CT LABORATORIES

delivering more than data from your environmental analyses

ANALYTICAL REPORT

This report at a minimum contains the following information:

- Analytical Report of Test Results
- Description of QC Qualifiers
- Chain of Custody (copy)
- Quality Control Summary
- Case Narrative (if applicable)
- Correspondence with Client (if applicable)

This report has been specifically prepared to satisfy project or program requirements. These results are in compliance with NELAC requirements for parameters where accreditation is required or available, unless otherwise noted in the case narrative.

ACCREDITED IN ACCORDANCE WITH nelac

CT Laboratories LLC • 1230 Lange Court • Baraboo, WI 53913 • 608-356-2760
www.ctlaboratories.com

ED_002857_00014932-00001

CT LABORATORIES
delivering more than data from your environmental analyses
1230 Lange Court • Baraboo, WI 53913 • 608-356-2760
www.ctlaboratories.com

ANALYTICAL REPORT

TETRA TECH
CORDELL RENNER
1 S WACKER DRIVE
SUITE 3700
CHICAGO, IL 60606

Project Name: EAST CHICAGO ARCELOR MYSTERY SPILL
Project Phase: EAST CHICAGO, IL
Contract #: 3034
Project #: 103X90260001S051404004
Folder #: 124896
Purchase Order #: 1111200

Arrival Temperature: 4.9
Report Date: 02/01/2017
Date Received: 01/19/2017
Reprint Date: 02/01/2017

CT LAB#: 828856 Sample Description: AM-OF009-02 Client Sample #: Sampled: 01/17/2017 1035

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method	
Inorganic Results													
Chlorine, Residual	0.0300	mg/L	0.0200			0.0200	1.00			1/23/17 15:00	SAW	SM 4500CL	
Oil and Grease	<1.4	mg/L	1.4	2.8	9.2	1.4	1.00	U	01/24/2017 08:30	1/25/17 10:00	BMM	EPA 1664A	^
Phenolics	<14	ug/L	14	25	50	50	1.00	U	01/24/2017 09:00	1/26/17 13:18	MER	EPA 9066	^
Metals Results													
Total Mercury	0.046	ug/L	0.030	0.060	0.12	0.12	1.00	J M	01/26/2017 10:30	1/27/17 11:59	LJF	EPA 7470A	^

CT LAB#: 828860 Sample Description: AM-OF009C-01 Client Sample #: Sampled: 01/17/2017 1040

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method	
Inorganic Results													
Ammonia Nitrogen	1.6	mg/L	0.022	0.10	0.20	0.20	1.00			1/26/17 12:21	LJS	EPA 350.1	^
Total Suspended Solids	<2.0	mg/L	2.0	2.0	2.0	2.0	1.00	U		1/20/17 11:50	SAW	SM 2540D	
Metals Results													

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB#: 828860 Sample Description: AM-OF009C-01 Client Sample #: Sampled: 01/17/2017 1040

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method	
Total Lead	<1.4	ug/L	1.4	2.0	4.0	4.0	1.00	U	01/23/2017 15:00	1/24/17 19:36	NAH	EPA 6010C	^
Total Zinc	<1.6	ug/L	1.6	5.0	10	10	1.00	U	01/23/2017 15:00	1/24/17 19:36	NAH	EPA 6010C	^

CT LAB#: 828861 Sample Description: AM-OF010-02 Client Sample #: Sampled: 01/17/2017 1045

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method	
Inorganic Results													
Chlorine, Residual	0.0400	mg/L	0.0200			0.0200	1.00			1/23/17 15:00	SAW	SM 4500CL	
Oil and Grease	<1.4	mg/L	1.4	2.8	9.3	1.4	1.00	U	01/24/2017 08:30	1/25/17 10:00	BMM	EPA 1664A	^
Phenolics	<14	ug/L	14	25	50	50	1.00	U M	01/24/2017 09:00	1/26/17 13:19	MER	EPA 9066	^
Metals Results													
Total Mercury	<0.030	ug/L	0.030	0.060	0.12	0.12	1.00	U	01/26/2017 10:30	1/27/17 12:08	LJF	EPA 7470A	^

CT LAB#: 828862 Sample Description: AM-OF010C-01 Client Sample #: Sampled: 01/17/2017 1050

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method	
Inorganic Results													
Ammonia Nitrogen	<0.022	mg/L	0.022	0.10	0.20	0.20	1.00	U		1/26/17 12:28	LJS	EPA 350.1	^
Total Suspended Solids	<2.0	mg/L	2.0	2.0	2.0	2.0	1.00	U		1/20/17 11:50	SAW	SM 2540D	
Metals Results													
Total Lead	<1.4	ug/L	1.4	2.0	4.0	4.0	1.00	U	01/23/2017 15:00	1/24/17 20:18	NAH	EPA 6010C	^
Total Zinc	<1.6	ug/L	1.6	5.0	10	10	1.00	U	01/23/2017 15:00	1/24/17 20:18	NAH	EPA 6010C	^

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

Notes:

^ Indicates the laboratory is NELAP accredited for this analyte by the indicated matrix and method. DL (detection limit), LOD (limit of detection), loq (limit of quantitation) as defined by most recent DOD QSM version.

All samples were received intact and properly preserved unless otherwise noted. The results reported relate only to the samples tested. This report shall not be reproduced, except in full, without written approval of this laboratory. The Chain of Custody is attached.

This report has been specifically prepared to satisfy project or program requirements. These results are in compliance with NELAC requirements for the parameters where accreditation is required or available, unless noted in the case narrative.

Submitted by: Brett M. Szymanski
Project Manager
608-356-2760

QC Qualifiers

Code	Description
B	Analyte detected in the associated Method Blank.
C	Toxicity present in BOD sample.
D	Diluted Out.
E	Safe, No Total Coliform detected.
F	Unsafe, Total Coliform detected, no E. Coli detected.
G	Unsafe, Total Coliform detected and E. Coli detected.
H	Holding time exceeded.
I	BOD incubator temperature was outside acceptance limits during test period.
J	Estimated value.
L	Significant peaks were detected outside the chromatographic window.
M	Matrix spike and/or Matrix Spike Duplicate recovery outside acceptance limits.
N	Insufficient BOD oxygen depletion.
O	Complete BOD oxygen depletion.
P	Concentration of analyte differs more than 40% between primary and confirmation analysis.
Q	Laboratory Control Sample outside acceptance limits.
R	See Narrative at end of report.
S	Surrogate standard recovery outside acceptance limits due to apparent matrix effects.
T	Sample received with improper preservation or temperature.
U	Analyte concentration was below detection limit.
V	Raised Quantitation or Reporting Limit due to limited sample amount or dilution for matrix background interference.
W	Sample amount received was below program minimum.
X	Analyte exceeded calibration range.
Y	Replicate/Duplicate precision outside acceptance limits.
Z	Specified calibration criteria was not met.

Current CT Laboratories Certifications

Wisconsin (WDNR) Chemistry ID# 157066030
Wisconsin (DATCP) Bacteriology ID# 105-289
Louisiana NELAP (primary) ID# ACC20160002
Illinois NELAP Lab ID# 200073
Kansas NELAP Lab ID# E-10368
Virginia NELAP Lab ID# 460203
Maryland Lab ID# WI00061
ISO/IEC 17025-2005 A2LA Cert # 3806.01
DoD-ELAP A2LA 3806.01
GA EPD Stipulation ID ACC20160002

QC SUMMARY REPORT

TETRA TECH

Project Name: EAST CHICAGO ARCELOR MYSTERY SPILL

SDG #: 0 **Folder #: 124896**

Project Number: 3X90260001S051404004

Duplicate

Analytical Run #:	134549	Analysis Date:	01/20/2017	Prep Batch #:		Matrix:	GROUND WATER
CTLab #:	829864	Analysis Time:	11:50	Prep Date/Time:		Method:	SM2540D
Parent Sample #:	828862	Analyst:	SAW	Prep Analyst:			

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Suspended Solids	4.00	mg/L	<4.00	U				0	46

Duplicate

Analytical Run #:	134593	Analysis Date:	01/23/2017	Prep Batch #:		Matrix:	GROUND WATER
CTLab #:	830811	Analysis Time:	15:00	Prep Date/Time:		Method:	
Parent Sample #:	828856	Analyst:	SAW	Prep Analyst:			

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Chlorine, Residual	0.0300	mg/L	0.0300					0	20

Duplicate

Analytical Run #:	134602	Analysis Date:	01/26/2017	Prep Batch #:	61090	Matrix:	GROUND WATER
CTLab #:	830305	Analysis Time:	13:20	Prep Date/Time:	01/24/2017 09:00	Method:	SW9066
Parent Sample #:	828861	Analyst:	MER	Prep Analyst:	MER		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Phenolics	14.0	ug/L	<14.0	U				0	20

Lab Control Spike Water

Analytical Run #:	134602	Analysis Date:	01/26/2017	Prep Batch #:	61090	Matrix:	LIQUID
CTLab #:	830304	Analysis Time:	13:04	Prep Date/Time:	01/24/2017 09:00	Method:	SW9066
Parent Sample #:		Analyst:	MER	Prep Analyst:	MER		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Phenolics Total	233.0	ug/L			250.0	93	--- 110		

Method Blank Water

Analytical Run #:	134602	Analysis Date:	01/26/2017	Prep Batch #:	61090	Matrix:	LIQUID
CTLab #:	830303	Analysis Time:	13:06	Prep Date/Time:	01/24/2017 09:00	Method:	SW9066
Parent Sample #:		Analyst:	MER	Prep Analyst:	MER		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Phenolics	14	ug/L		U	0		25		

Matrix Spike Duplicate Water

Analytical Run #:	134602	Analysis Date:	01/26/2017	Prep Batch #:	61090	Matrix:	GROUND WATER
CTLab #:	830307	Analysis Time:	13:23	Prep Date/Time:	01/24/2017 09:00	Method:	SW9066
Parent Sample #:	830306	Analyst:	MER	Prep Analyst:	MER		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Phenolics	255	ug/L	BDL		250	102	--- 110	13	20

Matrix Spike Water

Analytical Run #:	134602	Analysis Date:	01/26/2017	Prep Batch #:	61090	Matrix:	GROUND WATER
CTLab #:	830306	Analysis Time:	13:22	Prep Date/Time:	01/24/2017 09:00	Method:	SW9066
Parent Sample #:	828861	Analyst:	MER	Prep Analyst:	MER		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Phenolics	291	ug/L	BDL		250	116	--- 110		

Lab Control Spike Water

Analytical Run #:	134640	Analysis Date:	01/25/2017	Prep Batch #:	61074	Matrix:	LIQUID
CTLab #:	829682	Analysis Time:	10:00	Prep Date/Time:	01/24/2017 08:30	Method:	SW1664
Parent Sample #:		Analyst:	BMM	Prep Analyst:	BMM		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Oil and Grease	36.60	mg/L			40.00	92	78 --- 114		34

Method Blank Water

Analytical Run #:	134640	Analysis Date:	01/25/2017	Prep Batch #:	61074	Matrix:	LIQUID
CTLab #:	829681	Analysis Time:	10:00	Prep Date/Time:	01/24/2017 08:30	Method:	SW1664
Parent Sample #:		Analyst:	BMM	Prep Analyst:	BMM		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Oil and Grease	1.4	mg/L		U	0		4.6		

Duplicate

Analytical Run #:	134681	Analysis Date:	01/26/2017	Prep Batch #:		Matrix:	GROUND WATER
CTLab #:	831414	Analysis Time:	12:24	Prep Date/Time:		Method:	E350.1
Parent Sample #:	828860	Analyst:	DC	Prep Analyst:			

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Ammonia Nitrogen	1.59	mg/L	1.6					1	20

Lab Control Spike Water

Analytical Run #:	134681	Analysis Date:	01/26/2017	Prep Batch #:		Matrix:	LIQUID
CTLab #:	997232	Analysis Time:	11:55	Prep Date/Time:		Method:	E350.1
Parent Sample #:		Analyst:	LJS	Prep Analyst:			

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Ammonia Nitrogen	1.28	mg/L			1.25	102	90 --- 110		

Method Blank Water

Analytical Run #:	134681	Analysis Date:	01/26/2017	Prep Batch #:		Matrix:	LIQUID
CTLab #:	997233	Analysis Time:	11:56	Prep Date/Time:		Method:	E350.1
Parent Sample #:		Analyst:	LJS	Prep Analyst:			

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Ammonia Nitrogen	0.022	mg/L		U	0		0.10		

Matrix Spike Duplicate Water

Analytical Run #:	134681	Analysis Date:	01/26/2017	Prep Batch #:		Matrix:	GROUND WATER
CTLab #:	831418	Analysis Time:	12:47	Prep Date/Time:		Method:	E350.1
Parent Sample #:	831417	Analyst:	DC	Prep Analyst:			

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Ammonia Nitrogen	2.92	mg/L	1.6		1.25	106	80 --- 120	2	20

Matrix Spike Water

Analytical Run #:	134681	Analysis Date:	01/26/2017	Prep Batch #:		Matrix:	GROUND WATER
CTLab #:	831417	Analysis Time:	12:44	Prep Date/Time:		Method:	E350.1
Parent Sample #:	828860	Analyst:	DC	Prep Analyst:			

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Ammonia Nitrogen	2.98	mg/L	1.6		1.25	110	80 --- 120		20

Duplicate

Analytical Run #:	134589	Analysis Date:	01/24/2017	Prep Batch #:	61078	Matrix:	GROUND WATER
CTLab #:	829744	Analysis Time:	19:51	Prep Date/Time:	01/23/2017 15:00	Method:	SW6010
Parent Sample #:	828860	Analyst:	NAH	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Lead	1.40	ug/L	<1.40	U			4.0	0	20
Total Zinc	1.60	ug/L	<1.60	U			10.0	0	20

Lab Control Spike Water

Analytical Run #:	134589	Analysis Date:	01/24/2017	Prep Batch #:	61078	Matrix:	LIQUID
CTLab #:	829743	Analysis Time:	19:04	Prep Date/Time:	01/23/2017 15:00	Method:	SW6010
Parent Sample #:		Analyst:	NAH	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Lead	216.0	ug/L			200.0	108	80 --- 120		
Total Zinc	212.0	ug/L			200.0	106	80 --- 120		

Method Blank Water

Analytical Run #:	134589	Analysis Date:	01/24/2017	Prep Batch #:	61078	Matrix:	LIQUID
CTLab #:	829742	Analysis Time:	19:30	Prep Date/Time:	01/23/2017 15:00	Method:	SW6010
Parent Sample #:		Analyst:	NAH	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Lead	1.4	ug/L		U	0		2.0		
Total Zinc	1.6	ug/L		U	0		5.0		

Matrix Spike Duplicate Water

Analytical Run #:	134589	Analysis Date:	01/24/2017	Prep Batch #:	61078	Matrix:	GROUND WATER
CTLab #:	829746	Analysis Time:	20:05	Prep Date/Time:	01/23/2017 15:00	Method:	SW6010
Parent Sample #:	829745	Analyst:	NAH	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Lead	213	ug/L	BDL		200	106	80 --- 120	1	20
Total Zinc	212	ug/L	BDL		200	106	80 --- 120	1	20

Matrix Spike Water

Analytical Run #:	134589	Analysis Date:	01/24/2017	Prep Batch #:	61078	Matrix:	GROUND WATER
CTLab #:	829745	Analysis Time:	19:58	Prep Date/Time:	01/23/2017 15:00	Method:	SW6010
Parent Sample #:	828860	Analyst:	NAH	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Lead	216	ug/L	BDL		200	108	80 --- 120		
Total Zinc	215	ug/L	BDL		200	108	80 --- 120		

Duplicate

Analytical Run #:	134697	Analysis Date:	01/27/2017	Prep Batch #:	61122	Matrix:	GROUND WATER
CTLab #:	997052	Analysis Time:	12:01	Prep Date/Time:	01/26/2017 10:30	Method:	SW7470A
Parent Sample #:	828856	Analyst:	LJF	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Mercury	0.041	ug/L	0.046				0.12	11	20

Lab Control Spike Water

Analytical Run #:	134697	Analysis Date:	01/27/2017	Prep Batch #:	61122	Matrix:	LIQUID
CTLab #:	997051	Analysis Time:	11:54	Prep Date/Time:	01/26/2017 10:30	Method:	SW7470A
Parent Sample #:		Analyst:	LJF	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Mercury	3.13	ug/L			3.00	104	80 --- 120		

Method Blank Water

Analytical Run #:	134697	Analysis Date:	01/27/2017	Prep Batch #:	61122	Matrix:	LIQUID
CTLab #:	997050	Analysis Time:	11:57	Prep Date/Time:	01/26/2017 10:30	Method:	SW7470A
Parent Sample #:		Analyst:	LJF	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Mercury	0.03	ug/L		U	0		0.06		

Matrix Spike Duplicate Water

Analytical Run #:	134697	Analysis Date:	01/27/2017	Prep Batch #:	61122	Matrix:	GROUND WATER
CTLab #:	997054	Analysis Time:	12:05	Prep Date/Time:	01/26/2017 10:30	Method:	SW7470A
Parent Sample #:	997053	Analyst:	LJF	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Mercury	3.3	ug/L	0.046		2.0	163	80 --- 120	6	20

Matrix Spike Water

Analytical Run #:	134697	Analysis Date:	01/27/2017	Prep Batch #:	61122	Matrix:	GROUND WATER
CTLab #:	997053	Analysis Time:	12:03	Prep Date/Time:	01/26/2017 10:30	Method:	SW7470A
Parent Sample #:	828856	Analyst:	LJF	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Total Mercury	3.5	ug/L	0.046		2.0	173	80 --- 120		

CT LABORATORIES
delivering more than data from your environmental analyses

Sample Condition Report

Folder #: 124896
Client: TETRA TECH

Print Date / Time: 01/19/2017 10:29
Received Date / Time / By: 01/19/2017 10:00 BNA

Project Name: EAST CHICAGO ARCELOR MYSTERY SP
BNA
Log-In Date / Time / By: 01/19/201710:13
Project Phase: EAST CHICAGO, IL
Project #: 103X90260001S051404004
PM: BMS

Coolers: XXXX
Temperature: 4.9 C
On Ice: **Y**
Custody Seals Present :
COC Present:? **Y**
Complete? **Y**

Seal Intact? **N**
Numbers: N/A
Ship Method: FEDEX EXPRESS
Tracking Number: 0201700781679230
Adequate Packaging: **Y**
Temp Blank Enclosed?

Notes: THE SAMPLES WERE RECEIVED IN GOOD CONDITION ON ICE.

NO CUSTODY SEALS WERE PRESENT UPON RECEIPT - TAPE WAS INTACT.

THE SAMPLES WERE PRESERVED IN THE LAB UPON RECEIPT FOR THE REQUIRED ANALYSES.

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
828856 AM-OF009-02				
	LABEL ONLY	1	/	EXTRA VOL
	Total # of Containers of Type	(***LABEL ONLY***) = **1**		
828856 AM-OF009-02				
	HNO3	1	Y /	HG
	Total # of Containers of Type	(***HNO3***) = **1**		
828856 AM-OF009-02				
	AMBER HCL	1	N /	O&G
	Total # of Containers of Type	(***AMBER HCL***) = **1**		
828856 AM-OF009-02				
	Amber Gl H2SO4	1	Y /	PHNC
	Total # of Containers of Type	(***Amber Gl H2SO4***) = **1**		
828856 AM-OF009-02				
	UNPRES PL	1	/	RCHL
	Total # of Containers of Type	(***UNPRES PL***) = **1**		

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
828860 AM-OF009C-01				
	LABEL ONLY	1	/	EXTRA VOL
	LABEL ONLY	1	/	EXTRA VOL
	Total # of Containers of Type	(***LABEL ONLY***) = **2**		

124896

828860 AM-OF009C-01

HNO3	1	Y	/	ICP

Total # of Containers of Type (*HNO3*) = **1**

828860 AM-OF009C-01

H2SO4 PL	1	Y	/	NH3N

Total # of Containers of Type (*H2SO4 PL*) = **1**

828860 AM-OF009C-01

UNPRES PL	1		/	TSS

Total # of Containers of Type (*UNPRES PL*) = **1**

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests

---

828861 AM-OF010-02

LABEL ONLY	1		/	EXTRA VOL

Total # of Containers of Type (*LABEL ONLY*) = **1**

828861 AM-OF010-02

HNO3	1	Y	/	HG

Total # of Containers of Type (*HNO3*) = **1**

828861 AM-OF010-02

AMBER HCL	1	N	/	O&G

Total # of Containers of Type (*AMBER HCL*) = **1**

828861 AM-OF010-02

Amber Gl H2SO4	1	Y	/	PHNC

Total # of Containers of Type (*Amber Gl H2SO4*) = **1**

828861 AM-OF010-02

UNPRES PL	1		/	RCHL

Total # of Containers of Type (*UNPRES PL*) = **1**

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests

---

828862 AM-OF010C-01

LABEL ONLY	1		/	EXTRA VOL
LABEL ONLY	1		/	EXTRA VOL

Total # of Containers of Type (*LABEL ONLY*) = **2**

828862 AM-OF010C-01

HNO3	1	Y	/	ICP

Total # of Containers of Type (*HNO3*) = **1**

828862 AM-OF010C-01

H2SO4 PL	1	Y	/	NH3N

Total # of Containers of Type (*H2SO4 PL*) = **1**

828862 AM-OF010C-01

UNPRES PL	1		/	TSS

Total # of Containers of Type (*UNPRES PL*) = **1**

124896

Condition Code	*Condition Description*
1	Sample Received OK

124896

Rev. 4/2010

CHAIN OF CUSTODY

Company: Tetra Tech
Project Contact: Cordell Renner
Telephone: 312-201-7759
Project Name: Arcelor East Chicago Mystery
Project #:
Location: East Chicago, IN
Sampled By: Cordell Renner

CT LABORATORIES

1230 Lange Court, Baraboo, WI 53913
608-356-2760 Fax 608-356-2766
www.ctlaboratories.com

Folder #: 124896
Company: TETRA TECH
Project: EAST CHICAGO ARCELO
Logged By: BNA PM: BM

Program:
QSM RCRA SDWA NPDES
Solid Waste Other _____

PO # 03X 9126000150514 04004.004 AB

Report To: Cordell Renner
EMAIL: Cordell.Renner@Tetratech.com
Company: Tetra Tech
Address: 1S Wacker, 37th Fl Chicago, IL 60606
Invoice To:* Chris Burns
EMAIL: Chris.Burns@Tetratech.com
Company: Tetra Tech
Address: 1S Wacker Dr 37th Fl Chicago, IL 60606

*Party listed is responsible for payment of invoice as per CT Laboratories' terms and conditions

Client Special Instructions

Matrix:
GW - groundwater SW - surface water WW - wastewater DW - drinking water
S - soil/sediment SL - sludge A - air M - misc/waste

ANALYSES REQUESTED

Turnaround Time
Normal RUSH*
Date Needed: _____
Rush analysis requires prior CT Laboratories' approval
Surcharges:
24 hr 200%
2-3 days 100%
4-9 days 50%

Fill in Spaces with Bottles per Test

Collection Date	Collection Time	Matrix	Grab/Comp	Sample ID Description	Filtered? Y/N	EPA 7470 (Mercury)	EPA 1664 (oil & grease)	EPA 9016 (Phenolics)	SM4500CL (Residual chlorine)	SM4500NH4 (Ammonia)	EPA6010C (lead & zinc)	SM2540D (TSS)							Total # Containers	Designated MS/MSD	CT Lab ID # (Lab use only)
1/17/17	10:35	SW	G	AM-OF009-02		1	1	1	1										4		828856
1/17/17	10:40	SW	C	AM-OF009C-01						1	1	1							3		828860
1/17/17	10:45	SW	G	AM-OF010-02		1	1	1	1										4		828861
1/17/17	10:50	SW	C	AM-OF010C-01						1	1	1							3		828862

Relinquished By:	Date/Time	Received By:	Date/Time	Lab Use Only
R Houle	1/18/17 2:43	[signature]	1-19-17 1000	Ice Present Yes No
Received by:	Date/Time	Received for Laboratory by: [signature]	Date/Time 1-19-17 1013	Temperature 4.9
				Cooler # XXXX

CT Laboratories Terms and Conditions

Where a purchaser (Client) places an order for laboratory, consulting or sampling services from CT Laboratories (CTL), CTL shall provide the ordered services pursuant to these Terms and Conditions, and the related Quotation, or as agreed in a negotiated contract. In the absence of a written agreement to the contrary, the Order constitutes an acceptance by the Client of CTL's offer to do business under these Terms and Conditions, and an agreement to be bound by these Terms and Conditions. No contrary or additional terms and conditions expressed in a Client's document shall be deemed to become a part of the contract created upon acceptance of these Terms and Conditions, unless accepted by CTL in advance of the start of the project and in writing.

1. ORDERS AND RECEIPT OF SAMPLES (Sample Acceptance Policy)

1.1 The Client may place the Order (i.e., specify a Scope of Work) either by submitting a purchase order to CTL in writing, by telephone (confirmed in writing) or by negotiated contract. Whichever option the Client selects for placing the Order, the Order shall not be valid unless it contains sufficient specification to enable CTL to carry out the Client's requirements. It is the policy of CT Laboratories that samples not meeting the acceptance criteria, outlined in the NELAC standards and Section 5.8.3.2 of the DOD QSM, will not be accepted by the laboratory or will be qualified on the final report. All samples submitted to the laboratory must: (1) be accompanied by proper, full and complete documentation, including sample identification, location, date and time of collection, the collector's name, type of preservation (if any), type of sample, any special comments concerning the sample and any additional pertinent fields on the chain-of-custody. In the absence of any of the required information, the laboratory will attempt to contact the client to obtain the information; if unable to obtain the necessary information, the final report will be qualified. (2) be labeled appropriately with a unique sample identification written with indelible ink on water resistant labels. If the laboratory cannot determine the identity of a sample, it will be rejected and the client will be contacted for further instructions or resampling. (3) be in an appropriate sample container. If the container is inappropriate, the client will be contacted for further instructions or resampling. If analysis is possible, the final report will be qualified. CT Laboratories can provide a sampling guide containing approved containers and preservations for analytical methods requested. (4) adhere to specified holding times. If samples are received with less than ½ the holding time remaining for the requested test, CT Laboratories will make its best effort to analyze the samples and notify the client. If holding times are exceeded, the final report will be qualified. (5) contain adequate sample volume to perform the necessary testing. If sufficient volume is not present, the sample will be rejected and the client will be contacted for further instructions or resampling. If samples show signs of damage, contamination or inadequate preservation, the client will be notified. If analysis can be performed, the final report will be qualified. If not, the samples will be rejected and the client notified for further instructions or resampling.

1.2 CT Laboratories must be supplied with complete written disclosure of the known or suspected presence of any hazardous substances, as defined by applicable federal or state law. Where any samples which were not accompanied by the required disclosure, cause interruptions in the lab's ability to process work due to contamination of instruments or work areas, the Client will be responsible for the costs of clean up and recovery.

1.3 Prior to Sample Acceptance, the entire risk of loss or damage to samples remains with the Client. In no event will CTL have any responsibility or liability for the action or inaction of any carrier shipping or delivering any sample to or from CTL's premises. Client is responsible to assure that any sample containing any hazardous substance which is to be delivered to CTL's premises will be packaged, labeled, transported and delivered properly and in accordance with applicable laws.

2. PAYMENT TERMS

2.1 Services performed by CTL will be in accordance with prices quoted and later confirmed in writing or as stated in the Price Schedule. Invoices may be submitted to Client upon completion of any sample delivery group. Payment in advance is required for all Clients except those whose credit has been established with CTL. For Clients with approved credit, payment terms are net 30 days from the date of invoice by CTL. All overdue payments are subject to an additional interest and service charge of one and one-half percent (1.5%) (or the maximum rate permissible by law, whichever is lesser) per month or portion thereof from the due date until the date of payment. All fees are charged or billed directly to the Client. The billing of a third party will not be accepted without a statement, signed by the third party that acknowledges and accepts payment responsibility. CTL may suspend work and withhold delivery of data under this order at any time in the event Client fails to make timely payment of its invoices. Client shall be responsible for all costs and expenses of collection including reasonable attorney's fees. CTL reserves the right to refuse to proceed with work at any time based upon an unfavorable Client credit report.

3. CHANGE ORDERS, TERMINATION

3.1 Changes to the Scope of Work, price, or result delivery date may be initiated by CTL after Sample Acceptance due to any condition which conflicts with analytical, QA or other protocols warranted in these Terms and Conditions. CTL will not proceed with such changes until an agreement with the Client is reached on the amount of any cost, schedule change or technical change to the Scope of Work, and such agreement is documented in writing.

3.2 Changes to the Scope of Work, including but not limited to increasing or decreasing the work, changing test and analysis specification or acceleration in the performance of the work may be initiated by the Client after sample acceptance. Such a change will be documented in writing and may result in a change in cost and turnaround time commitment. CTL's acceptance of such changes is contingent upon technical feasibility and operational capacity.

3.3 Suspension or termination of all or any part of the work may be initiated by the Client. CTL will be compensated consistent with Section 2 of these Terms and Conditions. CTL will complete all work in progress and be paid in full for all work completed.

4. WARRANTIES AND LIABILITY

4.1 Where applicable, CTL will use analytical methodologies which are in substantial conformity with published test methods. CTL has implemented these methods in its Laboratory Quality Manuals and referenced Standard Operating Procedures and where the nature or composition of the sample requires it, CTL reserves the right to deviate from these methodologies as necessary or appropriate, based on the reasonable judgment of CTL, which deviations, if any, will be made on a basis consistent with recognized standards of the industry and/or CTL's Laboratory Quality Manuals. Client may request that CTL perform according to a mutually agreed Quality Assurance Project Plan (QAPP). In the event that samples arrive prior to agreement on a QAPP, CTL will proceed with analyses under its standard Quality Manuals then in effect, and CTL will not be responsible for any resampling or other charges if work must be repeated to comply with a subsequently finalized QAPP.

4.2 CTL shall start preparation and/or analysis within holding times provided that Sample Acceptance occurs within 48 hours of sampling or 1/2 of the holding time for the test, whichever is less. Where resolution of inconsistencies leading to Sample Acceptance does not occur within this period, CTL will use its best efforts to meet holding times and will proceed with the work provided that, in CTL's judgment, the chain-of-custody or definition of the Scope of Work provide sufficient guidance. Reanalysis of samples to comply with CTL's Quality Manuals will be deemed to have met holding times provided the initial analysis was performed within the applicable holding time. Where reanalysis demonstrates that sample matrix interference is the cause of failure to meet any Quality Manual requirements, the warranty will be deemed to have been met.

4.3 CTL warrants that it possesses and maintains all licenses and certifications which are required to perform services under these Terms and Conditions provided that such requirements are specified in writing to CTL prior to Sample Acceptance. CTL will notify the Client in writing of any decertification or revocation of any license, or notice of either, which affects work in progress.

4.4 The warranty obligations set forth in Sections 4.1, 4.2 and 4.3 are the sole and exclusive warranties given by CTL in connection with any services performed by CTL or any Results generated from such services, and CTL gives and makes NO OTHER REPRESENTATION OR WARRANTY OF ANY KIND, EXPRESS OR IMPLIED. No representative of CTL is authorized to give or make any other representation or warranty or modify this warranty in any way.

4.5 Client's sole and exclusive remedy for the breach of warranty in connection with any services performed by CTL, will be limited to repeating any services performed, contingent on the Client's providing, at the request of CTL and at the Client's expense, additional sample(s) if necessary. Any reanalysis requested by the Client generating Results consistent with the original Results will be at the Client's expense. If resampling is necessary, CTL's liability for resampling costs will be limited to actual cost or one hundred or one hundred fifty dollars ($150) per sample, whichever is less.

4.6 CTL's liability for any and all causes of action arising hereunder, whether based in contract, tort, warranty, negligence or otherwise, shall be limited to the lesser amount of compensation for the services performed or $100,000. All claims, including those for negligence, shall be deemed waived unless suit thereon is filed within one year after CTL's completion of the services. Under no circumstances, whether arising in contract, tort (including negligence), or otherwise, shall CTL be responsible for loss of use, loss of profits, or for any special, indirect, incidental or consequential damages occasioned by the services performed or by application or use of the reports prepared.

4.7 In no event shall CTL have any responsibility or liability to the Client for any failure or delay in performance by CTL which results, directly or indirectly, in whole or in part, from any cause or circumstance beyond the reasonable control of CTL. Such causes and circumstances shall include, but not be limited to, acts of God, acts of Client, acts or orders of any governmental authority, strikes or other labor disputes, natural disasters, accidents, wars, civil disturbances, equipment breakdown, matrix interference or unknown highly contaminated samples that impact instrument operation, unavailability of supplies from usual suppliers, difficulties or delays in transportation, mail or delivery services, or any other cause beyond CTL's reasonable control.

5. RESULTS, WORK PRODUCT

5.1 Data or information provided to CTL or generated by services performed under this agreement shall only become the property of the Client upon receipt in full by CTL of payment for the whole Order. Ownership of any analytical method, QA/QC protocols, software programs or equipment developed by CTL for performance of work will be retained by CTL, and Client shall not disclose such information to any third party.

5.2 Data and sample materials provided by Client or at Client's request, and the result obtained by CTL shall be held in confidence (unless such information is generally available to the public or is in the public domain or Client has failed to pay CTL for all services rendered or is otherwise in breach of these Terms and Conditions), subject to any disclosure required by law or legal process.

5.3 Should the Results delivered by CTL be used by the Client or Client's client, even though subsequently determined not to meet the warranties described in these Terms and Conditions, then the compensation will be adjusted based upon mutual agreement. In no case shall the Client unreasonably withhold CTL's right to independently defend its data.

5.4 CTL reserves the right to subcontract services ordered by the Client to another laboratory or laboratories, if, in CTL's sole judgment, it is reasonably necessary, appropriate or advisable to do so, and with the Client's permission. CTL will in no way be liable for any subcontracted services and all applicable warranties, guarantees and insurance are those of the subcontracted laboratory.

5.5 CTL shall dispose of the Client's samples 30 days after the analytical report is issued, unless instructed to store them for an alternate period of time or to return such samples to the Client, in a manner consistent with U.S. Environmental Protection Agency regulations or other applicable Federal, state or local requirements. Any samples for projects that are canceled or not accepted, or for which return was requested, will be returned to the Client at their own expense. CTL reserves the right to return to the Client any sample or unused portion of a sample that is not within CTL's permitted capability or the capabilities of CTL's designated waste disposal vendor(s).

5.6 Unless a different time period is agreed to in any order under these Terms and Conditions, CTL agrees to retain all records for five (5) years.

5.7 In the event that CTL is required to respond to legal process related to services for Client, Client agrees to reimburse CTL for hourly charges for personnel involved in the response and attorney fees reasonably incurred in obtaining advice concerning the response, preparation to testify, and appearances related to the legal process, travel and all reasonable expenses associated with the litigation.

6. INSURANCE

6.1 CTL shall maintain in force during the performance of services under these Terms and Conditions, Workers' Compensation and Employer's Liability Insurance in accordance with the laws of the states having jurisdiction over CTL's employees who are engaged in the performance of the work. CTL shall also maintain during such period, Comprehensive General and Contractual Liability (limit of $2,000,000 per occurrence/ aggregate), Comprehensive Automobile Liability, owned and hired, ($1,000,000 combined single limit), and Professional/Pollution Liability Insurance (limit of $5,000,000 per occurrence/aggregate). Any Client required changes to these limits or conditions may result in a change in cost to the Client.

7. AUDIT

7.1 Upon prior notice to CTL, the Client may audit and inspect CTL's records and accounts covering reimbursable costs related to work done for the Client, for a period of one (1) year after completion of the work. The purpose of any such audit shall be only for verification of such costs, and CTL shall not be required to provide access to cost records where prices are expressed as fixed fees or published unit prices.

Cooler Receipt Form

Ice Present YES NO

Temperature 4.9

IR Gun # 14

Initials BA

Date 1-19-17 Time 1000

Cooler #: XXXX

ORIGIN ID:CHIA (312) 201-7700
MAILROOM
TETRA TECH INC - EMI DIVISION
1 S. WACKER DR
37TH FLOOR
CHICAGO, IL 60606
UNITED STATES US

SHIP DATE: 18JAN17
ACTWGT: 55.9 LB MAN
CAD: 0563371/CAFE2912

BILL SENDER

TO SAMPLES RECIEVING
CT LABORATORIES
1230 LANGE COURT

BARABOO WI 53913
(608) 356-2760
INV: 103X90260001S051404004.004AC

FedEx Express

THU - 19 JAN 10:30A
PRIORITY OVERNIGHT

TRK# 0201 7007 8167 9230

55 MSNA

53913
WI-US MSN

Part # 156148V-434 RIT2 APV EXP 06/17