



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5

77 WEST JACKSON BOULEVARD

CHICAGO, IL 60604-3590

Memorandum

To: Robert Peachey, Associate Regional Counsel, Office of Regional Counsel, C-14J

From: Ramon Mendoza, On-Scene Coordinator, Response Section 3, Emergency Removal Branch 2 (RS3, ERB2)

Date: May 22, 2015

Subject: Pilsen Soils OU1 Railroad Spur
and Alley Site: Western Area, Rail Road Spur Soil Sample Results

Purpose and Background: The purpose of this Memorandum is to document the results of the soil sampling that was conducted at the location known as “Western Area” as part of the removal site evaluation for Pilsen Soil Operable Unit 1 (OU1) Railroad and Alley Site (Site). The Western Area is about a 500 ft. section of the western portion of the rail road spur directly north of the soccer field and parking lot of Benito Juarez High School. (See Figure 2). Soil samples had been collected in other portions of the Site’s railroad spur in May 2013 (See Figure 3-1).

After acquiring a signed consent for access form from BNSF Railroad, with concurrence from the City of Chicago, soil samples were collected on April 27, 2015 by the EPA OSC (Mendoza) and EPA START contractors (Tetra Tech) using a field sampling plan. In general, soil samples were collected using steel hand augers from 0-6 inches and from 6-24 inches below ground surface. A hand auger was used separately for each depth range and was decontaminated between locations to prevent cross-contamination. Ten soil sample locations were marked using GPS. The activity was conducted under a site specific EPA START health and safety plan and standard quality assurance project plan.

Soil samples were analyzed in the field using a hand held XRF analyzer. Lab analyses were conducted for: 1) Total: cadmium, copper, lead, tin, and zinc; 2) TCLP Lead; and 3) Lead fines. Results were compared to U.S. EPA Removal Management Levels (RML) for industrial soils (for lead, it is 800 mg/kg; and lead TCLP criteria, 5.0 mg/l).

Results: The results are summarized in the attached Table 1 and in the Lab results (validated). The data indicates that lead was the only metal that exceeded the EPA RML. The average **surface** soil total lead and fine grained lead concentrations (0-6 inches below ground surface) were 1,336 mg/kg and 2,074 mg/kg respectively. Total lead concentrations in the surface soil samples ranged from 499 mg/kg (PA-RR23 west end sample location) to 2,290 mg/kg (PA-RR26, east end sample location). Fine grain lead concentrations ranged from 898 mg/kg (PA-

RR23 west end sample location) to 3,540 mg/kg (PA-RR26, east end sample location). Surface results are shown in Figure 3.

The average **subsurface** soil total lead and fine grained lead concentrations (6-24 or 6-18 inches below ground surface) were 530 mg/kg and 931 mg/kg respectively. Total lead concentrations in the subsurface soil samples ranged from 168 mg/kg (PA-RR22 west end sample location) to 1,350 mg/kg (PA-RR26, east end sample location). Fine grain lead concentrations ranged from 358 mg/kg (PA-RR22 west end sample location) to 2,730 mg/kg (PA-RR26, east end sample location).

Lead TCLP criteria of 5mg/l was exceeded in one sample location at PA-RR26-0624 (subsurface 6-24 inches bgs), indicating a 13 mg/l result.

Zinc concentrations were consistently higher than the Little Italy Reference Area by at least one order of magnitude. Average Zinc concentrations at the surface soil was 16,222 mg/kg and subsurface soil average was 5,757 mg/kg.

Zinc to lead surface soil ratios in the Western Area were consistently greater than the Little Italy Reference Area. At Little Italy, surface soil the zinc to lead ratio ranged from .68 to 2.27 with an average of 1.04. By comparison, the Western Area surface soil zinc to lead ratios ranged from 4.1 to 20 with an average of 12.7. Further the surface soil zinc to lead ratios for the rest of the railroad spur ranged from 2.1 to 7 with an average of 4.7. In addition, the Phase 1 onsite surface soil results by H.Kramer contractor indicate zinc to lead ratio ranging from 3.8 to 8.32 with an average of 6.37.

The Attached Table 1 summarizes the aforementioned results. Validated lab results are also attached to this Memo.

Analysis: In general, surface soil lead concentrations were greater than the subsurface soil, or decreased with increasing depth at each location. In addition, lead concentrations indicated a decreasing trend from east to west, as one traveled further away from H. Kramer in the predominant upwind direction. Elevated lead concentrations were co-located with elevated zinc concentrations. The zinc to lead ratios indicated a pattern of greater than the Little Italy reference area (greater than 1), similar to zinc to lead ratios found on H. Kramer's facility and further east along the railroad spur.

ATTACHMENTS: FIGURES, Table 1, and Lab Data

Figure 2: Sample Locations

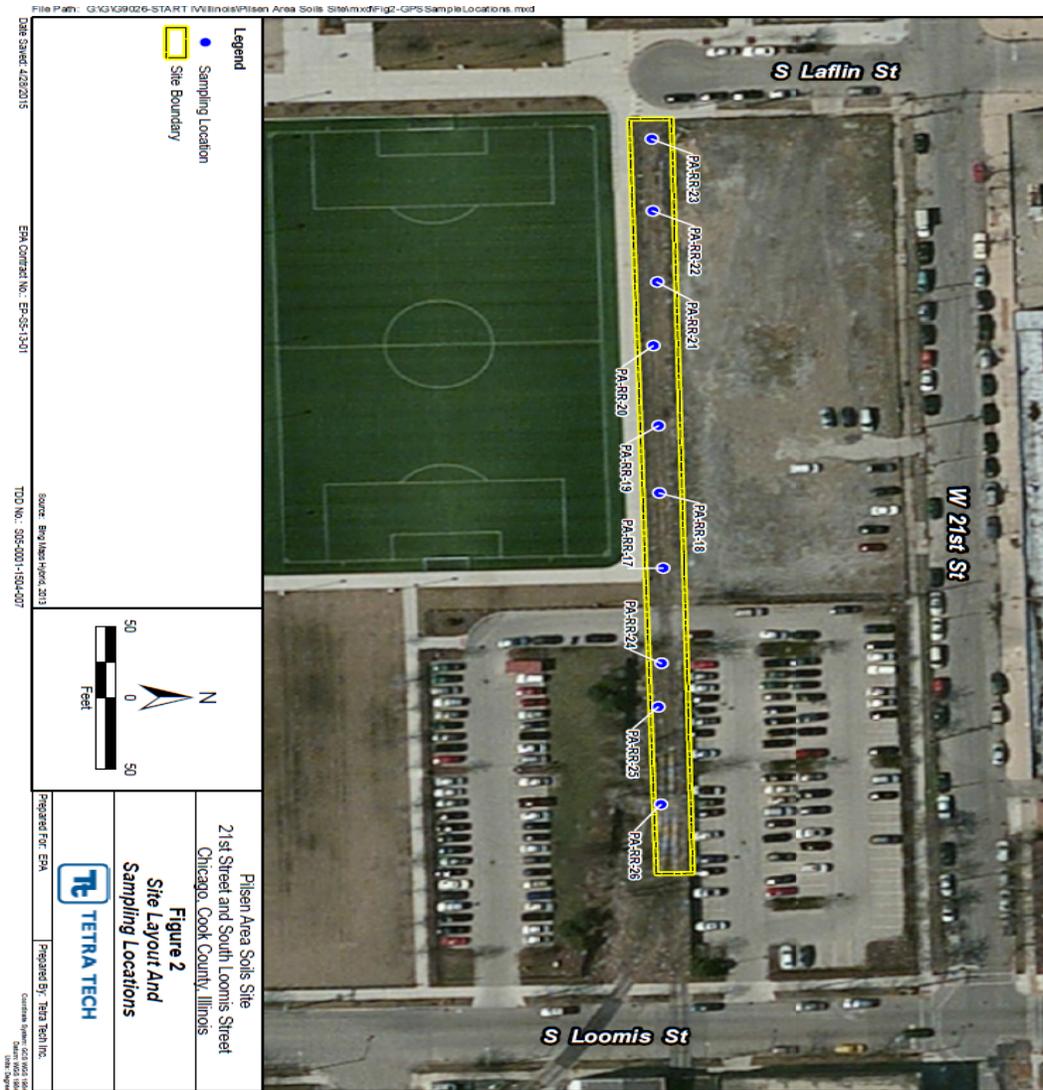


Figure 3-1. Sample Location RR and Alley

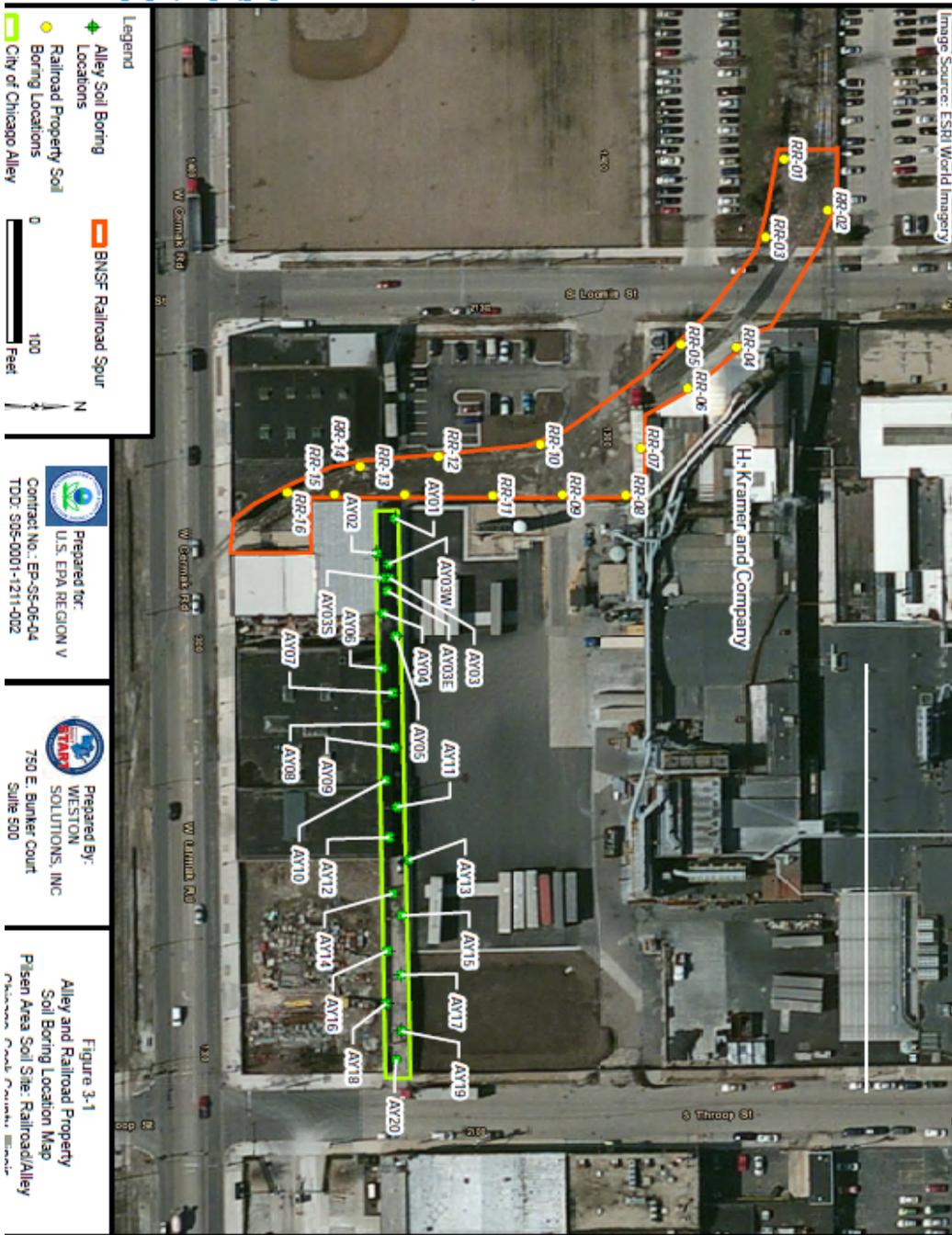


Figure 3: Surface Soil Results Western Area of the Railroad Spur



Figure 3. Total metal results surface samples (0-6" below ground surface).

TABLE 1: LAB RESULTS SUMMARY

Table 1
Soil Samples Metal Lab Results and XRF Lead Results
Pilsen Area Soils Site OU1

Sample Number :			United States Environmental Protection Agency (EPA) Regional Cumulative Removal Management Level (RML) Soil Supporting Table (a target risk (TR) level of 10 ⁻⁴ for carcinogen and a hazard quotient (HQ) or hazard index (HI) of 3 for non-carcinogen), January 2015 (mg/kg)				CFR Title 40 Part 261 Section 24, May 2015 (mg/L)	PA-RR17-0006			PA-RR17-0624			PA-RR18-0006			PA-RR18-0618		
Depth (in bgs):								0-6			6-24			0-6			6-18		
Matrix :								soil			soil			soil			soil		
Laboratory:								CT Laboratories			CT Laboratories			CT Laboratories			CT Laboratories		
Sample Date:								4/27/2015			4/27/2015			4/27/2015			4/27/2015		
Sample Time:			16:40			16:45			16:50			16:56							
Duplicate:																			
Compound	CAS #	Units	Residential Cumulative RMLs		Industrial Cumulative RMLs		Toxicity Characteristic	Lab Result	TT Qualifier	XRF Lead	Lab Result	TT Qualifier	XRF Lead	Lab Result	TT Qualifier	XRF Lead	Lab Result	TT Qualifier	XRF Lead
			Carcinogenic	Non-carcinogenic	Carcinogenic	Non-carcinogenic													
Cadmium	7440-43-9	mg/kg	210000	210	930000	3000		2.8			3.4			3.6			2.6		
Copper	7440-50-8	mg/kg		9400		140000		2820			2260			5140			1500		
Lead	7439-92-1	mg/kg		400		800		1120		694	854		477	1440		1613	656		487
Lead, Fines	7439-92-1	mg/kg		400		800		1260			954			2470			1030		
Lead, TCLP	7439-92-1	mg/L					5	0.15			0.51			0.86			0.22		
Tin	7440-31-5	mg/kg		140000		2100000		993			580			1120			308		
Zinc	7440-66-6	mg/kg		70000		1100000		22500			19000			27200			9630		

Table 1
Soil Samples Metal Lab Results and XRF Lead Results
Pilsen Area Soils Site OU1

Sample Number :			United States Environmental Protection Agency (EPA) Regional Cumulative Removal Management Level (RML) Soil Supporting Table (a target risk (TR) level of 10 ⁻⁴ for carcinogen and a hazard quotient (HQ) or hazard index (HI) of 3 for non-carcinogen), January 2015 (mg/kg)				CFR Title 40 Part 261 Section 24, May 2015 (mg/L)	PA-RR19-0006			PA-RR19-0618			PA-RR20-0006			PA-RR20-0618		
Depth (in bgs):								0-6			6-18			0-6			6-18		
Matrix :								soil			soil			soil			soil		
Laboratory:								CT Laboratories			CT Laboratories			CT Laboratories			CT Laboratories		
Sample Date:								4/27/2015			4/27/2015			4/27/2015			4/27/2015		
Sample Time:			17:05			17:10			17:20			17:25							
Duplicate:																			
Compound	CAS #	Units	Residential Cumulative RMLs		Industrial Cumulative RMLs		Toxicity Characteristic	Lab Result	TT Qualifier	XRF Lead	Lab Result	TT Qualifier	XRF Lead	Lab Result	TT Qualifier	XRF Lead	Lab Result	TT Qualifier	XRF Lead
			Carcinogenic	Non-carcinogenic	Carcinogenic	Non-carcinogenic													
Cadmium	7440-43-9	mg/kg	210000	210	930000	3000		3.0			4.1			2.7			1.5		
Copper	7440-50-8	mg/kg		9400		140000		2400			487			2400			464		
Lead	7439-92-1	mg/kg		400		800		967	343		326	363		979	851		227		193
Lead, Fines	7439-92-1	mg/kg		400		800		1380			719			1520			387		
Lead, TCLP	7439-92-1	mg/L					5	0.34			NA			0.31			NA		
Tin	7440-31-5	mg/kg		140000		2100000		641			76.7			699			131		
Zinc	7440-66-6	mg/kg		70000		1100000		14500			2560			17600			2810		

Table 1
Soil Samples Metal Lab Results and XRF Lead Results
Pilsen Area Soils Site OU1

Sample Number :			United States Environmental Protection Agency (EPA) Regional Cumulative Removal Management Level (RML) Soil Supporting Table (a target risk (TR) level of 10 ⁻⁴ for carcinogen and a hazard quotient (HQ) or hazard index (HI) of 3 for non-carcinogen), January 2015 (mg/kg)				CFR Title 40 Part 261 Section 24, May 2015 (mg/L)	PA-RR21-0006			PA-RR21-0624			PA-RR22-0006			PA-RR22-0006D			
Depth (in bgs):								0-6			6-24			0-6			0-6			
Matrix :								soil			soil			soil			soil			
Laboratory:								CT Laboratories			CT Laboratories			CT Laboratories			CT Laboratories			
Sample Date:								4/27/2015			4/27/2015			4/27/2015			4/27/2015			
Sample Time:			17:30			17:40			17:45			17:45								
Duplicate:									PA-RR22-0006D			PA-RR22-0006								
Compound	CAS #	Units	Residential Cumulative RMLs		Industrial Cumulative RMLs		Toxicity Characteristic	Lab Result	TT Qualifier	XRF Lead	Lab Result	TT Qualifier	XRF Lead	Lab Result	TT Qualifier	XRF Lead	Lab Result	TT Qualifier	XRF Lead	
			Carcinogenic	Non-carcinogenic	Carcinogenic	Non-carcinogenic														
Cadmium	7440-43-9	mg/kg	210000	210	930000	3000		4.2			1.5			4.0					4.1	
Copper	7440-50-8	mg/kg		9400		140000		2670			531			3420					3770	
Lead	7439-92-1	mg/kg		400		800		1100		993	229		172	1160		1410			1180	1410
Lead, Fines	7439-92-1	mg/kg		400		800		1750			378			2150					2190	
Lead, TCLP	7439-92-1	mg/L					5	0.25			NA			0.54					0.51	
Tin	7440-31-5	mg/kg		140000		2100000		583			104			873					801	
Zinc	7440-66-6	mg/kg		70000		1100000		16900			2730			17600					21500	

Table 1
Soil Samples Metal Lab Results and XRF Lead Results
Pilsen Area Soils Site OU1

Sample Number :			United States Environmental Protection Agency (EPA) Regional Cumulative Removal Management Level (RML) Soil Supporting Table (a target risk (TR) level of 10 ⁻⁴ for carcinogen and a hazard quotient (HQ) or hazard index (HI) of 3 for non-carcinogen), January 2015 (mg/kg)				CFR Title 40 Part 261 Section 24, May 2015 (mg/L)	PA-RR22-0624			PA-RR23-0006			PA-RR23-0624			PA-RR24-0006		
Depth (in bgs):								6-24			0-6			6-24			0-6		
Matrix :								soil			soil			soil			soil		
Laboratory:								CT Laboratories			CT Laboratories			CT Laboratories			CT Laboratories		
Sample Date:								4/27/2015			4/27/2015			4/27/2015			4/27/2015		
Sample Time:			17:58			18:05			18:12			18:20							
Duplicate:																			
Compound	CAS #	Units	Residential Cumulative RMLs		Industrial Cumulative RMLs		Toxicity Characteristic	Lab Result	TT Qualifier	XRF Lead	Lab Result	TT Qualifier	XRF Lead	Lab Result	TT Qualifier	XRF Lead	Lab Result	TT Qualifier	XRF Lead
			Carcinogenic	Non-carcinogenic	Carcinogenic	Non-carcinogenic													
Cadmium	7440-43-9	mg/kg	210000	210	930000	3000		1.3			2.6			1.4			8.2		
Copper	7440-50-8	mg/kg		9400		140000		224			558			235			798		
Lead	7439-92-1	mg/kg		400		800		168	150		499	342		188	246		1750	1324	
Lead, Fines	7439-92-1	mg/kg		400		800		358			898			506			2540		
Lead, TCLP	7439-92-1	mg/L					5	NA			0.032			NA			0.71		
Tin	7440-31-5	mg/kg		140000		2100000		43.4			49.1			82.5			1070		
Zinc	7440-66-6	mg/kg		70000		1100000		1150			2500			1440			7320		

Table 1
Soil Samples Metal Lab Results and XRF Lead Results
Pilsen Area Soils Site OU1

Sample Number :			United States Environmental Protection Agency (EPA) Regional Cumulative Removal Management Level (RML) Soil Supporting Table (a target risk (TR) level of 10 ⁻⁴ for carcinogen and a hazard quotient (HQ) or hazard index (HI) of 3 for non-carcinogen), January 2015 (mg/kg)				CFR Title 40 Part 261 Section 24, May 2015 (mg/L)	PA-RR24-0624			PA-RR24-0624D			PA-RR25-0006			PA-RR25-0624		
Depth (in bgs):								6-24			6-24			0-6			6-24		
Matrix :								soil			soil			soil			soil		
Laboratory:								CT Laboratories			CT Laboratories			CT Laboratories			CT Laboratories		
Sample Date:								4/27/2015			4/27/2015			4/27/2015			4/27/2015		
Sample Time:			18:35			18:35			18:45			19:00							
Duplicate:			PA-RR24-0624D			PA-RR24-0624													
Compound	CAS #	Units	Residential Cumulative RMLs		Industrial Cumulative RMLs		Toxicity Characteristic	Lab Result	TT Qualifier	XRF Lead	Lab Result	TT Qualifier	XRF Lead	Lab Result	TT Qualifier	XRF Lead	Lab Result	TT Qualifier	XRF Lead
			Carcinogenic	Non-carcinogenic	Carcinogenic	Non-carcinogenic													
Cadmium	7440-43-9	mg/kg	210000	210	930000	3000		28.6 J			3.1 J			7.7 J-					5.0
Copper	7440-50-8	mg/kg		9400		140000		818			1040			3330 J					820
Lead	7439-92-1	mg/kg		400		800		566	543		655	543		2060 J	2204			731	509
Lead, Fines	7439-92-1	mg/kg		400		800		1100			1130			3230 J-					1150
Lead, TCLP	7439-92-1	mg/L					5	NA			NA			1.9					NA
Tin	7440-31-5	mg/kg		140000		2100000		294 J			713 J			590					212
Zinc	7440-66-6	mg/kg		70000		1100000		7090			7900			15600 J					5880

Table 1
Soil Samples Metal Lab Results and XRF Lead Results
Pilsen Area Soils Site OU1

Sample Number :			United States Environmental Protection Agency (EPA) Regional Cumulative Removal Management Level (RML) Soil Supporting Table (a target risk (TR) level of 10 ⁻⁴ for carcinogen and a hazard quotient (HQ) or hazard index (HI) of 3 for non-carcinogen), January 2015 (mg/kg)				CFR Title 40 Part 261 Section 24, May 2015 (mg/L)		PA-RR26-0006			PA-RR26-0624		
Depth (in bgs):									0-6			6-24		
Matrix :									soil			soil		
Laboratory:									CT Laboratories			CT Laboratories		
Sample Date:									4/27/2015			4/27/2015		
Sample Time:									19:05			19:10		
Duplicate:														
Compound	CAS #	Units	Residential Cumulative RMLs		Industrial Cumulative RMLs		Toxicity Characteristic	Lab Result	TT Qualifier	XRF Lead	Lab Result	TT Qualifier	XRF Lead	
			Carcinogenic	Non-carcinogenic	Carcinogenic	Non-carcinogenic								
Cadmium	7440-43-9	mg/kg	210000	210	930000	3000		7.9 J-			13.3			
Copper	7440-50-8	mg/kg		9400		140000		3640 J			976			
Lead	7439-92-1	mg/kg		400		800		2290 J		1852	1350		2107	
Lead, Fines	7439-92-1	mg/kg		400		800		3540			2730 J			
Lead, TCLP	7439-92-1	mg/L					5	1.7			13			
Tin	7440-31-5	mg/kg		140000		2100000		767 J			151			
Zinc	7440-66-6	mg/kg		70000		1100000		20500 J			5280			

Notes:

- bgs = below ground surface
- CAS # = Chemical Abstracts Service Registry Number
- CFR = Code of Federal Regulations
- D = duplicate sample
- in = inch
- J = Analyte detected, associated value is an approximate concentration of the analyte in the sample
- J- = Analyte detected, associated value is an approximate concentration of the analyte in the sample and may be biased low
- mg/kg = milligram per kilogram
- mg/l = milligram per liter
- NA = Not analyzed
- PA = Pilsen Area
- RR = Railroad Area Soil Sample
- XRF = X-ray fluorescence analyzer

Color indicates highest RML exceeded for appropriate matrix

400	conc exceeds EPA screening level for residential (January 2015)
800	conc exceeds EPA screening level for residential and industrial (January 2015)
5	conc exceeds CFR Title 40 Part 261 Section 24 Toxicity Characteristic (May 2015)

-The cumulative RMLs above can be located at <http://www.epa.gov/region4/superfund/programs/riskassess/rml/rmlgentable.html>

-Cumulative RMLs are adjusted to a 10⁻⁴ risk level for carcinogens and an HQ of 3 for noncarcinogens

-The CFR Title 40 Part 261 Section 24 Toxicity Characteristic above can be located at

http://www.ecfr.gov/cgi-bin/text-idx?SID=e19136be3284e83c9270f732d171708e&mc=true&node=pt40.26.261&rgn=div5#se40.26.261_124

VALIDATED LAB RESULTS AND REPORTS



May 21, 2015

Mr. Ramon Mendoza
On-Scene Coordinator
U.S. Environmental Protection Agency
Region 5, Emergency Response Branch
77 W. Jackson Blvd., SE-5J
Chicago, IL 60604

Subject: Final Stage 4 Data Validation Checklist Report
EPA Contract No. EP-S5-13-01
Technical Direction Document No. S05-0001-1504-007
Document Tracking No. 0209 and 0210

Dear Mr. Mendoza:

Under the Superfund Technical Assessment and Response Team (START) Contract No. EP-S5-13-01, U.S. Environmental Protection Agency (EPA) Region 5 tasked Tetra Tech, Inc. (Tetra Tech), with collecting samples to assist in a removal assessment at the Pilsen Area Soils Site OU1 in Chicago, Cook County, Illinois on April 27, 2014. Upon collection, Tetra Tech submitted the samples to CT Laboratories, LLC (CT Labs) for analysis. Tetra Tech received a final level IV data package for lead analysis from CT Labs on May 6, 2015 and a final level IV data package for additional metals analysis (cadmium, copper, tin, and zinc) on May 14, 2015. Upon receipt of the final data packages, Tetra Tech conducted stage 4 data validations. The Final Stage 4 Data Validation Checklist Report (DVR) for the final lead data package is included as **Attachment A**. The Final Stage 4 Data Validation Checklist Reports DVR for the final additional metals data package is included as **Attachment B**.

The Final Stage 4 Checklist DVR for the lead analysis concluded that the results are acceptable and usable as reported, with the qualifications discussed in the post digestion spike and serial dilution sections. The Final Stage 4 Checklist DVR for the additional metal analysis concluded that the results are acceptable and usable as reported, with the qualifications discussed in the matrix spike/matrix spike duplicate (MS/MSD), post digestion spike, serial dilution, and field duplicate sections.



If you have any questions or require additional information, please call me at (312) 201-7710.

Sincerely,

A handwritten signature in black ink that reads 'Paul Pallardy'.

Paul Pallardy
Tetra Tech Project Manager

Attachment A – Final Lead Analysis Stage 4 Data Validation Checklist Report

Attachment B – Final Additional Metals Analysis Stage 4 Data Validation Checklist Report



ATTACHMENT A
FINAL LEAD ANALYSIS STAGE 4 DATA VALIDATION CHECKLIST REPORT



DATA VALIDATION CHECKLIST – STAGE 4

(Page 1 of 7)

Site Name	Pilsen Area Soils	Project No.	103X90260001S051504007
Data Reviewer (signature and date)	<i>Jessica A. Vickers</i> May 14, 2015	Technical Reviewer (signature and date)	<i>Debbie Kuhl</i> May 18, 2015
Laboratory Report No.	110900	Laboratory	CT Laboratories
Document Tracking No.	0209		
Analyses	Lead and Lead Fines – SW-846 6010C and Toxicity Characteristic Leaching Procedure (TCLP) Lead – SW-846 1311/6010C		
Samples	PA-RR-17-0006, PA-RR-17-0624, PA-RR-18-0006, PA-RR-18-0618, PA-RR-19-0006, PA-RR-19-0618, PA-RR-20-0006, PA-RR-20-0618, PA-RR-21-0006, PA-RR-21-0624, PA-RR-22-0006, PA-RR-22-0006D, PA-RR-22-0624, PA-RR-23-0006, PA-RR-23-0624, PA-RR-24-0006, PA-RR-24-0624, PA-RR-24-0624D, PA-RR-25-0006, PA-RR-25-0624, PA-RR-26-0006, and PA-RR-26-0624		
Field Duplicate Pairs	PA-RR-22-0006/PA-RR-22-0006D and PA-RR-24-0624/PA-RR-24-0624D		

This checklist summarizes the Stage 4 validation performed on the subject laboratory report, in accordance with the U.S. Environmental Protection Agency (EPA) *Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use* (January 2009). Analytical data were evaluated in general accordance with the EPA *Contract Laboratory Program (CLP) National Functional Guidelines (NFG) for Inorganic Superfund Data Review* (August 2014) data validation guidance document, as well as the above-referenced methods.

OVERALL EVALUATION

The results are acceptable and usable as reported, with the qualifications discussed in the post digestion spike and serial dilution sections.

Data completeness:

Within Criteria	Exceedance/Notes
Y	



DATA VALIDATION CHECKLIST – STAGE 4

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Sample preservation, receipt, and holding times:

Within Criteria	Exceedance/Notes
Y	

Instrument Performance Checks:

Within Criteria	Exceedance/Notes
NA	

DDT/Endrin Breakdown:

Within Criteria	Exceedance/Notes
NA	

Initial Calibration:

Within Criteria	Exceedance/Notes
Y	

Continuing Calibration:

Within Criteria	Exceedance/Notes
Y	



DATA VALIDATION CHECKLIST – STAGE 4

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Calibration Verification:

Within Criteria	Exceedance/Notes
Y	

Method blanks:

Within Criteria	Exceedance/Notes
N	CCB 05/04/15 (17:43): lead = 1.75 µg/L – no action (associated results greater than 10 times blank value) CCB 05/04/15 (22:56): lead = 1.78 µg/L – no action (associated results greater than 10 times blank value) MB 114581: lead = 0.061 mg/kg – no action (associated results greater than 10 times blank value) MB 114582: lead = 0.5 mg/kg – no action (associated results greater than 10 times blank value)

Field blanks:

Within Criteria	Exceedance/Notes
NA	

Interference Check Samples (ICS) (ICP metals only):

Within Criteria	Exceedance/Notes
Y	

System monitoring compounds (surrogates and labeled compounds):

Within Criteria	Exceedance/Notes
NA	



DATA VALIDATION CHECKLIST – STAGE 4

(Page 4 of 7)

MS/MSD:

Within Criteria	Exceedance/Notes
N	%Rs and/or RPDs out for lead in PA-RR-25-0006 and PA-RR-26-0006; and for lead fines in PA-RR-25-0006 and PA-RR-26-0624 – no action (results greater than four times spike concentrations)

Post digestion spikes:

Within Criteria	Exceedance/Notes
N	%Rs out for lead in PA-RR-25-0006 and PA-RR-26-0006 – no action (results greater than four times spike concentration) Low %R for lead fines in PA-RR-25-0006 – flagged “J-”

Serial dilutions:

Within Criteria	Exceedance/Notes
N	%D greater than 10% for lead for PA-RR-25-0006 and PA-RR-26-0006; and for lead fines for PA-RR-25-0006 and PA-RR-26-0624 – flagged “J” unless overridden by the post digestion flag spike discussed above

Laboratory duplicates:

Within Criteria	Exceedance/Notes
Y	

Field duplicates:

Within Criteria	Exceedance/Notes
Y	



DATA VALIDATION CHECKLIST – STAGE 4
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Total versus dissolved metals results evaluation:

Within Criteria	Exceedance/Notes
NA	

LCSs/LCSDs:

Within Criteria	Exceedance/Notes
Y	

Toxicity equivalents (TEQs) and isomer specificity (dioxins/furans, cBaP, and PCB congeners only):

Within Criteria	Exceedance/Notes
NA	

Sample dilutions:

Within Criteria	Exceedance/Notes
Y	

Re-extraction and reanalysis:

Within Criteria	Exceedance/Notes
Y	



DATA VALIDATION CHECKLIST – STAGE 4

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Second column confirmation (GC and HPLC analyses only):

Within Criteria	Exceedance/Notes
NA	

Internal Standards:

Within Criteria	Exceedance/Notes
NA	

Estimated detection limit (EDL), estimated maximum possible concentration (EMPC), and target analyte identification (dioxins/furans only):

Within Criteria	Exceedance/Notes
NA	

Target analyte identification:

Within Criteria	Exceedance/Notes
Y	

Analyte quantitation and MDLs/RLs:

Within Criteria	Exceedance/Notes
Y	



DATA VALIDATION CHECKLIST – STAGE 4

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Tentatively identified compounds:

Within Criteria	Exceedance/Notes
NA	

System performance and instrument stability:

Within Criteria	Exceedance/Notes
Y	

Overall Qualifications:

See results summary pages attached for changes to the laboratory qualifiers based upon this validation. The following is a list of qualifiers and definitions that may be used for the validation of this data package:

J	The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample.
J+	The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample and may be biased high.
J-	The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample and may be biased low.
NJ	The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated value is the approximate concentration of the analyte in the sample.
R	The sample result is rejected as unusable due to serious deficiencies in one or more quality control criteria. The analyte may or may not be present in the sample.
U	The analyte was analyzed for, but was not detected at or above the associated value (reporting limit).
UJ	The analyte was analyzed for, but was not detected at or above the associated value (reporting limit), which is considered approximate due to deficiencies in one or more quality control criteria.



INORGANIC ANALYSIS DATA SHEET

Sample Description

PA-RR-25-0006

Lab Name:	<u>CT Laboratories</u>	Contract:	<u>TETRA TECH-PILSEN AREA SOILS SITE OU1</u>	
Matrix (soil/water):	<u>SOIL</u>	SDG No.:	<u>110900</u>	
% Solids:	<u>80.8</u>	Lab Sample ID:	<u>579553</u>	
Analytical Method:	<u>EPA 6010C</u>	Date Received:	<u>04/29/2015</u>	
Dilution Factor:	<u>1.00</u>	TCLP/SPLP Extraction Date/time:		
Analytical Run #:	<u>114581</u>	Analysis Date/Time	<u>05/04/2015</u>	<u>16:56</u>
Analytical Prep Batch #:	<u>52386</u>	Prep. Date/Time:	<u>05/01/2015</u>	<u>07:00</u>
ICAL Calibration #:		Concentration Units:	<u>mg/kg</u>	

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
7439-92-1	Lead	2060	J M	0.051	0.16	0.32	0.32

gaw
05/14/15



PA-RR-25-0006

1
INORGANIC ANALYSIS DATA SHEET

Lab Name: CT Laboratories Contract: TETRA TECH-PILSEN AREA SOILS SITE OU1
 Matrix (soil/water): SOIL SDG No.: 110900
 % Solids: 80.8 Lab Sample ID: 579553
 Analytical Method: EPA 6010C Date Received: 04/29/2015
 Dilution Factor: 1.00 TCLP/SPLP Extraction Date/time: _____
 Analytical Run #: 114604 Analysis Date/Time 05/04/2015 22:29
 Analytical Prep Batch #: 52392 Prep. Date/Time: 05/04/2015 07:00
 ICAL Calibration #: _____ Concentration Units: mg/kg

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
7439-92-1	Lead, Fine	3230	J- M	0.30			1.0

gaw
 05/14/15



INORGANIC ANALYSIS DATA SHEET

Sample Description

PA-RR-26-0006

Lab Name:	<u>CT Laboratories</u>	Contract:	<u>TETRA TECH-PILSEN AREA SOILS SITE OU1</u>	
Matrix (soil/water):	<u>SOIL</u>	SDG No.:	<u>110900</u>	
% Solids:	<u>82.1</u>	Lab Sample ID:	<u>579556</u>	
Analytical Method:	<u>EPA 6010C</u>	Date Received:	<u>04/29/2015</u>	
Dilution Factor:	<u>1.00</u>	TCLP/SPLP Extraction Date/time:	_____	
Analytical Run #:	<u>114582</u>	Analysis Date/Time	<u>05/04/2015</u>	<u>17:47</u>
Analytical Prep Batch #:	<u>52387</u>	Prep. Date/Time:	<u>05/01/2015</u>	<u>07:00</u>
ICAL Calibration #:	_____	Concentration Units:	<u>mg/kg</u>	

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
7439-92-1	Lead	2290	J M	0.048	0.15	0.30	0.30

Jaw
05/14/15



**ATTACHMENT B
FINAL ADDITIONAL METALS STAGE 4 DATA VALIDATION CHECKLIST
REPORT**



DATA VALIDATION CHECKLIST – STAGE 4

(Page 1 of 8)

Site Name	Pilsen Area Soils	Project No.	103X90260001S051504007
Data Reviewer (signature and date)	<i>Jessica A. Vickers</i> May 14, 2015	Technical Reviewer (signature and date)	<i>Debbie Kuhl</i> May 18, 2015
Laboratory Report No.	111014	Laboratory	CT Laboratories
Document Tracking No.	0210		
Analyses	Cadmium, Copper, Tin, and Zinc – SW6010C		
Samples	PA-RR-17-0006, PA-RR-17-0624, PA-RR-18-0006, PA-RR-18-0618, PA-RR-19-0006, PA-RR-19-0618, PA-RR-20-0006, PA-RR-20-0618, PA-RR-21-0006, PA-RR-21-0624, PA-RR-22-0006, PA-RR-22-0006D, PA-RR-22-0624, PA-RR-23-0006, PA-RR-23-0624, PA-RR-24-0006, PA-RR-24-0624, PA-RR-24-0624D, PA-RR-25-0006, PA-RR-25-0624, PA-RR-26-0006, and PA-RR-26-0624		
Field Duplicate Pairs	PA-RR-22-0006/PA-RR-22-0006D and PA-RR-24-0624/PA-RR-24-0624D		

This checklist summarizes the Stage 4 validation performed on the subject laboratory report, in accordance with the U.S. Environmental Protection Agency (EPA) *Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use* (January 2009). Analytical data were evaluated in general accordance with the EPA *Contract Laboratory Program (CLP) National Functional Guidelines (NFG) for Inorganic Superfund Data Review* (August 2014) data validation guidance document, as well as the above referenced methods.

OVERALL EVALUATION

The results are acceptable and usable as reported, with the qualifications discussed in the matrix spike/matrix spike duplicate (MS/MSD), post digestion spike, serial dilution, and field duplicate sections.

Data completeness:

Within Criteria	Exceedance/Notes
Y	



DATA VALIDATION CHECKLIST – STAGE 4

(Page 2 of 8)

Sample preservation, receipt, and holding times:

Within Criteria	Exceedance/Notes
Y	

Instrument Performance Checks:

Within Criteria	Exceedance/Notes
NA	

DDT/Endrin Breakdown:

Within Criteria	Exceedance/Notes
NA	

Initial Calibration:

Within Criteria	Exceedance/Notes
Y	

Continuing Calibration:

Within Criteria	Exceedance/Notes
Y	



DATA VALIDATION CHECKLIST – STAGE 4

(Page 3 of 8)

Calibration Verification:

Within Criteria	Exceedance/Notes
Y	

Method blanks:

Within Criteria	Exceedance/Notes
N	CCB 05/04/15 (14:59): zinc = 3.21 µg/L – no action (associated results greater than 10 times blank value) CCB 05/04/15 (15:53): zinc = 9.56 µg/L – no action (associated results greater than 10 times blank value) CCB 05/04/15 (16:48): zinc = 10.8 µg/L – no action (associated results greater than 10 times blank value) CCB 05/04/15 (17:43): copper = 1.34 µg/L and zinc = 11.6 µg/L – no action (associated results greater than 10 times blank value) CCB 05/04/15 (18:38): zinc = 14.4 µg/L – no action (associated results greater than 10 times blank value) CCB 05/06/15 (16:00): zinc = 5.60 µg/L – no action (associated results greater than 10 times blank value) CCB 05/06/15 (16:49): zinc = 9.75 µg/L – no action (associated results greater than 10 times blank value) CCB 05/06/15 (17:39): zinc = 3.87 µg/L – no action (associated results greater than 10 times blank value) CCB 05/08/15 (13:06): tin = 12.3 µg/L – no action (associated results greater than 10 times blank value) CCB 05/08/15 (13:54): tin = 21.2 µg/L – no action (associated results greater than 10 times blank value) CCB 05/08/15 (14:34): tin = 14.1 µg/L – no action (associated results greater than 10 times blank value) MB 114709: copper = 0.38 mg/kg and zinc = 2.0 mg/kg – no action (associated results greater than 10 times blank value) MB 114710: copper = 0.81 mg/kg and zinc = 4.6 mg/kg – no action (associated results greater than 10 times blank value)

Field blanks:

Within Criteria	Exceedance/Notes
NA	



DATA VALIDATION CHECKLIST – STAGE 4

(Page 4 of 8)

Interference Check Samples (ICS) (ICP metals only):

Within Criteria	Exceedance/Notes
Y	

System monitoring compounds (surrogates and labeled compounds):

Within Criteria	Exceedance/Notes
NA	

MS/MSD:

Within Criteria	Exceedance/Notes
N	Low %R for cadmium for PA-RR-25-0006 and PA-RR-26-0006 – flag “J-” %Rs out for copper and zinc in PA-RR-25-0006 and PA-RR-26-0006; and for tin in PA-RR-17-0006 and PA-RR-26-0006 – no action (results greater than four times spike concentrations)

Post digestion spikes:

Within Criteria	Exceedance/Notes
N	%Rs out for copper and zinc in PA-RR-25-0006 and PA-RR-26-0006 – no action (result greater than four times spike concentration) Low %R for cadmium in PA-RR-25-0006 and PA-RR-26-0006 – flag “J-”



DATA VALIDATION CHECKLIST – STAGE 4
(Page 5 of 8)

Serial dilutions:

Within Criteria	Exceedance/Notes
N	%D greater than 10% for cadmium, copper, and zinc for PA-RR-25-0006; and for cadmium, copper, tin, and zinc for PA-RR-26-0006 – flag “J” unless overridden by the MS/MSD and post digestion spike qualifiers discussed above

Laboratory duplicates:

Within Criteria	Exceedance/Notes
Y	

Field duplicates:

Within Criteria	Exceedance/Notes
N	PA-RR-24-0624/PA-RR-24-0624D: cadmium RPD = 161% and tin RPD = 83% - flag “J” for both samples

Total versus dissolved metals results evaluation:

Within Criteria	Exceedance/Notes
NA	

LCSs/LCSDs:

Within Criteria	Exceedance/Notes
Y	



DATA VALIDATION CHECKLIST – STAGE 4
(Page 6 of 8)

Toxicity equivalents (TEQs) and isomer specificity (dioxins/furans, cBaP, and PCB congeners only):

Within Criteria	Exceedance/Notes
NA	

Sample dilutions:

Within Criteria	Exceedance/Notes
N	5x: tin for PA-RR-17-0006, PA-RR-17-0624, PA-RR-18-0006, PA-RR-19-0006, PA-RR-20-0006, PA-RR-21-0006, PA-RR-22-0006, PA-RR-22-0006D, PA-RR-24-0006, PA-RR-24-0624D, PA-RR-25-0006, and PA-RR-26-0006 10x: copper and zinc for PA-RR-17-0006, PA-RR-18-0006, PA-RR-22-0006, PA-RR-22-0006D, PA-RR-24-0006, PA-RR-25-0006, and PA-RR-26-0006 10x: zinc for PA-RR-17-0624, PA-RR-18-0618, PA-RR-19-0006, PA-RR-20-0006, PA-RR-21-0006, PA-RR-24-0624, PA-RR-24-0624D, PA-RR-25-0624, and PA-RR-26-0624

Re-extraction and reanalysis:

Within Criteria	Exceedance/Notes
Y	

Second column confirmation (GC and HPLC analyses only):

Within Criteria	Exceedance/Notes
NA	



DATA VALIDATION CHECKLIST – STAGE 4

(Page 7 of 8)

Internal Standards:

Within Criteria	Exceedance/Notes
NA	

Estimated detection limit (EDL), estimated maximum possible concentration (EMPC), and target analyte identification (dioxins/furans only):

Within Criteria	Exceedance/Notes
NA	

Target analyte identification:

Within Criteria	Exceedance/Notes
Y	

Analyte quantitation and MDLs/RLs:

Within Criteria	Exceedance/Notes
Y	

Tentatively identified compounds:

Within Criteria	Exceedance/Notes
NA	



DATA VALIDATION CHECKLIST – STAGE 4

(Page 8 of 8)

System performance and instrument stability:

Within Criteria	Exceedance/Notes
Y	

Overall Qualifications:

See results summary pages attached for changes to the laboratory qualifiers based upon this validation. The following is a list of qualifiers and definitions that may be used for the validation of this data package:

J	The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample.
J+	The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample and may be biased high.
J-	The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample and may be biased low.
NJ	The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated value is the approximate concentration of the analyte in the sample.
R	The sample result is rejected as unusable due to serious deficiencies in one or more quality control criteria. The analyte may or may not be present in the sample.
U	The analyte was analyzed for, but was not detected at or above the associated value (reporting limit).
UJ	The analyte was analyzed for, but was not detected at or above the associated value (reporting limit), which is considered approximate due to deficiencies in one or more quality control criteria.



INORGANIC ANALYSIS DATA SHEET

Sample Description

PA-RR-24-0624

Lab Name:	<u>CT Laboratories</u>	Contract:	<u>TETRA TECH-PILSEN AREA SOILS SITE OU1</u>	
Matrix (soil/water):	<u>SOIL</u>	SDG No.:	<u>111014</u>	
% Solids:	<u>78.0</u>	Lab Sample ID:	<u>581755</u>	
Analytical Method:	<u>EPA 6010C</u>	Date Received:	<u>04/29/2015</u>	
Dilution Factor:	<u>1.00</u>	TCLP/SPLP Extraction Date/time:	_____	
Analytical Run #:	<u>114733</u>	Analysis Date/Time	<u>05/08/2015</u>	<u>11:45</u>
Analytical Prep Batch #:	<u>52440</u>	Prep. Date/Time:	<u>05/07/2015</u>	<u>10:00</u>
ICAL Calibration #:	_____	Concentration Units:	<u>mg/kg</u>	

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
7440-31-5	Tin	294	J	0.12	0.33	0.66	0.66


 05/15/15



1
INORGANIC ANALYSIS DATA SHEET

PA-RR-24-0624

Lab Name:	<u>CT Laboratories</u>	Contract:	<u>TETRA TECH-PILSEN AREA SOILS SITE OU1</u>
Matrix (soil/water):	<u>SOIL</u>	SDG No.:	<u>111014</u>
% Solids:	<u>78.0</u>	Lab Sample ID:	<u>581755</u>
Analytical Method:	<u>EPA 6010C</u>	Date Received:	<u>04/29/2015</u>
Dilution Factor:	<u>1.00</u>	TCLP/SPLP Extraction Date/time:	_____
Analytical Run #:	<u>114709</u>	Analysis Date/Time	<u>05/04/2015 16:36</u>
Analytical Prep Batch #:	<u>52432</u>	Prep. Date/Time:	<u>05/01/2015 07:00</u>
ICAL Calibration #:	_____	Concentration Units:	<u>mg/kg</u>

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
7440-43-9	Cadmium	28.6	J	0.0075	0.025	0.050	0.050
7440-50-8	Copper	818		0.087	0.25	0.50	0.50

gaw
 05/15/15



1
INORGANIC ANALYSIS DATA SHEET

PA-RR-24-0624D

Lab Name:	<u>CT Laboratories</u>	Contract:	<u>TETRA TECH-PILSEN AREA SOILS SITE OU1</u>
Matrix (soil/water):	<u>SOIL</u>	SDG No.:	<u>111014</u>
% Solids:	<u>77.4</u>	Lab Sample ID:	<u>581756</u>
Analytical Method:	<u>EPA 6010C</u>	Date Received:	<u>04/29/2015</u>
Dilution Factor:	<u>5.00</u>	TCLP/SPLP Extraction Date/time:	_____
Analytical Run #:	<u>114733</u>	Analysis Date/Time	<u>05/08/2015 13:58</u>
Analytical Prep Batch #:	<u>52440</u>	Prep. Date/Time:	<u>05/07/2015 10:00</u>
ICAL Calibration #:	_____	Concentration Units:	<u>mg/kg</u>

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
7440-31-5	Tin	713	J	0.58	1.6	3.2	3.2


 05/15/15



Sample Description

1
INORGANIC ANALYSIS DATA SHEET

PA-RR-24-0624D

Lab Name:	<u>CT Laboratories</u>	Contract:	<u>TETRA TECH-PILSEN AREA SOILS SITE OU1</u>
Matrix (soil/water):	<u>SOIL</u>	SDG No.:	<u>111014</u>
% Solids:	<u>77.4</u>	Lab Sample ID:	<u>581756</u>
Analytical Method:	<u>EPA 6010C</u>	Date Received:	<u>04/29/2015</u>
Dilution Factor:	<u>1.00</u>	TCLP/SPLP Extraction Date/time:	_____
Analytical Run #:	<u>114709</u>	Analysis Date/Time	<u>05/04/2015 16:52</u>
Analytical Prep Batch #:	<u>52432</u>	Prep. Date/Time:	<u>05/01/2015 07:00</u>
ICAL Calibration #:	_____	Concentration Units:	<u>mg/kg</u>

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
7440-43-9	Cadmium	3.1	J	0.0075	0.025	0.050	0.050
7440-50-8	Copper	1040		0.087	0.25	0.50	0.50


 05/15/15



Sample Description

1
INORGANIC ANALYSIS DATA SHEET

PA-RR-25-0006

Lab Name:	<u>CT Laboratories</u>	Contract:	<u>TETRA TECH-PILSEN AREA SOILS SITE OU1</u>	
Matrix (soil/water):	<u>SOIL</u>	SDG No.:	<u>111014</u>	
% Solids:	<u>80.8</u>	Lab Sample ID:	<u>581757</u>	
Analytical Method:	<u>EPA 6010C</u>	Date Received:	<u>04/29/2015</u>	
Dilution Factor:	<u>10.00</u>	TCLP/SPLP Extraction Date/time:	<u></u>	
Analytical Run #:	<u>114709</u>	Analysis Date/Time	<u>05/06/2015</u>	<u>16:23</u>
Analytical Prep Batch #:	<u>52432</u>	Prep. Date/Time:	<u>05/01/2015</u>	<u>07:00</u>
ICAL Calibration #:	<u></u>	Concentration Units:	<u>mg/kg</u>	

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
7440-50-8	Copper	3330 J	M⁺	0.90	2.6	5.1	5.1
7440-66-6	Zinc	15600 J	M, B⁺	0.64	1.9	3.8	3.8

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 05/15/15



1
INORGANIC ANALYSIS DATA SHEET

PA-RR-25-0006

Lab Name:	CT Laboratories	Contract:	TETRA TECH-PILSEN AREA SOILS SITE OU1
Matrix (soil/water):	SOIL	SDG No.:	111014
% Solids:	80.8	Lab Sample ID:	581757
Analytical Method:	EPA 6010C	Date Received:	04/29/2015
Dilution Factor:	1.00	TCLP/SPLP Extraction Date/time:	
Analytical Run #:	114709	Analysis Date/Time	05/04/2015 16:56
Analytical Prep Batch #:	52432	Prep. Date/Time:	05/01/2015 07:00
ICAL Calibration #:		Concentration Units:	mg/kg

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
7440-43-9	Cadmium	7.7	J- M	0.0077	0.026	0.051	0.051

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05/15/15



1
INORGANIC ANALYSIS DATA SHEET

PA-RR-26-0006

Lab Name:	<u>CT Laboratories</u>	Contract:	<u>TETRA TECH-PILSEN AREA SOILS SITE OU1</u>
Matrix (soil/water):	<u>SOIL</u>	SDG No.:	<u>111014</u>
% Solids:	<u>82.1</u>	Lab Sample ID:	<u>581760</u>
Analytical Method:	<u>EPA 6010C</u>	Date Received:	<u>04/29/2015</u>
Dilution Factor:	<u>5.00</u>	TCLP/SPLP Extraction Date/time:	<u></u>
Analytical Run #:	<u>114734</u>	Analysis Date/Time	<u>05/08/2015 14:06</u>
Analytical Prep Batch #:	<u>52441</u>	Prep. Date/Time:	<u>05/07/2015 10:00</u>
ICAL Calibration #:	<u></u>	Concentration Units:	<u>mg/kg</u>

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
7440-31-5	Tin	767 <i>J</i>	<i>B</i>	0.53	1.5	3.0	3.0

gaw
05/15/15



Sample Description

1
INORGANIC ANALYSIS DATA SHEET

PA-RR-26-0006

Lab Name:	<u>CT Laboratories</u>	Contract:	<u>TETRA TECH-PILSEN AREA SOILS SITE OU1</u>	
Matrix (soil/water):	<u>SOIL</u>	SDG No.:	<u>111014</u>	
% Solids:	<u>82.1</u>	Lab Sample ID:	<u>581760</u>	
Analytical Method:	<u>EPA 6010C</u>	Date Received:	<u>04/29/2015</u>	
Dilution Factor:	<u>10.00</u>	TCLP/SPLP Extraction Date/time:	_____	
Analytical Run #:	<u>114710</u>	Analysis Date/Time	<u>05/06/2015</u>	<u>17:01</u>
Analytical Prep Batch #:	<u>52433</u>	Prep. Date/Time:	<u>05/01/2015</u>	<u>07:00</u>
ICAL Calibration #:	_____	Concentration Units:	<u>mg/kg</u>	

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
7440-50-8	Copper	3640	J M ^e	0.84	2.4	4.8	4.8
7440-66-6	Zinc	20500	J B.M ^e	0.60	1.8	3.6	3.6

gaw
 05/15/15



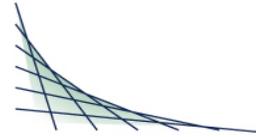
1
INORGANIC ANALYSIS DATA SHEET

PA-RR-26-0006

Lab Name:	<u>CT Laboratories</u>	Contract:	<u>TETRA TECH-PILSEN AREA SOILS SITE OU1</u>
Matrix (soil/water):	<u>SOIL</u>	SDG No.:	<u>111014</u>
% Solids:	<u>82.1</u>	Lab Sample ID:	<u>581760</u>
Analytical Method:	<u>EPA 6010C</u>	Date Received:	<u>04/29/2015</u>
Dilution Factor:	<u>1.00</u>	TCLP/SPLP Extraction Date/time:	<u> </u>
Analytical Run #:	<u>114710</u>	Analysis Date/Time	<u>05/04/2015 17:47</u>
Analytical Prep Batch #:	<u>52433</u>	Prep. Date/Time:	<u>05/01/2015 07:00</u>
ICAL Calibration #:	<u> </u>	Concentration Units:	<u>mg/kg</u>

CAS #	Analyte	Concentration	Qualifiers	DL	LOD	LOQ	RL
7440-43-9	Cadmium	7.9	J- M ²	0.0072	0.024	0.048	0.048

gw
 05/15/15



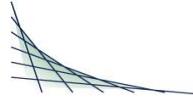
ANALYTICAL REPORT

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.





ANALYTICAL REPORT

TETRA TECH
 PAUL PALLARDY
 1 S WACKER DRIVER
 SUITE 3700
 CHICAGO, IL 60606

Project Name: PILSEN AREA SOILS SITE OU1
 Project Phase:
 Contract #: 2795
 Project #: 103X90260001S0515040
 Folder #: 110900
 Purchase Order #: 1111200

Page 1 of 14
 Arrival Temperature: 2.6
 Report Date: 05/05/2015
 Date Received: 04/29/2015
 Reprint Date: 05/05/2015

CT LAB#: 579498	Sample Description: PA-RR-17-0006	Client Sample #:	Sampled: 04/27/2015 1640
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Inorganic Results												
Solids, Percent	87.9	%	0.1	0.1	0.1	0.1	1.00			4/30/15 09:20	MDS	EPA 8000C
Metals Results												
Lead, Fine	1260	mg/kg	0.25			0.25	1.00		05/04/2015 07:00	5/4/15 20:47	NAH	EPA 6010C ^
Lead	1120	mg/kg	0.046	0.14	0.29	0.29	1.00		05/01/2015 07:00	5/4/15 15:15	NAH	EPA 6010C ^

CT LAB#: 579499	Sample Description: PA-RR-17-0006	Client Sample #:	Sampled: 04/27/2015 1640
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Metals Results												
TCLP Lead	0.15	mg/L	0.0014	0.0020	0.0040	0.0040	1.00		05/01/2015 07:00	5/4/15 13:27	NAH	EPA 6010C ^

CT LAB#: 579500	Sample Description: PA-RR-17-0624	Client Sample #:	Sampled: 04/27/2015 1645
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
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Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis





CT LAB#: 579500	Sample Description: PA-RR-17-0624	Client Sample #:	Sampled: 04/27/2015 1645
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
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Inorganic Results

Solids, Percent	82.4	%	0.1	0.1	0.1	0.1	1.00			4/30/15 09:20	MDS	EPA 8000C
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Metals Results

Lead, Fine	954	mg/kg	0.23			0.23	1.00		05/04/2015 07:00	5/4/15 20:51	NAH	EPA 6010C ^
Lead	854	mg/kg	0.048	0.15	0.30	0.30	1.00		05/01/2015 07:00	5/4/15 15:20	NAH	EPA 6010C ^

CT LAB#: 579501	Sample Description: PA-RR-17-0624	Client Sample #:	Sampled: 04/27/2015 1645
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
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Metals Results

TCLP Lead	0.51	mg/L	0.0014	0.0020	0.0040	0.0040	1.00		05/01/2015 07:00	5/4/15 13:31	NAH	EPA 6010C ^
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CT LAB#: 579502	Sample Description: PA-RR-18-0006	Client Sample #:	Sampled: 04/27/2015 1650
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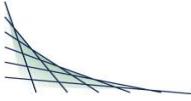
Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
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Inorganic Results

Solids, Percent	81.5	%	0.1	0.1	0.1	0.1	1.00			4/30/15 09:20	MDS	EPA 8000C
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Metals Results

Lead, Fine	2470	mg/kg	0.27			0.27	1.00		05/04/2015 07:00	5/4/15 20:55	NAH	EPA 6010C ^
Lead	1440	mg/kg	0.048	0.15	0.30	0.30	1.00		05/01/2015 07:00	5/4/15 15:25	NAH	EPA 6010C ^



CT LAB#: 579503	Sample Description: PA-RR-18-0006	Client Sample #:	Sampled: 04/27/2015 1650
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
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Metals Results

TCLP Lead	0.86	mg/L	0.0014	0.0020	0.0040	0.0040	1.00		05/01/2015 07:00	5/4/15 13:35	NAH	EPA 6010C ^
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CT LAB#: 579504	Sample Description: PA-RR-18-0618	Client Sample #:	Sampled: 04/27/2015 1656
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
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Inorganic Results

Solids, Percent	81.5	%	0.1	0.1	0.1	0.1	1.00			4/30/15 09:20	MDS	EPA 8000C
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Metals Results

Lead, Fine	1030	mg/kg	0.29			0.29	1.00		05/04/2015 07:00	5/4/15 20:58	NAH	EPA 6010C ^
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Lead	656	mg/kg	0.049	0.15	0.30	0.30	1.00		05/01/2015 07:00	5/4/15 15:30	NAH	EPA 6010C ^
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CT LAB#: 579505	Sample Description: PA-RR-18-0618	Client Sample #:	Sampled: 04/27/2015 1656
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
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Metals Results

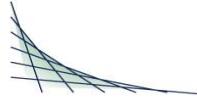
TCLP Lead	0.22	mg/L	0.0014	0.0020	0.0040	0.0040	1.00		05/01/2015 07:00	5/4/15 13:39	NAH	EPA 6010C ^
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CT LAB#: 579506	Sample Description: PA-RR-19-0006	Client Sample #:	Sampled: 04/27/2015 1705
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
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Inorganic Results

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



CT LAB#: 579506	Sample Description: PA-RR-19-0006	Client Sample #:	Sampled: 04/27/2015 1705
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Solids, Percent	81.5	%	0.1	0.1	0.1	0.1	1.00			4/30/15 09:20	MDS	EPA 8000C

Metals Results

Lead, Fine	1380	mg/kg	0.29			0.29	1.00		05/04/2015 07:00	5/4/15 21:06	NAH	EPA 6010C ^
Lead	967	mg/kg	0.050	0.16	0.31	0.31	1.00		05/01/2015 07:00	5/4/15 15:34	NAH	EPA 6010C ^

CT LAB#: 579507	Sample Description: PA-RR-19-0006	Client Sample #:	Sampled: 04/27/2015 1705
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
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Metals Results

TCLP Lead	0.34	mg/L	0.0014	0.0020	0.0040	0.0040	1.00		05/01/2015 07:00	5/4/15 13:44	NAH	EPA 6010C ^
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CT LAB#: 579508	Sample Description: PA-RR-19-0618	Client Sample #:	Sampled: 04/27/2015 1710
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
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Inorganic Results

Solids, Percent	79.2	%	0.1	0.1	0.1	0.1	1.00			4/30/15 09:20	MDS	EPA 8000C
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Metals Results

Lead, Fine	719	mg/kg	0.25			0.25	1.00		05/04/2015 07:00	5/4/15 21:21	NAH	EPA 6010C ^
Lead	326	mg/kg	0.049	0.15	0.31	0.31	1.00		05/01/2015 07:00	5/4/15 15:38	NAH	EPA 6010C ^

CT LAB#: 579509	Sample Description: PA-RR-20-0006	Client Sample #:	Sampled: 04/27/2015 1720
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
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Inorganic Results

Solids, Percent	78.4	%	0.1	0.1	0.1	0.1	1.00			4/30/15 09:20	MDS	EPA 8000C
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Metals Results

Lead, Fine	1520	mg/kg	0.23			0.23	1.00		05/04/2015 07:00	5/4/15 21:25	NAH	EPA 6010C ^
Lead	979	mg/kg	0.051	0.16	0.32	0.32	1.00		05/01/2015 07:00	5/4/15 15:42	NAH	EPA 6010C ^

CT LAB#: 579510	Sample Description: PA-RR-20-0006	Client Sample #:	Sampled: 04/27/2015 1720
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
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Metals Results

TCLP Lead	0.31	mg/L	0.0014	0.0020	0.0040	0.0040	1.00		05/01/2015 07:00	5/4/15 13:48	NAH	EPA 6010C ^
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CT LAB#: 579511	Sample Description: PA-RR-20-0618	Client Sample #:	Sampled: 04/27/2015 1725
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
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Inorganic Results

Solids, Percent	79.4	%	0.1	0.1	0.1	0.1	1.00			4/30/15 09:20	MDS	EPA 8000C
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Metals Results

Lead, Fine	387	mg/kg	0.25			0.25	1.00		05/04/2015 07:00	5/4/15 21:28	NAH	EPA 6010C ^
Lead	227	mg/kg	0.052	0.16	0.32	0.32	1.00		05/01/2015 07:00	5/4/15 15:57	NAH	EPA 6010C ^



CT LAB#: 579512	Sample Description: PA-RR-21-0006	Client Sample #:	Sampled: 04/27/2015 1730
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
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Inorganic Results

Solids, Percent	84.1	%	0.1	0.1	0.1	0.1	1.00			4/30/15 09:20	MDS	EPA 8000C
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Metals Results

Lead, Fine	1750	mg/kg	0.18			0.18	1.00		05/04/2015 07:00	5/4/15 21:32	NAH	EPA 6010C ^
Lead	1100	mg/kg	0.049	0.15	0.31	0.31	1.00		05/01/2015 07:00	5/4/15 16:01	NAH	EPA 6010C ^

CT LAB#: 579513	Sample Description: PA-RR-21-0006	Client Sample #:	Sampled: 04/27/2015 1730
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
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Metals Results

TCLP Lead	0.25	mg/L	0.0014	0.0020	0.0040	0.0040	1.00		05/01/2015 07:00	5/4/15 13:52	NAH	EPA 6010C ^
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CT LAB#: 579514	Sample Description: PA-RR-21-0624	Client Sample #:	Sampled: 04/27/2015 1740
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
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Inorganic Results

Solids, Percent	81.1	%	0.1	0.1	0.1	0.1	1.00			4/30/15 09:20	MDS	EPA 8000C
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Metals Results

Lead, Fine	378	mg/kg	0.26			0.26	1.00		05/04/2015 07:00	5/4/15 21:40	NAH	EPA 6010C ^
Lead	229	mg/kg	0.049	0.15	0.31	0.31	1.00		05/01/2015 07:00	5/4/15 16:06	NAH	EPA 6010C ^



CT LAB#: 579515	Sample Description: PA-RR-22-0006	Client Sample #:	Sampled: 04/27/2015 1745
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
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Inorganic Results

Solids, Percent	79.9	%	0.1	0.1	0.1	0.1	1.00			4/30/15 09:20	MDS	EPA 8000C
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Metals Results

Lead, Fine	2150	mg/kg	0.29			0.29	1.00		05/04/2015 07:00	5/4/15 21:43	NAH	EPA 6010C ^
Lead	1160	mg/kg	0.049	0.15	0.31	0.31	1.00		05/01/2015 07:00	5/4/15 16:10	NAH	EPA 6010C ^

CT LAB#: 579516	Sample Description: PA-RR-22-0006	Client Sample #:	Sampled: 04/27/2015 1745
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
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Metals Results

TCLP Lead	0.54	mg/L	0.0014	0.0020	0.0040	0.0040	1.00		05/01/2015 07:00	5/4/15 13:56	NAH	EPA 6010C ^
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CT LAB#: 579517	Sample Description: PA-RR-22-0006D	Client Sample #:	Sampled: 04/27/2015 1745
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
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Inorganic Results

Solids, Percent	81.7	%	0.1	0.1	0.1	0.1	1.00			4/30/15 09:20	MDS	EPA 8000C
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Metals Results

Lead, Fine	2190	mg/kg	0.22			0.22	1.00		05/04/2015 07:00	5/4/15 21:47	NAH	EPA 6010C ^
Lead	1180	mg/kg	0.049	0.15	0.31	0.31	1.00		05/01/2015 07:00	5/4/15 16:14	NAH	EPA 6010C ^

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



CT LAB#: 579518	Sample Description: PA-RR-22-0006D	Client Sample #:	Sampled: 04/27/2015 1745
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
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Metals Results

TCLP Lead	0.51	mg/L	0.0014	0.0020	0.0040	0.0040	1.00		05/01/2015 07:00	5/4/15 14:12	NAH	EPA 6010C ^
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CT LAB#: 579519	Sample Description: PA-RR-22-0624	Client Sample #:	Sampled: 04/27/2015 1758
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
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Inorganic Results

Solids, Percent	81.1	%	0.1	0.1	0.1	0.1	1.00			4/30/15 09:20	MDS	EPA 8000C
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Metals Results

Lead, Fine	358	mg/kg	0.29			0.29	1.00		05/04/2015 07:00	5/4/15 21:51	NAH	EPA 6010C ^
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Lead	168	mg/kg	0.048	0.15	0.30	0.30	1.00		05/01/2015 07:00	5/4/15 16:19	NAH	EPA 6010C ^
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CT LAB#: 579520	Sample Description: PA-RR-23-0006	Client Sample #:	Sampled: 04/27/2015 1805
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
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Inorganic Results

Solids, Percent	80.2	%	0.1	0.1	0.1	0.1	1.00			4/30/15 09:20	MDS	EPA 8000C
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Metals Results

Lead, Fine	898	mg/kg	0.29			0.29	1.00		05/04/2015 07:00	5/4/15 21:55	NAH	EPA 6010C ^
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Lead	499	mg/kg	0.050	0.16	0.31	0.31	1.00		05/01/2015 07:00	5/4/15 16:23	NAH	EPA 6010C ^
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CT LAB#: 579521	Sample Description: PA-RR-23-0006	Client Sample #:	Sampled: 04/27/2015 1805
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
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Metals Results

TCLP Lead	0.032	mg/L	0.0014	0.0020	0.0040	0.0040	1.00		05/01/2015 07:00	5/4/15 14:16	NAH	EPA 6010C ^
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CT LAB#: 579524	Sample Description: PA-RR-23-0624	Client Sample #:	Sampled: 04/27/2015 1812
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
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Inorganic Results

Solids, Percent	83.8	%	0.1	0.1	0.1	0.1	1.00			4/30/15 09:20	MDS	EPA 8000C
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Metals Results

Lead, Fine	506	mg/kg	0.20			0.20	1.00		05/04/2015 07:00	5/4/15 22:14	NAH	EPA 6010C ^
Lead	188	mg/kg	0.046	0.14	0.29	0.29	1.00		05/01/2015 07:00	5/4/15 16:27	NAH	EPA 6010C ^

CT LAB#: 579525	Sample Description: PA-RR-24-0006	Client Sample #:	Sampled: 04/27/2015 1820
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
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Inorganic Results

Solids, Percent	86.9	%	0.1	0.1	0.1	0.1	1.00			4/30/15 09:20	MDS	EPA 8000C
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Metals Results

Lead, Fine	2540	mg/kg	0.20			0.20	1.00		05/04/2015 07:00	5/4/15 22:18	NAH	EPA 6010C ^
Lead	1750	mg/kg	0.046	0.14	0.29	0.29	1.00		05/01/2015 07:00	5/4/15 16:31	NAH	EPA 6010C ^

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





CT LAB#: 579529	Sample Description: PA-RR-24-0006	Client Sample #:	Sampled: 04/27/2015 1820
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
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Metals Results

TCLP Lead	0.71	mg/L	0.0014	0.0020	0.0040	0.0040	1.00		05/01/2015 07:00	5/4/15 14:20	NAH	EPA 6010C ^
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CT LAB#: 579551	Sample Description: PA-RR-24-0624	Client Sample #:	Sampled: 04/27/2015 1835
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
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Inorganic Results

Solids, Percent	78.0	%	0.1	0.1	0.1	0.1	1.00			4/30/15 09:20	MDS	EPA 8000C
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Metals Results

Lead, Fine	1100	mg/kg	0.29			0.29	1.00		05/04/2015 07:00	5/4/15 22:22	NAH	EPA 6010C ^
Lead	566	mg/kg	0.050	0.16	0.31	0.31	1.00		05/01/2015 07:00	5/4/15 16:36	NAH	EPA 6010C ^

CT LAB#: 579552	Sample Description: PA-RR-24-0624D	Client Sample #:	Sampled: 04/27/2015 1835
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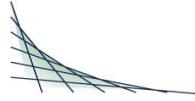
Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
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Inorganic Results

Solids, Percent	77.4	%	0.1	0.1	0.1	0.1	1.00			4/30/15 09:20	MDS	EPA 8000C
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Metals Results

Lead, Fine	1130	mg/kg	0.31			0.31	1.00		05/04/2015 07:00	5/4/15 22:25	NAH	EPA 6010C ^
Lead	655	mg/kg	0.050	0.16	0.31	0.31	1.00		05/01/2015 07:00	5/4/15 16:52	NAH	EPA 6010C ^



CT LAB#: 579553	Sample Description: PA-RR-25-0006	Client Sample #:	Sampled: 04/27/2015 1845
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Inorganic Results												
Solids, Percent	80.8	%	0.1	0.1	0.1	0.1	1.00			4/30/15 09:20	MDS	EPA 8000C
Metals Results												
Lead, Fine	3230	mg/kg	0.30			0.30	1.00	M	05/04/2015 07:00	5/4/15 22:29	NAH	EPA 6010C ^
Lead	2060	mg/kg	0.051	0.16	0.32	0.32	1.00	M	05/01/2015 07:00	5/4/15 16:56	NAH	EPA 6010C ^

CT LAB#: 579554	Sample Description: PA-RR-25-0006	Client Sample #:	Sampled: 04/27/2015 1845
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Metals Results												
TCLP Lead	1.9	mg/L	0.0014	0.0020	0.0040	0.0040	1.00		05/01/2015 07:00	5/4/15 14:24	NAH	EPA 6010C ^

CT LAB#: 579555	Sample Description: PA-RR-25-0624	Client Sample #:	Sampled: 04/27/2015 1900
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Inorganic Results												
Solids, Percent	78.7	%	0.1	0.1	0.1	0.1	1.00			4/30/15 09:20	MDS	EPA 8000C
Metals Results												
Lead, Fine	1150	mg/kg	0.31			0.31	1.00		05/04/2015 07:00	5/5/15 10:22	NAH	EPA 6010C ^
Lead	731	mg/kg	0.051	0.16	0.32	0.32	1.00		05/01/2015 07:00	5/4/15 17:23	NAH	EPA 6010C ^



CT LAB#: 579556	Sample Description: PA-RR-26-0006	Client Sample #:	Sampled: 04/27/2015 1905
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
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Inorganic Results

Solids, Percent	82.1	%	0.1	0.1	0.1	0.1	1.00			4/30/15 09:45	MDS	EPA 8000C
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Metals Results

Lead, Fine	3540	mg/kg	0.30			0.30	1.00		05/04/2015 07:00	5/5/15 10:37	NAH	EPA 6010C ^
Lead	2290	mg/kg	0.048	0.15	0.30	0.30	1.00	M	05/01/2015 07:00	5/4/15 17:47	NAH	EPA 6010C ^

CT LAB#: 579557	Sample Description: PA-RR-26-0006	Client Sample #:	Sampled: 04/27/2015 1905
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
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Metals Results

TCLP Lead	1.7	mg/L	0.0014	0.0020	0.0040	0.0040	1.00		05/01/2015 07:00	5/4/15 14:48	NAH	EPA 6010C ^
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CT LAB#: 579558	Sample Description: PA-RR-26-0624	Client Sample #:	Sampled: 04/27/2015 1910
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
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Inorganic Results

Solids, Percent	79.2	%	0.1	0.1	0.1	0.1	1.00			4/30/15 09:45	MDS	EPA 8000C
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Metals Results

Lead, Fine	2730	mg/kg	0.22			0.22	1.00		05/04/2015 07:00	5/5/15 10:41	NAH	EPA 6010C ^
Lead	1350	mg/kg	0.049	0.15	0.30	0.30	1.00		05/01/2015 07:00	5/4/15 18:14	NAH	EPA 6010C ^

CT LAB#: 579559	Sample Description: PA-RR-26-0624	Client Sample #:	Sampled: 04/27/2015 1910
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Metals Results												
TCLP Lead	13	mg/L	0.0014	0.0020	0.0040	0.0040	1.00		05/01/2015 07:00	5/4/15 15:03	NAH	EPA 6010C ^

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.

Submitted by: Pat M. Letterer
Project Manager
608-356-2760

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.

<u>Code</u>	<u>Description</u>	<u>QC Qualifiers</u>
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

Florida NELAP ID# E871111
Kansas NELAP ID# E-10368
Kentucky ID# 0023
ISO/IEC 17025-2005 A2LA Cert # 3806.01
New Jersey NELAP ID# WI001
North Carolina ID# 674
Wisconsin (WDNR) Chemistry ID# 157066030
Wisconsin (DATCP) Bacteriology ID# 105-289
DoD-ELAP L-A-B Cert # L2392
GA EPD Stipulation ID E871111, Expires Annually
Louisiana ID # 115843
Virginia ID# 7608
Illinois NELAP ID # 002413
Wisconsin (WOSB) ID# WI-5499-WBE
Maryland ID# 344



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 1/2 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

Company: Tetra Tech
 Project Contact: Paul Pallardy
 Telephone: 630-464-4101
 Project Name: PASS
 Project #: 103X90260001505/50427
 Location: Chicago, IL
 Sampled By: Paul Pallardy

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

Report To:
 EMAIL: paul.pallardy@tetratech.com
 Company: Tetra Tech
 Address: 15 Wacker Dr, suite 3700, Chicago, IL
 Invoice To:*
 EMAIL: paul.pallardy@tetratech.com
 Company: same as above
 Address: SAS

Lab Use Only
 Place Header Sticker Here:
 Program:
 QSM RCRA SDWA NPDES
 Solid Waste Other None

PO # 111200

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

Client Special Instructions

Filtered? Y/N	ANALYSES REQUESTED										Total # Containers	Designated MS/MSD
	Total Lead	Lead Fines	TCLP Lead									

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%

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

Collection		Matrix	Grab/Comp	Sample #	Sample ID Description	Filtered? Y/N	Fill in Spaces with Bottles per Test										Total # Containers	Designated MS/MSD	CT Lab ID # Lab use only
Date	Time																		
4/27/15	1758	S	G	12	PA-RR-22-0624	N	X	X									1	579519	
	1805			13	PA-RR-23-0006		X	X	X									1	579520/521
	1812			14	PA-RR-23-0624		X	X										1	579524
	1820			15	PA-RR-24-0006		X	X	X									1	579525/529
	1835			16	PA-RR-24-0624		X	X										1	579551
	1835			16	PA-RR-24-0624D		X	X										1	579552
	1845			17	PA-RR-25-0006		X	X	X								2	X	579553/554
	1900			18	PA-RR-25-0624		X	X										1	579555
	1905			19	PA-RR-26-0006		X	X	X									1	579556/557
	1910			20	PA-RR-26-0624		X	X	X									1	579558/559

Relinquished By: 

Date/Time
 4/28/15 1200

Received By: lux

Date/Time
 4/29/15 1310

Lab Use Only
 Ice Present No
 Temp 2.0 IR Gun # 4

Received by:

Date/Time

Received for Laboratory by:
 110900 - Page 18 of 54

Date/Time
 4/29/15 1441

Cooler # 5325

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

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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.

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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, 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

Ice Present YES NO
Temperature 2.6°
IR Gun # 4
Initials TKR
Date 4/29/15 Time 1310
Cooler #: 5325

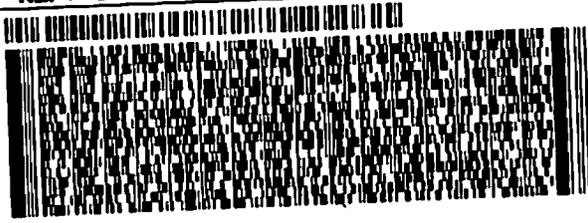
Cooler Receipt Form

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: 28APR15
ACTNGT: 40.2 LB MAN
DIMS: 18x12x12 IN
BILL SENDER

TO **PATRICK LETTERER**
CT LABS
1230 LANGE COURT

BARABOO WI 53913
(608) 356-2760
REF: 103X90260001S051504007



FedEx
Express



521C1/256Z/8F03
J1412140730010

TRK# 5987 5142 8018
0201

WED - 29 APR AA
STANDARD OVERNIGHT

55 MSNA

53913
WI-US MSN



POSTNET 159 48-434 RTD 0116

CUSTODY SEAL
DATE: 4-28-15
SIGNATURE: [Signature]
QEC
Quality Environmental Containers
800-255-3950 • 304-255-3900

CUSTODY SEAL
DATE: 4-28-15
SIGNATURE: [Signature]
QEC
Quality Environmental Containers
800-255-3950 • 304-255-3900

QC SUMMARY REPORT

TETRA TECH

Project Name: PILSEN AREA SOILS SITE OU1

SDG #: 0

Folder #: 110900

Project Number: 103X90260001S0515040

Duplicate

Analytical Run #:	114563	Analysis Date:	4/30/2015	Prep Batch #:	Matrix:	SOIL
CTLab #:	580806	Analysis Time:	09:20	Prep Date/Time:	Method:	SW8000C
Parent Sample #:	579553	Analyst:	MDS	Prep Analyst:		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Solids, Percent	80.3	%	80.8					1	8

TETRA TECH

Project Name: PILSEN AREA SOILS SITE OU1

SDG #: 0

Folder #: 110900

Project Number: 103X90260001S0515040

Duplicate

Analytical Run #:	114564	Analysis Date:	4/30/2015	Prep Batch #:		Matrix:	SOIL
CTLab #:	580807	Analysis Time:	09:45	Prep Date/Time:		Method:	SW8000C
Parent Sample #:	579558	Analyst:	MDS	Prep Analyst:			

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Solids, Percent	78.5	%	79.2					1	8

TETRA TECH

Project Name: PILSEN AREA SOILS SITE OU1

SDG #: 0

Folder #: 110900

Project Number: 103X90260001S0515040

Duplicate

Analytical Run #:	114581	Analysis Date:	5/4/2015	Prep Batch #:	52386	Matrix:	SOIL
CTLab #:	580070	Analysis Time:	17:04	Prep Date/Time:	05/01/2015 07:00	Method:	SW6010
Parent Sample #:	579553	Analyst:	NAH	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Lead	2040	mg/kg	2060				10.0	1	20

TETRA TECH

Project Name: PILSEN AREA SOILS SITE OU1

SDG #: 0

Folder #: 110900

Project Number: 103X90260001S0515040

Lab Control Spike Soil

Analytical Run #:	114581	Analysis Date:	5/4/2015	Prep Batch #:	52386	Matrix:	SOLID
CTLab #:	580069	Analysis Time:	15:07	Prep Date/Time:	05/01/2015 07:00	Method:	SW6010
Parent Sample #:		Analyst:	NAH	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Lead	21.6	mg/kg			25.0	86	80 --- 120		

TETRA TECH

Project Name: PILSEN AREA SOILS SITE OU1

SDG #: 0

Folder #: 110900

Project Number: 103X90260001S0515040

Method Blank Soil

Analytical Run #:	114581	Analysis Date:	5/4/2015	Prep Batch #:	52386	Matrix:	SOLID
CTLab #:	580068	Analysis Time:	15:11	Prep Date/Time:	05/01/2015 07:00	Method:	SW6010
Parent Sample #:		Analyst:	NAH	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Lead	0.061	mg/kg			0		0.125		

TETRA TECH

Project Name: PILSEN AREA SOILS SITE OU1

SDG #: 0

Folder #: 110900

Project Number: 103X90260001S0515040

Matrix Spike Duplicate Soil

Analytical Run #:	114581	Analysis Date:	5/4/2015	Prep Batch #:	52386	Matrix:	SOIL
CTLab #:	580072	Analysis Time:	17:14	Prep Date/Time:	05/01/2015 07:00	Method:	SW6010
Parent Sample #:	580071	Analyst:	NAH	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Lead	1860	mg/kg	2060		30.0	0	80 --- 120	55	20

TETRA TECH

Project Name: PILSEN AREA SOILS SITE OU1

SDG #: 0

Folder #: 110900

Project Number: 103X90260001S0515040

Matrix Spike Soil

Analytical Run #:	114581	Analysis Date:	5/4/2015	Prep Batch #:	52386	Matrix:	SOIL
CTLab #:	580071	Analysis Time:	17:09	Prep Date/Time:	05/01/2015 07:00	Method:	SW6010
Parent Sample #:	579553	Analyst:	NAH	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Lead	3370	mg/kg	2060		30.9	4239	80 --- 120		

TETRA TECH

Project Name: PILSEN AREA SOILS SITE OU1

SDG #: 0

Folder #: 110900

Project Number: 103X90260001S0515040

Duplicate

Analytical Run #:	114582	Analysis Date:	5/4/2015	Prep Batch #:	52387	Matrix:	SOIL
CTLab #:	580075	Analysis Time:	17:55	Prep Date/Time:	05/01/2015 07:00	Method:	SW6010
Parent Sample #:	579556	Analyst:	NAH	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Lead	2060	mg/kg	2290				10.0	11	20

TETRA TECH

Project Name: PILSEN AREA SOILS SITE OU1

SDG #: 0

Folder #: 110900

Project Number: 103X90260001S0515040

Lab Control Spike Soil

Analytical Run #:	114582	Analysis Date:	5/4/2015	Prep Batch #:	52387	Matrix:	SOLID
CTLab #:	580074	Analysis Time:	17:28	Prep Date/Time:	05/01/2015 07:00	Method:	SW6010
Parent Sample #:		Analyst:	NAH	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Lead	22.6	mg/kg			25.0	90	80 --- 120		

TETRA TECH

Project Name: PILSEN AREA SOILS SITE OU1

SDG #: 0

Folder #: 110900

Project Number: 103X90260001S0515040

Method Blank Soil

Analytical Run #:	114582	Analysis Date:	5/4/2015	Prep Batch #:	52387	Matrix:	SOLID
CTLab #:	580073	Analysis Time:	17:31	Prep Date/Time:	05/01/2015 07:00	Method:	SW6010
Parent Sample #:		Analyst:	NAH	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Lead	0.50	mg/kg			0		0.125		

TETRA TECH

Project Name: PILSEN AREA SOILS SITE OU1

SDG #: 0

Folder #: 110900

Project Number: 103X90260001S0515040

Matrix Spike Duplicate Soil

Analytical Run #:	114582	Analysis Date:	5/4/2015	Prep Batch #:	52387	Matrix:	SOIL
CTLab #:	580077	Analysis Time:	18:05	Prep Date/Time:	05/01/2015 07:00	Method:	SW6010
Parent Sample #:	580076	Analyst:	NAH	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Lead	1890	mg/kg	2290		29.4	0	80 --- 120	6	20

TETRA TECH

Project Name: PILSEN AREA SOILS SITE OU1

SDG #: 0

Folder #: 110900

Project Number: 103X90260001S0515040

Matrix Spike Soil

Analytical Run #:	114582	Analysis Date:	5/4/2015	Prep Batch #:	52387	Matrix:	SOIL
CTLab #:	580076	Analysis Time:	18:00	Prep Date/Time:	05/01/2015 07:00	Method:	SW6010
Parent Sample #:	579556	Analyst:	NAH	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Lead	2170	mg/kg	2290		31.9	0	80 --- 120		

TETRA TECH

Project Name: PILSEN AREA SOILS SITE OU1

SDG #: 0

Folder #: 110900

Project Number: 103X90260001S0515040

Duplicate

Analytical Run #:	114598	Analysis Date:	5/4/2015	Prep Batch #:	52390	Matrix:	TCLP
CTLab #:	580388	Analysis Time:	14:32	Prep Date/Time:	05/01/2015 1:00	Method:	SW6010
Parent Sample #:	579554	Analyst:	NAH	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Lead	1.98	mg/L	1.9				4.0	4	20

TETRA TECH

Project Name: PILSEN AREA SOILS SITE OU1

SDG #: 0

Folder #: 110900

Project Number: 103X90260001S0515040

Lab Control Spike Water

Analytical Run #:	114598	Analysis Date:	5/4/2015	Prep Batch #:	52390	Matrix:	LIQUID
CTLab #:	580386	Analysis Time:	13:19	Prep Date/Time:	05/01/2015 1:00	Method:	SW6010
Parent Sample #:		Analyst:	NAH	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Lead	0.196	mg/L			0.200	98	80 --- 120		

TETRA TECH

Project Name: PILSEN AREA SOILS SITE OU1

SDG #: 0

Folder #: 110900

Project Number: 103X90260001S0515040

Method Blank Water

Analytical Run #:	114598	Analysis Date:	5/4/2015	Prep Batch #:	52390	Matrix:	LIQUID
CTLab #:	580385	Analysis Time:	13:23	Prep Date/Time:	05/01/2015 1:00	Method:	SW6010
Parent Sample #:		Analyst:	NAH	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Lead	0.0014	mg/L		U	0		.0020		

TETRA TECH

Project Name: PILSEN AREA SOILS SITE OU1

SDG #: 0

Folder #: 110900

Project Number: 103X90260001S0515040

Matrix Spike Duplicate Water

Analytical Run #:	114598	Analysis Date:	5/4/2015	Prep Batch #:	52390	Matrix:	TCLP
CTLab #:	580390	Analysis Time:	14:40	Prep Date/Time:	05/01/2015 1:00	Method:	SW6010
Parent Sample #:	580389	Analyst:	NAH	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Lead	2.10	mg/L	1.9		0.200	100	80 --- 120	0	20

TETRA TECH

Project Name: PILSEN AREA SOILS SITE OU1

SDG #: 0

Folder #: 110900

Project Number: 103X90260001S0515040

Matrix Spike Water

Analytical Run #:	114598	Analysis Date:	5/4/2015	Prep Batch #:	52390	Matrix:	TCLP
CTLab #:	580389	Analysis Time:	14:36	Prep Date/Time:	05/01/2015 1:00	Method:	SW6010
Parent Sample #:	579554	Analyst:	NAH	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Lead	2.11	mg/L	1.9		0.200	105	80 --- 120		

TETRA TECH

Project Name: PILSEN AREA SOILS SITE OU1

SDG #: 0

Folder #: 110900

Project Number: 103X90260001S0515040

Duplicate

Analytical Run #:	114604	Analysis Date:	5/4/2015	Prep Batch #:	52392	Matrix:	SOIL
CTLab #:	580701	Analysis Time:	21:02	Prep Date/Time:	05/04/2015 07:00	Method:	SW6010
Parent Sample #:	579504	Analyst:	NAH	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Lead, Fine	965	mg/kg	1030					7	20

TETRA TECH

Project Name: PILSEN AREA SOILS SITE OU1

SDG #: 0

Folder #: 110900

Project Number: 103X90260001S0515040

Duplicate

Analytical Run #:	114604	Analysis Date:	5/4/2015	Prep Batch #:	52392	Matrix:	SOIL
CTLab #:	580702	Analysis Time:	21:36	Prep Date/Time:	05/04/2015 07:00	Method:	SW6010
Parent Sample #:	579512	Analyst:	NAH	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Lead, Fine	1790	mg/kg	1750					2	20

TETRA TECH

Project Name: PILSEN AREA SOILS SITE OU1

SDG #: 0

Folder #: 110900

Project Number: 103X90260001S0515040

Duplicate

Analytical Run #:	114604	Analysis Date:	5/4/2015	Prep Batch #:	52392	Matrix:	SOIL
CTLab #:	580703	Analysis Time:	22:10	Prep Date/Time:	05/04/2015 07:00	Method:	SW6010
Parent Sample #:	579520	Analyst:	NAH	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Lead, Fine	885	mg/kg	898					1	20

TETRA TECH

Project Name: PILSEN AREA SOILS SITE OU1

SDG #: 0

Folder #: 110900

Project Number: 103X90260001S0515040

Duplicate

Analytical Run #:	114604	Analysis Date:	5/4/2015	Prep Batch #:	52392	Matrix:	SOIL
CTLab #:	580704	Analysis Time:	22:37	Prep Date/Time:	05/04/2015 07:00	Method:	SW6010
Parent Sample #:	579553	Analyst:	NAH	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Lead, Fine	3210	mg/kg	3230					1	20

TETRA TECH

Project Name: PILSEN AREA SOILS SITE OU1

SDG #: 0

Folder #: 110900

Project Number: 103X90260001S0515040

Lab Control Spike Soil

Analytical Run #:	114604	Analysis Date:	5/4/2015	Prep Batch #:	52392	Matrix:	SOLID
CTLab #:	580700	Analysis Time:	20:40	Prep Date/Time:	05/04/2015 07:00	Method:	SW6010
Parent Sample #:		Analyst:	NAH	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Lead, Fine	92.6	mg/kg			100	93	80 --- 120		

TETRA TECH

Project Name: PILSEN AREA SOILS SITE OU1

SDG #: 0

Folder #: 110900

Project Number: 103X90260001S0515040

Matrix Spike Duplicate Soil

Analytical Run #:	114604	Analysis Date:	5/4/2015	Prep Batch #:	52392	Matrix:	SOIL
CTLab #:	580706	Analysis Time:	22:44	Prep Date/Time:	05/04/2015 07:00	Method:	SW6010
Parent Sample #:	580705	Analyst:	NAH	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Lead, Fine	3350	mg/kg	3230		117	103	75 --- 125	4	20

TETRA TECH

Project Name: PILSEN AREA SOILS SITE OU1

SDG #: 0

Folder #: 110900

Project Number: 103X90260001S0515040

Matrix Spike Soil

Analytical Run #:	114604	Analysis Date:	5/4/2015	Prep Batch #:	52392	Matrix:	SOIL
CTLab #:	580705	Analysis Time:	22:40	Prep Date/Time:	05/04/2015 07:00	Method:	SW6010
Parent Sample #:	579553	Analyst:	NAH	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Lead, Fine	3280	mg/kg	3230		119	42	75 --- 125		

TETRA TECH

Project Name: PILSEN AREA SOILS SITE OU1

SDG #: 0

Folder #: 110900

Project Number: 103X90260001S0515040

Duplicate

Analytical Run #:	114606	Analysis Date:	5/5/2015	Prep Batch #:	52393	Matrix:	SOIL
CTLab #:	580710	Analysis Time:	10:49	Prep Date/Time:	05/04/2015 07:00	Method:	SW6010
Parent Sample #:	579558	Analyst:	NAH	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Lead, Fine	2850	mg/kg	2730					4	20

TETRA TECH

Project Name: PILSEN AREA SOILS SITE OU1

SDG #: 0

Folder #: 110900

Project Number: 103X90260001S0515040

Lab Control Spike Soil

Analytical Run #:	114606	Analysis Date:	5/5/2015	Prep Batch #:	52393	Matrix:	SOLID
CTLab #:	580709	Analysis Time:	10:30	Prep Date/Time:	05/04/2015 07:00	Method:	SW6010
Parent Sample #:		Analyst:	NAH	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Lead, Fine	89.2	mg/kg			100	89	80 --- 120		

TETRA TECH

Project Name: PILSEN AREA SOILS SITE OU1

SDG #: 0

Folder #: 110900

Project Number: 103X90260001S0515040

Matrix Spike Duplicate Soil

Analytical Run #:	114606	Analysis Date:	5/5/2015	Prep Batch #:	52393	Matrix:	SOIL
CTLab #:	580712	Analysis Time:	11:09	Prep Date/Time:	05/04/2015 07:00	Method:	SW6010
Parent Sample #:	580711	Analyst:	NAH	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Lead, Fine	2870	mg/kg	2730		121	116	75 --- 125	3	20

TETRA TECH

Project Name: PILSEN AREA SOILS SITE OU1

SDG #: 0

Folder #: 110900

Project Number: 103X90260001S0515040

Matrix Spike Soil

Analytical Run #:	114606	Analysis Date:	5/5/2015	Prep Batch #:	52393	Matrix:	SOIL
CTLab #:	580711	Analysis Time:	10:54	Prep Date/Time:	05/04/2015 07:00	Method:	SW6010
Parent Sample #:	579558	Analyst:	NAH	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Lead, Fine	2960	mg/kg	2730		121	190	75 --- 125		

Sample Condition Report

Folder #: 110900	Print Date / Time: 04/29/2015 14:56
Client: TETRA TECH	Received Date / Time / By: 04/29/2015 1310 TKR
Project Name: PILSEN AREA SOILS SITE OU1	Log-In Date / Time / By: 04/29/2015 1441 TKR
Project Phase:	Project #: 103X90260001S0515040 PM: PML
Coolers: 5325	Temperature: 2.6 C On Ice: Y
Custody Seals Present : Y	COC Present?: Y Complete? Y
Seal Intact? Y	Numbers: DATED AND SIGNED
Ship Method: FEDEX EXPRESS	Tracking Number: 5987 5142 8018
Adequate Packaging: Y	Temp Blank Enclosed? Y

Notes: SAMPLES RECEIVED IN GOOD CONDITION ON ICE.

2 CUSTODY SEALS PRESENT AND INTACT ON COOLER, DATED AND SIGNED.

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
579498 PA-RR-17-0006	SOLIDS	1	/	%SOL,ICP,ICP Pb Fine DEQ
Total # of Containers of Type (SOLIDS) = 1				

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
579499 PA-RR-17-0006	SOLIDS	1	/	ICP
Total # of Containers of Type (SOLIDS) = 1				

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
579500 PA-RR-17-0624	SOLIDS	1	/	%SOL,ICP,ICP Pb Fine DEQ
Total # of Containers of Type (SOLIDS) = 1				

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
579501 PA-RR-17-0624	SOLIDS	1	/	ICP
Total # of Containers of Type (SOLIDS) = 1				

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
579502 PA-RR-18-0006				

SOLIDS 1 /
Total # of Containers of Type (SOLIDS) = 1

%SOL,ICP,ICP Pb Fine DEQ

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
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579503 PA-RR-18-0006
SOLIDS 1 /
Total # of Containers of Type (SOLIDS) = 1 ICP

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
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579504 PA-RR-18-0618
SOLIDS 1 /
Total # of Containers of Type (SOLIDS) = 1 %SOL,ICP,ICP Pb Fine DEQ

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
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579505 PA-RR-18-0618
SOLIDS 1 /
Total # of Containers of Type (SOLIDS) = 1 ICP

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
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579506 PA-RR-19-0006
SOLIDS 1 /
Total # of Containers of Type (SOLIDS) = 1 %SOL,ICP,ICP Pb Fine DEQ

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
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579507 PA-RR-19-0006
SOLIDS 1 /
Total # of Containers of Type (SOLIDS) = 1 ICP

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
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579508 PA-RR-19-0618
SOLIDS 1 /
Total # of Containers of Type (SOLIDS) = 1 %SOL,ICP,ICP Pb Fine DEQ

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
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579509 PA-RR-20-0006
SOLIDS 1 /
Total # of Containers of Type (SOLIDS) = 1 %SOL,ICP,ICP Pb Fine DEQ

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
579510 PA-RR-20-0006	SOLIDS Total # of Containers of Type	1	/	ICP
		(SOLIDS) =	1	
Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
579511 PA-RR-20-0618	SOLIDS Total # of Containers of Type	1	/	%SOL,ICP,ICP Pb Fine DEQ
		(SOLIDS) =	1	
Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
579512 PA-RR-21-0006	SOLIDS Total # of Containers of Type	1	/	%SOL,ICP,ICP Pb Fine DEQ
		(SOLIDS) =	1	
Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
579513 PA-RR-21-0006	SOLIDS Total # of Containers of Type	1	/	ICP
		(SOLIDS) =	1	
Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
579514 PA-RR-21-0624	SOLIDS Total # of Containers of Type	1	/	%SOL,ICP,ICP Pb Fine DEQ
		(SOLIDS) =	1	
Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
579515 PA-RR-22-0006	SOLIDS Total # of Containers of Type	1	/	%SOL,ICP,ICP Pb Fine DEQ
		(SOLIDS) =	1	
Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
579516 PA-RR-22-0006	SOLIDS Total # of Containers of Type	1	/	ICP
		(SOLIDS) =	1	
Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests

579517	PA-RR-22-0006D	SOLIDS	1	/	%SOL,ICP,ICP Pb Fine DEQ
		Total # of Containers of Type	(SOLIDS) = 1		
Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests	
579518	PA-RR-22-0006D	SOLIDS	1	/	ICP
		Total # of Containers of Type	(SOLIDS) = 1		
Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests	
579519	PA-RR-22-0624	SOLIDS	1	/	%SOL,ICP,ICP Pb Fine DEQ
		Total # of Containers of Type	(SOLIDS) = 1		
Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests	
579520	PA-RR-23-0006	SOLIDS	1	/	%SOL,ICP,ICP Pb Fine DEQ
		Total # of Containers of Type	(SOLIDS) = 1		
Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests	
579521	PA-RR-23-0006	SOLIDS	1	/	ICP
		Total # of Containers of Type	(SOLIDS) = 1		
Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests	
579524	PA-RR-23-0624	SOLIDS	1	/	%SOL,ICP,ICP Pb Fine DEQ
		Total # of Containers of Type	(SOLIDS) = 1		
Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests	
579525	PA-RR-24-0006	SOLIDS	1	/	%SOL,ICP,ICP Pb Fine DEQ
		Total # of Containers of Type	(SOLIDS) = 1		
Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests	
579529	PA-RR-24-0006				

SOLIDS 1 / ICP
Total # of Containers of Type (SOLIDS) = 1

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
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579551 PA-RR-24-0624	SOLIDS	1	/	%SOL,ICP,ICP Pb Fine DEQ
Total # of Containers of Type (SOLIDS) = 1				

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
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579552 PA-RR-24-0624D	SOLIDS	1	/	%SOL,ICP,ICP Pb Fine DEQ
Total # of Containers of Type (SOLIDS) = 1				

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
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579553 PA-RR-25-0006	SOLIDS	1	/	%SOL,ICP,ICP Pb Fine DEQ
	SOLIDS	1	/	%SOL,ICP,ICP Pb Fine DEQ
Total # of Containers of Type (SOLIDS) = 2				

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
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579554 PA-RR-25-0006	SOLIDS	1	/	ICP
	SOLIDS	1	/	ICP
Total # of Containers of Type (SOLIDS) = 2				

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
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579555 PA-RR-25-0624	SOLIDS	1	/	%SOL,ICP,ICP Pb Fine DEQ
Total # of Containers of Type (SOLIDS) = 1				

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
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579556 PA-RR-26-0006	SOLIDS	1	/	%SOL,ICP,ICP Pb Fine DEQ
Total # of Containers of Type (SOLIDS) = 1				

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
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579557 PA-RR-26-0006	SOLIDS	1	/	ICP
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Total # of Containers of Type (SOLIDS) = 1

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
579558 PA-RR-26-0624	SOLIDS	1	/	%SOL,ICP,ICP Pb Fine DEQ
		Total # of Containers of Type	(SOLIDS) = 1	

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
579559 PA-RR-26-0624	SOLIDS	1	/	ICP
		Total # of Containers of Type	(SOLIDS) = 1	

Condition Code Condition Description
 1 Sample Received OK

CT LABORATORIES

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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.



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



ANALYTICAL REPORT

TETRA TECH
 PAUL PALLARDY
 1 S WACKER DRIVER
 SUITE 3700
 CHICAGO, IL 60606

Project Name: PILSEN AREA SOILS SITE OU1
 Project Phase:
 Contract #: 2795
 Project #: 103X90260001S0515040
 Folder #: 111014
 Purchase Order #: 1111200

Page 1 of 12
 Arrival Temperature: 2.6
 Report Date: 5/12/2015
 Date Received: 4/29/2015
 Reprint Date: 5/12/2015

CT LAB#: 581728	Sample Description: PA-RR-17-0006	Client Sample #:	Sampled: 4/27/2015 1640
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
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Inorganic Results

Solids, Percent	87.9	%	0.1	0.1	0.1	0.1	1.00			4/30/15 09:20	MDS	EPA 8000C
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Metals Results

Cadmium	2.8	mg/kg	0.0069	0.023	0.046	0.046	1.00		5/1/2015 07:00	5/4/15 15:15	NAH	EPA 6010C ^
Copper	2820	mg/kg	0.80	2.3	4.6	4.6	10.00		5/1/2015 07:00	5/6/15 15:30	NAH	EPA 6010C ^
Zinc	22500	mg/kg	0.57	1.7	3.4	3.4	10.00		5/1/2015 07:00	5/6/15 15:30	NAH	EPA 6010C ^
Tin	993	mg/kg	0.53	1.5	2.9	2.9	5.00	B	5/7/2015 10:00	5/8/15 12:46	MDS	EPA 6010C ^

CT LAB#: 581730	Sample Description: PA-RR-17-0624	Client Sample #:	Sampled: 4/27/2015 1645
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
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Inorganic Results

Solids, Percent	82.4	%	0.1	0.1	0.1	0.1	1.00			4/30/15 09:20	MDS	EPA 8000C
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Metals Results

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



CT LAB#: 581730	Sample Description: PA-RR-17-0624	Client Sample #:	Sampled: 4/27/2015 1645
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Cadmium	3.4	mg/kg	0.0071	0.024	0.048	0.048	1.00		5/1/2015 07:00	5/4/15 15:20	NAH	EPA 6010C ^
Copper	2260	mg/kg	0.083	0.24	0.48	0.48	1.00		5/1/2015 07:00	5/4/15 15:20	NAH	EPA 6010C ^
Zinc	19000	mg/kg	0.59	1.8	3.6	3.6	10.00		5/1/2015 07:00	5/6/15 15:34	NAH	EPA 6010C ^
Tin	580	mg/kg	0.54	1.5	3.0	3.0	5.00	B	5/7/2015 10:00	5/8/15 13:18	MDS	EPA 6010C ^

CT LAB#: 581732	Sample Description: PA-RR-18-0006	Client Sample #:	Sampled: 4/27/2015 1650
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
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Inorganic Results

Solids, Percent	81.5	%	0.1	0.1	0.1	0.1	1.00			4/30/15 09:20	MDS	EPA 8000C
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Metals Results

Cadmium	3.6	mg/kg	0.0072	0.024	0.048	0.048	1.00		5/1/2015 07:00	5/4/15 15:25	NAH	EPA 6010C ^
Copper	5140	mg/kg	0.84	2.4	4.8	4.8	10.00		5/1/2015 07:00	5/6/15 15:37	NAH	EPA 6010C ^
Zinc	27200	mg/kg	0.60	1.8	3.6	3.6	10.00		5/1/2015 07:00	5/6/15 15:37	NAH	EPA 6010C ^
Tin	1120	mg/kg	0.54	1.5	3.0	3.0	5.00	B	5/7/2015 10:00	5/8/15 13:22	MDS	EPA 6010C ^

CT LAB#: 581734	Sample Description: PA-RR-18-0618	Client Sample #:	Sampled: 4/27/2015 1656
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
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Inorganic Results

Solids, Percent	81.5	%	0.1	0.1	0.1	0.1	1.00			4/30/15 09:20	MDS	EPA 8000C
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Metals Results

Cadmium	2.6	mg/kg	0.0073	0.024	0.049	0.049	1.00		5/1/2015 07:00	5/4/15 15:30	NAH	EPA 6010C ^
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Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis



CT LAB#: 581734	Sample Description: PA-RR-18-0618	Client Sample #:	Sampled: 4/27/2015 1656
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Copper	1500	mg/kg	0.085	0.24	0.49	0.49	1.00		5/1/2015 07:00	5/4/15 15:30	NAH	EPA 6010C ^
Zinc	9630	mg/kg	0.61	1.8	3.6	3.6	10.00		5/1/2015 07:00	5/6/15 15:41	NAH	EPA 6010C ^
Tin	308	mg/kg	0.11	0.31	0.62	0.62	1.00		5/7/2015 10:00	5/8/15 10:45	MDS	EPA 6010C ^

CT LAB#: 581736	Sample Description: PA-RR-19-0006	Client Sample #:	Sampled: 4/27/2015 1705
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
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Inorganic Results

Solids, Percent	81.5	%	0.1	0.1	0.1	0.1	1.00			4/30/15 09:20	MDS	EPA 8000C
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Metals Results

Cadmium	3.0	mg/kg	0.0075	0.025	0.050	0.050	1.00		5/1/2015 07:00	5/4/15 15:34	NAH	EPA 6010C ^
Copper	2400	mg/kg	0.088	0.25	0.50	0.50	1.00		5/1/2015 07:00	5/4/15 15:34	NAH	EPA 6010C ^
Zinc	14500	mg/kg	0.63	1.9	3.8	3.8	10.00		5/1/2015 07:00	5/6/15 15:45	NAH	EPA 6010C ^
Tin	641	mg/kg	0.54	1.5	3.0	3.0	5.00	B	5/7/2015 10:00	5/8/15 13:26	MDS	EPA 6010C ^

CT LAB#: 581738	Sample Description: PA-RR-19-0618	Client Sample #:	Sampled: 4/27/2015 1710
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
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Inorganic Results

Solids, Percent	79.2	%	0.1	0.1	0.1	0.1	1.00			4/30/15 09:20	MDS	EPA 8000C
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Metals Results

Cadmium	4.1	mg/kg	0.0074	0.025	0.049	0.049	1.00		5/1/2015 07:00	5/4/15 15:38	NAH	EPA 6010C ^
Copper	487	mg/kg	0.086	0.25	0.49	0.49	1.00		5/1/2015 07:00	5/4/15 15:38	NAH	EPA 6010C ^

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





CT LAB#: 581738	Sample Description: PA-RR-19-0618	Client Sample #:	Sampled: 4/27/2015 1710
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Zinc	2560	mg/kg	0.062	0.18	0.37	0.37	1.00	B	5/1/2015 07:00	5/4/15 15:38	NAH	EPA 6010C ^
Tin	76.7	mg/kg	0.12	0.32	0.64	0.64	1.00		5/7/2015 10:00	5/8/15 10:53	MDS	EPA 6010C ^

CT LAB#: 581739	Sample Description: PA-RR-20-0006	Client Sample #:	Sampled: 4/27/2015 1720
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
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Inorganic Results

Solids, Percent	78.4	%	0.1	0.1	0.1	0.1	1.00			4/30/15 09:20	MDS	EPA 8000C
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Metals Results

Cadmium	2.7	mg/kg	0.0077	0.026	0.051	0.051	1.00		5/1/2015 07:00	5/4/15 15:42	NAH	EPA 6010C ^
Copper	2400	mg/kg	0.089	0.26	0.51	0.51	1.00		5/1/2015 07:00	5/4/15 15:42	NAH	EPA 6010C ^
Zinc	17600	mg/kg	0.64	1.9	3.8	3.8	10.00		5/1/2015 07:00	5/6/15 15:49	NAH	EPA 6010C ^
Tin	699	mg/kg	0.59	1.6	3.3	3.3	5.00	B	5/7/2015 10:00	5/8/15 13:30	MDS	EPA 6010C ^

CT LAB#: 581741	Sample Description: PA-RR-20-0618	Client Sample #:	Sampled: 4/27/2015 1725
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
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Inorganic Results

Solids, Percent	79.4	%	0.1	0.1	0.1	0.1	1.00			4/30/15 09:20	MDS	EPA 8000C
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Metals Results

Cadmium	1.5	mg/kg	0.0078	0.026	0.052	0.052	1.00		5/1/2015 07:00	5/4/15 15:57	NAH	EPA 6010C ^
Copper	464	mg/kg	0.091	0.26	0.52	0.52	1.00		5/1/2015 07:00	5/4/15 15:57	NAH	EPA 6010C ^
Zinc	2810	mg/kg	0.065	0.19	0.39	0.39	1.00	B	5/1/2015 07:00	5/4/15 15:57	NAH	EPA 6010C ^

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





CT LAB#: 581741	Sample Description: PA-RR-20-0618	Client Sample #:	Sampled: 4/27/2015 1725
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Tin	131	mg/kg	0.11	0.32	0.63	0.63	1.00		5/7/2015 10:00	5/8/15 11:00	MDS	EPA 6010C ^

CT LAB#: 581742	Sample Description: PA-RR-21-0006	Client Sample #:	Sampled: 4/27/2015 1730
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
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Inorganic Results

Solids, Percent	84.1	%	0.1	0.1	0.1	0.1	1.00			4/30/15 09:20	MDS	EPA 8000C
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Metals Results

Cadmium	4.2	mg/kg	0.0074	0.025	0.049	0.049	1.00		5/1/2015 07:00	5/4/15 16:01	NAH	EPA 6010C ^
Copper	2670	mg/kg	0.086	0.25	0.49	0.49	1.00		5/1/2015 07:00	5/4/15 16:01	NAH	EPA 6010C ^
Zinc	16900	mg/kg	0.61	1.8	3.7	3.7	10.00	B	5/1/2015 07:00	5/6/15 16:04	NAH	EPA 6010C ^
Tin	583	mg/kg	0.54	1.5	3.0	3.0	5.00	B	5/7/2015 10:00	5/8/15 13:34	MDS	EPA 6010C ^

CT LAB#: 581744	Sample Description: PA-RR-21-0624	Client Sample #:	Sampled: 4/27/2015 1740
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
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Inorganic Results

Solids, Percent	81.1	%	0.1	0.1	0.1	0.1	1.00			4/30/15 09:20	MDS	EPA 8000C
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Metals Results

Cadmium	1.5	mg/kg	0.0073	0.024	0.049	0.049	1.00		5/1/2015 07:00	5/4/15 16:06	NAH	EPA 6010C ^
Copper	531	mg/kg	0.085	0.24	0.49	0.49	1.00		5/1/2015 07:00	5/4/15 16:06	NAH	EPA 6010C ^
Zinc	2730	mg/kg	0.061	0.18	0.37	0.37	1.00	B	5/1/2015 07:00	5/4/15 16:06	NAH	EPA 6010C ^
Tin	104	mg/kg	0.11	0.31	0.63	0.63	1.00		5/7/2015 10:00	5/8/15 11:09	MDS	EPA 6010C ^

CT LAB#: 581745	Sample Description: PA-RR-22-0006	Client Sample #:	Sampled: 4/27/2015 1745
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Inorganic Results												
Solids, Percent	79.9	%	0.1	0.1	0.1	0.1	1.00			4/30/15 09:20	MDS	EPA 8000C
Metals Results												
Cadmium	4.0	mg/kg	0.0073	0.024	0.049	0.049	1.00		5/1/2015 07:00	5/4/15 16:10	NAH	EPA 6010C ^
Copper	3420	mg/kg	0.85	2.4	4.9	4.9	10.00		5/1/2015 07:00	5/6/15 16:08	NAH	EPA 6010C ^
Zinc	17600	mg/kg	0.61	1.8	3.7	3.7	10.00	B	5/1/2015 07:00	5/6/15 16:08	NAH	EPA 6010C ^
Tin	873	mg/kg	0.56	1.6	3.1	3.1	5.00	B	5/7/2015 10:00	5/8/15 13:38	MDS	EPA 6010C ^

CT LAB#: 581747	Sample Description: PA-RR-22-0006D	Client Sample #:	Sampled: 4/27/2015 1745
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Inorganic Results												
Solids, Percent	81.7	%	0.1	0.1	0.1	0.1	1.00			4/30/15 09:20	MDS	EPA 8000C
Metals Results												
Cadmium	4.1	mg/kg	0.0074	0.025	0.049	0.049	1.00		5/1/2015 07:00	5/4/15 16:14	NAH	EPA 6010C ^
Copper	3770	mg/kg	0.87	2.5	4.9	4.9	10.00		5/1/2015 07:00	5/6/15 16:11	NAH	EPA 6010C ^
Zinc	21500	mg/kg	0.62	1.9	3.7	3.7	10.00	B	5/1/2015 07:00	5/6/15 16:11	NAH	EPA 6010C ^
Tin	801	mg/kg	0.54	1.5	3.0	3.0	5.00	B	5/7/2015 10:00	5/8/15 13:42	MDS	EPA 6010C ^

CT LAB#: 581749	Sample Description: PA-RR-22-0624	Client Sample #:	Sampled: 4/27/2015 1758
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
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Inorganic Results

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



CT LAB#: 581749	Sample Description: PA-RR-22-0624	Client Sample #:	Sampled: 4/27/2015 1758
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Solids, Percent	81.1	%	0.1	0.1	0.1	0.1	1.00			4/30/15 09:20	MDS	EPA 8000C
Metals Results												
Cadmium	1.3	mg/kg	0.0073	0.024	0.048	0.048	1.00		5/1/2015 07:00	5/4/15 16:19	NAH	EPA 6010C ^
Copper	224	mg/kg	0.085	0.24	0.48	0.48	1.00		5/1/2015 07:00	5/4/15 16:19	NAH	EPA 6010C ^
Zinc	1150	mg/kg	0.060	0.18	0.36	0.36	1.00	B	5/1/2015 07:00	5/4/15 16:19	NAH	EPA 6010C ^
Tin	43.4	mg/kg	0.11	0.30	0.61	0.61	1.00		5/7/2015 10:00	5/8/15 11:21	MDS	EPA 6010C ^

CT LAB#: 581750	Sample Description: PA-RR-23-0006	Client Sample #:	Sampled: 4/27/2015 1805
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Solids, Percent	80.2	%	0.1	0.1	0.1	0.1	1.00			4/30/15 09:20	MDS	EPA 8000C
Metals Results												
Cadmium	2.6	mg/kg	0.0075	0.025	0.050	0.050	1.00		5/1/2015 07:00	5/4/15 16:23	NAH	EPA 6010C ^
Copper	558	mg/kg	0.087	0.25	0.50	0.50	1.00		5/1/2015 07:00	5/4/15 16:23	NAH	EPA 6010C ^
Zinc	2500	mg/kg	0.062	0.19	0.37	0.37	1.00	B	5/1/2015 07:00	5/4/15 16:23	NAH	EPA 6010C ^
Tin	49.1	mg/kg	0.12	0.32	0.65	0.65	1.00		5/7/2015 10:00	5/8/15 11:33	MDS	EPA 6010C ^

CT LAB#: 581752	Sample Description: PA-RR-23-0624	Client Sample #:	Sampled: 4/27/2015 1812
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Solids, Percent	83.8	%	0.1	0.1	0.1	0.1	1.00			4/30/15 09:20	MDS	EPA 8000C

Inorganic Results

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



CT LAB#: 581752	Sample Description: PA-RR-23-0624	Client Sample #:	Sampled: 4/27/2015 1812
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Metals Results												
Cadmium	1.4	mg/kg	0.0070	0.023	0.046	0.046	1.00		5/1/2015 07:00	5/4/15 16:27	NAH	EPA 6010C ^
Copper	235	mg/kg	0.081	0.23	0.46	0.46	1.00		5/1/2015 07:00	5/4/15 16:27	NAH	EPA 6010C ^
Zinc	1440	mg/kg	0.058	0.17	0.35	0.35	1.00	B	5/1/2015 07:00	5/4/15 16:27	NAH	EPA 6010C ^
Tin	82.5	mg/kg	0.11	0.29	0.58	0.58	1.00		5/7/2015 10:00	5/8/15 11:37	MDS	EPA 6010C ^

CT LAB#: 581753	Sample Description: PA-RR-24-0006	Client Sample #:	Sampled: 4/27/2015 1820
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Inorganic Results												
Solids, Percent	86.9	%	0.1	0.1	0.1	0.1	1.00			4/30/15 09:20	MDS	EPA 8000C
Metals Results												
Cadmium	8.2	mg/kg	0.0069	0.023	0.046	0.046	1.00		5/1/2015 07:00	5/4/15 16:31	NAH	EPA 6010C ^
Copper	798	mg/kg	0.81	2.3	4.6	4.6	10.00		5/1/2015 07:00	5/6/15 16:15	NAH	EPA 6010C ^
Zinc	7320	mg/kg	0.58	1.7	3.5	3.5	10.00	B	5/1/2015 07:00	5/6/15 16:15	NAH	EPA 6010C ^
Tin	1070	mg/kg	0.52	1.4	2.9	2.9	5.00	B	5/7/2015 10:00	5/8/15 13:46	MDS	EPA 6010C ^

CT LAB#: 581755	Sample Description: PA-RR-24-0624	Client Sample #:	Sampled: 4/27/2015 1835
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Inorganic Results												
Solids, Percent	78.0	%	0.1	0.1	0.1	0.1	1.00			4/30/15 09:20	MDS	EPA 8000C
Metals Results												

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

CT LAB#: 581755	Sample Description: PA-RR-24-0624	Client Sample #:	Sampled: 4/27/2015 1835
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Cadmium	28.6	mg/kg	0.0075	0.025	0.050	0.050	1.00		5/1/2015 07:00	5/4/15 16:36	NAH	EPA 6010C ^
Copper	818	mg/kg	0.087	0.25	0.50	0.50	1.00		5/1/2015 07:00	5/4/15 16:36	NAH	EPA 6010C ^
Zinc	7090	mg/kg	0.62	1.9	3.7	3.7	10.00	B	5/1/2015 07:00	5/6/15 16:19	NAH	EPA 6010C ^
Tin	294	mg/kg	0.12	0.33	0.66	0.66	1.00		5/7/2015 10:00	5/8/15 11:45	MDS	EPA 6010C ^

CT LAB#: 581756	Sample Description: PA-RR-24-0624D	Client Sample #:	Sampled: 4/27/2015 1835
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
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Inorganic Results

Solids, Percent	77.4	%	0.1	0.1	0.1	0.1	1.00			4/30/15 09:20	MDS	EPA 8000C
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Metals Results

Cadmium	3.1	mg/kg	0.0075	0.025	0.050	0.050	1.00		5/1/2015 07:00	5/4/15 16:52	NAH	EPA 6010C ^
Copper	1040	mg/kg	0.087	0.25	0.50	0.50	1.00		5/1/2015 07:00	5/4/15 16:52	NAH	EPA 6010C ^
Zinc	7900	mg/kg	0.62	1.9	3.7	3.7	10.00		5/1/2015 07:00	5/7/15 18:27	NAH	EPA 6010C ^
Tin	713	mg/kg	0.58	1.6	3.2	3.2	5.00	B	5/7/2015 10:00	5/8/15 13:58	MDS	EPA 6010C ^

CT LAB#: 581757	Sample Description: PA-RR-25-0006	Client Sample #:	Sampled: 4/27/2015 1845
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
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Inorganic Results

Solids, Percent	80.8	%	0.1	0.1	0.1	0.1	1.00			4/30/15 09:20	MDS	EPA 8000C
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Metals Results

Cadmium	7.7	mg/kg	0.0077	0.026	0.051	0.051	1.00	M	5/1/2015 07:00	5/4/15 16:56	NAH	EPA 6010C ^
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Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB#: 581757	Sample Description: PA-RR-25-0006	Client Sample #:	Sampled: 4/27/2015 1845
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Copper	3330	mg/kg	0.90	2.6	5.1	5.1	10.00	M	5/1/2015 07:00	5/6/15 16:23	NAH	EPA 6010C ^
Zinc	15600	mg/kg	0.64	1.9	3.8	3.8	10.00	M,B	5/1/2015 07:00	5/6/15 16:23	NAH	EPA 6010C ^
Tin	590	mg/kg	0.55	1.5	3.1	3.1	5.00	B	5/7/2015 10:00	5/8/15 14:02	MDS	EPA 6010C ^

CT LAB#: 581759	Sample Description: PA-RR-25-0624	Client Sample #:	Sampled: 4/27/2015 1900
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
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Inorganic Results

Solids, Percent	78.7	%	0.1	0.1	0.1	0.1	1.00			4/30/15 09:20	MDS	EPA 8000C
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Metals Results

Cadmium	5.0	mg/kg	0.0076	0.025	0.051	0.051	1.00		5/1/2015 07:00	5/4/15 17:23	NAH	EPA 6010C ^
Copper	820	mg/kg	0.089	0.25	0.51	0.51	1.00		5/1/2015 07:00	5/4/15 17:23	NAH	EPA 6010C ^
Zinc	5880	mg/kg	0.64	1.9	3.8	3.8	10.00	B	5/1/2015 07:00	5/6/15 16:57	NAH	EPA 6010C ^
Tin	212	mg/kg	0.12	0.32	0.65	0.65	1.00		5/7/2015 10:00	5/8/15 11:57	MDS	EPA 6010C ^

CT LAB#: 581760	Sample Description: PA-RR-26-0006	Client Sample #:	Sampled: 4/27/2015 1905
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
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Inorganic Results

Solids, Percent	82.1	%	0.1	0.1	0.1	0.1	1.00			4/30/15 09:45	MDS	EPA 8000C
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Metals Results

Cadmium	7.9	mg/kg	0.0072	0.024	0.048	0.048	1.00	M	5/1/2015 07:00	5/4/15 17:47	NAH	EPA 6010C ^
Copper	3640	mg/kg	0.84	2.4	4.8	4.8	10.00	M	5/1/2015 07:00	5/6/15 17:01	NAH	EPA 6010C ^

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



CT LAB#: 581760	Sample Description: PA-RR-26-0006	Client Sample #:	Sampled: 4/27/2015 1905
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Zinc	20500	mg/kg	0.60	1.8	3.6	3.6	10.00	B,M	5/1/2015 07:00	5/6/15 17:01	NAH	EPA 6010C ^
Tin	767	mg/kg	0.53	1.5	3.0	3.0	5.00	B	5/7/2015 10:00	5/8/15 14:06	MDS	EPA 6010C ^

CT LAB#: 581762	Sample Description: PA-RR-26-0624	Client Sample #:	Sampled: 4/27/2015 1910
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Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
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Inorganic Results

Solids, Percent	79.2	%	0.1	0.1	0.1	0.1	1.00			4/30/15 09:45	MDS	EPA 8000C
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Metals Results

Cadmium	13.3	mg/kg	0.0073	0.024	0.049	0.049	1.00		5/1/2015 07:00	5/4/15 18:14	NAH	EPA 6010C ^
Copper	976	mg/kg	0.085	0.24	0.49	0.49	1.00		5/1/2015 07:00	5/4/15 18:14	NAH	EPA 6010C ^
Zinc	5280	mg/kg	0.61	1.8	3.7	3.7	10.00	B	5/1/2015 07:00	5/6/15 17:23	NAH	EPA 6010C ^
Tin	151	mg/kg	0.11	0.31	0.62	0.62	1.00	B	5/7/2015 10:00	5/8/15 12:42	MDS	EPA 6010C ^

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.

Submitted by: Pat M. Letterer
Project Manager
608-356-2760

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.

<u>Code</u>	<u>Description</u>	<u>QC Qualifiers</u>
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

Florida NELAP ID# E871111
Kansas NELAP ID# E-10368
Kentucky ID# 0023
ISO/IEC 17025-2005 A2LA Cert # 3806.01
New Jersey NELAP ID# WI001
North Carolina ID# 674
Wisconsin (WDNR) Chemistry ID# 157066030
Wisconsin (DATCP) Bacteriology ID# 105-289
DoD-ELAP L-A-B Cert # L2392
GA EPD Stipulation ID E871111, Expires Annually
Louisiana ID # 115843
Virginia ID# 7608
Illinois NELAP ID # 002413
Wisconsin (WOSB) ID# WI-5499-WBE
Maryland ID# 344



Company: Tetra Tech
 Project Contact: Paul Pallardy
 Telephone: 630-464-4101
 Project Name: PASS
 Project #: 103X90260001505150407
 Location: Chicago, IL
 Sampled By: Paul Pallardy

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

Program:
 QSM RCRA SDWA NPDES
 Solid Waste Other None
 PO # 111200

Report To:
 EMAIL: paul.pallardy@tetratech.com
 Company: Tetra Tech
 Address: 15 Wacker Dr, Suite 3700,
 Chicago, IL

Invoice To: *
 EMAIL: paul.pallardy@tetratech.com
 Company: same as above
 Address: SAS

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

ANALYSES REQUESTED

Filtered? Y/N	Total Lead	Lead Fines	TCLP Lead	ANALYSES REQUESTED	Total # Containers	Designated MS/MSD	Turnaround Time
N	X	X	X	✓	1		Normal RUSH*
	X	X	X	✓	1		Date Needed: _____
	X	X	X	✓	1		Rush analysis requires prior CT Laboratories' approval
	X	X	X	✓	1		Surcharges: 24 hr 200% 2-3 days 100% 4-9 days 50%

Client Special Instructions

@ Added on 05/06/15 per email from Paul Pallardy on 05/05/15.

Collection Date	Time	Matrix	Grab/Comp	Sample #	Sample ID Description	Filtered? Y/N	Total Lead	Lead Fines	TCLP Lead	ANALYSES REQUESTED	Total # Containers	Designated MS/MSD	Turnaround Time
1775	1758	S	G	12	PA-RR-22-0624	N	X	X	X	✓	1		579519
1805	1805			13	PA-RR-23-0006		X	X	X	✓	1		579520/521
1812	1812			14	PA-RR-23-0624		X	X	X	✓	1		579524
1820	1820			15	PA-RR-24-0006		X	X	X	✓	1		579525/529
1835	1835			16	PA-RR-24-0624		X	X	X	✓	1		579551
1835	1835			16	PA-RR-24-0624D		X	X	X	✓	1		579552
1845	1845			17	PA-RR-25-0006		X	X	X	✓	2	X	579553/554
1900	1900			18	PA-RR-25-0624		X	X	X	✓	1		579555
1905	1905			19	PA-RR-26-0006		X	X	X	✓	1		579556/557
1910	1910			20	PA-RR-26-0624	✓	X	X	X	✓	1		579558/559

Relinquished By:  Date/Time: 4/29/15 12:00

Received By: TWR Date/Time: 4/29/15 13:10

Received for Laboratory by: TWR Date/Time: 4/29/15 14:41

Lab Use Only
 Ice Present (Yes) No
 Temp 2.0 IR Gun # 4
 Cooler # 5325

QC SUMMARY REPORT

TETRA TECH

Project Name: PILSEN AREA SOILS SITE OU1

SDG #: 0

Folder #: 111014

Project Number: 103X90260001S0515040

Duplicate

Analytical Run #:	114724	Analysis Date:	4/30/2015	Prep Batch #:	Matrix:	SOIL
CTLab #:	582248	Analysis Time:	09:20	Prep Date/Time:	Method:	SW8000C
Parent Sample #:	581757	Analyst:	MDS	Prep Analyst:		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Solids, Percent	80.3	%	80.8					1	8

TETRA TECH

Project Name: PILSEN AREA SOILS SITE OU1

SDG #: 0

Folder #: 111014

Project Number: 103X90260001S0515040

Duplicate

Analytical Run #:	114725	Analysis Date:	4/30/2015	Prep Batch #:		Matrix:	SOIL
CTLab #:	582249	Analysis Time:	09:45	Prep Date/Time:		Method:	SW8000C
Parent Sample #:	581762	Analyst:	MDS	Prep Analyst:			

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Solids, Percent	78.5	%	79.2					1	8

TETRA TECH

Project Name: PILSEN AREA SOILS SITE OU1

SDG #: 0

Folder #: 111014

Project Number: 103X90260001S0515040

Duplicate

Analytical Run #:	114709	Analysis Date:	5/4/2015	Prep Batch #:	52432	Matrix:	SOIL
CTLab #:	581824	Analysis Time:	17:04	Prep Date/Time:	05/01/2015 07:00	Method:	SW6010
Parent Sample #:	581757	Analyst:	NAH	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Cadmium	7.4	mg/kg	7.7				1.60	4	20
Copper	3550	mg/kg	3330				16.0	6	20
Zinc	17500	mg/kg	15600				12.0	11	20

TETRA TECH

Project Name: PILSEN AREA SOILS SITE OU1

SDG #: 0

Folder #: 111014

Project Number: 103X90260001S0515040

Lab Control Spike Soil

Analytical Run #:	114709	Analysis Date:	5/4/2015	Prep Batch #:	52432	Matrix:	SOLID
CTLab #:	581823	Analysis Time:	15:07	Prep Date/Time:	05/01/2015 07:00	Method:	SW6010
Parent Sample #:		Analyst:	NAH	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Cadmium	2.1	mg/kg			2.5	84	80 --- 120		
Copper	11.3	mg/kg			12.5	90	80 --- 120		
Zinc	22.5	mg/kg			25.0	90	80 --- 120		

TETRA TECH

Project Name: PILSEN AREA SOILS SITE OU1

SDG #: 0

Folder #: 111014

Project Number: 103X90260001S0515040

Method Blank Soil

Analytical Run #:	114709	Analysis Date:	5/4/2015	Prep Batch #:	52432	Matrix:	SOLID
CTLab #:	581822	Analysis Time:	15:11	Prep Date/Time:	05/01/2015 07:00	Method:	SW6010
Parent Sample #:		Analyst:	NAH	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Cadmium	0.006	mg/kg		U	0		0.020		
Copper	0.38	mg/kg			0		0.20		
Zinc	2.0	mg/kg			0		0.15		

Matrix Spike Duplicate Soil

Analytical Run #:	114709	Analysis Date:	5/4/2015	Prep Batch #:	52432	Matrix:	SOIL
CTLab #:	581826	Analysis Time:	17:14	Prep Date/Time:	05/01/2015 07:00	Method:	SW6010
Parent Sample #:	581825	Analyst:	NAH	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Cadmium	9.9	mg/kg	7.7		3.0	73	80 --- 120	13	20
Copper	3390	mg/kg	3330		150	40	80 --- 120	2	20
Zinc	17700	mg/kg	15600		300	700	80 --- 120	5	20

TETRA TECH

Project Name: PILSEN AREA SOILS SITE OU1

SDG #: 0

Folder #: 111014

Project Number: 103X90260001S0515040

Matrix Spike Soil

Analytical Run #:	114709	Analysis Date:	5/4/2015	Prep Batch #:	52432	Matrix:	SOIL
CTLab #:	581825	Analysis Time:	17:09	Prep Date/Time:	05/01/2015 07:00	Method:	SW6010
Parent Sample #:	581757	Analyst:	NAH	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Cadmium	9.0	mg/kg	7.7		3.1	42	80 --- 120		
Copper	3430	mg/kg	3330		155	65	80 --- 120		
Zinc	17300	mg/kg	15600		309	550	80 --- 120		

TETRA TECH

Project Name: PILSEN AREA SOILS SITE OU1

SDG #: 0

Folder #: 111014

Project Number: 103X90260001S0515040

Duplicate

Analytical Run #:	114710	Analysis Date:	5/4/2015	Prep Batch #:	52433	Matrix:	SOIL
CTLab #:	581837	Analysis Time:	17:55	Prep Date/Time:	05/01/2015 07:00	Method:	SW6010
Parent Sample #:	581760	Analyst:	NAH	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Cadmium	8.7	mg/kg	7.9				1.60	10	20
Copper	3160	mg/kg	3640				16.0	14	20
Zinc	16800	mg/kg	20500				12.0	20	20

Lab Control Spike Soil

Analytical Run #:	114710	Analysis Date:	5/4/2015	Prep Batch #:	52433	Matrix:	SOLID
CTLab #:	581836	Analysis Time:	17:28	Prep Date/Time:	05/01/2015 07:00	Method:	SW6010
Parent Sample #:		Analyst:	NAH	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Cadmium	2.2	mg/kg			2.5	88	80 --- 120		
Copper	11.4	mg/kg			12.5	91	80 --- 120		
Zinc	28.0	mg/kg			25.0	112	80 --- 120		

TETRA TECH

Project Name: PILSEN AREA SOILS SITE OU1

SDG #: 0

Folder #: 111014

Project Number: 103X90260001S0515040

Method Blank Soil

Analytical Run #:	114710	Analysis Date:	5/4/2015	Prep Batch #:	52433	Matrix:	SOLID
CTLab #:	581835	Analysis Time:	17:31	Prep Date/Time:	05/01/2015 07:00	Method:	SW6010
Parent Sample #:		Analyst:	NAH	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Cadmium	0.006	mg/kg		U	0		0.020		
Copper	0.81	mg/kg			0		0.20		
Zinc	4.6	mg/kg			0		0.15		

TETRA TECH

Project Name: PILSEN AREA SOILS SITE OU1

SDG #: 0

Folder #: 111014

Project Number: 103X90260001S0515040

Matrix Spike Duplicate Soil

Analytical Run #:	114710	Analysis Date:	5/4/2015	Prep Batch #:	52433	Matrix:	SOIL
CTLab #:	581839	Analysis Time:	18:05	Prep Date/Time:	05/01/2015 07:00	Method:	SW6010
Parent Sample #:	581838	Analyst:	NAH	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Cadmium	10.2	mg/kg	7.9		2.9	79	80 --- 120	3	20
Copper	3320	mg/kg	3640		147	0	80 --- 120	2	20
Zinc	18200	mg/kg	20500		294	0	80 --- 120	9	20

TETRA TECH

Project Name: PILSEN AREA SOILS SITE OU1

SDG #: 0

Folder #: 111014

Project Number: 103X90260001S0515040

Matrix Spike Soil

Analytical Run #:	114710	Analysis Date:	5/4/2015	Prep Batch #:	52433	Matrix:	SOIL
CTLab #:	581838	Analysis Time:	18:00	Prep Date/Time:	05/01/2015 07:00	Method:	SW6010
Parent Sample #:	581760	Analyst:	NAH	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Cadmium	10.6	mg/kg	7.9		3.2	84	80 --- 120		
Copper	3670	mg/kg	3640		159	19	80 --- 120		
Zinc	21500	mg/kg	20500		319	313	80 --- 120		

TETRA TECH

Project Name: PILSEN AREA SOILS SITE OU1

SDG #: 0

Folder #: 111014

Project Number: 103X90260001S0515040

Duplicate

Analytical Run #:	114733	Analysis Date:	5/8/2015	Prep Batch #:	52440	Matrix:	SOIL
CTLab #:	582177	Analysis Time:	12:54	Prep Date/Time:	05/07/2015 10:00	Method:	SW6010
Parent Sample #:	581728	Analyst:	MDS	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Tin	852	mg/kg	993				20	15	20

TETRA TECH

Project Name: PILSEN AREA SOILS SITE OU1

SDG #: 0

Folder #: 111014

Project Number: 103X90260001S0515040

Lab Control Spike Soil

Analytical Run #:	114733	Analysis Date:	5/8/2015	Prep Batch #:	52440	Matrix:	SOLID
CTLab #:	582176	Analysis Time:	09:56	Prep Date/Time:	05/07/2015 10:00	Method:	SW6010
Parent Sample #:		Analyst:	MDS	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Tin	46.5	mg/kg			50.0	93	80 --- 120		

TETRA TECH

Project Name: PILSEN AREA SOILS SITE OU1

SDG #: 0

Folder #: 111014

Project Number: 103X90260001S0515040

Method Blank Soil

Analytical Run #:	114733	Analysis Date:	5/8/2015	Prep Batch #:	52440	Matrix:	SOLID
CTLab #:	582175	Analysis Time:	10:00	Prep Date/Time:	05/07/2015 10:00	Method:	SW6010
Parent Sample #:		Analyst:	MDS	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Tin	0.09	mg/kg		U	0		0.25		

Matrix Spike Duplicate Soil

Analytical Run #:	114733	Analysis Date:	5/8/2015	Prep Batch #:	52440	Matrix:	SOIL
CTLab #:	582179	Analysis Time:	13:10	Prep Date/Time:	05/07/2015 10:00	Method:	SW6010
Parent Sample #:	582178	Analyst:	MDS	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Tin	960	mg/kg	993		56.0	0	80 --- 120	13	20

TETRA TECH

Project Name: PILSEN AREA SOILS SITE OU1

SDG #: 0

Folder #: 111014

Project Number: 103X90260001S0515040

Matrix Spike Soil

Analytical Run #:	114733	Analysis Date:	5/8/2015	Prep Batch #:	52440	Matrix:	SOIL
CTLab #:	582178	Analysis Time:	12:58	Prep Date/Time:	05/07/2015 10:00	Method:	SW6010
Parent Sample #:	581728	Analyst:	MDS	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Tin	1080	mg/kg	993		55.5	157	80 --- 120		

TETRA TECH

Project Name: PILSEN AREA SOILS SITE OU1

SDG #: 0

Folder #: 111014

Project Number: 103X90260001S0515040

Duplicate

Analytical Run #:	114734	Analysis Date:	5/8/2015	Prep Batch #:	52441	Matrix:	SOIL
CTLab #:	582182	Analysis Time:	14:14	Prep Date/Time:	05/07/2015 10:00	Method:	SW6010
Parent Sample #:	581760	Analyst:	MDS	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Tin	648	mg/kg	767				20	17	20

TETRA TECH

Project Name: PILSEN AREA SOILS SITE OU1

SDG #: 0

Folder #: 111014

Project Number: 103X90260001S0515040

Lab Control Spike Soil

Analytical Run #:	114734	Analysis Date:	5/8/2015	Prep Batch #:	52441	Matrix:	SOLID
CTLab #:	582181	Analysis Time:	12:01	Prep Date/Time:	05/07/2015 10:00	Method:	SW6010
Parent Sample #:		Analyst:	MDS	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Tin	46.3	mg/kg			50.0	93	80 --- 120		

TETRA TECH

Project Name: PILSEN AREA SOILS SITE OU1

SDG #: 0

Folder #: 111014

Project Number: 103X90260001S0515040

Method Blank Soil

Analytical Run #:	114734	Analysis Date:	5/8/2015	Prep Batch #:	52441	Matrix:	SOLID
CTLab #:	582180	Analysis Time:	12:05	Prep Date/Time:	05/07/2015 10:00	Method:	SW6010
Parent Sample #:		Analyst:	MDS	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Tin	0.09	mg/kg		U	0		0.25		

TETRA TECH

Project Name: PILSEN AREA SOILS SITE OU1

SDG #: 0

Folder #: 111014

Project Number: 103X90260001S0515040

Matrix Spike Duplicate Soil

Analytical Run #:	114734	Analysis Date:	5/8/2015	Prep Batch #:	52441	Matrix:	SOIL
CTLab #:	582184	Analysis Time:	14:22	Prep Date/Time:	05/07/2015 10:00	Method:	SW6010
Parent Sample #:	582183	Analyst:	MDS	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Tin	864	mg/kg	767		60.6	160	80 --- 120	19	20

TETRA TECH

Project Name: PILSEN AREA SOILS SITE OU1

SDG #: 0

Folder #: 111014

Project Number: 103X90260001S0515040

Matrix Spike Soil

Analytical Run #:	114734	Analysis Date:	5/8/2015	Prep Batch #:	52441	Matrix:	SOIL
CTLab #:	582183	Analysis Time:	14:18	Prep Date/Time:	05/07/2015 10:00	Method:	SW6010
Parent Sample #:	581760	Analyst:	MDS	Prep Analyst:	LJF		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Tin	724	mg/kg	767		61.2	0	80 --- 120		

Sample Condition Report

Folder #: 111014	Print Date / Time: 05/07/2015 09:41
Client: TETRA TECH	Received Date / Time / By: 04/29/2015 1310 TKR
Project Name: PILSEN AREA SOILS SITE OU1	Log-In Date / Time / By: 05/06/2015 PML
Project Phase:	Project #: 103X90260001S0515040 PM: PML
Coolers: 5325	Temperature: 2.6 C On Ice: Y
Custody Seals Present : Y	COC Present?: Y Complete?: Y
Seal Intact? Y	Numbers: SIGNEDANDDATED
Ship Method: FEDEX	Tracking Number: 598751428018
Adequate Packaging: Y	Temp Blank Enclosed?

Notes: THE SAMPLES WERE ORIGINALLY RECEIVED ON 04/29/15 AND WERE RECEIVED INTACT AND ON ICE.

THE SAMPLES HAD THE ORIGINAL REQUEST OF LEAD ANALYSIS AND WERE LOGGED IN UNDER FOLDER 110900 ON A 1 WEEK TAT.

ON 05/05/15 THE CLIENT REQUESTED THAT CADMIUM, COPPER, ZINC AND TIN BE ANALYZED ON THE SAMPLES ON A WEEK TAT. THE SAMPLES WERE LOGGED IN FOR THE ADDITIONAL METALS UNDER THIS FOLDER WITH A ONE WEEK TAT.

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
581728 PA-RR-17-0006	SOLIDS	1	/	%SOL,ICP
Total # of Containers of Type (SOLIDS) = 1				

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
581730 PA-RR-17-0624	SOLIDS	1	/	%SOL,ICP
Total # of Containers of Type (SOLIDS) = 1				

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
581732 PA-RR-18-0006	SOLIDS	1	/	%SOL,ICP
Total # of Containers of Type (SOLIDS) = 1				

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
581734 PA-RR-18-0618	SOLIDS	1	/	%SOL,ICP
Total # of Containers of Type (SOLIDS) = 1				

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
581736 PA-RR-19-0006				

SOLIDS 1 / %SOL,ICP
Total # of Containers of Type (SOLIDS) = 1

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
581738 PA-RR-19-0618	SOLIDS	1	/	%SOL,ICP

Total # of Containers of Type (SOLIDS) = 1

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
581739 PA-RR-20-0006	SOLIDS	1	/	%SOL,ICP

Total # of Containers of Type (SOLIDS) = 1

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
581741 PA-RR-20-0618	SOLIDS	1	/	%SOL,ICP

Total # of Containers of Type (SOLIDS) = 1

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
581742 PA-RR-21-0006	SOLIDS	1	/	%SOL,ICP

Total # of Containers of Type (SOLIDS) = 1

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
581744 PA-RR-21-0624	SOLIDS	1	/	%SOL,ICP

Total # of Containers of Type (SOLIDS) = 1

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
581745 PA-RR-22-0006	SOLIDS	1	/	%SOL,ICP

Total # of Containers of Type (SOLIDS) = 1

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
581747 PA-RR-22-0006D	SOLIDS	1	/	%SOL,ICP

Total # of Containers of Type (SOLIDS) = 1

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
581749 PA-RR-22-0624	SOLIDS	1	/	%SOL,ICP

Total # of Containers of Type (SOLIDS) = 1

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
581750 PA-RR-23-0006	SOLIDS	1	/	%SOL,ICP
	Total # of Containers of Type	(SOLIDS)	= 1	
Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
581752 PA-RR-23-0624	SOLIDS	1	/	%SOL,ICP
	Total # of Containers of Type	(SOLIDS)	= 1	
Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
581753 PA-RR-24-0006	SOLIDS	1	/	%SOL,ICP
	Total # of Containers of Type	(SOLIDS)	= 1	
Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
581755 PA-RR-24-0624	SOLIDS	1	/	%SOL,ICP
	Total # of Containers of Type	(SOLIDS)	= 1	
Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
581756 PA-RR-24-0624D	SOLIDS	1	/	%SOL,ICP
	Total # of Containers of Type	(SOLIDS)	= 1	
Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
581757 PA-RR-25-0006	SOLIDS	1	/	%SOL,ICP
	Total # of Containers of Type	(SOLIDS)	= 1	
Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
581759 PA-RR-25-0624	SOLIDS	1	/	%SOL,ICP
	Total # of Containers of Type	(SOLIDS)	= 1	
Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
581760 PA-RR-26-0006	SOLIDS	1	/	%SOL,ICP
	Total # of Containers of Type	(SOLIDS)	= 1	

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
581762 PA-RR-26-0624	SOLIDS	1	/	%SOL,ICP
Total # of Containers of Type (SOLIDS) = 1				

<u>Condition Code</u>	<u>Condition Description</u>
1	Sample Received OK

Letterer, Patrick M

From: Pallardy, Paul <Paul.Pallardy@tetrattech.com>
Sent: Tuesday, May 05, 2015 4:41 PM
To: Letterer, Patrick M
Subject: RE: Pilsen Sample Receipt

I will go with placing the additional metals in under a new folder separately from the lead results because I would like the lead results as soon as you have them. Thank you for working with me on this Patrick!

From: Letterer, Patrick M [mailto:pletterer@ctlaboratories.com]
Sent: Tuesday, May 05, 2015 4:17 PM
To: Pallardy, Paul
Subject: RE: Pilsen Sample Receipt

I guess we have three options. One, we could log the additional metals in under a new folder separately from the lead results. Two we use the existing login and log the new metals in under new sample numbers. Or, three, I log them in with the lead results under the current sample numbers. If I do that then I will have to delete out the lead and add it back in with the new metals. I guess that would depend on when you would like to see the data package. If you want the data package sooner than the other metals would be completed then I would say we should log them in under a new folder. If you can wait for the final data package then option two might be the way to go. If you want option three then I would have to wait to log the additional metals in until we have the lead results reported so you can get those quickly.

Patrick Letterer
Project Manager
CTLaboratories, LLC
1230 Lange Court
Baraboo, WI 53913
Phone: 608-356-2760
Fax: 608-356-2766
e-mail: pletterer@ctlaboratories.com
<<<http://www.ctlaboratories.com/>>>

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From: Pallardy, Paul [mailto:Paul.Pallardy@tetrattech.com]
Sent: Tuesday, May 05, 2015 4:05 PM
To: Letterer, Patrick M
Subject: Re: Pilsen Sample Receipt

Hi Patrick,

Thank you for the update. As far as the additional metals, I would like to keep the results together. Would they be on the lead report as not yet analyzed or similar due to the different TAT?

Thanks,
Paul

On May 5, 2015, at 3:58 PM, Letterer, Patrick M <pletterer@ctlaboratories.com> wrote:

Hi Paul

I should have the results for the lead yet today or tomorrow morning. Do you want me to add these additional metals to the current report or should I log them in separately?

Patrick Letterer
Project Manager
CTLaboratories, LLC
1230 Lange Court
Baraboo, WI 53913
Phone: 608-356-2760
Fax: 608-356-2766
e-mail: pletterer@ctlaboratories.com
<<<http://www.ctlaboratories.com/>>>

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From: Pallardy, Paul [<mailto:Paul.Pallardy@tetrattech.com>]
Sent: Tuesday, May 05, 2015 3:53 PM
To: Letterer, Patrick M
Subject: RE: Pilsen Sample Receipt

Hi Patrick,

I just got word that we will need additional analysis on the Pilsen Area Samples, in addition to the Lead analysis specified on the chain of custody. We would like to have these samples ran for Total Copper, Zinc, Cadmium, and Tin. The priority metals would be Total Copper and Zinc, if soil volume is an issue. For this additional analysis, your standard TAT will be fine. Please let me know if you will be able to run the additional analysis on these samples.

Also, when should I expect the Lead analysis results for these samples?

Thank you,
Paul

From: Letterer, Patrick M [<mailto:pletterer@ctlaboratories.com>]
Sent: Thursday, April 30, 2015 9:08 AM
To: Pallardy, Paul
Subject: Pilsen Sample Receipt

Hello

Attached are the sample receipt documents for the Pilsen Area Soil Site that were received on 04/29/15.

Patrick Letterer
Project Manager
CTLaboratories, LLC
1230 Lange Court
Baraboo, WI 53913
Phone: 608-356-2760
Fax: 608-356-2766
e-mail: pletterer@ctlaboratories.com
<<<http://www.ctlaboratories.com/>>>

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