Work Order No.: 19H1598



August 26, 2019

Arcelor Mittal USA, Inc. 250 W US Highway 12 Burns Harbor, IN 46304-9745

Re: NPDES Excursion

Dear Teri Kirk:

Microbac Laboratories, Inc. - Chicagoland Division received 25 sample(s) on 8/26/2019 9:50:00AM for the analyses presented in the following report as Work Order 19H1598.

The enclosed results were obtained from and are applicable to the sample(s) as received at the laboratory. All sample results are reported on an "as received" basis unless otherwise noted.

All data included in this report have been reviewed and meet the applicable project specific and certification specific requirements, unless otherwise noted. A qualifications page is included in this report and lists the programs under which Microbac maintains certification.

This report has been paginated in its entirety and shall not be reproduced except in full, without the written approval of Microbac Laboratories.

We appreciate the opportunity to service your analytical needs. If you have any questions, please contact your project manager. For any feedback, please contact Ron Misiunas, Division Manager, at ron.misiunas@microbac.com.

Sincerely,

Microbac Laboratories, Inc.

Carry Hadzala

Carey Gadzala Project Manager



Date:

Partial 8/26/2019

Monday, August 26, 2019

WORK ORDER SAMPLE SUMMARY

Arcelor Mittal USA, Inc. NPDES Excursion

Lab Order: 19H1598

Client:

Project:

Lab Sample ID	Client Sample ID	Tag Number	Collection Date	Date Received
19H1598-01	15 Portage Marina East		08/25/2019 09:50	8/26/2019 9:50:00AM
19H1598-02	#8		08/25/2019 09:50	8/26/2019 9:50:00AM
19H1598-03	#9		08/25/2019 09:50	8/26/2019 9:50:00AM
19H1598-04	#10		08/25/2019 09:50	8/26/2019 9:50:00AM
19H1598-05	#11		08/25/2019 09:50	8/26/2019 9:50:00AM
19H1598-06	#12		08/25/2019 09:50	8/26/2019 9:50:00AM
19H1598-07	SL-1		08/25/2019 09:50	8/26/2019 9:50:00AM
19H1598-08	#13		08/25/2019 09:50	8/26/2019 9:50:00AM
19H1598-09	#14		08/25/2019 09:50	8/26/2019 9:50:00AM
19H1598-10	# 7		08/25/2019 09:50	8/26/2019 9:50:00AM
19H1598-11	#6		08/25/2019 09:50	8/26/2019 9:50:00AM
19H1598-12	#5		08/25/2019 09:50	8/26/2019 9:50:00AM
19H1598-13	#4		08/25/2019 09:50	8/26/2019 9:50:00AM
19H1598-14	#3		08/25/2019 09:50	8/26/2019 9:50:00AM
19H1598-15	#2		08/25/2019 09:50	8/26/2019 9:50:00AM
19H1598-16	#1		08/25/2019 09:50	8/26/2019 9:50:00AM
19H1598-17	OF001		08/25/2019 09:50	8/26/2019 9:50:00AM
19H1598-18	000		08/25/2019 09:50	8/26/2019 9:50:00AM
19H1598-19	SL-2		08/25/2019 09:50	8/26/2019 9:50:00AM
19H1598-20	SL-3		08/25/2019 09:50	8/26/2019 9:50:00AM
19H1598-21	SL-4		08/25/2019 09:50	8/26/2019 9:50:00AM
19H1598-22	SL-5		08/25/2019 09:50	8/26/2019 9:50:00AM
19H1598-23	SL-6		08/25/2019 09:50	8/26/2019 9:50:00AM
19H1598-24	SL-7		08/25/2019 09:50	8/26/2019 9:50:00AM
19H1598-25	SL-8		08/25/2019 09:50	8/26/2019 9:50:00AM



Partial 8/26/2019

Field Results		Date: Mond	ay, August 26, 2019
Client: Client Project:	Arcelor Mittal USA, Inc. NPDES Excursion	Work Order:	19H1598
Client Sample ID:	15 Portage Marina East	Work Order/ID:	19H1598-01
Sample Description:	To Fortage Marina Last	Sampled:	08/25/2019 09:50
Matrix:	Aqueous	Received:	08/26/2019 09:50
Analyses	·	Result	Units
Dissolved Oxygen		5.9	mg/L
pH		7.32	pH Units
Temperature		23.7	Deg C
Client Sample ID:	#8	Work Order/ID:	19H1598-02
Sample Description:		Sampled:	08/25/2019 09:50
Matrix:	Aqueous	Received:	08/26/2019 09:50
Analyses		Result	Units
Dissolved Oxygen		5.9	mg/L
pН		7.28	pH Units
Temperature		23.4	Deg C
Client Sample ID: Sample Description:	#9	Work Order/ID: Sampled:	19H1598-03 08/25/2019 09:50
Matrix:	Aqueous	Received:	08/26/2019 09:50
Analyses		Result	Units
Dissolved Oxygen		5.5	mg/L
pH		7.32	pH Units
Temperature		23.6	Deg C
Client Sample ID: Sample Description: Matrix:	#10 Aqueous	Work Order/ID: Sampled: Received:	19H1598-04 08/25/2019 09:50 08/26/2019 09:50
Analyses		Result	Units
Dissolved Oxygen		6.0	mg/L
pH		7.35	pH Units
Temperature		23.7	Deg C
Client Sample ID: Sample Description: Matrix:	#11 Aqueous	Work Order/ID: Sampled: Received:	19H1598-05 08/25/2019 09:50 08/26/2019 09:50
Analyses		Result	Units
Dissolved Oxygen		5.9	mg/L
рН		7.44	pH Units
Temperature		23.5	Deg C
Client Sample ID: Sample Description: Matrix:	#12 Aqueous	Work Order/ID: Sampled: Received:	19H1598-06 08/25/2019 09:50 08/26/2019 09:50
Analyses		Result	Units



Partial 8/26/2019

рН		7.47	pH Units
		23.8	
Temperature		23.6	Deg C
lient Sample ID:	SL-1	Work Order/ID:	19H1598-07
ample Description:		Sampled:	08/25/2019 09:50
Matrix:	Aqueous	Received:	08/26/2019 09:50
Analyses		Result	Units
Dissolved Oxygen		8.0	mg/L
pН		7.91	pH Units
Temperature		21.7	Deg C
Ni ant Canada IDa	440	Weste Onte #ID:	40114500.00
Client Sample ID:	#13	Work Order/ID:	19H1598-08
Sample Description:		Sampled:	08/25/2019 09:50
Matrix:	Aqueous	Received:	08/26/2019 09:50
Inalyses		Result	Units
Dissolved Oxygen		6.9	mg/L
pH		7.73	pH Units
Temperature		22.6	Deg C
Client Sample ID:	#14	Work Order/ID:	19H1598-09
Sample Description:		Sampled:	08/25/2019 09:50
	Aguagua		
Matrix:	Aqueous	Received:	08/26/2019 09:50
Analyses		Result	Units
Dissolved Oxygen		8.3	mg/L
pH		7.96	pH Units
Temperature		24.2	Deg C
Client Sample ID:	#7	Work Order/ID:	19H1598-10
Sample Description:		Sampled:	08/25/2019 09:50
Matrix:	Aqueous	Received:	08/26/2019 09:50
Analyses		Result	Units
Dissolved Oxygen		5.7	mg/L
pH		7.51	pH Units
Temperature		23.4	Deg C
Client Sample ID:	#6	Work Order/ID:	19H1598-11
Sample Description:		Sampled:	08/25/2019 09:50
Matrix:	Aqueous	Received:	08/26/2019 09:50
Inalyses		Result	Units
Dissolved Oxygen		6.4	mg/L
pH		7.71	pH Units
Temperature		22.4	Deg C
Client Sample ID:	#5	Work Order/ID:	19H1598-12
Sample Description:		Sampled:	08/25/2019 09:50
	Aqueous	Sampled: Received:	08/26/2019 09:50
Matrix:			



Field Results		Date: Mor	nday, August 26, 2019
Dissolved Oxygen		6.3	mg/L
pH		7.73	pH Units
Temperature		22.6	Deg C
Client Comple ID:	#4	Work Order/ID	: 19H1598-13
Client Sample ID: Sample Description:	""		08/25/2019 09:50
Matrix:	Aqueous	Sampled: Received:	08/26/2019 09:50
Analyses		Result	Units
Dissolved Oxygen		6.6	mg/L
pH		7.72	pH Units
Temperature		22.8	Deg C
Client Sample ID:	#3	Work Order/ID	: 19H1598-14
Sample Description:		Sampled:	08/25/2019 09:50
Matrix:	Aqueous	Received:	08/26/2019 09:50
Analyses		Result	Units
Dissolved Oxygen		6.6	mg/L
pН		7.76	pH Units
Temperature		22.4	Deg C
Client Sample ID: Sample Description: Matrix:	#2 Aqueous	Work Order/ID Sampled: Received:	: 19H1598-15 08/25/2019 09:50 08/26/2019 09:50
Analyses		Result	Units
Dissolved Oxygen		6.4	mg/L
pH		7.76	pH Units
Temperature		22.7	Deg C
Client Sample ID:	#1	Work Order/ID	
Sample Description:		Sampled:	08/25/2019 09:50
Matrix:	Aqueous	Received:	08/26/2019 09:50
Analyses		Result	Units
Dissolved Oxygen		7.1	mg/L
pН		7.73	pH Units
Temperature		23.3	Deg C
Client Sample ID:	OF001	Work Order/ID	: 19H1598-17
Sample Description:		Sampled:	08/25/2019 09:50
Matrix:	Aqueous	Received:	08/26/2019 09:50
Analyses		Result	Units
Dissolved Oxygen		6.4	mg/L
pН		7.79	pH Units
Tomporatura		24.4	Dog C

Temperature

Deg C



Client Sample ID: Sample Description:	000	Work Order/ID: Sampled:	19H1598-18 08/25/2019 09:50
Matrix:	Aqueous	Received:	08/26/2019 09:50
Analyses		Result	Units
Dissolved Oxygen		6.7	mg/L
рН		7.77	pH Units
Temperature		21.3	Deg C
Client Sample ID:	SL-2	Work Order/ID:	19H1598-19
Sample Description:		Sampled:	08/25/2019 09:50
Matrix:	Aqueous	Received:	08/26/2019 09:50
Analyses	·	Result	Units
Dissolved Oxygen		8.2	mg/L
pH		8.04	pH Units
Temperature		23.2	Deg C
		'	
Client Sample ID:	SL-3	Work Order/ID:	19H1598-20
Sample Description:		Sampled:	08/25/2019 09:50
Matrix:	Aqueous	Received:	08/26/2019 09:50
Analyses		Result	Units
Dissolved Oxygen		7.7	mg/L
pН		8.11	pH Units
Temperature		23.4	Deg C
011 / 0 1 15	01.4		40114500.04
Client Sample ID:	SL-4	Work Order/ID:	19H1598-21
Sample Description:		Sampled:	08/25/2019 09:50
Matrix:	Aqueous	Received:	08/26/2019 09:50
Analyses		Result	Units
Dissolved Oxygen		8.0	mg/L
pН		8.04	pH Units
Temperature		23.7	Deg C
	0.5		40114500.00
Client Sample ID:	SL-5	Work Order/ID:	19H1598-22
Sample Description:		Sampled:	08/25/2019 09:50
Matrix:	Aqueous	Received:	08/26/2019 09:50
Analyses		Result	Units
Dissolved Oxygen		7.6	mg/L
pH		7.92	pH Units
Temperature		23.9	Deg C
Client Sample ID:	SL-6	Work Order/ID:	19H1598-23
Sample Description:	02.0	Sampled:	08/25/2019 09:50
Sample Description. Matrix:	Aqueous	Received:	08/26/2019 09:50
Analyses	1	Result	Units
riiuiyada		6.7	mg/L
Dissolved Oxvaen		I U.1	I IIIU/L
Dissolved Oxygen pH		7.99	pH Units



Date: Monday, August 26, 2019 **Field Results**

Client Sample ID: SL-7 Work Order/ID: 19H1598-24

Sample Description: Sampled: 08/25/2019 09:50 Received: Matrix: Aqueous 08/26/2019 09:50

Analyses Result Units Dissolved Oxygen 6.8 mg/L рΗ 8.02 pH Units Temperature 23.8 Deg C

Client Sample ID: SL-8 Work Order/ID: 19H1598-25

Sample Description:

Sampled: 08/25/2019 09:50 Matrix: Aqueous Received: 08/26/2019 09:50

Analyses	Result	Units
Dissolved Oxygen	7.1	mg/L
pH	8.0	pH Units
Temperature	23.8	Deg C



08/26/2019 12:37

Analytical Results Date: Monday, August 26, 2019

Client: Arcelor Mittal USA, Inc.
Client Project: NPDES Excursion

Free Cyanide

Client Sample ID: 15 Portage Marina East Work Order/ID: 19H1598-01

Sample Description: Sampled: 08/25/2019 9:50

 Matrix:
 Aqueous
 Received:
 08/26/2019
 9:50

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: SM 4500-0	CN C/E-1999			An	alyst: AJR
Total Cyanide		Prep Method: NA P					Prep Date/	Time: 08/26/2019 12:58
Cyanide, Total	dij	Α	ND	0.0050		mg/L	1	08/26/2019 15:28
			Method: SW-846 90)14			Ana	alyst: AJR
Free Cyanide		F	Prep Method: SW-846 90	014			Prep Date/	Time: 08/26/2019 11:29

ND

0.0062

mg/L

Α



Client: Arcelor Mittal USA, Inc.
Client Project: NPDES Excursion

 Client Sample ID:
 #8
 Work Order/ID:
 19H1598-02

 Sample Description:
 Sampled:
 08/25/2019
 9:50

 Matrix:
 Aqueous
 Received:
 08/26/2019
 9:50

Analyses	Certs	ΑT	Result	RL	Qual	Units	DF	Analyzed
			Method: SM 4500-0	N C/E-1999			An	alyst: AJR
Total Cyanide		F	Prep Method: NA				Prep Date/	Time: 08/26/2019 12:58
Cyanide, Total	dij	Α	ND	0.0050	r	ng/L	1	08/26/2019 15:30
			Method: SW-846 90)14			An	alyst: AJR
Free Cyanide		F	Prep Method: SW-846 90	014			Prep Date/	Time: 08/26/2019 11:29
Free Cyanide		Α	ND	0.0062	r	ng/L	1	08/26/2019 12:39



Client: Arcelor Mittal USA, Inc.
Client Project: NPDES Excursion

 Client Sample ID:
 #9
 Work Order/ID:
 19H1598-03

 Sample Description:
 Sampled:
 08/25/2019
 9:50

 Matrix:
 Aqueous
 Received:
 08/26/2019
 9:50

Analyses	Certs	ΑT	Result	RL	Qual	Units	DF	Analyzed
			Method: SM 4500-0	N C/E-1999			An	alyst: AJR
Total Cyanide		F	Prep Method: NA				Prep Date/	Time:08/26/2019 13:14
Cyanide, Total	dij	Α	ND	0.0050	r	ng/L	1	08/26/2019 15:32
			Method: SW-846 90)14			An	alyst:AJR
Free Cyanide		F	Prep Method: SW-846 90	014			Prep Date/	Time: 08/26/2019 11:29
Free Cyanide		Α	ND	0.0062	r	ng/L	1	08/26/2019 12:41



08/26/2019 12:42

Analytical Results Date: Monday, August 26, 2019

Client: Arcelor Mittal USA, Inc.
Client Project: NPDES Excursion

Free Cyanide

 Client Sample ID:
 #10

 Work Order/ID:
 19H1598-04

 Sample Description:
 Sampled:
 08/25/2019
 9:50

 Matrix:
 Aqueous
 Received:
 08/26/2019
 9:50

RL Units **Analyses** Certs AT Result Qual DF Analyzed Method: SM 4500-CN C/E-1999 Analyst: AJR Prep Method: NA Prep Date/Time: 08/26/2019 13:14 **Total Cyanide** Cyanide, Total dij Α ND 0.0050 mg/L 08/26/2019 15:33 Method: SW-846 9014 Analyst: AJR Prep Method: SW-846 9014 Prep Date/Time: 08/26/2019 11:29 Free Cyanide

0.0062

mg/L

Α



Client: Arcelor Mittal USA, Inc.
Client Project: NPDES Excursion

 Client Sample ID:
 #11
 Work Order/ID:
 19H1598-05

 Sample Description:
 Sampled:
 08/25/2019
 9:50

 Matrix:
 Aqueous

 Received:
 08/26/2019
 9:50

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: SM 4500-0	CN C/E-1999			Ana	alyst:AJR
Total Cyanide		F	Prep Method: NA				Prep Date/	īme:08/26/2019 13:14
Cyanide, Total	dij	Α	ND	0.0050	n	ng/L	1	08/26/2019 15:35
			Method: SW-846 90	014			Ana	alyst: AJR
Free Cyanide		F	Prep Method: SW-846 9	014			Prep Date/	īme: 08/26/2019 11:29
Free Cyanide		Α	ND	0.0062	n	ng/L	1	08/26/2019 12:44



Client: Arcelor Mittal USA, Inc.
Client Project: NPDES Excursion

 Client Sample ID:
 #12
 Work Order/ID:
 19H1598-06

 Sample Description:
 Sampled:
 08/25/2019
 9:50

 Sample Description:
 Sampled:
 08/25/2019
 9:50

 Matrix:
 Aqueous
 Received:
 08/26/2019
 9:50

Analyses	Certs	ΑT	Result	RL	Qual	Units	DF	Analyzed
			Method: SM 4500-C	N C/E-1999			Ana	alyst: AJR
Total Cyanide		F	Prep Method: NA				Prep Date/	Time:08/26/2019 13:14
Cyanide, Total	dij	Α	ND	0.0050	r	ng/L	1	08/26/2019 15:37
			Method: SW-846 90	14			Ana	alyst:AJR
Free Cyanide		F	Prep Method: SW-846 90	14			Prep Date/	Time: 08/26/2019 11:29
Free Cyanide		Α	ND	0.0062	r	ng/L	1	08/26/2019 12:46



Arcelor Mittal USA, Inc. Client: NPDES Excursion **Client Project:**

SL-1 Work Order/ID: 19H1598-07 Client Sample ID:

Sample Description: 08/25/2019 9:50 Sampled: Matrix: Aqueous Received: 08/26/2019 9:50

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: SM 4500-0	CN C/E-1999			An	alyst: AJR
Total Cyanide		F	Prep Method: NA				Prep Date/	Time: 08/26/2019 13:14
Cyanide, Total	dij	А	ND	0.0050	n	ng/L	1	08/26/2019 15:42
			Method: SW-846 90	014			An	alyst: AJR
Free Cyanide		F	Prep Method: SW-846 9	014			Prep Date/	Time: 08/26/2019 11:29
Free Cyanide		Α	ND	0.0062	n	ng/L	1	08/26/2019 12:47



Client: Arcelor Mittal USA, Inc.
Client Project: NPDES Excursion

 Client Sample ID:
 #13

 Work Order/ID:
 19H1598-08

 Sample Description:
 Sampled:
 08/25/2019
 9:50

 Matrix:
 Aqueous
 Received:
 08/26/2019
 9:50

Analyses Certs AT Result RL Qual Units DF Analyzed

Method: SM 4500-CN C/E-1999 Analyst: AJR

 Total Cyanide
 Prep Method: NA
 Prep Date/Time: 08/26/2019 12:58

 Cyanide, Total
 dij
 A
 ND
 0.0050
 mg/L
 1
 08/26/2019 15:43

Method: **SW-846 9014** Analyst: **AJR**Prep Method: **SW-846 9014** Prep Date/Time: **08/26/2019 11:29**

 Free Cyanide
 Prep Method: SW-846 9014
 Prep Date/Time: 08/26/2019 11:29

 Free Cyanide
 A
 ND
 0.0062
 mg/L
 1
 08/26/2019 12:49



Arcelor Mittal USA, Inc. Client: NPDES Excursion **Client Project:**

#14 Work Order/ID: 19H1598-09 Client Sample ID:

Sample Description: Sampled: 08/25/2019 9:50 Aqueous Matrix: Received: 08/26/2019 9:50

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: SM 4500-0	CN C/E-1999			Ana	lyst: AJR
Total Cyanide		F	Prep Method: NA				Prep Date/T	me:08/26/2019 12:58
Cyanide, Total	dij	Α	ND	0.0050	m	g/L	1	08/26/2019 15:45
			Method: SW-846 90	014			Ana	lyst: AJR
Free Cyanide		F	Prep Method: SW-846 9	014			Prep Date/T	me: 08/26/2019 11:29
Free Cyanide		Α	ND	0.0062	m	g/L	1	08/26/2019 13:05



Client: Arcelor Mittal USA, Inc.
Client Project: NPDES Excursion

 Client Sample ID:
 #7
 Work Order/ID:
 19H1598-10

 Sample Description:
 Sampled:
 08/25/2019
 9:50

 Matrix:
 Aqueous
 Received:
 08/26/2019
 9:50

Analyses	Certs	ΑT	Result	RL	Qual	Units	DF	Analyzed
			Method: SM 4500-C	N C/E-1999			Ana	alyst:AJR
Total Cyanide		F	Prep Method: NA				Prep Date/	Time: 08/26/2019 12:58
Cyanide, Total	dij	Α	ND	0.0050	r	ng/L	1	08/26/2019 15:47
			Method: SW-846 90	14			Ana	alyst: AJR
Free Cyanide		F	Prep Method: SW-846 90	114			Prep Date/	Time: 08/26/2019 11:29
Free Cyanide		Α	ND	0.0062	r	ng/L	1	08/26/2019 13:07



Client: Arcelor Mittal USA, Inc.
Client Project: NPDES Excursion

 Client Sample ID:
 #6
 Work Order/ID:
 19H1598-11

 Sample Description:
 Sampled:
 08/25/2019
 9:50

 Matrix:
 Aqueous
 Received:
 08/26/2019
 9:50

Analyses	Certs	ΑT	Result	RL	Qual	Units	DF	Analyzed
			Method: SM 4500-0	N C/E-1999			Ana	alyst: AJR
Total Cyanide		F	Prep Method: NA				Prep Date/	Time:08/26/2019 12:58
Cyanide, Total	dij	Α	ND	0.0050	r	ng/L	1	08/26/2019 15:48
			Method: SW-846 90)14			Ana	alyst:AJR
Free Cyanide		F	Prep Method: SW-846 90	014			Prep Date/	Time:08/26/2019 11:29
Free Cyanide		Α	ND	0.0062	r	ng/L	1	08/26/2019 13:12



Client: Arcelor Mittal USA, Inc.
Client Project: NPDES Excursion

 Client Sample ID:
 #5
 Work Order/ID:
 19H1598-12

 Sample Description:
 Sampled:
 08/25/2019
 9:50

 Matrix:
 Aqueous
 Received:
 08/26/2019
 9:50

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: SM 4500-	CN C/E-1999			Ana	alyst:AJR
Total Cyanide		F	Prep Method: NA				Prep Date/1	ime:08/26/2019 12:58
Cyanide, Total	dij	Α	0.0070	0.0050	n	ng/L	1	08/26/2019 15:50
			Method: SW-846 9	014			Ana	alyst: AJR
Free Cyanide		F	Prep Method: SW-846 9	014			Prep Date/1	ime:08/26/2019 11:29
Free Cyanide		Α	ND	0.0062	n	ng/L	1	08/26/2019 13:17



Client: Arcelor Mittal USA, Inc.
Client Project: NPDES Excursion

 Client Sample ID:
 #4
 Work Order/ID:
 19H1598-13

 Sample Description:
 Sampled:
 08/25/2019
 9:50

 Matrix:
 Aqueous
 Received:
 08/26/2019
 9:50

RL Units **Analyses** Certs AT Result Qual DF Analyzed Method: SM 4500-CN C/E-1999 Analyst: AJR Prep Method: NA Prep Date/Time: 08/26/2019 12:58 **Total Cyanide** Cyanide, Total dij Α ND 0.0050 mg/L 08/26/2019 15:52

 Method: SW-846 9014
 Analyst: AJR

 Free Cyanide
 Prep Method: SW-846 9014
 Prep Date/Time: 08/26/2019 11:29

 Free Cyanide
 A
 ND
 0.0062
 mg/L
 1
 08/26/2019 13:26



Client: Arcelor Mittal USA, Inc.
Client Project: NPDES Excursion

 Client Sample ID:
 #3
 Work Order/ID:
 19H1598-14

 Sample Description:
 Sampled:
 08/25/2019
 9:50

 Matrix:
 Aqueous
 Received:
 08/26/2019
 9:50

Analyses Certs AT Result RL Qual Units DF Analyzed

 Method: SM 4500-CN C/E-1999
 Analyst: AJR

 Total Cyanide
 Prep Method: NA
 Prep Date/Time: 08/26/2019 12:58

 Cyanide, Total
 dij
 A
 ND
 0.0050
 mg/L
 1
 08/26/2019 15:53

 Method: SW-846 9014
 Analyst: AJR

 Free Cyanide
 Prep Method: SW-846 9014
 Prep Date/Time: 08/26/2019 11:29

 Free Cyanide
 A
 ND
 0.0062
 mg/L
 1
 08/26/2019 13:27



Client: Arcelor Mittal USA, Inc.
Client Project: NPDES Excursion

 Client Sample ID:
 #2
 Work Order/ID:
 19H1598-15

 Sample Description:
 Sampled:
 08/25/2019
 9:50

 Matrix:
 Aqueous
 Received:
 08/26/2019
 9:50

RL Units **Analyses** Certs AT Result Qual DF Analyzed Method: SM 4500-CN C/E-1999 Analyst: AJR Prep Method: NA Prep Date/Time: 08/26/2019 13:14 **Total Cyanide** Cyanide, Total dij Α ND 0.0050 mg/L 08/26/2019 16:09 Method: SW-846 9014 Analyst: AJR Prep Method: SW-846 9014 Prep Date/Time: 08/26/2019 11:29 Free Cyanide Free Cyanide Α 0.0062 mg/L 08/26/2019 13:29



08/26/2019 13:31

Analytical Results Date: Monday, August 26, 2019

Client: Arcelor Mittal USA, Inc.
Client Project: NPDES Excursion

Free Cyanide

 Client Sample ID:
 #1
 Work Order/ID:
 19H1598-16

 Sample Description:
 Sampled:
 08/25/2019
 9:50

 Matrix:
 Aqueous
 Received:
 08/26/2019
 9:50

RL Units **Analyses** Certs AT Result Qual DF Analyzed Method: SM 4500-CN C/E-1999 Analyst: AJR Prep Method: NA Prep Date/Time: 08/26/2019 13:14 **Total Cyanide** Cyanide, Total dij Α ND 0.0050 mg/L 08/26/2019 16:10 Method: SW-846 9014 Analyst: AJR Prep Method: SW-846 9014 Prep Date/Time: 08/26/2019 11:29 Free Cyanide

0.0062

mg/L

Α



Client: Arcelor Mittal USA, Inc.
Client Project: NPDES Excursion

Client Sample ID: OF001 Work Order/ID: 19H1598-17

Sample Description: Sampled: 08/25/2019 9:50

 Matrix:
 Aqueous

 Received:
 08/26/2019
 9:50

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: SM 4500-0	CN C/E-1999			Ana	alyst:AJR
Total Cyanide		F	Prep Method: NA				Prep Date/1	īme: 08/26/2019 14:17
Cyanide, Total	dij	Α	ND	0.0050	n	ng/L	1	08/26/2019 16:54
			Method: SW-846 90	014			Ana	alyst: AJR
Free Cyanide		F	Prep Method: SW-846 90	014			Prep Date/1	īme: 08/26/2019 11:29
Free Cyanide		Α	ND	0.0062	n	ng/L	1	08/26/2019 13:32



Client: Arcelor Mittal USA, Inc.
Client Project: NPDES Excursion

 Client Sample ID:
 000
 Work Order/ID:
 19H1598-18

 Sample Description:
 Sampled:
 08/25/2019
 9:50

 Matrix:
 Aqueous
 Received:
 08/26/2019
 9:50

RL Units **Analyses** Certs AT Result Qual DF Analyzed Method: SM 4500-CN C/E-1999 Analyst: AJR Prep Method: NA Prep Date/Time: 08/26/2019 14:17 **Total Cyanide** Cyanide, Total dij Α ND 0.0050 mg/L 08/26/2019 16:56 Method: SW-846 9014

 Method: SW-846 9014
 Analyst: AJR

 Free Cyanide
 Prep Method: SW-846 9014
 Prep Date/Time: 08/26/2019 11:29

 Free Cyanide
 A
 ND
 0.0062
 mg/L
 1
 08/26/2019 13:34



Arcelor Mittal USA, Inc. Client: NPDES Excursion **Client Project:**

SL-2 Work Order/ID: 19H1598-19 **Client Sample ID:**

08/25/2019 9:50 Sample Description: Sampled: Matrix: Aqueous Received: 08/26/2019 9:50

RL Units **Analyses** Certs AT Result Qual DF Analyzed Method: SM 4500-CN C/E-1999 Analyst: AJR Prep Method: NA Prep Date/Time: 08/26/2019 14:17 **Total Cyanide** Cyanide, Total dij Α ND 0.0050 mg/L 08/26/2019 16:57 Method: SW-846 9014 Analyst: AJR

Prep Method: SW-846 9014 Prep Date/Time: 08/26/2019 11:29 Free Cyanide Free Cyanide Α 0.0062 mg/L 08/26/2019 13:36



Arcelor Mittal USA, Inc. Client: NPDES Excursion **Client Project:**

SL-3 Work Order/ID: 19H1598-20 **Client Sample ID:**

08/25/2019 9:50 Sample Description: Sampled: Matrix: Aqueous Received: 08/26/2019 9:50

RL Units **Analyses** Certs AT Result Qual DF Analyzed Method: SM 4500-CN C/E-1999 Analyst: AJR Prep Method: NA Prep Date/Time: 08/26/2019 14:17 **Total Cyanide** Cyanide, Total dij Α ND 0.0050 mg/L 08/26/2019 16:59

Method: SW-846 9014 Analyst: AJR Prep Method: SW-846 9014 Prep Date/Time: 08/26/2019 11:29 Free Cyanide Free Cyanide Α 0.0062 mg/L 08/26/2019 13:37



Client: Arcelor Mittal USA, Inc.
Client Project: NPDES Excursion

Client Sample ID: SL-4 Work Order/ID: 19H1598-21

Sample Description: Sampled: 08/25/2019 9:50

 Matrix:
 Aqueous
 Received:
 08/26/2019
 9:50

Analyses	Certs	ΑT	Result	RL	Qual	Units	DF	Analyzed
			Method: SM 4500-0	N C/E-1999			An	alyst: AJR
Total Cyanide		F	Prep Method: NA				Prep Date/	Time:08/26/2019 13:00
Cyanide, Total	dij	Α	ND	0.0050	r	ng/L	1	08/26/2019 17:03
			Method: SW-846 90)14			An	alyst:AJR
Free Cyanide		F	Prep Method: SW-846 90	014			Prep Date/	Time:08/26/2019 11:29
Free Cyanide		Α	ND	0.0062	r	ng/L	1	08/26/2019 13:39



Arcelor Mittal USA, Inc. Client: NPDES Excursion **Client Project:**

SL-5 Work Order/ID: 19H1598-22 Client Sample ID:

Sample Description: Sampled: 08/25/2019 9:50

Received: 08/26/2019 9:50 Matrix: Aqueous

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: SM 4500-0	CN C/E-1999			Ana	alyst:AJR
Total Cyanide		F	Prep Method: NA				Prep Date/1	īme: 08/26/2019 13:00
Cyanide, Total	dij	Α	ND	0.0050	n	ng/L	1	08/26/2019 17:04
			Method: SW-846 90	014			Ana	alyst: AJR
Free Cyanide		F	Prep Method: SW-846 9	014			Prep Date/1	ime:08/26/2019 11:29
Free Cyanide		Α	ND	0.0062	n	ng/L	1	08/26/2019 13:41



Arcelor Mittal USA, Inc. Client: NPDES Excursion **Client Project:**

SL-6 Work Order/ID: 19H1598-23 Client Sample ID:

08/25/2019 9:50 **Sample Description:** Sampled: 08/26/2019 9:50

Received: Matrix: Aqueous

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: SM 4500-0	N C/E-1999			Ana	llyst: AJR
Total Cyanide		F	Prep Method: NA				Prep Date/1	ime:08/26/2019 13:00
Cyanide, Total	dij	Α	ND	0.0050	ı	mg/L	1	08/26/2019 17:06
			Method: SW-846 90)14			Ana	alyst:AJR
Free Cyanide		F	Prep Method: SW-846 90	014			Prep Date/1	ime:08/26/2019 11:29
Free Cyanide		Α	ND	0.0062	ı	mg/L	1	08/26/2019 14:34



Client: Arcelor Mittal USA, Inc.
Client Project: NPDES Excursion

 Client Sample ID:
 SL-7
 Work Order/ID:
 19H1598-24

Sample Description: Sampled: 08/25/2019 9:50

 Matrix:
 Aqueous
 Received:
 08/26/2019
 9:50

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: SM 4500-0	CN C/E-1999			An	alyst: AJR
Total Cyanide		F	Prep Method: NA				Prep Date/	Time: 08/26/2019 13:00
Cyanide, Total	dij	Α	ND	0.0050	r	ng/L	1	08/26/2019 17:08
			Method: SW-846 9	014			An	alyst: AJR
Free Cyanide		F	Prep Method: SW-846 9	014			Prep Date/	Time: 08/26/2019 11:29
Free Cyanide		Α	ND	0.0062	r	ng/L	1	08/26/2019 14:36



Client: Arcelor Mittal USA, Inc.
Client Project: NPDES Excursion

 Client Sample ID:
 SL-8
 Work Order/ID:
 19H1598-25

Sample Description: Sampled: 08/25/2019 9:50

 Matrix:
 Aqueous
 Received:
 08/26/2019
 9:50

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: SM 4500-0	CN C/E-1999			Ana	alyst:AJR
Total Cyanide		F	Prep Method: NA				Prep Date/1	īme:08/26/2019 13:00
Cyanide, Total	dij	Α	ND	0.0050	n	ng/L	1	08/26/2019 17:09
			Method: SW-846 90	014			Ana	alyst: AJR
Free Cyanide		F	Prep Method: SW-846 9	014			Prep Date/1	ime:08/26/2019 11:29
Free Cyanide		Α	ND	0.0062	n	ng/L	1	08/26/2019 14:38

ANALYTE TYPES: (AT)

A,B = Target Analyte

I = Internal Standard

M = Summation Analyte

S = Surrogate

T = Tentatively Identified Compound (TIC, concentration estimated)



Partial 8/26/2019

QC SAMPLE IDENTIFICATIONS

BLK = Method Blank
DUP = Method Duplicate
BS = Method Blank Spike
MS = Matrix Spike
ICB = Initial Calibration Blank
CCB = Continuing Calibration Blank

CRL = Client Required Reporting Limit PDS = Post Digestion Spike QCS = Quality Control Standard ICSA = Interference Check Standard "A"
ICSAB = Interference Check Standard "AB"
BSD = Method Blank Spike Duplicate
MSD = Matrix Spike Duplicate
ICV = Initial Calibration Verification
CCV = Continuing Calibration Verification
OPR = Ongoing Precision and Recovery Standard

SD = Serial Dilution

CERTIFICATIONS (Certs)

Below is a list of certifications maintained by the Microbac Merrillville Laboratory. All data included in this report has been reviewed for and meets all project specific and quality control requirements of the applicable accreditation, unless otherwise noted. Complete lists of individual analytes pursuant to each certification below are available upon request.

- d Illinois EPA drinking water, wastewater and solid waste analysis (#200064)
- i Kansas Dept Health & Env. NELAP (#E-10397)
- J Kentucky Wastewater Laboratory Certification Program (#108202)

FLAGS, FOOTNOTES AND ABBREVIATIONS (as needed)

RL: Reporting Limit

RPD: Relative Percent Difference

Cooler Receipt Log

Cooler ID: Default Cooler

No dates or times on sample containers

Comments

MICROBAC®

Partial 8/26/2019

Cooler Inspection Checklist

Ice Present or not required?	Yes
Shipping containers sealed or not required?	Yes
Custody seals intact or not required?	Yes
Chain of Custody (COC) Present?	Yes
COC includes customer information?	No
Relinquished and received signature on COC?	Yes
Sample collector identified on COC?	Yes
Sample type identified on COC?	Yes
Correct type of Containers Received	Yes
Correct number of containers listed on COC?	Yes
Containers Intact?	Yes
COC includes requested analyses?	Yes
Enough sample volume for indicated tests received?	Yes
Sample labels match COC (Name, Date & Time?)	No
Samples arrived within hold time?	Yes
Correct preservatives on COC or not required?	Yes
Chemical preservations checked or not required?	Yes
Preservation checks meet method requirements?	Yes
VOA vials have zero headspace, or not recd.?	Yes

CHAIN OF CUSTODY RECORD Number 152255 Instructions on back TO BE COMPLETED BY MICROBAC Therm in B Holding Time Samples Received on Ice? IXVes \(\text{INO} \) INVA Custody Seals Intact? \(\text{Ives} \) Ino \(\text{INO} \) Indirections on back Custody Seals Intact? \(\text{Ives} \) Ino \(\text{Ino} \) Indirections on lee? IXVes \(\text{Ino} \) Indirections on back Custody Seals Intact? \(\text{Ives} \) Ino \(\text{Ino} \) Indirections on lee? IXVes \(\text{Ino} \) Indirections on lee
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∅ MICROBAC^{*}

∅ MICROBAC [∗]			CHAIN OF CUSTODY RECORD Number 152358 Instructions on back
ab Report Address Client Name: #MMBH	Invoice Address Client Name:	Turnaround Time ☐ Routine (5 to 7 business days)	TO BE COMPLETED BY MICROBAC Temperature Upon Receipt (°C)
Address:	Address:		Holding Time
City, State, Zip:	City, State, Zip:	(needed by)	Samples Received on Ice?
Contact:	Contact:	Report Type	Custody Seals Intact? ☐ Yes ☐ No ☐ N/A
Telephone No.:	Telephone No.:	☐ Results Only ☐ Level 1 ☐ Level 2	2
Send Report via: \square Mail \square Fax \square e-mail (address)		Send Invoice via:	
Project: RECEIVING Water ManiforIng Location:	ON WING Location:	PO No.: Compliance Monitoring?	toring?
Sampled by (PRINT): Patrall Column	Sampler Signature:	Sampler Phone No.: 219 ~	-644-7585
* Matrix Types: Soil/Solid (S), Sluc ** Preservative Types: (1) HNO3, (2) H28	il, Wipe, Drinking Water (DW), Groundwater (GW), (3) HCI, (4) NaOH, (5) Zinc Acetate, (6) Methanol,	Surface Water (SW), Waste Water (WW), Other (specify) (7) Sodium Bisulfate, (8) Sodium Thiosulfate, (9) Hexane	y) ne, (U) Unpreserved
		REQUESTED ANALYSIS	
Lab ID Client Sample ID	Date Time Ollected Containers Astrix Astrix Astrix Trans \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	(bloth) (bloth) (bloth)	(Geld) (Geld) (941598
9	9 11:09 3 AGG C	11/2 728 1 1 1 1 1	1-1
, co	11:16	1 22.6 7.73	63 -12
7	11:23	57,7 8,26	66 -13
in	11:37	22,47,76	66 -14
d	11:31	22.77.76	64 - 15
2	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	23,3 7,73	7/1 -16
05001	~ ~ ~ & b:11 ·	17 124.4 7.7	104 -17
	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	\ \ \	
	NA ANA		
] azard Identification	Hazardous ☐ Non-Hazardous ☐ Radioactive	Sample Disposition	
when collected	Relinguished By (signature) Date	Date/Time Received By (signature)	Date/Time
July of Indian	Relinquished By (Marture) Date,	Filme 16-30	O 14 (1) Date/Time
temp 0.0.	(signature)	Date/Time Received By (signature)	8/26/4 0953
7100/30/17			

				Ŷ.		- 12	_		180				1			3 .5		
CHAIN OF CUSTOBY RECORD Number 152257	TO BE COMPLETED BY MICROBAC Therm ID Holding Time	Samples Received on Ices	Custody Seals Intact? ☐ Yes ☐ No K N/A ☐ Level 3 ☐ Level 4 ☐ EDD		g? □Yes □No	2886	J) Unpreserved	(941598 (Additional Natures	10	3- 21	70 -21	9.7 -22	124	22/	Return Archive	Date/Time 8/26/19 0800	Date/Time	\$\langle 5\langle 9\rangle 6\rangle 5\rangle 9\rangle 5\rangle 9\rangle 37 \rangle 6\rangle 37\rangle 6\rangle 5\rangle 6\rangle 5\rangle 6\rangle 5\rangle 6\rangle 6\rangle 5\rangle 6\rangle 5\rangle 6\rangle 5\rangle 6\rangle 6\rangle 5\rangle 6\rangle 6\r
Nun Nun	Turnaround Time TO Solutine (5 to 7 business days) Ten Routine (5 to 7 business days) Ten The		Report Type Cus	☐ Mail ☐ Fax ☐ e-mail (address)	PO No.: Compliance Monitoring?	Sampler Phone No.: 219 - 644-7	water (GW), Surface Water (SW), Waste Water (WW), Other (specify) 6) Methanol, (7) Sodium Bisulfate, (8) Sodium Thiosulfate, (9) Hexane, (U		,776	823, L 804 823, L 804	23,7 8.04 8	7 60. C 7. P.C	123,8 8,03 (V V 23,8 12.00	Sample Disposition Dispose as appropriate Re	Received By (signature)	Received By (signature) 19 Ø \$50	Received By (signature)
	Invoice Address Client Name: Address:	City, State, Zip:	Contact: Telephone No.:	Send Invoice via:	C R	Sampler Signaffle: //	Soli/Solid (S), Sludge, Oil, Wipe, Drinking Water (DW), Groundwater (GW), Surface Water (SW), Waste Water (WW), Other (specify) (1) HNO3, (2) H2SO4, (3) HCI, (4) NaOH, (5) Zinc Acetate, (6) Methanol, (7) Sodium Bisulfate, (8) Sodium Thiosulfate, (9) Hexane, (U) Unpreserved	Collected Matrix Matrix Grab / Comp	50 3 RB (0)	26.4	14:44	5.30	5:35	> > > > > > > > > > > > > > > > > > >	☐ Radioactive	(signature)	(signature) Date/Jime	Kelinquished By (signature) Daté/Time
∅ MICROBAC*	Lab Report Address Client Name: HMB - Address:	City, State, Zip:	Telephone No.:	Send Report via:	Project: Receiving Water Munisoring Location:	Sampled by (PRINT): Paki(K Correction)	** Preservative Types: (1) HNO3, (2) H2SO4, (3) HCI, (4) NaOH, (5) Zinc Acetate,	Date Client Sample ID Collected	6/10/0 8/12/19	\$6-3	4-75	5, -6,	4-75	→ ∞ √ √	Ossible Hazard Identification	when collected Time		D. O. ev.12/26/2017