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NS MAYPORT
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FINAL DEMONSTRATION OF NEW AND EMERGING ENVIRONMENTAL TECHNOLOGIES

NS MAYPORT FL

5/3/1996

FIFCO INTERNATIONAL

FINAL REPORT
3 MAY 1996

CONTRACT N62467-94-D-0889
DEMONSTRATION OF NEW AND EMERGING ENVIRONMENTAL TECHNOLOGIES
NAVAL STATION MAYPORT, FLORIDA

PREPARED FOR

DEPARTMENT OF THE NAVY
SOUTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
P.O.BOX 190010
2155 EAGLE DRIVE
NORTH CHARLESTON, S.C. 29419-9010

PREPARED BY

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1011 CAMINO DEL MAR, SUITE 240
DEL MAR, CALIFORNIA 92014

1.0 INTRODUCTION

1.1 OBJECTIVE

A technology demonstration is being conducted under the Navy Environmental Leadership Program (NELP) for *in situ* biological remediation of pesticide-contaminated soil at solid waste management unit (SWMU) 15 at Naval Station (NAVSTA) Mayport, Florida (Figures 1-1, 1-2, and 1-3). NELP was created to promote the use of new and innovative technologies on the areas of compliance, conservation, cleanup and pollution prevention within the Navy. NAVSTA Mayport was selected to participate in NELP because activities at this station are representative of similar activities at other naval stations.

1.2 SCOPE/APPROACH

ABB Environmental Services, Inc. (ABB-ES), was contracted by the Department of the Navy, Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM) to provide technical oversight for the technology demonstration at SMWU 15. FIFCO International, Inc. (FIFCO) was contracted to perform the technology demonstration at SMWU 15.

The technology being demonstrated at SMWU 15 is *in situ* bioremediation of pesticide-contaminated soils using bioaugmentation. Bioaugmentation is the adding of selected microorganisms to a site to achieve quicker and more effective remediation of target contaminants. The target contaminants at SMWU 15 are 4',4'-DDT, 4',4'-DDE and Chlordane. The cleanup levels which the State of Florida set for each of the target compounds is shown in the following table:

TARGET CONTAMINANTS AND CLEANUP GOALS

Chemical	Range of Detected Concentrations	Florida Cleanup Goals
4',4'-DDT	**1.6 - 790,000**	**1,000**
4',4'-DDE	**0.935 - 2,800**	**3,100**
Chlordane	**20 - 9,000**	**2,100**

Table 1-1. Units ug/kg

JACKSONVILLE, FLORIDA AREA

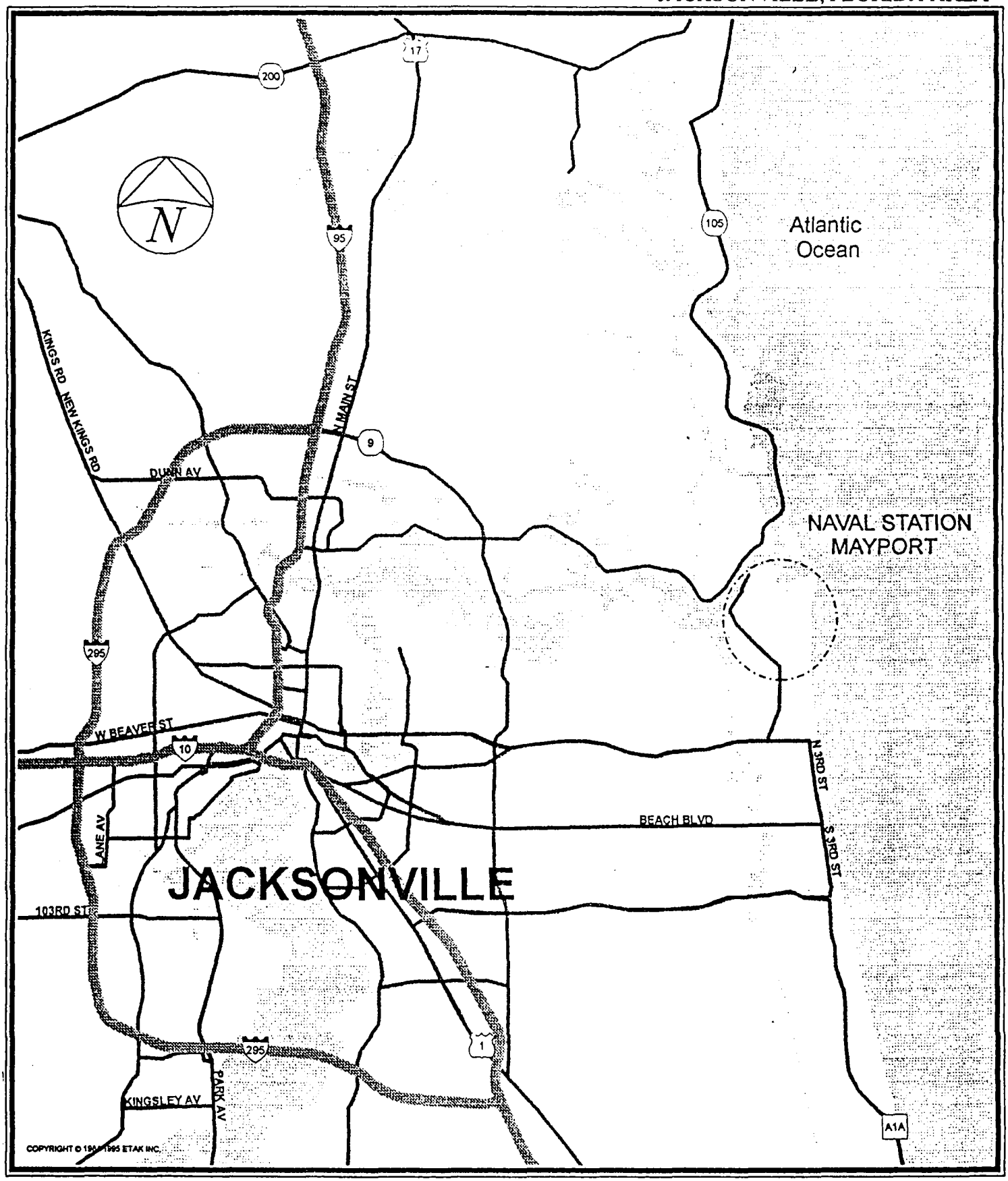

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Figure 1-1

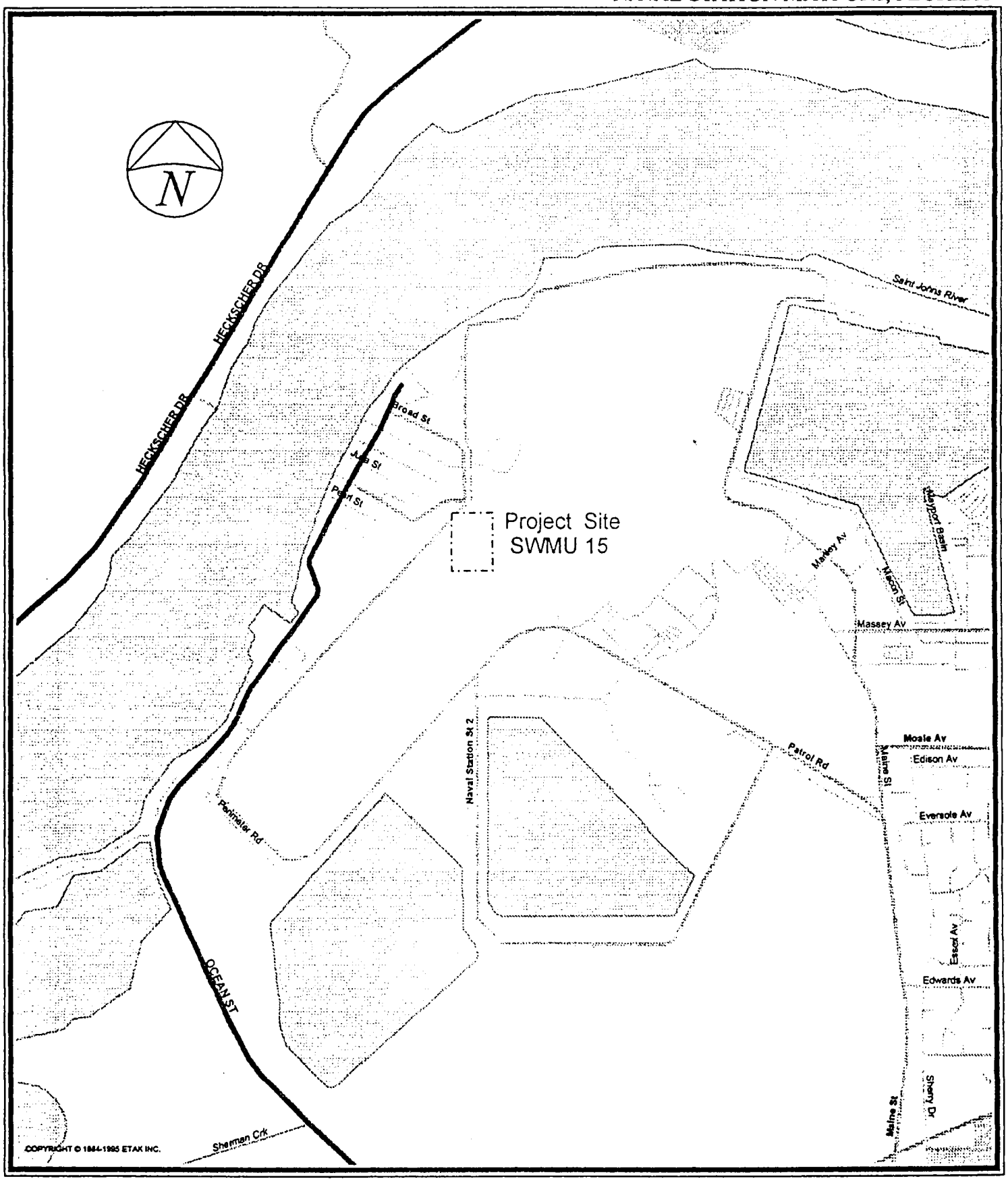

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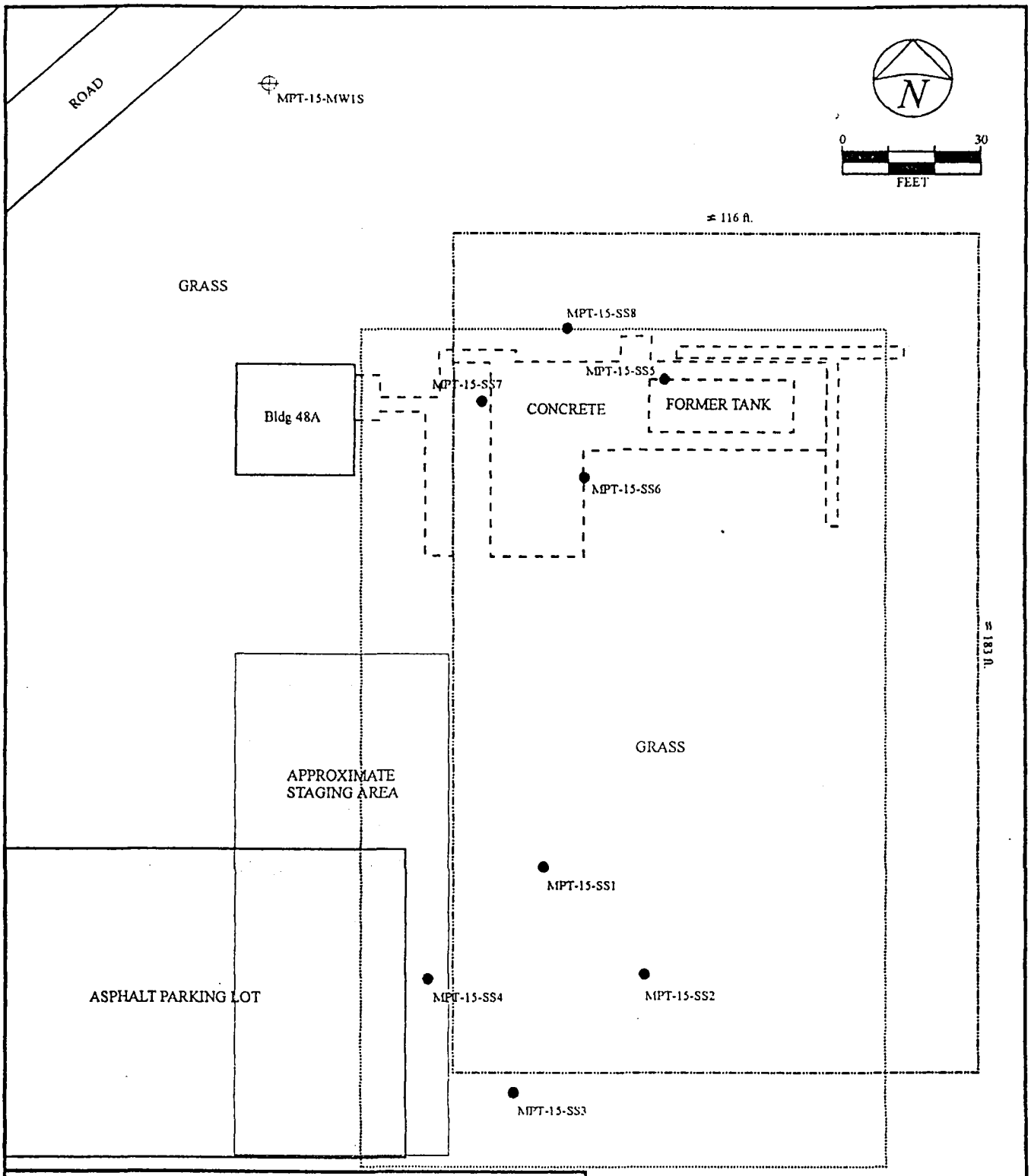
Figure 1-2



LEGEND

- ORIGINAL TREATMENT BOUNDARY
- FINAL MODIFIED TREATMENT BOUNDARY
- MPT-15-SS1 — LOCATION OF SURFACE SOIL SAMPLE PERFORMED IN 1991
- MPT-15-MW1S — LOCATION OF EXISTING MONITORING
- OUTLINE OF FORMER SIDEWALKS AND SURFACE STRUCTURE

SITE PLAN
SWMU 15, Old Pesticide Handling Area
U.S. Naval Station, Mayport, Florida

Figure 1-3

2.0 SUMMARY OF TECHNOLOGY DEMONSTRATION

2.1 ACTIVITIES

2.1.1 Project Set up and Start Dates. FIFCO received an official project start date from the NAVY of 18 Dec. 95. Set up at the site began on 18 Dec. 95 and was completed 05 Jan. 96. Start of the 60-day treatment period began on 05 Jan. 96. This final report covers the period from the project start date through the final application of the Bac-Terra tm liquid completed on 26 Feb 96.

2.1.2 Treatment System's Storage and Distribution System Set up. The set up of the storage and distribution system was done using the materials listed in the RAP, Table 6.2.5, page 25 (FIFCO, 1995). Some slight variances to the quantities listed in that table occurred as actual on-site set up took place.

Two distribution systems were set up at the site to place the liquid Bac-Terra TM product in contact with the contaminated soil.

2.1.2.1 Drip Irrigation System. A drip irrigation system by Roberts (RO-DRIP) was set up as one of the two distribution systems. RO-DRIP is a high performance drip tape for subsurface or above ground irrigation. The specific system set up at the site SWMU 15 was the Robert's RO-DRIP, 8 mil, 12", 24 gallons/hour irrigation system. Figure 2-1 shows the RO-DRIP distribution system. The drip tape was placed on the soil surface of the site and was held in place by jute staples at five-foot intervals. A three-inch distribution header pipe connected the drip tapes, and it was placed at the south end of the treatment zone.

2.1.2.2 Impact Sprinkler Head Irrigation System. An impact sprinkler head irrigation system by Rain Bird was installed as the second means of distributing the Bac-Terra TM liquid. The specific system set up at the site SWMU 15 was the Rain Bird 2045 PJ MaxiBird irrigation system. Figure 2-2 shows the Rain Bird distribution system. The pipe layout was set up with six distribution lines, each with four impact sprinkler heads and each line individually valved for shutoff. These six lines were fed from a manifold header system at the west edge of the treatment zone. The distribution manifold layout was set up so that each of the six feeder lines could be operated independenly of the other feeder lines. The Rain Bird impact sprinkler heads around the perimeter of the treatment zone were set up facing inward and the interior impact sprinkler heads were adjusted so that a 360 degree dispersion of liquid Bac-Terra TM product was possible. The distribution system pipes were held in place by jute staples placed at five-foot intervals.

2.1.2.3 Bac-Terra TM Storage System. Three 5000-gallon storage tanks were placed west of the treatment zone in the staging area. The Bac-Terra TM product was mixed with water in these tanks to provide a total of 14,950 gallons of Bac-Terra TM liquid for application on the site during the 60-day treatment period.

2.1.2.4 Pump System. The liquid Bac-Terra TM was moved from the storage tanks to either (or both) of the distribution systems via a pump. The pump used for this distribution was a three horsepower centrifical pump made by Dayton.

2.2 FIELD DEMONSTRATION

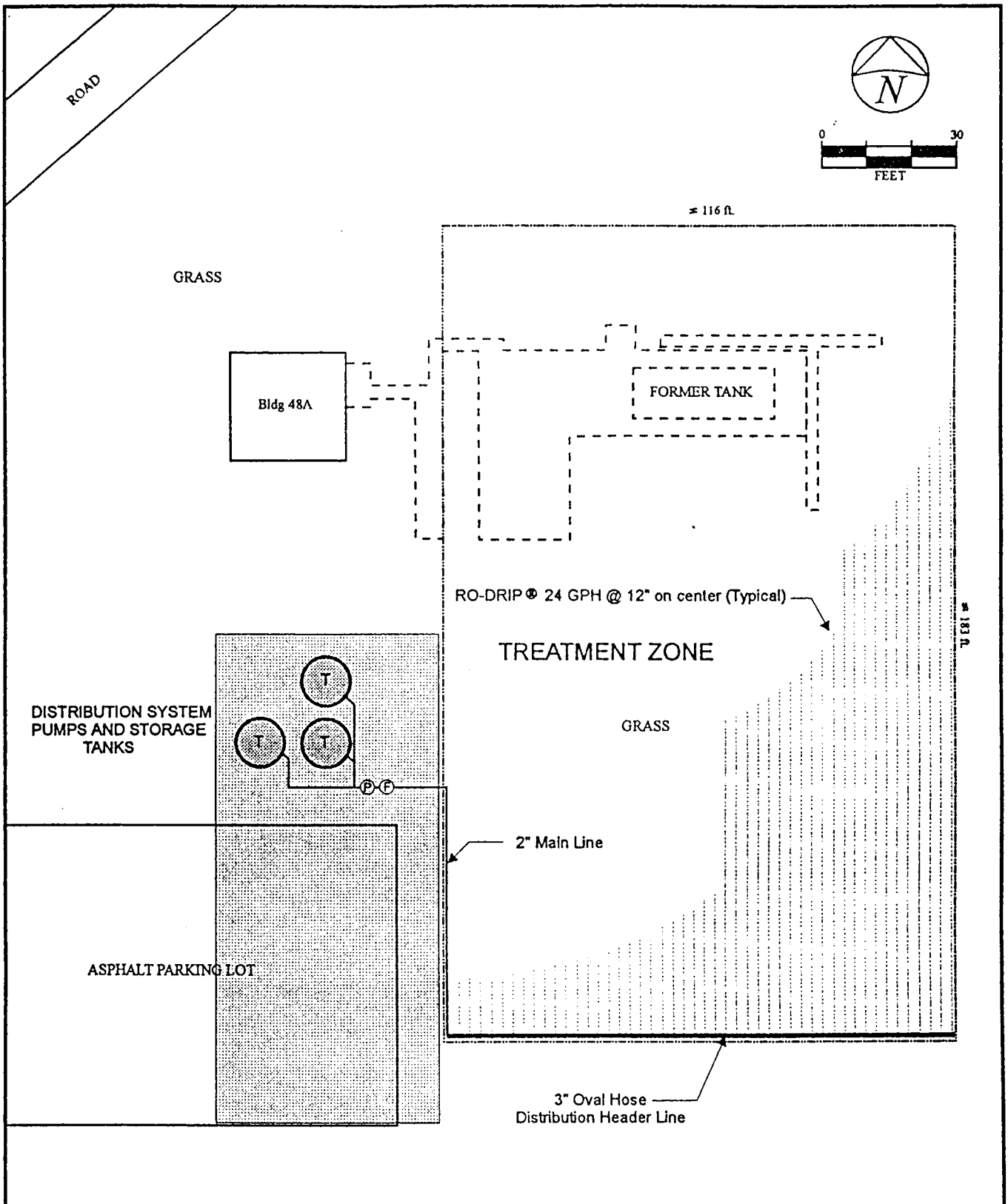
2.2.1 Application of the Liquid Bac-Terra TM Product. Bac-Terra TM BR650 product was mixed on site with water in the three 5,000-gallon tanks. The application of the liquid product commenced on 05 Jan. 96. Both the drip irrigation system and the impact sprinkler head irrigation system were used to apply the liquid product.

During the period of application covered by this final report (05 Jan. 96 through 26 Feb. 96), it was found that the impact sprinkler head irrigation system provided more control in the application of the liquid product. The drip irrigation system distributed the liquid product very efficiently, but tended to apply more product than was desired at any one time. However, the drip irrigation system did allow for initial soaking of the treatment zone with a large amount of product, thus, effecting an inital shock or slug, loading. On the other hand, the impact sprinkler head irrigation system allowed for a very measured application of the liquid Bac-Terra TM product to the treatment zone, and thus, provided a way to control soil moisture at proper levels for maximum microbial activity. Table 2-1 provides the application-rate schedule of the liquid Bac-Terra TM product as applied.

2.3 MONITORING ACTIVITIES DURING DEMONSTRATION

FIFCO collected soil samples during the technology demonstration to monitor and assess the performance of the remediation effort. Environmental Consulting and Technology, Inc. (ECT) was hired to collect the samples, while ENCO Laboratories was hired to analyze the samples using EPA method 8080. All sampling was conducted in accordance with the Revised Quality Assurance Project Plan, 1995, Section 6.3.2.

Sampling methodology was as follows: Samples were collected with a hand auger utilizing a 3 1/2 inch stainless steel auger bucket. Samples were removed from the auger bucket with a stainless steel spoon and placed within a stainless steel bowl for composite mixing. Sampling equipment was decontaminated after each sample was collected by cleaning with an Alconox and deionized water solution, rinsing with deionized water, then rinsing with isopropanol and allowing to air dry. All composite samples were collected from ground surface to one foot below the surface, with the exception one sample which was a composite sample from one foot to two feet below the land surface. Samples were will mixed, then placed into 250 mililiter (ml) amber containers supplied by ENCO Laboratories. After the soil sample was collected from the most contaminated spot at the site, an equipment blank was prepared after normal cleaning by rinsing all equipment with deionized water. The rinseate was collected in the stainless steel bowl and poured into a laboratory-supplied 500 ml amber bottle. All sample bottles were placed into an ice chest, chilled and delivered by ECT or FIFCO personnel to the laboratory (ENCO) for analysis using the EPA Method 8080 parameters. Chain-of-custody documentation was maintained throughout the project on all samples collected.

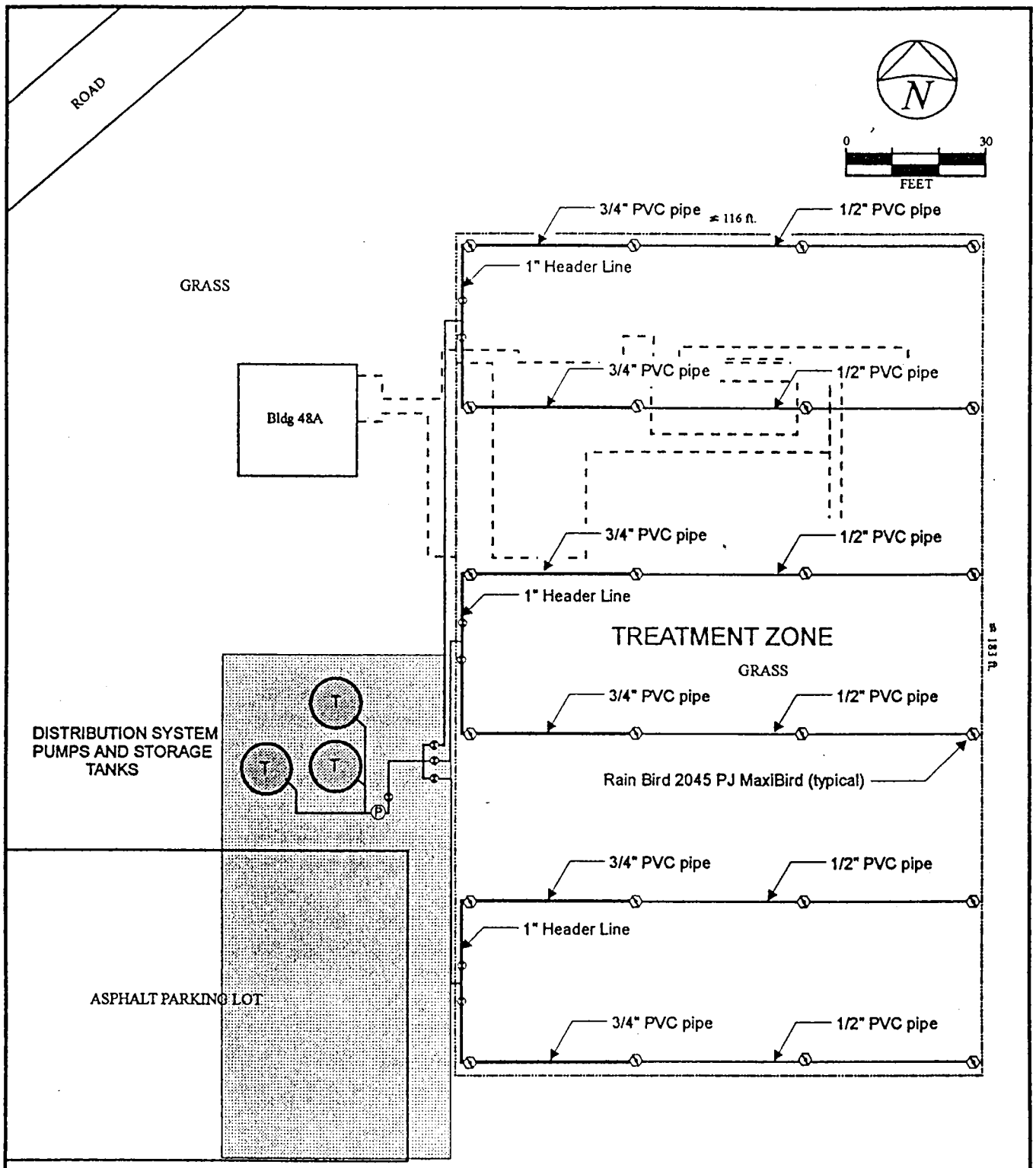


LEGEND

- DRIP TAPE FEEDER LINES
- FINAL MODIFIED TREATMENT BOUNDARY
- OUTLINE OF FORMER SIDEWALKS AND SURFACE STRUCTURE

SITE PLAN
SWMU 15, Old Pesticide Handling Area
U.S. Naval Station, Mayport, Florida

Drip Irrigation System | *Figure 2-1*



LEGEND

- IMPACT SPRINKLER HEADS AND LINES
- FINAL MODIFIED TREATMENT BOUNDARY
- OUTLINE OF FORMER SIDEWALKS AND SURFACE STRUCTURE

SITE PLAN
SWMU 15, Old Pesticide Handling Area
U.S. Naval Station, Mayport, Florida

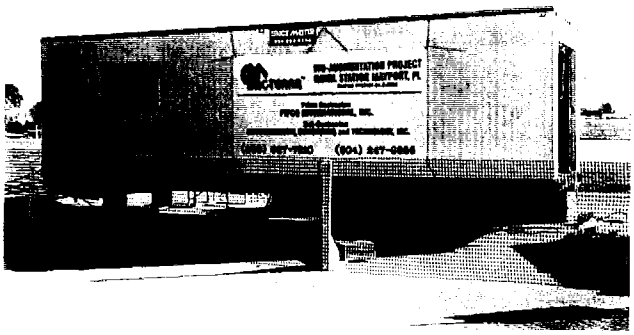
Impact Sprinkler System | *Figure 2-2*

LIQUID BAC-TERRA APPLICATION SCHEDULE

APPLICATION DATE	SYSTEM USED	TANK DRAWN FROM	GALLONS APPLIED
04 JAN 96	flush both systems	3	250
05 JAN 96	drip tape system	1,2	2,200
05 JAN 96	sprinkler system	1,2	340
08 JAN 96	sprinkler system	1,2	580
09 JAN 96	sprinkler syetem	1,2	520
11 JAN 96	sprinkler system	1,2	620
12 JAN 96	drip tape system	1,2	1,400
12 JAN 96	sprinkler system	1,2	300
13 JAN 96	sprinkler system	1,2	340
16 JAN 96	sprinkler system	1,2	500
18 JAN 96	sprinkler system	1,2	580
19 JAN 96	sprinkler system	1,2	540
22 JAN 96	sprinkler system	1,2	620
24 JAN 96	sprinkler system	1,2	500
26 JAN 96	sprinkler system	1,2	440
29 JAN 96	sprinkler system	1,2	600
31 JAN 96	sprinkler system	3	410
02 FEB 96	sprinkler system	3	440
05 FEB 96	sprinkler system	3	420
07 FEB 96	sprinkler system	3	460
09 FEB 96	sprinkler system	3	420
12 FEB 96	sprinkler system	3	420
13 FEB 96	sprinkler system	3	420
16 FEB 96	sprinkler system	3	440
20 FEB 96	sprinkler system	3	400
23 FEB 96	sprinkler system	3	400
26 FEB 96	sprinkler system	3	390

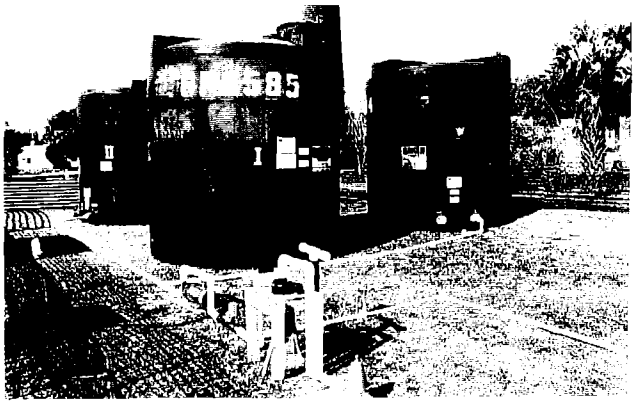
Table 2-1. Total gallons applied equals 14,950

2.4 PHOTOGRAPHS



FIFCO INTERNATIONAL, INC. on site trailer serving as field office at SWMU 15 cleanup site.

Storage tanks, pump, and pipe valving for the distribution system at SWMU 15 cleanup site.



The two irrigation distribution systems and perimeter control fencing at the contaminant zone at SWMU 15 cleanup site.

Table 2-2 provides a summary of the analysis of the samples collected by contractor and sub contractor personnel during the month of January 96. These samples were taken from slightly different locations throughout the sight, allowing for hot spot-cold spot abnormalities to be minimized.

TARGET CONTAMINANT SAMPLING AT SITE JANUARY 1996

Chemical	Range of Detected Concentrations	Relationship to Cleanup Goals
4',4'-DDT	U- 547.8	Below Target Amount
4',4'-DDE	U-1,914	Below Target Amount
4',4'-DDD	U- 237.6	No Target Amount Set
Chlordane	U-U	Below Target Amount

Table 2-2. Units ug/kg. (U indicates undetected using Method 8080 parameters.)

Compound 4',4'-DDD is shown in Table 2-2 because it is a compound which occurs in the braekdown pathway of 4',4'- DDT. This compond, 4',4'-DDD, showing up at the site during the remediation indicates biological breakdown of the 4',4'-DDT.

Table 2-2a provides a summary of the analysis of samples collected by contractor and sub contractor personnel during February 96. Samples during this episode were taken from locations outlined in the Implementation Plan , November 1995 (ABB-ES) and declared locations for Final Evaluation and Performance of the Technology.

TARGET CONTAMINANT SAMPLING AT SITE FEBRUARY 1996

Chemical	Range of Detected Concentrations	Relationship tp Cleanup Goals
4',4'- DDT	U-257.4	Below Target Amount
4',4'- DDE	U-739.2	Below Target Amount
4',4'- DDD	U-114	No Target Amount Set
Chlordane	U-U	Below Target Amount

Table 2-2a. Units ug/kg. (U indicates undetected using Method 8080 parameters.)

Compound 4',4'-DDD is shown in Table 2-2a because it is a compound which occurs in the breakdown pathway of 4',4'-DDT. This compound, 4',4'-DDD, showing up at the site during the remediation indicates breakdown of the 4',4'-DDT.

3.0 CONCLUSIONS

Set up at the site started on the authorized start date of 18 Dec. 95 and the technology demonstration started on 05 Jan. 96. The Technology Demonstration at site SWMU 15 was an effort to show bioremediation of pesticides using bioaugmentation. A proprietary material trade-named Bac-Terra TM was used by the contractor FIFCO to effect the cleanup. Two methods of application were used to apply the material to the cleanup site, a drip-tape irrigation system and an impact sprinkler head irrigation system. During the application of the liquid Bac-Terra TM product, it was found that the drip-tape system worked best for mass loading the site and that the impact sprinkler head system worked best for metering out the Bac-Terra TM solution in a controlled manner. The sprinkler system provided the best control of soil mosture also. A total of 15,000 gallons of Bac-Terra TM liquid solution, with no additional nutrient, was applied to the site over the total length of the project, using the two application methods.

Collection and analysis of the samples by contractor personnel was done in accordance with the Revised Quality Assurance Plan, dated August, 1995, Section 6.3.2. All the samples collected after the start of the remediation effort indicated that the contaminant concentrations were below the stated goals set for the project. This is of particular interest, since the generally accepted degradation half-life for the contaminants 4',4'-DDT and 4',4'-DDE is 15.6 years. Additionally, the compound 4',4'-DDD showing up at the site during the remediation indicates biological breakdown of 4',4'-DDT since 4',4'-DDD is formed from 4,,4'-DDT ,when 4',4'-DDT under goes a dechlorination reaction. Also, the areas just outside the treatment area showed 4',4' DDT 4',4' DDE and Chlordane to be below stated goals set at the site. SS 35 is of particular interest in that there was a dramatic reduction of PCB 1260 during the treatment period indicating a migration of the BAC-TERRA tm micro organisms off-site approximately 8 feet in sufficient quantities to metabolize the PCB 1260 at an accelerated rate. This is clearly indicated in the accompanying sample data appendix.

Respectfully submitted,

John Bullington, President
Fifco International, Inc.

APPENDIX A

BAC-TERRA BIOAUGMENTATION

REPORT OF ANALYSES
NAVAL STATION MAYPORT, FL.
Catagory #1, Area #1, Pesticide Area, SWMU 15
Contract Number N62467-94-D-0889

December 1995-January 1996 Sampling Events

4,4'-DDT (ug/kg)
BAC-TERRA FIELD TESTS
JANUARY 1996

	1/8/96	1/13/96	1/22/96
SS01F	92.40	165.00	33.00
SS02F	0.00	0.00	12.94
SS03F	5.61	7.59	9.54
SS04F	283.80	158.40	95.70
SS05F	0.00	2.97	0.00
SS06F	151.80	165.00	198.00
SS07F	43.56	39.60	29.37
SS08F	0.00	3.96	0.00
SS09F	36.30	38.94	184.80
SS10F	125.40	138.60	33.00
SS11F	11.88	3.63	20.79
SS12F	7.26	0.00	0.00
SS16		547.80	11.55

4,4'-DDE (ug/kg)
BAC-TERRA FIELD TESTS
January 1996

	1/9/96	1/13/96	1/22/96
SS01F	521.40	435.60	679.80
SS02F	4.95	3.63	7.59
SS03F	10.23	11.88	9.57
SS04F	363.00	310.20	95.70
SS05F	0.00	1.98	0.00
SS06F	323.40	442.20	637.20
SS07F	204.60	145.20	165.00
SS08F	2.31	3.63	5.28
SS09F	95.70	89.10	257.40
SS10F	303.60	600.60	574.20
SS11F	50.49	37.62	56.10
SS12F	0.00	10.23	18.81
SS16F	0.00	1,914.00	66.00

REPORT OF ANALYSES
BIOAUGMENTATION PROJECT
NAVAL STATION MAYPORT, FL
Catagory #1, Area #1, Pesticide Area, SWMU 15
Contract Number N62467-94-D-0889

DECEMBER 26, 1995 SAMPLING EVENT

PREPARED FOR:

BAC-TERRA™

Mr. John Bullington, President
FIFCO INTERNATIONAL, INC.
1011 Camino Del Mar, #240
Del Mar, California 92014

PREPARED BY:

ECT

Environmental Consulting & Technology, Inc.

4100 Center Pointe Drive, Suite 112
Fort Myers, Florida 33916
(941) 277-0003

JANUARY, 1996

PROFESSIONAL CERTIFICATION

I hereby certify that this report was prepared by me or under my direct supervision and is based upon sound geologic principals and practices. The findings and results of this report are for the sole use and benefit of FIFCO INTERNATIONAL, INC. and/or its assignees. Utilization of this report by other parties is at their risk and neither Environmental Consulting & Technology, Inc. (ECT) nor I are liable for consequences or damages extending therefrom. No warranties are implied nor intended. I do not attest to the accuracy of items outside of my area of expertise, including, but not limited to, laboratory analysis procedures.

SIGNED:

1/12/96

L. DUANE DUNGAN, P.G.
PROJECT MANAGER

REGISTERED PROFESSIONAL GEOLOGIST
STATE OF FLORIDA
LICENSE NO. 40

DATE: January 12. 1996

REPORT OF ANALYSES

BIOAUGMENTATION PROJECT
NAVAL STATION MAYPORT, FL

DECEMBER 26, 1995 SAMPLING EVENT

1.0 Introduction

On Tuesday, December 26, 1995, soil sampling was conducted at Mayport Naval Station, Florida, by Environmental Consulting & Technology, Inc. (ECT) personnel. Eight separate samples were collected from hand-augered borings, the locations of which are shown on the site plan (Figure 1).

2.0 Sampling Methodology

Samples were collected with a hand auger utilizing a 3 1/2 inch stainless steel auger bucket. Samples were removed from the auger bucket with a stainless steel spoon and placed within a stainless steel bowl for composite mixing. Sampling equipment was decontaminated after each sample was collected by cleaning with an Alconox and deionized water solution, rinsing with deionized water, then rinsing with isopropanol and allowing to air dry. All composite samples were collected from ground surface to one foot below the surface, with the exception of Sample Number SS23D, which was a composite sample from one foot to two feet below land surface. Samples were well mixed, then placed into 250 milliliter (ml) amber containers supplied by ENCO Laboratories, 4810 Executive Park Court, Suite 211, Jacksonville, Florida. After the soil sample was collected from what was considered to be the most contaminated location, SS16, an Equipment Blank was prepared after normal cleaning by rinsing all equipment with deionized water. The rinseate was collected in the stainless steel bowl and poured into a laboratory-supplied 500 ml amber bottle. All sample bottles were placed into an ice chest, chilled, and delivered by ECT personnel to the laboratory for analysis for the EPA Method 8080 parameters. Chain-of-custody documentation was maintained.

Sampling was conducted according to ECT's Comprehensive Quality Assurance Plan (approved by the Florida Department of Environmental Protection) and the Revised Quality Assurance Project Plan, dated August, 1995, Section 6.3.2.

3.0 Analysis Results

Samples were received by the laboratory at 1745 on Tuesday, December 26, 1995. The samples were extracted and analyzed on Wednesday, December 27, 1995. Analysis of the soil composite samples revealed several contaminants to be present (Table 1).

Table 1.
ANALYSIS RESULTS
December 26, 1995 Sampling Event

Results in micrograms/kilogram (μg/Kg)

Sample Number	alpha-BHC	beta-BHC	gamma-BHC	delta-BHC	Hepta-chlor epoxide	4,4'-DDE	4,4'-DDT	PCB-1260
SS23S	<1.65	<1.65	<1.65	<1.65	<1.65	**3.3**	**4.29**	<33
SS23D	<1.65	<1.65	<1.65	<1.65	<1.65	<1.65	<1.65	<33
SS31	<1.65	<1.65	<1.65	<1.65	<1.65	**419**	**198**	<33
SS32	<1.65	<1.65	<1.65	<1.65	<1.65	**82.5**	**23.43**	<33
SS33	<1.65	<1.65	<1.65	<1.65	<1.65	**5.61**	**2.31**	<33
SS34	<1.65	<1.65	<1.65	<1.65	<1.65	**1815**	**234.3**	<33
SS35	<33	<33	<33	<33	<33	<33	<33	**4747**
SS16	**3.63**	**75.9**	**1.65**	**1.65**	**26.4**	**1765.5**	**326.7**	<33
Equipment Blank	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1

The following EPA Method 8080 parameters were **not** detected in any sample analyzed: Heptachlor, Aldrin, Endosulfan I, Dieldrin, Endrin, Endosulfan II, 4,4'-DDD, Endrin aldehyde, Endosulfan sulfate, Methoxychlor, **Chlordane**, Toxaphene, PCB-1016/1242, PCB-1221, PCB-1232, PCT-1248, and PCB-1254.

Proper field cleaning procedures were verified by the fact that analyses did not reveal the presence of any contaminant in the Equipment Blank.

A copy of the laboratory report is included in this report.

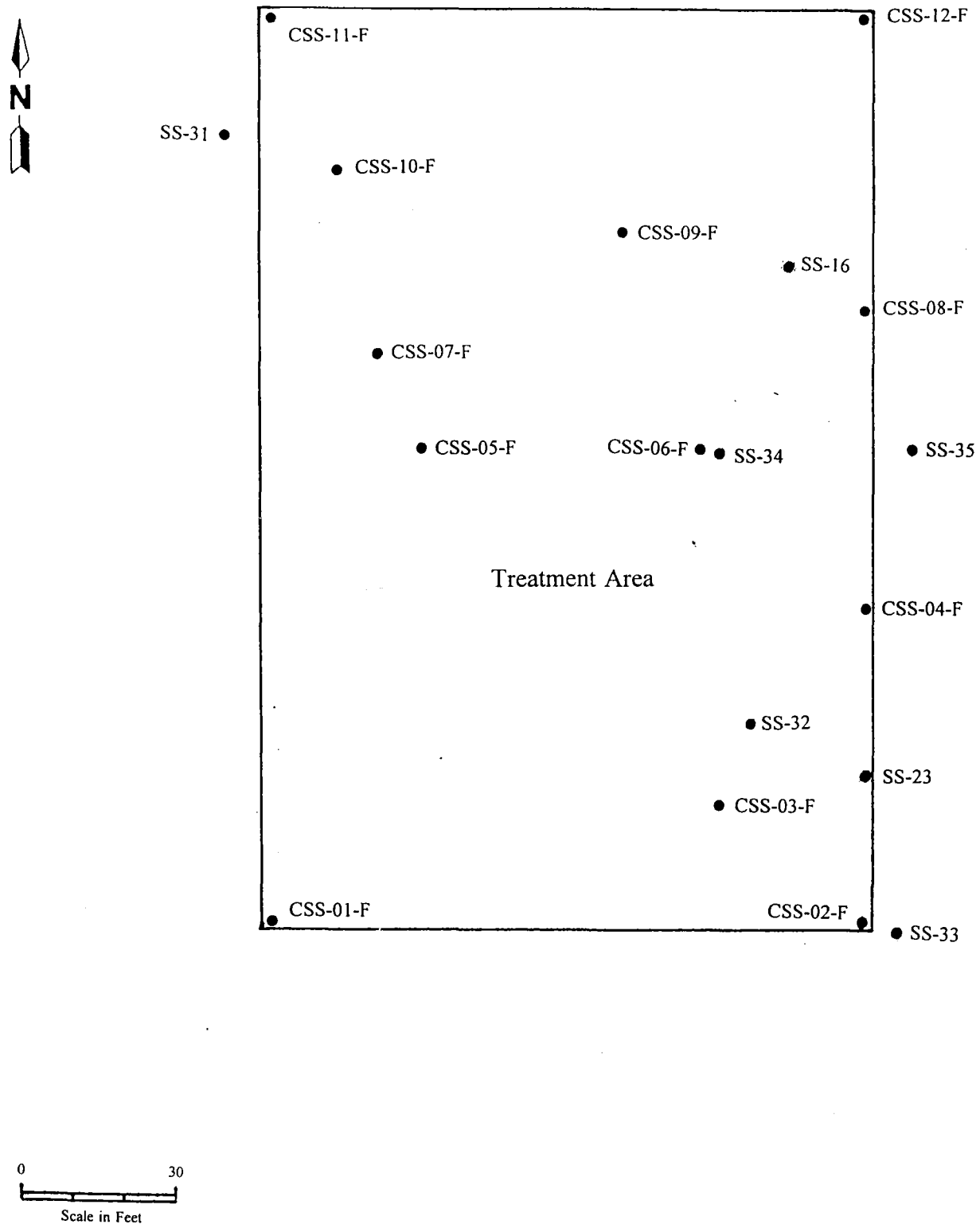


FIGURE 1.
SOIL SAMPLE LOCATION MAP
BIOAUGMENTATION PROJECT
NAVAL STATION MAYPORT, FL

Source: ECT, Inc., 1996

ECT
Environmental Consulting & Technology, Inc.

Environmental Conservation Laboratories
4810 Executive Park Court, Suite 211
Jacksonville, Florida 32216-6069
904 / 296-3007
Fax 904 / 296-6210

ENCO Laboratories

DHRS Certification No. E82277, 82417

CLIENT : Environmental Consulting & Tech
ADDRESS: 4100 Center Pointe Dr.
Suite 112
Fort Myers, FL 33916

REPORT # : JR1400
DATE SUBMITTED: December 26, 1995
DATE REPORTED : December 29, 1995

ATTENTION: L. Duane Dungan

SAMPLE IDENTIFICATION

Samples submitted and
identified by client as:

PROJECT #: 95-448/0100

12/26/95

#1	- 95448-SS23S	@ 15:21
#2	- 95448-SS23D	@ 15:30
#3	- 95448-SS31	@ 15:50
#4	- 95448-SS32	@ 16:00
#5	- 95448-SS33	@ 16:15
#6	- 95448-SS34	@ 16:30
#7	- 95448-SS35	@ 16:45
#8	- 95448-SS16	@ 16:50
#9	- EQUIP. BLANK	@ 17:05

PROJECT MANAGER Scott D. Martin

Scott D. Martin

ENCO LABORATORIES
REPORT # : JR1400
DATE REPORTED: December 29, 1995
REFERENCE : 95-448/0100

RESULTS OF ANALYSIS

EPA METHOD 8080 - PESTICIDE/PCB'S	95448-SS23S	95448-SS23D	95448-SS31	Units
alpha-BHC	1.65 U	1.65 U	1.65 U	µg/Kg
beta-BHC	1.65 U	1.65 U	1.65 U	µg/Kg
gamma-BHC (Lindane)	1.65 U	1.65 U	1.65 U	µg/Kg
delta-BHC	1.65 U	1.65 U	1.65 U	µg/Kg
Heptachlor	1.65 U	1.65 U	1.65 U	µg/Kg
Aldrin	1.65 U	1.65 U	1.65 U	µg/Kg
Heptachlor epoxide	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan I	1.65 U	1.65 U	1.65 U	µg/Kg
Dieldrin	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDE	**3.3**	1.65 U	**419.** D10	µg/Kg
Endrin	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan II	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDD	1.65 U	1.65 U	1.65 U	µg/Kg
Endrin aldehyde	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan sulfate	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDT	**4.29**	1.65 U	**198.** D10	µg/Kg
Methoxychlor	1.65 U	1.65 U	1.65 U	µg/Kg
Chlordane	33 U	33 U	33 U	µg/Kg
Toxaphene	66 U	66 U	66 U	µg/Kg
PCB-1016/1242	33 U	33 U	33 U	µg/Kg
PCB-1221	33 U	33 U	33 U	µg/Kg
PCB-1232	33 U	33 U	33 U	µg/Kg
PCB-1248	33 U	33 U	33 U	µg/Kg
PCB-1254	33 U	33 U	33 U	µg/Kg
PCB-1260	33 U	33 U	33 U	µg/Kg
Surrogate:	**% RECOV**	**% RECOV**	**% RECOV**	**LIMITS**
DBC (surr)	135	109	139	52-140
Date Extracted	12/27/95	12/27/95	12/27/95	
Date Analyzed	12/28/95	12/28/95	12/28/95	

D10 = Analyte value determined from a 1:10 dilution
U = Compound was analyzed for but not detected

ENCO LABORATORIES
REPORT # : JR1400
DATE REPORTED: December 29, 1995
REFERENCE : 95-448/0100

RESULTS OF ANALYSIS

EPA METHOD 8080 - PESTICIDE/PCB'S	95448-SS32	95448-SS33	95448-SS34	Units
alpha-BHC	1.65 U	1.65 U	1.65 U	µg/Kg
beta-BHC	1.65 U	1.65 U	1.65 U	µg/Kg
gamma-BHC (Lindane)	1.65 U	1.65 U	1.65 U	µg/Kg
delta-BHC	1.65 U	1.65 U	1.65 U	µg/Kg
Heptachlor	1.65 U	1.65 U	1.65 U	µg/Kg
Aldrin	1.65 U	1.65 U	1.65 U	µg/Kg
Heptachlor epoxide	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan I	1.65 U	1.65 U	1.65 U	µg/Kg
Dieldrin	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDE	**82.5** D5	**5.61**	**1815.** D50	µg/Kg
Endrin	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan II	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDD	1.65 U	1.65 U	1.65 U	µg/Kg
Endrin aldehyde	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan sulfate	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDT	**23.43**	**2.31**	**234.3** D10	µg/Kg
Methoxychlor	1.65 U	1.65 U	1.65 U	µg/Kg
Chlordane	33 U	33 U	33 U	µg/Kg
Toxaphene	66 U	66 U	66 U	µg/Kg
PCB-1016/1242	33 U	33 U	33 U	µg/Kg
PCB-1221	33 U	33 U	33 U	µg/Kg
PCB-1232	33 U	33 U	33 U	µg/Kg
PCB-1248	33 U	33 U	33 U	µg/Kg
PCB-1254	33 U	33 U	33 U	µg/Kg
PCB-1260	33 U	33 U	33 U	µg/Kg
Surrogate:	**% RECOV**	**% RECOV**	**% RECOV**	**LIMITS**
DBC (surr)	128	107	133	52-140
Date Extracted	12/27/95	12/27/95	12/27/95	
Date Analyzed	12/28/95	12/28/95	12/28/95	

D5 = Analyte value determined from a 1:5 dilution
D10 = Analyte value determined from a 1:10 dilution
D50 = Analyte value determined from a 1:50 dilution
U = Compound was analyzed for but not detected

ENCO LABORATORIES
REPORT # : JR1400
DATE REPORTED: December 29, 1995
REFERENCE : 95-448/0100

RESULTS OF ANALYSIS

EPA METHOD 8080 - PESTICIDE/PCB'S	95448-SS35	95448-SS16	LAB BLANK	Units
alpha-BHC	33 U	**3.63**	1.65 U	µg/Kg
beta-BHC	33 U	**75.9** D10	1.65 U	µg/Kg
gamma-BHC (Lindane)	33 U	**1.65** PQL	1.65 U	µg/Kg
delta-BHC	33 U	**1.65** PQL	1.65 U	µg/Kg
Heptachlor	33 U	1.65 U	1.65 U	µg/Kg
Aldrin	33 U	1.65 U	1.65 U	µg/Kg
Heptachlor epoxide	33 U	**26.4**	1.65 U	µg/Kg
Endosulfan I	33 U	1.65 U	1.65 U	µg/Kg
Dieldrin	33 U	1.65 U	1.65 U	µg/Kg
4,4'-DDE	33 U	**1765.5** D50	1.65 U	µg/Kg
Endrin	33 U	1.65 U	1.65 U	µg/Kg
Endosulfan II	33 U	1.65 U	1.65 U	µg/Kg
4,4'-DDD	33 U	1.65 U	1.65 U	µg/Kg
Endrin aldehyde	33 U	1.65 U	1.65 U	µg/Kg
Endosulfan sulfate	33 U	1.65 U	1.65 U	µg/Kg
4,4'-DDT	33 U	**326.7** D10	1.65 U	µg/Kg
Methoxychlor	33 U	1.65 U	1.65 U	µg/Kg
Chlordane	660 U	33 U	33 U	µg/Kg
Toxaphene	1320 U	66 U	66 U	µg/Kg
PCB-1016/1242	660 U	33 U	33 U	µg/Kg
PCB-1221	660 U	33 U	33 U	µg/Kg
PCB-1232	660 U	33 U	33 U	µg/Kg
PCB-1248	660 U	33 U	33 U	µg/Kg
PCB-1254	660 U	33 U	33 U	µg/Kg
PCB-1260	**4747** D20	33 U	33 U	µg/Kg
Surrogate:	**% RECOV**	**% RECOV**	**% RECOV**	**LIMITS**
DBC (surr)	NAI	NAI	77	52-140
Date Extracted	12/27/95	12/27/95	12/26/95	
Date Analyzed	12/28/95	12/28/95	12/26/95	

NAI = Surrogate recovery unavailable due to sample matrix interference
D10 = Analyte value determined from a 1:10 dilution
D20 = Analyte value determined from a 1:20 dilution
D50 = Analyte value determined from a 1:50 dilution
PQL = Analyte detected; value reported is greater than the method detection limit (MDL) but less than the practical quantitation level (PQL).
U = Compound was analyzed for but not detected

ENCO LABORATORIES
REPORT # : JR1400
DATE REPORTED: December 29, 1995
REFERENCE : 95-448/0100

RESULTS OF ANALYSIS

EPA METHOD 8080 - PESTICIDE/PCB'S	EQUIP. BLANK	LAB BLANK	Units
alpha-BHC	0.05 U	0.05 U	µg/L
beta-BHC	0.05 U	0.05 U	µg/L
gamma-BHC (Lindane)	0.05 U	0.05 U	µg/L
delta-BHC	0.05 U	0.05 U	µg/L
Heptachlor	0.05 U	0.05 U	µg/L
Aldrin	0.05 U	0.05 U	µg/L
Heptachlor epoxide	0.05 U	0.05 U	µg/L
Endosulfan I	0.05 U	0.05 U	µg/L
Dieldrin	0.05 U	0.05 U	µg/L
4,4'-DDE	0.05 U	0.05 U	µg/L
Endrin	0.05 U	0.05 U	µg/L
Endosulfan II	0.05 U	0.05 U	µg/L
4,4'-DDD	0.05 U	0.05 U	µg/L
Endrin aldehyde	0.05 U	0.05 U	µg/L
Endosulfan sulfate	0.05 U	0.05 U	µg/L
4,4'-DDT	0.05 U	0.05 U	µg/L
Methoxychlor	0.05 U	0.05 U	µg/L
Chlordane	1 U	1 U	µg/L
Toxaphene	2 U	2 U	µg/L
PCB-1016/1242	1 U	1 U	µg/L
PCB-1221	1 U	1 U	µg/L
PCB-1232	1 U	1 U	µg/L
PCB-1248	1 U	1 U	µg/L
PCB-1254	1 U	1 U	µg/L
PCB-1260	1 U	1 U	µg/L
Surrogate:	**% RECOV**	**% RECOV**	**LIMITS**
DBC (surr)	109	98	50-135
Date Extracted	12/27/95	12/27/95	
Date Analyzed	12/27/95	12/27/95	

U = Compound was analyzed for but not detected

QUALITY CONTROL DATA

Parameter	% RECOVERY MS/MSD/LCS	ACCEPT LIMITS	% RPD MS/MSD	ACCEPT LIMITS
EPA Method 8080 (EQUIP. BLANK)				
gamma-BHC (Lindane)	107/121/ 86	41-133	12	24
Heptachlor	110/126/101	15-164	14	25
Aldrin	96/107/ 82	27-150	11	24
Dieldrin	90/104/ 79	46-138	14	26
4,4'-DDT	107/121/109	46-138	12	26
EPA Method 8080 (95448-SS23S through 95448-SS16)				
gamma-BHC (Lindane)	109/101/116	48-118	8	21
Heptachlor	110/100/111	42-140	10	25
Aldrin	90/ 83/ 90	46-137	8	21
Dieldrin	97/ 88/ 95	48-135	10	21
Endrin	124/112/124	53-143	10	24
4,4'-DDT	104/ 94/107	53-143	10	24

Environmental Conservation Laboratories Comprehensive QA Plan #910190G

< = Less Than
MS = Matrix Spike
MSD = Matrix Spike Duplicate
LCS = Laboratory Control Standard
RPD = Relative Percent Difference

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ENCO Laboratories

ENVIRONMENTAL CONSERVATION LABORATORIES

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CHAIN OF CUSTODY RECORD

CLIENT NAME: ECT, INC.
PROJECT MANAGER: L. DUANE DUNGAN
PROJECT NUMBER: 95-448/0100
PROJECT NAME:
SAMPLER'S SIGNATURE: [signature]

STATION NO.	DATE	TIME	COMPOSITE	GRAB	STATION LOCATION	NO. OF CONTAINERS	EPA 8080								REMARKS
95448-SS235	12/26/95	1521	✓			1	1								SOIL
95448-SS236	12/26/95	1530	✓			1	1								SOIL
95448-SS31	12/26/95	1550	✓			1	1								SOIL
95448-SS32	12/26/95	1600	✓			1	1								SOIL
95448-SS33	12/26/95	1615	✓			1	1								SOIL
95448-SS34	12/26/95	1630	✓			1	1								SOIL
95448-SS35	12/26/95	1645	✓			1	1								SOIL
95448-SS36	12/26/95	1650	✓			1	1								SOIL
EQUIP BLANK	12/26/95	1705		✓		1	1								AQUEOUS
															* 48 hr *
															— call —

RELINQUISHED BY	DATE/TIME	RECEIVED BY	RELINQUISHED BY	DATE/TIME	REMARKS
EMPTY BOTTLES [signature]	12/22/95 1405	[signature]			
SAMPLE KIT PREPARED BY: ☐ ORLANDO ☒ JACKSONVILLE	12/26/95 1335	[signature]	RECEIVED FOR LABORATORY BY: ☐ ORL ☐ JAX		JR 1400
RELINQUISHED BY [signature]	12/26/95 1745	RECEIVED BY [signature]	[signature]	DATE/TIME 12/26/95 1745	QS 01689

REPORT OF ANALYSES
BIOAUGMENTATION PROJECT
NAVAL STATION MAYPORT, FL
Catagory #1, Area #1, Pesticide Area, SWMU 15
Contract Number N62467-94-D-0889

JANUARY 3, 1996 SAMPLING EVENT

PREPARED FOR:

BAC-TERRA™

Mr. John Bullington, President
FIFCO INTERNATIONAL, INC.
1011 Camino Del Mar, #240
Del Mar, California 92014

PREPARED BY:

ECT

Environmental Consulting & Technology, Inc.

4100 Center Pointe Drive, Suite 112
Fort Myers, Florida 33916
(941) 277-0003

JANUARY, 1996

PROFESSIONAL CERTIFICATION

I hereby certify that this report was prepared by me or under my direct supervision and is based upon sound geologic principals and practices. The findings and results of this report are for the sole use and benefit of FIFCO INTERNATIONAL, INC. and/or its assignees. Utilization of this report by other parties is at their risk and neither Environmental Consulting & Technology, Inc. (ECT) nor I are liable for consequences or damages extending therefrom. No warranties are implied nor intended. I do not attest to the accuracy of items outside of my area of expertise, including, but not limited to, laboratory analysis procedures.

SIGNED:

1/12/96

L. DUANE DUNGAN, P.G.
PROJECT MANAGER

REGISTERED PROFESSIONAL GEOLOGIST
STATE OF FLORIDA
LICENSE NO. 40

DATE: January 12. 1996

REPORT OF ANALYSES

BIOAUGMENTATION PROJECT
NAVAL STATION MAYPORT, FL

JANUARY 3, 1996 SAMPLING EVENT

1.0 Introduction

On Wednesday, January 3, 1996, soil sampling was conducted at Mayport Naval Station, Florida, by Environmental Consulting & Technology, Inc. (ECT) personnel. Fifteen separate samples were collected from hand-augered borings, the locations of which are shown on the site plan (Figure 1).

2.0 Sampling Methodology

Samples were collected with a hand auger utilizing a 3 1/2 inch stainless steel auger bucket. Samples were removed from the auger bucket with a stainless steel spoon and placed within a stainless steel bowl for composite mixing. Sampling equipment was decontaminated after each sample was collected by cleaning with an Alconox and deionized water solution, rinsing with deionized water, then rinsing with isopropanol and allowing to air dry. All composite samples were collected from ground surface to one foot below the surface, with the exception of Samples Number SS35D and SS16D, both of which were composite samples collected between four and five feet below land surface, immediately above the water table. To verify laboratory quality assurance, a duplicate sample, labelled CSS-13-F, was collected by splitting the composite mixture from Sample Number CSS-06-F. Samples were well mixed, then placed into 250 milliliter (ml) amber glass containers supplied by ENCO Laboratories, 4810 Executive Park Court, Suite 211, Jacksonville, Florida. Additionally, a Personnel Protection sample was collected by rinsing all boots and gloves of site workers with deionized water. The rinseate was collected in a stainless steel bowl, then poured into a laboratory-supplied 250 ml amber glass bottle. At the conclusion of sampling activities, an Equipment Blank was prepared after normal cleaning by rinsing all equipment with deionized water. The rinseate was collected in the stainless steel bowl and poured into a laboratory-supplied 500 ml amber glass bottle. All sample bottles were placed into an ice chest, chilled, and delivered by ECT personnel to the laboratory for analysis for the EPA Method 8080 parameters. Chain-of-custody documentation was maintained.Sampling was conducted according to ECT's Comprehensive Quality Assurance Plan (approved by the Florida Department of Environmental Protection) and the Revised Quality Assurance Project Plan, dated August, 1995, Section 6.3.2.

3.0 Analysis Results

Samples were received by the laboratory at 1335 hours on Wednesday, January 3, 1996. The samples were extracted on January 4, 1996, and analyzed on January 4 and 5, 1996. Analysis of the soil composite samples revealed several contaminants to be present (Table 1).

Table 1.
ANALYSIS RESULTS
January 3, 1996 Sampling Event

Results in micrograms/kilogram (μg/Kg)

Sample Number	alpha-BHC	beta-BHC	gamma-BHC	delta-BHC	Hepta-chlor epoxide	4,4'-DDE	4,4'-DDT	PCB-1260
CSS-01-F	<1.65	<1.65	<1.65	<1.65	<1.65	**316.8**	**59.4**	<33
CSS-02-F	<1.65	<1.65	<1.65	<1.65	<1.65	**2.64**	<1.65	<33
CSS-03-F	<1.65	<1.65	<1.65	<1.65	<1.65	**9.57**	**4.29**	<33
CSS-04-F	<1.65	<1.65	<1.65	<1.65	<1.65	**66**	**66**	<33
CSS-05-F	<1.65	<1.65	<1.65	<1.65	<1.65	<1.65	<1.65	<33
CSS-06-F	<1.65	<1.65	<1.65	<1.65	<1.65	**541.2**	**277.2**	<33
CSS-07-F	<33	<33	<33	<33	<33	**178.2**	**32.34**	<33
CSS-08-F	<1.65	<1.65	<1.65	<1.65	<1.65	**3.3**	**2.31**	<33
CSS-09-F	<1.65	<1.65	<1.65	<1.65	**16.5**	**323.4**	**231**	<33
CSS-10-F	<1.65	<1.65	<1.65	<1.65	**3.3**	**561**	**118.8**	<33
CSS-11-F	<1.65	<1.65	<1.65	<1.65	<1.65	**38.28**	<1.65	<33
CSS-12-F	<1.65	<1.65	<1.65	<1.65	<1.65	**11.88**	**4.62**	<33
CSS-13-F	<1.65	<1.65	<1.65	<1.65	<1.65	**607.2**	**409.2**	<33
SS-16D	<1.65	**4.29**	<1.65	<1.65	<1.65	**3.3**	<1.65	<33
SS-35D	<1.65	<1.65	<1.65	<1.65	<1.65	<1.65	<1.65	**239**
PP-1*	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
Equipment Blank*	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1

NOTE: Sample CSS-13-F is duplicate of CSS-06-F.

*Units in micrograms per liter (μg/L)

ENCO LABORATORIES
REPORT # : JR1476
DATE REPORTED: January 12, 1996
REFERENCE : 94-1021-NSMFL-CA

RESULTS OF ANALYSIS

EPA METHOD 8080 - PESTICIDE/PCB'S	95448-CS810F	95448-CS811F	95448-CS812F	Units
alpha-BHC	1.65 U	1.65 U	1.65 U	µg/Kg
beta-BHC	1.65 U	2.97 PQL	1.65 U	µg/Kg
gamma-BHC (Lindane)	4.95	1.65 U	1.65 U	µg/Kg
delta-BHC	2.97 PQL	1.65 U	1.65 U	µg/Kg
Heptachlor	1.65 U	1.65 U	1.65 U	µg/Kg
Aldrin	1.65 U	1.65 U	1.65 U	µg/Kg
Heptachlor epoxide	3.3 PQL	1.65 U	1.65 U	µg/Kg
Endosulfan I	1.65 U	1.65 U	1.65 U	µg/Kg
Dieldrin	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDE	303.6 D20	50.49	1.65 U	µg/Kg
Endrin	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan II	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDD	1.65 U	1.65 U	1.65 U	µg/Kg
Endrin aldehyde	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan sulfate	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDT	125.4 D20	11.88	7.26	µg/Kg
Methoxychlor	1.65 U	1.65 U	1.65 U	µg/Kg
Chlordane	33 U	33 U	33 U	µg/Kg
Toxaphene	66 U	66 U	66 U	µg/Kg
PCB-1016/1242	33 U	33 U	33 U	µg/Kg
PCB-1221	33 U	33 U	33 U	µg/Kg
PCB-1232	33 U	33 U	33 U	µg/Kg
PCB-1248	33 U	33 U	33 U	µg/Kg
PCB-1254	33 U	33 U	33 U	µg/Kg
PCB-1260	33 U	33 U	33 U	µg/Kg
Surrogate:	**% RECOV**	**% RECOV**	**% RECOV**	**LIMITS**
DBC (surr)	*	*	*	52-140
2,4,5,6-TCMX (Surr)	*	*	130	46-130
Date Extracted	01/10/96	01/10/96	01/10/96	
Date Analyzed	01/10/96	01/10/96	01/10/96	

* = Surrogate recovery unavailable due to matrix interference
D20 = Analyzed @ 1:20 dilution
PQL = Analyte detected; value is between the Method Detection Level (MDL) and the Practical Quantitation Level (PQL)
U = Compound was analyzed for but not detected

RESULTS OF ANALYSIS

EPA METHOD 8080 - PESTICIDE/PCB'S	95448-C8813F	LAB BLANK	Units
alpha-BHC	1.65 U	1.65 U	µg/Kg
beta-BHC	1.65 U	1.65 U	µg/Kg
gamma-BHC (Lindane)	1.65 U	1.65 U	µg/Kg
delta-BHC	1.65 U	1.65 U	µg/Kg
Heptachlor	1.65 U	1.65 U	µg/Kg
Aldrin	1.65 U	1.65 U	µg/Kg
Heptachlor epoxide	1.65 U	1.65 U	µg/Kg
Endosulfan I	1.65 U	1.65 U	µg/Kg
Dieldrin	1.65 U	1.65 U	µg/Kg
4,4'-DDE	151.8 D20	1.65 U	µg/Kg
Endrin	1.65 U	1.65 U	µg/Kg
Endosulfan II	1.65 U	1.65 U	µg/Kg
4,4'-DDD	1.65 U	1.65 U	µg/Kg
Endrin aldehyde	1.65 U	1.65 U	µg/Kg
Endosulfan sulfate	1.65 U	1.65 U	µg/Kg
4,4'-DDT	92.4 D20	1.65 U	µg/Kg
Methoxychlor	1.65 U	1.65 U	µg/Kg
Chlordane	33 U	33 U	µg/Kg
Toxaphene	66 U	66 U	µg/Kg
PCB-1016/1242	33 U	33 U	µg/Kg
PCB-1221	33 U	33 U	µg/Kg
PCB-1232	33 U	33 U	µg/Kg
PCB-1248	33 U	33 U	µg/Kg
PCB-1254	33 U	33 U	µg/Kg
PCB-1260	33 U	33 U	µg/Kg
Surrogate:	**% RECOV**	**% RECOV**	**LIMITS**
DBC (surr)	*	140	52-140
2,4,5,6-TCMX (Surr)	*	115	46-130
Date Extracted	01/10/96	01/10/96	
Date Analyzed	01/10/96	01/09/96	

* = Surrogate recovery unavailable due to matrix interference
D20 = Analyzed @ 1:20 dilution
U = Compound was analyzed for but not detected

ENCO LABORATORIES
REPORT # : JR1476
DATE REPORTED: January 12, 1996
REFERENCE : 94-1021-NSMFL-CA

RESULTS OF ANALYSIS

EPA METHOD 8080 - PESTICIDE/PCB'S	EQUIP. BLANK	LAB BLANK	Units
alpha-BHC	0.05 U	0.05 U	µg/L
beta-BHC	0.05 U	0.05 U	µg/L
gamma-BHC (Lindane)	0.05 U	0.05 U	µg/L
delta-BHC	0.05 U	0.05 U	µg/L
Heptachlor	0.05 U	0.05 U	µg/L
Aldrin	0.05 U	0.05 U	µg/L
Heptachlor epoxide	0.05 U	0.05 U	µg/L
Endosulfan I	0.05 U	0.05 U	µg/L
Dieldrin	0.05 U	0.05 U	µg/L
4,4'-DDE	0.05 U	0.05 U	µg/L
Endrin	0.05 U	0.05 U	µg/L
Endosulfan II	0.05 U	0.05 U	µg/L
4,4'-DDD	0.05 U	0.05 U	µg/L
Endrin aldehyde	0.05 U	0.05 U	µg/L
Endosulfan sulfate	0.05 U	0.05 U	µg/L
4,4'-DDT	0.05 U	0.05 U	µg/L
Methoxychlor	0.05 U	0.05 U	µg/L
Chlordane	1 U	1 U	µg/L
Toxaphene	2 U	2 U	µg/L
PCB-1016/1242	1 U	1 U	µg/L
PCB-1221	1 U	1 U	µg/L
PCB-1232	1 U	1 U	µg/L
PCB-1248	1 U	1 U	µg/L
PCB-1254	1 U	1 U	µg/L
PCB-1260	1 U	1 U	µg/L
Surrogate:	**% RECOV**	**% RECOV**	**LIMITS**
DBC (surr)	107	117	50-135
2,4,5,6-TCMX (Surr)	115	100	52-122
Date Extracted	01/10/96	01/10/96	
Date Analyzed	01/10/96	01/10/96	

U = Compound was analyzed for but not detected

QUALITY CONTROL DATA

Parameter	% RECOVERY MS/MSD/LCS	ACCEPT LIMITS	% RPD MS/MSD	ACCEPT LIMITS
EPA Method 8080 (aqueous)				
gamma-BHC (Lindane)	108/108/122	41-133	<1	24
Heptachlor	100/ 97/112	15-164	3	25
Aldrin	100/100/112	27-150	<1	24
Endrin	109/107/118	46-138	2	26
4,4'-DDT	68/ 72/ 72	46-138	6	26
EPA Method 8080 (soil)				
gamma-BHC (Lindane)	*120/131/127	48-118	9	21
Heptachlor	127/131/139	42-140	3	25
Aldrin	129/137/134	46-137	6	21
Endrin	143/142/138	53-143	<1	24
4,4'-DDT	*138/147/135	53-143	6	24

Environmental Conservation Laboratories Comprehensive QA Plan #910190G

* = Associated values exceed established criteria for accuracy
< = Less Than
MS = Matrix Spike
MSD = Matrix Spike Duplicate
LCS = Laboratory Control Standard
RPD = Relative Percent Difference

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ENVIRONMENTAL CONSERVATION LABORATORIES

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CHAIN OF CUSTODY RECORD

CLIENT NAME: Fif CO INT.
PROJECT MANAGER: Patrick J. Griffin
PROJECT NUMBER: 94-1021-NSMFL-CA
PROJECT NAME:
SAMPLER'S SIGNATURE: Patrick J. Griffin

STATION NO.	DATE	TIME	COMPOSITE	GRAB	STATION LOCATION	NO. OF CONTAINERS	EPA 8080								REMARKS
5448-CSS01F	1-9-96	12:00	✓			1	✓								SOIL
5448-CSS02F	1-9-96	12:10	✓			1	✓								SOIL
5448-CSS03F	1-9-96	12:23	✓			1	✓								SOIL
5448-CSS04F	1-9-96	12:34	✓			1	✓								SOIL
5448-CSS05F	1-9-96	12:45	✓			1	✓								SOIL
5448-CSS06F	1-9-96	12:58	✓			1	✓								SOIL
5448-CSS07F	1-9-96	13:11	✓			1	✓								SOIL
5448-CSS08F	1-9-96	13:23	✓			1	✓								SOIL
5448-CSS09F	1-9-96	13:37	✓			1	✓								SOIL
5448-CSS10F	1-9-96	13:48	✓			1	✓								SOIL
5448-CSS11F	1-9-96	13:58	✓			1	✓								SOIL
5448-CSS12F	1-9-96	14:14	✓			1	✓								SOIL
5448-CSS13F	1-9-96	14:25	✓			1	✓								SOIL
Equip. Blank	1-9-96	14:38		✓		1	✓								AQUEOUS

RELINQUISHED BY	DATE/TIME	RECEIVED BY	RELINQUISHED BY	DATE/TIME	REMARKS
EMPTY BOTTLES Andrew Neal	1/3/96 1730	Patrick J. Griffin			
SAMPLE KIT PREPARED BY: ☐ ORLANDO ☒ JACKSONVILLE	DATE/TIME 1/3/96 17:15	RECEIVED BY Patrick J. Griffin	RECEIVED FOR LABORATORY BY: ☐ ORL ☐ JAX		JR1476
RELINQUISHED BY	DATE/TIME	RECEIVED BY	K M l ,	DATE/TIME 6705	

ENCO LABORATORIES
REPORT # : JR1476
DATE REPORTED: January 12, 1996
REFERENCE : 94-1021-NSMFL-CA

RESULTS OF ANALYSIS

EPA METHOD 8080 - PESTICIDE/PCB'S	95448-CS804F	95448-CS805F	95448-CS806F	Units
alpha-BHC	1.65 U	1.65 U	1.65 U	µg/Kg
beta-BHC	1.65 U	1.65 U	1.65 U	µg/Kg
gamma-BHC (Lindane)	1.65 U	1.65 U	1.65 U	µg/Kg
delta-BHC	1.65 U	1.65 U	1.65 U	µg/Kg
Heptachlor	1.65 U	1.65 U	1.65 U	µg/Kg
Aldrin	1.65 U	1.65 U	1.65 U	µg/Kg
Heptachlor epoxide	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan I	1.65 U	1.65 U	1.65 U	µg/Kg
Dieldrin	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDE	363 D20	1.65 PQL	323.4 D20	µg/Kg
Endrin	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan II	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDD	1.65 U	1.65 U	1.65 U	µg/Kg
Endrin aldehyde	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan sulfate	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDT	283.8 D20	3.96 U	151.8 D20	µg/Kg
Methoxychlor	1.65 U	1.65 U	1.65 U	µg/Kg
Chlordane	33 U	33 U	33 U	µg/Kg
Toxaphene	66 U	66 U	66 U	µg/Kg
PCB-1016/1242	33 U	33 U	33 U	µg/Kg
PCB-1221	33 U	33 U	33 U	µg/Kg
PCB-1232	33 U	33 U	33 U	µg/Kg
PCB-1248	33 U	33 U	33 U	µg/Kg
PCB-1254	33 U	33 U	33 U	µg/Kg
PCB-1260	33 U	33 U	33 U	µg/Kg
Surrogate:	**% RECOV**	**% RECOV**	**% RECOV**	**LIMITS**
DBC (surr)	*	*	*	52-140
2,4,5,6-TCMX (Surr)	*	*	117	46-130
Date Extracted	01/10/96	01/10/96	01/10/96	
Date Analyzed	01/10/96	01/10/96	01/10/96	

* = Surrogate recovery unavailable due to matrix interference
D20 = Analyzed @ 1:20 dilution
PQL = Analyte detected; value is between the Method Detection Level (MDL) and the Practical Quantitation Level (PQL)
U = Compound was analyzed for but not detected

ENCO LABORATORIES
REPORT # : JR1476
DATE REPORTED: January 12, 1996
REFERENCE : 94-1021-NSMFL-CA

RESULTS OF ANALYSIS

EPA METHOD 8080 -

PESTICIDE/PCB'S	95448-CS807F	95448-CS808F	95448-CS809F	Units
alpha-BHC	1.65 U	1.65 U	1.65 U	µg/Kg
beta-BHC	1.65 U	1.65 U	1.65 U	µg/Kg
gamma-BHC (Lindane)	1.65 U	1.65 U	1.65 U	µg/Kg
delta-BHC	1.65 U	1.65 U	1.65 U	µg/Kg
Heptachlor	1.65 U	1.65 U	1.65 U	µg/Kg
Aldrin	1.65 U	1.65 U	1.65 U	µg/Kg
Heptachlor epoxide	1.65 U	1.65 U	6.6	µg/Kg
Endosulfan I	1.65 U	1.65 U	1.65 U	µg/Kg
Dieldrin	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDE	204.6 D20	2.31 PQL	95.7 D10	µg/Kg
Endrin	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan II	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDD	1.65 U	1.65 U	1.65 U	µg/Kg
Endrin aldehyde	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan sulfate	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDT	43.56	1.65 U	36.3	µg/Kg
Methoxychlor	1.65 U	1.65 U	1.65 U	µg/Kg
Chlordane	33 U	33 U	33 U	µg/Kg
Toxaphene	66 U	66 U	66 U	µg/Kg
PCB-1016/1242	33 U	33 U	33 U	µg/Kg
PCB-1221	33 U	33 U	33 U	µg/Kg
PCB-1232	33 U	33 U	33 U	µg/Kg
PCB-1248	33 U	33 U	33 U	µg/Kg
PCB-1254	33 U	33 U	33 U	µg/Kg
PCB-1260	33 U	33 U	33 U	µg/Kg
Surrogate:	**% RECOV**	**% RECOV**	**% RECOV**	**LIMITS**
DBC (surr)	*	107	137	52-140
2,4,5,6-TCMX (Surr)	*	*	111	46-130
Date Extracted	01/10/96	01/10/96	01/10/96	
Date Analyzed	01/10/96	01/10/96	01/10/96	

* = Surrogate recovery unavailable due to matrix interference
D20 = Analyzed @ 1:20 dilution
PQL = Analyte detected; value is between the Method Detection Level (MDL) and the Practical Quantitation Level (PQL)
U = Compound was analyzed for but not detected

ENCO LABORATORIES
REPORT # : JR1476
DATE REPORTED: January 12, 1996
REFERENCE : 94-1021-NSMFL-CA

RESULTS OF ANALYSIS

EPA METHOD 8080 - PESTICIDE/PCB'S	95448-CSS10F	95448-CSS11F	95448-CSS12F	Units
alpha-BHC	1.65 U	1.65 U	1.65 U	µg/Kg
beta-BHC	1.65 U	2.97 PQL	1.65 U	µg/Kg
gamma-BHC (Lindane)	4.95	1.65 U	1.65 U	µg/Kg
delta-BHC	2.97 PQL	1.65 U	1.65 U	µg/Kg
Heptachlor	1.65 U	1.65 U	1.65 U	µg/Kg
Aldrin	1.65 U	1.65 U	1.65 U	µg/Kg
Heptachlor epoxide	3.3 PQL	1.65 U	1.65 U	µg/Kg
Endosulfan I	1.65 U	1.65 U	1.65 U	µg/Kg
Dieldrin	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDE	303.6 D20	50.49	1.65 U	µg/Kg
Endrin	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan II	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDD	1.65 U	1.65 U	1.65 U	µg/Kg
Endrin aldehyde	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan sulfate	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDT	125.4 D20	11.88	7.26	µg/Kg
Methoxychlor	1.65 U	1.65 U	1.65 U	µg/Kg
Chlordane	33 U	33 U	33 U	µg/Kg
Toxaphene	66 U	66 U	66 U	µg/Kg
PCB-1016/1242	33 U	33 U	33 U	µg/Kg
PCB-1221	33 U	33 U	33 U	µg/Kg
PCB-1232	33 U	33 U	33 U	µg/Kg
PCB-1248	33 U	33 U	33 U	µg/Kg
PCB-1254	33 U	33 U	33 U	µg/Kg
PCB-1260	33 U	33 U	33 U	µg/Kg
Surrogate:	**% RECOV**	**% RECOV**	**% RECOV**	**LIMITS**
DBC (surr)	*	*	*	52-140
2,4,5,6-TCMX (Surr)	*	*	130	46-130
Date Extracted	01/10/96	01/10/96	01/10/96	
Date Analyzed	01/10/96	01/10/96	01/10/96	

* = Surrogate recovery unavailable due to matrix interference
D20 = Analyzed @ 1:20 dilution
PQL = Analyte detected; value is between the Method Detection Level (MDL) and the Practical Quantitation Level (PQL)
U = Compound was analyzed for but not detected

RESULTS OF ANALYSIS

EPA METHOD 8080 - PESTICIDE/PCB'S	95448-C8813F	LAB BLANK	Units
alpha-BHC	1.65 U	1.65 U	µg/Kg
beta-BHC	1.65 U	1.65 U	µg/Kg
gamma-BHC (Lindane)	1.65 U	1.65 U	µg/Kg
delta-BHC	1.65 U	1.65 U	µg/Kg
Heptachlor	1.65 U	1.65 U	µg/Kg
Aldrin	1.65 U	1.65 U	µg/Kg
Heptachlor epoxide	1.65 U	1.65 U	µg/Kg
Endosulfan I	1.65 U	1.65 U	µg/Kg
Dieldrin	1.65 U	1.65 U	µg/Kg
4,4'-DDE	151.8 D20	1.65 U	µg/Kg
Endrin	1.65 U	1.65 U	µg/Kg
Endosulfan II	1.65 U	1.65 U	µg/Kg
4,4'-DDD	1.65 U	1.65 U	µg/Kg
Endrin aldehyde	1.65 U	1.65 U	µg/Kg
Endosulfan sulfate	1.65 U	1.65 U	µg/Kg
4,4'-DDT	92.4 D20	1.65 U	µg/Kg
Methoxychlor	1.65 U	1.65 U	µg/Kg
Chlordane	33 U	33 U	µg/Kg
Toxaphene	66 U	66 U	µg/Kg
PCB-1016/1242	33 U	33 U	µg/Kg
PCB-1221	33 U	33 U	µg/Kg
PCB-1232	33 U	33 U	µg/Kg
PCB-1248	33 U	33 U	µg/Kg
PCB-1254	33 U	33 U	µg/Kg
PCB-1260	33 U	33 U	µg/Kg
Surrogate:	**% RECOV**	**% RECOV**	**LIMITS**
DBC (surr)	*	140	52-140
2,4,5,6-TCMX (Surr)	*	115	46-130
Date Extracted	01/10/96	01/10/96	
Date Analyzed	01/10/96	01/09/96	

* = Surrogate recovery unavailable due to matrix interference
D20 = Analyzed @ 1:20 dilution
U = Compound was analyzed for but not detected

ENCO LABORATORIES
REPORT # : JR1476
DATE REPORTED: January 12, 1996
REFERENCE : 94-1021-NSMFL-CA

RESULTS OF ANALYSIS

EPA METHOD 8080 - PESTICIDE/PCB'S	EQUIP. BLANK	LAB BLANK	Units
alpha-BHC	0.05 U	0.05 U	µg/L
beta-BHC	0.05 U	0.05 U	µg/L
gamma-BHC (Lindane)	0.05 U	0.05 U	µg/L
delta-BHC	0.05 U	0.05 U	µg/L
Heptachlor	0.05 U	0.05 U	µg/L
Aldrin	0.05 U	0.05 U	µg/L
Heptachlor epoxide	0.05 U	0.05 U	µg/L
Endosulfan I	0.05 U	0.05 U	µg/L
Dieldrin	0.05 U	0.05 U	µg/L
4,4'-DDE	0.05 U	0.05 U	µg/L
Endrin	0.05 U	0.05 U	µg/L
Endosulfan II	0.05 U	0.05 U	µg/L
4,4'-DDD	0.05 U	0.05 U	µg/L
Endrin aldehyde	0.05 U	0.05 U	µg/L
Endosulfan sulfate	0.05 U	0.05 U	µg/L
4,4'-DDT	0.05 U	0.05 U	µg/L
Methoxychlor	0.05 U	0.05 U	µg/L
Chlordane	1 U	1 U	µg/L
Toxaphene	2 U	2 U	µg/L
PCB-1016/1242	1 U	1 U	µg/L
PCB-1221	1 U	1 U	µg/L
PCB-1232	1 U	1 U	µg/L
PCB-1248	1 U	1 U	µg/L
PCB-1254	1 U	1 U	µg/L
PCB-1260	1 U	1 U	µg/L
Surrogate:	**% RECOV**	**% RECOV**	**LIMITS**
DBC (surr)	107	117	50-135
2,4,5,6-TCMX (Surr)	115	100	52-122
Date Extracted	01/10/96	01/10/96	
Date Analyzed	01/10/96	01/10/96	

U = Compound was analyzed for but not detected

QUALITY CONTROL DATA

Parameter	% RECOVERY MS/MSD/LCS	ACCEPT LIMITS	% RPD MS/MSD	ACCEPT LIMITS
EPA Method 8080 (aqueous)				
gamma-BHC (Lindane)	108/108/122	41-133	<1	24
Heptachlor	100/ 97/112	15-164	3	25
Aldrin	100/100/112	27-150	<1	24
Endrin	109/107/118	46-138	2	26
4,4'-DDT	68/ 72/ 72	46-138	6	26
EPA Method 8080 (soil)				
gamma-BHC (Lindane)	*120/131/127	48-118	9	21
Heptachlor	127/131/139	42-140	3	25
Aldrin	129/137/134	46-137	6	21
Endrin	143/142/138	53-143	<1	24
4,4'-DDT	*138/147/135	53-143	6	24

Environmental Conservation Laboratories Comprehensive QA Plan #910190G

* = Associated values exceed established criteria for accuracy
< = Less Than
MS = Matrix Spike
MSD = Matrix Spike Duplicate
LCS = Laboratory Control Standard
RPD = Relative Percent Difference

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Orlando, Florida 32824
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CHAIN OF CUSTODY RECORD

CLIENT NAME: Fifco INT.
PROJECT MANAGER: Patrick J. Griffin
PROJECT NUMBER: 94-1021-NSMFL-CA
PROJECT NAME:
SAMPLER'S SIGNATURE: Patrick J. Griffin

STATION NO.	DATE	TIME	COMPOSITE	GRAB	STATION LOCATION	NO. OF CONTAINERS	EPA 8080								REMARKS
5448-CSS01F	1-9-96	12:00	✓			1	✓								SOIL
5448-CSS02F	1-9-96	12:10	✓			1	✓								SOIL
5448-CSS03F	1-9-96	12:23	✓			1	✓								SOIL
5448-CSS04F	1-9-96	12:34	✓			1	✓								SOIL
5448-CSS05F	1-9-96	12:45	✓			1	✓								SOIL
5448-CSS06F	1-9-96	12:58	✓			1	✓								SOIL
5448-CSS07F	1-9-96	13:11	✓			1	✓								SOIL
5448-CSS08F	1-9-96	13:23	✓			1	✓								SOIL
5448-CSS09F	1-9-96	13:37	✓			1	✓								SOIL
5448-CSS10F	1-9-96	13:48	✓			1	✓								SOIL
5448-CSS11F	1-9-96	13:58	✓			1	✓								SOIL
5448-CSS12F	1-9-96	14:14	✓			1	✓								SOIL
5448-CSS13F	1-9-96	14:25	✓			1	✓								SOIL
EQUIP. BLANK	1-9-96	14:38		✓		1	✓								AQUEOUS

RELINQUISHED BY	DATE/TIME	RECEIVED BY	RELINQUISHED BY	DATE/TIME	REMARKS
EMPTY BOTTLES Andrew Neal	1/3/96 1730	Patrick J. Griffin			
SAMPLE KIT PREPARED BY: ☐ ORLANDO ☒ JACKSONVILLE	DATE/TIME 1/3/96 17:15	RECEIVED BY Patrick J. Griffin	RECEIVED FOR LABORATORY BY: ☐ ORL ☐ JAX		JR1976
RELINQUISHED BY	DATE/TIME	RECEIVED BY	K M l ,	DATE/TIME 1705	

Environmental Conservation Laboratories
4810 Executive Park Court, Suite 211
Jacksonville, Florida 32216-6069
904 / 296-3007
Fax 904 / 296-6210

ENCO Laboratories

DHRS Certification No. E82277, 82417

CLIENT : E.C.T.
ADDRESS: 4100 Center Pointe Dr.
Suite 112
Ft. Myers, FL 33916

REPORT # : JR1516
DATE SUBMITTED: January 14, 1996
DATE REPORTED : January 17, 1996

ATTENTION: Duane Dungan

SAMPLE IDENTIFICATION

Samples submitted and
identified by client as:

PROJECT #: 94-1021-NSMFL-CA

FIFCO Int.

01/13/96

#1 - 95448-CSS01F @ 11:12
#2 - 95448-CSS02F @ 11:27
#3 - 95448-CSS03F @ 11:40
#4 - 95448-CSS04F @ 11:52
#5 - 95448-CSS05F @ 12:03
#6 - 95448-CSS06F @ 12:14
#7 - 95448-CSS07F @ 12:23
#8 - 95448-CSS08F @ 12:34
#9 - 95448-CSS09F @ 12:47
#10 - 95448-CSS10F @ 12:59
#11 - 95448-CSS11F @ 13:07
#12 - 95448-CSS12F @ 13:16
#13 - 95448-CSS13F @ 13:25
#14 - 95448-SS16F @ 13:34
#15 - 95448-SS35F @ 11:04
#16 - EQUIP BLANK @ 13:42

PROJECT MANAGER Scott D. Martin

ENCO LABORATORIES
REPORT # : JR1515
DATE REPORTED: January 17, 1996
REFERENCE : 94-1021-NSMFL-CA
PROJECT NAME : FIFCO Int.

RESULTS OF ANALYSIS

EPA METHOD 8080 - PESTICIDE/PCB'S	95448-CSS01F	95448-CSS02F	95448-CSS03F	Units
alpha-BHC	1.65 U	1.65 U	1.65 U	µg/Kg
beta-BHC	1.65 U	1.65 U	1.65 U	µg/Kg
gamma-BHC (Lindane)	1.65 U	1.65 U	1.65 U	µg/Kg
delta-BHC	1.65 U	1.65 U	1.65 U	µg/Kg
Heptachlor	1.65 U	1.65 U	1.65 U	µg/Kg
Aldrin	1.65 U	1.65 U	1.65 U	µg/Kg
Heptachlor epoxide	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan I	1.65 U	1.65 U	1.65 U	µg/Kg
Dieldrin	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDE	**435.6** D20	**3.63** PQL	**11.88**	µg/Kg
Endrin	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan II	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDD	1.65 U	1.65 U	1.65 U	µg/Kg
Endrin aldehyde	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan sulfate	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDT	**165** D20	1.65 U	**7.59**	µg/Kg
Methoxychlor	1.65 U	1.65 U	1.65 U	µg/Kg
Chlordane	33 U	33 U	33 U	µg/Kg
Toxaphene	66 U	66 U	66 U	µg/Kg
PCB-1016/1242	33 U	33 U	33 U	µg/Kg
PCB-1221	33 U	33 U	33 U	µg/Kg
PCB-1232	33 U	33 U	33 U	µg/Kg
PCB-1248	33 U	33 U	33 U	µg/Kg
PCB-1254	33 U	33 U	33 U	µg/Kg
PCB-1260	33 U	33 U	33 U	µg/Kg
Surrogate:	**% RECOV**	**% RECOV**	**% RECOV**	**LIMITS**
DBC (surr)	*	*	*	52-140
2,4,5,6-TCMX (Surr)	*	*	*	46-130
Date Extracted	01/15/96	01/15/96	01/15/96	
Date Analyzed	01/15/96	01/15/96	01/15/96	

* = Surrogate recovery unavailable due to matrix interference
D20 = Analyzed @ 1:20 dilution
PQL = Analyte detected; value is between the Method Detection Level (MDL) and the Practical Quantitation Level (PQL)
U = Compound was analyzed for but not detected

ENCO LABORATORIES
REPORT # : JR1516
DATE REPORTED: January 17, 1996
REFERENCE : 94-1021-NSMFL-CA
PROJECT NAME : FIFCO Int.

RESULTS OF ANALYSIS

EPA METHOD 8080 - PESTICIDE/PCB'S	95448-CS804F	95448-CS805F	95448-CS806F	Units
alpha-BHC	1.65 U	1.65 U	1.65 U	µg/Kg
beta-BHC	1.65 U	1.65 U	1.65 U	µg/Kg
gamma-BHC (Lindane)	1.65 U	1.65 U	1.65 U	µg/Kg
delta-BHC	1.65 U	1.65 U	1.65 U	µg/Kg
Heptachlor	1.65 U	1.65 U	1.65 U	µg/Kg
Aldrin	1.65 U	1.65 U	1.65 U	µg/Kg
Heptachlor epoxide	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan I	1.65 U	1.65 U	1.65 U	µg/Kg
Dieldrin	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDE	**310.2** D20	**1.98** PQL	**442.2** D20	µg/Kg
Endrin	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan II	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDD	1.65 U	1.65 U	1.65 U	µg/Kg
Endrin aldehyde	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan sulfate	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDT	**158.4** D20	**2.97**	**165** D20	µg/Kg
Methoxychlor	1.65 U	1.65 U	1.65 U	µg/Kg
Chlordane	33 U	33 U	33 U	µg/Kg
Toxaphene	66 U	66 U	66 U	µg/Kg
PCB-1016/1242	33 U	33 U	33 U	µg/Kg
PCB-1221	33 U	33 U	33 U	µg/Kg
PCB-1232	33 U	33 U	33 U	µg/Kg
PCB-1248	33 U	33 U	33 U	µg/Kg
PCB-1254	33 U	33 U	33 U	µg/Kg
PCB-1260	33 U	33 U	33 U	µg/Kg
Surrogate:	**% RECOV**	**% RECOV**	**% RECOV**	**LIMITS**
DBC (surr)	*	*	*	52-140
2,4,5,6-TCMX (Surr)	130	*	60	46-130
Date Extracted	01/15/96	01/15/96	01/15/96	
Date Analyzed	01/15/96	01/15/96	01/15/96	

* = Surrogate recovery unavailable due to matrix interference
D20 = Analyzed @ 1:20 dilution
PQL = Analyte detected; value is between the Method Detection Level (MDL) and the Practical Quantitation Level (PQL)
U = Compound was analyzed for but not detected

ENCO LABORATORIES
REPORT # : JR1516
DATE REPORTED: January 17, 1996
REFERENCE : 94-1021-NSMFL-CA
PROJECT NAME : FIFCO Int.

RESULTS OF ANALYSIS

EPA METHOD 8080 - PESTICIDE/PCB'S	95448-CS807F	95448-CS808F	95448-CS809F	Units
alpha-BHC	1.65 U	1.65 U	1.65 U	µg/Kg
beta-BHC	1.65 U	1.65 U	1.65 U	µg/Kg
gamma-BHC (Lindane)	1.65 U	1.65 U	1.65 U	µg/Kg
delta-BHC	1.65 U	1.65 U	1.65 U	µg/Kg
Heptachlor	1.65 U	1.65 U	**2.52** PQL	µg/Kg
Aldrin	1.65 U	1.65 U	1.65 U	µg/Kg
Heptachlor epoxide	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan I	1.65 U	1.65 U	1.65 U	µg/Kg
Dieldrin	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDE	**145.2** D20	**3.63** PQL	**89.1** D10	µg/Kg
Endrin	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan II	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDD	1.65 U	1.65 U	1.65 U	µg/Kg
Endrin aldehyde	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan sulfate	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDT	**39.6**	**3.96**	**38.94**	µg/Kg
Methoxychlor	1.65 U	1.65 U	1.65 U	µg/Kg
Chlordane	33 U	33 U	33 U	µg/Kg
Toxaphene	66 U	66 U	66 U	µg/Kg
PCB-1016/1242	33 U	33 U	33 U	µg/Kg
PCB-1221	33 U	33 U	33 U	µg/Kg
PCB-1232	33 U	33 U	33 U	µg/Kg
PCB-1248	33 U	33 U	33 U	µg/Kg
PCB-1254	33 U	33 U	33 U	µg/Kg
PCB-1260	33 U	33 U	33 U	µg/Kg
Surrogate:	**% RECOV**	**% RECOV**	**% RECOV**	**LIMITS**
DBC (surr)	*	*	129	52-140
2,4,5,6-TCMX (Surr)	*	*	87	46-130
Date Extracted	01/15/96	01/15/96	01/15/96	
Date Analyzed	01/15/96	01/16/96	01/16/96	

* = Surrogate recovery unavailable due to matrix interference
D10 = Analyzed @ 1:10 dilution
D20 = Analyzed @ 1:20 dilution
PQL = Analyte detected; value is between the Method Detection Level (MDL) and the Practical Quantitation Level (PQL)
U = Compound was analyzed for but not detected

ENCO LABORATORIES
REPORT # : JR1516
DATE REPORTED: January 17, 1996
REFERENCE : 94-1021-NSMFL-CA
PROJECT NAME : FIFCO Int.

RESULTS OF ANALYSIS

EPA METHOD 8080 - PESTICIDE/PCB'S	95448-CSS10F	95448-CSS11F	95448-CSS12F	Units
alpha-BHC	1.65 U	1.65 U	1.65 U	µg/Kg
beta-BHC	1.65 U	1.65 U	1.65 U	µg/Kg
gamma-BHC (Lindane)	1.65 U	1.65 U	1.65 U	µg/Kg
delta-BHC	1.65 U	1.65 U	1.65 U	µg/Kg
Heptachlor	1.65 U	1.65 U	1.65 U	µg/Kg
Aldrin	1.65 U	1.65 U	1.65 U	µg/Kg
Heptachlor epoxide	9.9	1.65 U	1.65 U	µg/Kg
Endosulfan I	1.65 U	1.65 U	1.65 U	µg/Kg
Dieldrin	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDE	600.6 D20	37.62	10.23	µg/Kg
Endrin	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan II	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDD	1.65 U	1.65 U	1.65 U	µg/Kg
Endrin aldehyde	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan sulfate	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDT	138.6 D20	3.63	1.65 U	µg/Kg
Methoxychlor	1.65 U	1.65 U	1.65 U	µg/Kg
Chlordane	33 U	33 U	33 U	µg/Kg
Toxaphene	66 U	66 U	66 U	µg/Kg
PCB-1016/1242	33 U	33 U	33 U	µg/Kg
PCB-1221	33 U	33 U	33 U	µg/Kg
PCB-1232	33 U	33 U	33 U	µg/Kg
PCB-1248	33 U	33 U	33 U	µg/Kg
PCB-1254	33 U	33 U	33 U	µg/Kg
PCB-1260	33 U	33 U	33 U	µg/Kg
Surrogate:	**% RECOV**	**% RECOV**	**% RECOV**	**LIMITS**
DBC (surr)	*	*	135	52-140
2,4,5,6-TCMX (Surr)	*	109	108	46-130
Date Extracted	01/15/96	01/15/96	01/15/96	
Date Analyzed	01/16/96	01/16/96	01/16/96	

* = Surrogate recovery unavailable due to matrix interference
D20 = Analyzed @ 1:20 dilution
U = Compound was analyzed for but not detected

ENCO LABORATORIES
REPORT # : JR1516
DATE REPORTED: January 17, 1996
REFERENCE : 94-1021-NSMFL-CA
PROJECT NAME : FIFCO Int.

RESULTS OF ANALYSIS

EPA METHOD 8080 - PESTICIDE/PCB'S	95448-CS813F	95448-S816F	95448-S835F	Units
alpha-BHC	3.96	11.55	33 U	µg/Kg
beta-BHC	389.4 D20	1287 D50	33 U	µg/Kg
gamma-BHC (Lindane)	1.65 U	1.65 U	33 U	µg/Kg
delta-BHC	1.65 U	1.65 U	33 U	µg/Kg
Heptachlor	1.65 U	1.65 U	33 U	µg/Kg
Aldrin	1.65 U	1.65 U	33 U	µg/Kg
Heptachlor epoxide	13.2	1.65 U	33 U	µg/Kg
Endosulfan I	1.65 U	1.65 U	33 U	µg/Kg
Dieldrin	1.65 U	1.65 U	33 U	µg/Kg
4,4'-DDE	528 D20	1914 D50	33 U	µg/Kg
Endrin	1.65 U	1.65 U	33 U	µg/Kg
Endosulfan II	1.65 U	1.65 U	33 U	µg/Kg
4,4'-DDD	1.65 U	1.65 U	33 U	µg/Kg
Endrin aldehyde	1.65 U	1.65 U	33 U	µg/Kg
Endosulfan sulfate	1.65 U	1.65 U	33 U	µg/Kg
4,4'-DDT	125.4 D20	547.8 D20	33 U	µg/Kg
Methoxychlor	1.65 U	1.65 U	33 U	µg/Kg
Chlordane	33 U	33 U	660 U	µg/Kg
Toxaphene	66 U	66 U	1320 U	µg/Kg
PCB-1016/1242	33 U	33 U	660 U	µg/Kg
PCB-1221	33 U	33 U	660 U	µg/Kg
PCB-1232	33 U	33 U	660 U	µg/Kg
PCB-1248	33 U	33 U	660 U	µg/Kg
PCB-1254	33 U	33 U	660 U	µg/Kg
PCB-1260	33 U	33 U	3198 D20	µg/Kg
Surrogate:	**% RECOV**	**% RECOV**	**% RECOV**	**LIMITS**
DBC (surr)	136	*	107	52-140
2,4,5,6-TCMX (Surr)	103	*	27	46-130
Date Extracted	01/15/96	01/15/96	01/15/96	
Date Analyzed	01/16/96	01/16/96	01/16/96	

* = Surrogate recovery unavailable due to matrix interference
D20 = Analyzed @ 1:20 dilution
D50 = Analyzed @ 1:50 dilution
U = Compound was analyzed for but not detected

ENCO LABORATORIES
REPORT # : JR1516
DATE REPORTED: January 17, 1996
REFERENCE : 94-1021-NSMFL-CA
PROJECT NAME : FIFCO Int.

RESULTS OF ANALYSIS

EPA METHOD 8080 - PESTICIDE/PCB'S	EQUIP BLANK	LAB BLANK	Units
alpha-BHC	0.05 U	0.05 U	µg/L
beta-BHC	0.05 U	0.05 U	µg/L
gamma-BHC (Lindane)	0.05 U	0.05 U	µg/L
delta-BHC	0.05 U	0.05 U	µg/L
Heptachlor	0.05 U	0.05 U	µg/L
Aldrin	0.05 U	0.05 U	µg/L
Heptachlor epoxide	0.05 U	0.05 U	µg/L
Endosulfan I	0.05 U	0.05 U	µg/L
Dieldrin	0.05 U	0.05 U	µg/L
4,4'-DDE	0.05 U	0.05 U	µg/L
Endrin	0.05 U	0.05 U	µg/L
Endosulfan II	0.05 U	0.05 U	µg/L
4,4'-DDD	0.05 U	0.05 U	µg/L
Endrin aldehyde	0.05 U	0.05 U	µg/L
Endosulfan sulfate	0.05 U	0.05 U	µg/L
4,4'-DDT	0.05 U	0.05 U	µg/L
Methoxychlor	0.05 U	0.05 U	µg/L
Chlordane	1 U	1 U	µg/L
Toxaphene	2 U	2 U	µg/L
PCB-1016/1242	1 U	1 U	µg/L
PCB-1221	1 U	1 U	µg/L
PCB-1232	1 U	1 U	µg/L
PCB-1248	1 U	1 U	µg/L
PCB-1254	1 U	1 U	µg/L
PCB-1260	1 U	1 U	µg/L
Surrogate:	**% RECOV**	**% RECOV**	**LIMITS**
DBC (surr)	114	117	50-135
2,4,5,6-TCMX (Surr)	114	80	52-122
Date Extracted	01/16/96	01/16/96	
Date Analyzed	01/16/96	01/16/96	

U = Compound was analyzed for but not detected

ENCO LABORATORIES
REPORT # : JR1516
DATE REPORTED: January 17, 1996
REFERENCE : 94-1021-NSMFL-CA
PROJECT NAME : FIFCO Int.

RESULTS OF ANALYSIS

EPA METHOD 8080 - PESTICIDE/PCB'S	LAB BLANK	Units
alpha-BHC	1.65 U	µg/Kg
beta-BHC	1.65 U	µg/Kg
gamma-BHC (Lindane)	1.65 U	µg/Kg
delta-BHC	1.65 U	µg/Kg
Heptachlor	1.65 U	µg/Kg
Aldrin	1.65 U	µg/Kg
Heptachlor epoxide	1.65 U	µg/Kg
Endosulfan I	1.65 U	µg/Kg
Dieldrin	1.65 U	µg/Kg
4,4'-DDE	1.65 U	µg/Kg
Endrin	1.65 U	µg/Kg
Endosulfan II	1.65 U	µg/Kg
4,4'-DDD	1.65 U	µg/Kg
Endrin aldehyde	1.65 U	µg/Kg
Endosulfan sulfate	1.65 U	µg/Kg
4,4'-DDT	1.65 U	µg/Kg
Methoxychlor	1.65 U	µg/Kg
Chlordane	33 U	µg/Kg
Toxaphene	66 U	µg/Kg
PCB-1016/1242	33 U	µg/Kg
PCB-1221	33 U	µg/Kg
PCB-1232	33 U	µg/Kg
PCB-1248	33 U	µg/Kg
PCB-1254	33 U	µg/Kg
PCB-1260	33 U	µg/Kg

Surrogate:	% RECOV	LIMITS
DBC (surr)	140	52-140
2,4,5,6-TCMX (Surr)	67	46-130
Date Extracted	01/15/96	
Date Analyzed	01/15/96	

U = Compound was analyzed for but not detected

ENCO LABORATORIES
REPORT # : JR1516
DATE REPORTED: January 17, 1996
REFERENCE : 94-1021-NSMFL-CA
PROJECT NAME : FIFCO Int.

QUALITY CONTROL DATA

Parameter	% RECOVERY MS/MSD/LCS	ACCEPT LIMITS	% RPD MS/MSD	ACCEPT LIMITS
EPA Method 8080 (EQUIP BLANK)				
gamma-BHC (Lindane)	100/125/116	41-133	22	24
Heptachlor	95/113/113	15-164	17	25
Aldrin	99/126/117	27-150	24	24
Endrin	94/119/118	46-138	23	26
4,4'-DDT	56/ 72/ 70	46-138	25	26
EPA Method 8080 (CSS02F thru SS35F)				
gamma-BHC (Lindane)	119/109/ 91	48-118	9	21
Heptachlor	113/104/ 91	42-140	8	25
Aldrin	102/ 92/ 66	46-137	10	21
Endrin	150/154/117	53-143	3	24
4,4'-DDT	113/ 97/ 80	53-143	15	24

Environmental Conservation Laboratories Comprehensive QA Plan #910190G

MS = Matrix Spike
MSD = Matrix Spike Duplicate
LCS = Laboratory Control Standard
RPD = Relative Percent Difference

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ENCO Laboratories

ENVIRONMENTAL CONSERVATION LABORATORIES

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Jacksonville, Florida 32216-6069
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10207 General Drive
Orlando, Florida 32824
Ph. (407) 826-5314 - Fax (407) 850-6945

CHAIN OF CUSTODY REC

P.11

CLIENT NAME: FIFCO INT.
PROJECT MANAGER: Patrick J. Griffin
PROJECT NUMBER: 94-1021-NSMFL-CA
PROJECT NAME:
SAMPLER'S SIGNATURE: Patrick J. Griffin

STATION NO.	DATE	TIME	COMPOSITE	GRAB	STATION LOCATION	NO. OF CONTAINERS	EPA 8080								REMARKS
95448-CS01F	1-13-96	11:12	✓			1	✓								SOIL
95448-CS02F	1-13-96	11:27	✓			1	✓								SOIL
95448-CS03F	1-13-96	11:40	✓			1	✓								SOIL
95448-CS04F	1-13-96	11:52	✓			1	✓								SOIL
95448-CS05F	1-13-96	12:03	✓			1	✓								SOIL
95448-CS06F	1-13-96	12:14	✓			1	✓								SOIL
95448-CS07F	1-13-96	12:23	✓			1	✓								SOIL
95448-CS08F	1-13-96	12:34	✓			1	✓								SOIL
95448-CS09F	1-13-96	12:47	✓			1	✓								SOIL
95448-CS10F	1-13-96	12:59	✓			1	✓								SOIL
95448-CS11F	1-13-96	13:07	✓			1	✓								SOIL
95448-CS12F	1-13-96	13:16	✓			1	✓								SOIL
95448-CS13F	1-13-96	13:25	✓			1	✓								SOIL
95448-CS16F	1-13-96	13:34	✓			1	✓								SOIL

RELINQUISHED BY	DATE/TIME	RECEIVED BY	RELINQUISHED BY	DATE/TIME	REMARKS
			P.J. Griffin	9:50 1-14-96	
SAMPLE KIT PREPARED BY: ☐ ORLANDO ☒ JACKSONVILLE	DATE/TIME 1-9-96 17:30	RECEIVED BY Patrick J. Griffin	RECEIVED FOR LABORATORY BY:	☐ ORL ☐ JAX	JR1516
RELINQUISHED BY	DATE/TIME	RECEIVED BY		DATE/TIME 1/14/96 0950	

ENCO Laboratories

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CHAIN OF CUSTODY RECORD

CLIENT NAME: FIFCO INT.
PROJECT MANAGER: Patrick J. Griffin
PROJECT NUMBER: 94-1021-NSMFL-CA
PROJECT NAME:
SAMPLER'S SIGNATURE: Patrick J. Griffin

STATION NO.	DATE	TIME	COMPOSITE	GRAB	STATION LOCATION	NO. OF CONTAINERS	EPA 8080								REMARKS
S-[redacted]S35 A	1-13-96	11:04	✓			1	✓								SOIL
P. BLANK	1-13-96	13:42		✓		1	✓								AQUEOUS

RELINQUISHED BY	DATE/TIME	RECEIVED BY	RELINQUISHED BY	DATE/TIME	REMARKS
EMPTY BOTTLES Cinderella	1/13/96 1730		[signature]	9:50 1-14-96	
SAMPLE KIT PREPARED BY: ☐ ORLANDO ☒ JACKSONVILLE	DATE/TIME 1-9-96 17:30	RECEIVED BY Patrick J. Griffin	RECEIVED FOR LABORATORY BY: [signature]	☐ ORL ☐ JAX	JR1516
RELINQUISHED BY	DATE/TIME	RECEIVED BY		DATE/TIME 1/14/96 0950	Q501700

Environmental Conservation Laboratories
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ENCO Laboratories

DHRS Certification No. E82277, 82417

CLIENT : Environmental Consulting & Tech
ADDRESS: 4100 Center Pointe Dr.
Suite 112
Fort Myers, FL 33916

REPORT # : JR1587
DATE SUBMITTED: January 23, 1996
DATE REPORTED : January 26, 1996

ATTENTION: Duane Dungan

SAMPLE IDENTIFICATION

Samples submitted and
identified by client as:

PROJECT #: 95-448/0200

01/22/96

#1 - CSS 01F @ 12:55
#2 - CSS 02F @ 13:15
#3 - CSS 03F @ 13:24
#4 - CSS 04F @ 13:39
#5 - CSS 05F @ 13:43
#6 - CSS 06F @ 14:00
#7 - CSS 07F @ 14:35
#8 - CSS 08F @ 14:45
#9 - CSS 09F @ 14:55
#10 - CSS 10F @ 15:09
#11 - CSS 11F @ 15:18
#12 - CSS 12F @ 15:25
#13 - CSS 13F @ 15:30
#14 - SS35 D @ 14:26
#15 - EQ-1 @ 12:35
#16 - EQ-2 @ 13:53
#17 - SS 16D @ 15:35

PROJECT MANAGER Scott D. Martin

ENCO LABORATORIES
REPORT # : JR1587
DATE REPORTED: January 26, 1996
REFERENCE : 95-448/0200

RESULTS OF ANALYSIS

EPA METHOD 8080 - PESTICIDE/PCB'S	CSS 01F	CSS 02F	CSS 03F	Units
alpha-BHC	1.65 U	1.65 U	1.65 U	µg/Kg
beta-BHC	1.65 U	1.65 U	1.65 U	µg/Kg
gamma-BHC (Lindane)	1.65 U	1.65 U	1.65 U	µg/Kg
delta-BHC	1.65 U	1.65 U	1.65 U	µg/Kg
Heptachlor	1.65 U	1.65 U	1.65 U	µg/Kg
Aldrin	1.65 U	1.65 U	1.65 U	µg/Kg
Heptachlor epoxide	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan I	1.65 U	1.65 U	1.65 U	µg/Kg
Dieldrin	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDE	**679.8** D20	**7.59**	**9.57**	µg/Kg
Endrin	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan II	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDD	1.65 U	1.65 U	1.65 U	µg/Kg
Endrin aldehyde	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan sulfate	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDT	**33** D20	**12.94**	**9.54**	µg/Kg
Methoxychlor	1.65 U	1.65 U	1.65 U	µg/Kg
Chlordane	33 U	33 U	33 U	µg/Kg
Toxaphene	66 U	66 U	66 U	µg/Kg
PCB-1016/1242	33 U	33 U	33 U	µg/Kg
PCB-1221	33 U	33 U	33 U	µg/Kg
PCB-1232	33 U	33 U	33 U	µg/Kg
PCB-1248	33 U	33 U	33 U	µg/Kg
PCB-1254	33 U	33 U	33 U	µg/Kg
PCB-1260	33 U	33 U	33 U	µg/Kg
Surrogate:	**% RECOV**	**% RECOV**	**% RECOV**	**LIMITS**
DBC (surr)	*	*	*	35-169
2,4,5,6-TCMX (Surr)	*	127	127	46-130
Date Extracted	01/23/96	01/23/96	01/23/96	
Date Analyzed	01/23/96	01/23/96	01/23/96	

* = Surrogate recovery unavailable due to matrix interference
D20 = Analyte value determined from a 1:20 dilution.
U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
REPORT # : JR1587
DATE REPORTED: January 26, 1996
REFERENCE : 95-448/0200

RESULTS OF ANALYSIS

EPA METHOD 8080 - PESTICIDE/PCB'S	C8S 04F	C8S 05F	C8S 06F	Units
alpha-BHC	1.65 U	1.65 U	1.65 U	µg/Kg
beta-BHC	1.65 U	1.65 U	1.65 U	µg/Kg
gamma-BHC (Lindane)	1.65 U	1.65 U	1.65 U	µg/Kg
delta-BHC	1.65 U	1.65 U	1.65 U	µg/Kg
Heptachlor	1.65 U	1.65 U	1.65 U	µg/Kg
Aldrin	1.65 U	1.65 U	1.65 U	µg/Kg
Heptachlor epoxide	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan I	1.65 U	1.65 U	1.65 U	µg/Kg
Dieldrin	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDE	**95.7** D10	1.65 U	**673.2** D20	µg/Kg
Endrin	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan II	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDD	1.65 U	1.65 U	**237.6** D20	µg/Kg
Endrin aldehyde	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan sulfate	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDT	**95.7** D10	1.65 U	**198** D20	µg/Kg
Methoxychlor	1.65 U	1.65 U	1.65 U	µg/Kg
Chlordane	33 U	33 U	33 U	µg/Kg
Toxaphene	66 U	66 U	66 U	µg/Kg
PCB-1016/1242	33 U	33 U	33 U	µg/Kg
PCB-1221	33 U	33 U	33 U	µg/Kg
PCB-1232	33 U	33 U	33 U	µg/Kg
PCB-1248	33 U	33 U	33 U	µg/Kg
PCB-1254	33 U	33 U	33 U	µg/Kg
PCB-1260	33 U	33 U	33 U	µg/Kg
Surrogate:	**% RECOV**	**% RECOV**	**% RECOV**	**LIMITS**
DBC (surr)	*	*	*	35-169
2,4,5,6-TCMX (Surr)	110	121	*	46-130
Date Extracted	01/23/96	01/23/96	01/23/96	
Date Analyzed	01/23/96	01/23/96	01/24/96	

* = Surrogate recovery unavailable due to matrix interference
D10 = Analyte value determined from a 1:10 dilution.
D20 = Analyte value determined from a 1:20 dilution.
U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
REPORT # : JR1587
DATE REPORTED: January 26, 1996
REFERENCE : 95-448/0200

RESULTS OF ANALYSIS

EPA METHOD 8080 - PESTICIDE/PCB'S	CSS 07F	CSS 08F	CSS 09F	Units
alpha-BHC	1.65 U	1.65 U	1.65 U	µg/Kg
beta-BHC	1.65 U	1.65 U	2.97	µg/Kg
gamma-BHC (Lindane)	1.65 U	1.65 U	1.65 U	µg/Kg
delta-BHC	1.65 U	1.65 U	1.65 U	µg/Kg
Heptachlor	1.65 U	1.65 U	1.65 U	µg/Kg
Aldrin	1.65 U	1.65 U	1.65 U	µg/Kg
Heptachlor epoxide	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan I	1.65 U	1.65 U	1.65 U	µg/Kg
Dieldrin	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDE	165 D20	5.28	257.4 D20	µg/Kg
Endrin	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan II	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDD	23.76	1.65 U	85.8 D20	µg/Kg
Endrin aldehyde	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan sulfate	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDT	29.37	1.65 U	184.8 D20	µg/Kg
Methoxychlor	1.65 U	1.65 U	1.65 U	µg/Kg
Chlordane	33 U	33 U	33 U	µg/Kg
Toxaphene	66 U	66 U	66 U	µg/Kg
PCB-1016/1242	33 U	33 U	33 U	µg/Kg
PCB-1221	33 U	33 U	33 U	µg/Kg
PCB-1232	33 U	33 U	33 U	µg/Kg
PCB-1248	33 U	33 U	33 U	µg/Kg
PCB-1254	33 U	33 U	33 U	µg/Kg
PCB-1260	33 U	33 U	33 U	µg/Kg
Surrogate:	**% RECOV**	**% RECOV**	**% RECOV**	**LIMITS**
DBC (surr)	*	138	*	35-169
2,4,5,6-TCMX (Surr)	112	83	*	46-130
Date Extracted	01/23/96	01/23/96	01/23/96	
Date Analyzed	01/24/96	01/24/96	01/24/96	

D20 = Analyte value determined from a 1:20 dilution.
U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
REPORT # : JR1587
DATE REPORTED: January 26, 1996
REFERENCE : 95-448/0200

RESULTS OF ANALYSIS

EPA METHOD 8080 - PESTICIDE/PCB'S	CSS 10F	CSS 11F	CSS 12F	Units
alpha-BHC	1.65 U	1.65 U	1.65 U	µg/Kg
beta-BHC	**5.28**	1.65 U	1.65 U	µg/Kg
gamma-BHC (Lindane)	1.65 U	1.65 U	1.65 U	µg/Kg
delta-BHC	1.65 U	1.65 U	1.65 U	µg/Kg
Heptachlor	1.65 U	1.65 U	1.65 U	µg/Kg
Aldrin	1.65 U	1.65 U	1.65 U	µg/Kg
Heptachlor epoxide	**12.54**	1.65 U	1.65 U	µg/Kg
Endosulfan I	1.65 U	1.65 U	1.65 U	µg/Kg
Dieldrin	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDE	**574.2** D20	**56.1** D10	**18.81**	µg/Kg
Endrin	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan II	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDD	**52.8** D20	**4.95**	**7.59**	µg/Kg
Endrin aldehyde	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan sulfate	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDT	**33** D20	**20.79**	1.65 U	µg/Kg
Methoxychlor	1.65 U	1.65 U	1.65 U	µg/Kg
Chlordane	33 U	33 U	33 U	µg/Kg
Toxaphene	66 U	66 U	66 U	µg/Kg
PCB-1016/1242	33 U	33 U	33 U	µg/Kg
PCB-1221	33 U	33 U	33 U	µg/Kg
PCB-1232	33 U	33 U	33 U	µg/Kg
PCB-1248	33 U	33 U	33 U	µg/Kg
PCB-1254	33 U	33 U	33 U	µg/Kg
PCB-1260	33 U	33 U	33 U	µg/Kg
Surrogate:	**% RECOV**	**% RECOV**	**% RECOV**	**LIMITS**
DBC (surr)	*	*	*	35-169
2,4,5,6-TCMX (Surr)	130	114	*	46-130
Date Extracted	01/23/96	01/23/96	01/23/96	
Date Analyzed	01/24/96	01/24/96	01/24/96	

* = Surrogate recovery unavailable due to matrix interference
D10 = Analyte value determined from a 1:10 dilution.
D20 = Analyte value determined from a 1:20 dilution.
U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
REPORT # : JR1587
DATE REPORTED: January 26, 1996
REFERENCE : 95-448/0200

RESULTS OF ANALYSIS

EPA METHOD 8080 - PESTICIDE/PCB'S	CSS 13F	SS35 D	SS 16D	Units
alpha-BHC	1.65 U	1.65 U	1.65 U	µg/Kg
beta-BHC	1.65 U	1.65 U	36.3 D10	µg/Kg
gamma-BHC (Lindane)	1.65 U	1.65 U	1.65 U	µg/Kg
delta-BHC	1.65 U	1.65 U	1.65 U	µg/Kg
Heptachlor	1.65 U	1.65 U	1.65 U	µg/Kg
Aldrin	1.65 U	1.65 U	1.65 U	µg/Kg
Heptachlor epoxide	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan I	1.65 U	1.65 U	1.65 U	µg/Kg
Dieldrin	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDE	303.6 D20	1.65	66 D10	µg/Kg
Endrin	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan II	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDD	92.4 D20	1.65 U	10.89	µg/Kg
Endrin aldehyde	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan sulfate	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDT	165 D20	1.65 U	11.55	µg/Kg
Methoxychlor	1.65 U	1.65 U	1.65 U	µg/Kg
Chlordane	33 U	33 U	33 U	µg/Kg
Toxaphene	66 U	66 U	66 U	µg/Kg
PCB-1016/1242	33 U	33 U	33 U	µg/Kg
PCB-1221	33 U	33 U	33 U	µg/Kg
PCB-1232	33 U	33 U	33 U	µg/Kg
PCB-1248	33 U	33 U	33 U	µg/Kg
PCB-1254	33 U	33 U	33 U	µg/Kg
PCB-1260	33 U	33 U	33 U	µg/Kg
Surrogate:	**% RECOV**	**% RECOV**	**% RECOV**	**LIMITS**
DBC (surr)	*	*	*	35-169
2,4,5,6-TCMX (Surr)	129	*	*	46-130
Date Extracted	01/23/96	01/23/96	01/23/96	
Date Analyzed	01/24/96	01/24/96	01/24/96	

* = Surrogate recovery unavailable due to matrix interference
D10 = Analyte value determined from a 1:10 dilution
D20 = Analyte value determined from a 1:20 dilution.
U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
REPORT # : JR1587
DATE REPORTED: January 26, 1996
REFERENCE : 95-448/0200

RESULTS OF ANALYSIS

EPA METHOD 8080 - PESTICIDE/PCB'S	EQ-1	EQ-2	LAB BLANK	Units
alpha-BHC	0.05 U	0.05 U	0.05 U	µg/L
beta-BHC	0.05 U	0.05 U	0.05 U	µg/L
gamma-BHC (Lindane)	0.05 U	0.05 U	0.05 U	µg/L
delta-BHC	0.05 U	0.05 U	0.05 U	µg/L
Heptachlor	0.05 U	0.05 U	0.05 U	µg/L
Aldrin	0.05 U	0.05 U	0.05 U	µg/L
Heptachlor epoxide	0.05 U	0.05 U	0.05 U	µg/L
Endosulfan I	0.05 U	0.05 U	0.05 U	µg/L
Dieldrin	0.05 U	0.05 U	0.05 U	µg/L
4,4'-DDE	0.05 U	0.05 U	0.05 U	µg/L
Endrin	0.05 U	0.05 U	0.05 U	µg/L
Endosulfan II	0.05 U	0.05 U	0.05 U	µg/L
4,4'-DDD	0.05 U	0.05 U	0.05 U	µg/L
Endrin aldehyde	0.05 U	0.05 U	0.05 U	µg/L
Endosulfan sulfate	0.05 U	0.05 U	0.05 U	µg/L
4,4'-DDT	0.05 U	0.05 U	0.05 U	µg/L
Methoxychlor	0.05 U	0.05 U	0.05 U	µg/L
Chlordane	1 U	1 U	1 U	µg/L
Toxaphene	2 U	2 U	2 U	µg/L
PCB-1016/1242	1 U	1 U	1 U	µg/L
PCB-1221	1 U	1 U	1 U	µg/L
PCB-1232	1 U	1 U	1 U	µg/L
PCB-1248	1 U	1 U	1 U	µg/L
PCB-1254	1 U	1 U	1 U	µg/L
PCB-1260	1 U	1 U	1 U	µg/L
Surrogate:	**% RECOV**	**% RECOV**	**% RECOV**	**LIMITS**
DBC (surr)	117	108	101	32-150
2,4,5,6-TCMX (Surr)	87	67	88	52-122
Date Extracted	01/24/96	01/24/96	01/24/96	
Date Analyzed	01/25/96	01/25/96	01/25/96	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
REPORT # : JR1587
DATE REPORTED: January 26, 1996
REFERENCE : 95-448/0200

RESULTS OF ANALYSIS

EPA METHOD 8080 - PESTICIDE/PCB'S	LAB BLANK	Units
alpha-BHC	1.65 U	µg/Kg
beta-BHC	1.65 U	µg/Kg
gamma-BHC (Lindane)	1.65 U	µg/Kg
delta-BHC	1.65 U	µg/Kg
Heptachlor	1.65 U	µg/Kg
Aldrin	1.65 U	µg/Kg
Heptachlor epoxide	1.65 U	µg/Kg
Endosulfan I	1.65 U	µg/Kg
Dieldrin	1.65 U	µg/Kg
4,4'-DDE	1.65 U	µg/Kg
Endrin	1.65 U	µg/Kg
Endosulfan II	1.65 U	µg/Kg
4,4'-DDD	1.65 U	µg/Kg
Endrin aldehyde	1.65 U	µg/Kg
Endosulfan sulfate	1.65 U	µg/Kg
4,4'-DDT	1.65 U	µg/Kg
Methoxychlor	1.65 U	µg/Kg
Chlordane	33 U	µg/Kg
Toxaphene	66 U	µg/Kg
PCB-1016/1242	33 U	µg/Kg
PCB-1221	33 U	µg/Kg
PCB-1232	33 U	µg/Kg
PCB-1248	33 U	µg/Kg
PCB-1254	33 U	µg/Kg
PCB-1260	33 U	µg/Kg

Surrogate:	% RECOV	LIMITS
DBC (surr)	105	35-169
2,4,5,6-TCMX (Surr)	78	46-130
Date Extracted	01/23/96	
Date Analyzed	01/23/96	

U = Compound was analyzed for but not detected to the level shown.

QUALITY CONTROL DATA

Parameter	% RECOVERY MS/MSD/LCS	ACCEPT LIMITS	% RPD MS/MSD	ACCEPT LIMITS
EPA Method 8080 (EQ1-EQ2)				
gamma-BHC (Lindane)	82/ 96/ 74	41-133	16	24
Heptachlor	70/ 82/ 55	21-154	16	30
Aldrin	62/ 72/ 38	23-150	15	30
Endrin	90/105/ 83	38-133	15	36
4,4'-DDT	*40/ 48/ 41	46-138	18	26
EPA Method 8080 (CSS 01F thru SS 16D)				
gamma-BHC (Lindane)	136/123/120	48-118	10	21
Heptachlor	139/132/125	36-163	5	27
Aldrin	135/122/118	39-154	10	23
Endrin	159/140/134	31-181	13	27
4,4'-DDT	**158/141/133	53-143	11	24

Environmental Conservation Laboratories Comprehensive QA Plan #910190G

* = MS/MSD/LCS failed to meet established criteria; however, within method specified criteria
** = Associated value failed to meet established criteria for accuracy
< = Less Than
MS = Matrix Spike
MSD = Matrix Spike Duplicate
LCS = Laboratory Control Standard
RPD = Relative Percent Difference

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QSARF #01749

ENVIRONMENTAL CONSERVATION LABORATORIES

4810 Executive Park Court, Suite 211
Jacksonville, Florida 32216-6069
Ph. (904) 296-3007 • Fax (904) 296-6210

10207 General Drive
Orlando, Florida 32824
Ph. (407) 826-5314 • Fax (407) 850-6945

CHAIN OF CUSTODY RECORD

PROJECT REFERENCE: 95-448/0200
PROJECT NO.:
P.O. NUMBER:
PAGE 1 OF 2

PROJECT LOC. (State): FL
SAMPLER(s) NAME: L.D. DUNGAN
PHONE:
FAX:

CLIENT NAME: ECT, INC.
CLIENT PROJECT MANAGER: L. DUNOE-DUNGAN

CLIENT ADDRESS (CITY, STATE, ZIP): 4100 Cobb Parkway Dr., #112, Ft. Myers, FL 33916

☐ STANDARD REPORT DELIVERY
☒ EXPEDITED REPORT DELIVERY (surcharge)
48 HOUR
Date Due:

REQUIRED ANALYSIS: PAD

SAMPLE DATE	SAMPLE TIME	GRAB	COMP	SAMPLE IDENTIFICATION	SURFACE WATER	GROUND WATER	WASTEWATER	DRINKING WATER	SOIL/SOLID/SEDIMENT	NONAQUEOUS LIQUID	AIR	SLUDGE	OTHER	PAD								REMARKS
1/22/96	1255		✓	CSS 01F				X						1								
"	1315		✓	CSS 02F				X						1								
"	1324		✓	CSS 03F				X						1								
"	1339		✓	CSS 04F				X						1								
"	1347		✓	CSS 05F				X						1								
"	1400		✓	CSS 06F				X						1								
"	1435		✓	CSS 07F				X						1								
"	1445		✓	CSS 08F				X						1								
"	1455		✓	CSS 09F				X						1								
"	1509		✓	CSS 10F				X						1								
"	1518		✓	CSS 11F				X						1								
"	1525		✓	CSS 12F				X						1								
"	1530		✓	CSS 13F				X						1								
"	1426		✓	SS 16D				X						1								

PRESERVATIVE / NUMBER OF CONTAINERS SUBMITTED

SAMPLE KIT PREPARED BY: ☒ JACKSONVILLE ☐ ORLANDO	DATE 1-19-96	TIME 1500	RELINQUISHED BY: (SIGNATURE)	DATE 1/22/96	TIME 0850	RECEIVED BY: (SIGNATURE)	DATE	TIME
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
RECEIVED BY: (SIGNATURE)	DATE 1/22/96	TIME 1050	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

RECEIVED FOR LABORATORY BY: (SIGNATURE) ☐ Jacksonville ☐ Orlando	DATE 0850 1-23-96	TIME	CUSTODY INTACT ☐ YES ☐ NO	ENCO LOG NO. JR1587	REMARKS

QSARF # 01748

ENVIRONMENTAL CONSERVATION LABORATORIES

4810 Executive Park Court, Suite 211
Jacksonville, Florida 32216-6069
Ph. (904) 296-3007 - Fax (904) 296-6210

10207 General Drive
Orlando, Florida 32824
Ph. (407) 826-5314 - Fax (407) 850-6945

CHAIN OF CUSTODY RECORD

PROJECT REFERENCE: 95-448/0200
PROJECT NO.:
P.O. NUMBER:
PAGE 2 OF 2

PROJECT LOC. (State): FL
SAMPLER(s) NAME: L. D. DUNGAN
PHONE:
FAX:

CLIENT NAME: ECT, INC.
CLIENT PROJECT MANAGER: L. Duane Dungan

CLIENT ADDRESS (CITY, STATE, ZIP): 4100 Cantera Pointe Dr., #112, Ft. Myers, FL 33916

☐ STANDARD REPORT DELIVERY
☒ EXPEDITED REPORT DELIVERY (surcharge) 48 HOUR
Date Due:

SAMPLE STATION	DATE	TIME	GRAB	COMP	SAMPLE IDENTIFICATION	SURFACE WATER	GROUND WATER	WASTEWATER	DRINKING WATER	SOIL/SOLID/SEDIMENT	NONAQUEOUS LIQUID (specify)	AIR	SLUDGE	OTHER	VOCs								REMARKS
	1/22/96	1235		✓	SS35D					X													
	"	1353	✓		EQ-1						X												
	"	1535	✓		EQ-2						X												

PRESERVATIVE: VOCs

SAMPLE KIT PREPARED BY: ☐ JACKSONVILLE ☐ ORLANDO	DATE 1-19-96	TIME 1500	RELINQUISHED BY: (SIGNATURE)	DATE 1/22/96	TIME 0050	RECEIVED BY: (SIGNATURE)	DATE	TIME
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
RECEIVED BY: (SIGNATURE)	DATE 1/22/96	TIME 1050	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	ENCO LOG NO.	REMARKS
☒ Jacksonville ☐ Orlando	1-23-96	0850	☒ YES ☐ NO	JR 1587	

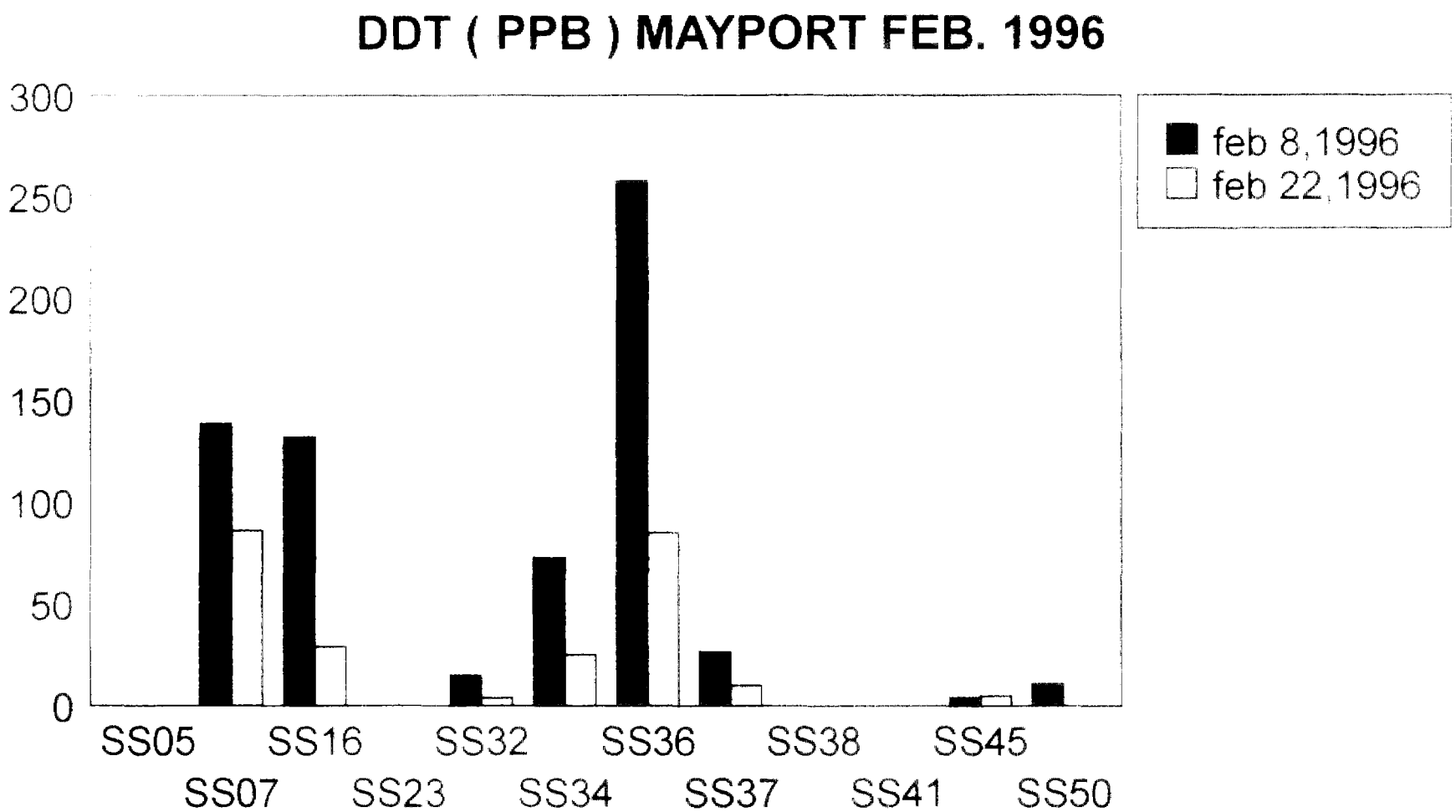
APPENDIX B

BAC-TERRA BIOAUGMENTATION

REPORT OF ANALYSES
NAVAL STATION MAYPORT, FL..
Catagory #1, Area #1, Pesticide Area, SWMU 15
Contract Number N62467-94-D-0889

February 1996 Sampling Events

BAC-TERRA DATA SHEET

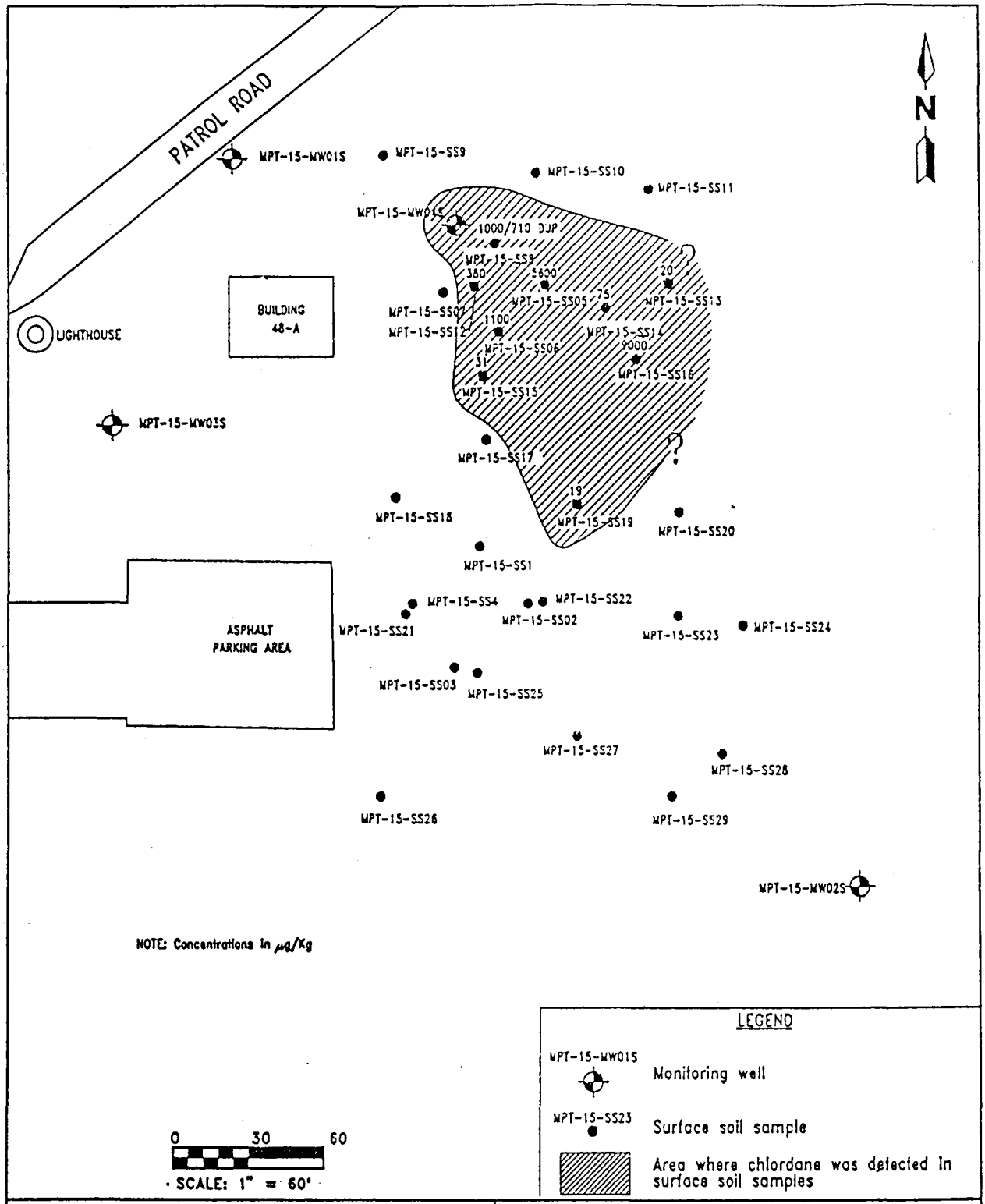


4,4'DDT (ug/kg)
BAC-TERRA FIELD TESTS
FEBRUARY 1996

	2/8/96	2/22/96
SSO5	0.00	0
SS07	138.60	86
SS16	132.00	29
SS23	0.00	0
SS32	15.18	4
SS34	72.60	25
SS36	257.40	85
SS37	26.40	10
SS38	0.00	0
SS41	0.00	0
SS45	4.29	5
SS50	10.89	0

4,4'-DDE (ug/kg)
BAC-TERRA FIELD TESTS
February 1996

	2/8/96	2/22/96
SS05	0.00	0
SS07	105.60	112
SS16	739.20	570
SS23	4.95	5
SS32	62.70	56
SS34	475.20	541
SS36	600.00	449
SS37	32.01	39
SS38	0.00	0
SS41	7.26	11
SS45	24.75	42
SS50	59.40	0



CHLORDANE CONCENTRATIONS DETECTED IN SURFACE SOIL SAMPLES AT SWMU 15

IMPLEMENTATION PLAN NELP TECHNOLOGY DEMONSTRATION

U.S. NAVAL STATION MAYPORT, FLORIDA

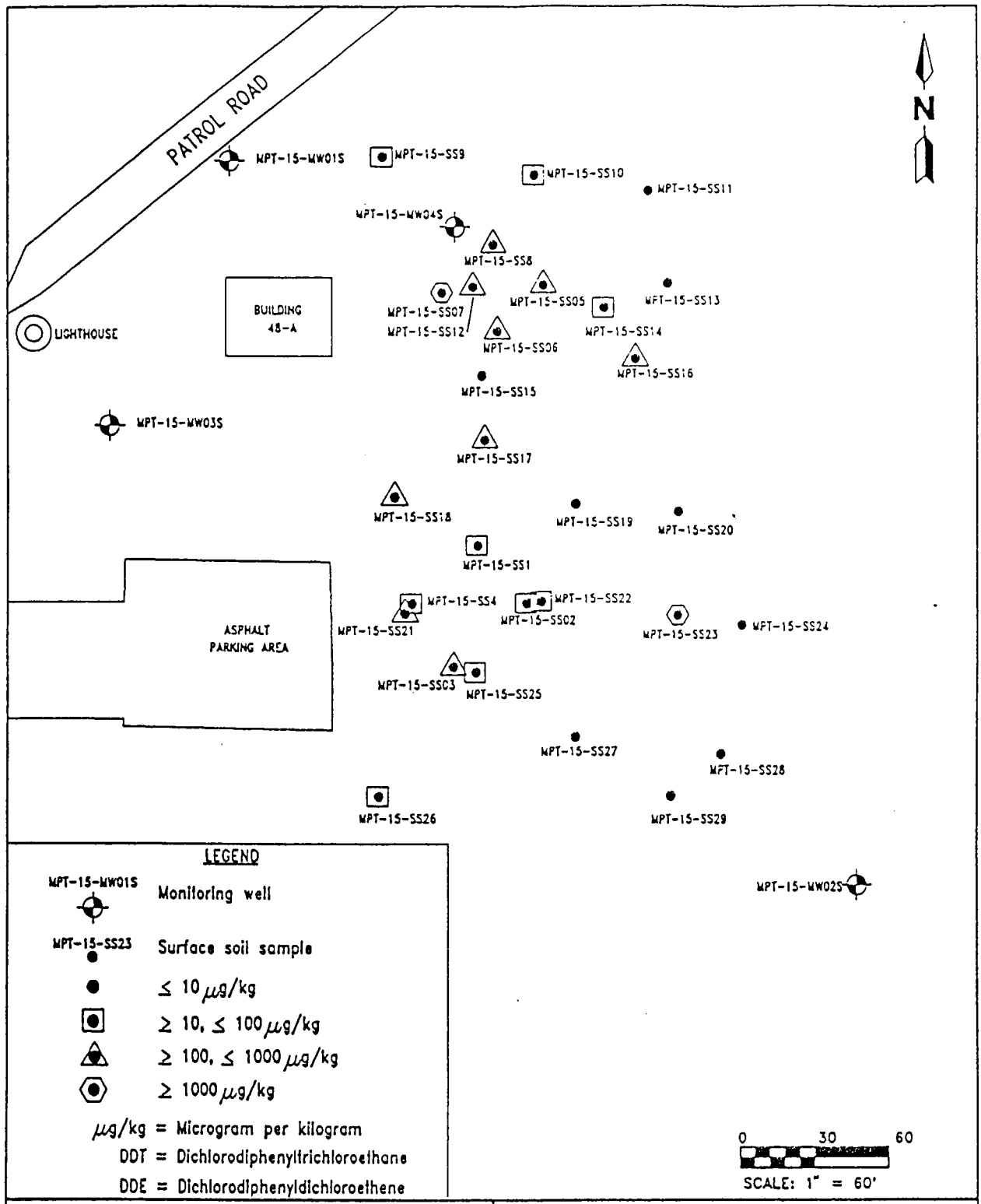


FIGURE 1-3

TOTAL 4,4-DDT AND 4,4-DDE CONCENTRATIONS DETECTED IN SURFACE SOIL SAMPLES AT SWMU 15

IMPLEMENTATION PLAN NELP TECHNOLOGY DEMONSTRATION

U.S. NAVAL STATION MAYPORT, FLORIDA

Environmental Conservation Laboratories
4810 Executive Park Court, Suite 211
Jacksonville, Florida 32216-6069
904 / 296-3007
Fax 904 / 296-6210

ENCO Laboratories

DHRS Certification No. E82277, 82417

CLIENT : Environmental Consulting & Tech
ADDRESS: 4100 Center Pointe Dr.
Suite 112
Fort Myers, FL 33916

REPORT # : JR1714
DATE SUBMITTED: February 8, 1996
DATE REPORTED : February 12, 1996

ATTENTION: Duane Dungan

SAMPLE IDENTIFICATION

Samples submitted and
identified by client as:

PROJECT #: 95-448/0200

FIFCO International

02/08/96

#1 - MPT-15-SS36 @ 11:36
#2 - MPT-15-SS07 @ 11:24
#3 - MPT-15-SS05 @ 11:14
#4 - MPT-15-SS38 @ 11:03
#5 - MPT-15-SS37 @ 11:44
#6 - MPT-15-SS16 @ 11:51
#7 - MPT-15-SS41 @ 12:01
#8 - MPT-15-SS34 @ 12:11
#9 - MPT-15-SS32 @ 12:20
#10 - MPT-15-SS23 @ 12:28
#11 - MPT-15-SS45 @ 12:36
#12 - MPT-15-SS50 @ 12:45
#13 - EQUP. BLAK @ 12:50

PROJECT MANAGER Scott D. Martin

ENCO LABORATORIES
REPORT # : JR1714
DATE REPORTED: February 12, 1996
REFERENCE : 95-448/0200
PROJECT NAME : FIFCO International

RESULTS OF ANALYSIS

EPA METHOD 8080 - PESTICIDE/PCB'S	MPT-15-SS36	MPT-15-SS07	MPT-15-SS05	Units
alpha-BHC	1.65 U	1.65 U	1.65 U	µg/Kg
beta-BHC	1.65 U	1.65 U	1.65 U	µg/Kg
gamma-BHC (Lindane)	1.65 U	1.65 U	1.65 U	µg/Kg
delta-BHC	1.65 U	1.65 U	1.65 U	µg/Kg
Heptachlor	1.65 U	1.65 U	1.65 U	µg/Kg
Aldrin	1.65 U	1.65 U	1.65 U	µg/Kg
Heptachlor epoxide	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan I	1.65 U	1.65 U	1.65 U	µg/Kg
Dieldrin	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDE	**600** D20	**105.6** D20	1.65 U	µg/Kg
Endrin	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan II	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDD	1.65 U	1.65 U	1.65 U	µg/Kg
Endrin aldehyde	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan sulfate	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDT	**257.4** D20	**138.6** D20	1.65 U	µg/Kg
Methoxychlor	1.65 U	1.65 U	1.65 U	µg/Kg
Chlordane	33 U	33 U	33 U	µg/Kg
Toxaphene	66 U	66 U	66 U	µg/Kg
PCB-1016/1242	33 U	33 U	33 U	µg/Kg
PCB-1221	33 U	33 U	33 U	µg/Kg
PCB-1232	33 U	33 U	33 U	µg/Kg
PCB-1248	33 U	33 U	33 U	µg/Kg
PCB-1254	33 U	33 U	33 U	µg/Kg
PCB-1260	33 U	33 U	33 U	µg/Kg
Surrogate:	**% RECOV**	**% RECOV**	**% RECOV**	**LIMITS**
DBC	135	122	112	35-169
2,4,5,6-TCMX	87	77	58	46-130
Date Extracted	02/09/96	02/09/96	02/09/96	
Date Analyzed	02/09/96	02/09/96	02/09/96	

D20 = Analyte value determined from a 1:20 dilution.
U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
REPORT # : JR1714
DATE REPORTED: February 12, 1996
REFERENCE : 95-448/0200
PROJECT NAME : FIFCO International

RESULTS OF ANALYSIS

EPA METHOD 8080 - PESTICIDE/PCB'S	MPT-15-SS38	MPT-15-SS37	MPT-15-SS16	Units
alpha-BHC	1.65 U	1.65 U	**12.21**	µg/Kg
beta-BHC	1.65 U	**1.98** I	**699.6** D20	µg/Kg
gamma-BHC (Lindane)	1.65 U	1.65 U	1.65 U	µg/Kg
delta-BHC	1.65 U	1.65 U	**3.3**	µg/Kg
Heptachlor	1.65 U	1.65 U	1.65 U	µg/Kg
Aldrin	1.65 U	1.65 U	1.65 U	µg/Kg
Heptachlor epoxide	1.65 U	1.65 U	**19.8**	µg/Kg
Endosulfan I	1.65 U	1.65 U	1.65 U	µg/Kg
Dieldrin	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDE	1.65 U	**32.01**	**739.2** D20	µg/Kg
Endrin	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan II	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDD	1.65 U	1.65 U	**92.4** D20	µg/Kg
Endrin aldehyde	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan sulfate	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDT	1.65 U	**26.4**	**132** D20	µg/Kg
Methoxychlor	1.65 U	1.65 U	1.65 U	µg/Kg
Chlordane	33 U	33 U	33 U	µg/Kg
Toxaphene	66 U	66 U	66 U	µg/Kg
PCB-1016/1242	33 U	33 U	33 U	µg/Kg
PCB-1221	33 U	33 U	33 U	µg/Kg
PCB-1232	33 U	33 U	33 U	µg/Kg
PCB-1248	33 U	33 U	33 U	µg/Kg
PCB-1254	33 U	33 U	33 U	µg/Kg
PCB-1260	33 U	33 U	33 U	µg/Kg
Surrogate:	**% RECOV**	**% RECOV**	**% RECOV**	**LIMITS**
DBC	114	112	137	35-169
2,4,5,6-TCMX	71	79	87	46-130
Date Extracted	02/09/96	02/09/96	02/09/96	
Date Analyzed	02/09/96	02/09/96	02/09/96	

D20 = Analyte value determined from a 1:20 dilution.
I = Analyte detected; value is between the Method Detection Level (MDL) and the Practical Quantitation Level (PQL).
U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
REPORT # : JR1714
DATE REPORTED: February 12, 1996
REFERENCE : 95-448/0200
PROJECT NAME : FIFCO International

RESULTS OF ANALYSIS

EPA METHOD 8080 - PESTICIDE/PCB'S	MPT-15-SS41	MPT-15-SS34	MPT-15-SS32	Units
alpha-BHC	1.65 U	1.65 U	1.65 U	µg/Kg
beta-BHC	1.65 U	1.65 U	1.65 U	µg/Kg
gamma-BHC (Lindane)	1.65 U	1.65 U	1.65 U	µg/Kg
delta-BHC	1.65 U	1.65 U	1.65 U	µg/Kg
Heptachlor	1.65 U	1.65 U	1.65 U	µg/Kg
Aldrin	1.65 U	1.65 U	1.65 U	µg/Kg
Heptachlor epoxide	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan I	1.65 U	1.65 U	1.65 U	µg/Kg
Dieldrin	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDE	**7.26**	**475.2** D20	**62.7** D10	µg/Kg
Endrin	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan II	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDD	1.65 U	**39.6** D20	**11.2**	µg/Kg
Endrin aldehyde	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan sulfate	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDT	1.65 U	**72.6** D20	**15.18**	µg/Kg
Methoxychlor	1.65 U	1.65 U	1.65 U	µg/Kg
Chlordane	33 U	33 U	33 U	µg/Kg
Toxaphene	66 U	66 U	66 U	µg/Kg
PCB-1016/1242	33 U	33 U	33 U	µg/Kg
PCB-1221	33 U	33 U	33 U	µg/Kg
PCB-1232	33 U	33 U	33 U	µg/Kg
PCB-1248	33 U	33 U	33 U	µg/Kg
PCB-1254	33 U	33 U	33 U	µg/Kg
PCB-1260	33 U	33 U	33 U	µg/Kg
Surrogate:	**% RECOV**	**% RECOV**	**% RECOV**	**LIMITS**
DBC	108	133	105	35-169
2,4,5,6-TCMX	72	89	80	46-130
Date Extracted	02/09/96	02/09/96	02/09/96	
Date Analyzed	02/09/96	02/09/96	02/09/96	

D10 = Analyte value determined from a 1:10 dilution.
D20 = Analyte value determined from a 1:20 dilution.
U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
REPORT # : JR1714
DATE REPORTED: February 12, 1996
REFERENCE : 95-448/0200
PROJECT NAME : FIFCO International

RESULTS OF ANALYSIS

EPA METHOD 8080 - PESTICIDE/PCB'S	MPT-15-SS23	MPT-15-SS45	MPT-15-SS50	Units
alpha-BHC	1.65 U	1.65 U	1.65 U	µg/Kg
beta-BHC	1.65 U	1.65 U	1.65 U	µg/Kg
gamma-BHC (Lindane)	1.65 U	1.65 U	1.65 U	µg/Kg
delta-BHC	1.65 U	1.65 U	1.65 U	µg/Kg
Heptachlor	1.65 U	1.65 U	1.65 U	µg/Kg
Aldrin	1.65 U	1.65 U	1.65 U	µg/Kg
Heptachlor epoxide	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan I	1.65 U	1.65 U	1.65 U	µg/Kg
Dieldrin	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDE	**4.95**	**24.75**	**59.4** D10	µg/Kg
Endrin	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan II	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDD	1.65 U	**8.9**	**11.2**	µg/Kg
Endrin aldehyde	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan sulfate	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDT	1.65 U	**4.29**	**10.89**	µg/Kg
Methoxychlor	1.65 U	1.65 U	1.65 U	µg/Kg
Chlordane	33 U	33 U	33 U	µg/Kg
Toxaphene	66 U	66 U	66 U	µg/Kg
PCB-1016/1242	33 U	33 U	33 U	µg/Kg
PCB-1221	33 U	33 U	33 U	µg/Kg
PCB-1232	33 U	33 U	33 U	µg/Kg
PCB-1248	33 U	33 U	33 U	µg/Kg
PCB-1254	33 U	33 U	33 U	µg/Kg
PCB-1260	33 U	**99**	33 U	µg/Kg
Surrogate:	**% RECOV**	**% RECOV**	**% RECOV**	**LIMITS**
DBC	85	77	123	35-169
2,4,5,6-TCMX	74	103	100	46-130
Date Extracted	02/09/96	02/09/96	02/09/96	
Date Analyzed	02/09/96	02/09/96	02/09/96	

D10 = Analyte value determined from a 1:10 dilution.
U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
REPORT # : JR1714
DATE REPORTED: February 12, 1996
REFERENCE : 95-448/0200
PROJECT NAME : FIFCO International

RESULTS OF ANALYSIS

EPA METHOD 8080 - PESTICIDE/PCB'S	LAB BLANK	Units
alpha-BHC	1.65 U	µg/Kg
beta-BHC	1.65 U	µg/Kg
gamma-BHC (Lindane)	1.65 U	µg/Kg
delta-BHC	1.65 U	µg/Kg
Heptachlor	1.65 U	µg/Kg
Aldrin	1.65 U	µg/Kg
Heptachlor epoxide	1.65 U	µg/Kg
Endosulfan I	1.65 U	µg/Kg
Dieldrin	1.65 U	µg/Kg
4,4'-DDE	1.65 U	µg/Kg
Endrin	1.65 U	µg/Kg
Endosulfan II	1.65 U	µg/Kg
4,4'-DDD	1.65 U	µg/Kg
Endrin aldehyde	1.65 U	µg/Kg
Endosulfan sulfate	1.65 U	µg/Kg
4,4'-DDT	1.65 U	µg/Kg
Methoxychlor	1.65 U	µg/Kg
Chlordane	33 U	µg/Kg
Toxaphene	66 U	µg/Kg
PCB-1016/1242	33 U	µg/Kg
PCB-1221	33 U	µg/Kg
PCB-1232	33 U	µg/Kg
PCB-1248	33 U	µg/Kg
PCB-1254	33 U	µg/Kg
PCB-1260	33 U	µg/Kg

Surrogate:	% RECOV	LIMITS
DBC	73	35-169
2,4,5,6-TCMX	55	46-130
Date Extracted	02/09/96	
Date Analyzed	02/09/96	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
REPORT # : JR1714
DATE REPORTED: February 12, 1996
REFERENCE : 95-448/0200
PROJECT NAME : FIFCO International

RESULTS OF ANALYSIS

EPA METHOD 8080 - PESTICIDE/PCB'S	EQUP. BLAK	LAB BLANK	Units
alpha-BHC	0.05 U	0.05 U	µg/L
beta-BHC	0.05 U	0.05 U	µg/L
gamma-BHC (Lindane)	0.05 U	0.05 U	µg/L
delta-BHC	0.05 U	0.05 U	µg/L
Heptachlor	0.05 U	0.05 U	µg/L
Aldrin	0.05 U	0.05 U	µg/L
Heptachlor epoxide	0.05 U	0.05 U	µg/L
Endosulfan I	0.05 U	0.05 U	µg/L
Dieldrin	0.05 U	0.05 U	µg/L
4,4'-DDE	0.05 U	0.05 U	µg/L
Endrin	0.05 U	0.05 U	µg/L
Endosulfan II	0.05 U	0.05 U	µg/L
4,4'-DDD	0.05 U	0.05 U	µg/L
Endrin aldehyde	0.05 U	0.05 U	µg/L
Endosulfan sulfate	0.05 U	0.05 U	µg/L
4,4'-DDT	0.05 U	0.05 U	µg/L
Methoxychlor	0.05 U	0.05 U	µg/L
Chlordane	1 U	1 U	µg/L
Toxaphene	2 U	2 U	µg/L
PCB-1016/1242	1 U	1 U	µg/L
PCB-1221	1 U	1 U	µg/L
PCB-1232	1 U	1 U	µg/L
PCB-1248	1 U	1 U	µg/L
PCB-1254	1 U	1 U	µg/L
PCB-1260	1 U	1 U	µg/L
Surrogate:	**% RECOV**	**% RECOV**	**LIMITS**
DBC	117	130	32-150
2,4,5,6-TCMX	116	56	52-122
Date Extracted	02/09/96	02/09/96	
Date Analyzed	02/10/96	02/10/96	

U = Compound was analyzed for but not detected to the level shown.

QUALITY CONTROL DATA

Parameter	% RECOVERY MS/MSD/LCS	ACCEPT LIMITS	% RPD MS/MSD	ACCEPT LIMITS
EPA Method 8080 (EQUP.BLANK)				
gamma-BHC (Lindane)	117/116/115	41-133	<1	24
Heptachlor	109/108/103	21-154	<1	30
Aldrin	104/102/ 82	23-150	2	30
Endrin	114/118/132	38-133	3	36
4,4'-DDT	92/ 78/ 86	46-138	16	26
EPA Method 8080 (MPT-15-55-36 thru MPT-15-55-50)				
gamma-BHC (Lindane)	99/ 91/ 84	48-118	8	21
Heptachlor	99/ 91/ 83	36-163	8	27
Aldrin	91/ 84/ 73	39-154	8	23
Endrin	113/104/101	31-181	8	27
4,4'-DDT	108/ 97/136	53-143	11	24

Environmental Conservation Laboratories Comprehensive QA Plan #910190G

< = Less Than
MS = Matrix Spike
MSD = Matrix Spike Duplicate
LCS = Laboratory Control Standard
RPD = Relative Percent Difference

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QSARF #_____

ENVIRONMENTAL CONSERVATION LABORATORIES

4810 Executive Park Court, Suite 211
Jacksonville, Florida 32216-6069
Ph. (904) 296-3007 · Fax (904) 296-6210

10207 General Drive
Orlando, Florida 32824
Ph. (407) 826-5314 · Fax (407) 850-6945

CHAIN OF CUSTODY RECORD

PROJECT REFERENCE: 95-448/0200
PROJECT NO.:
P.O. NUMBER:
PAGE 1 OF 1

PROJECT LOC. (State): FL.
SAMPLER(s) NAME: PATRICK J. GRIFFIN
PH: 904-247-6666
FAX: 904-247-9955

CLIENT NAME: HFCO INTERNATIONAL
CLIENT PROJECT MANAGER: P. J. Griffin
CLIENT ADDRESS (CITY, STATE, ZIP): ENVIRONMENTAL CONSULTING + TECHNOLOGY INC

☐ STANDARD REPORT DELIVERY
☒ EXPEDITED REPORT DELIVERY (surcharge)
Date Due: 48 Hour

SAMPLE STATION	DATE	TIME	GRAB	COMP	SAMPLE IDENTIFICATION	SURFACE WATER	GROUND WATER	WASTEWATER	DRINKING WATER	SOIL/SOLID/SEDIMENT	NONAQUEOUS LIQUID (oil, solvent, etc.)	AIR	SLUDGE	OTHER		EPA 8080							REMARKS
-15-SS36	2-8-96	11:36		✓						X						1							SOIL
-15-SS07	2-8-96	11:24		✓						X						1							SOIL
-15-SS05	2-8-96	11:14		✓						X						1							SOIL
-15-SS38	2-8-96	11:03		✓						X						1							SOIL
-15-SS37	2-8-96	11:44		✓						X						1							SOIL
-15-SS16	2-8-96	11:51		✓						X						1							SOIL
-15-SS41	2-8-96	12:01		✓						X						1							SOIL
-15-SS34	2-8-96	12:11		✓						X						1							SOIL
-15-SS32	2-8-96	12:20		✓						X						1							SOIL
-15-SS23	2-8-96	12:28		✓						X						1							SOIL
-15-SS45	2-8-96	12:36		✓						X						1							SOIL
-15-SS50	2-8-96	12:45		✓						X						1							SOIL
EQUIP. BLK	2-8-96	12:50	✓											X		1							AQUEOUS

SAMPLE KIT PREPARED BY: ☐JACKSONVILLE ☐ORLANDO	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
RECEIVED BY (SIGNATURE): P. J. Griffin	DATE: 2-7-96	TIME: 16:30	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	ENCO LOG NO.	REMARKS
☒ Jacksonville ☐ Orlando	2-8-96	1410	☐ YES ☐ NO	JR 1714	

Environmental Conservation Laboratories
4810 Executive Park Court, Suite 211
Jacksonville, Florida 32216-6069
904 / 296-3007
Fax 904 / 296-6210

ENCO Laboratories

DHRS Certification No. E82277, 82417

CLIENT : Environmental Consulting & Tech
ADDRESS: 4100 Center Pointe Dr.
Suite 112
Fort Myers, FL 33916

REPORT # : JR1865
DATE SUBMITTED: February 22, 1996
DATE REPORTED : February 26, 1996

ATTENTION: Duane Dungan

SAMPLE IDENTIFICATION

Samples submitted and
identified by client as:

PROJECT #: 95-448/0200

02/22/96

#1 - MPT-15-SS36 @ 12:08
#2 - MPT-15-SS07 @ 12:14
#3 - MPT-15-SS05 @ 12:20
#4 - MPT-15-SS38 @ 12:27
#5 - MPT-15-SS37 @ 12:38
#6 - MPT-15-SS16 @ 12:45
#7 - MPT-15-SS41 @ 12:50
#8 - MPT-15-SS34 @ 13:13
#9 - MPT-15-SS32 @ 13:21
#10 - MPT-15-SS23 @ 13:27
#11 - MPT-15-SS45 @ 13:33
#12 - MPT-15-SS50 @ 13:05
#13 - EQ-1 @ 12:03
#14 - EQ-2 @ 13:45

PROJECT MANAGER Scott D. Martin

ENCO LABORATORIES
REPORT # : JR1865
DATE REPORTED: February 26, 1996
REFERENCE : 95-448/0200

RESULTS OF ANALYSIS

EPA METHOD 8080 - PESTICIDE/PCB'S	MPT-15-8836	MPT-15-8807	MPT-15-8805	Units
alpha-BHC	1.65 U	1.65 U	1.65 U	µg/Kg
beta-BHC	1.65 U	1.65 U	1.65 U	µg/Kg
gamma-BHC (Lindane)	1.65 U	1.65 U	1.65 U	µg/Kg
delta-BHC	1.65 U	1.65 U	1.65 U	µg/Kg
Heptachlor	1.65 U	4.29 I	1.65 U	µg/Kg
Aldrin	1.65 U	1.65 U	1.65 U	µg/Kg
Heptachlor epoxide	1.65 U	59.4	1.65 U	µg/Kg
Endosulfan I	1.65 U	1.65 U	1.65 U	µg/Kg
Dieldrin	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDE	449 D20	112 D20	1.65 U	µg/Kg
Endrin	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan II	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDD	1.65 U	1.65 U	1.65 U	µg/Kg
Endrin aldehyde	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan sulfate	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDT	85 D20	86 D20	1.65 U	µg/Kg
Methoxychlor	1.65 U	1.65 U	1.65 U	µg/Kg
Chlordane (Total)	33 U	33 U	33 U	µg/Kg
Toxaphene	66 U	66 U	66 U	µg/Kg
PCB-1016/1242	33 U	33 U	33 U	µg/Kg
PCB-1221	33 U	33 U	33 U	µg/Kg
PCB-1232	33 U	33 U	33 U	µg/Kg
PCB-1248	33 U	33 U	33 U	µg/Kg
PCB-1254	33 U	33 U	33 U	µg/Kg
PCB-1260	33 U	33 U	33 U	µg/Kg
Surrogate:	**% RECOV**	**% RECOV**	**% RECOV**	**LIMITS**
DBC	146	128	129	35-169
2,4,5,6-TCMX	94	85	65	46-130
Date Extracted	02/23/96	02/23/96	02/23/96	
Date Analyzed	02/23/96	02/23/96	02/23/96	

D20 = Analyte value determined from a 1:20 dilution.
I = Analyte detected; value is between the Method Detection Level (MDL) and the Practical Quantitation Level (PQL).
U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
REPORT # : JR1865
DATE REPORTED: February 26, 1996
REFERENCE : 95-448/0200

RESULTS OF ANALYSIS

EPA METHOD 8080 - PESTICIDE/PCB'S	MPT-15-8838	MPT-15-8837	MPT-15-8816	Units
alpha-BHC	1.65 U	1.65 U	28.05	µg/Kg
beta-BHC	1.65 U	1.65 U	772.2 D20	µg/Kg
gamma-BHC (Lindane)	1.65 U	1.65 U	1.65 U	µg/Kg
delta-BHC	1.65 U	1.65 U	4.62	µg/Kg
Heptachlor	1.65 U	1.65 U	1.65 U	µg/Kg
Aldrin	1.65 U	1.65 U	1.65 U	µg/Kg
Heptachlor epoxide	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan I	1.65 U	1.65 U	1.65 U	µg/Kg
Dieldrin	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDE	1.65 U	39	570 D20	µg/Kg
Endrin	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan II	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDD	1.65 U	12	114 D20	µg/Kg
Endrin aldehyde	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan sulfate	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDT	1.65 U	10	29	µg/Kg
Methoxychlor	1.65 U	1.65 U	1.65 U	µg/Kg
Chlordane (Total)	33 U	33 U	33 U	µg/Kg
Toxaphene	66 U	66 U	66 U	µg/Kg
PCB-1016/1242	33 U	33 U	33 U	µg/Kg
PCB-1221	33 U	33 U	33 U	µg/Kg
PCB-1232	33 U	33 U	33 U	µg/Kg
PCB-1248	33 U	33 U	33 U	µg/Kg
PCB-1254	33 U	33 U	33 U	µg/Kg
PCB-1260	33 U	33 U	33 U	µg/Kg
Surrogate:	**% RECOV**	**% RECOV**	**% RECOV**	**LIMITS**
DBC	128	129	*	35-169
2,4,5,6-TCMX	62	103	74	46-130
Date Extracted	02/23/96	02/23/96	02/23/96	
Date Analyzed	02/23/96	02/23/96	02/24/96	

* = Surrogate recovery unavailable due to matrix interference
D20 = Analyte value determined from a 1:20 dilution.
U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
REPORT # : JR1865
DATE REPORTED: February 26, 1996
REFERENCE : 95-448/0200

RESULTS OF ANALYSIS

EPA METHOD 8080 - PESTICIDE/PCB'S	MPT-15-8841	MPT-15-8834	MPT-15-8832	Units
alpha-BHC	1.65 U	1.65 U	1.65 U	µg/Kg
beta-BHC	1.65 U	1.65 U	1.65 U	µg/Kg
gamma-BHC (Lindane)	1.65 U	1.65 U	1.65 U	µg/Kg
delta-BHC	1.65 U	1.65 U	1.65 U	µg/Kg
Heptachlor	1.65 U	1.65 U	1.65 U	µg/Kg
Aldrin	1.65 U	1.65 U	1.65 U	µg/Kg
Heptachlor epoxide	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan I	1.65 U	1.65 U	1.65 U	µg/Kg
Dieldrin	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDE	11	541 D20	56 D10	µg/Kg
Endrin	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan II	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDD	1.65 U	40 D20	14	µg/Kg
Endrin aldehyde	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan sulfate	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDT	1.65 U	25	4	µg/Kg
Methoxychlor	1.65 U	1.65 U	1.65 U	µg/Kg
Chlordane (Total)	33 U	33 U	33 U	µg/Kg
Toxaphene	66 U	66 U	66 U	µg/Kg
PCB-1016/1242	33 U	33 U	33 U	µg/Kg
PCB-1221	33 U	33 U	33 U	µg/Kg
PCB-1232	33 U	33 U	33 U	µg/Kg
PCB-1248	33 U	33 U	33 U	µg/Kg
PCB-1254	33 U	33 U	33 U	µg/Kg
PCB-1260	33 U	33 U	33 U	µg/Kg
Surrogate:	**% RECOV**	**% RECOV**	**% RECOV**	**LIMITS**
DBC	121	140	110	35-169
2,4,5,6-TCMX	127	94	79	46-130
Date Extracted	02/23/96	02/23/96	02/23/96	
Date Analyzed	02/24/96	02/24/96	02/24/96	

D10 = Analyte value determined from a 1:10 dilution.
D20 = Analyte value determined from a 1:20 dilution.
U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
REPORT # : JR1865
DATE REPORTED: February 26, 1996
REFERENCE : 95-448/0200

RESULTS OF ANALYSIS

EPA METHOD 8080 - PESTICIDE/PCB'S	MPT-15-SS23	MPT-15-SS45	MPT-15-SS50	Units
alpha-BHC	1.65 U	1.65 U	1.65 U	µg/Kg
beta-BHC	1.65 U	1.65 U	1.65 U	µg/Kg
gamma-BHC (Lindane)	1.65 U	1.65 U	1.65 U	µg/Kg
delta-BHC	1.65 U	1.65 U	1.65 U	µg/Kg
Heptachlor	1.65 U	1.65 U	1.65 U	µg/Kg
Aldrin	1.65 U	1.65 U	1.65 U	µg/Kg
Heptachlor epoxide	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan I	1.65 U	1.65 U	1.65 U	µg/Kg
Dieldrin	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDE	5	42	1.65 U	µg/Kg
Endrin	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan II	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDD	1.65 U	8	1.65 U	µg/Kg
Endrin aldehyde	1.65 U	1.65 U	1.65 U	µg/Kg
Endosulfan sulfate	1.65 U	1.65 U	1.65 U	µg/Kg
4,4'-DDT	1.65 U	5	1.65 U	µg/Kg
Methoxychlor	1.65 U	1.65 U	1.65 U	µg/Kg
Chlordane (Total)	33 U	33 U	33 U	µg/Kg
Toxaphene	66 U	66 U	66 U	µg/Kg
PCB-1016/1242	33 U	33 U	33 U	µg/Kg
PCB-1221	33 U	33 U	33 U	µg/Kg
PCB-1232	33 U	33 U	33 U	µg/Kg
PCB-1248	33 U	33 U	33 U	µg/Kg
PCB-1254	33 U	33 U	33 U	µg/Kg
PCB-1260	33 U	33 U	33 U	µg/Kg
Surrogate:	**% RECOV**	**% RECOV**	**% RECOV**	**LIMITS**
DBC	115	110	113	35-169
2,4,5,6-TCMX	91	91	87	46-130
Date Extracted	02/23/96	02/23/96	02/23/96	
Date Analyzed	02/24/96	02/24/96	02/24/96	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
REPORT # : JR1865
DATE REPORTED: February 26, 1996
REFERENCE : 95-448/0200

RESULTS OF ANALYSIS

EPA METHOD 8080 - PESTICIDE/PCB'S	EQ-1	EQ-2	LAB BLANK	Units
alpha-BHC	0.05 U	0.05 U	0.05 U	µg/L
beta-BHC	0.05 U	0.05 U	0.05 U	µg/L
gamma-BHC (Lindane)	0.05 U	0.05 U	0.05 U	µg/L
delta-BHC	0.05 U	0.05 U	0.05 U	µg/L
Heptachlor	0.05 U	0.05 U	0.05 U	µg/L
Aldrin	0.05 U	0.05 U	0.05 U	µg/L
Heptachlor epoxide	0.05 U	0.05 U	0.05 U	µg/L
Endosulfan I	0.05 U	0.05 U	0.05 U	µg/L
Dieldrin	0.05 U	0.05 U	0.05 U	µg/L
4,4'-DDE	0.05 U	0.05 U	0.05 U	µg/L
Endrin	0.05 U	0.05 U	0.05 U	µg/L
Endosulfan II	0.05 U	0.05 U	0.05 U	µg/L
4,4'-DDD	0.05 U	0.05 U	0.05 U	µg/L
Endrin aldehyde	0.05 U	0.05 U	0.05 U	µg/L
Endosulfan sulfate	0.05 U	0.05 U	0.05 U	µg/L
4,4'-DDT	0.05 U	0.05 U	0.05 U	µg/L
Methoxychlor	0.05 U	0.05 U	0.05 U	µg/L
Chlordane (Total)	1 U	1 U	1 U	µg/L
Toxaphene	2 U	2 U	2 U	µg/L
PCB-1016/1242	1 U	1 U	1 U	µg/L
PCB-1221	1 U	1 U	1 U	µg/L
PCB-1232	1 U	1 U	1 U	µg/L
PCB-1248	1 U	1 U	1 U	µg/L
PCB-1254	1 U	1 U	1 U	µg/L
PCB-1260	1 U	1 U	1 U	µg/L
Surrogate:	**% RECOV**	**% RECOV**	**% RECOV**	**LIMITS**
DBC	119	118	115	32-150
2,4,5,6-TCMX	101	123	134	52-122
Date Extracted	02/23/96	02/23/96	02/23/96	
Date Analyzed	02/24/96	02/24/96	02/24/96	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
REPORT # : JR1865
DATE REPORTED: February 26, 1996
REFERENCE : 95-448/0200

RESULTS OF ANALYSIS

EPA METHOD 8080 - PESTICIDE/PCB'S	LAB BLANK	Units
alpha-BHC	1.65 U	µg/Kg
beta-BHC	1.65 U	µg/Kg
gamma-BHC (Lindane)	1.65 U	µg/Kg
delta-BHC	1.65 U	µg/Kg
Heptachlor	1.65 U	µg/Kg
Aldrin	1.65 U	µg/Kg
Heptachlor epoxide	1.65 U	µg/Kg
Endosulfan I	1.65 U	µg/Kg
Dieldrin	1.65 U	µg/Kg
4,4'-DDE	1.65 U	µg/Kg
Endrin	1.65 U	µg/Kg
Endosulfan II	1.65 U	µg/Kg
4,4'-DDD	1.65 U	µg/Kg
Endrin aldehyde	1.65 U	µg/Kg
Endosulfan sulfate	1.65 U	µg/Kg
4,4'-DDT	1.65 U	µg/Kg
Methoxychlor	1.65 U	µg/Kg
Chlordane (Total)	33 U	µg/Kg
Toxaphene	66 U	µg/Kg
PCB-1016/1242	33 U	µg/Kg
PCB-1221	33 U	µg/Kg
PCB-1232	33 U	µg/Kg
PCB-1248	33 U	µg/Kg
PCB-1254	33 U	µg/Kg
PCB-1260	33 U	µg/Kg

Surrogate:	% RECOV	LIMITS
DBC	106	35-169
2,4,5,6-TCMX	58	46-130
Date Extracted	02/23/96	
Date Analyzed	02/23/96	

U = Compound was analyzed for but not detected to the level shown.

QUALITY CONTROL DATA

Parameter	% RECOVERY MS/MSD/LCS	ACCEPT LIMITS	% RPD MS/MSD	ACCEPT LIMITS
EPA Method 8080 (EQ-1, EQ-2)				
gamma-BHC (Lindane)	103/ 99/ 86	41-133	4	24
Heptachlor	89/ 82/ 67	21-154	8	30
Aldrin	89/ 88/ 74	23-150	1	30
Endrin	94/ 90/ 81	38-133	4	36
4,4'-DDT	53/ 50/ 41	46-138	6	26
EPA Method 8080 (MPT-15-SS36 thru MPT-15-SS50)				
gamma-BHC (Lindane)	88/ 90/ 78	48-118	2	21
Heptachlor	89/ 90/ 80	36-163	1	27
Aldrin	83/ 85/ 73	39-154	2	23
Endrin	98/101/ 90	31-181	3	27
4,4'-DDT	98/118/ 86	53-143	18	24

Environmental Conservation Laboratories Comprehensive QA Plan #910190G

MS = Matrix Spike
MSD = Matrix Spike Duplicate
LCS = Laboratory Control Standard
RPD = Relative Percent Difference

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QSARF #_____

ENVIRONMENTAL CONSERVATION LABORATORIES

4810 Executive Park Court, Suite 211
Jacksonville, Florida 32216-6069
Ph. (904) 296-3007 · Fax (904) 296-6210

10207 General Drive
Orlando, Florida 32824
Ph. (407) 826-5314 · Fax (407) 850-6945

CHAIN OF CUSTODY RECORD

PROJECT REFERENCE	PROJECT NO.	P.O. NUMBER
	95-448/0200	

PAGE 1 OF 1

PROJECT LOC. (State)	SAMPLER(s) NAME	PHONE / FAX
FL	L.D. DUNGAN	PHONE 277-0003 FAX 904-277-1211

CLIENT NAME	CLIENT PROJECT MANAGER
ECT	L.D. DUNGAN

CLIENT ADDRESS (CITY, STATE, ZIP): 4100 CENTER POINTE DR., #112, FT. MYERS, FL 33916

☐ STANDARD REPORT DELIVERY

☒ EXPEDITED REPORT DELIVERY (surcharge) 48 HOURS

Date Due:

SAMPLE STATION	DATE	TIME	GRAB	COMP	SAMPLE IDENTIFICATION	SURFACE WATER	GROUND WATER	WASTEWATER	DRINKING WATER	SOIL/SOLID/SEDIMENT	NONAQUEOUS LIQUID (oil, solvent, etc.)	AIR	SLUDGE	OTHER	8080								REMARKS
	2/22/96	1208		✓	MPT-15-SS36					✓					1								
	"	1214		✓	MPT-15-SS07					✓					1								
	"	1220		✓	MPT-15-SS05					✓					1								
	"	1227		✓	MPT-15-SS38					✓					1								
	"	1238		✓	MPT-15-SS37					✓					1								
	"	1245		✓	MPT-15-SS16					✓					1								
	"	1250		✓	MPT-15-SS41					✓					1								
	"	1313		✓	MPT-15-SS34					✓					1								
	"	1321		✓	MPT-15-SS32					✓					1								
	"	1327		✓	MPT-15-SS23					✓					1								
	"	1333		✓	MPT-15-SS45					✓					1								P- 247-6666
	"	1305		✓	MPT-15-SS50					✓					1								F- 9955
	"	1203	✓		EQ-1		✓								1								F- Days Inn
	"	1345	✓		EQ-2		✓								1								249-5050

SAMPLE KIT PREPARED BY: ☐JACKSONVILLE ☐ORLANDO	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
			[signature]	2/22/96	11:19			
RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
			[signature]	2/22/96	1119			
RECEIVED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
[signature]	2/22/96	15:40	[signature]	2/22/96	1505			

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	ENCO LOG NO.	REMARKS
[signature] ☒ Jacksonville ☐ Orlando	2-22-96	1505	☐ YES ☐ NO		COC NOT SIGNED OUT BY ENCO.

APPENDIX C

BAC-TERRA BIOAUGMENTATION

REPORT OF FIFCO DAILY LOG
NAVAL STATION MAYPORT, FL.
Catagory #1, Area #1, Pesticide Area, SWMU 15
Contract Number N62467-94-D-0889

18 December 1995 - 5 March 1996

DECEMBER 18, 1995

TEMP 81°F WARM

ARRIVED AT MAYPORT WITH PROGRAM MANAGER (JOHN BULLINGTON), PROJECT MGR (KEN OFTEDAL), FIELD TECH (PATRICK GRIFFEN), FIELD TECH (BILL EDWARDS) REPRESENTING FIRO, PRIME CONTRACTOR. SUB-CONTRACTOR, ENVIRONMENTAL CONSULTING AND TECHNOLOGY, INC., REPRESENTED BY PROJECT GEOLOGIST (DUANE DUNGAN), PROJECT ENGINEER (JOHN EDWARDS) AND INDUSTRIAL HYGIENIST (MIKE LUSTER).

ALL OF THE ABOVE MET WITH NAVSTA MAYPORT CIVIL ENGINEER MIKE DAVENPORT FOR PRE-START-UP MEETING AT 11:30 A.M. MIKE IS THE SUPERVISOR FOR NAVAL STATION MAYPORT ENV. ENG. DEPARTMENT + FOR OUR MAYPORT CONTACT CHERYL MITCHELL. AFTER THIS MEETING, WE ALL WENT TO SITE AND AS REVIEW OF THE SITE WAS ESSENTIAL BEFORE BUILDUP. OUR INITIAL HEATH + SAFETY MEETING WAS HELD BY OUR INDUSTRIAL HYGIENIST, MIKE LUSTER. ALL HEALTH + SAFETY ISSUES WERE DISCUSSED AND PAT GRIFFIN WAS NAMED LOCAL HEATH + SAFETY OFFICER. ABB REP. INDICATED THAT MUCH OF CONTAMINATED AREA WAS OUTSIDE ORIGINAL

Dec 19, 1995

TEMP 55°F CLOUDY, COOL

HAROLD McGILL of So. DIV NAVFAC ENG COM. FAXED CHANGE ORDER TO MIKE DAVENPORT TO FIFCO AT NAVSTA MAYPORT + MAILED ORIGINAL TO FIFCO CORPORATE OFFICES IN CALIF. ORDER WAS TO MOVE TREATMENT ZONE 20 FEET EAST + 20 FEET NORTH FROM THE CURRENT LOCATION. AFTER MEETINGS WITH RAY CORBIN AT NAVSTA MAYPORT AREA OF SAFE ZONE DECON ZONE WAS CHANGED FROM SIZE IN RAP TO USE LESS SPACE. REVISED DRAWINGS FOR APPLICATION TANKS. APPLICATION SUPPLIES BOUGHT + MOVED TO MOBILE OFFICE AT SITE. STORAGE TANKS ARRIVE TO SITE. 1,000 POUNDS OF BAC-TERRA BR-650 ARRIVE AT SITE + ARE STORED IN LOCKED STORAGE AREA.

DEC 20, 1995

TEMP 40°F, COLD, CLOUDY

SITE MEETING WITH FIFCO PERSONNEL, KEN OFTEDAY, PAT GRIFFIN AND BILL EDWARDS. RECEIVED SOME OF APPLICATION SYSTEM EQUIPMENT SENT BY COURIER + DELIVERED TO SITE. MORE SUPPLIES ORDERED LOCALLY FOR SYSTEM.

MIKE DAVENPORT ENV. ENG NAVSTA MAYPORT MAKES CHANGE ORDER FORMAL FOR HAROLD MCGILL.

JOHN BULLINGTON + KEN OFTEDAL OF FIFCO MET WITH MIKE DAVENPORT REGARDING TREES NOW IN TREATMENT AREA, WHICH WILL INTERFER WITH APPLICATION SYSTEM EFFICIENCY. HE STATED TO MARK TREES AND THEY WOULD BE CUT DOWN ASAP. WE PLACED 25 lbs. of BAC-TERRA BR-650 IN EACH of APPLICATION TANKS MARKED I + II, FOR A TOTAL of 50 lbs. TO STEEP.

DEC 21, 1995
TEMP 38°F COLD, CLOUDY

EXACT LOCATION OF TEST SITE DETERMINED AT LAID OUT BY FIFCO PERSONNEL. CORNER STAKES LAID OUT + SITE BEGINS TO BE CLEARED OF EXCESS GRASS. GENERATOR IS DELIVERED TO SITE. FENCE + TREE REMOVAL PEOPLE FOR NAVSTA MAYPORT CONTRACTOR COLETON VISIT SITE. FROM COLETON ROSS BONNELL, R.L. HICKS, BILL HUGHES, JOHN McGLOTHLIN.
ABB-ES REP. SRIN KUCHIBOTA, ARRIVES AT SITE AND OBSERVES SET UP OF SITE APPLICATION EQUIP. + HAZ MAT FENCING, + SITE PREPARATION.

DEC 22, 1995

TEMP 45°F COLD, CLOUDY

FINISHED SITE PREPRATION + BEGAN PIPE ASSEMBLY FOR EXCLUSIONARY ZONE TO HOOK UP TO DELIVERY SYSTEM FROM TANKS THROUGH 3HP PUMP, FLOW REGULATOR, FILTER AT PRESSURE REGULATOR. REPS FROM NAVSTA MAYPORT AT SITE WERE MIKE DAVENPORT JOHN HOMA + SCOTT CAPUANO. REPS FROM COLETON AT SITE WERE BILL HUGHES, JOHN Mc GLOTHLIN, ROSS BONNELL, DARYL ALLEN, BRUCE JOHNSON + ROBERT MOLINE. REP FROM ABB-ES AT SITE WAS SRIN KUCHIBOTA WHO OBSERVED + RECORDED FIFCO ACTIVITIES. FENCE CONTRUCTION COMPLETED + TREES REMOVED. WE STATED TO ABB + MIKE DAVENPORT THAT SOME of ABB INITIAL SAMPLE SITES WERE OUTSIDE OUR TREATMENT AREA. WE CONTACTED OUR SUB-CONTRACTOR (ECT) ENVIRONMENTAL CONSULTING + TECHNOLOGY REG. GEOLOGIST DUANE DUNGAN TO COME AND TAKES SAMPLES AT EXACTLY THE SAME LOCATION AS ABB. DECON BARRELS ARRIVE TO SITE.

DEC 23, 1995

TEMP. 45° COLD, CLOUDY

FIFCO CONTINUES ASSEMBLING PIPE + GRIDWORK AT SITE.

DEC 24, 1995

SUNDAY, NO WORK

DEC 25, 1995

CHRISTMAS DAY

PAID HOLIDAY

NO WORK

DEC 26, 1995

TEMP 43°F CLEAR, COLD

CONTINUED TO ASSEMBLE APPLICATION SYSTEM (PIPE + DRIP SYSTEM). ACTIVITIES OBSERVED AND RECORDED BY OVERSIGHT CONTRACTOR, ABB-ES, REP. SRIN KUCHIBOTA. BELL SOUTH ARRIVES TO BEGIN TELEPHONE WIRING FOR WORK TRAILER. FIFCO ADVISED ABB REP + NAVSTA MAYPORT THAT ECT, DUANE DUNGAN, WILL BE TAKING SAMPLES USING ABB + FIFCO AGREED SAMPLING PROTOCOL FROM SAME LOCATIONS AS PREVIOUS ABB SAMPLES. LOCATIONS SS23 (0-1'), SS23 (4½'), SS31 (0-1'), SS 32 (0-1'), SS 33 (0-1'), SS 34 (0-1'), SS 35 (0-1') (OUTSIDE TREATMENT AREA APPROXIMATELY 10') + SS 16 (0-1') SS 33 + SS 35 ARE OUTSIDE TREATMENT AREA, BUT WERE PREVIOUSLY SAMPLED BY ABB-ES PERSONNEL. THIS SAMPLING BEGINS AT 3:21 PM + CONCLUDES AT 5:05 PM. SAMPLES ARE PLACED ON ICE AND IMMEDIATELY TRANSPORTED TO ENCO LABS (ENVIRONMENTAL CONSERATION LABORATORIES, INC. ~~[illegible]~~ 4810 EXECUTIVE PARK COURT, SUITE 211 JACKSONVILLE, FLA. 32216-6069) FOR ANALYSIS USING EPA 8080 FOR

IS REQUESTED WITH PRIMARY ANALYSIS TO BE FOR THE CONTAMINANTS OF PRIMARY CONERN BEING, 4,4 DDT ; 4,4,DDE + CHLORDANE.

ABB REP, SRIN KUCHIBOTA OBSERVED, PHOTOGRAPHED AND NOTED ALL DECON + SAMPLING PROCEDURES.

HELD WEEKLY H+S MEETING

DEC 27, 1995

TEMP 50°F CLEAR, COLD

FIFCO CONTINUES CONSTRUCTION OF BAC-TERRA BR-650 APPLICATION SYSTEM. MORE DRIP PIPE IS LAID AS WELL AS PVC IRRIGATION PIPE. PLACED ADDITIONAL 50 lbs BAC-TERRA BR-650 IN EACH of TANKS, I+II, FOR A TOTAL of 100 lbs BR-650 TODAY

DEC 28, 1995

TEMP 35°F CLOUDY, COLD

FIFCO FINISHED APPLICATION SYSTEM LAY-OUT & CONSTRUCTION IN TREATMENT AREA. BEGAN WORK ON DRIP SYSTEM + PVC SYSTEM TO PUMP.

ABB-ES REP. SRIN KUCHIBOTLA OBSERVES AND DOCUMENTS FIFCO ACTIVITIES.

DEC 29, 1995

TEMP 50°F COLD

FIFCO COMPLETES REMAINING PLUMBING FROM TANKS, I, II + III TO MANIFOLDS, PUMP, FILTER, REGULATOR AND VALVES.

DEC 30, 1995

SATURDAY
NO WORK

Dec 31, 1995

Sunday
No Work

JAN. 1, 1996

NEW YEARS DAY
PAID HOLIDAY
NO WORK

JAN 2, 1996

TEMP 72°F, CLOUDY, WARM, HEAVY RAIN

BELL SOUTH COMPLETES HOOK-UP of FAX (904-247-9955) AND PHONE (904-247-6666) AT SITE TRAILER. HELD WEEKLY H+S MEETING. THOSE PRESENT INCLUDE ALL FIFCO PERSONNEL ON SITE, JOHN BULLINGTON, PAT GRIFFIN + BILL EDWARDS. CHANGED + REMOVED PREVIOUS BR-650 FROM TANKS I+II, ADDED 50 lbs. NEW BR-650 TO EACH TANK (I+II)
FIFCO MARKED OUT LOCATIONS FROM RAP (CSS01F - CSS12F) TO CORRESPOND WITH SAME LOCATION IN REVISED TREATMENT AREA. ABB-ES REP SRIN KUCHIBOTA PRESENT FOR OBSERVATION of FIFCO ACTIVITIES. DUE TO HARD RAIN + LIGHTNING IN THE AFTERNOON, SAMPLING BY DUANE DUNGAN WAS POSTPONED UNTIL JAN 3, 1996. JOHN EDWARDS, P.E., FROM ECT TOOK MEASUREMENTS FOR AS-BUILT DRAWINGS, NOTING MODIFICATIONS RESULTING FROM SITE SPECIFIC VARIATIONS FROM 8/85 FIFCO REVISED RAP.

JAN 3, 1996

TEMP 56°F COLD & WINDY

FIFCO FINISHED LAYING PVC PIPE APPLICATION SYSTEM. ALSO FINISHED DRIP SYSTEM TACK DOWN. JOHN EDWARDS, P.E. (ECT) FINISHED MEASUREMENT for AS-BUILT DRAWINGS. DUANE DUNGAN, R.G. (ECT) TAKES SAMPLES WITH HELP of PAT GRIFFIN AND JOHN EDWARDS. ABB REP SRIN KUCHIBOTA OBSERVES, PHOTOGRAPHS & DOCUMENTS THESE ACTIVITIES. CHERY MITCHELL ENV. ENG. NAVSTA MAYPORT VISITS SITE TO ACCESS PROGRESS TO DATE. FIFCO STATES THAT PRE-START SAMPLES ARE BEING TAKEN. ALSO THAT SYSTEM WILL BE TURNED ON WITH only WATER JAN 4, 1996 TO CHECK ALL SYSTEMS HOOKED UP. SAMPLES TAKEN TODAY ARE BEGUN AT 10:00 A.M. AND END AT 12:40 PM. SITES SAMPLED ARE 01F, 02F, 03F, 04F, 05F 06F, 07F, 08F, 09F, 10F, 11F, 12F, 13F (DUPLICATE of 06F) ALL AT 0-1' DEPTH, 16 D + 35D BOTH AT 4' DEPTH. EQUIP. BLANK & PP WERE NUMBERED #16 + #17, RESPECTIVELY.

AFTER SAMPLING WAS CONCLUDED, SRIN INQUIRED WHETHER WE HAD RECEIVED RESULTS OF OUR TEST RUN AT THE ABB LOCATIONS OF DEC. 26, 1995. HE FURTHER STATED THEIR RESULTS WOULD BE AVAILABLE JAN 20, 1996.

I STATED, YES, AND OFFERED HIM A COPY OF THE RESULTS WHICH WERE AS FOLLOWS:

IN ug/Kg	4,4 DDT	4,4 DDE	CHLORDANE
SS23S	4.29	3.3	—
* SS23D	—	—	—
SS31	198	419	—
SS32	23.43	82.5	—
** SS33	2.31	5.61	—
SS34	234.3	1815	—
** SS35	—	—	—
SS16	326.7	1765.5	—

*- D = DEPTH 4'.

**- OUTSIDE TREATMENT AREA

- ALL OTHERS AT 0-1' LEVEL

WE FURTHER NOTED AT SS35 PCB-1260 WAS FOUND AT A LEVEL OF 4,747 ug/Kg.

SRIN STATED ARR-ES HAD NOT

SAMPLES TAKEN WERE DELIVERED TO ENCO BY MR. DUNGAN WITHIN 1 HR. of COMPLETION of SAMPLING. 48 HR. TURNAROUND WAS REQUESTED.

JAN 4, 1996

TEMP 60°F CODY BREEBY

FIFCO CONTINUED TO FINE TUNE APPLICATION SYSTEM MAKING MINOR CHANGES IN PVC SYSTEM. PUT 50 lbs. BAC-TERRA BR-650 IN EACH OF TANKS I + II, TOTALLY 100 lbs BR-650, THIS MORNING. FIFCO PERSONNEL FLUSH SYSTEM FROM WATER ONLY IN TANK III. FIFCO TURNS SYSTEM ON FOR APPROXIMATELY 20 MINUTES TO CHECK FOR LEAKS IN LATE AFTERNOON. CHERYL MITCHELL AT SITE TO DISCUSS DATE OF INITIAL TREATMENT. WE STATE JAN 5, 1996.

SCOTT WESTLAKE of ENVIRO-LAB, INC. ARRIVES AT SITE TO REVIEW DATA THUS FAR. ENVIRO-LAB, INC., AN ASSOCIATED COMPANY of FIFCO WILL BE COMPILING + WRITING INITIAL REPORT of THIS PROJECT FOR FIFCO.

FIFCO ORDERS A LARGER GENERATOR, SO THAT SUFFICIENT POWER IS AVAILABLE TO ADEQUATELY OPERATE PUMP SYSTEM.

JAN 5, 1996

TEMP 60°F CLEAR + COOL

FIFCO BEGINS TREATMENT OF BAC-TERRA BR-650, ONLY TO DETERMINE WHETHER NUTRIENT OTHER THAN THAT IN BR-650 WILL BE NECESSARY. IF WE SEE GOOD REDUCTION, NUTRIENT WILL BE UNNESSARY AS AN ADDITIVE, DURING NEXT TEST.

APPLICATION AMOUNTS OF LIQUID BAC-TERRA BR650 ARE AS follows, APPLIED EQUALLY OVER THE ENTIRE TREATMENT AREA:

DRIP APPLICATION SYSTEM	2,200 GAL
RAINBIRD APPLICATION SYSTEM	340 GAL
TOTAL TO SITE	2,540 GAL.

JAN 6, 1996

SATURDAY
NO WORK

JAN 7, 1996

SUNDAY
NO WORK

JAN 8, 1996

FLFCO MODIFIES RAINBIRD SYSTEM WITH SPRINKLER HEADS EVERY 40' INSTEAD OF EVERY 60'. THIS WILL ALLOW FOR WIND VARIATIONS TO HAVE MINIMAL EFFECT ON APPLICATION SYSTEM.
RESULTS IN FROM JAN 3, 1996 TESTS AS FOLLOWS:

	4,4-DDT	4,4 DDE	CLORDANE
01F	59.4	316.8	—
02F	—	2.64	—
03F	4.29	9.57	—
04F	66	66	—
05F	—	—	—
06F	277.2	541.2	—
07F	3234	178.2	—
08F	2.31	3.3	—
09F	231	323.4	—
10F	118.8	561	—
11F	—	38.28	—
12F	4.62	11.88	—

JAN 8, 1996

TEMP 40°F COLD, WINDY

FIFCO REPAIRS WIND DAMAGED FENCE AROUND EXCLUSIVITY ZONE. FIFCO HOLDS WEEKLY H+S MEETING. PRESENT WERE BULLINGTON, GRIFFIN + EDWARDS.

520 [redacted] GAL. BAC-TERRA BR-650 APPLIED THROUGH RAINBIRD APPLICATION SYSTEM.

SAMPLING PERFORMED BY FIFCO INTERNATIONAL INC. PERSONNEL AT LOCATIONS 12 INCHES APART FROM PREVIOUS SITES OF JAN 3, 1996. THIS IS BEING DONE TO INSURE HOT-SPOT-COLD SPOT VARIATIONS IN CONTAMINANT READINGS. IT IS FIFCO'S JOB TO REDUCE ALL AREAS OF TREATMENT ZONE BELOW CLEAN-UP GOAL LEVELS. THESE FIFCO FIELD TESTS SHOW EACH LOCATIONS' READING AT THE TIME OF SAMPLING + AID FIFCO IN DETERMINING ADDITIONAL APPLICATION AMOUNTS.

LOCATIONS SAMPLED THIS DATE WERE 01F, 02F, 03F, 04F, 05F, 06F, 07F, 08F, 09F, 10F, 11F, 12F + 13F (DUPLICATE of 09F). #14 WAS MARKED AS EQUIP BLANK. PROTOCOL WAS AS PER FIFCO RAP 8/95. SAMPLES WERE TAKEN, EQUIP+

FEB 11, 1996

SUNDAY
NO WORK

of DDT, DDE + CHLORDANE, USING
EPA METHOD 8080. RESULTS
REQUESTED IN A 48 HR TURN
AROUND.
ABB REP, SRIN KUCHIBOTA
REQUSTED INFORMATION ON
TESTS RECIEVED BY FIFCO
1/8/96. WE MENTIONED LEVELS
THUS FAR REMAIN UNDER
TREATMENT LEVELS IN LOCATIONS
SAMPLED. FURTHER THAT THE
OFFSIDE LOCATION SS35D (4+)
HAD A PCB READING of
239 ug/kg FOR PCB-1260
SRIN FURTHER STATED THAT
ABB-ES COULD NOT GIVE US
THEIR TESTS RESULTS, BUT
WE would HAVE TO get
THOSE FROM THE NAVY.
ADDED 25lbs BAC-TERRA
BR-650 TO TANKS I + II.
FIFCO DETERMINES AFTER THESE
RESULTS COME IN TO DECIDE
ADDITION of NUTRIENT ISSUE.
TOTAL BAC-TERRA BR-650
ADDED TODAY = 50 lbs.

JAN 10, 1996

TEMP 60°F CLEAR, WARM, WINDY

NO BAC-TERRA BR-650 ADDED TODAY.
APPLICATION SYSTEM MODIFIED BY CHANGING SPRINKLER MANIFOLD INTO 3 SEPARATE LINES. ALSO ADDED VALVES & SUB-MANIFOLDS SO ONLY 1 OF 6 LINES OF RAINBIRDS WOULD WORK AT A TIME.
ABB-ES REP SRIN KUCHIBOTA ARRIVED @ 12:30 PM TO OBSERVE AND RECORD CHANGES.

JAN 11, 1996

TEMP 65°F CLEAR + WARM

620 GALLONS LIQUID BAC-TERRA BR-650 ADDED THROUGH RAINBIRD SYSTEM.

NO SAMPLES TODAY.

NO ABB-ES REP SIGNING IN TODAY.

JAN 12, 1996

TEMP 55°F COOL, RAINY

ADD 1400 GALLONS LIQUID BAC-TERRA BR-650 THROUGH DRIP APPLICATION SYSTEM THROUGH ENTIRE SITE.
ADDED 300 GALLONS LIQUID BAC-TERRA BR-650 THROUGH RAINBIRD APPLICATION SYSTEMS THROUGHOUT THE ENTIRE TREATMENT ZONE. PICKED UP RESULTS OF JAN 9, 1996 SAMPLING FROM ENCO LABS.
RESULTS ARE AS follows:

IN ug/kg	DDT	DDE	CHLORDANE
01F	92.4	521.4	—
02F	—	4.95	—
03F	5.61	10.23	—
04F	283.8	363	—
05F	—	—	—
06F	151.8	323.4	—
07F	43.56	204.6	—
08F	—	2.31	—
09F	36.3	95.7	—
10F	125.4	303.6	—
11F	11.88	50.49	—
12F	7.26	—	—
13F	92.4	151.8	—

AFTER REVIEWING THESE RESULTS AND INASMUCH AS IT APPEARS THEY ARE UNDER CLEAN-UP GOALS, BUT MAY NOT HAVE BEEN IN [illegible]

THAT THERE WAS SUFFICIENT NUTRIENT IN THE BAC-TERRA BR-650 SOLUTION TO COMPLETE THE CLEAN-UP OF THE TARGET CONTAMINANTS. THEREFORE, NO NUTRIENT ATHER THAT THAT IN THE BR-650 WOULD BE ADDED TO THE SITE. WITH THIS IN MIND 150 lbs of BAC-TERRA BR-650 CONCENTRATE WAS ADDED TO THE CLEAN WATER IN TANK III.

FIFCO ADVISED BY PHONE ABB-ES REP SRIN KUCHIBOTA + NAVSTA MAYPORT CHERYL MITCHELL THAT FIELD TESTS WOULD BE RUN BY FIFCO ON SAT JAN 13, 1996

JAN 13, 1996

TEMP 55°F COOL, CLOUDY

340 GALLONS OF BAC-TERRA BR-650 LIQUID WAS APPLIED THROUGH THE RAINBIRD DELIVERY APPLICATION SYSTEM, THROUGHOUT THE SITE.

FIELD SCREENING TESTS WERE COLLECTED AND TRANSPORT UNDER ICE ~~W~~BY FIFCO PERSONNEL. LOCATIONS AT THIS TIME WERE AS follows:

01F, 02F, 03F, 04F, 05F, 06F, 07F 08F, 09F, 10F, 11F, 12F, 13F, 16F AND 35F. #16 WAS MARKED AS EQUIP BLANK.

TESTS WERE SAMPLED APPROX 18 INCHES FROM PREVIOUS (1/9/96) SAMPLES TO PROVIDE DATA DIFFERENT FROM PREVIOUS TESTS AS TO LEVELS THROUGHOUT THE SITE OF TARGET CONTAMINANTS.

JAN 15, 1996

MARTIN LUTHER KING DAY

PAID HOLIDAY

NO WORK

JAN 16, 1996

TEMP 70°F CLEAR + WARM

FIFCO PERSONNEL HELD HEALTH + SAFETY MEETING.

100 lbs. of BAC-TERRA BR-650 TO TANK III.

REWIRED WATER PUMP FROM 110 TO 220.

500 GALLONS OF LIQUID BAC-TERRA BR-650 THROUGH THE RAINBIRD DELIVERY APPLICATION SYSTEM THROUGHOUT THE SITE.

JAN 17, 1996

TEMP 64°F Cool + CLOUDY

NO BAC-TERRA BR-650 TREATMENT TODAY. RECEIVED TESTS RESULTS FROM 1/3/96 SAMPLING. RESULTS ARE AS follows:

ug/Kg	DDT	DDE	CHLORDANE
01F	165	435.6	—
02F	—	3.63	—
03F	7.59	11.88	—
04F	158.4	310.2	—
05F	2.97	1.98	—
06F	165	442.2	—
07F	39.6	145.2	—
08F	~~38.94~~ 3.96	~~89.1~~ 3.63	—
09F	38.94	89.1	—
10F	138.6	600.6	—
11F	3.63	37.62	—
12F	—	10.23	—
13F	125.4	528	—
16F	547.8	1,914	—
* 35F	—	—	—

PCB 1260 LEVEL FOUND AT 3,198 ug/Kg

JAN 18, 1996

TEMP 66°F COOL, CLOUDY, WINDY

100 lbs. BAC-TERRA BR-650 PLACED IN TANK III.

580 GALLONS LIQUID BAC-TERRA BR-650 THROUGH THE RAINBIRD DELIVERY SYSTEM THROUGHOUT THE SITE.

ABB-ES REP SRIN KUCHIBOTLA OBSERVED + RECORDED FIFCO ACTIVITIES.

JAN 19, 1996

TEMP 60°F WET, WINDY, COOL

540 GALLONS LIQUID BAC-TERRA BR-650 THROUGH RAINBIRD DELIVERY APPLICATION SYSTEM THROUGHOUT THE SITE.
ABB-ES REP SRIN KUCHIBOTLA ON SITE OBSERVING + RECORDING FIFCO ACTIVITES.

JAN 20, 1996

SATURDAY
NO WORK

JAN 21, 1996

SUNDAY
NO WORK

JAN 22, 1996

TEMP 50°F COLD, WINDY

HELD HEALTH + SAFETY MEETING. PLACED ADDITIONAL 100 lbs. of BAC-TERRA BR-650 INTO TANK III 620 GALLONS OF LIQUID BAC-TERRA BR-650 THROUGH RAINBIRD DELIVERY SYSTEM THROUGHOUT THE SITE, ADVISED ABB-ES REP + NAVSTA Mayport ENV. ENG CHERY/ MITCHELL THAT SAMPLES WOULD BE TAKEN THIS AFTERNOON. SAMPLES WOULD TAKEN BY SITE REGISTERED GEOLOGIST, DUANE DUNGAN, of ECT. SAMPLES WERE TAKEN 18 INCHES AWAY FROM ALL OTHER SAMPLING ~~TESTS~~ SITES PREVIOUSLY TAKEN TO GIVE ADDITIONAL INFO ON CONTAMINANT LEVELS ON SITE AND NOT FOR DIRECT COMPARISON. SAMPLES TAKEN WERE: 01F, 02F, 03F, 04F, 05F, 06F, 07F, 08F, 09F, 10F, 11F, 12F 13F, 16D, 35D.

ALL SAMPLES EXCEPT 16D + 35D WERE TAKEN AT 0-1'. 16D + 35D WERE TAKEN AT 4.5' LEVEL. 13F WAS DUPLICATE SAMPLE.

JAN 23, 1996

TEMP 60°F FOGGY

NO BAC-TERRA BR-650
APPLICATION TODAY.

ABB-ES REP SRIN KUCHIBOTLA
ON SITE TODAY.

JAN 24, 1996

TEMP 70°F RAIN, WINDY, WARM

500 GALLONS LIQUID BAC-TERRA BR-650 APPLIED TO SITE THROUG RAINBIRD DELIVERY APPLICATION SYSTEM.

ABB-ES REP SEN KUSHIBOTLA ON SITE OBSERVING + RECORDING RIFCO ACTIVITIES.

JAN 25, 1996

TEMP 55°F COOL, WINDY

NO BAC-TERRA BR-650 APPLIED TODAY.

MONITORED SYSTEM.

JAN 26, 1996

TEMP. 70°F WARM, WINDY

440 GALLONS LIQUID BAC-TERRA BR-650 APPLIED THROUGH RAINBIRD DELIVERY SYSTEM THROUGH THE SITE. MEASURED AND PLACED FLAGS INSIDE SITE AREA AT LOCATIONS ABB-ES IN IMPLEMENTATION PLAN, NOV 1995, PAGES 3.5, 3.6 + 3.7

SITES FLAGGED ARE: SS07, SS05, SS16, SS23, SS32, SS34, SS36, SS37, SS38, SS41, + SS45

THE LAST TWO SAMPLING EPISODES WILL BE TAKEN FROM THESE PERFORMANCE EVALUATION LOCATIONS, ONLY. THEY WILL BE TAKEN FROM EXACTLY THE SAME HOLES SO THAT COMPARISON OF BREAKDOWN RATES CAN BE MADE.

RECEIVED RESULTS FROM ENCO FOR SAMPLING DONE 1/22/96.

RESULTS ARE AS follows:

ug/Kg	DDT	DDE	CHLORDANE
01F	33	679.8	–
02F	12.94	7.59	–
03F	9.54	9.57	–
04F	95.7	95.7	–
05F	–	–	–
06F	198	673.2	–
07F	29.37	165	–
08F	–	5.28	–
09F	184.8	257.4	–
10F	33	574.2	–
11F	20.79	56.1	–
12F	–	18.81	–
16D	11.55	66	–
35D	–	–	–
13F	165	303.6	–

JAN 27, 1996

SATURDAY
NO WORK

JAN 28, 1996

SUNDAY
NO WORK

JAN 29, 1996

600 GALLONS LIQUID BAC-TERRA BR-650 APPLIED THROUGH RAINBIRD DELIVERY APPLICATION SYSTEM THROUGHOUT THE SITE.

MONITORED DELIVERY SYSTEM.

JAN 30, 1996

TEMP 70°F SUNNY, WARM

NO BAC-TERRA BR-650
APPLIED TO SITE.
MONITORED SITE.

JAN 31, 1996

TEMP. 72°F SUNNY, WARM

ADDED 75 lbs. BAC-TERRA BR-650 TO TANK III.

APPLIED 460 GALLONS OF LIQUID BAC-TERRA BR-650 THROUGH RAINBIRD DELIVERY APPLICATION SYSTEM, THROUGHOUT THE SITE.

MONITORED SITE.

FEB 1, 1996

TEMP 60°F COOL, CLOUDY

NO BAC-TERR BR-650
APPLIED TO SITE TODAY.
MONITORED SITE+ DELIVERY
SYSTEM.

FEB 2, 1996

TEMP 60°F COOL, WINDY

440 GALLONS LIQUID BAC-TERRA
BR-650 APPLIED THROUGH RAINBIRD
DELIVERY APPLICATION SYSTEM,
THROUGHOUT THE SITE.
ABB-ES REP SRIN KUCHIBOTLA
ON SITE TODAY

FEB 3, 1996

SATURDAY
No WORK

FEB 4, 1996

SUNDAY
NO WORK

FEB 5, 1996

TEMP 35°F COLD.

APPLIED 420 GALLONS LIQUID BAC-TERRA TO SITE THROUGH RAINBIRD SYSTEM.

MADE MINOR REPAIRS TO SYSTEM.

FEB 6, 1996

TEMP 46°F COLD, WINDY

NO BAC-TERRA APPLIED TODAY.

FINISHED MINOR REPAIRS TO SYSTEM.

FEB 7, 1996

TEMP 55°F COOL, WINDY

APPLIED 460 GALLONS LIQUID
BAC-TERRA BR-650 TO SITE
THROUGH RAINBIRD SYSTEM
HELD HEALTH + SAFETY MEETING
GROUND TEMP 50°F

FEB 8, 1996

TEMP 70°F WARM

NO BAC-TERRA BR-650 TREATMENT TODAY. ADVISED RBB-ES + NAUSTA MAYPORT THAT SAMPLES (FIELD) WOULD BE TAKEN THIS AFTERNOON, BY PHONE. FIFCO PERSONNEL CONDUCTED SAMPLING IN ACCORDANCE WITH PROTOCOL SET BY REVISED RAP, AUG. 1995 (FIFCO).

SAMPLE LOCATIONS WERE THOSE MEASURED BY FIFCO FROM ARB-ES IMPLEMENTATION PLAN (NOV 95) AND WERE TO BE USED AS A MEASURE OF FIFCO'S PERFORMANCE. WE ONLY SAMPLED THOSE INSIDE OUR NEW TREATMENT AREA (REVISED BY LETTER FROM SOUTH, HAROLD MC GILL, 18 DEC 95).

THE LOCATIONS ARE:

SS36, SS07, SS05, SS38, SS37, SS16, SS41, SS34, SS32, SS23, SS45, + SS50

SS50 WAS DUPLICATE OF SS45. SS23 + SS45 WERE OUTSIDE (2') OUR TREATMENT AREA.

SAMPLING BEGAN AT 11:03AM + ENDED AT 12:50PM. SAMPLES WERE TAKEN IMMEDIATELY TO ENCO LABS PROPERLY STORED WITH ICE + CHAIN-OF-CUSTODY DOCS.

FEB 9, 1996

TEMP 76°F WARM + SUNNY

ADDED 75 lbs BAC-TERRA TO TANK III.

Applied 420 GALLONS LIQUID BAC-TERRA BR-650 TO SITE THROUGH RAINBIRD DELIVERY APPLICATION SYSTEM.

MONITORED APPLICATION SYSTEM.

FEB 10, 1996

SATURDAY
NO WORK

FEB 11, 1996

SUNDAY
NO WORK

FEB 12, 1996

TEMP 67°F WARM, SUNNY

HELD HEALTH + SAFETY MEETING.
APPLIED 420 GALLONS OF LIQUID
BAC-TERR BR-650 THROUGH THE
RAINBIRD APPLICATION SYSTEM
THROUGHOUT THE SITE.

MONITORED APPLICATION SYSTEM.

FEB 13, 1996

TEMP 62°F BREEZY, COOL

HELD HEALTH + SAFETY MEETING.
ADDED 50 lbs BAC-TERRA BR-650
TO TANK III. DISCONNECTED TANKS I + II.
JOHN FLODEN + SCOTT WESTLAKE
OF ENVIRO-LAB, INC., A FIFCO
ASSOCIATED COMPANY, AT SITE
TO DISCUSS PROGRESS ON INTERIM
REPORT FOR DAN.
RESULTS RECEIVED FROM 2/8/96
SAMPLING, AS FOLLOWS:

ug/kg	DDT	DDE	CHLORDANE
S536	257.4	600	—
S507	138.6	105.6	—
S505	—	—	—
S538	—	—	—
S537	26.4	32.01	—
S516	132	739.2	—
S541	—	7.26	—
S534	72.6	475.2	—
S532	15.18	62.7	—
* S523	—	4.95	—
* S545	4.29	24.75	—
* S550	10.89	59.4	—

* S523, S545 + S550 WERE
OUTSIDE TREATMENT AREA.

APPLIED 420 GALLONS LIQUID

FEB 14, 1996

TEMP 65°F WARM + BREEZY

NO BAC-TERRA TREATMENT TODAY.

UNMONITORED APPLICATION SYSTEM.

FEB 15, 1996

TEMP 70°F WET, WARM

NO BAC-TERRA TREATMENT TODAY.
TANKS I + II PICKED UP BY
BAKER TANKS.
REPAIRED WIND DAMAGED FENCE.

MONITORED APPLICATION SYSTEM.

FEB 16, 1996

TEMP 52°F COOL, CLEAR

APPLIED 440 GALLONS LIQUID
BAC-TERRA BR-650 THROUGH
RAINBIRD DELIVERY SYSTEM, THROUGHOUT
THE SITE

MONITORED APPLICATION SYSTEM.

CALLED DUANE DUNGAN, ECT, TO
SCHEDULE FINAL FIELD SAMPLES
FOR THURSDAY 22 FEB 1996.

FEB 17, 1996

SATURDAY
No WORK

FEB 18, 1996

SUNDAY
NO WORK

FEB 19, 1996

PRESIDENT'S DAY
HOLIDAY
NO WORK

FEB 20, 1996

TEMP 75°F CLEAR, WARM

HECO HEALTH + SAFETY MEETING.
APPLIED 400 GALLONS LIQUID
BAC-TERRA BR-650 THROUGH
RAINBIRD DELIVERY APPLICATION
SYSTEM THROUGHOUT THE SITE.

MONITORED APPLICATION SYSTEM.

FEB 21, 1996

TEMP 70°F FOGGY, THEN WARM

REMOVED RESIDUE FROM SOLID BR-650 FROM TANK III.

NO BAC-TERRA TREATMENT TODAY

MONITORED APPLICATION SYSTEM.

FEB 22, 1996

TEMP 75°F WARM

DUANE DUNGAN, ECT, ARRIVED TO TAKE FINAL FIELD SAMPLES FOR TESTING. LOCATIONS WERE TO BE EXACTLY THE SAME AS 8 FEB 96 + EXACTLY SAME HOLES. THIS WILL PROVIDE INFORMATION FOR COMPARISON BREAKDOWN RATES.

LOCATIONS WERE:

SS36, SS07, SS05, SS38, SS37, SS16, SS41, SS34, SS32, SS23, SS45, + SS50.

SS23, SS45 + SS50 (DUPLICATE of SS45) ARE 2' OUTSIDE FIFCO'S TREATMENT AREA.

ALL SAMPLES WERE 0-1'.

SAMPLING BEGAN AT 12:08 PM + ENDED 1:45 PM. SAMPLES WERE TAKEN BY DUNGAN, SEALED AT PROPER ICED TEMPS TO ENCO LABS FOR ANALYSIS USING EPA 8080, FOR DDT, DDE + CHORDANE.

FEB 23, 1996

TEMP 75°F WARM, SUNNY

APPLIED 400 GALLONS LIQUID BAC-TERRA THROUGH RAINBIRD DELIVERY APPLICATION SYSTEM, THROUGHOUT THE SITE.

BEGAN RE-PACKING TOOLS & SUPPLIES FOR DE-MOBILIZATION.

MONITORED APPLICATION SYSTEM.

FEB 24, 1996

SATURDAY
NO WORK

FEB 25, 1996

SUNDAY
NO WORK

FEB 26, 1996

TEMP 80°F HOT, HUMID

APPLIED 390 GALLONS LIQUID BAC-TERRA BR-650 THROUGH RAINBIRD SYSTEM; THROUGHOUT THE SITE.

THIS IS THE FINAL TREATMENT OF THIS SITE.

HELD HEALTH + SAFETY MEETING.

MONITORED SITE.

FEB 27, 1996

TEMP 85°F WARM, SUNNY

RECEIVED RESULTS of 22FEB96 SAMPLING FROM ENCO LABS.

RESULTS AS follows:

ug/Kg	DDT	DDE	CHLORDANE
SS36	85	449	—
SS07	86	112	—
SS05	—	—	—
SS38	—	—	—
SS37	10	39	—
SS16	29	570	—
SS41	—	11	—
SS34	25	541	—
SS32	4	56	—
* SS23	—	5	—
* SS45	5	42	—
* SS50	—	—	—

* NOT INSIDE TREATMENT AREA.

SAMPLES SS37, SS16, SS34, SS32 + SS45 SHOWED DDD, INDICATING DECHLORINATION OR METABOLISM OF DDT.

PERENTAGE CHANGES IN DDT
FROM 8 FEB 96 - 22 FEB 96:
(IN PPB)

SS36 257.4 TO 85 = 67%

SS07 138.6 TO 86 = 38%

(SS05 0 TO 0 = 0)

(SS38 0 TO 0 = 0)

SS37 26.4 TO 10 = 62.1%

SS16 132 TO 29 = 78%

(SS41 0 TO 0 = 0)

SS34 72.6 TO 25 = 65.6%

SS32 15.18 TO 4 = 73.6%

(SS23 0 TO 0 = 0)

SENT LETTER TO NAVFAC ENG COM
SO DIV, HAROLD McGILL, STATED J°B
WAS FININISHED + REQUESTING
ABB-ES COME AND DO PERFORMANCE
SAMPLING, ASAP, AS I WANT
TO BE THERE.

FEB 28, 1996

NO WORK
AWAITING CALL FROM ABB-ES
REGARDING DATE OF THEIR
FINAL SAMPLING.

FEB 29, 1996

HAROLD McGILL CONFIRMED TEAR DOWN + DEMOBILIZATION WHICH BEGAN TODAY.

MARCH 1, 1996

CONTINUED TEARDOWN OF APPLICATION SYSTEM. LAST TANK PICKED UP TODAY

RECEIVED COPY OF INTERIM REPORT 18 DEC 95 - 31 JAN 96 FROM ELI.
COPIED IN BOUND FORM FOR MAILING OF 6 COPIES TO SODIU, HAROLD McGILL.

FINISHED TEARDOWN OF APP. SYSTEM.

MARCH 2, 1996

SATURDAY

REVIEWED SITE.
Only FENCE, GEN + TRAILER LEFT.
LEFT SAMPLE LOCATION OF FLAGS
IN PLACE.
CALLED ABB-ES SITE TRAILER +
LEFT MESSAGE REGARDING FINAL
SAMPLING + SPLIT-SAMPLE REQUEST.

MARCH 3, 1996

SUNDAY
NO WORK

MARCH 4, 1996

RECEIVED PHONE MESSAGE AT HOTEL THAT ABB-ES WOULD BEGIN SAMPLING IN 2 HOURS, AT NOON TODAY. WENT TO SITE. NO SAMPLING OCCURRED.

SPOKE TO MIKE AT ABB-ES TRAILER AT 4:00PM. HE STATED THEY JUST ARRIVED ON SITE + SAMPLING WOULD BEGIN 9:30AM - 10:00AM TUESDAY 5 MARCH 96.

MARCH 6, 1996

ARRIVED AT SITE AT 0930. ABB-ES PERSONEL WERE ALREADY HERE & HAD MEASURED OUT SITES WHERE PERFORMANCE SAMPLES WOULD BE TAKEN. SAMPLE LOCATIONS WILL BE MARKED AS FOLLOWS WITH SPLIT SAMPLES PREPARED FOR FIFCO'S ANALYSIS:

SS31, SS37, SS07, SS05, SS07D, SS05D, SS14, SS16, SS38, SS16D, SS33
* SS13, SS34, SS32, *SS23, * SS23D,
* SS35, SS04, SS04D, + SS18.

* SS13, SS23, SS23D, SS33 + SS35 ARE ALL OUTSIDE TREATMENT AREA.

ALL SAMPLES WERE COMPLETED BY ABB-ES PERSONNEL, RICHARD STEPHENS & MIKE JAYNES.

SAMPLING WAS DONE BETWEEN 0900 & 1515 TODAY.

SAMPLES WERE TAKEN (SPLIT) TO ENCO LABS BY FIFCO FOR ANALYSIS (EPA 8080), PROPERLY STORED, ETC.

VI. Spill Or Leak Procedures

Steps to Be Taken In Case Material Is Released or Spilled

Wear appropriate protective clothing during cleanup. Dike spill and collect for disposal. Neutralize residual material with alkali and wash spill area with lots of water. Adequate ventilation is required because of the generation of carbon dioxide gas if soda ash or limestone are used for neutralization.

Waste Disposal Method

For disposal, product is a regulated waste. Neutralized waste may have to be disposed of by an approved contractor. Use of carbonates for neutralization will generate carbon dioxide gas.

VII. Special Protection Information

Respiratory Protection

If misting conditions exist, wear NIOSH approved mist respirator.

Ventilation

Natural or general ventilation is adequate for normal conditions.

Local ventilation is recommended to control exposure from operations that can generate aerosols, mists or vapors.

Protective Gloves

Neoprene, polyvinyl, butyl rubber or nitrile rubber gloves are recommended.

Eye Protection

Chemical splash goggles. Do not wear contact lenses.

Other Protective Equipment

For operations where contact can occur, coveralls, apron and rubber foot coverings are recommended. A safety shower and eye wash facility should be available.

VIII. Special Precautions

Eye wash and quick-drench showers should be immediately available to locations where exposure can occur.

IX. State R-T-K Information

Chemical Name	CAS Number	Comment
Aluminum Sulfate	10043-01-3	
Quaternary Polyamine	26062-79-3	
Water	7732-18-5	

X. SARA Title III Section 313 Information

Not Applicable

XI. RCRA Information

Regulated as a hazardous waste

Disposal Code D002 (corrosive)

XII. CERCLA Information

Product contains aluminum sulfate. Reportable Quantity is 18,000 pounds.

XIII. California Proposition 65 Information

Not Applicable

XIV. Other Information

All components of this product are listed in the TSCA inventory.

Transportation of this product by motor vehicle or rail car is regulated by D.O.T. only for single packagings containing more than 1300 gallons.

SUMMARY REPORT

CLIENT: Solar Kinetics, Inc.
PROJECT: NSM 3865

SAMPLE NO.	ID MARKS	MATRIX	DATE SAMPLED
1	051096-4	Liquid	10-MAY-1996
2	051096-5	Liquid	10-MAY-1996
3	051096-6	Liquid	10-MAY-1996
4	051096-7	Liquid	10-MAY-1996

BTEX ANALYSIS, EPA 8020		1	2	3	4
Benzene	µg/L	41.5	5.8	10.3	10.3
Toluene	µg/L	57.2	7.1	13.5	13.6
Ethyl benzene	µg/L	55.8	6.6	12.5	12.5
Xylenes	µg/L	321	39.7	73.4	73.5
BTEX (total)	µg/L	476	59.2	110	110
Description		inlet	outlet	outlet	outlet
Flow gpm		30	30	30	30
H_2O_2 mg/l		128	128	256	384

ATTACHMENT (3)

SUMMARY REPORT

CLIENT : Solar Kinetics, Inc. REPORT NUMBER : D96-5121
PROJECT : NBM 3865 REPORT DATE : 13-MAY-1996

SAMPLE NO.	ID MARKS	MATRIX	DATE SAMPLED
5	051096-8	Liquid	10-MAY-1996
6	051096-9	Liquid	10-MAY-1996
7	051096-10	Liquid	10-MAY-1996
8	051096-11	Liquid	10-MAY-1996

BTEX ANALYSIS, EPA 8020		5	6	7	8
Benzene	µg/L	10.3	< 1.0	14.2	14.8
Toluene	µg/L	13.7	< 1.0	19.0	19.7
Ethyl benzene	µg/L	12.8	< 1.0	17.7	18.5
Xylenes	µg/L	74.7	< 1.0	104	108
BTEX (total)	µg/L	112	< 1.0	155	161
Description		outlet dup	Blank	outlet	outlet
Flow (gpm)		30		50	50
H_2O_2 (mg/l)		384		128	256

SUMMARY REPORT

CLIENT : Solar Kinetics, Inc. JOB NUMBER : D96-5120
PROJECT : NBM 3865 REPORT DATE : 13-MAY-1996

SAMPLE NO.	FIELD MARKS	MATRIX	DATE SAMPLED
9	051096-12	Liquid	10-MAY-1996
10	051096-13	Liquid	10-MAY-1996
11	051096-14	Liquid	10-MAY-1996
12	051096-15	Liquid	10-MAY-1996

BTEX ANALYSIS, EPA 8020		9	10	11	12
Benzene	µg/L	14.6	42.5	5.8	6.8
Toluene	µg/L	19.0	69.1	7.6	6.9
Ethyl benzene	µg/L	18.3	56.7	7.1	6.2
Xylenes	µg/L	107	335	41.6	37.8
BTEX (total)	µg/L	169	493	62.1	57.7
	Description	outlet	inlet	outlet	outlet
	Flow (gpm)	50	~~50~~ 20	20	20
	H_2O_2 (mg/l)	384	128	128	256

SUMMARY REPORT

[redacted] Solar Kinetics, Inc. [redacted] JOB NUMBER [redacted]
[redacted] NSM 3865 [redacted] REPORT DATE [redacted]

[redacted]	[redacted]	[redacted]	[redacted]
13	051096-16	Liquid	10-MAY-1996

BTEX ANALYSIS, EPA 8020		13			
Benzene	µg/L	5.6			
Toluene	µg/L	7.3			
Ethyl benzene	µg/L	5.8			
Xylenes	µg/L	40.5			
BTEX (total)	µg/L	60.2			

Description	outlet
Flow (gpm)	20
H_2O_2 (mg/l)	384

SUMMARY REPORT

CLIENT: Solar Kinetics, Inc. NUMBER: D96-5294
PROJECT: NSM 3855 DATE: 17-MAY-1996

SAMPLE NO.	ID MARKS		DATE SAMPLED
1	051596-17	Liquid	15-MAY-1996
2	051596-18	Liquid	15-MAY-1996
3	051596-19	Liquid	15-MAY-1996
4	051596-20	Liquid	15-MAY-1996

BTEX ANALYSIS, EPA 8020		1	2	3	4
Benzene	µg/L	44	1.4	1.5	< 1.0
Toluene	µg/L	60	2.3	2.1	< 1.0
Ethyl benzene	µg/L	56	1.8	1.8	< 1.0
Xylenes	µg/L	353	11.8	10.4	< 1.0
BTEX (total)	µg/L	512	17.3	15.8	< 1.0

MISCELLANEOUS ANALYSES		1	2	3	4
Chemical Oxygen Demand	mg/L	1610	-	-	-
Description		inlet	outlet	outlet duplicate	BLK
Flow (gpm)		30			
H_2S_L (mg/L)		128			

Attachment (4)

14·MAY·96 Visitors

w/NADEPJAX Cimicio, Marid - (904)-772-3444-

(for tour call) Patin, Roland (Thad) 904-772-5990 (Pager 459-8494

Coleman, Henry " " "

GREEN, MIKE (904) 772-3444

* DOW THIBERAULT PWC NAS JAX 778-9618 LAB
346-8717 BEEPER

Jay Caddy (JC) works w/ Bill Howe 346-8843 Beeper

Navy Environmental Leadership Program
Weekly Report
for
New Technology Demonstration Project
Ultraviolet Oxidation of Oily Waste Water Treatment Plant Effluent

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Week of: 20 May 96

1. ON-SITE ACTIVITIES:

a. General Overview: The SOLOX unit operated monday, wednesday and thursday this week. Due to low Oily Waste inflow to the OWTP the plant was not treating water on tuesday and friday. Samples were taken wednesday and thursday by PWC. Hydrogen Peroxide supply in drum #1 was emptied last week, so the #2 drum was brought into service on monday. A flow rate of 68 gpm was attained on wednesday.

b. Specific observations/incidents: None to report.

2. WATER QUALITY ANALYSIS

a. Sampling/Analysis Schedule: PWC and SOLOX sampling continued as planned with split samples taken wednesday and PWC samples taken again on thursday.

b. Sampling Analysis Results. Results were received for the split sample testing conducted jointly by PWC and SOLOX on 22 May with the following results Attachment (1) is the analytical report. All data represents micrograms per liter unless otherwise indicated. Samples were taken at two flow rates, 30 gpm and 63 gpm. Peroxide concentration was 128 mg/l for both sets of samples.

Samples taken at a flow rate of 30 gpm:

	INLET	OUTLET
SAMPLE ⇨	1	2
[illegible]	[illegible]	[illegible]
[illegible]		
[illegible]	70	[illegible]
[illegible]	49	
[illegible]	62	[illegible]
[illegible]	648	[illegible]
[illegible]	527	[illegible]

Samples taken at a flow rate of 63 gpm:

	INLET	OUTLET			
SAMPLE ⇨	3	4			
[Peroxide]		128 mg/l			
Settling					
Benzene	59	9.2			
Toluene	32	4.8			
EthylBenzene	52	7.7			
Xylene	328	40.9			
Total BTEX	471	62.6			

3. EQUIPMENT OPERATIONS & MAINTENANCE

a. Treatment equipment. Operating properly.

b. Support equipment.

1) Diesel Electric generator. Operating properly

2) OWWO Treatment plant. Operated monday, reduced hours wednesday and thursday. The plant did not operate on tuesday and friday due to low levels of oily waste inflow to the plant and low levels in the storage tanks.

3) Submersible Feed Pump. Operating properly.

4) Hydrogen Peroxide supply. Approximately 50 gallons of the initial 110 remaining.

4. COMMUNITY RELATIONS (visits, providing information, PAO issues, etc.)

Nothing to report.

5. PROJECT SCHEDULE

a. Timeline maintenance. The volume of oily waste in settling tanks at the OWTP was not enough to support operation of the OWTP during all regular working hours this week and may not be next week. Operation of the SOLOX unit will be interupted any time there is no effluent from the OWTP. Chemical supplies are adequate. Analytical testing is continuing. The timeline for completion of the project on 30 May is on schedule.

b. Scope adjustments. None to report.

c. Plan for next week's activities.

1) Monday. Holiday.

2) Tuesday.
   a) Visit site.
   b) Take Split samples (PWC/SOLOX)

3) Wednesday
   a) Visit site.

4) Thursday
   a) Visit site.
   b) Pick up operator daily reports for previous week.
   c) PWC take samples.

5) Friday
   a) Visit site.
   b) Prepare weekly report in draft.

ATTACHMENTS

1) SOLOX lab results from samples taken 22 May

FAXED

SOLAR KINETICS INC.

Date: 5-24-96

Number of pages including cover: 3

[redacted]

Phone:

Fax phone: 904 772 3269

cc: none

Solar Kinetics, Inc.
10635 King William Drive
Dallas, TX 75220
Phone: (800) 949-7654
(214) 556-2376
Fax phone: (214) 869-4158

REMARKS:

Here are our results from 5/22/96

Attach (1)

SUMMARY REPORT

CLIENT: Solar Kinetics
PROJECT: NSM-3865

SAMPLE NO.	ID MARKS	MATRIX	DATE RECEIVED
1	052296-21	Liquid	22-MAY-1996
2	052296-22	Liquid	22-MAY-1996
3	052296-23	Liquid	22-MAY-1996
4	052296-24	Liquid	22-MAY-1996

BTEX ANALYSIS, EPA 8020		1	2	3	4
Benzene	µg/L	70	12.3	59	9.2
Toluene	µg/L	47	7.7	32	4.8
Ethyl benzene	µg/L	62	10.2	52	7.7
Xylenes	µg/L	348	53.7	328	40.9
BTEX (total)	µg/L	527	83.9	471	62.6

MISCELLANEOUS ANALYSES		1	2	3	4
Chemical Oxygen Demand	mg/L	199	-	199	-
	Designation	inlet	outlet	inlet	outlet
	Flow	30	30	~~30~~ 63	~~30~~ 63
	H_2O_2	128		128	

Preliminary report based upon incomplete data.

SUMMARY REPORT

CLIENT: Solar Kinetics, Inc. JOB NUMBER: D96-5578
PROJECT: NBN 3865 REPORT DATE: 24-MAY-1996

SAMPLE NO.	ID/MARKS	MATRIX	DATE SAMPLED
5	052296-25	Liquid	22-MAY-1996
6	052296-26	Liquid	22-MAY-1996

BTEX ANALYSIS, EPA 8020		5	6		
Benzene	µg/L	7.7	< 1.0		
Toluene	µg/L	4.1	< 1.0		
Ethyl benzene	µg/L	6.4	< 1.0		
Xylenes	µg/L	34.6	< 1.0		
BTEX (total)	µg/L	52.8	< 1.0		

Description	outlet dup	Blank
Flow	3063	—
H_2O_2		—

Preliminary report based upon incomplete data.

Navy Environmental Leadership Program
Weekly Report
for
New Technology Demonstration Project
Ultraviolet Oxidation of Oily Waste Water Treatment Plant Effluent

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Week of: 27 May 96

1. ON-SITE ACTIVITIES:

a. General Overview: Monday the OWTP and the SOLOX unit were not operated due to the observance of Memorial Day. The OWTP and SOLOX unit both operated tuesday, wednesday, thursday and friday. The operational demonstration phase of the project ended Friday, and preparations began to transport the treatment unit to SOLOX, Inc. in Dallas, Texas. Sampling continued as scheduled.

b. Specific observations/incidents: None to report.

2. WATER QUALITY ANALYSIS

a. Sampling/Analysis Schedule: PWC and SOLOX sampling continued as planned with split samples taken thursday and PWC samples taken again on thursday.

b. Sampling Analysis Results. Results were received for the PWC samples taken 29 May.

PWC Samples taken at a flow rate of 30 gpm:

	INLET	OUTLET	INLET	OUTLET
SAMPLE ⇨	1	2	3	4
[illegible]		[illegible]		[illegible]
[illegible]				
[illegible]	[illegible]		[illegible]	[illegible]
[illegible]	[illegible]		[illegible]	[illegible]
[illegible]	[illegible]		[illegible]	[illegible]
[illegible]	[illegible]		[illegible]	[illegible]
[illegible]	[illegible]		[illegible]	[illegible]

3. EQUIPMENT OPERATIONS & MAINTENANCE

a. Treatment equipment. Operating properly.

b. Support equipment.

1) Diesel Electric generator. Operating properly

2) OWWO Treatment plant. Operating properly.

3) Submersible Feed Pump. Operating properly.

4) Hydrogen Peroxide supply. Reduced to 0 Friday AM.

4. COMMUNITY RELATIONS (visits, providing information, PAO issues, etc.)

Nothing to report.

5. PROJECT SCHEDULE

a. Timeline maintenance. The timeline for the operational demonstration phase of the project was maintained and the SOLOX treatment unit was secured friday, and preparation began to remove the unit from the site.

b. Scope adjustments. None to report.

c. Plan for next week's activities. None. This is the final weekly report for the Ultraviolet Oxidation of Oily Waste Water Treatment Plant Effluent demonstration project.

ATTACHMENTS

1) PWC lab results from samples taken 29 May.

Environmental Conservation Laboratories
4810 Executive Park Court, Suite 211
Jacksonville, Florida 32216-6069
904 / 296-3007
Fax 904 / 296-6210

ENCO Laboratories
DHRS Certification No. E82277, 82417

CLIENT : Navy Public Works Center
ADDRESS: Navy Public Works
c\o Environmental Lab
Jacksonville, FL 32212-0030

REPORT # : JR2682
DATE SUBMITTED: May 29, 1996
DATE REPORTED : May 30, 1996

PAGE 1 OF 5

ATTENTION: Ali Kewan

SAMPLE IDENTIFICATION

Samples submitted and identified by client as:

05/29/96 @ 6:00

#1 - 6050212
#2 - 6050209
#3 - 6050210
#4 - 6050211

PROJECT MANAGER Scott D. Martin

Attach (1)

ENCO LABORATORIES
REPORT # : JR2682
DATE REPORTED: May 30, 1996

RESULTS OF ANALYSIS

EPA METHOD 8020 - VOLATILE AROMATICS	6050212	6050209	Units
Methyl tert-butyl ether	5	10	µg/L
Benzene	20	46	µg/L
Toluene	36	58	µg/L
Chlorobenzene	1 U	1 U	µg/L
Ethylbenzene	15	55	µg/L
m-Xylene & p-Xylene	46	170	µg/L
o-Xylene	35	152 D2	µg/L
1,3-Dichlorobenzene	1 U	1 U	µg/L
1,4-Dichlorobenzene	1 U	1 U	µg/L
1,2-Dichlorobenzene	1 U	1 U	µg/L
Surrogate:	**% RECOV**	**% RECOV**	**LIMITS**
Bromofluorobenzene	110	110	64-125
Date Analyzed	05/30/96	05/30/96	

D2 = Analyzed @ 1:2 dilution
U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
REPORT # : JR2682
DATE REPORTED: May 30, 1996

RESULTS OF ANALYSIS

EPA METHOD 8020 - VOLATILE AROMATICS	6050210	6050211 D5	Units
Methyl tert-butyl ether	2	10 U	µg/L
Benzene	1	60	µg/L
Toluene	2	115	µg/L
Chlorobenzene	1 U	5 U	µg/L
Ethylbenzene	2	45	µg/L
m-Xylene & p-Xylene	6	155	µg/L
o-Xylene	6	120	µg/L
1,3-Dichlorobenzene	1 U	5 U	µg/L
1,4-Dichlorobenzene	1 U	5 U	µg/L
1,2-Dichlorobenzene	1 U	5 U	µg/L
Surrogate:	**% RECOV**	**% RECOV**	**LIMITS**
Bromofluorobenzene	125	115	64-125
Date Analyzed	05/30/96	05/30/96	-

D5 = Analyte value determined from a 1:5 dilution.
U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
REPORT # : JR2682
DATE REPORTED: May 30, 1996

RESULTS OF ANALYSIS

EPA METHOD 8020 - VOLATILE AROMATICS	LAB BLANK	Units
Methyl tert-butyl ether	2 U	µg/L
Benzene	1 U	µg/L
Toluene	1 U	µg/L
Chlorobenzene	1 U	µg/L
Ethylbenzene	1 U	µg/L
m-Xylene & p-Xylene	1 U	µg/L
o-Xylene	1 U	µg/L
1,3-Dichlorobenzene	1 U	µg/L
1,4-Dichlorobenzene	1 U	µg/L
1,2-Dichlorobenzene	1 U	µg/L
Surrogate:	**% RECOV**	**LIMITS**
Bromofluorobenzene	85	64-125
Date Analyzed	05/29/96	

U = Compound was analyzed for but not detected to the level shown.

ENCO LABORATORIES
REPORT # : JR2682
DATE REPORTED: May 30, 1996

QUALITY CONTROL DATA

Parameter	% RECOVERY MS/MSD/LCS	ACCEPT LIMITS	% RPD MS/MSD	ACCEPT LIMITS
EPA Method 8020				
Benzene	*160/155/105	61-130	3	18
Toluene	105/105/105	59-134	<1	14
Ethylbenzene	125/125/105	55-135	<1	15
m-Xylene & p-Xylene	118/120/102	42-152	2	18

Environmental Conservation Laboratories Comprehensive QA Plan #960038

* = Associated values failed to meet laboratory established criteria for accuracy.
< = Less Than
MS = Matrix Spike
MSD = Matrix Spike Duplicate
LCS = Laboratory Control Standard
RPD = Relative Percent Difference

This report shall not be reproduced except in full, without the written approval of the laboratory.

TOTAL P.07

CHAIN OF CUSTODY RECORD

NAVY PUBLIC WORKS CENTER JACKSONVILLE
ATTN CODE 330 (ENVIRONMENTAL LABORATORY)
JACKSONVILLE, FL 32212-0030

PROJECT # CONTRACT # N68821-95-A-0011

D.O.# CALL# COLLECTED BY: MIKE DAILEY CODE 90 F

LABORATORY ENVIRONMENTAL CONSERVATION LABORATORY PHONE: 904/296-3007
4810 EXECUTIVE PARK COURT SUITE 111
ADDRESS JACKSONVILLE, FL 32216 FAX #

SAMPLE ID #	DATE	TIME	COMP	GRAB	MEDIA	SAMPLE LOCATION	SAMP.COMP	PR	TEMP	# CONT	REMARKS / TESTS REQUIRED	CONTAINER TYPE / PRESERVATION: 40 ml VOA Vial
6Q5 0212	5/29/96	6:00		✓				N/A	4°C		8020	
6Q5 0209	5/29/96	6:00		✓				N/A	4°C		8020	
6Q5 0210	5/29/96	6:00		✓				N/A	4°C		8020	
6Q5 0211	5/29/96	6:00		✓				N/A	4°C		8020	

RELINQUISHED BY	DATE	TIME	RECEIVED BY	REMARKS:
[illegible]	5/29/96	6:00	[illegible] 5/30/96 6:00 pm	
RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY	
RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:	
RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY LAB BY:	

JR2682

PWCENVLAB FORM-12 DTD 11-22-94

Page 1 of 1

8-31-95

Mark - Here are my rough notes from the conference call that we had with RHS at our last partnering meeting. I don't remember whether I sent them to you, probably not based on the draft Implentation Plan. Sorry! My notes are probably rather cryptic, but combined with the "Response to RHS comments of June 30, 1995" which Cheryl put together I think you can get the gist of it. Give me a call after labor day and we can go over it. Thanks! Peggy

Tuesday, August 8, 1995

Ted ?? and Bob Schuler at RHS
Harold McGill and Debbie Ravenel in Charleston
Mayport partnering team in Tallahassee

Comments on Concrete Treatment

Comment #1: RHS should provide map in workplan, a map was included in the original RFP, RHS requests a map of the immediate area of the FTC - ABB to provide

Comment #2: RHS asserts that there proposal is to remediate the hydrocarbon. Would like to see a "soil profile" of the area, need more information on site characterization. Jim points out that the intent of his comment was to alert the contractor to the possibility that as a result of burning waste oil there may be other contaminants present at the site. We agreed that it is unlikely that there are large quantities of other contaminants present.

Comments #3 and 4 are acceptable.

Comment #5: RHS agrees that any runoff must meet FAC 62-302. Navy will do testing.

Comment #6: RHS agrees to collect any runoff. They would still like to use drums, agree to use tank if Navy can provide.

Comment #7: FDEP notes that water cannot be discharged to ground. RHS agrees.

Comment #8: acceptable

Comment #9: Petro-flag test kit, 1 ppm limit, 10% accuracy from 10 to 100, range 10 to 2000 ppm, colorimetric with digital readout from "calibrated meter" by Dexsil, RHS will provide specs; amount of water hard to predict but "as little as possible", think a 250 to 300 gallon tank would be sufficient, by treating a small area at a time would be able to stop and cleanup in case of rain.

Comments 10 - 19 are acceptable

Comment #20: RHS agrees to containerize water

Comment #21: RHS asserts that looking for a sheen on the water is more "sensitive" than a chemical analysis. They are OK as long as we are the ones paying for the analysis.

Comment #22: Agreed.

Comments on Soil Treatment

Comments #1 and 2: acceptable
Comment #3: Re time to remediate, not knowing more about site characterization, expect 90% reduction in 90 days (this was the basis of their bid). Look at this as a treatability study or pilot test (Jay).
Comment #4: RHS says they plan to drill 100 3" diameter 3 foot holes with a little beaver. They will post hole if required. Cheryl will try to narrow the area down where hand digging will be required. Should be BOSS contractor's responsibility. Frank notes that site workers must be OSHA trained. Harold notes that any use of GPR by RHS would be at no cost to the government.
Comment #5: noted
Comment #6: RHS will provide info on test kits - will fax to Harold.
Comment #7: Re Florida clean soil criteria, RHS agrees these are the target cleanup levels.
Comment #8: acceptable
Comment #9: RHS will use perf PVC to keep holes open if necessary. This is acceptable.
Comment #10: Re injection wells, RHS will forget about this and rototill and spray solution on the surface. May still drill holes for aeration purposes. This is acceptable.
Comments 11 and 12: OK
Comment #13, 14, 15: acceptable
Comment #16: Will use hand held pH meter to measure pH in the field. Jay asks for description of procedure in the workplan. Cheryl recommends incorporation into revised workplan. Re phosphate, it is included in the product. Will be monitored indirectly (by performance). More product (Earthwise) will be added based on progress of cleanup. This is acceptable.
Comment #17: Testing results will be included in daily report logs and delivered to the Navy. This is acceptable.
Comment #18: FDEP looking for simple predictive rate model for application of technology. RHS will try to provide.
Comment #19: OK
Comment #20: RHS requests copy of EPA SOP for decon. (ABB or Cheryl to FAX to RHS, along with map.)
Comment #21: OK

RHS wants to know when they can start. Harold requests final workplan. RHS can provide early next week, if Navy provides requested information (map and decon procedure, utility location). Navy requests sign and seal by Florida PE. RHS says no problem.

We agree to provide results of sample analysis as soon as available. ABB notes that info will be available in 6 to 8 weeks.
RHS will target October for field work.

** Action Item for ABB or Cheryl to fax map and decon info to RHS