Hernandez, Alysha

From: Talvitie, Marcia
Sent: Monday, December 19, 2011 10:47 AM
To: Hernandez, Alysha
Subject: Field Well Analysis - 2011 Q4
Attachments: King I & King II Water Analysis Report 2011 Q4.pdf

Hi, Alysha

I received the attached electronic submittal of well data from the King Coal Mine. Please file in Laserfiche for Permit No. C-1981-035 – Hydrology.

Thanks,

Marcia

From: tbird@gcc.com [mailto:tbird@gcc.com]
Sent: Monday, December 19, 2011 10:15 AM
To: Talvitie, Marcia
Cc: kpoulson@gcc.com; jjarvis@gcc.com
Subject: Field Well Analysis - 2011 Q4

Tom Bird
Manager of Coal Services
GCC Energy, LLC
970.385.4528 x 6503
970.769.1160 Cell

GCC Energy

"Safety as a Value"

Telephone: 970.385.4528
Facsimile: 970.385.4638

GCC Energy, LLC
6473 County Road 120
Hesperus, CO 81326

December 13, 2011

State of Colorado
Division of Reclamation, Mining & Safety
1313 Sherman Street, Room 215
Denver, Colorado 80203-2273

Attn: Marcia Talvitie

Re: Field Well Water Analysis; King I & King II
4th Quarter 2011

Dear Ms. Talvitie,

Please find enclosed a copy of the King I quarterly water analysis for the Wiltze Well for the 4th quarter of 2011.

Also, please find enclosed a copy of the King II quarterly water analysis for the #1 up-gradient monitoring well, the #2 down-gradient monitoring well and the #3 Hay Gulch Irrigation Ditch.

Please call Tom Bird at (970) 385-4528 x 6503 if you have any questions or comments.

Sincerely,

Tom Bird
Manager, Coal Services
GCC Energy, LLC

75 Suttle Street
Durango, CO 81303
970.247.4220 Phone
970.247.4227 Fax
www.greenanalytical.com

13 December 2011

Tom Bird
GCC Energy, LLC
6473 CR 120
Hesperus, CO 81326

RE: Quarterly

Enclosed are the results of analyses for samples received by the laboratory on 11/30/11 14:10.
If you need any further assistance, please feel free to contact me.

Sincerely,

Debbie Zufelt
Reports Manager

dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303

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GCC Energy, LLC	Project: Quarterly	
6473 CR 120	Project Name / Number: King I & King II	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	12/13/11 13:53

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Wiltze Well	1111123-01	Water	11/29/11 12:30	11/30/11 14:10
#1 Upgradient	1111123-02	Water	11/29/11 13:00	11/30/11 14:10
#2 Downgradient	1111123-03	Water	11/29/11 13:15	11/30/11 14:10
#3 Hay Gulch Ditch	1111123-04	Water	11/29/11 13:30	11/30/11 14:10

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Debbie Zufelt

Debbie Zufelt, Reports Manager

dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303

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GCC Energy, LLC	Project: Quarterly	
6473 CR 120	Project Name / Number: King I & King II	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	12/13/11 13:53

Wiltze Well
King I

1111123-01 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry								
Alkalinity, Bicarbonate	**520**	10.0	mg/L	10	12/01/11	2320 B		ABP
Alkalinity, Carbonate	ND	10.0	mg/L	10	12/01/11	2320 B		ABP
Alkalinity, Hydroxide	ND	10.0	mg/L	10	12/01/11	2320 B		ABP
Alkalinity, Total	**520**	10.0	mg/L	10	12/01/11	2320 B		ABP
pH	**7.46**		pH Units	1	11/30/11	150.1		MJV
Sulfate	**800**	200	mg/L	20	12/02/11	4500SO4		ABP
TDS	**1730**	10.0	mg/L	1	12/01/11	160.1/2540C		ABP
Dissolved Metals by ICP								
Calcium	**226**	1.00	mg/L	1	12/05/11	200.7		JGS
Hardness	**1180**	6.62	mg/L	1	12/05/11	Calc		JGS
Iron	ND	0.050	mg/L	1	12/05/11	200.7		JGS
Magnesium	**149**	1.00	mg/L	1	12/05/11	200.7		JGS
Manganese	**0.008**	0.005	mg/L	1	12/05/11	200.7		JGS
Sodium	**110**	1.00	mg/L	1	12/05/11	200.7		JGS

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Debbie Zufelt

Debbie Zufelt, Reports Manager

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dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303
www.GreenAnalytical.com

GCC Energy, LLC	Project: Quarterly	
6473 CR 120	Project Name / Number: King I & King II	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	12/13/11 13:53

#1 Upgradient
King II

1111123-02 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry								
Alkalinity, Bicarbonate	**580**	10.0	mg/L	10	12/01/11	2320 B		ABP
Alkalinity, Carbonate	**40.0**	10.0	mg/L	10	12/01/11	2320 B		ABP
Alkalinity, Hydroxide	ND	10.0	mg/L	10	12/01/11	2320 B		ABP
Alkalinity, Total	**620**	10.0	mg/L	10	12/01/11	2320 B		ABP
pH	**9.03**		pH Units	1	11/30/11	150.1		MJV
Sulfate	**27.0**	10.0	mg/L	1	12/02/11	4500SO4		ABP
TDS	**460**	10.0	mg/L	1	12/01/11	160.1/2540C		ABP
Dissolved Metals by ICP								
Calcium	**8.63**	1.00	mg/L	1	12/05/11	200.7		JGS
Hardness	**292**	6.62	mg/L	1	12/05/11	Calc		JGS
Iron	ND	0.050	mg/L	1	12/05/11	200.7		JGS
Magnesium	**65.7**	1.00	mg/L	1	12/05/11	200.7		JGS
Manganese	**0.019**	0.005	mg/L	1	12/05/11	200.7		JGS
Sodium	**138**	1.00	mg/L	1	12/05/11	200.7		JGS

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Debbie Zufelt, Reports Manager

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www.GreenAnalytical.com

GCC Energy, LLC	Project: Quarterly	
6473 CR 120	Project Name / Number: King I & King II	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	12/13/11 13:53

#2 Downgradient
King II

1111123-03 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry								
Alkalinity, Bicarbonate	**312**	10.0	mg/L	2	12/01/11	2320 B		ABP
Alkalinity, Carbonate	ND	10.0	mg/L	2	12/01/11	2320 B		ABP
Alkalinity, Hydroxide	ND	10.0	mg/L	2	12/01/11	2320 B		ABP
Alkalinity, Total	**316**	10.0	mg/L	2	12/01/11	2320 B		ABP
pH	**8.01**		pH Units	1	11/30/11	150.1		MJV
Sulfate	**100**	20.0	mg/L	2	12/02/11	4500SO4		ABP
TDS	**335**	10.0	mg/L	1	12/01/11	160.1/2540C		ABP
Dissolved Metals by ICP								
Calcium	**68.4**	1.00	mg/L	1	12/05/11	200.7		JGS
Hardness	**407**	6.62	mg/L	1	12/05/11	Calc		JGS
Iron	ND	0.050	mg/L	1	12/05/11	200.7		JGS
Magnesium	**57.4**	1.00	mg/L	1	12/05/11	200.7		JGS
Manganese	**0.005**	0.005	mg/L	1	12/05/11	200.7		JGS
Sodium	**15.8**	1.00	mg/L	1	12/05/11	200.7		JGS

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Debbie Zufelt

Debbie Zufelt, Reports Manager

dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303

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GCC Energy, LLC	Project: Quarterly	
6473 CR 120	Project Name / Number: King I & King II	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	12/13/11 13:53

#3 Hay Gulch Ditch
King II

1111123-04 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Analyzed	Method	Notes	Analyst
General Chemistry								
Alkalinity, Bicarbonate	**108**	10.0	mg/L	1	12/01/11	2320 B		ABP
Alkalinity, Carbonate	ND	10.0	mg/L	1	12/01/11	2320 B		ABP
Alkalinity, Hydroxide	ND	10.0	mg/L	1	12/01/11	2320 B		ABP
Alkalinity, Total	**110**	10.0	mg/L	1	12/01/11	2320 B		ABP
pH	**8.25**		pH Units	1	11/30/11	150.1		MJV
Sulfate	**56.0**	20.0	mg/L	2	12/02/11	4500SO4		ABP
TDS	**120**	10.0	mg/L	1	12/01/11	160.1/2540C		ABP
Dissolved Metals by ICP								
Calcium	**41.0**	1.00	mg/L	1	12/05/11	200.7		JGS
Hardness	**163**	6.62	mg/L	1	12/05/11	Calc		JGS
Iron	ND	0.050	mg/L	1	12/05/11	200.7		JGS
Magnesium	**14.8**	1.00	mg/L	1	12/05/11	200.7		JGS
Manganese	ND	0.005	mg/L	1	12/05/11	200.7		JGS
Sodium	**5.58**	1.00	mg/L	1	12/05/11	200.7		JGS

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Debbie Zufelt

Debbie Zufelt, Reports Manager

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dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303
www.GreenAnalytical.com

GCC Energy, LLC	Project: Quarterly	
6473 CR 120	Project Name / Number: King I & King II	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	12/13/11 13:53

General Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B112003 - General Prep - Wet Chem										
Duplicate (B112003-DUP4)	**Source: 1111123-01**			Prepared & Analyzed: 11/30/11						
pH	7.46		pH Units		7.46			0.00	20	
Reference (B112003-SRM1)				Prepared & Analyzed: 11/30/11						
pH	8.41		pH Units	8.30		101	90-110			
Batch B112010 - General Prep - Wet Chem										
Blank (B112010-BLK1)				Prepared & Analyzed: 12/01/11						
Alkalinity, Total	ND	10.0	mg/L							
LCS (B112010-BS1)				Prepared & Analyzed: 12/01/11						
Alkalinity, Total	101	10.0	mg/L	100		101	85-115			
LCS Dup (B112010-BSD1)				Prepared & Analyzed: 12/01/11						
Alkalinity, Total	105	10.0	mg/L	100		105	85-115	3.88	20	
Batch B112012 - General Prep - Wet Chem										
Blank (B112012-BLK1)				Prepared & Analyzed: 12/02/11						
Sulfate	ND	10.0	mg/L							
LCS (B112012-BS1)				Prepared & Analyzed: 12/02/11						
Sulfate	50.0	10.0	mg/L	50.0		100	80-120			
LCS Dup (B112012-BSD1)				Prepared & Analyzed: 12/02/11						
Sulfate	54.0	10.0	mg/L	50.0		108	80-120	7.69	20	

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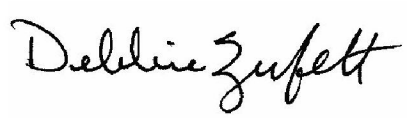

Debbie Zufelt, Reports Manager

Green Analytical Laboratories
dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303
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GCC Energy, LLC	Project: Quarterly	
6473 CR 120	Project Name / Number: King I & King II	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	12/13/11 13:53

General Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B112013 - General Prep - Wet Chem										
Blank (B112013-BLK1)				Prepared & Analyzed: 12/01/11						
TDS	ND	10.0	mg/L							
Duplicate (B112013-DUP2)		**Source: 1111128-01**		Prepared & Analyzed: 12/01/11						
TDS	30.0	10.0	mg/L		40.0			28.6	20	R1
Reference (B112013-SRM1)				Prepared & Analyzed: 12/01/11						
TDS	3490	10.0	mg/L	3510		99.4	85-115			

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GCC Energy, LLC	Project: Quarterly	
6473 CR 120	Project Name / Number: King I & King II	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	12/13/11 13:53

Dissolved Metals by ICP - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B112020 - Dissolved/Potentially Dissolved Metals										
Blank (B112020-BLK1)				Prepared & Analyzed: 12/05/11						
Calcium	ND	1.00	mg/L							
Iron	ND	0.050	mg/L							
Magnesium	ND	1.00	mg/L							
Manganese	ND	0.005	mg/L							
Sodium	ND	1.00	mg/L							
LCS (B112020-BS1)				Prepared & Analyzed: 12/05/11						
Calcium	4.64	1.00	mg/L	5.00		92.8	85-115			
Iron	4.69	0.050	mg/L	5.00		93.8	85-115			
Magnesium	23.9	1.00	mg/L	25.0		95.4	85-115			
Manganese	2.40	0.005	mg/L	2.50		95.9	85-115			
Sodium	7.53	1.00	mg/L	8.10		93.0	85-115			
LCS Dup (B112020-BSD1)				Prepared & Analyzed: 12/05/11						
Calcium	4.62	1.00	mg/L	5.00		92.3	85-115	0.565	20	
Iron	4.65	0.050	mg/L	5.00		92.9	85-115	1.01	20	
Magnesium	23.7	1.00	mg/L	25.0		94.8	85-115	0.688	20	
Manganese	2.38	0.005	mg/L	2.50		95.2	85-115	0.764	20	
Sodium	7.47	1.00	mg/L	8.10		92.2	85-115	0.915	20	

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Debbie Zufelt, Reports Manager

dzufelt@greenanalytical.com p: 970.247.4220 f: 970.247.4227 75 Suttle Street Durango, CO 81303

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GCC Energy, LLC	Project: Quarterly	
6473 CR 120	Project Name / Number: King I & King II	**Reported:**
Hesperus CO, 81326	Project Manager: Tom Bird	12/13/11 13:53

Notes and Definitions

R1	Duplicate sample RPD exceeded laboratory acceptance criteria. BS/BSD RPD was acceptable.
Q1	Sample received outside of acceptable temperature range for analyses requiring cold storage.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis *Results reported on as received basis unless designated as dry.
RPD	Relative Percent Difference
LCS	Laboratory Control Sample (Blank Spike)

Green Analytical Laboratories

Debbie Zufelt

Debbie Zufelt, Reports Manager

Green Analytical Laboratories

CHAIN OF CUSTODY RECORD

Page 1 of 1

Client: GCC ENERGY, LLC
Contact: TOM BIRD
Address: 6473 C.R 120
HESPERUS, CO 81326
Phone Number: 970.385.4528 x6503
FAX Number: 970-385-4638

NOTES:
1) Ensure proper container packaging.
2) Ship samples promptly following collection.
3) Designate Sample Reject Disposition.
PO#
Project Name: KING I & KING II
PLEASE BILL SEPARATELY

Table 1. – Matrix Type
1 = Surface Water, 2 = Ground Water
3 = Soil/Sediment, 4 = Rinsate, 5 = Oil
6 = Waste, 7 = Other (Specify) ___

FOR GAL USE ONLY
GAL JOB # 1111-123

Samplers Signature:

Lab Name: Green Analytical Laboratories (970) 247-4220 FAX (970) 247-4227
Address: 75 Suttle Street, Durango, CO 81303 www.greenanalytical.com

	Sample ID	Collection: Date	Collection: Time	Collected by: (Init.)	Matrix Type From Table 1	No. of Containers	Sample Filtered ? Y/N	Preservative(s): Unpreserved (Ice Only)	HNO3	HCL	H2SO4	NAOH	Other (Specify)	Analyses Required: KING COAL QUARTERLY	Comments
01	1. WILTZE WELL	11/29/11	1230pm	JJ	2	2	N	X						X	KING I
02	2. #1 UPGRADIENT	11/29/11	1:00pm	JJ	2	2	N	↓						X	KING II
03	3. #2 DOWNGRADIENT	11/29/11	1:15pm	JJ	2	2	N							X	KING II
04	4. #3 HAY GULCH DITCH	11/29/11	1:30pm	JJ	2	2	N	↓						X	KING II
	5.														
	6.														
	7.														
	8.														
	9.														
	10.														

16.1°C

Relinquished by: Sara Swift	Date: 11-30-11	Time: 1410	Received by: Debbie Zufelt	Date: 11-30-11	Time: 1410
Relinquished by:	Date:	Time: 1410	Received by:	Date:	Time: 1410

* Sample Reject: [ ] Return [ ] Dispose [ ] Store (30 Days)