



## **Penn E&R**

Environmental & Remediation, Inc.

January 26, 2004  
HA4797-03000

### **VIA REGULAR MAIL**

Mr. Craig Poff  
Bentley Communities, L.P.  
1595 Paoli Pike, Suite 202  
P.O. Box 1906  
West Chester, Pennsylvania 19380-6167

**Subject:** Summary Report of Findings of Additional Phase II Activities Completed in the Vicinity of the Former Settlement Pond Located on the Balderston Property (Tax Parcel No. 29-04-179), 224 Swinehart Road, West Brandywine Township, Chester County, Pennsylvania

Dear Mr. Poff:

Penn Environmental & Remediation, Inc. (Penn E&R) is pleased to present this summary report for the additional Phase II Site Assessment activities completed at the above-referenced site (Site) during December 2003. The purpose of the additional Phase II activities was to evaluate potential impacts to subsurface soil and ground water in the vicinity of the former settlement pond located in the southwest portion of the Site. Penn E&R understands that Bentley Communities, L.P. (Bentley) intends to construct a sewer treatment plant in the immediate vicinity of the former settlement pond. The methods and findings of the additional Phase II activities are presented below.

### **SITE LOCATION AND DESCRIPTION**

The Site consists of a 130.2-acre irregular-shaped parcel of land located at the southeast corner of the intersection of Swinehart Road and Culbertson Run Road in West Brandywine Township, Chester County, Pennsylvania. The property is identified by the Chester County Tax Assessors Office as Parcel 29-04-0179. It consists of undeveloped agricultural land used primarily for cultivation of corn and soybeans. The only structure present on the Site is the ruins of a stone barn that reportedly burned down approximately 15 years ago. The Site is owned by the Balderston Family Limited Partnership and has been used for agricultural purposes since at least 1945. Figure 1 shows the location of the Site.

### **BACKGROUND**

Previous investigations completed at the Site by Penn E&R includes a Phase I Environmental Site Assessment (ESA) and a limited Phase II Site Assessment. The findings of these investigations are summarized below.

#### **Phase I Environmental Site Assessment**

At the request of Bentley, Penn E&R completed a Phase I ESA on the Site during October 2002. The results of this Phase I ESA were documented in an October 22, 2002 report prepared by Penn E&R

entitled "Phase I Environmental Site Assessment for Tax Parcel No. 29-04-0179, Located on Swinehart Road, West Brandywine Township, Chester, County, Pennsylvania." As outlined in the aforementioned report, Penn E&R recommended that Bentley complete soil borings and collect subsurface soil samples from the on-Site area formerly occupied by a settlement pond. As indicated above, the former settlement pond was located in the cornfield in the southwest portion of the Site. Treated wash water from a former automotive facility was reportedly hauled to the Site for approximately 5 years and disposed of in this settlement pond. Disposal activities ceased approximately 20 years ago when the results of PADER [(now Pennsylvania Department of Environmental Protection (PADEP))] monitoring indicated that not all the treated wash water had evaporated. Subsequently, the settlement pond was allowed to fill in and corn was planted over the pond.

#### Phase II Site Assessment

To address potential environmental issues associated with the disposal of treated wash water, Penn E&R implemented Phase II Site Assessment activities at the Site on November 14, 2002. The results of the Phase II activities are documented in the report entitled "Phase II Site Assessment Report of the Balderston Property (Tax Parcel No. 29-04-179) Located on Swinehart Road in West Brandywine Township, Chester County, Pennsylvania" and dated December 13, 2002. In the aforementioned Phase I report, Penn E&R recommended completing borings in the immediate vicinity of the former settlement pond. However, as the Balderston Family Partnership intended to retain this portion of the property for agricultural purposes, Bentley requested that the investigation of the former settlement pond area focus on evaluating surface soil conditions. As such, Penn E&R collected two surface soil samples [0 to 0.5 foot below ground surface (bgs)] in the immediate vicinity of the former settlement pond on November 14, 2002. The approximate locations of the two soil samples, designated SS-A-1 and SS-A-2, are shown on Figure 2. Following collection, the soil samples were submitted to GLA Laboratories, Inc. (GLA), a PADEP-certified laboratory located in King of Prussia, Pennsylvania and analyzed for volatile organic compounds (VOCs), polynuclear aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), pesticides, and Resource Conservation and Recovery Act (RCRA) metals.

Table 1 summarizes laboratory analytical results for surface soil samples SS-A-1 and SS-A-2 that were collected from the former settlement pond. As shown on Table 1, no PAHs, PCBs, pesticides, or VOCs were detected above the listed laboratory detection limits. Low concentrations of arsenic, barium, chromium and lead were detected in the two surface soil samples obtained from the former settlement pond area. However, the reported concentrations of these constituents are well below their residential Medium Specific Concentration (MSC) cleanup standards developed pursuant to Pennsylvania's Land Recycling and Environmental Remediation Standards Act (Act 2).

#### ADDITIONAL PHASE II SITE ASSESSMENT ACTIVITIES

As indicated in the aforementioned Phase II Site Assessment Report, Penn E&R recommended that a limited boring and sampling program be implemented to evaluate subsurface soil and ground water quality conditions in the event development activities were implemented in the vicinity of the former settlement pond. As discussed above, Bentley intends to construct a sewer plant in the vicinity of the former settlement pond.

On December 3, 2003, Penn E&R implemented additional Phase II activities in the vicinity of the former settlement pond. Additional Phase II Site Assessment activities were implemented in accordance with our November 25, 2003 proposal entitled "Proposal to Implement a Limited Phase II Assessment in the Vicinity of the Former Settlement Pond on the Balderston Property Located at 224 Swinehart Road, West

Brandywine Township, Chester County, Pennsylvania” and involved: (1) completing four soil borings within the approximate footprint of the former settlement pond; (2) collecting continuous subsurface soil samples from the four borings; and (3) submitting two of the subsurface soil samples for laboratory analysis of VOCs, PAHs, PCBs, pesticides, and RCRA metals.

The four soil borings, designated SS-A-3 through SS-A-6, were advanced to refusal using a hand-held direct push sampling device. During borehole advancement, soil samples were collected continuously from each boring. The Penn E&R on-Site geologist visually assessed the subsurface soil for lithologic information and indications of contamination (e.g., odors, stained/discolored soil horizons) and screened the soils in the field with a photo ionization detector (PID) to confirm the presence/absence of total volatile organic vapors.

### **RESULTS OF ADDITIONAL PHASE II SITE ASSESSMENT ACTIVITIES**

This section of the report presents the results of additional Phase II Site Assessment sampling activities that were completed at the Site on December 3, 2003.

Table 2 presents the soil boring details. As shown on Table 2, subsurface materials encountered beneath a 1.5-foot-thick layer of topsoil consisted primarily of a silty loam and clay with trace amounts of fine gravel and coarse sand. Refusal, interpreted as bedrock, was encountered in the four borings at depths ranging from 3.5 feet below ground surface (BGS) to 6 feet BGS before intersecting the ground water table. As such, Penn E&R was unable to evaluate ground water conditions in the immediate vicinity of the former settlement pond. No odors or stained/discolored soil horizons were observed during borehole advancement. PID field screening results did not elicit a recorded reading above 0 parts per million.

Table 3 summarizes laboratory analytical results for the two subsurface soil samples (SS-A-3 and SS-A-5) collected from the former settlement pond. Laboratory analytical data and the chain-of-custody form for the aforementioned subsurface soil samples are included in Appendix A. As shown on Table 3, no PAHs, pesticides or VOCs were detected in the two soil samples at concentrations above the listed laboratory detection limits. Low concentrations of RCRA metals (arsenic, barium, chromium, and lead) were detected in the two subsurface soil samples collected from the footprint of the former settlement pond. However, the reported concentrations of these constituents are well below their Ac 2 residential MSC cleanup standards.

### **CONCLUSIONS AND RECOMMENDATIONS**

During December 2003, Penn E&R completed additional Phase II Site Assessment activities in the vicinity of the former settlement pond. Additional Phase II Site Assessment activities included completing four soil borings and submitting two subsurface soil samples from the four borings completed within the footprint of the former settlement pond for laboratory analysis of VOCs, PAHs, PCBs, pesticides and RCRA metals. No PAHs, PCBs, pesticides or VOCs were detected at concentrations above the listed laboratory detection limits. Low concentrations of RCRA metals (arsenic, barium, chromium and lead) were detected in Site subsurface soils. However, none of the aforementioned metals were detected at concentrations that exceeded their Act 2 residential MSCs.

Based on these findings, no additional Site characterization or remedial action appears warranted in the vicinity of the former settlement pond.

Mr. Craig Poff  
January 26, 2004  
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If you have any questions or comments pertaining to this report, or any project-related issues, or if we can be of further assistance, please contact us at your earliest convenience. We appreciate the opportunity to be of continued service to Bentley Communities, L.P.

Sincerely,  
PENN ENVIRONMENTAL & REMEDIATION, INC.

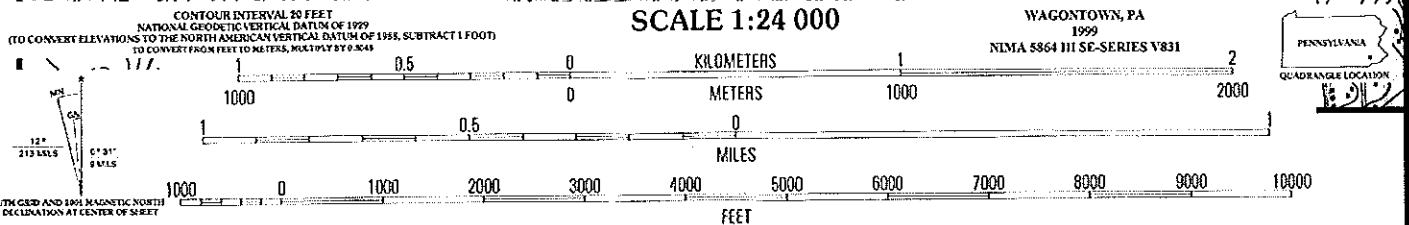
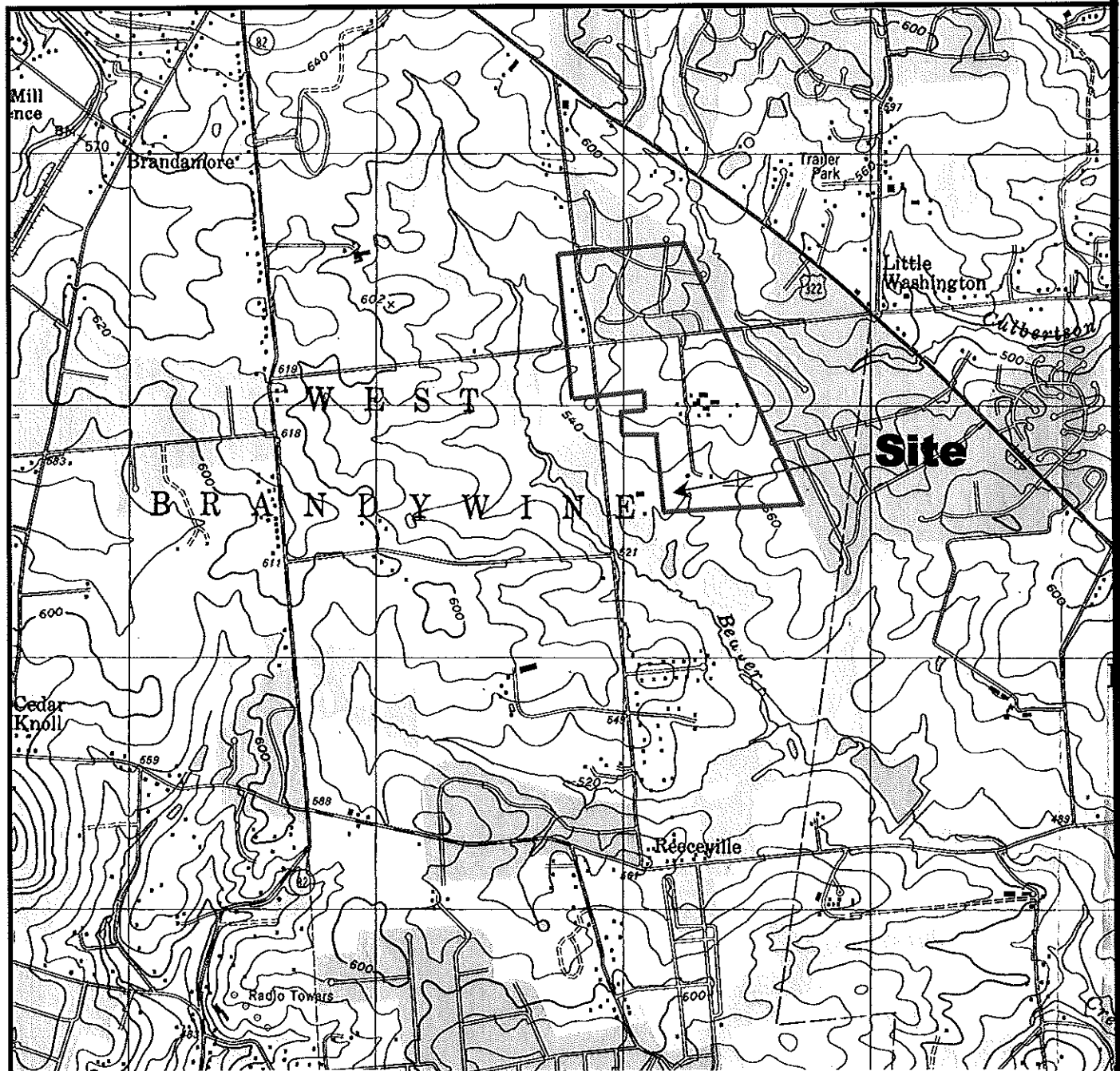


Donald A. Coleman, P.G.  
Project Manager



Michael A. Christie, P.G.  
Vice President

DAC:dac  
Enclosure  
4797: rpt



**Penn E&R**  
Environmental & Remediation, Inc.

Hatfield, Pennsylvania 19440  
215-997-9000 fax 215-822-8575

**Figure 1**

Site Location Map  
Tax Parcel No. 29-04-0179  
Swinehart Road  
W. Brandywine Township, Chester County, PA

Date: 12-Jan-04

Project Number: 4797

Scale: AS NOTED

TABLE 1

SUMMARY OF LABORATORY RESULTS FOR PHASE II ASSESSMENT SOIL SAMPLES  
COLLECTED FROM THE FORMER SETTLEMENT POND AREA LOCATED ON THE BALDERSTON PROPERTY  
SWINEHART ROAD, W. BRANDYWINE TOWNSHIP, CHESTER COUNTY, PA

ANALYTICAL PARAMETERS <sup>(1)</sup>	SAMPLE DESIGNATION/ANALYTICAL RESULTS <sup>(2)</sup>		PADEP RDC MSC <sup>(3)</sup>	PADEP RSG MSC <sup>(3)</sup>
	SS-A-1	SS-A-2		
<i>Volatile Organic Compounds:</i>	ND	ND	---	---
<i>PAHs:</i>	ND	ND	---	---
<i>PCBs:</i>	ND	ND	---	---
<i>Pesticides:</i>	ND	ND	---	---
<i>RCRA Metals:</i>				
Arsenic	<8	9.3	12	150
Barium	83	120	15,000	8,200
Cadmium	<1	<1	47	38
Chromium	55	57	190,000	190,000
Lead	19	17	500	450
Mercury	<0.1	<0.1	66	10
Selenium	<12	<12	1,100	26
Silver	<2.5	<2.5	1,100	84
<i>Sample Collection Depth<sup>(4)</sup>:</i>	0-0.5	0-0.5	---	---

**Notes:**

(1) - Each sample was analyzed for VOCs, PAHs, PCBs and RCRA metals. Only those compounds detected above laboratory detection limits are listed.

(2) - All results are reported in milligrams per kilogram.

(3) - Pennsylvania Department of Environmental Protection, Land Recycling and Environmental Remediation Standards Act, Residential Medium Specific Concentrations (November 24, 2001).

(4) - Sample collection depths are in feet below the ground surface

MSC - Medium Specific Concentration

ND - Not Detected

PADEP - Pennsylvania Department of Environmental Protection

RDC - Residential Direct Contact

RSG - Residential Soil-to-Ground Water

<8 - Compound was not detected above the listed laboratory detection limit

TABLE 2  
SUMMARY OF SOIL BORING INSTALLATION ACTIVITIES  
FORMER SETTLEMENT POND AREA  
BALDERSTON PROPERTY  
224 SWINEHART ROAD, WEST BRANDYWINE TOWNSHIP  
CHESTER COUNTY, PENNSYLVANIA  
DECEMBER 3, 2003

SOIL BORING DESIGNATION	SAMPLE COLLECTION DEPTH (ft bgs)	PID (ppm)	DESCRIPTION / COMMENTS
SS-A-3	0-2	0	0-1.5' (Topsoil)
	2-4	0	1.5-6' Loamy Silt/Loamy Clay; trace fine Gravel and coarse Sand.
	4-6	0	Refusal encountered on silicate bedrock at 6 feet BGS.
SS-A-4	0-2	0	0-1.5' (Topsoil)
	2-3.5	0	1.5-3.5' Light brown Silt, loamy Clay; trace fine Gravel and coarse Sand; slight mottling. Refusal at approximately 3.5 feet BGS.
SS-A-5	0-2	0	0-1.5' (Top soil)
	2-4	0	1.5-6' Light brown Silt loam and clay; trace of fine gravel and coarse Sand. Slightly mottled. Refusal on silicate bedrock at 6 feet BGS.
	4-6	0	
SS-A-6	0-2	0	0-1.5' (Topsoil)
	2-4	0	1.5-6' Loamy Silt/Loamy Clay; trace fine Gravel and coarse Sand.
	4-6	0	Refusal encountered on silicate bedrock at 6 feet BGS.

TABLE 3

SUMMARY OF LABORATORY RESULTS FOR SUBSURFACE SOIL SAMPLES  
COLLECTED FROM THE FORMER SETTLEMENT POND AREA LOCATED ON THE BALDERSTON PROPERTY  
SWINEHART ROAD, W. BRANDYWINE TOWNSHIP, CHESTER COUNTY, PA

ANALYTICAL PARAMETERS <sup>(1)</sup>	SAMPLE DESIGNATION/ANALYTICAL RESULTS <sup>(2)</sup>		PADEP RDC MSC <sup>(3)</sup>	PADEP RSG MSC <sup>(3)</sup>
	SS-A-3	SS-A-5		
<i>Volatile Organic Compounds:</i>				
	ND	ND	---	---
<i>PAHs:</i>				
	ND	ND	---	---
<i>PCBs:</i>				
	ND	ND	---	---
<i>Pesticides:</i>				
	ND	ND	---	---
<i>RCRA Metals:</i>				
Arsenic	<8	8.4	12	150
Barium	81	93	15,000	8,200
Cadmium	<1	<1	47	38
Chromium	50	53	190,000	190,000
Lead	21	22	500	450
Mercury	<0.1	<0.1	66	10
Selenium	<12	<12	1,100	26
Silver	<2.5	<2.5	1,100	84
<i>Sample Collection Depth<sup>(4)</sup>:</i>	5.5-6	5.5-6	---	---

**Notes:**

(1) - Each sample was analyzed for VOCs, PAHs, PCBs and RCRA metals. Only those compounds detected above laboratory detection limits are listed.

(2) - All results are reported in milligrams per kilogram.

(3) - Pennsylvania Department of Environmental Protection, Land Recycling and Environmental Remediation Standards Act, Residential Medium Specific Concentrations (November 24, 2001).

(4) - Sample collection depths are in feet below the ground surface

MSC - Medium Specific Concentration

ND - Not Detected

PADEP - Pennsylvania Department of Environmental Protection

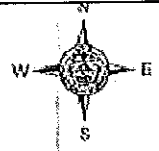
RDC - Residential Direct Contact

RSG - Residential Soil-to-Ground Water

<8 - Compound was not detected above the listed laboratory detection limit



# Balderston Family Partnership Property



**APPENDIX A**  
**LABORATORY ANALYICAL DATA**



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(732) 661-0777 • FAX (732) 661-0305

12 December 2003

PENN E & R  
Don Coleman  
2755 Bergey Rd  
Hatfield, PA 19440

RE: Balderston / W. Brandywine

Enclosed are the results of analyses for samples received by the laboratory on 12/03/03 14:25. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in cursive script that reads 'Jill Miller'.

Jill Miller  
Project Manager



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PENN E & R  
2755 Bergey Rd  
Hatfield PA, 19440

Project: Balderston / W. Brandywine  
Project Number: [none]  
Project Manager: Don Coleman

Reported:  
12/12/03 18:10

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS-A-3	K312093-01	Soil	12/03/03 13:15	12/03/03 14:25
SS-A-5	K312093-02	Soil	12/03/03 13:45	12/03/03 14:25

GLA Laboratories

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

Jill Miller, Project Manager



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PENN E & R  
2755 Bergey Rd  
Hatfield PA, 19440

Project: Balderston / W. Brandywine  
Project Number: [none]  
Project Manager: Don Coleman

Reported:  
12/12/03 18:10

### Total Metals by EPA 6000/7000 Series Methods

#### GLA Laboratories

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SS-A-3 (K312093-01) Soil Sampled: 12/03/03 13:15 Received: 12/03/03 14:25									
Mercury	ND	0.100	mg/kg dry	1	3120508	12/05/03	12/05/03	EPA 7471A	
Arsenic	ND	8.0	"	"	3120507	12/05/03	12/05/03	EPA 6010B	
Barium	81	0.50	"	"	"	"	"	"	
Cadmium	ND	1.0	"	"	"	"	"	"	
Chromium	50	2.5	"	"	"	"	"	"	
Lead	21	5.0	"	"	"	"	"	"	
Selenium	ND	12	"	"	"	"	"	"	
Silver	ND	2.5	"	"	"	"	"	"	
SS-A-5 (K312093-02) Soil Sampled: 12/03/03 13:45 Received: 12/03/03 14:25									
Mercury	ND	0.100	mg/kg dry	1	3120508	12/05/03	12/05/03	EPA 7471A	
Arsenic	8.4	8.0	"	"	3120507	12/05/03	12/05/03	EPA 6010B	
Barium	93	0.50	"	"	"	"	"	"	
Cadmium	ND	1.0	"	"	"	"	"	"	
Chromium	53	2.5	"	"	"	"	"	"	
Lead	22	5.0	"	"	"	"	"	"	
Selenium	ND	12	"	"	"	"	"	"	
Silver	ND	2.5	"	"	"	"	"	"	



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PENN E & R  
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Hatfield PA, 19440

Project: Balderston / W. Brandywine  
Project Number: [none]  
Project Manager: Don Coleman

Reported:  
12/12/03 18:10

## Organochlorine Pesticides by EPA Method 8081A

### GLA Laboratories

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SS-A-3 (K312093-01) Soil Sampled: 12/03/03 13:15 Received: 12/03/03 14:25 Pa									
Aldrin	ND	1.0	ug/kg dry	1	3120918	12/11/03	12/12/03	EPA 8081A	
alpha-BHC	ND	2.0	"	"	"	"	"	"	
beta-BHC	ND	1.0	"	"	"	"	"	"	
delta-BHC	ND	1.0	"	"	"	"	"	"	
gamma-BHC (Lindane)	ND	1.0	"	"	"	"	"	"	G4
Chlordane (tech)	ND	20	"	"	"	"	"	"	
alpha-Chlordane	ND	2.0	"	"	"	"	"	"	
gamma-Chlordane	ND	2.0	"	"	"	"	"	"	
4,4'-DDD	ND	6.0	"	"	"	"	"	"	
4,4'-DDE	ND	2.0	"	"	"	"	"	"	
4,4'-DDT	ND	6.0	"	"	"	"	"	"	G4
Dieldrin	ND	2.0	"	"	"	"	"	"	G4
Endosulfan I	ND	2.0	"	"	"	"	"	"	
Endosulfan II	ND	2.0	"	"	"	"	"	"	
Endosulfan sulfate	ND	6.0	"	"	"	"	"	"	
Endrin	ND	2.0	"	"	"	"	"	"	G4
Endrin aldehyde	ND	6.0	"	"	"	"	"	"	
Endrin ketone	ND	6.0	"	"	"	"	"	"	
Heptachlor	ND	1.0	"	"	"	"	"	"	
Heptachlor epoxide	ND	1.0	"	"	"	"	"	"	
Methoxychlor	ND	20	"	"	"	"	"	"	
Toxaphene	ND	80	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		62.4 %		60-126	"	"	"	"	
Surrogate: Decachlorobiphenyl		48.1 %		60-126	"	"	"	"	O4



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PENN E & R  
2755 Bergey Rd  
Hatfield PA, 19440

Project: Balderston / W. Brandywine  
Project Number: [none]  
Project Manager: Don Coleman

Reported:  
12/12/03 18:10

## Organochlorine Pesticides by EPA Method 8081A

### GLA Laboratories

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SS-A-5 (K312093-02) Soil Sampled: 12/03/03 13:45 Received: 12/03/03 14:25									Pa
Aldrin	ND	1.0	ug/kg dry	1	3120918	12/11/03	12/12/03	EPA 8081A	
alpha-BHC	ND	2.0	"	"	"	"	"	"	
beta-BHC	ND	1.0	"	"	"	"	"	"	
delta-BHC	ND	1.0	"	"	"	"	"	"	
gamma-BHC (Lindane)	ND	1.0	"	"	"	"	"	"	G4
Chlordane (tech)	ND	20	"	"	"	"	"	"	
alpha-Chlordane	ND	2.0	"	"	"	"	"	"	
gamma-Chlordane	ND	2.0	"	"	"	"	"	"	
4,4'-DDD	ND	6.0	"	"	"	"	"	"	
4,4'-DDE	ND	2.0	"	"	"	"	"	"	
4,4'-DDT	ND	6.0	"	"	"	"	"	"	G4
Dieldrin	ND	2.0	"	"	"	"	"	"	G4
Endosulfan I	ND	2.0	"	"	"	"	"	"	
Endosulfan II	ND	2.0	"	"	"	"	"	"	
Endosulfan sulfate	ND	6.0	"	"	"	"	"	"	
Endrin	ND	2.0	"	"	"	"	"	"	G4
Endrin aldehyde	ND	6.0	"	"	"	"	"	"	
Endrin ketone	ND	6.0	"	"	"	"	"	"	
Heptachlor	ND	1.0	"	"	"	"	"	"	
Heptachlor epoxide	ND	1.0	"	"	"	"	"	"	
Methoxychlor	ND	20	"	"	"	"	"	"	
Toxaphene	ND	80	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		72.6 %		60-126	"	"	"	"	
Surrogate: Decachlorobiphenyl		52.5 %		60-126	"	"	"	"	O4



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PENN E & R  
2755 Bergey Rd  
Hatfield PA, 19440

Project: Balderston / W. Brandywine  
Project Number: [none]  
Project Manager: Don Coleman

Reported:  
12/12/03 18:10

**Polychlorinated Biphenyls by EPA Method 8082**  
**GLA Laboratories**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SS-A-3 (K312093-01) Soil Sampled: 12/03/03 13:15 Received: 12/03/03 14:25									
PCB-1016	ND	50	ug/kg dry	1	3120517	12/09/03	12/09/03	EPA 8082	
PCB-1221	ND	50	"	"	"	"	"	"	
PCB-1232	ND	50	"	"	"	"	"	"	
PCB-1242	ND	50	"	"	"	"	"	"	
PCB-1248	ND	50	"	"	"	"	"	"	
PCB-1254	ND	50	"	"	"	"	"	"	
PCB-1260	ND	50	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		57.8 %	60-126		"	"	"	"	O4
Surrogate: Decachlorobiphenyl		49.8 %	60-126		"	"	"	"	O4
SS-A-5 (K312093-02) Soil Sampled: 12/03/03 13:45 Received: 12/03/03 14:25									
PCB-1016	ND	50	ug/kg dry	1	3120517	12/09/03	12/09/03	EPA 8082	
PCB-1221	ND	50	"	"	"	"	"	"	
PCB-1232	ND	50	"	"	"	"	"	"	
PCB-1242	ND	50	"	"	"	"	"	"	
PCB-1248	ND	50	"	"	"	"	"	"	
PCB-1254	ND	50	"	"	"	"	"	"	
PCB-1260	ND	50	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		66.9 %	60-126		"	"	"	"	
Surrogate: Decachlorobiphenyl		46.8 %	60-126		"	"	"	"	O4



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PENN E & R  
2755 Bergey Rd  
Hatfield PA, 19440

Project: Balderston / W. Brandywine  
Project Number: [none]  
Project Manager: Don Coleman

Reported:  
12/12/03 18:10

**Volatile Organic Compounds by EPA Method 8260B**  
**GLA Laboratories**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SS-A-3 (K312093-01) Soil Sampled: 12/03/03 13:15 Received: 12/03/03 14:25									
Acetone	ND	120	ug/kg dry	1	3120516	12/05/03	12/05/03	EPA 8260B	O8
Benzene	ND	0.80	"	"	"	"	"	"	
Bromodichloromethane	ND	0.80	"	"	"	"	"	"	
Bromoform	ND	1.6	"	"	"	"	"	"	
Bromomethane	ND	1.6	"	"	"	"	"	"	
2-Butanone	ND	80	"	"	"	"	"	"	
Carbon disulfide	ND	1.6	"	"	"	"	"	"	
Carbon tetrachloride	ND	1.6	"	"	"	"	"	"	
Chlorobenzene	ND	1.6	"	"	"	"	"	"	
Chlorodibromomethane	ND	1.6	"	"	"	"	"	"	
Chloroethane	ND	3.2	"	"	"	"	"	"	
Chloroform	ND	1.6	"	"	"	"	"	"	
Chloromethane	ND	1.6	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.6	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.6	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.6	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.6	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.6	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.6	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	1.6	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	1.6	"	"	"	"	"	"	
Ethylbenzene	ND	1.6	"	"	"	"	"	"	
2-Hexanone	ND	8.0	"	"	"	"	"	"	
Methylene chloride	ND	24	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	8.0	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	1.6	"	"	"	"	"	"	
Styrene	ND	1.6	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.6	"	"	"	"	"	"	
Tetrachloroethene	ND	0.80	"	"	"	"	"	"	
Toluene	ND	1.6	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.6	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1.6	"	"	"	"	"	"	
Trichloroethene	ND	0.80	"	"	"	"	"	"	
Trichlorofluoromethane	ND	1.6	"	"	"	"	"	"	
Vinyl chloride	ND	1.6	"	"	"	"	"	"	
p,m-Xylene	ND	3.2	"	"	"	"	"	"	
o-Xylene	ND	1.6	"	"	"	"	"	"	
Xylenes (total)	ND	4.8	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		101 %	60-140		"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		106 %	60-140		"	"	"	"	
Surrogate: Toluene-d8		98.6 %	60-140		"	"	"	"	

GLA Laboratories

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Jill Miller, Project Manager



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(732) 661-0777 • FAX (732) 661-0305

PENN E & R  
2755 Bergey Rd  
Hatfield PA, 19440

Project: Balderston / W. Brandywine  
Project Number: [none]  
Project Manager: Don Coleman

Reported:  
12/12/03 18:10

## Volatile Organic Compounds by EPA Method 8260B

### GLA Laboratories

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SS-A-5 (K312093-02) Soil Sampled: 12/03/03 13:45 Received: 12/03/03 14:25									
Acetone	ND	120	ug/kg dry	1	3120516	12/05/03	12/05/03	EPA 8260B	O8
Benzene	ND	0.77	"	"	"	"	"	"	
Bromodichloromethane	ND	0.77	"	"	"	"	"	"	
Bromoform	ND	1.5	"	"	"	"	"	"	
Bromomethane	ND	1.5	"	"	"	"	"	"	
2-Butanone	ND	77	"	"	"	"	"	"	
Carbon disulfide	ND	1.5	"	"	"	"	"	"	
Carbon tetrachloride	ND	1.5	"	"	"	"	"	"	
Chlorobenzene	ND	1.5	"	"	"	"	"	"	
Chlorodibromomethane	ND	1.5	"	"	"	"	"	"	
Chloroethane	ND	3.1	"	"	"	"	"	"	
Chloroform	ND	1.5	"	"	"	"	"	"	
Chloromethane	ND	1.5	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.5	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.5	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.5	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.5	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.5	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.5	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	1.5	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	1.5	"	"	"	"	"	"	
Ethylbenzene	ND	1.5	"	"	"	"	"	"	
2-Hexanone	ND	7.7	"	"	"	"	"	"	
Methylene chloride	ND	23	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	7.7	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	1.5	"	"	"	"	"	"	
Styrene	ND	1.5	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.5	"	"	"	"	"	"	
Tetrachloroethene	ND	0.77	"	"	"	"	"	"	
Toluene	ND	1.5	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	1.5	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	1.5	"	"	"	"	"	"	
Trichloroethene	ND	0.77	"	"	"	"	"	"	
Trichlorofluoromethane	ND	1.5	"	"	"	"	"	"	
Vinyl chloride	ND	1.5	"	"	"	"	"	"	
p,m-Xylene	ND	3.1	"	"	"	"	"	"	
o-Xylene	ND	1.5	"	"	"	"	"	"	
Xylenes (total)	ND	4.6	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		102 %		60-140	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		104 %		60-140	"	"	"	"	
Surrogate: Toluene-d8		98.7 %		60-140	"	"	"	"	

GLA Laboratories

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PENN E & R  
2755 Bergey Rd  
Hatfield PA, 19440

Project: Balderston / W. Brandywine  
Project Number: [none]  
Project Manager: Don Coleman

Reported:  
12/12/03 18:10

## Semivolatile Organic Compounds by EPA Method 8270C

### GLA Laboratories

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SS-A-3 (K312093-01) Soil Sampled: 12/03/03 13:15 Received: 12/03/03 14:25									
Acenaphthene	ND	100	ug/kg dry	1	3120427	12/08/03	12/09/03	EPA 8270C	
Acenaphthylene	ND	100	"	"	"	"	"	"	
Anthracene	ND	100	"	"	"	"	"	"	
Benzo (a) anthracene	ND	100	"	"	"	"	"	"	
Benzo[a]pyrene	ND	100	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	100	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	100	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	100	"	"	"	"	"	"	
Chrysene	ND	100	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	100	"	"	"	"	"	"	
Fluoranthene	ND	100	"	"	"	"	"	"	G4
Fluorene	ND	100	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	100	"	"	"	"	"	"	
Naphthalene	ND	100	"	"	"	"	"	"	
Phenanthrene	ND	100	"	"	"	"	"	"	G4
Pyrene	ND	100	"	"	"	"	"	"	
Surrogate: Nitrobenzene-d5		73.0 %	23-120		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		71.0 %	30-115		"	"	"	"	
Surrogate: Terphenyl-d14		72.5 %	18-137		"	"	"	"	
SS-A-5 (K312093-02) Soil Sampled: 12/03/03 13:45 Received: 12/03/03 14:25									
Acenaphthene	ND	100	ug/kg dry	1	3120427	12/08/03	12/09/03	EPA 8270C	
Acenaphthylene	ND	100	"	"	"	"	"	"	
Anthracene	ND	100	"	"	"	"	"	"	
Benzo (a) anthracene	ND	100	"	"	"	"	"	"	
Benzo[a]pyrene	ND	100	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	100	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	100	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	100	"	"	"	"	"	"	
Chrysene	ND	100	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	100	"	"	"	"	"	"	
Fluoranthene	ND	100	"	"	"	"	"	"	G4
Fluorene	ND	100	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	100	"	"	"	"	"	"	
Naphthalene	ND	100	"	"	"	"	"	"	
Phenanthrene	ND	100	"	"	"	"	"	"	G4
Pyrene	ND	100	"	"	"	"	"	"	
Surrogate: Nitrobenzene-d5		50.3 %	23-120		"	"	"	"	
Surrogate: 2-Fluorobiphenyl		48.6 %	30-115		"	"	"	"	
Surrogate: Terphenyl-d14		51.3 %	18-137		"	"	"	"	

GLA Laboratories

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Hatfield PA, 19440

Project: Balderston / W. Brandywine  
Project Number: [none]  
Project Manager: Don Coleman

Reported:  
12/12/03 18:10

### Physical Parameters by APHA/ASTM/EPA Methods

#### GLA Laboratories

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SS-A-3 (K312093-01) Soil Sampled: 12/03/03 13:15 Received: 12/03/03 14:25									
% Solids	82.3	0.01 % by Weight		1	3120401	12/04/03	12/04/03	EPA 160.3	
SS-A-5 (K312093-02) Soil Sampled: 12/03/03 13:45 Received: 12/03/03 14:25									
% Solids	83.2	0.01 % by Weight		1	3120401	12/04/03	12/04/03	EPA 160.3	

GLA Laboratories

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PENN E & R  
2755 Bergey Rd  
Hatfield PA, 19440

Project: Balderston / W. Brandywine  
Project Number: [none]  
Project Manager: Don Coleman

Reported:  
12/12/03 18:10

### Notes and Definitions

DILN Due to matrix interference and or sample dilution the detection limits for this sample have been elevated.

G2 The matrix QC recoveries associated with this sample were below the laboratory's established acceptance criteria.

G4 The laboratory control spike recoveries associated with this sample were below the laboratory's established acceptance criteria.

O4 One or more surrogate recoveries were below the laboratory's established acceptance criteria.

O8 The preservative in this sample produced ketones, the detection limits have been elevated for those compounds.

P The average response factor met method criteria for the check standard following this sample however these compounds were low:  
endrin ketone, methoxychlor

Pa The average response factor met method criteria for the check standard following this sample however these compounds were low:  
endrin ketone, methoxychlor, DDT

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

K312093

## GLA Laboratories

Client: PENN E & R  
Project: Balderston / W. Brandywine

Project Manager: Jill Miller  
Project Number: [none]

Report To:

PENN E & R  
Don Coleman  
2755 Bergey Rd  
Hatfield, PA 19440  
Phone: 215-997-9000  
Fax: (215) 822-8575

Invoice To:

PENN E & R  
Don Coleman  
2755 Bergey Rd  
Hatfield, PA 19440  
Phone :215-997-9000  
Fax: (215) 822-8575

Date Due: 12/09/03 18:00 (4 day TAT)

Received By: Amy Zanck

Logged In By: Oswaldo Burgos

Date Received: 12/03/03 14:25

Date Logged In: 12/03/03 17:09

Samples Received at: 0°C

Custody Seals No Received On Ice Yes

Containers Intact Yes

COC/Labels Agree Yes

Preservation Confir Yes

Analysis	Due	TAT	Expires	Comments
----------	-----	-----	---------	----------

K312093-01 SS-A-3 [Soil] Sampled 12/03/03 13:15 Eastern

PA ACT 2

8260	12/09/03 17:00	4	12/17/03 13:15	
8270 PAH	12/09/03 17:00	4	12/17/03 13:15	
PCB 8082	12/09/03 17:00	4	12/17/03 13:15	
Pests 8081	12/09/03 17:00	4	12/17/03 13:15	
RCRA Metals Soil	12/09/03 17:00	4	12/08/03 13:15	
Solids, Dry Weight	12/09/03 17:00	4	01/02/04 13:15	

K312093-02 SS-A-5 [Soil] Sampled 12/03/03 13:45 Eastern

PA ACT 2

8260	12/09/03 17:00	4	12/17/03 13:45	
8270 PAH	12/09/03 17:00	4	12/17/03 13:45	
PCB 8082	12/09/03 17:00	4	12/17/03 13:45	
Pests 8081	12/09/03 17:00	4	12/17/03 13:45	
RCRA Metals Soil	12/09/03 17:00	4	12/08/03 13:45	
Solids, Dry Weight	12/09/03 17:00	4	01/02/04 13:45	

Analysis groups included in this work order

RCRA Metals Soil

Hg Soil 7471 Metals, RCRA ICP



# CHAIN OF CUSTODY REPORT

1008 W. Ninth Ave.  
King of Prussia, PA 19406  
(610) 337-9992  
FAX (610) 337-9939

Client: Penn Behr		Bill To:		TAT: Standard		3 DAY		1 DAY	
Address: 2755 Berney Rd		Address: Same		4 DAY		2 DAY		< 24 HRS.	
Haitfield, PA 19440		State & Program: Act 2		DATE RESULTS NEEDED: 12/10/03					
Report to: D. Coleman		Phone #: 415-917-1000		TEMPERATURE UPON RECEIPT:					
Fax #: 215-822-8575		Fax #: { }		SHIPPING#:					
Project: Bally's		Preservative Used		ANALYSIS TYPE		SAMPLE CONTROL			
Sampler: J. Mante		MeOH		NaHSO4		CRACKED - BROKEN			
PO/Quote #: { }		HCl		HNO3		IMPROPERLY SEALED			
FIELD ID, LOCATION		NaOH		H2SO4		GOOD CONDITION			
DATE COLLECTED		TIME COLLECTED		SAMPLE MATRIX		TOTAL # OF BOTTLES		LABORATORY ID NUMBER	
12/3/03		1315		Soil		12		K312093-01	
12/3/03		1345		↓		14		-02	
PID: 0.0									
PID: 0.0									
PID:									
PID:									
PID:									
PID:									
PID:									
PID:									
PID:									
PID:									
RECEIVED		DATE		TIME		RECEIVED		DATE	
12/3/03		14:25		14:25		12/10/03		12:10/03	
RECEIVED		DATE		TIME		RECEIVED		DATE	
12/10/03		14:25		14:25		12/10/03		12:10/03	
COMMENTS:		must meet minimum Act 2 detection limits							
PAGE		1 OF 1							