



# HART RESOURCE TECHNOLOGIES, INC.

P.O. BOX 232 • CREEKSIDE, PA 15732 • 724-349-8600 • FAX: 724-349-8601  
E-MAIL: [hrt8600@comcast.net](mailto:hrt8600@comcast.net) • WEB PAGE: [www.HartResourceTech.com](http://www.HartResourceTech.com)

May 6, 2011

Ron Furlan, Manager  
Division of Planning & Permits  
PA Department of Environmental Resources  
PO Box 8774  
Harrisburg, PA 17105-8774

Dear Ron,

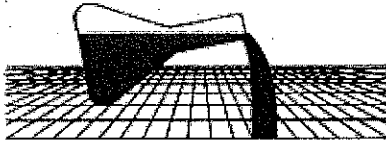
Enclosed are the analyses that the Department requested in your letter of March 18, 2011. The enclosed analyses are for Hart Resource Technologies' Outfall 401 (frac) and Outfall 501 (brine) for March 22, 2011 and April 5, 2011. I will forward the next set of monitoring when I receive my analyses from the analytical laboratory.

Please contact me if you have any questions.

Sincerely,

Becky Snyder  
Operations Manager

RECEIVED  
11 MAY 11 AM 10:46  
WATER STANDARDS &  
FACILITY REGULATION



**ENVIRONMENTAL**  
 SERVICE LABORATORIES, INC.  
 1809 Philadelphia St., Indiana, PA 15701  
 (724) 463-TEST (724) 465-4209

### Report of Analysis

<b>Name:</b>	Hart Resource Technologies, Inc. Po Box 232 Rt 110 West Creekside, PA 15732	<b>Sample ID#:</b>	11 10897
		<b>Sample Type:</b>	Water
		<b>Sample Source:</b>	Grab
		<b>Sampler:</b>	CLIENT (Client)
		<b>Client Sample ID:</b>	401
<b>Sample Start Date:</b>	3/22/2011 5:00 AM		
<b>Sample End Date:</b>	3/22/2011 1:00 PM		
<b>Receipt Date:</b>	3/22/2011 4:41 PM		
<b>Report Date:</b>	4/1/2011		

Analyte	Analyst	Analysis Date	Analysis Time	Sample Result	Units	Data Qualifier	Method	RPL
Bromide	AJD	03/30	n/a	96.20	mg/l	D	D1246-99	10.00

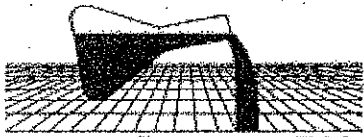
Comments:

ND=Not Detected
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Note:

DEP Certification #s 32-00382  
 D - Indicates an identified compound in an analysis that has been diluted

**Approved By:** \_\_\_\_\_  
*Clayton Gorman*  
 Laboratory Supervisor



**ENVIRONMENTAL**  
SERVICE LABORATORIES, INC.  
1803 Philadelphia St., Indiana, PA 15701  
(724) 463-TEST (724) 465-4209

## Report of Analysis

**Name:** Hart Resource Technologies, Inc.  
Po Box 232  
Rt 110 West  
Creekside, PA 15732  
**Sample Start Date:** 4/5/2011 5:00 AM  
**Sample End Date:** 4/5/2011 1:00 PM  
**Receipt Date:** 4/5/2011 2:17 PM  
**Report Date:** 5/3/2011

**Sample ID#:** 11 12774  
**Sample Type:** Waste Water  
**Sample Source:** Composite  
**Sampler:** CLIENT (Client)  
**Client Sample ID:** Outfall 401 Composite

Analyte	Analyst	Analysis Date	Analysis Time	Sample Result	Units	Data Qualifier	Method	RPL
Acidity to pH=8.3	CLM	04/05	n/a	ND	mg/l as CaCO3	n/a	SM2310B	2
Alkalinity to pH=4.5	CLM	04/18	n/a	54	mg/l as CaCO3	n/a	SM2320B	20
Bromide	AJD	04/13	n/a	108.00	mg/l	D	D1246-99	10.00
Chloride	CLM	04/12	n/a	5879.4	mg/l	n/a	SM4500CIC	5.0
Sulfate ASTM	CLM	04/14	n/a	112	mg/l	n/a	D516-02	20
Barium - ICP	GJT	04/27	n/a	2.775	mg/l	n/a	200.7/6010	0.005
Iron - ICP	GJT	04/27	n/a	0.577	mg/l	n/a	200.7/6010	0.010
Osmotic Pressure	LL	04/12	n/a	389	mOs/kg	n/a	OSP	100
Total Dissolved Solids (TDS)	LAW	04/05	n/a	16600	mg/l	n/a	SM2540C	25
Total Suspended Solids	LAW	04/05	n/a	13	mg/l	n/a	SM2540D	5

**Comments:**

ND=Not Detected

**Note:** DEP Certification #s 32-00382  
D - Indicates an identified compound in an analysis that has been diluted

**Approved By:**

Laboratory Supervisor

# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Report Date: May 6, 2011

Company : Hart Resource Technologies, Inc.  
Address : PO Box 232  
Creekside, Pennsylvania 15732  
Contact: Ms. Becky Snyder  
Project: Creekside Facility

Client Sample ID: Outfall 401  
Sample ID: 275712001  
Matrix: Water  
Collect Date: 05-APR-11 13:00  
Receive Date: 08-APR-11  
Collector: Client

Project: HTRT00110  
Client ID: HTRT001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS											
SW846 3005A/6020A Liquid "As Received"											
Uranium	U	ND	1.34	4.00	ug/L	20	PRB	05/04/11	1556	1091521	1

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3005A	ICP-MS 3005A PREP	LYH1	04/13/11	0850	1091520

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3005A/6020A	

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## Certificate of Analysis

Report Date: May 6, 2011

Company : Hart Resource Technologies, Inc.  
 Address : PO Box 232  
 Creekside, Pennsylvania 15732  
 Contact : Ms. Becky Snyder  
 Project : Creekside Facility

Client Sample ID: Outfall 401	Project: HTRT00110
Sample ID: 275712001	Client ID: HTRT001
Matrix: Water	
Collect Date: 05-APR-11 13:00	
Receive Date: 08-APR-11	
Collector: Client	

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis											
Gammascpec, Gamma, Liquid (Standard List) "As Received"											
Radium-228	U	-3.53 +/-24.8	41.9		pCi/L	KXG3	05/05/11	2050	1097659		1
Rad Gas Flow Proportional Counting											
GFPC, Gross Alpha Liquid "As Received"											
Alpha		18.0 +/-9.36	12.8	5.00	pCi/L	VXC2	05/03/11	1922	1093492		2
Rad Radium-226											
Lucas Cell, Ra226, liquid "As Received"											
Radium-226	U	-0.0679 +/-0.211	0.489	1.00	pCi/L	KSD1	04/22/11	1315	1091818		3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 901.1	
2	EPA 900.0/SW846 9310	
3	EPA 903.1 Modified	



## Report of Analysis

**Name:** Hart Resource Technologies, Inc.  
Po Box 232  
Rt 110 West  
Creekside, PA 15732

**Sample ID#:** 11 10898  
**Sample Type:** Water  
**Sample Source:** Grab  
**Sampler:** CLIENT (Client)  
**Client Sample ID:** 501

**Sample Start Date:** 3/22/2011 5:00 AM  
**Sample End Date:** 3/22/2011 1:00 PM  
**Receipt Date:** 3/22/2011 4:41 PM  
**Report Date:** 4/1/2011

Analyte	Analyst	Analysis Date	Analysis Time	Sample Result	Units	Data Qualifier	Method	RPL
Bromide	AJD	03/30	n/a	2070.00	mg/l	D	D1246-99	100.00

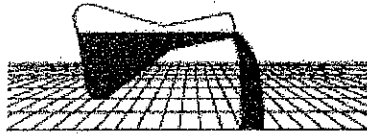
**Comments:**

ND=Not Detected

**Note:** DEP Certification #s 32-00382  
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**Approved By:**

  
Laboratory Supervisor



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## Report of Analysis

Name: Hart Resource Technologies, Inc.  
Po Box 232  
Rt 110 West  
Creekside, PA 15732  
Sample Start Date: 4/5/2011 5:00 AM  
Sample End Date: 4/5/2011 1:00 PM  
Receipt Date: 4/5/2011 2:17 PM  
Report Date: 5/3/2011

Sample ID#: 11 12776  
Sample Type: Waste Water  
Sample Source: Composite  
Sampler: CLIENT (Client)  
Client Sample ID: Outfall 501 Composite

Analyte	Analyst	Analysis Date	Analysis Time	Sample Result	Units	Data Qualifier	Method	RPL
Acidity to pH=8.3	CLM	04/05	n/a	ND	mg/l as CaCO <sub>3</sub>	n/a	SM2310B	2
Alkalinity to pH=4.5	CLM	04/18	n/a	263	mg/l as CaCO <sub>3</sub>	n/a	SM2320B	20
Bromide	AJD	04/13	n/a	1820.00	mg/l	D	D1246-99	100.00
Chloride	CLM	04/12	n/a	81200.7	mg/l	n/a	SM4500CIC	5.0
Sulfate ASTM	CLM	04/14	n/a	600	mg/l	n/a	D516-02	500
Barium - ICP	GJT	04/27	n/a	5.604	mg/l	n/a	200.7/6010	0.005
Iron - ICP	GJT	04/27	n/a	0.119	mg/l	n/a	200.7/6010	0.010
Osmotic Pressure	LL	04/12	n/a	3660	mOs/kg	n/a	OSP	1000
Total Dissolved Solids (TDS)	LAW	04/05	n/a	178100	mg/l	n/a	SM2540C	25
Total Suspended Solids	LAW	04/05	n/a	25	mg/l	n/a	SM2540D	5

Comments:

ND=Not Detected

Note: DEP Certification #s 32-00382

D - Indicates an identified compound in an analysis that has been diluted

Approved By: \_\_\_\_\_

Laboratory Supervisor

# GEL LABORATORIES LLC

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## Certificate of Analysis

Report Date: May 6, 2011

Company : Hart Resource Technologies, Inc.  
Address : PO Box 232

Creekside, Pennsylvania 15732

Contact: Ms. Becky Snyder

Project: Creekside Facility

Client Sample ID: Outfall 501

Project: HTRT00110

Sample ID: 275712002

Client ID: HTRT001

Matrix: Water

Collect Date: 05-APR-11 13:00

Receive Date: 08-APR-11

Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS											
SW846 3005A/6020A Liquid "As Received"											
Uranium		60.6	1.34	4.00	ug/L	20	PRB	05/04/11	1558	1091521	1

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3005A	ICP-MS 3005A PREP	LYHI	04/13/11	0850	1091520

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3005A/6020A	



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## Certificate of Analysis

Report Date: May 6, 2011

Company : Hart Resource Technologies, Inc.  
Address : PO Box 232

Project: Creekside, Pennsylvania 15732  
Contact: Ms. Becky Snyder  
Project: Creekside Facility

Client Sample ID: Outfall 501	Project: HTRT00110
Sample ID: 275712002	Client ID: HTRT001
Matrix: Water	
Collect Date: 05-APR-11 13:00	
Receive Date: 08-APR-11	
Collector: Client	

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis											
Gammaspec, Gamma, Liquid (Standard List) "As Received"											
Radium-228	U	-6.45 +/-19.8	32.1		pCi/L		KXG3	05/05/11	2050	1097659	1
Rad Gas Flow Proportional Counting											
GFPC, Gross Alpha Liquid "As Received"											
Alpha	U	92.9 +/-157	275	5.00	pCi/L		VXC2	05/03/11	1922	1093492	2
Rad Radium-226											
Lucas Cell, Ra226, liquid "As Received"											
Radium-226		1.71 +/-0.548	0.399	1.00	pCi/L		KSD1	04/22/11	1315	1091818	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 901.1	
2	EPA 900.0/SW846 9310	
3	EPA 903.1 Modified	