

3R - 75

REPORTS

DATE:

2000

BURLINGTON RESOURCES

SAN JUAN DIVISION
March 27, 2001

Certified: 709932200028981 4004

Bill Olson
New Mexico Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505

MAR 29 2001

**RE: 2000 Annual Groundwater Investigation and Remediation Reports
San Juan Basin, New Mexico**

Dear Mr. Olson:

As required in Burlington Resources' approved Groundwater Investigation and Remediation Plan dated August, 1998, enclosed are the 2000 annual reports for Burlington's groundwater impact sites in the San Juan Basin. Separate reports are enclosed for the following locations:

Cozzens B#1
Fogelson #4-1
Hampton #4M
Johnson Federal #4 Metering Station
Standard Oil Com. #1
Taylor Com. #2A
Maddox Com 1A

If you have questions or additional information is needed, please contact me at (505) 326-9537.

Sincerely,



Gregg Wurtz
Sr. Environmental Representative

Attachments - Groundwater Investigation and Remediation Reports

cc: Denny Foust - NMOCD Aztec
Bruce Gantner - BR
WFS - Mark Harvey (Cozzens B#1, Hampton #4M)
EPFS - Scott Pope (Fogelson #4-1, Johnson Fed. #4, Standard Oil Com.#1)
Facility and Correspondence Files

21275
MAR 29 2001
CONSERVATION DIVISION

BURLINGTON RESOURCES 2000 ANNUAL GROUNDWATER REPORT

Taylor Com. #2A

SITE DETAILS

Location: Unit Letter A, Section 17, Township 30N, Range 11W; San Juan County, New Mexico
Land Type: Fee

PREVIOUS ACTIVITIES

During a spill cleanup on the subject location, Burlington Resources excavated into an apparent abandon earthen pit. As excavation of impacted soils continued, groundwater was encountered at approximately 9 feet below the ground surface. Impacted soils continued to be excavated to the extent practical until the "core" of impacted soils had been removed (approximate depth of 12 ft.). The excavation was backfilled with clean fill.

1999 ACTIVITIES

A ground water monitoring well was installed in the center of the former earthen pit in May 1999. After developing the well and allowing it to stabilize, the well was purged and sampled on May 27, 1999.

Two downgradient ground water monitoring wells were installed in October 1999. After developing the wells and allowing them to stabilize, the wells were purged and sampled on October 21, 1999.

2000 ACTIVITIES

Quarterly groundwater monitoring continued through the third quarter of 2000. A summary of the groundwater analytical data is presented in Table 1. A site map is presented as Figure 1.

CONCLUSIONS

Analytical results of groundwater sampling from the source monitoring well in the initial sampling event on May 27, 1999 show levels of benzene above New Mexico Groundwater Standards. All subsequent quarterly sampling from the source well and the two additional downgradient wells have shown all BTEX constituents to be below standards. Therefore, four quarters of ground water sampling have shown BTEX constituents to be below standards and the site is considered remediated.

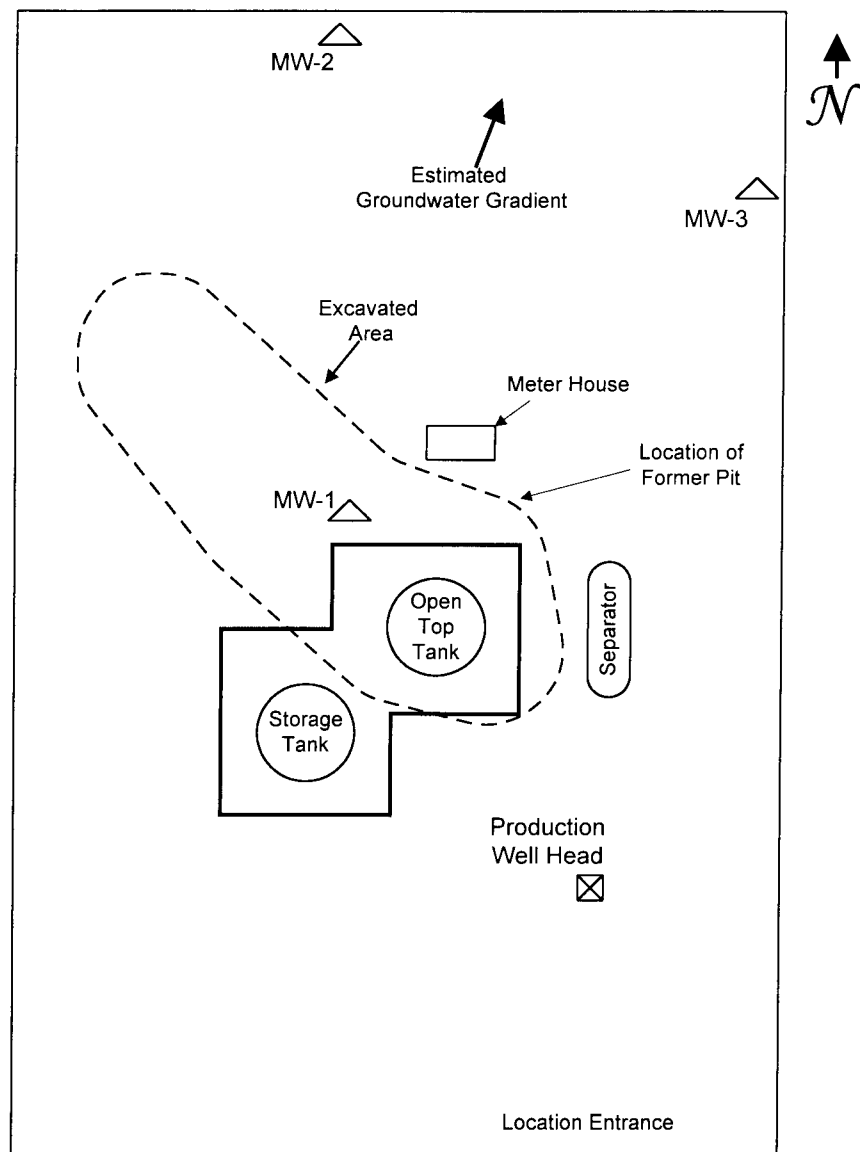
RECOMMENDATIONS

- Burlington Resources proposes to discontinue quarterly sampling at this site and requests official closure of this site.

Attachments: Figure 1 - Site Map
Table 1 - Groundwater Sampling Results Summary
2000 Groundwater Analytical Results
Drilling Logs/Wellbore Diagrams
Letter to Olson dated August 13, 1999 including the Drilling Log/Wellbore Diagram

Figure 1

Taylor Com 2A - Site Diagram



Legend

- MW-9  Monitoring Well
- - - - - Excavation Area
- Earthen Berm

Table 1

Groundwater Monitoring Well Sampling

Well Name	MW #	Sample Date	B (ppb)	T (ppb)	E (ppb)	X (ppb)	BTEX (ppb)	DTW (ft)
Standard			10	750	750	620		
Taylor #2A	1	5/27/1999	64	<0.5	23	98	185	
		9/1/1999	<0.5	<0.5	1.3	1.6	2.9	3.72
		10/21/1999	0.7	1.9	1.2	3.5	7.3	
		1/19/2000	0.6	1.9	0.8	3.3	6.6	9.94
		5/17/2000	<0.5	<0.5	<0.5	<0.5	0	6.06
		9/13/2000	<0.5	<0.5	<0.5	<0.5	0	5.3
	2							
		10/21/1999	<0.5	<0.5	<0.5	<0.5	0	
		1/19/2000	<0.5	<0.5	<0.5	<0.5	0	9.4
		5/17/2000	<0.5	<0.5	<0.5	<0.5	0	5.79
		9/13/2000	<0.5	<0.5	<0.5	<0.5	0	4.92
	3							
		10/21/1999	<0.5	<0.5	<0.5	<0.5	0	
		1/19/2000	<0.5	<0.5	<0.5	<0.5	0	8.35
		5/17/2000	<0.5	<0.5	<0.5	<0.5	0	4.11
		9/13/2000	<0.5	<0.5	<0.5	<0.5	0	3.66

2000 GROUNDWATER ANALYTICAL RESULTS

PINNACLE
LABORATORIES

2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED
CLIENT : PHILIP ENVIRONMENTAL
PROJECT # : 21057
PROJECT NAME : BURLINGTON DRILLING

PINNACLE I.D.: 905106

SAMPLE			DATE	DATE	DATE	DIL.
ID. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	BR-TAYLOR MW1	AQUEOUS	5/27/99	NA	5/28/99	1
02	BR-FOGELSON MW1	AQUEOUS	5/27/99	NA	5/28/99	10

PARAMETER	DET. LIMIT	UNITS	BR-TAYLOR MW1	BR-FOGELSON MW1
BENZENE	0.5	UG/L	64	5.0
TOLUENE	0.5	UG/L	< 0.5	< 5.0
ETHYLBENZENE	0.5	UG/L	23	210
TOTAL XYLENES	0.5	UG/L	98	420

SURROGATE:

TRIFLUOROTOLUENE (%)

SURROGATE LIMITS

(69 - 117)

85

95

CHEMIST NOTES:

N/A

[0] Page 1
Date 07-Jun-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 905635
Client: PINNACLE LABORATORIES
Project Number: 905106
Project Name: PHIL
Project Location: BURLINGTON DRILLING
Test: Group of Single Wetchem
Matrix: WATER
QC Level: I

Lab ID: 001
Client Sample Id: 905106-01

Sample Date/Time: 27-MAY-99 1015
Received Date: 29-MAY-99

Parameters:	Units:	Results:	Rpt Lmts:	Q:	Batch:	Analyst:
CHLORIDE (4500-CL E)	MG/L	45	2		CKW22C	WH
NITRITE-NITRATE, NITROGEN (353.2)	MG/L	2.0	0.1		N3W36A	WH
SULFATE (375.4/4500E/9038)	MG/L	1000	200	+	SEW052	EE
TOTAL DISSOLVED SOLIDS (160.1)	MG/L	1800	5		TDW027	ED

Comments:

[0] Page 3
Date 07-Jun-99

"Method Report Summary"

Accession Number: 905635
Client: PINNACLE LABORATORIES
Project Number: 905106
Project Name: PHIL
Project Location: BURLINGTON DRILLING
Test: Group of Single Wetchem

Client Sample Id:	Parameter:	Unit:	Result:
905106-01	CHLORIDE (4500-CL E)	MG/L	45
	NITRITE-NITRATE, NITROGEN (353.2)	MG/L	2.0
	SULFATE (375.4/4500E/9038)	MG/L	1000
	TOTAL DISSOLVED SOLIDS (160.1)	MG/L	1800
905106-02	CHLORIDE (4500-CL E)	MG/L	430
	SULFATE (375.4/4500E/9038)	MG/L	9300
	TOTAL DISSOLVED SOLIDS (160.1)	MG/L	14000

[0] Page 1
Date 10-Jun-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 905635
Client: PINNACLE LABORATORIES
Project Number: 905106
Project Name: PHIL
Project Location: BURLINGTON DRILLING
Test: RCRA METALS - AXIAL
Matrix: WATER
QC Level: I

Lab Id: 001
Client Sample Id: 905106-01

Sample Date/Time: 27-MAY-99 1015
Received Date: 29-MAY-99

Parameters:	Units:	Results:	Rpt Lmts:	Q:	Batch:	Analyst:
SILVER (6010B)	MG/L	ND	0.005		AYW154	GSP
ARSENIC (6010B)	MG/L	ND	0.005		RYW154	GSP
BARIUM (6010B)	MG/L	0.38	0.01		BYW154	GSP
CADMIUM (6010B)	MG/L	ND	0.005		CYW154	GSP
CHROMIUM (6010B)	MG/L	0.008	0.005		HYW154	GSP
MERCURY (7470A)	MG/L	ND	0.0002		M7W047	JL
LEAD (6010B)	MG/L	0.042	0.005		PYW154	GSP
SELENIUM (6010B)	MG/L	ND	0.01		SYW154	GSP

Comments:

(0) Page 3
Date 10-Jun-99

"Method Report Summary"

Accession Number: 905635
Client: PINNACLE LABORATORIES
Project Number: 905106
Project Name: PHIL
Project Location: BURLINGTON DRILLING
Test: RCRA METALS - AXIAL

Client Sample Id:	Parameter:	Unit:	Result:
905106-01	BARIUM (6010B)	MG/L	0.38
	CHROMIUM (6010B)	MG/L	0.008
	LEAD (6010B)	MG/L	0.042
905106-02	ARSENIC (6010B)	MG/L	0.006
	BARIUM (6010B)	MG/L	0.14
	CHROMIUM (6010B)	MG/L	0.019
	LEAD (6010B)	MG/L	0.007

Albuquerque, New Mexico 87107
(505) 344-3777 Fax (505) 344-4413

1

NUMBER OF CONTAINERS

PROJECT INFORMATION		SAMPLE RECEIPT		SAMPLES SENT TO:		RELINQUISHED BY: 1.		RELINQUISHED BY: 2.	
PROJECT #:	905106	Total Number of Containers		PENSACOLA - STL-FL		Signature:	Time:	Signature:	Time:
PROJ. NAME:	PHL	Chain of Custody Seals		PORTLAND - ESL-OR		<i>Shumone J. J. J.</i>	1700		
QC LEVEL:	STD IV	Received Intact?		STL - CT		Printed Name: -	Date:	Printed Name:	Date:
QC REQUIRED:	MS MSD BLANK	Received Good Cond /Cold		STL - NEW JERSEY		<i>Shumone J. J. J.</i>	5/28/90		
IAI: STANDARD	RUSH!!	LAB NUMBER:		N. CREEK		Pinnacle Laboratories, Inc.		Company	
DUE DATE:	6/11	COMMENTS:		BARRINGER		RECEIVED BY:	1.	RECEIVED BY:	2.
RUSH SURCHARGE:				SEQUOIA		Signature:	Time:	Signature:	Time:
CLIENT DISCOUNT:						Printed Name:	Date:	Printed Name:	Date:
SPECIAL CERTIFICATION									
REQUIRED: YES (NO)						Company	STL-FL	Company	





Water Sampling Data

Location No. TAYLOR COM #2ASerial No. WSD-Group List Number Sample Type: ☒ Groundwater ☐ Surface Water ☐ Other Date 4/1/99Project Name BURLINGTON WATER SAMPLING Project No. 02800023Project Manager C. IRBY Phase/Task No. Site Name TAYLOR COM #2A, MW 1

Sampling Specifications

Requested Sampling

Depth Interval (feet)

Requested Wait Following

Development/Purging (hours)

Initial Measurements

Time Elapsed From Final Development/Purging (hours) Initial Water Depth (feet) 3.72' 3:50 PMNonaqueous Liquids Present (Describe)

Water Quality/Water Collection

DO = Dissolved Oxygen; Cond. = Conductivity

Date	Time	Sampler Initials	Water Quality Readings				Water Collection Data				Notes (Explain in Comments Below)	
			Temp. (°C)	pH	DO (mg/L)	Cond. (µmhos/cm)	Volume Removed (gallons)	Removal Rate (gal/min)	Pump Intake Depth (feet)	Ball		Final Water Depth (feet)
9/1/99	4:15pm	CC					~7	7 gal/min		X	6.51'	

Container Type: G = Clear Glass; A = Amber Glass; P = Plastic; V = VOA Vial (Glass); O = Other (Specify)

Sample Containers

Preservatives: H = HCl; N = HNO₃; S = H₂SO₄; A = NaOH; O = Other (Specify); - = None

Analytical Parameter List	Container			Field Filtered		Preserved	Cooled During Collection		Comments
	Number	Type	Volume (mL)	Yes	No		Yes	No	
8021									

Filter Type Chain-of-Custody Form Number Comments SOME SUSPENDED FINE BLACK SEDIMENTDURING BAILING, CLEAR DURING SAMPLINGSignature Cathy Culbert Date 4/2/99 Reviewer Date



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

CLIENT	: PHILIP ENVIRONMENTAL	PINNACLE ID	: 909019
PROJECT #	: (none)	DATE RECEIVED	: 9/3/99
PROJECT NAME	: BURL. DRILLING	REPORT DATE	: 9/14/99
PIN			DATE
ID. #	CLIENT DESCRIPTION	MATRIX	COLLECTED
01	TAYLOR COM #2A MW1	AQUEOUS	9/1/99
02	COZZENS B#1 MW1	AQUEOUS	9/2/99
03	COZZENS B#1 MW2	AQUEOUS	9/2/99

2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

PINNACLE
LABORATORIES

GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED / 8015 GRO
CLIENT : PHILIP ENVIRONMENTAL
PROJECT # : (none)
PROJECT NAME : BURL. DRILLING

PINNACLE I.D.: 908019

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
01	TAYLOR COM #2A MW1	AQUEOUS	9/1/99	NA	9/9/99	1
02	COZZENS B#1 MW1	AQUEOUS	9/2/99	NA	9/10/99	1
03	COZZENS B#1 MW2	AQUEOUS	9/2/99	NA	9/9/99	100

PARAMETER	DET. LIMIT	UNITS	TAYLOR COM #2A MW1	COZZENS B#1 MW1	COZZENS B#1 MW2
FUEL HYDROCARBONS	50	UG/L	120	930	11000
HYDROCARBON RANGE			C6-C14	C6-C14	C6-C14
HYDROCARBONS QUANTITATED USING			GASOLINE	GASOLINE	GASOLINE

BENZENE	0.5	UG/L	< 0.5	2.5	120
TOLUENE	0.5	UG/L	< 0.5	2.1	55
ETHYLBENZENE	0.5	UG/L	1.3	5.6	440
TOTAL XYLENES	0.5	UG/L	1.6	22	450
METHYL-t-BUTYL ETHER	2.5	UG/L	< 2.5	< 2.5	< 250

SURROGATE:

BROMOFLUOROBENZENE (%)

104

114

99

SURROGATE LIMITS (80 - 120)

CHEMIST NOTES:

N/A

909019

PLEASE FILL THIS FORM IN COMPLETELY.

[illegible]

1410-085 ON 6-60c: *Emmenda* 1-brownish; lar. = 2790. D. *Des. American* *Emmenda* ME. *Abrunensis*. New Mexico 8710° = (505) 344-3777. E-mail: PIN_LAG@WORLDMET.AT.T.NET
DISTRIBUTION: White - PU. Canary - Originator



mw 1 p 2 of 2



Water Sampling Data

Location No. _____

Group List Number _____

Sample Type:

☒ Groundwater
 ☐ Surface Water
 ☐ Other _____
Date 10/21/99

Project Name

BURLINGTON GROUNDWATER

Project No.

C2800086

Project Manager

R. THOMPSON

Phase/Task No.

Site Name

TAYLOR COM #2A

Sampling Specifications

Initial Measurements

Requested Sampling

Depth Interval (feet) _____

Time Elapsed From Final Development/Purging (hours) _____

Requested Wait Following

Development/Purging (hours) _____

Initial Water Depth (feet) _____

Nonaqueous Liquids Present (Describe) _____

Water Quality/Water Collection

DO = Dissolved Oxygen; Cond. = Conductivity

Date	Time	Sampler Initials	Water Quality Readings				Water Collection Data					Notes (Explain in Comments Below)
			Temp. (°C)	pH	DO (mg/L)	Cond. (µmhos/cm)	Volume Removed (gallons)	Removal Rate (gal/min)	Pump Intake Depth (feet)	Bail	Final Water Depth (feet)	

Sample Containers

Container Type: G = Clear Glass; A = Amber Glass; P = Plastic; V = VOA Vial (Glass); O = Other (Specify)

Preservatives: H = HCl; N = HNO₃; S = H₂SO₄; A = NaOH; Q = Other (Specify); -- = None

Analytical Parameter List	Container			Field Filtered		Preserved	Cooled During Collection		Comments
	Number	Type	Volume (mL)	Yes	No		Yes	No	
BTEX	2	VOA			X	HCl	X		Ce: 30pm

Filter Type _____

Chain-of-Custody Form Number

C2401

Comments _____

Signature

Cathy Culbert

Date

10/21/99

Reviewer _____

Date _____

Well Number MW-2

☒ Development
☒ Purging

WELL DEVELOPMENT AND PURGING DATA

Serial No. WDPD-

Page 1 of 2

Project Name BURLINGTON DAILING Project Manager R. THOMPSON Project No. 628000036
Client Company BURLINGTON Phase/Task No. _____
Site Name TAYLOR COM #2A Site Address _____

Development Criteria

☒ 3 to 5 Casing Volumes of Water Removal
☒ Stabilization of Indicator Parameters
☒ Other WATER QUALITY

Water Volume Calculation

Initial Depth of Well (feet) 15'
Initial Depth to Water (feet) 4.53'
Height of Water Column in Well (feet) 10.37'
Diameter (inches): Well 2 Gravel Pack _____

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		<u>2</u>	<u>670</u>
Gravel Pack			
Drilling fluids			
Total			

Methods of Development

Pump ☐ Centrifugal ☐ Bottom Valve
☐ Submersible ☐ Double Check Valve
☐ Peristaltic ☐ Stainless-steel Kemmerer
☐ Other _____

Instruments

Serial No. (if applicable) _____
☒ pH Meter
☐ DO Monitor
☒ Conductivity Meter
☒ Temperature Meter
☐ Other _____

Water Disposal DUMPING AROUND

Water Removal Data

Date	Time	Development Method	Removal Rate (gpm/min)	Inlet Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons)		Temperature (°F)	pH	Conductivity (microhm/cm)	Dissolved Oxygen (mg/L)	Comments
						Incremental	Cumulative					
10/21/99	4:18					2	2	68.1	7.1	1940		WATER ALLOWED
	4:25					2	4	63.6	6.8	1862		
	4:29					2	6	62.5	6.8	1871		
	4:33					2	8	62.4	6.7	1960		
	4:34					2	10	62.5	6.6	2020		WATER MORE CLEAR
	4:41					2	12	61.4	6.8	2230		
	4:45					2	14	61.8	6.8	2180		
	4:53					7	21	58.3	6.9	2630		
	4:57					2	23	61.1	6.9	2750		WATER MORE CLEAR

Circle the date and time that the development criteria are met.

Comments

Developer's Signature(s) Cathy Culbert

Date 10/21/99

Reviewer _____

Date _____

MW2p2092



Water Sampling Data

Location No. _____

Group List Number _____

Serial No. WSD- _____

Sample Type: ☒ Groundwater ☐ Surface Water ☐ Other _____Date 10/21/99Project Name BURLINGTON DRILLINGProject No. 62800080Project Manager R. THOMPSON

Phase/Task No. _____

Site Name TAYLOR CAN #2A

Sampling Specifications

Requested Sampling

Depth Interval (feet) _____

Requested Wait Following

Development/Purging (hours) _____

Initial Measurements

Time Elapsed From Final Development/Purging (hours) _____

Initial Water Depth (feet) _____

Nonaqueous Liquids Present (Describe) _____

Water Quality/Water Collection

DO = Dissolved Oxygen; Cond. = Conductivity

Date	Time	Sampler Initials	Water Quality Readings				Water Collection Data					Notes (Explain in Comments Below)
			Temp. (°C)	pH	DO (mg/L)	Cond. (µmhos/cm)	Volume Removed (gallons)	Removal Rate (gal/min)	Pump Intake Depth (feet)	Seal	Final Water Depth (feet)	

Sample Containers

Container Type: G = Clear Glass; A = Amber Glass; P = Plastic; V = VOA Vial (Glass); O = Other (Specify)

Preservatives: H = HCl; N = HNO₃; S = H₂SO₄; A = NaOH; O = Other (Specify); - = None

Analytical Parameter List	Container			Field Filtered		Preserved	Cooler During Collection		Comments
	Number	Type	Volume (mL)	Yes	No		Yes	No	
BTEX	2	VOA			X	HCl	X		5:00pm

Filter Type _____ Chain-of-Custody Form Number C 2401

Comments _____

Signature Cathy Celli Date 10/21/99 Reviewer _____ Date _____

Well Number MW 3
Serial No. WDPD-

☐ Development
☒ Purging

WELL DEVELOPMENT AND PURGING DATA

Page 1 of 2

Project Name Bucklington DeLuna Project Manager R. THOMPSON Project No. 62800086
Client Company Bucklington Phase Task No. _____
Site Name TAYLOR COM #2A Site Address _____

Development Criteria

☒ 3 to 5 Casing Volumes of Water Removal
☒ Stabilization of Indicator Parameters
Other Water Clear sup

Water Volume Calculation
Initial Depth of Well (feet) 151
Initial Depth to Water (feet) 4-36'
Height of Water Column in Well (feet) 10.64'
Diameter (inches): Well 2 Gravel Pack _____

Item	Water Volume In Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		<u>2</u>	
Gravel Pack			
Drilling Fluids			
Total			<u>6-10</u>

Methods of Development

Pump ☐ Centrifugal ☒ Bottom Valve
☐ Submersible ☐ Double Check Valve
☐ Peristaltic ☐ Stainless-steel Kemmerer
☐ Other _____

Instruments
☒ pH Meter
☐ DO Monitor
☒ Conductivity Meter
☒ Temperature Meter
☐ Other _____

Serial No. (if applicable) _____

Water Disposal
DUMP ON GROUND

Water Removal Data

Date	Time	Development Method	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons)		Temperature (°C)	pH	Conductivity (umhos/cm)	Dissolved Oxygen (mg/L)	Comments
						Incremental	Cumulative					
10/21/99	5:15					2	2	62.6	6.6	5540		WATER V. CLOUDY
	5:20					2	4	61.1	6.7	4490		
	5:24					2	6	61.7	6.8	4020		
	5:28					2	8	60.1	6.9	3790		
	5:31					2	10	60.1	6.9	3570		WATER CLEAR & CLOUDY
	5:35					2	12	60.7	6.9	3480		
	5:39					2	14	60.6	6.9	3280		
	5:47					7	21	58.8	7.0	3270		
	5:53					2	23	59.7	7.0	3190		
	5:55					1	24	60.1	7.0	3170		

Circle the date and time that the development criteria are met.

Comments DIW AFTER BAILING 4.53'

Developer's Signature(s) Cathy Culbert

Date 10/21/99

Reviewer _____

Date _____

MW 3p 2 of 2



Water Sampling Data

Location No. _____

Group List Number _____

Sample Type: ☒ Groundwater ☐ Surface Water ☐ Other _____ Date 10/21/99Project Name BURLINGTON DRILLING Project No. 62800086Project Manager R. THOMPSON Phase/Task No. _____Site Name TAYLOR COM #2A

Sampling Specifications

Requested Sampling

Depth Interval (feet) _____

Requested Wait Following

Development/Purging (hours) _____

Initial Measurements

Time Elapsed From Final Development/Purging (hours) _____

Initial Water Depth (feet) _____

Nonaqueous Liquids Present (Describe) _____

Water Quality/Water Collection

DO = Dissolved Oxygen; Cond. = Conductivity

Date	Time	Sampler Initials	Water Quality Readings				Water Collection Data					Notes (Explain in Comments Below)
			Temp. (°C)	pH	DO (mg/L)	Cond. (µmhos/cm)	Volume Removed (gallons)	Removal Rate (gal/min)	Pump Intake Depth (feet)	Bail	Final Water Depth (feet)	

Sample Containers

Container Type: G = Clear Glass; A = Amber Glass; P = Plastic; V = VOA Vial (Glass); O = Other (Specify)

Preservatives: H = HCl; N = HNO₃; S = H₂SO₄; A = NaOH; O = Other (Specify); - = None

Analytical Parameter List	Container			Field Filtered		Preserved	Coated During Collection		Comments
	Number	Type	Volume (mL)	Yes	No		Yes	No	
BTEX	2	VOA			X	HCl	X		5:55 pm

Filter Type _____ Chain-of-Custody Form Number C 2401

Comments _____

Signature Cathy Culbreth Date 10/21/99 Reviewer _____ Date _____



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED
CLIENT : PHILIP ENVIRONMENTAL
PROJECT # : 62800086
PROJECT NAME : BURLINGTON DRILLING

PINNACLE I.D.: 910079

SAMPLE			DATE	DATE	DATE	DIL.
ID. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	TAYLOR MW-1	AQUEOUS	10/21/99	NA	10/26/99	1
02	TAYLOR MW-2	AQUEOUS	10/21/99	NA	10/26/99	1
03	TAYLOR MW-3	AQUEOUS	10/21/99	NA	10/26/99	1

PARAMETER	DET. LIMIT	UNITS	TAYLOR MW-1	TAYLOR MW-2	TAYLOR MW-3
BENZENE	0.5	UG/L	0.7	< 0.5	< 0.5
TOLUENE	0.5	UG/L	1.9	< 0.5	< 0.5
ETHYLBENZENE	0.5	UG/L	1.2	< 0.5	< 0.5
TOTAL XYLENES	0.5	UG/L	3.5	< 0.5	< 0.5

SURROGATE:

BROMOFLUOROBENZENE (%)	106	98	102
SURROGATE LIMITS (80 - 120)			

CHEMIST NOTES:

N/A

ENVIRONMENTAL

4000 Monroe Road
Farmington, NM 87401
(505) 326-2262 Phone
(505) 326-2388 FAX

[illegible]

Signature	Date	Time	Signature	Date	Time
Cathy Culbert	10/22/99	7am	H. Mitchell	10/22/99	1800

Signature	Date	Time
<i>H. M. M. M. M.</i>	10/22/99	1800

Samples Iced: ☒ Yes ☐ No		Carrier: G-R-E-Y-H-O-U-N-A	Airbill No. G-L-I-L-G-06050265
Preservatives (ONLY for Water Samples) ☐ Cyanide Sodium hydroxide (NaOH) ☒ Volatile Organic Analysis Hydrochloric acid (HCl) ☐ Metals Nitric acid (HNO ₃) ☐ TPH (418.1) Sulfuric acid (H ₂ SO ₄) ☐ Other (Specify) _____ ☐ Other (Specify) _____		Shipping and Lab Notes: 100 — 3.6°C 6 VAS ✓	

PHILIP

Well Number mw 1

☐ Development
☒ Purging

WELL DEVELOPMENT AND PURGING DATA

ENVIRONMENTAL

Serial No. WDPD

Page 1 of 1

Project Name BR Well Sampling

Project Manager Robert Thompson

Project No. 62800228

Client Company Bureau of Resources

Phase/Task No. 0301

Site Name Taylor COM #2A

Site Address RURAL SAN JUAN CO

Development Criteria

- ☒ 5 Casing Volumes of Water Removal
☒ Stabilization of Indicator Parameters
☐ Other

Water Volume Calculation

Initial Depth of Well (feet) 17.30 TOR
Initial Depth to Water (feet) 6.04 TOR
Height of Water Column in Well (feet) 11.24
Diameter (inches): Well 2 Gravel Pack

Instruments

Serial No. (if applicable)

☒ pH Meter

HYDAC

☐ DO Monitor

☒ Conductivity Meter

HYDAC

☒ Temperature Meter

HYDAC

☐ Other

Water Disposal

ON GROUND ON SITE

Methods of Development

- Pump
☐ Centrifugal
☐ Submersible
☐ Peristaltic
☐ Other
- Boiler
☒ Bottom Valve
☐ Double Check Valve
☐ Stainless-steel Kemmerer

Water Removal Data

Date	Time	Development Method		Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons)		Product Volume Removed (gallons)		Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/l)	Comments
		Pump	Boiler				Increment	Cumulative	Increment	Cumulative					
5/17/00	1210		X				1	1			18.4	7.61	1800		Cloudy
5/17/00	1212		X				1	2			18.0	7.37	1780		Cloudy
5/17/00	1214		X				1	3			14.4	7.63	1810		Cloudy
5/17/00	1216		X				1	4			15.9	7.53	1740		Cloudy
5/17/00	1223		X				1	5			15.9	7.35	1700		Cloudy
5/17/00	1220		X				1	6			15.8	7.26	1720		Cloudy

Circle the date and time that the development criteria are met.

Comments SAMPLED AT 1227

Developer's Signature(s)

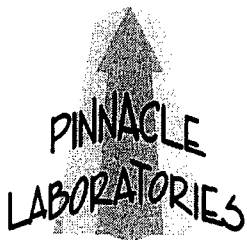
Robert Thompson

Date 5/17/00

Reviewer

Date

F:\NEWFORM\FE A0101.DOT 1/31/96



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

Pinnacle Lab ID number **005081**
May 26, 2000

PHILIP ENVIRONMENTAL
4000 MONROE ROAD
FARMINGTON, NM 87401

Project Name BR WELL SAMPLING
Project Number 62800228

Attention: ROBERT THOMPSON

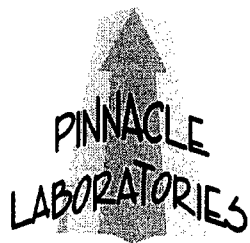
On 05/19/00 Pinnacle Laboratories, Inc. Inc., (ADHS License No. AZ0592 pending), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

If you have any questions or comments, please do not hesitate to contact us at (505)344-3777.

H. Mitchell Rubenstein, Ph. D.
General Manager

MR: jt

Enclosure

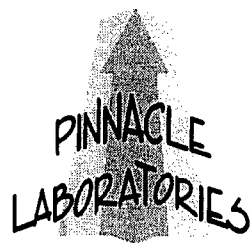


2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

CLIENT : PHILIP ENVIRONMENTAL
PROJECT # : 62800228
PROJECT NAME : BR WELL SAMPLING

PINNACLE ID : 005081
DATE RECEIVED : 05/19/00
REPORT DATE : 05/26/00

PIN			DATE
ID. #	CLIENT DESCRIPTION	MATRIX	COLLECTED
01	TAYLOR COM#2A MW3	AQUEOUS	05/17/00
02	TAYLOR COM#2A MW2	AQUEOUS	05/17/00
03	TAYLOR COM#2A MW1	AQUEOUS	05/17/00



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Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED
CLIENT : PHILIP ENVIRONMENTAL
PROJECT # : 62800228
PROJECT NAME : BR WELL SAMPLING

PINNACLE I.D.: 005081

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
01	TAYLOR COM#2A MW3	AQUEOUS	05/17/00	NA	05/23/00	1
02	TAYLOR COM#2A MW2	AQUEOUS	05/17/00	NA	05/23/00	1
03	TAYLOR COM#2A MW1	AQUEOUS	05/17/00	NA	05/23/00	1

PARAMETER	DET. LIMIT	UNITS	TAYLOR COM#2A MW3	TAYLOR COM#2A MW2	TAYLOR COM#2A MW1
BENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
TOLUENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
ETHYLBENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
TOTAL XYLENES	0.5	UG/L	< 0.5	< 0.5	< 0.5

SURROGATE:

BROMOFLUOROBENZENE (%)

105

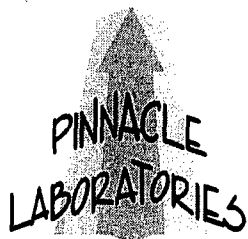
97

94

SURROGATE LIMITS (80 - 120)

CHEMIST NOTES:

N/A



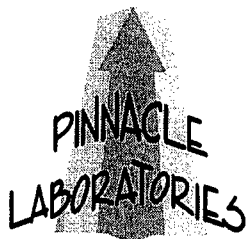
2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 005081
BLANK I. D.	: 052300	DATE EXTRACTED	: NA
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 05/23/00
PROJECT #	: 62800228	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: BR WELL SAMPLING		

PARAMETER	UNITS	
BENZENE	UG/L	<0.5
TOLUENE	UG/L	<0.5
ETHYLBENZENE	UG/L	<0.5
TOTAL XYLENES	UG/L	<0.5

SURROGATE:
BROMOFLUOROBENZENE (%) 106
SURROGATE LIMITS: (80 - 120)
CHEMIST NOTES:
N/A



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Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY QUALITY CONTROL
MSMSD

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 005081
MSMSD #	: 005081-02	DATE EXTRACTED	: NA
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 05/23/00
PROJECT #	: 62800228	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: BR WELL SAMPLING	UNITS	: UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
BENZENE	<0.5	20.0	20.4	102	20.1	101	1	(80 - 120)	20
TOLUENE	<0.5	20.0	20.5	103	20.6	103	0	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	20.8	104	20.8	104	0	(80 - 120)	20
TOTAL XYLENES	<0.5	60.0	63.0	105	62.1	104	1	(80 - 120)	20

CHEMIST NOTES:
N/A

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

PHILIP

Chain of Custody Record

005081

4000 Monroe Road
Farmington, NM 87401

(505) 326-2262 Phone
(505) 326-2388 FAX

COC Serial No. C 2546



Project Name **BR Well Sample**

Project Number **2800228** Phase **Task 0301**

Sampler **R. THOMPSON**

Laboratory Name **PINNACLE LABS**

Location **ALBUQUERQUE, NM**

Sample Number (and depth) Date Time Matrix

TAYLOR Cam #24 MW3 5/17/00 1130 H2O 2 X

TAYLOR Cam #24 MW2 5/17/00 1154 H2O 2 X

TAYLOR Cam #24 MW1 5/17/00 1227 H2O 2 X

Total Number of Bottles

Type of Analysis and Bottle

BTEX & O21

Comments

Relinquished by:

Signature

Date

Time

Received By:

Signature

Date

Time

Samples Iced: ☒ Yes ☐ NO

Preservatives (ONLY for Water Samples)

☐ Cyanide ☐ Sodium hydroxide (NaOH)

☒ Volatile Organic Analysis ☐ Hydrochloric acid (HCl)

☐ Metals ☐ Nitric acid (HNO3)

☐ TPH (418.1) ☐ Sulfuric acid (H2SO4)

☐ Other (Specify) _____

Carrier: **6 PERRYHOUND LINES**

Shipping and Lab Notes:

11 On Ice

Airbill No. **BLI 1601650760**

4.6 °C

Project Name B.B.R. Well Sampling

Project Manager R. Thompson

Project No. 62600228

Client Company Burlington Resources

Phase, Job No. 0301

Site Name Taylor Com # 2A

Site Address Rural San Juan CO

Development Criteria

☒ 5 Casing Volumes of Water Removal
☒ Stabilization of Indicator Parameters
☐ Other

Water Volume Calculation

Initial Depth of Well (feet) 17.32
Initial Depth to Water (feet) 5.30
Height of Water Column in Well (feet) 12.02
Diameter (inches): Well 2" Gravel Pack

Instruments

Serial No. (if applicable)

☒ pH Meter

Hydac

☐ DO Monitor

☒ Conductivity Meter

Hydac

☒ Temperature Meter

Hydac

☐ Other

Water Disposal

2.7 On Site

Methods of Development

Pump
☐ Centrifugal ☒ Bottom Valve
☐ Submersible ☐ Double Check Valve
☐ Peristaltic ☐ Stainless-steel Kemmerer
☐ Other

Item	Water Volume in Well	Galons to be Removed
Well Casing	42.02	196 x 3
Gravel Pack		
Drilling Fluids		
Total		5.88

Water Removal Data

Date	Time	Development Method	Removal Rate (gal/min)	Initial Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (galons)		Product Volume Removed (galons)		Temperature (°C)	pH	Conductivity (microhm/cm)	Dissolved Oxygen (mg/l)	Comments
						Incremental	Cumulative	Incremental	Cumulative					
09/13/00	9:35	✓				1.25	1.25			21.7	6.58	2550		Reset in Colson
	9:36	✓				1.25	2.50			20.9	6.64	2450		Flow rate
	9:39	✓				1.25	3.75			20.1	6.62	2260		Flow rate
	9:42	✓				1.25	5.00			19.9	6.61	2200		Flow rate
	9:44	✓				1.25	6.25			19.4	6.63	2160		No Change

Circle the date and time that the development criteria are met.

Comments Sampled for BTEX 9:48 AM

Developer's Signature(s) Ch. A. May

Date 09/13/00

Reviewer RT Date 9/19/00

Well Number Mw 03

☒ Development
☒ Purging

WELL DEVELOPMENT AND PURGING DATA

Serial No. WDPD-

Project Name B.R. well Sampling

Client Company Burlington Resources

Project Manager R Thompson

Project No. 629 00228

Site Name Taylor Com # 2A

Site Address Rural San Juan Co.

Phase/Task No. 0301

Page 1 of 1

Development Criteria

- ☒ 3 to 5 Casing Volumes of Water Removal
☒ Stabilization of Indicator Parameters
☐ Other

Water Volume Calculation

Initial Depth of Well (feet) 15.27
Initial Depth to Water (feet) 3.66
Height of Water Column in Well (feet) 11.61
Diameter (inches): Well 2" Gravel Pack

Instruments

- ☒ pH Meter Hydac
☐ DO Monitor
☒ Conductivity Meter Hydac
☒ Temperature Meter Hydac
☐ Other

Methods of Development

- Pump
☐ Centrifugal
☐ Submersible
☐ Peristaltic
☒ Bottom Valve
☐ Double Check Valve
☐ Stainless-steel Kemmerer
☐ Other

Item	Water Volume in Well	Gallons to be Removed
Well Casing	Cubic Feet <u>11.61</u>	Gallons <u>199 X 3</u>
Gravel Pack		<u>5.67</u>
Drilling Fluids		
Total		<u>5.67</u>

Water Disposal

in pit on site

Water Removal Data

Date	Time	Development Method	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons)		Product Volume Removed (gallons)		Temperature (°F)	pH	Conductivity (micro/cm)	Dissolved Oxygen (mg/l)	Comments
						Incremental	Cumulative	Incremental	Cumulative					
09-13-00	10:51	X				1.25	1.25			24.1	6.44	1980		Brown in color muddy
	10:53	X				1.25	2.5			20.7	6.41	1840		" "
	10:55	X				1.25	3.75			19.2	6.30	1780		" "
	10:57	X				1.25	5			18.5	6.27	1760		" "
	11:00	X				1.25	6.25			19.2	6.27	1760		no change

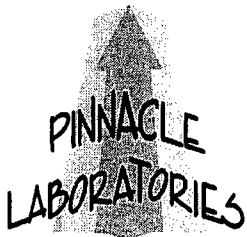
Circle the date and time that the development criteria are met.

Comments Sampled for BTEX 11.04 needs lock

Developer's Signature(s) Chris A. May

Date 09-13-00

Reviewer RT Date 9/19/00



SEP 20 2000

2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

Pinnacle Lab ID number 009077
September 18, 2000

PHILIP ENVIRONMENTAL
4000 MONROE ROAD
FARMINGTON, NM 87401

Project Name BR WELL SAMPLING
Project Number 62800228

Attention: ROBERT THOMPSON

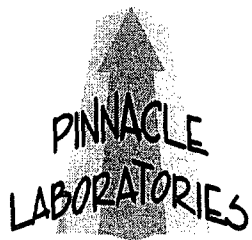
On 09/14/00 Pinnacle Laboratories, Inc., (ADHS License No. AZ0592 pending), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

If you have any questions or comments, please do not hesitate to contact us at (505)344-3777.

H. Mitchell Rubenstein, Ph. D.
General Manager

MR: jt

Enclosure

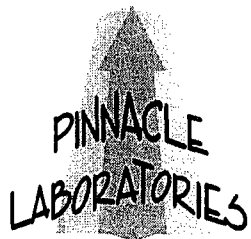


2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

CLIENT : PHILIP ENVIRONMENTAL
PROJECT # : 62800228
PROJECT NAME : BR WELL SAMPLING

PINNACLE ID : 009077
DATE RECEIVED : 09/14/00
REPORT DATE : 09/18/00

PIN ID. #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	TAYLOR COM #2A-MW01	AQUEOUS	09/13/00
02	TAYLOR COM #2A-MW02	AQUEOUS	09/13/00
03	TAYLOR COM #2A-MW03	AQUEOUS	09/13/00
04	TRIP BLANK	AQUEOUS	09/13/00



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED
CLIENT : PHILIP ENVIRONMENTAL
PROJECT # : 62800228
PROJECT NAME : BR WELL SAMPLING

PINNACLE I.D.: 009077

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
01	TAYLOR COM #2A-MW01	AQUEOUS	09/13/00	NA	09/14/00	1
02	TAYLOR COM #2A-MW02	AQUEOUS	09/13/00	NA	09/14/00	1
03	TAYLOR COM #2A-MW03	AQUEOUS	09/13/00	NA	09/14/00	1

PARAMETER	DET. LIMIT	UNITS	TAYLOR COM #2A-MW01	TAYLOR COM #2A-MW02	TAYLOR COM #2A-MW03
BENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
TOLUENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
ETHYLBENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
TOTAL XYLENES	0.5	UG/L	< 0.5	< 0.5	< 0.5

SURROGATE:

BROMOFLUOROBENZENE (%)

109

107

103

SURROGATE LIMITS (80 - 120)

CHEMIST NOTES:

N/A



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED
CLIENT : PHILIP ENVIRONMENTAL
PROJECT # : 62800228
PROJECT NAME : BR WELL SAMPLING

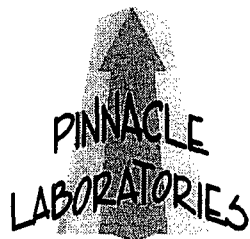
PINNACLE I.D.: 009077

SAMPLE	DATE	DATE	DATE	DIL.
ID. #	SAMPLED	EXTRACTED	ANALYZED	FACTOR
04	09/13/00	NA	09/14/00	1

PARAMETER	DET. LIMIT	UNITS	TRIP BLANK
BENZENE	0.5	UG/L	< 0.5
TOLUENE	0.5	UG/L	< 0.5
ETHYLBENZENE	0.5	UG/L	< 0.5
TOTAL XYLENES	0.5	UG/L	< 0.5

SURROGATE:
BROMOFLUOROBENZENE (%) 102
SURROGATE LIMITS (80 - 120)

CHEMIST NOTES:
N/A



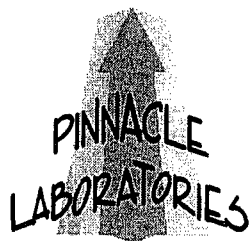
2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 009077
BLANK I. D.	: 091400	DATE EXTRACTED	: NA
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 09/14/00
PROJECT #	: 62800228	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: BR WELL SAMPLING		

PARAMETER	UNITS	
BENZENE	UG/L	<0.5
TOLUENE	UG/L	<0.5
ETHYLBENZENE	UG/L	<0.5
TOTAL XYLENES	UG/L	<0.5

SURROGATE:
BROMOFLUOROBENZENE (%) 111
SURROGATE LIMITS: (80 - 120)
CHEMIST NOTES:
N/A



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY QUALITY CONTROL
MSMSD

TEST : EPA 8021 MODIFIED
MSMSD # : 091400
CLIENT : PHILIP ENVIRONMENTAL
PROJECT # : 62800228
PROJECT NAME : BR WELL SAMPLING

PINNACLE I.D. : 009077
DATE EXTRACTED : NA
DATE ANALYZED : 09/14/00
SAMPLE MATRIX : AQUEOUS
UNITS : UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
BENZENE	<0.5	20.0	20.6	103	19.8	99	4	(80 - 120)	20
TOLUENE	<0.5	20.0	21.2	106	20.5	103	3	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	22.2	111	20.9	105	6	(80 - 120)	20
TOTAL XYLENES	<0.5	60.0	66.7	111	63.1	105	6	(80 - 120)	20

CHEMIST NOTES:
N/A

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

THE

4000 Monroe Road
Farmington, NM 87401

(505) 326-2262 Phone
(505) 326-2388 FAX

004074

COC Serial No. C 2456

Project Name		BR well Sampling	
Project Number		62800228 Phase Task 0301	
Samplers		C. maez	
Laboratory	Name	PINNACLE	
	Location	ALBQ NM.	
Sample Number (and depth)	Date	Time	Matrix
Taylor Com. #2A-MW01	09-13-00	9:48 AM	H ₂ O
Taylor Com. #2A-MW02	09-13-00	10:14 AM	H ₂ O
Taylor Com. #2A-MW03	09-13-00	11:04 AM	H ₂ O
Trip Blank	09-13-00	12:30 PM	H ₂ O

Relinquished by:

Received By:

Signature	Date	Time	Signature	Date	Time
Dr. A. M.	09-13-00	13 00	Stancune Juvau	9/14/00	0945

Samples Iced:

Preservatives (ONLY for Water Samples)

☐ Cyanide	Sodium hydroxide (NaOH)
☐ Volatile Organic Analysis	Hydrochloric acid (HCl)
☐ Metals	Nitric acid (HNO ₃)
☐ TPH (418.1)	Sulfuric acid (H ₂ SO ₄)
☒ Other (Specify) <u>H₂SO₄</u>	
☐ Other (Specify) _____	

Carrier: Greyhound Bus Lines

Shipping and Lab Notes:

Qcd @ 3° Ice Present

DRILLING LOGS/WELLBORE DIAGRAMS

RECORD OF SUBSURFACE EXPLORATION

Philip Environmental Services Corp.

4000 Morrow Road

Farmington, New Mexico 87401

(808) 328-2282 FAX (808) 328-2388

Borehole #

Well #

Page

1

MW 2

1 of 2

Project Name

Project Number

Project Location

BURLINGTON DRILLING

02500066 Phase 35

TAYLOR CORP #24

Well Logged By

Personnel On-Site

Contractors On-Site

Client Personnel On-Site

C. CULLICOTT

K. PADILLA, D. PADILLA,

R. THOMPSON

J. FFFS

Drilling Method

Air Monitoring Method

MUGER

P10

Elevation

Borehole Location

GWL Depth

Logged By

Drilled By

Date/Time Started

Date/Time Completed

T30N 12W S17A

3.96'

C. CULLICOTT

K. PADILLA & D. PADILLA

10/14/99 10:30am

10/14/99 11:30am

Depth (Feet)	Sample Interval	Sample Type & Recovery (Inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Unit: NDU			Drilling Conditions & Blow Counts
						BZ	SH	S	
0									
5	① 5-6		① 18" RECOVERY BELOW WATER TABLE UPPER 17" - BROWN CLAYEY SAND						① 5 Blows SS 0.0 ppm HS 0.0 ppm
10	② 10-11		② 10" RECOVERY LOWER 17" - GRAY CLAYEY SAND WITH WHITE COALS						② 4 Blows SS 0.0 ppm HS 0.0 ppm
15	③ 15-16		③ FULL RECOVERY SATURATED BROWN SAND, CLEAN						③ 1 Blow
20			HIT COBBLES @ 13' SETTING WELL @ 15'						
25			TO 15'						
30									
35									
40									

Comments:

DTW MW1 3.92' TD 14.4'

SUNNY WEATHER

Geologist Signature

Cathy Cullcott

MONITORING WELL INSTALLATION RECORD

Philip Environmental Services Corp.

100 Marney Road

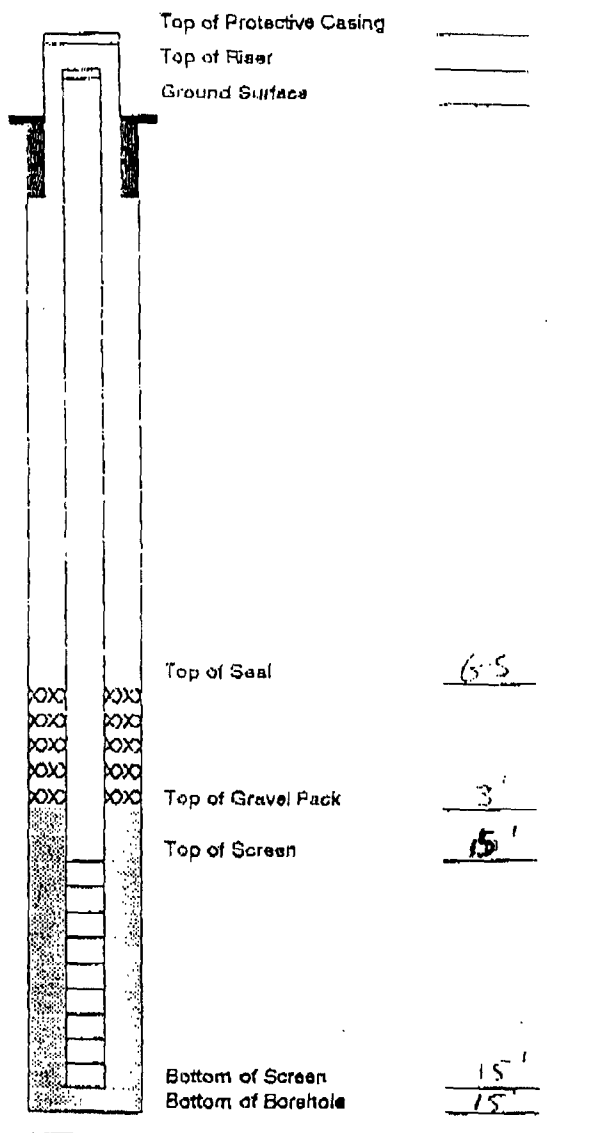
Birmingham, New Mexico 87401

UGI 326-2282 FAX (505) 326-2388

Borehole # 1Well # MW2Page 2 of 2Project Name BURLINGTON DRILLINGProject Number 62400086 Phase 3EProject Location TAYLOR CUM H2AOn-Site Geologist C. CULLICOTTPersonnel On-Site C. PADILLA, D. PADILLA,Contractors On-Site R. PADILLA, R. THOMPSONClient Personnel On-Site JEFFSElevation T30N 011W S17AWell Location T30N 011W S17ABWL Depth 3.96'Installed By C. PADILLADate/Time Started 10/14/99 10:30amDate/Time Completed 10/14/99 11:30am

Depths in Reference to Ground Surface

Item	Material	Depth
Top of Protective Casing		
Bottom of Protective Casing		
Top of Permanent Borehole Casing		
Bottom of Permanent Borehole Casing		
Top of Concrete		
Bottom of Concrete		
Top of Grout		
Bottom of Grout		
Top of Well Riser	2"	6.5'
Bottom of Well Riser	2"	5'
Top of Well Screen	2"	5'
Bottom of Well Screen	2"	15'
Top of Peltonite Seal	BENT	6.5'
Bottom of Peltonite Seal	CHIPS	3'
Top of Gravel Pack	CU	3'
Bottom of Gravel Pack	SAND	15'
Top of Natural Cave-In		
Bottom of Natural Cave-In		
Top of Groundwater		3.96'
Total Depth of Borehole		15'

Comments: WELL DEVELOPED W/ 7 GALLONS REMOVED.12" W. S-16" AFTER BAILING. WELLS 0-000 PRODUCERWATER VERY TURBID W/ SAND. Geologist Signature
SEDIMENT - NO SIGN OF OILCathy Cullicott

RECORD OF SUBSURFACE EXPLORATION

Philip Environmental Services Corp.

000 Monroe Road

Farmington, New Mexico 87401

505) 326-2282 FAX (505) 326-2388

Borehole # 2
Well # MW3
Page 1 of 2Project Name BURLINGTON DRILLING
Project Number 02800086 Phase 35
Project Location TAYLOR COM #2AElevation _____
Borehole Location T30N R11W S17A
GWL Depth 3.56'
Logged By C. CULLICOTT
Drilled By E. PADILLA & D. PADILLA
Date/Time Started 10/14/99 11:30 am
Date/Time Completed 10/14/99 12:30 pmWell Logged By C. CULLICOTT
Personnel On-Site E. PADILLA, D. PADILLA,
Contractors On-Site R. THOMPSON
Client Personnel On-Site _____Drilling Method Auger
Air Monitoring Method PID

Depth (Feet)	Sample Interval	Sample Type & Recovery (Inches)	Sample Description Classification System: UBCS	UBCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: NDU			Drilling Conditions & Blow Counts
						BZ	BH	S	
0									
5	0-7'		16" RECOVERY BLOW WATER TABLE BROWN FINE CLAY SAND UPPER 12" w/ PATCHES OF SOME GRAY CLAY THEN 2" OF BROWN CLAY w/ OILY APPEARANCE AND SOME FIBERS OF THEN 2" OF GRAY SAND.						1) 4 BLOWS SS 0.0 ppm HS 0.0 ppm
10	10-11 1/2'		12" RECOVERY UPPER 4" BROWN SAND. NEXT 4" GRAY CLAY SAND 2" GRAY CLAY 2" w/ OILY BROWN APPEARANCE LAST 4" BROWN SAND, POORLY SORTED, >60% COARSE.						2) 3 BLOWS SS 0.0 ppm HS 2.9 ppm
15									
20									
25									
30									
35									
40									

Comments:

SUNNY, WARM

Geologist Signature

Cathy Cullcott

MONITORING WELL INSTALLATION RECORD

Philip Environmental Services Corp.

100 Marvay Road

Birmingham, New Mexico 87401

OBI 328-2282 FAX (505) 328-2388

Borehole # 2
Well # MW3
Page 2 of 2Project Name BURLINGTONProject Number 62800086 Phase 35Project Location TAYLOR CORP #2AOn-Site Geologist C. CULLICOTTPersonnel On-Site E. PADILLA, O. PADILLAContractors On-Site R. THOMPSONClient Personnel On-Site Ø

Elevation

Well Location T30N R11W S17A3WL Depth 3.56'Installed By E. PADILLAO. PADILLADate/Time Started 10/14/99 11:30amDate/Time Completed 10/14/99 12:30pm

Depths in Reference to Ground Surface		
Item	Material	Depth
Top of Protective Casing		
Bottom of Protective Casing		
Top of Permanent Borehole Casing		
Bottom of Permanent Borehole Casing		
Top of Concrete		
Bottom of Concrete		
Top of Grout		
Bottom of Grout		
Top of Well Riser	2"	6.5'
Bottom of Well Riser	2"	5'
Top of Well Screen	2"	5'
Bottom of Well Screen	2"	15'
Top of Peltonite Seal	BENT.	6.5'
Bottom of Peltonite Seal	CHIPS	3'
Top of Gravel Pack	CO	3'
Bottom of Gravel Pack	SAND	15'
Top of Natural Cave-In		
Bottom of Natural Cave-In		
Top of Groundwater		3.56'
Total Depth of Borehole		15'



Top of Protective Casing _____

Top of Riser _____

Ground Surface _____

Top of Seal 6.5'

Top of Gravel Pack 3'

Top of Screen 5'

Bottom of Screen 15'

Bottom of Borehole 15'

Comments: WELL DEVELOPED w/ 7 gallons removedOTU after drilling 3.56'

well is good producer
water is very turbid
with brown sediment.
no other comments

Geologist Signature

Cathy Cullcott

**LETTER TO MR. OLSON
DATED AUGUST 13, 1999**

BURLINGTON RESOURCES

SAN JUAN DIVISION

August 13, 1999

Certified Mail: Z 186 732 850

Bill Olson
New Mexico Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505

RE: Taylor Com. #2A
Unit Letter A, Section 17, Township 30N, Range 11W
Notification of Groundwater above Benzene Standard

Dear Mr. Olson:

As a follow-up to the E-mail dated July 30, 1999, this letter is Burlington Resources' (BR) notification of groundwater that exceeded the benzene standard at the subject location. All other BTEX constituents were below the standards, but benzene was over 10 uG/L. BR is also proposing a plan of action to address the groundwater concerns at the Taylor Com. #2A.

During a spill cleanup on the subject location, BR excavated into an apparent abandoned earthen pit. As the excavation of impacted soils continued, groundwater was encountered at approximately 9 feet below ground surface. Impacted soils continued to be excavated to the extent practical until the "core" of impacted soils had been removed (approximate depth of 12 ft.). The excavation was backfilled with clean fill. BR then installed a temporary groundwater monitoring well in the center of the former earthen pit on May 19, 1999. After developing the well and allowing it to stabilize for one week, the well was purged and sampled on May 27, 1999. The sample results are as follows:

	Lab Results (uG/L)	Standard (uG/L)
Benzene	64	10
Toluene	<0.5	750
Ethylbenzene	23	750
Total Xylenes	98	640

Included with this letter are the groundwater lab analysis, the drilling log, and the monitoring well installation record.

Plan of Action:

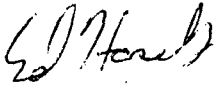
BR proposes to complete the existing temporary monitoring well as the permanent source well and proceed with quarterly sampling for BTEX constituents. Due to the shallow depth of the groundwater, the relatively low contaminant level, and apparent groundwater flow direction (toward the Animas River), we feel additional monitoring wells are not justified at this time. If the sampling shows the water is below standards for 4 consecutive quarters, BR proposes no additional investigation/remediation work at this site. The 2-inch PVC casing would be

removed to the extent practical from the monitoring well and the wellbore would be filled to surface with a bentonite/cement grout.

If after four quarters of sampling, the source monitoring well continues to test above standards, BR will initiate additional investigation work including possible downgradient wells and soil borings to identify the extent of the impact and potential additional sources.

Please provide written correspondence concerning our proposed plan of action. If you have questions or additional information is needed, please contact me at (505) 326-9841.

Sincerely,



Ed Hasely
Sr. Staff Environmental Representative

Attachments: Drilling Log/Wellbore Diagram
Analytical Results

cc: Denny Foust - NMOCD Aztec
Johnny Ellis (letter only)
Bruce Gantner (letter only)
~~Facility File~~
Correspondence



Drilling Log/Wellbore Diagram

RECORD OF SUBSURFACE EXPLORATION

Philip Environmental Services Corp.

4000 Monroe Road

Farmington, New Mexico 87401

(505) 328-2262 FAX (505) 328-2388

Borehole # 1
Well # NW-1 (T)
Page 1 of 1

Project Name _____
Project Number 21073 Phase 1000.99
Project Location Taylor

Well Logged By P. Cheney
Personnel On-Site Cheney, K. Padilla, D. Padilla
Contractors On-Site _____
Client Personnel On-Site Ed Haseley

Drilling Method 4 1/4" 115A
Air Monitoring Method PID

Elevation _____
Borehole Location Taylor
GWL Depth 5
Logged By P. Cheney
Drilled By K. Padilla
Date/Time Started 5/19 1113
Date/Time Completed 5/19

Depth (Feet)	Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: NDU			Drilling Conditions & Blow Counts
						BZ	BH	S	
0			Pit excavated and back filled to $\approx 12'$ (Ed Haseley). 1st sample at 5-7'						
5	5	18"	brown silty clay w/ black staining, soft, moderate plasticity wet at $\approx 9'$		0.0		1.5		BC = 3 S/115 = 87.0
10	10	24"	Dark gray to black, fine grained silty sand, poorly sorted, Hc odor		1.1		1.4		BC = 2 S/115 = 245.0
15	15	2"	coarse grained, well sorted sand		0.5		1.4		BC = 5 (4") S/115: not enough sample to log and bag
20			TD = 15' Set 10' of 2" screen from 15' to 5', silica sand to 3', bentonite to ground surface						
25									
30									
35									
40									

Comments: Materials: 1 silt trap, 1-10' screen, 1-5' riser, 4 sacks silica sand

Geologist Signature

Paul Cheney

MONITORING WELL INSTALLATION RECORD

Philip Environmental Services Corp.
4000 Monroe Road
Farmington, New Mexico 87401
(505) 326-2262 FAX (505) 326-2388

Borehole # 1
Well # MW-1
Page 1 of 1

Project Name _____
Project Number 21073 Phase 1000.99
Project Location Taylor

On-Site Geologist P. Cheney
Personnel On-Site Cheney, Padilla, D. Padilla
Contractors On-Site _____
Client Personnel On-Site Ed Hasey

Elevation _____
Well Location Taylor
GWL Depth 9'
Installed By R. Padilla
Date/Time Started 5/19 1113
Date/Time Completed 5/19

Depths in Reference to Ground Surface		
Item	Material	Depth
Top of Protective Casing		
Bottom of Protective Casing		
Top of Permanent Borehole Casing		
Bottom of Permanent Borehole Casing		
Top of Concrete		N.A.
Bottom of Concrete		N.A.
Top of Grout		N.A.
Bottom of Grout		N.A.
Top of Well Riser		Ground Surface
Bottom of Well Riser		5'
Top of Well Screen		5'
Bottom of Well Screen		15'
Top of Peltonite Seal		Ground Surface
Bottom of Peltonite Seal		3'
Top of Gravel Pack		3'
Bottom of Gravel Pack		15'
Top of Natural Cave-In		N.A.
Bottom of Natural Cave-In		N.A.
Top of Groundwater		9'
Total Depth of Borehole		15'



Top of Protective Casing _____

Top of Riser _____

Ground Surface _____

Top of Seal Ground Surface

Top of Gravel Pack 3'

Top of Screen 5'

Bottom of Screen 15'

Bottom of Borehole 15'

Comments: Materials: 1 silt nap, 1-10' screen, 1-5' riser, 4 sacks silica sand, 1 sack bentonite

Geologist Signature

Paul Cheney



Analytical Results - Groundwater

PINNACLE
LABORATORIES

JUN 16 1999

2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

Pinnacle Lab ID number **905106**
June 14, 1999

PHILIP ENVIRONMENTAL
4000 MONROE ROAD
FARMINGTON, NM 87401

Project Name BURLINGTON DRILLING
Project Number 21057

Attention: PAUL CHENEY

On 5/28/99 Pinnacle Laboratories, Inc. Inc., (ADHS License No. AZ0592), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

EPA method 8021 was performed by Pinnacle Laboratories, Inc., Albuquerque, NM.

All other parameters were performed by Severn Trent (FL) Inc., Pensacola, FL.

If you have any questions or comments, please do not hesitate to contact us at (505)344-3777.



Kimberly D. McNeill
Project Manager



H. Mitchell Rubenstein, Ph. D.
General Manager

MR: mt

Enclosure



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

CLIENT : PHILIP ENVIRONMENTAL
PROJECT # : 21057
PROJECT NAME : BURLINGTON DRILLING

PINNACLE ID : 905106
DATE RECEIVED : 5/28/99
REPORT DATE : 6/14/99

PIN ID. #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	BR-TAYLOR MW1	AQUEOUS	5/27/99
02	BR-FOGELSON MW1	AQUEOUS	5/27/99



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED
CLIENT : PHILIP ENVIRONMENTAL
PROJECT # : 21057
PROJECT NAME : BURLINGTON DRILLING

PINNACLE I.D.: 905106

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
01	BR-TAYLOR MW1	AQUEOUS	5/27/99	NA	5/28/99	1
02	BR-FOGELSON MW1	AQUEOUS	5/27/99	NA	5/28/99	10

PARAMETER	DET. LIMIT	UNITS	BR-TAYLOR MW1	BR-FOGELSON MW1
BENZENE	0.5	UG/L	64	5.0
TOLUENE	0.5	UG/L	< 0.5	< 5.0
ETHYLBENZENE	0.5	UG/L	23	210
TOTAL XYLENES	0.5	UG/L	98	420

SURROGATE:

TRIFLUOROTOLUENE (%)

85

95

SURROGATE LIMITS (69 - 117)

CHEMIST NOTES:

N/A



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 905106
BLANK I. D.	: 052899	DATE EXTRACTED	: NA
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 5/28/99
PROJECT #	: 21057	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: BURLINGTON DRILLING		

PARAMETER	UNITS	
BENZENE	UG/L	<0.5
TOLUENE	UG/L	<0.5
ETHYLBENZENE	UG/L	<0.5
TOTAL XYLENES	UG/L	<0.5

SURROGATE:
TRIFLUOROTOLEUEN (%) 100
SURROGATE LIMITS: (69 - 117)
CHEMIST NOTES:
N/A



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY QUALITY CONTROL
MSMSD

TEST : EPA 8021 MODIFIED
MSMSD # : 905111-01
CLIENT : PHILIP ENVIRONMENTAL
PROJECT # : 21057
PROJECT NAME : BURLINGTON DRILLING

PINNACLE I.D. : 905106
DATE EXTRACTED : NA
DATE ANALYZED : 5/28/99
SAMPLE MATRIX : AQUEOUS
UNITS : UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
BENZENE	<0.5	10.0	10.1	101	10.5	105	4	(80 - 120)	20
TOLUENE	<0.5	10.0	10.5	105	10.5	105	0	(80 - 120)	20
ETHYLBENZENE	<0.5	10.0	10.8	108	10.8	108	0	(80 - 120)	20
TOTAL XYLENES	<0.5	30.0	32.2	107	32.0	107	1	(80 - 120)	20

CHEMIST NOTES:
N/A

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$



Severn Trent Laboratories
11 East Olive Road
Pensacola FL 32514

SIGNATURE PAGE

Tel: (850) 474-1001
Fax: (850) 478-2671

Reviewed by:


STL Project Manager

Client: PINNACLE LABORATORIES
ALBUQUERQUE, NEW MEXICO

Project Name: PHIL
Project Number: 905106
Project Location: BURLINGTON DRILLING
Accession Number: 905635

Project Manager: KIMBERLY D. MCNEILL
Sampled By: N/S

Other Laboratory Locations:

- 149 Rangeway Road, North Billerica MA 01862
- 16203 Park Row, Suite 110, Houston TX 77084
- 200 Monroe Turnpike, Monroe CT 06468
- 55 South Park Drive, Colchester VT 05446
- 315 Fullerton Avenue, Newburgh NY 12550
- Westfield Executive Park, 53 Southampton Road, Westfield MA 01085
- 628 Route 10, Whippany NY 07981
- 77 New Durham Road, Edison NJ 08817

a part of

Severn Trent Services Inc.



SEVERN TRENT LABORATORIES, INC. – PENSACOLA, FLORIDA
STATE CERTIFICATIONS

Alabama Department of Environmental Management, Laboratory ID No. 40150 (Drinking Water by Reciprocity with FL)
Arizona Department of Health Services, Lab ID No. AZ0589 (Hazardous Waste & Wastewater)
Arkansas Department of Pollution Control and Ecology, (No Laboratory ID No. assigned by state) (Environmental)
State of California, Department of Health Services, Laboratory ID No. 2338 (Hazardous Waste and Wastewater)
State of Connecticut, Department of Health Services, Connecticut Lab Approval No. PH-0697 (Drinking Water, Hazardous Waste and Wastewater)
Delaware Health & Social Services, Division of Public Health, Laboratory ID No. FL094 (Drinking Water by Reciprocity with FL)
Florida DOH Laboratory ID No. 81142 (Drinking Water), Laboratory ID No. E81010 (Hazardous Waste and Wastewater)
Florida, Radioactive Materials License No. G0733-1
Foreign Soil Permit, Permit No. S-37599
Kansas Department of Health & Environment, Laboratory ID No. E10253 (Wastewater and Hazardous Waste)
Commonwealth of Kentucky, Natural Resources and Environmental Protection Cabinet, Laboratory ID No. 90043 (Drinking Water)
State of Louisiana, DHH, Office of Public Health Division of Laboratories, Laboratory ID No. 98-25 (Drinking Water)
State of Maryland, DH&MH Laboratory ID No. 233 (Drinking Water by Reciprocity with Florida)
Commonwealth of Massachusetts, DEP, Laboratory ID No. M-FL094 (Hazardous Waste and Wastewater)
State of Michigan, Bureau of E&OcH, Laboratory ID No. 9912 (Drinking Water by Reciprocity with Florida)
New Hampshire DES, Laboratory ID No. 250598-A (Wastewater)
State of New Jersey, Department of Environmental Protection & Energy, Laboratory ID No. 49006 (Wastewater and Hazardous Waste)
New York State, Department of Health, Laboratory ID No. 11503 (Wastewater and Solids/Hazardous Waste)
North Carolina Department of Environment, Health, & Natural Resources, Laboratory ID No. 314 (Hazardous Waste and Wastewater)
North Dakota DH&Consol Labs, Laboratory ID No. R-108 (Hazardous Waste and Wastewater by Reciprocity with Florida)
State of Oklahoma, Oklahoma Department of Environmental Quality, Laboratory ID No. 9810 (Hazardous Waste and Wastewater)
Commonwealth of Pennsylvania, Department of Environmental Resources, Laboratory ID No. 68-467 (Drinking Water)
South Carolina DH&EC, Laboratory ID No. 96026 (Wastewater by Reciprocity with FL and Solids/Hazardous Waste by Reciprocity with CA)
Tennessee Department of Health & Environment, Laboratory ID No. 02907 (Drinking Water)
Tennessee Division of Underground Storage Tanks Approved Laboratory
Virginia Department of General Services, Laboratory ID No. 00008 (Drinking Water by Reciprocity with FL)
State of Washington, Department of Ecology, Laboratory ID No. C282 (Hazardous Waste and Wastewater)
West Virginia Division of Environmental Protection, Office of Water Resources, Laboratory ID No. 136 (Hazardous Waste and Wastewater by Reciprocity with FL)
American Industrial Hygiene Association (AIHA) Accredited Laboratory, Laboratory ID No. 9133

SEVERN TRENT LABORATORIES

11 East Olive Road Pensacola, Florida 32514 (850) 474-1001

Analysis Report

Analysis: Group of Single Wetchem

Accession:	905635
Client:	PINNACLE LABORATORIES
Project Number:	905106
Project Name:	PHIL
Project Location:	BURLINGTON DRILLING
Department:	WET CHEM

[0] Page 1
Date 07-Jun-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 905635
Client: PINNACLE LABORATORIES
Project Number: 905106
Project Name: PHIL
Project Location: BURLINGTON DRILLING
Test: Group of Single Wetchem
Matrix: WATER
QC Level: I

Lab ID: 001
Client Sample Id: 905106-01

Sample Date/Time: 27-MAY-99 1015
Received Date: 29-MAY-99

Parameters:	Units:	Results:	Rpt Lmts:	Q:	Batch:	Analyst:
CHLORIDE (4500-CL E)	MG/L	45	2		CKW22C	WH
NITRITE-NITRATE, NITROGEN (353.2)	MG/L	2.0	0.1		N3W36A	WH
SULFATE (375.4/4500E/9038)	MG/L	1000	200	+	SEW052	BE
TOTAL DISSOLVED SOLIDS (160.1)	MG/L	1800	5		TDW027	ED

Comments:

Taylor Com. #2A

[0] Page 2
Date 07-Jun-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 905635
Client: PINNACLE LABORATORIES
Project Number: 905106
Project Name: PHIL
Project Location: BURLINGTON DRILLING
Test: Group of Single Wetchem
Matrix: WATER
QC Level: I

Lab ID: 002
Client Sample Id: 905106-02

Sample Date/Time: 27-MAY-99 1215
Received Date: 29-MAY-99

Parameters:	Units:	Results:	Rpt Lmts:	Q:	Batch:	Analyst:
CHLORIDE (4500-CL E)	MG/L	430	10	+	CKW22C	WH
NITRITE-NITRATE, NITROGEN (353.2)	MG/L	ND	0.1		N3W36A	WH
SULFATE (375.4/4500E/9038)	MG/L	9300	2000	+	SEW052	BE
TOTAL DISSOLVED SOLIDS (160.1)	MG/L	14000	5		TDW027	ED

Comments:

Fogelson 4-1

[0] Page 3
Date 07-Jun-99

"Method Report Summary"

Accession Number: 905635
Client: PINNACLE LABORATORIES
Project Number: 905106
Project Name: PHIL
Project Location: BURLINGTON DRILLING
Test: Group of Single Wetchem

Client Sample Id:	Parameter:	Unit:	Result:
905106-01	CHLORIDE (4500-CL E)	MG/L	45
	NITRITE-NITRATE, NITROGEN (353.2)	MG/L	2.0
	SULFATE (375.4/4500E/9038)	MG/L	1000
	TOTAL DISSOLVED SOLIDS (160.1)	MG/L	1800
905106-02	CHLORIDE (4500-CL E)	MG/L	430
	SULFATE (375.4/4500E/9038)	MG/L	9300
	TOTAL DISSOLVED SOLIDS (160.1)	MG/L	14000

SEVERN TRENT LABORATORIES

11 East Olive Road Pensacola, Florida 32514 (850) 474-1001

Analysis Report

Analysis: RCRA METALS - AXIAL

Accession:	905635
Client:	PINNACLE LABORATORIES
Project Number:	905106
Project Name:	PHIL
Project Location:	BURLINGTON DRILLING
Department:	METALS

[0] Page 1
Date 10-Jun-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 905635
Client: PINNACLE LABORATORIES
Project Number: 905106
Project Name: PHIL
Project Location: BURLINGTON DRILLING
Test: RCRA METALS - AXIAL
Matrix: WATER
QC Level: I

Lab Id: 001
Client Sample Id: 905106-01

Sample Date/Time: 27-MAY-99 1015
Received Date: 29-MAY-99

Parameters:	Units:	Results:	Rpt Lmts:	Q:	Batch:	Analyst:
SILVER (6010B)	MG/L	ND	0.005		AYW154	GSP
ARSENIC (6010B)	MG/L	ND	0.005		RYW154	GSP
BARIUM (6010B)	MG/L	0.38	0.01		BYW154	GSP
CADMIUM (6010B)	MG/L	ND	0.005		CYW154	GSP
CHROMIUM (6010B)	MG/L	0.008	0.005		HYW154	GSP
MERCURY (7470A)	MG/L	ND	0.0002		M7W047	JL
LEAD (6010B)	MG/L	0.042	0.005		PYW154	GSP
SELENIUM (6010B)	MG/L	ND	0.01		SYW154	GSP

Comments:

[0] Page 2
Date 10-Jun-99

"FINAL REPORT FORMAT - SINGLE"

Accession: 905635
Client: PINNACLE LABORATORIES
Project Number: 905106
Project Name: PHIL
Project Location: BURLINGTON DRILLING
Test: RCRA METALS - AXIAL
Matrix: WATER
QC Level: I

Lab Id: 002
Client Sample Id: 905106-02

Sample Date/Time: 27-MAY-99 1215
Received Date: 29-MAY-99

Parameters:	Units:	Results:	Rpt Lmts:	Q:	Batch:	Analyst:
SILVER (6010B)	MG/L	ND	0.005		AYW154	GSP
ARSENIC (6010B)	MG/L	0.006	0.005		RYW154	GSP
BARIUM (6010B)	MG/L	0.14	0.01		BYW154	GSP
CADMIUM (6010B)	MG/L	ND	0.005		CYW154	GSP
CHROMIUM (6010B)	MG/L	0.019	0.005		HYW154	GSP
MERCURY (7470A)	MG/L	ND	0.0002		M7W047	JL
LEAD (6010B)	MG/L	0.007	0.005		PYW154	GSP
SELENIUM (6010B)	MG/L	ND	0.01		SYW154	GSP

Comments:

[0] Page 3
Date 10-Jun-99

"Method Report Summary"

Accession Number: 905635
Client: PINNACLE LABORATORIES
Project Number: 905106
Project Name: PHIL
Project Location: BURLINGTON DRILLING
Test: RCRA METALS - AXIAL

Client Sample Id:	Parameter:	Unit:	Result:
905106-01	BARIUM (6010B)	MG/L	0.38
	CHROMIUM (6010B)	MG/L	0.008
	LEAD (6010B)	MG/L	0.042
905106-02	ARSENIC (6010B)	MG/L	0.006
	BARIUM (6010B)	MG/L	0.14
	CHROMIUM (6010B)	MG/L	0.019
	LEAD (6010B)	MG/L	0.007

Data Qualifiers for Final Report

STL-Pensacola Inorganic/Organic and AFCEE Projects (under QAPP)

J4	(For positive results)	Temperature limits exceeded ($\leq 2^{\circ}\text{C}$ or $\geq 6^{\circ}\text{C}$)
J5	(TICs)	The reported value is quantitated as a TIC; therefore, it is estimated
J6	(For positive results)	LCS or Surrogate %R is $>$ upper control limit (UCL) or $<$ lower control limit (LCL)
J7	(For positive results)	The reported value is $>$ the laboratory MDL and $<$ lowest calibration standards; therefore, the quantitation is an estimation.
J (AFCEE description)	The analyte was positively identified, the quantitation is an estimation	
R1	(For nondetects)	Temperature limits exceeded ($\leq 2^{\circ}\text{C}$ or $\geq 6^{\circ}\text{C}$)
R2	Improper preservation, no preservative present in sample upon receipt	
R3	Improper preservation, incorrect preservative present in sample upon receipt	
R4	Holding time exceeded	
R5	Collection requirements not met, improper container used for sample	
R6	LCS or surrogate %R is $<$ LCL and analyte is not detected or surrogate %R is $<$ 10% for detects/nondetects	
R7	Internal standard area outside -50% to $+100\%$ of initial calibration midpoint standard.	
R8	Second source calibration verification exceeds acceptance criteria.	
R9	Improper preservation, sample not filtered in the field.	
R (AFCEE description)	The data are unusable due to deficiencies in the ability to analyze the sample and meet QC criteria	
F	$<$ laboratory or AFCEE RL and $>$ laboratory MDL	
F (AFCEE description)	The analyte was positively identified but the associated numerical value is below the AFCEE or lab RL	
U2	$<$ Laboratory MDL (value for result will be the MDL, never below the MDL)	
U (AFCEE description)	The analyte was analyzed for but not detected. The associated numerical value is at or below the MDL	
B (AFCEE description)	The analyte was found in the associated blank, as well as in the sample	
@	Adjusted reporting limit due to sample matrix (dilution prior to digestion and/or analysis)	
+	Elevated reporting limit due to dilution into calibration range	
*	Elevated reporting limit due to matrix interference (dilution prior to digestion and/or analysis)	
#	Elevated reporting limit due to insufficient sample size	
D	Diluted out	
M	A matrix effect was present (sample was analyzed twice to confirm or chromatogram had interfering peaks)	
S	Incorrect sample amount was submitted to the laboratory for analysis	
T	Second-column confirmation exceeded the SW-846 criteria of 40% RPD for this compound.	

ND = Not Detected at or above the STL-Pensacola reporting limit (RL)

N/S = Not Submitted

N/A = Not Applicable

IDL = Laboratory Instrument Detection Limit

MDL = Laboratory Method Detection Limit

RL = Reporting Limit (AFCEE RLs are listed in the AFCEE QAPP)

Any time a sample arrives at the laboratory improperly preserved (at improper pH or temperature) or after holding time has expired or prepared or analyzed after holding time, client must be notified in writing (i.e. case narrative)

Florida Projects Inorganic/Organic

Refer to back side of this page

ICR Projects Inorganic/Organic

A1 Acceptable

R6

Rejected

Examples: ICR Flags

R6 = Laboratory extracted the sample but the refrigerator malfunctioned so the extract became warm and client was notified

R6 = Sample arrived in laboratory in good condition; however, the laboratory did not analyze it within EPA's established holding time limit

CLP and CLP-like Projects: Refer to referenced CLP Statement of Work (SOW) for explanation of data qualifiers

Quality Control Report

Analysis: Group of Single Wetchem

Accession:	905635
Client:	PINNACLE LABORATORIES
Project Number:	905106
Project Name:	PHIL
Project Location:	BURLINGTON DRILLING
Department:	WET CHEM

[0] Page 1
Date 07-Jun-99

"WetChem Quality Control Report"

Parameter:	CHLORIDE	NO2NO3	SULFATE	TDS
Batch Id:	CKW22C	N3W36A	SEW052	TDW027
Blank Result:	<2	<0.1	<5	<5
Anal. Method:	CL4500E	353.2	375.4	160.1
Prep. Method:	N/A	N/A	N/A	N/A
Analysis Date:	02-JUN-99	07-JUN-99	02-JUN-99	03-JUN-99
Prep. Date:	01-JUN-99	01-JUN-99	02-JUN-99	02-JUN-99

Sample Duplication

Sample Dup:	905608-10	905611-1	905608-9	905635-1
Rept Limit:	<2	<0.1	<5	<5
Sample Result:	48.4	<0.1	19	1794
Dup Result:	48.4	<0.1	19	1856
Sample RPD:	0	N/C	0 G	3
Max RPD:	20	0.1	5	17
Dry Weight%	N/A	N/A	N/A	N/A

Matrix Spike

Sample Spiked:	905608-10	905611-1	905608-9	N/A
Rept Limit:	<2	<0.1	<5	N/A
Sample Result:	48.4	<0.1	19	
Spiked Result:	73.4	0.97	38	
Spike Added:	25.0	1.00	20	
% Recovery:	100	97	95	
% Rec Limits:	79-132	71-123	61-138	
Dry Weight%	N/A	N/A	N/A	

ICV

ICV Result:	50.2	1.94	20	
True Result:	50.0	2.00	20	
% Recovery:	100	97	100	
% Rec Limits:	90-110	90-110	90-110	

LCS

LCS Result:			296
True Result:			293
% Recovery:			101
% Rec Limits:			73-125

SEVERN TRENT LABORATORIES

11 East Olive Road Pensacola, Florida 32514 (850) 474-1001

[0) Page 2
Date 07-Jun-99

"Quality Control Comments"

Batch Id: Comments:

TDW027	906013-1,2,3,4,5,6,7,8,9,10 were added to batch on 03-Jun-99
TDW027	906043-1,2,3 were added to batch on 04-Jun-99

[0] Page 3
Date 07-Jun-99

----- Common Footnotes WetChem -----

N/A = NOT APPLICABLE.

N/S = NOT SUBMITTED.

N/C = SAMPLE AND DUPLICATE RESULTS ARE AT OR BELOW STL REPORTING LIMIT;
THEREFORE, THE RPD IS "NOT CALCULABLE" AND NO CONTROL LIMITS APPLY.

N/D = NOT DETECTED AT OR ABOVE THE STL-PENSACOLA REPORTING LIMIT (RL).

R = REACTIVE

T = TOTAL

G = SAMPLE AND/OR DUPLICATE RESULT IS BELOW 5 X STL REPORTING LIMIT AND
THE ABSOLUTE DIFFERENCE BETWEEN THE SAMPLE AND DUPLICATE RESULT IS AT
OR BELOW STL REPORTING LIMIT; THEREFORE, THE RESULTS ARE "IN CONTROL".Q = THE ANALYTICAL (POST-DISTILLATION) SPIKE IS REPORTED DUE TO PERCENT RECOVERY
BEING OUTSIDE ACCEPTANCE LIMITS ON THE MATRIX (PRE-DISTILLATION) SPIKE.

= ELEVATED REPORTING LIMIT DUE TO INSUFFICIENT SAMPLE.

+ = ELEVATED REPORTING LIMIT DUE TO DILUTION INTO CALIBRATION RANGE.

* = ELEVATED REPORTING LIMIT DUE TO MATRIX INTERFERENCE (DILUTION PRIOR DIGESTION
AND/OR ANALYSIS).@ = ADJUSTED REPORTING LIMIT DUE TO SAMPLE MATRIX (DILUTION PRIOR TO DIGESTION
AND/OR ANALYSIS).

P = ANALYTICAL (POST DIGESTION) SPIKE.

I = DUPLICATE INJECTION.

& = AUTOMATED

F = SAMPLE SPIKED > 4 X SPIKE CONCENTRATION.

N/C+ = NOT CALCULABLE

H = SAMPLE AND/OR DUPLICATE RESULT IS BELOW 5 X STL REPORTING LIMIT AND THE
ABSOLUTE DIFFERENCE BETWEEN THE RESULTS EXCEEDS THE STL REPORTING
LIMIT; THEREFORE, THE RESULTS ARE "OUT OF CONTROL".

A = SAMPLE AND DUPLICATE RESULTS ARE "OUT OF CONTROL".

Z = THE SAMPLE RESULT FOR THE SPIKE IS BELOW THE REPORTING LIMIT. HOWEVER,
THIS RESULT IS REPORTED FOR ACCURATE QC CALCULATIONS.NH = SAMPLE AND / OR DUPLICATE RESULT IS BELOW 5 X STL REPORTING LIMIT
AND THE ABSOLUTE DIFFERENCE BETWEEN THE RESULTS EXCEEDS THE STL
REPORTING LIMIT; THEREFORE, THE RESULTS ARE "OUT OF CONTROL".
SAMPLE IS NON-HOMOGENEOUS.

(*) = REPORTING LIMITS RAISED DUE TO CLP METHOD NOT REQUIRING A CONCENTRATION STEP FOR CN.

(CA) = SEE CORRECTIVE ACTIONS FORM.

** = MATRIX INTERFERENCE

SW-846, 3rd Edition, latest EPA-approved edition.

EPA 600/4-79-020, Revised March 1983.

STANDARD METHODS, For the Examination of Water and Wastewater, latest EPA-approved edition.

NIOSH Manual of Analytical Methods, 4th Edition.

ANNUAL BOOK OF ASTM STANDARDS, VOLUMES 11.01 and 11.02, latest EPA-approved edition.

METHODS FOR THE DETERMINATION OF INORGANIC SUBSTANCES IN ENVIRONMENTAL SAMPLES,
EPA600/R-93/100, AUGUST 1993

METHODS FOR SOIL ANALYSIS, PART 2, CHEMICAL AND MICROBIOLOGICAL PROPERTIES, 2ND EDITION.

STL-PN USES THE MOST CURRENT PROMULGATED METHODS FROM THE REFERENCES LISTED ABOVE.

1. COLIFORM. COLIFORM PRECISION IS MEASURED BY THE ABSOLUTE DIFFERENCE BETWEEN
THE LOGARITHM OF COLONIES PER 100 MLS OF SAMPLE ON DUPLICATE PLATES.2. PH. PH PRECISION IS MEASURED BY THE ABSOLUTE DIFFERENCE BETWEEN THE
SAMPLE AND DUPLICATE ANALYSIS.3. FLASHPOINT. FLASHPOINT PRECISION IS MEASURED BY THE ABSOLUTE DIFFERENCE BETWEEN
THE SAMPLE AND DUPLICATE ANALYSIS.

RPD = RELATIVE PERCENT DIFFERENCE (OR DEVIATION).

RPD LMTS = REPORTING LIMITS BASED ON METHOD DETECTION LIMIT STUDIES.

COE = EPA/COE, EPA/CE-81-1, 1981, AMMONIA, TKN, NO3-NO2, T-PO4 AND PHENOL PREPARATION
METHODS.

SAMPLES AND QC SAMPLES ARE NOT ADJUSTED FOR DRY WEIGHT UNLESS REQUESTED BY THE CLIENT.

DPH = DOLLY P. HWANG

RB = REBECCA BROWN

WH = WENDY HAGGARD

ED = ESTHER DANTIN

CR = CYNTHIA ROBERTS

AB = AMY BRADLEY

BE = BETTY EVERTON

PLD = PAULA L. DOUGHTY

RH = RICKY HAGENDORFER

LT = LISA TORRES

SEVERN TRENT LABORATORIES

11 East Olive Road Pensacola, Florida 32514 (850) 474-1001

Quality Control Report

Analysis: RCRA METALS - AXIAL

Accession:	905635
Client:	PINNACLE LABORATORIES
Project Number:	905106
Project Name:	PHIL
Project Location:	BURLINGTON DRILLING
Department:	METALS

[0] Page 1
Date 10-Jun-99

"Metals Quality Control Report"

Parameter:	SILVER	ARSENIC	BARIUM	CADMIUM	CHROMIUM	MERCURY
Batch Id:	AYW154	RYW154	BYW154	CYW154	HYW154	M7W047
Blank Result:	<0.005	<0.005	<0.01	<0.005	<0.005	<0.0002
Anal. Method:	6010B	6010B	6010B	6010B	6010B	7470A
Prep. Method:	3010A	3010A	3010A	3010A	3010A	7470A
Analysis Date:	08-JUN-99	08-JUN-99	08-JUN-99	08-JUN-99	08-JUN-99	09-JUN-99
Prep. Date:	07-JUN-99	07-JUN-99	07-JUN-99	07-JUN-99	07-JUN-99	09-JUN-99

Sample Duplication

Sample Dup:	905635-2	905635-2	905635-2	905635-2	905635-2	905588-1
Rept Limit:	<0.005	<0.005	<0.01	<0.005	<0.005	<0.0002
Sample Result:	0.55	1.0	1.1	0.48	0.99	0.0050
Dup Result:	0.54	1.0	1.1	0.48	0.99	0.0048
Sample RPD:	2	0	0	0	0	4
Max RPD:	20	20	20	20	20	20
Dry Weight%	N/A	N/A	N/A	N/A	N/A	N/A

Matrix Spike

Sample Spiked:	905635-2	905635-2	905635-2	905635-2	905635-2	905588-1
Rept Limit:	<0.005	<0.005	<0.01	<0.005	<0.005	<0.0002
Sample Result:	<0.005	0.006	0.14	<0.005	0.019	<0.0002
Spiked Result:	0.55	1.0	1.1	0.48	0.99	0.0050
Spike Added:	0.5	1.0	1.0	0.5	1.0	0.0050
% Recovery:	110	99	96	96	97	100
% Rec Limits:	75-125	75-125	75-125	75-125	75-125	75-125
Dry Weight%	N/A	N/A	N/A	N/A	N/A	N/A

ICV

ICV Result:	0.49	1.0	1.0	0.50	1.0	0.0039
True Result:	0.5	1.0	1.0	0.5	1.0	0.0040
% Recovery:	98	100	100	100	100	98
% Rec Limits:	90-110	90-110	90-110	90-110	90-110	90-110

LCS

LCS Result:	0.52	1.0	1.0	0.52	1.0	0.0051
True Result:	0.5	1.0	1.0	0.5	1.0	0.0050
% Recovery:	104	100	100	104	100	102
% Rec Limits:	80-120	80-120	80-120	80-120	80-120	85-115

[0] Page 2
Date 10-Jun-99

"Metals Quality Control Report"

Parameter:	LEAD	SELENIUM
Batch Id:	PYW154	SYW154
Blank Result:	<0.005	<0.01
Anal. Method:	6010B	6010B
Prep. Method:	3010A	3010A
Analysis Date:	08-JUN-99	08-JUN-99
Prep. Date:	07-JUN-99	07-JUN-99

Sample Duplication

Sample Dup:	905635-2	905635-2
Rept Limit:	<0.005	<0.01

Sample Result:	0.96	1.0
Dup Result:	0.97	1.0
Sample RPD:	1	0
Max RPD:	20	20
Dry Weight%	N/A	N/A

Matrix Spike

Sample Spiked:	905635-2	905635-2
Rept Limit:	<0.005	<0.01

Sample Result:	0.007	<0.01
Spiked Result:	0.96	1.0
Spike Added:	1.0	1.0
% Recovery:	95	100
% Rec Limits:	75-125	75-125
Dry Weight%	N/A	N/A

ICV

ICV Result:	0.98	0.99
True Result:	1.0	1.0
% Recovery:	98	99
% Rec Limits:	90-110	90-110

LCS

LCS Result:	1.0	0.99
True Result:	1.0	1.0
% Recovery:	100	99
% Rec Limits:	80-120	80-120

[0] Page 3
Date 10-Jun-99

--- Data Qualifiers for Metals QC Report ---

N/A = NOT APPLICABLE.
N/S = NOT SUBMITTED.
N/C = SAMPLE AND DUPLICATE RESULTS ARE AT OR BELOW THE REPORTING LIMIT;
THEREFORE, THE RPD IS "NOT CALCULABLE" AND NO CONTROL LIMITS APPLY.
N/D = NOT DETECTED AT OR ABOVE THE STL-PENSACOLA REPORTING LIMIT (RL).
DISS. OR D = DISSOLVED
T & D = TOTAL AND DISSOLVED
R = REACTIVE
T = TOTAL
G = SAMPLE AND/OR DUPLICATE RESULT IS BELOW 5 X THE REPORTING LIMIT AND
THE ABSOLUTE DIFFERENCE BETWEEN THE SAMPLE AND DUPLICATE RESULT IS AT
OR BELOW STL REPORTING LIMIT; THEREFORE, THE RESULTS ARE "IN CONTROL".
Q = THE ANALYTICAL (POST-DIGESTION) SPIKE IS REPORTED DUE TO PERCENT RECOVERY
BEING OUTSIDE ACCEPTANCE LIMITS ON THE MATRIX (PRE-DIGESTION) SPIKE.
= ELEVATED REPORTING LIMIT DUE TO INSUFFICIENT SAMPLE.
+ = ELEVATED REPORTING LIMIT DUE TO DILUTION INTO CALIBRATION RANGE.
* = ELEVATED REPORTING LIMIT DUE TO MATRIX INTERFERENCE. (DILUTION PRIOR
TO ANALYSIS)
@ = ADJUSTED REPORTING LIMIT DUE TO SAMPLE MATRIX. (DILUTION PRIOR TO
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P = ANALYTICAL (POST DIGESTION) SPIKE.
I = DUPLICATE INJECTION.
& = AUTOMATED
F = SAMPLE SPIKED > 4 X SPIKE CONCENTRATION.
N/C+ = NOT CALCULABLE
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THIS RESULT IS REPORTED FOR ACCURATE QC CALCULATIONS.
NH= THE RELATIVE PERCENT DIFFERENCE (RPD) EXCEEDS THE STL CONTROL LIMIT
AND IS "OUT OF CONTROL; DUE TO A NON-HOMOGENEOUS SAMPLE MATRIX.
J = (FLORIDA DEP 'J' FLAG) - MATRIX SPIKE AND POST SPIKE RECOVERY IS OUT OF
THE ACCEPTABLE RANGE. SEE OUT OF CONTROL EVENTS FORM.
U = (FLORIDA DEP 'U' FLAG) - THE COMPOUND WAS ANALYZED FOR, BUT NOT DETECTED.
S = METHOD OF STANDARD ADDITIONS (MSA) WAS PERFORMED ON THIS SAMPLE.
M = A MATRIX EFFECT WAS PRESENT (SAMPLE WAS ANALYZED TWICE TO CONFIRM).
SCN = SEE CASE NARRATIVE.

FROM QUALITY CONTROL REPORT:

RPD= RELATIVE PERCENT DEVIATION.

REPT LIMIT= REPORTING LIMIT BASED ON METHOD DETECTION LIMIT STUDIES.

NOTE: ALL RESULTS REPORTED UNDER 'SAMPLE DUPLICATION' ARE THE MS/MSD.

NOTE: THE UNITS REPORTED ON THE QUALITY CONTROL REPORT ARE REPORTED ON AN AS
RUN BASIS. (NOT ADJUSTED FOR DRY WEIGHT).

SW-846, 3rd Edition.

EPA 600/4-79-020, Revised March 1983.

NIOSH Manual of Analytical Methods, 4th Edition.

Standard Methods For the Examination of Water and Wastewater, 18th Edition, 1992.

Methods For the Determination of Metals in Environmental Samples - Supplement I,

EPA 600/R-94-111, May 1994.

GSP = GARY ST PERE

LT = LISA TORRES

KN = KAREN NALL

CH = CHRIS HIGH

JL = JANET LECLEAR

MPE = MARTY EDWARDS

Data Qualifiers for Final Report

STL-Pensacola Inorganic/Organic and AFCEE Projects (under QAPP)

J4	(For positive results)	Temperature limits exceeded ($\leq 2^{\circ}\text{C}$ or $\geq 6^{\circ}\text{C}$)
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R6	LCS or surrogate %R is < LCL and analyte is not detected or surrogate %R is < 10% for detects/nondetects	
R7	Internal standard area outside -50% to +100% of initial calibration midpoint standard.	
R8	Second source calibration verification exceeds acceptance criteria.	
R9	Improper preservation, sample not filtered in the field.	
R (AFCEE description)	The data are unusable due to deficiencies in the ability to analyze the sample and meet QC criteria	
F	< laboratory or AFCEE RL and > laboratory MDL	
F (AFCEE description)	The analyte was positively identified but the associated numerical value is below the AFCEE or lab RL	
U2	< Laboratory MDL (value for result will be the MDL, never below the MDL)	
U (AFCEE description)	The analyte was analyzed for but not detected. The associated numerical value is at or below the MDL	
B (AFCEE description)	The analyte was found in the associated blank, as well as in the sample	
@	Adjusted reporting limit due to sample matrix (dilution prior to digestion and/or analysis)	
+	Elevated reporting limit due to dilution into calibration range	
*	Elevated reporting limit due to matrix interference (dilution prior to digestion and/or analysis)	
#	Elevated reporting limit due to insufficient sample size	
D	Diluted out	
M	A matrix effect was present (sample was analyzed twice to confirm or chromatogram had interfering peaks)	
S	Incorrect sample amount was submitted to the laboratory for analysis	
T	Second-column confirmation exceeded the SW-846 criteria of 40% RPD for this compound.	

ND = Not Detected at or above the STL-Pensacola reporting limit (RL)

N/S = Not Submitted

N/A = Not Applicable

IDL = Laboratory Instrument Detection Limit

MDL = Laboratory Method Detection Limit

RL = Reporting Limit (AFCEE RLs are listed in the AFCEE QAPP)

Any time a sample arrives at the laboratory improperly preserved (at improper pH or temperature) or after holding time has expired or prepared or analyzed after holding time, client must be notified in writing (i.e. case narrative)

Florida Projects Inorganic/Organic

Refer to back side of this page

ICR Projects Inorganic/Organic

A1 Acceptable

R6

Rejected

Examples: ICR Flags

R6 = Laboratory extracted the sample but the refrigerator malfunctioned so the extract became warm and client was notified

R6 = Sample arrived in laboratory in good condition; however, the laboratory did not analyze it within EPA's established holding time limit.

CLP and CLP-like Projects: Refer to referenced CLP Statement of Work (SOW) for explanation of data qualifiers

Severn Trent Laboratories of Florida

PROJECT SAMPLE INSPECTION FORM

Lab Accession #: 905635

Date Received: 29 May - 99

1. Was there a Chain of Custody? ☒ Yes ☐ No*

2. Was Chain of Custody properly filled out and relinquished? ☒ Yes ☐ No*

3. Were samples received cold? ☒ Yes ☐ No* N/A
(Criteria: 2° - 6°C: STL-SOP 1055)

4. Were all samples properly labeled and identified? ☒ Yes ☐ No*

5. Did samples require splitting? ☐ Yes* ☒ No
Req By: PM Client Other*

6. Were samples received in proper containers for analysis requested? ☒ Yes ☐ No*

7. Were all sample containers received intact? ☒ Yes ☐ No*

8. Were samples checked for preservative? ☒ Yes ☐ No* N/A
(Check pH of all H₂O requiring preservative (STL-PN SOP 917) except VOA vials that require zero headspace*)

9. Is there sufficient volume for analysis requested? ☒ Yes ☐ No* N/A (Can)

10. Were samples received within Holding Time? ☐ Yes ☒ No* (REFER TO STL-SOP 1040)

11. Is Headspace visible > 1/4" in diameter in VOA vials? If any headspace is evident, comment in out-of-control section. ☐ Yes* ☐ No ☒ N/A

12. If sent, were matrix spike bottles returned? ☐ Yes ☐ No* ☒ N/A

13. Was Project Manager notified of problems? (initials: PLG) ☒ Yes ☐ No* ☒ N/A
PLG 5/29/99

Airbill Number(s): 4412 6310 3632

Shipped By: FEDEX

Cooler Number(s): client Cooler

Shipping Charges: N/A

Cooler Weight(s): N/A

Cooler Temp(s) (°C): 2.0°C - CCK5

(LIST THERMOMETER NUMBER(S) FOR VERIFICATION)

Out of Control Events and Inspection Comments:

10. The NO2 sample for sample 905106-01 was received out of hold time. PLG 5/29/99.

(USE BACK OF PSIF FOR ADDITIONAL NOTES AND COMMENTS)

Inspected By: PLG Date: 5/29/99 Logged By: PLG Date: 5/29/99

* Note all Out-of-Control and/or questionable events on Comment Section of this form.

* Note who requested the splitting of samples on the Comment Section of this form.

* All preservatives for the State of North Carolina, the State of New York, and other requested samples are to be recorded on the sheet provided to record pH results (STL-SOP 938).

* According to EPA, 1/4" of headspace is allowed in 40 ml vials requiring volatile analysis, however, STL makes it policy to record any headspace as out-of-control (STL-SOP 938).

ANALYSIS REQUEST

(505) 344-3777 Fax (505) 344-4413

11/45 905635

PROJECT INFORMATION		SAMPLE RECEIPT		SAMPLES SENT TO:		RELINQUISHED BY:		RELINQUISHED BY:	
PROJECT #:		Total Number of Containers		PENSACOLA - STL-FL		Signature:	Time:	Signature:	Time:
PROJECT NAME:	PHL	Chain of Custody Seals		PORTLAND - ESL-OR		<i>Manuella Torruvo</i>	1700		
QC LEVEL:	STD IV	Received Intact?		STL - CT		Printed Name: -	Date:	Printed Name:	Date:
QC REQUIRED:	MS MSD BLANK	Received Good Cond./Cold		STL - NEW JERSEY		<i>Manuella Torruvo</i>	5/28/96		
TAT:	STANDARD RUSH!!	LAB NUMBER:		N. CREEK		Pinnacle Laboratories, Inc.		Company	
				BARRINGER		RECEIVED BY:	1.	RECEIVED BY:	2
DUE DATE:	6/11	COMMENTS:		SEQUOIA		Signature:	Time:	Signature:	Time:
RUSH SURCHARGE:	-					<i>Manuella Torruvo</i>	1000		
CLIENT DISCOUNT:	-					Printed Name:	Date:	Printed Name:	Date:
SPECIAL CERTIFICATION						<i>R. ELSPERMAN</i>	5/29/96		
REQUIRED: YES/NO	NO					Company	STL-FL	Company	



CHAIN OF CUSTODY

PLI Accession #:

905106

DATE: _____ PAGE: ____ OF ____

[illegible]

PLEASE FILL THIS FORM IN COMPLETELY.

SHADED AREAS ARE FOR LAB USE ONLY.

11/10/98 P.L. Inc.: Pinnacle Laboratories, Inc. • 2709-D Pan American Freeway, NE • Albuquerque, New Mexico 87107 • (505) 344-3777 • Fax (505) 344-4413 • E-mail: PIN_LAB@WORLDNET.ATT.NET

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