-octylphthalate	NA	ND (9.7) [0.970873]	ND (9.6) [0.961538]	ND (9.5) [0.952380]
Diallate	NA	ND (9.7) [0.970873]	ND (9.6) [0.961538]	ND (9.5) [0.952380]
Dibenz(a,h)anthracene	NA	ND (9.7) [0.970873]	ND (9.6) [0.961538]	ND (9.5) [0.952380]
Dibenzofuran	NA	ND (9.7) [0.970873]	ND (9.6) [0.961538]	ND (9.5) [0.952380]
Dibutylphthalate	NA	ND (9.7) [0.970873]	ND (9.6) [0.961538]	ND (9.5) [0.952380]
Diethylphthalate	NA	ND (9.7) [0.970873]	ND (9.6) [0.961538]	ND (9.5) [0.952380]
Dimethylphenethylamine	NA	ND (120) [0.970873]	ND (120) [0.961538]	ND (110) [0.952380]
Dimethylphthalate	NA	ND (9.7) [0.970873]	ND (9.6) [0.961538]	ND (9.5) [0.952380]
Diphenylamine	NA	ND (9.7) [0.970873]	ND (9.6) [0.961538]	ND (9.5) [0.952380]
Ethyl methanesulfonate	NA	ND (9.7) [0.970873]	ND (9.6) [0.961538]	ND (9.5) [0.952380]
Fluoranthene	NA	ND (9.7) [0.970873]	ND (9.6) [0.961538]	ND (9.5) [0.952380]
Fluorene	NA	ND (9.7) [0.970873]	ND (9.6) [0.961538]	ND (9.5) [0.952380]
Hexachlorobenzene	NA	ND (9.7) [0.970873]	ND (9.6) [0.961538]	ND (9.5) [0.952380]

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TABLE B6 RESULTS OF ORGANIC ANALYSES FOR WATER SAMPLES, HOLLOMAN SEWAGE LAGOONS AND LAKES INVESTIGATION.

PARAMETER	MW-08 9303-MW-08-01	MW-09 9303-MW-09-01	MW-10 9303-MW-10-01	MW-11 9303-MW-11-01
Hexachlorobutadiene	NA	ND (9.7) [0.970873]	ND (9.6) [0.961538]	ND (9.5) [0.952380]
Hexachlorocyclopentadiene	NA	ND (9.7) [0.970873]	ND (9.6) [0.961538]	ND (9.5) [0.952380]
Hexachloroethane	NA	ND (9.7) [0.970873]	ND (9.6) [0.961538]	ND (9.5) [0.952380]
Hexachlorophene	NA	ND (1900) [0.970873]	ND (1900) [0.961538]	ND (1900) [0.952380]
Hexachloropropene	NA	ND (9.7) [0.970873]	ND (9.6) [0.961538]	ND (9.5) [0.952380]
Indeno(1,2,3-cd)pyrene	NA	ND (9.7) [0.970873]	ND (9.6) [0.961538]	ND (9.5) [0.952380]
Isophorone	NA	ND (9.7) [0.970873]	ND (9.6) [0.961538]	ND (9.5) [0.952380]
Isosafrole	NA	ND (9.7) [0.970873]	ND (9.6) [0.961538]	ND (9.5) [0.952380]
Methapyriline	NA	ND (49) [0.970873]	ND (48) [0.961538]	ND (48) [0.952380]
Methyl methanesulfonate	NA	ND (49) [0.970873]	ND (48) [0.961538]	ND (48) [0.952380]
N-Nitroso-di-n-butylamine	NA	ND (9.7) [0.970873]	ND (9.6) [0.961538]	ND (9.5) [0.952380]
N-Nitrosodiethylamine	NA	ND (9.7) [0.970873]	ND (9.6) [0.961538]	ND (9.5) [0.952380]
N-Nitrosodimethylamine	NA	ND (9.7) [0.970873]	ND (9.6) [0.961538]	ND (9.5) [0.952380]
N-Nitrosodiphenylamine	NA	ND (9.7) [0.970873]	ND (9.6) [0.961538]	ND (9.5) [0.952380]
N-Nitrosodipropylamine	NA	ND (9.7) [0.970873]	ND (9.6) [0.961538]	ND (9.5) [0.952380]
N-Nitrosomethylethylamine	NA	ND (9.7) [0.970873]	ND (9.6) [0.961538]	ND (9.5) [0.952380]
N-Nitrosomorpholine	NA	ND (19) [0.970873]	ND (19) [0.961538]	ND (19) [0.952380]
N-Nitrosopiperidine	NA	ND (9.7) [0.970873]	ND (9.6) [0.961538]	ND (9.5) [0.952380]
N-Nitrosopyrrolidine	NA	ND (9.7) [0.970873]	ND (9.6) [0.961538]	ND (9.5) [0.952380]
Naphthalene	NA	ND (9.7) [0.970873]	ND (9.6) [0.961538]	ND (9.5) [0.952380]
Nitrobenzene	NA	ND (9.7) [0.970873]	ND (9.6) [0.961538]	ND (9.5) [0.952380]
Pentachlorobenzene	NA	ND (9.7) [0.970873]	ND (9.6) [0.961538]	ND (9.5) [0.952380]
Pentachloroethane	NA	ND (9.7) [0.970873]	ND (9.6) [0.961538]	ND (9.5) [0.952380]
Pentachloronitrobenzene	NA	ND (9.7) [0.970873]	ND (9.6) [0.961538]	ND (9.5) [0.952380]
Pentachlorophenol	NA	ND (9.7) [0.970873]	ND (9.6) [0.961538]	ND (9.5) [0.952380]
Phenacetin	NA	ND (9.7) [0.970873]	ND (9.6) [0.961538]	ND (9.5) [0.952380]
Phenanthrene	NA	ND (9.7) [0.970873]	ND (9.6) [0.961538]	ND (9.5) [0.952380]
Phenol	NA	ND (9.7) [0.970873]	ND (9.6) [0.961538]	ND (9.5) [0.952380]
Pronamide	NA	ND (9.7) [0.970873]	ND (9.6) [0.961538]	ND (9.5) [0.952380]

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NOTE: Reported results for sample IDs ending with a 'D' represent dissolved metals concentrations.

TABLE B6 RESULTS OF ORGANIC ANALYSES FOR WATER SAMPLES, HOLLOMAN SEWAGE LAGOONS AND LAKES INVESTIGATION.

PARAMETER	SITE ID LOCATION ID SAMPLE ID MW-08 9303-MW-08-01	MW-09 9303-MW-09-01			MW-10 9303-MW-10-01			MW-11 9303-MW-11-01		
Pyrene	NA	ND	(9.7)	[0.970873]	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]
Pyridine	NA	ND	(9.7)	[0.970873]	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]
Safrole	NA	ND	(9.7)	[0.970873]	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]
Unknown	NA	14	()	[0.970873]	0.96	()	[0.961538]	240	()	[0.952380]
Unknown 2	NA	90	()	[0.970873]	5.8	()	[0.961538]	100	()	[0.952380]
Unknown 3	NA	NA			NA			10	()	[0.952380]
Unknown 4	NA	NA			NA			3.8	()	[0.952380]
Unknown 5	NA	NA			NA			6.7	()	[0.952380]
bis(2-Chloroethoxy)methane	NA	ND	(9.7)	[0.970873]	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]
bis(2-Chloroethyl)ether	NA	ND	(9.7)	[0.970873]	NO	(9.6)	[0.961538]	ND	(9.5)	[0.952380]
bis(2-Chloroisopropyl)ether	NA	ND	(9.7)	[0.970873]	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]
bis(2-Ethylhexyl)phthalate	NA	ND	(9.7)	[0.970873]	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]
o-Toluidine	NA	ND	(9.7)	[0.970873]	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]
p-Chloroaniline	NA	ND	(9.7)	[0.970873]	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]
p-Dimethylaminoazobenzene	NA	ND	(9.7)	[0.970873]	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]
p-Phenylenediamine	NA	ND	(120)	[0.970873]	ND	(120)	[0.961538]	ND	(110)	[0.952380]
SW8280 - Dioxins and Furans (ng/L)										
2,3,7,8-TCDD	NA	ND	(3.9)	[0.985221]	ND	(2.9)	[0.961538]	ND	(1.9)	[0.961538]
HpCDD	NA	ND	(5.9)	[0.985221]	ND	(3.8)	[0.961538]	ND	(2.9)	[0.961538]
HpCDF	NA	ND	(3.9)	[0.985221]	ND	(2.9)	[0.961538]	ND	(1.9)	[0.961538]
HxCDD	NA	ND	(4.9)	[0.985221]	ND	(3.8)	[0.961538]	ND	(1.9)	[0.961538]
HxCDF	NA	ND	(3)	[0.985221]	ND	(2.9)	[0.961538]	ND	(1.9)	[0.961538]
OCDD	NA	ND	(7.9)	[0.985221]	ND	(6.7)	[0.961538]	ND	(3.8)	[0.961538]
OCDF	NA	ND	(5.9)	[0.985221]	ND	(4.8)	[0.961538]	ND	(2.9)	[0.961538]
PeCDD	NA	ND	(3.9)	[0.985221]	ND	(2.9)	[0.961538]	ND	(1.9)	[0.961538]
PeCDF	NA	ND	(3.9)	[0.985221]	ND	(2.9)	[0.961538]	ND	(1.9)	[0.961538]
TCDD	NA	ND	(3.9)	[0.985221]	ND	(2.9)	[0.961538]	ND	(1.9)	[0.961538]
TCDF	NA	ND	(3.9)	[0.985221]	ND	(2.9)	[0.961538]	ND	(1.9)	[0.961538]

Compiled: 14 September 1993 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable * - Value considered suspect, Refer to QC Report

NOTE: Reported results for sample IDs ending with a 'D' represent dissolved metals concentrations.

TABLE B6 RESULTS OF ORGANIC ANALYSES FOR WATER SAMPLES, HOLLOMAN SEWAGE LAGOONS AND LAKES INVESTIGATION.

PARAMETER	MW-12 9303-MW-12-01				MW-12 9303-MW-12-02 Dup of 9303-MW-12-01				MW-13 9303-MW-13-01				MW-14 9303-MW-14-01			
SW8080 - Organochlorine Pesticides and PCBs (ug/L)																
4,4'-DDD	ND		(0.0097)	[0.970873]	ND		(0.0096)	[0.961538]	0.014	X@	(0.0095)	[0.952380]	ND		(0.0097)	[0.970873]
4,4'-DDE	ND		(0.0097)	[0.970873]	ND		(0.0096)	[0.961538]	ND		(0.0095)	[0.952380]	ND		(0.0097)	[0.970873]
4,4'-DDT	ND		(0.019)	[0.970873]	ND		(0.019)	[0.961538]	ND		(0.019)	[0.952380]	ND		(0.019)	[0.970873]
Aldrin	ND		(0.0097)	[0.970873]	ND		(0.0096)	[0.961538]	ND		(0.0095)	[0.952380]	ND		(0.0097)	[0.970873]
Dieldrin	ND		(0.0097)	[0.970873]	0.013	X@	(0.0096)	[0.961538]	ND		(0.0095)	[0.952380]	ND		(0.0097)	[0.970873]
Endosulfan I	ND		(0.0097)	[0.970873]	ND		(0.0096)	[0.961538]	ND		(0.0095)	[0.952380]	ND		(0.0097)	[0.970873]
Endosulfan II	ND		(0.029)	[0.970873]	ND		(0.029)	[0.961538]	ND		(0.029)	[0.952380]	ND		(0.029)	[0.970873]
Endosulfan Sulfate	ND		(0.049)	[0.970873]	ND		(0.048)	[0.961538]	ND		(0.048)	[0.952380]	ND		(0.049)	[0.970873]
Endrin	ND		(0.0097)	[0.970873]	0.0019	JX	(0.0096)	[0.961538]	0.005	JX	(0.0095)	[0.952380]	ND		(0.0097)	[0.970873]
Endrin Aldehyde	ND		(0.019)	[0.970873]	0.0078	JX	(0.019)	[0.961538]	0.0085	JX	(0.019)	[0.952380]	ND		(0.019)	[0.970873]
Heptachlor	0.015	X@	(0.0097)	[0.970873]	0.015	G@	(0.0096)	[0.961538]	0.018	X@	(0.0095)	[0.952380]	0.02	G@	(0.0097)	[0.970873]
Heptachlor epoxide	0.0055	JX	(0.0097)	[0.970873]	0.005	JX	(0.0096)	[0.961538]	0.0064	JX	(0.0095)	[0.952380]	ND		(0.0097)	[0.970873]
Isodrin	0.0082	JX	(0.0097)	[0.970873]	ND		(0.0096)	[0.961538]	0.018	X@	(0.0095)	[0.952380]	0.02	X@	(0.0097)	[0.970873]
Kepone	ND		(0.0097)	[0.970873]	ND		(0.0096)	[0.961538]	ND		(0.0095)	[0.952380]	NO		(0.0097)	[0.970873]
Methoxychlor	ND		(0.049)	[0.970873]	ND		(0.048)	[0.961538]	ND		(0.048)	[0.952380]	ND		(0.049)	[0.970873]
PCB-1016	ND		(0.097)	[0.970873]	ND		(0.096)	[0.961538]	ND		(0.095)	[0.952380]	NO		(0.097)	[0.970873]
PCB-1221	ND		(0.19)	[0.970873]	ND		(0.19)	[0.961538]	ND		(0.19)	[0.952380]	ND		(0.19)	[0.970873]
PCB-1232	ND		(0.19)	[0.970873]	ND		(0.19)	[0.961538]	ND		(0.19)	[0.952380]	ND		(0.19)	[0.970873]
PCB-1242	ND		(0.097)	[0.970873]	ND		(0.096)	[0.961538]	ND		(0.095)	[0.952380]	ND		(0.097)	[0.970873]
PCB-1248	ND		(0.097)	[0.970873]	ND		(0.096)	[0.961538]	ND		(0.095)	[0.952380]	ND		(0.097)	[0.970873]
PCB-1254	ND		(0.19)	[0.970873]	ND		(0.19)	[0.961538]	ND		(0.19)	[0.952380]	ND		(0.19)	[0.970873]
PCB-1260	ND		(0.19)	[0.970873]	ND		(0.19)	[0.961538]	ND		(0.19)	[0.952380]	ND		(0.19)	[0.970873]
Toxaphene	ND		(0.49)	[0.970873]	ND		(0.48)	[0.961538]	ND		(0.48)	[0.952380]	ND		(0.49)	[0.970873]
alpha-BHC	0.013	X@	(0.0097)	[0.970873]	0.019	X@	(0.0096)	[0.961538]	0.028	X@	(0.0095)	[0.952380]	0.05	X	(0.0097)	[0.970873]
alpha-Chlordane	0.0016	JX	(0.0097)	[0.970873]	0.003	JX	(0.0096)	[0.961538]	ND		(0.0095)	[0.952380]	0.0012	JX	(0.0097)	[0.970873]
beta-BHC	0.0059	JX	(0.0097)	[0.970873]	0.0097	X@	(0.0096)	[0.961538]	0.02	@	(0.0095)	[0.952380]	0.013	X@	(0.0097)	[0.970873]
delta-BHC	ND		(0.0097)	[0.970873]	ND		(0.0096)	[0.961538]	0.014	@	(0.0095)	[0.952380]	ND		(0.0097)	[0.970873]
gamma-BHC	0.016	@	(0.0097)	[0.970873]	0.0097	@	(0.0096)	[0.961538]	0.0093	J	(0.0095)	[0.952380]	0.027	@	(0.0097)	[0.970873]

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TABLE B6 RESULTS OF ORGANIC ANALYSES FOR WATER SAMPLES, HOLLOMAN SEWAGE LAGOONS AND LAKES INVESTIGATION.

PARAMETER	SITE ID / LOCATION ID / SAMPLE ID: MW-12 9303-MW-12-01				MW-12 9303-MW-12-02 Dup of 9303-MW-12-01				MW-13 9303-MW-13-01				MW-14 9303-MW-14-01			
gamma-Chlordane	0.0023	JX	(0.0097)	[0.970873]	0.0025	JX	(0.0096)	[0.961538]	0.0016	J	(0.0095)	[0.952380]	0.0024	J	(0.0097)	[0.970873]
SW8140 - Organophosphorus Pesticides (ug/L)																
Dimethoate	ND		(0.19)	[0.970873]	ND		(0.19)	[0.970873]	ND		(0.19)	[0.961538]	ND		(0.19)	[0.970873]
Disulfoton	ND		(0.19)	[0.970873]	ND		(0.19)	[0.970873]	ND		(0.19)	[0.961538]	ND		(0.19)	[0.970873]
Ethyl parathion	ND		(0.15)	[0.970873]	ND		(0.15)	[0.970873]	ND		(0.14)	[0.961538]	ND		(0.15)	[0.970873]
Famphur	ND		(0.49)	[0.970873]	ND		(0.49)	[0.970873]	ND		(0.48)	[0.961538]	ND		(0.49)	[0.970873]
Methyl parathion	ND		(0.029)	[0.970873]	ND		(0.029)	[0.970873]	ND		(0.029)	[0.961538]	ND		(0.029)	[0.970873]
Phorate	ND		(0.15)	[0.970873]	ND		(0.15)	[0.970873]	ND		(0.14)	[0.961538]	ND		(0.15)	[0.970873]
Sulfotepp	ND		(0.097)	[0.970873]	ND		(0.097)	[0.970873]	ND		(0.096)	[0.961538]	ND		(0.097)	[0.970873]
Thionazin	ND		(0.97)	[0.970873]	ND		(0.97)	[0.970873]	ND		(0.96)	[0.961538]	ND		(0.97)	[0.970873]
o,o,o-Triethylphosphorthioate	ND		(0.97)	[0.970873]	ND		(0.97)	[0.970873]	ND		(0.96)	[0.961538]	ND		(0.97)	[0.970873]
SW8150 - Chlorinated Herbicides (ug/L)																
2,4,5-T	ND		(0.19)	[0.970873]	ND		(0.19)	[0.934579]	ND		(0.19)	[0.952380]	ND		(0.19)	[0.970873]
2,4,5-TP (Silvex)	ND		(0.17)	[0.970873]	ND		(0.16)	[0.934579]	ND		(0.16)	[0.952380]	ND		(0.17)	[0.970873]
2,4-D	ND		(1.2)	[0.970873]	ND		(1.1)	[0.934579]	ND		(1.1)	[0.952380]	ND		(1.2)	[0.970873]
Dinoseb	ND		(0.15)	[0.970873]	ND		(0.14)	[0.934579]	ND		(0.14)	[0.952380]	ND		(0.15)	[0.970873]
SW8240 - Volatile Organics (ug/L)																
1,1,1,2-Tetrachloroethane	ND		(5)	[1]	ND		(5)	[1]	ND		(5)	[1]	ND		(5)	[1]
1,1,1-Trichloroethane	ND		(5)	[1]	ND		(5)	[1]	ND		(5)	[1]	ND		(5)	[1]
1,1,2,2-Tetrachloroethane	ND		(5)	[1]	ND		(5)	[1]	ND		(5)	[1]	ND		(5)	[1]
1,1,2-Trichloroethane	ND		(5)	[1]	ND		(5)	[1]	ND		(5)	[1]	ND		(5)	[1]
1,1-Dichloroethane	ND		(5)	[1]	ND		(5)	[1]	ND		(5)	[1]	ND		(5)	[1]
1,1-Dichloroethene	ND		(5)	[1]	ND		(5)	[1]	ND		(5)	[1]	ND		(5)	[1]
1,2,3-Trichloropropane	ND		(5)	[1]	ND		(5)	[1]	ND		(5)	[1]	ND		(5)	[1]
1,2-Dibromo-3-chloropropane	ND		(20)	[1]	ND		(20)	[1]	ND		(20)	[1]	ND		(20)	[1]
1,2-Dibromoethane	ND		(5)	[1]	ND		(5)	[1]	ND		(5)	[1]	ND		(5)	[1]
1,2-Dichloroethane	ND		(5)	[1]	ND		(5)	[1]	ND		(5)	[1]	ND		(5)	[1]
1,2-Dichloropropane	ND		(5)	[1]	ND		(5)	[1]	ND		(5)	[1]	ND		(5)	[1]
2-Chloro-1,3-butadiene	ND		(25)	[1]	ND		(25)	[1]	ND		(25)	[1]	ND		(25)	[1]

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TABLE B6 RESULTS OF ORGANIC ANALYSES FOR WATER SAMPLES, HOLLOMAN SEWAGE LAGOONS AND LAKES INVESTIGATION.

	SITE ID											
	LOCATION ID											
	SAMPLE ID											
PARAMETER	MW-12 9303-MW-12-01			MW-12 9303-MW-12-02 Dup of 9303-MW-12-01			MW-13 9303-MW-13-01			MW-14 9303-MW-14-01		
2-Hexanone	ND	(50)	[1]	ND	(50)	[1]	ND	(50)	[1]	ND	(50)	[1]
3-Chloropropene	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
4-Methyl-2-pentanone(MIBK)	ND	(50)	[1]	ND	(50)	[1]	ND	(50)	[1]	ND	(50)	[1]
Acetone	ND	(100)	[1]	ND	(100)	[1]	ND	(100)	[1]	ND	(100)	[1]
Acetonitrile	ND	(100)	[1]	ND	(100)	[1]	ND	(100)	[1]	ND	(100)	[1]
Acrolein	ND	(75)	[1]	ND	(75)	[1]	ND	(75)	[1]	ND	(75)	[1]
Acrylonitrile	ND	(50)	[1]	ND	(50)	[1]	ND	(50)	[1]	ND	(50)	[1]
Benzene	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
Bromodichloromethane	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
Bromomethane	ND	(10)	[1]	ND	(10)	[1]	ND	(10)	[1]	ND	(10)	[1]
Carbon disulfide	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
Carbon tetrachloride	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
Chlorobenzene	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
Chloroethane	ND	(10)	[1]	ND	(10)	[1]	ND	(10)	[1]	ND	(10)	[1]
Chloroform	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
Chloromethane	ND	(10)	[1]	ND	(10)	[1]	ND	(10)	[1]	ND	(10)	[1]
Dibromochloromethane	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
Dibromomethane	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
Dichlorodifluoromethane	ND	(20)	[1]	ND	(20)	[1]	ND	(20)	[1]	ND	(20)	[1]
Ethyl benzene	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
Ethyl methacrylate	ND	(15)	[1]	ND	(15)	[1]	ND	(15)	[1]	ND	(15)	[1]
Iodomethane	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
Methyl ethyl ketone	ND	(100)	[1]	ND	(100)	[1]	ND	(100)	[1]	ND	(100)	[1]
Methyl methacrylate	ND	(10)	[1]	ND	(10)	[1]	ND	(10)	[1]	ND	(10)	[1]
Methylene chloride	ND	(5)	[1]	ND	(5)	[1]	NO	(5)	[1]	ND	(5)	[1]
Propanenitrile	ND	(100)	[1]	ND	(100)	[1]	ND	(100)	[1]	ND	(100)	[1]
Styrene	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
Tetrachloroethene	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
Toluene	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]

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TABLE B6 RESULTS OF ORGANIC ANALYSES FOR WATER SAMPLES, HOLLOMAN SEWAGE LAGOONS AND LAKES INVESTIGATION.

PARAMETER	SITE ID / LOCATION ID / SAMPLE ID: MW-12 9303-MW-12-01			MW-12 9303-MW-12-02 Dup of 9303-MW-12-01			MW-13 9303-MW-13-01			MW-14 9303-MW-14-01		
Tribromomethane(Bromoform)	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
Trichloroethene	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
Trichlorofluoromethane	ND	(10)	[1]	ND	(10)	[1]	ND	(10)	[1]	ND	(10)	[1]
Unknown alkane	NA			8	()	[1]	6	()	[1]	6	()	[1]
Vinyl acetate	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
Vinyl chloride	ND	(10)	[1]	ND	(10)	[1]	ND	(10)	[1]	ND	(10)	[1]
Xylenes	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
cis-1,3-Dichloropropene	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
trans-1,2-Dichloroethene	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
trans-1,3-Dichloropropene	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
trans-1,4-Dichloro-2-butene	ND	(10)	[1]	ND	(10)	[1]	ND	(10)	[1]	ND	(10)	[1]
SW8240DI - Volatile Organics, Direct Injection (ug/mL)												
1,4-Dioxane	ND	(10)	[1]	ND	(10)	[1]	ND	(10)	[1]	ND	(10)	[1]
Isobutanol	ND	(10)	[1]	ND	(10)	[1]	ND	(10)	[1]	ND	(10)	[1]
Methacrylonitrile	ND	(10)	[1]	ND	(10)	[1]	ND	(10)	[1]	ND	(10)	[1]
SW8270 - Semivolatile Organics (ug/L)												
1,2,4,5-Tetrachlorobenzene	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
1,2,4-Trichlorobenzene	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
1,2-Dichlorobenzene	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
1,3-Dichlorobenzene	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
1,3-Dinitrobenzene	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
1,4-Dichlorobenzene	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
1,4-Napthoquinone	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
1-Naphthylamine	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
2,3,4,6-Tetrachlorophenol	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
2,4,5-Trichlorophenol	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
2,4,6-Trichlorophenol	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
2,4-Dichlorophenol	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
2,4-Dimethylphenol	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]

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TABLE B6 RESULTS OF ORGANIC ANALYSES FOR WATER SAMPLES, HOLLOMAN SEWAGE LAGOONS AND LAKES INVESTIGATION.

PARAMETER	SITE ID LOCATION ID SAMPLE ID MW-12 9303-MW-12-01			MW-12 9303-MW-12-02 Dup of 9303-MW-12-01			MW-13 9303-MW-13-01			MW-14 9303-MW-14-01		
2,4-Dinitrophenol	ND	(19)	[0.961538]	ND	(19)	[0.961538]	ND	(19)	[0.961538]	ND	(19)	[0.970873]
2,4-Dinitrotoluene	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
2,6-Dichlorophenol	NO	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
2,6-Dinitrotoluene	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
2-Acetylaminofluorene	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
2-Chloronaphthalene	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
2-Chlorophenol	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
2-Methylnaphthalene	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
2-Methylphenol(o-cresol)	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
2-Naphthylamine	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
2-Nitroaniline	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
2-Nitrophenol	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
2-Picoline	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
3,3'-Dichlorobenzidine	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
3,3'-Dimethylbenzidine	ND	(19)	[0.961538]	ND	(19)	[0.961538]	ND	(19)	[0.961538]	ND	(19)	[0.970873]
3-Methylcholanthrene	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
3-Methylphenol(m-cresol)	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
3-Nitroaniline	ND	(19)	[0.961538]	ND	(19)	[0.961538]	ND	(19)	[0.961538]	ND	(19)	[0.970873]
4,6-Dinitro-2-methylphenol	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
4-Aminobiphenyl	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
4-Bromophenyl phenyl ether	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
4-Chloro-3-methylphenol	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
4-Chlorophenyl phenyl ether	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
4-Methylphenol(p-cresol)	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
4-Nitroaniline	ND	(19)	[0.961538]	ND	(19)	[0.961538]	ND	(19)	[0.961538]	ND	(19)	[0.970873]
4-Nitrophenol	NO	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
4-Nitroquinoline-N-oxide	ND	(77)	[0.961538]	ND	(77)	[0.961538]	ND	(77)	[0.961538]	ND	(78)	[0.970873]
5-Nitro-o-toluidine	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
7,12-Dimethylbenz(a)anthracene	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]

Compiled: 14 September 1993 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable * - Value considered suspect, Refer to QC Report

NOTE: Reported results for sample IDs ending with a 'D' represent dissolved metals concentrations.

TABLE B6 RESULTS OF ORGANIC ANALYSES FOR WATER SAMPLES, HOLLOMAN SEWAGE LAGOONS AND LAKES INVESTIGATION.

	SITE ID			
	LOCATION ID			
	SAMPLE ID			
PARAMETER	MW-12 9303-MW-12-01	MW-12 9303-MW-12-02 Dup of 9303-MW-12-01	MW-13 9303-MW-13-01	MW-14 9303-MW-14-01
Acenaphthene	ND (9.6) [0.961538]	ND (9.6) [0.961538]	ND (9.6) [0.961538]	ND (9.7) [0.970873]
Acenaphthylene	ND (9.6) [0.961538]	ND (9.6) [0.961538]	ND (9.6) [0.961538]	ND (9.7) [0.970873]
Acetophenone	ND (9.6) [0.961538]	ND (9.6) [0.961538]	ND (9.6) [0.961538]	ND (9.7) [0.970873]
Aniline	ND (9.6) [0.961538]	ND (9.6) [0.961538]	ND (9.6) [0.961538]	ND (9.7) [0.970873]
Anthracene	ND (9.6) [0.961538]	ND (9.6) [0.961538]	ND (9.6) [0.961538]	ND (9.7) [0.970873]
Aramite	NO (9.6) [0.961538]	ND (9.6) [0.961538]	ND (9.6) [0.961538]	ND (9.7) [0.970873]
Benzo(a)anthracene	ND (9.6) [0.961538]	ND (9.6) [0.961538]	ND (9.6) [0.961538]	ND (9.7) [0.970873]
Benzo(a)pyrene	ND (9.6) [0.961538]	ND (9.6) [0.961538]	ND (9.6) [0.961538]	ND (9.7) [0.970873]
Benzo(b)fluoranthene	ND (9.6) [0.961538]	ND (9.6) [0.961538]	ND (9.6) [0.961538]	ND (9.7) [0.970873]
Benzo(g,h,i)perylene	ND (9.6) [0.961538]	ND (9.6) [0.961538]	ND (9.6) [0.961538]	ND (9.7) [0.970873]
Benzo(k)fluoranthene	ND (9.6) [0.961538]	ND (9.6) [0.961538]	ND (9.6) [0.961538]	ND (9.7) [0.970873]
Benzyl alcohol	ND (9.6) [0.961538]	ND (9.6) [0.961538]	ND (9.6) [0.961538]	ND (9.7) [0.970873]
Butylbenzylphthalate	ND (9.6) [0.961538]	ND (9.6) [0.961538]	ND (9.6) [0.961538]	ND (9.7) [0.970873]
Chlorobenzilate	ND (9.6) [0.961538]	ND (9.6) [0.961538]	ND (9.6) [0.961538]	ND (9.7) [0.970873]
Chrysene	ND (9.6) [0.961538]	ND (9.6) [0.961538]	ND (9.6) [0.961538]	ND (9.7) [0.970873]
Cyclohexene	5.8 () [0.961538]	7.7 () [0.961538]	12 () [0.961538]	NA
Di-n-octylphthalate	ND (9.6) [0.961538]	ND (9.6) [0.961538]	NO (9.6) [0.961538]	ND (9.7) [0.970873]
Diallate	ND (9.6) [0.961538]	ND (9.6) [0.961538]	ND (9.6) [0.961538]	ND (9.7) [0.970873]
Dibenz(a,h)anthracene	ND (9.6) [0.961538]	ND (9.6) [0.961538]	ND (9.6) [0.961538]	ND (9.7) [0.970873]
Dibenzofuran	ND (9.6) [0.961538]	ND (9.6) [0.961538]	ND (9.6) [0.961538]	ND (9.7) [0.970873]
Dibutylphthalate	ND (9.6) [0.961538]	ND (9.6) [0.961538]	ND (9.6) [0.961538]	ND (9.7) [0.970873]
Diethylphthalate	ND (9.6) [0.961538]	ND (9.6) [0.961538]	ND (9.6) [0.961538]	ND (9.7) [0.970873]
Dimethylphenethylamine	ND (120) [0.961538]	ND (120) [0.961538]	ND (120) [0.961538]	ND (120) [0.970873]
Dimethylphthalate	ND (9.6) [0.961538]	ND (9.6) [0.961538]	ND (9.6) [0.961538]	ND (9.7) [0.970873]
Diphenylamine	ND (9.6) [0.961538]	ND (9.6) [0.961538]	ND (9.6) [0.961538]	ND (9.7) [0.970873]
Ethyl methanesulfonate	ND (9.6) [0.961538]	ND (9.6) [0.961538]	ND (9.6) [0.961538]	ND (9.7) [0.970873]
Fluoranthene	ND (9.6) [0.961538]	ND (9.6) [0.961538]	ND (9.6) [0.961538]	ND (9.7) [0.970873]
Fluorene	ND (9.6) [0.961538]	ND (9.6) [0.961538]	ND (9.6) [0.961538]	ND (9.7) [0.970873]
Hexachlorobenzene	ND (9.6) [0.961538]	ND (9.6) [0.961538]	ND (9.6) [0.961538]	ND (9.7) [0.970873]

Compiled: 14 September 1993 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable * - Value considered suspect, Refer to QC Report

NOTE: Reported results for sample IDs ending with a 'D' represent dissolved metals concentrations.

TABLE B6 RESULTS OF ORGANIC ANALYSES FOR WATER SAMPLES, HOLLOMAN SEWAGE LAGOONS AND LAKES INVESTIGATION.

PARAMETER	SITE ID / LOCATION ID / SAMPLE ID: MW-12 / 9303-MW-12-01			MW-12 / 9303-MW-12-02 Dup of 9303-MW-12-01			MW-13 / 9303-MW-13-01			MW-14 / 9303-MW-14-01		
Hexachlorobutadiene	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
Hexachlorocyclopentadiene	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
Hexachloroethane	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
Hexachlorophene	ND	(1900)	[0.961538]	ND	(1900)	[0.961538]	ND	(1900)	[0.961538]	ND	(1900)	[0.970873]
Hexachloropropene	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
Indeno(1,2,3-cd)pyrene	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
Isophorone	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
Isosafrole	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
Methapyriline	ND	(48)	[0.961538]	ND	(48)	[0.961538]	ND	(48)	[0.961538]	ND	(49)	[0.970873]
Methyl methanesulfonate	ND	(48)	[0.961538]	ND	(48)	[0.961538]	ND	(48)	[0.961538]	ND	(49)	[0.970873]
N-Nitroso-di-n-butylamine	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
N-Nitrosodiethylamine	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
N-Nitrosodimethylamine	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
N-Nitrosodiphenylamine	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
N-Nitrosodipropylamine	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
N-Nitrosomethylethylamine	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
N-Nitrosomorpholine	ND	(19)	[0.961538]	ND	(19)	[0.961538]	ND	(19)	[0.961538]	ND	(19)	[0.970873]
N-Nitrosopiperidine	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
N-Nitrosopyrrolidine	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
Naphthalene	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
Nitrobenzene	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
Pentachlorobenzene	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
Pentachloroethane	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
Pentachloronitrobenzene	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
Pentachlorophenol	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
Phenacetin	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
Phenanthrene	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
Phenol	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
Pronamide	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]

Compiled: 14 September 1993 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable * - Value considered suspect, Refer to QC Report

NOTE: Reported results for sample IDs ending with a 'D' represent dissolved metals concentrations.

TABLE B6 RESULTS OF ORGANIC ANALYSES FOR WATER SAMPLES, HOLLOMAN SEWAGE LAGOONS AND LAKES INVESTIGATION.

PARAMETER	SITE ID / LOCATION ID / SAMPLE ID: MW-12 / 9303-MW-12-01				MW-12 / 9303-MW-12-02 Dup of 9303-MW-12-01			MW-13 / 9303-MW-13-01			MW-14 / 9303-MW-14-01		
Pyrene	ND		(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
Pyridine	ND		(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
Safrole	ND		(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
Unknown	4.8		()	[0.961538]	7.7	()	[0.961538]	7.7	()	[0.961538]	150	()	[0.970873]
Unknown 10	NA				NA			6.7	()	[0.961538]	NA		
Unknown 11	NA				NA			7.7	()	[0.961538]	NA		
Unknown 12	NA				NA			7.7	()	[0.961538]	NA		
Unknown 2	130		()	[0.961538]	18	()	[0.961538]	190	()	[0.961538]	40	()	[0.970873]
Unknown 3	13		()	[0.961538]	200	()	[0.961538]	25	()	[0.961538]	7.8	()	[0.970873]
Unknown 4	210		()	[0.961538]	28	()	[0.961538]	27	()	[0.961538]	7.8	()	[0.970873]
Unknown 5	4.8		()	[0.961538]	3.8	()	[0.961538]	3.8	()	[0.961538]	NA		
Unknown 6	8.6		()	[0.961538]	5.8	()	[0.961538]	3.8	()	[0.961538]	NA		
Unknown 7	NA				9.6	()	[0.961538]	3.8	()	[0.961538]	NA		
Unknown 8	NA				NA			3.8	()	[0.961538]	NA		
Unknown 9	NA				NA			4.8	()	[0.961538]	NA		
bis(2-Chloroethoxy)methane	ND		(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
bis(2-Chloroethyl)ether	ND		(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
bis(2-Chloroisopropyl)ether	ND		(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
bis(2-Ethylhexyl)phthalate	1.5	J	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
o-Toluidine	ND		(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
p-Chloroaniline	ND		(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
p-Dimethylaminoazobenzene	ND		(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.6)	[0.961538]	ND	(9.7)	[0.970873]
p-Phenylenediamine	ND		(120)	[0.961538]	ND	(120)	[0.961538]	ND	(120)	[0.961538]	ND	(120)	[0.970873]
SW8280 - Dioxins and Furans (ng/L)													
2,3,7,8-TCDD	ND		(2)	[0.985221]	ND	(2)	[0.980392]	ND	(1.9)	[0.961538]	ND	(3)	[1]
HpCDD	ND		(3)	[0.985221]	ND	(2.9)	[0.980392]	ND	(2.9)	[0.961538]	ND	(3)	[1]
HpCDF	ND		(2)	[0.985221]	ND	(2)	[0.980392]	ND	(1.9)	[0.961538]	ND	(2)	[1]
HxCDD	ND		(3)	[0.985221]	ND	(2.9)	[0.980392]	ND	(2.9)	[0.961538]	ND	(3)	[1]
HxCDF	ND		(2)	[0.985221]	ND	(2)	[0.980392]	ND	(1.9)	[0.961538]	ND	(2)	[1]

Compiled: 14 September 1993 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable * - Value considered suspect, Refer to QC Report

NOTE: Reported results for sample IDs ending with a 'D' represent dissolved metals concentrations.

TABLE 86 RESULTS OF ORGANIC ANALYSES FOR WATER SAMPLES, HOLLOMAN SEWAGE LAGOONS AND LAKES INVESTIGATION.

	SITE ID											
	LOCATION ID											
	SAMPLE ID											
PARAMETER	MW-12 9303-MW-12-01			MW-12 9303-MW-12-02 Dup of 9303-MW-12-01			MW-13 9303-MW-13-01			MW-14 9303-MW-14-01		
OCDD	ND	(4.9)	[0.985221]	ND	(4.9)	[0.980392]	ND	(4.8)	[0.961538]	ND	(5)	[1]
OCDF	ND	(3)	[0.985221]	ND	(3.9)	[0.980392]	ND	(2.9)	[0.961538]	ND	(4)	[1]
PeCDD	ND	(2)	[0.985221]	ND	(2)	[0.980392]	ND	(1.9)	[0.961538]	ND	(3)	[1]
PeCDF	ND	(2)	[0.985221]	ND	(2)	[0.980392]	ND	(1.9)	[0.961538]	ND	(2)	[1]
TCDD	ND	(2)	[0.985221]	ND	(2)	[0.980392]	ND	(1.9)	[0.961538]	ND	(3)	[1]
TCDF	ND	(2)	[0.985221]	ND	(2)	[0.980392]	ND	(1.9)	[0.961538]	ND	(4)	[1]

Compiled: 14 September 1993 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable * - Value considered suspect, Refer to QC Report

NOTE: Reported results for sample IDs ending with a 'D' represent dissolved metals concentrations.

TABLE B6 RESULTS OF ORGANIC ANALYSES FOR WATER SAMPLES, HOLLOMAN SEWAGE LAGOONS AND LAKES INVESTIGATION.

PARAMETER	SITE ID / LOCATION ID / SAMPLE ID: MW-15 / 9303-MW-15-01				MWD-03 / 9303-MWD-03-01				MWD-04 / 9303-MWD-04-01				MWD-05 / 9303-MWD-05-01			
SW8080 - Organochlorine Pesticides and PCBs (ug/L)																
4,4'-DDD	ND		(0.0097)	[0.970873]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]
4,4'-DDE	ND		(0.0097)	[0.970873]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]
4,4'-DDT	ND		(0.019)	[0.970873]	ND		(0.019)	[0.952380]	ND		(0.019)	[0.952380]	ND		(0.019)	[0.952380]
Aldrin	ND		(0.0097)	[0.970873]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]
Dieldrin	ND		(0.0097)	[0.970873]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]
Endosulfan I	ND		(0.0097)	[0.970873]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]
Endosulfan II	ND		(0.029)	[0.970873]	ND		(0.029)	[0.952380]	ND		(0.029)	[0.952380]	ND		(0.029)	[0.952380]
Endosulfan Sulfate	ND		(0.049)	[0.970873]	ND		(0.048)	[0.952380]	0.013	JB	(0.048)	[0.952380]	ND		(0.048)	[0.952380]
Endrin	0.0024	JX	(0.0097)	[0.970873]	0.0022	JX	(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	0.0022	JX	(0.0095)	[0.952380]
Endrin Aldehyde	0.0097	JX	(0.019)	[0.970873]	ND		(0.019)	[0.952380]	ND		(0.019)	[0.952380]	ND		(0.019)	[0.952380]
Heptachlor	0.025	G@	(0.0097)	[0.970873]	0.0074	JX	(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	0.0046	JX	(0.0095)	[0.952380]
Heptachlor epoxide	ND		(0.0097)	[0.970873]	0.065	X	(0.0095)	[0.952380]	0.0081	JX	(0.0095)	[0.952380]	0.0051	JX	(0.0095)	[0.952380]
Isodrin	ND		(0.0097)	[0.970873]	0.0092	JX	(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]
Kepone	ND		(0.0097)	[0.970873]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]
Methoxychlor	ND		(0.049)	[0.970873]	ND		(0.048)	[0.952380]	ND		(0.048)	[0.952380]	ND		(0.048)	[0.952380]
PCB-1016	ND		(0.097)	[0.970873]	ND		(0.095)	[0.952380]	ND		(0.095)	[0.952380]	ND		(0.095)	[0.952380]
PCB-1221	ND		(0.19)	[0.970873]	ND		(0.19)	[0.952380]	ND		(0.19)	[0.952380]	ND		(0.19)	[0.952380]
PCB-1232	ND		(0.19)	[0.970873]	ND		(0.19)	[0.952380]	ND		(0.19)	[0.952380]	ND		(0.19)	[0.952380]
PCB-1242	ND		(0.097)	[0.970873]	ND		(0.095)	[0.952380]	ND		(0.095)	[0.952380]	ND		(0.095)	[0.952380]
PCB-1248	ND		(0.097)	[0.970873]	ND		(0.095)	[0.952380]	ND		(0.095)	[0.952380]	ND		(0.095)	[0.952380]
PCB-1254	ND		(0.19)	[0.970873]	ND		(0.19)	[0.952380]	ND		(0.19)	[0.952380]	ND		(0.19)	[0.952380]
PCB-1260	ND		(0.19)	[0.970873]	ND		(0.19)	[0.952380]	ND		(0.19)	[0.952380]	ND		(0.19)	[0.952380]
Toxaphene	ND		(0.49)	[0.970873]	ND		(0.48)	[0.952380]	ND		(0.48)	[0.952380]	ND		(0.48)	[0.952380]
alpha-BHC	ND		(0.0097)	[0.970873]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]
alpha-Chlordane	0.0026	JX	(0.0097)	[0.970873]	ND		(0.0095)	[0.952380]	0.0055	JX	(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]
beta-BHC	ND		(0.0097)	[0.970873]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]
delta-BHC	ND		(0.0097)	[0.970873]	0.013	X@	(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]
gamma-BHC	0.01	@	(0.0097)	[0.970873]	0.015	X@	(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]

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NOTE: Reported results for sample IDs ending with a 'D' represent dissolved metals concentrations.

TABLE B6 RESULTS OF ORGANIC ANALYSES FOR WATER SAMPLES, HOLLOMAN SEWAGE LAGOONS AND LAKES INVESTIGATION.

PARAMETER	MW-15 9303-MW-15-01				MWD-03 9303-MWD-03-01				MWD-04 9303-MWD-04-01				MWD-05 9303-MWD-05-01			
gamma-Chlordane	0.003	JX	(0.0097)	[0.970873]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	0.0016	JX	(0.0095)	[0.952380]
SW8140 - Organophosphorus Pesticides (ug/L)																
Dimethoate	ND		(0.19)	[0.970873]	ND		(0.19)	[0.952380]	ND		(0.19)	[0.934579]	ND		(0.19)	[0.952380]
Disulfoton	ND		(0.19)	[0.970873]	ND		(0.19)	[0.952380]	ND		(0.19)	[0.934579]	ND		(0.19)	[0.952380]
Ethyl parathion	ND		(0.15)	[0.970873]	ND		(0.14)	[0.952380]	ND		(0.14)	[0.934579]	ND		(0.14)	[0.952380]
Famphur	ND		(0.49)	[0.970873]	ND		(0.48)	[0.952380]	ND		(0.47)	[0.934579]	ND		(0.48)	[0.952380]
Methyl parathion	ND		(0.029)	[0.970873]	ND		(0.029)	[0.952380]	ND		(0.028)	[0.934579]	ND		(0.029)	[0.952380]
Phorate	ND		(0.15)	[0.970873]	ND		(0.14)	[0.952380]	ND*		(0.14)	[0.934579]	ND		(0.14)	[0.952380]
Sulfotepp	ND		(0.097)	[0.970873]	ND		(0.095)	[0.952380]	ND		(0.093)	[0.934579]	ND		(0.095)	[0.952380]
Thionazin	ND		(0.97)	[0.970873]	ND		(0.95)	[0.952380]	ND		(0.93)	[0.934579]	ND		(0.95)	[0.952380]
o,o,o-Triethylphosphorthioate	ND		(0.97)	[0.970873]	ND		(0.95)	[0.952380]	ND		(0.93)	[0.934579]	ND		(0.95)	[0.952380]
SW8150 - Chlorinated Herbicides (ug/L)																
2,4,5-T	ND		(0.19)	[0.970873]	ND		(0.19)	[0.952380]	ND		(0.19)	[0.934579]	ND		(0.19)	[0.970873]
2,4,5-TP (Silvex)	ND		(0.17)	[0.970873]	ND		(0.16)	[0.952380]	ND		(0.16)	[0.934579]	ND		(0.17)	[0.970873]
2,4-D	ND		(1.2)	[0.970873]	ND		(1.1)	[0.952380]	ND		(1.1)	[0.934579]	ND		(1.2)	[0.970873]
Dinoseb	ND		(0.15)	[0.970873]	ND		(0.14)	[0.952380]	ND		(0.14)	[0.934579]	ND		(0.15)	[0.970873]
SW8240 - Volatile Organics (ug/L)																
1,1,1,2-Tetrachloroethane	ND		(5)	[1]	ND		(5)	[1]	ND		(5)	[1]	ND		(5)	[1]
1,1,1-Trichloroethane	ND		(5)	[1]	ND		(5)	[1]	ND		(5)	[1]	ND		(5)	[1]
1,1,2,2-Tetrachloroethane	ND		(5)	[1]	ND		(5)	[1]	ND		(5)	[1]	ND		(5)	[1]
1,1,2-Trichloroethane	ND		(5)	[1]	ND		(5)	[1]	ND		(5)	[1]	ND		(5)	[1]
1,1-Dichloroethane	ND		(5)	[1]	ND		(5)	[1]	ND		(5)	[1]	ND		(5)	[1]
1,1-Dichloroethene	ND		(5)	[1]	ND		(5)	[1]	ND		(5)	[1]	ND		(5)	[1]
1,2,3-Trichloropropane	ND		(5)	[1]	ND		(5)	[1]	ND		(5)	[1]	ND		(5)	[1]
1,2-Dibromo-3-chloropropane	ND		(20)	[1]	ND		(20)	[1]	ND		(20)	[1]	ND		(20)	[1]
1,2-Dibromoethane	ND		(5)	[1]	ND		(5)	[1]	ND		(5)	[1]	ND		(5)	[1]
1,2-Dichloroethane	ND		(5)	[1]	ND		(5)	[1]	ND		(5)	[1]	ND		(5)	[1]
1,2-Dichloropropane	ND		(5)	[1]	ND		(5)	[1]	ND		(5)	[1]	ND		(5)	[1]
2-Chloro-1,3-butadiene	ND		(25)	[1]	ND		(25)	[1]	ND		(25)	[1]	ND		(25)	[1]

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TABLE B6 RESULTS OF ORGANIC ANALYSES FOR WATER SAMPLES, HOLLOMAN SEWAGE LAGOONS AND LAKES INVESTIGATION.

PARAMETER	SITE ID / LOCATION ID / SAMPLE ID: MW-15 / 9303-MW-15-01			MWD-03 / 9303-MWD-03-01			MWD-04 / 9303-MWD-04-01			MWD-05 / 9303-MWD-05-01		
2-Hexanone	ND	(50)	[1]	ND	(50)	[1]	ND	(50)	[1]	ND	(50)	[1]
3-Chloropropene	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
4-Methyl-2-pentanone(MIBK)	ND	(50)	[1]	ND	(50)	[1]	ND	(50)	[1]	ND	(50)	[1]
Acetone	ND	(100)	[1]	ND	(100)	[1]	ND	(100)	[1]	ND	(100)	[1]
Acetonitrile	ND	(100)	[1]	ND	(100)	[1]	ND	(100)	[1]	ND	(100)	[1]
Acrolein	ND	(75)	[1]	ND	(75)	[1]	ND	(75)	[1]	ND	(75)	[1]
Acrylonitrile	ND	(50)	[1]	ND	(50)	[1]	ND	(50)	[1]	ND	(50)	[1]
Benzene	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
Bromodichloromethane	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
Bromomethane	ND	(10)	[1]	ND	(10)	[1]	ND	(10)	[1]	ND	(10)	[1]
Carbon disulfide	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
Carbon tetrachloride	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
Chlorobenzene	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
Chloroethane	ND	(10)	[1]	ND	(10)	[1]	ND	(10)	[1]	ND	(10)	[1]
Chloroform	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
Chloromethane	ND	(10)	[1]	ND	(10)	[1]	ND	(10)	[1]	ND	(10)	[1]
Dibromochloromethane	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
Dibromomethane	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
Dichlorodifluoromethane	ND	(20)	[1]	ND	(20)	[1]	ND	(20)	[1]	ND	(20)	[1]
Ethyl benzene	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
Ethyl methacrylate	ND	(15)	[1]	ND	(15)	[1]	ND	(15)	[1]	ND	(15)	[1]
Iodomethane	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
Methyl ethyl ketone	ND	(100)	[1]	ND	(100)	[1]	ND	(100)	[1]	ND	(100)	[1]
Methyl methacrylate	ND	(10)	[1]	ND	(10)	[1]	ND	(10)	[1]	ND	(10)	[1]
Methylene chloride	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
Propanenitrile	ND	(100)	[1]	ND	(100)	[1]	ND	(100)	[1]	ND	(100)	[1]
Styrene	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
Tetrachloroethene	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
Toluene	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]

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TABLE B6 RESULTS OF ORGANIC ANALYSES FOR WATER SAMPLES, HOLLOMAN SEWAGE LAGOONS AND LAKES INVESTIGATION.

PARAMETER	MW-15 9303-MW-15-01			MWD-03 9303-MWD-03-01			MWD-04 9303-MWD-04-01			MWD-05 9303-MWD-05-01		
Tribromomethane(Bromoform)	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
Trichloroethene	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
Trichlorofluoromethane	ND	(10)	[1]	ND	(10)	[1]	ND	(10)	[1]	ND	(10)	[1]
Unknown alkane	11	()	[1]	NA			NA			NA		
Vinyl acetate	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
Vinyl chloride	ND	(10)	[1]	ND	(10)	[1]	ND	(10)	[1]	ND	(10)	[1]
Xylenes	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
cis-1,3-Dichloropropene	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
trans-1,2-Dichloroethene	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
trans-1,3-Dichloropropene	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]	ND	(5)	[1]
trans-1,4-Dichloro-2-butene	ND	(10)	[1]	ND	(10)	[1]	ND	(10)	[1]	ND	(10)	[1]
SW8240DI - Volatile Organics, Direct Injection (ug/mL)												
1,4-Dioxane	ND	(10)	[1]	ND	(10)	[1]	ND	(10)	[1]	ND	(10)	[1]
Isobutanol	ND	(10)	[1]	ND	(10)	[1]	ND	(10)	[1]	ND	(10)	[1]
Methacrylonitrile	ND	(10)	[1]	ND	(10)	[1]	ND	(10)	[1]	ND	(10)	[1]
SW8270 - Semivolatile Organics (ug/L)												
1,2,4,5-Tetrachlorobenzene	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
1,2,4-Trichlorobenzene	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
1,2-Dichlorobenzene	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
1,3-Dichlorobenzene	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
1,3-Dinitrobenzene	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
1,4-Dichlorobenzene	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
1,4-Napthoquinone	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
1-Naphthylamine	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
2,3,4,6-Tetrachlorophenol	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
2,4,5-Trichlorophenol	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
2,4,6-Trichlorophenol	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
2,4-Dichlorophenol	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
2,4-Dimethylphenol	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]

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TABLE B6 RESULTS OF ORGANIC ANALYSES FOR WATER SAMPLES, HOLLOMAN SEWAGE LAGOONS AND LAKES INVESTIGATION.

PARAMETER	SITE ID / LOCATION ID / SAMPLE ID: MW-15 / 9303-MW-15-01			MWD-03 / 9303-MWD-03-01			MWD-04 / 9303-MWD-04-01			MWD-05 / 9303-MWD-05-01		
2,4-Dinitrophenol	ND	(19)	[0.961538]	ND	(19)	[0.952380]	ND	(19)	[0.947867]	ND	(19)	[0.952380]
2,4-Dinitrotoluene	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
2,6-Dichlorophenol	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
2,6-Dinitrotoluene	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
2-Acetylaminofluorene	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
2-Chloronaphthalene	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
2-Chlorophenol	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
2-Methylnaphthalene	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
2-Methylphenol(o-cresol)	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
2-Naphthylamine	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
2-Nitroaniline	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
2-Nitrophenol	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
2-Picoline	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
3,3'-Dichlorobenzidine	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
3,3'-Dimethylbenzidine	ND	(19)	[0.961538]	ND	(19)	[0.952380]	ND	(19)	[0.947867]	ND	(19)	[0.952380]
3-Methylcholanthrene	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
3-Methylphenol(m-cresol)	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
3-Nitroaniline	ND	(19)	[0.961538]	ND	(19)	[0.952380]	ND	(19)	[0.947867]	ND	(19)	[0.952380]
4,6-Dinitro-2-methylphenol	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
4-Aminobiphenyl	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
4-Bromophenyl phenyl ether	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
4-Chloro-3-methylphenol	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
4-Chlorophenyl phenyl ether	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
4-Methylphenol(p-cresol)	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
4-Nitroaniline	ND	(19)	[0.961538]	ND	(19)	[0.952380]	ND	(19)	[0.947867]	ND	(19)	[0.952380]
4-Nitrophenol	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
4-Nitroquinoline-N-oxide	ND	(77)	[0.961538]	ND	(76)	[0.952380]	NO	(76)	[0.947867]	ND	(76)	[0.952380]
5-Nitro-o-toluidine	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
7,12-Dimethylbenz(a)anthracene	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]

Compiled: 14 September 1993 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable * - Value considered suspect, Refer to QC Report

NOTE: Reported results for sample IDs ending with a 'D' represent dissolved metals concentrations.

TABLE B6 RESULTS OF ORGANIC ANALYSES FOR WATER SAMPLES, HOLLOMAN SEWAGE LAGOONS AND LAKES INVESTIGATION.

PARAMETER	MW-15 9303-MW-15-01			MWD-03 9303-MWD-03-01			MWD-04 9303-MWD-04-01			MWD-05 9303-MWD-05-01		
Acenaphthene	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
Acenaphthylene	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
Acetophenone	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
Aniline	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
Anthracene	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
Aramite	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
Benzo(a)anthracene	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
Benzo(a)pyrene	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
Benzo(b)fluoranthene	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
Benzo(g,h,i)perylene	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
Benzo(k)fluoranthene	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
Benzyl alcohol	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
Butylbenzylphthalate	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
Chlorobenzilate	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
Chrysene	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
Di-n-octylphthalate	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
Diallate	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
Dibenz(a,h)anthracene	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
Dibenzofuran	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
Dibutylphthalate	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
Diethylphthalate	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
Dimethylphenethylamine	ND	(120)	[0.961538]	ND	(110)	[0.952380]	ND	(110)	[0.947867]	ND	(110)	[0.952380]
Dimethylphthalate	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
Diphenylamine	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
Ethyl methanesulfonate	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
Fluoranthene	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
Fluorene	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
Hexachlorobenzene	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
Hexachlorobutadiene	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]

Compiled: 14 September 1993 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable * - Value considered suspect, Refer to QC Report

NOTE: Reported results for sample IDs ending with a 'D' represent dissolved metals concentrations.

TABLE B6 RESULTS OF ORGANIC ANALYSES FOR WATER SAMPLES, HOLLOMAN SEWAGE LAGOONS AND LAKES INVESTIGATION.

PARAMETER	SITE ID / LOCATION ID / SAMPLE ID: MW-15 / 9303-MW-15-01			MWD-03 / 9303-MWD-03-01			MWD-04 / 9303-MWD-04-01			MWD-05 / 9303-MWD-05-01		
Hexachlorocyclopentadiene	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
Hexachloroethane	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
Hexachlorophene	ND	(1900)	[0.961538]	ND	(1900)	[0.952380]	ND	(1900)	[0.947867]	ND	(1900)	[0.952380]
Hexachloropropene	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
Indeno(1,2,3-cd)pyrene	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
Isophorone	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
Isosafrole	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
Methapyriline	ND	(48)	[0.961538]	ND	(48)	[0.952380]	ND	(47)	[0.947867]	ND	(48)	[0.952380]
Methyl methanesulfonate	ND	(48)	[0.961538]	ND	(48)	[0.952380]	ND	(47)	[0.947867]	ND	(48)	[0.952380]
N-Nitroso-di-n-butylamine	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
N-Nitrosodiethylamine	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
N-Nitrosodimethylamine	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
N-Nitrosodiphenylamine	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
N-Nitrosodipropylamine	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
N-Nitrosomethylethylamine	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
N-Nitrosomorpholine	ND	(19)	[0.961538]	ND	(19)	[0.952380]	ND	(19)	[0.947867]	ND	(19)	[0.952380]
N-Nitrosopiperidine	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
N-Nitrosopyrrolidine	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
Naphthalene	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
Nitrobenzene	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
Pentachlorobenzene	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
Pentachloroethane	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
Pentachloronitrobenzene	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
Pentachlorophenol	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
Phenacetin	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
Phenanthrene	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
Phenol	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
Pronamide	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]
Pyrene	ND	(9.6)	[0.961538]	ND	(9.5)	[0.952380]	ND	(9.5)	[0.947867]	ND	(9.5)	[0.952380]

Compiled: 14 September 1993 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable * - Value considered suspect, Refer to QC Report

NOTE: Reported results for sample IDs ending with a 'D' represent dissolved metals concentrations.

TABLE B6 RESULTS OF ORGANIC ANALYSES FOR WATER SAMPLES, HOLLOMAN SEWAGE LAGOONS AND LAKES INVESTIGATION.

PARAMETER	SITE ID / LOCATION ID / SAMPLE ID															
	MW-15				MWD-03				MWD-04				MWD-05			
	9303-MW-15-01				9303-MWD-03-01				9303-MWD-04-01				9303-MWD-05-01			
Pyridine	ND		(9.6)	[0.961538]	ND		(9.5)	[0.952380]	ND		(9.5)	[0.947867]	ND		(9.5)	[0.952380]
Safrole	ND		(9.6)	[0.961538]	ND		(9.5)	[0.952380]	ND		(9.5)	[0.947867]	ND		(9.5)	[0.952380]
Unknown	3.8		()	[0.961538]	3.8		()	[0.952380]	NA				NA			
Unknown 2	76		()	[0.961538]	NA				NA				NA			
Unknown 3	8.6		()	[0.961538]	NA				NA				NA			
Unknown 4	9.6		()	[0.961538]	NA				NA				NA			
bis(2-Chloroethoxy)methane	ND		(9.6)	[0.961538]	ND		(9.5)	[0.952380]	ND		(9.5)	[0.947867]	ND		(9.5)	[0.952380]
bis(2-Chloroethyl)ether	ND		(9.6)	[0.961538]	ND		(9.5)	[0.952380]	ND		(9.5)	[0.947867]	ND		(9.5)	[0.952380]
bis(2-Chloroisopropyl)ether	ND		(9.6)	[0.961538]	ND		(9.5)	[0.952380]	ND		(9.5)	[0.947867]	ND		(9.5)	[0.952380]
bis(2-Ethylhexyl)phthalate	2.4	J	(9.6)	[0.961538]	13	@	(9.5)	[0.952380]	ND		(9.5)	[0.947867]	ND		(9.5)	[0.952380]
o-Toluidine	ND		(9.6)	[0.961538]	ND		(9.5)	[0.952380]	ND		(9.5)	[0.947867]	ND		(9.5)	[0.952380]
p-Chloroaniline	ND		(9.6)	[0.961538]	ND		(9.5)	[0.952380]	ND		(9.5)	[0.947867]	ND		(9.5)	[0.952380]
p-Dimethylaminoazobenzene	ND		(9.6)	[0.961538]	ND		(9.5)	[0.952380]	ND		(9.5)	[0.947867]	ND		(9.5)	[0.952380]
p-Phenylenediamine	ND		(120)	[0.961538]	ND		(110)	[0.952380]	ND		(110)	[0.947867]	ND		(110)	[0.952380]
SW8280 - Dioxins and Furans (ng/L)																
2,3,7,8-TCDD	ND		(2.9)	[0.980392]	ND		(1.9)	[0.952380]	ND		(1.9)	[0.970873]	ND		(1.9)	[0.952380]
HpCDD	ND		(3.9)	[0.980392]	ND		(2.9)	[0.952380]	ND		(2.9)	[0.970873]	ND		(3.8)	[0.952380]
HpCDF	ND		(2.9)	[0.980392]	ND		(1.9)	[0.952380]	ND		(1.9)	[0.970873]	ND		(1.9)	[0.952380]
HxCDD	ND		(2.9)	[0.980392]	ND		(2.9)	[0.952380]	ND		(2.9)	[0.970873]	ND		(2.9)	[0.952380]
HxCDF	ND		(2)	[0.980392]	ND		(1.9)	[0.952380]	ND		(1.9)	[0.970873]	ND		(1.9)	[0.952380]
OCDD	ND		(6.9)	[0.980392]	ND		(4.8)	[0.952380]	ND		(4.9)	[0.970873]	ND		(4.8)	[0.952380]
OCDF	ND		(4.9)	[0.980392]	ND		(2.9)	[0.952380]	ND		(2.9)	[0.970873]	ND		(3.8)	[0.952380]
PeCDD	ND		(2.9)	[0.980392]	ND		(1.9)	[0.952380]	ND		(1.9)	[0.970873]	ND		(2.9)	[0.952380]
PeCDF	ND		(2.9)	[0.980392]	ND		(1.9)	[0.952380]	ND		(1.9)	[0.970873]	ND		(1.9)	[0.952380]
TCDD	ND		(2.9)	[0.980392]	ND		(1.9)	[0.952380]	ND		(1.9)	[0.970873]	ND		(1.9)	[0.952380]
TCDF	ND		(2.9)	[0.980392]	ND		(1.9)	[0.952380]	ND		(1.9)	[0.970873]	ND		(1.9)	[0.952380]

Compiled: 14 September 1993 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable * - Value considered suspect, Refer to QC Report

NOTE: Reported results for sample IDs ending with a 'D' represent dissolved metals concentrations.

TABLE B6 RESULTS OF ORGANIC ANALYSES FOR WATER SAMPLES, HOLLOMAN SEWAGE LAGOONS AND LAKES INVESTIGATION.

PARAMETER	SITE ID / LOCATION ID / SAMPLE ID															
	MWS-04				MWS-05				MW-01				MW-02			
	9303-MWS-04-01				9303-MWS-05-01				9304-MW-01 01				9304-MW-02-01			
SW8080 - Organochlorine Pesticides and PCBs (ug/L)																
4,4'-DDD	ND		(0.0098)	[0.980392]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0096)	[0.961538]
4,4'-DDE	ND		(0.0098)	[0.980392]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	0.016	X@	(0.0096)	[0.961538]
4,4'-DDT	ND		(0.02)	[0.980392]	0.049	X@	(0.019)	[0.952380]	0.018	JX	(0.019)	[0.952380]	0.014	J	(0.019)	[0.961538]
Aldrin	ND		(0.0098)	[0.980392]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0096)	[0.961538]
Dieldrin	ND		(0.0098)	[0.980392]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0096)	[0.961538]
Endosulfan I	ND		(0.0098)	[0.980392]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0096)	[0.961538]
Endosulfan II	ND		(0.029)	[0.980392]	ND		(0.029)	[0.952380]	ND		(0.029)	[0.952380]	0.0098	JX	(0.029)	[0.961538]
Endosulfan Sulfate	0.0094	J	(0.049)	[0.980392]	0.028	JB	(0.048)	[0.952380]	ND		(0.048)	[0.952380]	0.018	JX	(0.048)	[0.961538]
Endrin	ND		(0.0098)	[0.980392]	ND		(0.0095)	[0.952380]	0.017	X8@	(0.0095)	[0.952380]	0.018	@	(0.0096)	[0.961538]
Endrin Aldehyde	ND		(0.02)	[0.980392]	0.004	JX	(0.019)	[0.952380]	ND		(0.019)	[0.952380]	0.0035	JX	(0.019)	[0.961538]
Heptachlor	0.0059	JX	(0.0098)	[0.980392]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0096)	[0.961538]
Heptachlor epoxide	0.022	X@	(0.0098)	[0.980392]	0.0081	J	(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0096)	[0.961538]
Isodrin	ND		(0.0098)	[0.980392]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	0.0051	JX	(0.0096)	[0.961538]
Kepone	ND		(0.0098)	[0.980392]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0096)	[0.961538]
Methoxychlor	ND		(0.049)	[0.980392]	ND		(0.048)	[0.952380]	ND		(0.048)	[0.952380]	ND		(0.048)	[0.961538]
PCB-1016	NA				ND		(0.095)	[0.952380]	NA				NA			
PCB-1221	NA				ND		(0.19)	[0.952380]	NA				NA			
PCB-1232	NA				ND		(0.19)	[0.952380]	NA				NA			
PCB-1242	NA				ND		(0.095)	[0.952380]	NA				NA			
PCB-1248	NA				ND		(0.095)	[0.952380]	NA				NA			
PCB-1254	NA				ND		(0.19)	[0.952380]	NA				NA			
PCB-1260	NA				ND		(0.19)	[0.952380]	NA				NA			
Toxaphene	ND		(0.49)	[0.980392]	ND		(0.48)	[0.952380]	ND		(0.48)	[0.952380]	ND		(0.48)	[0.961538]
alpha-BHC	ND		(0.0098)	[0.980392]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0096)	[0.961538]
alpha-Chlordane	ND		(0.0098)	[0.980392]	0.006	JX	(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	0.062	X	(0.0096)	[0.961538]
beta-BHC	ND		(0.0098)	[0.980392]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0096)	[0.961538]
delta-BHC	ND		(0.0098)	[0.980392]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	0.012	G@	(0.0096)	[0.961538]
gamma-BHC	ND		(0.0098)	[0.980392]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0096)	[0.961538]

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NOTE: Reported results for sample IDs ending with a 'D' represent dissolved metals concentrations.

TABLE B6 RESULTS OF ORGANIC ANALYSES FOR WATER SAMPLES, HOLLOMAN SEWAGE LAGOONS AND LAKES INVESTIGATION.

PARAMETER	SITE ID LOCATION ID SAMPLE ID MWS-04 9303-MWS-04-01			MWS-05 9303-MWS-05-01			MW-01 9304-MW-01-01			MW-02 9304-MW-02-01		
gamma-Chlordane	ND	(0.0098)	[0.980392]	ND	(0.0095)	[0.952380]	ND	(0.0095)	[0.952380]	0.74 G	(0.0096)	[0.961538]
SW8140 - Organophosphorus Pesticides (ug/L)												
Dimethoate	NA			ND	(0.19)	[0.934579]	NA			NA		
Disulfoton	NA			ND	(0.19)	[0.934579]	NA			NA		
Ethyl parathion	NA			ND	(0.14)	[0.934579]	NA			NA		
Famphur	NA			ND	(0.47)	[0.934579]	NA			NA		
Methyl parathion	NA			ND	(0.028)	[0.934579]	NA			NA		
Phorate	NA			ND*	(0.14)	[0.934579]	NA			NA		
Sulfotepp	NA			ND	(0.093)	[0.934579]	NA			NA		
Thionazin	NA			ND	(0.93)	[0.934579]	NA			NA		
o,o,o-Triethylphosphorthioate	NA			ND	(0.93)	[0.934579]	NA			NA		
SW8150 - Chlorinated Herbicides (ug/L)												
2,4,5-T	NA			ND	(0.19)	[0.934579]	NA			NA		
2,4,5-TP (Silvex)	NA			ND	(0.16)	[0.934579]	NA			NA		
2,4-D	NA			ND	(1.1)	[0.934579]	NA			NA		
Dinoseb	NA			ND	(0.14)	[0.934579]	NA			NA		
SW8240 - Volatile Organics (ug/L)												
1,1,1,2-Tetrachloroethane	NA			ND	(5)	[1]	NA			NA		
1,1,1-Trichloroethane	NA			ND	(5)	[1]	NA			NA		
1,1,2,2-Tetrachloroethane	NA			ND	(5)	[1]	NA			NA		
1,1,2-Trichloroethane	NA			ND	(5)	[1]	NA			NA		
1,1-Dichloroethane	NA			ND	(5)	[1]	NA			NA		
1,1-Dichloroethene	NA			ND	(5)	[1]	NA			NA		
1,2,3-Trichloropropane	NA			ND	(5)	[1]	NA			NA		
1,2-Dibromo-3-chloropropane	NA			ND	(20)	[1]	NA			NA		
1,2-Dibromoethane	NA			ND	(5)	[1]	NA			NA		
1,2-Dichloroethane	NA			ND	(5)	[1]	NA			NA		
1,2-Dichloropropane	NA			ND	(5)	[1]	NA			NA		
2-Chloro-1,3-butadiene	NA			ND	(25)	[1]	NA			NA		

Compiled: 14 September 1993 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable * - Value considered suspect, Refer to QC Report

NOTE: Reported results for sample IDs ending with a 'D' represent dissolved metals concentrations.

TABLE B6 RESULTS OF ORGANIC ANALYSES FOR WATER SAMPLES, HOLLOMAN SEWAGE LAGOONS AND LAKES INVESTIGATION.

PARAMETER	SITE ID / LOCATION ID / SAMPLE ID: MWS-04 / 9303-MWS-04-01	MWS-05 / 9303-MWS-05-01			MW-01 / 9304-MW-01-01	MW-02 / 9304-MW-02-01
2-Hexanone	NA	ND	(50)	[1]	NA	NA
3-Chloropropene	NA	ND	(5)	[1]	NA	NA
4-Methyl-2-pentanone(MIBK)	NA	ND	(50)	[1]	NA	NA
Acetone	NA	ND	(100)	[1]	NA	NA
Acetonitrile	NA	ND	(100)	[1]	NA	NA
Acrolein	NA	ND	(75)	[1]	NA	NA
Acrylonitrile	NA	ND	(50)	[1]	NA	NA
Benzene	NA	ND	(5)	[1]	NA	NA
Bromodichloromethane	NA	ND	(5)	[1]	NA	NA
Bromomethane	NA	ND	(10)	[1]	NA	NA
Carbon disulfide	NA	ND	(5)	[1]	NA	NA
Carbon tetrachloride	NA	ND	(5)	[1]	NA	NA
Chlorobenzene	NA	ND	(5)	[1]	NA	NA
Chloroethane	NA	ND	(10)	[1]	NA	NA
Chloroform	NA	ND	(5)	[1]	NA	NA
Chloromethane	NA	ND	(10)	[1]	NA	NA
Dibromochloromethane	NA	ND	(5)	[1]	NA	NA
Dibromomethane	NA	ND	(5)	[1]	NA	NA
Dichlorodifluoromethane	NA	ND	(20)	[1]	NA	NA
Ethyl benzene	NA	ND	(5)	[1]	NA	NA
Ethyl methacrylate	NA	ND	(15)	[1]	NA	NA
Iodomethane	NA	ND	(5)	[1]	NA	NA
Methyl ethyl ketone	NA	ND	(100)	[1]	NA	NA
Methyl methacrylate	NA	ND	(10)	[1]	NA	NA
Methylene chloride	NA	ND	(5)	[1]	NA	NA
Propanenitrile	NA	ND	(100)	[1]	NA	NA
Styrene	NA	ND	(5)	[1]	NA	NA
Tetrachloroethene	NA	ND	(5)	[1]	NA	NA
Toluene	NA	ND	(5)	[1]	NA	NA

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TABLE B6 RESULTS OF ORGANIC ANALYSES FOR WATER SAMPLES, HOLLOMAN SEWAGE LAGOONS AND LAKES INVESTIGATION.

	SITE ID LOCATION ID SAMPLE ID					
PARAMETER	MWS-04 9303-MWS-04-01	MWS-05 9303-MWS-05-01			MW-01 9304-MW-01-01	MW-02 9304-MW-02-01
Tribromomethane(Bromoform)	NA	ND	(5)	[1]	NA	NA
Trichloroethene	NA	ND	(5)	[1]	NA	NA
Trichlorofluoromethane	NA	ND	(10)	[1]	NA	NA
Vinyl acetate	NA	ND	(5)	[1]	NA	NA
Vinyl chloride	NA	ND	(10)	[1]	NA	NA
Xylenes	NA	ND	(5)	[1]	NA	NA
cis-1,3-Dichloropropene	NA	ND	(5)	[1]	NA	NA
trans-1,2-Dichloroethene	NA	ND	(5)	[1]	NA	NA
trans-1,3-Dichloropropene	NA	ND	(5)	[1]	NA	NA
trans-1,4-Dichloro-2-butene	NA	ND	(10)	[1]	NA	NA
SW8240DI - Volatile Organics, Direct Injection (ug/mL)						
1,4-Dioxane	NA	ND	(10)	[1]	NA	NA
Isobutanol	NA	ND	(10)	[1]	NA	NA
Methacrylonitrile	NA	ND	(10)	[1]	NA	NA
SW8270 - Semivolatile Organics (ug/L)						
1,2,4,5-Tetrachlorobenzene	NA	ND	(9.5)	[0.952380]	NA	NA
1,2,4-Trichlorobenzene	NA	ND	(9.5)	[0.952380]	NA	NA
1,2-Dichlorobenzene	NA	ND	(9.5)	[0.952380]	NA	NA
1,3-Dichlorobenzene	NA	ND	(9.5)	[0.952380]	NA	NA
1,3-Dinitrobenzene	NA	ND	(9.5)	[0.952380]	NA	NA
1,4-Dichlorobenzene	NA	ND	(9.5)	[0.952380]	NA	NA
1,4-Napthoquinone	NA	ND	(9.5)	[0.952380]	NA	NA
1-Naphthylamine	NA	ND	(9.5)	[0.952380]	NA	NA
2,3,4,6-Tetrachlorophenol	NA	ND	(9.5)	[0.952380]	NA	NA
2,4,5-Trichlorophenol	NA	ND	(9.5)	[0.952380]	NA	NA
2,4,6-Trichlorophenol	NA	ND	(9.5)	[0.952380]	NA	NA
2,4-Dichlorophenol	NA	ND	(9.5)	[0.952380]	NA	NA
2,4-Dimethylphenol	NA	ND	(9.5)	[0.952380]	NA	NA
2,4-Dinitrophenol	NA	ND	(19)	[0.952380]	NA	NA

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TABLE B6 RESULTS OF ORGANIC ANALYSES FOR WATER SAMPLES, HOLLOMAN SEWAGE LAGOONS AND LAKES INVESTIGATION.

	SITE ID LOCATION ID SAMPLE ID					
PARAMETER	MWS-04 9303-MWS-04-01	MWS-05 9303-MWS-05-01			MW-01 9304-MW-01-01	MW-02 9304-MW-02-01
2,4-Dinitrotoluene	NA	ND	(9.5)	[0.952380]	NA	NA
2,6-Dichlorophenol	NA	ND	(9.5)	[0.952380]	NA	NA
2,6-Dinitrotoluene	NA	ND	(9.5)	[0.952380]	NA	NA
2-Acetylaminofluorene	NA	ND	(9.5)	[0.952380]	NA	NA
2-Chloronaphthalene	NA	ND	(9.5)	[0.952380]	NA	NA
2-Chlorophenol	NA	ND	(9.5)	[0.952380]	NA	NA
2-Methylnaphthalene	NA	ND	(9.5)	[0.952380]	NA	NA
2-Methylphenol(o-cresol)	NA	ND	(9.5)	[0.952380]	NA	NA
2-Naphthylamine	NA	ND	(9.5)	[0.952380]	NA	NA
2-Nitroaniline	NA	ND	(9.5)	[0.952380]	NA	NA
2-Nitrophenol	NA	ND	(9.5)	[0.952380]	NA	NA
2-Picoline	NA	ND	(9.5)	[0.952380]	NA	NA
3,3'-Dichlorobenzidine	NA	ND	(9.5)	[0.952380]	NA	NA
3,3'-Dimethylbenzidine	NA	ND	(19)	[0.952380]	NA	NA
3-Methylcholanthrene	NA	ND	(9.5)	[0.952380]	NA	NA
3-Methylphenol(m-cresol)	NA	ND	(9.5)	[0.952380]	NA	NA
3-Nitroaniline	NA	ND	(19)	[0.952380]	NA	NA
4,6-Dinitro-2-methylphenol	NA	ND	(9.5)	[0.952380]	NA	NA
4-Aminobiphenyl	NA	ND	(9.5)	[0.952380]	NA	NA
4-Bromophenyl phenyl ether	NA	ND	(9.5)	[0.952380]	NA	NA
4-Chloro-3-methylphenol	NA	ND	(9.5)	[0.952380]	NA	NA
4-Chlorophenyl phenyl ether	NA	ND	(9.5)	[0.952380]	NA	NA
4-Methylphenol(p-cresol)	NA	ND	(9.5)	[0.952380]	NA	NA
4-Nitroaniline	NA	ND	(19)	[0.952380]	NA	NA
4-Nitrophenol	NA	ND	(9.5)	[0.952380]	NA	NA
4-Nitroquinoline-N-oxide	NA	ND	(76)	[0.952380]	NA	NA
5-Nitro-o-toluidine	NA	ND	(9.5)	[0.952380]	NA	NA
7,12-Dimethylbenz(a)anthracene	NA	ND	(9.5)	[0.952380]	NA	NA
Acenaphthene	NA	ND	(9.5)	[0.952380]	NA	NA

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TABLE B6 RESULTS OF ORGANIC ANALYSES FOR WATER SAMPLES, HOLLOMAN SEWAGE LAGOONS AND LAKES INVESTIGATION.

PARAMETER	SITE ID LOCATION ID SAMPLE ID MWS-04 9303-MWS-04-01	MWS-05 9303-MWS-05-01	MW-01 9304-MW-01-01	MW-02 9304-MW-02-01
Acenaphthylene	NA	ND (9.5) [0.952380]	NA	NA
Acetophenone	NA	ND (9.5) [0.952380]	NA	NA
Aniline	NA	ND (9.5) [0.952380]	NA	NA
Anthracene	NA	ND (9.5) [0.952380]	NA	NA
Aramite	NA	ND (9.5) [0.952380]	NA	NA
Benzo(a)anthracene	NA	ND (9.5) [0.952380]	NA	NA
Benzo(a)pyrene	NA	ND (9.5) [0.952380]	NA	NA
Benzo(b)fluoranthene	NA	ND (9.5) [0.952380]	NA	NA
Benzo(g,h,i)perylene	NA	ND (9.5) [0.952380]	NA	NA
Benzo(k)fluoranthene	NA	ND (9.5) [0.952380]	NA	NA
Benzyl alcohol	NA	ND (9.5) [0.952380]	NA	NA
Butylbenzylphthalate	NA	ND (9.5) [0.952380]	NA	NA
Chlorobenzilate	NA	ND (9.5) [0.952380]	NA	NA
Chrysene	NA	ND (9.5) [0.952380]	NA	NA
Di-n-octylphthalate	NA	ND (9.5) [0.952380]	NA	NA
Diallate	NA	ND (9.5) [0.952380]	NA	NA
Dibenz(a,h)anthracene	NA	ND (9.5) [0.952380]	NA	NA
Oibenzofuran	NA	ND (9.5) [0.952380]	NA	NA
Dibutylphthalate	NA	ND (9.5) [0.952380]	NA	NA
Diethylphthalate	NA	ND (9.5) [0.952380]	NA	NA
Dimethylphenethylamine	NA	ND (110) [0.952380]	NA	NA
Dimethylphthalate	NA	ND (9.5) [0.952380]	NA	NA
Diphenylamine	NA	ND (9.5) [0.952380]	NA	NA
Ethyl methanesulfonate	NA	ND (9.5) [0.952380]	NA	NA
Fluoranthene	NA	ND (9.5) [0.952380]	NA	NA
Fluorene	NA	ND (9.5) [0.952380]	NA	NA
Hexachlorobenzene	NA	ND (9.5) [0.952380]	NA	NA
Hexachlorobutadiene	NA	ND (9.5) [0.952380]	NA	NA
Hexachlorocyclopentadiene	NA	ND (9.5) [0.952380]	NA	NA

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TABLE B6 RESULTS OF ORGANIC ANALYSES FOR WATER SAMPLES, HOLLOMAN SEWAGE LAGOONS AND LAKES INVESTIGATION.

	SITE ID LOCATION ID SAMPLE ID			
PARAMETER	MWS-04 9303-MWS-04-01	MWS-05 9303-MWS-05-01	MW-01 9304-MW-01-01	MW-02 9304-MW-02-01
Hexachloroethane	NA	ND (9.5) [0.952380]	NA	NA
Hexachlorophene	NA	ND (1900) [0.952380]	NA	NA
Hexachloropropene	NA	ND (9.5) [0.952380]	NA	NA
Indeno(1,2,3-cd)pyrene	NA	ND (9.5) [0.952380]	NA	NA
Isophorone	NA	ND (9.5) [0.952380]	NA	NA
Isosafrole	NA	ND (9.5) [0.952380]	NA	NA
Methapyriline	NA	ND (48) [0.952380]	NA	NA
Methyl methanesulfonate	NA	ND (48) [0.952380]	NA	NA
N-Nitroso-di-n-butylamine	NA	ND (9.5) [0.952380]	NA	NA
N-Nitrosodiethylamine	NA	ND (9.5) [0.952380]	NA	NA
N-Nitrosodimethylamine	NA	ND (9.5) [0.952380]	NA	NA
N-Nitrosodiphenylamine	NA	ND (9.5) [0.952380]	NA	NA
N-Nitrosodipropylamine	NA	ND (9.5) [0.952380]	NA	NA
N-Nitrosomethylethylamine	NA	ND (9.5) [0.952380]	NA	NA
N-Nitrosomorpholine	NA	ND (19) [0.952380]	NA	NA
N-Nitrosopiperidine	NA	ND (9.5) [0.952380]	NA	NA
N-Nitrosopyrrolidine	NA	ND (9.5) [0.952380]	NA	NA
Naphthalene	NA	ND (9.5) [0.952380]	NA	NA
Nitrobenzene	NA	ND (9.5) [0.952380]	NA	NA
Pentachlorobenzene	NA	ND (9.5) [0.952380]	NA	NA
Pentachloroethane	NA	ND (9.5) [0.952380]	NA	NA
Pentachloronitrobenzene	NA	ND (9.5) [0.952380]	NA	NA
Pentachlorophenol	NA	ND (9.5) [0.952380]	NA	NA
Phenacetin	NA	ND (9.5) [0.952380]	NA	NA
Phenanthrene	NA	ND (9.5) [0.952380]	NA	NA
Phenol	NA	ND (9.5) [0.952380]	NA	NA
Pronamide	NA	ND (9.5) [0.952380]	NA	NA
Pyrene	NA	ND (9.5) [0.952380]	NA	NA
Pyridine	NA	ND (9.5) [0.952380]	NA	NA

Compiled: 14 September 1993 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable * - Value considered suspect, Refer to QC Report

NOTE: Reported results for sample IDs ending with a 'D' represent dissolved metals concentrations.

TABLE B6 RESULTS OF ORGANIC ANALYSES FOR WATER SAMPLES, HOLLOMAN SEWAGE LAGOONS AND LAKES INVESTIGATION.

	SITE ID LOCATION ID SAMPLE ID			
PARAMETER	MWS-04 9303-MWS-04-01	MWS-05 9303-MWS-05-01	MW-01 9304-MW-01-01	MW-02 9304-MW-02-01
Safrole	NA	ND (9.5) [0.952380]	NA	NA
Unknown	NA	78 () [0.952380]	NA	NA
bis(2-Chloroethoxy)methane	NA	ND (9.5) [0.952380]	NA	NA
bis(2-Chloroethyl)ether	NA	ND (9.5) [0.952380]	NA	NA
bis(2-Chloroisopropyl)ether	NA	ND (9.5) [0.952380]	NA	NA
bis(2-Ethylhexyl)phthalate	NA	ND (9.5) [0.952380]	NA	NA
o-Toluidine	NA	ND (9.5) [0.952380]	NA	NA
p-Chloroaniline	NA	ND (9.5) [0.952380]	NA	NA
p-Dimethylaminoazobenzene	NA	ND (9.5) [0.952380]	NA	NA
p-Phenylenediamine	NA	ND (110) [0.952380]	NA	NA
SW8280 - Dioxins and Furans (ng/L)				
2,3,7,8-TCDD	NA	ND (1.9) [0.952380]	NA	NA
HpCDD	NA	ND (2.9) [0.952380]	NA	NA
HpCDF	NA	ND (1.9) [0.952380]	NA	NA
HxCDD	NA	ND (1.9) [0.952380]	NA	NA
HxCDF	NA	ND (1.9) [0.952380]	NA	NA
OCDD	NA	ND (3.8) [0.952380]	NA	NA
OCDF	NA	ND (2.9) [0.952380]	NA	NA
PeCDD	NA	ND (1.9) [0.952380]	NA	NA
PeCDF	NA	ND (1.9) [0.952380]	NA	NA
TCDD	NA	ND (1.9) [0.952380]	NA	NA
TCDF	NA	ND (1.9) [0.952380]	NA	NA

Compiled: 14 September 1993 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable * - Value considered suspect, Refer to QC Report

NOTE: Reported results for sample IDs ending with a 'D' represent dissolved metals concentrations.

TABLE B6 RESULTS OF ORGANIC ANALYSES FOR WATER SAMPLES, HOLLOMAN SEWAGE LAGOONS AND LAKES INVESTIGATION.

	SITE ID															
	LOCATION ID															
	SAMPLE ID															
PARAMETER	MW-03 9304-MW-03-01				MW-04 9304-MW-04-01				MW-05 9304-MW-05-01				MW-06 9304-MW-06-01			
SW8080 - Organochlorine Pesticides and PCBs (ug/L)																
4,4'-DDD	ND		(0.0095)	[0.952380]	0.018	@	(0.0095)	[0.952380]	0.019	X@	(0.0096)	[0.961538]	ND		(0.0095)	[0.952380]
4,4'-DDE	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	0.026	X@	(0.0096)	[0.961538]	ND		(0.0095)	[0.952380]
4,4'-DDT	0.091	G@	(0.019)	[0.952380]	ND		(0.019)	[0.952380]	0.014	J	(0.019)	[0.961538]	ND		(0.019)	[0.952380]
Aldrin	0.03	@	(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	0.018	X@	(0.0096)	[0.961538]	ND		(0.0095)	[0.952380]
Dieldrin	0.012	X@	(0.0095)	[0.952380]	0.016	G@	(0.0095)	[0.952380]	0.036	X@	(0.0096)	[0.961538]	ND		(0.0095)	[0.952380]
Endosulfan I	ND		(0.0095)	[0.952380]	0.024	@	(0.0095)	[0.952380]	0.0093	J	(0.0096)	[0.961538]	ND		(0.0095)	[0.952380]
Endosulfan II	0.067	@	(0.029)	[0.952380]	ND		(0.029)	[0.952380]	0.016	J	(0.029)	[0.961538]	ND		(0.029)	[0.952380]
Endosulfan Sulfate	0.036	JX	(0.048)	[0.952380]	ND		(0.048)	[0.952380]	0.018	JX	(0.048)	[0.961538]	ND		(0.048)	[0.952380]
Endrin	0.15	G	(0.0095)	[0.952380]	0.0093	JB	(0.0095)	[0.952380]	0.056	G	(0.0096)	[0.961538]	ND		(0.0095)	[0.952380]
Endrin Aldehyde	0.077	GB@	(0.019)	[0.952380]	0.0029	J	(0.019)	[0.952380]	0.0039	JB	(0.019)	[0.961538]	ND		(0.019)	[0.952380]
Heptachlor	0.032	@	(0.0095)	[0.952380]	0.008	J	(0.0095)	[0.952380]	0.0049	J	(0.0096)	[0.961538]	ND		(0.0095)	[0.952380]
Heptachlor epoxide	0.011	@	(0.0095)	[0.952380]	0.043	@	(0.0095)	[0.952380]	0.01	G@	(0.0096)	[0.961538]	0.0045	J	(0.0095)	[0.952380]
Isodrin	0.054	X	(0.0095)	[0.952380]	0.015	G@	(0.0095)	[0.952380]	0.068	X	(0.0096)	[0.961538]	ND		(0.0095)	[0.952380]
Kepone	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0096)	[0.961538]	ND		(0.0095)	[0.952380]
Methoxychlor	0.21	G@	(0.048)	[0.952380]	ND		(0.048)	[0.952380]	0.0046	JX	(0.048)	[0.961538]	ND		(0.048)	[0.952380]
Toxaphene	ND		(0.48)	[0.952380]	ND		(0.48)	[0.952380]	ND		(0.48)	[0.961538]	ND		(0.48)	[0.952380]
alpha-BHC	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	0.018	@	(0.0096)	[0.961538]	0.013	@	(0.0095)	[0.952380]
alpha-Chlordane	0.0011	JX	(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	0.024	G@	(0.0096)	[0.961538]	ND		(0.0095)	[0.952380]
beta-BHC	0.017	X@	(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	0.0019	JX	(0.0096)	[0.961538]	ND		(0.0095)	[0.952380]
delta-BHC	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	0.013	G@	(0.0096)	[0.961538]	ND		(0.0095)	[0.952380]
gamma-BHC	0.085	X	(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0096)	[0.961538]	ND		(0.0095)	[0.952380]
gamma-Chlordane	0.16	G	(0.0095)	[0.952380]	0.016	G@	(0.0095)	[0.952380]	2.7	G	(0.0096)	[0.961538]	ND		(0.0095)	[0.952380]

Compiled: 14 September 1993 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable * - Value considered suspect, Refer to QC Report

NOTE: Reported results for sample IDs ending with a 'D' represent dissolved metals concentrations.

TABLE B6 RESULTS OF ORGANIC ANALYSES FOR WATER SAMPLES, HOLLOMAN SEWAGE LAGOONS AND LAKES INVESTIGATION.

PARAMETER	MW-07 9304-MW-07-01				MW-08 9304-MW-08-01				MW-09 9304-MW-09-01				MW-10 9304-MW-10-01			
SW8080 - Organochlorine Pesticides and PCBs (ug/L)																
4,4'-DDD	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0097)	[0.970873]
4,4'-DDE	0.015	X@	(0.0095)	[0.952380]	0.01	X@	(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0097)	[0.970873]
4,4'-DDT	0.018	JX	(0.019)	[0.952380]	0.015	J	(0.019)	[0.952380]	0.019	X@	(0.019)	[0.952380]	0.026	X@	(0.019)	[0.970873]
Aldrin	0.014	X@	(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0097)	[0.970873]
Dieldrin	ND		(0.0095)	[0.952380]	0.0076	JX	(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0097)	[0.970873]
Endosulfan I	ND		(0.0095)	[0.952380]	0.014	G@	(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0097)	[0.970873]
Endosulfan II	0.013	JX	(0.029)	[0.952380]	ND		(0.029)	[0.952380]	ND		(0.029)	[0.952380]	ND		(0.029)	[0.970873]
Endosulfan Sulfate	0.015	JX	(0.048)	[0.952380]	0.019	JX	(0.048)	[0.952380]	ND		(0.048)	[0.952380]	ND		(0.049)	[0.970873]
Endrin	0.035	@	(0.0095)	[0.952380]	0.019	@	(0.0095)	[0.952380]	0.016	XB@	(0.0095)	[0.952380]	0.018	B@	(0.0097)	[0.970873]
Endrin Aldehyde	ND		(0.019)	[0.952380]	ND		(0.019)	[0.952380]	ND		(0.019)	[0.952380]	0.0056	J	(0.019)	[0.970873]
Heptachlor	ND		(0.0095)	[0.952380]	0.0026	JX	(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0097)	[0.970873]
Heptachlor epoxide	0.0071	J	(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0097)	[0.970873]
Isodrin	0.021	X@	(0.0095)	[0.952380]	0.053	X	(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0097)	[0.970873]
Kepone	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0097)	[0.970873]
Methoxychlor	ND		(0.048)	[0.952380]	ND		(0.048)	[0.952380]	ND		(0.048)	[0.952380]	ND		(0.049)	[0.970873]
Toxaphene	ND		(0.48)	[0.952380]	ND		(0.48)	[0.952380]	ND		(0.48)	[0.952380]	ND		(0.49)	[0.970873]
alpha-BHC	0.008	J	(0.0095)	[0.952380]	0.0061	J	(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0097)	[0.970873]
alpha-Chlordane	0.037	X@	(0.0095)	[0.952380]	0.0028	JX	(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0097)	[0.970873]
beta-BHC	0.0013	JX	(0.0095)	[0.952380]	0.014	X@	(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0097)	[0.970873]
delta-BHC	0.014	X@	(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0097)	[0.970873]
gamma-BHC	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0097)	[0.970873]
gamma-Chlordane	2.5	G	(0.0095)	[0.952380]	2.2	G	(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0097)	[0.970873]

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NOTE: Reported results for sample IDs ending with a 'D' represent dissolved metals concentrations.

TABLE B6 RESULTS OF ORGANIC ANALYSES FOR WATER SAMPLES, HOLLOMAN SEWAGE LAGOONS AND LAKES INVESTIGATION.

PARAMETER	MW-11 9304-MW-11-01				MW-12 9304-MW-12-01				MW-13 9304-MW-13-01				MW-14 9304-MW-14-01			
SW8080 - Organochlorine Pesticides and PCBs (ug/L)																
4,4'-DDD	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]
4,4'-DDE	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]
4,4'-DDT	ND		(0.019)	[0.952380]	ND		(0.019)	[0.952380]	0.021	X@	(0.019)	[0.952380]	0.023	X@	(0.019)	[0.952380]
Aldrin	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]
Dieldrin	0.0056	JX	(0.0095)	[0.952380]	0.0063	JX	(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]
Endosulfan I	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]
Endosulfan II	ND		(0.029)	[0.952380]	ND		(0.029)	[0.952380]	ND		(0.029)	[0.952380]	ND		(0.029)	[0.952380]
Endosulfan Sulfate	0.025	JX	(0.048)	[0.952380]	0.026	JX	(0.048)	[0.952380]	ND		(0.048)	[0.952380]	ND		(0.048)	[0.952380]
Endrin	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	0.013	B@	(0.0095)	[0.952380]	0.013	XB@	(0.0095)	[0.952380]
Endrin Aldehyde	0.0043	JB	(0.019)	[0.952380]	0.0007	JB	(0.019)	[0.952380]	0.0049	J	(0.019)	[0.952380]	0.0041	J	(0.019)	[0.952380]
Heptachlor	0.0085	J	(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	0.013	G@	(0.0095)	[0.952380]	0.014	G@	(0.0095)	[0.952380]
Heptachlor epoxide	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]
Isodrin	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]
Kepone	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]
Methoxychlor	ND		(0.048)	[0.952380]	ND		(0.048)	[0.952380]	ND		(0.048)	[0.952380]	ND		(0.048)	[0.952380]
Toxaphene	ND		(0.48)	[0.952380]	ND		(0.48)	[0.952380]	ND		(0.48)	[0.952380]	ND		(0.48)	[0.952380]
alpha-BHC	0.0066	JX	(0.0095)	[0.952380]	0.0066	JX	(0.0095)	[0.952380]	0.06	X	(0.0095)	[0.952380]	0.064	X	(0.0095)	[0.952380]
alpha-Chlordane	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]
beta-BHC	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	0.03	X@	(0.0095)	[0.952380]	0.02	X@	(0.0095)	[0.952380]
delta-BHC	0.008	JX	(0.0095)	[0.952380]	0.0082	JX	(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]
gamma-BHC	0.0057	JX	(0.0095)	[0.952380]	0.0052	JX	(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]
gamma-Chlordane	0.12	X	(0.0095)	[0.952380]	0.094	X	(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]

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NOTE: Reported results for sample IDs ending with a 'D' represent dissolved metals concentrations.

TABLE B6 RESULTS OF ORGANIC ANALYSES FOR WATER SAMPLES, HOLLOMAN SEWAGE LAGOONS AND LAKES INVESTIGATION.

PARAMETER	MW-14 9304-MW-14-02 Dup of 9304-MW-14-01				MW-15 9304-MW-15-01				MW-15 9304-MW-15-02 Dup of 9304-MW-15-01				MWS-04 9304-MWS-04-01			
SW8080 - Organochlorine Pesticides and PCBs (ug/L)																
4,4'-DDD	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]
4,4'-DDE	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]
4,4'-DDT	0.024	X@	(0.019)	[0.952380]	ND		(0.019)	[0.952380]	0.02	X@	(0.019)	[0.952380]	ND		(0.019)	[0.952380]
Aldrin	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]
Dieldrin	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]
Endosulfan I	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]
Endosulfan II	ND		(0.029)	[0.952380]	ND		(0.029)	[0.952380]	ND		(0.029)	[0.952380]	ND		(0.029)	[0.952380]
Endosulfan Sulfate	ND		(0.048)	[0.952380]	0.03	J	(0.048)	[0.952380]	ND		(0.048)	[0.952380]	ND		(0.048)	[0.952380]
Endrin	0.013	XB@	(0.0095)	[0.952380]	0.024	B@	(0.0095)	[0.952380]	0.013	XB@	(0.0095)	[0.952380]	0.0052	JB	(0.0095)	[0.952380]
Endrin Aldehyde	ND		(0.019)	[0.952380]	0.0077	J	(0.019)	[0.952380]	ND		(0.019)	[0.952380]	ND		(0.019)	[0.952380]
Heptachlor	0.016	G@	(0.0095)	[0.952380]	0.016	G@	(0.0095)	[0.952380]	0.015	G@	(0.0095)	[0.952380]	0.0041	J	(0.0095)	[0.952380]
Heptachlor epoxide	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]
Isodrin	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]
Kepone	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]
Methoxychlor	ND		(0.048)	[0.952380]	ND		(0.048)	[0.952380]	ND		(0.048)	[0.952380]	ND		(0.048)	[0.952380]
Toxaphene	ND		(0.48)	[0.952380]	ND		(0.48)	[0.952380]	ND		(0.48)	[0.952380]	ND		(0.48)	[0.952380]
alpha-BHC	0.043	X@	(0.0095)	[0.952380]	0.083	X	(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]
alpha-Chlordane	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]
beta-BHC	0.02	X@	(0.0095)	[0.952380]	0.018	X@	(0.0095)	[0.952380]	0.019	X@	(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]
delta-BHC	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]
gamma-BHC	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]
gamma-Chlordane	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]	ND		(0.0095)	[0.952380]

Compiled: 14 September 1993 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable * - Value considered suspect, Refer to QC Report

NOTE: Reported results for sample IDs ending with a 'D' represent dissolved metals concentrations.

TABLE B6 RESULTS OF ORGANIC ANALYSES FOR WATER SAMPLES, HOLLOMAN SEWAGE LAGOONS AND LAKES INVESTIGATION.

	SITE ID			
	LOCATION ID			
	SAMPLE ID			
PARAMETER	MWS-05 9304-MWS-05-01			
SW8080 - Organochlorine Pesticides and PCBs (ug/L)				
4,4'-DDD	0.017	X@	(0.0095)	[0.952380]
4,4'-DDE	ND		(0.0095)	[0.952380]
4,4'-DDT	ND		(0.019)	[0.952380]
Aldrin	ND		(0.0095)	[0.952380]
Dieldrin	ND		(0.0095)	[0.952380]
Endosulfan I	ND		(0.0095)	[0.952380]
Endosulfan II	ND		(0.029)	[0.952380]
Endosulfan Sulfate	0.018	JX	(0.048)	[0.952380]
Endrin	ND		(0.0095)	[0.952380]
Endrin Aldehyde	ND		(0.019)	[0.952380]
Heptachlor	ND		(0.0095)	[0.952380]
Heptachlor epoxide	ND		(0.0095)	[0.952380]
Isodrin	ND		(0.0095)	[0.952380]
Kepone	ND		(0.0095)	[0.952380]
Methoxychlor	ND		(0.048)	[0.952380]
Toxaphene	ND		(0.48)	[0.952380]
alpha-BHC	ND		(0.0095)	[0.952380]
alpha-Chlordane	ND		(0.0095)	[0.952380]
beta-BHC	ND		(0.0095)	[0.952380]
delta-BHC	ND		(0.0095)	[0.952380]
gamma-BHC	ND		(0.0095)	[0.952380]
gamma-Chlordane	ND		(0.0095)	[0.952380]

Compiled: 14 September 1993 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable * - Value considered suspect, Refer to QC Report

NOTE: Reported results for sample IDs ending with a 'D' represent dissolved metals concentrations.

TABLE B6 RESULTS OF INORGANIC ANALYSES FOR WATER SAMPLES, HOLLOMAN SEWAGE LAGOONS AND LAKES INVESTIGATION.

PARAMETER	MW-09 9303-MW-09-01				MW-10 9303-MW-10-01				MW-11 9303-MW-11-01				MW-12 9303-MW-12-01			
E130.2 - Hardness (mg/L)																
Hardness, as CaCO3	16000		(250)	[25.00000]	20000		(250)	[25.00000]	14000		(250)	[25.00000]	12000		(250)	[25.00000]
E160.1 - Residue, Filterable (TDS) (mg/L)																
Total dissolved solids	37000		(10)	[1.000000]	44000		(10)	[1.000000]	40000		(10)	[1.000000]	37000		(10)	[1.000000]
SW6010 - Metals (mg/L)																
Antimony	-0.25	@	(0.1)	[1]	-0.46	@	(0.1)	[1]	0.5	@	(1)	[10]	0.053	@	(1)	[10]
Barium	0.016	@	(0.01)	[1]	0.015	@	(0.01)	[1]	0.031	@	(0.01)	[1]	0.018	@	(0.01)	[1]
Beryllium	-0.00021		(0.002)	[1]	0.0002	@	(0.002)	[1]	-0.00057		(0.002)	[1]	0.00016	@	(0.002)	[1]
Cadmium	0.013	@	(0.005)	[1]	0.01	@	(0.005)	[1]	0.012	@	(0.005)	[1]	0.013	@	(0.005)	[1]
Chromium	0.00042	@	(0.01)	[1]	-0.029	@	(0.01)	[1]	-0.0078	@	(0.01)	[1]	-0.013	@	(0.01)	[1]
Cobalt	-0.0073	@	(0.01)	[1]	-0.0031	@	(0.01)	[1]	0.0076	@	(0.01)	[1]	-0.0088	@	(0.01)	[1]
Copper	-0.012	@	(0.02)	[1]	-0.012	@	(0.02)	[1]	-0.01	@	(0.02)	[1]	-0.011	@	(0.02)	[1]
Nickel	0.0073	@	(0.02)	[1]	-0.0024	@	(0.02)	[1]	0.0026	@	(0.02)	[1]	-0.013	@	(0.02)	[1]
Silver	-0.018	@	(0.01)	[1]	-0.018	@	(0.01)	[1]	-0.007	@	(0.01)	[1]	-0.0032	@	(0.01)	[1]
Thallium	0.13	@	(0.1)	[1]	0.19	@	(0.1)	[1]	0.47	@	(0.1)	[1]	0.35	@	(0.1)	[1]
Tin	-0.048	@	(0.6)	[1]	-0.0089	@	(0.6)	[1]	0.021	@	(0.6)	[1]	0.035	@	(0.6)	[1]
Vanadium	-0.00072		(0.02)	[1]	0.0019	@	(0.02)	[1]	0.024	@	(0.02)	[1]	0.014	@	(0.02)	[1]
Zinc	-0.005	@	(0.02)	[1]	-0.0052	@	(0.02)	[1]	0.0037	@	(0.02)	[1]	-0.0049	@	(0.02)	[1]
SW7060 - Arsenic (mg/L)																
Arsenic	-0.01	@	(0.004)	[1]	0.012	@	(0.008)	[2]	-0.031	@	(0.016)	[4]	-0.011	@	(0.016)	[4]
SW7421 - Lead (mg/L)																
Lead	-0.012	@	(0.012)	[4]	-0.0188	@	(0.012)	[4]	-0.01	@	(0.006)	[2]	-0.008	@	(0.006)	[2]
SW7470 - Mercury (mg/L)																
Mercury	-0.00001		(0.00018)	[1]	-0.00001		(0.00018)	[1]	0	@	(0.00018)	[1]	0.00001		(0.00018)	[1]
SW7740 - Selenium (mg/L)																
Selenium	-0.0081	@	(0.005)	[1]	0.051		(0.005)	[1]	-0.019	@	(0.01)	[2]	0.018	@	(0.01)	[2]
SW7841 - Thallium (mg/L)																
Thallium	-0.0036	@	(0.02)	[4]	-0.0044	@	(0.02)	[4]	0.0024	@	(0.02)	[4]	-0.002	@	(0.02)	[4]
SW9012 - Total Cyanide (mg/L)																

Compiled: 14 September 1993 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable * - Value considered suspect, Refer to QC Report

NOTE: Reported results for sample IDs ending with a 'D' represent dissolved metals concentrations.

TABLE B6 RESULTS OF INORGANIC ANALYSES FOR WATER SAMPLES, HOLLOMAN SEWAGE LAGOONS AND LAKES INVESTIGATION.

PARAMETER	SITE ID LOCATION ID SAMPLE ID MW-09 9303-MW-09-01				MW-10 9303-MW-10-01				MW-11 9303-MW-11-01				MW-12 9303-MW-12-01			
Cyanide	0.004	@	(0.01)	[1.000000]	0.001	@	(0.01)	[1.000000]	0.0097	@	(0.01)	[1.000000]	0.0077	@	(0.01)	[1.000000]
SW9030 - Total Sulfide (mg/L)																
Sulfide	0.029	@	(1)	[1.000000]	0.029	@	(1)	[1.000000]	-0.0096	@	(1)	[1.000000]	-0.059	@	(1)	[1.000000]

Compiled: 14 September 1993 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable * - Value considered suspect, Refer to QC Report

NOTE: Reported results for sample IDs ending with a 'D' represent dissolved metals concentrations.

TABLE B6 RESULTS OF INORGANIC ANALYSES FOR WATER SAMPLES, HOLLOMAN SEWAGE LAGOONS AND LAKES INVESTIGATION.

PARAMETER	MW-12 9303-MW-12-02					MW-12 Dup of 9303-MW-12-01					MW-13 9303-MW-13-01					MW-14 9303-MW-14-01					MW-15 9303-MW-15-01				
E130.2 - Hardness (mg/L)																									
Hardness, as CaCO3	12000		(250)	[25.00000]							13000		(250)	[25.00000]		14000		(250)	[25.00000]		16000		(500)	[50.00000]	
E160.1 - Residue, Filterable (TDS) (mg/L)																									
Total dissolved solids	36000		(10)	[1.000000]							38000		(10)	[1.000000]		35000		(10)	[1.000000]		51000		(10)	[1.000000]	
SW6010 - Metals (mg/L)																									
Antimony	-0.15	@	(1)	[10]							-0.95	@	(1)	[10]		-0.23	@	(1)	[10]		-0.4	@	(1)	[10]	
Barium	0.019	@	(0.01)	[1]							0.026	@	(0.01)	[1]		0.035	@	(0.01)	[1]		0.042	@	(0.01)	[1]	
Beryllium	-0.00077		(0.002)	[1]							-0.00074		(0.002)	[1]		-0.00023		(0.002)	[1]		-0.00004		(0.002)	[1]	
Cadmium	0.0079	@	(0.005)	[1]							0.014	@	(0.005)	[1]		0.0054	@	(0.005)	[1]		0.011	@	(0.005)	[1]	
Chromium	-0.011	@	(0.01)	[1]							-0.0077	@	(0.01)	[1]		-0.013	@	(0.01)	[1]		-0.012	@	(0.01)	[1]	
Cobalt	-0.01	@	(0.01)	[1]							-0.0055	@	(0.01)	[1]		-0.00006		(0.01)	[1]		-0.0055	@	(0.01)	[1]	
Copper	-0.011	@	(0.02)	[1]							-0.01	@	(0.02)	[1]		-0.01	@	(0.02)	[1]		-0.012	@	(0.02)	[1]	
Nickel	-0.015	@	(0.02)	[1]							-0.048	@	(0.02)	[1]		-0.024	@	(0.02)	[1]		-0.033	@	(0.02)	[1]	
Silver	-0.0088	@	(0.01)	[1]							-0.0082	@	(0.01)	[1]		-0.0082	@	(0.01)	[1]		-0.011	@	(0.01)	[1]	
Thallium	0.16	@	(0.1)	[1]							0.26	@	(0.1)	[1]		0.39	@	(0.1)	[1]		0.19	@	(0.1)	[1]	
Tin	-0.05	@	(0.6)	[1]							0.038	@	(0.6)	[1]		-0.028	@	(0.6)	[1]		0.073	@	(0.6)	[1]	
Vanadium	0.013	@	(0.02)	[1]							0.013	@	(0.02)	[1]		0.0019	@	(0.02)	[1]		0.0066	@	(0.02)	[1]	
Zinc	0.0021	@	(0.02)	[1]							0.0072	@	(0.02)	[1]		0.0054	@	(0.02)	[1]		0.011	@	(0.02)	[1]	
SW7060 - Arsenic (mg/L)																									
Arsenic	-0.032	@	(0.016)	[4]							-0.033	@	(0.016)	[4]		-0.029	@	(0.016)	[4]		-0.023	@	(0.016)	[4]	
SW7421 - Lead (mg/L)																									
Lead	-0.01	@	(0.006)	[2]							-0.012	@	(0.006)	[2]		-0.008	@	(0.006)	[2]		-0.022	@	(0.006)	[2]	
SW7470 - Mercury (mg/L)																									
Mercury	0.00001		(0.00018)	[1]							0.00002		(0.00018)	[1]		0.00002		(0.00036)	[2]		0.00001		(0.00018)	[1]	
SW7740 - Selenium (mg/L)																									
Selenium	-0.0082	@	(0.01)	[2]							-0.0092	@	(0.01)	[2]		0.0062	@	(0.01)	[2]		0.0046	@	(0.01)	[2]	
SW7841 - Thallium (mg/L)																									
Thallium	-0.0004		(0.02)	[4]							-0.0032	@	(0.02)	[4]		-0.0008		(0.01)	[2]		-0.006	@	(0.02)	[4]	
SW9012 - Total Cyanide (mg/L)																									

Compiled: 14 September 1993 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable * - Value considered suspect, Refer to QC Report

NOTE: Reported results for sample IDs ending with a 'D' represent dissolved metals concentrations.

TABLE B6 RESULTS OF INORGANIC ANALYSES FOR WATER SAMPLES, HOLLOMAN SEWAGE LAGOONS AND LAKES INVESTIGATION.

	SITE ID LOCATION ID SAMPLE ID											
	MW-12			MW-13			MW-14			MW-15		
PARAMETER	9303-MW-12-02 Dup of 9303-MW-12-01			9303-MW-13-01			9303-MW-14-01			9303-MW-15-01		
Cyanide	0.0085	@	(0.01) [1.000000]	0.0011	@	(0.01) [1.000000]	0.0055	@	(0.01) [1.000000]	0.0059	@	(0.01) [1.000000]
SW9030 - Total Sulfide (mg/L)												
Sulfide	-0.0096	@	(1) [1.000000]	0.067	@	(1) [1.000000]	-0.037	@	(1) [1.000000]	-0.0096	@	(1) [1.000000]

Compiled: 14 September 1993 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable * - Value considered suspect, Refer to QC Report

NOTE: Reported results for sample IDs ending with a 'D' represent dissolved metals concentrations.

TABLE B6 RESULTS OF INORGANIC ANALYSES FOR WATER SAMPLES, HOLLOMAN SEWAGE LAGOONS AND LAKES INVESTIGATION.

PARAMETER	MWD-03 9303-MWD-03-01				MWD-04 9303-MWD-04-01				MWD-05 9303-MWD-05-01				MWS-05 9303-MWS-05-01			
E130.2 - Hardness (mg/L)																
Hardness, as CaCO3	3800		(50)	[5.000000]	10000		(120)	[12.5]	7100		(83)	[8.333333]	20000		(250)	[25.00000]
E160.1 - Residue, Filterable (TDS) (mg/L)																
Total dissolved solids	11000		(10)	[1.000000]	14000		(10)	[1.000000]	16000		(10)	[1.000000]	55000		(10)	[1.000000]
SW6010 - Metals (mg/L)																
Antimony	-0.022	@	(1)	[10]	-0.6	@	(1)	[10]	-0.6	@	(1)	[10]	0.34	@	(1)	[10]
Barium	0.033	@	(0.01)	[1]	0.074		(0.01)	[1]	0.26		(0.01)	[1]	0.021	@	(0.01)	[1]
Beryllium	0.00067	@	(0.002)	[1]	0.00046	@	(0.002)	[1]	0.0018	@	(0.002)	[1]	0.00035	@	(0.002)	[1]
Cadmium	0.00086	@	(0.005)	[1]	0.004	@	(0.005)	[1]	0.0098	@	(0.005)	[1]	0.014	@	(0.005)	[1]
Chromium	-0.0053	@	(0.01)	[1]	0.00047	@	(0.01)	[1]	0.02	@	(0.01)	[1]	-0.012	@	(0.01)	[1]
Cobalt	0.0062	@	(0.01)	[1]	-0.0028	@	(0.01)	[1]	0.0069	@	(0.01)	[1]	-0.0068	@	(0.01)	[1]
Copper	-0.0071	@	(0.02)	[1]	-0.011	@	(0.02)	[1]	0.0037	@	(0.02)	[1]	-0.0094	@	(0.02)	[1]
Nickel	-0.015	@	(0.02)	[1]	-0.031	@	(0.02)	[1]	0.002	@	(0.02)	[1]	-0.046	@	(0.02)	[1]
Silver	-0.0056	@	(0.01)	[1]	-0.0068	@	(0.01)	[1]	-0.0062	@	(0.01)	[1]	-0.0074	@	(0.01)	[1]
Thallium	0.15	@	(0.1)	[1]	0.31	@	(0.1)	[1]	0.21	@	(0.1)	[1]	0.28	@	(0.1)	[1]
Tin	0.02	@	(0.6)	[1]	0.018	@	(0.6)	[1]	0.049	@	(0.6)	[1]	0.04	@	(0.6)	[1]
Vanadium	0.0016	@	(0.02)	[1]	-0.0015	@	(0.02)	[1]	0.043	@	(0.02)	[1]	0.021	@	(0.02)	[1]
Zinc	0.0054	@	(0.02)	[1]	0.013	@	(0.02)	[1]	0.069	@	(0.02)	[1]	0.0007	@	(0.02)	[1]
SW7060 - Arsenic (mg/L)																
Arsenic	-0.0052	@	(0.016)	[4]	-0.011	@	(0.016)	[4]	0.0024	@	(0.016)	[4]	0.0072	@	(0.016)	[4]
SW7421 - Lead (mg/L)																
Lead	-0.004	@	(0.006)	[2]	-0.012	@	(0.012)	[4]	0.004	@	(0.006)	[2]	-0.02	@	(0.012)	[4]
SW7470 - Mercury (mg/L)																
Mercury	0.00001		(0.00018)	[1]	-0.00005		(0.00018)	[1]	0.00002		(0.00036)	[2]	-0.00005		(0.00018)	[1]
SW7740 - Selenium (mg/L)																
Selenium	0.015	@	(0.01)	[2]	-0.0032	@	(0.01)	[2]	0.044	@	(0.01)	[2]	-0.015	@	(0.01)	[2]
SW7841 - Thallium (mg/L)																
Thallium	-0.0007		(0.005)	[1]	0.0028	@	(0.02)	[4]	-0.0013	@	(0.005)	[1]	-0.0008		(0.02)	[4]
SW9012 - Total Cyanide (mg/L)																

Compiled: 14 September 1993 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable * - Value considered suspect, Refer to QC Report

NOTE: Reported results for sample IDs ending with a 'D' represent dissolved metals concentrations.

TABLE B6 RESULTS OF INORGANIC ANALYSES FOR WATER SAMPLES, HOLLOMAN SEWAGE LAGOONS AND LAKES INVESTIGATION.

PARAMETER	SITE ID / LOCATION ID / SAMPLE ID											
	MWD-03 9303-MWD-03-01				MWD-04 9303-MWD-04-01				MWD-05 9303-MWD-05-01				MWS-05 9303-MWS-05-01			
Cyanide	0.0016	@	(0.01)	[1.000000]	0.0006	@	(0.01)	[1.000000]	0.0023	@	(0.01)	[1.000000]	0.0045	@	(0.01)	[1.000000]
SW9030 - Total Sulfide (mg/L)																
Sulfide	0.052	@	(1)	[1.000000]	0.84	@	(1)	[1.000000]	0.072	@	(1)	[1.000000]	0.99	@	(1)	[1.000000]

Compiled: 14 September 1993 () = Reporting Limit [] = Factor ND = Not Detected NA = Not Applicable * - Value considered suspect, Refer to QC Report

NOTE: Reported results for sample IDs ending with a 'D' represent dissolved metals concentrations.

APPENDIX C.2

METHOD DETECTION LIMITS

Analytical Methods, Requested Detection Limits, and Maximum Contaminant Levels

Parameter	Analysis		Method Detection Limits[a]	Maximum Contaminant Level	
	Technique	Method	Groundwater	MCL[b] (µg/L)	HHS[c] (mg/L)
VOLATILE ORGANICS					
Acetone	GC/MS	SW-846:8240	100 µg/L	–	–
Acetonitrile	GC/MS	SW-846:8240	100 µg/L	–	–
Acrolein	GC/MS	SW-846:8240	75 µg/L	–	–
Acrylonitrile	GC/MS	SW-846:8240	50 µg/L	–	–
Benzene	GC/MS	SW-846:8240	5 µg/L	5	0.01
Bromodichloromethane	GC/MS	SW-846:8240	5 µg/L	–	–
Bromoform	GC/MS	SW-846:8240	5 µg/L	–	–
Bromomethane	GC/MS	SW-846:8240	10 µg/L	–	–
Carbon disulfide	GC/MS	SW-846:8240	5 µg/L	–	–
Carbon tetrachloride	GC/MS	SW-846:8240	5 µg/L	5	0.01
Chlorobenzene	GC/MS	SW-846:8240	5 µg/L	–	–
Chloroethane	GC/MS	SW-846:8240	10 µg/L	–	–
Chloroform	GC/MS	SW-846:8240	5 µg/L	–	0.1
Chloromethane	GC/MS	SW-846:8240	10 µg/L	–	–
3-Chloropropene	GC/MS	SW-846:8240	5 µg/L	–	–
1,2-Dibromo-3-chloropropane	GC/MS	SW-846:8240	20 µg/L	0.2	–
Dibromochloromethane	GC/MS	SW-846:8240	5 µg/L	–	–
1,2-Dibromoethane	GC/MS	SW-846:8240	5 µg/L	–	–
Dibromomethane	GC/MS	SW-846:8240	5 µg/L	–	–
trans-1,4-Dichloro-2-butene	GC/MS	SW-846:8240	10 µg/L	–	–
Dichlorodifluoromethane	GC/MS	SW-846:8240	20 µg/L	–	–
1,2-Dichloroethane	GC/MS	SW-846:8240	5 µg/L	5	0.01
trans-1,2-Dichloroethene	GC/MS	SW-846:8240	5 µg/L	100	–
1,1-Dichloroethane	GC/MS	SW-846:8240	5 µg/L	–	0.025
1,1-Dichloroethene	GC/MS	SW-846:8240	5 µg/L	7	0.005
1,2-Dichloropropane	GC/MS	SW-846:8240	5 µg/L	5	–
cis-1,3-Dichloropropene	GC/MS	SW-846:8240	5 µg/L	–	–
trans-1,3-Dichloropropene	GC/MS	SW-846:8240	5 µg/L	–	–
Ethyl benzene	GC/MS	SW-846:8240	5 µg/L	700	0.75
Ethyl methacrylate	GC/MS	SW-846:8240	5 µg/L	–	–
2-Hexanone	GC/MS	SW-846:8240	50 µg/L	–	–
Iodomethane	GC/MS	SW-846:8240	5 µg/L	–	–
Methylene chloride	GC/MS	SW-846:8240	5 µg/L	–	0.1
2-Butanone (MEK)	GC/MS	SW-846:8240	100 µg/L	–	–
Methyl methacrylate	GC/MS	SW-846:8240	5 µg/L	–	–

(Continued)

Parameter	Analysis		Method Detection Limits[a]	Maximum Contaminant Level	
	Technique	Method	Groundwater	MCL[b] (μg/L)	HHS[c] (mg/L)
4-Methyl-2-pentanone	GC/MS	SW-846:8240	50 μg/L	--	--
Propanenitrile	GC/MS	SW-846:8240	100 μg/L	--	--
Styrene	GC/MS	SW-846:8240	5 μg/L	100	--
1,1,1,2-Tetrachloroethane	GC/MS	SW-846:8240	5 μg/L	--	--
1,1,2,2-Tetrachloroethane	GC/MS	SW-846:8240	5 μg/L	--	0.01
Tetrachloroethene	GC/MS	SW-846:8240	5 μg/L	5	0.02
1,1,1-Trichloroethane	GC/MS	SW-846:8240	5 μg/L	200	0.06
1,1,2-Trichloroethane	GC/MS	SW-846:8240	5 μg/L	5	0.01
Trichloroethene	GC/MS	SW-846:8240	5 μg/L	5	0.1
Trichlorofluoromethane	GC/MS	SW-846:8240	10 μg/L	--	--
Toluene	GC/MS	SW-846:8240	5 μg/L	1,000	0.75
1,2,3-Trichloropropane	GC/MS	SW-846:8240	5 μg/L	--	--
Vinyl Acetate	GC/MS	SW-846:8240	50 μg/L	--	--
Vinyl Chloride	GC/MS	Sw-846:8240	10 μg/L	2	0.001
Xylenes (total)	GC/MS	SW-846:8240	5 μg/L	10,000	0.62
HALOGENATED VOLATILE ORGANICS					
Bromodichloromethane	GC/HSD	SW-846:8010	0.10 μg/L	--	--
Bromoform	GC/HSD	SW-846:8010	0.50 μg/L	--	--
Bromomethane	GC/HSD	SW-846:8010	1.18 μg/L	--	--
Carbon Tetrachloride	GC/HSD	SW-846:8010	0.12 μg/L	5	0.01
Chlorobenzene	GC/HSD	SW-846:8010	0.25 μg/L	--	--
Chloroethane	GC/HSD	SW-846:8010	0.52 μg/L	--	--
2-Chloroethylvinylether	GC/HSD	SW-846:8010	0.50 μg/L	--	--
Chloroform	GC/HSD	SW-846:8010	0.10 μg/L	--	0.1
Chloromethane	GC/HSD	SW-846:8010	0.30 μg/L	--	--
Dibromochloromethane	GC/HSD	SW-846:8010	0.20 μg/L	--	--
1,2-Dichlorobenzene	GC/HSD	SW-846:8010	0.50 μg/L	600	--
1,3-Dichlorobenzene	GC/HSD	SW-846:8010	0.32 μg/L	600	--
1,4-Dichlorobenzene	GC/HSD	SW-846:8010	0.24 μg/L	75	--
1,1-Dichloroethane	GC/HSD	SW-846:8010	0.50 μg/L	--	0.025
1,2-Dichloroethane	GC/HSD	SW-846:8010	0.10 μg/L	5	0.01
1,1-Dichloroethene	GC/HSD	SW-846:8010	0.20 μg/L	7	0.005
trans-1,2-Dichloroethene	GC/HSD	SW-846:8010	0.20 μg/L	100	--
1,2-Dichloropropane	GC/HSD	SW-846:8010	0.10 μg/L	5	--
trans-1,3-Dichloropropene	GC/HSD	SW-846:8010	0.34 μg/L	--	--
cis-1,3-Dichloropropene	GC/HSD	SW-846:8010	0.30 μg/L	--	--
Methylene Chloride	GC/HSD	SW-846:8010	0.40 μg/L	--	0.1

(Continued)

Parameter	Analysis		Method Detection Limits[a]	Maximum Contaminant Level	
	Technique	Method	Groundwater	MCL[b] (µg/L)	HHS[c] (mg/L)
1,1,2,2-Tetrachloroethane	GC/HSD	SW-846:8010	0.15 µg/L	–	0.01
Tetrachloroethene	GC/HSD	SW-846:8010	0.10 µg/L	5	0.02
1,1,2-Trichloroethane	GC/HSD	SW-846:8010	0.20 µg/L	5	0.01
1,1,1-Trichloroethane	GC/HSD	SW-846:8010	0.20 µg/L	200	0.06
Trichloroethene	GC/HSD	SW-846:8010	0.20 µg/L	5	0.1
Trichlorofluoromethane	GC/HSD	SW-846:8010	0.20 µg/L	–	–
Vinyl Chloride	GC/HSD	SW-846:8010	0.20 µg/L	2	0.001
SEMIVOLATILE ORGANICS					
Acetophenone	GC/MS	SW-846:8270	10 µg/L	–	–
2-Acetylaminofluorene	GC/MS	SW-846:8270	50 µg/L	–	–
4-Aminobiphenyl	GC/MS	SW-846:8270	10 µg/L	–	–
Aniline	GC/MS	SW-846:8270	10 µg/L	–	–
Anthracene	GC/MS	SW-846:8270	10 µg/L	–	0.03
Benzo(a)anthracene	GC/MS	SW-846:8270	10 µg/L	0.2	0.03
Benzo(b)fluoranthene	GC/MS	SW-846:8270	10 µg/L	0.2	0.03
Benzo(k)fluoranthene	GC/MS	SW-846:8270	10 µg/L	0.2	0.03
Benzo(a)pyrene	GC/MS	SW-846:8270	10 µg/L	0.2	0.0007
bis(2-Ethylhexyl)phthalate	GC/MS	SW-846:8270	10 µg/L	–	–
Butyl benzyl phthalate	GC/MS	SW-846:8270	10 µg/L	4	–
Chrysene	GC/MS	SW-846:8270	10 µg/L	0.2	–
Chlorobenzilate	GC/MS	SW-846:8270	10 µg/L	–	–
Dibenz(a,h)anthracene	GC/MS	SW-846:8270	10 µg/L	0.2	–
1,2-Dichlorobenzene	GC/MS	SW-846:8270	10 µg/L	600	–
1,3-Dichlorobenzene	GC/MS	SW-846:8270	10 µg/L	600	–
1,4-Dichlorobenzene	GC/MS	SW-846:8270	10 µg/L	75	–
Dimethylpthalate	GC/MS	SW-846:8270	10 µg/L	4	–
Diethylphthalate	GC/MS	SW-846:8270	10 µg/L	4	–
Di-n-butylphthalate	GC/MS	SW-846:8270	10 µg/L	–	–
Di-n-octylphthalate	GC/MS	SW-846:8270	10 µg/L	–	–
2,6-Dichlorophenol	GC/MS	SW-846:8270	10 µg/L	–	–
p-Dimethylaminoazobenzene	GC/MS	SW-846:8270	10 µg/L	–	–
7,12-Dimethylbenz(a)anthracene	GC/MS	SW-846:8270	25 µg/L	–	–
3,3'-Dimethylbenzidine	GC/MS	SW-846:8270	20 µg/L	–	–
Dimethylphenethylamine	GC/MS	SW-846:8270	10 µg/L	–	–
1,3-Dinitrobenzene	GC/MS	SW-846:8270	10 µg/L	–	–
Diphenylamine	GC/MS	SW-846:8270	10 µg/L	–	–
Ethyl methanesulfonate	GC/MS	SW-846:8270	10 µg/L	–	–

(Continued)

Parameter	Analysis		Method Detection Limits[a]	Maximum Contaminant Level	
	Technique	Method	Groundwater	MCL[b] (μg/L)	HHS[c] (mg/L)
Fluoranthene	GC/MS	SW-846:8270	10 μg/L	–	–
Hexachlorophene	GC/MS	SW-846:8270	10 μg/L	–	–
Hexachloropropene	GC/MS	SW-846:8270	10 μg/L	–	–
Isosafrole	GC/MS	SW-846:8270	10 μg/L	–	–
Methapyriline	GC/MS	SW-846:8270	10 μg/L	–	–
Methyl methanesulfonate	GC/MS	SW-846:8270	10 μg/L	–	–
3-Methylcholanthrene	GC/MS	SW-846:8270	10 μg/L	–	–
2-Methyl naphthalene	GC/MS	SW-846:8270	10 μg/L	–	0.03
N-Nitroso-di-n-butylamine	GC/MS	SW-846:8270	10 μg/L	–	–
N-Nitrosodiethylamine	GC/MS	SW-846:8270	10 μg/L	–	–
N-Nitrosodimethylamine	GC/MS	SW-846:8270	10 μg/L	–	–
N-Nitrosomethylethylamine	GC/MS	SW-846:8270	10 μg/L	–	–
N-Nitrosomorpholine	GC/MS	SW-846:8270	10 μg/L	–	–
N-Nitrosopiperidine	GC/MS	SW-846:8270	10 μg/L	–	–
N-Nitrosopyrrolidine	GC/MS	SW-846:8270	10 μg/L	–	–
Naphthalene	GC/MS	SW-846:8270	10 μg/L	–	0.03
1-Naphthylamine	GC/MS	SW-846:8270	10 μg/L	–	–
2-Naphthylamine	GC/MS	SW-846:8270	10 μg/L	–	–
1,4-Napthoquinone	GC/MS	SW-846:8270	10 μg/L	–	–
5-Nitro-o-toluidine	GC/MS	SW-846:8270	10 μg/L	–	–
4-Nitroquinoline-N-oxide	GC/MS	SW-846:8270	100 μg/L	–	–
Pentachlorobenzene	GC/MS	SW-846:8270	10 μg/L	–	–
Pentachloroethane	GC/MS	SW-846:8270	10 μg/L	–	–
Pentachloronitrobenzene	GC/MS	SW-846:8270	10 μg/L	–	–
Phenacetin	GC/MS	SW-846:8270	10 μg/L	–	–
Phenanthrene	GC/MS	SW-846:8270	10 μg/L	0.2	0.03
p-Phenylenediamine	GC/MS	SW-846:8270	10 μg/L	–	–
2-Picoline	GC/MS	SW-846:8270	10 μg/L	–	–
Pronamide	GC/MS	SW-846:8270	10 μg/L	–	–
Pyrene	GC/MS	SW-846:8270	10 μg/L	0.2	0.03
2,4-Dimethylphenol	GC/MS	SW-846:8270	10 μg/L	–	–
2,4-Dinitrophenol	GC/MS	SW-846:8270	50 μg/L	–	–
4-Nitrophenol	GC/MS	SW-846:8270	50 μg/L	–	–
Phenol	GC/MS	SW-846:8270	10 μg/L	–	–
Pyridine	GC/MS	SW-846:8270	10 μg/L	–	–
Safrole	GC/MS	SW-846:8270	10 μg/L	–	–
1,2,4,5-Tetrachlorobenzene	GC/MS	SW-846:8270	10 μg/L	–	–

(Continued)

Parameter	Analysis		Method Detection Limits[a]	Maximum Contaminant Level	
	Technique	Method	Groundwater	MCL[b] (μg/L)	HHS[c] (mg/L)
2,3,4,6-Tetrachlorophenol	GC/MS	SW-846:8270	20 μg/L	–	–
o-Toluidine	GC/MS	SW-846:8270	10 μg/L	–	–
Acenaphthene	GC/MS	SW-846:8270	10 μg/L	–	–
Acenaphthylene	GC/MS	SW-846:8270	10 μg/L	–	–
Benzo(g,h,i)perylene	GC/MS	SW-846:8270	10 μg/L	–	0.03
Benzyl Alcohol	GC/MS	SW-846:8270	20 μg/L	–	–
4-Bromophenyl phenyl ether	GC/MS	SW-846:8270	10 μg/L	–	–
4-Chloroaniline	GC/MS	SW-846:8270	20 μg/L	–	–
4-Chloro-3-methylphenol	GC/MS	SW-846:8270	20 μg/L	–	–
bis(2-Chloroisopropyl)ether	GC/MS	SW-846:8270	10 μg/L	–	–
bis(2-Chloroethyl)ether	GC/MS	SW-846:8270	10 μg/L	–	–
2-Chloronaphthalene	GC/MS	SW-846:8270	10 μg/L	–	–
2-Chlorophenol	GC/MS	SW-846:8270	10 μg/L	–	–
bis(2-Chloroethoxy)methane	GC/MS	SW-846:8270	10 μg/L	–	–
4-Chlorophenyl phenyl ether	GC/MS	SW-846:8270	10 μg/L	–	–
Dibenzofuran	GC/MS	SW-846:8270	10 μg/L	–	–
2,4-Dichlorophenol	GC/MS	SW-846:8270	10 μg/L	–	–
3,3'-Dichlorobenzidine	GC/MS	SW-846:8270	20 μg/L	–	–
2,4-Dinitrotoluene	GC/MS	SW-846:8270	10 μg/L	–	–
2,6-Dinitrotoluene	GC/MS	SW-846:8270	10 μg/L	–	–
4,6-Dinitro-2-methylphenol	GC/MS	SW-846:8270	50 μg/L	–	–
Fluorene	GC/MS	SW-846:8270	10 μg/L	0.2	0.03
Hexachlorobenzene	GC/MS	SW-846:8270	10 μg/L	1	–
Hexachlorocyclopentadiene	GC/MS	SW-846:8270	10 μg/L	50	–
Hexachloroethane	GC/MS	SW-846:8270	10 μg/L	–	–
Hexachlorobutadiene	GC/MS	SW-846:8270	10 μg/L	–	–
Indeno(1,2,3-c,d)pyrene	GC/MS	SW-846:8270	10 μg/L	0.2	0.03
Isophorone	GC/MS	SW-846:8270	10 μg/L	–	–
2-Methylphenol	GC/MS	SW-846:8270	10 μg/L	–	–
3-Methylphenol	GC/MS	SW-846:8270	10 μg/L	–	–
4-Methylphenol	GC/MS	SW-846:8270	10 μg/L	–	–
2-Nitroaniline	GC/MS	SW-846:8270	50 μg/L	–	–
3-Nitroaniline	GC/MS	SW-846:8270	50 μg/L	–	–
4-Nitroaniline	GC/MS	SW-846:8270	50 μg/L	–	–
Nitrobenzene	GC/MS	SW-846:8270	10 μg/L	–	–
2-Nitrophenol	GC/MS	SW-846:8270	10 μg/L	–	–
n-Nitroso-di-n-propylamine	GC/MS	SW-846:8270	10 μg/L	–	–

(Continued)

Parameter	Analysis		Method Detection Limits[a]	Maximum Contaminant Level	
	Technique	Method	Groundwater	MCL[b] (μg/L)	HHS[c] (mg/L)
n-Nitrosodiphenylamine	GC/MS	SW-846:8270	10 μg/L	–	–
Pentachlorophenol	GC/MS	SW-846:8270	50 μg/L	1	–
1,2,4-Trichlorobenzene	GC/MS	SW-846:8270	10 μg/L	9	–
2,4,5-Trichlorophenol	GC/MS	SW-846:8270	10 μg/L	–	–
2,4,6-Trichlorophenol	GC/MS	SW-846:8270	10 μg/L	–	–
ORGANOCHLORINE PESTICIDES AND PCBs					
Aldrin	GC/ECD	SW-846:8080	0.01 μg/L	–	–
alpha-BHC	GC/ECD	SW-846:8080	0.01 μg/L	–	–
beta-BHC	GC/ECD	SW-846:8080	0.01 μg/L	–	–
delta-BHC	GC/ECD	SW-846:8080	0.01 μg/L	–	–
gamma-BHC (Lindane)	GC/ECD	SW-846:8080	0.01 μg/L	0.2	–
Chlordane (technical)	GC/ECD	SW-846:8080	0.05 μg/L	2	–
4,4'-DDD	GC/ECD	SW-846:8080	0.01 μg/L	–	–
4,4'-DDE	GC/ECD	SW-846:8080	0.01 μg/L	–	–
4,4'-DDT	GC/ECD	SW-846:8080	0.02 μg/L	–	–
Dieldrin	GC/ECD	SW-846:8080	0.01 μg/L	–	–
Endosulfan I	GC/ECD	SW-846:8080	0.01 μg/L	–	–
Endosulfan II	GC/ECD	SW-846:8080	0.03 μg/L	–	–
Endosulfan sulfate	GC/ECD	SW-846:8080	0.05 μg/L	–	–
Endrin	GC/ECD	SW-846:8080	0.01 μg/L	2	–
Endrin aldehyde	GC/ECD	SW-846:8080	0.02 μg/L	–	–
Heptachlor	GC/ECD	SW-846:8080	0.01 μg/L	0.4	–
Heptachlor epoxide	GC/ECD	SW-846:8080	0.01 μg/L	0.2	–
Methoxychlor	GC/ECD	SW-846:8080	0.05 μg/L	40	–
Toxaphene	GC/ECD	SW-846:8080	0.50 μg/L	3	–
PCB-1016	GC/ECD	SW-846:8080	0.10 μg/L	0.5	0.001
PCB-1221	GC/ECD	SW-846:8080	0.20 μg/L	0.5	0.001
PCB-1232	GC/ECD	SW-846:8080	0.20 μg/L	0.5	0.001
PCB-1242	GC/ECD	SW-846:8080	0.10 μg/L	0.5	0.001
PCB-1248	GC/ECD	SW-846:8080	0.10 μg/L	0.5	0.001
PCB-1254	GC/ECD	SW-846:8080	0.20 μg/L	0.5	0.001
PCB-1260	GC/ECD	SW-846:8080	0.20 μg/L	0.5	0.001
ORGANOPHOSPHORUS PESTICIDES					
Disulfoton	GC/FPD	SW-846:8140	0.2 μg/L	–	–
Methyl parathion	GC/FPD	SW-846:8140	0.03 μg/L	–	–
Phorate	GC/FPD	SW-846:8140	0.15μg/L	–	–

(Continued)

Parameter	Analysis		Method Detection Limits[a]	Maximum Contaminant Level	
	Technique	Method	Groundwater	MCL[b] (μg/L)	HHS[c] (mg/L)
CHLORINATED HERBICIDES					
2,4-D	GC/ECD	SW-846:8150	1.2 μg/L	70	–
2,4,5-T	GC/ECD	SW-846:8150	0.20 μg/L	–	–
2,4,5-TP (Silvex)	GC/ECD	SW-846:8150	0.15 μg/L	50	–
Dinoseb	GC/ECD	SW-846:8150	0.7 μg/L	7	–
POLYCHLORINATED DIOXINS AND FURANS					
2,3,7,8-TCDD	GC/MS	SW-846:8280	10 ng/L	–	–
TCDD	GC/MS	SW-846:8280	10 ng/L	–	–
TCDF	GC/MS	SW-846:8280	10 ng/L	–	–
PeCDD	GC/MS	SW-846:8280	10 ng/L	–	–
PeCDF	GC/MS	SW-846:8280	10 ng/L	–	–
HxCDD	GC/MS	SW-846:8280	10 ng/L	–	–
HxCDF	GC/MS	SW-846:8280	10 ng/L	–	–
WATER QUALITY PARAMETERS					
Total Cyanide	Colorimetric	SW-846:9012	0.01 mg/L	200	0.2
Total Sulfide	Titrametric	SW-846:9030	1.0 mg/L	–	–
GENERAL					
Total Organic Carbon	Oxidation	SW-846:9060	1.0 mg/L	–	–

[a] Method Detection Limit is the minimum concentration of a substance that can be measured and reported. Method Detection Limits are highly matrix dependent and may not always be achievable.

[b] Federal Drinking Water Standards Maximum Contaminant Levels (MCL), Office of Drinking Water, USEPA.

[c] New Mexico Standards for Groundwater, Human Health Standards (HHS), New Mexico Water Quality Control Commission Regulations, November 24, 1988.