00235

City Parks Soil Testing at Lincoln Park, SE 15th Street and Wilhelmina Johnson Center, 321 NW 10th Street Playground Structures, Gainesville, Florida

Prepared for

City of Gainesville
Parks Department
405 NW 39th Avenue, Building F
Gainesville, Florida 32609

Prepared by

Water & Air Research, Inc.
6821 S.W. Archer Road
Gainesville, Florida 32608

May 2001
01-5373-05

Contents

1 Introduction

This report summarizes results and findings of limited soil testing performed on behalf of the City of Gainesville Parks Division in the vicinity of two small playground structures constructed in part wood treated with chromated copper arsenate (CCA). The purpose of the assessment was to evaluate arsenic levels in soils near that may be contacted by children using the equipment.

The CCA treatment process involves pressure-treating wood with a water-based solution containing compounds of chromium, copper, and arsenic. The CCA treatment inhibits degradation of the wood by various wood destroying organisms.

The two playground structures are referred to in this report as the Lincoln Park and the Wilhelmina Johnson Center playgrounds. Both sites are in Gainesville and maintained by the City of Gainesville Parks Division. The Lincoln Park site is at SE 15th Street northeast of Lincoln Middle School and the Wilhelmina Johnson Center site is at 321 NW 10th Street. Locations of both sites are indicated on a portion of the United States Geological Survey (USGS) Gainesville East topographic map included as Figure 1.

The sampling was performed on April 11, 2001. A summary of the results and findings of field assessment and laboratory analysis follows.

2 Soil Sample Collection and Laboratory Analysis

The assessment involved collection of shallow soil samples for arsenic analysis in the immediate vicinity of the playground equipment at both sites. Soil sampling procedures are discussed in detail in the following paragraphs.

Samples were collected from the upper three inches of the soil horizon that children are most likely to contact while using the equipment. Samples at both sites were collected near the equipment dripline where rainwater dripping off the equipment contacts the soil surface or at the wood-soil contact zone. Care was taken not to collect pieces of structure wood that might contain CCA.

Sample locations for the Lincoln Park playground and the Wilhelmina Johnson Center playground are provided in Figure 2 and Figure 3, respectively. Samples from the Lincoln Park site are designated "LP", and samples from the Wilhelmina Johnson Center are identified as "WP."

The number of samples collected was based on the size of the equipment structure and potential areas of exposure. Six samples were collected at the larger Lincoln Park structure including one reference sample (LP-6), and four samples were collected at the Wilhelmina Johnson Center structure and also included one reference sample (WP-4). The purpose of the reference samples is to provide information regarding the concentration of arsenic that may occur naturally in the soil. Effort was made to locate reference samples as far as possible from any treated wood while remaining on the property. Because the entire property has been developed to at least some extent, the reference samples may not be representative of completely unimpacted soil.

All samples were collected directly into new, dedicated sample containers and immediately chilled with wet ice in accordance with the Water & Air Florida Department of Environmental Protection (FDEP)-approved Comprehensive Quality Assurance Plan (CompQAP) #900211/7.

After collection the samples were submitted to PPB Environmental Laboratories, Inc. (PPB) in Gainesville, Florida, for arsenic analysis.

3 Results and Findings

All samples were comprised of dry, fine-grain, sand and silty sand ranging from light gray to dark brown in color. A summary of laboratory testing results along with the Soil Cleanup Target Level (SCTL) for arsenic is provided in Table 1. Copies of laboratory data sheets, quality control information, and chain-of-custody forms for soil analysis are included in Appendix A.

Arsenic concentrations ranged from more than one microgram per kilogram (mg/kg) of soil to 15 mg/kg. The SCTL of 0.8 mg/kg for arsenic concentrations at the playground is the one that relates to direct exposure values in a residential setting as provided in Chapter 62-777 Table II Soil Cleanup Target Levels (SCTLs) of the *Florida Administrative Code* (*FAC*). Arsenic also was detected above laboratory detection limits in both reference samples; however, the concentration of arsenic did not exceed 0.8 mg/kg in either sample.

4 Conclusions

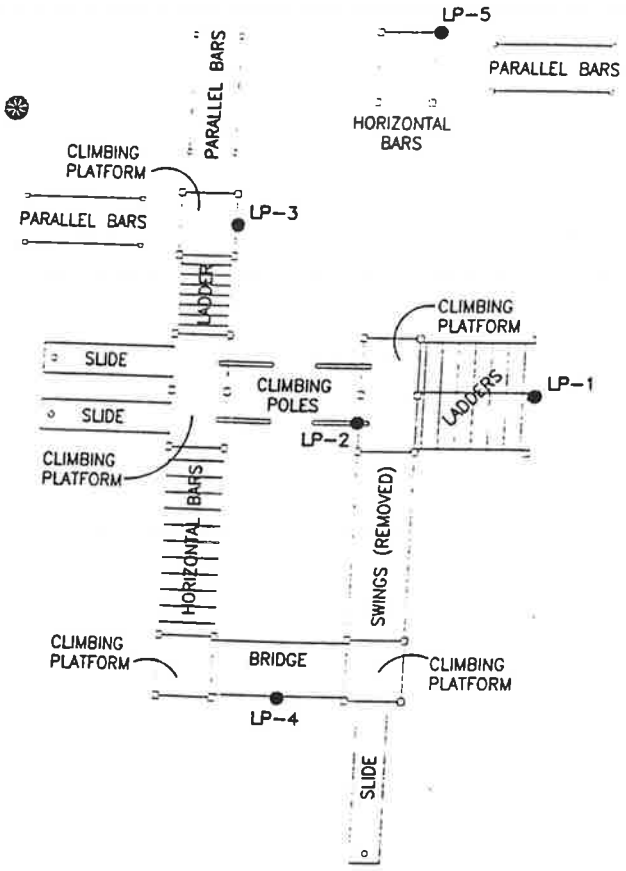
Evidence of arsenic leaching from the wood to surficial soil at the wood-soil contact and equipment driplines was identified at both the Lincoln Park and Wilhelmina Johnson Center playgrounds. The concentration of arsenic exceeded the SCTL for direct exposure in a residential environment in all samples except for reference samples.

The limited assessment identified the presence of arsenic-contaminated soil, but did not provide either the lateral or vertical extent of arsenic-affected soil. Should removal of soils be contemplated, testing to determine extent of soil concentrations above SCTLs would be needed.

Because arsenic-contaminated soil may be classified as a hazardous waste, Toxicity Characteristic Leachate Procedure (TCLP) sampling may be required prior to disposal of any excavated soils. This is significant because the cost of hazardous waste disposal is greater than disposal costs for nonhazardous wastes. The regulatory criteria for TCLP analysis of arsenic is five mg/kg and roughly corresponds to 20 times the total concentration or 100 mg/kg to be classified as a hazardous waste. The type of analysis performed during this assessment was total arsenic analysis, and all results were well below 100 mg/kg. Based on existing results, the soil would not be classified as a hazardous waste.

Figures

GRASS



GRASS

STORM DRAIN

LINCOLN PLAYGROUND

water & air RESEARCH, INC.

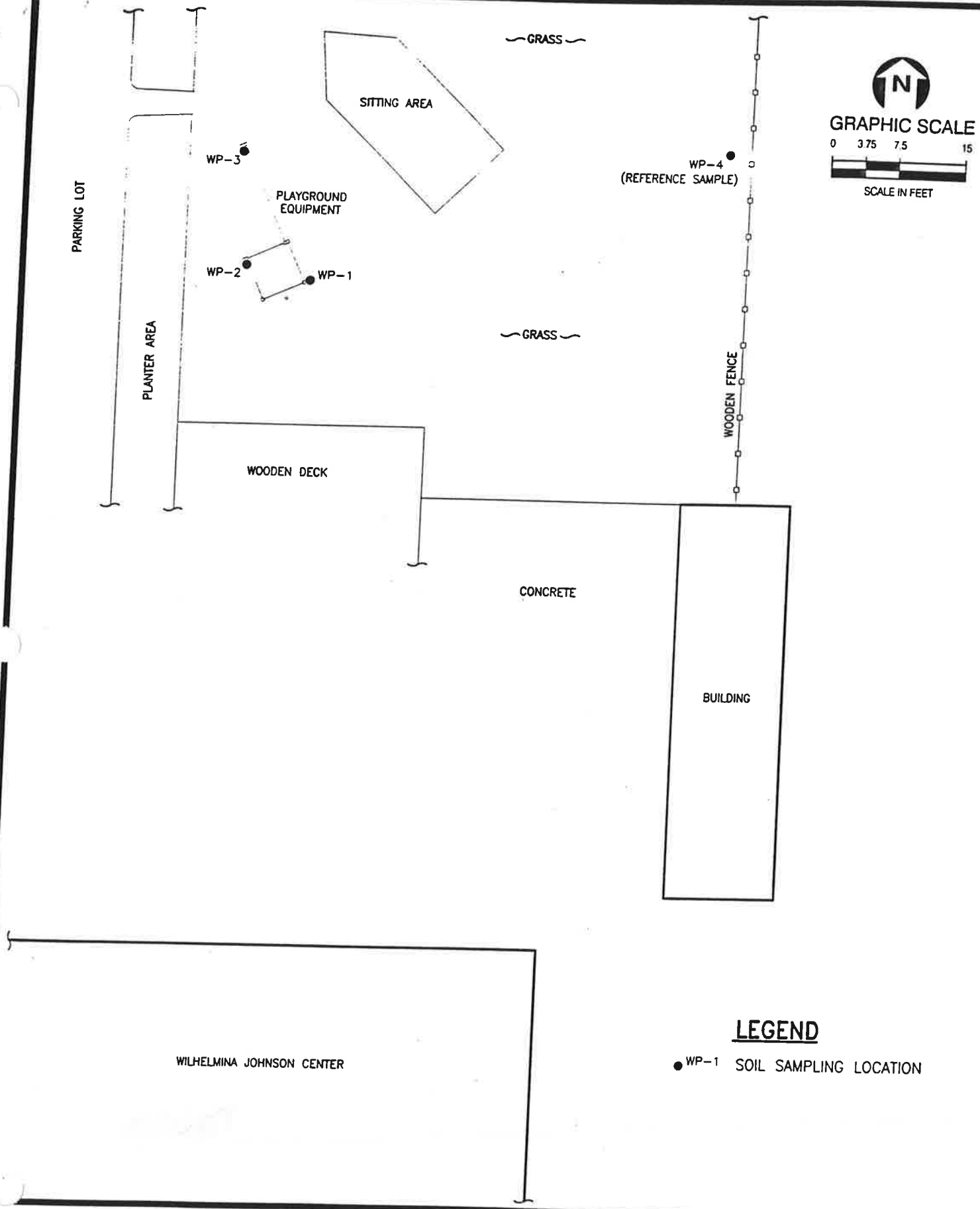


FIGURE 3.
LOCATIONS OF SOIL SAMPLES WP-1 THROUGH WP-4
AT THE WILHELMINA JOHNSON CENTER
321 NW 10TH STREET, GAINESVILLE, FLORIDA

Source: Water & Air Research, Inc., 2001.

water & air RESEARCH, INC.

Tables

TABLE 1
Soil Sample Test Results and Soil Cleanup Target Level for Arsenic Sampling at the Lincoln Park and Wilhelmina Johnson Center, Gainesville, Florida.

Sample Identifier	Sample Area	Arsenic (mg/kg)	Soil Cleanup Target Level (mg/kg)
LP-1	1	**8.5**	0.8
LP-2	1	**12**	0.8
LP-3	1	**15**	0.8
LP-4	1	**1.1**	0.8
LP-5	1	**2.5**	0.8
LP-6	1	0.29	0.8
WP-1	1	**1.1**	0.8
WP-2	1	**7.0**	0.8
WP-3	1	**1.4**	0.8
WP-4	1	0.78	0.8

Bold type indicates Soil Cleanup Target Level Exceedance
based on Direct Exposure in a residential environment per Table II Chapter 62-777.

Appendix A
Laboratory Data Sheets, Quality Control Sheets, and Chain-of-Custody Forms for Arsenic in Soil

ppb
ENVIRONMENTAL LABORATORIES, INC.

April 26, 2001

Scott Burgard
Water and Air Research, Inc.
6821 S.W. Archer Road
Gainesville, FL 32608

Dear Scott:

Enclosed are the analytical results for the City of Gainesville Parks samples we received April 11, 2001.

All data were determined in accordance with published procedures (EPA-600/4-79-020, *Methods for Chemical Analysis of Water and Wastes*, Revised March 1983). Our laboratory is certified by the Florida Department of Health (FDH No. E82001) and our CompQAP is approved by FDEP (#870017G).

If you have any questions concerning this report, please contact me.

Sincerely,

Bryan F. Cotter
Project Manager

/cms

Enclosures

1 SW ARCHER ROAD, GAINESVILLE, FL 32608 (352) 377-2349 Fax (352) 395-6639 ppb@ppb-envlabs.com

ppb
ENVIRONMENTAL LABORATORIES, INC.

REPORT OF ANALYSES

WATER AND AIR RESEARCH
6821 SW ARCHER ROAD
GAINESVILLE, FL 32608-

Attn: SCOTT BURGARD

PROJECT NAME: WAR GVILLE PARK
DATE: 04/26/01
FDH # E82001
DEP CQAP # 870017G

ANALYSIS OF SAMPLES RECEIVED APRIL 2001: GAINESVILLE PARKS (Page 1 of 1)

CLIENT STATION ID	LAB NUMBER	%SOLIDS %	AS/S/AA mg/kg
LP-1	204968	99.1	8.50
LP-2	204969	98.4	12.0
LP-3	204970	99.3	15.0
LP-4	204971	99.2	1.08
LP-5	204972	98.8	2.48
LP-6	204973	96.8	0.29
WP-1	204974	97.9	1.08
WP-2	204975	95.3	7.00
WP-3	204976	90.8	1.36
WP-4	204977	97.4	0.78

PROJECT MANAGER B.F. C

6821 SW ARCHER ROAD. GAINESVILLE. FL 32608 (352) 377-2349 Fax (352) 395-6639 ppb@ppb-envlabs.com

QC REPORT FOR WATER AND AIR RESEARCH 04/26/01 PAGE 1

OTAL SOLIDS % SO Method: EPA 160.3 Alt. Method: None

uplicates

PB Number	Client ID	Value 1	Value 2	Range	% RSD	QC Control Limit
204968	LP-1	99.2	99.0	0.20	0.14	2.70

IO SPIKE QC DATA FOUND

IO REFERENCE QC DATA FOUND

SENIC IN SEDIMENT mg/kg SO Method: EPA 7060 Alt. Method: None

plicates

B Number	Client ID	Value 1	Value 2	Range	% RSD	QC Control Limit
204971	LP-4	1.06	1.11	0.050	3.26	91.50
204976	WP-3	1.29	1.43	0.14	7.28	91.52

kes

Number	Client ID	% MS	% MSD	Spike Recovery Control Limits	% RSD	% RSD Control Limit
04974	WP-1	112	---	64 TO 144	----	----
04977	WP-4	111	---	62 TO 145	----	----
04977	WP-4	91	---	62 TO 145	----	----

rences

erence ID	Target	Found	% Recovery	Control Limits
4	75.2	93.0	124	68 TO 139
4	75.2	87.3	116	68 TO 141

QC REPORT FOR WATER AND AIR RESEARCH 04/26/01 PAGE 2

Blanks

Blank Concentration	Analytical Batch #	Sample Numbers in Batch
<1.0	47307	204968-204977,
<1.0	47307	204968-204977,
<1.0	47307	204968-204977,

DATE, TIME, ANALYST REPORT

ANALYSIS	METHOD	PREP DATE	PREP BY	ANALYSIS DATE	ANALYSIS TIME	ANALYSIS BY	MATRIX
%SOLIDS	EPA 160.3	/ /		04/17/01	1134	ARL	SO
AS/S/AA	EPA 7060	04/16/01	CB	04/20/01	1845	SEK	SO

ppb
ENVIRONMENTAL LABORATORIES, INC.
6821 SW Archer Road, Gainesville, FL 32608
(352) 377-2349 FAX (352) 395-6639

CHAIN-OF-CUSTODY RECORD

LABTROL CLIENT No.	BATCH NO.	FOR LAB USE ONLY
24	16347	Subcontractor _____ Shipping Method _____

CLIENT NAME: City of Gainesville Parks
CLIENT/PROJECT

SITE NAME & ADDRESS: Gainesville Parks

SAMPLERS: (Signature) Scott Burgard

LAB REPORT GOES TO (Client contact person): Scott Burgard

IDENTIFY PARAMETERS DESIRED AND NO. OF CONTAINERS: 40 Arsenic

PRESERVATION
CF Chilled-Filtered
SF Sulfunc-Filtered
NF Nitnc-Filtered
C Chilled
S Sulfunc
N Nitnc
B Basic/NaOH
Z Zinc
T Thiosulfate
H HCL
Ot Other (see Remarks)

NUMBER	DATE	TIME	COMP.	GRAB	STATION LOCATION / NUMBER	SAMPLE MATRIX	NUMBER OF CONTAINERS	Lab I.D. Number
LP-1	4/11/01	0936		✓	Lincoln Park	S	1	204968
LP-2		0940						969
LP-3		0943						970
LP-4		0946						971
LP-5		0948						972
LP-6		0952						973
WP-1		1045			Wildmina Johnson Park			974
WP-2		1048						975
WP-3		1051						976
WP-4		1054						977

Precleaned Containers

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time
Christina Balanya	4/10/01 15:45	Scott Burgard	4/11/01 1545
Scott Burgard	4/11/01 1210	Christina Balanya	4/11/01 12:15
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time

Remarks and Observations

Need results by 4/27/01.

Thanks

Scott

Login as A5/S/AA

SL Sludge or Solid Waste MW Marine Water GW Ground Water

ECT
Environmental Consulting & Technology, Inc.

September 27, 2001
ECT No. 010765-0100

Mr. Steve Phillips
City of Gainesville
3540 East University
Gainesville, FL 32641

Re: Limited Soil Assessment Report; Alfred A. Ring Park, 2424 NW 23rd Blvd, Gainesville, FL

Dear Mr. Phillips:

The purpose of this letter report is to document the procedure and results for the soil assessment activities performed by Environmental Consulting & Technology, Inc. (ECT), of the Ring Park Playground in the area of the Timb "R" Scape for arsenic.

INTRODUCTION

ECT was authorized by the City of Gainesville on September 4, 2001 to conduct soil assessment activities at the site in response to a request to investigate the possible soil contamination in the area of the Timb "R" Scape in the Ring Park Playground. The affected area is approximately 16 feet wide by 20 feet long.

The scope of work consisted of 9 soil samples in the affected area and one soil sample from an unaffected area and submitting a sample from each boring for laboratory analysis for Arsenic (EPA Method 7060). All work was performed on September 18, 2001, in accordance with standard professional practices. All soil sample collection was conducted in accordance with ECT's FDEP-approved Comprehensive Quality Assurance Plan (CompQAP) No. 890083G.

The soil samples collected for laboratory analysis were properly preserved, placed in appropriate containers with ice, and shipped to U.S. Biosystems, Inc., in Tampa, Florida. Analytical methods and procedural references for the chemical analyses performed by U.S. Biosystems, Inc. are specified in the laboratory's CompQAP. The results of ECT's assessment efforts and sample analyses are summarized in the following sections.

FIELD METHODOLOGIES

Soil Boring Installation and Sampling

ECT collected a total of 10 soil samples, including one in a non-improved area for background concentrations. The soil samples were collected to a depth not to exceed 1 ft. Soil samples were collected in accordance with ECT's FDEP-approved CompQAP. Soil boring locations were determined based on field observations. U.S. Biosystems, Inc. performed the laboratory analysis. ECT submitted each sample for laboratory analysis for Arsenic (EPA Method 7060) and pH.

3701 Northwest 98th Street
Gainesville, FL 32606

(352) 332-0444

FAX (352) 332-6722

The soil samples collected for laboratory analysis were properly preserved, placed in appropriate containers with ice, and shipped to U.S. Biosystems, Inc. Analytical methods and procedural references for the chemical analyses performed by U.S. Biosystems, Inc. are specified in the laboratory's CompQAP.

ASSESSMENT RESULTS

Soil Assessment

The results of the laboratory analyses of the soil samples are summarized in Table 2. A copy of the laboratory report is attached.

Table 2. Summary of Soil Laboratory Analysis.

Soil Sample Location	Arsenic (mg/kg)
S-1	3.9
S-2	7.4
S-3	5.5
S-4	17
S-5	9
S-6	24
S-7	12
S-8	16
S-9	0.81
Background (S-10)	BDL
SCTL - commercial	0.8
SCTL - residential	3.7

mg/kg = milligram per kilogram
SCTL= Soil Cleanup Target Levels, Florida
BDL = below detection limits
NA = Not applicable

CONCLUSIONS

The soil laboratory data presented above indicated arsenic is present at levels above the Soil Cleanup Target Levels in all of the samples collected from the Timb "R" Scape area. The results of this limited soil assessment indicate that the soil in the Timb "R" Scape area has been adversely affected.

ECT appreciates the opportunity to assist you with this project. If you have any questions concerning this report or require additional information or assistance, please call me at 352.332.0444, extension 334.

Sincerely,

ENVIRONMENTAL CONSULTING & TECHNOLOGY, INC.

Emily W. Coyner, P.G.
Staff Scientist

EWC

cc: Project/Reading File

US BIOSYSTEMS

Client #: JAX-97-060210
Address: Environmental Consulting & Tech.
3701 NW 98th Street
Gainesville, FL 32606
Attn: Emily Coyner

Page: Page 1 of 1
Date: 09/24/2001
Log #: L56385-1

Sample Description:

Ring Park
Proj.#: 010765

Analytical Report: AS-1
Date Sampled: 09/18/2001
Time Sampled: 08:45
Date Received: 09/18/2001
Collected By: Client

Parameter	Results	Units	Method	Reportable Limit	Extr. Date	Analysis Date	Analyst
Percent Solids							
Percent Solid	94	%	SM2540B	0.10	09/19	09/19	KB
Metals							
Arsenic	3.9	mg/kg (dw)	3050/6010	0.53	09/20	09/21	W

All analyses were performed using EPA, ASTM, NIOSH, USGS, or Standard Methods and certified to meet NELAC requirements.
Flags: BDL or U-below reporting limit; DL-diluted out; IL-meets internal lab limits; MI-matrix interference; NA-not appl.
Flags: CFR-Pb/Cu rule; ND-non detect(RL estimated); NFL-no free liquids; dw-dry wt; ww-wet wt; C(#)-see attached USB code
FLDEP Flags: J(#)-estimated 1:surr. fail 2:no known QC req. 3:QC fail %R or %RPD; 4:matrix int. 5:improper fld. protocol
FLDEP Flags: L-exceeds calibration; Q-holding time exceeded; T-value < MDL; V-present in blank
FLDEP Flags: Y-improper preservation; B-colonies exceed range; I-result between MDL and PQL

QAP# 980126
SUB DOH# 86122,86109,E86048
SC CERT# 96031001
ELPAT# 13801
VA CERT# 00395
DOH# E86240
ADEM ID# 40850
TN CERT# 02985
GA CERT# 917
USDA Soil Permit# S-35240
NC CERT# 444
MA CERT# M-FL449
CT CERT# PH-0122

Respectfully submitted,

Mike Kimmel
Senior Project Manager

Client #: JAX-97-060210
Address: Environmental Consulting & Tech.
3701 NW 98th Street
Gainesville, FL 32606
Attn: Emily Coyner

Page: Page 1 of 1
Date: 09/24/2001
Log #: L56385-2

Sample Description:

Ring Park
Proj.#: 010765

Analytical Report: AS-2
Date Sampled: 09/18/2001
Time Sampled: 09:00
Date Received: 09/18/2001
Collected By: Client

Parameter	Results	Units	Method	Reportable Limit	Extr. Date	Analysis Date	Analy
Percent Solids							
Percent Solid	96	%	SM2540B	0.10	09/19	09/19	KB
Metals							
Arsenic	7.4	mg/kg (dw)	3050/6010	0.52	09/20	09/21	WM

All analyses were performed using EPA, ASTM, NIOSH, USGS, or Standard Methods and certified to meet NELAC requirements.
Flags: BDL or U-below reporting limit; DL-diluted out; IL-meets internal lab limits; MI-matrix interference; NA-not appl.
Flags: CFR-Pb/Cu rule; ND-non detect(RL estimated); NFL-no free liquids; dw-dry wt; ww-wet wt; C(#)-see attached USB code
FLDEP Flags: J(#)-estimated 1:surr. fail 2:no known QC req. 3:QC fail %R or %RPD; 4:matrix int. 5:improper fld. protocol
FLDEP Flags: L-exceeds calibration; Q-holding time exceeded; T-value < MDL; V-present in blank
FLDEP Flags: Y-improper preservation; B-colonies exceed range; I-result between MDL and PQL

QAP# 980126
SUB DOH# 86122,86109,E86048
SC CERT# 96031001
ELPAT# 13801
VA CERT# 00395
DOH# E86240
ADEM ID# 40850
TN CERT# 02985
GA CERT# 917
USDA Soil Permit# S-35240
NC CERT# 444
MA CERT# M-FL449
CT CERT# PH-0122

Respectfully submitted,

Mike Kimmel
Senior Project Manager

Client #: JAX-97-060210
Address: Environmental Consulting & Tech.
3701 NW 98th Street
Gainesville, FL 32606
Attn: Emily Coyner

Page: Page 1 of 1
Date: 09/24/2001
Log #: L56385-3

Sample Description:

Ring Park
Proj.#: 010765

Analytical Report: AS-3
Date Sampled: 09/18/2001
Time Sampled: 09:10
Date Received: 09/18/2001
Collected By: Client

Parameter	Results	Units	Method	Reportable Limit	Extr. Date	Analysis Date	Analys
Percent Solids							
Percent Solid	76	%	SM2540B	0.10	09/19	09/19	KB
Metals							
Arsenic	5.5	mg/kg (dw)	3050/6010	0.66	09/20	09/21	

All analyses were performed using EPA, ASTM, NIOSH, USGS, or Standard Methods and certified to meet NELAC requirements.
Flags: BDL or U-below reporting limit; DL-diluted out; IL-meets internal lab limits; MI-matrix interference; NA-not appl.
Flags: CFR-Pb/Cu rule; ND-non detect(RL estimated); NFL-no free liquids; dw-dry wt; ww-wet wt; C(#)-see attached USB code
FLDEP Flags: J(#)-estimated 1:surr. fail 2:no known QC req. 3:QC fail %R or %RPD; 4:matrix int. 5:improper fld. protocol
FLDEP Flags: L-exceeds calibration; Q-holding time exceeded; T-value < MDL; V-present in blank
FLDEP Flags: Y-improper preservation; B-colonies exceed range; I-result between MDL and PQL

QAP# 980126
SUB DOH# 86122,86109,E86048
SC CERT# 96031001
ELPAT# 13801
VA CERT# 00395
DOH# E86240
ADEM ID# 40850
TN CERT# 02985
GA CERT# 917
USDA Soil Permit# S-35240
NC CERT# 444
MA CERT# M-FL449
CT CERT# PH-0122

Respectfully submitted,

Mike Kimmel
Senior Project Manager

Client #: JAX-97-060210
Address: Environmental Consulting & Tech.
3701 NW 98th Street
Gainesville, FL 32606
Attn: Emily Coyner

Page: Page 1 of 1
Date: 09/24/2001
Log #: L56385-4

Sample Description:

Ring Park
Proj.#: 010765

Analytical Report: AS-4
Date Sampled: 09/18/2001
Time Sampled: 09:20
Date Received: 09/18/2001
Collected By: Client

Parameter	Results	Units	Method	Reportable Limit	Extr. Date	Analysis Date	Analy
Percent Solids							
Percent Solid	96	%	SM2540B	0.10	09/19	09/19	KB
Metals							
Arsenic	17	mg/kg (dw)	3050/6010	0.52	09/20	09/21	WM

All analyses were performed using EPA, ASTM, NIOSH, USGS, or Standard Methods and certified to meet NELAC requirements.
Flags: BDL or U-below reporting limit; DL-diluted out; IL-meets internal lab limits; MI-matrix interference; NA-not appl.
Flags: CFR-Pb/Cu rule; ND-non detect(RL estimated); NFL-no free liquids; dw-dry wt; ww-wet wt; C(#)-see attached USB code
FLDEP Flags: J(#)-estimated 1:surr. fail 2:no known QC req. 3:QC fail %R or %RPD; 4:matrix int. 5:improper fld. protocol
FLDEP Flags: L-exceeds calibration; Q-holding time exceeded; T-value < MDL; V-present in blank
FLDEP Flags: Y-improper preservation; B-colonies exceed range; I-result between MDL and PQL

QAP# 980126
SUB DOH# 86122,86109,E86048
SC CERT# 96031001
ELPAT# 13801
VA CERT# 00395
DOH# E86240
ADEM ID# 40850
TN CERT# 02985
GA CERT# 917
USDA Soil Permit# S-35240
NC CERT# 444
MA CERT# M-FL449
CT CERT# PH-0122

Respectfully submitted,

Mike Kimmel
Senior Project Manager

Client #: JAX-97-060210
Address: Environmental Consulting & Tech.
3701 NW 98th Street
Gainesville, FL 32606
Attn: Emily Coyner

Page: Page 1 of 1
Date: 09/24/2001
Log #: L56385-5

Sample Description:

Ring Park
Proj.#: 010765

Analytical Report: AS-5
Date Sampled: 09/18/2001
Time Sampled: 09:30
Date Received: 09/18/2001
Collected By: Client

Parameter	Results	Units	Method	Reportable Limit	Extr. Date	Analysis Date	Analys
Percent Solids							
Percent Solid	82	%	SM2540B	0.10	09/19	09/19	KB
Metals							
Arsenic	9.0	mg/kg (dw)	3050/6010	0.61	09/20	09/21	

All analyses were performed using EPA, ASTM, NIOSH, USGS, or Standard Methods and certified to meet NELAC requirements.
Flags: BDL or U-below reporting limit; DL-diluted out; IL-meets internal lab limits; MI-matrix interference; NA-not appl.
Flags: CFR-Pb/Cu rule; ND-non detect(RL estimated); NFL-no free liquids; dw-dry wt; ww-wet wt; C(#)-see attached USB code
FLDEP Flags: J(#)-estimated 1:surr. fail 2:no known QC req. 3:QC fail %R or %RPD; 4:matrix int. 5:improper fld. protocol
FLDEP Flags: L-exceeds calibration; Q-holding time exceeded; T-value < MDL; V-present in blank
FLDEP Flags: Y-improper preservation; B-colonies exceed range; I-result between MDL and PQL

QAP# 980126
SUB DOH# 86122,86109,E86048
SC CERT# 96031001
ELPAT# 13801
VA CERT# 00395
DOH# E86240
ADEM ID# 40850
TN CERT# 02985
GA CERT# 917
USDA Soil Permit# S-35240
NC CERT# 444
MA CERT# M-FL449
CT CERT# PH-0122

Respectfully submitted,

Mike Kimmel
Senior Project Manager

Client #: JAX-97-060210
Address: Environmental Consulting & Tech.
3701 NW 98th Street
Gainesville, FL 32606
Attn: Emily Coyner

Page: Page 1 of 1
Date: 09/24/2001
Log #: L56385-6

Sample Description:

Ring Park
Proj.#: 010765

Analytical Report: AS-6
Date Sampled: 09/18/2001
Time Sampled: 09:35
Date Received: 09/18/2001
Collected By: Client

Parameter	Results	Units	Method	Reportable Limit	Extr. Date	Analysis Date	Analys
Percent Solids							
Percent Solid	89	%	SM2540B	0.10	09/19	09/19	KB
Metals							
Arsenic	24	mg/kg (dw)	3050/6010	0.56	09/20	09/21	WM

All analyses were performed using EPA, ASTM, NIOSH, USGS, or Standard Methods and certified to meet NELAC requirements.
Flags: BDL or U-below reporting limit; DL-diluted out; IL-meets internal lab limits; MI-matrix interference; NA-not appl.
Flags: CFR-Pb/Cu rule; ND-non detect(RL estimated); NFL-no free liquids; dw-dry wt; ww-wet wt; C(#)-see attached USB code
FLDEP Flags: J(#)-estimated 1:surr. fail 2:no known QC req. 3:QC fail %R or %RPD; 4:matrix int. 5:improper fld. protocol
FLDEP Flags: L-exceeds calibration; Q-holding time exceeded; T-value < MDL; V-present in blank
FLDEP Flags: Y-improper preservation; B-colonies exceed range; I-result between MDL and PQL

QAP# 980126
SUB DOH# 86122,86109,E86048
SC CERT# 96031001
ELPAT# 13801
VA CERT# 00395
DOH# E86240
ADEM ID# 40850
TN CERT# 02985
GA CERT# 917
USDA Soil Permit# S-35240
NC CERT# 444
MA CERT# M-FL449
CT CERT# PH-0122

Respectfully submitted,

Mike Kimmel
Senior Project Manager

Client #: JAX-97-060210
Address: Environmental Consulting & Tech.
3701 NW 98th Street
Gainesville, FL 32606
Attn: Emily Coyner

Page: Page 1 of 1
Date: 09/24/2001
Log #: L56385-7

Sample Description:

Ring Park
Proj.#: 010765

Analytical Report: AS-7
Date Sampled: 09/18/2001
Time Sampled: 09:45
Date Received: 09/18/2001
Collected By: Client

Parameter	Results	Units	Method	Reportable Limit	Extr. Date	Analysis Date	Analyst
Percent Solids							
Percent Solid	82	%	SM2540B	0.10	09/19	09/19	KB
Metals							
Arsenic	12	mg/kg (dw)	3050/6010	0.61	09/20	09/21	W.

All analyses were performed using EPA, ASTM, NIOSH, USGS, or Standard Methods and certified to meet NELAC requirements.
Flags: BDL or U-below reporting limit; DL-diluted out; IL-meets internal lab limits; MI-matrix interference; NA-not appl.
Flags: CFR-Pb/Cu rule; ND-non detect(RL estimated); NFL-no free liquids; dw-dry wt; ww-wet wt; C(#)-see attached USB code
FLDEP Flags: J(#)-estimated 1:surr. fail 2:no known QC req. 3:QC fail %R or %RPD; 4:matrix int. 5:improper fld. protocol
FLDEP Flags: L-exceeds calibration; Q-holding time exceeded; T-value < MDL; V-present in blank
FLDEP Flags: Y-improper preservation; B-colonies exceed range; I-result between MDL and PQL

QAP# 980126
SUB DOH# 86122,86109,E86048
SC CERT# 96031001
ELPAT# 13801
VA CERT# 00395
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TN CERT# 02985
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NC CERT# 444
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Respectfully submitted,

Mike Kimmel
Senior Project Manager

Client #: JAX-97-060210
Address: Environmental Consulting & Tech.
3701 NW 98th Street
Gainesville, FL 32606
Attn: Emily Coyner

Page: Page 1 of 1
Date: 09/24/2001
Log #: L56385-8

Sample Description:

Ring Park
Proj.#: 010765

Analytical Report: AS-8
Date Sampled: 09/18/2001
Time Sampled: 09:55
Date Received: 09/18/2001
Collected By: Client

Parameter	Results	Units	Method	Reportable Limit	Extr. Date	Analysis Date	Analy
Percent Solids							
Percent Solid	96	%	SM2540B	0.10	09/19	09/19	KB
Metals							
Arsenic	16	mg/kg (dw)	3050/6010	0.52	09/20	09/21	WM

All analyses were performed using EPA, ASTM, NIOSH, USGS, or Standard Methods and certified to meet NELAC requirements.
Flags: BDL or U-below reporting limit; DL-diluted out; IL-meets internal lab limits; MI-matrix interference; NA-not appl.
Flags: CFR-Pb/Cu rule; ND-non detect(RL estimated); NFL-no free liquids; dw-dry wt; ww-wet wt; C(#)-see attached USB code
FLDEP Flags: J(#)-estimated 1:surr. fail 2:no known QC req. 3:QC fail %R or %RPD; 4:matrix int. 5:improper fld. protocol
FLDEP Flags: L-exceeds calibration; Q-holding time exceeded; T-value < MDL; V-present in blank
FLDEP Flags: Y-improper preservation; B-colonies exceed range; I-result between MDL and PQL

QAP# 980126
SUB DOH# 86122,86109,E86048
SC CERT# 96031001
ELPAT# 13801
VA CERT# 00395
DOH# E86240
ADEM ID# 40850
TN CERT# 02985
GA CERT# 917
USDA Soil Permit# S-35240
NC CERT# 444
MA CERT# M-FL449
CT CERT# PH-0122

Respectfully submitted,

Mike Kimmel
Senior Project Manager

Client #: JAX-97-060210
Address: Environmental Consulting & Tech.
3701 NW 98th Street
Gainesville, FL 32606
Attn: Emily Coyner

Page: Page 1 of 1
Date: 09/24/2001
Log #: L56385-9

Sample Description:

Ring Park
Proj.#: 010765

Analytical Report: AS-9
Date Sampled: 09/18/2001
Time Sampled: 10:05
Date Received: 09/18/2001
Collected By: Client

Parameter	Results	Units	Method	Reportable Limit	Extr. Date	Analysis Date	Analyst
Percent Solids							
Percent Solid	96	%	SM2540B	0.10	09/19	09/19	KB
Metals							
Arsenic	0.81	mg/kg (dw)	3050/6010	0.52	09/20	09/21	

All analyses were performed using EPA, ASTM, NIOSH, USGS, or Standard Methods and certified to meet NELAC requirements.
Flags: BDL or U-below reporting limit; DL-diluted out; IL-meets internal lab limits; MI-matrix interference; NA-not appl.
Flags: CFR-Pb/Cu rule; ND-non detect(RL estimated); NFL-no free liquids; dw-dry wt; ww-wet wt; C(#)-see attached USB code
FLDEP Flags: J(#)-estimated 1:surr. fail 2:no known QC req. 3:QC fail %R or %RPD; 4:matrix int. 5:improper fld. protocol
FLDEP Flags: L-exceeds calibration; Q-holding time exceeded; T-value < MDL; V-present in blank
FLDEP Flags: Y-improper preservation; B-colonies exceed range; I-result between MDL and PQL

QAP# 980126
SUB DOH# 86122,86109,E86048
SC CERT# 96031001
ELPAT# 13801
VA CERT# 00395

DOH# E86240
ADEM ID# 40850
TN CERT# 02985
GA CERT# 917
USDA Soil Permit# S-35240

NC CERT# 444
MA CERT# M-FL449
CT CERT# PH-0122

Respectfully submitted,

Mike Kimmel
Senior Project Manager

Client #: JAX-97-060210
Address: Environmental Consulting & Tech.
3701 NW 98th Street
Gainesville, FL 32606
Attn: Emily Coyner

Page: Page 1 of 1
Date: 09/24/2001
Log #: L56385-10

Sample Description:

Ring Park
Proj.#: 010765

Analytical Report: AS-10
Date Sampled: 09/18/2001
Time Sampled: 10:10
Date Received: 09/18/2001
Collected By: Client

Parameter	Results	Units	Method	Reportable Limit	Extr. Date	Analysis Date	Analys
Percent Solids							
Percent Solid	89	%	SM2540B	0.10	09/19	09/19	KB
Metals							
Arsenic	BDL	mg/kg (dw)	3050/6010	0.56	09/20	09/21	WM

All analyses were performed using EPA, ASTM, NIOSH, USGS, or Standard Methods and certified to meet NELAC requirements.
Flags: BDL or U-below reporting limit; DL-diluted out; IL-meets internal lab limits; MI-matrix interference; NA-not appl.
Flags: CFR-Pb/Cu rule; ND-non detect(RL estimated); NFL-no free liquids; dw-dry wt; ww-wet wt; C(#)-see attached USB code
FLDEP Flags: J(#)-estimated 1:surr. fail 2:no known QC req. 3:QC fail %R or %RPD; 4:matrix int. 5:improper fld. protocol
FLDEP Flags: L-exceeds calibration; Q-holding time exceeded; T-value < MDL; V-present in blank
FLDEP Flags: Y-improper preservation; B-colonies exceed range; I-result between MDL and PQL

QAP# 980126
SUB DOH# 86122,86109,E86048
SC CERT# 96031001
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NC CERT# 444
MA CERT# M-FL449
CT CERT# PH-0122

Respectfully submitted,

Mike Kimmel
Senior Project Manager

USBI SYSTEMS

Log# 56385

Quote# 15/10 P

Company Name ECT PO#

Address 3701 NW 98th St

City Gainesville State FL Zip 32606

Attn: EMILY COYNER Fax#

Project Name Ring Park Proj# 0107605

Sampler Name/Signature Emily Coyner Phone# 352 332-0444 x 334

#	Sample Label (Client ID)	Collect Date	Collect Time	Matrix Code*	Sample Container No.	Sample Container Size	Parameters: Sample Id	Parameters: pH	Parameters: Pres Codes	Parameters: Arsenic (EPA 7060)	Field Filtered (Y/N)	Integrity OK (Y/N)
01	AS-1	9/18	0845	SO	1	Glass	2011		A	X	04	SI
02	AS-2		0900									
03	AS-3		0910									
04	AS-4		0920									
05	AS-5		0930									
06	AS-6		0935									
07	AS-7		0945									
08	AS-8		0955									
09	AS-9		10:05									
10	AS-10	↓	10:10	↓	↓	↓						

LAB ANALYSIS

Samples INTACT upon receipt? Y
Received ON WET ICE? Y
PROPER PRESERVATIVES indicated? Y
Received WITHIN HOLDING TIMES? Y
CUSTODY SEALS INTACT? Y
VOLATILES rec'd W/OUT HEADSPACE? Y
PROPER CONTAINERS used? Y

Matrix Codes*

SD	Solid Waste	OL	Oil
GW	Ground Water	SL	Sludge
EFF	Effluent	SO	Soil Sediment
AFW	Analyte Free H_2O	AQ	Aqueous
WW	Waste Water	NA	Nonaqueous
DW	Drinking Water	PE	Petroleum
SU	Surface Water	O	Other (Please Specify)

Pres/Codes

A. None	G. $Na_2S_2O_3$
B. HNO_3	H. $NaHSO_4$
C. H_2SO_4	I. Ice
D. NaOH	J. MCAA
E. HCL	O. Other
F. MeOH	

REMARKS

T.A.T. REQUEST: STANDARD (Y) N; RUSH ____ Date required

Short Hold: Y ____ N ✓

QA/QC Report Level: None ____ 1 ____ 2 ____ 3 ____ Other ____

COC OK: (Y) N

Initials: JP

Specific State Certification Required: FL

Coolers #'s

Baillers #____

Item	Relinquished by	Date	Time	Received by	Date	Time
	Emily Coyner	9/18/01	1140		9/18/01	1100
		9/18/01	1730	FedEx 830351717204	9/18/01	1730
					9/19/01	1245

3231 N.W. 7th Avenue
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