

Work Plan Supplement

Phase II Site Operation Plan

EPA Region 5 Records Ctr.



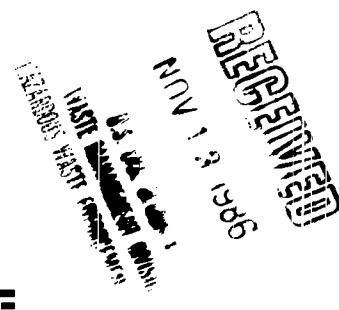
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Remedial Investigation/ Feasibility Study

Crab Orchard National Wildlife Refuge

U.S. Fish and Wildlife Service
U.S. Department of Interior
Marion, Illinois
and
Sangamo-Weston, Inc.
Atlanta, Georgia.

November 1986



OBRIEN & GERE



O'BRIEN & GERE

November 12, 1986

Mr. Dick Ruelle
Resource Contaminants Assessment Coordinator
U.S. FISH AND WILDLIFE SERVICE
1830 Second Avenue
Rock Island, Illinois 61201

Re: Crab Orchard RI/FS Work Plan
Supplement Phase II Site
Operations Plan, Revision 4

File: 3114.001

Dear Mr. Ruelle:

Enclosed is a copy of the Work Plan Supplement - Phase II Site Operations Plan, Revision 4. Comments received from U.S. EPA to our Phase II Site Operations Plan (SOP), Revision 3 and Quality Assurance Project Plan, Revision 3, both of September 1986, have been incorporated into this Phase II SOP. The Phase II Quality Assurance Project Plan (QAPP), Revision 4 (November 1986) has been submitted separately.

The comments were discussed and modifications to the SOP and QAPP were finalized during a conference call on November 6, 1986 between Mr. Steve Garver, Dr. Dharmarajan Iyer and Mr. Dave Hill of O'Brien and Gere, Mr. Dick Ruelle of FWS, and Mr. Rich Boice, Mr. Dave Payne and Dr. Chai Teng of U.S. EPA.

The Phase II sampling effort will be initiated on November 17, 1986 subject to approval of the Phase II SOP and QAPP by the U.S. EPA. Please contact me if you have any questions on the materials presented herein.

Very truly yours,

O'BRIEN & GERE ENGINEERS, INC.

Steven R. Garver, P.E.
Vice President

DRI:wp
Encl.

cc: Mr. Richard Boice (U.S. EPA) (5 copies)
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Mr. Bob Cowles (IEPA)
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Dr. Dharmarajan R. Iyer
Mr. David R. Hill

WORK PLAN SUPPLEMENT
PHASE II
SITE OPERATIONS PLAN

CRAB ORCHARD NATIONAL WILDLIFE REFUGE
REMEDIAL INVESTIGATION/FEASIBILITY STUDY

U.S. FISH AND WILDLIFE SERVICE
DEPARTMENT OF THE INTERIOR
AND
SANGAMO-WESTON, INC.

NOVEMBER, 1986

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TABLE OF CONTENTS

	<u>Page</u>
SECTION 1 - INTRODUCTION	1
SECTION 2 - REVIEW OF PHASE I ANALYTICAL DATA	2
SECTION 3 - PHASE II SAMPLING SCHEDULES	21
SECTION 4 - SAMPLING EQUIPMENT AND PROCEDURES	22
SECTION 5 - DECONTAMINATION PROCEDURES	23
SECTION 6 - DOCUMENTATION	24
SECTION 7 - ANALYTICAL PROCEDURES	25
SECTION 8 - PERSONNEL REQUIREMENTS	26

TABLES

1. List of Study Sites
2. Parameter List for Phase I (completed) Analysis Sets
3. Parameter List for Phase II (completed) Analysis Sets
4. List of Chemical Compounds for Parameters in Tables 2 and 3
5. Summary of Phase I Sampling and Analysis Completed
6. Scheduled Phase II Sampling and Analysis Summary
7. Phase II Sampling and Analysis by Site and Sample Types
- 7B. Summary of Biota Sampling for Phase II Analysis
- 7C. Phase II Analysis Summary with Detection Limits
- 7D. Analytical Laboratories for Phase II
8. List of Sampling and Safety Equipment
9. List of Containers

FIGURES

1. Phase II Sampling Locations: Sites 10 and 11
2. Phase II Sampling Locations: Site 14
3. Phase II Sampling Locations: Site 17
4. Phase II Sampling Locations: Site 29
5. Phase II Sampling Locations: Site 32
6. Phase II Sampling Locations: Site 33

APPENDICES

- A. Sampling and Analysis Schedule Key
- B. Chemical Parameters Included in Lab Data Output
- C. Phase I Sampling and Analysis Schedule
- D. Phase II Sampling and Analysis Schedule
- E. Phase I Analysis Summaries

SECTION 1 - INTRODUCTION

As explained in the original Work Plan dated June, 1985, the sampling and analysis program at Crab Orchard National Wildlife Refuge is being conducted in two phases. The purpose of Phase I, which was initiated in July 1985 and completed in November 1985, was to determine if potential problems exist on a given site and to define the range of chemical compounds which contribute to the problem. The purpose of Phase II, the subject of this Site Operations Plan (SOP), is to further define the extent of contamination (both vertically and laterally) so that remedial options may be evaluated.

This document summarizes the results of the completed Phase I sampling and analyses, and presents the rationale for selection of additional locations for follow-up sampling and analyses or other field activities. The proposed Phase II sampling and analysis program is presented in detail for several sites on the Refuge.

The Phase II program will be initiated immediately after receipt of approval from EPA, Region V for this SOP and the Quality Assurance Project Plan (QAPP). The QAPP for Phase II (Revision 2) was submitted on September 2, 1986. In addition, ground water elevation monitoring and sampling will be conducted. Information on ground water elevation variability can be developed by comparison to the Phase I monitoring data. A three-week field period using a crew of 3 samplers will be required. Following the analyses of the Phase II samples, the draft Site Investigation report section will be prepared.

SECTION 2 - REVIEW OF PHASE I ANALYTICAL DATA

Thirty-three (33) study sites (Table 1), including two control sites, were included as part of the Crab Orchard National Wildlife Refuge RI/FS. The background information on these sites and description of the Phase I sampling program was included as Appendix B in the original Work Plan dated June 1985.

Summaries of analytical data (Appendix E) are referenced in the discussions which follow. For clarity, these summary tables include the results only for parameters which were found above detection limits. The draft Site Investigations report section will include full listings of all data, including those below detection limits. Appendix B includes a key to parameter abbreviations and a listing of units of expression used for each parameter.

Endangerment Assessments of each of the site groups cannot be completed until all of the analytical data from Phases I and II are available. However, preliminary assessments of risk have been developed from Phase I data to assist in the selection of sites for additional sampling and the design of the Phase II sampling program. The Phase II follow-up status of each study site is summarized in Table 6, with details provided in Table 7. The list of analysis sets (Table 3) for Phase II has been updated from that used in Phase I (Table 2). A complete listing of chemical compounds under each parameter is provided in Table 4 for both Phases I and II. In general, the analyses specified in Phase II are much more limited than those specified in Phase I.

GROUP 1

Site 3: Area 11 South

Site 3 is a disposal area adjacent to an old rail spur which served abandoned explosives manufacturing areas. Five composited samples were obtained in Phase I. Analytical results are summarized on Page 1 of Appendix E. Trace amounts of explosive residues (HMX and RDX) were found in one soil and one sediment sample. Both sites are upstream (east) of the drainage culvert. Two samples showed lead concentrations of 547 and 662 ppm (dry weight basis). Sample 3-2 showed 13,000 ppb organics by FID screening and was thus selected for full CLP organics testing. It contained 3850 ppb n-nitroso diphenylamine and 107 ppb 2-methyl napthalene. Small quantities of tetrachloroethene were found in three samples. Traces of PCBs (less than 1 ppm) were found throughout the site.

No Phase II testing is scheduled for this site, as the Refuge Manager has indicated that the DOD will be responsible for further work at this site.

Site 4: Area 11 North

Site 4 is an abandoned dry impoundment which may have been used for underwater storage of munitions. One soil and one sediment composite were taken at this location. Analytical results are included on Page 2 of Appendix E. A trace of explosives residue (2,4 Dinitrotoluene) was found in the soil. Among the organics, only n-nitrosodimethylamine at levels of 1055 ppb is worthy of mention. No heavy metals were of concern. The soil contained the highest specific conductance (22,800 umhos/cm²) and nitrate (1914 ppm) of 120 samples taken at the refuge. This may

indicate the presence of degradation products from explosives components.

No Phase II testing is scheduled for this site, as the Refuge Manager has indicated that the DOD will be responsible for further work at this site.

Site 5: Area 11 Acid Pond

Site 5 is a wastewater pond which previously served the explosives manufacturing facilities in Area 11. Acidic overflow from this pond allegedly killed a stand of trees to the northwest.

One composite sample each of water, soil and sediment were taken at this site during Phase I. Results are summarized on Page 3 of Appendix E. Values for pH indicate that acid residuals have been neutralized or dissipated. Specific conductance of the pond water is fairly high (37,600 micromhos/cm), but no other components were found at levels of concern. Slight residuals of chromium (140 and 110 ppm, wet weight basis) were observed in the soil and sediment. The soil sample contained 1035 ppb n-nitrosodimethylamine. The sediment also contained 10,300 ppb di-n-octyl phthalate.

None of the analytical results are felt to represent concern; follow-up Phase II testing is not proposed at this site.

GROUP 2

The Group 2 sites represent drainage areas downstream of the active Olin complexes (D Area and P Area). They consist of the following:

Site 7: D Area SE Drainage
Site 8: D Area SW Drainage
Site 9: P Area NW Drainage
Site 10: Waterworks North Drainage
Site 11: P Area SE Drainage
Site 20: D Area South

Three drainage routes are represented by these sites. Sites 7, 20, 9 and 10 are upstream of the tributary which discharges immediately adjacent to the Refuge Waterworks. Site 8 is on a tributary which discharges to the west of the Waterworks. Site 11 is downstream of the research and development P Area and discharges to the east of the Waterworks.

One water and one sediment sample composite was obtained from each site. Analytical results are summarized on Pages 4, 6, 7, 8, 9 and 11 of Appendix E. In general, heavy metals were not of concern at these sites, with the exception of 16,700 ppm magnesium in the sediment at Site 8. Water at Site 8 also contained total organic halides (TOX) of 28 to 42 ppb. The water at Site 11 also contained TOX levels of 200 to 270 ppb and the explosive residue HMX at 8 ppb.

Sites 7, 9 and 10, which drain to the Waterworks contained TOX in water ranging from 20 to 180 ppb. However, no volatile organics were detected in any of these water samples. Sediments at Sites 9 and 10 contained small concentrations of cyanide (21 to 35 ppm), but this compound was not detected in any of the water samples. Sediment at Site 10 also showed 236,000 ppb of di-n-octyl phthalate, which may represent a concern.

No Phase II follow-up is scheduled for Sites 7 and 8. Mercury analysis will be rerun on one soil sample each from Sites 7, 9, 10, 11, and 20, and cyanide will be rerun on one sample each from Sites 9, 11, and 20. Phase II testing on Site 10 will focus on cyanide and phthalates in the vicinity of the Refuge waterworks. Five sediment samples will be acquired from the embayment area and upstream of the bay. One water sample will be tested for the same parameters. The proposed Phase II sampling sites are illustrated on Figure 1.

Site 7A: D Area North Lawn

Site 7A is a 3-acre lawn area adjacent to the Olin D Area where it was alleged that barrels of chemicals were dumped. Sixteen soil samples were acquired in Phase I, ranging from the surface to a depth of 3 feet. Analytical results are summarized on Page 5 of Appendix E. In general, no heavy metals or other contaminants were found at levels of concern. Traces of mercury (0 to 10 ppb, dry weight) were observed at the surface and 1-ft level along one transect, but were not detectable elsewhere. Another transect showed 6310 ppb of di-n-octyl phthalate at the surface.

No follow-up Phase II sampling is proposed for this site. However, six Phase I samples will be re-analyzed for mercury.

Site 11A: P Area North

Site 11A is an abandoned loading area where it is alleged that contaminants were dumped on the ground outside of the building. Eight soil and sediment composites were acquired during Phase I. Analytical results are summarized on Page 10 of Appendix E. The

only parameter of potential concern is magnesium which was detected in the range of 15,100 to 29,900 ppm in soils outside of three of the former doorways. Magnesium in drainage ditch sediments was generally one order of magnitude lower. One sediment sample showed the presence of 818 ppb of di-n-octyl phthalate.

No follow-up Phase II sampling is proposed for this site. However, one Phase I sample will be re-analyzed for mercury.

GROUP 3

Site 12: Area 14 Impoundment

Site 12 is an abandoned dry circular impoundment which apparently served the munitions loading activity at Area 14. Black residues were observed in the soil and sediments located within the impoundment. One composite sample of each was taken during Phase I. Analytical results are summarized on Page 12 of Appendix E. Other than high TOC, TKN and FID scan, no contaminants were found at levels of concern. Small concentrations of base/neutral extractable compounds (n-nitrosodimethylamine, n-nitrosodiphenylamine, phenanthrene, pyrene, and anthracene) were detected in the sediment.

No follow-up Phase II sampling is proposed for this site.

Site 13: Area 14 Change House Site

Site 13 is the site of a former "Change House" where workers changed their clothing after working in the adjacent bomb-loading buildings. The building was subsequently used for manufacturing operations prior to its demolition. A magnetometer and electromagnetic survey conducted during Phase I did not indicate

the presence of major buried articles (see Status Report dated September 11, 1985). Six soil sample composites were taken to a depth of 1 foot during Phase I. Analytical results are summarized on Page 13 of Appendix E.

No contaminants were found in any of these samples at levels of concern. Phase II follow-up sampling has not been proposed for this site.

Site 14: Area 14 Solvent Storage

Site 14 is a drainage ditch adjacent to the active manufacturing operations of Diagraph-Bradley in Area 14. Many solvents are handled nearby in bulk and in drums. Two composite water samples and two composite sediments were taken during Phase I. Analytical results are summarized on Page 14 of Appendix E.

The only contaminant of potential concern found in the water samples was chloroform at 11 to 43 ppb. Subsequent to FID screening, one of the sediment samples was selected for CLP organics. This sample showed small concentrations of n-nitrosodimethylamine (95 ppb), methylene chloride (657 ppb) and acetone (188 ppb). Phase II sampling will consist of one water and one sediment sample to be taken further downstream and analyzed for purgeable and acid extractable compounds. These locations are illustrated on Figure 2.

GROUP 4

Site 15: Area 7 Plating Pond

Site 15 is a small impoundment adjacent to the Area 7 industrial complex. It is claimed that this pond was used to receive

plating wastewaters from Olin operations which were located here at one time. Phase I sampling included one water and one sediment composite from the pond. Analytical results are summarized on Page 15 of Appendix E.

The water analyses did not indicate the presence of contaminants of concern. The sediment contained chromium at an elevated level (508 ppm, dry weight basis) as well as phosphorus which was somewhat elevated. The pesticide alpha-endosulfan was also detected. One downgradient monitoring well was installed during Phase I. This well will be analyzed for the parameters cited above as part of Phase II. In addition, a sample of pond sediment will be analyzed for total and extractable chromium (EP Toxicity) as part of Phase II. Two piezometers for ground water level measurements will be installed.

Site 16: Area 7 Industrial Site

Site 16 is a complex of 33 buildings which are used by various industries, mainly for warehousing purposes. A drainage ditch bisects the site. Two water samples and three samples of sediment were taken from this ditch during Phase I. Analytical results are summarized on Page 16 of Appendix E. One water sample showed slight concentrations of chlorinated organics; both samples had fairly high levels of magnesium (25 to 35 ppm). Nine soil samples were taken adjacent to several of the buildings. These results, also on Page 16 of Appendix E, showed high levels of magnesium in several spots. Three samples selected for CLP organics detected acetone, n-nitrosodimethylamine, 2-methylnaphthalene, phenanthrene, and other base/neutral compounds, probably from oil spillage.

Phase II sampling will consist of one water and one sediment analyses further downstream for magnesium, lead, arsenic, purgeables, base/neutral/acids and pesticide/PCB's.

GROUP 5

Site 17: Job Corps Landfill

Site 17 is a wooded area adjacent to a small pond created by Job Corps workers in the mid-1960s. The area contains widespread debris (bottles, cans, etc.) which does not appear to be buried deeply. A magnetometer and electromagnetic survey conducted as part of Phase I did not suggest any concentrated pockets of material (see Status Report dated September 11, 1985). Phase I sampling included seven composited soil samples and two water samples from the pond. Analytical results are summarized on Page 17 of Appendix E.

The soil samples showed the widespread presence of several parameters of concern. The explosive residual Tetryl was detected in four samples, while 2,4-DNT was barely detected in one water sample. The soil samples all contained lead concentrations within the range of 609 to 14,100 ppm wet weight basis. One sample showed elevated cadmium (34 ppm). PCBs were also found at high concentrations (42 to 1700 ppm). The two samples analyzed for CLP organics showed di-n-octylphthalate (4050 and 4760 ppb) and one showed 1984 ppb methylene chloride.

Phase II will focus on better defining the distribution of PCBs, lead and cadmium using a network of 47 soil samples (35 shallow and 12 to a depth of 3 feet). Explosives residuals and

nitrosamines will be analyzed in twelve of these samples. These sample locations are illustrated on Figure 3. Two additional water and sediment samples from the pond will be analyzed for PCB, lead, cadmium and explosives residuals. The two pond water samples will also be analyzed for purgeables. One Phase I soil sample will be reanalyzed for mercury. Five wells, including one deep well, are scheduled for CLPHSL full organics and metals, low level nitrosamines, cyanide and explosive residues.

GROUP 6

Site 18: Area 13 Loading Platform

Site 18 is a loading platform adjacent to an abandoned and dismantled rail spur which served Area 13. It is reported that munitions-typed chemicals were dumped off the platform. Phase I sampling consisted of four composite soil samples. Analytical results are summarized on Page 18 of Appendix E.

Trace quantities of the explosive Tetryl was observed in two soil samples and the TOC was slightly elevated. FID scans and CLP organics on one sample did not indicate any major problem with organics with the exception of 4050 ppb di-n-octyl phthalate. No Phase II sampling is proposed for this site.

Site 19: Area 13 Bunker 1-3

Site 19 is the area adjacent to one of the munitions storage bunkers in Area 13. It has been reported that chemicals were poured out near this bunker. Phase I sampling consisted of five soil composites. Analytical results are summarized on Page 19 of Appendix E.

The analysis showed slight levels of organics such as PCB (1100 ppb) and n-nitrosodimethylamine at 1455 ppb. However, these constituents do not represent a serious concern at the site. The discolored area which was sampled contained a very small trace of Tetryl. No follow-up Phase II work is proposed for this site. However, one Phase I sample will be re-analyzed for mercury.

Site 30: Munition Control Site

Site 30 is the control area established on the south side of the Refuge. A monitoring well was installed and one soil sample was taken here during Phase I. Analytical results are summarized on Page 20 of Appendix E. Di-n-octyl phthalate was present in the soil at a concentration of 83,900 ppb. The monitoring well will be sampled and analyzed during Phase II. Phase II also includes one additional soil sample.

GROUP 7

Site 21: Southeast Corner Field

Site 21 is an area which is speculated to be an old landfill area because of the presence of concrete rubble near one end. A magnetometer and electromagnetic survey conducted as part of Phase I did not indicate any unusual subsurface conditions (see Status Report dated September 11, 1985). Four soil samples were taken to a depth of 1 foot during Phase I. Analytical results are summarized on Page 21 of Appendix E. Two of the transects showed high magnesium levels (10,500 to 27,200 ppm wet weight). The FID reading on transect 1 was due to low levels of base/neutral extractable compounds. No Phase II sampling is

proposed for this site. One Phase I soil sample will be re-analyzed for mercury.

GROUP 8

Site 22: Old Refuge Shop

Site 22 is the area adjacent to the old Refuge shop. Pine poles were previously treated with pentachlorophenol here and a small drainage pool presently contains a yellow-green scum. One water and one sediment sample were acquired during Phase I. Analytical results are summarized on Page 22 of Appendix E.

With the exception of a low residual TOX, the water sample did not contain contaminants at levels of concern. The sediment contained cyanide (240 ppm), cadmium (701 ppm), chromium (663 ppm) and lead (150) concentrations. Small concentrations of methylene chloride and acetone were also detected. Six Phase II samples, including one from a monitoring well, are proposed to trace the downstream distribution of the parameters cadmium, chromium, lead, and cyanide. Extraction (EP Toxicity) analyses will be conducted on three sediment samples.

Site 24: Pepsi-West

Site 24 is a drainage ditch adjacent to the Pepsi Cola Bottling Company in Marion. This ditch ultimately discharges to Crab Orchard Lake. Phase I sampling included a single grab of water and sediment from this ditch. Analytical results are summarized on Page 23 of Appendix E.

TOX was somewhat elevated in the water samples (160 to 190 ppb). The sediment did not show contaminants of concern other

than slight levels of acetone (268 ppb) and methylene chloride (117 ppb). No Phase II sampling is proposed for this site. One Phase I sediment sample will be re-analyzed for mercury.

Site 25: COC at Marion Landfill

Site 25 is on Crab Orchard Creek adjacent to the old Marion landfill off Old Creal Springs Road. A small pond is also adjacent to the landfill. Phase I sampling comprised water and sediment samples upstream and downstream of the landfill as well as samples of water and sediment from the pond. Analytical results are summarized on Page 24 of Appendix E.

Magnesium in water was somewhat elevated, increasing from 14.3 to 47.2 in the downstream sample. The other parameters in water were not of significance, but they generally increased in the downstream samples. The sediments showed only moderate magnesium (904 to 1840 ppm), as did the pond sediments (956 ppm). The downstream sediment showed some cyanide (57 ppm) and elevated TOC (11,500 ppm). For Phase II, one sediment sample will be re-sampled for cyanide.

Site 26: COC below Marion STP

Site 27: COC below 157 Dredge Area

Sites 26 and 27 are locations on Crab Orchard Creek upstream and downstream of the Marion sewage treatment plant and downstream of the dredge area near Interstate Route 95. Composite water and sediment samples were taken from each location as a part of Phase I. Analytical results are summarized on Pages 25 and 26 of Appendix E.

TOX readings are elevated (120 to 130 ppb) at the upstream but drop further downstream. Likewise, the FID scans and several other parameters decrease further downstream. Heavy metals do not appear to be of concern in Crab Orchard Creek sediments. No Phase II sampling has been proposed for these areas.

GROUP 9

Site 28: Water Tower Landfill

Site 28 is the area adjacent to the water tower near Areas 7 and 14, where landfilling of waste is suspected to have occurred. Previous sampling by DOI showed 800 ppm of lead in the soil. Magnetometer and electromagnetic surveys conducted during Phase I suggested concentrations of debris within the transverse ditch and within the wooded area to the east. Twelve soil samples were taken during Phase I. Analytical results are summarized on Page 27 of Appendix E.

The highest lead concentrations obtained were 200 and 250 ppm wet weight. All other samples were within the range of 20 to 70 ppm. PCB concentrations in two soil samples were higher than the rest at 1400 ppb. No other parameters were found at levels of concern. Water samples from four ground water monitoring wells (two shallow wells were installed in Phase I, one shallow and one deep well will be installed in Phase II) which were installed during Phase I will be sampled in Phase II. In addition, four soil samples from two test pits will be analyzed for PCBs, magnesium, lead, arsenic, copper, and cyanide.

GROUP 10

Site 29: Fire Station Landfill

Site 29 is a large open field behind the Refuge fire station which was used for storage of mining machinery until several years ago. The northern and western edges of this field show evidence of dumping. Magnetometer and electromagnetic surveys during Phase I confirmed that these are the major areas of buried debris (see Status Report dated September 11, 1985). Previous sampling by DOI found lead concentrations of 553 ppm. Seven composite soil samples were taken as part of Phase I. Analytical results are summarized on Page 28 of Appendix E.

Lead concentrations varied between 20 and 410 ppm. Magnesium was also somewhat elevated at the site ranging between 2430 and 35,100 ppm. The higher concentrations tended to be near the northeast corner. No CLP organics were found at levels of concern. Phase II soil sampling will be conducted at 13 locations (10 surface and 3 at 3-ft depth) within the swampy area to the east. These will be analyzed for lead and magnesium. These locations are shown on Figure 4. Four shallow and one deep ground water monitoring wells which were installed during Phase I will be sampled and analyzed for purgeables, pesticides, metals and cyanide. Six Phase I soil samples will be re-analyzed for mercury.

GROUP 11

Site 32: Area 9 Landfill

Site 32 is an inactive landfill area located adjacent to the manufacturing buildings in Area 9. It was used for disposal of capacitors prior to 1964 and possibly for disposal of munitions wastes during its life. A magnetometer survey conducted by DOI suggested that the majority of the residues are located along the western and northern faces of the fill. Nine composting stations were established within the fill area as part of Phase I. Samples were obtained from these locations to a depth of 12 feet. Six transects were also established to the north, east and west to define the limits of the contaminated fill area. Six sediment samples were also obtained from the intermittent creek adjacent to the landfill. Analytical results are summarized on Page 29 of Appendix E.

The following conclusions have been tentatively developed from these data. (1) PCB content in the fill area is limited mainly to the surface (above 6 feet). (2) The northeast edge of the fill area shows PCB concentrations at six feet, but not at 12 feet, on both outer edges. The center northeast edge is the only spot showing elevated PCBs at 12-ft depth. These patterns closely parallel the results of the magnetometer survey. (3) The outer transects on the northwest and southeast sides of the fill area were relatively free of PCBs. The drainage channel upstream and downstream of the Area 9 Landfill exhibited very low PCB concentrations (0.058 to 11 ppm). (4) Heavy metals and other organics do not appear to be significantly present at the Area 9 landfill.

Phase II sampling at Site 32 will include 30 additional soils samples within the lowland area below the landfill for PCBs and lead. These locations are illustrated on Figure 5. These sampling locations are less likely to be affected by water scour than the intermittent creek sample locations of Phase I. The embayment area downstream of the landfill will also be sampled during Phase II. Twelve sediment samples from the adjacent bay will be analyzed for PCBs and lead. Twenty-four Phase I surface samples (nine surface soil composites, nine stream sediments and six transects) and nine deeper core composite soil samples from the landfill will be analyzed for lead, mercury and chromium. Five monitoring wells, including one deep well, will be analyzed for full CLP organics and metals, low level nitrosamines and cyanide.

Site 33: Area 9 Building Complex

Site 33 is the Area 9 Building Complex where capacitors were manufactured prior to 1962. It is presently occupied by Olin Corporation. Soil sampling and analyses conducted by Olin have isolated two areas of concern: adjacent to Buildings I-1-23 and I-1-2. Phase I included 187 soil samples analyzed for PCBs at various depths ranging to 3 feet. Analytical results are summarized on Page 30 of Appendix E.

In general, the Phase I results support those analyses of Olin. The Phase I data were intended to define the horizontal and vertical limits of the affected areas, which they do in most cases. Additional Phase II sampling will be conducted in some spots where the contaminant limits are not adequately defined. In addition, the Phase I results showed two areas where PCBs are migrating via

drainage ditches from the Area 9 site. Soil samples (151), including those obtained along and outside of these drainage ditches, will be analyzed for PCBs to monitor the extent of migration. Some of these samples will be three feet cores. Three wells will be installed and ground water samples analyzed for full CLP organics and metals, and cyanide. The Phase II sampling sites are shown on Figure 6.

Site 35: Area 9 Waterway

Site 35 is a low-lying spot in a field to the west of Area 9 where vegetation does not grow. Phase I samples included one soil sample analyzed as summarized on Page 31 of Appendix E. The only notable analysis is specific conductance (11,650 umhos/cm²). It is speculated that evaporation and salt accumulation may be responsible for the lack of vegetation. No Phase II analyses are proposed.

GROUP 12

Site 34: Crab Orchard Lake

The sampling and analysis program for Crab Orchard Lake was outlined in the Work Plan dated June 1985 (see page 111-43 of Appendix B). The fish samples will be analyzed only for pesticides, lead, mercury, and cadmium. Five water samples that are sources of drinking water will be re-sampled and will be analyzed for full CLP organics, low level nitrosamines and PCB's NIPDWR (40 CFR 141) metals and cyanide. The ten lake water columns are scheduled for low level nitrosamines and PCB's cadmium, chromium, lead, arsenic and cyanide. Analysis on the

ten lake sediments will include semi-volatiles, pesticides/PCB's, metals and cyanide.

GROUP 13

Site 31: Refuge Control Site

Site 31 is the control area established on the north side of the Refuge. A monitoring well was installed and one soil sample was taken here during Phase I. Analytical results are summarized on Page 33 of Appendix E. Nothing of concern was detected at this site. The monitoring well and one additional soil sample will be sampled and analyzed during Phase II.

SECTION 3 - PHASE II SAMPLING SCHEDULES

The Phase II sampling program is based on the analytical results obtained from Phase I sampling and analysis, which was completed in November 1985. Table 5 provides, for information only, a summary of the samples collected in Phase I by sites and analysis sets. Phase I analytical parameters and a listing of compounds are provided in Tables 2 and 4A respectively.

The sampling schedules for Phase II samples and analyses are included in Appendix D. These schedules detail the sample locations, designations and analysis sets to be associated with each location. The rationale for selection of locations and analyses was discussed in the paragraphs above. Additional details on parameters included for the various types of samples are detailed in Table 7, with a summary in Table 6. Phase II analytical sets and a listing of compounds are provided in Tables 3 and 4B respectively. Individual laboratories performing Phase II analyses are identified in Table 7D.

SECTION 4 - SAMPLING EQUIPMENT AND PROCEDURES

Specific equipment and supplies required for the Phase II sampling activities are enumerated on Tables 8 and 9. Other preparatory aspects of the sampling program include acquisition or arrangements for the following:

- Field trailer
- Electrical and telephone service for field trailer
- Sample refrigeration facilities
- Air and surface transport of samples to laboratories
- Travel arrangements for field personnel
- Lodging arrangements for field personnel
- Letters of credit for local banks
- Vehicles
- Sample containers

SECTION 5 - DECONTAMINATION PROCEDURES

Decontamination protocols are addressed in the Quality Assurance Project Plan, Revision 4 (November 1986).

SECTION 6 - DOCUMENTATION

Protocols for documentation of field activities are presented in the
Quality Assurance Project Plan, Revision 4, November 1986.

SECTION 7 - ANALYTICAL PROCEDURES

Analytical procedures are documented in the Quality Assurance Project Plan (Revision 4, November 1986) for Phase II sampling and analysis.

SECTION 8 - PERSONNEL REQUIREMENTS

Site operations will involve personnel from O'Brien & Gere Engineers, U.S. Fish & Wildlife Service and U.S. EPA. Specific sampling team members are listed below:

- Cornelius B. Murphy, Jr., Ph.D. (Project Director/Officer)
- Steven R. Garver, P.E. (Project Manager)
- Dharmarajan R. Iyer, Ph.D. (Primary Field Chief)
- Michael P. Quirk (QA/QC Officer)
- Swiatoslav W. Kaczmar, Ph.D. (Safety Officer)
- Robert Foresti (Field Hydrogeologist)
- Cindy Klevens (Sampler)
- Richard A. Ruelle (U.S. FWS Project Manager)
- Richard Boice (U.S. EPA On-Scene Coordinator)

Tables



O'BRIEN & GERE

TABLE 1
CRAB ORCHARD REFUGE
STUDY SITES

<u>Site #</u>	<u>Type</u>	<u>Name</u>
<u>Group 1</u>		
3	Surface Soil	Area 11 South
4	Surface Soil	Area 11 North
5	Pond	Area 11 Acid Pond
<u>Group 2</u>		
7	Surface Water	D Area SE Drainage
7A	Surface Soil	D Area North Lawn
8	Surface Water	D Area SW Drainage
9	Surface Water	P Area NW Drainage
10	Surface Water	Waterworks North Drainage
11	Surface Water	P Area SE Drainage
11A	Surface Soil	P Area North
20	Surface Water	D Area South
<u>Group 3</u>		
12	Surface Soil	Area 14 Impoundment
13	Surface Soil	Area 14 Change House Site
14	Surface Water	Area 14 Solvent Storage
<u>Group 4</u>		
15	Pond	Area 7 Plating Pond
16	Surface Soil	Area 7 Industrial Site
<u>Group 5</u>		
17	Landfill	Job Corps Landfill
<u>Group 6</u>		
18	Surface Soil	Area 13 Loading Platform
19	Surface Soil	Area 13 Bunker 1-3
30	Control	Munition Control Site
<u>Group 7</u>		
21	Landfill	Southeast Corner Field
<u>Group 8</u>		
22	Surface Water	Old Refuge Shop
24	Surface Water	Pepsi-West
25	Surface Water	COC at Marion Landfill
26	Surface Water	COC below Marion STP
27	Surface Water	COC below 157 Dredge Area

TABLE 1
(Continued)

CRAB ORCHARD REFUGE

STUDY SITES

<u>Site #</u>	<u>Type</u>	<u>Name</u>
<u>Group 9 28</u>	Landfill	Water Tower Landfill
<u>Group 10 29</u>	Landfill	Fire Station Landfill
<u>Group 11 32</u>	Landfill	Area 9 Landfill
<u>33</u>	Surface Soil	Area 9 Building Complex
<u>Group 12 34</u>	Lake	Crab Orchard Lake
<u>Group 13 31</u>	Control	Refuge Control Site

NOTES:

1. The names of sites 3, 4, and 12 have been changed from their previous descriptions as landfills to reflect the absence of any buried materials.
2. Sites 30 and 31 are included only as control sites.

PARAMETER LIST FOR PHASE I (COMPLETED) ANALYSIS SETS

PARAMETERS	ANALYSIS SET							
	A	B	C	D	E	F	G	H
1. Purgeable Priority Pollutants	-Screen	x	-	-	x	-	-	-
	-Full Anal.	-	-	-	-	x	x	x
2. Acid Extract. Priority Pollutants	-Screen	x	-	-	x	-	-	-
	-Full Anal.	-	-	-	-	x	x	x
3. Base/Neutral Extract. Prior. Poll.	-Screen	x	-	-	x	-	-	-
	-Full Anal.	-	-	-	-	x	x	x
4. Pesticide/PCB Priority Pollutants	-Screen	x	-	-	x	-	-	-
	-Full Anal.	-	-	-	-	x	x	x
5. PCB's		-	x	x	-	-	-	-
6. Metals - ICP Scan		x	-	-	x	-	-	-
- Prior. Poll. Metals by AA		-	-	-	-	-	-	x
- Mercury		x	-	-	x	-	-	-
7. EP Toxicity Metals		-	-	-	-	-	-	-
8. Cyanide		x	-	-	x	-	-	x
9. Indicators	- pH (field)	x	-	x	x	-	-	x
	- Specific Conductance (field)	x	-	x	x	-	-	x
	- Total Organic Carbon	x	-	x	x	-	-	x
	- Total Organic Halogen	x	-	x	x	-	-	x
10. Explosives Residues by HPLC		x	-	-	x	-	-	x
11. Nitrogen Series: TKN, NH3, NO3		x	-	x	x	-	-	x
12. PCDD/PCDF	-Screen	-	-	x	x	-	-	-
	-Full Anal.	-	-	-	-	-	x	x
13. Cation Exchange Capacity		-	-	x	-	-	x	x
14. Total Phosphorus		x	-	-	x	-	-	x
15. Primary & Secondary Drinking Water Stds.		-	-	-	-	x	-	-
16. Percent Solids (on soil/sed only)		x	x	x	x	-	x	x

NOTE: See Table 4A for list of compounds included within each parameter

Phase I Sampling and Analysis was completed in November 1985.

SETS F & G are full analysis of parameters screened in SETS A & D resply.

SET H is full analysis of selected samples instead of SET D

PARAMETERS	PARAMETER LIST & UNIT COSTS FOR PHASE II ANALYSIS SETS															
	ANALYSIS SET															
	B	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
1. CLP HSL Full Analysis	-	-	-	-	-	-	-	x	-	-	-	-	-	x	x	
2. CLP HSL Volatiles	-	-	-	-	x	x	-	-	-	-	x	-	x	-	-	
3. CLP HSL Base/Neutral/Acids	-	x	x	-	x	-	-	-	-	-	-	-	x	-	-	
4. Nitrosamines (CLP, soil)	-	-	-	-	-	-	-	-	x	-	-	-	-	-	-	
5. Nitrosamines (low level)	-	-	-	-	-	-	-	-	-	-	-	-	x	x	-	
6. CLP HSL Pesticide/PCB	-	x	-	-	-	x	-	-	-	x	x	-	-	-	-	
7. PCB's General	x	-	-	-	-	-	-	x	-	-	-	-	-	-	-	
8. PCB's Low Level (water)	-	-	-	-	x	-	-	-	-	-	-	x	x	-	-	
9. PCB's Semi-low (sediment)	-	x	-	-	-	-	-	-	-	x	-	-	-	-	-	
10. Metals - CLP HSL	-	x	-	-	-	x	-	-	-	-	x	-	x	-	x	
11. Metals - NIPDVR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
12. Special - Mercury	-	-	-	x	-	-	-	-	-	-	-	x	-	-	-	
- Cadmium	-	-	-	-	-	x	-	-	x	x	x	-	x	x	x	
- Chromium	-	-	-	-	-	x	x	-	-	x	-	-	x	-	x	
- Magnesium	-	-	-	-	-	-	-	x	-	-	-	-	-	-	-	
- Lead	-	-	-	-	-	x	-	x	x	x	x	-	x	x	x	
- Arsenic	-	-	-	-	-	x	-	x	-	-	-	-	x	x	x	
- Copper	-	-	-	-	-	-	-	-	-	-	-	-	x	-	-	
13. BP Toxicity - Cr - Cd, Cr, Pb	-	-	-	-	-	-	x	-	-	-	-	-	-	-	-	
14. Cyanide	-	x	x	x	-	-	-	-	-	x	x	-	x	-	x	
15. Indicators - pH - NH ₃ , NO ₃ , P	-	x	x	-	x	x	x	x	-	x	x	x	-	x	x	
16. Explosives by HPLC	-	-	-	-	-	-	-	-	-	x	-	-	-	x	x	
17. Lipids	-	-	-	-	-	-	-	-	-	-	-	x	-	-	-	
18. PCDD/PCDF	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
19. Total Phosphorus	-	-	-	-	-	x	-	-	-	-	-	-	-	-	-	
20. Grain Size	-	-	-	-	-	-	-	-	-	-	x	-	-	-	x	
21. Percent Solids (soil/sed	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	

NOTE: See Table 4B of SOP or 2D of QAPP for list of compounds included within each parameter

See Table 7C of SOP or QAPP for detection levels; Table 10 of QAPP for analytical procedures

Nitrosamines in water & well samples will be analyzed using a lower detection level

Well water metals analyses include unfiltered and filtered

PARAMETER LIST & UNIT COSTS FOR PHASE II ANALYSIS SETS
ANALYSIS SET (contd.)

PARAMETERS	I	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL
1. CLP HSL Full Analysis	X	-	-	-	-	-	-	X	-	-	X	X	X	-	X
2. CLP HSL Volatiles	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3. CLP HSL Base/Neut/Acids	-	X	X	-	-	-	-	-	-	-	-	-	-	-	-
4. Nitrosamines (CLP, soil)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5. Nitrosamines (low level)	X	-	-	-	-	-	-	-	-	X	-	-	X	X	-
6. CLP HSL Pesticide/PCB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7. PCB's General	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
8. PCB's Low Level (water)	X	-	-	-	-	-	-	-	-	X	-	-	X	X	-
9. PCB's Semi-low (sediment)	-	-	-	-	-	-	X	-	X	-	X	-	-	-	-
10. Metals - CLP HSL	X	-	-	-	-	-	-	-	-	X	X	X	-	-	-
11. Metals - HIPOWR	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-
12. Special - Mercury	-	-	-	-	-	-	-	-	X	-	-	-	X	-	X
- Cadmium	X	-	X	-	-	-	-	-	-	X	-	-	-	-	X
- Chromium	X	-	X	-	-	-	-	X	-	X	-	-	-	-	X
- Magnesium	-	-	-	-	X	X	-	-	-	-	-	-	-	-	-
- Lead	X	-	-	-	X	X	X	X	X	X	-	-	-	-	X
- Arsenic	X	-	-	-	X	-	-	-	-	X	-	-	-	-	X
- Copper	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
13. EP Toxicity - Cr	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
- Cd, Cr, Pb	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14. Cyanide	X	-	X	X	X	-	-	-	-	X	X	-	X	X	X
15. Indicators - pH	X	-	-	-	-	X	X	-	-	X	X	-	-	X	X
- NH ₃ , NO ₃ , F	X	-	-	-	-	-	-	-	-	X	-	-	-	-	X
16. Explosives by HPLC	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-
17. Lipids	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18. PCDD/PCDF	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-
19. Total Phosphorus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20. Grain Size	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-
21. Percent Solids (soil/sed	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

NOTE: See Table 4B of SOP or 2D of QAPP for list of compounds included within each parameter

See Table 7C of SOP or QAPP for detection levels; Table 10 of QAPP for analytical procedures

Nitrosamines in water & well samples will be analyzed using a lower detection level

Well water metals analyses include unfiltered and filtered

LIST OF CHEMICAL COMPOUNDS FOR PARAMETERS IN TABLE 2
 (for PHASE I, completed November 1985)

PURGEABLE PRIORITY POLLUTANTS

1 Chloromethane	15 1,2-Dichloropropane	29 1,1 Dichloroethylene
2 Bromomethane	16 t-1,3-Dichloropropene	30 t-1,2-Dichloroethylene
3 Dichlorodifluoromethane	17 Trichloroethene	31 Bromochloromethane
4 Vinyl chloride	18 Benzene	32 Trichloroethylene
5 Chloroethane	19 Dibromochloromethane	33 2-Bromo-1-chloropropane
6 Methylene Chloride	20 1,1,2-Trichloroethane	34 Tetrachloroethylene
7 Trichlorodifluoromethane	21 c-1,3-Dichloropropane	35 Acetone
8 1,1-Dichloroethene	22 2-Chloroethylvinyl ether	36 Carbon disulfide
9 1,1-Dichloroethane	23 Bromoform	37 2-Butanone
10 t-1,1-Dichloroethene	24 1,1,2,2-Tetrachloroethane	38 Vinyl acetate
11 Chloroform	25 Tetrachloroethene	39 2-Hexanone
12 1,1,1-Trichloroethane	26 Toluene	40 4-Methyl-2-pentanone
13 Carbon tetrachloride	27 Chlorobenzene	41 Styrene
14 Bromodichloromethane	28 Ethylbenzene	42 Total xylenes

ACID EXTRACTABLE PRIORITY POLLUTANTS

1 Phenol	6 2-Nitrophenol	11 Pentafluorophenol
2 d6-Phenol	7 4-Nitrophenol	12 2,4,6-Trichlorophenol
3 2-Fluorophenol	8 4-Chloro-3-methylphenol	13 2-Methyl-4,6-dinitrophenol
4 2,4-Dimethylphenol	9 2,4-Dichlorophenol	14 Pentachlorophenol
5 2-Chlorophenol	10 2,4-Dinitrophenol	

BASE/NEUTRAL PRIORITY POLLUTANTS

1 1,3-Dichlorobenzene	17 Acenaphthene	33 Benzidine
2 1,4-Dichlorobenzene	18 Dimethyl phthalate	34 Butyl benzyl phthalate
3 1,2-Dichlorobenzene	19 2,6-Dinitrotoluene	35 Bis (2-ethylhexyl) phthalate
4 Hexachloroethane	20 Fluorene	36 Chrysene
5 Bis (2-chloroethyl) ether	21 4-Chlorophenyl phenyl ether	37 Benzo(a)anthracene
6 Bis (2-chloroisopropyl) ether	22 2,4-Dinitrotoluene	38 3,3-Dichlorobenzidine
7 N-Nitrosodi-n-propylamine	23 1,2-Diphenylhydrazine	39 Di-n-octylphthalate
8 Nitrobenzene	24 Diethylphthalate	40 Benzo(b)fluoranthene
9 Hexachlorobutadiene	25 N-nitrosodiphenylamine	41 Benzo(k)fluoranthene
10 1,2,4-Trichlorobenzene	26 Hexachlorobenzene	42 Benzo(a)pyrene
11 Isophorone	27 4-Bromophenyl phenyl ether	43 Indeno(1,2,3-cd)pyrene
12 Naphthalene	28 Phenanthrene	44 Dibenzo(a,h)anthracene
13 Bis (2-chloroethoxy) methane	29 Anthracene	45 Benzo(g,h,i)perylene
14 Hexachlorocyclopentadiene	30 Di-n-butyl phthalate	46 N-Nitrosodimethyl Amine
15 2-Chloronaphthalene	31 Fluoranthene	
16 Acenaphthalene	32 Pyrene	

PESTICIDES/PCB PRIORITY POLLUTANTS

1 Alpha-BHC	10 Dieldrin	19 Toxaphene
2 Gamma-BHC (Lindane)	11 Endrin	20 Arochlor-1016
3 Beta-BHC	12 4,4'-DDD	21 Arochlor-1242
4 Delta-BHC	13 Endosulfan II	22 Arochlor-1221
5 Heptachlor	14 4,4'-DDT	23 Arochlor-1232
6 Aldrin	15 Endosulfan Sulfate	24 Arochlor-1248
7 Heptachlor epoxide	16 Endrin Aldehyde	25 Arochlor-1254
8 Endosulfan I	17 Methoxychlor	26 Arochlor-1260
9 4,4'-DDE	18 Chlordane	27 Endrin ketone

**LIST OF CHEMICAL COMPOUNDS FOR PARAMETERS IN TABLE 2
(for PHASE I, completed November 1985)**

PCDDs/PCDFs		
1 Tetra-CDD	5 Octa-CDD	9 Hepta-CDF
2 Penta-CDD	6 Tetra-CDF	10 Octa-CDF
3 Hexa-CDD	7 Penta-CDF	
4 Hepta-CDD	8 Hexa-CDF	
 EXPLOSIVES RESIDUES BY HPLC		
1 HMX	4 1,3 DNB	7 2,4,6 TNT
2 RDX	5 NB	8 2,6 DNT
3 1,3,5 TNB	6 TETRYL	9 2,4 DNT
 METALS (ICPs AND PP ATOMIC ABS.)		
1 Aluminum	10 Iron	20 Silver
2 Antimony	11 Lead	21 Sodium
3 Arsenic	12 Magnesium	22 Tin
4 Barium	13 Manganese	23 Titanium
5 Cadmium	14 Molybdenum	24 Vanadium
6 Calcium	15 Mercury	25 Zinc
7 Chromium	16 Nickel	
8 Cobalt	17 Potassium	
9 Copper	18 Selenium	
 OTHERS		
INDIATORS		
1 pH	NITROGEN SERIES	
2 Specific Conductivity	1 Ammonia Nitrogen	CYANIDE
3 Total Organic Carbon	2 Nitrate Nitrogen	CATION EXCHANGE CAPACITY
4 Total Organic Halides	3 Nitrite Nitrogen	TOTAL PHOSPHORUS
4 Total Kjeldahl Nitrogen		
 SAFETY DRINKING WATER ACT STANDARDS		
Primary Inorganic Chemicals		
1 Arsenic	Organic Chemicals	
2 Barium	1 Endrin	Secondary Inorganic Chemicals
3 Cadmium	2 Lindane	1 Chloride
4 Chromium	3 Methoxychlor	2 Copper
5 Fluoride	4 Toxaphene	3 Iron
6 Lead	5 2,4-D	4 Manganese
7 Mercury	6 2,4,5-TP Silvex	5 Sodium
8 Nitrate		6 Sulfate
9 Silver		7 Zinc
		8 Corrosivity

**LIST OF CHEMICAL COMPOUNDS FOR PARAMETERS IN TABLE 3
(for PHASE II, scheduled November 1986)**

CLP NSL VOLATILES		
1 Chloromethane	13 Bromodichloromethane	25 Toluene
2 Bromomethane	14 1,2-Dichloropropane	26 Chlorobenzene
3 t-1,2-Dichloroethene	15 t-1,3-Dichloropropene	27 Ethylbenzene
4 Vinyl chloride	16 Trichloroethene	28 Carbon Disulfide
5 Chloroethane	17 Benzene	29 1,2-Dichloroethane
6 Methylene Chloride	18 Dibromochloromethane	30 Acetone
7 Styrene	19 1,1,2-Trichloroethane	31 2-Butanone
8 1,1-Dichloroethene	20 c-1,3-Dichloropropene	32 Vinyl acetate
9 1,1-Dichloroethane	21 2-Chloroethylvinyl ether	33 2-Meanone
10 Chloroform	22 Bromoform	34 4-Methyl-2-pentanone
11 1,1,1-Trichloroethane	23 1,1,2,2-Tetrachloroethane	35 Total xylenes
12 Carbon tetrachloride	24 Tetrachloroethene	36 Total xylenes
NSL CLP BASE/NEUTRAL/ACID EXTRACTABLES (SEMI-VOLATILES)		
1 Phenol	23 1,2,4-Trichlorobenzene	45 Pyrene
2 2-Methylphenol	24 Isophorone	46 Butyl benzyl phthalate
3 2,4-Dimethylphenol	25 Naphthalene	47 Bis (2-ethylhexyl) phthalate
4 2-Chlorophenol	26 Bis (2-chloroethoxy) methane	48 Chrysene
5 2-Nitrophenol	27 Hexachlorocyclopentadiene	49 Benzo(a)anthracene
6 4-Chloro-3-methylphenol	28 2-Chloronaphthalene	50 3,3-Dichlorobenzidine
7 2,4-Dichlorophenol	29 Acenaphthalene	51 Di-n-octylphthalate
8 2,4-Dinitrophenol	30 Acenaphthene	52 Benzo(b)fluoranthene
9 2,4,5-Trichlorophenol	31 Dimethyl phthalate	53 Benzo(k)fluoranthene
10 2,4,6-Trichlorophenol	32 2,6-Dinitrotoluene	54 Benzo(a)pyrene
11 2-Methyl-4,6-dinitrophenol	33 Fluorene	55 Indeno(1,2,3-cd)pyrene
12 Pentachlorophenol	34 4-Chlorophenyl phenyl ether	56 Dibenzo(a,h)anthracene
13 4-Methylphenol	35 2,4-Dinitrotoluene	57 Benzo(g,h,i)perylene
14 1,3-Dichlorobenzene	36 2-Methylnaphthalene	58 2-Nitroaniline
15 1,4-Dichlorobenzene	37 Diethylphthalate	59 3-Nitroaniline
16 1,2-Dichlorobenzene	38 N-nitrosodiphenylamine	60 4-Nitroaniline
17 Hexachloroethane	39 Hexachlorobenzene	61 4-Chloroaniline
18 Bis (2-chloroethyl) ether	40 4-Bromophenyl phenyl ether	62 Benzyl Alcohol
19 Bis (2-chloroisopropyl) ether	41 Phenanthrene	63 Benzoic Acid
20 N-Nitrosodi-n-propylamine	42 Anthracene	64 Dibenzofuran
21 Nitrobenzene	43 Di-n-butyl phthalate	
22 Hexachlorobutadiene	44 Fluoranthene	
CLP NSL PESTICIDES/PCBs		
1 Alpha-BHC	10 Dieldrin	19 Arochlor-1016
2 Gamma-BHC (Lindane)	11 Endrin	20 Arochlor-1242
3 Beta-BHC	12 4,4'-DDD	21 Arochlor-1221
4 Delta-BHC	13 Endosulfan II	22 Arochlor-1232
5 Heptachlor	14 4,4'-DDT	23 Arochlor-1248
6 Aldrin	15 Endosulfan Sulfate	24 Arochlor-1254
7 Heptachlor epoxide	16 Methoxychlor	25 Arochlor-1260
8 Endosulfan I	17 Chlordane	26 Endrin ketone
9 4,4'-DDE	18 Toxaphene	

Note: See parameter list and analysis sets in Table 3 of SOP or 2B of QAPP

**LIST OF CHEMICAL COMPOUNDS FOR PARAMETERS IN TABLE 3
(for PHASE II, scheduled November 1986)**

PCDDs/PCDFs		
1 Tetra-CDD	5 Octa-CDD	9 Hepta-CDF
2 Penta-CDD	6 Tetra-CDF	10 Octa-CDF
3 Hexa-CDD	7 Penta-CDF	
4 Hepta-CDD	8 Hexa-CDF	
EXPLOSIVES RESIDUES BY HPLC		
1 HMX	4 1,3 DNB	7 2,4,6 TNT
2 RDX	5 NB	8 2,6 DNT
3 1,3,5 TNT	6 TETRYL	9 2,4 DNT
CLP NSL METALS		
1 Aluminum	9 Cobalt	17 Potassium
2 Antimony	10 Copper	18 Selenium
3 Arsenic	11 Iron	19 Silver
4 Barium	12 Lead	20 Sodium
5 Beryllium	13 Magnesium	21 Thallium
6 Cadmium	14 Manganese	22 Vanadium
7 Calcium	15 Mercury	23 Zinc
8 Chromium	16 Nickel	
Hazardous Metals (40CFR 141)		
1 Arsenic	4 Chromium	7 Selenium
2 Barium	5 Lead	8 Silver
3 Cadmium	6 Mercury	
OTHERS		
INDICATORS		
1 pH	NITROGEN SERIES	
2 Percent solids	1 Ammonia Nitrogen	CYANIDE
	2 Nitrate Nitrogen	FLUORIDE
	3 Nitrite Nitrogen	TOTAL PHOSPHORUS

Note: See parameter list and analysis sets in Table 3 of SOP or 2B of QAPP

SUMMARY OF PHASE I SAMPLING AND ANALYSIS (Completed November 1985)

SITE NO.	SAMPLE TYPE	WATER	SOILS	SEDIMENTS
		NO. OF ANAL. SAMPL TYPE	NO. OF ANAL. SAMPL TYPE	NO. OF ANAL. SAMPL TYPE
3 AREA 11 SOUTH	0 -	3 A 1 P	1 A 1 D	
4 AREA 11 NORTH	0 -	1 D	1 A 1 P	
5 AREA 11 ACID POND	1 A	1 A	1 A 1 P	
7A D AREA NORTH LAWN	0 -	16 A 1 P	0 -	
11A P AREA NORTH	0 -	4 A	4 A 1 P	
7 D AREA SOUTHEAST DRAINAGE	1 A	0 -	1 A	
8 D AREA SOUTHWEST DRAINAGE	1 A	0 -	1 A	
9 D AREA NORTHWEST DRAINAGE	1 A	0 -	1 A	
10 WATERWORKS NORTH DRAINAGE	1 A	0 -	1 D 1 G	
11 P AREA SOUTHEAST DRAINAGE	1 A	0 -	1 A 1 P	
20 D AREA SOUTH	0 -	0 -	1 A 1 P	
12 AREA 14 IMPOUNDMENT	0 -	1 D	1 A 1 G	
13 AREA 14 CHARGE HOUSE SITE	0 -	6 A	0 -	
14 AREA 14 SOLVENT STORAGE	2 A	0 -	2 A 1 P	
15 AREA 7 PLATING POND	1 A	0 -	1 A	
16 AREA 7 INDUSTRIAL SITE	2 A	7 A 2 D 1 P 1 G	3 A 1 P	
17 JOB CORPS LANDFILL	2 A	5 A 2 D 2 G	0 -	
18 AREA 13 LOADING PLATFORM	0 -	4 A 1 P	0 -	

SUMMARY OF PHASE I SAMPLING AND ANALYSIS (Completed November 1985)

SITE NO.	SAMPLE TYPE	WATER NO. OF ANAL. SAMPL TYPE	SOILS NO. OF ANAL. SAMPL TYPE	SEDIMENTS NO. OF ANAL. SAMPL TYPE
19 AREA 13 BUNKER 1-3		0 -	5 A 1 P	0 -
30 MUNITIONS CONTROL SITE		0 -	1 D 1 G	0 -
21 SOUTHEAST CORNER FIELD		0 -	1 A 1 P	0 -
22 OLD REFUGEE SHOP		1 A	0 -	1 A 1 P
24 PEPSI-WEST		1 A	0 -	1 A 1 P
25 C.O.CREEK AT MARION LP		3 A	0 -	2 A 1 D 1 G
26 C.O.CREEK BELOW MARION STP		2 A	0 -	2 A
27 C.O.CREEK BELOW 157 DREDGE		1 A	0 -	1 D
28 WATER TOWER LANDFILL		0 -	11 A 1 D 1 G	0 -
29 FIRE STATION LANDFILL		0 -	5 A 2 D 1 G	0 -
32 AREA 9 LANDFILL		0 -	1 A 3 B 27 C 9 E	15 A 3 D
33 AREA 9 BUILDING COMPLEX		0 -	184 B 4 D	0 -
35 AREA 9 EAST WATERWAY		0 -	0 -	1 A 1 P
34 CRAB ORCHARD LAKE		5 B	0 -	0 -
31 REFUGEE CONTROL SITE		0 -	1 D 1 G	0 -
TOTAL NUMBER OF ANALYSES		26	328	61 415

SUMMARY BY ANALYSIS SETS OF PHASE I (Completed November 1985)

NO. OF ANALYSES	SCREENING					SUB-TOTAL	FULL ANALYSIS			TOTAL
	A	B	C	D	E		F	G	H	
WATER	21	0	0	0	5	26	0	0	0	26
SOILS	72	192	27	15	0	306	6	7	9	328
SEDIMENTS	41	0	0	7	0	48	10	3	0	61
SUB-TOTAL	134	192	27	22	5	300	16	10	9	415
QA/QC - WATER	1	0	0	0	0	1	0	0	0	1
QA/QC - SOIL	12	31	4	6	0	53	1	2	2	58
QA/QC - SEDIMENT	7	0	0	1	0	8	2	1	0	11
QA/QC - BLANKS	9	0	0	1	0	10	0	2	1	13
QA/QC - TOTAL	29	31	4	8	0	72	3	5	3	83
TOTAL	163	223	31	30	5	452	19	15	12	498

PHASE II SAMPLING AND ANALYSIS SUMMARY BY SITES

SITE NO.	SAMPLE TYPE	WATER	WELL	SOILS	SEDIMENTS	BIOTA
		NO. OF ANAL. SAMPL TYPE	NO. OF ANAL. SAMPL TYPE	NO. OF ANAL. SAMPL TYPE	NO. OF ANAL. SAMPL TYPE	NO. OF ANAL. SAMPL TYPE
NOTE: * indicates re-sampling/re-analysis of Phase I samples						
3 AREA 11 SOUTH		No Phase II sampling and/or analysis				
4 AREA 11 NORTH		No Phase II sampling and/or analysis				
5 AREA 11 ACID POND		No Phase II sampling and/or analysis				
7A D AREA NORTH LAWN	0 -	0 -	6 AJ *	0 -	0 -	0 -
11A P AREA NORTH	0 -	0 -	1 AJ *	0 -	0 -	0 -
7 D AREA SOUTHEAST DRAINAGE	0 -	0 -	0 -	1 AJ *	0 -	0 -
8 D AREA SOUTHWEST DRAINAGE		No Phase II sampling and/or analysis				
9 D AREA NORTHWEST DRAINAGE	0 -	0 -	0 -	1 K *	0 -	0 -
10 WATERWORKS NORTH DRAINAGE	1 J	0 -	0 -	5 J	0 -	1 AJ *
11 P AREA SOUTHEAST DRAINAGE	1 K *	0 -	0 -	1 AJ *	0 -	0 -
20 D AREA SOUTH	1 K *	0 -	0 -	0 -	0 -	0 -
12 AREA 14 INPOUNDMENT		No Phase II sampling and/or analysis				
13 AREA 14 CHANGE HOUSE SITE		No Phase II sampling and/or analysis				
14 AREA 14 SOLVENT STORAGE	1 L	0 -	0 -	1 L	0 -	0 -
15 AREA 7 PLATING POND	0 -	1 H	0 -	1 H	0 -	0 -
16 AREA 7 INDUSTRIAL SITE	1 O	0 -	0 -	1 O	0 -	0 -
17 JOH CORPS LANDFILL	2 V	5 V	35 P	6 O	0 -	0 -
			12 Q			
18 AREA 13 LOADING PLATFORM		No Phase II sampling and/or analysis				
19 AREA 13 BUNKER 1-3	0 -	0 -	1 AJ *	0 -	0 -	0 -
30 MUNITIONS CONTROL SITE	0 -	1 I	1 I	0 -	0 -	0 -
21 SOUTHEAST CORNER FIELD	0 -	0 -	1 AJ *	0 -	0 -	0 -
22 OLD REFUGEE SHOP	0 -	1 U	1 I	3 R	0 -	0 -
				1 Z		

PHASE II SAMPLING AND ANALYSIS SUMMARY BY SITES

SITE NO.	SAMPLE TYPE	WATER	VELL	SOILS	SEDIMENTS	BIOTA
		NO. OF ANAL. SAMPLE TYPE	NO. OF ANAL. SAMPLE TYPE	NO. OF ANAL. SAMPLE TYPE	NO. OF ANAL. SAMPLE TYPE	NO. OF ANAL. SAMPLE TYPE
NOTE: * indicates re-sampling/re-analysis of Phase I samples						
24 PEPSI-WEST		0 -	0 -	0 -	1 AJ *	0 -
25 C.O.CREEK AT MARION LP		0 -	0 -	0 -	1 AA *	0 -
26 C.O.CREEK BELOW MARION STP		No Phase II sampling and/or analysis				
27 C.O.CREEK BELOW 157 DREDGE		No Phase II sampling and/or analysis				
28 WATER TOWER LANDFILL		0 -	4 S	4 AB	0 -	0 -
29 PINE STATION LANDFILL		0 -	5 S	13 AC	0 -	0 -
32 AREA 9 LANDFILL		0 -	5 AG	29 AB	37 AP 5 AD	0 -
33 AREA 9 BUILDING COMPLEX		0 -	3 I	148 S 3 AI	0 -	0 -
35 AREA 9 EAST WATERWAY		No Phase II sampling and/or analysis				
34 CRAB ORCHARD LAKE		10 AL 5 AK	0 -	0 -	0 I 2 AM	30 T
31 REFUGEE CONTROL SITE		0 -	1 I	1 I	0 -	0 -
TOTAL NUMBER OF ANALYSES		22	26	251	76	30 405

PHASE II SAMPLING AND ANALYSIS SUMMARY BY SETS

NO. OF ANALYSES	ANALYSIS SET																	
	B	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
WATER	0	0	1	2	1	0	0	1	0	0	0	0	0	0	2	0	0	0
WELLS	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	5	5	0
SOILS	148	0	0	0	0	0	0	0	35	12	0	0	0	0	0	0	0	2
SEDIMENTS	0	1	5	1	1	0	1	1	0	6	3	0	0	0	0	0	0	0
BIOTA	0	0	0	0	0	0	0	0	0	0	0	0	30	0	0	0	0	0
SUB-TOTAL	148	1	6	3	2	1	1	2	35	18	3	9	30	1	2	5	5	2
QA/QC - WATER	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0
QA/QC - WELL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0
QA/QC - SOIL	23	0	0	0	0	0	0	0	5	2	0	0	0	0	0	0	0	1
QA/QC - SEDIMENT	0	2	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0
QA/QC - BLANKS	2	0	1	0	0	0	0	0	1	1	0	0	0	0	1	0	1	1
QA/QC - TOTAL	25	2	2	0	1	0	0	0	6	4	1	2	0	0	2	1	2	2
TOTAL	173	10	8	3	3	1	1	2	41	22	4	11	30	1	4	6	7	4

SAMPLING AND ANALYSIS SUMMARY BY SETS

ANALYSIS SET (Cont'd)

NO. OF ANALYSES	I	AA	AB	AC	AD	AE	AP	AG	AM	AI	AJ	AK	AL	TOTAL
WATER	0	0	0	0	0	0	0	0	0	0	0	5	10	22
WELLS	0	0	0	0	0	0	0	5	0	0	0	0	0	26
SOILS	1	0	4	13	0	24	0	0	0	3	9	0	0	251
SEDIMENTS	1	1	0	0	5	0	37	0	2	0	4	0	0	76
BIOTA	0	0	0	0	0	0	0	0	0	0	0	0	0	30
SUB-TOTAL	2	1	4	13	5	24	37	5	2	3	13	5	10	405
QA/QC - WATER	0	0	0	0	0	0	0	0	0	0	0	2	2	6
QA/QC - WELL	0	0	0	0	0	0	0	1	0	0	0	0	0	5
QA/QC - SOIL	1	0	1	2	0	3	0	0	0	1	2	0	0	91
QA/QC - SEDIMENT	0	0	0	0	1	0	6	0	1	0	1	0	0	14
QA/QC - BLANKS	0	0	1	1	1	0	1	1	0	0	0	0	1	14
QA/QC - TOTAL	1	0	2	3	2	3	7	2	1	1	3	2	3	80
TOTAL	3	1	6	16	7	27	44	7	3-	4	16	7	13	405

PHASE II SAMPLING

SITE # 3
AREA 11 SOUTH

PARAMETERS NUMBER OF SAMPLES

1. CLP HSL Full Analysis
 2. CLP HSL Volatiles
 3. CLP HSL Base/Neut/Acids
 4. Nitrosamines (CLP, soil)
 5. Nitrosamines (low, water)
 6. CLP HSL Pesticide/PCB
 7. PCB's (general)
 8. PCB's (low level, water)
 9. PCB's (semi low, sediment)
- NO PHASE II
10. Metals - CLP HSL
 11. Metals - NIPDWR(40CFR141)
 12. Special - Mercury
 - Cadmium
 - Chromium
 - Magnesium
 - Lead
 - Arsenic
 - Copper
 13. EP Toxicity - Cr
 - Cd, Cr, Pb
 14. Cyanide
 15. Indicators - pH
 - NH₃, NO₃, F
 16. Explosives by HPLC
 17. Lipids
 18. PCDD/PCDF
 19. Total Phosphorus
 20. Grain Size
 21. Percent Solids (soil/sed)

NOTE: 1. Detection levels in Table 7C
2. See analytical procedures in
Table 10 of QAPP (Sept. 1986)
3. See Table 4 for compounds
included in parameters
4. See Table 6, pages 3 & 4 for
field duplicates and spikes

PHASE II SAMPLING

SITE # 4
AREA 11 NORTH

PARAMETERS	NUMBER OF SAMPLES
1. CLP HSL Full Analysis	
2. CLP HSL Volatiles	
3. CLP HSL Base/Neut/Acids	
4. Nitrosamines (CLP, soil)	
5. Nitrosamines (low, water)	
6. CLP HSL Pesticide/PCB	
7. PCB's (general)	
8. PCB's (low level, water)	
9. PCB's (semi low, sediment)	
	NO PHASE II
10. Metals - CLP HSL	
11. Metals - NIPDWR(40CFR141)	
12. Special - Mercury	
- Cadmium	
- Chromium	
- Magnesium	
- Lead	
- Arsenic	
- Copper	
13. EP Toxicity - Cr	
- Cd, Cr, Pb	
14. Cyanide	
15. Indicators - pH	
- NH3, NO3, F	
16. Explosives by HPLC	
17. Lipids	
18. PCDD/PCDF	
19. Total Phosphorus	
20. Grain Size	
21. Percent Solids (soil/sed)	

NOTE:

1. Detection levels in Table 7C
2. See analytical procedures in Table 10 of QAPP (Sept. 1986)
3. See Table 4 for compounds included in parameters
4. See Table 6, pages 3 & 4 for field duplicates and spikes

PHASE II SAMPLING

SITE # 5
AREA 11 ACID POND

PARAMETERS	NUMBER OF SAMPLES
------------	-------------------

1. CLP HSL Full Analysis
2. CLP HSL Volatiles
3. CLP HSL Base/Neut/Acids
4. Nitrosamines (CLP, soil)
5. Nitrosamines (low, water)
6. CLP HSL Pesticide/PCB
7. PCB's (general)
8. PCB's (low level, water)
9. PCB's (semi low, sediment)
10. Metals - CLP HSL
11. Metals - NIPDWR(40CFR141)
12. Special - Mercury
 - Cadmium
 - Chromium
 - Magnesium
 - Lead
 - Arsenic
 - Copper
13. EP Toxicity - Cr
 - Cd, Cr, Pb
14. Cyanide
15. Indicators - pH
 - NH3, NO3, F
16. Explosives by HPLC
17. Lipids
18. PCDD/PCDF
19. Total Phosphorus
20. Grain Size
21. Percent Solids (soil/sed)

NOTE: 1. Detection levels in Table 7C
 2. See analytical procedures in
 Table 10 of QAPP (Sept. 1986)
 3. See Table 4 for compounds
 included in parameters
 4. See Table 6, pages 3 & 4 for
 field duplicates and spikes

PHASE II SAMPLING

SITE # 7A
D AREA NORTH LAWN

PARAMETERS

NUMBER OF SAMPLES

SOILS

- | | |
|---|---|
| 1. CLP HSL Full Analysis | |
| 2. CLP HSL Volatiles | |
| 3. CLP HSL Base/Neut/Acids | |
| 4. Nitrosamines (CLP, soil) | |
| 5. Nitrosamines (low, water) | |
| 6. CLP HSL Pesticide/PCB | |
| 7. PCB's (general) | |
| 8. PCB's (low level, water) | |
| 9. PCB's (semi low, sediment) | |
| 10. Metals - CLP HSL | |
| 11. Metals - NIPDWR(40CFR141) | |
| 12. Special - Mercury | 6 |
| - Cadmium | |
| - Chromium | |
| - Magnesium | |
| - Lead | |
| - Arsenic | |
| - Copper | |
| 13. EP Toxicity - Cr | |
| - Cd, Cr, Pb | |
| 14. Cyanide | |
| 15. Indicators - pH | |
| - NH ₃ , NO ₃ , F | |
| 16. Explosives by HPLC | |
| 17. Lipids | |
| 18. PCDD/PCDF | |
| 19. Total Phosphorus | |
| 20. Grain Size | |
| 21. Percent Solids (soil/sed) | 6 |

NOTE: 1. Detection levels in Table 7C
 2. See analytical procedures in
 Table 10 of QAPP (Sept. 1986)
 3. See Table 4 for compounds
 included in parameters
 4. See Table 6, pages 3 & 4 for
 field duplicates and spikes
 5. No Phase II sampling
 6. The six soils are Phase I
 samples for Hg re-analysis

PHASE II SAMPLING

SITE # 11A
P AREA NORTH

PARAMETERS	NUMBER OF SAMPLES
	SOILS

1. CLP HSL Full Analysis
2. CLP HSL Volatiles
3. CLP HSL Base/Neut/Acids
4. Nitrosamines (CLP, soil)
5. Nitrosamines (low, water)
6. CLP HSL Pesticide/PCB
7. PCB's (general)
8. PCB's (low level, water)
9. PCB's (semi low, sediment)
10. Metals - CLP HSL
11. Metals - NIPDWR(40CFR141)
12. Special - Mercury
 - Cadmium
 - Chromium
 - Magnesium
 - Lead
 - Arsenic
 - Copper
13. EP Toxicity - Cr
 - Cd, Cr, Pb
14. Cyanide
15. Indicators - pH
 - NH3, NO3, F
16. Explosives by HPLC
17. Lipids
18. PCDD/PCDF
19. Total Phosphorus
20. Grain Size
21. Percent Solids (soil/sed) 1

NOTE:

1. Detection levels in Table 7C
2. See analytical procedures in Table 10 of QAPP (Sept. 1986)
3. See Table 4 for compounds included in parameters
4. See Table 6, pages 3 & 4 for field duplicates and spikes
5. No Phase II sampling
6. The one soil is Phase I sample for Hg re-analysis

PHASE II SAMPLING

SITE # 7
 D AREA SOUTHEAST DRAINAGE

PARAMETERS	NUMBER OF SAMPLES
	SEDIMENT
1. CLP HSL Full Analysis	
2. CLP HSL Volatiles	
3. CLP HSL Base/Neut/Acids	
4. Nitrosamines (CLP, soil)	
5. Nitrosamines (low, water)	
6. CLP HSL Pesticide/PCB	
7. PCB's (general)	
8. PCB's (low level, water)	
9. PCB's (semi low, sediment)	
10. Metals - CLP HSL	
11. Metals - NIPDWR(40CFR141)	
12. Special - Mercury	1
- Cadmium	
- Chromium	
- Magnesium	
- Lead	
- Arsenic	
- Copper	
13. EP Toxicity - Cr	
- Cd, Cr, Pb	
14. Cyanide	
15. Indicators - pH	
- NH ₃ , NO ₃ , F	
16. Explosives by HPLC	
17. Lipids	
18. PCDD/PCDF	
19. Total Phosphorus	
20. Grain Size	
21. Percent Solids (soil/sed)	1

NOTE: 1. Detection levels in Table 7C
 2. See analytical procedures in
 Table 10 of QAPP (Sept. 1986)
 3. See Table 4 for compounds
 included in parameters
 4. See Table 6, pages 3 & 4 for
 field duplicates and spikes
 5. No Phase II sampling
 6. One sediment is Phase I
 sample for Hg re-analysis

PHASE II SAMPLING

SITE # 8
D AREA SOUTHWEST DRAINAGE

PARAMETERS	NUMBER OF SAMPLES
1. CLP HSL Full Analysis	
2. CLP HSL Volatiles	
3. CLP HSL Base/Neut/Acids	
4. Nitrosamines (CLP, soil)	
5. Nitrosamines (low, water)	
6. CLP HSL Pesticide/PCB	
7. PCB's (general)	
8. PCB's (low level, water)	
9. PCB's (semi low, sediment)	
10. Metals - CLP HSL	NO PHASE II
11. Metals - NIPDWR(40CFR141)	
12. Special - Mercury	
- Cadmium	
- Chromium	
- Magnesium	
- Lead	
- Arsenic	
- Copper	
13. EP Toxicity - Cr	
- Cd, Cr, Pb	
14. Cyanide	
15. Indicators - pH	
- NH ₃ , NO ₃ , F	
16. Explosives by HPLC	
17. Lipids	
18. PCDD/PCDF	
19. Total Phosphorus	
20. Grain Size	
21. Percent Solids (soil/sed)	

NOTE: 1. Detection levels in Table 7C
 2. See analytical procedures in
 Table 10 of QAPP (Sept. 1986)
 3. See Table 4 for compounds
 included in parameters
 4. See Table 6, pages 3 & 4 for
 field duplicates and spikes

PHASE II SAMPLING

SITE # 9

P AREA NORTHWEST DRAINAGE

PARAMETERS	NUMBER OF SAMPLES
	SEDIMENT
1. CLP HSL Full Analysis	
2. CLP HSL Volatiles	
3. CLP HSL Base/Neut/Acids	
4. Nitrosamines (CLP, soil)	
5. Nitrosamines (low, water)	
6. CLP HSL Pesticide/PCB	
7. PCB's (general)	
8. PCB's (low level, water)	
9. PCB's (semi low, sediment)	
10. Metals - CLP HSL	
11. Metals - NIPDWR(40CFR141)	
12. Special - Mercury	1
- Cadmium	
- Chromium	
- Magnesium	
- Lead	
- Arsenic	
- Copper	
13. EP Toxicity - Cr	
- Cd, Cr, Pb	
14. Cyanide	1
15. Indicators - pH	
- NH ₃ , NO ₃ , F	
16. Explosives by HPLC	
17. Lipids	
18. PCDD/PCDF	
19. Total Phosphorus	
20. Grain Size	
21. Percent Solids (soil/sed)	1

NOTE: 1. Detection levels in Table 7C
 2. See analytical procedures in
 Table 10 of QAPP (Sept. 1986)
 3. See Table 4 for compounds
 included in parameters
 4. See Table 6, pages 3 & 4 for
 field duplicates and spikes
 5. One sediment is re-sample and
 analysis for Hg and CN

PHASE II SAMPLING

SITE # 10
WATERWORKS NORTH DRAINAGE

PARAMETERS	NUMBER OF SAMPLES
	WATER SEDIMENT
1. CLP HSL Full Analysis	
2. CLP HSL Volatiles	
3. CLP HSL Base/Neut/Acids	1 5,-
4. Nitrosamines (CLP, soil)	
5. Nitrosamines (low, water)	
6. CLP HSL Pesticide/PCB	
7. PCB's (general)	
8. PCB's (low level, water)	
9. PCB's (semi low, sediment)	
10. Metals - CLP HSL	
11. Metals - NIPDWR(40CFR141)	
12. Special - Mercury	- ,1
- Cadmium	
- Chromium	
- Magnesium	
- Lead	
- Arsenic	
- Copper	
13. EP Toxicity - Cr	
- Cd, Cr, Pb	
14. Cyanide	1 5,-
15. Indicators - pH	1 5,-
- NH3, NO3, F	
16. Explosives by HPLC	
17. Lipids	
18. PCDD/PCDF	
19. Total Phosphorus	
20. Grain Size	
21. Percent Solids (soil/sed)	5,-

NOTE: 1. Detection levels in Table 7C
 2. See analytical procedures in Table 10 of QAPP (Sept. 1986)
 3. See Table 4 for compounds included in parameters
 4. See Table 6, pages 3 & 4 for field duplicates and spikes
 5. Total of 6 sediment samples: five sediment for Phase II; one Phase I sediment sample re-analyzed for Hg

PHASE II SAMPLING

SITE # 11
 P AREA SOUTHEAST DRAINAGE

PARAMETERS	NUMBER OF SAMPLES	
	WATER SEDIMENT	

1. CLP HSL Full Analysis		
2. CLP HSL Volatiles		
3. CLP HSL Base/Neut/Acids		
4. Nitrosamines (CLP, soil)		
5. Nitrosamines (low, water)		
6. CLP HSL Pesticide/PCB		
7. PCB's (general)		
8. PCB's (low level, water)		
9. PCB's (semi low, sediment)		
10. Metals - CLP HSL		
11. Metals - NIPDWR(40CFR141)		
12. Special - Mercury	1	1
- Cadmium		
- Chromium		
- Magnesium		
- Lead		
- Arsenic		
- Copper		
13. EP Toxicity - Cr		
- Cd, Cr, Pb		
14. Cyanide	1	
15. Indicators - pH	1	
- NH3, NO3, F		
16. Explosives by HPLC		
17. Lipids		
18. PCDD/PCDF		
19. Total Phosphorus		
20. Grain Size		
21. Percent Solids (soil/sed)		1

NOTE: 1. Detection levels in Table 7C
 2. See analytical procedures in
 Table 10 of QAPP (Sept. 1986)
 3. See Table 4 for compounds
 included in parameters
 4. See Table 6, pages 3 & 4 for
 field duplicates and spikes
 5. One Phase I sediment sample
 re-analyzed for Hg
 6. One water for re-sampling
 and analysis

PHASE II SAMPLING

SITE # 20
D AREA SOUTH

PARAMETERS	NUMBER OF SAMPLES
	WATER

1. CLP HSL Full Analysis
2. CLP HSL Volatiles
3. CLP HSL Base/Neut/Acids
4. Nitrosamines (CLP, soil)
5. Nitrosamines (low, water)
6. CLP HSL Pesticide/PCB
7. PCB's (general)
8. PCB's (low level, water)
9. PCB's (semi low, sediment)
10. Metals - CLP HSL
11. Metals - NIPDWR(40CFR141)
12. Special - Mercury
 - Cadmium
 - Chromium
 - Magnesium
 - Lead
 - Arsenic
 - Copper
13. EP Toxicity - Cr
 - Cd, Cr, Pb
14. Cyanide
15. Indicators - pH
 - NH3, NO3, F
16. Explosives by HPLC
17. Lipids
18. PCDD/PCDF
19. Total Phosphorus
20. Grain Size
21. Percent Solids (soil/sed)

NOTE: 1. Detection levels in Table 7C
 2. See analytical procedures in
 Table 10 of QAPP (Sept. 1986)
 3. See Table 4 for compounds
 included in parameters
 4. See Table 6, pages 3 & 4 for
 field duplicates and spikes
 5. Water sample is re-analysis;
 If no water is available,
 will use sediment leachate

PHASE II SAMPLING

SITE # 12
AREA 14 IMPOUNDMENT

PARAMETERS

NUMBER OF SAMPLES

- | | |
|---|-------------|
| 1. CLP HSL Full Analysis | |
| 2. CLP HSL Volatiles | |
| 3. CLP HSL Base/Neut/Acids | |
| 4. Nitrosamines (CLP, soil) | |
| 5. Nitrosamines (low, water) | |
| 6. CLP HSL Pesticide/PCB | |
| 7. PCB's (general) | |
| 8. PCB's (low level, water) | |
| 9. PCB's (semi low, sediment) | |
| 10. Metals - CLP HSL | NO PHASE II |
| 11. Metals - NIPDWR(40CFR141) | |
| 12. Special - Mercury | |
| - Cadmium | |
| - Chromium | |
| - Magnesium | |
| - Lead | |
| - Arsenic | |
| - Copper | |
| 13. EP Toxicity - Cr | |
| - Cd, Cr, Pb | |
| 14. Cyanide | |
| 15. Indicators - pH | |
| - NH ₃ , NO ₃ , F | |
| 16. Explosives by HPLC | |
| 17. Lipids | |
| 18. PCDD/PCDF | |
| 19. Total Phosphorus | |
| 20. Grain Size | |
| 21. Percent Solids (soil/sed) | |

NOTE: 1. Detection levels in Table 7C
2. See analytical procedures in
Table 10 of QAPP (Sept. 1986)
3. See Table 4 for compounds
included in parameters
4. See Table 6, pages 3 & 4 for
field duplicates and spikes

PHASE II SAMPLING

SITE # 13
 AREA 14 CHANGE HOUSE SITE

PARAMETERS	NUMBER OF SAMPLES
------------	-------------------

1. CLP HSL Full Analysis
 2. CLP HSL Volatiles
 3. CLP HSL Base/Neut/Acids
 4. Nitrosamines (CLP, soil)
 5. Nitrosamines (low, water)
 6. CLP HSL Pesticide/PCB
 7. PCB's (general)
 8. PCB's (low level, water)
 9. PCB's (semi low, sediment)
- NO PHASE II
10. Metals - CLP HSL
 11. Metals - NIPDWR (40CFR141)
 12. Special - Mercury
 - Cadmium
 - Chromium
 - Magnesium
 - Lead
 - Arsenic
 - Copper
 13. EP Toxicity - Cr
 - Cd, Cr, Pb
 14. Cyanide
 15. Indicators - pH
 - NH₃, NO₃, F
 16. Explosives by HPLC
 17. Lipids
 18. PCDD/PCDF
 19. Total Phosphorus
 20. Grain Size
 21. Percent Solids (soil/sed)

NOTE: 1. Detection levels in Table 7C
 2. See analytical procedures in
 Table 10 of QAPP (Sept. 1986)
 3. See Table 4 for compounds
 included in parameters
 4. See Table 6, pages 3 & 4 for
 field duplicates and spikes

PHASE II SAMPLING

SITE # 14
AREA 14 SOLVENT STORAGE

PARAMETERS

NUMBER OF SAMPLES
WATER SEDIMENT

1. CLP HSL Full Analysis		
2. CLP HSL Volatiles	1	1
3. CLP HSL Base/Neut/Acids	1	1
4. Nitrosamines (CLP, soil)		
5. Nitrosamines (low, water)		
6. CLP HSL Pesticide/PCB		
7. PCB's (general)		
8. PCB's (low level, water)		
9. PCB's (semi low, sediment)		
10. Metals - CLP HSL		
11. Metals - NIPDWR(40CFR141)		
12. Special - Mercury		
- Cadmium		
- Chromium		
- Magnesium		
- Lead		
- Arsenic		
- Copper		
13. EP Toxicity - Cr		
- Cd, Cr, Pb		
14. Cyanide		
15. Indicators - pH	1	1
- NH3, NO3, F		
16. Explosives by HPLC		
17. Lipids		
18. PCDD/PCDF		
19. Total Phosphorus		
20. Grain Size		
21. Percent Solids (soil/sed)	1	

- NOTE:
1. Detection levels in Table 7C
 2. See analytical procedures in Table 10 of QAPP (Sept. 1986)
 3. See Table 4 for compounds included in parameters
 4. See Table 6, pages 3 & 4 for field duplicates and spikes
 5. EPA to request SPCC inspctn.

PHASE II SAMPLING

SITE # 15
 AREA 7 PLATING POND

PARAMETERS	NUMBER OF SAMPLES	
	WELL SEDIMENT	
1. CLP HSL Full Analysis		
2. CLP HSL Volatiles	1	
3. CLP HSL Base/Neut/Acids		
4. Nitrosamines (CLP, soil)		
5. Nitrosamines (low, water)		
6. CLP HSL Pesticide/PCB	1	
7. PCB's (general)		
8. PCB's (low level, water)		
9. PCB's (semi low, sediment)		
10. Metals - CLP HSL	1	
11. Metals - NIPDWR(40CFR141)		
12. Special - Mercury		
- Cadmium	1	
- Chromium	1	1
- Magnesium		
- Lead	1	
- Arsenic	1	
- Copper		
13. EP Toxicity - Cr		1
- Cd, Cr, Pb		
14. Cyanide		
15. Indicators - pH	1	1
- NH ₃ , NO ₃ , F		
16. Explosives by HPLC		
17. Lipids		
18. PCDD/PCDF		
19. Total Phosphorus	1	
20. Grain Size		
21. Percent Solids (soil/sed)		1

NOTE: 1. Detection levels in Table 7C
 2. See analytical procedures in
 Table 10 of QAPP (Sept. 1986)
 3. See Table 4 for compounds
 included in parameters
 4. See Table 6, pages 3 & 4 for
 field duplicates and spikes
 5. Two piezometers for GW level
 6. Field permeability in well

PHASE II SAMPLING

SITE # 16
AREA 7 INDUSTRIAL SITE

PARAMETERS	NUMBER OF SAMPLES	
	WATER	SEDIMENT
1. CLP HSL Full Analysis	1	1
2. CLP HSL Volatiles		
3. CLP HSL Base/Neut/Acids		
4. Nitrosamines (CLP, soil)		
5. Nitrosamines (low, water)		
6. CLP HSL Pesticide/PCB		
7. PCB's (general)		
8. PCB's (low level, water)		
9. PCB's (semi low, sediment)		
10. Metals - CLP HSL		
11. Metals - NIPDWR(40CFR141)		
12. Special - Mercury		
- Cadmium		
- Chromium		
- Magnesium	1	1
- Lead	1	1
- Arsenic	1	1
- Copper		
13. EP Toxicity - Cr		
- Cd, Cr, Pb		
14. Cyanide		
15. Indicators - pH	1	1
- NH ₃ , NO ₃ , F		
16. Explosives by HPLC		
17. Lipids		
18. PCDD/PCDF		
19. Total Phosphorus		
20. Grain Size		
21. Percent Solids (soil/sed)		1

NOTE: 1. Detection levels in Table 7C
 2. See analytical procedures in
 Table 10 of QAPP (Sept. 1986)
 3. See Table 4 for compounds
 included in parameters
 4. See Table 6, pages 3 & 4 for
 field duplicates and spikes

PHASE II SAMPLING

SITE # 17
JOB CORPS LANDFILL

PARAMETERS		NUMBER OF SAMPLES			
		WATER	WELL	SOILS	SEDIMENT
1. CLP HSL Full Analysis	2	4 , 1			
2. CLP HSL Volatiles					
3. CLP HSL Base/Neut/Acids					
4. Nitrosamines (CLP, soil)				- , 12	
5. Nitrosamines (low, water)	2	4 , 1			
6. CLP HSL Pesticide/PCB					
7. PCB's (general)				35 , -	
8. PCB's (low level, water)	2	4 , 1			
9. PCB's (semi low, sediment)				- , 12	6
10. Metals - CLP HSL		4 , 1			
11. Metals - NIPDWR(40CFR141)					
12. Special - Mercury				1	
- Cadmium	2	4 , 1	35 , 12		6
- Chromium		4 , 1			
- Magnesium					
- Lead	2	4 , 1	35 , 12		6
- Arsenic	2	4 , 1			
- Copper	2				
13. EP Toxicity - Cr					
- Cd, Cr, Pb					
14. Cyanide		4 , 1			
15. Indicators - pH	2	4 , 1	- , 12		6
- NH3, NO3, F		4 , 1			
16. Explosives by HPLC	2	4 , 1	- , 12		6
17. Lipids					
18. PCDD/PCDF					
19. Total Phosphorus					
20. Grain Size		4 , 1			
21. Percent Solids (soil/sed)					6

- NOTE: 1. Detection levels in Table 7C
 2. See analytical procedures in Table 10 of QAPP (Sept. 1986)
 3. See Table 4 for compounds included in parameters
 4. See Table 6, pages 3 & 4 for field duplicates and spikes
 5. 4 shallow and one deep well,
 6. 35 surface and 12 core soils,
 7. Field permeability in wells
 8. One Phase I soil sample will be re-analyzed for Hg
 9. Small mammals for liver

PHASE II SAMPLING

SITE # 18
AREA 13 LOADING PLATFORM

PARAMETERS NUMBER OF SAMPLES

1. CLP HSL Full Analysis
2. CLP HSL Volatiles
3. CLP HSL Base/Neut/Acids
4. Nitrosamines (CLP, soil)
5. Nitrosamines (low, water)
6. CLP HSL Pesticide/PCB
7. PCB's (general)
8. PCB's (low level, water)
9. PCB's (semi low, sediment)

NO PHASE II

10. Metals - CLP HSL
11. Metals - NIPDWR(40CFR141)
12. Special - Mercury
 - Cadmium
 - Chromium
 - Magnesium
 - Lead
 - Arsenic
 - Copper
13. EP Toxicity - Cr
 - Cd, Cr, Pb
14. Cyanide
15. Indicators - pH
 - NH₃, NO₃, F
16. Explosives by HPLC
17. Lipids
18. PCDD/PCDF
19. Total Phosphorus
20. Grain Size
21. Percent Solids (soil/sed)

NOTE: 1. Detection levels in Table 7C
2. See analytical procedures in
Table 10 of QAPP (Sept. 1986)
3. See Table 4 for compounds
included in parameters
4. See Table 6, pages 3 & 4 for
field duplicates and spikes
5. Small mammals for liver
examination

PHASE II SAMPLING

SITE # 19
 AREA 13 BUNKER 1-3

PARAMETERS	NUMBER OF SAMPLES
	SOILS

1. CLP HSL Full Analysis
2. CLP HSL Volatiles
3. CLP HSL Base/Neut/Acids
4. Nitrosamines (CLP, soil)
5. Nitrosamines (low, water)
6. CLP HSL Pesticide/PCB
7. PCB's (general)
8. PCB's (low level, water)
9. PCB's (semi low, sediment)
10. Metals - CLP HSL
11. Metals - NIPDWR(40CFR141)
12. Special - Mercury
 - Cadmium
 - Chromium
 - Magnesium
 - Lead
 - Arsenic
 - Copper
13. EP Toxicity - Cr
 - Cd, Cr, Pb
14. Cyanide
15. Indicators - pH
 - NH3, NO3, F
16. Explosives by HPLC
17. Lipids
18. PCDD/PCDF
19. Total Phosphorus
20. Grain Size
21. Percent Solids (soil/sed) 1

NOTE: 1. Detection levels in Table 7C
 2. See analytical procedures in
 Table 10 of QAPP (Sept. 1986)
 3. See Table 4 for compounds
 included in parameters
 4. See Table 6, pages 3 & 4 for
 field duplicates and spikes
 5. No Phase II sampling
 6. The one soil is Phase I
 sample for Hg re-analysis

PHASE II SAMPLING

SITE # 30
 MUNITIONS CONTROL SITE

PARAMETERS	NUMBER OF SAMPLES
	WELL SOILS
1. CLP HSL Full Analysis	1
2. CLP HSL Volatiles	
3. CLP HSL Base/Neut/Acids	1
4. Nitrosamines (CLP, soil)	
5. Nitrosamines (low, water)	1
6. CLP HSL Pesticide/PCB	
7. PCB's (general)	
8. PCB's (low level, water)	1
9. PCB's (semi low, sediment)	
10. Metals - CLP HSL	1
11. Metals - NIPDWR(40CFR141)	
12. Special - Mercury	
- Cadmium	1
- Chromium	1
- Magnesium	
- Lead	1
- Arsenic	1
- Copper	
13. EP Toxicity - Cr	
- Cd, Cr, Pb	
14. Cyanide	1
15. Indicators - pH	1
- NH3, NO3, F	
16. Explosives by HPLC	
17. Lipids	
18. PCDD/PCDF	
19. Total Phosphorus	
20. Grain Size	
21. Percent Solids (soil/sed)	1

NOTE: 1. Detection levels in Table 7C
 2. See analytical procedures in
 Table 10 of QAPP (Sept. 1986)
 3. See Table 4 for compounds
 included in parameters
 4. See Table 6, pages 3 & 4 for
 field duplicates and spikes
 5. One surface soil

PHASE II SAMPLING

SITE # 21
 SOUTHEAST CORNER FIELD

PARAMETERS	NUMBER OF SAMPLES
	SOILS
1. CLP HSL Full Analysis	
2. CLP HSL Volatiles	
3. CLP HSL Base/Neut/Acids	
4. Nitrosamines (CLP, soil)	
5. Nitrosamines (low, water)	
6. CLP HSL Pesticide/PCB	
7. PCB's (general)	
8. PCB's (low level, water)	
9. PCB's (semi low, sediment)	
10. Metals - CLP HSL	
11. Metals - NIPDWR(40CFR141)	
12. Special - Mercury	1
- Cadmium	
- Chromium	
- Magnesium	
- Lead	
- Arsenic	
- Copper	
13. EP Toxicity - Cr	
- Cd, Cr, Pb	
14. Cyanide	
15. Indicators - pH	
- NH3, NO3, F	
16. Explosives by HPLC	
17. Lipids	
18. PCDD/PCDF	
19. Total Phosphorus	
20. Grain Size	
21. Percent Solids (soil/sed)	1

- NOTE: 1. Detection levels in Table 7C
 2. See analytical procedures in
 Table 10 of QAPP (Sept. 1986)
 3. See Table 4 for compounds
 included in parameters
 4. See Table 6, pages 3 & 4 for
 field duplicates and spikes
 5. No Phase II sampling
 6. The one soil is Phase I
 sample for Hg re-analysis

PHASE II SAMPLING

SITE # 22
OLD REFUGE SHOP

PARAMETERS	NUMBER OF SAMPLES		
	WELL	SOILS	SEDIMENT
1. CLP HSL Full Analysis			
2. CLP HSL Volatiles	1		
3. CLP HSL Base/Neut/Acids	1	1	1 , -
4. Nitrosamines (CLP, soil)			
5. Nitrosamines (low, water)			
6. CLP HSL Pesticide/PCB			
7. PCB's (general)			
8. PCB's (low level, water)			
9. PCB's (semi low, sediment)			
10. Metals - CLP HSL	1		
11. Metals - NIPDWR(40CFR141)			
12. Special - Mercury			
- Cadmium	1	1	1 , 3
- Chromium	1	1	1 , 3
- Magnesium			
- Lead	1		- , 3
- Arsenic	1		
- Copper			
13. EP Toxicity - Cr - Cd, Cr, Pb			- , 3
14. Cyanide	1	1	1 , 3
15. Indicators - pH - NH3, NO3, F	1		- , 3
16. Explosives by HPLC			
17. Lipids			
18. PCDD/PCDF			
19. Total Phosphorus			
20. Grain Size			
21. Percent Solids (soil/sed)		1	1 , 3

- NOTE:
1. Detection levels in Table 7C
 2. See analytical procedures in Table 10 of QAPP (Sept. 1986)
 3. See Table 4 for compounds included in parameters
 4. See Table 6, pages 3 & 4 for field duplicates and spikes
 5. Total of 4 sediment samples
 6. Field permeability in well

PHASE II SAMPLING

SITE # 24
PEPSI-WEST

PARAMETERS	NUMBER OF SAMPLES
	SEDIMENT
1. CLP HSL Full Analysis	
2. CLP HSL Volatiles	
3. CLP HSL Base/Neut/Acids	
4. Nitrosamines (CLP, soil)	
5. Nitrosamines (low, water)	
6. CLP HSL Pesticide/PCB	
7. PCB's (general)	
8. PCB's (low level, water)	
9. PCB's (semi low, sediment)	
10. Metals - CLP HSL	
11. Metals - NIPDWR(40CFR141)	
12. Special - Mercury	1
- Cadmium	
- Chromium	
- Magnesium	
- Lead	
- Arsenic	
- Copper	
13. EP Toxicity - Cr	
- Cd, Cr, Pb	
14. Cyanide	
15. Indicators - pH	
- NH ₃ , NO ₃ , F	
16. Explosives by HPLC	
17. Lipids	
18. PCDD/PCDF	
19. Total Phosphorus	
20. Grain Size	
21. Percent Solids (soil/sed)	1

- NOTE:
1. Detection levels in Table 7C
 2. See analytical procedures in Table 10 of QAPP (Sept. 1986)
 3. See Table 4 for compounds included in parameters
 4. See Table 6, pages 3 & 4 for field duplicates and spikes
 5. No Phase II sampling
 6. One sediment is Phase I sample for Hg re-analysis

PHASE II SAMPLING

SITE # 25
 C.O. CREEK AT MARION LF

PARAMETERS	NUMBER OF SAMPLES
	SEDIMENT
1. CLP HSL Full Analysis	
2. CLP HSL Volatiles	
3. CLP HSL Base/Neut/Acids	
4. Nitrosamines (CLP, soil)	
5. Nitrosamines (low, water)	
6. CLP HSL Pesticide/PCB	
7. PCB's (general)	
8. PCB's (low level, water)	
9. PCB's (semi low, sediment)	
10. Metals - CLP HSL	
11. Metals - NIPDWR(40CFR141)	
12. Special - Mercury	
- Cadmium	
- Chromium	
- Magnesium	
- Lead	
- Arsenic	
- Copper	
13. EP Toxicity - Cr	
- Cd, Cr, Pb	
14. Cyanide	1
15. Indicators - pH	
- NH3, NO3, F	
16. Explosives by HPLC	
17. Lipids	
18. PCDD/PCDF	
19. Total Phosphorus	
20. Grain Size	
21. Percent Solids (soil/sed)	1

NOTE: 1. Detection levels in Table 7C
 2. See analytical procedures in
 Table 10 of QAPP (Sept. 1986)
 3. See Table 4 for compounds
 included in parameters
 4. See Table 6, pages 3 & 4 for
 field duplicates and spikes
 5. Sediment re-sampled for CN

PHASE II SAMPLING

SITE # 26

C.O. CREEK BELOW MARION STP

PARAMETERS	NUMBER OF SAMPLES
------------	-------------------

- | | |
|---|-------------|
| 1. CLP HSL Full Analysis | |
| 2. CLP HSL Volatiles | |
| 3. CLP HSL Base/Neut/Acids | |
| 4. Nitrosamines (CLP, soil) | |
| 5. Nitrosamines (low, water) | |
| 6. CLP HSL Pesticide/PCB | |
| 7. PCB's (general) | |
| 8. PCB's (low level, water) | |
| 9. PCB's (semi low, sediment) | |
| 10. Metals - CLP HSL | NO PHASE II |
| 11. Metals - NIPDWR(40CFR141) | |
| 12. Special - Mercury | |
| - Cadmium | |
| - Chromium | |
| - Magnesium | |
| - Lead | |
| - Arsenic | |
| - Copper | |
| 13. EP Toxicity - Cr | |
| - Cd, Cr, Pb | |
| 14. Cyanide | |
| 15. Indicators - pH | |
| - NH ₃ , NO ₃ , F | |
| 16. Explosives by HPLC | |
| 17. Lipids | |
| 18. PCDD/PCDF | |
| 19. Total Phosphorus | |
| 20. Grain Size | |
| 21. Percent Solids (soil/sed) | |

NOTE: 1. Detection levels in Table 7C
2. See analytical procedures in
Table 10 of QAPP (Sept. 1986)
3. See Table 4 for compounds
included in parameters
4. See Table 6, pages 3 & 4 for
field duplicates and spikes

PHASE II SAMPLING

SITE # 27

C.O. CREEK BELOW 157 DREDGE

PARAMETERS

NUMBER OF SAMPLES

1. CLP HSL Full Analysis
2. CLP HSL Volatiles
3. CLP HSL Base/Neut/Acids
4. Nitrosamines (CLP, soil)
5. Nitrosamines (low, water)
6. CLP HSL Pesticide/PCB
7. PCB's (general)
8. PCB's (low level, water)
9. PCB's (semi low, sediment)
10. Metals - CLP HSL
11. Metals - NIPDWR(40CFR141)
12. Special - Mercury
 - Cadmium
 - Chromium
 - Magnesium
 - Lead
 - Arsenic
 - Copper
13. EP Toxicity - Cr
 - Cd, Cr, Pb
14. Cyanide
15. Indicators - pH
 - NH₃, NO₃, F
16. Explosives by HPLC
17. Lipids
18. PCDD/PCDF
19. Total Phosphorus
20. Grain Size
21. Percent Solids (soil/sed)

NO PHASE II

- NOTE:
1. Detection levels in Table 7C
 2. See analytical procedures in Table 10 of QAPP (Sept. 1986)
 3. See Table 4 for compounds included in parameters
 4. See Table 6, pages 3 & 4 for field duplicates and spikes

PHASE II SAMPLING

SITE # 28
WATER TOWER LANDFILL

PARAMETERS	NUMBER OF SAMPLES
	WELL SOILS
1. CLP HSL Full Analysis	
2. CLP HSL Volatiles	3 , 1
3. CLP HSL Base/Neut/Acids	
4. Nitrosamines (CLP, soil)	
5. Nitrosamines (low, water)	
6. CLP HSL Pesticide/PCB	3 , 1
7. PCB's (general)	4
8. PCB's (low level, water)	
9. PCB's (semi low, sediment)	
10. Metals - CLP HSL	3 , 1
11. Metals - NIPDWR(40CFR141)	
12. Special - Mercury	
- Cadmium	
- Chromium	
- Magnesium	4
- Lead	4
- Arsenic	4
- Copper	4
13. EP Toxicity - Cr	
- Cd, Cr, Pb	
14. Cyanide	3 , 1 4
15. Indicators - pH	3 , 1
- NH3, NO3, F	3 , 1
16. Explosives by HPLC	
17. Lipids	
18. PCDD/PCDF	
19. Total Phosphorus	
20. Grain Size	3 , 1
21. Percent Solids (soil/sed)	4

- NOTE: 1. Detection levels in Table 7C
 2. See analytical procedures in Table 10 of QAPP (Sept. 1986)
 3. See Table 4 for compounds included in parameters
 4. See Table 6, pages 3 & 4 for field duplicates and spikes
 5. 4 soils from two test pits; safety plan in QAPP (Rev.3)
 6. 3 shallow and 1 deep well, 35 surface and 12 core soils,
 7. Field permeability in wells
 8. One soil sample re-run for CN

PHASE II SAMPLING
SITE # 29
FIRE STATION LANDFILL

PARAMETERS	NUMBER OF SAMPLES
	WELL SOILS
1. CLP HSL Full Analysis	
2. CLP HSL Volatiles	4 , 1
3. CLP HSL Base/Neut/Acids	
4. Nitrosamines (CLP, soil)	
5. Nitrosamines (low, water)	
6. CLP HSL Pesticide/PCB	4 , 1
7. PCB's (general)	
8. PCB's (low level, water)	
9. PCB's (semi low, sediment)	
10. Metals - CLP HSL	4 , 1
11. Metals - NIPDWR(40CFR141)	
12. Special - Mercury	
- Cadmium	
- Chromium	
- Magnesium	13
- Lead	13
- Arsenic	
- Copper	
13. EP Toxicity - Cr	
- Cd, Cr, Pb	
14. Cyanide	4 , 1
15. Indicators - pH	4 , 1
- NH3, NO3, F	4 , 1
16. Explosives by HPLC	
17. Lipids	
18. PCDD/PCDF	
19. Total Phosphorus	
20. Grain Size	4 , 1
21. Percent Solids (soil/sed)	13

NOTE: 1. Detection levels in Table 7C
 2. See analytical procedures in
 Table 10 of QAPP (Sept. 1986)
 3. See Table 4 for compounds
 included in parameters
 4. See Table 6, pages 3 & 4 for
 field duplicates and spikes
 5. 4 shallow and 1 deep well,
 6. Field permeability in wells
 7. Six Phase I soil samples
 will be re-analyzed for Hg

PHASE II SAMPLING

SITE # 32
AREA 9 LANDFILL

PARAMETERS	NUMBER OF SAMPLES
	WELL SOILS SEDIMENT
1. CLP HSL Full Analysis	4 , 1 - , 5
2. CLP HSL Volatiles	
3. CLP HSL Base/Neut/Acids	
4. Nitrosamines (CLP, soil)	
5. Nitrosamines (low, water)	4 , 1
6. CLP HSL Pesticide/PCB	
7. PCB's (general)	
8. PCB's (low level, water)	4 , 1
9. PCB's (semi low, sediment)	37 , 5
10. Metals - CLP HSL	4 , 1
11. Metals - NIPDWR(40CFR141)	
12. Special - Mercury	24 , 9
- Cadmium	4 , 1
- Chromium	4 , 1 24 , 9
- Magnesium	
- Lead	4 , 1 24 , 9 37 , 5
- Arsenic	4 , 1
- Copper	
13. EP Toxicity - Cr	
- Cd, Cr, Pb	
14. Cyanide	4 , 1
15. Indicators - pH	4 , 1
- NH3, NO3, F	4 , 1
16. Explosives by HPLC	
17. Lipids	
18. PCDD/PCDF	
19. Total Phosphorus	
20. Grain Size	4 , 1
21. Percent Solids (soil/sed)	24 , 9 37 , 5

- NOTE:
1. Detection levels in Table 7C
 2. See analytical procedures in Table 10 of QAPP (Sept. 1986)
 3. See Table 4 for compounds included in parameters
 4. See Table 6, pages 3 & 4 for field duplicates and spikes
 5. 4 shallow and 1 deep well
 6. Total of 42 sediment samples
 7. 24 surface soils from Phase I
 8. 9 Phase I bottom comp. soils re-analyzed for Hg, Cr & Pb
 9. Field permeability in wells

PHASE II SAMPLING

SITE # 33
 AREA 9 BUILDING COMPLEX

PARAMETERS	NUMBER OF SAMPLES
	WELL SOILS
1. CLP HSL Full Analysis	3 - , 3
2. CLP HSL Volatiles	
3. CLP HSL Base/Neut/Acids	
4. Nitrosamines (CLP, soil)	
5. Nitrosamines (low, water)	3
6. CLP HSL Pesticide/PCB	
7. PCB's (general)	148 , -
8. PCB's (low level, water)	3
9. PCB's (semi low, sediment)	
10. Metals - CLP HSL	3 - , 3
11. Metals - NIPDWR(40CFR141)	
12. Special - Mercury	
- Cadmium	3
- Chromium	3
- Magnesium	
- Lead	3
- Arsenic	3
- Copper	
13. EP Toxicity - Cr - Cd, Cr, Pb	
14. Cyanide	3
15. Indicators - pH - NH3, NO3, F	3
16. Explosives by HPLC	
17. Lipids	
18. PCDD/PCDF	
19. Total Phosphorus	
20. Grain Size	
21. Percent Solids (soil/sed)	148 , 3

NOTE: 1. Detection levels in Table 7C
 2. See analytical procedures in
 Table 10 of QAPP (Sept. 1986)
 3. See Table 4 for compounds
 included in parameters
 4. See Table 6, pages 3 & 4 for
 field duplicates and spikes
 5. Field permeability in wells
 6. Total 151 sediment samples

PHASE II SAMPLING

SITE # 35
AREA 9 EAST WATERWAY

PARAMETERS	NUMBER OF SAMPLES
1. CLP HSL Full Analysis	
2. CLP HSL Volatiles	
3. CLP HSL Base/Neut/Acids	
4. Nitrosamines (CLP, soil)	
5. Nitrosamines (low, water)	
6. CLP HSL Pesticide/PCB	
7. PCB's (general)	
8. PCB's (low level, water)	
9. PCB's (semi low, sediment)	
10. Metals - CLP HSL	NO PHASE II
11. Metals - NIPDWR(40CFR141)	
12. Special - Mercury	
- Cadmium	
- Chromium	
- Magnesium	
- Lead	
- Arsenic	
- Copper	
13. EP Toxicity - Cr .	
- Cd, Cr, Pb	
14. Cyanide	
15. Indicators - pH	
- NH3, NO3, F	
16. Explosives by HPLC	
17. Lipids	
18. PCDD/PCDF	
19. Total Phosphorus	
20. Grain Size	
21. Percent Solids (soil/sed)	

NOTE: 1. Detection levels in Table 7C
2. See analytical procedures in
Table 10 of QAPP (Sept. 1986)
3. See Table 4 for compounds
included in parameters
4. See Table 6, pages 3 & 4 for
field duplicates and spikes

PHASE II SAMPLING

SITE # 34
CRAB ORCHARD LAKE

PARAMETERS

NUMBER OF SAMPLES
WATER SEDIMENT BIOTA

1. CLP HSL Full Analysis	- , 5	- , 2	
2. CLP HSL Volatiles			
3. CLP HSL Base/Neut/Acids	8 , -		
4. Nitrosamines (CLP, soil)			
5. Nitrosamines (low, water)	10 , 5		
6. CLP HSL Pesticide/PCB		8 , -	30
7. PCB's (general)			
8. PCB's (low level, water)	10 , 5		
9. PCB's (semi low, sediment)		8 , 2	
10. Metals - CLP HSL		8 , 2	
11. Metals - NIPDWR(40CFR141)	- , 5		
12. Special - Mercury			30
- Cadmium	10 , -		30
- Chromium	10 , -		
- Magnesium			
- Lead	10 , -		30
- Arsenic	10 , -		
- Copper			
13. EP Toxicity - Cr			
- Cd, Cr, Pb			
14. Cyanide	10 , 5	8 , 2	
15. Indicators - pH	10 , 5	8 , 2	
- NH3, NO3, F	10 , -		
16. Explosives by HPLC		- , 2	
17. Lipids			30
18. PCDD/PCDF		- , 2	
19. Total Phosphorus			
20. Grain Size			
21. Percent Solids (soil/sed)		8 , 2	

- NOTE:
1. Detection levels in Table 7C
 2. See analytical procedures in Table 10 of QAPP (Sept. 1986)
 3. See Table 4 for compounds included in parameters
 4. See Table 6, pages 3 & 4 for field duplicates and spikes
 5. 10 vertical water column & 5 drinking water sources
 6. Total of 6 sediment samples
 7. See Table 7B for fish species and duplicates

PHASE II SAMPLING

SITE # 31
 REFUGE CONTROL SITE

PARAMETERS	NUMBER OF SAMPLES
	WELL SOILS
1. CLP HSL Full Analysis	1
2. CLP HSL Volatiles	
3. CLP HSL Base/Neut/Acids	1
4. Nitrosamines (CLP, soil)	
5. Nitrosamines (low, water)	1
6. CLP HSL Pesticide/PCB	
7. PCB's (general)	
8. PCB's (low level, water)	1
9. PCB's (semi low, sediment)	
10. Metals - CLP HSL	1
11. Metals - NIPDWR(40CFR141)	
12. Special - Mercury	
- Cadmium	1
- Chromium	1
- Magnesium	
- Lead	1
- Arsenic	1
- Copper	
13. EP Toxicity - Cr	
- Cd, Cr, Pb	
14. Cyanide	1
15. Indicators - pH	1
- NH ₃ , NO ₃ , F	
16. Explosives by HPLC	
17. Lipids	
18. PCDD/PCDF	
19. Total Phosphorus	
20. Grain Size	
21. Percent Solids (soil/sed)	1

NOTE: 1. Detection levels in Table 7C
 2. See analytical procedures in
 Table 10 of QAPP (Sept. 1986)
 3. See Table 4 for compounds
 included in parameters
 4. See Table 6, pages 3 & 4 for
 field duplicates and spikes
 5. One surface soil

PHASE II SAMPLING
REFUGE TOTAL
ALL SITES

PARAMETERS	WATR WELL SOIL SED. BIOTA					TOTAL
	WATR	WELL	SOIL	SED.	BIOTA	
1. CLP HSL Full Analysis	8	15	3	8	0	34
2. CLP HSL Volatiles	1	11	0	1	0	13
3. CLP HSL Base/Neut/Acids	2	1	3	15	0	21
4. Nitrosamines (CLP, soil)	0	0	12	0	0	12
5. Nitrosamines (low, water)	17	15	0	0	0	32
6. CLP HSL Pesticide/PCB	0	10	0	8	30	48
7. PCB's (general)	0	0	187	0	0	187
8. PCB's (low level, water)	17	15	0	0	0	32
9. PCB's (semi low, sediment)	0	0	12	58	0	70
10. Metals - CLP HSL	0	26	3	10	0	39
11. Metals - NIPDWR(40CFR141)	5	0	0	0	0	5
12. Special - Mercury	2	0	43	5	30	80
- Cadmium	12	17	48	10	30	117
- Chromium	10	17	34	5	0	66
- Magnesium	1	0	17	1	0	19
- Lead	13	17	97	52	30	209
- Arsenic	13	17	4	1	0	35
- Copper	2	0	4	0	0	6
13. EP Toxicity - Cr	0	0	0	1	0	1
- Cd, Cr, Pb	0	0	0	3	0	3
14. Cyanide	18	25	5	21	0	69
15. Indicators - pH	22	26	12	27	0	87
- NH ₃ , NO ₃ , F	10	19	0	0	0	29
16. Explosives by HPLC	2	5	12	8	0	27
17. Lipids	0	0	0	0	30	30
18. PCDD/PCDF	0	0	0	2	0	2
19. Total Phosphorus	0	1	0	0	0	1
20. Grain Size	0	19	0	0	0	19
21. Percent Solids (soil/sed)	0	0	213	75	0	288
						1581

NOTE: 1. Detection levels in Table 7C
 2. See analytical procedures in
 Table 10 of QAPP (Sept. 1986)
 3. See Table 4 for compounds
 included in parameters
 4. See Table 6, pages 3 & 4 for
 field duplicates and spikes

SUMMARY OF BIOTA SAMPLING FOR PHASE II ANALYSIS

CRAB ORCHARD LAKE SITE NO.		NUMBER OF FISH PER COMPOSITE	SPECIES
1		5	Carp
	*	5	Bass
	*	5	Bass
	**	5	Bullhead
	**	5	Bullhead
		2	Catfish
2	**	5	Carp
	*	5	Carp
		5	Bass
		5	Bullhead
	*	5	Bullhead
		5	Catfish
3		5	Carp
	*	5	Carp
	**	5	Bass
		5	Bullhead
	*	5	Bullhead
4	**	5	Carp
		5	Bass
	*	5	Bass
		5	Bullhead
	*	5	Bullhead
		4	Catfish
Lake Control		5	Carp
	*	5	Carp
	**	3	Bass
	*	5	Bass
		5	Bullhead
	*	5	Bullhead
		3	Catfish

NOTES: 1. Procedures for fish preparation & analysis will be submitted separately
 2. (*) = Duplicate composites for OB&G analysis
 3. (**) = Duplicate composites for FWS analysis

**PHASE II ANALYSIS
NO OF ANALYSIS AND DETECTION LEVELS**

PARAMETERS	WATER & WELL			SOIL & SEDIMENTS		
	No. of Samples	Detection Level	Pg. no. in Table 10	No. of Analysis	Detection Level	Pg. no. in Table 10
1. CLP HSL Full Analysis	23	.05-50 ppb	1,2,5	11	10-1600 ppb	13,14,17
2. CLP HSL Volatiles	12	10 ppb	1	1	10 ppb	13
3. CLP HSL Base/Neutral/Acids	3	10-50 ppb	2	18	330-1600 ppb	14
4. Nitrosamines (CLP, soil)				12	330 ppb	16
5. Nitrosamines (low, water)	32	0.1-0.8 ppb	4			
6. CLP HSL Pesticide/PCB	10	.05-1 ppb	5	8	80-160 ppb	17
7. PCB's General				187	500 ppb	18
8. PCB's Low Level (water)	32	5 ppt	6			
9. PCB's Semi-low (sediment)				22	40 ppb	19
10. Metals - CLP HSL	26	5-5000 ppb	7	13	0.1-80 ppm	20
11. Metals - NIPDVR	5	0.2-1000 ppb	9			
12. Sp. - Mercury	2	0.2 ppb	10	48 *	20 ppb	21
- Cadmium - Flame				58	500 ppb	21
- Furnace	29	1 ppb	10			
- Chromium - Flame				39	5000 ppb	21
- Furnace	27	1 ppb	10			
- Magnesium - Flame	1	10 ppb	10	18	1000 ppb	21
- Lead - Flame				149	10000 ppb	21
- Furnace	30	0.2 ppb	10			
- Arsenic - Furnace	30	5 ppb	10	5	100 ppb	21
- Copper - Flame				4	2000 ppb	21
- Furnace	2	1.0 ppb	10			
13. ER Toxicity - Cr				1	1000 ppb	
- Cd, Cr, Pb				3	100 ppb	
14. Cyanide	43	50 ppb	11	26 *	5000 ppb	22
15. Indicators - pH	48	-	11	39	--	22
- NH ₃ , NO ₃ , P	29	10,10,50 ppb	11			
16. Explosives by HPLC	7	0.4-2.0 ppb	12	20	500 ppb	24
17. Lipids						
18. PCDD/PCDF				2	0.02-0.2 ppb	23
19. Total Phosphorus	1	10 ppb	11	2	1000 ppb	22
21. Percent Solids (soil/sed)				200	0.1%	22

NOTE: 1. See Table 4B of SOP or 2D of QAPP for list of compounds included within each parameter
 2. See Table 10 of QAPP for analytical procedures
 3. (*) Phase I re-sampling is included above
 4. (**) Procedures for fish analysis will be submitted separately

ANALYTICAL RESPONSIBILITIES

PARAMETERS	OB&G	ETC	Rocky Mt	Weston
1. CLP HSL Full Analysis			W/S	
2. CLP HSL Volatiles			W/S	
3. CLP HSL Base/Neut/Acids			W/S	
4. Nitrosamines (CLP, soil)			W/S	
5. Nitrosamines (low level, water)			W/S	
6. CLP HSL Pesticide/PCB			W/S	
7. PCB's (general, soil)	S			
8. PCB's (low level, water)	W			
9. PCB's (semi-low, sediment)	S			
10. Metals - CLP HSL			W/S	
11. Metals - NIPDWR (water)			W	
12. Special - Mercury			W/S	
- Cadmium	S		W/S	
- Chromium			W/S	
- Lead	S		W/S	
- Arsenic			W/S	
- Copper			W/S	
- Magnesium	S		W	
13. EP Toxicity - Cr	S			
- Cd, Cr, Pb	S			
14. Cyanide		S/W		
15. Indicators - pH	S/W			
- NH ₃ , NO ₃ , F	S/W			
16. Explosives by HPLC				W/S
17. Lipids (biota) *				
18. PCDD/PCDF (sediment)		S		
19. Total Phosphorus		S/W		
20. Grain Size		S		
21. Percent Solids (soil/sed)	S/W	S/W	W/S	S/W

NOTES: 1. OBG - O'Brien & Gere Laboratories, Syracuse, NY
 ETC - Environmental Testing & Certification, Edison, NJ
 Rocky Mt. - Rocky Mountain Labs, Denver, CO
 Weston - Roy F. Weston, Inc., West Chester, PA
 * OBG - metals in soils if only Cd, Pd & Mg are scheduled

2. W/S/B/ denote: W - water/well
 S - soil/sediment
 B - biota

3. Laboratories analyzing biota will be included separately

		PHASE I & II SAMPLING EQUIPMENT		
		NUMBER or AMOUNT		
		per UNIT (person, NUMBER of TOTAL NO. site, or sample) X UNITS = NEEDED (here, St.Louis,etc.)		
HIT LIST (sub.1)				
SITE IDENTIFICATION:				
	2"x2"x24" wooden stakes.....	100	-	100
	orange spray paint.....	2 cans	-	2
	rope.....	400 ft.	-	400 ft
	hammer.....	1	-	1
WATER:	vaders.....	2 size 10; 2 size 12		4
	boat.....	1	-	1
	disposable stirrers.....			
	2" submersible pump.....			
	water filtering device.....			
	filters.....			
	100 ft. steel tape.....			
	shovel.....			
	electrical cord.....			
	glass funnel.....			
	deep buckets.....			
	paper towels.....			
	plastic sheeting.....	10'x50' roll	2	2 rolls
	polypropylene rope.....			
	silicone spray.....			
	flagging tape.....			
	electrical tape.....			
	aluminum foil.....	3 rolls		3 rolls
	tool kit: phillipshead screwdrivers.....	3 sizes		3
	wrenches.....	2 crescent; 2 pipe		4
	hammers.....	(1) 5#; (1) 1# claw		2
	knife.....	1		1
	pliers.....	1 needle-nose; 1 reg.		2
	tubing bender.....	(1) 3/8"		1
	tubing cutter.....	1		1
	saw.....	1		1
	automatic cord reeler and lead cord.....			
SEDIMENT:	aluminum pans.....	1 dozen		
	Wildco hand operated core sampler.....			
	2"OD, 1/16" thickness Lexan tubing.....	8 foot lengths	25	200 ft
	polypropylene scoops.....	6		
	aluinum scoops.....	6		
	disposable spatulas.....			
GEOPHYSICAL:	pH meters.....			
	specific conductance meters.....			
	thermometers.....			
	magnetometer/electromagnetic induction equipment...			
	surveying equipment.....			
	water level probe.....	1		1
	sampling trier.....			
	soil auger.....			
	split barrel sampler.....			
HANDLING,	coolers.....	(10) 20 quart		10
STORAGE &	sample jars (see BOTTLES file).....			
SHIPPING	freezer.....	1		1

PHASE I & II SAMPLING EQUIPMENT		NUMBER or AMOUNT per UNIT (person, NUMBER OF TOTAL NO. site, or sample) X UNITS = NEEDED (here, St. Louis, etc.)
HIT LIST (sub.1)		
van with roofrack.....	1	1
dry ice.....		
ice.....		
shipping labels.....		
markers.....		
DOCUMENTATION: field notebooks.....		
sample tags.....		
record sheets.....		
chain-of-custody records.....		
camera.....	1	1
35 mm, color slide film.....		
QA/QC: field blanks.....		
duplicate samples.....		
split samples.....		
ignitability field test.....		
SAFETY : GENERAL PERSONAL GEAR (SAFETY LEVELS B, C, AND D):		
calibrated HNU-1101 photoionizing air monitor.....		
pressure demand self-contained breathing apparatus;		
high efficiency organic vapor/particulate/pesticide cartridge (respiratory safety level C).....		
rubber safety boots or safety workboots with rubber overboots (safety levels B, C, & D).....		
cotton overalls (level D) or work clothing under white tyvek suit (levels B & C).....		
tyvek or other hood (levels B & C).....		
cotton gloves (level D) or surgeon's gloves with rubber overgloves (levels B & C).....		
protective eyewear.....		
hard hat (during drilling).....		
noise protection (during drilling).....		
2 way communication.....		
chemical resistant clothing(yellow tyveks, PVC coveralls, or butyl apron) as needed for specific tasks.....		
first aid kit and manual.....		
LEVEL A: -HIGHEST LEVEL OF RESPIRATORY, SKIN, AND EYE PROTECTION:		
THE ABOVE LIST PLUS:*		
chemical-resistant fully encapsulating suit.....		
chemical-resistant outer and inner gloves.....		
chemical-resistant boots with steel toe and shank..		
disposable protective suit, gloves, and boots (worn over fully encapsulating suit).....		
LEVEL B: -THE GENERAL GEAR LIST PLUS:*		
chemical-resistant clothing (overalls and long-sleeved jacket; coveralls; hooded, one or two-piece chemical-resistant splash suit; disposable chemical-resistant coveralls).....		
chemical-resistant outer and inner gloves.....		
chemical-resistant boots with steel toe and shank..		
chemical-resistant disposable outer boots.....		

		PHASE I & II SAMPLING EQUIPMENT	
		NUMBER or AMOUNT	
		per UNIT (person, NUMBER of TOTAL NO. WHERE AVAILABLE site, or sample) X UNITS = NEEDED (here, St.Louis, etc.)	
HIT LIST (sub.1)			
hard-hat with face shield.....			
LEVEL C: -THE GENERAL GEAR LIST PLUS:#			
chemical-resistant clothing (coveralls; hooded,two-piece chemical-resistant splash suit; chemical-resistant hood and apron; disposable, chemical-resistant coveralls).....			
chemical-resistant outer and inner gloves.....			
chemical-resistant boots with steel toe and shank..			
chemical-resistant disposable outer boots.....			
hard-hat with face shield.....			
escape mask.....			
LEVEL D: -THE GENERAL GEAR LIST PLUS:#			
boots/shoes:leather or chemical-resistant,with steel toe and shank.....			
chemical-resistant disposable outer boots.....			
hard hat with face shield.....			
escape mask.....			
safety glasses or chemical splash goggles.....			
DECONTAMNTN.: brushes.....		6	6
tub.....			
acetone.....		1 gal	1 gal
hexane.....		1 gal	1 gal
distilled water.....		5 gal	5 gal
55 gallon drums.....		4	4
interference-free, redistilled solvent (eg. acetone or methyl chloride).....			
detergent.....			
5 gallon pails.....			
kiddie pool.....		2	2
Gateraid.....		2 cases	2 cases
fire extinguishers.....		1 ABC	1
Jerry jugs.....		(4) 5 gal	4
plant sprayer.....		1 10 gal	1
air horns.....		2	2
plastic garbage cans.....		2	2
scissors.....		2 pair	2 pair
pocket knives.....		3	3
Janitor-in-a-drum cleaner.....		1	1

TABLE 8 (page 4 of 5)
SAMPLING EQUIPMENT - CHECK LIST

amount	SYRACUSE	check	amount	St.LOUIS	check	amount	REFUGE/MARION	check
	LAB			VAN WITH ROOFRACK			BOAT (REFUGE)	
	-----			DRY ICE			ICE (MARION)	
	SAMPLING JARS (see pages 2&3)			COOLERS			DISTILLED WATER	
	RECORD SHEETS			ALUMINUM PANS			(EITHER AT AN INDUSTRY	
	CHAIN-OF-CUSTODY RECORDS			PLASTIC PAILS			OR FROM SOUTHERN	
	DETERGENT			WADERS			ILLINOIS UNIVERSITY)	
	SOLVENT (NANOGRADE):			TOILET BRUSHES			FREEZER	
	ACETONE			KIDS POOL			STATION WAGON	
	HEXANE			GATERAID				
	WATER FILTERING DEVICE			FIRE EXTINGUISHER				
	FILTERS			JERRY JUGS				
	DETERGENT			PLANT SPRAYER				
	-----			PLASTIC SHEETING				
	HYDROGEOLOGIC			AIR HORNS				
	-----			GARBAGE CANS				
	WATER LEVEL PROBE			SCISSORS				
	ELECTROMAGNETIC EQUIP'T			POCKET KNIVES				
	SURVEY EQUIPMENT			JANITOR-IN-A-DRUM				
	-----			ALUMINUM SCOOPS				
	SUPPLY			POLYPROPYLENE SCOOPS				
	-----			LEXAN TUBING				
	SHIPPING LABELS			ROPE				
	MARKERS			HAMMER				
	I.D.STICKERS(RED&YELLOW)			STAKES				
	RUBBERBANDS			ORANGE PAINT				
	FOLDERS			ALUMINUM FOIL				
	-----			HACKSAW				
	DIV. 3			100 ft. STEEL TAPE				
	-----			SHOVEL				
	CAMERA			ELECTRICAL CORD				
	COMPUTER SAMPLE LABELS			GLASS FUNNEL				
	pH METER			DEEP BUCKETS				
	SPEC. CONDUCTANCE METER			PAPER TOWELS				
	SAFETY EQUIPMENT (see page 4):			POLYPROPYLENE ROPE				
				SILICONE SPRAY				
				FLAGGING TAPE				
				ELECTRICAL TAPE				
				DISPOSABLE SPATULAS				
				DISPOSABLE STIRRERS				
				THERMOMETERS				
				DRUMS				
				SQUEEZE BOTTLES				
				TUB				
				INTERFERENCE-FREE				
				REDISTILLED SOLVENT				

TABLE 8 (page 5 of 5)
SAMPLING EQUIPMENT - CHECK LIST

AMOUNT	SAFETY EQUIPMENT	CHECK
1	GENERAL PERSONAL GEAR (SAFETY LEVELS B, C, AND D):	
1	calibrated HNU-1101 photoionizing air monitor.....	
1	pressure demand self-contained breathing apparatus;	
1	high efficiency organic vapor/particulate/pesticide cartridge (respiratory safety level C).....	
1	rubber safety boots or safety workboots with rubber	
1	overboots (safety levels B, C, & D).....	
1	cotton overalls (level D) or work clothing under	
1	white tyvek suit (levels B & C).....	
1	tyvek or other hood (levels B & C).....	
1	cotton gloves (level D) or surgeon's gloves with	
1	rubber overgloves (levels B & C).....	
1	protective eyewear.....	
1	hard hat (during drilling).....	
1	noise protection (during drilling).....	
1	2 way communication.....	
1	chemical resistant clothing(yellow tyveks,PVC coveralls, or butyl apron) as needed for specific tasks.	
1	first aid kit and manual.....	
1	1	
1	LEVEL A:HIGHEST: SKIN, EYE,AND RESP. PROTECTION:	
1	THE ABOVE LIST PLUS:#	
1	chemical-resistant fully encapsulating suit.....	
1	chemical-resistant outer and inner gloves.....	
1	chemical-resistant boots with steel toe and shank..	
1	disposable protective suit, gloves, and boots (worn over fully encapsulating suit).....	
1	SAFETY LEVEL B: GENERAL GEAR PLUS :	
1	chemical-resistant clothing (overalls and long-sleeved jacket; coveralls; hooded, one or two-piece chemical-resistant splash suit; disposable chemical-resistant coveralls).....	
1	chemical-resistant outer and inner gloves.....	
1	chemical-resistant boots with steel toe and shank..	
1	chemical-resistant disposable outer boots.....	
1	hard-hat with face shield.....	
1	SAFETY LEVEL C: GENERAL GEAR PLUS:	
1	THE GENERAL GEAR LIST PLUS:#	
1	chemical-resistant clothing (coveralls; hooded,two-piece chemical-resistant splash suit; chemical-resistant hood and apron; disposable, chemical-resistant coveralls).....	
1	chemical-resistant outer and inner gloves.....	
1	chemical-resistant boots with steel toe and shank..	
1	chemical-resistant disposable outer boots.....	
1	hard-hat with face shield.....	
1	escape mask.....	
1	SAFETY LEVEL D: GENERAL GEAR PLUS:	
1	boots:leather or chem.resist. with st.toe & shank..	
1	chemical-resistant disposable outer boots.....	
1	hard hat with face shield.....	
1	escape mask.....	
1	safety glasses or chemical splash goggles.....	

CONCUR

TABLE 9

Nov. 10, 1986

SAMPLE CONTAINERS AND PRESERVATIVES

PARAMETERS	WATER & WELL	SOIL & SEDIMENTS
1. CLP HSL Full Analysis	see below	see below
2. CLP HSL Volatiles	40 ml vial (2)	40 ml vial (2)
3. CLP HSL Base/Neut/Acids	1 Liter glass	1 Liter glass
4. Nitrosamines (CLP, soil)	--	--
5. Nitrosamines (low, water)	1 Liter glass	--
6. CLP HSL Pesticide/PCB	1 qt. glass (teflon)	1 qt. glass (teflon)
7. PCB's General	--	1 pt glass (teflon)
8. PCB's Low Level (water)	1 qt. glass (teflon)	--
9. PCB's Semi-low (sediment)	--	1 pt glass (teflon)
10. Metals - CLP HSL	1 pt plastic/HNO3	1 pt glass
11. Metals - NIPDVR	"	"
12. Sp. - Mercury	1 pt plastic/HNO3	1 pt glass
- Cadmium - Flame	--	--
- Furnace	1 pt plastic/HNO3	1 pt glass
- Chromium - Flame	--	--
- Furnace	1 pt plastic/HNO3	1 pt glass
- Magnesium - Flame	--	--
- Lead - Flame	1 pt plastic/HNO3	1 pt glass
- Furnace	--	"
- Arsenic - Furnace	1 pt plastic/HNO3	1 pt glass
- Copper - Flame	--	"
- Furnace	1 pt plastic/HNO3	--
13. RP Toxicity - Cr	--	1 pt glass
- Cd, Cr, Pb	--	"
14. Cyanide	1 pt plastic/NaOH	--
15. Indicators - pH	1 pt plastic	--
- NH3, NO3, F	"	--
16. Explosives by HPLC	1/2 pt glass	1/2 pt glass
17. Lipids	--	--
18. PCDD/PCDF	--	1 pt glass teflon
19. Total Phosphorus	1/2 pt glass	1/2 pt glass
21. Percent Solids (soil/sed)	--	"

Figures



OBRIEN & GERE

Figure 1

Phase II Sampling Locations: Sites 10 and 11.

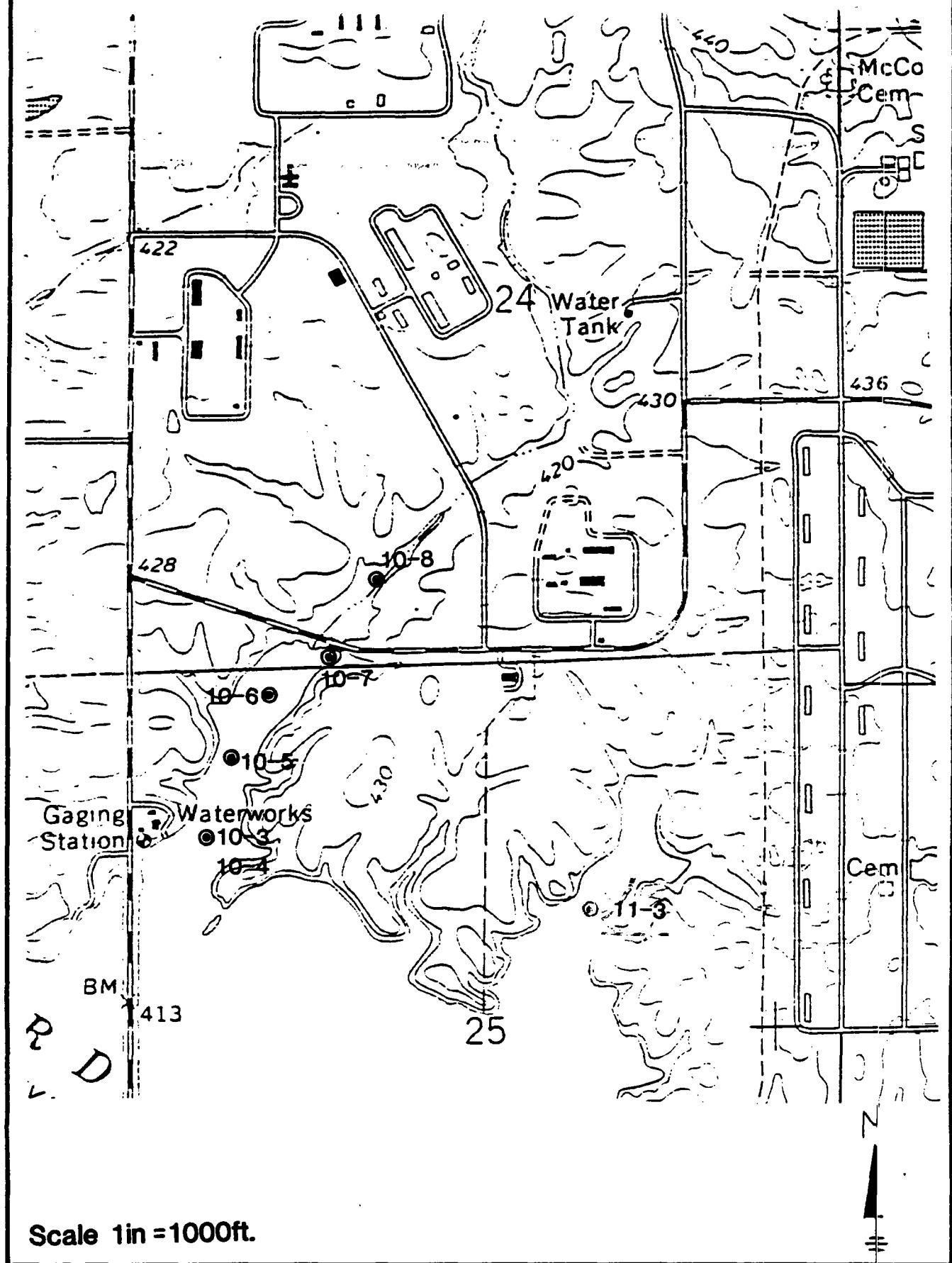
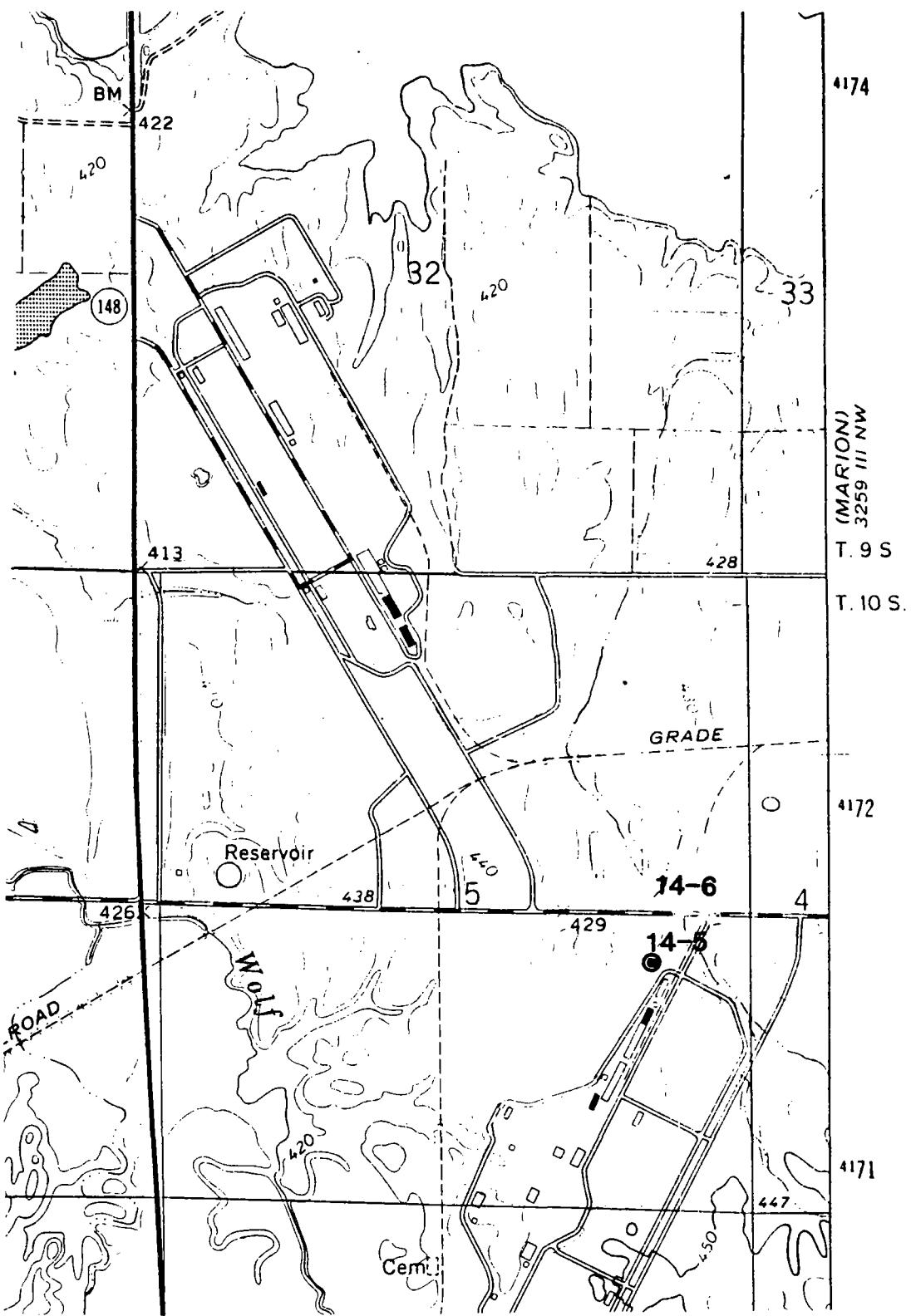


Figure 2

Phase II Sampling Locations: Site 14

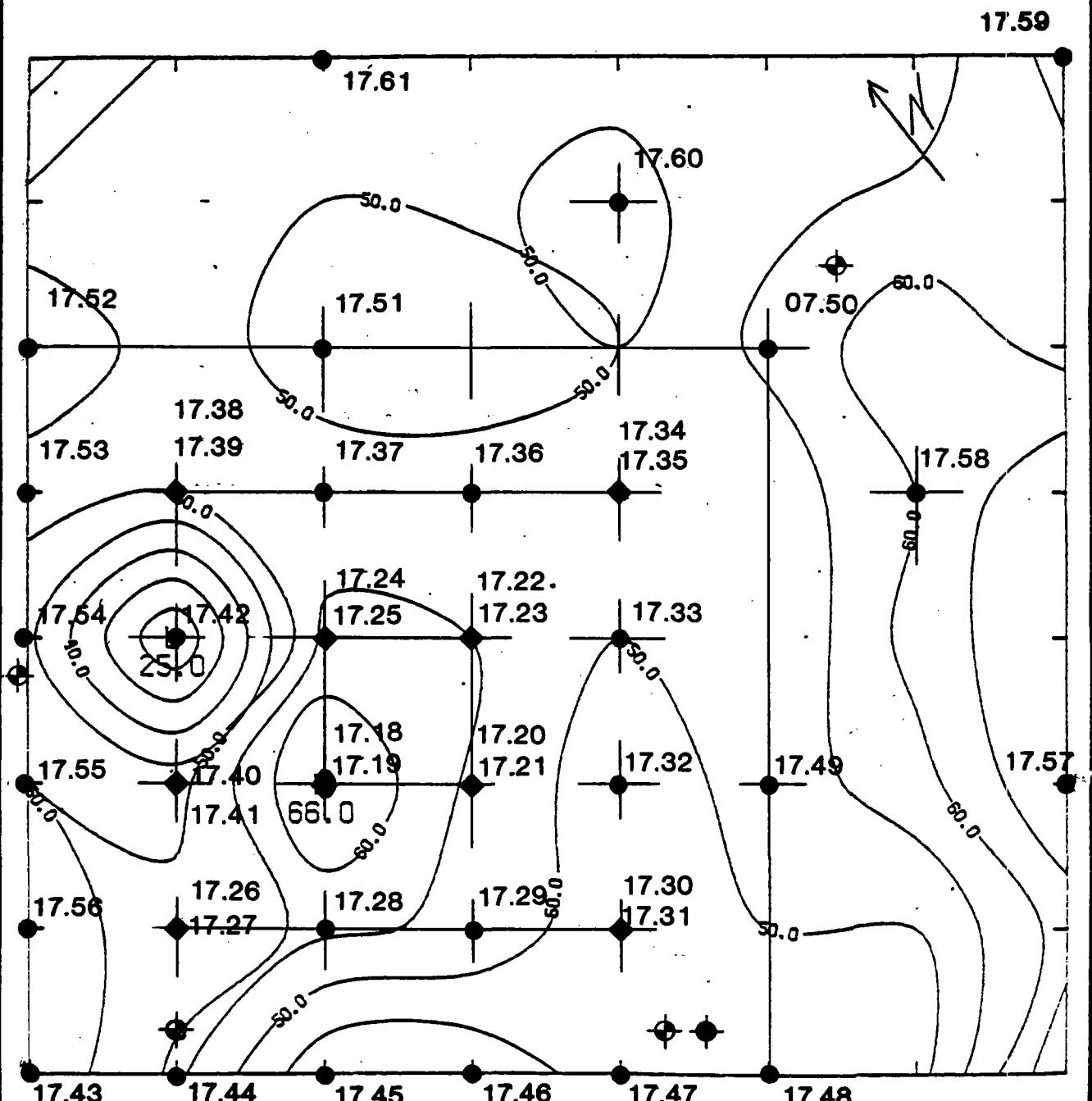


Scale: 1in = 1400ft

Figure 3

Phase II Sampling Locations

CRAB ORCHARD NATIONAL WILDLIFE REFUGE SITE 17 EM



Deep well

• Shallow wells

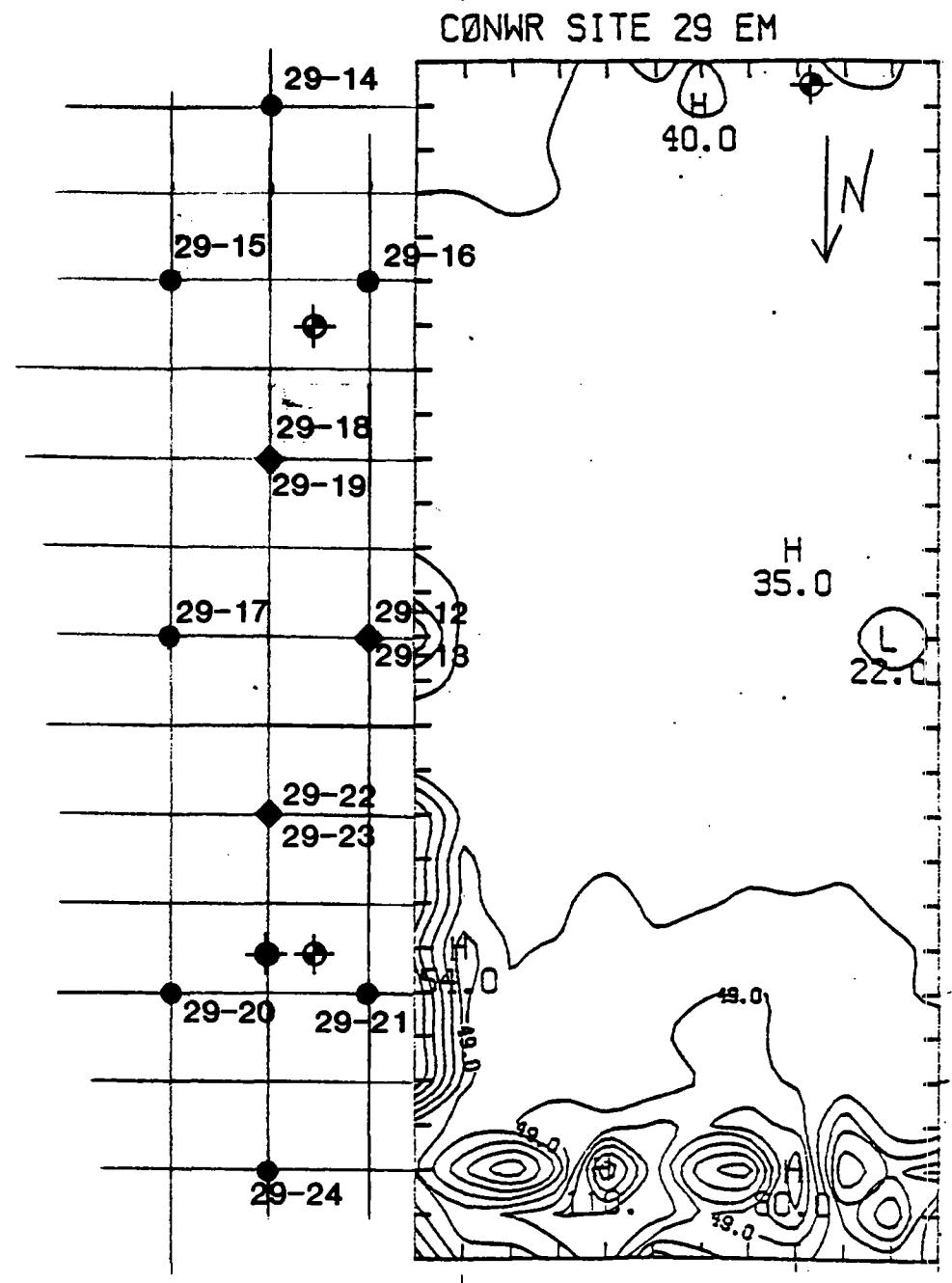
Scale **25ft.**

● Surface only

◆ Surface and 3-ft. depths

Figure 4

Phase II Sampling Locations



Scale: 50ft.

●
◆ Surface and 3-ft depts

Figure 5

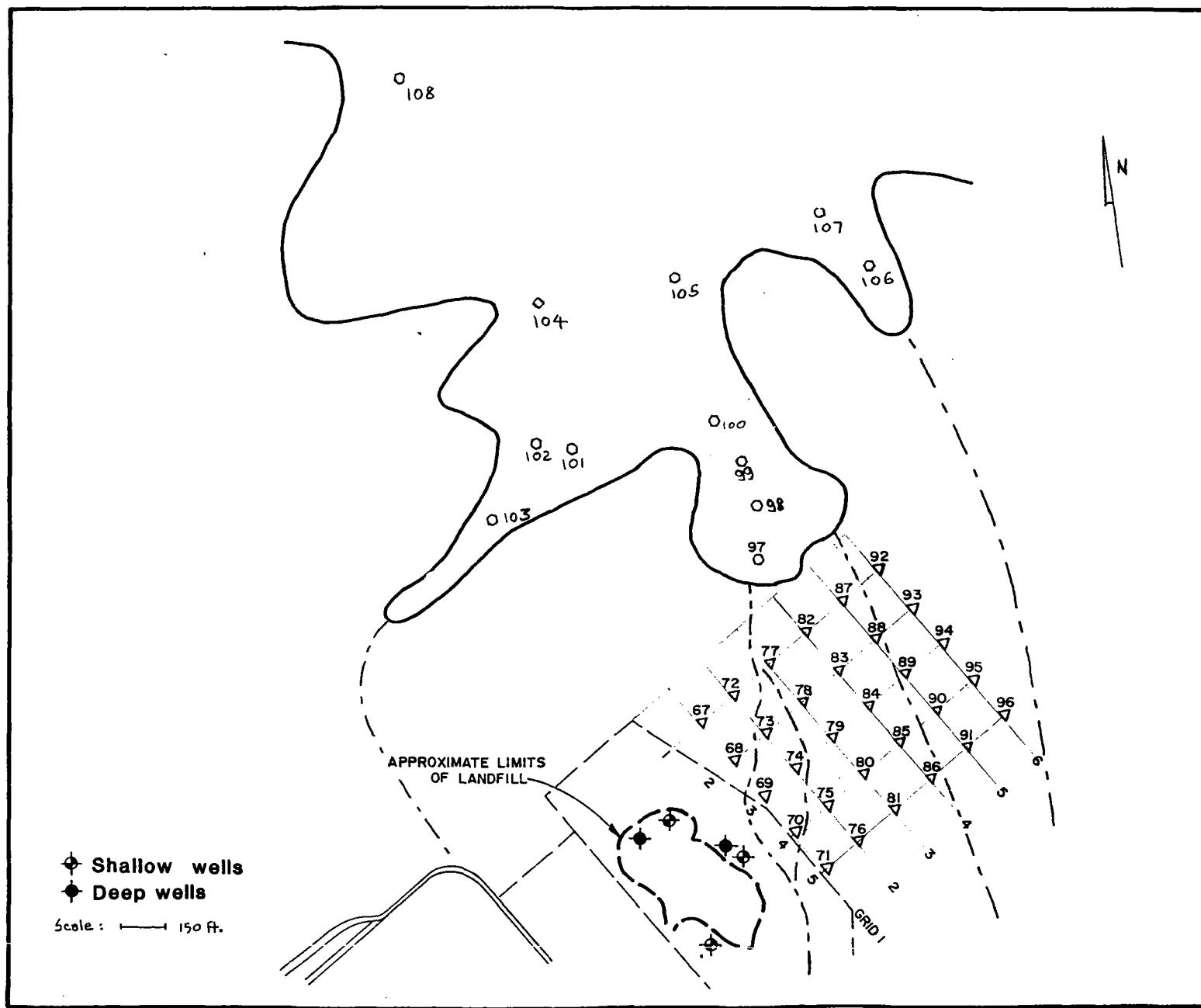


Figure 6

**CRAB ORCHARD
NATIONAL WILDLIFE
REFUGE**

**AREA 9
BUILDING COMPLEX
PHASE II
SAMPLING LOCATIONS**

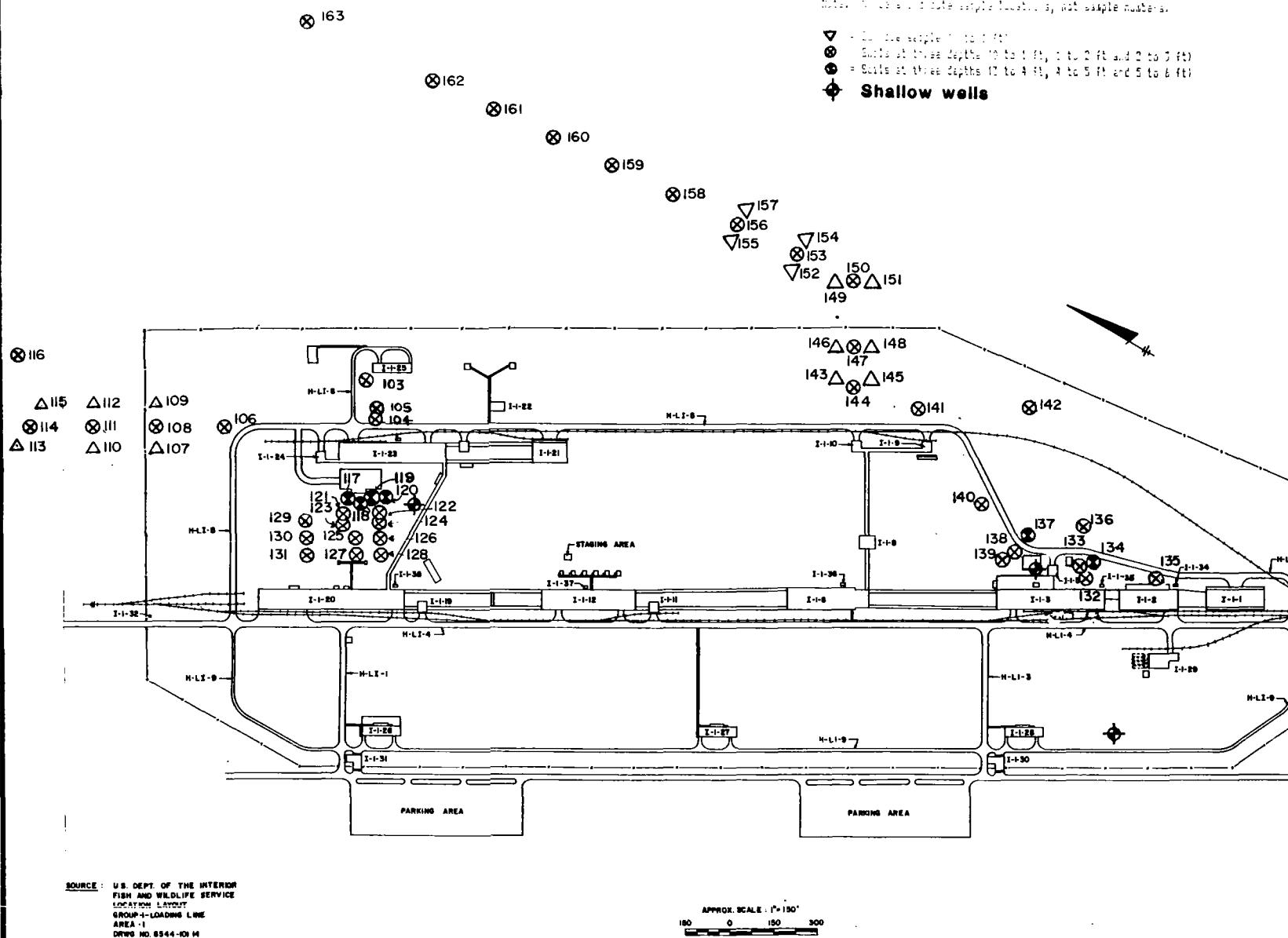


Figure 7

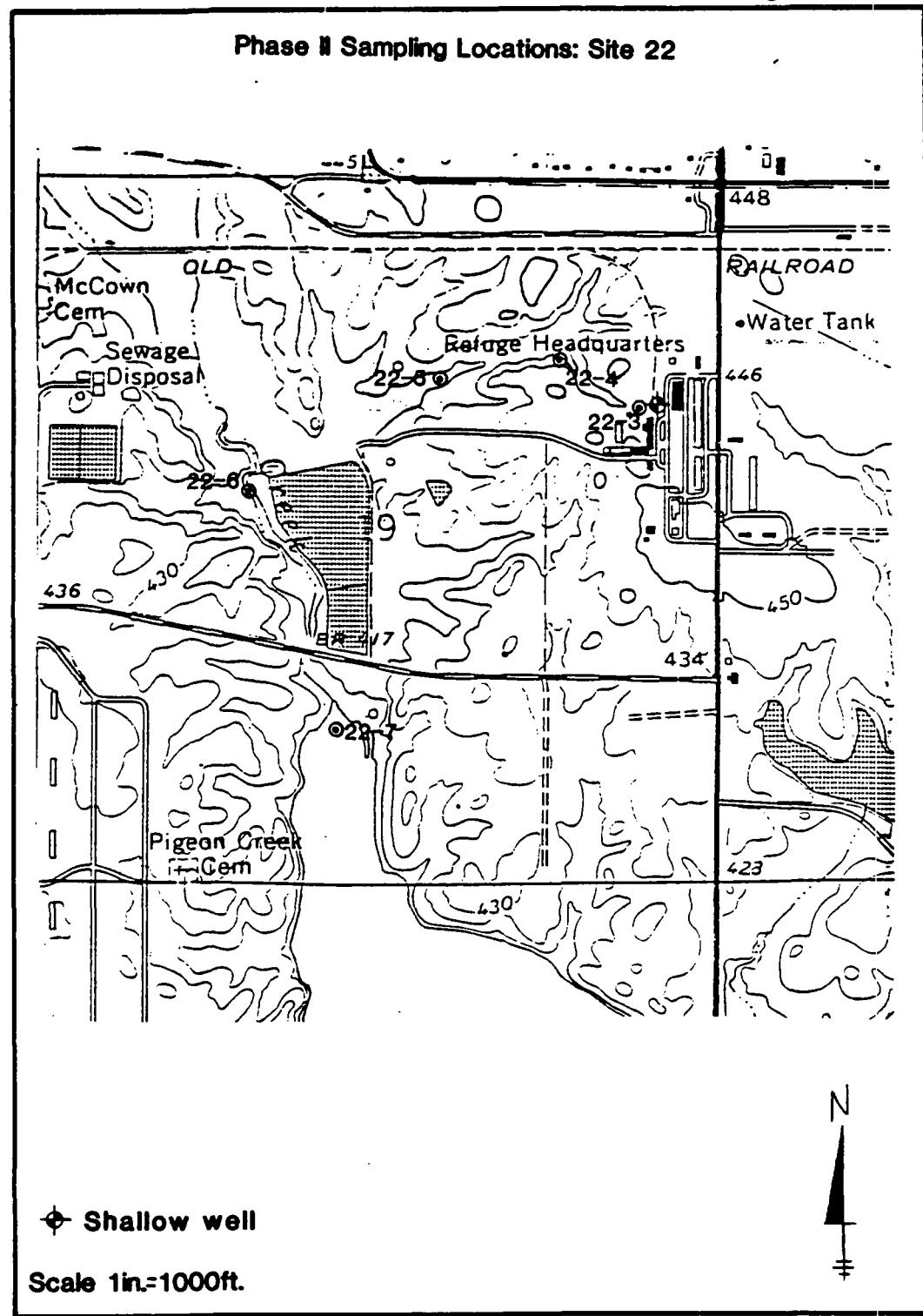
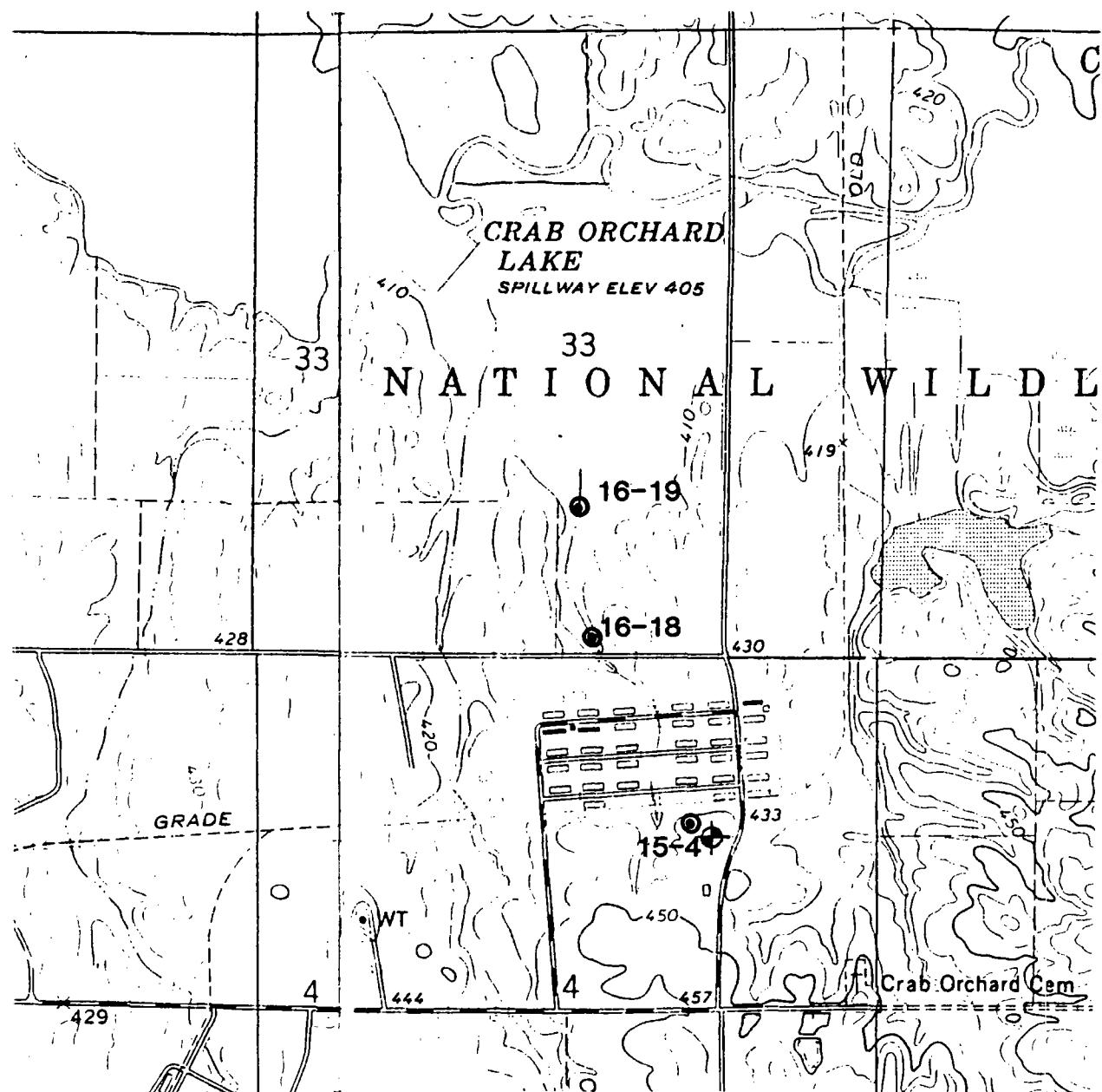


Figure 8

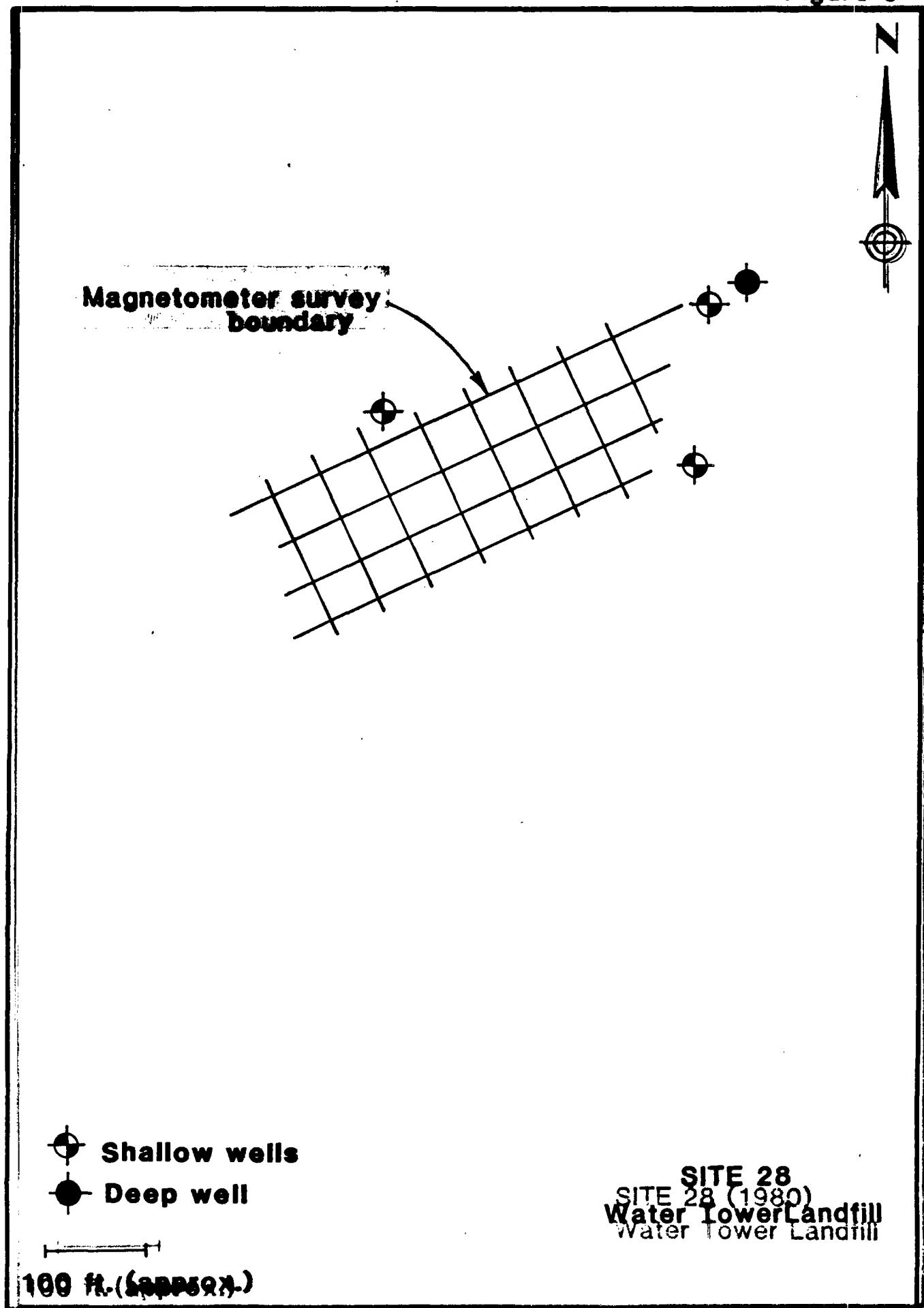
Phase II Sampling Locations: Sites 15 and 16

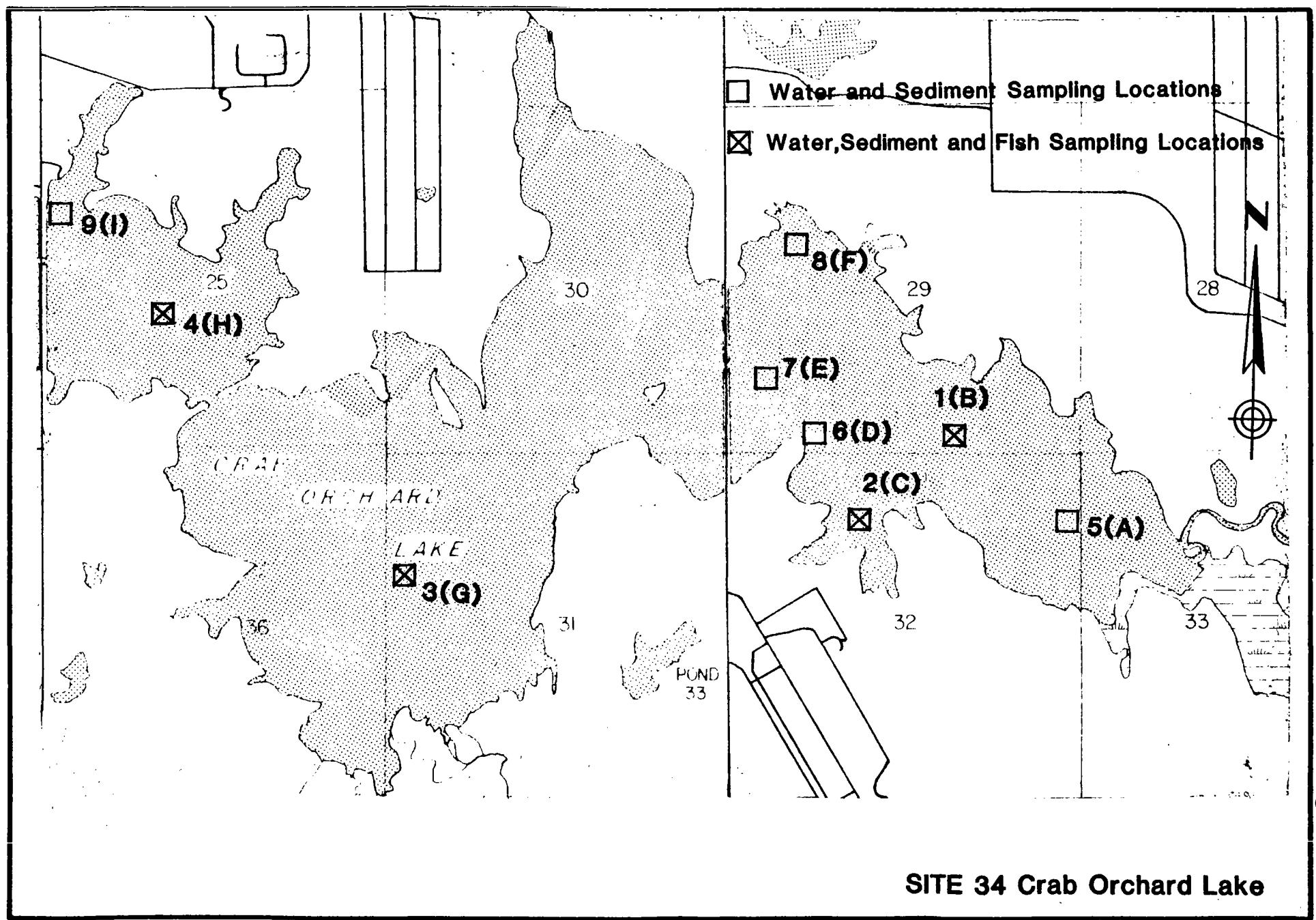


• Shallow well

Scale 1in.=1400ft.

Figure 9





Appendices



O'BRIEN & GERÉ

APPENDIX A
SAMPLING AND ANALYSIS SCHEDULE KEY

CRAB ORCHARD NATIONAL WILDLIFE REFUGE

SAMPLING & ANALYSIS SCHEDULE

KEY

1. ID1 - Site Number
2. ID2 - Sequential number at a given site
3. ID3 - Sample Matrix: Soil-1; water-2; sediment-3; fish-4; turtles-5; crayfish-6
4. ID4 - Analysis set: A-1; B-2; C-3; D-4; E-5; F-6; G-7; H-8
(see parameter list for analysis sets)
5. MATRIX- soil, water, etc. (See ID3)
6. Name - Description of sampling locations
7. Type - Type of sample collection - surface, grab, composite, core,etc.
8. Depth- Depth at which sample is collected
9. Analysis set - See Parameter List for analysis sets
10. Sample No.- Sequential numbering for site use.
11. Lab No. - Number used by OB&G Laboratory System
12. Replicate - Shows if replicates are collected for FWS, duplicates or spikes
13. Sample Coll. Date - Date of sampling -
'****' indicates sample collected; '---' indicates sample not collected
14. Dupl/spike Numbers - Lab No. for corresponding duplicate or spike sample

APPENDIX B
CHEMICAL PARAMETERS INCLUDED IN LAB DATA OUTPUT
(Key to Abbreviations and Units)

CRAB ORCHARD NATIONAL WILDLIFE REFUGE
CHEMICAL PARAMETERS INCLUDED IN LAB DATA OUTPUT

Abbrev.	NAME	Type	Units
A-BHC	alpha-BHC	PPCB	ppb
A-ENDO	Endosulfan I	PPCB	ppb
ACETONE	Acetone	VOL	ppb
ACNAHENE	Acenaphthene	BN	ppb
AE	Acid Extractable screen	AE	ppb
AG	Silver	M	ppm
ALDCRB	Aldicarb	SURR	ppb
ALDCRB-S	Aldicarb sulfone	SURR	ppb
ALDCRB-SX	Aldicarb sulfoxide	SURR	ppb
ALDRIN	Aldrin	PPCB	ppb
ANTHRACE	Anthracene	BN	ppb
AS	Arsenic	M	ppm
ASBEST	Asbestos	O	Mf/L
B-BHC	beta-BHC	PPCB	ppb
B-ENDO	Endosulfan II	PPCB	ppb
BA	Barium	M	ppm
BACT	Total bacteria	BIO	#/kcc
BENZ	Benzene	VOL	ppb
BIETHEPH	Bis (2-ethylhexyl) phthalate	BN	ppb
BN	Base/Neutral screen	BN	ppb
BNZALC	Benzyl alcohol	BN	ppb
BNZOAN	Benzo(a)anthracene	BN	ppb
BRCL2CH	Bromodichloromethane	VOL	ppb
BRCLC3H6	2 Bromo-1-chloropropane	VOL	ppb
BRCLCH2	Bromochloromethane	VOL	ppb
BUBZYZPH	Butyl benzyl phthalate	BN	ppb
C2H5CL	Chloroethane	VOL	ppb
CA	Calcium	M	ppm
CARBFRN	Carbofuran	BN	ppb
CCL4	Carbon Tetrachloride	VOL	ppb
CD	Cadmium	M	ppm
CH2CHCL	Vinyl Chloride	VOL	ppb
CH2CL2	Methylene Chloride	VOL	ppb
CH3BR	Bromomethane	VOL	ppb
CH3CL	Chloromethane	VOL	ppb
CHBR3	Bromoform	VOL	ppb
CHCL3	Chloroform	VOL	ppb
CHLRDNE	Chlordane	PPCB	ppb
CHRYSENE	Chrysene	BN	ppb
CL	Chloride	O	ppm
CL3C2112	1,1,2-Trichloroethane	VOL	ppb
CL3C2H	Trichloroethene	VOL	ppb
CL3CCH3	1,1,1-Trichloroethane	VOL	ppb
CL4C2	Tetrachloroethylene	VOL	ppb
CL4C2H2	1,1,2,2-Tetrachloroethane	VOL	ppb
CLBR2CH	Dibromochloromethane	VOL	ppb
CLETHER	2-Chloroethylvinyl Ether	VOL	ppb
CLNAPHNE	2-Chloronaphthalene	BN	ppb
CLROBZ	Chlorobenzene	VOL	ppb
CN	Cyanide	O	ppm
COLOR	Color	O	units

CRAB ORCHARD NATIONAL WILDLIFE REFUGE
CHEMICAL PARAMETERS INCLUDED IN LAB DATA OUTPUT

Abbrev.	NAME	Type	Units
CR	Chromium	M	ppm
CRSVTY	Corrosivity	O	mpy
CS2	Carbob disulfide	VOL	ppb
CU	Copper	M	ppm
D-BHC	delta-BHC	PPCB	ppb
DCETAN11	1,1-Dichloroethane	VOL	ppb
DCETAN12	1,2-Dichloroethane	VOL	ppb
DCLEN11	1,1-Dichloroethene	VOL	ppb
DCLEN12-c	c-1,2-Dichloroethene	VOL	ppb
DCLEN12-t	t-1,2-Dichloroethene	VOL	ppb
DCPAN12	1,2-Dichloropropane	VOL	ppb
DCPENC13	Cis-1,3-Dichloropropene	VOL	ppb
DCPENT13	t-1,3-Dichloropropene	VOL	ppb
DIBNFURN	Dibenzofuran	BN	ppb
DIBUTPHT	Di-n-butylphthalate	BN	ppb
DICLBZ13	o-Dichlorobenzene	VOL	ppb
DICLBZ14	1,4-Dichlorobenzene	VOL	ppb
DICLBZ14	p-Dichlorobenzene	VOL	ppb
DIELDRN	Dieldrin	PPCB	ppb
DINITO26	2,6 Dinitrotoluene	BN	ppb
DIOCTPHT	Di-n-octyl phthalate	BN	ppb
DISODMEA	N-Nitrosodimethylamine	BN	ppb
DNB13	1,3-Dinitrobenzene	EXPL	ppb
DNT24	2,4-Dinitrotoluene	EXPL	ppb
DNT26	2,6-Dinitrotoluene	EXPL	ppb
ENDRIN	Endrin	PPCB	ppb
ENDRIN-A	Endrin Aldehyde	PPCB	ppb
ENDRIN-K	Endrin Ketone	PPCB	ppb
ENDSULF	Endosulfan Sulfate	PPCB	ppb
ETHBENZ	Ethylbenzene	VOL	ppb
F	Fluoride	INORG	ppm
F3C7	Trifluorotoluene	VOL	ppb
FE	Iron	M	ppm
FIDSCAN	Flame ionization Det scan	FID	ppb
FLUORANT	Fluoranthene	BN	ppb
FLUORENE	Fluorene	BN	ppb
FREON113	Freon 113	VOL	ppb
GRALPHA	Gross Alpha	RAD	pCi/L
H24-D	2,4-Dichlorophenoxyacid	CPAH	ppb
H245-TP	2,4,5-TP Silvex	CPAH	ppb
HEPEPOX	Heptachlor Epoxide	PPCB	ppb
HEPTA	Heptachlor	PPCB	ppb
HEXANONE	2-Hexanone	VOL	ppb
HG	Mercury	M	ppb
HMX	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine	EXPL	ppb
HPCDD	Heptachloro-dibenzo-p-dioxions	DF	ppm
HPCDF	Heptachloro-dibenzo-furons	DF	ppm
HXCDD	Hexachloro-dibenzo-p-dioxions	DF	ppm
HXCDF	Hexachloro-dibenzo-furons	DF	ppm
ISOPRONE	Isophorone	BN	ppb
LINDANE	gamma-BHC	PPCB	ppb

CRAB ORCHARD NATIONAL WILDLIFE REFUGE
CHEMICAL PARAMETERS INCLUDED IN LAB DATA OUTPUT

Abbrev.	Name	Type	Units
M-XYLENE	Meta-Xylene	VOL	ppb
M2NAPH	2-Methylnaphthalene	BN	ppb
M4PNTNE4	4-Methyl 2-pentanone	BN	ppb
MBAS	Foaming agents	O	ppm
ME2PHOL	2-Methyl Phenol	AE	ppb
MIBK	Methyl-iso-butyl ketone	VOL	ppb
MN	Manganese	M	ppm
MTHXYCR	Methoxychlor	PPCB	ppb
NA	Sodium	M	ppm
NATHLENE	Naphthalene	BN	ppb
NB	Nitrobenzene	EXPL	ppb
NH3N	Ammonia as N	INORG	ppm
NI	Nickel	M	ppm
NISODOPHA	N-Nitrosodiphenylamine	BN	ppb
NISODRA	N-Nitosodi-n-propylamine	BN	ppb
NO2N	Nitrite as N	INORG	ppm
NO2N03	Nitrite + Nitrate as N	INORG	ppm
NO3N	Nitrate as N	INORG	ppm
OCDD	Octachloro-dibenzo-p-dioxins	DF	ppm
OCDF	Octachloro-dibenzo-furans	DF	ppm
ODOR	Odor	O	to‡
ORGN	Organic Nitrogen	ORG	ppm
P	Phosphorus	O	ppm
PB	Lead	M	ppm
PCB	PCBs (total)	PPCB	ppb
PCB1248	PCB 1248	PPCB	ppb
PCB1254	PCB 1254	PPCB	ppb
PCB1260	PCB 1260	PPCB	ppb
PCB16-42	PCB 1016/1242	PPCB	ppb
PCDD	Pentachloro-dibenzo-p-dioxins	DF	ppm
PCDF	Pentachloro-dibenzo-furans	DF	ppm
PCTS	Percent Solids	O	ppm
PH	pH	O	s.u.
PHENOL-A	Phenol	AE	ppb
PHNATHRE	Phenanthrene	BN	ppb
PNCLPHOL	Pentachlorophenol	AE	ppb
PP-DDD	4,4'-DDD	PPCB	ppb
PP-DDE	4,4'-DDE	PPCB	ppb
PP-DDT	4,4'-DDT	PPCB	ppb
PYRENE	Pyrene	BN	ppb
RA226,228	Radium-226 and -228	RAD	pCi/L
RDX	Hexahydro-1,3,5-trinitro-s-triazine	EXPL	ppb
SB	Antimony	M	ppm
SE	Selenium	M	ppm
SO4	Sulfate	INORG	ppm
SPCOND	Specific Conductance	O	ppm
STYRENE	Styrene	VOL	ppb
TALK	Total Alkalinity	INORG	ppm
TC	Total Carbon	ORG	ppm
TCBZ-124	1,2,4-Trichlorobenzene	VOL	ppb
TCDD	Tetrachloro-dibenzo-p-dioxins	DF	ppm

CRAB ORCHARD NATIONAL WILDLIFE REFUGE
CHEMICAL PARAMETERS INCLUDED IN LAB DATA OUTPUT

Abbrev.	NAME	Type	Units
TCDF	Tetrachloro-dibenzo-furans	DF	ppm
TDS	Total Dissolved Solids	O	ppm
TETRYL	2,4,6-Trinitrophenylmethylnitramine	EXPL	ppb
TIC	Total Inorganic Carbon	INORG	ppm
TKN	Total Kjeldahl Nitrogen	INORG	ppm
TL	Thallium	M	ppm
TNB135	1,3,5-Trinitrobenzene	EXPL	ppb
TNT246	2,4,6-Trinitrotoluene	EXPL	ppb
TOC	Total Organic Carbon	ORG	ppm
TOLUENE	Toluene	VOL	ppb
TOX-1	Total Organic Halides	ORG	ppb
TOX-2	Total Org. Halides, dupl.	ORG	ppb
TTHM	Total trihalomethanes	VOL	ppb
TURB	Turbidity	O	TU
TXPHENE	Toxaphene	PPCB	ppb
XYLEMES	Xylenes	VOL	ppb
ZN	Zinc	M	ppm

Notes:

ppb= mcg/l (water) or
mcg/kg wet wt. (soil, sed.)

ppm= mg/l (water) or
mg/kg wet wt. (soil, sed.)

ICP metals are expressed as ppb

Explosives are mcg/l (water) or
mg/kg dry wt. (soil, sed.)

CPAH: Chrophenoxyacid herbicides

INORG: Inorganic

ORG: Organic

RAD: Radiological

O: Other

PPCB: Peicides/PCBs

VOL: Votile organics

AE: Acid Extractibles

BN: Base/Neutrals

EXPL: EXPLOSIVES

DF: Dioxins & di-benzo-furans

M: METALS(units are ppm except ICP metals which are ppb)

APPENDIX C

PHASE I SAMPLING AND ANALYSIS SCHEDULE

CDNWR (10/20/86)

PHASE I SAMPLING AND ANALYSIS SCHEDULE

APPENDIX C (Page 1)

I.D.	MATRIX	NAME	TYPE	DEPTH	ANAL	DEPTH	LOCA	INTRVL	SAMP	LAB	REPLICATE	SAMPLE	DUPL./SPIKE	NOTES
					SET	TION	& NO.	NOS.	NO	LAB	FWS	COLL.	DATE	NUMBERS
....(RATIONALE)....!														
***	#1	3:AREA 11 SOUTH LANDFILL												
3- 1	SOIL	NORTH BANK	COMP. 6 GRABS	0-1 FT	A	I	P	Y	1	9401	FWS	*1*	8/14/85	
3- 2	SOIL	SOUTH BANK	COMP. 6 GRABS	0-1 FT	A	I	P	Y	2	9402	DUPL	*1*	8/14/85	
3- 2	SOIL	SOUTH BANK	COMP. 6 GRABS	0-1 FT	F	I	P	Y	572	9257	DUPL	*1*	11/19/85	
3- 3	SOIL	EAST MOUND	COMP. 4 GRABS	0-1 FT	A	I	P	W	3	9403	SPKE	*1*	8/14/85	
3- 4	SEDIMENT	MARSH	COMP. 10 GRABS	0-1 FT	D	K	R,S	Y	4	9404		*1*	8/14/85	
3- 5	SEDIMENT	LOWER STREAM	COMP. 10 GRABS	0-1 FT	A	K	P,R,S	Y	5	9405		*1*	8/14/85	
***		4:AREA 11 NORTH LANDFILL												
4- 1	SOIL	BARE PATCHES	COMP. 6 GRABS	0-1 FT	D	I	P,U	Y	6	9406		*1*	8/13/85	
4- 2	SEDIMENT	SWAMPY SED.	COMP. 6 GRABS	0-1 FT	A	K	R	X	7	9407		*1*	8/13/85	
4- 2	SEDIMENT	SWAMPY SED.	COMP. 6 GRABS	0-1 FT	F	K	R	X	573	9258	FWS	*1*	11/19/85	
***		5:AREA 11 ACID POND												
5- 1	WATER	POND WATER	COMP. 4 GRABS	SURFACE	A	N	R	Y	8	9408		*1*	8/13/85	
5- 2	SOIL	DEAD TREE AREA	COMP. 4 GRABS	0-1 FT	A	K	P,R,U	Y	9	9409	FWS	*1*	8/13/85	
5- 3	SEDIMENT	POND SED.	COMP. 4 GRABS	0-1 FT	A	K	R	Y	10	9410		*1*	8/13/85	
5- 3	SEDIMENT	POND SED.	COMP. 4 GRABS	0-1 FT	F	K	R	Y	574	9259		*1*	11/19/85	
***	#2	7A:D AREA NORTH LAWN												
7A- 1	SOIL	LOW SPOTS-SURF	COMP. 8 GRABS	SURFACE	A+OVA	I	U	X	11	9411		*1*	8/17/85	
7A- 2	SOIL	LOW SPOTS-1 FT	COMP. 8 GRABS	6-12 INCHES	A+OVA	M	U	X	12	9412		*1*	8/17/85	
7A- 3	SOIL	LOW SPOTS-2 FT	COMP. 8 GRABS	1-2 FEET	A+OVA	M	U	X	13	9413	FWS	*1*	8/17/85	
7A- 4	SOIL	LOW SPOTS-3 FT	COMP. 8 GRABS	2-3 FEET	A+OVA	M	U	X	14	9414		*1*	8/17/85	
7A- 5	SOIL	TRANSECT A-SURF	COMP. 3 GRABS	SURFACE	A+OVA	J	Q	X	15	9415		*1*	8/17/85	
7A- 6	SOIL	TRANSECT A-1FT	COMP. 3 GRABS	6-12 INCHES	A+OVA	M	Q	X	16	9416		*1*	8/17/85	
7A- 7	SOIL	TRANSECT A-2FT	COMP. 3 GRABS	1-2 FEET	A+OVA	M	Q	X	17	9417	DUPL	*1*	8/17/85	
7A- 8	SOIL	TRANSECT A-3FT	COMP. 3 GRABS	2-3 FEET	A+OVA	M	Q	X	18	9418		*1*	8/17/85	
7A- 9	SOIL	TRANSECT B-SURF	COMP. 3 GRABS	SURFACE	A+OVA	J	Q	X	19	9419		*1*	8/17/85	
7A- 9	SOIL	TRANSECT B-SURF	COMP. 3 GRABS	SURFACE	F	M	Q	X	575	9260		*1*	11/19/85	
7A- 10	SOIL	TRANSECT B-1FT	COMP. 3 GRABS	6-12 INCHES	A+OVA	M	Q	X	20	9420		*1*	8/17/85	
7A- 11	SOIL	TRANSECT B-2FT	COMP. 3 GRABS	1-2 FEET	A+OVA	M	Q	X	21	9421		*1*	8/17/85	

! I.D.	! MATRIX!	NAME	! TYPE	! DEPTH	! ANAL SET	! DEPTH TION	! LOCA- & NO.	! INTRVL NOS.	! SAMP NO	LAB NO	REPLICATE LAB FWS	SAMPLE	DUPL./SPIKE	NOTES
											(RATIONALE)....!	COLL. DATE	
7A- 12	SOIL	TRANSECT B-3FT	COMP. 3 GRABS	2-3 FEET	A+OVA	M	Q	X	22	9422		*1*	8/17/85	
7A- 13	SOIL	TRANSECT C-SURF	COMP. 3 GRABS	SURFACE	A+OVA	J	Q	X	23	9423		*1*	8/17/85	
7A- 14	SOIL	TRANSECT C-1FT	COMP. 3 GRABS	6-12 INCHES	A+OVA	M	Q	X	24	9424		*1*	8/17/85	
7A- 15	SOIL	TRANSECT C-2FT	COMP. 3 GRABS	1-2 FEET	A+OVA	M	Q	X	25	9425		*1*	8/17/85	
7A- 16	SOIL	TRANSECT C-3FT	COMP. 3 GRABS	2-3 FEET	A+OVA	M	Q	X	26	9426		*1*	8/17/85	

*** 1:A:P AREA NORTH

11A- 1	SEDIMENT	WEST SWALE	COMP. 3 GRABS	0-1 FT	A	J,K	Q,R	X	27	9427	SPKE	*1*	8/16/85	19282
11A- 2	SEDIMENT	EAST SWALE	COMP. 7 GRABS	0-1 FT	A	J,K	Q,R	X	28	9428	FWS	*1*	8/16/85	
11A- 3	SEDIMENT	NORTH SWALE 1	COMP. 6 GRABS	0-1 FT	A	J,K	Q,R	X	29	9429	DUPL	*1*	8/16/85	19254
11A- 3	SEDIMENT	NORTH SWALE 1	COMP. 6 GRABS	0-1 FT	F	J,K	Q,R	X	576	9261	DUPL	*1*	11/18/85	19225
11A- 4	SEDIMENT	NORTH SWALE 2	COMP. 3 GRABS	0-1 FT	A	J,K	Q,R	X	30	9430		*1*	8/16/85	
11A- 5	SOIL	LOADING DOCK	COMP. 3 GRABS	0-1 FT	A	J	Q	W	31	9431		*1*	8/16/85	
11A- 6	SOIL	NORTH DOOR	COMP. 2 GRABS	0-1 FT	A	J	Q	W	32	9432		*1*	8/16/85	
11A- 7	SOIL	EAST LOAD AREA	COMP. 3 GRABS	0-1 FT	A	J	Q	W	33	9433		*1*	8/16/85	
11A- 8	SOIL	STEAMHOUSE DOOR	COMP. 2 GRABS	0-1 FT	A	J	Q	W	34	9434		*1*	8/16/85	

*** 7:D AREA SOUTHEAST DRAINAGE

7- 1	WATER	D-SE WATER	COMP. 4 GRABS	SURFACE	A	N	R	W	35	19209		*1*	8/16/85	
7- 2	SEDIMENT	D-SE SEDIMENT	COMP. 4 GRABS	0-1 FT	A	K	R	W	36	19210	DUPL	*1*	8/16/85	19255

*** 8:D AREA SOUTHWEST DRAINAGE

8- 1	WATER	D-SW WATER	COMP. 2 GRABS	SURFACE	A	N	R	W	37	3258		*1*	7/25/85
8- 2	SEDIMENT	D-SW SEDIMENT	COMP. 4 GRABS	0-1 FT	A	K	R	W	38	3386		*1*	7/25/85

*** 9:D AREA NORTHWEST DRAINAGE

9- 1	WATER	P-NW WATER	COMP. 4 GRABS	SURFACE	A	N	R	W	39	3257		*1*	7/25/85
9- 2	SEDIMENT	P-NW SEDIMENT	COMP. 4 GRABS	0-1 FT	A	K	R	W	40	3385		*1*	7/25/85

*** 10:WATERWORKS NORTH DRAINAGE

10- 1	WATER	WW-N WATER	COMP. 4 GRABS	SURFACE	A	N	R,S	W	41	3250		*1*	7/25/85
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CONWR (10/20/86)

PHASE I SAMPLING AND ANALYSIS SCHEDULE

APPENDIX C (Page 3)

I.D.	MATRIX	NAME	TYPE	DEPTH	ANAL SET	DEPTH TION	LOCA- & NO.	INTRVL NOS.	SAMP NO	LAB NO	REPLICATE	SAMPLE	DUPL./SPIKE	NOTES
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!....(RATIONALE)....!

10-	2 SEDIMENT	WW-N SEDIMENT	COMP. 4 GRABS	0-1 FT	D	K	R,S	W	42	42	FWS	*1*	7/25/85
10-	2 SEDIMENT	WW-N SEDIMENT	COMP. 4 GRABS	0-1 FT	G	K	R,S	W	577	9262	DUPL	*1*	11/19/85

*** 11:D AREA SOUTHEAST DRAINAGE

11-	1	WATER	P-SE WATER	COMP. 4 GRABS	SURFACE	A	N	R	W	43	3247		*1*	7/25/85
11-	2	SEDIMENT	P-SE SEDIMENT	COMP. 4 GRABS	0-1 FT	A	K	R	W	44	44		*1*	7/25/85
11-	2	SEDIMENT	P-SE SEDIMENT	COMP. 4 GRABS	0-1 FT	F	K	R	W	578	9263		*1*	11/18/85

*** 20:D AREA SOUTH

20-	1	WATER	D SOUTH	COMP. 4 GRABS	SURFACE	A	N	R	X	45	9383		-1-	7/25/85
20-	2	SEDIMENT	D SOUTH	COMP. 4 GRABS	0-1 FT	A	K	R	X	46	3389		*1*	7/25/85
20-	2	SEDIMENT	D SOUTH	COMP. 4 GRABS	0-1 FT	F	K	R	X	579	9264		*1*	11/18/85

*** #3 12:AREA 14 LANDFILL

12-	1	WATER	DRAINAGE CHANNEL	COMP. 4 GRABS	SURFACE	A	N	P,R	W	47	9384		-1-	7/25/85
12-	2	SEDIMENT	DRAINAGE CHANNEL	COMP. 4 GRABS	0-1 FT	A	I,K	P,R	W	48	3387	DUPL	*1*	7/25/85
12-	2	SEDIMENT	DRAINAGE CHANNEL	COMP. 4 GRABS	0-1 FT	G	I,K	P,R	W	580	9265		*1*	11/18/85
12-	3	SOIL	BLACK RESIDUE	COMP. 4 GRABS	0-1 FT	D	I	P,U	W	49	9385	FWS	*1*	8/14/85

*** 13:AREA 14 CHANGE HOUSE SITE

13-	1	SOIL	TRANSECT 1	COMP. 10 GRABS	0-1 FT	A	J	Q	Y	50	9386		*1*	8/15/85
13-	2	SOIL	TRANSECT 2	COMP. 10 GRABS	0-1 FT	A	J	Q	Y	51	9387	FWS	*1*	8/15/85
13-	3	SOIL	TRANSECT 3	COMP. 10 GRABS	0-1 FT	A	J	Q	Y	52	9388		*1*	8/15/85
13-	4	SOIL	TRANSECT 4	COMP. 10 GRABS	0-1 FT	A	J	Q	Y	53	9389		*1*	8/15/85
13-	5	SOIL	TRANSECT 5	COMP. 10 GRABS	0-1 FT	A	J	Q	Y	54	9390		*1*	8/15/85
13-	6	SOIL	TRANSECT 6	COMP. 10 GRABS	0-1 FT	A	J	Q	Y	55	9391		*1*	8/15/85

*** 14:AREA 14 SOLVENT STORAGE

14-	1	WATER	DITCH NORTH	COMP. 6 GRABS	SURFACE	A	N	Q,R	Y	56	19301		*1*	7/25/85
14-	2	SEDIMENT	DITCH NORTH	COMP. 6 GRABS	0-1 FT	A	K	Q,R	Y	57	19302	FWS	*1*	7/25/85
14-	3	WATER	DITCH SOUTH	COMP. 6 GRABS	SURFACE	A	N	Q,R	Y	58	19303		*1*	7/25/85

I.D.	MATRIX	NAME	TYPE	DEPTH	ANAL SET	DEPTH	LOCA TION	INTRVL & NO.	SAMP NOS.	LAB NO	REPLICATE LAB FWS	SAMPLE NO	DUPL. / SPIKE COLLECT. DATE	NOTES
.....(RATIONALE)....!														
14- 4	SEDIMENT	DITCH SOUTH	COMP. 6 GRABS	0-1 FT	A	K	Q,R	Y	59	19304		*1*	7/25/85	
14- 4	SEDIMENT	DITCH SOUTH	COMP. 6 GRABS	0-1 FT	F	K	Q,R	Y	581	9266		*1*	11/18/85	
***	#4	15: AREA 7 PLATING POND												
15- 1	WATER	PLATING POND	COMP. 4 GRABS	SURFACE	A	N	Q	Y	60	19305		*1*	7/25/85	
15- 2	SEDIMENT	PLATING POND	COMP. 4 GRABS	0-1 FT	A	K	Q	Y	61	19306		*1*	7/25/85	NO FWS REP.
***		16: AREA 7 INDUSTRIAL SITE												
16- 1	WATER	DITCH NO. 1	COMP. 2 GRABS	SURFACE	A	N	R,S	W	63	19307		*1*	7/25/85	
16- 2	SEDIMENT	DITCH NO. 1	COMP. 2 GRABS	0-1 FT	A	K	R,S	W	64	19308		*1*	7/25/85	
16- 3	WATER	DITCH NO. 2	COMP. 2 GRABS	SURFACE	A	N	R	W	65	19309		*1*	7/25/85	
16- 4	SEDIMENT	DITCH NO. 2	COMP. 2 GRABS	0-1 FT	A	K	R	W	66	19310	FWS	*1*	7/25/85	
16- 4	SEDIMENT	DITCH NO. 2	COMP. 2 GRABS	0-1 FT	F	K	R	W	582	9267		*1*	11/19/85	
16- 5	WATER	DITCH NO. 3	COMP. 2 GRABS	SURFACE	A	N	R	W	67	9394		-1-	7/25/85	
16- 6	SEDIMENT	DITCH NO. 3	COMP. 2 GRABS	0-1 FT	A	K	R	W	68	9395		-1-	7/25/85	
16- 7	WATER	DITCH NO. 4	COMP. 2 GRABS	SURFACE	A	N	R	W	69	9396		-1-	7/25/85	
16- 8	SEDIMENT	DITCH NO. 4	COMP. 2 GRABS	0-1 FT	A	K	R	W	70	9397		*1*	7/25/85	
16- 9	SOIL	BLDG 3-4 FRONT	COMP. 12 GRABS	SURFACE	D	I	P	Y	71	9398 DUPL		*1*	8/17/85	19253
16- 10	SOIL	BLDG 3-4 BACK	COMP. 6 GRABS	0-1 FT	A	J	Q	X	72	9399		*1*	8/17/85	
16- 10	SOIL	BLDG 3-4 BACK	COMP. 6 GRABS	0-1 FT	G	J	Q	X	583	9268	FWS	*1*	11/19/85	
16- 11	SOIL	BLDG 3-5 FRONT	COMP. 6 GRABS	0-1 FT	A	J	Q	X	73	9400		*1*	8/17/85	
16- 12	SOIL	BLDG 3-5 BACK	COMP. 12 GRABS	SURFACE	A	I	P	Y	74	9435		*1*	8/17/85	
16- 13	SOIL	BLDG 4-4 FRONT	COMP. 6 GRABS	0-1 FT	A	J	Q	X	75	9436 SPKE		*1*	8/17/85	19267
16- 14	SOIL	BLDG 4-4 BACK	COMP. 6 GRABS	0-1 FT	A	J	Q	X	76	9437		*1*	8/17/85	
16- 15	SOIL	BLDG 5-2&3 FRONT	COMP. 12 GRABS	SURFACE	D	I	P	Y	77	9438	FWS	*1*	8/17/85	
16- 15	SOIL	BLDG 5-2&3 FRONT	COMP. 12 GRABS	SURFACE	F	I	P	Y	584	9269		*1*	11/19/85	
16- 16	SOIL	BLDG 5-2&3 BACK	COMP. 6 GRABS	0-1 FT	A	J	Q	X	78	9439		*1*	8/17/85	
16- 17	SOIL	BLDG 6-1 CONTROL	COMP. 6 GRABS	0-1 FT	A	J	Q	X	79	9440		*1*	8/17/85	
***	#5	17: JOB CORPS LANDFILL												
17- 1	SOIL	SOIL GRID 1	COMP. 5 GRABS	0-1 FT	A	I	P	X	80	9441		*1*	8/16/85	
17- 2	SOIL	SOIL GRID 2	COMP. 5 GRABS	0-1 FT	A	I	P	X	81	9442		*1*	8/16/85	
17- 2	SOIL	SOIL GRID 2	COMP. 5 GRABS	0-1 FT	G	I	P	X	585	9270 DUPL		*1*	11/18/85	19227

! I.D.	! MATRIX!	NAME	! TYPE	! DEPTH	! ANAL SET	! DEPTH TION	! LOCA- INTRVL & NO. NOS.	! SAMP! LAB NO	REPLICATE LAB FWS	SAMPLE	DUPL./SPIKE NUMBERS	NOTES		
										COLL.			DATE	
!....(RATIONALE)....!														
17- 3	SOIL	SOIL GRID 3	COMP. 5 GRABS	0-1 FT	D	I	P	X	82	9443 DUPL	*1*	8/16/85	19290	
17- 4	SOIL	SOIL GRID 4	COMP. 5 GRABS	0-1 FT	A	I	P	X	83	9444	*1*	8/16/85		
17- 5	SOIL	SOIL GRID 5	COMP. 5 GRABS	0-1 FT	A	I	P	X	84	9445	*1*	8/16/85		
17- 6	SOIL	BARE PATCH 1	COMP. 2 GRABS	0-1 FT	D	I	P,U	W	85	9446	*1*	8/16/85		
17- 6	SOIL	BARE PATCH 1	COMP. 2 GRABS	0-1 FT	G	I	P,U	W	586	9271	*1*	11/18/85		
17- 7	SOIL	BARE PATCH 2	COMP. 2 GRABS	SURFACE	A	I	P,U	W	86	9447	FWS	*1*	8/16/85	
17- 12	WATER	POND NO.1	SINGLE SAMPLE	SURFACE	A	K,N	R	W	91	3248	*1*	7/25/85		
17- 13	WATER	POND NO.2	SINGLE SAMPLE	SURFACE	A	K,N	R	W	92	3249	*1*	7/25/85		

*** #6 :8:AREA 13 LOADING PLATFORM

18- 1	SOIL	LOADING DOCK N	COMP. 20 GRABS	0-1 FT	A	J	Q	Y	93	9452	FWS	*1*	8/15/85	
18- 2	SOIL	LOADING DOCK S	COMP. 20 GRABS	0-1 FT	A	J	Q	Y	94	9453	DUPL	*1*	8/15/85	19223
18- 3	SOIL	LOADING DOCK E	COMP. 2 GRABS	0-1 FT	A	J	Q	W	95	9454	*1*	8/15/85		
18- 4	SOIL	LOADING DOCK W	COMP. 2 GRABS	0-1 FT	A	I	P,Q	W	96	9455	*1*	8/15/85		
18- 4	SOIL	LOADING DOCK W	COMP. 2 GRABS	0-1 FT	F	I	P,Q	W	587	9272	*1*	11/19/85		

*** :9:AREA 13 BUNKER 1-3

19- 1	SOIL	SOIL GRID NE	COMP. 14 GRABS	0-1 FT	A	J	Q	Y	97	9456		*1*	8/16/85	
19- 2	SOIL	SOIL GRID SE	COMP. 14 GRABS	0-1 FT	A	J	Q	Y	98	9457		*1*	8/16/85	
19- 3	SOIL	SOIL GRID NW	COMP. 14 GRABS	0-1 FT	A	J	Q	Y	99	9458		*1*	8/16/85	
19- 3	SOIL	SOIL GRID NW	COMP. 14 GRABS	0-1 FT	F	J	Q	Y	588	9273		*1*	11/19/85	
19- 4	SOIL	SOIL GRID FRONT	COMP. 10 GRABS	0-1 FT	A	J	Q	Y	100	9459	SPKE	*1*	8/16/85	19268
19- 5	SOIL	BR. PATCH TRANSECT	COMP. 3 GRABS	0-1 FT	A	J	Q,U	X	101	9460	FWS	*1*	8/16/85	

*** :10:MUNITIONS CONTROL SITE

30- 1	SOIL	MUNITION CONTROL	SINGLE SAMPLE	SURFACE	D	-	T	W	102	9461	DUPL FWS	*1*	8/16/85	19289 BUNKER 1-11
30- 1	SOIL	MUNITION CONTROL	SINGLE SAMPLE	SURFACE	G	-	T	W	589	9274	FWS	*1*	11/19/85	

*** #7 :21:SOUTHEAST CORNER FIELD

21- 1	SOIL	TRANSECT 1	COMP. 6 GRABS	0-1 FT	A	J	Q	Y	104	9463	DUSP	*1*	8/14/85	19224 1st, SPKE 14138
21- 1	SOIL	TRANSECT 1	COMP. 6 GRABS	0-1 FT	F	J	Q	Y	590	9275		*1*	11/19/85	
21- 2	SOIL	TRANSECT 2	COMP. 6 GRABS	0-1 FT	A	J	Q	Y	105	9464		*1*	8/14/85	4th FROM RD.

CONWR (10/20/85)

PHASE I SAMPLING AND ANALYSIS SCHEDULE

APPENDIX C (Page 6)

! I.D.	! MATRIX!	NAME	! TYPE	! DEPTH	! ANAL SET	! DEPTH TION & NO.	! LOCA- NOS.	! INTRVL	! SAMP!! LAB NO	REPLICATE NO	SAMPLE	DUPL./SPIKE	NOTES	
										FWS	COLL. DATE			
!....(RATIONALE)....!														
21- 3	SOIL	TRANSECT 3	COMP. 6 GRABS	0-1 FT	A	J	Q	Y	106	9465		*1*	8/14/85	6th FROM RD.
21- 4	SOIL	TRANSECT 4	COMP. 6 GRABS	0-1 FT	A	J	Q	Y	107	9466		*1*	8/14/85	8th FROM RD.
*** #8 22:OLD REFUGE SHOP														
22- 1	WATER	POOL WATER	SINGLE GRAB	SURFACE	A	K,N	P	W	108	3256		*1*	7/25/85	
22- 2	SEDIMENT	STREAM SEDIMENTS	COMP. 2 GRABS	0-1 FT	A	K	Q,R	W	109	3384	FWS	*1*	7/25/85	
22- 2	SEDIMENT	STREAM SEDIMENTS	COMP. 2 GRABS	0-1 FT	F	K	Q,R	W	591	9276		*1*	12/05/85	
*** 24:PEPSI-WEST														
24- 1	WATER	PEPSI-WEST	COMP. 3 GRABS	SURFACE	A	K,N	R	W	110	3254		*1*	7/25/85	
24- 1	WATER	PEPSI-WEST	COMP. 3 GRABS	SURFACE	F	K,N	R	W	592	9277		-1-	12/05/85	
24- 2	SEDIMENT	PEPSI-WEST	COMP. 3 GRABS	0-1 FT	A	K	R	W	111	2711		*1*	7/25/85	
24- 2	SEDIMENT	PEPSI-WEST	COMP. 3 GRABS	0-1 FT	F	K	R	W	593	9278	SPKE	*1*	12/05/85	19262
*** 25:C.O. CREEK AT MARION LF														
25- 1	WATER	COC DOWNSTREAM	COMP. 3 GRABS	SURFACE	A	K,N	R	W	112	3243		*1*	7/25/85	
25- 2	SEDIMENT	COC DOWNSTREAM	COMP. 3 GRABS	0-1 FT	D	K	R	W	113	3388		*1*	7/25/85	
25- 3	SEDIMENT	COC DOWNSTREAM	COMP. 3 GRABS	0-1 FT	G	K	R	W	594	9279		*1*	12/05/85	
25- 3	WATER	COC UPSTREAM	COMP. 3 GRABS	SURFACE	A	-	T	W	114	9467	DUSP	*1*	8/13/85	19215 SPKE 85576
25- 4	SEDIMENT	COC UPSTREAM	COMP. 3 GRABS	0-1 FT	A	-	T	W	115	9468	DUPL	*1*	8/13/85	19256
25- 5	WATER	LF POND	COMP. 3 GRABS	SURFACE	A	K,N	R	W	116	9469		*1*	8/13/85	
25- 6	SEDIMENT	LF POND	COMP. 3 GRABS	0-1 FT	A	K	R	W	117	9470	FWS	*1*	8/13/85	
*** 26:C.O. CREEK BELOW MARION STP														
26- 1	WATER	COC AT S. CARBON	COMP. 3 GRABS	SURFACE	A	K,N	R	W	118	3244		*1*	7/25/85	
26- 2	SEDIMENT	COC AT S. CARBON	COMP. 3 GRABS	0-1 FT	A	K	R	W	119	3391		*1*	7/25/85	
26- 3	SEDIMENT	COC AT S. CARBON	COMP. 3 GRABS	0-1 FT	G	K	R	W	595	9280		-1-	12/05/85	
26- 3	WATER	COC AT COURT ST.	COMP. 3 GRABS	SURFACE	A	K,N	R	W	120	9471		*1*	8/13/85	
26- 4	SEDIMENT	COC AT COURT ST.	COMP. 3 GRABS	0-1 FT	A	K	R	W	121	9472	FWS	*1*	8/13/85	
*** 27:C.O. CREEK BELOW 157 DREDGE														

Clay- no sediment.

! I.D.	! MATRIX!	NAME	! TYPE	! DEPTH	! ANAL!DEPTH! SET	LOCA- TION	! INTRVL! SAMP! & NO. NOS.	LAB NO	REPLICATE NO	SAMPLE NO	DUPL./SPIKE FWS	NOTES	
27- 1	WATER	COC AT CHAMNESS	COMP. 3 GRABS	SURFACE	A K,N	R,S	W	122	3245	*1*	7/25/85		
27- 2	SEDIMENT	COC AT CHAMNESS	COMP. 3 GRABS	0-1 FT	D K	R,S	W	123	3390	*1*	7/25/85		
*** #9 28:WATER TOWER LANDFILL													
28- 1	SOIL	MAIN GULLY	COMP. 8 GRABS	0-1 FT	D	K	R,S	X	124	9473 DUPL	*1*	8/14/85	19291
28- 2	SOIL	TRANS. GULLY	COMP. 6 GRABS	0-1 FT	A	I,K	P,R	X	125	9474	*1*	8/14/85	
28- 2	SOIL	TRANS. GULLY	COMP. 6 GRABS	0-1 FT	G	I,K	P,R	X	596	9281 SPKE	*1*	11/19/85	19263
28- 3	SOIL	SOIL GRID 1	COMP. 6 GRABS	0-1 FT	A	J	Q	X	126	9475 FWS	*1*	8/14/85	
28- 4	SOIL	SOIL GRID 2	COMP. 6 GRABS	0-1 FT	A	J	Q	X	127	9476	*1*	8/14/85	
28- 5	SOIL	SOIL GRID 3	COMP. 6 GRABS	0-1 FT	A	J	Q	X	128	9477	*1*	8/14/85	
28- 6	SOIL	SOIL GRID 4	COMP. 6 GRABS	0-1 FT	A	J	Q	X	129	9478	*1*	8/14/85	
28- 9	SOIL	SOUTH END OF DITCH	GRAB	0-1 FT	A	I,K	P,R	W	132	9481 SPKE	*1*	8/14/85	19269
28- 10	SOIL	NORTH END OF DITCH	GRAB	0-1 FT	A	I,K	P,R	W	133	9482	*1*	8/14/85	
28- 11	SOIL	NORTH OF 28-4	GRAB	0-1 FT	A	I	P	W	134	9483	*1*	8/14/85	
28- 12	SOIL	NORTHWEST OF 28-3	GRAB	0-1 FT	A	I	P	W	135	9484	*1*	8/14/85	
28- 13	SOIL	N. FIELD-OLD 28-9	GRAB	0-1 FT	A	I	P	W	136	9485	*1*	8/14/85	
28- 14	SOIL	GULLY	GRAB	0-1 FT	A	I,K	P,R	W	137	9486	*1*	8/14/85	
*** #10 29:FIRE STATION LANDFILL													
29- 1	SOIL	EAST FACE 1	COMP. 12 GRABS	0&1 FT	A	I	P	X	138	9487 SPKE	*1*	8/13/85	19288
29- 2	SOIL	EAST FACE 2	COMP. 12 GRABS	0&1 FT	A	I	P	X	139	9488	*1*	8/13/85	
29- 2	SOIL	EAST FACE 2	COMP. 12 GRABS	0&1 FT	G	I	P	X	597	9282	*1*	11/19/85	
29- 3	SOIL	EAST FACE 3	COMP. 12 GRABS	0&1 FT	D	I	P	X	140	9489	*1*	8/13/85	
29- 4	SOIL	EAST FACE 4	COMP. 12 GRABS	0&1 FT	A	I	P	X	141	9490	*1*	8/13/85	
29- 5	SOIL	NORTH FACE 1	COMP. 12 GRABS	0&1 FT	A	I	P	X	142	9491 DUPL	*1*	8/13/85	19287
29- 6	SOIL	NORTH FACE 2	COMP. 12 GRABS	0&1 FT	D	I	P	X	143	9492	*1*	8/13/85	
29- 7	SOIL	NORTH FACE 3	COMP. 12 GRABS	0&1 FT	A	I	P	X	144	9493 FWS	*1*	8/13/85	
*** #11 32:AREA 9 LANDFILL													
32- 1	SOIL	SOIL GRID 1	COMP.01' DEPTHS	0-12 FT	H	L,M	P	Z	149	9498	*1*	8/24/85	
32- 2	SOIL	SOIL GRID 1-0	TOP CORE COMP.	0-6 INCH	C	I	P	Z	150	9499	*1*	8/24/85	
32- 3	SOIL	SOIL GRID 1-1	MID CORE COMP.	6-6.5 FT	C	L,M	P	Z	151	9500 DUPL	*1*	8/24/85	19250
32- 4	SOIL	SOIL GRID 1-2	BOT CORE COMP.	11.5-12'	C	L,M	P	Z	152	10640	*1*	8/24/85	

! I.D.	! MATRIX!	NAME	! TYPE	! DEPTH	! ANAL SET	! DEPTH! TION	! LOCA-! INTRVL NOS.	! LAB NO	REPLICATE	SAMPLE	DUPL./SPIKE	NOTES	
										FWS	COLL.		DATE
!....(RATIONALE)....!													
32- 5	SOIL	SOIL GRID 2	COMP.@1' DEPTHS	0-12 FT	H	L,M	P	Z	153	10641	*1*	8/24/85	
32- 6	SOIL	SOIL GRID 2-0	TOP CORE COMP.	0-6 INCH	C	I	P	Z	154	10642	*1*	8/24/85	
32- 7	SOIL	SOIL GRID 2-1	MID CORE COMP.	6-6.5 FT	C	L,M	P	Z	155	10643	*1*	8/24/85	
32- 8	SOIL	SOIL GRID 2-2	BOT CORE COMP.	11.5-12'	C	L,M	P	Z	156	10644	*1*	8/24/85	
32- 9	SOIL	SOIL GRID 3	COMP.@1' DEPTHS	0-12 FT	H	L,M	P	Z	157	10645	*1*	8/21/85	
32- 10	SOIL	SOIL GRID 3-0	TOP CORE COMP.	0-6 INCH	C	I	P	Z	158	10646	*1*	8/21/85	
32- 11	SOIL	SOIL GRID 3-1	MID CORE COMP.	6-6.5 FT	C	L,M	P	Z	159	10647	*1*	8/21/85	
32- 12	SOIL	SOIL GRID 3-2	BOT CORE COMP.	11.5-12'	C	L,M	P	Z	160	10648	*1*	8/21/85	
32- 13	SOIL	SOIL GRID 4	COMP.@1' DEPTHS	0-12 FT	H	L,M	P	Z	161	10649	*1*	8/21/85	
32- 14	SOIL	SOIL GRID 4-0	TOP CORE COMP.	0-6 INCH	C	I	P	Z	162	10650	*1*	8/21/85	
32- 15	SOIL	SOIL GRID 4-1	MID CORE COMP.	6-6.5 FT	C	L,M	P	Z	163	10651	*1*	8/21/85	
32- 16	SOIL	SOIL GRID 4-2	BOT CORE COMP.	11.5-12'	C	L,M	P	Z	164	10652	*1*	8/21/85	
32- 17	SOIL	SOIL GRID 5	COMP.@1' DEPTHS	0-12 FT	H	L,M	P	Z	165	10653	*1*	8/22/85	
32- 18	SOIL	SOIL GRID 5-0	TOP CORE COMP.	0-6 INCH	C	I	P	Z	166	10654	DUPL	*1*	8/22/85
32- 19	SOIL	SOIL GRID 5-1	MID CORE COMP.	6-6.5 FT	C	L,M	P	Z	167	10655	*1*	8/22/85	
32- 20	SOIL	SOIL GRID 5-2	BOT CORE COMP.	11.5-12'	C	L,M	P	Z	168	10656	*1*	8/22/85	
32- 21	SOIL	SOIL GRID 6	COMP.@1' DEPTHS	0-12 FT	H	L,M	P	Z	169	10657	*1*	8/22/85	
32- 22	SOIL	SOIL GRID 6-0	TOP CORE COMP.	0-6 INCH	C	I	P	Z	170	10658	FWS	*1*	8/22/85
32- 23	SOIL	SOIL GRID 6-1	MID CORE COMP.	6-6.5 FT	C	L,M	P	Z	171	10659	*1*	8/22/85	
32- 24	SOIL	SOIL GRID 6-2	BOT CORE COMP.	11.5-12'	C	L,M	P	Z	172	10660	DUPL	*1*	8/22/85
32- 25	SOIL	SOIL GRID 7	COMP.@1' DEPTHS	0-12 FT	H	L,M	P	Z	173	10661	DUPL	*1*	8/22/85
32- 26	SOIL	SOIL GRID 7-0	TOP CORE COMP.	0-6 INCH	C	I	P	Z	174	10662	*1*	8/22/85	
32- 27	SOIL	SOIL GRID 7-1	MID CORE COMP.	6-6.5 FT	C	L,M	P	Z	175	10663	*1*	8/22/85	
32- 28	SOIL	SOIL GRID 7-2	BOT CORE COMP.	11.5-12'	C	L,M	P	Z	176	10664	*1*	8/22/85	
32- 29	SOIL	SOIL GRID 8	COMP.@1' DEPTHS	0-12 FT	H	L,M	P	Z	177	10665	SPKE	*1*	8/23/85
32- 30	SOIL	SOIL GRID 8-0	TOP CORE COMP.	0-6 INCH	C	I	P	Z	178	10666	SPKE	*1*	8/23/85
32- 31	SOIL	SOIL GRID 8-1	MID CORE COMP.	6-6.5 FT	C	L,M	P	Z	179	10667	FWS	*1*	8/23/85
32- 32	SOIL	SOIL GRID 8-2	BOT CORE COMP.	11.5-12'	C	L,M	P	Z	180	10668	*1*	8/23/85	
32- 33	SOIL	SOIL GRID 9	COMP.@1' DEPTHS	0-12 FT	H	L,M	P	Z	181	10669	FWS	*1*	8/23/85
32- 34	SOIL	SOIL GRID 9-0	TOP CORE COMP.	0-6 INCH	C	I	P	Z	182	10670	FWS	*1*	8/23/85
32- 35	SOIL	SOIL GRID 9-1	MID CORE COMP.	6-6.5 FT	C	L,M	P	Z	183	10671	*1*	8/23/85	
32- 36	SOIL	SOIL GRID 9-2	BOT CORE COMP.	11.5-12'	C	L,M	P	Z	184	10672	*1*	8/23/85	
32- 37	SOIL	NORTH TRANSECT 1	COMP.@3' INTRVL	SURFACE	B	K	R or T	Y	185	10673	*1*	8/19/85	
32- 38	SOIL	NORTH TRANSECT 1	COMP.@3' INTRVL	SURFACE	B	K	R or T	Y	186	10674	*1*	8/19/85	
32- 39	SOIL	EAST TRANSECT 1	COMP.@3' INTRVL	SURFACE	B	K	R or T	Y	187	10675	*1*	8/19/85	
32- 40	SOIL	EAST TRANSECT 2	COMP.@3' INTRVL	SURFACE	B	K	R or T	Y	188	10676	*1*	8/19/85	

! I.D.	! MATRIX!	NAME	! TYPE	! DEPTH	! ANAL SET	! DEPTH TION	! LOCA & NO.	! INTRVL NOS.	! SAMP NO	! LAB FWS	REPLICATE	SAMPLE	DUPL./SPIKE	NOTES
											NO	COLL.	DATE	NUMBERS
!....(RATIONALE)....!														
32- 41	SOIL	SOUTH TRANSECT 1	COMP. #3' INTRVL	SURFACE	B	K	R or T	Y	189	10677		*1*	8/19/85	
32- 42	SOIL	SOUTH TRANSECT 2	COMP. #3' INTRVL	SURFACE	B	K	R or T	Y	190	10678		*1*	8/19/85	
32- 43	SEDIMENT	INT. CREEK 1-0	GRAB	SURFACE	A	J,K	Q,R	Z	191	10679		*1*	8/22/85	
32- 44	SEDIMENT	INT. CREEK 1-1	GRAB	3 FEET	A	J,K,L,	Q,R	Z	192	10680		*1*	8/22/85	
32- 45	SEDIMENT	INT. CREEK 1-2	GRAB	6 FEET	A	J,K,L,	Q,R	Z	193	10681		*1*	8/22/85	
32- 46	SEDIMENT	INT. CREEK 2-0	GRAB	SURFACE	A	J,K	Q,R	Z	194	10682	FWS	*1*	8/22/85	
32- 47	SEDIMENT	INT. CREEK 2-1	GRAB	3 FEET	A	J,K,L,	Q,R	Z	195	10683		*1*	8/22/85	
32- 48	SEDIMENT	INT. CREEK 2-2	GRAB	6 FEET	A	J,K,L,	Q,R	Z	196	10684		*1*	8/22/85	
32- 49	SEDIMENT	INT. CREEK 3-0	GRAB	SURFACE	A	J,K	Q,R	Z	197	10685	DUPL	*1*	8/22/85	19257
32- 50	SEDIMENT	INT. CREEK 3-1	GRAB	3 FEET	A	J,K,L,	Q,R	Z	198	10686		*1*	8/22/85	
32- 51	SEDIMENT	INT. CREEK 3-2	GRAB	6 FEET	A	J,K,L,	Q,R	Z	199	10687		*1*	8/22/85	
32- 52	SEDIMENT	INT. CREEK 4-0	GRAB	SURFACE	A	J,K	Q,R	Z	200	10688	FWS	*1*	8/23/85	
32- 53	SEDIMENT	INT. CREEK 4-1	GRAB	3 FEET	A	J,K,L,	Q,R	Z	201	10689		*1*	8/23/85	
32- 54	SEDIMENT	INT. CREEK 4-2	GRAB	6 FEET	A	J,K,L,	Q,R	Z	202	10690		*1*	8/23/85	
32- 55	SEDIMENT	INT. CREEK 5-0	GRAB	SURFACE	A	J,K	Q,R	Z	203	10691	DUPL	*1*	8/23/85	19258
32- 56	SEDIMENT	INT. CREEK 5-1	GRAB	3 FEET	A	J,K,L,	Q,R	Z	204	10692		*1*	8/23/85	
32- 57	SEDIMENT	INT. CREEK 5-2	GRAB	6 FEET	A	J,K,L,	Q,R	Z	205	10693		*1*	8/23/85	
32- 58	SEDIMENT	INT. CREEK 6-0	GRAB	SURFACE	D	J,K	Q,R	Z	206	10694	SPKE	*1*	8/23/85	19285
32- 59	SEDIMENT	INT. CREEK 6-1	GRAB	3 FEET	D	J,K,L,	Q,R	Z	207	10695		*1*	8/23/85	
32- 60	SEDIMENT	INT. CREEK 6-2	GRAB	6 FEET	D	J,K,L,	Q,R	Z	208	10696		*1*	8/23/85	
32- 64	SOIL	YELLOW SPOT	SINGLE SAMPLE	SURFACE	A	I	P	W	558	46701		*1*	8/26/85	
32- 65	SOIL	BEFORE CLEANING	SINGLE SAMPLE	SURFACE	B	K	T	W	559	46702		*1*	8/26/85	
32- 66	SOIL	AFTER CLEANING	SINGLE SAMPLE	SURFACE	B	K	T	W	560	46703		*1*	8/26/85	

*** 33: AREA 9 BUILDING COMPLEX

33- 1	SOIL	LOC.	1 - I-1- 25 CORE VERTICAL	0-1 FOOT	B	J	Q1	Z	212	10700	FWS	*1*	9/23/85	
33- 2	SOIL	LOC.	1 - I-1- 25 CORE VERTICAL	1-2 FEET	B	J,M	Q1	Z	213	10701		*1*	9/23/85	
33- 3	SOIL	LOC.	1 - I-1- 25 CORE VERTICAL	2-3 FEET	B	J,M	Q1	Z	214	10702		*1*	9/23/85	
33- 4	SOIL	LOC.	2 - I-1- 25 CORE VERTICAL	0-1 FOOT	B	J	Q1	Z	215	10703	DUPL	*1*	9/23/85	19228
33- 5	SOIL	LOC.	2 - I-1- 25 CORE VERTICAL	1-2 FEET	B	J,M	Q1	Z	216	10704		*1*	9/23/85	
33- 6	SOIL	LOC.	2 - I-1- 25 CORE VERTICAL	2-3 FEET	B	J,M	Q1	Z	217	10705		*1*	9/23/85	
33- 7	SOIL	LOC.	3 - I-1- 25 CORE VERTICAL	0-1 FOOT	B	J	Q1	Z	218	10706		*1*	9/23/85	
33- 8	SOIL	LOC.	3 - I-1- 25 CORE VERTICAL	1-2 FEET	B	J,M	Q1	Z	219	10707		*1*	9/23/85	
33- 9	SOIL	LOC.	3 - I-1- 25 CORE VERTICAL	2-3 FEET	B	J,M	Q1	Z	220	10708		*1*	9/23/85	
33- 10	SOIL	LOC.	4 - I-1- 25 CORE VERTICAL	0-1 FOOT	B	J	Q1	Z	221	10709		*1*	9/23/85	

! I.D.	! MATRIX!	NAME	! TYPE	! DEPTH	! ANAL!	DEPTH!	LOCA-	! INTRVL!	SAMP!!	LAB	REPLICATE	SAMPLE	DUPL./SPIKE	NOTES
													FWS	
....(RATIONALE)....!														
33- 11	SOIL	LOC.	4 - I-1- 25	CORE VERTICAL	1-2 FEET	B	J,M	Q1	Z	222	10710	*1*	9/23/85	
33- 12	SOIL	LOC.	4 - I-1- 25	CORE VERTICAL	2-3 FEET	B	J,M	Q1	Z	223	10711	*1*	9/23/85	
33- 13	SOIL	LOC.	5 - I-1- 25	CORE VERTICAL	0-1 FOOT	B	J	Q1	Z	224	10712	*1*	9/23/85	
33- 14	SOIL	LOC.	5 - I-1- 25	CORE VERTICAL	1-2 FEET	B	J,M	Q1	Z	225	10713	*1*	9/23/85	
33- 15	SOIL	LOC.	5 - I-1- 25	CORE VERTICAL	2-3 FEET	B	J,M	Q1	Z	226	10714	*1*	9/23/85	
33- 16	SOIL	LOC.	6 - I-1- 25	CORE SURFACE	0-1 FOOT	B	J	Q1	Z	227	10715 DUPL.	*1*	9/23/85	19229
33- 17	SOIL	LOC.	7 - I-1- 25	CORE VERTICAL	0-1 FOOT	B	J	Q1	Z	228	10716	*1*	9/23/85	
33- 18	SOIL	LOC.	7 - I-1- 25	CORE VERTICAL	1-2 FEET	B	J,M	Q1	Z	229	10717	*1*	9/23/85	
33- 19	SOIL	LOC.	7 - I-1- 25	CORE VERTICAL	2-3 FEET	B	J,M	Q1	Z	230	10718	*1*	9/23/85	
33- 20	SOIL	LOC.	8 - I-1- 25	CORE VERTICAL	0-1 FOOT	B	J	Q1	Z	231	10719	*1*	9/23/85	
33- 21	SOIL	LOC.	8 - I-1- 25	CORE VERTICAL	1-2 FEET	B	J,M	Q1	Z	232	10720	*1*	9/23/85	
33- 22	SOIL	LOC.	8 - I-1- 25	CORE VERTICAL	2-3 FEET	B	J,M	Q1	Z	233	10721	*1*	9/23/85	
33- 23	SOIL	LOC.	9 - I-1- 25	CORE SURFACE	0-1 FOOT	B	J	Q1	Z	234	10722 DUPL.	*1*	9/23/85	19230
33- 24	SOIL	LOC.	10 - I-1- 25	CORE SURFACE	0-1 FOOT	B	J	Q1	Z	235	10723 FWS	*1*	9/23/85	
33- 25	SOIL	LOC.	11 - I-1- 25	CORE SURFACE	0-1 FOOT	B	J	Q1	Z	236	10724	*1*	9/23/85	
33- 26	SOIL	LOC.	12 - I-1- 25	CORE SURFACE	0-1 FOOT	B	J	Q1	Z	237	10725 SPKE	*1*	9/23/85	19270
33- 27	SOIL	LOC.	13 - I-1- 25	CORE SURFACE	0-1 FOOT	D	J	Q1	Z	238	10726	*1*	9/23/85	
33- 28	SOIL	LOC.	14 - I-1- 23	DITCH	0-1 FOOT	B	K	Q1	Z	239	10727	*1*	9/23/85	
33- 29	SOIL	LOC.	15 - I-1- 23	CORE SURFACE	0-6 INCH	B	J	Q1	Z	240	10728 DUPL.	*1*	9/23/85	19231
33- 30	SOIL	LOC.	16 - I-1- 64	DITCH	0-1 FOOT	B	K	Q1	Z	241	10729	*1*	9/23/85	
33- 31	SOIL	LOC.	17 - I-1- 64	CORE SURFACE	0-1 FOOT	B	J	Q1	Z	242	10730	*1*	9/23/85	
33- 32	SOIL	LOC.	18 - I-1- 22	DITCH	0-1 FOOT	B	K	Q1	Z	243	10731	*1*	9/23/85	
33- 33	SOIL	LOC.	19 - I-1- 21	DITCH	0-1 FOOT	B	K	Q1	Z	244	10732	*1*	9/23/85	
33- 34	SOIL	LOC.	20 - I-1- 21	CORE VERTICAL	0-1 FOOT	B	J	Q1	Z	245	10733 FWS	*1*	9/24/85	
33- 35	SOIL	LOC.	20 - I-1- 21	CORE VERTICAL	1-2 FEET	B	J,M	Q1	Z	246	10734	*1*	9/24/85	
33- 36	SOIL	LOC.	20 - I-1- 21	CORE VERTICAL	2-3 FEET	B	J,M	Q1	Z	247	10735	*1*	9/24/85	
33- 37	SOIL	LOC.	21 - I-1- 21	CORE SURFACE	0-1 FOOT	B	J	Q1	Z	248	10736 DUPL.	*1*	9/24/85	19232
33- 38	SOIL	LOC.	22 - I-1- 21	CORE SURFACE	0-1 FOOT	B	J	Q1	Z	249	10737	*1*	9/24/85	
33- 39	SOIL	LOC.	23 - STAGING	DITCH	0-1 FOOT	B	K	Q1	Z	250	10738	*1*	9/23/85	
33- 40	SOIL	LOC.	24 - STAGING	DITCH	0-1 FOOT	B	K	Q1	Z	251	10739	*1*	9/23/85	
33- 41	SOIL	LOC.	25 - 1-1- 24	CORE VERTICAL	0-1 FOOT	B	J	Q1	Z	252	10740	*1*	9/23/85	
33- 42	SOIL	LOC.	25 - 1-1- 24	CORE VERTICAL	1-2 FEET	B	J,M	Q1	Z	253	10741	*1*	9/23/85	
33- 43	SOIL	LOC.	25 - 1-1- 24	CORE VERTICAL	2-3 FEET	B	J,M	Q1	Z	254	10742	*1*	9/23/85	
33- 44	SOIL	LOC.	26 - I-1- 24	CORE VERTICAL	0-1 FOOT	B	J	Q1	Z	255	10743	*1*	9/23/85	
33- 45	SOIL	LOC.	26 - I-1- 24	CORE VERTICAL	1-2 FEET	B	J,M	Q1	Z	256	10744	*1*	9/23/85	
33- 46	SOIL	LOC.	26 - I-1- 24	CORE VERTICAL	2-3 FEET	B	J,M	Q1	Z	257	10745 SPKE	*1*	9/23/85	19271

! I.D. !	MATRIX!	NAME	! TYPE	! DEPTH	! ANAL SET	DEPTH! LOCATI	! INTRVL	! SAMP!	LAB NO.	REPLICATE NO	SAMPLE	DUPL./SPIKE	NOTES
											!....(RATIONALE)....!		
33- 47	SOIL	LOC.	27 - I-1- 24	CORE VERTICAL	0-1 FOOT	B	J	Q1	Z	258	10746	*1*	9/23/85
33- 48	SOIL	LOC.	27 - I-1- 24	CORE VERTICAL	1-2 FEET	B	J,M	Q1	Z	259	10747	*1*	9/24/85
33- 49	SOIL	LOC.	27 - I-1- 24	CORE VERTICAL	2-3 FEET	B	J,M	Q1	Z	260	10748	*1*	9/24/85
33- 50	SOIL	LOC.	28 - I-1- 24	CORE VERTICAL	0-1 FOOT	B	J	Q1	Z	261	10749	*1*	9/24/85
33- 51	SOIL	LOC.	28 - I-1- 24	CORE VERTICAL	1-2 FEET	B	J,M	Q1	Z	262	10750	*1*	9/24/85
33- 52	SOIL	LOC.	28 - I-1- 24	CORE VERTICAL	2-3 FEET	B	J,M	Q1	Z	263	10751	*1*	9/24/85
33- 53	SOIL	LOC.	29 - I-1- 24	DITCH	0-1 FOOT	B	K	Q1	Z	264	10752	*1*	9/24/85
33- 54	SOIL	LOC.	30 - I-1- 24	DITCH	0-1 FOOT	B	K	Q1	Z	265	10753	FWS	*1* 9/24/85
33- 55	SOIL	LOC.	31 - I-1- 24	DITCH	0-1 FOOT	B	K	Q1	Z	266	11641	SPKE	*1* 9/24/85
33- 56	SOIL	LOC.	32 - I-1- 24	DITCH	0-1 FOOT	B	K	Q1	Z	267	11642	DUPL	*1* 9/24/85
33- 57	SOIL	LOC.	33 - I-1- 20	CORE SURFACE	0-1 FOOT	B	J	Q1	Z	268	11643	*1*	9/24/85
33- 58	SOIL	LOC.	34 - I-1- 20	CORE SURFACE	0-1 FOOT	B	J	Q1	Z	269	11644	*1*	9/24/85
33- 59	SOIL	LOC.	35 - I-1- 20	CORE SURFACE	0-1 FOOT	B	J	Q1	Z	270	11645	*1*	9/24/85
33- 60	SOIL	LOC.	36 - I-1- 20	CORE SURFACE	0-1 FOOT	D	J	Q1	Z	271	11646	*1*	9/24/85
33- 61	SOIL	LOC.	37 - I-1- 19	CORE SURFACE	0-6 INCH	B	J	Q1	Z	272	11647	*1*	9/24/85
33- 62	SOIL	LOC.	38 - I-1- 2	CORE VERTICAL	0-1 FOOT	B	J	Q1	Z	273	11648	*1*	9/24/85
33- 63	SOIL	LOC.	38 - I-1- 2	CORE VERTICAL	1-2 FEET	B	J,M	Q1	Z	274	11649	*1*	9/24/85
33- 64	SOIL	LOC.	38 - I-1- 2	CORE VERTICAL	2-3 FEET	B	J,M	Q1	Z	275	11650	*1*	9/24/85
33- 65	SOIL	LOC.	39 - I-1- 2	CORE SURFACE	0-1 FOOT	B	J	Q1	Z	276	11651	DUPL	*1* 9/24/85
33- 66	SOIL	LOC.	40 - I-1- 2	CORE SURFACE	0-1 FOOT	B	J	Q1	Z	277	11652	FWS	*1* 9/24/85
33- 67	SOIL	LOC.	41 - I-1- 2	CORE VERTICAL	0-1 FOOT	B	J	Q1	Z	278	11653	*1*	9/24/85
33- 68	SOIL	LOC.	41 - I-1- 2	CORE VERTICAL	1-2 FEET	B	J,M	Q1	Z	279	11654	*1*	9/24/85
33- 69	SOIL	LOC.	41 - I-1- 2	CORE VERTICAL	2-3 FEET	B	J,M	Q1	Z	280	11655	*1*	9/24/85
33- 70	SOIL	LOC.	42 - I-1- 2	CORE SURFACE	0-1 FOOT	B	J	Q1	Z	281	11656	*1*	9/24/85
33- 71	SOIL	LOC.	43 - I-1- 2	CORE SURFACE	0-1 FOOT	B	J	Q1	Z	282	11657	*1*	9/24/85
33- 72	SOIL	LOC.	44 - I-1- 2	CORE VERTICAL	0-1 FOOT	B	J	Q1	Z	283	11658	*1*	9/24/85
33- 73	SOIL	LOC.	44 - I-1- 2	CORE VERTICAL	1-2 FEET	B	J,M	Q1	Z	284	11659	*1*	9/24/85
33- 74	SOIL	LOC.	44 - I-1- 2	CORE VERTICAL	2-3 FEET	B	J,M	Q1	Z	285	11660	*1*	9/24/85
33- 75	SOIL	LOC.	45 - I-1- 2	CORE SURFACE	0-1 FOOT	B	J	Q1	Z	286	11661	DUPL	*1* 9/24/85
33- 76	SOIL	LOC.	56 - I-1- 2	CORE VERTICAL	0-1 FOOT	B	J	Q1	Z	287	11662	*1*	9/24/85
33- 77	SOIL	LOC.	56 - I-1- 2	CORE VERTICAL	1-2 FEET	B	J,M	Q1	Z	288	11663	*1*	9/24/85
33- 78	SOIL	LOC.	56 - I-1- 2	CORE VERTICAL	2-3 FEET	B	J,M	Q1	Z	289	11664	*1*	9/24/85
33- 79	SOIL	LOC.	57 - I-1- 2	CORE SURFACE	0-1 FOOT	B	J	Q1	Z	290	11665	SPKE	*1* 9/24/85
33- 80	SOIL	LOC.	58 - I-1- 2	CORE SURFACE	0-1 FOOT	B	J	Q1	Z	291	11666	*1*	9/24/85
33- 81	SOIL	LOC.	46 - I-1- 5	CORE VERTICAL	0-1 FOOT	B	J	Q1	Z	292	11667	*1*	9/24/85
33- 82	SOIL	LOC.	46 - I-1- 5	CORE VERTICAL	1-2 FEET	B	J,M	Q1	Z	293	11668	*1*	9/24/85

! I.D.	! MATRIX!	NAME	! TYPE	! DEPTH	! ANAL!	DEPTH!	LOCA-	! INTRVL!	SAMP!!	LAB	REPLICATE	SAMPLE	DUPL./SPIKE	NOTES
													NUMBERS	
!....(RATIONALE)....!														
33- 83	SOIL	LOC.	46 - I-1-	5 CORE VERTICAL	2-3 FEET	B	J,M	Q1	Z	294	11669		*1*	9/24/85
33- 84	SOIL	LOC.	47 - I-1-	5 CORE SURFACE	0-1 FOOT	B	J	Q1	Z	295	11670		*1*	9/24/85
33- 85	SOIL	LOC.	48 - I-1-	5 CORE SURFACE	0-1 FOOT	B	J	Q1	Z	296	11671		*1*	9/24/85
33- 86	SOIL	LOC.	49 - I-1-	5 CORE VERTICAL	0-1 FOOT	B	J	Q1	Z	297	11672		*1*	9/24/85
33- 87	SOIL	LOC.	49 - I-1-	5 CORE VERTICAL	1-2 FEET	B	J,M	Q1	Z	298	11673		*1*	9/24/85
33- 88	SOIL	LOC.	49 - I-1-	5 CORE VERTICAL	2-3 FEET	B	J,M	Q1	Z	299	11674		*1*	9/24/85
33- 89	SOIL	LOC.	50 - I-1-	5 CORE SURFACE	0-1 FOOT	B	J	Q1	Z	300	11675	FWS	*1*	9/24/85
33- 90	SOIL	LOC.	51 - I-1-	5 CORE VERTICAL	0-1 FOOT	B	J	Q1	Z	301	11676		*1*	9/24/85
33- 91	SOIL	LOC.	51 - I-1-	5 CORE VERTICAL	1-2 FEET	B	J,M	Q1	Z	302	11677		*1*	9/24/85
33- 92	SOIL	LOC.	51 - I-1-	5 CORE VERTICAL	2-3 FEET	B	J,M	Q1	Z	303	11678		*1*	9/24/85
33- 93	SOIL	LOC.	52 - I-1-	5 CORE SURFACE	0-1 FOOT	B	J	Q1	Z	304	11679	DUPL	*1*	9/24/85
33- 94	SOIL	LOC.	53 - I-1-	5 CORE SURFACE	0-1 FOOT	B	J	Q1	Z	305	11680	SPKE	*1*	9/24/85
33- 95	SOIL	LOC.	54 - I-1-	35 CORE VERTICAL	0-1 FOOT	B	J	Q1	Z	306	11681		*1*	9/24/85
33- 96	SOIL	LOC.	54 - I-1-	35 CORE VERTICAL	1-2 FEET	B	J,M	Q1	Z	307	11682		*1*	9/24/85
33- 97	SOIL	LOC.	54 - I-1-	35 CORE VERTICAL	2-3 FEET	B	J,M	Q1	Z	308	11683		*1*	9/24/85
33- 98	SOIL	LOC.	55 - I-1-	35 CORE SURFACE	0-1 FOOT	B	J	Q1	Z	309	11684		*1*	9/24/85
33- 99	SOIL	LOC.	59 - I-1-	1 CORE SURFACE	0-1 FOOT	B	J	Q1	Z	310	11685	DUPL	*1*	9/24/85
33-100	SOIL	LOC.	60 - I-1-	1 CORE SURFACE	0-1 FOOT	B	J	Q1	Z	311	11686		*1*	9/25/85
33-101	SOIL	LOC.	61 - I-1-	1 CORE SURFACE	0-1 FOOT	B	J	Q1	Z	312	11687		*1*	9/25/85
33-102	SOIL	LOC.	62 - I-1-	3 CORE VERTICAL	0-1 FOOT	B	J	Q1	Z	313	11688	SPKE	*1*	9/25/85
33-103	SOIL	LOC.	62 - I-1-	3 CORE VERTICAL	1-2 FEET	B	J,M	Q1	Z	314	11689		*1*	9/25/85
33-104	SOIL	LOC.	62 - I-1-	3 CORE VERTICAL	2-3 FEET	B	J,M	Q1	Z	315	11690		*1*	9/25/85
33-105	SOIL	LOC.	63 - I-1-	3 CORE VERTICAL	0-1 FOOT	B	J	Q1	Z	316	11691	DUPL	*1*	9/25/85
33-106	SOIL	LOC.	63 - I-1-	3 CORE VERTICAL	1-2 FEET	B	J,M	Q1	Z	317	11692		*1*	9/25/85
33-107	SOIL	LOC.	63 - I-1-	3 CORE VERTICAL	2-3 FEET	B	J,M	Q1	Z	318	11693		*1*	9/25/85
33-108	SOIL	LOC.	64 - I-1-	3 CORE VERTICAL	0-1 FOOT	B	J	Q1	Z	319	11694	FWS	*1*	9/24/85
33-109	SOIL	LOC.	64 - I-1-	3 CORE VERTICAL	1-2 FEET	B	J,M	Q1	Z	320	11695		*1*	9/24/85
33-110	SOIL	LOC.	64 - I-1-	3 CORE VERTICAL	2-3 FEET	B	J,M	Q1	Z	321	11696		*1*	9/24/85
33-111	SOIL	LOC.	65 - I-1-	3 CORE VERTICAL	0-1 FOOT	B	J	Q1	Z	322	11697		*1*	9/24/85
33-112	SOIL	LOC.	65 - I-1-	3 CORE VERTICAL	1-2 FEET	B	J,M	Q1	Z	323	11698		*1*	9/24/85
33-113	SOIL	LOC.	65 - I-1-	3 CORE VERTICAL	2-3 FEET	B	J,M	Q1	Z	324	11699		*1*	9/24/85
33-114	SOIL	LOC.	66 - I-1-	3 CORE VERTICAL	0-1 FOOT	B	J	Q1	Z	325	11700		*1*	9/24/85
33-115	SOIL	LOC.	66 - I-1-	3 CORE VERTICAL	1-2 FEET	B	J,M	Q1	Z	326	11701		*1*	9/24/85
33-116	SOIL	LOC.	66 - I-1-	3 CORE VERTICAL	2-3 FEET	B	J,M	Q1	Z	327	11702		*1*	9/24/85
33-117	SOIL	LOC.	67 - I-1-	3 CORE VERTICAL	0-1 FOOT	B	J	Q1	Z	328	11703	DUPL	*1*	9/24/85
33-118	SOIL	LOC.	67 - I-1-	3 CORE VERTICAL	1-2 FEET	B	J,M	Q1	Z	329	11704		*1*	9/24/85

! I.D. !	! MATRIX!	NAME	!	TYPE	! DEPTH	! ANAL!DEPTH! SET	! LOCA- TION	! INTRVL! & NO.	! Samp! NOS.	! LAB NO.	REPLICATE	SAMPLE	DUPL./SPIKE	NOTES	
												FWS	COLL.		DATE
!.... (RATIONALE)....!															
33-119	SOIL	LOC.	67 - I-1-	3 CORE VERTICAL	2-3 FEET	B	J, M	Q1	Z	330	11705		*1*	9/24/85	
33-120	SOIL	LOC.	68 - I-1-	3 CORE VERTICAL	0-1 FOOT	B	J	Q1	Z	331	11706	SPKE	*1*	9/24/85	19276
33-121	SOIL	LOC.	68 - I-1-	3 CORE VERTICAL	1-2 FEET	B	J, M	Q1	Z	332	11707		*1*	9/24/85	
33-122	SOIL	LOC.	68 - I-1-	3 CORE VERTICAL	2-3 FEET	B	J, M	Q1	Z	333	11708		*1*	9/24/85	
33-123	SOIL	LOC.	69 - I-1-	3 CORE VERTICAL	0-1 FOOT	B	J	Q1	Z	334	11709	FWS	*1*	9/24/85	
33-124	SOIL	LOC.	69 - I-1-	3 CORE VERTICAL	1-2 FEET	B	J, M	Q1	Z	335	11710		*1*	9/24/85	
33-125	SOIL	LOC.	69 - I-1-	3 CORE VERTICAL	2-3 FEET	B	J, M	Q1	Z	336	11711		*1*	9/24/85	
33-126	SOIL	LOC.	70 - I-1-	3 CORE SURFACE	0-1 FOOT	B	J	Q1	Z	337	11712		*1*	9/25/85	
33-127	SOIL	LOC.	71 - I-1-	3 CORE SURFACE	0-1 FOOT	B	J	Q1	Z	338	11713	DUPL	*1*	9/25/85	19240
33-128	SOIL	LOC.	72 - I-1-	3 CORE SURFACE	0-1 FOOT	B	J	Q1	Z	339	11714		*1*	9/25/85	
33-129	SOIL	LOC.	73 - I-1-	3 CORE SURFACE	0-1 FOOT	D	J	Q1	Z	340	11715		*1*	9/24/85	
33-130	SOIL	LOC.	74 - I-1-	3 CORE SURFACE	0-1 FOOT	B	J	Q1	Z	341	11716	DUPL	*1*	9/25/85	19241
33-131	SOIL	LOC.	75 - I-1-	3 CORE VERTICAL	0-1 FOOT	B	J	Q1	Z	342	11717		*1*	9/23/85	
33-132	SOIL	LOC.	75 - I-1-	3 CORE VERTICAL	1-2 FEET	B	J, M	Q1	Z	343	11718		*1*	9/23/85	
33-133	SOIL	LOC.	75 - I-1-	3 CORE VERTICAL	2-3 FEET	B	J, M	Q1	Z	344	11719		*1*	9/23/85	
33-134	SOIL	LOC.	76 - I-1-	3 CORE SURFACE	0-1 FOOT	B	J	Q1	Z	345	11720	DUPL	*1*	9/23/85	19242
33-135	SOIL	LOC.	77 - I-1-	3 CORE VERTICAL	0-1 FOOT	B	J	Q1	Z	346	11721		*1*	9/23/85	
33-136	SOIL	LOC.	77 - I-1-	3 CORE VERTICAL	1-2 FEET	B	J, M	Q1	Z	347	11722		*1*	9/23/85	
33-137	SOIL	LOC.	77 - I-1-	3 CORE VERTICAL	2-3 FEET	B	J, M	Q1	Z	348	11723		*1*	9/23/85	
33-138	SOIL	LOC.	78 - I-1-	3 CORE SURFACE	0-1 FOOT	B	J	Q1	Z	349	11724	SPKE	*1*	9/23/85	19277
33-139	SOIL	LOC.	79 - I-1-	3 CORE SURFACE	0-1 FOOT	B	J	Q1	Z	350	11725	FWS	*1*	9/23/85	
33-140	SOIL	LOC.	80 - I-1-	9 CORE VERTICAL	0-1 FOOT	B	J	Q1	Z	351	11726		*1*	9/24/85	
33-141	SOIL	LOC.	80 - I-1-	9 CORE VERTICAL	1-2 FEET	B	J, M	Q1	Z	352	11727		*1*	9/24/85	
33-142	SOIL	LOC.	80 - I-1-	9 CORE VERTICAL	2-3 FEET	B	J, M	Q1	Z	353	11728		*1*	9/24/85	
33-143	SOIL	LOC.	81 - I-1-	9 CORE SURFACE	0-1 FOOT	B	J	Q1	Z	354	11729		*1*	9/23/85	
33-144	SOIL	LOC.	82 - I-1-	9 CORE SURFACE	0-1 FOOT	B	J	Q1	Z	355	11730		*1*	9/23/85	
33-145	SOIL	LOC.	83 - I-1-23C	CORE VERTICAL	0-1 FOOT	B	J	Q1	Z	356	11731	DUPL	*1*	9/25/85	19243
33-146	SOIL	LOC.	83 - I-1-23C	CORE VERTICAL	1-2 FEET	B	J, M	Q1	Z	357	11732		*1*	9/25/85	
33-147	SOIL	LOC.	83 - I-1-23C	CORE VERTICAL	2-3 FEET	B	J, M	Q1	Z	358	11733		*1*	9/25/85	
33-148	SOIL	LOC.	84 - I-1-23C	CORE VERTICAL	0-1 FOOT	B	J	Q1	Z	359	11734		*1*	9/25/85	
33-149	SOIL	LOC.	84 - I-1-23C	CORE VERTICAL	1-2 FEET	B	J, M	Q1	Z	360	11735		*1*	9/25/85	
33-150	SOIL	LOC.	84 - I-1-23C	CORE VERTICAL	2-3 FEET	B	J, M	Q1	Z	361	11736		*1*	9/25/85	
33-151	SOIL	LOC.	85 - I-1-23C	CORE VERTICAL	0-1 FOOT	B	J	Q1	Z	362	11737		*1*	9/25/85	
33-152	SOIL	LOC.	85 - I-1-23C	CORE VERTICAL	1-2 FEET	B	J, M	Q1	Z	363	11738		*1*	9/25/85	
33-153	SOIL	LOC.	85 - I-1-23C	CORE VERTICAL	2-3 FEET	B	J, M	Q1	Z	364	11739		*1*	9/25/85	
33-154	SOIL	LOC.	86 - I-1-23C	CORE VERTICAL	0-1 FOOT	B	J	Q1	Z	365	11740		*1*	9/25/85	

! I.D.	! MATRIX!	NAME	! TYPE	! DEPTH	! ANAL!DEPTH! LOCA-	! INTRVL!SAMP!! LAB	REPLICATE		SAMPLE	DUPL./SPIKE	NOTES	
							SET	TION & NO.				NOS.
!.... (RATIONALE)....!												
33-155	SOIL	LOC.	86 - I-1-23C CORE VERTICAL	1-2 FEET	B J,M Q1	Z	366	11741	DUPL	*1*	9/25/85	19244
33-156	SOIL	LOC.	86 - I-1-23C CORE VERTICAL	2-3 FEET	B J,M Q1	Z	367	11742		*1*	9/25/85	
33-157	SOIL	LOC.	87 - I-1-23C CORE VERTICAL	0-1 FOOT	D J Q1	Z	368	11743		*1*	9/25/85	
33-158	SOIL	LOC.	87 - I-1-23C CORE VERTICAL	1-2 FEET	B J,M Q1	Z	369	11744		*1*	9/25/85	
33-159	SOIL	LOC.	87 - I-1-23C CORE VERTICAL	2-3 FEET	B J,M Q1	Z	370	11745		*1*	9/25/85	
33-160	SOIL	LOC.	88 - I-1-23C CORE VERTICAL	0-1 FOOT	B J Q1	Z	371	11746		*1*	9/25/85	
33-161	SOIL	LOC.	88 - I-1-23C CORE VERTICAL	1-2 FEET	B J,M Q1	Z	372	11747		*1*	9/25/85	
33-162	SOIL	LOC.	88 - I-1-23C CORE VERTICAL	2-3 FEET	B J,M Q1	Z	373	11748		*1*	9/25/85	
33-163	SOIL	LOC.	89 - I-1-23C CORE VERTICAL	0-1 FOOT	B J Q1	Z	374	11749	DUPL	*1*	9/25/85	19245
33-164	SOIL	LOC.	89 - I-1-23C CORE VERTICAL	1-2 FEET	B J,M Q1	Z	375	11750		*1*	9/25/85	
33-165	SOIL	LOC.	89 - I-1-23C CORE VERTICAL	2-3 FEET	B J,M Q1	Z	376	11751		*1*	9/25/85	
33-166	SOIL	LOC.	90 - I-1-23C CORE VERTICAL	0-1 FOOT	B J Q1	Z	377	11752	FWS	*1*	9/25/85	
33-167	SOIL	LOC.	90 - I-1-23C CORE VERTICAL	1-2 FEET	B J,M Q1	Z	378	11753		*1*	9/25/85	
33-168	SOIL	LOC.	90 - I-1-23C CORE VERTICAL	2-3 FEET	B J,M Q1	Z	379	11754	SPKE	*1*	9/25/85	19278
33-169	SOIL	LOC.	91 - I-1-23C CORE VERTICAL	0-1 FOOT	B J Q1	Z	380	11755		*1*	9/25/85	
33-170	SOIL	LOC.	91 - I-1-23C CORE VERTICAL	1-2 FEET	B J,M Q1	Z	381	11756	SPKE	*1*	9/25/85	19279
33-171	SOIL	LOC.	91 - I-1-23C CORE VERTICAL	2-3 FEET	B J,M Q1	Z	382	11757		*1*	9/25/85	
33-172	SOIL	LOC.	92 - I-1-23C CORE VERTICAL	0-1 FOOT	B J Q1	Z	383	11758		*1*	9/25/85	
33-173	SOIL	LOC.	92 - I-1-23C CORE VERTICAL	1-2 FEET	B J,M Q1	Z	384	11759		*1*	9/25/85	
33-174	SOIL	LOC.	92 - I-1-23C CORE VERTICAL	2-3 FEET	B J,M Q1	Z	385	11760	DUPL	*1*	9/25/85	19246
33-175	SOIL	LOC.	93 - I-1-23C CORE VERTICAL	0-1 FOOT	B J Q1	Z	386	11761		*1*	9/25/85	
33-176	SOIL	LOC.	93 - I-1-23C CORE VERTICAL	1-2 FEET	B J,M Q1	Z	387	11762		*1*	9/25/85	
33-177	SOIL	LOC.	93 - I-1-23C CORE VERTICAL	2-3 FEET	B J,M Q1	Z	388	11763		*1*	9/25/85	
33-178	SOIL	LOC.	94 - I-1-23C CORE SURFACE	0-1 FOOT	B J Q1	Z	389	11764		*1*	9/25/85	
33-179	SOIL	LOC.	95 - I-1-23C CORE SURFACE	0-1 FOOT	B J Q1	Z	390	11765		*1*	9/25/85	
33-180	SOIL	LOC.	96 - I-1-23C CORE VERTICAL	0-1 FOOT	B J Q1	Z	391	11766	DUPL	*1*	9/25/85	19247
33-181	SOIL	LOC.	96 - I-1-23C CORE VERTICAL	1-2 FEET	B J,M Q1	Z	392	11767		*1*	9/25/85	
33-182	SOIL	LOC.	96 - I-1-23C CORE VERTICAL	2-3 FEET	B J,M Q1	Z	393	11768		*1*	9/25/85	
33-183	SOIL	LOC.	97 - I-1- 9 SURFACE COMP.	0-1 FOOT	B J Q1	X	394	11769		*1*	9/25/85	
33-184	SOIL	LOC.	98 - I-1- 15 SURFACE COMP.	0-1 FOOT	B J Q1	X	395	11770		*1*	9/25/85	
33-185	SOIL	LOC.	99 - I-1- 1 SURFACE COMP.	0-1 FOOT	B J Q1	X	396	11771		*1*	9/25/85	
33-186	SOIL	LOC.	100 - I-1- 29 SURFACE COMP.	0-1 FOOT	B J Q1	X	397	11772		*1*	9/25/85	
33-187	SOIL	LOC.	101 - I-1- 8 SURFACE COMP.	0-1 FOOT	B J Q1	X	398	11773	DUPL	*1*	9/25/85	19248
33-188	SOIL	LOC.	102 - I-1- 8 SURFACE COMP.	0-1 FOOT	B J Q1	X	399	11774	FWS	*1*	9/25/85	

CONWR (10/20/86)

PHASE I SAMPLING AND ANALYSIS SCHEDULE

APPENDIX C (Page 15)

! I.D.	! MATRIX!	NAME	! TYPE	! DEPTH	! ANAL	DEPTH	! LOCA-	! INTRVL	SAMP!!	LAB	REPLICATE	SAMPLE	DUPL./SPIKE	NOTES	
					SET	TION	& NO.	NOS.	NO	LAB	FWS	COLL.	DATE	NUMBERS	
					!....(RATIONALE)....!										

35- 1 SEDIMENT WATERWAY COMP. 5 GRABS 0-1 FT A I P Y 548 19208 *1* 8/13/85
 35- 1 SEDIMENT WATERWAY COMP. 5 GRABS 0-1 FT F I P Y 598 9283 *1* 11/18/85

*** #12 34:CRAB ORCHARD LAKE

34- 1	WATER	REFUGE INTAKE	GRAB	NA	E	-	T	W	413	3252	*1*	7/24/85	
34- 2	WATER	MARION INTAKE	GRAB	NA	E	-	T	W	414	3251	*1*	7/24/85	
34- 3	WATER	MARION RES.-INTAKE	GRAB	NA	E	-	T	W	415	3253	*1*	7/25/85	Resamp. 9/24/85
34- 4	WATER	REFUGE TREATED H2O	GRAB	NA	E	-	T	W	416	3246	*1*	7/24/85	Resamp. 9/24/85
34- 5	WATER	MARION TREATED H2O	GRAB	NA	E	-	T	W	417	3255	*1*	7/25/85	Resamp. 9/24/85

*** #13 31:REFUGE CONTROL SITE

31- 1	SOIL	REFUGE CONTROL	SINGLE SAMPLE	SURFACE	D	--	T	W	474	19206	*1*	8/14/85	
31- 1	SOIL	REFUGE CINTROL	SINGLE SAMPLE	SURFACE	G	--	T	W	599	9284	*1*	11/19/85	Near dead tree

*** #14 40:REPLICATES

40- 1	WATER	REPLCTE 2		A					476	19215 DUPL	*1*	8/13/85	9467
40- 7	SOIL	REPLCTE 2		A					482	19221 DUPL	*1*	8/14/85	9402
40- 8	SOIL	REPLCTE 2		F					483	19222 DUPL	*1*	11/19/85	9251
40- 9	SOIL	REPLCTE 2		A					484	19223 DUPL	*1*	8/15/85	9453
40- 10	SOIL	REPLCTE 2		A					485	19224 DUPL	*1*	8/14/85	9463
40- 11	SEDIMENT	REPLCTE 2		F					486	19225 DUPL	*1*	11/18/85	9261
40- 12	SOIL	REPLCTE 2		A					487	19226 DUPL	*1*	8/17/85	9417
40- 13	SOIL	REPLCTE 2		G					488	19227 DUPL	*1*	11/18/85	9270
40- 14	SOIL	REPLCTE 2		B					489	19228 DUPL	*1*	9/23/85	10703
40- 15	SOIL	REPLCTE 2		B					490	19229 DUPL	*1*	9/23/85	10715
40- 16	SOIL	REPLCTE 2		B					491	19230 DUPL	*1*	9/23/85	10722
40- 17	SOIL	REPLCTE 2		B					492	19231 DUPL	*1*	9/23/85	10728
40- 18	SOIL	REPLCTE 2		B					493	19232 DUPL	*1*	9/24/85	10736
40- 19	SOIL	REPLCTE 2		B					494	19233 DUPL	*1*	9/23/85	11642
40- 20	SOIL	REPLCTE 2		B					495	19234 DUPL	*1*	9/24/85	11651
40- 21	SOIL	REPLCTE 2		B					496	19235 DUPL	*1*	9/24/85	11661
40- 22	SOIL	REPLCTE 2		B					497	19236 DUPL	*1*	9/24/85	11679

CONWR (10/20/86)

PHASE I SAMPLING AND ANALYSIS SCHEDULE

APPENDIX C (Page 16)

! I.D.	! MATRIX!	NAME	! TYPE	! DEPTH	! ANAL	DEPTH	! LOCA-	! INTRVL	SAMP!	! LAB	REPLICATE	SAMPLE	DUPL./SPIKE	NOTES	
					SET	TION	& NO.	NOS.	NO	LAB	FWS	COLL.	DATE	NUMBERS	
					!....(RATIONALE)....!										
40- 23	SOIL		REPLCTE 2	B			498	19237	DUPL		*1*	9/24/85		11685	
40- 24	SOIL		REPLCTE 2	B			499	19238	DUPL		*1*	9/25/85		11691	
40- 25	SOIL		REPLCTE 2	B			500	19239	DUPL		*1*	9/24/85		11703	
40- 26	SOIL		REPLCTE 2	B			501	19240	DUPL		*1*	9/25/85		11713	
40- 27	SOIL		REPLCTE 2	B			502	19241	DUPL		*1*	9/25/85		11716	
40- 28	SOIL		REPLCTE 2	B			503	19242	DUPL		*1*	9/23/85		11719	
40- 29	SOIL		REPLCTE 2	B			504	19243	DUPL		*1*	9/25/85		11731	
40- 30	SOIL		REPLCTE 2	B			505	19244	DUPL		*1*	9/25/85		11741	
40- 31	SOIL		REPLCTE 2	B			506	19245	DUPL		*1*	9/25/85		11749	
40- 32	SOIL		REPLCTE 2	B			507	19246	DUPL		*1*	9/25/85		11760	
40- 33	SOIL		REPLCTE 2	B			508	19247	DUPL		*1*	9/25/85		11766	
40- 34	SOIL		REPLCTE 2	B			509	19248	DUPL		*1*	9/25/85		11773	
40- 35	SOIL		REPLCTE 2	C			510	19249	DUPL		*1*	8/22/85		10654	
40- 36	SOIL		REPLCTE 2	C			511	19250	DUPL		*1*	8/24/85		9500	
40- 37	SOIL		REPLCTE 2	C			512	19251	DUPL		*1*	8/22/85		10660	
40- 38	SOIL		REPLCTE 2	H			513	19252	DUPL		*1*	8/22/85		10661	
40- 39	SOIL		REPLCTE 2	D			514	19253	DUPL		*1*	8/17/85		9398	
40- 40	SEDIMENT		REPLCTE 2	A			515	19254	DUPL		*1*	8/16/85		9429	
40- 41	SEDIMENT		REPLCTE 2	A			516	19255	DUPL		*1*	8/16/85		19210	
40- 42	SEDIMENT		REPLCTE 2	A			517	19256	DUPL		*1*	8/13/85		9468	
40- 43	SEDIMENT		REPLCTE 2	A			518	19257	DUPL		*1*	8/22/85		10685	
40- 44	SEDIMENT		REPLCTE 2	A			519	19258	DUPL		*1*	8/23/85		10691	
40- 45	SEDIMENT		REPLCTE 2	G			520	19259	DUPL		*1*	11/19/85		9262	
40- 48	SOIL		REPLCTE 2	A			549	19287	DUPL		*1*	8/13/85		9491	
40- 49	SOIL		REPLCTE 2	D			551	19289	DUPL		*1*	8/16/85		9461	
40- 50	SOIL		REPLCTE 2	D			552	19290	DUPL		*1*	8/16/85		9443	
40- 51	SOIL		REPLCTE 2	D			553	19291	DUPL		*1*	8/14/85		9473	
40- 52	SEDIMENT EXPLOSIVES ANAL.		REPLCTE 2	A			555	9255	DUPL		*1*	7/25/85		3387	
														66406	

*** 41: MATRIX SPIKES

41- 1	SEDIMENT	SPIKE ONLY	F	523	19262	SPKE	*1*	12/05/85	9278
41- 2	SOIL	SPIKE ONLY	G	524	19263	SPKE	*1*	11/19/85	9281
41- 5	SOIL	SPIKE ONLY	A	527	19266	SPKE	*1*	8/14/85	9403
41- 6	SOIL	SPIKE ONLY	A	528	19267	SPKE	*1*	8/17/85	9436
41- 7	SOIL	SPIKE ONLY	A	529	19268	SPKE	*1*	8/16/85	9459

CONWR (10/20/85)

PHASE I SAMPLING AND ANALYSIS SCHEDULE

APPENDIX C (Page 17)

! I.D.	! MATRIX!	NAME	! TYPE	! DEPTH	! ANAL	! DEPTH	! LOCA	! INTRVL	! SAMP	! LAB	REPLICATE	SAMPLE	DUPL./SPIKE	NOTES
											SET	TION	& NO.	
!....(RATIONALE)....!														
41- 8	SOIL		SPIKE ONLY		A					530	19269 SPKE	*1*	8/14/85	9481
41- 9	SOIL		SPIKE ONLY		B					531	19270 SPKE	*1*	9/23/85	10725
41- 10	SOIL		SPIKE ONLY		B					532	19271 SPKE	*1*	9/23/85	10745
41- 11	SOIL		SPIKE ONLY		B					533	19272 SPKE	*1*	9/23/85	11641
41- 12	SOIL		SPIKE ONLY		B					534	19273 SPKE	*1*	9/24/85	11665
41- 13	SOIL		SPIKE ONLY		B					535	19274 SPKE	*1*	9/24/85	11680
41- 14	SOIL		SPIKE ONLY		B					536	19275 SPKE	*1*	9/25/85	11688
41- 15	SOIL		SPIKE ONLY		B					537	19276 SPKE	*1*	9/24/85	11706
41- 16	SOIL		SPIKE ONLY		B					538	19277 SPKE	*1*	9/23/85	11724
41- 17	SOIL		SPIKE ONLY		B					539	19278 SPKE	*1*	9/25/85	11754
41- 18	SOIL		SPIKE ONLY		B					540	19279 SPKE	*1*	9/25/85	11756
41- 19	SOIL		SPIKE ONLY		C					541	19280 SPKE	*1*	8/23/85	10666
41- 20	SOIL		SPIKE ONLY	H						542	19281 SPKE	*1*	8/23/85	10665
41- 21	SEDIMENT		SPIKE ONLY	A						543	19282 SPKE	*1*	8/16/85	9427
41- 24	SEDIMENT		SPIKE ONLY	D						546	19285 SPKE	*1*	8/23/85	10694
41- 25	SOIL		SPIKE ONLY	A						550	19288 SPKE	*1*	8/13/85	9487
41- 27	SOIL EXPLOSIVES ANAL.		SPIKE ONLY	D						557	46700 SPKE	*1*	7/25/85	3385
41- 28	SOIL		SPIKE ONLY	D						561	9256 SPKE	*1*	7/25/85	46700
41- 29	SOIL		SPIKE ONLY	A						562	85576 SPKE	*1*	8/13/85	9467
41- 30	SOIL		SPIKE ONLY	A						569	14138 SPKE	*1*	8/14/85	9463
														66470

*** 42:BLANKS

42- 1	SOIL	FIELD - SAND	BLANK	D		554	19292 BLNK		*1*	8/19/85
42- 2	SOIL	EXPLOSIVES ANAL.	BLANK	A		556	46699 BLNK		*1*	8/19/85
42- 3	SOIL	OB&G LAB	BLANK	A		563	85575 BLNK		*1*	8/19/85
42- 4	SOIL	OB&G LAB	BLANK	A		564	46453 BLNK		*1*	8/19/85
42- 5	SOIL	OB&G LAB	BLANK	A		565	85608 BLNK		*1*	8/19/85
42- 6	SOIL	OB&G LAB	BLANK	A		566	14139 BLNK		*1*	8/19/85
42- 7	SOIL	OB&G LAB	BLANK	A		567	2994 BLNK		*1*	8/19/85
42- 8	SOIL	OB&G LAB	BLANK	A		568	2995 BLNK		*1*	8/19/85
42- 9	SOIL	OB&G LAB	BLANK	A		570	46508 BLNK		*1*	8/23/85
42- 10	SOIL	OB&G LAB	BLANK	A		571	46683 BLNK		*1*	8/28/85
42- 11	SOIL	OB&G LAB	BLANK	G		600	9285 BLNK		*1*	11/20/85

END

CONWR (10/20/86)

PHASE I SAMPLING AND ANALYSIS SCHEDULE

APPENDIX C (Page 18)

I.D.	MATRIX	NAME	TYPE	DEPTH	ANAL	DEPTH	LOCA-	INTRVL	SAMP	LAB	REPLICATE	SAMPLE	DUPL./SPIKE	NOTES		
SET										NO.	NOS.	NO	LAB FWS	COLL.	DATE	NUMBERS
.....(RATIONALE)....!																

APPENDIX D
PHASE II SAMPLING AND ANALYSIS SCHEDULE

CONWR (10/20/86)

PHASE II SAMPLING AND ANALYSIS SCHEDULE

APPENDIX D (page 1)

I.D.	MATRIX	NAME	TYPE	DEPTH	ANAL!	DEPTH!	LOCA-	INTRVL	SAMP!!	LAB	REPLICATE	SAMPLE	DUPL./SPIKE	NOTES
					SET	TION	& NO.	NOS.	NO	LAB FWS	PHASE	DATE	NUMBERS	
					(RATIONALE)					

Note: Field duplicates and spikes, and FWS replicates will be assigned after SOP is finalized

***	#1	3:AREA 11 SOUTH											No Phase II Sampling and/or Analysis
***		4:AREA 11 NORTH											No Phase II Sampling and/or Analysis
***		5:AREA 11 ACID POND											No Phase II Sampling and/or Analysis
***	#2	7A:D AREA NORTH LAWN											No Phase II Sampling; 6 Phase I soils for Hg
***		11A:P AREA NORTH											No Phase II Sampling; 1 Phase I soil for Hg
***		7:D AREA SOUTHEAST DRAINAGE											No Phase II Sampling; 1 Phase I sediment for Hg
***		8:D AREA SOUTHWEST DRAINAGE											No Phase II Sampling and/or Analysis
***		9:D AREA NORTHWEST DRAINAGE											One Phase I sediment re-sampled
9-	1	SEDIMENT	F-NW SEDIMENT	GRAB	0-1 FT	K			612	66608		.2.	
***		10:WATERWORKS NORTH DRAINAGE											One Phase I sediment re-analyzed for Hg
10-	3	WATER	WW-N WATER	-1	COMP.	4 GRABS	SURFACE	J		605	66601		.2.
10-	4	SEDIMENT	WW-N SEDIMENT-1		GRAB		0-1 FT	J		606	66602		.2.
10-	5	SEDIMENT	WW-N SEDIMENT-2		GRAB		0-1 FT	J		607	66603		.2.
10-	6	SEDIMENT	WW-N SEDIMENT-3		GRAB		0-1 FT	J		608	66604		.2.
10-	7	SEDIMENT	WW-N SEDIMENT-4		GRAB		0-1 FT	J		609	66605		.2.
10-	8	SEDIMENT	WW-N SEDIMENT-5		GRAB		0-1 FT	J		610	66606		.2.
***		11:P AREA SOUTHEAST DRAINAGE											One Phase I water re-sampled
11-	3	WATER	F-SE WATER	GRAB	0-1 FT	K			611	66607		.2.	
***		20:D AREA SOUTH											One Phase I water re-sampled

CONWR (10/20/86)

PHASE II SAMPLING AND ANALYSIS SCHEDULE

APPENDIX D (page 2)

! I.D.	! MATRIX!	NAME	! TYPE	! DEPTH	! ANAL!DEPTH! LOCA-!INTRVL!SAMP!! LAB SET TION & NO. NOS. NO LAB FWS PHASE DATE	SAMPLE	DUPL./SPIKE NUMBERS	NOTES	
.....(RATIONALE)....!									
20- 3	WATER	D SOUTH	GRAB	SURFACE	K	613	66609	.2.	
***	#3	12:AREA 14 IMPOUNDMENT			No Phase II Sampling and/or Analysis				
***		13:AREA 14 CHANGE HOUSE SITE			No Phase II Sampling and/or Analysis				
***		14:AREA 14 SOLVENT STORAGE							
14- 5	WATER	DITCH	GRAB	0-1 FT	L	616	66612	.2.	
14- 6	SEDIMENT	DITCH	GRAB	0-1 FT	L	617	66613	.2.	
***	#4	15:AREA 7 PLATING POND			Field permeability in well				
15- 3	WATER	MONITOR WELL	SINGLE SAMPLE	BAILER	M	62	9393	.2.	Depth 11/19/85
15- 4	SEDIMENT	PLATING POND	COMP. 4 GRABS	0-1 FT	N	621	66617	.2.	
***		16:AREA 7 INDUSTRIAL SITE							
16- 18	WATER	DITCH	COMP. 2 GRABS	SURFACE	O	622	66618	.2.	
16- 19	SEDIMENT	DITCH	COMP. 2 GRABS	0-1 FT	O	623	66619	.2.	
***	#5	17:JOB CORPS LANDFILL			One Phase I soil re-analyzed for Hg; field permeability in wells				
17- 8	WATER	WELL 17-1	SINGLE SAMPLE	BAILER	W	87	9448	.2.	
17- 9	WATER	WELL 17-2	SINGLE SAMPLE	BAILER	W	88	9449	.2.	
17- 10	WATER	WELL 17-3	SINGLE SAMPLE	BAILER	W	89	9450	.2.	
17- 11	WATER	WELL 17-4	SINGLE SAMPLE	BAILER	W	90	9451	.2.	
17- 14	WATER	WELL 17-5 DEEP	SINGLE SAMPLE	BAILER	W			.2.	
17- 15	WATER	POND NO.1	GRAB	SURFACE	V	624	66620	.2.	
17- 16	WATER	POND NO.2	GRAB	SURFACE	V	625	66621	.2.	
17- 17	SEDIMENT	POND NO.1	GRAB	0-1 FT	Q	626	66622	.2.	
17- 18	SEDIMENT	POND NO.2	GRAB	0-1 FT	Q	627	66623	.2.	
17- 19	SEDIMENT	POND NO.3	GRAB	0-1 FT	Q	614	66610	.2.	
17- 20	SEDIMENT	POND NO.4	GRAB	0-1 FT	Q	615	66611	.2.	
17- 21	SEDIMENT	POND NO.5	GRAB	0-1 FT	Q	618	66614	.2.	

I.D.	MATRIX	NAME	TYPE	DEPTH	ANAL SET	DEPTH TION & NO.	LOCA- TION & NO.	INTRVL NOS.	SAMP!!	LAB NO.	REPLICATE	SAMPLE	DUPL./SPIKE NUMBERS	NOTES
!....(RATIONALE)....!														
17- 22	SEDIMENT	POND NO.6	GRAB	0-1 FT	Q		619	66615				.2.		
17- 23	SOIL	SQUARE 1-SW 1	GRAB	SURFACE	P		628	66624				.2.		
17- 24	SOIL	SQUARE 1-SW 1	GRAB	3 FT	P		629	66625		FWS		.2.		
17- 25	SOIL	SQUARE 1-SE 2	GRAB	SURFACE	P		630	66626				.2.		
17- 26	SOIL	SQUARE 1-SE 2	GRAB	3 FT	P		631	66627				.2.		
17- 27	SOIL	SQUARE 1-NE 3	GRAB	SURFACE	P		632	66628				.2.		
17- 28	SOIL	SQUARE 1-NE 3	GRAB	3 FT	P		633	66629				.2.		
17- 29	SOIL	SQUARE 1-NW 4	GRAB	SURFACE	P		634	66630				.2.		
17- 30	SOIL	SQUARE 1-NW 4	GRAB	3 FT	P		635	66631		FWS		.2.		
17- 31	SOIL	SQUARE 2-S 5	GRAB	SURFACE	Q		636	66632				.2.		
17- 32	SOIL	SQUARE 2-S 5	GRAB	SURFACE	Q		637	66633				.2.		
17- 33	SOIL	SQUARE 2-S 6	GRAB	SURFACE	P		638	66634				.2.		
17- 34	SOIL	SQUARE 2-S 7	GRAB	SURFACE	P		639	66635		FWS		.2.		
17- 35	SOIL	SQUARE 2-S 8	GRAB	SURFACE	Q		640	66636				.2.		
17- 36	SOIL	SQUARE 2-S 8	GRAB	3 FT	Q		641	66637				.2.		
17- 37	SOIL	SQUARE 2-S 9	GRAB	SURFACE	P		642	66638				.2.		
17- 38	SOIL	SQUARE 2-E 10	GRAB	SURFACE	P		643	66639				.2.		
17- 39	SOIL	SQUARE 2-N 11	GRAB	SURFACE	Q		644	66640				.2.		
17- 40	SOIL	SQUARE 2-N 11	GRAB	3 FT	Q		645	66641				.2.		
17- 41	SOIL	SQUARE 2-N 12	GRAB	SURFACE	P		646	66642				.2.		
17- 42	SOIL	SQUARE 2-N 13	GRAB	SURFACE	P		647	66643				.2.		
17- 43	SOIL	SQUARE 2-N 14	GRAB	SURFACE	Q		648	66644				.2.		
17- 44	SOIL	SQUARE 2-N 14	GRAB	3 FT	Q		649	66645				.2.		
17- 45	SOIL	SQUARE 2-W 15	GRAB	SURFACE	P		650	66646				.2.		
17- 46	SOIL	SQUARE 2-W 15	GRAB	3 FT	P		651	66647				.2.		
17- 47	SOIL	SQUARE 2-W 16	GRAB	SURFACE	P		652	66648				.2.		
17- 48	SOIL	SQUARE 3-S 17	GRAB	SURFACE	Q		653	66649		FWS		.2.		
17- 49	SOIL	SQUARE 3-S 18	GRAB	SURFACE	P		654	66650				.2.		
17- 50	SOIL	SQUARE 3-S 19	GRAB	SURFACE	P		655	66651				.2.		
17- 51	SOIL	SQUARE 3-S 20	GRAB	SURFACE	P		656	66652				.2.		
17- 52	SOIL	SQUARE 3-S 21	GRAB	SURFACE	P		657	66653				.2.		
17- 53	SOIL	SQUARE 3-S 22	GRAB	SURFACE	P		658	66654				.2.		
17- 54	SOIL	SQUARE 3-E 23	GRAB	SURFACE	P		659	66655				.2.		
17- 55	SOIL	SQUARE 3-N 24	GRAB	SURFACE	P		660	66656				.2.		
17- 56	SOIL	SQUARE 3-N 25	GRAB	SURFACE	P		661	66657				.2.		

! I.D.	! MATRIX!	NAME	! TYPE	! DEPTH	! ANAL!DEPTH! LOCA-		! SAMP!! LAB NO	REPLICATE NO	SAMPLE NO	DUPL./SPIKE NUMBERS	NOTES
					SET	TION & NO.					
!....(RATIONALE)....!											
17- 57	SOIL	SQUARE 3-N 26	GRAB	SURFACE	P		662	66658	.2.		
17- 58	SOIL	SQUARE 3-W 27	GRAB	SURFACE	P		663	66659	.2.		
17- 59	SOIL	SQUARE 3-W 28	GRAB	SURFACE	P		664	66660	.2.		
17- 60	SOIL	SQUARE 3-W 29	GRAB	SURFACE	P		665	66661	.2.		
17- 61	SOIL	SQUARE 3-W 30	GRAB	SURFACE	P		666	66662	.2.		
17- 62	SOIL	SQUARE 4-E 31	GRAB	SURFACE	Q		667	66663	.2.		
17- 63	SOIL	SQUARE 4-E 32	GRAB	SURFACE	P		668	66664	.2.		
17- 64	SOIL	SQUARE 4-N 33	GRAB	SURFACE	Q		669	66665	.2.		
17- 65	SOIL	SQUARE 4-N 34	GRAB	SURFACE	P		670	66666	.2.		
17- 66	SOIL	SQUARE 4-N 35	GRAB	SURFACE	Q		671	66667	.2.		
17- 67	SOIL		GRAB		P		672	66668	.2.		
17- 68	SOIL		GRAB		P		673	66669	.2.		
17- 69	SOIL		GRAB		P		674	66670	.2.		
***	#6	18:AREA 13 LOADING PLATFORM				No Phase II Sampling and Analysis					
***		19:AREA 13 BUNKER 1-3				No Phase II Sampling; 1 Phase I soil for Hg					
***		30:MUNITIONS CONTROL SITE				Field permeability in well					
30- 2	WATER	MUNITION CONTROL	SINGLE SAMPLE	BAILER	X		103	9462	.2.		
30- 3	SOIL	MUNITION CONTROL	SINGLE SAMPLE	SURFACE	Y		620	66616	.2.		
***	#7	21:SOUTHEAST CORNER FIELD				No Phase II Sampling; 1 Phase I soil for Hg					
***	#8	22:OLD REFUGEE SHOP				Field permeability in well					
22- 3	SOIL	STREAM	GRAB	0-1 FT	Z		675	66671	.2.		
22- 4	SEDIMENT	STREAM	GRAB	0-1 FT	R		676	66672	.2.		
22- 5	SEDIMENT	STREAM	GRAB	0-1 FT	R		677	66673	.2.		
22- 6	SEDIMENT	STREAM	GRAB	0-1 FT	R		678	66674	.2.		
22- 7	SEDIMENT	STREAM	GRAB	0-1 FT	Z		679	66675	.2.		
22- 8	WATER	WELL	SINGLE SAMPLE	BAILER	U		749	66745	.2.		
***		24:PEPSI-WEST				No Phase II Sampling; 1 Phase I sediment for Hg					

! I.D.	! MATRIX!	NAME	! TYPE	! DEPTH	! ANAL!DEPTH! LOCA-!INTRVL!SAMP!! LAB SET TION & NO. NOS.	REPLICATE NO	SAMPLE LAB FWS PHASE DATE	DUPL./SPIKE NUMBERS	NOTES
									!....(RATIONALE)....!
***		25:C.O. CREEK AT MARION LF			Sediment re-sampled				
25-	7	SEDIMENT	LF POND	COMP. 3 GRABS	0-1 FT	AA	748 66744	.2.	
***		26:C.O. CREEK BELOW MARION STP					No Phase II Sampling and/or Analysis		
***		27:C.O. CREEK BELOW 157 DREDGE					No Phase II Sampling and/or Analysis		
***	#9	28:WATER TOWER LANDFILL					One Phase I soil for CN; field permeability in wells; 1 deep well		
28-	7	WATER	WELL 28-1	SINGLE GRAB	BAILER	S	130 9479	.2.	
28-	8	WATER	WELL 28-2	SINGLE GRAB	BAILER	S	131 9480	.2.	
28-	15	SOIL	TEST PIT - 1-1	GRAB	0-1 FT	AB	742 66738	.2.	
28-	16	SOIL	TEST PIT - 1-2	GRAB	0-1 FT	AB	743 66739	.2.	
28-	17	SOIL	TEST PIT - 2-1	GRAB	0-1 FT	AB	744 66740	.2.	
28-	18	SOIL	TEST PIT - 2-2	GRAB	0-1 FT	AB	745 66741	.2.	
28-	19	WATER	WELL 28-3	SINGLE GRAB	BAILER	S	746 66742	.2.	
28-	20	WATER	WELL 28-3; DEEP	SINGLE GRAB	BAILER	S	747 66743	.2.	
***	#10	29:FIRE STATION LANDFILL					Six Phase I soil for Hg; field permeability in wells; 1 deep well		
29-	8	WATER	WELL 29-1	SINGLE GRAB	BAILER	S	145 9494	.2.	
29-	9	WATER	WELL 29-2	SINGLE GRAB	BAILER	S	146 9495	.2.	
29-	10	WATER	WELL 29-3	SINGLE GRAB	BAILER	S	147 9496	.2.	
29-	11	WATER	WELL 29-4	SINGLE GRAB	BAILER	S	148 9497	.2.	
29-	12	WATER	WELL 29-5 DEEP	SINGLE GRAB	BAILER	S			.2.
29-	13	SOIL	EAST FACE 5	GRAB	0-1 FT	AC	680 66676	.2.	
29-	14	SOIL	EAST FACE 5	GRAB	3 FT	AC	681 66677	.2.	
29-	15	SOIL	EAST FACE 6	GRAB	0-1 FT	AC	682 66678	.2.	
29-	16	SOIL	EAST FACE 7	GRAB	0-1 FT	AC	683 66679	.2.	
29-	17	SOIL	EAST FACE 8	GRAB	0-1 FT	AC	684 66680	FWS	.2.
29-	18	SOIL	EAST FACE 9	GRAB	0-1 FT	AC	685 66681		.2.
29-	19	SOIL	EAST FACE 10	GRAB	0-1 FT	AC	686 66682		.2.
29-	20	SOIL	EAST FACE 10	GRAB	3 FT	AC	687 66683		.2.

! I.D.	! MATRIX!	NAME	!	TYPE	! DEPTH	! ANAL!DEPTH! LOCAT!INTRVL!SAMP!!	LAB		REPLICATE	SAMPLE	DUPL./SPIKE	NOTES
							SET	TION & NO.				
!....(RATIONALE)....!												
29- 21	SOIL	EAST FACE 11		GRAB	0-1 FT	AC		688	66684		.2.	
29- 22	SOIL	EAST FACE 12		GRAB	0-1 FT	AC		689	66685		.2.	
29- 23	SOIL	EAST FACE 13		GRAB	0-1 FT	AC		690	66686		.2.	
29- 24	SOIL	EAST FACE 13		GRAB	3 FT	AC		691	66687		.2.	
29- 25	SOIL	EAST FACE 14		GRAB	0-1 FT	AC		692	66688		.2.	
***	#11	32:AREA 9 LANDFILL					24 surface and 9 core composite Phase I samples for Hg, Cr & Pb (SET AE); 1 deep well					
32- 61	WATER	WELL 1		SINGLE SAMPLE	BAILER	AG		209	10697		.2.	
32- 62	WATER	WELL 2		SINGLE SAMPLE	BAILER	AG		210	10698		.2.	
32- 63	WATER	WELL 3		SINGLE SAMPLE	BAILER	AG		211	10699		.2.	
32- 67	WATER	WELL 4		SINGLE SAMPLE	BAILER	AG		740	66736		.2.	
32- 68	WATER	WELL 5 DEEP		SINGLE SAMPLE	BAILER	AG		741	66737		.2.	
32- 69	SEDIMENT	GRID 1 - 1		SINGLE SAMPLE	SURFACE	AD		693	66689		.2.	
32- 70	SEDIMENT	GRID 1 - 2		SINGLE SAMPLE	SURFACE	AF		694	66690	FWS	.2.	
32- 71	SEDIMENT	GRID 1 - 3		SINGLE SAMPLE	SURFACE	AF		695	66691		.2.	
32- 72	SEDIMENT	GRID 1 - 4		SINGLE SAMPLE	SURFACE	AF		696	66692		.2.	
32- 73	SEDIMENT	GRID 1 - 5		SINGLE SAMPLE	SURFACE	AF		697	66693		.2.	
32- 74	SEDIMENT	GRID 2 - 1		SINGLE SAMPLE	SURFACE	AD		698	66694		.2.	
32- 75	SEDIMENT	GRID 2 - 2		SINGLE SAMPLE	SURFACE	AF		699	66695		.2.	
32- 76	SEDIMENT	GRID 2 - 3		SINGLE SAMPLE	SURFACE	AF		700	66696		.2.	
32- 77	SEDIMENT	GRID 2 - 4		SINGLE SAMPLE	SURFACE	AF		701	66697	FWS	.2.	
32- 78	SEDIMENT	GRID 2 - 5		SINGLE SAMPLE	SURFACE	AF		702	66698		.2.	
32- 79	SEDIMENT	GRID 3 - 1		SINGLE SAMPLE	SURFACE	AD		703	66699		.2.	
32- 80	SEDIMENT	GRID 3 - 2		SINGLE SAMPLE	SURFACE	AF		704	66700		.2.	
32- 81	SEDIMENT	GRID 3 - 3		SINGLE SAMPLE	SURFACE	AF		705	66701		.2.	
32- 82	SEDIMENT	GRID 3 - 4		SINGLE SAMPLE	SURFACE	AF		706	66702		.2.	
32- 83	SEDIMENT	GRID 3 - 5		SINGLE SAMPLE	SURFACE	AF		707	66703		.2.	
32- 84	SEDIMENT	GRID 4 - 1		SINGLE SAMPLE	SURFACE	AD		708	66704		.2.	
32- 85	SEDIMENT	GRID 4 - 2		SINGLE SAMPLE	SURFACE	AF		709	66705		.2.	
32- 86	SEDIMENT	GRID 4 - 3		SINGLE SAMPLE	SURFACE	AF		710	66706		.2.	
32- 87	SEDIMENT	GRID 4 - 4		SINGLE SAMPLE	SURFACE	AF		711	66707		.2.	
32- 88	SEDIMENT	GRID 4 - 5		SINGLE SAMPLE	SURFACE	AF		712	66708		.2.	
32- 89	SEDIMENT	GRID 5 - 1		SINGLE SAMPLE	SURFACE	AD		713	66709		.2.	
32- 90	SEDIMENT	GRID 5 - 2		SINGLE SAMPLE	SURFACE	AF		714	66710		.2.	

! I.D.	! MATRIX!	NAME	! TYPE	! DEPTH	! ANAL!DEPTH! LOCA-!INTRVL!SAMP!! LAB SET TION & NO. NOS. NO LAB FWS PHASE DATE	SAMPLE	DUPL./SPIKE NUMBERS	NOTES
!....(RATIONALE)....!								
32- 91	SEDIMENT	GRID 5 - 3	SINGLE SAMPLE	SURFACE	AF	715	66711	.2.
32- 92	SEDIMENT	GRID 5 - 4	SINGLE SAMPLE	SURFACE	AF	716	66712	.2.
32- 93	SEDIMENT	GRID 5 - 5	SINGLE SAMPLE	SURFACE	AF	717	66713	.2.
32- 94	SEDIMENT	GRID 6 - 1	SINGLE SAMPLE	SURFACE	AF	718	66714	.2.
32- 95	SEDIMENT	GRID 6 - 2	SINGLE SAMPLE	SURFACE	AF	719	66715	.2.
32- 96	SEDIMENT	GRID 6 - 3	SINGLE SAMPLE	SURFACE	AF	720	66716	.2.
32- 97	SEDIMENT	GRID 6 - 4	SINGLE SAMPLE	SURFACE	AF	721	66717	.2.
32- 98	SEDIMENT	GRID 6 - 5	SINGLE SAMPLE	SURFACE	AF	722	66718	.2.
32- 99	SEDIMENT	BAY - 1	SINGLE SAMPLE	SURFACE	AF	723	66719	FWS .2.
32-100	SEDIMENT	BAY - 2	SINGLE SAMPLE	SURFACE	AF	724	66720	.2.
32-101	SEDIMENT	BAY - 3	SINGLE SAMPLE	SURFACE	AF	725	66721	.2.
32-102	SEDIMENT	BAY - 4	SINGLE SAMPLE	SURFACE	AF	726	66722	.2.
32-103	SEDIMENT	BAY - 5	SINGLE SAMPLE	SURFACE	AF	727	66723	.2.
32-104	SEDIMENT	BAY - 6	SINGLE SAMPLE	SURFACE	AF	728	66724	.2.
32-105	SEDIMENT	BAY - 7	SINGLE SAMPLE	SURFACE	AF	729	66725	.2.
32-106	SEDIMENT	BAY - 8	SINGLE SAMPLE	SURFACE	AF	730	66726	.2.
32-107	SEDIMENT	BAY - 9	SINGLE SAMPLE	SURFACE	AF	731	66727	.2.
32-108	SEDIMENT	BAY - 10	SINGLE SAMPLE	SURFACE	AF	732	66728	.2.
32-109	SEDIMENT	BAY - 11	SINGLE SAMPLE	SURFACE	AF	733	66729	.2.
32-110	SEDIMENT	BAY - 12	SINGLE SAMPLE	SURFACE	AF	734	66730	.2.

*** 33: AREA 9 BUILDING COMPLEX

33-189	SOIL	LOC. 103 - I-1- 25	CORE VERTICAL	0-1 FOOT	B	400	11775	FWS .2.
33-190	SOIL	LOC. 103 - I-1- 25	CORE VERTICAL	1-2 FOOT	B	401	11776	.2.
33-191	SOIL	LOC. 103 - I-1- 25	CORE VERTICAL	2-3 FOOT	B	402	11777	.2.
33-192	SOIL	LOC. 104 - I-1- 25	CORE VERTICAL	0-1 FOOT	B	403	11778	.2.
33-193	SOIL	LOC. 104 - I-1- 25	CORE VERTICAL	1-2 FOOT	B	404	11779	.2.
33-194	SOIL	LOC. 104 - I-1- 25	CORE VERTICAL	2-3 FOOT	B	405	11780	.2.
33-195	SOIL	LOC. 105 - I-1- 25	CORE VERTICAL	0-1 FOOT	B	406	11781	.2.
33-196	SOIL	LOC. 105 - I-1- 25	CORE VERTICAL	1-2 FOOT	B	407	11782	.2.
33-197	SOIL	LOC. 105 - I-1- 25	CORE VERTICAL	2-3 FOOT	B	408	11783	.2.
33-198	SEDIMENT	LOC. 106 -NW.DRNG	CORE VERTICAL	0-1 FOOT	B	409	11784	.2.
33-199	SEDIMENT	LOC. 106 -NW.DRNG	CORE VERTICAL	1-2 FOOT	B	410	11785	.2.
33-200	SEDIMENT	LOC. 106 -NW.DRNG	CORE VERTICAL	2-3 FOOT	B	411	11786	FWS .2.

CONWR (10/20/86)

PHASE II SAMPLING AND ANALYSIS SCHEDULE

APPENDIX D (page 8)

! I.D.	! MATRIX!	NAME	!	TYPE	!	DEPTH	! ANAL!	DEPTH!	LOCA-	! INTRVL!	SAMP!!	LAB	REPLICATE	SAMPLE	DUPL./SPIKE	NOTES
						SET			TION	& NO.	NOS.	NO	LAB FWS	PHASE DATE	NUMBERS	
!....(RATIONALE)....!																
33-201	SOIL	LOC. 107	-	NW.DRNG SURFACE COMP.	0-1 FOOT	B				412	11787			.2.		
33-202	SEDIMENT	LOC. 108	-	NW.DRNG CORE VERTICAL	0-1 FOOT	B				750	66746			.2.		
33-203	SEDIMENT	LOC. 108	-	NW.DRNG CORE VERTICAL	1-2 FOOT	B				751	66747			.2.		
33-204	SEDIMENT	LOC. 108	-	NW.DRNG CORE VERTICAL	2-3 FOOT	B				752	66748	FWS		.2.		
33-205	SOIL	LOC. 109	-	NW.DRNG SURFACE COMP.	0-1 FOOT	B				753	66749			.2.		
33-206	SOIL	LOC. 110	-	NW.DRNG SURFACE COMP.	0-1 FOOT	B				754	66750	FWS		.2.		
33-207	SEDIMENT	LOC. 111	-	NW.DRNG CORE VERTICAL	0-1 FOOT	B				755	66751			.2.		
33-208	SEDIMENT	LOC. 111	-	NW.DRNG CORE VERTICAL	1-2 FOOT	B				756	66752			.2.		
33-209	SEDIMENT	LOC. 111	-	NW.DRNG CORE VERTICAL	2-3 FOOT	B				757	66753			.2.		
33-210	SOIL	LOC. 112	-	NW.DRNG SURFACE COMP.	0-1 FOOT	B				758	66754			.2.		
33-211	SOIL	LOC. 113	-	NW.DRNG SURFACE COMP.	0-1 FOOT	B				759	66755			.2.		
33-212	SEDIMENT	LOC. 114	-	NW.DRNG CORE VERTICAL	0-1 FOOT	B				760	66756			.2.		
33-213	SEDIMENT	LOC. 114	-	NW.DRNG CORE VERTICAL	1-2 FOOT	B				761	66757			.2.		
33-214	SEDIMENT	LOC. 114	-	NW.DRNG CORE VERTICAL	2-3 FOOT	B				762	66758			.2.		
33-215	SOIL	LOC. 115	-	NW.DRNG SURFACE COMP.	0-1 FOOT	B				763	66759			.2.		
33-216	SEDIMENT	LOC. 116	-	NW.DRNG CORE VERTICAL	0-1 FOOT	B				764	66760			.2.		
33-217	SEDIMENT	LOC. 116	-	NW.DRNG CORE VERTICAL	1-2 FOOT	B				765	66761			.2.		
33-218	SEDIMENT	LOC. 116	-	NW.DRNG CORE VERTICAL	2-3 FOOT	B				766	66762			.2.		
33-219	SOIL	LOC. 117	-	I-1- 23 CORE VERTICAL	3-4 FOOT	B				767	66763	FWS		.2.		
33-220	SOIL	LOC. 117	-	I-1- 23 CORE VERTICAL	4-5 FOOT	B				768	66764			.2.		
33-221	SOIL	LOC. 117	-	I-1- 23 CORE VERTICAL	5-6 FOOT	B				769	66765			.2.		
33-222	SOIL	LOC. 118	-	I-1- 23 CORE VERTICAL	3-4 FOOT	AI				770	66766			.2.		
33-223	SOIL	LOC. 118	-	I-1- 23 CORE VERTICAL	4-5 FOOT	B				771	66767			.2.		
33-224	SOIL	LOC. 118	-	I-1- 23 CORE VERTICAL	5-6 FOOT	B				772	66768			.2.		
33-225	SOIL	LOC. 119	-	I-1- 23 CORE VERTICAL	3-4 FOOT	B				773	66769			.2.		
33-226	SOIL	LOC. 119	-	I-1- 23 CORE VERTICAL	4-5 FOOT	B				774	66770			.2.		
33-227	SOIL	LOC. 119	-	I-1- 23 CORE VERTICAL	5-6 FOOT	B				775	66771			.2.		
33-228	SOIL	LOC. 120	-	I-1- 23 CORE VERTICAL	3-4 FOOT	B				776	66772			.2.		
33-229	SOIL	LOC. 120	-	I-1- 23 CORE VERTICAL	4-5 FOOT	B				777	66773			.2.		
33-230	SOIL	LOC. 120	-	I-1- 23 CORE VERTICAL	5-6 FOOT	B				778	66774			.2.		
33-231	SOIL	LOC. 121	-	I-1- 23 CORE VERTICAL	0-1 FOOT	B				779	66775			.2.		
33-232	SOIL	LOC. 121	-	I-1- 23 CORE VERTICAL	1-2 FOOT	B				780	66776			.2.		
33-233	SOIL	LOC. 121	-	I-1- 23 CORE VERTICAL	2-3 FOOT	B				781	66777			.2.		
33-234	SOIL	LOC. 122	-	I-1- 23 CORE VERTICAL	0-1 FOOT	B				782	66778			.2.		
33-235	SOIL	LOC. 122	-	I-1- 23 CORE VERTICAL	1-2 FOOT	B				783	66779			.2.		

! I.D.	! MATRIX!	NAME	!	TYPE	! DEPTH	! ANAL!	DEPTH!	LOCA-	! INTRVL!	SAMP!!	LAB	REPLICATE	SAMPLE	DUPL./SPIKE	NOTES	
																SET
!.... (RATIONALE)....!																
33-236	SOIL	LOC. 122 - I-1- 23	CORE VERTICAL		2-3 FOOT	B					784	66780		.2.		
33-237	SOIL	LOC. 123 - I-1- 23	CORE VERTICAL		0-1 FOOT	B					785	66781		.2.		
33-238	SOIL	LOC. 123 - I-1- 23	CORE VERTICAL		1-2 FOOT	B					786	66782		.2.		
33-239	SOIL	LOC. 123 - I-1- 23	CORE VERTICAL		2-3 FOOT	B					787	66783		.2.		
33-240	SOIL	LOC. 124 - I-1- 23	CORE VERTICAL		0-1 FOOT	B					788	66784		.2.		
33-241	SOIL	LOC. 124 - I-1- 23	CORE VERTICAL		1-2 FOOT	B					789	66785		.2.		
33-242	SOIL	LOC. 124 - I-1- 23	CORE VERTICAL		2-3 FOOT	B					790	66786		.2.		
33-243	SOIL	LOC. 125 - I-1- 23	CORE VERTICAL		0-1 FOOT	B					791	66787		.2.		
33-244	SOIL	LOC. 125 - I-1- 23	CORE VERTICAL		1-2 FOOT	B					792	66788		.2.		
33-245	SOIL	LOC. 125 - I-1- 23	CORE VERTICAL		2-3 FOOT	B					793	66789		.2.		
33-246	SOIL	LOC. 126 - I-1- 23	CORE VERTICAL		0-1 FOOT	B					794	66790		.2.		
33-247	SOIL	LOC. 126 - I-1- 23	CORE VERTICAL		1-2 FOOT	B					795	66791		.2.		
33-248	SOIL	LOC. 126 - I-1- 23	CORE VERTICAL		2-3 FOOT	B					796	66792		.2.		
33-249	SOIL	LOC. 127 - I-1- 23	CORE VERTICAL		0-1 FOOT	B					797	66793	FWS	.2.		
33-250	SOIL	LOC. 127 - I-1- 23	CORE VERTICAL		1-2 FOOT	B					798	66794		.2.		
33-251	SOIL	LOC. 127 - I-1- 23	CORE VERTICAL		2-3 FOOT	B					799	66795		.2.		
33-252	SOIL	LOC. 128 - I-1- 23	CORE VERTICAL		0-1 FOOT	B					800	66796		.2.		
33-253	SOIL	LOC. 128 - I-1- 23	CORE VERTICAL		1-2 FOOT	B					801	66797		.2.		
33-254	SOIL	LOC. 128 - I-1- 23	CORE VERTICAL		2-3 FOOT	B					802	66798		.2.		
33-255	SOIL	LOC. 129 - I-1- 23	CORE VERTICAL		0-1 FOOT	B					803	66799		.2.		
33-256	SOIL	LOC. 129 - I-1- 23	CORE VERTICAL		1-2 FOOT	B					842	66403		.2.		
33-257	SOIL	LOC. 129 - I-1- 23	CORE VERTICAL		2-3 FOOT	B					843	66404		.2.		
33-258	SOIL	LOC. 130 - I-1- 23	CORE VERTICAL		0-1 FOOT	B					844	66405		.2.		
33-259	SOIL	LOC. 130 - I-1- 23	CORE VERTICAL		1-2 FOOT	B					845	66406		.2.		
33-260	SOIL	LOC. 130 - I-1- 23	CORE VERTICAL		2-3 FOOT	B					846	66407		.2.		
33-261	SOIL	LOC. 131 - I-1- 23	CORE VERTICAL		0-1 FOOT	B					847	66408		.2.		
33-262	SOIL	LOC. 131 - I-1- 23	CORE VERTICAL		1-2 FOOT	B					848	66409		.2.		
33-263	SOIL	LOC. 131 - I-1- 23	CORE VERTICAL		2-3 FOOT	B					849	66410		.2.		
33-264	SOIL	LOC. 132 - I-1- 5	CORE VERTICAL		0-1 FOOT	B					850	66411	FWS	.2.		
33-265	SOIL	LOC. 132 - I-1- 5	CORE VERTICAL		1-2 FOOT	B					851	66412		.2.		
33-266	SOIL	LOC. 132 - I-1- 5	CORE VERTICAL		2-3 FOOT	B					852	66413		.2.		
33-267	SOIL	LOC. 133 - I-1- 5	CORE VERTICAL		0-1 FOOT	B					853	66414		.2.		
33-268	SOIL	LOC. 133 - I-1- 5	CORE VERTICAL		1-2 FOOT	B					854	66415		.2.		
33-269	SOIL	LOC. 133 - I-1- 5	CORE VERTICAL		2-3 FOOT	B					855	66416		.2.		
33-270	SOIL	LOC. 134 - I-1- 5	CORE VERTICAL		3-4 FOOT	AI					856	66417		.2.		

I.D.	MATRIX	NAME	TYPE	DEPTH	ANAL SET	DEPTH TION	INTRVL & NO.	LAB NO.	REPLICATE LAB FWS	SAMPLE PHASE	SAMPLE DATE	DUPL./SPIKE NUMBERS	NOTES
!....(RATIONALE)....!													
33-271	SOIL	LOC. 134 - I-1-	5 CORE VERTICAL	4-5 FOOT	B			857	66418		.2.		
33-272	SOIL	LOC. 134 - I-1-	5 CORE VERTICAL	5-6 FOOT	B			858	66419		.2.		
33-273	SOIL	LOC. 135 - I-1-	5 CORE VERTICAL	0-1 FOOT	B			859	66420		.2.		
33-274	SOIL	LOC. 135 - I-1-	5 CORE VERTICAL	1-2 FOOT	B			860	66421		.2.		
33-275	SOIL	LOC. 135 - I-1-	5 CORE VERTICAL	2-3 FOOT	B			861	66422		.2.		
33-276	SOIL	LOC. 136 - I-1-	5 CORE VERTICAL	0-1 FOOT	B			862	66423	FWS	.2.		
33-277	SOIL	LOC. 136 - I-1-	5 CORE VERTICAL	1-2 FOOT	B			863	66424		.2.		
33-278	SOIL	LOC. 136 - I-1-	5 CORE VERTICAL	2-3 FOOT	B			864	66425		.2.		
33-279	SOIL	LOC. 137 - I-1-	5 CORE VERTICAL	3-4 FOOT	B			865	66426		.2.		
33-280	SOIL	LOC. 137 - I-1-	5 CORE VERTICAL	4-5 FOOT	B			866	66427		.2.		
33-281	SOIL	LOC. 137 - I-1-	5 CORE VERTICAL	5-6 FOOT	B			867	66428		.2.		
33-282	SOIL	LOC. 138 - I-1-	5 CORE VERTICAL	0-1 FOOT	B			868	66429		.2.		
33-283	SOIL	LOC. 138 - I-1-	5 CORE VERTICAL	1-2 FOOT	B			869	66430		.2.		
33-284	SOIL	LOC. 138 - I-1-	5 CORE VERTICAL	2-3 FOOT	B			870	66431		.2.		
33-285	SOIL	LOC. 139 - I-1-	5 CORE VERTICAL	0-1 FOOT	B			871	66432		.2.		
33-286	SOIL	LOC. 139 - I-1-	5 CORE VERTICAL	1-2 FOOT	B			872	66433		.2.		
33-287	SOIL	LOC. 139 - I-1-	5 CORE VERTICAL	2-3 FOOT	B			873	66434	FWS	.2.		
33-288	SOIL	LOC. 140 - I-1-	5 CORE VERTICAL	0-1 FOOT	B			874	66435		.2.		
33-289	SOIL	LOC. 140 - I-1-	5 CORE VERTICAL	1-2 FOOT	B			875	66436		.2.		
33-290	SOIL	LOC. 140 - I-1-	5 CORE VERTICAL	2-3 FOOT	B			876	66437		.2.		
33-291	SOIL	LOC. 141 - NW.DRNG	CORE VERTICAL	0-1 FOOT	AI			877	66438	FWS	.2.		
33-292	SOIL	LOC. 141 - NW.DRNG	CORE VERTICAL	1-2 FOOT	B			878	66439		.2.		
33-293	SOIL	LOC. 141 - NW.DRNG	CORE VERTICAL	2-3 FOOT	B			879	66440		.2.		
33-294	SOIL	LOC. 142 - NW.DRNG	CORE VERTICAL	0-1 FOOT	B			880	66441		.2.		
33-295	SOIL	LOC. 142 - NW.DRNG	CORE VERTICAL	1-2 FOOT	B			881	66442		.2.		
33-296	SOIL	LOC. 142 - NW.DRNG	CORE VERTICAL	2-3 FOOT	B			882	66443		.2.		
33-297	SOIL	LOC. 143 - NW.DRNG	SURFACE COMP.	0-1 FOOT	B			883	66444		.2.		
33-298	SEDIMENT	LOC. 144 -NW.DRNG	CORE VERTICAL	0-1 FOOT	B			884	66445		.2.		
33-299	SEDIMENT	LOC. 144 -NW.DRNG	CORE VERTICAL	1-2 FOOT	B			885	66446		.2.		
33-300	SEDIMENT	LOC. 144 -NW.DRNG	CORE VERTICAL	2-3 FOOT	B			886	66447		.2.		
33-301	SOIL	LOC. 145 - NW.DRNG	SURFACE COMP.	0-1 FOOT	B			887	66448		.2.		
33-302	SOIL	LOC. 146 - NW.DRNG	SURFACE COMP.	0-1 FOOT	B			888	66449		.2.		
33-303	SEDIMENT	LOC. 147 -NW.DRNG	CORE VERTICAL	0-1 FOOT	B			889	66450		.2.		
33-304	SEDIMENT	LOC. 147 -NW.DRNG	CORE VERTICAL	1-2 FOOT	B			890	66451		.2.		
33-305	SEDIMENT	LOC. 147 -NW.DRNG	CORE VERTICAL	2-3 FOOT	B			891	66452		.2.		

I.D.	MATRIX	NAME	TYPE	DEPTH	ANAL SET	DEPTH TION	LOCA- & NO. NOS.	INTRVL	SAMP!	LAB NO	REPLICATE LAB	SAMPLE FWS PHASE	DUPL./SPIKE NUMBERS	NOTES
													(RATIONALE)....!

33-341	WATER	WELL - 1		X			927	64491		.2.				
33-342	WATER	WELL - 1		X			934	64498		.2.				
33-343	SOIL	-SPARE		B			935	64499		.2.				

*** 35:AREA 9 EAST WATERWAY No Phase II Sampling and/or Analysis

*** #12 34:CRAB ORCHARD LAKE

34- 62	WATER	REFUGE INTAKE	GRAB	NA	AK		735	66731		.2.				For resampling
34- 63	WATER	MARION INTAKE	GRAB	NA	AK		736	66732		.2.				For resampling
34- 64	WATER	MARION RES.-INTAKE	GRAB	NA	AK		737	66733		.2.				For resampling
34- 65	WATER	REFUGE TREATED H2O	GRAB	NA	AK		738	66734		.2.				For resampling
34- 66	WATER	MARION TREATED H2O	GRAB	NA	AK		739	66735		.2.				For resampling
34- 6	WATER	LAKE 1 B	COMP.3 DEPTHS	SURF-0.8 FT AL			418	11788		.2.				
34- 7	WATER	LAKE 2 C	COMP.3 DEPTHS	SURF-0.8 FT AL			419	11789		.2.				
34- 8	WATER	LAKE 3 G	COMP.3 DEPTHS	SURF-0.8 FT AL			420	11790		.2.				
34- 9	WATER	LAKE 4 H	COMP.3 DEPTHS	SURF-0.8 FT AL			421	11791		.2.				
34- 10	WATER	LAKE 5 A	COMP.3 DEPTHS	SURF-0.8 FT AL			422	11792		.2.				
34- 11	WATER	LAKE 6 D	COMP.3 DEPTHS	SURF-0.8 FT AL			423	11793		.2.				
34- 12	WATER	LAKE 7 E	COMP.3 DEPTHS	SURF-0.8 FT AL			424	11794		.2.				
34- 13	WATER	LAKE 8 F	COMP.3 DEPTHS	SURF-0.8 FT AL			425	11795		.2.				
34- 14	WATER	LAKE 9 I	COMP.3 DEPTHS	SURF-0.8 FT AL			426	11796		.2.				
34- 15	WATER	LAKE 10J	COMP.3 DEPTHS	SURF-0.8 FT AL			427	19159		.2.				
34- 16	SEDIMENT	LAKE 1 B	GRAB	DREDGE	AH		428	19160		.2.				
34- 17	SEDIMENT	LAKE 2 C	GRAB	DREDGE	AH		429	19161		.2.				
34- 18	SEDIMENT	LAKE 3 G	GRAB	DREDGE	I		430	19162	FWS	.2.				
34- 19	SEDIMENT	LAKE 4 H	GRAB	DREDGE	I		431	19163		.2.				
34- 20	SEDIMENT	LAKE 5 A	GRAB	DREDGE	I		432	19164		.2.				
34- 21	SEDIMENT	LAKE 6 D	GRAB	DREDGE	I		433	19165		.2.				
34- 22	SEDIMENT	LAKE 7 E	GRAB	DREDGE	I		434	19166		.2.				
34- 23	SEDIMENT	LAKE 8 F	GRAB	DREDGE	I		435	19167		.2.				
34- 24	SEDIMENT	LAKE 9 I	GRAB	DREDGE	I		436	19168		.2.				
34- 25	SEDIMENT	LAKE 10J	GRAB	DREDGE	I		437	19169		.2.				
34- 26	FISH	LAKE SITE 1 B	COMP. 5 CARP	NA	T		438	19170		*2. 7/23/85				
34- 27	FISH	LAKE SITE 1 B	COMP. 5 BASS	NA	T		439	19171		*2. 7/23/85				

! I.D.	! MATRIX!	NAME	!	TYPE	! DEPTH	! ANAL SET	DEPTH!	LOCA- TION	! INTRVL & NO.	SAMP! NOS.	LAB NO	REPLICATE NO	SAMPLE LAB FWS	DUPL./SPIKE PHASE	NOTES	
																NUMBERS
!....(RATIONALE)....!																
34- 28	FISH	LAKE SITE 1 B		COMP. 5 BASS	NA	T			440	19172		*2.	7/23/85			
34- 48	FISH	LAKE SITE 1 B		COMP.5 BULLHEAD	NA	T			460	19192	FWS	*2.	7/23/85			
34- 49	FISH	LAKE SITE 1 B		COMP.5 BULLHEAD	NA	T			461	19193		*2.	7/23/85			
34- 50	FISH	LAKE SITE 1 B		COMP.2 CATFISH	NA	T			462	19194		*2.	7/23/85			3 bullhead 11/85
34- 29	FISH	LAKE SITE 2 C		COMP. 5 CARP	NA	H			441	19173	FWS	*2.	7/23/85			
34- 30	FISH	LAKE SITE 2 C		COMP. 5 CARP	NA	T			442	19174		*2.	7/23/85			
34- 31	FISH	LAKE SITE 2 C		COMP. 5 BASS	NA	H			443	19175		*2.	7/23/85			
34- 51	FISH	LAKE SITE 2 C		COMP.5 BULLHEAD	NA	T			463	19195		*2.	7/23/85			
34- 52	FISH	LAKE SITE 2 C		COMP.5 BULLHEAD	NA	T			464	19196		*2.	7/23/85			
34- 53	FISH	LAKE SITE 2 C		COMP.5 CATFISH	NA	T			465	19197		*2.	7/23/85			
34- 32	FISH	LAKE SITE 3 G		COMP. 5 CARP	NA	T			444	19176		*2.	7/23/85			
34- 33	FISH	LAKE SITE 3 G		COMP. 5 CARP	NA	T			445	19177		*2.	7/23/85			
34- 34	FISH	LAKE SITE 3 G		COMP. 5 BASS	NA	T			446	19178	FWS	*2.	7/23/85			FWS 11/85
34- 54	FISH	LAKE SITE 3 G		COMP.5 BULLHEAD	NA	T			466	19198		*2.	7/23/85			
34- 55	FISH	LAKE SITE 3 G		COMP.5 BULLHEAD	NA	T			467	19199		*2.	7/23/85			
34- 35	FISH	LAKE SITE 4 H		COMP. 5 CARP	NA	T			447	19179	FWS	*2.	7/24/85			
34- 36	FISH	LAKE SITE 4 H		COMP. 5 BASS	NA	T			448	19180		*2.	7/24/85			
34- 37	FISH	LAKE SITE 4 H		COMP. 5 BASS	NA	T			449	19181		*2.	7/24/85			
34- 59	FISH	LAKE SITE 4 H		COMP.5 BULLHEAD	NA	T			472	19200		*2.	7/24/85			
34- 60	FISH	LAKE SITE 4 H		COMP.5 BULLHEAD	NA	T			473	19201		*2.	7/24/85			
34- 61	FISH	LAKE SITE 4 H		COMP.4 CATFISH	NA	T			471	19202		*2.	7/24/85			1 bullhead 11/85
34- 38	FISH	LAKE CONTROL J		COMP. 5 CARP	NA	T			450	19182		*2.	7/24/85			
34- 39	FISH	LAKE CONTROL J		COMP. 5 CARP	NA	T			451	19183		*2.	7/24/85			
34- 40	FISH	LAKE CONTROL J		COMP. 3 BASS	NA	T			452	19184	FWS	*2.	7/24/85			1 FWS 11/85
34- 41	FISH	LAKE CONTROL J		COMP. 5 BASS	NA	T			453	19185		*2.	7/24/85			
34- 56	FISH	LAKE CONTROL J		COMP.5 BULLHEAD	NA	T			468	19203		*2.	7/24/85			
34- 57	FISH	LAKE CONTROL J		COMP.5 BULLHEAD	NA	T			469	19204		*2.	7/24/85			
34- 58	FISH	LAKE CONTROL J		COMP.3 CATFISH	NA	T			470	19205		*2.	7/24/85			2 bullhead 11/85
34- 42	TURTLES	LAKE SITE 1 B		COMP. OF 2	BOTTOM	T			454	19186		-1-	7/24/85			
34- 43	TURTLES	LAKE SITE 2 C		COMP. OF 2	BOTTOM	T			455	19187		-1-	7/24/85			
34- 44	TURTLES	LAKE SITE 3 G		COMP. OF 2	BOTTOM	T			456	19188		-1-	7/24/85			
34- 45	CRAYFISH	LAKE SITE 1 B		COMP.OF 300gms	SURFACE	T			457	19189		-1-	7/24/85			
34- 46	CRAYFISH	LAKE SITE 2 C		COMP.OF 300gms	SURFACE	T			458	19190		-1-	7/24/85			
34- 47	CRAYFISH	LAKE SITE 3 G		COMP.OF 300gms	SURFACE	T			459	19191		-1-	7/24/85			

I.D.	MATRIX	NAME	TYPE	DEPTH	ANAL SET	DEPTH TION	LOCA & INTRVL NOS.	SAMP NO	LAB NO	REPLICATE LAB FWS	SAMPLE PHASE DATE	DUPL./SPIKE NUMBERS	NOTES
				(RATIONALE)....!								
***	#13	31:REFUGE CONTROL SITE											
31-	2	WATER	REFUGE CONTROL	SINGLE SAMPLE	BAILER	X			475	19207		.2.	
31-	3	SOIL	REFUGE CONTROL	SINGLE SAMPLE	SURFACE	Y						.2.	
***	#14	40:REPLICATES	Note: Replicates will be assigned after Phase II SOP is finalized										
40-	2	SOIL		REPLCATE 2					477	19216	DUPL	.2.	
40-	3	WATER		REPLCATE 2					478	19217	DUPL	.2.	
40-	4	WATER		REPLCATE 2					479	19218	DUPL	.2.	
40-	5	WATER		REPLCATE 2-WELL					480	19219	DUPL	.2.	
40-	6	WATER		REPLCATE 2-WELL					481	19220	DUPL	.2.	
40-	46	SEDIMENT		REPLCATE 2					521	19260	DUPL	.2.	
40-	47	SEDIMENT		REPLCATE 2					522	19261	DUPL	.2.	
40-	53	SEDIMENT		REPLCATE 2					601	9286	DUPL	.2.	
40-	54	SEDIMENT		REPLCATE 2					804	67440	DUPL	.2.	
40-	55	SEDIMENT		REPLCATE 2					805	67441	DUPL	.2.	
40-	56	SEDIMENT		REPLCATE 2					806	67442	DUPL	.2.	
40-	57	SOIL		REPLCATE 2					807	67443	DUPL	.2.	
40-	58	SOIL		REPLCATE 2					809	67445	DUPL	.2.	
40-	59	SOIL		REPLCATE 2					810	67446	DUPL	.2.	
40-	60	SOIL		REPLCATE 2					811	67447	DUPL	.2.	
40-	61	SOIL		REPLCATE 2					812	67448	DUPL	.2.	
40-	62	SOIL		REPLCATE 2					814	67450	DUPL	.2.	
40-	63	SOIL		REPLCATE 2					815	67451	DUPL	.2.	
40-	64	SEDIMENT		REPLCATE 2					817	67453	DUPL	.2.	
40-	65	SEDIMENT		REPLCATE 2					819	67455	DUPL	.2.	
40-	66	SEDIMENT		REPLCATE 2					820	67456	DUPL	.2.	
40-	67	SEDIMENT		REPLCATE 2					822	67458	DUPL	.2.	
40-	68	SEDIMENT		REPLCATE 2					824	67460	DUPL	.2.	
40-	69	SOIL		REPLCATE 2					825	67461	DUPL	.2.	
40-	70	SOIL		REPLCATE 2					826	67462	DUPL	.2.	
40-	71	SOIL		REPLCATE 2					827	67463	DUPL	.2.	
40-	72	SOIL		REPLCATE 2					829	67465	DUPL	.2.	
40-	73	SOIL		REPLCATE 2					831	67467	DUPL	.2.	

! I.D.	! MATRIX!	NAME	! TYPE	! DEPTH	! ANAL!DEPTH! LOCA-	! INTRVL!SAMP!	! LAB	REPLICATE	SAMPLE	DUPL./SPIKE	NOTES
				SET	TION & NO.	NOS.	NO	LAB FWS	PHASE DATE	NUMBERS	
!....(RATIONALE)....!											

40- 74	SOIL	REPLCTE 2					833	67469	DUPL	.2.	
40- 75	SOIL	REPLCTE 2					840	67476	DUPL	.2.	
40- 76	SOIL	REPLCTE 2					841	67477	DUPL	.2.	
40- 77	SOIL	REPLCTE 2					928	64492	DUPL	.2.	
40- 78	SOIL	REPLCTE 2					929	64493	DUPL	.2.	
40- 79	SOIL	REPLCTE 2					930	64494	DUPL	.2.	
40- 80	SOIL	REPLCTE 2					931	64495	DUPL	.2.	
40- 81	SOIL	REPLCTE 2					932	64496	DUPL	.2.	
40- 82	SOIL	REPLCTE 2					936	64500	SPKE	.2.	

*** 41:MATRIX SPIKES Note: Field matrix spikes will be assigned after Phase II SOP is finalized

41- 3	WATER	SPIKE ONLY					525	19264	SPKE	.2.	
41- 4	WATER	SPIKE ONLY - WELL					526	19265	SPKE	.2.	
41- 22	SOIL	SPIKE ONLY					544	19283	SPKE	.2.	
41- 23	SOIL	SPIKE ONLY					545	19284	SPKE	.2.	
41- 25	SEDIMENT	SPIKE ONLY					547	19286	SPKE	.2.	
41- 31	SOIL	SPIKE ONLY					808	67444	SPKE	.2.	
41- 32	SOIL	SPIKE ONLY					813	67449	SPKE	.2.	
41- 33	SOIL	SPIKE ONLY					816	67452	SPKE	.2.	
41- 34	SEDIMENT	SPIKE ONLY					818	67454	SPKE	.2.	
41- 35	SEDIMENT	SPIKE ONLY					821	67457	SPKE	.2.	
41- 36	SEDIMENT	SPIKE ONLY					823	67459	SPKE	.2.	
41- 37	SOIL	SPIKE ONLY					828	67464	SPKE	.2.	
41- 38	SOIL	SPIKE ONLY					830	67466	SPKE	.2.	
41- 39	SOIL	SPIKE ONLY					832	67468	SPKE	.2.	
41- 40	SOIL	SPIKE ONLY					933	64497	SPKE	.2.	

*** 42:BLANKS Note: Field blanks will be assigned after Phase II SOP is finalized

42- 12	SOIL	OB&G LAB	BLANK				602	9287	BLNK	.2.	
42- 13	SOIL	OB&G LAB	BLANK				603	9288	BLNK	.2.	
42- 14	SOIL	OB&G LAB	BLANK				604	9289	BLNK	.2.	
42- 15	OB&G LAB	BLANK					834	67470	BLNK	.2.	
42- 16	OB&G LAB	BLANK					835	67471	BLNK	.2.	

CONWR (10/20/86)

PHASE II SAMPLING AND ANALYSIS SCHEDULE

APPENDIX D (page 16)

! T.D.	! MATRIX!	NAME	! TYPE	! DEPTH	! ANAL!	DEPTH!	LOCA-	! INTRVL!	SAMP!	! LAB	REPLICATE	SAMPLE	DUPL./SPIKE	NOTES
					SET	TION	& NO.	NOS.	NO	LAB	FWS	PHASE	DATE	NUMBERS
!....(RATIONALE)....!														
42- 17	OB&G LAB		BLANK						836	67472	BLNK		.2.	
42- 18	OB&G LAB		BLANK						837	67473	BLNK		.2.	
42- 19	OB&G LAB		BLANK						838	67474	BLNK		.2.	
42- 20	OB&G LAB		BLANK						839	67475	BLNK		.2.	

END

APPENDIX E
PHASE I ANALYSIS SUMMARIES

(Note: See Appendix B for units and key
to abbreviations used herein.)

NOTE

Analytical Data from Phase I Sampling and Analysis for all sites were included in the Phase II Site Operations Plan of April 1986 and are not included herein. A separate package listing all Phase I analytical data, including duplicates and data qualifiers, will be provided by the end of September 1986. The PCDD/PCDF data which was not included in the April 1986 SOP is included herein.

CRAB ORCHARD NATIONAL WILDLIFE REFUGE
DIOXINS AND DIBENZOFURAN ISOMERS TETRA - OCTA

SAMPLE No.	I.D. No.	LAB No.	DATE 8/24/85	ISOMER No.	CONCENTRATION (PPB)								RATIOS (ppm) (ppb)					
					TCDD	TCDF	PCDD	PCDF	HxCDD	HxCDF	HxCDD	HxCDF	OCDD	OCDF	PCBs	DID'S/PCB	DF'S/PCB	
REPORT JAN. 4, 1986 V. I																		
149	32-	1	9498	8/24/85	1	-	0.14	-	-	-	-	-	-	-	-	-	-	
149	32-	1	9498	8/24/85	TOTAL	< 0.03	0.14	< 0.06	< 0.04	< 0.07	< 0.03	< 0.08	< 0.05	0.60	< 0.18	31800	26.42	13.84
					Ratio(ETC)	< 0.94	4.40	< 1.89	< 1.26	< 2.20	< 0.94	< 2.52	< 1.57	< 18.87	< 5.66			
					Ratio(OBG)	< 0.40	1.87	< 0.80	< 0.53	< 0.93	< 0.40	< 1.07	< 0.67	< 8.00	< 2.40	75000	11.20	5.87
153	32-	5	10641	8/24/85	1	-	-	-	0.04	-	0.47	-	-	-	-	-	-	
153	32-	5	10641	8/24/85	2	-	0.31	-	0.16	-	0.17	-	-	-	-	-	-	
153	32-	5	10641	8/24/85	3	-	0.23	-	0.41	-	-	-	-	-	-	-	-	
153	32-	5	10641	8/24/85	4	-	4.10	-	0.00	-	-	-	-	-	-	-	-	
153	32-	5	10641	8/24/85	5	-	2.37	-	1.81	-	-	-	-	-	-	-	-	
153	32-	5	10641	8/24/85	6	-	-	-	1.00	-	-	-	-	-	-	-	-	
153	32-	5	10641	8/24/85	7	-	0.17	-	0.00	-	-	-	-	-	-	-	-	
153	32-	5	10641	8/24/85	TOTAL	< 0.04	7.18	< 0.17	3.42	< 0.12	0.64	< 0.08	< 0.05	8.40	< 0.15			
					Ratio(ETC)	< 0.01	1.38	< 0.03	0.66	< 0.02	0.12	< 0.02	< 0.01	1.62	< 0.03	5197000	1.70	2.20
					Ratio(OBG)	< 0.03	5.52	< 0.13	2.63	< 0.09	0.49	< 0.06	< 0.04	6.46	< 0.12	1300000	6.78	8.80
157	32-	9	10645	8/21/85	TOTAL	< 0.13	0.28	< 0.26	0.34	< 0.19	0.09	< 0.34	< 0.16	1.93	< 0.83			
					Ratio(ETC)	< 4.00	8.62	< 8.00	10.46	< 5.85	2.77	< 10.46	< 4.92	59.38	< 25.54	32500	87.69	52.31
					Ratio(OBG)	< 2.65	5.71	< 5.31	6.94	< 3.88	1.84	< 6.94	< 3.27	39.39	< 16.94	49000	58.16	34.69
161	32-	13	10649	8/21/85	TOTAL	< 0.02	< 0.01	< 0.03	< 0.02	< 0.03	< 0.01	< 0.06	< 0.04	1.88	< 0.11			
					Ratio(ETC)													
					Ratio(OBG)	< 10.53	< 5.26	< 15.79	< 10.53	< 15.79	< 5.26	< 31.58	< 21.05	989.47	< 57.89	1900	1063.16	100.00
165	32-	17	10653	8/22/85	1	-	-	-	0.05	-	0.09	-	-	-	-	-	-	
165	32-	17	10653	8/22/85	2	-	0.08	-	0.17	-	0.05	-	-	-	-	-	-	
165	32-	17	10653	8/22/85	3	-	0.06	-	0.72	-	-	-	-	-	-	-	-	
165	32-	17	10653	8/22/85	4	-	1.63	-	0.31	-	-	-	-	-	-	-	-	
165	32-	17	10653	8/22/85	5	-	1.14	-	-	-	-	-	-	-	-	-	-	
165	32-	17	10653	8/22/85	6	-	0.29	-	-	-	-	-	-	-	-	-	-	
165	32-	17	10653	8/22/85	TOTAL	< 0.01	3.20	< 0.04	1.25	< 0.04	0.14	< 0.07	< 0.02	0.15	< 0.11			
					Ratio(ETC)	< 0.01	4.09	< 0.05	1.60	< 0.05	0.18	< 0.09	< 0.03	0.19	< 0.14	782500	0.40	6.03

CRAB ORCHARD NATIONAL WILDLIFE REFUGE
DIOXINS AND DIBENZOFURAN ISOMERS TETRA - OCTA

SAMPLE No.	I.D. No.	LAB No.	DATE	ISOMER No.	CONCENTRATION (PPB)										RATIOS (ppm)		
					TCDD	TCDF	PCDD	PCDF	HxCDD	HxCDF	HpCDD	HpCDF	OCDD	OCDF	PCBs (ppb)	DD'S/PCB	DF'S/PCB
															360000	0.86	13.11
				Ratio(OBG)	< 0.03	8.89	< 0.11	3.47	< 0.11	0.39	< 0.19	< 0.06	< 0.42	< 0.31			
169	32-	21	10657 8/22/85	1	-	-	-	0.26	0.20	0.09	1.10	0.10	-	-			
169	32-	21	10657 8/22/85	2	-	0.54	-	0.09	0.09	0.06	0.75	0.26	-	-			
169	32-	21	10657 8/22/85	3	-	1.09	0.21	1.20	0.38	0.30	-	-	2.09	-			
169	32-	21	10657 8/22/85	4	-	1.66	0.16	3.58	0.45	0.06	-	-	-	-			
169	32-	21	10657 8/22/85	5	-	0.67	0.20	0.08	0.47	0.09	-	-	-	-			
169	32-	21	10657 8/22/85	6	-	12.60	0.11	0.36	-	0.00	-	-	-	-			
169	32-	21	10657 8/22/85	7	-	7.31	0.16	9.46	-	1.83	-	-	-	-			
169	32-	21	10657 8/22/85	8	-	2.23	0.29	5.21	-	1.18	-	-	-	-			
169	32-	21	10657 8/22/85	9	-	0.20	0.56	0.30	-	-	-	-	-	-			
169	32-	21	10657 8/22/85	10	-	-	0.47	-	-	-	-	-	-	-			
169	32-	21	10657 8/22/85	11	0.09	-	-	-	-	-	-	-	-	-			
169	32-	21	10657 8/22/85	TOTAL	0.09	26.30	2.16	20.54	1.59	3.61	1.85	0.36	2.09	< 0.19			
				Ratio(ETC)	0.01	3.15	0.26	2.46	0.19	0.43	0.22	0.04	0.25	< 0.02	8359000	0.93	6.10
				Ratio(OBG)	0.02	5.60	0.46	4.37	0.34	0.77	0.39	0.08	0.44	< 0.04	4700000	1.66	10.85
173	32-	25	10661 8/22/85	1	-	0.27	0.15	0.71	-	-	-	-	-	-			
173	32-	25	10661 8/22/85	2	-	0.94	-	1.28	-	-	-	-	-	-			
173	32-	25	10661 8/22/85	3	-	0.47	-	0.00	-	1.09	0.16	-	20.60	-			
173	32-	25	10661 8/22/85	4	-	0.16	-	4.98	-	0.38	-	-	-	-			
173	32-	25	10661 8/22/85	5	-	10.50	-	3.48	-	-	-	-	-	-			
173	32-	25	10661 8/22/85	6	-	5.93	-	-	0.28	-	-	-	-	-			
173	32-	25	10661 8/22/85	7	-	1.75	-	-	-	-	-	-	-	-			
173	32-	25	10661 8/22/85	8	-	0.22	-	-	-	-	-	-	-	-			
173	32-	25	10661 8/22/85	TOTAL	< 0.04	20.24	0.15	10.45	0.28	1.47	0.16	< 0.07	20.60	< 0.11			
				Ratio(ETC)	< 0.01	3.74	0.03	1.93	0.05	0.27	0.03	< 0.01	3.80	< 0.02	5416100	3.92	5.97
				Ratio(OBG)	< 0.01	4.31	0.03	2.22	0.06	0.31	0.03	< 0.01	4.38	< 0.02	4700000	4.52	6.88
177	32-	29	10665 8/23/85	1	-	-	-	0.37	-	-	-	-	-	-			
177	32-	29	10665 8/23/85	2	-	0.32	-	1.03	-	0.32	-	-	-	-			
177	32-	29	10665 8/23/85	3	-	0.53	-	0.17	-	0.15	-	-	-	-			
177	32-	29	10665 8/23/85	4	-	1.02	-	2.20	-	-	-	-	-	-			

CRAB ORCHARD NATIONAL WILDLIFE REFUGE
DIOXINS AND DIBENZOFURAN ISOMERS TETRA - OCTA

SAMPLE No.	I.D. No.	LAB No.	DATE	ISOMER No.	CONCENTRATION (PPB)									RATIOS (ppm)			
					TCDD	TCDF	PCDD	PCDF	HxCDD	HxCDF	HxCDD	HxCDF	OCDD	OCDF	PCBs (ppb)	DD'S/PCB	DF'S/PCB
177	32- 29	10665	8/23/85	5	-	6.11	-	1.36	-	-	-	-	-	-			
177	32- 29	10665	8/23/85	6	-	3.65	-	-	-	-	-	-	-	-			
177	32- 29	10665	8/23/85	7	-	1.14	-	-	-	-	-	-	-	-			
177	32- 29	10665	8/23/85	8	-	0.12	-	-	-	-	-	-	-	-			
177	32- 29	10665	8/23/85	9	-	0.39	-	-	-	-	-	-	-	-			
177	32- 29	10665	8/23/85	TOTAL	< 0.05	13.28	< 0.13	5.13	< 0.17	0.47	< 0.20	< 0.08	< 0.52	< 0.28			
				Ratio(ETC)	< .00	1.09	< 0.01	0.42	< 0.01	0.04	< 0.02	< 0.01	< 0.04	< 0.02	12238200	0.09	1.57
				Ratio(OBG)	< 0.06	16.20	< 0.16	6.26	< 0.21	0.57	< 0.24	< 0.10	< 0.63	< 0.34	820000	1.30	23.46
181	32- 33	10669	8/23/85	TOTAL	< 0.05	1.00	< 0.11	0.07	< 0.16	0.06	< 0.21	< 0.11	< 0.53	< 0.58			
				Ratio(ETC)	< 0.29	5.78	< 0.64	0.40	< 0.92	0.35	< 1.21	< 0.64	< 3.06	< 3.35	173120	6.12	10.51
				Ratio(OBG)	< 1.04	20.83	< 2.29	1.46	< 3.33	1.25	< 4.38	< 2.29	< 11.04	< 12.08	48000	22.08	37.92
238	33- 27	10726	9/23/85	TOTAL	< 0.06	< 0.05	< 0.11	< 0.08	< 0.10	< 0.05	< 0.17	< 0.11	6.20	< 0.37			
				Ratio(ETC)													
				Ratio(OBG)													
271	33- 60	11646	9/24/85	TOTAL	< 0.12	< 0.09	< 0.12	< 0.10	< 0.13	< 0.08	< 0.39	< 0.13	7.40	< 0.63			
				Ratio(ETC)													
				Ratio(OBG)													
340	33- 129	11715	9/24/85	TOTAL	< 0.03	< 0.04	< 0.10	0.17	< 0.06	< 0.04	< 0.15	< 0.06	9.70	< 0.34			
				Ratio(ETC)	< 0.14	0.19	< 0.47	0.81	< 0.28	< 0.19	< 0.71	< 0.28	46.06	< 1.61	210600	47.67	3.09
				Ratio(OBG)	< 0.03	< 0.03	< 0.08	0.14	< 0.05	< 0.03	< 0.13	< 0.05	8.08	< 0.28	1200000	8.37	0.54
368	33- 158	11743	9/25/85	1	-	1.24	-	43.10	2.15	0.99	20.78	51.00	169.00	71.50			
368	33- 158	11743	9/25/85	2	-	-	-	18.50	-	42.30	21.56	5.19	-	-			
368	33- 158	11743	9/25/85	3	-	2.72	-	7.06	3.43	3.60	-	10.50	-	-			
368	33- 158	11743	9/25/85	4	-	0.88	-	8.57	2.62	36.20	-	20.20	-	-			
368	33- 158	11743	9/25/85	5	-	1.55	-	-	0.63	93.30	-	-	-	-			
368	33- 158	11743	9/25/85	6	-	1.63	-	1.03	-	35.80	-	-	-	-			
368	33- 158	11743	9/25/85	7	-	1.06	-	22.90	-	4.70	-	-	-	-			
368	33- 158	11743	9/25/85	8	-	0.54	-	22.90	-	18.20	-	-	-	-			

CRAB ORCHARD NATIONAL WILDLIFE REFUGE
DIOXINS AND DIBENZOFURAN ISOMERS TETRA - OCTA

SAMPLE No.	I.D. No.	LAB No.	DATE	ISOMER No.	CONCENTRATION (PPB)										RATIOS (ppm)		
					TCDD	TCDF	PCDD	PCDF	HxCDD	HxCDF	HpCDD	HpCDF	OCDD	OCDF	PCBs (ppb)	DD'S/PCB	DF'S/PCB
368	33- 158	11743	9/25/85	9	-	3.12	-	22.70	-	13.80	-	-	-	-			
368	33- 158	11743	9/25/85	10	-	1.33	0.21	10.70	-	-	-	-	-	-			
368	33- 158	11743	9/25/85	11	-	9.01	0.37	-	-	-	-	-	-	-			
368	33- 158	11743	9/25/85	12	-	3.41	-	-	-	-	-	-	-	-			
368	33- 158	11743	9/25/85	13	-	0.80	-	-	-	-	-	-	-	-			
368	33- 158	11743	9/25/85	14	-	0.84	-	-	-	-	-	-	-	-			
368	33- 158	11743	9/25/85	TOTAL	(0.11	28.13	0.58	157.46	8.83	248.89	42.34	86.89	169.00	71.50			
				Ratio(ETC)	(0.01	3.27	(0.07	18.31	(1.03	28.94	(4.92	(10.10	(19.65	(8.31	8600000	25.68	68.94
				Ratio(DB6)	(0.04	10.05	(0.21	56.24	(3.15	88.89	(15.12	(31.03	(60.36	(25.54	2800000	78.88	211.74
513	40- 38	19252	8/22/85	1	-	0.48	-	0.40	-	0.08	-	-	-	0.90	-		
513	40- 38	19252	8/22/85	2	-	0.54	-	0.17	-	0.05	-	-	-	-			
513	40- 38	19252	8/22/85	3	-	0.61	-	0.41	-	0.18	-	-	-	-			
513	40- 38	19252	8/22/85	4	-	-	-	0.72	-	0.06	-	-	-	-			
513	40- 38	19252	8/22/85	5	-	1.14	-	0.10	-	0.20	-	-	-	-			
513	40- 38	19252	8/22/85	6	-	0.55	-	0.36	-	0.12	-	-	-	-			
513	40- 38	19252	8/22/85	7	-	4.84	-	1.43	-	-	-	-	-	-			
513	40- 38	19252	8/22/85	8	-	2.89	-	1.01	-	-	-	-	-	-			
513	40- 38	19252	8/22/85	9	-	0.87	-	0.07	-	-	-	-	-	-			
513	40- 38	19252	8/22/85	10	-	0.09	-	-	-	-	-	-	-	-			
513	40- 38	19252	8/22/85	TOTAL	(0.05	12.01	(0.12	4.67	(0.14	0.69	(0.17	(0.09	0.90	(0.25			
				Ratio(ETC)	(0.01	3.58	(0.04	1.39	(0.04	0.21	(0.05	(0.03	0.27	(0.07	3357000	0.41	5.28
				Ratio(DB6)	(0.04	10.01	(0.10	3.89	(0.12	0.58	(0.14	(0.08	0.75	(0.21	1200000	1.15	14.76
542	41- 20	19281	8/23/85	1	0.00	0.21	-	0.22	-	-	-	-	-	-			
542	41- 20	19281	8/23/85	2	0.00	0.19	-	0.39	-	-	-	-	-	-			
542	41- 20	19281	8/23/85	3	0.00	1.14	-	0.59	-	-	-	-	-	-			
542	41- 20	19281	8/23/85	4	0.00	0.44	-	0.15	-	-	-	-	-	-			
542	41- 20	19281	8/23/85	5	0.00	0.00	-	-	-	-	-	-	-	-			
542	41- 20	19281	8/23/85	6	0.00	11.30	-	5.05	-	-	-	-	-	-			
542	41- 20	19281	8/23/85	7	0.00	3.20	-	3.01	-	-	-	-	-	-			
542	41- 20	19281	8/23/85	8	0.00	0.32	-	-	-	-	-	-	-	-			
542	41- 20	19281	8/23/85	TOTAL	1.03	0.00	(0.19	9.41	(0.10	0.59	(0.21	(0.03	0.92	(0.11			

CRAB ORCHARD NATIONAL WILDLIFE REFUGE
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SAMPLE No.	I.D. No.	LAB No.	DATE	ISOMER No.	CONCENTRATION (PPB)								RATIOS (ppm) (ppb)				
					TCDD	TCDF	PCDD	PCDF	HxCDD	HxCDF	HpCDD	HpCDF	OCDD	OCDF	PCBs (ppb)	DD'S/PCB	DF'S/PCB
				Ratio(ETC)	(2.15	0.00	(0.40	19.60	(0.21	1.23	(0.44	(0.06	1.92	(0.23	480000	5.10	21.13
				Ratio(OBG)	(0.38	0.00	(0.07	3.49	(0.04	0.22	(0.08	(0.01	0.34	(0.04	2700000	0.91	3.76