

**CON 12-15
Doc #18957**

**SOIL CHARACTERIZATION SERVICES
PROPOSED CASINO PARKING RAMP FACILITY
INTERSECTION OF EAST 5TH and BELL
~~ESTOCKPILE #2~~
DUBUQUE, IOWA**

**Project No. 07077067
January 23, 2008**

• 4,000 CY

Prepared For:

**CITY OF DUBUQUE
Dubuque, Iowa**

Prepared By:

**Terracon
Bettendorf, Iowa**

*benzo(a) pyrene
benzo(b)fluoranthene*

January 23, 2008

City of Dubuque
Engineering Department
50 West 13th Street
Dubuque, IA 52001-4864

Attention: Mr. Steve Brown

Re: Soil Characterization Services
Proposed Casino Parking Ramp Facility
Intersection of East 5th and Bell
Stockpile #2
Dubuque, Iowa
Project No. 07077067

Terracon
Consulting Engineers & Scientists

Terracon Consultants, Inc.
870 40th Avenue
Bettendorf, Iowa 52722
Phone 563.355.0702
Fax 563.355.4789
www.terracon.com

Dear Mr. Brown:

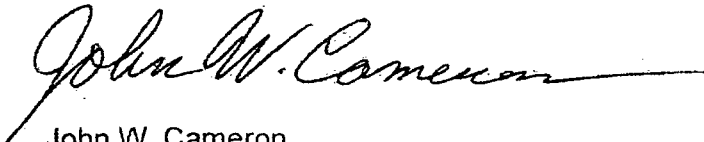
Terracon is pleased to submit our report of soil characterization services completed at the site referenced above. The report presents documentation from recent field activities that included the sampling of soil from known impacted areas.

Based upon the results of the activities documented in this report, a portion of stockpiled soil requires special handling.

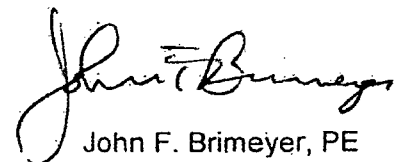
Terracon appreciates the opportunity to assist you with this project. Should you have any questions or require additional information, please do not hesitate to contact our office.

Sincerely,

Terracon



John W. Cameron
Environmental Scientist



John F. Brimeyer, PE
Department Manager

JWC/JFB/jb2
N:\Projects\2007\07077067\report\CharacterizationStockpile2.doc

cc: Paul Kalb, Conlon Construction Inc.
Jane McAlister, Ahlers Law Firm

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SOIL CHARACTERIZATION SERVICES
PROPOSED CASINO PARKING RAMP FACILITY
INTERSECTION OF 5th & BELL
DUBUQUE, IOWA

Project No. 07077067
January 23, 2008

1.0 INTRODUCTION

Terracon has completed the soil characterization for stockpile #2 activities at the intersection of 5th & Bell as described in our proposal dated December 27, 2007.

1.1 Project History

Terracon understands that a parking ramp for the proposed Diamond Jo Casino is currently under construction at the site. Previous site assessment activities identified the presence of uncontrolled fill, consisting of sand, clay, sawdust, and other miscellaneous material across the site. Laboratory analysis of soil samples identified reported concentrations of lead and polynuclear aromatic hydrocarbons (PAHs) in excess of Iowa Department of Natural Resources (IDNR) Statewide Standards. The results of previous assessment activities have been presented^{1,2} to the IDNR and have resulted in the issuance of an IDNR "Comfort Letter" dated October 12, 2006.

The "Comfort Letter" references the Soil Management Plan (SMP) dated August 18, 2006 and prepared by Terracon (Project Number 07037005). The SMP provides an assessment of hazards associated with possible chemical impact, identifies health and safety precautions to reduce the risk of chemical exposure for on-site construction workers, and recommends procedures to handle excess soils in consideration of the observed chemical impact. At the direction of the City of Dubuque (the City), the SMP has been implemented for the site.

Approximately **4,000 cubic yards** of excess materials removed from the Casino Parking Ramp construction site have been placed on a temporary soil stockpile at the Dubuque Hardwoods property located on the north side of 5th Street. It is directly north of the previously sampled stockpile and will be referred to as Stockpile #2

¹ Phase II Environmental Site Assessment, East 5th and Bell Street, Dubuque, Iowa, Port of Dubuque Brownfields Redevelopment Project, Terracon Project No. 07037005, June 21, 2005

² Supplemental Phase II Environmental Site Assessment, East Fifth^h and Bell Street, Port of Dubuque Brownfields Redevelopment Project, Dubuque, Iowa, Terracon Project No. 07037005, August 18, 2006

1.2 Project Objective

The intent of the characterization activities was to determine whether portions of the stockpiled soils are impacted at levels above the IDNR Statewide Standards and to identify soil handling and disposal procedures.

2.0 CHARACTERIZATION ACTIVITIES

2.1 Health and Safety

Terracon performed field activities under Level D safety precautions. Level D safety attire for this project consisted of a washable work uniform including safety shoes, hardhat, rubber gloves, and appropriate eye protection. Terracon developed a health and safety plan before mobilization.

2.2 Sampling Activities

On January 9, 2008, Terracon mobilized a technician and equipment to the Stockpile #2 site. The site location is identified on Figure 1, Appendix A. Soils were stockpiled north of 5th Street on the former Dubuque Hardwoods property. Upon arrival, Terracon divided the stockpile into five areas of approximately equivalent volume. Terracon advanced one soil boring within each of the five areas. One soil sample was taken from each boring at varying depths within each boring. The sample locations are identified on Figure 2, Appendix A. Soil samples were obtained directly from the hand auger bucket.

Terracon transferred the soil samples to laboratory-prepared containers that were placed in an ice-packed cooler for transport to the laboratory. Terracon shipped the samples under standard Chain-of-Custody procedures via overnight carrier to Environmental Science Corporation (ESC). ESC analyzed the samples for lead and PAHs using USEPA Methods 6010B and 8270C, respectively.

Sample locations were measured with respect to site features using a measuring wheel. Angles were estimated.

3.0 ANALYTICAL RESULTS

Lead was detected in each of the soil samples at concentrations below the IDNR Statewide Standard. PAH's were detected in each of the five soil samples. The reported concentration of detected PAH's in two of the five samples (P2-HA2, and P2-HA3) were below the IDNR Statewide Standards. The reported benzo(a)pyrene concentration in samples P2-HA1, P2-HA4 and P2-HA5, was 1.1, 2.6, and 1.6 milligrams per kilogram (mg/kg) respectively, which is above the IDNR Statewide Standard of 0.31 mg/kg. The reported benzo(b)floranthene concentration in sample P2-

HA4 is 4.4 mg/kg which is above the IDNR Statewide Standard of 3.1 mg/kg. Laboratory analytical results for the soil samples are summarized in Table 1, Appendix B. Copies of the laboratory analytical report are attached as Appendix C.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Analytical results indicate that a portions of the stockpile represented by sample P2-HA1, P2-HA4, and P2-HA5 require special handling. These samples are located in the center, northeastern, and northwestern portions of the stockpile. Off-site disposal at a landfill would be an appropriate method to handle these soils. Please note that the landfill will need to be notified and approval given before soils will be accepted by them.

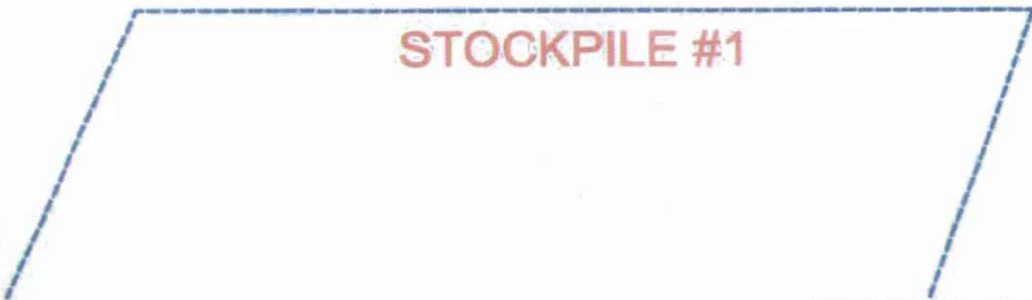
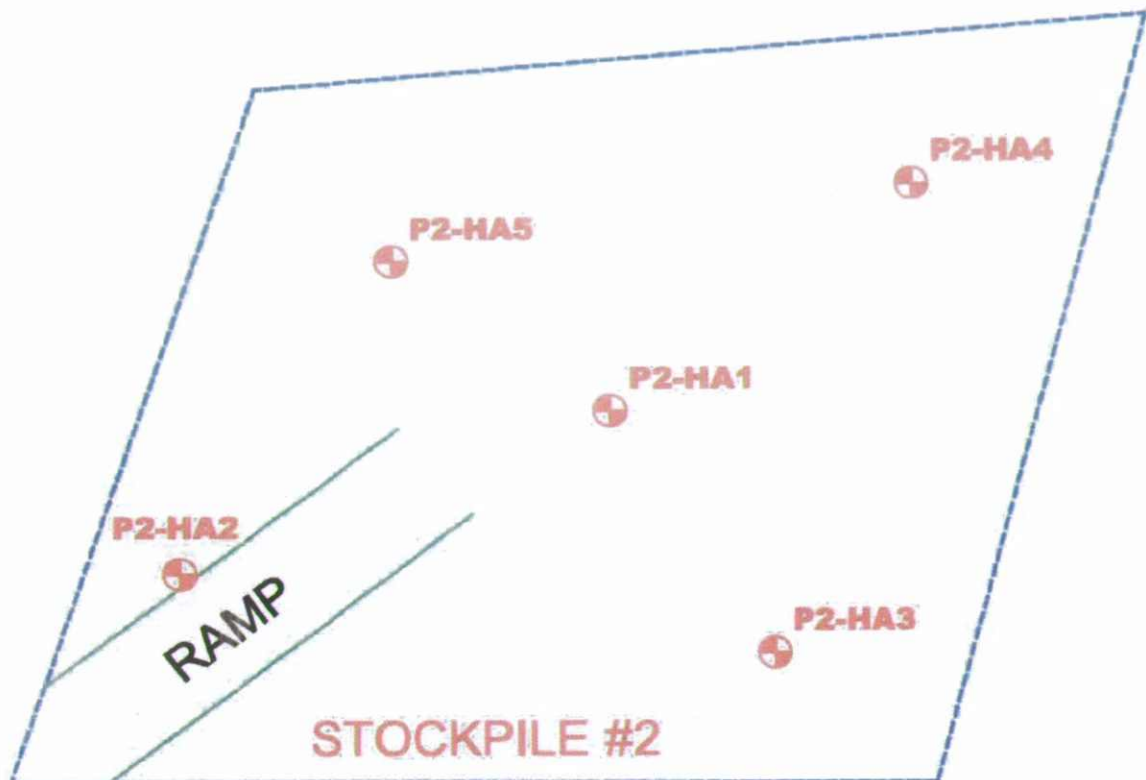
The intent of soil characterization activities is that each soil sample is representative of the approximately equivalent proportion of the pile that it was collected from. The actual extent of observed impact throughout that portion of the stockpile, however, is not known. The representative portion of the stockpile around each sample location could be further divided and additional samples could be analyzed to help determine the extent of impact. Further sampling with the intent of reducing the quantity of soil to be disposed of would have to be evaluated against the cost of disposal.

The analysis presented in this report is based upon data obtained from field activities and from other information discussed in this report. This report does not reflect any variations in subsurface stratigraphy which may occur between borings or across the site. Actual subsurface conditions may vary. The extent of such variations may not become evident without additional exploration.

This report is prepared for the exclusive use of our client for the specific application to the project discussed and has been prepared in accordance with generally accepted environmental engineering practices. No warranties, either express or implied are intended or made. In the event any changes in nature or location of subsurface conditions as outlined in this report are observed, the conclusions contained in this report cannot be considered valid unless the changes are reviewed and the conclusions of this report are modified or verified in writing by the environmental engineer.

APPENDIX A

PROJECT: OTHER OPERATIONS/STORAGE - 07077067b-LSI - REV 20080110a.dwg



--- Approximate Stockpile Boundary

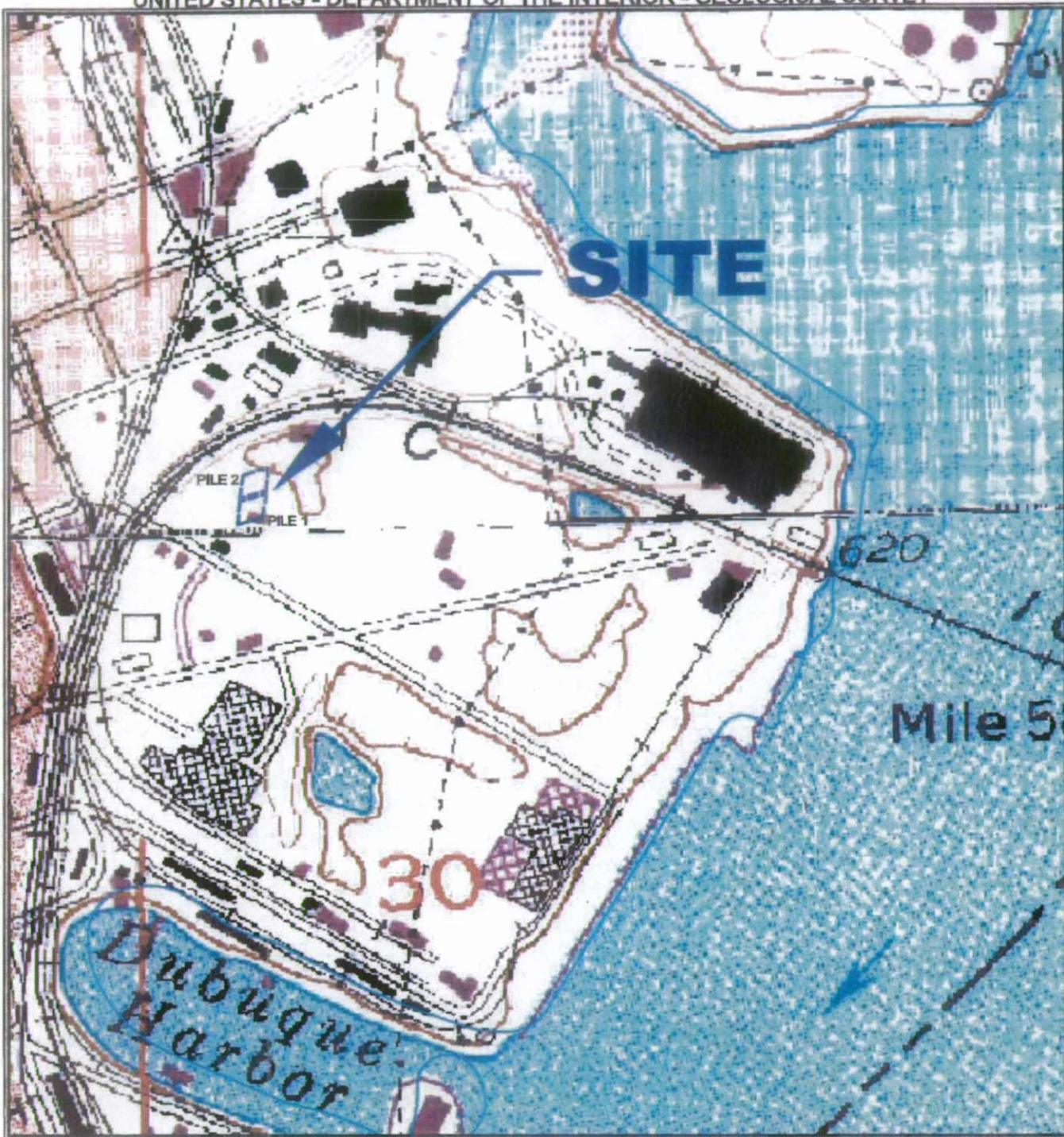
⊕ Approximate Casino Ramp Soil Characterization



SITE DETAIL DIAGRAM LIMITED SITE INVESTIGATION PARKING RAMP SOIL CHARACTERIZATION EAST 6TH STREET, PORT OF DUBUQUE DUBUQUE, IOWA		
Project Mngr:	JWC	Project #
Drawn By:	DAC	Scale:
Checked By:	JWC	Date:
Approved By:	JWC	Revised By:
File Name:	07077067b-LSI - REV 20080110a.dwg	Figure #

870 40th Avenue
Bettendorf, Iowa 52722
(563) 355-0702

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES.



Map Source:
USGS TERRASERVER-USA.COM
Topographic Image
Dated 1972

0 500'
APPROXIMATE SCALE 1"=500'

----- Approximate Site Boundary

**TOPOGRAPHIC VICINITY MAP
LIMITED SITE INVESTIGATION
PARKING RAMP SOIL CHARACTERIZATION
EAST 6TH STREET, PORT OF DUBUQUE
DUBUQUE, IOWA**

Project Mgr:	JWC	 870 40th Avenue Bettendorf, Iowa 52722 (563) 355-0702	Project #	07077067b
Drawn By:	DAC		Scale:	AS SHOWN
Checked By:	JWC		Date:	January 15, 2008
Approved By:	JWC		Revised By:	EP
File Name:	07077067b-LSI - REV 20080110a.dwg		Figure #	1

APPENDIX B

Table 1: Soil Analytical Results
Soil Stockpile #2 - Dubuque Hardwoods Site

Lab Sample ID			L327323-01	L327323-02	L327323-03	L327323-04	L327323-05	Frequency of Detection	Maximum Detected Concentration	Most Restrictive LRP Standard	Maximum Exceeds?
Client Sample ID			P2-HA1 7'	P2-HA2 3'	P2-HA3 4'	P2-HA4 10'	P2-HA5 12'				
Date Sampled			1/9/2008	1/9/2008	1/9/2008	1/9/2008	12/20/2007				
CAS No	Parameter	Units									
7439-92-1	Lead, Total	mg/kg	37	47	44	54	36	5 of 5 (100%)	54	400	NO
83-32-9	Acenaphthene	mg/kg	0.57	0.074	0.14	1.3	0.91	5 of 5 (100%)	1.3	3400	NO
208-96-8	Acenaphthylene	mg/kg	0.26	<0.033	0.058	0.54	0.39	4 of 5 (80%)	0.54	Not Established	No Standard
120-12-7	Anthracene	mg/kg	<0.033	0.039	<0.033	0.044	<0.033	2 of 5 (40%)	0.044	17000	NO
56-55-3	Benzo(a)anthracene	mg/kg	1.2	0.23	0.29	3.1	1.8	5 of 5 (100%)	3.1	3.1	NO
50-32-8	Benzo(a)pyrene	mg/kg	1.1	0.28	0.27	2.6	1.6	5 of 5 (100%)	2.6	0.31	YES
205-99-2	Benzo(b)fluoranthene	mg/kg	1.4	0.48	0.44	4.4	3.0	5 of 5 (100%)	4.4	3.1	YES
191-24-2	Benzo(g,h,i)perylene	mg/kg	0.62	0.11	0.13	0.59	0.50	5 of 5 (100%)	0.62	Not Established	No Standard
207-08-9	Benzo(k)fluoranthene	mg/kg	0.51	0.16	0.22	1.8	0.65	5 of 5 (100%)	1.8	31	NO
218-01-9	Chrysene	mg/kg	1.0	0.19	0.26	2.9	1.4	5 of 5 (100%)	2.9	310	NO
53-70-3	Dibenzo(a,h)anthracene	mg/kg	0.18	0.036	<0.033	0.31	0.19	4 of 5 (80%)	0.31	0.31	NO
206-44-0	Fluoranthene	mg/kg	3.2	0.38	0.60	8.0	5.0	5 of 5 (100%)	8	2300	NO
86-73-7	Fluorene	mg/kg	0.28	<0.033	0.062	0.76	0.44	4 of 5 (80%)	0.76	2300	NO
193-39-5	Indeno(1,2,3-c,d)pyrene	mg/kg	0.58	0.11	0.10	0.69	0.49	5 of 5 (100%)	0.69	3.1	NO
91-20-3	Naphthalene	mg/kg	0.25	0.11	0.14	0.36	0.44	5 of 5 (100%)	0.44	1100	NO
85-01-8	Phenanthrene	mg/kg	2.2	0.20	0.48	7.1	3.4	5 of 5 (100%)	7.1	Not Established	No Standard
129-00-0	Pyrene	mg/kg	2.2	0.39	0.63	6.9	3.9	5 of 5 (100%)	6.9	1700	NO

APPENDIX C



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John Brimeyer
Terracon - Bettendorf
870 40th Avenue

Bettendorf, IA 52722

Report Summary

Tuesday January 22, 2008

Report Number: L327323

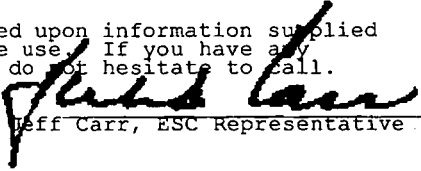
Samples Received: 01/11/08

Client Project: 07077067

Description: Casino Soil Sampling - Dubuque, IA

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:


Jeff Carr, ESC Representative

Laboratory Certification Numbers

AZLA - 1461-01, AIHA - 09227, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375, DW21704, ND - R-140
NJ - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910

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5 Samples Reported: 01/21/08 17:47 Revised: 01/22/08 10:57

Page 1 of 8



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REPORT OF ANALYSIS

January 22, 2008

John Brimeyer
Terracon - Bettendorf
870 40th Avenue
Bettendorf, IA 52722

Date Received : January 11, 2008
Description : Casino Soil Characterization Hardwood SP 2
Sample ID : P2-HA1 7 FT
Collected By : John W. Cameron
Collection Date : 01/09/08 15:00

ESC Sample # : L327323-01
Site ID :
Project # : 07077067

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Lead	37.	0.25	mg/kg	6010B	01/13/08	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	0.57	0.033	mg/kg	8270C	01/20/08	1
Acenaphthene	0.26	0.033	mg/kg	8270C	01/20/08	1
Acenaphthylene	BDL	0.033	mg/kg	8270C	01/20/08	1
Benzo(a)anthracene	1.2	0.033	mg/kg	8270C	01/20/08	1
Benzo(a)pyrene	1.1	0.033	mg/kg	8270C	01/20/08	1
Benzo(b)fluoranthene	1.4	0.033	mg/kg	8270C	01/20/08	1
Benzo(g,h,i)perylene	0.62	0.033	mg/kg	8270C	01/20/08	1
Benzo(k)fluoranthene	0.51	0.033	mg/kg	8270C	01/20/08	1
Chrysene	1.0	0.033	mg/kg	8270C	01/20/08	1
Dibenz(a,h)anthracene	0.18	0.033	mg/kg	8270C	01/20/08	1
Fluoranthene	3.2	0.033	mg/kg	8270C	01/20/08	1
Fluorene	0.28	0.033	mg/kg	8270C	01/20/08	1
Indeno(1,2,3-cd)pyrene	0.58	0.033	mg/kg	8270C	01/20/08	1
Naphthalene	0.25	0.033	mg/kg	8270C	01/20/08	1
Phenanthrene	2.2	0.033	mg/kg	8270C	01/20/08	1
Pyrene	2.2	0.033	mg/kg	8270C	01/20/08	1
Surrogate Recovery						
Nitrobenzene-d5	83.3		% Rec.	8270C	01/20/08	1
2-Fluorobiphenyl	89.5		% Rec.	8270C	01/20/08	1
p-Terphenyl-d14	60.2		% Rec.	8270C	01/20/08	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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REPORT OF ANALYSIS

January 22, 2008

John Brimeyer
Terracon - Bettendorf
870 40th Avenue
Bettendorf, IA 52722

Date Received : January 11, 2008
Description : Casino Soil Characterization Hardwood SP 2
Sample ID : P2-HA 2 3 FT
Collected By : John W. Cameron
Collection Date : 01/09/08 15:15

ESC Sample # : L327323-02

Site ID :

Project # : 07077067

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Lead	47.	0.25	mg/kg	6010B	01/13/08	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	0.074	0.033	mg/kg	8270C	01/18/08	1
Acenaphthene	BDL	0.033	mg/kg	8270C	01/18/08	1
Acenaphthylene	0.039	0.033	mg/kg	8270C	01/18/08	1
Benzo(a)anthracene	0.23	0.033	mg/kg	8270C	01/18/08	1
Benzo(a)pyrene	0.28	0.033	mg/kg	8270C	01/18/08	1
Benzo(b)fluoranthene	0.48	0.033	mg/kg	8270C	01/18/08	1
Benzo(g,h,i)perylene	0.11	0.033	mg/kg	8270C	01/18/08	1
Benzo(k)fluoranthene	0.16	0.033	mg/kg	8270C	01/18/08	1
Chrysene	0.19	0.033	mg/kg	8270C	01/18/08	1
Dibenz(a,h)anthracene	0.036	0.033	mg/kg	8270C	01/18/08	1
Fluoranthene	0.38	0.033	mg/kg	8270C	01/18/08	1
Fluorene	BDL	0.033	mg/kg	8270C	01/18/08	1
Indeno(1,2,3-cd)pyrene	0.11	0.033	mg/kg	8270C	01/18/08	1
Naphthalene	0.11	0.033	mg/kg	8270C	01/18/08	1
Phenanthrene	0.20	0.033	mg/kg	8270C	01/18/08	1
Pyrene	0.39	0.033	mg/kg	8270C	01/18/08	1
Surrogate Recovery						
Nitrobenzene-d5	39.7		% Rec.	8270C	01/18/08	1
2-Fluorobiphenyl	118.		% Rec.	8270C	01/18/08	1
p-Terphenyl-d14	140.		% Rec.	8270C	01/18/08	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

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REPORT OF ANALYSIS

January 22, 2008

John Brimeyer
Terracon - Bettendorf
870 40th Avenue
Bettendorf, IA 52722

Date Received : January 11, 2008
Description : Casino Soil Characterization Hardwood SP 2
Sample ID : P2-HA 3 4 FT
Collected By : John W. Cameron
Collection Date : 01/09/08 15:30

ESC Sample # : L327323-03
Site ID :
Project # : 07077067

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Lead	44.	0.25	mg/kg	6010B	01/13/08	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	0.14	0.033	mg/kg	8270C	01/18/08	1
Acenaphthene	0.058	0.033	mg/kg	8270C	01/18/08	1
Acenaphthylene	BDL	0.033	mg/kg	8270C	01/18/08	1
Benzo(a)anthracene	0.29	0.033	mg/kg	8270C	01/18/08	1
Benzo(a)pyrene	0.27	0.033	mg/kg	8270C	01/18/08	1
Benzo(b)fluoranthene	0.44	0.033	mg/kg	8270C	01/18/08	1
Benzo(g,h,i)perylene	0.13	0.033	mg/kg	8270C	01/18/08	1
Benzo(k)fluoranthene	0.22	0.033	mg/kg	8270C	01/18/08	1
Chrysene	0.26	0.033	mg/kg	8270C	01/18/08	1
Dibenz(a,h)anthracene	BDL	0.033	mg/kg	8270C	01/18/08	1
Fluoranthene	0.60	0.033	mg/kg	8270C	01/18/08	1
Fluorene	0.062	0.033	mg/kg	8270C	01/18/08	1
Indeno(1,2,3-cd)pyrene	0.10	0.033	mg/kg	8270C	01/18/08	1
Naphthalene	0.14	0.033	mg/kg	8270C	01/18/08	1
Phenanthrene	0.48	0.033	mg/kg	8270C	01/18/08	1
Pyrene	0.63	0.033	mg/kg	8270C	01/18/08	1
Surrogate Recovery						
Nitrobenzene-d5	44.0		% Rec.	8270C	01/18/08	1
2-Fluorobiphenyl	115.		% Rec.	8270C	01/18/08	1
p-Terphenyl-d14	83.6		% Rec.	8270C	01/18/08	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit (PQL)

Note:

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REPORT OF ANALYSIS

January 22, 2008

John Brimeyer
Terracon - Bettendorf
870 40th Avenue
Bettendorf, IA 52722

Date Received : January 11, 2008
Description : Casino Soil Characterization Hardwood SP 2
Sample ID : P2-HA 4 10 FT
Collected By : John W. Cameron
Collection Date : 01/09/08 15:45

ESC Sample # : L327323-04
Site ID :
Project # : 07077067

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Lead	54.	0.25	mg/kg	6010B	01/13/08	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	1.3	0.033	mg/kg	8270C	01/18/08	1
Acenaphthene	0.54	0.033	mg/kg	8270C	01/18/08	1
Acenaphthylene	0.044	0.033	mg/kg	8270C	01/18/08	1
Benzo (a) anthracene	3.1	0.033	mg/kg	8270C	01/18/08	1
Benzo (a) pyrene	2.6	0.033	mg/kg	8270C	01/18/08	1
Benzo (b) fluoranthene	4.4	0.033	mg/kg	8270C	01/18/08	1
Benzo (g,h,i) perylene	0.59	0.033	mg/kg	8270C	01/18/08	1
Benzo (k) fluoranthene	1.8	0.033	mg/kg	8270C	01/18/08	1
Chrysene	2.9	0.033	mg/kg	8270C	01/18/08	1
Dibenz (a,h) anthracene	0.31	0.033	mg/kg	8270C	01/18/08	1
Fluoranthene	8.0	0.033	mg/kg	8270C	01/18/08	1
Fluorene	0.76	0.033	mg/kg	8270C	01/18/08	1
Indeno (1,2,3-cd) pyrene	0.69	0.033	mg/kg	8270C	01/18/08	1
Naphthalene	0.36	0.033	mg/kg	8270C	01/18/08	1
Phenanthrene	7.1	0.033	mg/kg	8270C	01/18/08	1
Pyrene	6.9	0.033	mg/kg	8270C	01/18/08	1
Surrogate Recovery						
Nitrobenzene-d5	41.6		% Rec.	8270C	01/18/08	1
2-Fluorobiphenyl	117.		% Rec.	8270C	01/18/08	1
p-Terphenyl-d14	144.		% Rec.	8270C	01/18/08	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit (PQL)

Note:

The reported analytical results relate only to the sample submitted.
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Reported: 01/21/08 17:47 Revised: 01/22/08 10:58



**ENVIRONMENTAL
SCIENCE CORP.**

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Est. 1970

REPORT OF ANALYSIS

January 22, 2008

John Brimeyer
Terracon - Bettendorf
870 40th Avenue
Bettendorf, IA 52722

Date Received : January 11, 2008
Description : Casino Soil Characterization Hardwood SP 2
Sample ID : P2-HA 5 12 FT
Collected By : John W. Cameron
Collection Date : 01/09/08 16:00

ESC Sample # : L327323-05
Site ID :
Project # : 07077067

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Lead	36.	0.25	mg/kg	6010B	01/13/08	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	0.91	0.033	mg/kg	8270C	01/18/08	1
Acenaphthene	0.39	0.033	mg/kg	8270C	01/18/08	1
Acenaphthylene	BDL	0.033	mg/kg	8270C	01/18/08	1
Benzo(a)anthracene	1.8	0.033	mg/kg	8270C	01/18/08	1
Benzo(a)pyrene	1.6	0.033	mg/kg	8270C	01/18/08	1
Benzo(b)fluoranthene	3.0	0.033	mg/kg	8270C	01/18/08	1
Benzo(g,h,i)perylene	0.50	0.033	mg/kg	8270C	01/18/08	1
Benzo(k)fluoranthene	0.65	0.033	mg/kg	8270C	01/18/08	1
Chrysene	1.4	0.033	mg/kg	8270C	01/18/08	1
Dibenz(a,h)anthracene	0.19	0.033	mg/kg	8270C	01/18/08	1
Fluoranthene	5.0	0.033	mg/kg	8270C	01/18/08	1
Fluorene	0.44	0.033	mg/kg	8270C	01/18/08	1
Indeno(1,2,3-cd)pyrene	0.49	0.033	mg/kg	8270C	01/18/08	1
Naphthalene	0.44	0.033	mg/kg	8270C	01/18/08	1
Phenanthrene	3.4	0.033	mg/kg	8270C	01/18/08	1
Pyrene	3.9	0.033	mg/kg	8270C	01/18/08	1
Surrogate Recovery						
Nitrobenzene-d5	46.1		% Rec.	8270C	01/18/08	1
2-Fluorobiphenyl	116.		% Rec.	8270C	01/18/08	1
p-Terphenyl-d14	106.		% Rec.	8270C	01/18/08	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Attachment A
List of Analytes with QC Qualifiers

Sample #	Analyte	Qualifier
L327323-02	Benzo(a)pyrene	V3
	Benzo(b)fluoranthene	V3
	Benzo(g,h,i)perylene	V3
	Benzo(k)fluoranthene	V3
	Dibenz(a,h)anthracene	V3
	Indeno(1,2,3-cd)pyrene	V3
	p-Terphenyl-d14	J1
L327323-03	Benzo(a)pyrene	V3
	Benzo(b)fluoranthene	V3
	Benzo(g,h,i)perylene	V3
	Benzo(k)fluoranthene	V3
	Dibenz(a,h)anthracene	V3
	Indeno(1,2,3-cd)pyrene	V3
L327323-04	Benzo(a)pyrene	V3
	Benzo(b)fluoranthene	V3
	Benzo(g,h,i)perylene	V3
	Benzo(k)fluoranthene	V3
	Dibenz(a,h)anthracene	V3
	Fluoranthene	E
	Indeno(1,2,3-cd)pyrene	V3
	Phenanthrene	E
	Pyrene	E
L327323-05	p-Terphenyl-d14	J1
	Benzo(a)pyrene	V3
	Benzo(b)fluoranthene	V3
	Benzo(g,h,i)perylene	V3
	Benzo(k)fluoranthene	V3
	Dibenz(a,h)anthracene	V3
	Indeno(1,2,3-cd)pyrene	V3

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
E	GTL (EPA) - Greater than upper calibration limit: Actual value is known to be greater than the upper calibration range.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits
V3	(ESC) - Additional QC Info: The internal standard exhibited poor recovery due to sample matrix interference. The analytical results will be biased high. BDL results will be unaffected.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable unless qualified as 'R' (Rejected).

Definitions

- Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.
- Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.
- Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.
- TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed
01/22/08 at 10:58:45

TSR Signing Reports: 206
R5 - Desired TAT

Sample: L327323-01 Account: TERRABIA Received: 01/11/08 09:00 Due Date: 01/18/08 00:00 RPT Date: 01/21/08 17:47
Sample: L327323-02 Account: TERRABIA Received: 01/11/08 09:00 Due Date: 01/18/08 00:00 RPT Date: 01/21/08 17:47
Sample: L327323-03 Account: TERRABIA Received: 01/11/08 09:00 Due Date: 01/18/08 00:00 RPT Date: 01/21/08 17:47
Sample: L327323-04 Account: TERRABIA Received: 01/11/08 09:00 Due Date: 01/18/08 00:00 RPT Date: 01/21/08 17:47
Sample: L327323-05 Account: TERRABIA Received: 01/11/08 09:00 Due Date: 01/18/08 00:00 RPT Date: 01/21/08 17:47

Company Name/Address:
Terracon - Bettendorf
 870 40th Avenue
 Bettendorf, IA 52722

Alternate billing information:
 Report to: *John Brimeyer*
 Email to: *jbrimeyer@terracon.com*

Analysis/Container/Preservative

Chain of Custody
 Page 1 of 1

Prepared by:
ENVIRONMENTAL SCIENCE CORP.
 12065 Lebanon Road
 Mt Juliet, TN 37122
 Phone (615) 758-5858
 Phone (800) 767-5859
 FAX (615) 758-5859

Project Description: *Casino Soil Characterization*
Hardwood Stackpile #2
 City/State Collected: *Des Moines, Iowa*
 Phone: (563) 355-0702
 FAX: (563) 355-4789
 Client Project #: *02077067*
 ESC Key:

Collected by: *John W. Cameron*
 Site/Facility ID#: _____
 P.O.#: _____

Collected by (signature): *John W. Cameron*
 Rush? (Lab MUST Be Notified)
 Same Day 200%
 Next Day 100%
 Two Day 50%
 Three Day 25%
 Date Results Needed:
 Email? No Yes
 FAX? No Yes
 Immediately Packed on Ice N Y X

Co Code: **TERRABIA** (lab use only)
 Template/Prelogin
 Shipped Via:

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	Remarks/Contaminant	Sample # (lab only)
<i>P2-HA1</i>	<i>grab</i>	<i>SS</i>	<i>7' ABS</i>	<i>1/9/08</i>	<i>15:00</i>	<i>2</i>		<i>327327</i>
<i>P2-HA2</i>	<i>grab</i>	<i>SS</i>	<i>3' ABS</i>		<i>15:15</i>	<i>1</i>		<i>02</i>
<i>P2-HA3</i>	<i>grab</i>	<i>SS</i>	<i>4' ABS</i>		<i>15:30</i>	<i>1</i>		<i>03</i>
<i>P2-HA-4</i>	<i>grab</i>	<i>SS</i>	<i>10' ABS</i>		<i>15:45</i>	<i>1</i>		<i>04</i>
<i>P2-HA-5</i>	<i>grab</i>	<i>SS</i>	<i>12' ABS</i>		<i>16:00</i>	<i>1</i>		<i>05</i>

10 50100
PAH'S 8270C

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other _____

pH _____ Temp _____

Remarks:

Flow _____ Other _____

Relinquished by: (Signature) <i>John W. Cameron</i>	Date: <i>1/10/08</i>	Time: <i>11:00</i>	Received by: (Signature) _____	Samples returned via: <input checked="" type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> Courier	Condition: (lab use only) <i>OK</i>
Relinquished by: (Signature) _____	Date: _____	Time: _____	Received by: (Signature) _____	Temp: <i>5.0</i>	Bottles Received: <i>10</i>
Relinquished by: (Signature) _____	Date: _____	Time: _____	Received for lab use: (Signature) _____	Date: <i>1/11/08</i>	Time: <i>9:00</i>

Overview of soil removal activities for the
East 5th & Bell site in Dubuque, Iowa

- As part of a USEPA Brownfields Project for the Port of Dubuque, Phase I and Phase II environmental assessments were completed for the site and submitted to the Department for review. Data from the Phase II indicated that several contaminants were detected in soil above their respective Statewide Standard which included:

Contaminant	Highest Detected Concentration (mg/kg)	Statewide Standard 567 IAC 137 (mg/kg)
Arsenic	6.53	1.9*
Lead	599.3	400
Benzo(a)anthracene	7.1	3.1
Benzo(a)pyrene	6.8	0.31
Benzo(b)fluoranthene	8.6	3.1

*The statewide Standard for arsenic in soil is 1.9 mg/kg. The commonly observed background concentration of arsenic in Iowa soil is 1.7 mg/kg.

- The Departments response to the Phase II was transmitted to the City of Dubuque in a September 28, 2005 letter that stated in part:

The City of Dubuque has two options:

1. *Conduct additional investigation to determine extent of contamination.*
- or*
2. *Accept and environmental covenant that will*
 - a. *Prohibit the installation of any water well*
 - b. *Require confirmation sampling on shallow soils if the site is to be used for residential development.*
 - c. *Require that the Department be notified before any on-site construction/excavation activity*

The City of Dubuque offered a work plan that would involve additional soil sampling for lead (Supplemental Phase II) and would develop a Soil Management Plan that would address contamination detected on-site under a variety of possible future construction/excavation scenarios. The Department agreed to the proposed work plan.

- The Supplemental Phase II data was submitted to the Department along with the Soil Management plan for Department review. The Department's response was issued in a letter dated October 12, 2006 noting that contamination had been detected in soil and groundwater on-site at concentrations that exceed their respective Statewide Standards. The response also noted that a soil management plan had been developed for the site and stated that no further investigation would be required at this time.

- At some time after the Department's October 12, 2006 response, work which included the excavation of a considerable quantity of soil was begun on-site. The Soil Management Plan that had been developed for the site was apparently not completely followed. Soil has been removed from the site with approximately 23,000 cubic yards being deposited on the Illinois side of the river in East Dubuque (Highway 20 East Dubuque Site). Approximately 5,000 cubic yards has also been deposited at a site on the Iowa side of the river (Rubie Farm Site). Additional soil has been excavated and remains stock-pilled at the East 5th & Bell site.
- Soil deposited at the Highway 20 East Dubuque site has been sampled by Terracon Consultants (Soil Characterization Services, Proposed Casino Parking Ramp Facility, Highway 20 East, East Dubuque, Illinois – Project No. 07077067). Ten samples were selected and each was analyzed for RCRA Metals, PAHs, and pesticides. Five soil samples were selected and analyzed for VOCs. Arsenic was detected at a highest concentration of 19 mg/kg which exceeds the most restrictive Tier 1 objective or background (Illinois) of 11.3 mg/kg. Of the twenty-five other contaminants detected, none were detected at concentrations that exceeded the most restrictive Tier 1 objective or background for the State of Illinois.
- Soil deposited at the RubieFarm Site has been sampled by Terracon Consultants (Soil Characterization Services, Proposed Casino Parking Ramp Facility, Rubie Farm Site, 8159 Settler's Lane, Dubuque, Iowa – Project No. 07077067). Ten samples were selected and each was analyzed for lead and PAHs. Benzo(a)pyrene was detected at a highest concentration of 2.6 mg/kg, above the Statewide Standard of 0.31 mg/kg. Of the sixteen other contaminants detected, none were detected at concentrations that exceeded their respective Statewide Standard (Iowa).