

Gilliam, Allen

From: Gilliam, Allen
Sent: Friday, October 23, 2009 3:28 PM
To: 'Bob Taylor'; 'tbartley@defiancemetal.com'
Subject: Defiance Metal Products (ARP001047) Amended July 09 Semi Annual Report (Heber Springs AR0022381)



defiance metals
CAV 09.DOC (40...

Mr. Taylor (and Tim),

Apologies for taking so long getting back to you regarding the above amended report and the lab results mystery.

Your amended semi-annual report was received 7/6/09. It is fairly easy to follow what your sampling/analysis protocol was from 11/5/08 thru 4/30/09.

Per our conversations, since you are sampling monthly and using your own AA for compliance purposes, it may be in your best interest to report the limits' page six times with each semi-annual report (just like you summarized in the amended report).

Summary of Amended Semi-Annual Report:

November '08: Monthly avg of 0.999 mg/l is correct. No violation.

December '08: Monthly avg of 1.953 mg/l is correct AND in violation of the monthly avg of 1.48 mg/l. Values of 2.57 and 2.11 very close to violating daily maximum of 2.61 mg/l.

January '09: Monthly avg of 1.246 mg/l is correct. No violation.

February '09: Monthly avg of 0.545 mg/l is correct. No violation.

March '09: This is where the questions begin. There's too much variance between many of AR Testing results and your own AA's. 20% variance is "acceptable" for split samples according to our tech service's chief. But, almost all the labs' results during March are much more than 20% different.

Arrangements will be made for your Tim to talk to ADEQ's "metals expert" to review your QA/QC documentation and results hopefully next Monday.

At this point in time, Defiance still shows a "monthly average not to exceed" violation of the Zn standard in 40 CFR 433.17 for the month of December.

I just tried calling both you and Tim and left voice messages. I'd like to conduct a site visit sometime next week, but hopefully will put Tim in touch with our Tech Services metals' experts regarding his AA QA/QC details on Monday the 26th if Tim has not gotten his results more in line with Ark Testing's or has already talked to them about the wide discrepancies in results.

Also, please find attached a partially completed ADEQ compliance assurance visit form. If you find the time, would you please scratch in some blanks you can readily answer starting in section "II. Pre-Inspection Meeting" especially "Attachment A: Industrial Process(es)". There may even be some mistakes on the very first page. This will shorten the time necessary for the pre-inspection interview and me asking duplicative questions during the walk thru.

Thanx Bob and y'all have a good weekend,

Allen Gilliam
ADEQ State Pretreatment Coordinator



944 BY PASS RD. • HEBER SPRINGS, ARKANSAS 72543
PH. (501) 362-1919 • FAX (501) 362-6160

AG

June 29, 2009

7025

Arkansas Department of Environmental Quality
Water Division
5301 North Shore Dr.
North Little Rock, AR 72218-5317

JUL - 6 2009

Attn: Mr. Allen Gilliam

hlt

Re: Semi Annual Reporting

Dear Mr. Gilliam

Attached you will find an amended report showing Defiance Metal Products (DMP) waste water effluent testing for the period represented from the beginning of November 2008 through April 2009. Also attached you will find a summary of all testing conducted during this time, both offsite and in-house. As you will note there are non-compliance results. Our corrective actions are; changing our piping to have all effluent water be retained in a segregated tank until test results are obtained with our AA spectrometer. If upon testing we find the processed water to be non-compliant we'll make the necessary adjustments to the chemistry and send the water back through for further processing. We'll continue to process our water using chemical precipitation (conventional method) until such time that we can use the MRS.

Please find attached our TOMP dated June 29th, 2009.

Upon your review, if you should find anything which requires our attention please do not hesitate to call. We'll continue to strive to improve our processes and to comply with all Federal, State and Local regulations.

Sincerely,

A handwritten signature in black ink, appearing to read "Bob D. Taylor, Jr.", written over a horizontal line.

Bob D. Taylor, Jr.
Safety Leader
Defiance Metal Products

Revised Report

SEMI-ANNUAL REPORT FOR INDUSTRIAL USERS REGULATED BY 40CFR433

Use of this form is not an EPA/ADEQ requirement.

Attn: Water Div/NPDES Pretreatment

(1) IDENTIFYING INFORMATION

A. LEGAL NAME & MAILING ADDRESS

Defiance Metal Products
944 Bypass Rd.
Heber Springs, Ar. 72543

B. FACILITY & LOCATION ADDRESS

Defiance Metal Products
944 Bypass Rd.
Heber Springs, Ar. 72543

Bobs 5232

C. FACILITY CONTACT: TIM BARTLEY

TELEPHONE NUMBER: 501-362-1919 EXT 5297

(2) REPORTING PERIOD—FISCAL YEAR From May 1 to Apr 30 (Both Semi-Annual Reports must cover Fiscal Year)

A. MONTHS WHICH REPORTS ARE DUE

NOVEMBER & MAY

B. PERIOD COVERED BY THIS REPORT

FROM: NOVEMBER '09 TO: MAY '09

(3) DESCRIPTION OF OPERATION

A. REGULATED PROCESSES

CORE PROCESS(ES)

CHECK EACH APPLICABLE BLOCK

- Electroplating
- Electroless Plating
- Anodizing
- Coating
- Chemical Etching and Milling
- Printed Circuit Board Manufacture

ANCILLARY PROCESS(ES)*

LIST BELOW EACH PROCESS USED IN THE FACILITY

CLEANING

B. CHANGES:

SUMMARIZE ANY CHANGES IN THE REGULATED PROCESSES SINCE THE LAST REPORT. ATTACH AN ADDITIONAL SHEET IF THE SPACE BELOW IS INADEQUATE. PROVIDE A NEW SCHEMATIC IF APPROPRIATE.

*SEE 40CFR433.10(a) FOR 40 DIFFERENT OPERATIONS

C. Number of Regular Employees at this Facility 185

D. [Reserved]

**DEFIANCE METAL PRODUCTS
WASTE WATER EFFLUENT TEST RESULTS**

DATE	AR Testing Lab ZINC EFFLUENT		In-House AA unit ZINC EFFLUENT	
	MRS	CLARIFIER	MRS	CLARIFIER
11/5/2008	0.04✓	N/A	N/A	N/A
11/6/2008	0.122✓	N/A	N/A	N/A
11/12/2008	1.399✓	N/A	N/A	N/A
11/13/2008	1.059✓	N/A	N/A	N/A
11/17/2008	N/A	1.553✓	N/A	N/A
11/19/2008	N/A	1.821✓	N/A	N/A
12/9/2009	N/A	2.57	N/A	N/A
12/11/2009	N/A	2.11	N/A	N/A
12/15/2009	N/A	1.18	N/A	N/A
1/16/2009	N/A	1.551	N/A	N/A
1/23/2009	N/A	1.339	N/A	N/A
1/29/2009	N/A	0.85	N/A	N/A
2/12/2009	N/A	0.422	N/A	N/A
2/18/2009	N/A	0.668	N/A	N/A
3/2/2009	N/A	N/A	N/A	0.3005 <i>ok</i>
3/3/2009	N/A	1.581	N/A	0.1373 <i>ok</i>
3/4/2009	N/A	N/A	N/A	0.2754 <i>ok</i>
3/5/2009	N/A	3.463	N/A	0.3307
3/6/2009	N/A	N/A	N/A	2.061
3/11/2009	N/A	2.406	N/A	0.2248
3/12/2009	N/A	1.195	N/A	0.2409
3/13/2009	N/A	N/A	N/A	2.4626
3/16/2009	N/A	N/A	N/A	0.9491
3/17/2009	N/A	1.554	N/A	3.2098 <i>Avg = 2.38mg/l</i>
3/18/2009	N/A	0.92	N/A	N/A
3/19/2009	N/A	N/A	N/A	0.2407
3/23/2009	N/A	N/A	N/A	1.0196
3/23/2009	N/A	N/A	0.0768	N/A
3/25/2009	N/A	0.731	1.2885	N/A
3/26/2009	N/A	0.931	1.2208	N/A
3/27/2009	N/A	N/A	1.4258	N/A
3/31/2009	N/A	N/A	1.5338	N/A
3/31/2009	N/A	N/A	0.8636	N/A
4/1/2009	N/A	N/A	1.6322	N/A
4/2/2009	N/A	1.571	2.2409	N/A
4/6/2009	N/A	N/A	1.3658	N/A
4/7/2009	N/A	N/A	2.058	N/A
4/8/2009	N/A	1.325	1.741	N/A
4/9/2009	N/A	N/A	1.2031	N/A
4/13/2009	N/A	N/A	2.3124	N/A
4/13/2009	N/A	N/A	2.5164	N/A
4/14/2009	N/A	N/A	1.5371	N/A
4/15/2009	N/A	0.25	1.1807	N/A
4/16/2009	N/A	N/A	N/A	1.3336
4/21/2009	N/A	N/A	N/A	0.8569
4/30/2009	N/A	N/A	N/A	0.1035

*Zn monthly avg limit
1.48mg/l
Daily Max
2.61mg/l*

NOV.
Mo. AVG.
0.999✓

DEC.
Mo. AVG.
1.953 ✓ *violation
Mo. Avg.*

JAN.
Mo. AVG.
1.246
FEB.
Mo. AVG.
0.545

Avg = 2.38mg/l

MAR.
Mo. AVG.
1.178

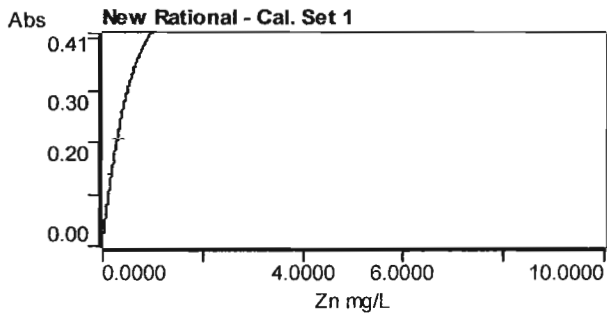
23.23 Total

APR.
Mo. AVG.
1.451 ✓

Analyst
Date Started 11:45 AM 3/2/2009
Worksheet Mixed metals 03 02 09
Comment
Methods Ag,Cd,Cr,Cu,Mn,Ni,Pb,Zn
Computer name DCKJZMH1
Serial Number: AA0810M067

Method: Zn (Flame)

Sample ID	Conc mg/L	%RSD	Mean Abs	BG Abs		
CAL ZERO	0.0000	2.5	0.0268	0.0017		
	Readings					
	0.0274	0.0261	0.0269		3/2/2009	12:00:18 PM
STANDARD 1	0.2000	1.5	0.1353	0.0010		
	Readings					
	0.1333	0.1353	0.1373		3/2/2009	12:00:40 PM
STANDARD 2	0.4000	0.9	0.2562	0.0022		
	Readings					
	0.2567	0.2536	0.2583		3/2/2009	12:01:14 PM
STANDARD 3	1.0000	0.2	0.4096	0.0035		
	Readings					
	0.4099	0.4088	0.4101		3/2/2009	12:01:48 PM



Curve Fit = New Rational
 Characteristic Conc = 0.0065 mg/L
 r = ~~0.9998~~
 Calculated Conc = 0.0392 0.1950 0.4104 0.9892
 Residuals = -0.0392 0.0050 -0.0104 0.0108

Conc = A

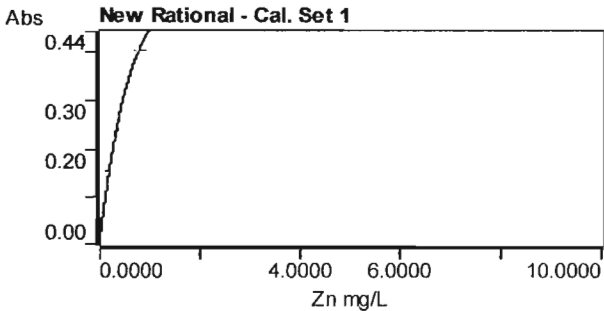
$$(-2.89656 \times A \times A + 0.55941 \times A + 0.67096)$$

clar inf 1-10	0.3104	0.9	0.2059	0.0031		
	Readings					
	0.2039	0.2065	0.2073		3/2/2009	12:02:22 PM
clar eff 1-10	0.3005	0.7	0.2003	0.0044		
	Readings					
	0.1987	0.2007	0.2016		3/2/2009	12:03:00 PM
1 ppm Zn	0.9967	0.1	0.4107	0.0050		

Analyst
 Date Started 9:55 AM 3/3/2009
 Worksheet Mixed metals 03 03 09
 Comment
 Methods Ag,Cd,Cr,Cu,Mn,Ni,Pb,Zn
 Computer name DCKJZMH1
 Serial Number: AA0810M067

Method: Zn (Flame)

Sample ID	Conc mg/L	%RSD	Mean Abs	BG Abs	
CAL ZERO	0.0000	>100	0.0000	-0.0008	
	Readings				
	0.0003	-0.0003	0.0001	3/3/2009	10:38:50 AM
STANDARD 1	0.2000	0.1	0.1508	0.0005	
	Readings				
	0.1510	0.1507	0.1507	3/3/2009	10:39:18 AM
STANDARD 2	0.4000	0.3	0.2569	-0.0001	
	Readings				
	0.2571	0.2576	0.2560	3/3/2009	10:39:48 AM
STANDARD 3	1.0000	0.4	0.4445	0.0005	
	Readings				
	0.4426	0.4464	0.4444	3/3/2009	10:40:24 AM



Curve Fit = New Rational
 Characteristic Conc = 0.0058 mg/L
 r = 0.9997
 Calculated Conc = 0.0000 0.2060 0.3877 1.0096
 Residuals = 0.0000 -0.0060 0.0123 -0.0096

Conc = A

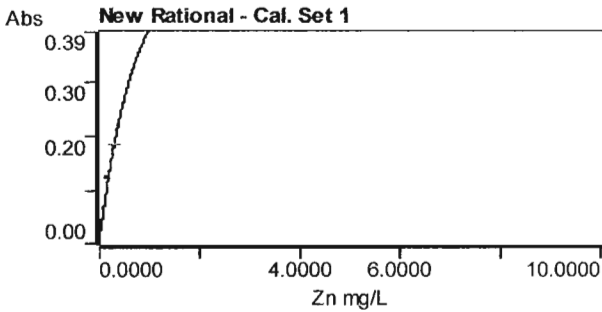
$$(-1.81347 \times A \times A + 0.03689 \times A + 0.75989)$$

clar inf 1-10	0.8082	0.4	0.4037	0.0010	
	Readings				
	0.4036	0.4053	0.4020	3/3/2009	10:40:58 AM
clar eff 1-10	0.1373	0.7	0.1029	0.0000	
	Readings				
	0.1035	0.1030	0.1022	3/3/2009	10:41:28 AM
1 ppm Zn	1.0106	0.5	0.4446	0.0001	

Analyst
 Date Started 11:31 AM 3/4/2009
 Worksheet Mixed metals 03 04 09
 Comment
 Methods Ag,Cd,Cr,Cu,Mn,Ni,Pb,Zn
 Computer name DCKJZMH1
 Serial Number: AA0810M067

Method: Zn (Flame)

Sample ID	Conc mg/L	%RSD	Mean Abs	BG Abs		
CAL ZERO	0.0000	40.1	0.0004	0.0002		
	Readings					
	0.0004	0.0005	0.0002		3/4/2009	11:43:00 AM
STANDARD 1	0.2000	0.3	0.1221	0.0020		
	Readings					
	0.1225	0.1221	0.1217		3/4/2009	11:43:26 AM
STANDARD 2	0.4000	0.3	0.2182	0.0035		
	Readings					
	0.2185	0.2187	0.2174		3/4/2009	11:43:56 AM
STANDARD 3	1.0000	0.7	0.3925	0.0054		
	Readings					
	0.3898	0.3953	0.3924		3/4/2009	11:44:28 AM



Curve Fit = New Rational
 Characteristic Conc = 0.0072 mg/L
 r = 0.9999
 Calculated Conc = 0.0006 0.2034 0.3936 1.0045
 Residuals = -0.0006 -0.0034 0.0064 -0.0045

Conc = A

$$(-1.69815 \times A \times A + 0.09865 \times A + 0.61363)$$

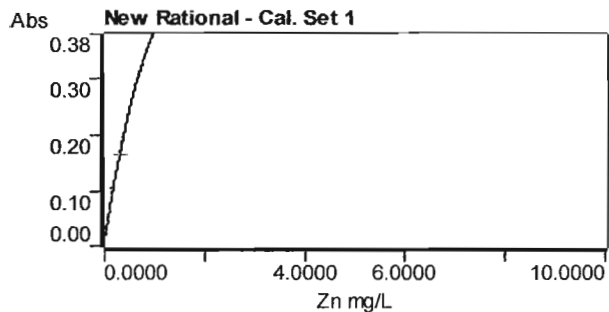
clar inf 1-10	0.3147	0.5	0.1812	0.0064		
	Readings					
	0.1821	0.1811	0.1803		3/4/2009	11:45:00 AM
clar eff 1-10	0.2754	0.5	0.1612	0.0076		
	Readings					
	0.1607	0.1609	0.1622		3/4/2009	11:45:40 AM
1 ppm Zn	1.0011	0.3	0.3919	0.0089		

Analyst

Date Started 12:14 PM 3/5/2009
 Worksheet Mixed metals 03 05 09
 Comment
 Methods Ag,Cd,Cr,Cu,Mn,Ni,Pb,Zn
 Computer name DCKJZMH1
 Serial Number: AA0810M067

Method: Zn (Flame)

Sample ID	Conc mg/L	%RSD	Mean Abs	BG Abs		
CAL ZERO	0.0000	>100	0.0001	-0.0015		
	Readings					
	-0.0001	0.0002	0.0002	3/5/2009	12:31:22 PM	
STANDARD 1	0.2000	0.3	0.1045	-0.0002		
	Readings					
	0.1047	0.1047	0.1041	3/5/2009	12:31:48 PM	
STANDARD 2	0.4000	0.2	0.1933	0.0003		
	Readings					
	0.1933	0.1929	0.1936	3/5/2009	12:32:20 PM	
STANDARD 3	1.0000	0.3	0.3803	0.0020		
	Readings					
	0.3790	0.3809	0.3810	3/5/2009	12:32:50 PM	



Curve Fit = New Rational
 Characteristic Conc = 0.0084 mg/L
 r = 0.9999
 Calculated Conc = 0.0002 0.2028 0.3953 1.0025
 Residuals = -0.0002 -0.0028 0.0047 -0.0025

Conc = A

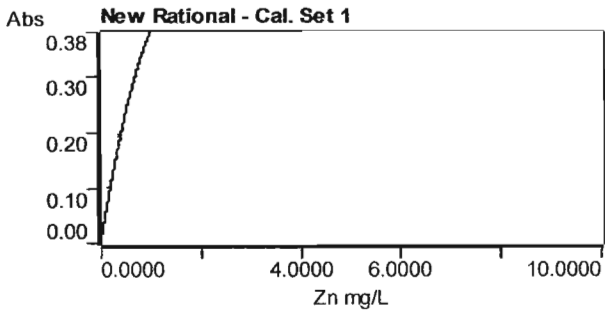
$$(-1.05221 \times A \times A + 0.01751 \times A + 0.52486)$$

clar eff 1-10	0.3307	0.5	0.1650	0.0017		
	Readings					
	0.1645	0.1659	0.1647	3/5/2009	12:33:22 PM	
clar inf 1-10	0.9299	0.5	0.3642	0.0022		
	Readings					
	0.3663	0.3629	0.3635	3/5/2009	12:33:52 PM	
1 ppm Zn	1.0261	0.0	0.3853	0.0012		

Analyst
Date Started 9:33 AM 3/6/2009
Worksheet Mixed metals 03 06 09
Comment
Methods Ag,Cd,Cr,Cu,Mn,Ni,Pb,Zn
Computer name DCKJZMH1
Serial Number: AA0810M067

Method: Zn (Flame)

Sample ID	Conc mg/L	%RSD	Mean Abs	BG Abs		
CAL ZERO	0.0000	63.2	0.0005	0.0023		
	Readings					
	0.0005	0.0007	0.0002	3/6/2009	9:52:58 AM	
STANDARD 1	0.2000	0.7	0.0995	0.0001		
	Readings					
	0.0994	0.1002	0.0988	3/6/2009	9:53:26 AM	
STANDARD 2	0.4000	0.9	0.1908	0.0023		
	Readings					
	0.1924	0.1909	0.1890	3/6/2009	9:53:54 AM	
STANDARD 3	1.0000	0.2	0.3771	0.0035		
	Readings					
	0.3779	0.3774	0.3761	3/6/2009	9:54:26 AM	



Curve Fit = New Rational
 Characteristic Conc = 0.0088 mg/L
 r = 1.0000
 Calculated Conc = 0.0009 0.2001 0.3998 1.0001
 Residuals = -0.0009 -0.0001 0.0002 -0.0001

Conc = A

$$(-1.13764 \times A \times A + 0.10963 \times A + 0.49756)$$

clar eff	2.0610	0.1	0.5166	0.0064		
	Readings					
	0.5170	0.5164	0.5163	3/6/2009	9:55:10 AM	
clar inf	2.6980	0.1	0.5565	0.0069		
	Readings					
	0.5559	0.5570	0.5566	3/6/2009	9:55:46 AM	
1 ppm Zn	0.9910	0.6	0.3752	-0.0004		

Analyst

Date Started 10:56 AM 3/11/2009
Worksheet Mixed metals 03 11 09

Comment

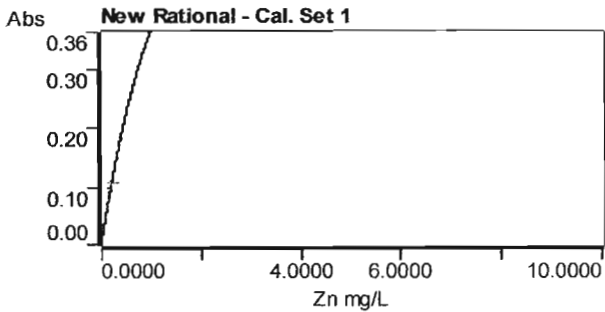
Methods Ag,Cd,Cr,Cu,Mn,Ni,Pb,Zn

Computer name DCKJZMH1

Serial Number: AA0810M067

Method: Zn (Flame)

Sample ID	Conc mg/L	%RSD	Mean Abs	BG Abs		
CAL ZERO	0.0000	94.8	0.0008	0.0004		
	Readings					
	0.0003	0.0005	0.0017		3/11/2009	11:12:26 AM
STANDARD 1	0.2000	0.7	0.0955	0.0004		
	Readings					
	0.0952	0.0963	0.0951		3/11/2009	11:13:02 AM
STANDARD 2	0.4000	0.9	0.1819	0.0029		
	Readings					
	0.1800	0.1831	0.1826		3/11/2009	11:13:32 AM
STANDARD 3	1.0000	0.5	0.3626	0.0035		
	Readings					
	0.3645	0.3623	0.3610		3/11/2009	11:14:04 AM



Curve Fit = New Rational
 Characteristic Conc = 0.0092 mg/L
 r = 1.0000
 Calculated Conc = 0.0017 0.2008 0.3987 1.0007
 Residuals = -0.0017 -0.0008 0.0013 -0.0007

Conc = A

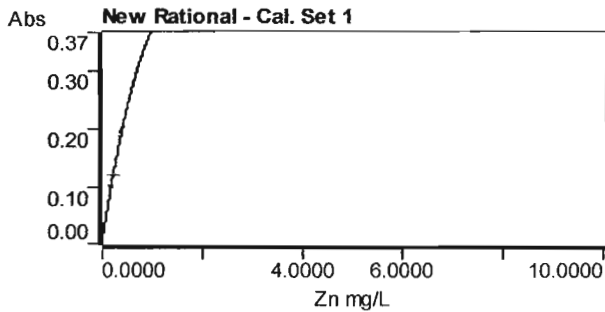
$$(-1.09640 \times A \times A + 0.07800 \times A + 0.47828)$$

clar eff 1-10	0.2248	1.1	0.1066	0.0040		
	Readings					
	0.1055	0.1066	0.1077		3/11/2009	11:14:40 AM
clar inf 1-10	0.7989	0.2	0.3149	0.0045		
	Readings					
	0.3148	0.3143	0.3156		3/11/2009	11:15:10 AM
1 ppm Zn	0.9907	0.3	0.3605	0.0047		

Analyst
 Date Started 11:44 AM 3/12/2009
 Worksheet Mixed metals 03 12 09
 Comment
 Methods Ag,Cd,Cr,Cu,Mn,Ni,Pb,Zn
 Computer name DCKJZMH1
 Serial Number: AA0810M067

Method: Zn (Flame)

Sample ID	Conc mg/L	%RSD	Mean Abs	BG Abs	
CAL ZERO	0.0000	>100	-0.0002	0.0028	
	Readings				
	0.0000	-0.0002	-0.0003	3/12/2009	11:52:18 AM
STANDARD 1	0.2000	1.0	0.1011	0.0039	
	Readings				
	0.1020	0.1012	0.1000	3/12/2009	11:52:54 AM
STANDARD 2	0.4000	0.4	0.1916	0.0076	
	Readings				
	0.1921	0.1920	0.1906	3/12/2009	11:53:26 AM
STANDARD 3	1.0000	0.0	0.3671	0.0121	
	Readings				
	0.3671	0.3673	0.3670	3/12/2009	11:53:58 AM



Curve Fit = New Rational
 Characteristic Conc = 0.0087 mg/L
 r = 1.0000
 Calculated Conc = -0.0003 0.2003 0.3994 1.0003
 Residuals = 0.0003 -0.0003 0.0006 -0.0003

Conc = A

$$(-1.37686 \times A \times A + 0.12794 \times A + 0.50564)$$

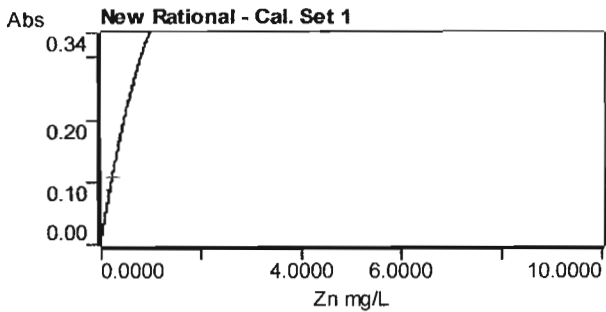
clar eff 1-10 3-10	0.2409	0.3	0.1207	0.0171	
	Readings				
	0.1202	0.1210	0.1208	3/12/2009	11:54:50 AM
clar inf 1-10 3-10	0.7474	0.4	0.3091	0.0194	
	Readings				
	0.3078	0.3100	0.3096	3/12/2009	11:55:28 AM
clar eff 1-10 3-12	0.1644	0.6	0.0833	0.0215	

Analyst

Date Started 9:24 AM 3/13/2009
 Worksheet Mixed metals 03 13 09
 Comment
 Methods Ag,Cd,Cr,Cu,Mn,Ni,Pb,Zn
 Computer name DCKJZMH1
 Serial Number: AA0810M067

Method: Zn (Flame)

Sample ID	Conc mg/L	%RSD	Mean Abs	BG Abs	
CAL ZERO	0.0000	>100	0.0001	0.0008	
	Readings				
	0.0003	0.0003	-0.0004	3/13/2009	9:43:58 AM
STANDARD 1	0.2000	0.7	0.0874	0.0019	
	Readings				
	0.0871	0.0870	0.0881	3/13/2009	9:44:26 AM
STANDARD 2	0.4000	0.6	0.1708	0.0054	
	Readings				
	0.1718	0.1708	0.1698	3/13/2009	9:44:58 AM
STANDARD 3	1.0000	0.5	0.3388	0.0070	
	Readings				
	0.3397	0.3370	0.3396	3/13/2009	9:45:28 AM



Curve Fit = New Rational
 Characteristic Conc = 0.0101 mg/L
 r = 1.0000
 Calculated Conc = 0.0001 0.1987 0.4021 0.9989
 Residuals = -0.0001 0.0013 -0.0021 0.0011

Conc = A

$$(-1.31498 \times A \times A + 0.15004 \times A + 0.43588)$$

clar eff 1-10	2.4626	0.7	0.1078	0.0084	
	Readings				
	0.1075	0.1087	0.1073	3/13/2009	9:46:00 AM
clar inf 1-10	11.2739	0.1	0.3622	0.0099	
	Readings				
	0.3617	0.3624	0.3626	3/13/2009	9:46:32 AM
1 ppm Zn	0.9922	0.3	0.3375	0.0118	

Analyst

Date Started 10:06 AM 3/16/2009

Worksheet Mixed metals 03 16 09

Comment

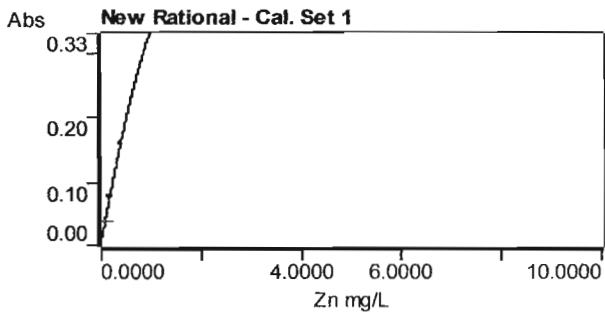
Methods Ag,Cd,Cr,Cu,Mn,Ni,Pb,Zn

Computer name DCKJZMH1

Serial Number: AA0810M067

Method: Zn (Flame)

Sample ID	Conc mg/L	%RSD	Mean Abs	BG Abs		
CAL ZERO	0.0000	69.0	0.0007	-0.0001		
	Readings					
	0.0007	0.0002	0.0012		3/16/2009	10:16:00 AM
STANDARD 1	0.2000	0.5	0.0772	0.0025		
	Readings					
	0.0768	0.0772	0.0776		3/16/2009	10:16:36 AM
STANDARD 2	0.4000	0.2	0.1584	0.0058		
	Readings					
	0.1582	0.1587	0.1581		3/16/2009	10:17:12 AM
STANDARD 3	1.0000	0.4	0.3314	0.0090		
	Readings					
	0.3305	0.3307	0.3329		3/16/2009	10:17:50 AM



Curve Fit = New Rational
 Characteristic Conc = 0.0115 mg/L
 r = 0.9999
 Calculated Conc = 0.0018 0.1961 0.4057 0.9974
 Residuals = -0.0018 0.0039 -0.0057 0.0026

Conc = A

$$(-1.15385 \times A \times A + 0.22903 \times A + 0.38301)$$

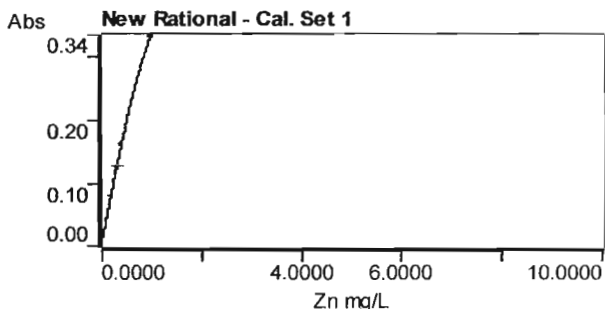
clar eff 1-10	0.9491	0.7	0.0370	0.0111		
	Readings					
	0.0372	0.0371	0.0367		3/16/2009	10:18:24 AM
clar inf 1-10	5.4828	0.3	0.2087	0.0124		
	Readings					
	0.2078	0.2090	0.2091		3/16/2009	10:19:04 AM
1 ppm Zn	0.9877	0.5	0.3292	0.0142		

Analyst

Date Started 11:52 AM 3/17/2009
Worksheet Mixed metals 03 17 09
Comment
Methods Ag,Cd,Cr,Cu,Mn,Ni,Pb,Zn
Computer name DCKJZMH1
Serial Number: AA0810M067

Method: Zn (Flame)

Sample ID	Conc mg/L	%RSD	Mean Abs	BG Abs		
CAL ZERO	0.0000	7.5	0.0006	0.0004		
	Readings					
	0.0006	0.0007	0.0006		3/17/2009	11:58:48 AM
STANDARD 1	0.2000	0.5	0.0785	0.0014		
	Readings					
	0.0781	0.0785	0.0789		3/17/2009	11:59:16 AM
STANDARD 2	0.4000	0.5	0.1606	0.0017		
	Readings					
	0.1601	0.1615	0.1601		3/17/2009	11:59:50 AM
STANDARD 3	1.0000	1.1	0.3320	0.0046		
	Readings					
	0.3358	0.3322	0.3281		3/17/2009	12:00:30 PM



Curve Fit = New Rational
 Characteristic Conc = 0.0113 mg/L
 r = 0.9999
 Calculated Conc = 0.0016 0.1960 0.4058 0.9973
 Residuals = -0.0016 0.0040 -0.0058 0.0027

Conc = A

$$(-1.22224 \times A \times A + 0.23605 \times A + 0.38932)$$

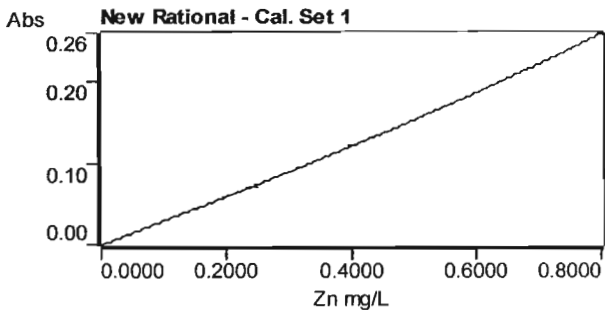
clar eff 1-10	3.2098	1.1	0.1282	0.0058		
	Readings					
	0.1267	0.1292	0.1288		3/17/2009	12:01:10 PM
clar inf 1-10	11.2348	0.2	0.3570	0.0088		
	Readings					
	0.3575	0.3575	0.3562		3/17/2009	12:01:48 PM
1 ppm Zn	0.9531	0.4	0.3225	0.0117		

Analyst

Date Started 3:13 PM 3/19/2009
 Worksheet Zinc 01
 Comment
 Methods Zn
 Computer name DCKJZMH1
 Serial Number: AA0810M067

Method: Zn (Flame)

Sample ID	Conc mg/L	%RSD	Mean Abs	BG Abs		
CAL ZERO	0.0000	82.3	-0.0001	0.0013		
	Readings					
	-0.0001	-0.0001	0.0000		3/19/2009	3:21:46 PM
STANDARD 1	0.2000	0.3	0.0572	0.0010		
	Readings					
	0.0574	0.0571	0.0571		3/19/2009	3:22:20 PM
STANDARD 2	0.4000	0.5	0.1213	0.0028		
	Readings					
	0.1213	0.1206	0.1218		3/19/2009	3:22:54 PM
STANDARD 3	0.8000	0.8	0.2563	0.0033		
	Readings					
	0.2587	0.2554	0.2547		3/19/2009	3:23:30 PM



Curve Fit = New Rational
 Characteristic Conc = 0.0155 mg/L
 r = 0.9999
 Calculated Conc = -0.0003 0.1965 0.4047 0.7987
 Residuals = 0.0003 0.0035 -0.0047 0.0013

.02%

Conc = A

$$(0.10390 \times A \times A + 0.11793 \times A + 0.28382)$$

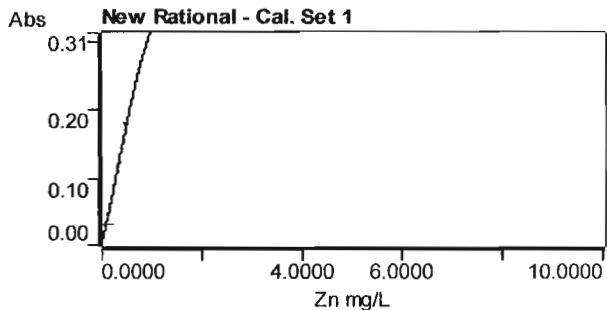
Zn01	CLAR, EFF.	0.2407	1.5	0.0704	0.0042		
		Readings					
		0.0709	0.0711	0.0693		3/19/2009	3:24:10 PM
Zn02	MRS EFF.	0.2353	0.3	0.0688	0.0039		
		Readings					
		0.0690	0.0687	0.0687		3/19/2009	3:24:40 PM

Analyst

Date Started 12:17 PM 3/23/2009
 Worksheet 03 23 09 Clarifier
 Comment
 Methods Ag,Cd,Ni,Pb,Zn
 Computer name DCKJZMH1
 Serial Number: AA0810M067

Method: Zn (Flame)

Sample ID	Conc mg/L	%RSD	Mean Abs	BG Abs		
CAL ZERO	0.0000	20.4	0.0014	0.0003		
	Readings					
	0.0012	0.0012	0.0017	3/23/2009	12:29:52 PM	
STANDARD 1	0.1000	1.1	0.0286	0.0014		
	Readings					
	0.0289	0.0283	0.0287	3/23/2009	12:30:16 PM	
STANDARD 2	0.5000	0.7	0.1792	0.0038		
	Readings					
	0.1797	0.1801	0.1776	3/23/2009	12:30:56 PM	
STANDARD 3	1.0000	0.3	0.3134	0.0044		
	Readings					
	0.3129	0.3145	0.3129	3/23/2009	12:31:34 PM	



Curve Fit = New Rational
 Characteristic Conc = 0.0157 mg/L
 r = 0.9996
 Calculated Conc = 0.0049 0.0958 0.5061 0.9959
 Residuals = -0.0049 0.0042 -0.0061 0.0041

Conc = A

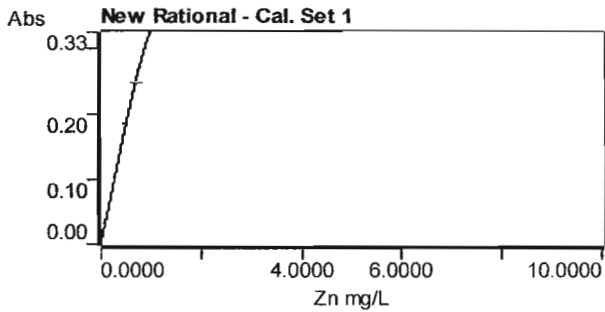
$$(-2.31081 \times A \times A + 0.84557 \times A + 0.27670)$$

clar eff 1-10	1.0196	1.4	0.0306	0.0052		
	Readings					
	0.0311	0.0303	0.0304	3/23/2009	12:32:10 PM	
clar inf 1-10	3.9840	0.5	0.1393	0.0070		
	Readings					
	0.1386	0.1395	0.1398	3/23/2009	12:32:40 PM	
1 ppm Zn	0.9969	0.1	0.3136	0.0085		

Analyst
 Date Started 9:34 AM 3/23/2009
 Worksheet MRS 03 23 09
 Comment
 Methods Zn,Ni
 Computer name DCKJZMH1
 Serial Number: AA0810M067

Method: Zn (Flame)

Sample ID	Conc mg/L	%RSD	Mean Abs	BG Abs		
CAL ZERO	0.0000	22.2	0.0010	0.0039		
	Readings					
	0.0012	0.0010	0.0008	3/23/2009	9:53:52 AM	
STANDARD 1	0.1000	1.3	0.0319	0.0046		
	Readings					
	0.0315	0.0322	0.0321	3/23/2009	9:54:28 AM	
STANDARD 2	0.5000	0.8	0.1821	0.0093		
	Readings					
	0.1805	0.1824	0.1833	3/23/2009	9:55:26 AM	
STANDARD 3	1.0000	0.4	0.3250	0.0108		
	Readings					
	0.3255	0.3236	0.3260	3/23/2009	9:56:08 AM	



98%
 REM
 RATE

Curve Fit = New Rational
 Characteristic Conc = 0.0140 mg/L
 r = 0.9998
 Calculated Conc = 0.0031 0.0972 0.5046 0.9971
 Residuals = -0.0031 0.0028 -0.0046 0.0029

Conc = A

$$(-1.57093 \times A \times A + 0.55248 \times A + 0.31234)$$

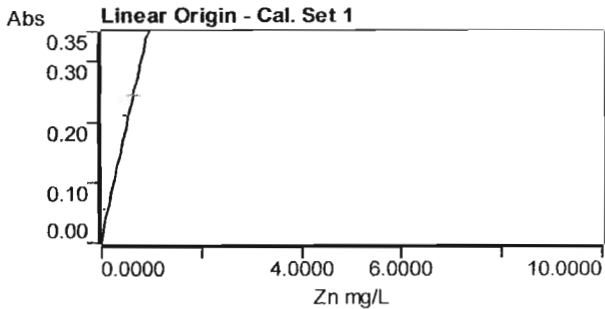
MRS St 1	6.9483	0.2	0.2455	0.0126		
	Readings					
	0.2449	0.2458	0.2457	3/23/2009	9:56:54 AM	
MRS Eff	0.0768	12.2	0.0024	0.0126		
	Readings					
	0.0027	0.0023	0.0022	3/23/2009	9:57:34 AM	

Method: Ni (Flame)

Analyst
Date Started 11:33 AM 3/25/2009
Worksheet MRS 03 25 09
Comment
Methods Zn,Ni
Computer name DCKJZMH1
Serial Number: AA0810M067

Method: Zn (Flame)

Sample ID	Conc mg/L	%RSD	Mean Abs	BG Abs		
CAL ZERO	0.0000	56.6	-0.0004	0.0022		
	Readings					
	-0.0007	-0.0003	-0.0003		3/25/2009	11:36:34 AM
STANDARD 1	0.1000	0.4	0.0560	0.0026		
	Readings					
	0.0558	0.0561	0.0561		3/25/2009	11:37:24 AM
STANDARD 2	0.5000	0.5	0.2091	0.0040		
	Readings					
	0.2085	0.2102	0.2087		3/25/2009	11:38:08 AM
STANDARD 3	1.0000	0.5	0.3497	0.0058		
	Readings					
	0.3503	0.3511	0.3477		3/25/2009	11:38:56 AM



Curve Fit = Linear Origin
 Characteristic Conc = 0.0121 mg/L
 r = 0.9911
 Calculated Conc = -0.0012 0.1534 0.5730 0.9582
 Residuals = 0.0012 -0.0534 -0.0730 0.0418

Abs = 0.36498 x C

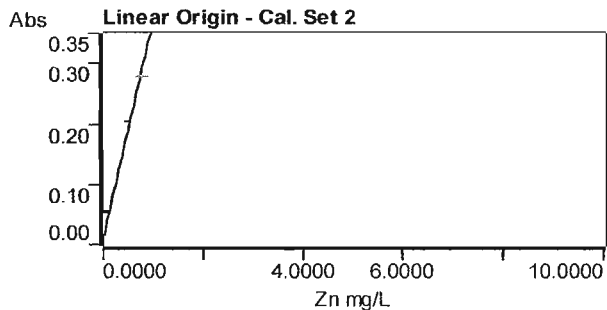
MRS St 1	6.6242	0.4	0.2418	0.0066		
	Readings					
	0.2407	0.2417	0.2429		3/25/2009	11:39:44 AM
MRS Eff	1.2885	0.3	0.0470	0.0077		
	Readings					
	0.0470	0.0472	0.0469		3/25/2009	11:40:20 AM
High standard	0.9422	0.1	0.3439	0.0098		
	Readings					
	0.3435	0.3438	0.3444		3/25/2009	11:41:04 AM

81%
 REM
 RATE

Analyst
 Date Started 11:46 AM 3/26/2009
 Worksheet MRS 03 26 09
 Comment
 Methods Zn,Ni
 Computer name DCKJZMH1
 Serial Number: AA0810M067

Method: Zn (Flame)

Sample ID	Conc mg/L	%RSD	Mean Abs	BG Abs		
CAL ZERO	0.0000	10.8	-0.0002	0.0018		
	Readings					
	-0.0002	-0.0002	-0.0003	3/26/2009	12:01:04 PM	
STANDARD 1	0.1000	0.6	0.0536	-0.0006		
	Readings					
	0.0533	0.0540	0.0536	3/26/2009	12:01:38 PM	
STANDARD 2	0.5000	0.4	0.2033	0.0005		
	Readings					
	0.2025	0.2041	0.2033	3/26/2009	12:02:28 PM	
STANDARD 3	1.0000	0.5	0.3497	0.0011		
	Readings					
	0.3478	0.3502	0.3513	3/26/2009	12:03:16 PM	



84%
 REM. RATE

Curve Fit = Linear Origin
 Characteristic Conc = 0.0121 mg/L
 r = 0.9936
 Calculated Conc = -0.0006 0.1479 0.5609 0.9648
 Residuals = 0.0006 -0.0479 -0.0609 0.0352

Abs = 0.36251 x C

MRS St 1	7.6619	0.3	0.2778	0.0009		
	Readings					
	0.2770	0.2787	0.2775	3/26/2009	12:03:56 PM	
MRS Efl	1.2208	0.9	0.0443	0.0007		
	Readings					
	0.0447	0.0440	0.0441	3/26/2009	12:04:36 PM	

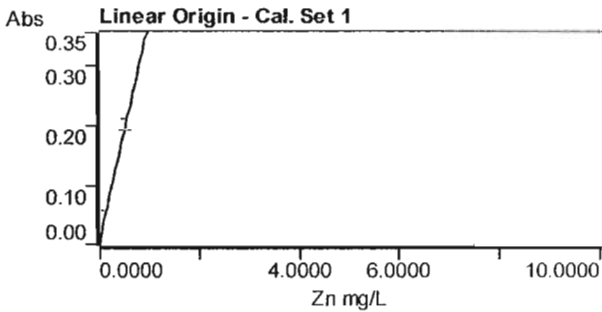
Method: Ni (Flame)

Sample ID	Conc mg/L	%RSD	Mean Abs	BG Abs
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Analyst
 Date Started 1:27 PM 3/27/2009
 Worksheet MRS 03 27 09
 Comment
 Methods Zn,Ni
 Computer name DCKJZMH1
 Serial Number: AA0810M067

Method: Zn (Flame)

Sample ID	Conc mg/L	%RSD	Mean Abs	BG Abs		
CAL ZERO	0.0000	>100	0.0004	0.0017		
	Readings					
	0.0000	0.0008	0.0005		3/27/2009	1:30:00 PM
STANDARD 1	0.1000	0.6	0.0548	0.0007		
	Readings					
	0.0549	0.0550	0.0544		3/27/2009	1:30:36 PM
STANDARD 2	0.5000	0.2	0.2097	0.0039		
	Readings					
	0.2095	0.2102	0.2093		3/27/2009	1:31:20 PM
STANDARD 3	1.0000	0.4	0.3547	0.0062		
	Readings					
	0.3536	0.3562	0.3543		3/27/2009	1:32:08 PM



72%
 REM
 RATE

Curve Fit = Linear Origin
 Characteristic Conc = 0.0119 mg/L
 r = 0.9925
 Calculated Conc = 0.0011 0.1484 0.5681 0.9611
 Residuals = -0.0011 -0.0484 -0.0681 0.0389

Abs = 0.36907 x C

MRS St 1	5.1163	0.5	0.1888	0.0076		
	Readings					
	0.1883	0.1883	0.1899		3/27/2009	1:32:46 PM
MRS Eff	1.4258	0.7	0.0526	0.0100		
	Readings					
	0.0529	0.0522	0.0528		3/27/2009	1:33:22 PM
High standard	0.9493	0.1	0.3504	0.0123		
	Readings					
	0.3503	0.3508	0.3500		3/27/2009	1:33:58 PM

Analyst

Date Started 10:02 AM 3/31/2009

Worksheet MRS 03 31 09

Comment

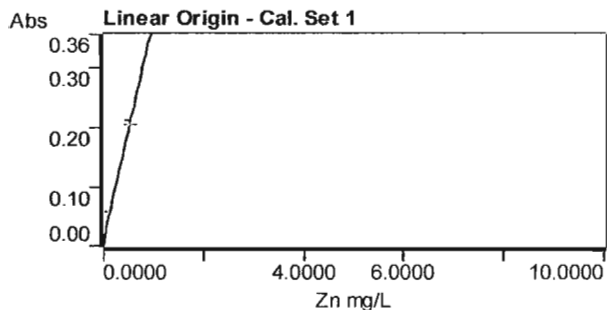
Methods Zn,Ni

Computer name DCKJZMH1

Serial Number: AA0810M067

Method: Zn (Flame)

Sample ID	Conc mg/L	%RSD	Mean Abs	BG Abs		
CAL ZERO	0.0000	13.1	-0.0013	0.0010		
	Readings					
	-0.0014	-0.0011	-0.0013	3/31/2009	10:18:14 AM	
STANDARD 1	0.1000	0.1	0.0564	-0.0023		
	Readings					
	0.0564	0.0565	0.0564	3/31/2009	10:18:56 AM	
STANDARD 2	0.5000	0.3	0.2086	-0.0007		
	Readings					
	0.2080	0.2091	0.2088	3/31/2009	10:19:42 AM	
STANDARD 3	1.0000	0.4	0.3557	-0.0015		
	Readings					
	0.3549	0.3572	0.3550	3/31/2009	10:20:28 AM	



72%^{ag}

Curve Fit = Linear Origin
 Characteristic Conc = 0.0119 mg/L
 r = 0.9926
 Calculated Conc = -0.0034 0.1527 0.5645 0.9625
 Residuals = 0.0034 -0.0527 -0.0645 0.0375

Abs = 0.36956 x C

MRS St 1	5.4623	0.2	0.2019	-0.0008		
	Readings					
	0.2016	0.2023	0.2017	3/31/2009	10:21:14 AM	
MRS Eff	1.5338	0.2	0.0567	-0.0005		
	Readings					
	0.0565	0.0568	0.0567	3/31/2009	10:21:50 AM	
High standard	9.6642	0.2	0.3571	0.0003		
	Readings					
	0.3565	0.3578	0.3571	3/31/2009	10:22:32 AM	

Analyst

Date Started 12:37 PM 3/31/2009

Worksheet MRS 03 31 09 B

Comment

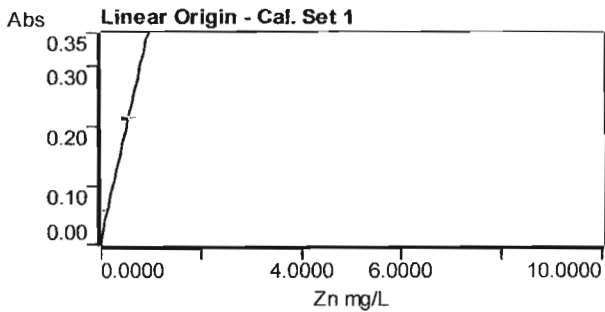
Methods Zn,Ni

Computer name DCKJZMH1

Serial Number: AA0810M067

Method: Zn (Flame)

Sample ID	Conc mg/L	%RSD	Mean Abs	BG Abs		
CAL ZERO	0.0000	11.3	-0.0007	-0.0004		
	Readings					
	-0.0007	-0.0007	-0.0006		3/31/2009	12:39:22 PM
STANDARD 1	0.1000	1.2	0.0570	-0.0004		
	Readings					
	0.0577	0.0570	0.0563		3/31/2009	12:39:54 PM
STANDARD 2	0.5000	0.3	0.2101	0.0007		
	Readings					
	0.2108	0.2097	0.2097		3/31/2009	12:40:48 PM
STANDARD 3	1.0000	0.1	0.3549	0.0035		
	Readings					
	0.3549	0.3544	0.3554		3/31/2009	12:41:32 PM



Curve Fit = Linear Origin
 Characteristic Conc = 0.0119 mg/L
 r = 0.9918
 Calculated Conc = -0.0018 0.1543 0.5685 0.9603
 Residuals = 0.0018 -0.0543 -0.0685 0.0397

Abs = 0.36953 x C

MRS St 1	5.7130	1.2	0.2111	0.0079		
	Readings					
	0.2129	0.2123	0.2082		3/31/2009	12:42:18 PM
MRS Eff	0.8636	1.9	0.0319	0.0119		
	Readings					
	0.0312	0.0322	0.0323		3/31/2009	12:42:54 PM
High standard	9.5188	0.1	0.3517	0.0130		
	Readings					
	0.3513	0.3519	0.3519		3/31/2009	12:43:36 PM

AFTER BACKWASH ON
 ALL STAGES
 85%

(4) FLOW MEASUREMENTS

INDIVIDUAL & TOTAL PROCESS FLOWS DISCHARGED TO POTW IN GALLONS PER DAY

Process	Average	Maximum	Type of Discharge
Regulated (Core & Anc)	8,000	12,000	BATCH
Regulated (Cyanide)			
§403.6(e) Unregulated*			
§403.6(e) Dilute			
Cooling Water			
Sanitary	3,000	4,500	CONTINUOUS
Total Flow to POTW	11,000	16,500	*****

*"Unregulated" has a precise legal meaning; see 40CFR403.6(e).

(5) MEASUREMENT OF POLLUTANTS

A. TYPE OF TREATMENT SYSTEM

CHECK EACH APPLICABLE BLOCK

- Neutralization
- Chemical Precipitation and Sedimentation
- Chromium Reduction
- Cyanide Destruction
- Other MRS - PROPRIETARY MEDIA
- None

B. COMMENTS ON TREATMENT SYSTEM

PLYMOUTH TECHNOLOGY
METALS REMOVAL SYSTEM
(MRS)

C. THE INDUSTRIAL USER MUST PERFORM SAMPLING AND ANALYSIS OF THE EFFLUENT FROM ALL REGULATED PROCESSES--CORE & ANCILLARY--(AFTER TREATMENT, IF APPLICABLE). ATTACH THE LAB ANALYSIS WHICH SHOWS A MAXIMUM; TABULATE ALL THE ANALYTICAL DATA COLLECTED DURING THE REPORT PERIOD IN THE SPACE PROVIDED BELOW. ZERO CONCENTRATIONS ARE NOT ACCEPTABLE; LIST THE DETECTION LIMIT IF CONCENTRATION WAS BELOW DETECTION LIMIT.

APR. 2009

Pollutant(mg/l)	Cd	Cr	Cu	Pb	Ni	Ag	Zn	CN	TTO*
Max for 1 day	0.11	2.77	3.38	0.69	3.98	0.43	2.61	1.20	2.13
Monthly Ave	0.07	1.71	2.07	0.43	2.38	0.24	1.48	0.65	--
Max Measured	<0.005	0.077	0.033	<0.015	0.283	<0.020	2.516	<0.01	
Ave Measured	—	—	—	—	—	—	1.451		

Sample Location MRS EFFLUENT / CLARIFIER EFFLUENT

Sample Type (Grab or Composite) GRAB

Number of Samples and Frequency Collected BIWEEKLY (FOR ZINC)

40CFR136 Preservation and Analytical Methods Use: Yes No

(6) CERTIFICATION

Analyst

Date Started 3:19 PM 4/1/2009

Worksheet MRS 04 01 09

Comment

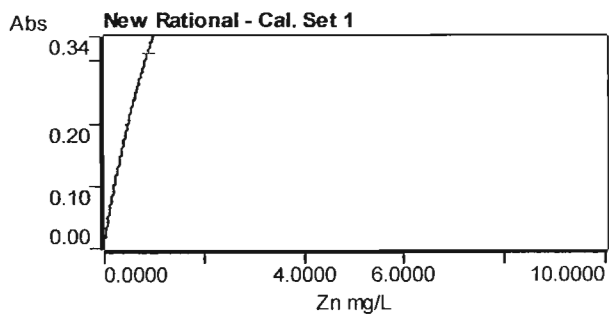
Methods Zn,Ni

Computer name DCKJZMH1

Serial Number: AA0810M067

Method: Zn (Flame)

Sample ID	Conc mg/L	%RSD	Mean Abs	BG Abs		
CAL ZERO	0.0000	2.3	0.0080	0.0013		
	Readings					
	0.0079	0.0079	0.0083		4/1/2009	3:21:56 PM
STANDARD 1	0.1000	0.8	0.0478	0.0014		
	Readings					
	0.0481	0.0479	0.0474		4/1/2009	3:22:36 PM
STANDARD 2	0.5000	0.4	0.1968	0.0042		
	Readings					
	0.1976	0.1968	0.1960		4/1/2009	3:23:26 PM
STANDARD 3	1.0000	0.3	0.3379	0.0071		
	Readings					
	0.3370	0.3388	0.3378		4/1/2009	3:24:08 PM



Curve Fit = New Rational
 Characteristic Conc = 0.0091 mg/L
 r = 0.9998
 Calculated Conc = 0.0167 0.1027 0.4922 1.0056
 Residuals = -0.0167 -0.0027 0.0078 -0.0056

Conc = A

$$(-0.04047 \times A \times A - 0.43092 \times A + 0.48620)$$

MRS St 1	8.8230	0.5	0.3083	0.0111		
	Readings					
	0.3100	0.3084	0.3067		4/1/2009	3:24:54 PM
MRS Eff	1.6322	0.4	0.0741	0.0135		
	Readings					
	0.0742	0.0743	0.0738		4/1/2009	3:25:28 PM
High standard	0.9980	0.1	0.3361	0.0163		

Analyst

Date Started 11:10 AM 4/2/2009

Worksheet MRS 04 02 09

Comment

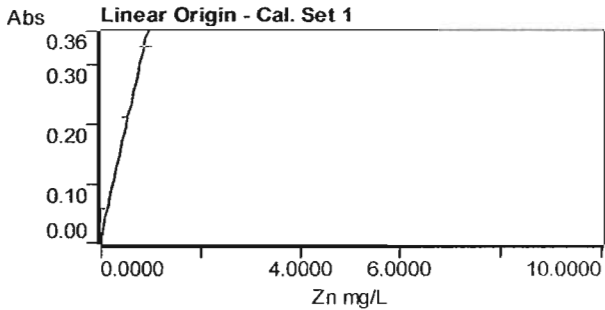
Methods Zn,Ni

Computer name DCKJZMH1

Serial Number: AA0810M067

Method: Zn (Flame)

Sample ID	Conc mg/L	%RSD	Mean Abs	BG Abs		
CAL ZERO	0.0000	5.1	-0.0019	0.0009		
	Readings					
	-0.0019	-0.0020	-0.0018	4/2/2009	11:36:14 AM	
STANDARD 1	0.1000	0.4	0.0565	-0.0024		
	Readings					
	0.0565	0.0563	0.0567	4/2/2009	11:37:00 AM	
STANDARD 2	0.5000	0.4	0.2104	-0.0008		
	Readings					
	0.2101	0.2114	0.2098	4/2/2009	11:37:54 AM	
STANDARD 3	1.0000	0.3	0.3572	-0.0006		
	Readings					
	0.3572	0.3564	0.3582	4/2/2009	11:38:36 AM	



Curve Fit = Linear Origin
 Characteristic Conc = 0.0118 mg/L
 r = 0.9923
 Calculated Conc = -0.0051 0.1521 0.5664 0.9616
 Residuals = 0.0051 -0.0521 -0.0664 0.0384

Abs = 0.37152 x C

MRS St 1	8.8837	0.2	0.3300	0.0004		
	Readings					
	0.3301	0.3307	0.3293	4/2/2009	11:39:16 AM	
MRS Eff	2.2409	0.6	0.0833	0.0000		
	Readings					
	0.0838	0.0829	0.0830	4/2/2009	11:39:50 AM	
High standard	0.9675	0.2	0.3594	0.0006		
	Readings					
	0.3596	0.3602	0.3585	4/2/2009	11:40:26 AM	

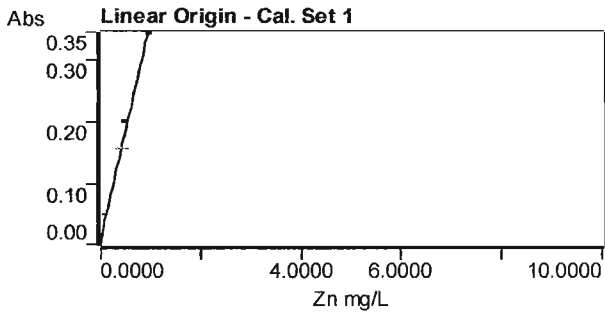
75/10

Analyst

Date Started 12:02 PM 4/6/2009
 Worksheet MRS 04 06 09
 Comment
 Methods Zn,Ni
 Computer name DCKJZMH1
 Serial Number: AA0810M067

Method: Zn (Flame)

Sample ID	Conc mg/L	%RSD	Mean Abs	BG Abs		
CAL ZERO	0.0000	3.4	0.0030	-0.0134		
	Readings					
	0.0029	0.0031	0.0029	4/6/2009	12:14:06 PM	
STANDARD 1	0.1000	4.1	0.0493	0.0023		
	Readings					
	0.0471	0.0498	0.0511	4/6/2009	12:14:42 PM	
STANDARD 2	0.5000	0.2	0.1989	0.0007		
	Readings					
	0.1992	0.1992	0.1984	4/6/2009	12:15:22 PM	
STANDARD 3	1.0000	0.4	0.3418	0.0010		
	Readings					
	0.3416	0.3433	0.3405	4/6/2009	12:16:06 PM	



69%

Curve Fit = Linear Origin
 Characteristic Conc = 0.0124 mg/L
 r = 0.9942
 Calculated Conc = 0.0084 0.1393 0.5618 0.9652
 Residuals = -0.0084 -0.0393 -0.0618 0.0348

Abs = 0.35414 x C

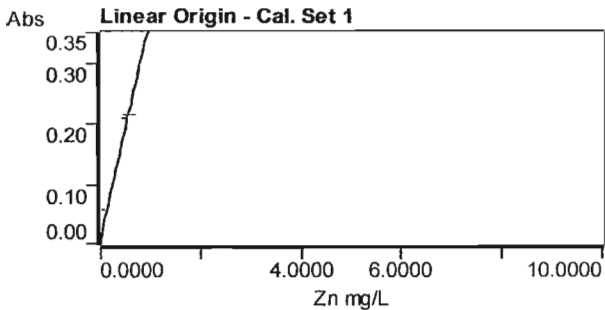
MRS St 1	4.3816	0.9	0.1552	0.0002		
	Readings					
	0.1538	0.1551	0.1566	4/6/2009	12:16:42 PM	
MRS Eff	1.3658	1.5	0.0484	0.0017		
	Readings					
	0.0483	0.0476	0.0491	4/6/2009	12:17:18 PM	
CAL ZERO	0.0000	6.6	0.0029	-0.0117		
	Readings					
	0.0029	0.0028	0.0031	4/6/2009	12:18:10 PM	

Analyst

Date Started 12:20 PM 4/7/2009
 Worksheet MRS 04 07 09
 Comment
 Methods Zn,Ni
 Computer name DCKJZMH1
 Serial Number: AA0810M067

Method: Zn (Flame)

Sample ID	Conc mg/L	%RSD	Mean Abs	BG Abs		
CAL ZERO	0.0000	80.2	-0.0003	0.0053		
	Readings					
	-0.0006	-0.0002	-0.0001		4/7/2009	12:30:34 PM
STANDARD 1	0.1000	0.4	0.0552	0.0030		
	Readings					
	0.0555	0.0552	0.0551		4/7/2009	12:31:02 PM
STANDARD 2	0.5000	0.6	0.2076	0.0075		
	Readings					
	0.2068	0.2090	0.2069		4/7/2009	12:31:40 PM
STANDARD 3	1.0000	0.2	0.3534	0.0110		
	Readings					
	0.3543	0.3527	0.3531		4/7/2009	12:32:18 PM



65%

Curve Fit = Linear Origin
 Characteristic Conc = 0.0120 mg/L
 r = 0.9927
 Calculated Conc = -0.0009 0.1504 0.5652 0.9623
 Residuals = 0.0009 -0.0504 -0.0652 0.0377

Abs = 0.36723 x C

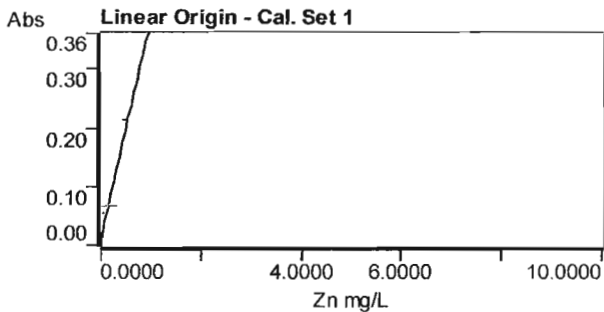
MRS Influent	5.8487	0.4	0.2148	0.0132		
	Readings					
	0.2142	0.2142	0.2159		4/7/2009	12:32:56 PM
MRS Eff	2.0580	0.2	0.0756	0.0134		
	Readings					
	0.0758	0.0754	0.0755		4/7/2009	12:33:32 PM
High standard	0.9626	0.2	0.3535	0.0150		
	Readings					
	0.3532	0.3528	0.3544		4/7/2009	12:34:06 PM

Analyst

Date Started 12:25 PM 4/8/2009
 Worksheet MRS 04 08 09
 Comment
 Methods Zn,Ni
 Computer name DCKJZMH1
 Serial Number: AA0810M067

Method: Zn (Flame)

Sample ID	Conc mg/L	%RSD	Mean Abs	BG Abs		
CAL ZERO	0.0000	>100	0.0002	0.0003		
	Readings					
	0.0001	0.0000	0.0005		4/8/2009	12:32:24 PM
STANDARD 1	0.1000	0.3	0.0552	0.0017		
	Readings					
	0.0552	0.0550	0.0553		4/8/2009	12:32:54 PM
STANDARD 2	0.5000	0.2	0.2134	0.0040		
	Readings					
	0.2139	0.2129	0.2133		4/8/2009	12:33:36 PM
STANDARD 3	1.0000	0.3	0.3619	0.0059		
	Readings					
	0.3607	0.3626	0.3623		4/8/2009	12:34:18 PM



7870

Curve Fit = Linear Origin
 Characteristic Conc = 0.0117 mg/L
 r = 0.9928
 Calculated Conc = 0.0006 0.1467 0.5672 0.9617
 Residuals = -0.0006 -0.0467 -0.0672 0.0383

Abs = 0.37625 x C

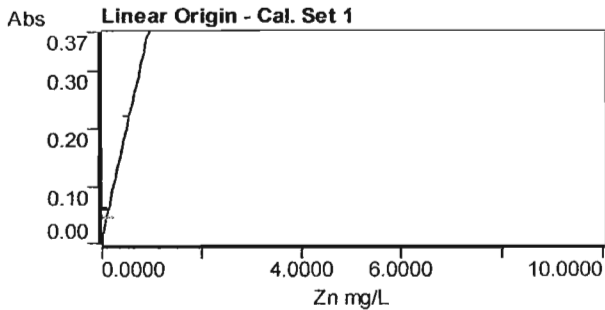
MRS Effluent	1.7410	0.2	0.0655	0.0084		
	Readings					
	0.0654	0.0656	0.0655		4/8/2009	12:34:58 PM
MRS Influent	7.8875	0.2	0.2968	0.0113		
	Readings					
	0.2962	0.2971	0.2970		4/8/2009	12:35:34 PM
High standard	0.9590	0.2	0.3608	0.0141		
	Readings					
	0.3601	0.3617	0.3606		4/8/2009	12:36:14 PM

Analyst

Date Started 12:16 PM 4/9/2009
 Worksheet MRS 04 09 09
 Comment
 Methods Zn,Ni
 Computer name DCKJZMH1
 Serial Number: AA0810M067

Method: Zn (Flame)

Sample ID	Conc mg/L	%RSD	Mean Abs	BG Abs		
CAL ZERO	0.0000	12.3	-0.0008	0.0011		
	Readings					
	-0.0007	-0.0009	-0.0008	4/9/2009	12:20:46 PM	
STANDARD 1	0.1000	0.3	0.0593	0.0002		
	Readings					
	0.0593	0.0591	0.0595	4/9/2009	12:21:16 PM	
STANDARD 2	0.5000	0.6	0.2178	0.0013		
	Readings					
	0.2181	0.2164	0.2189	4/9/2009	12:21:54 PM	
STANDARD 3	1.0000	0.3	0.3664	0.0031		
	Readings					
	0.3668	0.3672	0.3653	4/9/2009	12:22:34 PM	



8270

Curve Fit = Linear Origin
 Characteristic Conc = 0.0115 mg/L
 r = 0.9913
 Calculated Conc = -0.0021 0.1553 0.5703 0.9593
 Residuals = 0.0021 -0.0553 -0.0703 0.0407

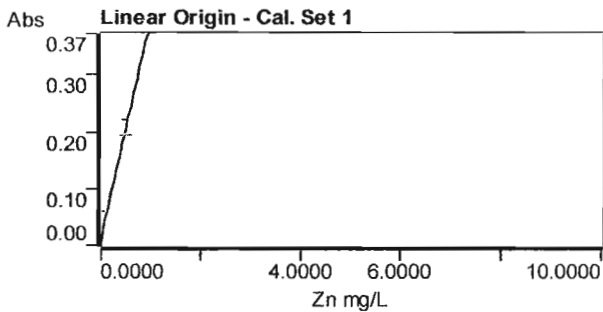
Abs = 0.38194 x C

MRS Effluent	1.2031	1.6	0.0460	0.0048		
	Readings					
	0.0466	0.0460	0.0452	4/9/2009	12:23:16 PM	
MRS Influent	6.8011	0.1	0.2598	0.0090		
	Readings					
	0.2601	0.2599	0.2593	4/9/2009	12:23:56 PM	
High standard	0.9526	0.1	0.3638	0.0118		
	Readings					
	0.3641	0.3639	0.3635	4/9/2009	12:24:32 PM	

Analyst
 Date Started 11:27 AM 4/13/2009
 Worksheet MRS 04 13 09
 Comment
 Methods Zn,Ni
 Computer name DCKJZMH1
 Serial Number: AA0810M067

Method: Zn (Flame)

Sample ID	Conc mg/L	%RSD	Mean Abs	BG Abs		
CAL ZERO	0.0000	>100	0.0000	0.0025		
	Readings					
	0.0003	-0.0002	0.0000		4/13/2009	11:39:26 AM
STANDARD 1	0.1000	0.4	0.0595	0.0016		
	Readings					
	0.0594	0.0593	0.0598		4/13/2009	11:39:54 AM
STANDARD 2	0.5000	0.8	0.2191	0.0049		
	Readings					
	0.2171	0.2204	0.2199		4/13/2009	11:40:30 AM
STANDARD 3	1.0000	0.3	0.3727	0.0071		
	Readings					
	0.3729	0.3737	0.3716		4/13/2009	11:41:04 AM



5370

Curve Fit = Linear Origin
 Characteristic Conc = 0.0114 mg/L
 r = 0.9923
 Calculated Conc = 0.0001 0.1536 0.5655 0.9619
 Residuals = -0.0001 -0.0536 -0.0655 0.0381

Abs = 0.38751 x C

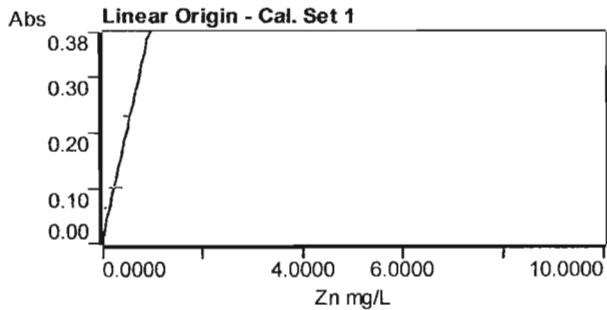
MRS Inf	4.9462	0.1	0.1917	0.0086		
	Readings					
	0.1914	0.1917	0.1918		4/13/2009	11:41:38 AM
MRS Eff	2.3124	0.3	0.0896	0.0097		
	Readings					
	0.0896	0.0899	0.0893		4/13/2009	11:42:08 AM
High standard	0.9567	0.1	0.3707	0.0107		
	Readings					
	0.3706	0.3714	0.3703		4/13/2009	11:42:42 AM

Analyst

Date Started 4:17 PM 4/13/2009
 Worksheet MRS 04 13 09 B
 Comment
 Methods Zn,Ni
 Computer name DCKJZMH1
 Serial Number: AA0810M067

Method: Zn (Flame)

Sample ID	Conc mg/L	%RSD	Mean Abs	BG Abs		
CAL ZERO	0.0000	41.0	-0.0004	0.0008		
	Readings					
	-0.0004	-0.0005	-0.0002		4/13/2009	4:24:36 PM
STANDARD 1	0.1000	0.5	0.0622	0.0012		
	Readings					
	0.0620	0.0626	0.0621		4/13/2009	4:25:10 PM
STANDARD 2	0.5000	0.4	0.2271	0.0033		
	Readings					
	0.2265	0.2267	0.2282		4/13/2009	4:25:52 PM
STANDARD 3	1.0000	0.2	0.3807	0.0067		
	Readings					
	0.3814	0.3804	0.3802		4/13/2009	4:26:32 PM



Curve Fit = Linear Origin
 Characteristic Conc = 0.0111 mg/L
 r = 0.9909
 Calculated Conc = -0.0009 0.1567 0.5718 0.9584
 Residuals = 0.0009 -0.0567 -0.0718 0.0416

Abs = 0.39720 x C

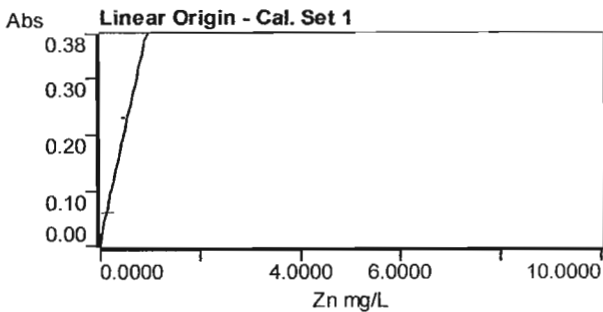
MRS Effluent	2.5164	0.5	0.1000	0.0097		
	Readings					
	0.1005	0.0999	0.0995		4/13/2009	4:27:14 PM
MRS Influent	7.6932	0.7	0.3056	0.0136		
	Readings					
	0.3077	0.3053	0.3037		4/13/2009	4:27:52 PM
High standard	0.9551	0.1	0.3794	0.0172		
	Readings					
	0.3797	0.3796	0.3789		4/13/2009	4:28:30 PM

Analyst

Date Started 11:43 AM 4/14/2009
 Worksheet MRS 04 14 09
 Comment
 Methods Zn,Ni
 Computer name DCKJZMH1
 Serial Number: AA0810M067

Method: Zn (Flame)

Sample ID	Conc mg/L	%RSD	Mean Abs	BG Abs		
CAL ZERO	0.0000	29.7	-0.0006	0.0036		
	Readings					
	-0.0004	-0.0006	-0.0008	4/14/2009	11:55:54 AM	
STANDARD 1	0.1000	0.2	0.0587	0.0002		
	Readings					
	0.0586	0.0586	0.0589	4/14/2009	11:56:22 AM	
STANDARD 2	0.5000	0.1	0.2252	0.0030		
	Readings					
	0.2254	0.2252	0.2250	4/14/2009	11:57:14 AM	
STANDARD 3	1.0000	0.4	0.3782	0.0046		
	Readings					
	0.3771	0.3799	0.3778	4/14/2009	11:57:52 AM	



Curve Fit = Linear Origin
 Characteristic Conc = 0.0112 mg/L
 r = 0.9919
 Calculated Conc = -0.0015 0.1489 0.5713 0.9595
 Residuals = 0.0015 -0.0489 -0.0713 0.0405

Abs = 0.39422 x C

MRS Effluent	1.5371	0.2	0.0606	0.0042		
	Readings					
	0.0607	0.0605	0.0606	4/14/2009	11:58:28 AM	
MRS Influent	8.1654	0.2	0.3219	0.0054		
	Readings					
	0.3224	0.3212	0.3221	4/14/2009	11:59:02 AM	
High standard	0.9659	0.4	0.3808	0.0055		
	Readings					
	0.3793	0.3811	0.3819	4/14/2009	11:59:38 AM	

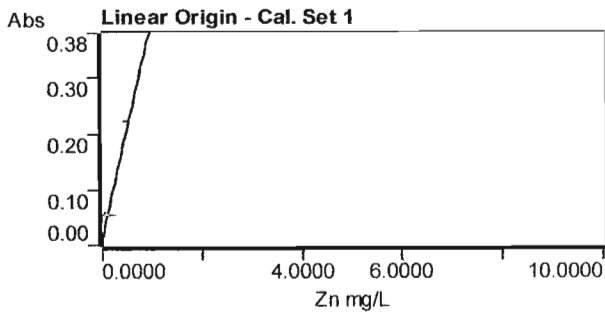
81%

Analyst

Date Started 12:06 PM 4/16/2009
 Worksheet MRS 04 16 09
 Comment
 Methods Zn,Ni
 Computer name DCKJZMH1
 Serial Number: AA0810M067

Method: Zn (Flame)

Sample ID	Conc mg/L	%RSD	Mean Abs	BG Abs		
CAL ZERO	0.0000	>100	0.0000	0.0032		
	Readings					
	-0.0001	0.0002	-0.0002		4/16/2009	12:17:48 PM
STANDARD 1	0.1000	0.8	0.0579	0.0017		
	Readings					
	0.0576	0.0577	0.0585		4/16/2009	12:18:18 PM
STANDARD 2	0.5000	0.4	0.2218	0.0066		
	Readings					
	0.2228	0.2214	0.2211		4/16/2009	12:19:02 PM
STANDARD 3	1.0000	0.1	0.3802	0.0105		
	Readings					
	0.3806	0.3801	0.3800		4/16/2009	12:19:42 PM



Curve Fit = Linear Origin
 Characteristic Conc = 0.0112 mg/L
 r = 0.9935
 Calculated Conc = -0.0001 0.1469 0.5623 0.9641
 Residuals = 0.0001 -0.0469 -0.0623 0.0359

8970

CAL

MRS Effluent

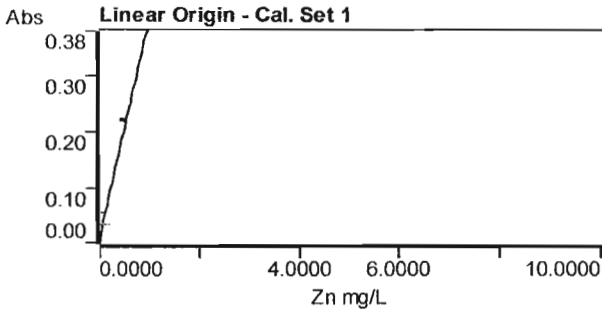
1.3336	0.2	0.0526	0.0114		
Readings					
0.0525	0.0526	0.0527		4/16/2009	12:20:20 PM
<i>CAL</i>					
MRS Influent	12.5448	0.1	0.4947	0.0141	
Readings					
0.4953	0.4947	0.4943		4/16/2009	12:20:56 PM
High standard	0.9687	0.2	0.3820	0.0144	
Readings					
0.3810	0.3824	0.3827		4/16/2009	12:21:34 PM

Abs = 0.39438 x C

Analyst
 Date Started 11:49 AM 4/21/2009
 Worksheet Clar 04 21 09
 Comment
 Methods Zn,Ni
 Computer name DCKJZMH1
 Serial Number: AA0810M067

Method: Zn (Flame)

Sample ID	Conc mg/L	%RSD	Mean Abs	BG Abs		
CAL ZERO	0.0000	12.7	0.0004	0.0009		
	Readings					
	0.0004	0.0005	0.0004		4/21/2009	11:59:30 AM
STANDARD 1	0.1000	0.7	0.0538	0.0011		
	Readings					
	0.0540	0.0541	0.0534		4/21/2009	11:59:58 AM
STANDARD 2	0.5000	0.3	0.2194	0.0038		
	Readings					
	0.2189	0.2190	0.2202		4/21/2009	12:00:38 PM
STANDARD 3	1.0000	0.3	0.3820	0.0059		
	Readings					
	0.3806	0.3823	0.3831		4/21/2009	12:01:14 PM



Curve Fit = Linear Origin
 Characteristic Conc = 0.0112 mg/L
 r = 0.9952
 Calculated Conc = 0.0010 0.1364 0.5561 0.9683
 Residuals = -0.0010 -0.0364 -0.0561 0.0317

9470

Abs = 0.39450 x C

Clarifier Eff	0.8569	1.1	0.0338	0.0066		
	Readings					
	0.0336	0.0342	0.0336		4/21/2009	12:01:52 PM
Clarifier Inf	14.8833	0.1	0.5871	0.0090		
	Readings					
	0.5864	0.5874	0.5875		4/21/2009	12:02:28 PM
SWSP 2	0.8960	0.7	0.0353	0.0093		
	Readings					
	0.0357	0.0352	0.0352		4/21/2009	12:03:10 PM

Analyst

Date Started 10:57 AM 4/30/2009

Worksheet Clar 04 30 09

Comment

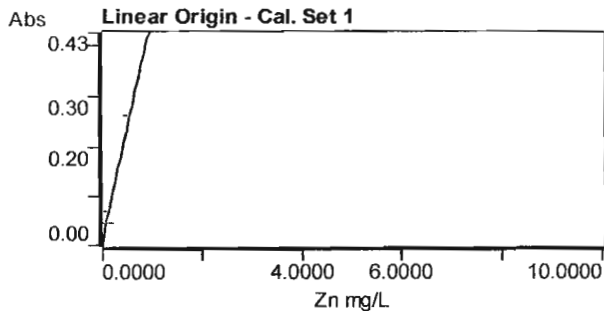
Methods Zn,Ni

Computer name DCKJZMH1

Serial Number: AA0810M067

Method: Zn (Flame)

Sample ID	Conc mg/L	%RSD	Mean Abs	BG Abs		
CAL ZERO	0.0000	23.4	-0.0008	0.0004		
	Readings					
	-0.0007	-0.0006	-0.0010		4/30/2009	11:14:02 AM
STANDARD 1	0.1000	0.2	0.0675	-0.0026		
	Readings					
	0.0677	0.0674	0.0675		4/30/2009	11:14:36 AM
STANDARD 2	0.5000	0.4	0.2580	-0.0006		
	Readings					
	0.2579	0.2590	0.2572		4/30/2009	11:15:18 AM
STANDARD 3	1.0000	0.2	0.4265	0.0003		
	Readings					
	0.4267	0.4255	0.4274		4/30/2009	11:15:58 AM



Curve Fit = Linear Origin
 Characteristic Conc = 0.0099 mg/L
 r = 0.9904
 Calculated Conc = -0.0017 0.1513 0.5782 0.9558
 Residuals = 0.0017 -0.0513 -0.0782 0.0442

92%

Abs = 0.44627 x C

Clarifier Eff	0.1035	1.0	0.0462	0.0009		
	Readings					
	0.0466	0.0462	0.0457		4/30/2009	11:16:34 AM
Clarifier Inf	1.2666	0.1	0.5652	0.0023		
	Readings					
	0.5657	0.5648	0.5652		4/30/2009	11:17:08 AM
High standard	0.9590	0.4	0.4280	0.0025		
	Readings					
	0.4282	0.4295	0.4262		4/30/2009	11:17:50 AM

A. CYANIDE CERTIFICATION (Applicability Pending)

[Reserved]

B. CHECK ONE: §433.11(e) TOXIC ORGANIC ANALYSIS ATTACHED §433.12(a) TTO CERTIFICATION PROVIDED BELOW

Based on my inquiry of the person or persons directly responsible for managing compliance with the pretreatment standard for total toxic organics (TTO), I certify that, to the best of my knowledge and belief, no dumping of concentrated toxic organics into the wastewaters has occurred since filing of the last semi-annual compliance report. I further certify that this facility is implementing the toxic organic management plan submitted to Arkansas Department of Environmental Quality.

DEVIN McSPADDEN, PLANT MANAGER
(Typed Name)

[Signature]
(Corporate Officer or authorized representative)

Date of Signature 6/30/2009

CORPORATE ACKNOWLEDGEMENT (Optional)

STATE OF ARKANSAS)
COUNTY OF _____)

Before me, the undersigned authority, on this day personally appeared _____ of _____,

a corporation, known to me to be the person whose name is subscribed to the foregoing instrument(s), and acknowledged to me that he executed the same for purposes and considerations therein expressed, in the capacity therein stated and as the act and deed of said corporation.

Given under my hand and seal of office on this _____ day of _____, 200__.

Notary Public in and for _____
County, Arkansas

§6602 [42 U.S.C. 13101] Findings and Policy para (b) Policy.—The Congress hereby declares it to be the national policy of the United States that pollution should be prevented or reduced at the source whenever feasible; pollution that cannot be prevented should be recycled in an environmentally safe manner, whenever feasible; pollution that cannot be prevented or recycled should be treated in an environmentally safe manner whenever feasible; and disposal or other release into the environment should be employed only as a last resort and should be conducted in an environmentally safe manner.

The User may list any new or ongoing Pollution Prevention practices:

Plymouth Technology's Metals Removal System (MRS), while being a greener way to process wastewater has been unable to render results consistent with compliance and is not cost effective as a result. We have moved back to using the chemical precipitation method of treatment exclusively. We will continue to work with Plymouth Technology toward the release of a working media that will consistently yield results within compliance parameters. An atomic absorption spectrometer, Varian model AA240FS has been purchased and in use to provide immediate in-house results from our waste treatment system on a daily basis. The AA was put on-line February 2009. Samples are also now sent to an outside lab on a monthly basis as a check against in-house results.

(8) GENERAL COMMENTS

(9) SIGNATORY REQUIREMENTS [40CFR 403.12(f)]

I certify under penalty of law that I have personally examined and am familiar with the information in this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

DEVIN McSpadden
NAME OF CORPORATE OFFICER OR AUTHORIZED REPRESENTATIVE

[Signature]
SIGNATURE

PLANT MANAGER
OFFICIAL TITLE

6/30/2009
DATE SIGNED

(4) FLOW MEASUREMENT

INDIVIDUAL & TOTAL PROCESS FLOWS DISCHARGED TO POTW IN GALLONS PER DAY

Process	Average	Maximum	Type of Discharge
Regulated (Core & Anc)	8,000	12,000	BATCH
Regulated (Cyanide)			
§403.6(e) Unregulated*			
§403.6(e) Dilute			
Cooling Water			
Sanitary	3,000	4,500	CONTINUOUS
Total Flow to POTW	11,000	16,500	*****

*"Unregulated" has a precise legal meaning; see 40CFR403.6(e).

(5) MEASUREMENT OF POLLUTANTS

A. TYPE OF TREATMENT SYSTEM

CHECK EACH APPLICABLE BLOCK

- Neutralization
- Chemical Precipitation and Sedimentation
- Chromium Reduction
- Cyanide Destruction
- Other MRS - PROPRIETARY MEDIA
- None

B. COMMENTS ON TREATMENT SYSTEM

PLYMOUTH TECHNOLOGY
METALS REMOVAL SYSTEM
(MRS)

C. THE INDUSTRIAL USER MUST PERFORM SAMPLING AND ANALYSIS OF THE EFFLUENT FROM ALL REGULATED PROCESSES--CORE & ANCILLARY--(AFTER TREATMENT, IF APPLICABLE). ATTACH THE LAB ANALYSIS WHICH SHOWS A MAXIMUM; TABULATE ALL THE ANALYTICAL DATA COLLECTED DURING THE REPORT PERIOD IN THE SPACE PROVIDED BELOW. ZERO CONCENTRATIONS ARE NOT ACCEPTABLE; LIST THE DETECTION LIMIT IF CONCENTRATION WAS BELOW DETECTION LIMIT.

Nov. 2008

Pollutant(mg/l)	Cd	Cr	Cu	Pb	Ni	Ag	Zn	CN	TTO*
Max for 1 day	0.11	2.77	3.38	0.69	3.98	0.43	2.61	1.20	2.13
Monthly Ave	0.07	1.71	2.07	0.43	2.38	0.24	1.48	0.65	--
Max Measured	<0.005	0.077	0.033	<0.015	0.283	<0.020	1.399	<0.01	
Ave Measured	—	—	—	—	—	—	0.999		

Sample Location MRS EFFLUENT / CHARACTER EFFLUENT

Sample Type (Grab or Composite) GRAB

Number of Samples and Frequency Collected BIWEEKLY (FOR ZINC)

40CFR136 Preservation and Analytical Methods Use: Yes No

(6) CERTIFICATION

Arkansas Testing Laboratories

NPDES Wastewater Monitoring
 Water and Wastewater Analysis
 Concrete, Asphalt, and Aggregate Testing
 Geotechnical Testing
 Industrial and Construction Quality Control

3301 Langley Drive · Searcy, AR 72143 (501) 268-6431 f(501) 268-9314

Defiance Metals

Collection Date / Time: November 5, 2008 1:10 PM

Wastewater Analysis KLB

Parameter	Analysis Begin Date / Time	Analysis End Date / Time	Results	Unit	Loading lb/day	Analyst	% Spike	Rel %	Sample Type	Ref #
Collection Place: MRS EFFLUENT										
Iron	11/25 10:15 AM	NA	0.61	mg/l	NA	BET	97.5	5.94	GRAB	1
Zinc	11/25 10:30 AM	NA	0.040	mg/l	NA	BET	99.7	1.98	GRAB	2
Collection Place: INFLUENT										
Iron	11/25 10:15 AM	NA	9.17	mg/l	NA	BET	97.5	5.94	GRAB	1
Zinc	11/25 10:30 AM	NA	10.960	mg/l	NA	BET	99.7	1.98	GRAB	1

Quality Assurance: All Parameters include 10% duplication studies by random selection. The following equipment is checked and calibrated daily: pH meter, balance, incubators, water baths, drying oven and sterilizing apparatus. Ammonia Nitrogen and Oil & Grease Analysis include duplication and spike studies at a rate of at least 10%.

Notes: Samples iced at collection. Preserved with H₂SO₄ to pH₂; Oil & Grease, Ammonia, COD

References:

Analysis complies with 40 CFR Part 136:

- SM 3111 B



Neville Adams, Manager

Arkansas Testing Laboratories

NPDES Wastewater Monitoring
 Water and Wastewater Analysis
 Concrete, Asphalt, and Aggregate Testing
 Geotechnical Testing
 Industrial and Construction Quality Control

3301 Langley Drive · Searcy, AR 72143 (501) 268-6431 f(501) 268-9314

Defiance Metals

Collection Date / Time: November 6, 2008 10:00 AM

Wastewater Analysis KLB

Parameter	Analysis Begin Date / Time	Analysis End Date / Time	Results	Unit	Loading lb/dy	Analyst	% Spike	Rel %	Sample Type	Ref #
Collection Place: MRS EFFLUENT										
Iron	11/25 10:15 AM	NA	0.91	mg/l	NA	BET	97.5	5.94	GRAB	1
Zinc	11/25 10:30 AM	NA	0.122	mg/l	NA	BET	99.7	1.98	GRAB	2
Collection Place: INFLUENT										
Iron	11/25 10:15 AM	NA	15.89	mg/l	NA	BET	97.5	5.94	GRAB	1
Zinc	11/25 10:30 AM	NA	3.897	mg/l	NA	BET	99.7	1.98	GRAB	1

Quality Assurance: All Parameters include 10% duplication studies by random selection. The following equipment is checked and calibrated daily: pH meter, balance, incubators, water baths, drying oven and sterilizing apparatus. Ammonia Nitrogen and Oil & Grease Analysis include duplication and spike studies at a rate of at least 10%.

Notes: Samples iced at collection. Preserved with H₂SO₄ to pH₂; Oil & Grease, Ammonia, COD

References:

Analysis complies with 40 CFR Part 136:

- SM 3111 B



Neville Adams, Manager

Arkansas Testing Laboratories

NPDES Wastewater Monitoring
 Water and Wastewater Analysis
 Concrete, Asphalt, and Aggregate Testing
 Geotechnical Testing
 Industrial and Construction Quality Control

3301 Langley Drive · Searcy, AR 72143 (501) 268-6431 f(501) 268-9314

Defiance Metals

Collection Date / Time: November 12, 2008 12:15 PM

Wastewater Analysis

KLB

Parameter	Analysis Begin Date / Time	Analysis End Date / Time	Results	Unit	Loading lb/dy	Analyst	% Spike	Rel %	Sample Type	Ref #
Collection Place: MRS EFFLUENT										
Iron	11/25 10:15 AM	NA	3.19	mg/l	NA	BET	97.5	5.94	GRAB	1
Zinc	11/25 10:30 AM	NA	1.399	mg/l	NA	BET	99.7	1.98	GRAB	2
Collection Place: INFLUENT										
Iron	11/25 10:15 AM	NA	6.41	mg/l	NA	BET	97.5	5.94	GRAB	1
Zinc	11/25 10:30 AM	NA	5.656	mg/l	NA	BET	99.7	1.98	GRAB	1

Quality Assurance: All Parameters include 10% duplication studies by random selection. The following equipment is checked and calibrated daily: pH meter, balance, incubators, water baths, drying oven and sterilizing apparatus. Ammonia Nitrogen and Oil & Grease Analysis include duplication and spike studies at a rate of at least 10%.

Notes: Samples iced at collection. Preserved with H₂SO₄ to pH₂; Oil & Grease, Ammonia, COD

References:

Analysis complies with 40 CFR Part 136:

1. SM 3111 B



Neville Adams, Manager

Arkansas Testing Laboratories

NPDES Wastewater Monitoring
Water and Wastewater Analysis
Concrete, Asphalt, and Aggregate Testing
Geotechnical Testing
Industrial and Construction Quality Control

3301 Langley Drive · Searcy, AR 72143 (501) 268-6431 f(501) 268-9314

Defiance Metals

Collection Date / Time: November 13, 2008 11:15 AM

Wastewater Analysis KLB

Parameter	Analysis Begin Date / Time	Analysis End Date / Time	Results	Unit	Loading lb/dy	Analyst	% Spike	Rel %	Sample Type	Ref #
Collection Place: MRS EFFLUENT										
Iron	11/25 10:15 AM	NA	3.12	mg/l	NA	BET	97.5	5.94	GRAB	1
Zinc	11/25 10:30 AM	NA	1.059	mg/l	NA	BET	99.7	1.98	GRAB	2
Collection Place: INFLUENT										
Iron	11/25 10:15 AM	NA	8.56	mg/l	NA	BET	97.5	5.94	GRAB	1
Zinc	11/25 10:30 AM	NA	4.060	mg/l	NA	BET	99.7	1.98	GRAB	1

Quality Assurance: All Parameters include 10% duplication studies by random selection. The following equipment is checked and calibrated daily: pH meter, balance, incubators, water baths, drying oven and sterilizing apparatus. Ammonia Nitrogen and Oil & Grease Analysis include duplication and spike studies at a rate of at least 10%.

Notes: Samples iced at collection. Preserved with H₂SO₄ to pH₂: Oil & Grease, Ammonia, COD

References:

Analysis complies with 40 CFR Part 136:

1. SM 3111 B


Neville Adams, Manager

Arkansas Testing Laboratories

204 E Lincoln
Searcy, AR 72143
Off 501-268-6431
Fax 501-268-9314

*NPDES Wastewater Monitoring
*Water and Wastewater Analysis
*Concrete, Asphalt, and Aggregate Testing
*Geotechnical Testing
*Industrial and Construction Quality Control

CHAIN OF CUSTODY / ANALYSIS REQUEST FORM

CLIENT: DEFIANCE METALS		SAMPLE ID	SAMPLE MATRIX	SAMPLED BY: <i>TIM BARTLEY</i>			PARAMETERS										
				DATE	TIME	GRAB	PRESERVATIVES										
EFF	INF	CLAR	POND	BACKWASH	CLAR.	EFF	11-12-08	12:15pm	X						1-125ml-P		
					CLAR. INF	EFF	11-12-08	12:15pm	X						1-125ml-P		
					CLAR. INF	EFF	11-13-08	11:15AM	X						1-125ml-P		
					CLAR. EFF	EFF	11-13-08	11:15AM	X						1-125ml-P		
# = number of bottles							4			Q, L, H = Quart, Liter, Half Gallon				P, G = Plastic, Glass			
Relinquished by:				<i>DS</i>												Date/Time	
Relinquished by:																	Date/Time
																	11-14-08 7:00 am

Arkansas Testing Laboratories

3301 Langley Drive · Searcy, AR 72143 (501) 268-6431 f(501) 268-9314

NPDES Wastewater Monitoring
 Water and Wastewater Analysis
 Concrete, Asphalt, and Aggregate Testing
 Geotechnical Testing
 Industrial and Construction Quality Control

Defiance Metals

Collection Date / Time: November 17, 2008 12:25 PM

Wastewater Analysis

KLB

Parameter	Analysis Begin Date / Time	Analysis End Date / Time	Results	Unit	Loading lb/dy	Analyst	% Spike	Rel %	Sample Type	Ref #
Collection Place: CLARIFIER EFFLUENT										
Iron	11/25 10:15 AM	NA	3.49	mg/l	NA	BET	97.5	5.94	GRAB	1
Zinc	11/25 10:30 AM	NA	1.553	mg/l	NA	BET	99.7	1.98	GRAB	2
Collection Place: CLARIFIER INFLUENT										
Iron	11/25 10:15 AM	NA	2.08	mg/l	NA	BET	97.5	5.94	GRAB	1
Zinc	11/25 10:30 AM	NA	3.905	mg/l	NA	BET	99.7	1.98	GRAB	1

Quality Assurance: All Parameters include 10% duplication studies by random selection. The following equipment is checked and calibrated daily: pH meter, balance, incubators, water baths, drying oven and sterilizing apparatus. Ammonia Nitrogen and Oil & Grease Analysis include duplication and spike studies at a rate of at least 10%.

Notes: Samples iced at collection. Preserved with H₂SO₄ to pH₂; Oil & Grease, Ammonia, COD

References:

- Analysis complies with 40 CFR Part 136:
 1. SM 3111 B



Neville Adams, Manager

Arkansas Testing Laboratories

NPDES Wastewater Monitoring
 Water and Wastewater Analysis
 Concrete, Asphalt, and Aggregate Testing
 Geotechnical Testing
 Industrial and Construction Quality Control

3301 Langley Drive · Searcy, AR 72143 (501) 268-6431 f(501) 268-9314

Defiance Metals

Collection Date / Time: November 19, 2008 12:30 PM

Wastewater Analysis KLB

Parameter	Analysis Begin Date / Time	Analysis End Date / Time	Results	Unit	Loading lb/dy	Analyst	% Spike	Rel %	Sample Type	Ref #
Collection Place: CLARIFIER EFFLUENT										
Iron	11/25 10:15 AM	NA	3.49	mg/l	NA	BET	97.5	5.94	GRAB	1
Zinc	11/25 10:30 AM	NA	1.821	mg/l	NA	BET	99.7	1.98	GRAB	2
Collection Place: CLARIFIER INFULENT										
Iron	11/25 10:15 AM	NA	6.72	mg/l	NA	BET	97.5	5.94	GRAB	1
Zinc	11/25 10:30 AM	NA	5.141	mg/l	NA	BET	99.7	1.98	GRAB	1

Quality Assurance: All Parameters include 10% duplication studies by random selection. The following equipment is checked and calibrated daily: pH meter, balance, incubators, water baths, drying oven and sterilizing apparatus. Ammonia Nitrogen and Oil & Grease Analysis include duplication and spike studies at a rate of at least 10%.

Notes: Samples iced at collection. Preserved with H₂SO₄ to pH₂: Oil & Grease, Ammonia, COD

References:

- Analysis complies with 40 CFR Part 136:
 1. SM 3111 B

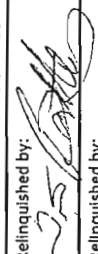


 Neville Adams, Manager

Arkansas Testing Laboratories

204 E Lincoln
 Searcy, AR 72143
 Off 501-268-6431
 Fax 501-268-9314

*NPDES Wastewater Monitoring
 *Water and Wastewater Analysis
 *Concrete, Asphalt, and Aggregate Testing
 *Geotechnical Testing
 *Industrial and Construction Quality Control

CHAIN OF CUSTODY / ANALYSIS REQUEST FORM

CLIENT: DEFIANCE METALS					PARAMETERS			
SAMPLE ID	SAMPLE MATRIX	SAMPLED BY: <u>TIM BARTLEY</u>	DATE	TIME	GRAB	PRESERVATIVES		
							HNO3	ZINC
CLAR. INF.	W	11-17-08	12:25p		X			1-125ml-P
CLAR. INF.	W	11-17-08	12:25p		X			1-125ml-P
CLAR. INF.	W	11-19-08	12:30p		X			1-125ml-P
CLAR. EFF.	W	11-19-08	12:30p		X			1-125ml-P
# = number of bottles	4	Q, L, H = Quart, Liter, Half Gallon						P, G = Plastic, Glass
Relinquished by:		Date/Time	11-21-08	7:00A.M.				Received by:
Relinquished by:		Date/Time	11-21-08	7:00A.M.				Received by:
		Date/Time						11-21-08 7:00A.M.

(4) FLOW MEASUREMENT

INDIVIDUAL & TOTAL PROCESS FLOWS DISCHARGED TO POTW IN GALLONS PER DAY

Process	Average	Maximum	Type of Discharge
Regulated (Core & Anc)	8,000	12,000	BATCH
Regulated (Cyanide)			
§403.6(e) Unregulated*			
§403.6(e) Dilute			
Cooling Water			
Sanitary	3,000	4,500	CONTINUOUS
Total Flow to POTW	11,000	16,500	*****

*"Unregulated" has a precise legal meaning; see 40CFR403.6(e).

(5) MEASUREMENT OF POLLUTANTS

A. TYPE OF TREATMENT SYSTEM

CHECK EACH APPLICABLE BLOCK

- Neutralization
- Chemical Precipitation and Sedimentation
- Chromium Reduction
- Cyanide Destruction
- Other MRS - PROPRIETARY MEDIA
- None

B. COMMENTS ON TREATMENT SYSTEM

PLYMOUTH TECHNOLOGY
METALS REMOVAL SYSTEM
(MRS)

C. THE INDUSTRIAL USER MUST PERFORM SAMPLING AND ANALYSIS OF THE EFFLUENT FROM ALL REGULATED PROCESSES--CORE & ANCILLARY--(AFTER TREATMENT, IF APPLICABLE). ATTACH THE LAB ANALYSIS WHICH SHOWS A MAXIMUM; TABULATE ALL THE ANALYTICAL DATA COLLECTED DURING THE REPORT PERIOD IN THE SPACE PROVIDED BELOW. ZERO CONCENTRATIONS ARE NOT ACCEPTABLE; LIST THE DETECTION LIMIT IF CONCENTRATION WAS BELOW DETECTION LIMIT. Dec. 2008

Pollutant(mg/l)	Cd	Cr	Cu	Pb	Ni	Ag	Zn	CN	TTO*
Max for 1 day	0.11	2.77	3.38	0.69	3.98	0.43	2.61	1.20	2.13
Monthly Ave	0.07	1.71	2.07	0.43	2.38	0.24	1.48	0.65	--
Max Measured	<u><0.005</u>	<u>0.073</u>	<u>0.033</u>	<u><0.015</u>	<u>0.283</u>	<u><0.020</u>	<u>2.570</u>	<u><0.01</u>	
Ave Measured	—	—	—	—	—	—	<u>1.953</u>		

Sample Location MRS EFFLUENT / CHLORIDE EFFLUENT

Sample Type (Grab or Composite) GRAB

Number of Samples and Frequency Collected BIDWEEKLY (FOR ZINC)

40CFR136 Preservation and Analytical Methods Use: Yes No

(6) CERTIFICATION

Arkansas Testing Laboratories

3301 Langley Drive · Searcy, AR 72143 (501) 268-6431 f(501) 268-9314

NPDES Wastewater Monitoring
 Water and Wastewater Analysis
 Concrete, Asphalt, and Aggregate Testing
 Geotechnical Testing
 Industrial and Construction Quality Control

Defiance Metals

Collection Date / Time: December 9, 2008 12:50 PM

Wastewater Analysis KLB

Parameter	Analysis Begin Date / Time	Analysis End Date / Time	Results	Unit	Loading lb/dy	Analyst	% Spike	Rel %	Sample Type	Ref #
Collection Place: CLARIFIER EFFLUENT										
Iron	01/05 3:00 PM	NA	2.08	mg/l	NA	BET	97.8	3.02	GRAB	1
Zinc	01/05 3:30 PM	NA	2.570	mg/l	NA	BET	106.6	0.93	GRAB	2
Collection Place: CLARIFIER INFLUENT										
Iron	01/05 3:00 PM	NA	1.74	mg/l	NA	BET	97.8	3.02	GRAB	1
Zinc	01/05 3:30 PM	NA	4.550	mg/l	NA	BET	106.6	0.93	GRAB	1

Quality Assurance: All Parameters include 10% duplication studies by random selection. The following equipment is checked and calibrated daily: pH meter, balance, incubators, water baths, drying oven and sterilizing apparatus. Ammonia Nitrogen and Oil & Grease Analysis include duplication and spike studies at a rate of at least 10%.

Notes: Samples iced at collection. Preserved with H₂SO₄ to pH₂; Oil & Grease, Ammonia, COD

References:

Analysis complies with 40 CFR Part 136:

1. SM 3111 B



Nevine Adams, Manager

Arkansas Testing Laboratories

3301 Langley Drive · Searcy, AR 72143 (501) 268-6431 f(501) 268-9314

NPDES Wastewater Monitoring
 Water and Wastewater Analysis
 Concrete, Asphalt, and Aggregate Testing
 Geotechnical Testing
 Industrial and Construction Quality Control

Defiance Metals

Collection Date / Time: December 11, 2008 12:25 PM

Wastewater Analysis KLB

Parameter	Analysis Begin Date / Time	Analysis End Date / Time	Results	Unit	Loading lb/dy	Analyst	% Spike	Rel %	Sample Type	Ref #
Collection Place: CLARIFIER EFFLUENT										
Iron	01/05 3:00 PM	NA	1.67	mg/l	NA	BET	97.8	3.02	GRAB	1
Zinc	01/05 3:30 PM	NA	2.110	mg/l	NA	BET	106.6	0.93	GRAB	2
Collection Place: CLARIFIER INFLUENT										
Iron	01/05 3:00 PM	NA	0.50	mg/l	NA	BET	97.8	3.02	GRAB	1
Zinc	01/05 3:30 PM	NA	5.080	mg/l	NA	BET	106.6	0.93	GRAB	1

Quality Assurance: All Parameters include 10% duplication studies by random selection. The following equipment is checked and calibrated daily: pH meter, balance, incubators, water baths, drying oven and sterilizing apparatus. Ammonia Nitrogen and Oil & Grease Analysis include duplication and spike studies at a rate of at least 10%.

Notes: Samples iced at collection. Preserved with H₂SO₄ to pH₂. Oil & Grease, Ammonia, COD

References:

Analysis complies with 40 CFR Part 136:

- SM 3111 B



Nevine Adams, Manager

Arkansas Testing Laboratories

3301 Langley Drive · Searcy, AR 72143 (501) 268-6431 f(501) 268-9314

NPDES Wastewater Monitoring
 Water and Wastewater Analysis
 Concrete, Asphalt, and Aggregate Testing
 Geotechnical Testing
 Industrial and Construction Quality Control

Defiance Metals

Collection Date / Time: December 15, 2008 10:00 AM

Wastewater Analysis KLB

Parameter	Analysis Begin Date / Time	Analysis End Date / Time	Results	Unit	Loading lb/dv	Analyst	% Spike	Rel %	Sample Type	Ref #
Collection Place: CLARIFIER EFFLUENT										
Iron	01/05 3:00 PM	NA	1.12	mg/l	NA	BET	97.8	3.02	GRAB	1
Zinc	01/05 3:30 PM	NA	1.180	mg/l	NA	BET	106.6	0.93	GRAB	2
Collection Place: CLARIFIER INFILTRANT										
Iron	01/05 3:00 PM	NA	4.02	mg/l	NA	BET	97.8	3.02	GRAB	1
Zinc	01/05 3:30 PM	NA	3.660	mg/l	NA	BET	106.6	0.93	GRAB	1

Quality Assurance: All Parameters include 10% duplication studies by random selection. The following equipment is checked and calibrated daily: pH meter, balance, incubators, water baths, drying oven and sterilizing apparatus. Ammonia Nitrogen and Oil & Grease Analysis include duplication and spike studies at a rate of at least 10%.

Notes: Samples iced at collection. Preserved with H₂SO₄ to pH₂; Oil & Grease, Ammonia, COD

References:

Analysis complies with 40 CFR Part 136:

1. SM 3111 B



Neville Adams, Manager

(4) FLOW MEASUREMENT

INDIVIDUAL & TOTAL PROCESS FLOWS DISCHARGED TO POTW IN GALLONS PER DAY

Process	Average	Maximum	Type of Discharge
Regulated (Core & Anc)	8,000	12,000	BATCH
Regulated (Cyanide)			
§403.6(e) Unregulated*			
§403.6(e) Dilute			
Cooling Water			
Sanitary	3,000	4,500	CONTINUOUS
Total Flow to POTW	11,000	16,500	*****

*"Unregulated" has a precise legal meaning; see 40CFR403.6(e).

(5) MEASUREMENT OF POLLUTANTS

A. TYPE OF TREATMENT SYSTEM

CHECK EACH APPLICABLE BLOCK

- Neutralization
- Chemical Precipitation and Sedimentation
- Chromium Reduction
- Cyanide Destruction
- Other MRS - PROPRIETARY MEDIA
- None

B. COMMENTS ON TREATMENT SYSTEM

PLYMOUTH TECHNOLOGY
METALS REMOVAL SYSTEM
(MRS)

C. THE INDUSTRIAL USER MUST PERFORM SAMPLING AND ANALYSIS OF THE EFFLUENT FROM ALL REGULATED PROCESSES--CORE & ANCILLARY--(AFTER TREATMENT, IF APPLICABLE). ATTACH THE LAB ANALYSIS WHICH SHOWS A MAXIMUM; TABULATE ALL THE ANALYTICAL DATA COLLECTED DURING THE REPORT PERIOD IN THE SPACE PROVIDED BELOW. ZERO CONCENTRATIONS ARE NOT ACCEPTABLE; LIST THE DETECTION LIMIT IF CONCENTRATION WAS BELOW DETECTION LIMIT.

JAN. 2009

Pollutant(mg/l)	Cd	Cr	Cu	Pb	Ni	Ag	Zn	CN	TTO*
Max for 1 day	0.11	2.77	3.38	0.69	3.98	0.43	2.61	1.20	2.13
Monthly Ave	0.07	1.71	2.07	0.43	2.38	0.24	1.48	0.65	--
Max Measured	<0.005	0.077	0.033	<0.015	0.283	<0.020	1.551	<0.01	
Ave Measured	—	—	—	—	—	—	1.246		

Sample Location MRS EFFLUENT / CLARIFIER EFFLUENT

Sample Type (Grab or Composite) GRAB

Number of Samples and Frequency Collected BIWEEKLY (FOR ZINC)

40CFR136 Preservation and Analytical Methods Use: Yes No

(6) CERTIFICATION

Arkansas Testing Laboratories

3301 Langley Drive · Searcy, AR 72143 (501) 268-6431 f(501) 268-9314

NPDES Wastewater Monitoring
 Water and Wastewater Analysis
 Concrete, Asphalt, and Aggregate Testing
 Geotechnical Testing
 Industrial and Construction Quality Control

Defiance Metals

Collection Date / Time: January 16, 2009 12:00 PM

Wastewater Analysis KLB

Parameter	Analysis Begin Date / Time	Analysis End Date / Time	Results	Unit	Loading lb/dy	Analyst	% Spike	Rel %	Sample Type	Ref #
Collection Place: CLARIFIER EFFLUENT										
Zinc	02/02 2:30 PM	NA	1.551	mg/l	NA	BET	99.1	2.99	GRAB	1
Collection Place: CLARIFIER INFLUENT										
Zinc	02/02 2:30 PM	NA	5.343	mg/l	NA	BET	99.1	2.99	GRAB	1

Quality Assurance: All Parameters include 10% duplication studies by random selection. The following equipment is checked and calibrated daily: pH meter, balance, incubators, water baths, drying oven and sterilizing apparatus. Ammonia Nitrogen and Oil & Grease Analysis include duplication and spike studies at a rate of at least 10%.

Notes: Samples iced at collection. Preserved with H₂SO₄ to pH₂: Oil & Grease, Ammonia, COD

References:

Analysis complies with 40 CFR Part 136:

1. SM 3111 B



Neville Adams, Manager

Arkansas Testing Laboratories

3301 Langley Drive · Searcy, AR 72143 (501) 268-6431 f(501) 268-9314

NPDES Wastewater Monitoring
Water and Wastewater Analysis
Concrete, Asphalt, and Aggregate Testing
Geotechnical Testing
Industrial and Construction Quality Control

Defiance Metals

Collection Date / Time: January 23, 2009 11:45 AM

Wastewater Analysis KLB

Parameter	Analysis Begin Date / Time	Analysis End Date / Time	Results	Unit	Loading lb/dy	Analyst	% Spike	Rel %	Sample Type	Ref #
Collection Place: CLARIFIER EFFLUENT										
Zinc	02/02 2:30 PM	NA	1.339	mg/l	NA	BET	99.1	2.99	GRAB	1
Collection Place: CLARIFIER INFLUENT										
Zinc	02/02 2:30 PM	NA	16.263	mg/l	NA	BET	99.1	2.99	GRAB	1

Quality Assurance: All Parameters include 10% duplication studies by random selection. The following equipment is checked and calibrated daily: pH meter, balance, incubators, water baths, drying oven and sterilizing apparatus. Ammonia Nitrogen and Oil & Grease Analysis include duplication and spike studies at a rate of at least 10%.

Notes: Samples iced at collection. Preserved with H₂SO₄ to pH₂; Oil & Grease, Ammonia, COD

References:

Analysis complies with 40 CFR Part 136:

1. SM 3111 B



Neville Adams, Manager

Arkansas Testing Laboratories

3301 Langley Drive · Searcy, AR 72143 (501) 268-6431 f(501) 268-9314

NPDES Wastewater Monitoring
 Water and Wastewater Analysis
 Concrete, Asphalt, and Aggregate Testing
 Geotechnical Testing
 Industrial and Construction Quality Control

Defiance Metals

Collection Date / Time: January 29, 2009 12:45 PM

Wastewater Analysis KLB

Parameter	Analysis Begin Date / Time	Analysis End Date / Time	Results	Unit	Loading lb/dy	Analyst	% Spike	Rel %	Sample Type	Ref #
Collection Place: CLARIFIER EFFLUENT										
Zinc	02/02 2:30 PM	NA	0.850	mg/l	NA	BET	99.1	2.99	GRAB	1
Collection Place: CLARIFIER INFLUENT										
Zinc	02/02 2:30 PM	NA	9.749	mg/l	NA	BET	99.1	2.99	GRAB	1

Quality Assurance: All Parameters include 10% duplication studies by random selection. The following equipment is checked and calibrated daily: pH meter, balance, incubators, water baths, drying oven and sterilizing apparatus. Ammonia Nitrogen and Oil & Grease Analysis include duplication and spike studies at a rate of at least 10%.

Notes: Samples iced at collection. Preserved with H₂SO₄ to pH₂; Oil & Grease, Ammonia, COD

References:

- Analysis complies with 40 CFR Part 136:
- 1. SM 3111 B



Nevine Adams, Manager

(4) FLOW MEASUREMENT

INDIVIDUAL & TOTAL PROCESS FLOWS DISCHARGED TO POTW IN GALLONS PER DAY

Process	Average	Maximum	Type of Discharge
Regulated (Core & Anc)	8,000	12,000	BATCH
Regulated (Cyanide)			
§403.6(e) Unregulated*			
§403.6(e) Dilute			
Cooling Water			
Sanitary	3,000	4,500	CONTINUOUS
Total Flow to POTW	11,000	16,500	*****

*"Unregulated" has a precise legal meaning; see 40CFR403.6(e).

(5) MEASUREMENT OF POLLUTANTS

A. TYPE OF TREATMENT SYSTEM

CHECK EACH APPLICABLE BLOCK

- Neutralization
- Chemical Precipitation and Sedimentation
- Chromium Reduction
- Cyanide Destruction
- Other MRS - PROPRIETARY MEDIA
- None

B. COMMENTS ON TREATMENT SYSTEM

PLYMOUTH TECHNOLOGY
METALS REMOVAL SYSTEM
(MRS)

C. THE INDUSTRIAL USER MUST PERFORM SAMPLING AND ANALYSIS OF THE EFFLUENT FROM ALL REGULATED PROCESSES--CORE & ANCILLARY--(AFTER TREATMENT, IF APPLICABLE). ATTACH THE LAB ANALYSIS WHICH SHOWS A MAXIMUM; TABULATE ALL THE ANALYTICAL DATA COLLECTED DURING THE REPORT PERIOD IN THE SPACE PROVIDED BELOW. ZERO CONCENTRATIONS ARE NOT ACCEPTABLE; LIST THE DETECTION LIMIT IF CONCENTRATION WAS BELOW DETECTION LIMIT.

Feb. 2009

Pollutant(mg/l)	Cd	Cr	Cu	Pb	Ni	Ag	Zn	CN	TTO*
Max for 1 day	0.11	2.77	3.38	0.69	3.98	0.43	2.61	1.20	2.13
Monthly Ave	0.07	1.71	2.07	0.43	2.38	0.24	1.48	0.65	--
Max Measured	<u><0.005</u>	<u>0.077</u>	<u>0.033</u>	<u><0.015</u>	<u>0.283</u>	<u><0.020</u>	<u>0.668</u>	<u><0.01</u>	
Ave Measured	—	—	—	—	—	—	<u>0.545</u>		

Sample Location: MRS EFFLUENT / CLARIFIER EFFLUENT

Sample Type (Grab or Composite): GRAB

Number of Samples and Frequency Collected: BIWEEKLY (FOR ZINC)

40CFR136 Preservation and Analytical Methods Use: Yes No

(6) CERTIFICATION

Arkansas Testing Laboratories

3301 Langley Drive · Searcy, AR 72143

(501) 268-6431 f(501) 268-9314

NPDES Wastewater Monitoring
 Water and Wastewater Analysis
 Concrete, Asphalt, and Aggregate Testing
 Geotechnical Testing
 Industrial and Construction Quality Control

Defiance Metals

Collection Date / Time: February 12, 2009 12:30 PM

Wastewater Analysis

KLB

Parameter	Analysis Begin Date / Time	Analysis End Date / Time	Results	Unit	Loading lb/dy	Analyst	% Spike	Rel %	Sample Type	Ref #
Collection Place: CLARIFIER EFFLUENT										
Zinc	02/16 9:00 AM	NA	0.422	mg/l	NA	BET	99.1	2.99	GRAB	1
Collection Place: CLARIFIER INFLUENT										
Zinc	02/16 9:00 AM	NA	1.778	mg/l	NA	BET	99.1	2.99	GRAB	1

Quality Assurance: All Parameters include 10% duplication studies by random selection. The following equipment is checked and calibrated daily: pH meter, balance, incubators, water baths, drying oven and sterilizing apparatus. Ammonia Nitrogen and Oil & Grease Analysis include duplication and spike studies at a rate of at least 10%.

Notes: Samples iced at collection. Preserved with H₂SO₄ to pH₂; Oil & Grease, Ammonia, COD

References:

- Analysis complies with 40 CFR Part 136:*
 1. SM 3111 B





Neville Adams, Manager

Arkansas Testing Laboratories

204 E Lincoln
Searcy, AR 72143
Off 501-268-6431
Fax 501-268-9314

- *NPDES Wastewater Monitoring
- *Water and Wastewater Analysis
- *Concrete, Asphalt, and Aggregate Testing
- *Geotechnical Testing
- *Industrial and Construction Quality Control

CHAIN OF CUSTODY / ANALYSIS REQUEST FORM

CLIENT: DEFIANCE METALS		PARAMETERS							
SAMPLE ID	SAMPLE MATRIX	SAMPLED BY: <i>TIM BARTLEY</i>	DATE	TIME	GRAB	PRESERVATIVES		ZINC	HNO3
						1-125ml-P	1-125ml-P		
EFF	W	2-12-09	12:30P		X				
CLAR	W	2-12-09	12:30P		X				
POND									
BACKWASH									
EFF									
# = number of bottles	2	Q, L, H = Quart, Liter, Half Gallon							P, G = Plastic, Glass
Relinquished by: 		Date/Time: 2-13-09							Date/Time: 7:00AM
Relinquished by: 		Date/Time: 2-13-09							Date/Time: 7:00AM

Arkansas Testing Laboratories

NPDES Wastewater Monitoring
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Concrete, Asphalt, and Aggregate Testing
Geotechnical Testing
Industrial and Construction Quality Control

3301 Langley Drive - Searcy, AR 72143 (501) 268-6431 f(501) 268-9314

Defiance Metals

Collection Date / Time: February 18, 2009 11:55 AM

Wastewater Analysis KLB

Parameter	Analysis Begin Date / Time	Analysis End Date / Time	Results	Unit	Loading lb/dy	Analyst	% Spike	Rel %	Sample Type	Ref #
Collection Place: CLARIFIER EFFLUENT										
Zinc	02/25 11:00 AM	NA	0.668	mg/l	NA	BET	98.5	1.02	GRAB	1
Collection Place: CLARIFIER INFLUENT										
Zinc	02/25 11:00 AM	NA	5.784	mg/l	NA	BET	98.5	1.02	GRAB	1

Quality Assurance: All Parameters include 10% duplication studies by random selection. The following equipment is checked and calibrated daily: pH meter, balance, incubators, water baths, drying oven and sterilizing apparatus. Ammonia Nitrogen and Oil & Grease Analysis include duplication and spike studies at a rate of at least 10%.

Notes: Samples iced at collection. Preserved with H₂SO₄ to pH₂; Oil & Grease, Ammonia, COD

References:

Analysis complies with 40 CFR Part 136:

1. SM 3111 B


Neville Adams, Manager

Arkansas Testing Laboratories

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- *NPDES Wastewater Monitoring
- *Water and Wastewater Analysis
- *Concrete, Asphalt, and Aggregate Testing
- *Geotechnical Testing
- *Industrial and Construction Quality Control

CHAIN OF CUSTODY / ANALYSIS REQUEST FORM

CLIENT: DEFIANCE METALS				PARAMETERS			
SAMPLE ID	SAMPLE MATRIX	SAMPLED BY: <i>TIM BARTLEY</i>	DATE	TIME	GRAB	PRESERVATIVES	
						HNO3	ZINC
CLAR EFF	W	2-18-09	11:55A	X		1-125ml-P	
CLAR INF	W	2-18-09	11:55A	X		1-125ml-F	
# = number of bottles	2	Q, L, H = Quart, Liter, Half Gallon	P, G = Plastic, Glass				
Relinquished by: <i>[Signature]</i>	Date/Time 2-20-09 7:00am	Received by: <i>[Signature]</i>	Date/Time 2-20-09 7:00am				
Relinquished by:		Received by:					

(4) FLOW MEASUREMENT

INDIVIDUAL & TOTAL PROCESS FLOWS DISCHARGED TO POTW IN GALLONS PER DAY

Process	Average	Maximum	Type of Discharge
Regulated (Core & Anc)	8,000	12,000	BATCH
Regulated (Cyanide)			
§403.6(e) Unregulated*			
§403.6(e) Dilute			
Cooling Water			
Sanitary	3,000	4,500	CONTINUOUS
Total Flow to POTW	11,000	16,500	*****

*"Unregulated" has a precise legal meaning; see 40CFR403.6(e).

(5) MEASUREMENT OF POLLUTANTS

A. TYPE OF TREATMENT SYSTEM

CHECK EACH APPLICABLE BLOCK

- Neutralization
- Chemical Precipitation and Sedimentation
- Chromium Reduction
- Cyanide Destruction
- Other MRS -- PROPRIETARY MEDIA
- None

B. COMMENTS ON TREATMENT SYSTEM

PLYMOUTH TECHNOLOGY
METALS REMOVAL SYSTEM
(MRS)

C. THE INDUSTRIAL USER MUST PERFORM SAMPLING AND ANALYSIS OF THE EFFLUENT FROM ALL REGULATED PROCESSES--CORE & ANCILLARY--(AFTER TREATMENT, IF APPLICABLE). ATTACH THE LAB ANALYSIS WHICH SHOWS A MAXIMUM; TABULATE ALL THE ANALYTICAL DATA COLLECTED DURING THE REPORT PERIOD IN THE SPACE PROVIDED BELOW. ZERO CONCENTRATIONS ARE NOT ACCEPTABLE; LIST THE DETECTION LIMIT IF CONCENTRATION WAS BELOW DETECTION LIMIT.

MAR. 2009

Pollutant(mg/l)	Cd	Cr	Cu	Pb	Ni	Ag	Zn	CN	TTO*
Max for 1 day	0.11	2.77	3.38	0.69	3.98	0.43	2.61	1.20	2.13
Monthly Ave	0.07	1.71	2.07	0.43	2.38	0.24	1.48	0.65	--
Max Measured	<0.005	0.077	0.033	<0.015	0.283	<0.010	3.463	<0.01	
Ave Measured	--	--	--	--	--	--	1.178		

Sample Location MRS EFFLUENT / CLARIFIER EFFLUENT

Sample Type (Grab or Composite) GRAB

Number of Samples and Frequency Collected BIWEEKLY (FOR ZINC)

40CFR136 Preservation and Analytical Methods Use: Yes No

(6) CERTIFICATION

Arkansas Testing Laboratories

3301 Langley Drive · Searcy, AR 72143 (501) 268-6431 f(501) 268-9314

NPDES Wastewater Monitoring
Water and Wastewater Analysis
Concrete, Asphalt, and Aggregate Testing
Geotechnical Testing
Industrial and Construction Quality Control

Defiance Metals

Collection Date / Time: March 3, 2009 9:40 AM

Wastewater Analysis

Parameter	Analysis Begin Date / Time	Analysis End Date / Time	Results	Unit	Loading lb/dy	Analyst	% Spike	Rel %	Sample Type	Ref #
Collection Place: CLARIFIER EFFLUENT										
Zinc	03/23 11:30 AM	NA	1.581	mg/l	NA	BET	101.9	0.53	GRAB	1
Collection Place: CLARIFIER INFLENT										
Zinc	03/23 11:30 AM	NA	7.795	mg/l	NA	BET	101.9	0.53	GRAB	1

Quality Assurance: All Parameters include 10% duplication studies by random selection. The following equipment is checked and calibrated daily: pH meter, balance, incubators, water baths, drying oven and sterilizing apparatus. Ammonia Nitrogen and Oil & Grease Analysis include duplication and spike studies at a rate of at least 10%.

Notes: Samples iced at collection. Preserved with H₂SO₄ to pH₂; Oil & Grease, Ammonia, COD

References:

Analysis complies with 40 CFR Part 136:

1. SM 3111 B


Neville Adams, Manager

Arkansas Testing Laboratories

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NPDES Wastewater Monitoring
Water and Wastewater Analysis
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Industrial and Construction Quality Control

Defiance Metals

Collection Date / Time: March 5, 2009 10:30 AM

Wastewater Analysis

Parameter	Analysis Begin Date / Time	Analysis End Date / Time	Results	Unit	Loading lb/dy	Analyst	% Spike	Rel %	Sample Type	Ref #	KLB
Collection Place: CLARIFIER EFFLUENT											
Zinc	03/23 11:30 AM	NA	3.463	mg/l	NA	BET	101.9	0.53	GRAB	1	
Collection Place: CLARIFIER INFLUENT											
Zinc	03/23 11:30 AM	NA	6.341	mg/l	NA	BET	101.9	0.53	GRAB	1	

Quality Assurance: All Parameters include 10% duplication studies by random selection. The following equipment is checked and calibrated daily: pH meter, balance, incubators, water baths, drying oven and sterilizing apparatus. Ammonia Nitrogen and Oil & Grease Analysis include duplication and spike studies at a rate of at least 10%.

Notes: Samples iced at collection. Preserved with H₂SO₄ to pH₂; Oil & Grease, Ammonia, COD

References:

Analysis complies with 40 CFR Part 136:

1. SM 3111 B





Neville Adams, Manager

Arkansas Testing Laboratories

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 Off 501-268-6431
 Fax 501-268-9314

- *NPDES Wastewater Monitoring
- *Water and Wastewater Analysis
- *Concrete, Asphalt, and Aggregate Testing
- *Geotechnical Testing
- *Industrial and Construction Quality Control

CHAIN OF CUSTODY / ANALYSIS REQUEST FORM

CLIENT: DEFIANCE METALS		SAMPLED BY: JIM BARTLEY				PARAMETERS				
SAMPLE ID	SAMPLE MATRIX	DATE	TIME	GRAB	HN03	ZINC	PRESERVATIVES			
CLAR EFF	W	3-3-09	9:40A	X		1-125ml-P				TZLP (RCRA METALS)
CLAR INF	W	3-3-09	9:40A	X		1-125ml-P				
CLAR EFF	W	3-5-09	10:30A	X		1-125ml-P				
CLAR INF	W	3-5-09	10:30A	X		1-125ml-P				
FILTER PRESS	S	3-6-09	6:55A	X						1-1000ml-P
# = number of bottles 5 Q, L, H = Quart, Liter, Half Gallon P, G = Plastic, Glass										
Relinquished by:		Date/Time		Date/Time		Date/Time		Date/Time		
		3-6-09		7:00A		3-6-09		7:00 am		
Relinquished by:		Date/Time		Date/Time		Date/Time		Date/Time		
						3-6-09		7:00 am		

Arkansas Testing Laboratories

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Defiance Metals

Collection Date / Time: March 11, 2009 10:40 AM

Wastewater Analysis

Parameter	Analysis Begin Date / Time	Analysis End Date / Time	Results	Unit	Loading lb/dy	Analyst	% Spike	Rel %	Sample Type	Ref #
Collection Place: CLARIFIER EFFLUENT										
Zinc	03/23 11:30 AM	NA	2.406	mg/l	NA	BET	101.9	0.53	GRAB	1
Collection Place: CLARIFIER INFLUENT										
Zinc	03/23 11:30 AM	NA	8.853	mg/l	NA	BET	101.9	0.53	GRAB	1

Quality Assurance: All Parameters include 10% duplication studies by random selection. The following equipment is checked and calibrated daily: pH meter, balance, incubators, water baths, drying oven and sterilizing apparatus. Ammonia Nitrogen and Oil & Grease Analysis include duplication and spike studies at a rate of at least 10%.

Notes: Samples iced at collection. Preserved with H₂SO₄ to pH₂: Oil & Grease, Ammonia, COD

References:
 Analysis complies with 40 CFR Part 136:
 1. SM 3111 B


 Neville Adams, Manager

Arkansas Testing Laboratories

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NPDES Wastewater Monitoring
 Water and Wastewater Analysis
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 Industrial and Construction Quality Control

Defiance Metals

Collection Date / Time: March 12, 2009 11:30 AM

Wastewater Analysis

Parameter	Analysis Begin Date / Time	Analysis End Date / Time	Results	Unit	Loading lb/dy	Analyst	% Spike	Rel %	Sample Type	Ref #	KLB
Collection Place: CLARIFIER EFFLUENT											
Zinc	03/23 11:30 AM	NA	1.195	mg/l	NA	BET	101.9	0.53	GRAB	1	
Collection Place: CLARIFIER INFLUENT											
Zinc	03/23 11:30 AM	NA	9.778	mg/l	NA	BET	101.9	0.53	GRAB	1	

Quality Assurance: All Parameters include 10% duplication studies by random selection. The following equipment is checked and calibrated daily: pH meter, balance, incubators, water baths, drying oven and sterilizing apparatus. Ammonia Nitrogen and Oil & Grease Analysis include duplication and spike studies at a rate of at least 10%.

Notes: Samples iced at collection. Preserved with H₂SO₄ to pH₂; Oil & Grease, Ammonia, COD

References:

- Analysis complies with 40 CFR Part 136:
- 1. SM 3111 B



Neville Adams, Manager

Arkansas Testing Laboratories

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NPDES Wastewater Monitoring
 Water and Wastewater Analysis
 Concrete, Asphalt, and Aggregate Testing
 Geotechnical Testing
 Industrial and Construction Quality Control

Defiance Metals

Collection Date / Time: March 17, 2009 11:20 AM

Wastewater Analysis

Parameter	Analysis Begin Date / Time	Analysis End Date / Time	Results	Unit	Loading lb/dy	Analyst	% Spike	Rel %	Sample Type	Ref #
Collection Place: CLARIFIER EFFLUENT										
Zinc	03/23 11:30 AM	NA	1.554	mg/l	NA	BET	101.9	0.53	GRAB	1
Collection Place: CLARIFIER INFLUENT										
Zinc	03/23 11:30 AM	NA	8.985	mg/l	NA	BET	101.9	0.53	GRAB	1

Quality Assurance: All Parameters include 10% duplication studies by random selection. The following equipment is checked and calibrated daily: pH meter, balance, incubators, water baths, drying oven and sterilizing apparatus. Ammonia Nitrogen and Oil & Grease Analysis include duplication and spike studies at a rate of at least 10%.

Notes: Samples iced at collection. Preserved with H₂SO₄ to pH₂; Oil & Grease, Ammonia, COD

References:
 Analysis complies with 40 CFR Part 136:
 1. SM 3111 B



Neville Adams, Manager

Arkansas Testing Laboratories

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NPDES Wastewater Monitoring
 Water and Wastewater Analysis
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 Industrial and Construction Quality Control

Defiance Metals

Collection Date / Time: March 18, 2009 11:45 AM

Wastewater Analysis

Parameter	Analysis Begin Date / Time	Analysis End Date / Time	Results	Unit	Loading lb/day	Analyst	% Spike	Rel %	Sample Type	Ref #	KLB
Collection Place: CLARIFIER EFFLUENT											
Zinc	03/23 11:30 AM	NA	0.920	mg/l	NA	BET	101.9	0.53	GRAB	1	
Collection Place: CLARIFIER INFLUENT											
Zinc	03/23 11:30 AM	NA	3.829	mg/l	NA	BET	101.9	0.53	GRAB	1	

Quality Assurance: All Parameters include 10% duplication studies by random selection. The following equipment is checked and calibrated daily: pH meter, balance, incubators, water baths, drying oven and sterilizing apparatus. Ammonia Nitrogen and Oil & Grease Analysis include duplication and spike studies at a rate of at least 10%.

Notes: Samples iced at collection. Preserved with H₂SO₄ to pH₂; Oil & Grease, Ammonia, COD

References:

- Analysis complies with 40 CFR Part 136:
 1. SM 3111 B



Neville Adams, Manager

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NPDES Wastewater Monitoring
 Water and Wastewater Analysis
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 Industrial and Construction Quality Control

Defiance Metals

Collection Date / Time: March 25, 2009 11:20 AM

Wastewater Analysis

Parameter	Analysis Begin Date / Time	Analysis End Date / Time	Results	Unit	Loading lb/dy	Analyst	% Spike	Rel %	Sample Type	Ref #	KLB
Collection Place: CLARIFIER EFFLUENT											
Zinc	04/03 3:00 PM	NA	0.731	mg/l	NA	BET	104.8	0.00	GRAB	1	
Collection Place: CLARIFIER INFLUENT											
Zinc	04/03 3:00 PM	NA	6.583	mg/l	NA	BET	104.8	0.00	GRAB	1	

Quality Assurance: All Parameters include 10% duplication studies by random selection. The following equipment is checked and calibrated daily: pH meter, balance, incubators, water baths, drying oven and sterilizing apparatus. Ammonia Nitrogen and Oil & Grease Analysis include duplication and spike studies at a rate of at least 10%.

Notes: Samples iced at collection. Preserved with H₂SO₄ to pH₂; Oil & Grease, Ammonia, COD

References:

Analysis complies with 40 CFR Part 136:

1. SM 3111 B



Neville Adams, Manager

Arkansas Testing Laboratories

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NPDES Wastewater Monitoring
 Water and Wastewater Analysis
 Concrete, Asphalt, and Aggregate Testing
 Geotechnical Testing
 Industrial and Construction Quality Control

Defiance Metals

Collection Date / Time: March 26, 2009

11:20 AM

Wastewater Analysis

Parameter	Analysis Begin Date / Time	Analysis End Date / Time	Results	Unit	Loading lb/dy	Analyst	% Spike	Rel %	Sample Type	Ref #	KLB
Collection Place: CLARIFIER EFFLUENT											
Zinc	04/03 3:00 PM	NA	0.931	mg/l	NA	BET	104.8	0.00	GRAB	1	
Collection Place: CLARIFIER INFLUENT											
Zinc	04/03 3:00 PM	NA	7.752	mg/l	NA	BET	104.8	0.00	GRAB	1	

Quality Assurance: All Parameters include 10% duplication studies by random selection. The following equipment is checked and calibrated daily: pH meter, balance, incubators, water baths, drying oven and sterilizing apparatus. Ammonia Nitrogen and Oil & Grease Analysis include duplication and spike studies at a rate of at least 10%.

Notes: Samples iced at collection. Preserved with H₂SO₄ to pH₂; Oil & Grease, Ammonia, COD

References:

- Analysis complies with 40 CFR Part 136:
- 1. SM 3111 B



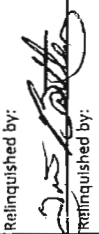
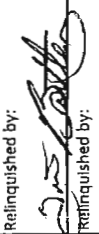
Neville Adams, Manager

Arkansas Testing Laboratories

204 E Lincoln
 Searcy, AR 72143
 Off 501-268-6431
 Fax 501-268-9314

- *NPDES Wastewater Monitoring
- *Water and Wastewater Analysis
- *Concrete, Asphalt, and Aggregate Testing
- *Geotechnical Testing
- *Industrial and Construction Quality Control

CHAIN OF CUSTODY / ANALYSIS REQUEST FORM

CLIENT: DEFIANCE METALS		PARAMETERS				PRESERVATIVES		
SAMPLE ID	SAMPLE MATRIX	SAMPLED BY:	DATE	TIME	GRAB	HNO3	ZINC	
MRS EFF	W	TIM BAETLEY	3-25-09	11:20A	X		1-125ml-P	
MRS INF	W		3-25-09	11:20A	X		1-125ml-P	
MRS INF	W		3-26-09	11:20A	X		1-125ml-P	
MRS EFF	W		3-26-09	11:20A	X		1-125ml-P	
FILTER PRESS	S		3-27-09	5:10A	X		1-100ml-P	
# = number of bottles	5	Q, L, H = Quart, Liter, Half Gallon						
Relinquished by:		Date/Time	3-27-09	7:00am				
Relinquished by:		Date/Time						

P, G = Plastic, Glass

Received by:

Date/Time

Received by:

Date/Time

Arkansas Testing Laboratories

NPDES Wastewater Monitoring
 Water and Wastewater Analysis
 Concrete, Asphalt, and Aggregate Testing
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3301 Langley Drive · Searcy, AR 72143 (501) 268-6431 f(501) 268-9314

Defiance Metals

Collection Date / Time: April 2, 2009 11:00 AM

Wastewater Analysis

Parameter	Analysis Begin Date / Time	Analysis End Date / Time	Results	Unit	Loading lb/dy	Analyst	% Spike	Rel %	Sample Type	Ref #	KLB
Collection Place: CLARIFIER EFFLUENT											
Iron	05/04 9:15 AM	NA	3.29	mg/l	NA	BET	98.3	0.00	GRAB	1	
Zinc	05/04 9:00 AM	NA	1.571	mg/l	NA	BET	98.9	1.02	GRAB	1	
Collection Place: CLARIFIER INFILUENT											
Iron	05/04 9:15 AM	NA	1.98	mg/l	NA	BET	98.3	0.00	GRAB	1	
Zinc	05/04 9:00 AM	NA	6.116	mg/l	NA	BET	98.9	1.02	GRAB	1	

Quality Assurance: All Parameters include 10% duplication studies by random selection. The following equipment is checked and calibrated daily: pH meter, balance, incubators, water baths, drying oven and sterilizing apparatus. Ammonia Nitrogen and Oil & Grease Analysis include duplication and spike studies at a rate of at least 10%.

Notes: Samples iced at collection. Preserved with H₂SO₄ to pH₂; Oil & Grease, Ammonia, COD

References:

Analysis complies with 40 CFR Part 136:

1. SM 3111 B



Neville Adams, Manager

Arkansas Testing Laboratories

3301 Langley Drive · Searcy, AR 72143 (501) 268-6431 f(501) 268-9314

NPDES Wastewater Monitoring
 Water and Wastewater Analysis
 Concrete, Asphalt, and Aggregate Testing
 Geotechnical Testing
 Industrial and Construction Quality Control

Defiance Metals

Collection Date / Time: April 8, 2009 11:30 AM

Wastewater Analysis

Parameter	Analysis Begin Date / Time	Analysis End Date / Time	Results	Unit	Loading lb/dy	Analyst	% Spike	Rel %	Sample Type	Ref #	KLB
Collection Place: CLARIFIER EFFLUENT											
Iron	05/04 9:15 AM	NA	0.51	mg/l	NA	BET	98.3	0.00	GRAB	1	
Zinc	05/04 9:00 AM	NA	1.325	mg/l	NA	BET	98.9	1.02	GRAB	1	
Collection Place: CLARIFIER INFLEUENT											
Iron	05/04 9:15 AM	NA	2.24	mg/l	NA	BET	98.3	0.00	GRAB	1	
Zinc	05/04 9:00 AM	NA	3.212	mg/l	NA	BET	98.9	1.02	GRAB	1	

Quality Assurance: All Parameters include 10% duplication studies by random selection. The following equipment is checked and calibrated daily: pH meter, balance, incubators, water baths, drying oven and sterilizing apparatus. Ammonia Nitrogen and Oil & Grease Analysis include duplication and spike studies at a rate of at least 10%.

Notes: Samples iced at collection. Preserved with H₂SO₄ to pH₂; Oil & Grease, Ammonia, COD

References:

- Analysis complies with 40 CFR Part 136:
- 1. SM 3111 B


 Neville Adams, Manager

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204 E Lincoln
 Searcy, AR 72143
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*NPDES Wastewater Monitoring
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CHAIN OF CUSTODY / ANALYSIS REQUEST FORM

CLIENT:		DEFIANCE METALS				PARAMETERS			
SAMPLE ID	SAMPLE MATRIX	SAMPLED BY:	DATE	TIME	GRAB	PRESERVATIVES			
	W=H2O S=SLUDGE D=SOIL C=WELL	<i>Tom Bartley</i>				HNO3			
MPS EFF	W		4-2-09	11:00A	X	ZINC RDN			
MPS INF	W		4-2-09	11:00A	X	1-125ml-P			
MPS EFF	W		4-8-09	11:30A	X	1-125ml-P			
MPS INF	W		4-8-09	11:30A	X	1-125ml-P			
# = number of bottles			4			P, G = Plastic, Glass			
Relinquished by:						Date/Time			
<i>[Signature]</i>			4-9-09	700		Date/Time			
Relinquished by:						Date/Time			
<i>[Signature]</i>			4-9-09	700		Date/Time			

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NPDES Wastewater Monitoring
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Defiance Metals

Collection Date / Time: April 15, 2009 11:00 AM

Wastewater Analysis

Parameter	Analysis Begin Date / Time	Analysis End Date / Time	Results	Unit	Loading lb/dy	Analyst	% Spike	Rel %	Sample Type	Ref #	KLB
Collection Place: CLARIFIER EFFLUENT											
Iron	05/04 9:15 AM	NA	0.98	mg/l	NA	BET	98.3	0.00	GRAB	1	
Zinc	05/04 9:00 AM	NA	0.250	mg/l	NA	BET	98.9	1.02	GRAB	1	
Collection Place: CLARIFIER INFLUENT											
Iron	05/04 9:15 AM	NA	1.25	mg/l	NA	BET	98.3	0.00	GRAB	1	
Zinc	05/04 9:00 AM	NA	5.253	mg/l	NA	BET	98.9	1.02	GRAB	1	

Quality Assurance: All Parameters include 10% duplication studies by random selection. The following equipment is checked and calibrated daily: pH meter, balance, incubators, water baths, drying oven and sterilizing apparatus. Ammonia Nitrogen and Oil & Grease Analysis include duplication and spike studies at a rate of at least 10%.

Notes: Samples iced at collection. Preserved with H₂SO₄ to pH₂; Oil & Grease, Ammonia, COD

References:

Analysis complies with 40 CFR Part 136:

1. SM 3111 B



Neville Adams, Manager

