

30-025-40420

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

October 22, 2012

RUSSELL BENTLEY

P B ENERGY

16285 PARK TEN PLACE, SUITE 400

HOUSTON, TX 77084

RE: MALJAMAR AGI #1

Unit 8, 2+175-320, 130/3 4 1813/2

Enclosed are the results of analyses for samples received by the laboratory on 10/03/12 16:55.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-11-3. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list on accredited analytes and matrices visit the TCEQ website at <a href="https://www.tceq.texas.gov/field/qa/lab\_accred\_certif.html">www.tceq.texas.gov/field/qa/lab\_accred\_certif.html</a>.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

5

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celuz D. Keine

Celey D. Keene Lab Director/Quality Manager

FOR RECORD ONLY EG 1-7-2013

Page 1 of 9



### PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

HOUSTON TX, 77084 Project Manager: RUSSELL BENTLEY   Fax To: (281) 589-5865	P B ENERGY 16285 PARK TEN PLACE, SUITE 400 HOUSTON TX, 77084	,	Reported: 22-Oct-12 12:07
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Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	
#1	H202416-01	Water	03-Oct-12 00:00	03-Oct-12 16:55	
#2	H202416-02	Water	03-Oct-12 00:00	03-Oct-12 16:55	

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#### \*=Accredited Analyte

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Page 2 of 9



P B ENERGY 16285 PARK TEN PLACE, SUITE 400 HOUSTON TX, 77084		Project Nun Project Mana		ie given Sell bent	LEY		2	Reported: 22-Oct-12 12:0	)7
			#1						
		H2024	#1 16-01 (Wa	ter)					
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
		Cardina	al Laborat	ories					·
norganic Compounds			<u>.</u>				,		
Ikalinity, Bicarbonate	195	5.00	mg/L	1	2091506	HM	17-Oct-12	310.1	
Calcium	1560	1.60	mg/L	1	2091504	HM	17-Oct-12	SM3500Ca- D	
Alkalinity, Carbonate	ND	0.00	mg/L	1	2091506	HM	17-Oct-12	310.1	
Chloride*	132000	4.00	mg/L	1	2100807	CK	17-Oct-12	4500-CI-B	
Conductivity*	376000	1.00	uS/cm	1	2101702	HM	16-Oct-12	120.1	
ensity	1.145		g/mL	4	2101719	HM	17-Oct-12	SM 2710F	
Aagnesium	401	1.00	mg/L	1	2091504	НМ	17-Oct-12	SM3500Mg- E	
H*	7.70	0.100	pH Units	1	2101702	HM	16-Oct-12	150.1	
otassium	325	1.00	mg/L	1	2091504	HM	17-Oct-12	HACH 8049	
odium	84400	1.00	mg/L	1	2091504	НМ	17-Oct-12	Calculation	

3340

160

225000

10.0

5.00

4.00

mg/L

mg/L

mg/L

2101204

2101003

2091506

1

1

1

AP

ΗM

ΗM

12-Oct-12

10-Oct-12

24-Sep-12

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375.4

160.1

310.1

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Page 3 of 9

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Sulfate\*

Alkalinity, Total\*

TDS\*



P B ENERGY 16285 PARK TEN PLACE, SUITE 400 HOUSTON TX, 77084	)	Project Num Project Mana		ie given Sell Bent	TLEY ·		:	Reported: 22-Oct-12 12:(	)7
		H2024	#2 16-02 (Wa	ter)					
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
		Cardina	al Laborat	ories					
Inorganic Compounds	1								
Alkalinity, Bicarbonate	317	5.00	mg/L	1	2091506	HM	17-Oct-12	310.1	
Calcium	1440	1.60	mg/L	1	2091504	НМ	17-Oct-12	SM3500Ca- D	
Alkalinity, Carbonate	ND	0.00	mg/L	1	2091506	HM	17-Oct-12	310.1	
Chloride*	126000	4.00	mg/L	1	2100807	СК	17-Oct-12	4500-CI-B	
Conductivity* '	365000	1.00	uS/cm	1	2101702	HM	16-Oct-12	120.1	
Density	1.135		g/mL	4	2101719	HM	17-Oct-12	SM 2710F	
Magnesium	510	1.00	mg/L	1	2091504	HM	17-Oct-12	SM3500Mg- E	
pH*	7.51	0.100	pH Units	1	2101702	HM	16-Oct-12	150.1	
Potassium	340	1.00	mg/L	1	2091504	HM	17-Oct-12	HACH 8049	
Sodium	80700	1.00	mg/L	1	2091504	HM	17-Oct-12	Calculation	
Sulfate*	3710	10.0	mg/L	I	2101204	AP	12-Oct-12	375.4	
TDS*	213000	5.00	mg/L	1	2101003	HM	10-Oct-12	160. <u>1</u>	
Alkalinity, Total*	260	4.00	mg/L	1	2091506	HM	17-Oct-12	310.1	

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Page 4 of 9



P B ENERGYProject:MALJAMAR AGI #116285 PARK TEN PLACE, SUITE 400Project Number:NONE GIVENHOUSTON TX, 77084Project Manager:RUSSELL BENTLEYFax To:(281) 589-5865	Reported: 22-Oct-12 12:07
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### **Inorganic Compounds - Quality Control**

## **Cardinal Laboratories**

· · · · · · · · · · · · · · · · · · ·		Cardir	ial Lab	oratories						
	:	Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 2091504 - *** DEFAULT PREP ***	1									
Blank (2091504-BLK1)				Prepared:	13-Sep-12 A	.nalyzed: 1	5-Sep-12			•
Calcium	ND	1.60	mg/L							
Magnesium	ND ,	1.00	mg/L							
Potassium	ND	1.00	mg/L							
LCS (2091504-BS1)	1			Prepared:	13-Sep-12 A	nalyzed: 1	5-Sep-12			
Calcium	20.8		mg/L	20.0		104	80-120			
Magnesium	53.5		' mg/L	50.0		107	80-120			
Potassium	3.10		mg/L	3.00		103	80-120			
Duplicate (2091504-DUP1)	Sou	irce: H202190-	-01	Prepared:	13-Sep-12 A	.nalyzed: 1	5-Sep-12			
Magnesium	486	1.00	mg/L		<b>58</b> 3			18.1	20	
Potassium	800	1.00	mg/L		825			3.08	20	
Calcium	2770	1.60	mg/L		2640			4.81	20	
Batch 2091506 - General Prep - Wet Chem	i									
Blank (2091506-BLK1)	i			Prepared &	k Analyzed:	12-Sep-12		•		
Alkalinity, Carbonate	ND	0.00	mg/L							
Alkalinity, Bicarbonate	ND	5.00	mg/L							
Alkalinity, Total	ND :	4.00	mg/L							
LCS (2091506-BS1)				Prepared &	k Analyzed:	12-Sep-12				
Alkalinity, Carbonate	ND	0.00	mg/L				80-120			
Alkalinity, Bicarbonate	132	5.00	mg/L				80-120			
Alkalinity, Total	108	4.00	mg/L	100		108	80-120			
LCS Dup (2091506-BSD1)				Prepared &	z Analyzed:	12-Sep-12				
Alkalinity, Carbonate	ND	0.00	mg/L				80-120		20	
Alkalinity, Bicarbonate	137	5.00	mg/L				80-120	3.72	20	
Alkalinity, Total	112	4.00	mg/L	100		112	80-120	3.64	20	
	1							• •		
										•

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Page 5 of 9



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## Analytical Results For:

P B ENERGY 16285 PARK TEN PLACE, SUITE 400 HOUSTON TX, 77084		Project Nu Project Ma	umber: nager:	MALJAMAR NONE GIVE RUSSELL BE (281) 589-5	N ENTLEY			Reported: 22-Oct-12 12:07					
	Ino	rganic Com	pounds	- Quality (	Control								
		Cardir	al Lab	oratories									
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes			
Batch 2100807 - General Prep - Wet Chem	ŕ												
Blank (2100807-BLK1)				Prepared &	: Analyzed:	08-Oct-12							
Chloride	ND	4.00	mg/L										
LCS (2100807-BS1)				Prepared &	Analyzed:	08-Oct-12							
Chloride	100	4.00	mg/L	100		100	80-120						
LCS Dup (2100807-BSD1)				Prepared &	Analyzed:	08-Oct-12		,					
Chloride	104	4.00	mg/L	100		104	80-120	3.92	20				
Batch 2101003 - Filtration													
Blank (2101003-BLK1)				Prepared &	Analyzed:	09-Oct-12							
TDS	ND	5,00	mg/L										
LCS (2101003-BS1)				Prepared &	Analyzed:	09-Oct-12							
TDS	251		mg/L	240		105	80-120						
Duplicate (2101003-DUP1)	Sou	ırce: H202447-	01	Prepared &	: Analyzed:	09-Oct-12							
TDS	5320	5.00	mg/L		5380			1.12	20				
Batch 2101204 - General Prep - Wet Chem													
Blank (2101204-BLK1)				Prepared &	Analyzed:	12-Oct-12							
Sulfate	ND	10.0	mg/L	• • • • • • • • • • • • • • • • • • • •	· · · · ·				· · · · ·				
LCS (2101204-BS1)				Prepared &	Analyzed:	12-Oct-12							
Sulfate	16.7	10.0	mg/L	20.0		83.6	80-120			-			

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Page 6 of 9



P B ENERGY 16285 PARK TEN PLACE, SUITE 400 HOUSTON TX, 77084		Project N Project M	lumber:    anager:	Maljamar None give Russell Be (281) 589-5	N ENTLEY				Reported: ·Oct-12 12	2:07
<u> </u>	Inoi	rganic Con Cordi	-	- Quality oratories	Control	·				
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2101204 - General Prep - Wet Chem			· · · ·							
CS Dup (2101204-BSD1)				Prepared &	Analyzed:	12-Oct-12				
ulfate	19.3	10.0	mg/L	20.0		96.6	80-120	14.4	20	
Batch 2101702 - General Prep - Wet Chem										
CS (2101702-BS1)				Prepared &	Analyzed:	16-Oct-12				
onductivity	496		uS/cm	500		99.2	80-120			
H	7.08		pH Units	7.00		101	90-110			
Duplicate (2101702-DUP1)	Sou	rce: H202484	-01	Prepared &	Analyzed:	16-Oct-12				
Н	7.27	0.100	pH Units		7.23			0.552	20	
onductivity	5460	1.00	uS/cm		5450			0,183	20	

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Page 7 of 9

and the target process



#### **Notes and Definitions**

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
- '	Chloride by SM4500CI-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

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Page 8 of 9



# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name:	575) 393-2326 FAX (575) 393-				T.	01	11.20		÷				A	Voi		OUF	CT.			
Project Manager:	Pussell Butle	ner	ר"	X		). #:	LL TO						ANA	- 151	S RE		51			<u> </u>
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FOR LAB USE ONLY	KUSSEL DI	en	<u>4</u>	MATRIX	Fax	k #: PRESERV.	SAMPL	NG		afi	204							:		
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202416			# CONTAINERS	GROUNDWATER WASTEWATER SOIL OIL SLUDGE	OTHER	ACID/BASE: ICE / COOL OTHER :	DATE	TIME		Ż	2	F	/							
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Page 9 of 9

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