



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

*Hand delivered
11/10/08
by Bob Taylor
AFB
Civ response to emails
denoting IU's
violations*

November 8, 2008

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

Attn: Mr. Allen Gilliam

Re: Semi Annual Reporting

Dear Mr. Gilliam

Attached you will find results of Defiance Metal Products (DMP) waste water effluent testing for the period represented from the end of May 2008 through November 2008. We have been experiencing compliance issues with the MRS effluent for zinc. DMP and Plymouth have been investigating this issue and it has been determined that 1) our cleaner baths have a excessive amount of chealants and 2) the bottom of our storage tanks had accumulated a large amount of iron/zinc. Corrective actions have taken place as identified in section 8 of our filing. We've been using our chemical precipitation (conventional method) since this has occurred.

Upon your review, you will find attached to our filing a summary of events since detection of our non compliant zinc effluent results, a summary of all testing taken place and a drawing with attached legend of our system. Should you 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,

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

NPDES PERMIT FILE
NPDES # AR00082381
AFIN # 12-00029
Permit PN
 Correspondence
 Technical Backup
5/6/09 Date Scanned

SEMI-ANNUAL REPORT FOR INDUSTRIAL USERS REGULATED BY 40CFR433

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

Attn: Water Div/NPDES Pretreatment

(B) IDENTIFYING INFORMATION

<p>A. LEGAL NAME & MAILING ADDRESS</p> <p style="margin-left: 20px;"><i>Defiance Metal Products</i> <i>944 Bypass Rd.</i> <i>Heber Springs, Ar. 72543</i></p>	<p>B. FACILITY & LOCATION ADDRESS</p> <p style="margin-left: 20px;"><i>Defiance Metal Products</i> <i>944 Bypass Rd.</i> <i>Heber Springs, Ar. 72543</i></p>
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C. FACILITY CONTACT: *Tim Bartlew* TELEPHONE NUMBER: *501-362-1919 #5297*

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

<p>A. MONTHS WHICH REPORTS ARE DUE</p> <p style="margin-left: 20px;"><i>November & May</i></p>	<p>B. PERIOD COVERED BY THIS REPORT</p> <p style="margin-left: 20px;">FROM: <i>May 08</i> TO: <i>November 08</i></p>
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(3) DESCRIPTION OF OPERATION

<p>A. REGULATED PROCESSES</p> <p style="margin-left: 20px;"><u>CORE PROCESS(ES)</u></p> <p style="margin-left: 20px;">CHECK EACH APPLICABLE BLOCK</p> <ul style="list-style-type: none"> <input type="checkbox"/> Electroplating <input type="checkbox"/> Electroless Plating <input type="checkbox"/> Anodizing <input checked="" type="checkbox"/> Coating <input type="checkbox"/> Chemical Etching and Milling <input type="checkbox"/> Printed Circuit Board Manufacture <p style="margin-left: 20px;"><u>ANCILLARY PROCESS(ES)*</u></p> <p style="margin-left: 20px;">LIST BELOW EACH PROCESS USED IN THE FACILITY</p> <p style="margin-left: 20px;"><i>Cleaning</i></p> <hr style="margin-left: 20px;"/> <hr style="margin-left: 20px;"/> <hr style="margin-left: 20px;"/> <hr style="margin-left: 20px;"/> <hr style="margin-left: 20px;"/>	<p>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.</p>
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*SEE 40CFR433.10(a) FOR 40 DIFFERENT OPERATIONS

<p>C. Number of Regular Employees at this Facility <i>265</i></p>	<p>D. [Reserved]</p>
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(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.

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	0.0001	<0.007	0.071	<0.001	0.33	<0.0002	5.755	<0.01	
Ave Measured	—	—	—	—	—	—	2.326	—	

Sample Location MRS effluent / Clarifier effluent

Sample Type (Grab or Composite) Grab

Number of Samples and Frequency Collected 1 Bi Weekly

40CFR136 Preservation and Analytical Methods Use: Yes No

1 Bi Weekly for Zinc Only

(6) CERTIFICATION

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
(Typed Name)

[Signature]
(Corporate Officer or authorized representative)

Date of Signature 11-8-08

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:

(8) GENERAL COMMENTS

Defiance Metal Products (DMP) has experienced compliance issues with the MRS effluent results for zinc. DMP and Plymouth has investigated the root cause and has determined that; 1) our waste water storage tanks had accumulated sludge at the bottom of all three primary holding tanks containing high levels of iron/zinc, Corrective Action – all three tanks power washed and vacuumed clean and tank cleaning put on a maintenance PM. 2) our cleaner baths contain aggressive amounts of chealants, Corrective Action – bleed concentrates containing chealants into MRS at 1.5 to 2.0 gallons/minute and increase overflows and to look into a non-chealant cleaner, 3) Atomic Absorption tester purchased to obtain rapid results, MRS effluent will be held until acceptable results obtained, 4) System re-plumbed to be able to process water with clarifier then through MRS or vs versa.

(9) SIGNATORY REQUIREMENTS [40CFR403.12(I)]

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.

Devon McSpadden

NAME OF CORPORATE OFFICER OR AUTHORIZED REPRESENTATIVE

Devon McSpadden

SIGNATURE

Plant Manager

OFFICIAL TITLE

11/8/08

DATE SIGNED

5/6/2008 Received semi-annual waste water effluent results for zinc (Ana Lab - 3.88mg/L)
Actions: Backwash all three MRS stages several times, sample and retest.

5/23/2008 Received retest results for waste water effluent for zinc (Ana Lab - 3.88mg/L)
Actions: Re-bed all three stages with new media, process for a day, sample and retest.

5/30/2008 Received retest results for waste water effluent for zinc (AR Testing Lab 2.7mg/L)
Actions: MRS taken off line until an investigation is conducted to determine root cause of out of compliance zinc results

5/30/2008 Process waste water using metal precipitation (clarifier) method.

6/2/2008 Met with ADEQ, hand carried semi-annual report and discussed out of compliance zinc effluent results and our action plan (conduct an investigation and continue to process using clarifier until a root cause is identified and corrective actions implemented.

6/4/2008 Ordered YSI Model 9300 photometer to replace Hach DR890 for in-house testing

6/5/2008 Plymouth on site to evaluate MRS performance and sample media

6/10/2008 Plymouth on site to conduct comparison testing using identical Hach meters
Results obtain off both meters were practically the same

6/11/2008 Plymouth on site to conduct additional comparison testing with both Hach meters
Media sample results received indicated media fouling has occurred
Actions: Backwash all three stages several times to expose media sites

6/12/2008 Sample taken from clarifier effluent.

6/16/2008 MRS started up and samples taken. Several backwashing of all stages on going.

6/20/2008 Results received from AR Testing Lab (ATL) on clarifier zinc effluent .947mg/L and on MRS effluent 1.612mg/L
Actions: Plymouth recommendation to continue backwashing and to meter in all concentrates at a rate of 5 gallons/minute and to increase system over flows up to 10 gallons/minute.

6/24/2008 Samples taken from MRS effluent

6/26/2008 Samples taken from MRS effluent

7/1/2008 Samples taken from MRS effluent

7/2/2008 Samples taken from MRS effluent

7/3/2008 Results received from MRS effluent (6/24 & 6/26) and found to be out of compliance
ATL = 5.198mg/L & 5.755mg/L respectively
Actions: MRS taken off line

7/7/2008 Results received from MRS effluent (7/1 & 7/2) and found to be out of compliance
 ATL = 3.642mg/L & 4.235mg/L
 Actions: None taken MRS taken off line 7/3/08

7/8/2008 Continued to process waste water using metals precipitation (clarifier) while
 thru Plymouth and DMP continue to investigate root cause of non-compliance
 7/21/2008 Influent and effluent backwash plumbing changed out from 1.5 inch to 2.0 inch
 Clarifier effluent results on Zinc Concentrations table

7/22/2008 Plymouth on site to continue investigation. Corrective actions identified by Plymouth
 1) eliminate all chelants from our system, 2) meter in all concentrates at no more
 than 2 gallons/minute, 3) Evaluate flat bottom storage tank maintenance,
 4) evaluate which waste streams can be sent down drain (test first), 5) new media
 installed in MRS, start up postponed until some action items completed

7/23/2008 Continued to process waste water using metals precipitation (clarifier)
 thru Completed installation of flow restrictors, changed out old floats in feed tank
 9/9/2008 Continued sampling for Plymouth to determine removal rates and performance
 Clarifier effluent results on Zinc Concentrations table

9/10/2008 Plymouth on site for continued investigation and sampling. Backwashed all stages
 several times. Over all system operations appear good

9/11/2008 MRS put back on line, concentrates metered in and over flows increased
 Samples taken

9/11/2008 Continued to process using the MRS and to sample and test
 thru Continued to backwash all stages
 10/23/2008 Results on Zinc Concentration table

10/22/2008 Contracted PMI to clean out bottom of three primary storage tanks, sludge build up
 possibly contributing to media performance

10/25/2008 New media installed in all three MRS stages

10/28/2008 MRS effluent sampled and sent off to Plymouth

10/29/2008 Results received from Plymouth showing 3.55mg/L
 MRS taken off line and clarifier started up

11/4/2008 Clarifier effluent samples taken

11/7/2008 Clarifier effluent results received from ATL = 0.30mg/L

ZINC CONCENTRATIONS

Sample Date	Sample Time	MRS Effluent Daily Max.	Clarifier Effluent Daily Max.	Monthly AVG.
6/12/2008	7:35am	0	0.947	
6/16/2008	9:10am-9:50am	1.612	0	
6/24/2008	11:40am-1:00pm	<u>5.198</u>	0	
6/26/2008	9:00am-11:55am	<u>5.755</u>	0	<u>3.378</u>
7/1/2008	11:20am-1:55pm	<u>3.642</u>	0	
7/2/2008	11:20am-1:20pm	<u>4.235</u>	0	
7/8/2008	11:30am-1:45pm	0	0.385	
7/10/2008	10:00am-12:30pm	0	1.278	
7/14/2008	10:30am-12:30pm	0	0.265	
7/16/2008	11:25am-1:40pm	0	0.375	
7/24/2008	9:00am	0	1.408	
7/28/2008	12:35pm	0	1.018	
7/30/2008	10:00am	0	0.074	1.409
8/5/2008	10:10am	0	0.626	
8/7/2008	11:45am	0	1.212	
8/11/2008	11:15am	0	1.258	
8/13/2008	12:35pm	0	1.227	
8/18/2008	12:20pm	0	1.600	
8/19/2008	12:40pm	0	2.500	
8/26/2008	8:18am	0	1.800	
8/27/2008	1:45pm	0	2.500	<u>1.59</u>

Sample Date	Sample Time	MRS Effluent Daily Max.	Clarifier Effluent Daily Max.	Monthly AVG.
9/3/2008	1:38pm	0	2.200	
9/4/2008	12:15pm	0	1.700	
9/9/2008	10:30am	0	1.180	
9/11/2008	12:30pm	<u>5.440</u>	0	
9/17/2008	11:30am	<u>2.320</u>	0	
9/18/2008	1:50pm	<u>3.330</u>	0	
9/24/2008	11:40am	<u>1.770</u>	0	
9/25/2008	1:10pm	<u>3.338</u>	0	<u>2.665</u>
10/1/2008	10:15am	<u>0.248</u>	0	
10/2/2008	7:10am	<u>1.502</u>	0	
10/7/2008	9:30am	<u>2.199</u>	0	
10/8/2008	10:00am	<u>1.257</u>	0	
10/14/2008	10:00am	<u>2.631</u>	0	
10/16/2008	12:00pm	<u>4.629</u>	0	
10/21/2008	11:40am	<u>3.46</u>	0	
10/23/2008	11:50am	<u>4.79</u>	0	<u>2.59</u>
11/4/2008	11:00am	0	0.3	

OUT OF COMPLIANCE RESULTS

Arkansas Testing Laboratories

204 E. Lincoln Ave · 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

Zinc Analysis

Location	Collected		Analyzed		ZINC Results	Unit	Analyst	Spike %	BET
	Date	Time	Date	Time					Rel %
EFF - MRS	06/16	9:10 AM	06/20	4:30 PM	1.612	mg/l	BET	99.5	1.01
EFF - Clarifier	06/12	7:35 AM	06/20	4:30 PM	0.947	mg/l	BET	99.5	1.01

Notes: Test method used - SM 3111B


Neville Adams, Manager

Arkansas Testing Laboratories

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

- *NPDES Wastewater Monitoring
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- *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:	DATE	TIME	GRAB	RESIDUALS	PRESERVATIVES										
EFF	W=H2O S=SLUDGE D=SOIL C=WELL	Tim BARTLEY					HNO3	ZINC									
EFF MRS	W	6-16-08	9:10A	9:50A	X			1-125ml-P									
EFF Clarifier	W	6-12-08	7:35A			X		1-125ml-P									
# = number of bottles		2	Q, L, H = Quart, Liter, Half Gallon		P, G = Plastic, Glass												
Relinquished by:						Date/Time		Received by:						Date/Time			
[Signature]						6-19-08 7:00am		[Signature]						6-19-08 7:00am			
Relinquished by:						Date/Time		Received by:						Date/Time			

Arkansas Testing Laboratories

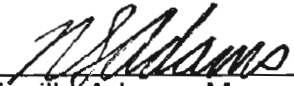
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Defiance Metals Zinc Analysis

Location	Collected		Analyzed		ZINC Results	Unit	Analyst	Spike %	BET
	Date	Time	Date	Time					Rel %
EFF - MRS	06/24	11:40 AM - 1:00 PM	06/30	6:00 PM	5.198	mg/l	BET	100.3	1.00
EFF - MRS	06/26	9:00 AM - 11:55 AM	06/30	6:00 PM	5.755	mg/l	BET	100.3	1.00

Notes: Test method used - SM 3111B




 Neville Adams, Manager

Arkansas Testing Laboratories

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CHAIN OF CUSTODY / ANALYSIS REQUEST FORM

CLIENT: DEFIANCE METALS										PARAMETERS			
SAMPLE ID	SAMPLE MATRIX	SAMPLED BY: <i>Tim BARTLEY</i>			DATE	TIME	GRAB	COMPOSITE	PRESERVATIVES				
		W=H2O	S=SLUDGE	D=SOIL					C=WELL	HNO3	ZINC		
EFF						X							
MRS 062408	W			6-24-08	11:40 AM		X					1-125 ml-P	
MRS 062608	W			6-26-08	1:00 AM		X					1-125 ml-P	
# = number of bottles		2	Q, L, H = Quart, Liter, Half Gallon									P, G = Plastic, Glass	
Relinquished by:				Date/Time	6-27-08	7:00 AM	Received by:			Date/Time	6-27-08	7:00 AM	
Relinquished by:				Date/Time	6-27-08	7:00 AM	Received by:			Date/Time	6-27-08	7:00 AM	

Arkansas Testing Laboratories

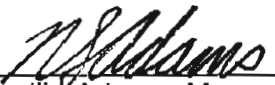
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Defiance Metals Zinc Analysis

Location	Collected		Analyzed		ZINC Results	Unit	Analyst	Spike %	BET
	Date	Time	Date	Time					Rel %
EFF - MRS	07/01	11:20 AM - 1:55 PM	07/07	4:15 PM	3.642	mg/l	BET	97.8	0.00
EFF - MRS	07/02	11:20 AM - 1:20 PM	07/07	4:15 PM	4.235	mg/l	BET	97.8	0.00

Notes: Test method used - SM 3111B


 Neville Adams, Manager

Arkansas Testing Laboratories

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 Searcy, AR 72143
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 Fax 501-268-9914

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CHAIN OF CUSTODY / ANALYSIS REQUEST FORM

CLIENT: DEFIANCE METALS									
SAMPLE ID	SAMPLE MATRIX	SAMPLED BY:				PRESERVATIVES			
		DATE	TIME	GRAB	CONCENTRATION	HNO3	ZINC		
INF	W-H2O								
CLAR	S-SLUDGE								
POND	D-SOIL								
BACKWASH	C-WELL								
EFF				X				1-125ml-P	
DRS	W	7-1-08	11:20AM 11:59PM	X				1-125ml-P	
DRS	W	7-2-08	11:20AM 11:20PM	X				1-125ml-P	
# = number of bottles	2	Q, L, H = Quart, Liter, Half Gallon							
Requisitioned by:		Received by:							
		Date/Time	7-3-08	7:00AM					
		Date/Time	7-3-08	7:00AM					

Arkansas Testing Laboratories

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NPDES Wastewater Monitoring

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Defiance Metals

Zinc Analysis

Location	Collected		Analyzed		ZINC Results	Unit	Analyst	Spike %	BET
	Date	Time	Date	Time					Rel %
EFF - CLARIFIER	07/08	11:30 AM - 1:45 PM	07/22	10:30 AM	0.385	mg/l	BET	95.3	1.06
EFF - CLARIFIER	07/10	10:00 AM - 12:30 PM	07/22	10:30 AM	1.278	mg/l	BET	95.3	1.06
EFF - CLARIFIER	07/14	10:30 AM - 12:30 PM	07/22	10:30 AM	0.265	mg/l	BET	95.3	1.06
EFF - CLARIFIER	07/16	11:25 AM - 1:40 PM	07/22	10:30 AM	0.375	mg/l	BET	95.3	1.06

Notes: Test method used - SM 3111B


Neville Adams, Manager

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CHAIN OF CUSTODY / ANALYSIS REQUEST FORM

CLIENT: DEFIANCE METALS				PARAMETERS										
SAMPLE ID	SAMPLE MATRIX	SAMPLED BY:	DATE	TIME	GRAB									PRESERVATIVES
INF	W=H2O S=SLUDGE D=SOIL C=WELL													HNO3
EFF					X									ZINC
CLABEFF	W	D 7/14/08	10:30 AM		X									1-125ml-P
CLABEFF	W	D 7/16/08	12:30 PM	11:25 AM	X									1-125ml-P

= number of bottles 2 Q, L, H = Quart, Liter, Half Gallon P, G = Plastic, Glass

Relinquished by: [Signature] Date/Time: 7/18/08 7:00 AM

Relinquished by: [Signature] Date/Time: 7-18-08 700 AM

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Defiance Metals

Collection Date / Time: July 24, 2008 9:20 AM

Collection Place: Clarifier - Influent

Wastewater Analysis

Metals - Influent Structure

Parameter	Analysis Begin Date / Time	Analysis End Date / Time	Results	Unit	Loading lb/dy	Analyst	% Spike	Rel %	Sample Type	Ref #
Iron	08/04 9:00 AM	NA	31.13	mg/l	NA	BET	103.5	0.00	COMP	1
Zinc	08/04 9:30 AM	NA	5.122	mg/l	NA	BET	100.6	2.00	COMP	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

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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: July 24, 2008 9:20 AM

Collection Place: Clarifier - Effluent

Wastewater Analysis

Metals - Effluent Structure

KLB

Parameter	Analysis Begin Date / Time	Analysis End Date / Time	Results	Unit	Loading lb/dy	Analyst	% Spike	Rel %	Sample Type	Ref #
Iron	08/04 9:00 AM	NA	2.72	mg/l	NA	BET	103.5	0.00	COMP	1
Zinc	08/04 9:30 AM	NA	1.408	mg/l	NA	BET	100.6	2.00	COMP	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

204 E Lincoln
Searcy, AR 72143
Off 501-268-6631
Fax 501-268-9314

Arkansas Testing Laboratories

- *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:		PARAMETERS		PRESERVATIVES	
		MATRIX	DATE			TIME	GRAB
EFF	CLAR	W-H2O	7/24	9:20	X		1.00N
		S-SLUDGE					
		D-SOIL					
		C-WELL					
INF	CLAR		7/24	9:20	X		2-125ml-P 2-125ml-P
# = Number of bottles		Q, L, H = Quart, Liter, Half Gallon		P, G = Plastic, Glass		Date/Time	
Relinquished by: ROB ADKINS		Date/Time 7/25/08 6:30		Received by: 		Date/Time 7-25-08 6:30am	
Relinquished by:		Date/Time		Received by:		Date/Time	

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Defiance Metals

Collection Date / Time: July 28, 2008 12:35 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	08/04 9:00 AM	NA	15.37	mg/l	NA	BET	103.5	0.00	GRAB	1
Zinc	08/04 9:30 AM	NA	2.242	mg/l	NA	BET	100.6	2.00	GRAB	1
Collection Place: Clarifier - Influent										
Iron	08/04 9:00 AM	NA	3.87	mg/l	NA	BET	103.5	0.00	GRAB	1
Zinc	08/04 9:30 AM	NA	1.018	mg/l	NA	BET	100.6	2.00	GRAB	1

Handwritten notes:
 SAMPLES
 IDENTIFIED
 BY LAB
 NAME
 DATE
 SIGNATURE

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
 Neville Adams, Manager

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Defiance Metals

Collection Date / Time: July 30, 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: Clarifier - Effluent										
Iron	08/04 9:00 AM	NA	7.13	mg/l	NA	BET	103.5	0.00	GRAB	1
Zinc	08/04 9:30 AM	NA	0.074	mg/l	NA	BET	100.6	2.00	GRAB	1
Collection Place: Clarifier - Influent										
Iron	08/04 9:00 AM	NA	3.45	mg/l	NA	BET	103.5	0.00	GRAB	1
Zinc	08/04 9:30 AM	NA	3.935	mg/l	NA	BET	100.6	2.00	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



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Industrial and Construction Quality Control

Defiance Metals

Collection Date / Time: July 28, 2008

10:00 AM

Collection Place: **VIBRO**

Collected By: **TIM BARTLEY**

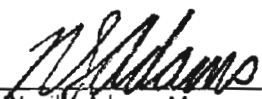
TCLP METALS ANALYSIS

KLB

Parameter	Date / Time Analyzed		Results	Unit	Analyst	Spike %	Rel %	Method
The following was analyzed by American Interplex								
TCLP METALS								
Solids	08/04	10:17 AM	< 0.5	%	21	NA	NA	EPA 1311
Arsenic	08/04	7:31 PM	< 0.05	mg/l	270	104.0	0.12	EPA 3010A, 6010B
Barium	08/04	7:31 PM	< 1	mg/l	270	113.0	0.72	EPA 3010A, 6010B
Cadmium	08/04	7:31 PM	0.76	mg/l	270	108.0	0.74	EPA 3010A, 6010B
Chromium	08/04	7:31 PM	0.15	mg/l	270	105.0	0.33	EPA 3010A, 6010B
Lead	08/04	7:31 PM	0.3	mg/l	270	102.0	0.50	EPA 3010A, 6010B
Selenium	08/04	7:31 PM	< 0.07	mg/l	270	110.0	0.92	EPA 3010A, 6010B
Silver	08/04	7:31 PM	< 0.007	mg/l	270	92.2	0.66	EPA 3010A, 6010B
Mercury	08/04	4:24 PM	< 0.01	mg/l	257	88.8	12.30	EPA 7470A

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


Neville Adams, Manager

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CHAIN OF CUSTODY / ANALYSIS REQUEST FORM

CLIENT: DEFIANCE METALS		SAMPLED BY:					PARAMETERS				
SAMPLE ID	SAMPLE MATRIX	DATE	TIME	GRAB	HR/HS	ZINC	HR/HS	PRESERVATIVES			
EFF	W	7-28-08	12:35pm	X		1-125ml-P	X		RECAP METALS NON-VOL 125-P		
INF	W	7-29-08	12:35pm	X		1-125ml-P					
EFF	W	7-30-08	10:00am	X		1-125ml-P					
INF	W	7-30-08	10:00am	X		1-125ml-P					
VIBRO	W	7-28-08	10:00am	X					1-500ml-P		
# number of bottles		5									
Requisitioned by:		Tom Babbley			Q, L, H = Quart, Liter, Half Gallon		P, G = Plastic, Glass				
Requisitioned by:		Date/Time			Date/Time		Date/Time				
Date/Time		8-1-08 7:00am			8-1-08 7:00am		8-1-08 7:00am				
Date/Time											

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Defiance Metals

Collection Date / Time: August 5, 2008 10:10 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										
Iron	08/21 1:00 PM	NA	2.34	mg/l	NA	BET	97.3	0.00	GRAB	1
Zinc	08/21 1:30 PM	NA	0.626	mg/l	NA	BET	100.0	2.02	GRAB	1
Collection Place: Clarifier - Influent										
Iron	08/21 1:00 PM	NA	5.29	mg/l	NA	BET	97.3	0.00	GRAB	1
Zinc	08/21 1:30 PM	NA	3.052	mg/l	NA	BET	100.0	2.02	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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Defiance Metals

Collection Date / Time: August 7, 2008 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										
Iron	08/21 1:00 PM	NA	2.13	mg/l	NA	BET	97.3	0.00	GRAB	1
Zinc	08/21 1:30 PM	NA	1.212	mg/l	NA	BET	100.0	2.02	GRAB	1
Collection Place: Clarifier - Influent										
Iron	08/21 1:00 PM	NA	2.13	mg/l	NA	BET	97.3	0.00	GRAB	1
Zinc	08/21 1:30 PM	NA	3.365	mg/l	NA	BET	100.0	2.02	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:

- SM 3111 B





Neville Adams, Manager

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- *Geotechnical Testing
- *Industrial and Construction Quality Control

CHAIN OF CUSTODY / ANALYSIS REQUEST FORM

CLIENT: DEFIANCE METALS					PARAMETERS		
SAMPLE ID	SAMPLE MATRIX W=H2O S=SLUDGE D=SOIL C=WELL	DATE	TIME	GRAB	PRESERVATIVES		
					HNO3	ZINC AND 12DN	HEAD
EFF	W	8-5-08	10:10am	X		1-125ml-P	
INF	W	8-5-08	10:10am	X		1-125ml-P	
EFF	W	8-7-08	11:45am	X		1-125ml-P	
INF	W	8-17-08	11:45am	X		1-125ml-P	
# = number of bottles	4	Q, L, H = Quart, Liter, Half Gallon			P, G = Plastic, Glass		
Relinquished by:		Date/Time	8-8-08	7:00am	Received by:		
Relinquished by:		Date/Time	8-8-08	7:00am	Received by: 		
		Date/Time	8-8-08	7:00am	Date/Time		
		Date/Time	8-8-08	7:00am	Date/Time		

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Defiance Metals

Collection Date / Time: August 11, 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: Clarifier - Effluent										
Iron	08/21 1:00 PM	NA	2.66	mg/l	NA	BET	97.3	0.00	GRAB	1
Zinc	08/21 1:30 PM	NA	1.258	mg/l	NA	BET	100.0	2.02	GRAB	1
Collection Place: Clarifier - Influent										
Iron	08/21 1:00 PM	NA	3.18	mg/l	NA	BET	97.3	0.00	GRAB	1
Zinc	08/21 1:30 PM	NA	4.446	mg/l	NA	BET	100.0	2.02	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



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NPDES Wastewater Monitoring
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Defiance Metals

Collection Date / Time: August 13, 2008 12:35 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	08/21 1:00 PM	NA	2.03	mg/l	NA	BET	97.3	0.00	GRAB	1
Zinc	08/21 1:30 PM	NA	1.227	mg/l	NA	BET	100.0	2.02	GRAB	1
Collection Place: Clarifier - Inflow										
Iron	08/21 1:00 PM	NA	4.45	mg/l	NA	BET	97.3	0.00	GRAB	1
Zinc	08/21 1:30 PM	NA	4.482	mg/l	NA	BET	100.0	2.02	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



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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				HNO3	ZINC AND IRON	1-125ml-P	1-125ml-P	1-125ml-P							
EFF	W				8-11-08	11:15A	X												TE-P ROCK METALS AND IRON	
INF	W				8-11-08	11:15A	X													
EFF	W				8-13-08	12:35P	X													
INF	W				8-13-08	12:35P	X													
SCUBBING	W				8-13-08	5:30P	X												X	
# = number of bottles	5	Q, L, H = Quart, Liter, Half Gallon				Date/Time		Date/Time		P, G = Plastic, Glass			Date/Time	Date/Time	Date/Time	Date/Time				
Relinquished by:					8-15-08	7:00am	Received by:						8-15-08	7:00am						
Relinquished by:					8-15-08	7:00am	Received by:						8-15-08	7:00am						

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NPDES Wastewater Monitoring

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Geotechnical Testing

Industrial and Construction Quality Control

Defiance Metals

Collection Date / Time: August 13, 2008

5:30 PM

Collection Place: **SCRUBBER**

Collected By: TIM BARTLEY

TCLP METALS ANALYSIS

KLB

Parameter	Date / Time Analyzed	Results	Unit	Analyst	Spike %	Rel %	Method
IRON	08/20 12:11 PM	300.0	mg/l	270	97.5	0.44	EPA 200.7


The following was analyzed by American Interplex

TCLP METALS

Solids	08/18 4:45 PM	2.1	%	21	NA	NA	EPA 1311
Arsenic	08/19 6:12 PM	< 0.05	mg/l	270	100.0	2.23	EPA 3010A, 6010B
Barium	08/19 6:12 PM	< 1	mg/l	270	104.0	2.36	EPA 3010A, 6010B
Cadmium	08/19 6:12 PM	< 0.004	mg/l	270	101.0	2.06	EPA 3010A, 6010B
Chromium	08/19 6:12 PM	0.024	mg/l	270	99.2	2.24	EPA 3010A, 6010B
Lead	08/19 6:12 PM	< 0.04	mg/l	270	94.1	1.98	EPA 3010A, 6010B
Selenium	08/19 6:12 PM	< 0.07	mg/l	270	101.0	1.74	EPA 3010A, 6010B
Silver	08/19 6:12 PM	< 0.007	mg/l	270	98.8	2.15	EPA 3010A, 6010B
Mercury	08/20 1:21 PM	< 0.01	mg/l	257	105.0	1.52	EPA 7470A

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




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CHAIN OF CUSTODY / ANALYSIS REQUEST FORM

CLIENT:		DEFIANCE METALS					PARAMETERS					
SAMPLE ID	SAMPLE MATRIX	SAMPLED BY:			DATE	TIME	GRAB	PRESERVATIVES				
EFF	W=H2O S=SLUDGE D=SOIL C=WELL						HNO3	ZINC AND IRON	TCLP PCP/METALS AND IRON			
EFF	W	8-11-08	11:15A	X				1-125ml-P				
INF	W	8-11-08	11:15A	X				1-125ml-P				
EFF	W	8-13-08	12:35P	X				1-125ml-P				
INF	W	8-13-08	2:35P	X				1-125ml-P				
SCUBBER	W	8-13-08	5:30P	X							X	
# = number of bottles	5	Q, L, H = Quart, Liter, Half Gallon			P, G = Plastic, Glass							
Relinquished by:		Date/Time	8-15-08	7:00am	Received by:							
Relinquished by:		Date/Time			Received by:			8-15-08 7:00am				

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NPDES Wastewater Monitoring
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Defiance Metals

Collection Date / Time: August 13, 2008

5:30 PM

Collection Place: **SCRUBBER**

Collected By: TIM BARTLEY


TCLP METALS ANALYSIS

KLB

Parameter	Date / Time Analyzed		Results	Unit	Analyst	Spike %	Rel %	Method
IRON	08/20	12:11 PM	300.0	mg/l	270	97.5	0.44	EPA 200.7
The following was analyzed by American Interplex								
TCLP METALS								
Solids	08/18	4:45 PM	2.1	%	21	NA	NA	EPA 1311
Arsenic	08/19	6:12 PM	< 0.05	mg/l	270	100.0	2.23	EPA 3010A, 6010B
Barium	08/19	6:12 PM	< 1	mg/l	270	104.0	2.36	EPA 3010A, 6010B
Cadmium	08/19	6:12 PM	< 0.004	mg/l	270	101.0	2.06	EPA 3010A, 6010B
Chromium	08/19	6:12 PM	0.024	mg/l	270	99.2	2.24	EPA 3010A, 6010B
Lead	08/19	6:12 PM	< 0.04	mg/l	270	94.1	1.98	EPA 3010A, 6010B
Selenium	08/19	6:12 PM	< 0.07	mg/l	270	101.0	1.74	EPA 3010A, 6010B
Silver	08/19	6:12 PM	< 0.007	mg/l	270	98.8	2.15	EPA 3010A, 6010B
Mercury	08/20	1:21 PM	< 0.01	mg/l	257	105.0	1.52	EPA 7470A

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


 Neville Adams, Manager

Arkansas Testing Laboratories

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Defiance Metals

Collection Date / Time: August 18, 2008 12:20 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	09/05 9:37 PM	NA	2.40	mg/l	NA	270	91.2	2.79	GRAB	1
Zinc	09/09 1:38 PM	NA	1.600	mg/l	NA	270	105.0	3.84	GRAB	2
Collection Place: Clarifier - Influent										
Iron	09/05 9:37 PM	NA	2.20	mg/l	NA	270	91.2	2.79	GRAB	1
Zinc	09/09 1:38 PM	NA	7.600	mg/l	NA	270	105.0	3.84	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. EPA 200.8
2. EPA 200.7



Neville Adams, Manager

Arkansas Testing Laboratories

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Defiance Metals

Collection Date / Time: August 19, 2008 12:40 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	09/05 9:37 PM	NA	3.80	mg/l	NA	270	91.2	2.79	GRAB	1
Zinc	09/09 1:38 PM	NA	2.500	mg/l	NA	270	105.0	3.84	GRAB	2
Collection Place: Clarifier - Influent										
Iron	09/05 9:37 PM	NA	4.90	mg/l	NA	270	91.2	2.79	GRAB	1
Zinc	09/09 1:38 PM	NA	6.100	mg/l	NA	270	105.0	3.84	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. EPA 200.8
2. EPA 200.7



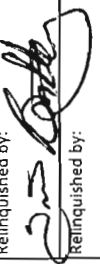

Neville Adams, Manager

Arkansas Testing Laboratories

204 E Lincoln
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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										PARAMETERS									
SAMPLE ID	SAMPLE MATRIX	W=H2O S=SLUDGE D=SOIL C=WELL	DATE	TIME	GRAB	PRESERVATIVES													
						HNO3													
EFF	W		8-18-08	12:20p	X	ZINC IRON													
INF	W		8-18-08	12:20p	X	1-125ml-P													
EFF	W		8-19-08	12:40p	X	1-125ml-P													
INF	W		8-19-08	12:40p	X	1-125ml-P													
# = number of bottles					Q, L, H = Quart, Liter, Half Gallon					P, G = Plastic, Glass									
Relinquished by:					Date/Time	8-22-08				7:00am									
Relinquished by:									Date/Time	8-22-08				7:00am					

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Defiance Metals

Collection Date / Time: August 26, 2008 8:15 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: Clarifier - Effluent										
Iron	09/05 9:37 PM	NA	6.10	mg/l	NA	270	91.2	2.79	GRAB	1
Zinc	09/09 1:38 PM	NA	1.800	mg/l	NA	270	105.0	3.84	GRAB	2
Collection Place: Clarifier - Influent										
Iron	09/05 9:37 PM	NA	13.00	mg/l	NA	270	91.2	2.79	GRAB	1
Zinc	09/09 1:38 PM	NA	6.800	mg/l	NA	270	105.0	3.84	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. EPA 200.8
2. EPA 200.7



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Arkansas Testing Laboratories

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Defiance Metals

Collection Date / Time: August 27, 2008 1:45 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										
Iron	09/05 9:37 PM	NA	3.60	mg/l	NA	270	91.2	2.79	GRAB	1
Zinc	09/09 1:38 PM	NA	2.500	mg/l	NA	270	105.0	3.84	GRAB	2
Collection Place: Clarifier - Influent										
Iron	09/05 9:37 PM	NA	5.60	mg/l	NA	270	91.2	2.79	GRAB	1
Zinc	09/09 1:38 PM	NA	3.300	mg/l	NA	270	105.0	3.84	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. EPA 200.8
2. EPA 200.7



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- *Geotechnical Testing
- *Industrial and Construction Quality Control

CHAIN OF CUSTODY / ANALYSIS REQUEST FORM

CLIENT: DEFIANCE METALS			PARAMETERS														
SAMPLE ID	SAMPLE MATRIX W=H2O S=SLUDGE D=SOIL C=WELL	SAMPLED BY:				PRESERVATIVES											
		DATE	TIME	GRAB	HNO3												
EFF	W	8-26-08	8:15am	X									ZINC + Pb				
INF	W	8-26-08	8:15am	X									1-125ml-P				
EFF	W	8-27-08	1:45pm	X									1-125ml-P				
INF	W	8-27-08	1:45pm	X									1-125ml-P				
# = number of bottles	4	Q, L, H = Quart, Liter, Half Gallon			P, G = Plastic, Glass								Date/Time				
Relinquished by:		8-28-08 7:00AM			Received by:												
Relinquished by:		8-28-08 7:00AM			Received by:												

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Defiance Metals

Collection Date / Time: September 3, 2008 10:20 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										
Iron	09/05 9:37 PM	NA	2.90	mg/l	NA	270	91.2	2.79	GRAB	1
Zinc	09/09 1:38 PM	NA	2.200	mg/l	NA	270	105.0	3.84	GRAB	2
Collection Place: Clarifier - Influent										
Iron	09/05 9:37 PM	NA	5.80	mg/l	NA	270	91.2	2.79	GRAB	1
Zinc	09/09 1:38 PM	NA	10.000	mg/l	NA	270	105.0	3.84	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. EPA 200.8
2. EPA 200.7



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Defiance Metals

Collection Date / Time: September 4, 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: Clarifier - Effluent										
Iron	09/05 9:37 PM	NA	1.30	mg/l	NA	270	91.2	2.79	GRAB	1
Zinc	09/09 1:38 PM	NA	1.700	mg/l	NA	270	105.0	3.84	GRAB	2
Collection Place: Clarifier - Influent										
Iron	09/05 9:37 PM	NA	3.00	mg/l	NA	270	91.2	2.79	GRAB	1
Zinc	09/09 1:38 PM	NA	7.200	mg/l	NA	270	105.0	3.84	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. EPA 200.8
2. EPA 200.7



Neville Adams, Manager

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Defiance Metals

Collection Date / Time: September 9, 2008 10:30 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										
Iron	09/22 11:00 AM	NA	1.94	mg/l	NA	BET	98.5	6.90	GRAB	1
Zinc	09/22 10:30 AM	NA	1.180	mg/l	NA	BET	99.9	1.01	GRAB	2
Collection Place: Clarifier - Influent										
Iron	09/22 11:00 AM	NA	2.75	mg/l	NA	BET	98.5	6.90	GRAB	1
Zinc	09/22 10:30 AM	NA	8.130	mg/l	NA	BET	99.9	1.01	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

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Defiance Metals

Collection Date / Time: September 11, 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: MRS - Effluent										
Iron	09/22 11:00 AM	NA	1.79	mg/l	NA	BET	98.5	6.90	GRAB	1
Zinc	09/22 10:30 AM	NA	5.440	mg/l	NA	BET	99.9	1.01	GRAB	2
Collection Place: MRS - Influent										
Iron	09/22 11:00 AM	NA	2.85	mg/l	NA	BET	98.5	6.90	GRAB	1
Zinc	09/22 10:30 AM	NA	4.970	mg/l	NA	BET	99.9	1.01	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





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CHAIN OF CUSTODY / ANALYSIS REQUEST FORM

CLIENT: DEFIANCE METALS		SAMPLED BY:				PARAMETERS		PRESERVATIVES	
SAMPLE ID	SAMPLE MATRIX	DATE	TIME	GRAB					
EFF (CLAR)	W	9-9-08	10:30AM	X					1-125ml-P
INF (CLAR)	W	9-9-08	10:30AM	X					1-125ml-P
MBS INF	W	9-11-08	12:30PM	X					1-125ml-P
MRS EFF	W	9-11-08	12:30PM	X					1-125ml-P
# = number of bottles	4				Q, L, H = Quart, Liter, Half Gallon				P, G = Plastic, Glass
Relinquished by:		Date/Time	9/12/08	7:00AM	Received by:		Date/Time	9-12-08	7:00AM
Relinquished by:		Date/Time			Received by:		Date/Time		

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Defiance Metals

Collection Date / Time: September 17, 2008 11:30 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	09/22 11:00 AM	NA	1.28	mg/l	NA	BET	98.5	6.90	GRAB	1
Zinc	09/22 10:30 AM	NA	2.320	mg/l	NA	BET	99.9	1.01	GRAB	2
Collection Place: MRS - Influent										
Iron	09/22 11:00 AM	NA	3.34	mg/l	NA	BET	98.5	6.90	GRAB	1
Zinc	09/22 10:30 AM	NA	4.550	mg/l	NA	BET	99.9	1.01	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



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Defiance Metals

Collection Date / Time: September 18, 2008 1:50 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: MRS - Effluent										
Iron	09/22 11:00 AM	NA	2.09	mg/l	NA	BET	98.5	6.90	GRAB	1
Zinc	09/22 10:30 AM	NA	3.330	mg/l	NA	BET	99.9	1.01	GRAB	2
Collection Place: MRS - Influent										
Iron	09/22 11:00 AM	NA	0.84	mg/l	NA	BET	98.5	6.90	GRAB	1
Zinc	09/22 10:30 AM	NA	3.340	mg/l	NA	BET	99.9	1.01	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



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CHAIN OF CUSTODY / ANALYSIS REQUEST FORM

CLIENT: SAMPLE ID	DEFIANCE METALS								PARAMETERS				
	EFF INF CLAR POND BACKWASH	SAMPLE MATRIX W=H2O S=SLUDGE D=SOIL C=WELL	SAMPLED BY:				DATE	TIME	GRAB	PRESERVATIVES			
			Q	L	H	Gallon				HN03			
EFF (MRS)	W	9-17-08	11:30A	X								ZINC + IRON	
MRS INF	W	9-17-08	11:30A	X								1-125ml-P	
MRS INF	W	9-18-08	1:50P	X								1-125ml-P	
MRS EFF	W	9-18-08	1:50P	X								1-125ml-P	
# = number of bottles	4	Q, L, H = Quart, Liter, Half Gallon								P, G = Plastic, Glass			
Relinquished by:		Date/Time	9-19-08	7:00am						Received by:		Date/Time	9-19-08 700AM
Relinquished by:		Date/Time								Received by:		Date/Time	

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Defiance Metals

Collection Date / Time: September 22, 2008 5:30 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: EFFLUENT CLARIFIER STATIC										
Iron	10/10 12:45 PM	NA	2.11	mg/l	NA	BET	95.1	0.00	GRAB	1
Zinc	10/10 1:15 PM	NA	0.590	mg/l	NA	BET	101.5	1.96	GRAB	2
Collection Place: EFFLUENT CLARIFIER STATIC										
Iron	10/10 12:45 PM	NA	2.11	mg/l	NA	BET	95.1	0.00	GRAB	1
Zinc	10/10 1:15 PM	NA	0.590	mg/l	NA	BET	101.5	1.96	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



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Defiance Metals

Collection Date / Time: September 24, 2008 11:40 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	10/10 12:45 PM	NA	1.16	mg/l	NA	BET	95.1	0.00	GRAB	1
Zinc	10/10 1:15 PM	NA	1.770	mg/l	NA	BET	101.5	1.96	GRAB	2
Collection Place: MRS INFLUENT										
Iron	10/10 12:45 PM	NA	0.08	mg/l	NA	BET	95.1	0.00	GRAB	1
Zinc	10/10 1:15 PM	NA	2.243	mg/l	NA	BET	101.5	1.96	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



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Defiance Metals

Collection Date / Time: September 25, 2008 1:10 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	10/10 12:45 PM	NA	1.32	mg/l	NA	BET	95.1	0.00	GRAB	1
Zinc	10/10 1:15 PM	NA	3.338	mg/l	NA	BET	101.5	1.96	GRAB	2
Collection Place: MRS INFLUENT										
Iron	10/10 12:45 PM	NA	2.84	mg/l	NA	BET	95.1	0.00	GRAB	1
Zinc	10/10 1:15 PM	NA	3.899	mg/l	NA	BET	101.5	1.96	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



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Defiance Metals

Collection Date / Time: October 1, 2008 10:15 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	10/10 12:45 PM	NA	0.32	mg/l	NA	BET	95.1	0.00	GRAB	1
Zinc	10/10 1:15 PM	NA	0.248	mg/l	NA	BET	101.5	1.96	GRAB	2
Collection Place: MRS INFLUENT										
Iron	10/10 12:45 PM	NA	4.00	mg/l	NA	BET	95.1	0.00	GRAB	1
Zinc	10/10 1:15 PM	NA	4.276	mg/l	NA	BET	101.5	1.96	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



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Defiance Metals

Collection Date / Time: October 2, 2008 7:10 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	10/10 12:45 PM	NA	0.74	mg/l	NA	BET	95.1	0.00	GRAB	1
Zinc	10/10 1:15 PM	NA	1.502	mg/l	NA	BET	101.5	1.96	GRAB	2
Collection Place: MRS INFLUENT										
Iron	10/10 12:45 PM	NA	2.74	mg/l	NA	BET	95.1	0.00	GRAB	1
Zinc	10/10 1:15 PM	NA	2.383	mg/l	NA	BET	101.5	1.96	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

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CHAIN OF CUSTODY / ANALYSIS REQUEST FORM

CLIENT: DEFIANCE METALS						PARAMETERS					
SAMPLE ID	SAMPLE MATRIX	SAMPLED BY:			PRESERVATIVES	HNO3	ZINC	+	/	P	CON
		DATE	TIME	GRAB							
MRS EFF	W	10-1-08	10:15AM	X						1-125ml-P	
MRS INF	W	10-1-08	10:15AM	X						1-125ml-P	
MRS INF	W	10-2-08	7:10AM	X						1-125ml-P	
MRS EFF	W	10-2-08	7:10AM	X						1-125ml-P	
# = number of bottles	4	Q, L, H = Quart, Liter, Half Gallon			P, G = Plastic, Glass						
Relinquished by:		Date/Time	10-3-08	7:00AM	Received by:						
Relinquished by:		Date/Time			Received by:			Date/Time 10-3-08 700AM			

Arkansas Testing Laboratories

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 Geotechnical Testing
 Industrial and Construction Quality Control

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Defiance Metals

Collection Date / Time: October 7, 2008 9:30 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	10/10 12:45 PM	NA	2.53	mg/l	NA	BET	95.1	0.00	GRAB	1
Zinc	10/10 1:15 PM	NA	2.199	mg/l	NA	BET	101.5	1.96	GRAB	2
Collection Place: MRS INFLUENT										
Iron	10/10 12:45 PM	NA	3.05	mg/l	NA	BET	95.1	0.00	GRAB	1
Zinc	10/10 1:15 PM	NA	4.083	mg/l	NA	BET	101.5	1.96	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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Defiance Metals

Collection Date / Time: October 8, 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	10/10 12:45 PM	NA	1.48	mg/l	NA	BET	95.1	0.00	GRAB	1
Zinc	10/10 1:15 PM	NA	1.257	mg/l	NA	BET	101.5	1.96	GRAB	2
Collection Place: MRS INFLUENT										
Iron	10/10 12:45 PM	NA	4.68	mg/l	NA	BET	95.1	0.00	GRAB	1
Zinc	10/10 1:15 PM	NA	4.346	mg/l	NA	BET	101.5	1.96	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




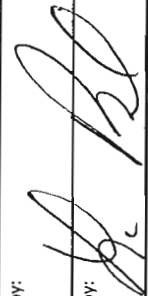
Neville Adams, Manager

Arkansas Testing Laboratories

204 E Lincoln
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 Fax 501-268-9314

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- *Geotechnical Testing
- *Industrial and Construction Quality Control

CHAIN OF CUSTODY / ANALYSIS REQUEST FORM

CLIENT:		DEFIANCE METALS				PARAMETERS			
SAMPLE ID	SAMPLE MATRIX	SAMPLED BY:			PRESERVATIVES	HNO3			
		DATE	TIME	GRAB		ZINC			
MRS INF	W	10-7-08	9:30AM	X	1-125ml-P				
MRS INF	W	10-7-08	9:30AM	X	1-125ml-P				
MRS EFF	W	10-8-08	10:00AM	X	1-125ml-P				
MRS INF	W	10-8-08	10:00AM	X	1-125ml-P				
# = number of bottles	H	Q, L, H = Quart, Liter, Half Gallon			P, G = Plastic, Glass				
Relinquished by:		Date/Time	10-10-08	7:00AM	Received by:				
Relinquished by:		Date/Time	10-10-08	7:00AM	Received by:				
		Date/Time			Date/Time				
		Date/Time			Date/Time				

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Defiance Metals

Collection Date / Time: October 14, 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	10/24 12:00 PM	NA	1.67	mg/l	NA	BET	103.5	5.94	GRAB	1
Zinc	10/30 2:00 PM	NA	2.631	mg/l	NA	BET	101.8	0.98	GRAB	2
Collection Place: MRS INFLUENT										
Iron	10/24 12:00 PM	NA	1.72	mg/l	NA	BET	103.5	5.94	GRAB	1
Zinc	10/30 2:00 PM	NA	2.834	mg/l	NA	BET	101.8	0.98	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

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Defiance Metals

Collection Date / Time: October 16, 2008 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: MRS EFFLUENT										
Iron	10/24 12:00 PM	NA	2.56	mg/l	NA	BET	103.5	5.94	GRAB	1
Zinc	10/30 2:00 PM	NA	4.629	mg/l	NA	BET	101.8	0.98	GRAB	2
Collection Place: MRS INFLUENT										
Iron	10/24 12:00 PM	NA	4.19	mg/l	NA	BET	103.5	5.94	GRAB	1
Zinc	10/30 2:00 PM	NA	4.104	mg/l	NA	BET	101.8	0.98	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

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CHAIN OF CUSTODY / ANALYSIS REQUEST FORM

CLIENT: DEFIANCE METALS										PARAMETERS			
SAMPLE ID	SAMPLE MATRIX	SAMPLING BY:	DATE	TIME	GRAB	PRESERVATIVES							
						HNO3	ZINC						
EFF MRS	W		10-14-08	10:00am	X				1-125ml-P				
MRS INF	W		10-14-08	10:00am	X				1-125ml-P				
MRS EFF	W		10-16-08	12:00pm	X				1-125ml-P				
MRS INF	W		10-16-08	12:00pm	X				1-125ml-P				
# = number of bottles		4	Q, L, H = Quart, Liter, Half Gallon						P, G = Plastic, Glass				
Relinquished by:			Date/Time	10-17-08	7:00AM	Received by:				Date/Time	10-17-08	7:00	
Relinquished by:			Date/Time			Received by:				Date/Time	10-17-08	7:00	

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Defiance Metals

Collection Date / Time: October 21, 2008 11:40 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	10/24 12:00 PM	NA	2.56	mg/l	NA	BET	103.5	5.94	GRAB	1
Zinc	10/24 2:30 PM	NA	3.460	mg/l	NA	BET	101.8	0.98	GRAB	2
Collection Place: MRS INFLUENT										
Iron	10/24 12:00 PM	NA	2.98	mg/l	NA	BET	103.5	5.94	GRAB	1
Zinc	10/24 2:30 PM	NA	3.460	mg/l	NA	BET	101.8	0.98	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



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Defiance Metals

Collection Date / Time: October 23, 2008 11:50 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	10/24 12:00 PM	NA	2.24	mg/l	NA	BET	103.5	5.94	GRAB	1
Zinc	10/24 2:30 PM	NA	4.790	mg/l	NA	BET	101.8	0.98	GRAB	2
Collection Place: MRS INFLUENT										
Iron	10/24 12:00 PM	NA	3.56	mg/l	NA	BET	103.5	5.94	GRAB	1
Zinc	10/24 2:30 PM	NA	4.610	mg/l	NA	BET	101.8	0.98	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



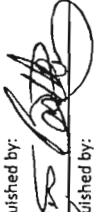

Neville Adams, Manager

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CHAIN OF CUSTODY / ANALYSIS REQUEST FORM

CLIENT: DEFIANCE METALS					PARAMETERS						PRESERVATIVES				
SAMPLE ID	SAMPLE MATRIX	SAMPLED BY:			DATE	TIME	GRAB	HNO3	ZINC	1-125ml-P	1-125ml-P	1-125ml-P	1-125ml-P	Date/Time	Date/Time
		EFF	INF	CLAR											
MRS	W				10-21-08	11:40 AM	X								
MRS	W				10-21-08	11:40 AM	X								
MRS	W				10-23-08	11:50 AM	X								
MRS	W				10-23-08	11:50 AM	X								
													P, G = Plastic, Glass		
# = number of bottles			4		Q, L, H = Quart, Liter, Half Gallon										
Relinquished by:						Date/Time			10-24-08			7:00 AM			
Relinquished by:						Date/Time			10-24-08			7:00 AM			



Plymouth Technology, Inc.
 2925 Waterview Dr
 Rochester Hills • MI • 48309 USA
 (248) 537-0081 • Fax (248) 537-0088
 www.PlymouthTechnology.com

Analytical Testing Report

Report No.: 10292008B
Project Name:
Customer/Location: Defiance Metal Products, Heber Springs, AR
Customer Contact:
PTI Sales Representative:
Sample Date/Time: 10/28/08 9:30am
Sample(s) Description: Shown Below
Sample Testing By: ML

Results:

Sample	Zn (nitrous flame) 1:10 & 1:20		Zn (acetylene flame)	Ni
MRS Influent	4.26	4.52	4.45	1.438
MRS in 2	3.90	4.16	4.15	1.309
MRS in 3	3.40	4.04	3.40	0.726
MRS Effluent	3.55	4.64	3.35	0.721

All results expressed in mg / liter (ppm)

ND = No Detection

n/a = not applicable

*Averaged

Comments:

Operator Notes:

ORP= +351
 pH= 7.08
 Temp= 87.1
 Flow= 14 GPM
 Total= 3302089
 In 1= 35psi
 In 2= 28psi
 In 3= 19psi
 Out= 0psi



Arkansas Testing Laboratories
ATTN: Mr. Neville Adams
3301 Langley Drive
Searcy, AR 72143

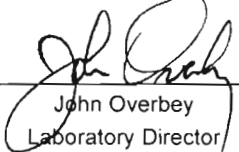
Dear Mr. Neville Adams:

Project Description: One (1) water sample(s) received on November 4, 2008
1820
P.O. No. 2673

This report is the analytical results and supporting information for the sample submitted to American Interplex Corporation (AIC) on November 4, 2008. The following results are applicable only to the sample identified by the control number referenced above. Accurate assessment of the data requires access to the entire document. Each section of the report has been reviewed and approved by the appropriate laboratory director or a qualified designee.

Data has been validated using standard quality control measures performed on at least 10% of the samples analyzed. Quality Assurance, instrumentation, maintenance and calibration were performed in accordance with guidelines established by the cited methodology.

AMERICAN INTERPLEX CORPORATION

By  _____
John Overbey
Laboratory Director

Enclosure(s): Chain of Custody

PDF cc: Arkansas Testing Laboratories
ATTN: Mr. Neville Adams
arkatl@sbcglobal.net



Arkansas Testing Laboratories
3301 Langley Drive
Searcy, AR 72143

CASE NARRATIVE

SAMPLE RECEIPT

Received Temperature: 2°C

Receipt Verification:	Complete Chain of Custody	Y
	Sample ID on Sample Labels	Y
	Date and Time on Sample Labels	Y
	Proper Sample Containers	Y
	Within Holding Times	Y
	Adequate Sample Volume	Y
	Sample Integrity	Y
	Proper Temperature	Y
	Proper Preservative	Y

COMMENTS

Mercury low level was received in plastic container preserved with nitric acid.

QUALIFIERS

Qualifiers	Definition
J	Result is less than the sample's quantitation limit but greater than MDL
R	n-Nitrosodiphenylamine cannot be separated from diphenylamine
X	Spiking level is invalid due to the high concentration of analyte in the spiked sample

References:

"Methods for Chemical Analysis of Water and Wastes", EPA/600/4-79-020 (Mar 1983) with updates and supplements EPA/600/5-91-010 (Jun 1991), EPA/600/R-92-129 (Aug 1992) and EPA/600/R-93-100 (Aug 1993).

"Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846)", Third Edition.

"Standard Methods for the Examination of Water and Wastewaters", 20th edition, 1998.

"American Society for Testing and Materials" (ASTM).

"Association of Analytical Chemists" (AOAC).

"Self-Davis and Moore" (2000).

Arkansas Testing Laboratories
3301 Langley Drive
Searcy, AR 72143

ANALYTICAL RESULTS

AIC No. 124155-1

Sample Identification: Clarifier 11-4-08 1100/am

Analyte	Method	Result	RL	Units	Batch	Qualifier
Total Cyanide	SM4500-CN C,E	< 0.01	0.01	mg/l	W27061	
Mercury, low level	EPA 245.7	< 1.8	1.8	ng/l	S24255	
Base/Neutral and Acid Compounds By EPA 625						
Acenaphthene		< 1.9	1.9	ug/l	B5392	
Acenaphthylene		< 3.5	3.5	ug/l	B5392	
Anthracene		< 1.9	1.9	ug/l	B5392	
Benidine		< 44	44	ug/l	B5392	
Benzo(a)anthracene		< 5	5	ug/l	B5392	
Benzo(a)pyrene		< 2.5	2.5	ug/l	B5392	
Benzo(g,h,i)perylene		< 4.1	4.1	ug/l	B5392	
Benzo(k)fluoranthene		< 2.5	2.5	ug/l	B5392	
3,4-Benzofluoranthene		< 4.8	4.8	ug/l	B5392	
Bis(2-chloroethoxy)methane		< 5.3	5.3	ug/l	B5392	
Bis(2-chloroethyl)ether		< 5.7	5.7	ug/l	B5392	
Bis(2-chloroisopropyl)ether		< 5.7	5.7	ug/l	B5392	
Bis(2-ethylhexyl)phthalate		< 2.5	2.5	ug/l	B5392	
4-Bromophenyl phenyl ether		< 1.9	1.9	ug/l	B5392	
Butylbenzyl phthalate		4.6	2.5	ug/l	B5392	J
2-Chloronaphthalene		< 1.9	1.9	ug/l	B5392	
2-Chlorophenol		< 3.3	3.3	ug/l	B5392	
4-Chlorophenyl phenyl ether		< 4.2	4.2	ug/l	B5392	
Chrysene		< 2.5	2.5	ug/l	B5392	
Di-n-butyl phthalate		3.8	2.5	ug/l	B5392	J
Di-n-octyl phthalate		< 2.5	2.5	ug/l	B5392	
Dibenzo(a,h)anthracene		< 2.5	2.5	ug/l	B5392	
1,2-Dichlorobenzene		< 1.9	1.9	ug/l	B5392	
1,3-Dichlorobenzene		< 1.9	1.9	ug/l	B5392	
1,4-Dichlorobenzene		< 4.4	4.4	ug/l	B5392	
3,3'-Dichlorobenzidine		< 5	5	ug/l	B5392	
2,4-Dichlorophenol		< 2.7	2.7	ug/l	B5392	
Diethyl phthalate		< 1.9	1.9	ug/l	B5392	
Dimethyl phthalate		< 1.6	1.6	ug/l	B5392	
2,4-Dimethylphenol		< 2.7	2.7	ug/l	B5392	
4,6-Dinitro-o-cresol		< 24	24	ug/l	B5392	
2,4-Dinitrophenol		< 42	42	ug/l	B5392	
2,4-Dinitrotoluene		< 5.7	5.7	ug/l	B5392	
2,6-Dinitrotoluene		< 1.9	1.9	ug/l	B5392	
1,2-Diphenylhydrazine		< 11	11	ug/l	B5392	
Fluoranthene		< 2.2	2.2	ug/l	B5392	
Fluorene		< 1.9	1.9	ug/l	B5392	
Hexachlorobenzene		< 1.9	1.9	ug/l	B5392	
Hexachlorobutadiene		< 0.9	0.9	ug/l	B5392	
Hexachlorocyclopentadiene		< 5	5	ug/l	B5392	
Hexachloroethane		< 1.6	1.6	ug/l	B5392	
Indeno(1,2,3-cd)pyrene		< 3.7	3.7	ug/l	B5392	
Isophorone		< 2.2	2.2	ug/l	B5392	
n-Nitrosodi-n-propylamine		< 0.84	0.84	ug/l	B5392	
n-Nitrosodimethylamine		9.0	0.96	ug/l	B5392	
n-Nitrosodiphenylamine		< 1.9	1.9	ug/l	B5392	R

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Searcy, AR 72143

ANALYTICAL RESULTS

AIC No. 124155-1 (Continued)

Sample Identification: Clarifier 11-4-08 1100/am

Analyte	Method	Result	RL	Units	Batch	Qualifier
Base/Neutral and Acid Compounds By EPA 625 (Continued)						
Naphthalene		< 1.6	1.6	ug/l	B5392	
Nitrobenzene		< 1.9	1.9	ug/l	B5392	
2-Nitrophenol		< 3.6	3.6	ug/l	B5392	
4-Nitrophenol		< 2.4	2.4	ug/l	B5392	
p-Chloro-m-cresol		< 3	3	ug/l	B5392	
Pentachlorophenol		< 3.6	3.6	ug/l	B5392	
Phenanthrene		< 5.4	5.4	ug/l	B5392	
Phenol		< 1.5	1.5	ug/l	B5392	
Pyrene		< 1.9	1.9	ug/l	B5392	
2,3,7,8-TCDD		< 1	1	ug/l	B5392	
1,2,4-Trichlorobenzene		< 1.9	1.9	ug/l	B5392	
2,4,6-Trichlorophenol		< 2.7	2.7	ug/l	B5392	
Surrogate Recovery						
2-Fluorobiphenyl		86.7	-	%	B5392	
2-Fluorophenol		62.9	-	%	B5392	
Nitrobenzene-D5		84.8	-	%	B5392	
Phenol-D5		51.3	-	%	B5392	
Terphenyl-D14		101	-	%	B5392	
2,4,6-Tribromophenol		90.6	-	%	B5392	
Volatile Organic Compounds By EPA 624						
Acrolein		< 50	50	ug/l	V6831	
Acrylonitrile		< 20	20	ug/l	V6831	
Benzene		< 4.4	4.4	ug/l	V6831	
Bromoform		< 4.7	4.7	ug/l	V6831	
Carbon tetrachloride		< 2	2	ug/l	V6831	
Chlorobenzene		< 6	6	ug/l	V6831	
Chlorodibromomethane		< 3.1	3.1	ug/l	V6831	
Chloroethane		< 8.7	8.7	ug/l	V6831	
2-Chloroethylvinyl ether		< 5.1	5.1	ug/l	V6831	
Chloroform		2.6	1.6	ug/l	V6831	J
1,2-Dichlorobenzene		< 5	5	ug/l	V6831	
1,3-Dichlorobenzene		< 5	5	ug/l	V6831	
1,4-Dichlorobenzene		< 5	5	ug/l	V6831	
Dichlorobromomethane		< 2.2	2.2	ug/l	V6831	
1,1-Dichloroethane		< 4.7	4.7	ug/l	V6831	
1,2-Dichloroethane		< 2.8	2.8	ug/l	V6831	
1,1-Dichloroethylene		< 2.8	2.8	ug/l	V6831	
trans-1,2-Dichloroethylene		< 1.6	1.6	ug/l	V6831	
1,2-Dichloropropane		< 6	6	ug/l	V6831	
cis-1,3-Dichloropropylene		< 5	5	ug/l	V6831	
trans-1,3-Dichloropropylene		< 1.3	1.3	ug/l	V6831	
Ethylbenzene		< 7.2	7.2	ug/l	V6831	
Methyl bromide(Bromomethane)		< 8.9	8.9	ug/l	V6831	
Methyl chloride(Chloromethane)		< 7.8	7.8	ug/l	V6831	
Methylene chloride		< 10	10	ug/l	V6831	
1,1,2,2-Tetrachloroethane		< 6.9	6.9	ug/l	V6831	
Tetrachloroethylene		< 4.1	4.1	ug/l	V6831	
Toluene		< 6	6	ug/l	V6831	

Arkansas Testing Laboratories
 3301 Langley Drive
 Searcy, AR 72143

ANALYTICAL RESULTS

AIC No. 124155-1 (Continued)

Sample Identification: Clarifier 11-4-08 1100/am

Analyte	Method	Result	RL	Units	Batch	Qualifier
Volatile Organic Compounds By EPA 624 (Continued)						
1,1,1-Trichloroethane		< 3.8	3.8	ug/l	V6831	
1,1,2-Trichloroethane		< 5	5	ug/l	V6831	
Trichloroethylene		< 1.9	1.9	ug/l	V6831	
Vinyl chloride		< 6.4	6.4	ug/l	V6831	
Surrogate Recovery						
Bromofluorobenzene		96.8	-	%	V6831	
Dibromofluoromethane		103	-	%	V6831	
Toluene-D8		99.8	-	%	V6831	
Organophosphorus Pesticides By EPA 3510C, 8141A						
Chlorpyrifos		< 0.07	0.07	ug/l	G7224	
Surrogate Recovery						
Triphenyl phosphate		91.2	-	%	G7224	
Organochlorine Pesticides and PCBs By EPA 608						
Aldrin		< 0.004	0.004	ug/l	G7223	
alpha-BHC		< 0.003	0.003	ug/l	G7223	
alpha-Endosulfan		< 0.014	0.014	ug/l	G7223	
beta-BHC		< 0.006	0.006	ug/l	G7223	
beta-Endosulfan		< 0.004	0.004	ug/l	G7223	
Chlordane		< 0.014	0.014	ug/l	G7223	
4,4'-DDD		< 0.011	0.011	ug/l	G7223	
4,4'-DDE		< 0.004	0.004	ug/l	G7223	
4,4'-DDT		< 0.012	0.012	ug/l	G7223	
delta-BHC		< 0.009	0.009	ug/l	G7223	
Dieldrin		< 0.002	0.002	ug/l	G7223	
Endosulfan sulfate		< 0.066	0.066	ug/l	G7223	
Endrin		< 0.006	0.006	ug/l	G7223	
Endrin aldehyde		< 0.023	0.023	ug/l	G7223	
gamma-BHC (Lindane)		< 0.004	0.004	ug/l	G7223	
Heptachlor		< 0.003	0.003	ug/l	G7223	
Heptachlor epoxide		< 0.01	0.01	ug/l	G7223	
PCB 1016		< 0.07	0.07	ug/l	G7223	
PCB 1221		< 0.2	0.2	ug/l	G7223	
PCB 1232		< 0.05	0.05	ug/l	G7223	
PCB 1242		< 0.06	0.06	ug/l	G7223	
PCB 1248		< 0.07	0.07	ug/l	G7223	
PCB 1254		< 0.2	0.2	ug/l	G7223	
PCB 1260		< 0.06	0.06	ug/l	G7223	
Toxaphene		< 0.24	0.24	ug/l	G7223	
Surrogate Recovery						
Decachlorobiphenyl		57.2	-	%	G7223	
Tetrachloro-m-xylene		74.4	-	%	G7223	
Total Recoverable:						
Cadmium	EPA 200.8	0.00011	0.0001	mg/l	S24258	
Chromium	EPA 200.8	< 0.007	0.007	mg/l	S24258	
Copper	EPA 200.8	0.071	0.001	mg/l	S24258	
Lead	EPA 200.8	< 0.001	0.001	mg/l	S24258	
Nickel	EPA 200.8	0.33	0.001	mg/l	S24258	
Silver	EPA 200.8	< 0.0002	0.0002	mg/l	S24258	



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ANALYTICAL RESULTS

AIC No. 124155-1 (Continued)

Sample Identification: Clarifier 11-4-08 1100/am

Analyte	Method	Result	RL	Units	Batch	Qualifier
Total Recoverable:						
Zinc	EPA 200.8	0.30	0.002	mg/l	S24258	