TETRA TECH

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June 8, 2017

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**Subject: Final Removal Assessment Summary Report – Pilsen Area Soils Site OU1**
**EPA Contract No. EP-S5-13-01**
**Technical Direction Document No. 0001/S05-0001-1504-007**
**Document Tracking No. 1330**

Dear Mr. Mendoza:

The Tetra Tech, Inc. Superfund Technical Assessment and Response Team (START) is submitting this Final Removal Assessment Summary Report for the Pilsen Area Soils Site OU1 (PASS OU1) site in Chicago, Cook County, Illinois. As you indicated on Wednesday, June 7, 2017, no changes to the draft report were required. This report summarizes the removal assessment and oversight of responsible party removal activities conducted at the site from April 27, 2015, to September 16, 2016 and includes the excavation area soil sample results, X-ray fluorescence (XRF) screening results, soil pH screening results, results of discrete samples chosen by EPA, and air monitoring data recorded at the PASS OU1 removal site.

If you have any questions regarding this report, please contact me at (312) 201-7710.

Sincerely,

Paul Pallardy
Project Manager

Enclosure

cc: TDD File
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# FINAL REMOVAL ASSESSMENT SUMMARY REPORT
# FOR
# THE PILSEN AREA SOILS OU1 SITE

## CHICAGO, COOK COUNTY, ILLINOIS

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Emergency Response Branch
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START QC Reviewer

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# 1.0 INTRODUCTION

Under Technical Direction Document (TDD) 0001/S05-0001-1504-007, the U.S. Environmental Protection Agency (EPA) tasked the Tetra Tech, Inc. (Tetra Tech) Superfund Technical Assessment and Response Team (START) to perform a removal assessment and oversight of a responsible party led removal action at the Pilsen Area Soils Site Operable Unit 1 (PASS OU1) located in the Pilsen neighborhood of Chicago, Cook County, IL.

This report provides site background information in Section 2.0, summarizes removal assessment activities in Section 3.0, provides removal assessment findings in Section 4.0, summarizes the oversight of the responsible party removal action activities in Section 5.0, and completed responsible party removal actions are summarized in Section 6.0. References are cited in the report following Section 6.0. This report also provides figures in Appendix A, tables in Appendix B, copies of field logbook notes in Appendix C; photographic documentation of removal assessment and oversight of responsible party removal action activities in Appendix D; copies of the removal assessment boring logs in Appendix E; copies of the chain-of-custody records in Appendix F; copies of truck loads and tonnage documentation in Appendix G; and daily air monitoring data in Appendix H. Laboratory analytical data packages are provided as Attachment 1.

# 2.0 BACKGROUND

This section describes the site and its location and summarizes previous site activities and investigations.

## 2.1 SITE LOCATION AND DESCRIPTION

The site is a 0.75-acre irregularly shaped area consisting of alleyways and former railway spurs located at South Loomis Street and West 21st Street, in the Pilsen neighborhood of Chicago, Cook County, Illinois (see Figure 1 in Appendix A). The site is a vacant property located in a mixed residential, commercial, and industrial area. The site is bordered by a vacant parcel, a parking lot for the Benito Juarez High School, and H. Kramer & Company (H. Kramer) to the north; H. Kramer, South Throop Street, and industrial properties to the east; commercial and industrial properties, West Cermak Road, and Benito Juarez High School property to the south; and Benito Juarez High School to the west (see Figure 2 in Appendix A).

The site is broken up into ten areas (see Figure 2 in Appendix A). Table 1 in Appendix B presents the approximate size and location of each area.

## 2.2 SITE HISTORY

In 2004 the Pilsen Environmental Rights & Reform Organization (PERRO) (a community group of Pilsen residents) organized an advisory referendum for the November 2004 ballot. This referendum asked the alderman of the Pilsen neighborhood to call upon the Department of Environment (DOE) and the Illinois Environmental Protection Agency (EPA) to complete a report on H. Kramer's emissions and their health effects by July 1, 2005. The DOE asked the Chicago Department of Public Health and the U.S. and Illinois EPA to assist in answering the questions that fell in their jurisdictions (PERRO 2016).

In March 2005, the Pilsen Environmental Rights & Reform Organization (PERRO) collected 12 surface soil samples in the Site Area around the vicinity of H. Kramer (Subra Company 2005). Lead was detected in soil samples collected from eight locations above the 2012 EPA Removal Management Level (RML) with a hazard quotient (HQ) of 3 for residential soil of 400 milligram per kilogram (mg/kg). Lead concentrations ranged from 440 to 37,000 mg/kg.

In June 2005, the Illinois Environmental Protection Agency (IEPA) Site Assessment Unit (SAU) identified heavy metal contamination, particularly lead, in soil samples on the H. Kramer property and in the nearby vicinity. Lead concentrations in 15 of the 17 samples collected by the SAU exceeded 1,000 mg/kg. In September 2005, H. Kramer entered the IEPA Site Remediation Program (SRP).

In January 2010, IEPA placed an air monitoring station on the roof of Perez Elementary School to sample ambient air concentrations of lead in the area. Air samples at the Perez monitor were collected once every six days. In 2010, lead was detected in 11 of the approximately 60 samples at concentrations above the National Ambient Air Quality Standard (NAAQS) of 0.15 microgram per cubic meter ($\mu g/m^3$) averaged over three months. IEPA installed a second air monitoring station at Juarez to the west of H. Kramer and Perez. According to IEPA, results from the second air monitoring station indicated that H. Kramer was the primary contributor to the elevated ambient air lead levels in the area. As a result, IEPA requested that the Illinois Attorney General initiate legal action against H. Kramer relative to its contribution to a violation of the lead NAAQS. EPA addressed this issue in a 2011 enforcement action.

In March 2011, EPA Region 5 requested EPA's National Enforcement Investigations Center (NEIC) to examine particulate matter from H. Kramer and Fisk Station and total suspended particulate (TSP) matter collected in ambient air on glass fiber filters from area air monitoring stations to determine if material from either facility was present on the TSP filters. On August 21, 2011, NEIC submitted a report to EPA Region 5 entitled "Characterization of Lead-Bearing Particulate Matter," presenting analytical results of filters containing the highest and lowest concentrations of lead collected at the Perez air monitoring site

from January 2010 to January 2011, as well as baghouse dust samples collected at H. Kramer (EPA NEIC 2011). The report concluded that H. Kramer's furnaces were likely the primary source of lead-bearing airborne particulate matter in the Pilsen neighborhood based on the location of its facility, wind direction, and analytical results of TSP filters and baghouse dust from its facility.

In 2011, the United States brought three claims against H. Kramer. First, the United States alleged that H. Kramer violated the Illinois State Implementation Plan by causing or allowing the emission of lead into the air to cause air pollution and/or to prevent the attainment or maintenance of the revised NAAQS for lead. Second, the United States alleged that H. Kramer failed to maintain and operate the rotary furnaces at the facility in a manner consistent with good air pollution control practice, as required by the Standards of Performance for New Stationary Sources. Third, the United States alleged that H. Kramer failed to operate and maintain all furnace melting operations in a manner consistent with good air pollution control practices as required by the National Emissions Standards for Hazardous Air Pollutants. Negotiations between EPA, IEPA, the Attorney General's Office, Department of Justice (DOJ), and H. Kramer resulted in an Agreed Preliminary Injunction Order being filed in state court on September 2, 2011. Pursuant to the order, H. Kramer made significant repairs to the facility, including pollution control upgrades, cleanup, and paving of the facility's yard, and reduction in the production of two lead alloys.

In December 2011 and March 2012, H. Kramer submitted to IEPA a Remedial Action Completion Report and an Addendum to the Remedial Action Completion Report, respectively. On March 29, 2012, IEPA granted H. Kramer a No Further Remediation (NFR) Letter, signifying a release from further responsibilities pursuant to Section 58.10 of the Illinois Environmental Protection Act (415 ILCS 5/1 et seq.).

On August 24, 2012, NEIC submitted a second report to EPA Region 5 entitled "Additional Characterization of Lead-Bearing Particulate Matter," presenting additional analytical results of lead-bearing particulate matter on TSP filters from the Juarez and Perez air monitoring stations and in coal and fly ash collected from the Fisk Station and Midwest Generation's Crawford Station coal-fired power plant (Crawford Station), in addition to any contribution from H. Kramer. H. Kramer was indicated by NEIC as the major contributor of airborne lead-bearing particulate matter in the Pilsen neighborhood, both during and outside the NAAQS exceedance period of October 2010 to February 2011 (Weston 2014).

Based on historic releases of zinc, copper, and lead from H. Kramer, a corporation that owns and operates a secondary nonferrous metals facility located at 1345 West 21st Street, Chicago, IL, and its close

proximity to the alleyways and former railway spurs located at South Loomis Street and West 21st Street, EPA expected to find elevated levels of lead, zinc, and copper in the soil at the PASS OU1.

In December 2012 and May 2013, EPA and its START III contractor (Weston Solutions) initiated an evaluation of the potential impacts of possible aerial deposition of heavy metals to the PASS OU1 from historic industrial activities. In addition, samples were collected in the Little Italy area about 1 mile north of the Site in August 2013. Samples were collected in the Little Italy area as a reference area for results comparison as a part of the evaluation. Soil samples collected by EPA and its START contractors from the PASS OU1 were analyzed for Toxicity Characteristic Leaching Procedure (TCLP) lead, total metals, and lead bioavailability (EPA 2015). The resulting analysis of these samples indicated the presence of lead at concentrations above the EPA residential soil RML of 400 milligrams per kilogram (mg/kg) and above the applicable EPA industrial soil RML of 800 mg/kg throughout the site. TCLP lead concentrations were also detected above the TCLP lead federal regulatory limit of 5 milligrams per liter (mg/L) (Code of Federal Regulations [CFR] Title 40 Part 261 Section 24 Toxicity Characteristics) in Area 4 and portions of Areas 5 and 8.

Based on EPA's evaluation of historical aerial deposition of heavy metals at the PASS OU1, EPA tasked Tetra Tech, under the START IV contract, to perform a removal assessment and oversight of a responsible party led removal action at the PASS OU1.

# 3.0 REMOVAL ASSESSMENT ACTIVITIES

This section describes the removal assessment activities completed by START and EPA at the PASS OU1 from April 27, 2015 until December 30, 2015.

Prior to mobilizing to the site to perform oversight of potential responsible party (PRP) cleanup activities, Tetra Tech was verbally tasked by EPA to prepare a draft Sampling and Analysis Plan (SAP) to address a lack of historical analytical data in Area 1 and Area 2 and to further define the extent of contamination at the site (Tetra Tech 2015a). The draft SAP was submitted to the EPA OSC for review and comment on April 25, 2015. No comments were received on the draft SAP.

## 3.1 SAMPLE COLLECTION

On April 27, 2015 START and EPA mobilized to the PASS OU1 to conduct the removal assessment which included the collection of additional soil samples for metal analysis from Area 1 and a portion of Area 2.

Sample locations were discussed with EPA prior to the sampling event. Ten sample locations were selected by START and EPA at the site across Area 1 and the western portion of Area 2 (see Figure 3 in Appendix A). The sample locations were spaced approximately 50 feet (ft) apart and the sample location coordinates were recorded by START utilizing a handheld Trimble Global Positioning System (GPS) unit.

A hand auger was used to bore at each sample location to a depth of up to 24 inches below ground surface (bgs). All samples were collected in accordance with the draft SAP (Tetra Tech 2015a). Removal assessment activities, sample location information, and sample depths were recorded in a field logbook in accordance with Tetra Tech Standard Operating Procedure (SOP) No. 024-2 "Recording Notes in Field Logbooks" (Tetra Tech 2014b). Field logbook notes are provided in Appendix C. Photo documentation of removal site assessment activities is provided as a photographic documentation log in Appendix D. Boring logs for each sample location from the removal assessment are provided in Appendix E. A total of 22 samples including 2 duplicate samples were collected from the 10 boring locations in Area 1 and the western portion of Area 2. See Table 2 for a summary of samples collected during the removal assessment provided in Appendix B.

## 3.2 XRF SCREENING

Following sample collection, each soil sample was placed in a resealable plastic bag, homogenized, and field screened for lead using an XRF analyzer (Olympus InnovX DELTA). The XRF screening results were recorded using a laptop with EPA FAST software and the data are stored in a Microsoft Access database format. The XRF Screening results are presented in Section 4.

## 3.3 SAMPLE SHIPMENT

Following XRF screening, each soil sample was directly transferred into glass sample jars in preparation for shipment to a fixed laboratory for metals analysis. The glass sample jars were labeled with sample IDs, date, and time collected. The samples were labeled, packaged, and shipped to CT Laboratories located at 1230 Lange Court, in Baraboo, Wisconsin, under Chain of Custody (COC) in accordance with SOP No. 019-7 "Packaging and Shipping Samples" (Tetra Tech 2014a). Samples were shipped to CT Laboratories on April 28, 2015. Copies of the chain of custody records of samples submitted to CT Laboratories for analysis are provided in Appendix F.

## 3.4 SAMPLE ANALYSIS

All samples were submitted to CT Laboratories in Baraboo for cadmium, copper, tin, lead (total and fines), and zinc analysis. At the discretion of the EPA OSC, 12 of the 20 samples were analyzed for

TCLP lead. All soil samples were analyzed in accordance with EPA SW-846 Method 6010C, inductively coupled plasma-atomic emission spectrometry (ICP-AES). START requested that CT Laboratories provide the initial analytical results in a turnaround time (TAT) of seven days.

# 4.0 REMOVAL ASSESSMENT FINDINGS

## 4.1 XRF SCREENING RESULTS

Each soil sample was field screened for lead using an XRF analyzer. XRF screening indicated that of the 22 samples collected and screened for lead, 15 contained lead at concentrations above the EPA residential soil RML for lead compounds, and 9 samples also contained lead at concentrations above the EPA industrial soil RML for lead compounds. The remaining 7 samples XRF screened for lead contained lead concentrations below the of the EPA residential soil RML for lead compounds. The average XRF lead screening result for each sample is provided in Table 3 in Appendix B.

## 4.2 SOIL SAMPLE ANALYTICAL RESULTS

Tetra Tech received a final level IV data package for lead and TCLP lead analysis from CT Laboratories on May 6, 2015 and a final level IV data package for cadmium, copper, tin, and zinc analysis on May 14, 2015. Upon receipt of the final data packages, a START chemist began stage 4 data validations. The Data Validation Report (DVR) submitted under Document Tracking Numbers (DTNs) 0209 and 0210 on May 21, 2015 summarizes the findings of the stage 4 data validation of the cadmium, copper, lead, TCLP lead, tin, and zinc analytical results.

Of the 22 samples collected, 17 contained lead at concentrations above the EPA residential soil RML for lead compounds, and 16 samples also contained lead at concentrations above the EPA industrial soil RML for lead compounds. The initial TCLP lead concentration of Sample ID PA-RR-26-0624 was 13 mg/L. This was the only sample with a result that exceeded the Code of Federal Regulations (CFR) TCLP regulatory limit of 5 mg/L. The next highest result for TCLP lead was 1.9 mg/L at PA-RR-25-0006. Analytical data for the removal assessment is summarized in Table 3 in Appendix B. Figure 4 in Appendix A provides sample locations, total lead, lead fines, and TCLP lead results.

No other TCLP lead exceedances were detected in soil samples collected in the area and because of the heterogeneous nature of the soil with gravel, stone, construction material, and debris, the EPA OSC suspected interference may have caused initial TCLP lead analysis of Sample PA-RR-26-0624 on May 4, 2015 to have a TCLP lead concentration of 13 mg/L. At the request of the EPA OSC, Sample PA-RR-26-0624 was relogged and analyzed a second time on June 4, 2015 by CT Laboratories for TCLP lead. Tetra Tech received the final data package from CT Laboratories on June 11, 2015 for the EPA requested

second TCLP lead analysis of sample PA-RR-26-0624. The DVR submitted under DTN 0258 on June 30, 2015 summarizes the findings of the stage 4 data validation of the EPA requested second TCLP lead analysis results of sample PA-RR-26-0624. Results from the second analysis indicated a TCLP lead concentration of 0.39 mg/L. Laboratory analytical data packages containing removal assessment results are provided as Attachment 1.

## 5.0 OVERSIGHT OF RP REMOVAL ACTIVITIES

Based on historical analytical results and results from the removal assessment described above, an Administrative Settlement Agreement and Order on Consent (AOC) for removal action was issued on October 6, 2015, for the responsible parties, which included of H. Kramer, Burlington Northern Santa Fe Railway (BNSF), and the City of Chicago (EPA 2015). BNSF was included on the AOC as a responsible party due to use of the railway spur and the City of Chicago was included as a responsible party due to portions of the railway spur residing on property owned by the City of Chicago. The PRP and contractors mobilized to the site on November 16, 2015, to initiate removal activities related to the lead-impacted materials. The contractor for BNSF was DF Rail Group, also known as Compliance One. The contractors for H. Kramer included GHD, Hygieneering, and Robert W. Collins Company (RW Collins). The removal action was performed in general accordance with the approved Removal Plan for Alley–Railroad, Revision 3 (GHD 2015a).

EPA and START mobilized to the site on the same day as the PRP and its contractors to perform oversight of the PRP cleanup of the site. Oversight objectives were to oversee and confirm that the RPs and RP contractors conducted removal activities in accordance with the AOC to remove the threat of direct contact with lead-impacted soil above the EPA industrial soil RML of 800 mg/kg in Area 1–West, capped lead-impacted soil remaining in place throughout the remainder of the site, and removed impacted soil containing TCLP lead concentrations above the CFR TCLP regulatory limit for lead of 5 mg/L in Areas 4 and 8.

From November 16 to December 30, 2015, START oversaw and documented the removal actions completed by the RPs and their contractors; collected excavation area confirmation soil samples in Area 1-West; collected TCLP lead confirmation soil samples from excavated material in Areas 4 and 8; conducted pH soil screening; and conducted personal and area air monitoring. A single soil sample collected from Area 8 was also analyzed for TCLP cadmium at the request of the EPA due to a potential TCLP cadmium exceedance in this area based upon historical data.

During removal actions, BNSF and H. Kramer and their contractors GHD, Compliance One, Hygieneering, and RW Collins and the City of Chicago completed the activities as described below.

(1) Compliance One removed approximately 1,150 feet of rail and 575 wooden railroad ties, which were transported off site to a BNSF property for appropriate disposal.

(2) RW Collins grubbed vegetation and removed trash.

(3) The City of Chicago Department of Streets and Sanitation (DSS) transported three loads (34.8 tons) of solid waste (trash) and vegetation collected from Areas 1 and 2 off site to the Shred-All solid waste transfer station (43rd and Racine) in Chicago.

(4) RW Collins removed lead-impacted soil from applicable areas of the site.

(5) Hygieneering was retained by Compliance One and RW Collins to conduct an industrial hygiene study to quantify employee exposure to lead and arsenic during work activities within established exclusion zones and during removal operations in accordance with Occupational Safety and Health Administration (OSHA) specific construction standards for lead (1926.62) and arsenic (1926.1118) (GHD 2016).

(6) RW Collins treated soil impacted with lead at concentrations above the TCLP regulatory limit of 5 mg/L using Free Flow 200 and 300 reagent blends developed to reduce the mobility of heavy metals. Free Flow 200 and 300 are phosphate-based materials, which were mixed at a 4 percent application rate to soil for TCLP lead treatment.

(7) RW Collins laid geo-fabric in Areas 1, 2, 4, 6, 7, 8, 9, and 10.

(8) RW Collins placed gravel and then graded the gravel in all excavated areas.

(9) BNSF, RW Collins, and the Chicago Department of Transportation (CDOT) provided gravel backfill brought in from Pershing Recycle and Reliable Asphalt.

(10) RW Collins disposed of 708 tons (37 truckloads) of impacted soil and debris to the Waste Management Laraway Recycling and Disposal Facility (RDF) facility in Elwood, Illinois (copies of truck loads and tonnage documentation is provided in Appendix G).

(11) RW Collins and CDOT used asphalt to pave over gravel placed in Areas 2, 4, 6, 7, 8, 9, and 10. Intact brick pavers were discovered by RW Collins in Area 5. The intact brick pavers were determined by GHD and EPA to provide an engineered barrier and they were left in place. A thin layer of gravel was placed and graded over the brick pavers and Area 5 was then asphalt paved by RW Collins and CDOT.

(12) GHD provided oversight of site plans, and dust particulate monitoring upwind and downwind of site while removal activities were being performed in accordance with the Site Specific Health and Safety Plan (GHD 2015b), and collected TCLP lead confirmation soil samples.

During removal actions, START provided written documentation of all the removal activities that took place from November 16 to December 30, 2015. Field logbook documentation was conducted in accordance with Tetra Tech SOP No. 024, “Recording Notes in Field Logbooks” and Tetra Tech’s QAPP

for START (Tetra Tech 2015b). Appendix C provides a copy of RP removal oversight field logbook notes. START took photographs of the excavation areas to convey the progress made in removing steel rail lines, wooden railroad ties, and soil from the excavation area. Photographs were also taken by START to document the progress of engineered barrier placement. Appendix D contains a photographic documentation log of the removal activities. As part of the PRP oversight, Tetra Tech was task to perform air sampling and monitoring and collect confirmation soil samples. The sections below describe these tasks in more detail.

## 5.1 AIR SAMPLING AND MONITORING

On November 16, 2015, START collected one air sample (P1-A10-111615) for metal particulate matter in the air in the breathing zone in the vicinity of the removal work in accordance with OSHA specific construction standards for lead (1926.62) and arsenic (1926.1118). Sample collection followed procedures outlined in the AMP (Tetra Tech 2015c) Sample P1-A10-111615 was shipped to ALS Environmental under COC on November 16, 2015 in accordance with SOP No. 019-7 "Packaging and Shipping Samples" (Tetra Tech 2014a). Tetra Tech requested a TAT of seven days for arsenic, cadmium, chromium, and lead analysis of Sample P1-A10-111615 using National Institute for Occupational Safety and Health (NIOSH) Method 7300. Tetra Tech received the final level II data package from ALS Environmental on November 23, 2015.

Concentrations of arsenic, cadmium, chromium, and lead were not detected in sample P1-A10-111615 and therefore did not exceed OSHA-specific construction standards for lead (1926.62) and arsenic (1926.1118). A copy of the final data package from ALS Environmental for sample P1-A10-111615 is provided as Attachment 1. The air particulate sample was collected for verification purposes only. Concentrations of arsenic, cadmium, chromium, and lead were not detected in sample P1-A10-111615 and therefore the final Level II data received from the lab was not validated.

Hygieneering was retained by Compliance One and RW Collins to conduct an industrial hygiene study to quantify employee exposure to lead and arsenic during work activities within established exclusion zones and during removal operations in accordance with OSHA- specific construction standards for lead (1926.62) and arsenic (1926.1118). Personal time weighted average (TWA) exposures were below (OSHA) Permissible Exposure Limits (PELs) and American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLVs) for lead and arsenic (GHD 2016).

Additionally, from November 16 to December 30, 2015, START used a Thermo Scientific DataRAM 4 (DataRAM 4) particulate air monitoring unit to assess the ambient air conditions on the perimeter of the

site, downwind of the excavation work taking place at the site. GHD also set up particulate monitoring stations upwind and downwind for the active work areas. GHD conducted air monitoring using a Trust Science Innovation (TSI) 8520 Dustrak aerosol monitor (Dustrak) in a weather-proof enclosure. GHD monitoring did not indicate action level exceedances during construction.

From November 18 to December 10, 2015, START also used a Thermo Scientific personal DataRAM pDR-1500 Aerosol Monitor (pDR) to assess ambient air conditions in close proximity to the excavation work as well as along the perimeter of the site as needed. The pDR was primarily worn by the on-site START personnel while they were in the vicinity of the excavation work.

Particulate action levels were as follows: Areas 8 and 9 (0.812 mg/m$^3$), Areas 2, 3, 4, 5, and 6 (1.19 mg/m$^3$), Areas 1 and 7 (3.19 mg/m$^3$). These action levels were based off the highest concentration observed at each area and were calculated using the following criteria: (1) a safety factor of 3 (from 1 to 10, with 10 being the most conservative) was selected for the western portion of the site because the metal concentrations at the site were well characterized; (2) a safety factor of 5 was selected for the eastern portion of the site because the metal concentrations at the site were less characterized; (3) the historical concentrations and safety factors were used to calculate a site-specific airborne dust permissible exposure level (PEL) of 5 mg/m$^3$.

Prior to and during each particulate monitoring run, START recorded the prevailing weather conditions in the field logbook so that the particulate monitors could be placed downwind of the excavation activities. In the event that the wind direction changed during the workday, START changed the location of the particulate monitors accordingly to take into account the new wind direction. The air monitoring results were downloaded daily to a START computer. A copy of the daily air monitoring data is provided in Appendix H.

One anomalous particulate concentration of 3.92 mg/m$^3$ was recorded above the action level on December 10, 2015, at 11:11 by the START pDR. Site activities and dust generated at the time of this reading did not correlate to the particulate concentration recorded by the pDR. Particulate concentrations remained below the action level the remainder of day on December 10, 2015. The highest particulate concentration recorded by the START downwind DataRAM 4 was 0.135 mg/m$^3$ on December 10, 2015. The highest particulate concentration recorded by the GHD downwind Dustrak was 0.041 mg/m$^3$ on December 10, 2015. During the remainder of the removal activity air monitoring, the particulate concentrations were below the action levels set for each area.

## 5.2 CONFIRMATION SOIL SAMPLING

This section describes the samples collected and XRF screening conducted by START in the excavation areas at the PASS OU1 removal site. Soil samples were collected at the discretion of the EPA OSC. Sampling was conducted in accordance with the final Removal Sampling and Analysis Plan (Tetra Tech 2015d). The final Removal SAP was submitted on November 13, 2015 to replace the draft SAP submitted on April 25, 2015. The final Removal SAP was developed to summarize methods for the removal oversight confirmation sampling at the PASS OU1. All samples were shipped to CT Laboratories under COC for lead, TCLP cadmium, or TCLP lead analysis by method EPA SW-846 Method 6010C, ICP-AES in accordance with SOP No. 019-7 "Packaging and Shipping Samples" (Tetra Tech 2014a). Copies of the chain of custody records of samples submitted to CT Laboratories for analysis are provided in Appendix F.

XRF screening was also conducted during and after excavation activities were completed, specifically in Area 1–West, to determine whether areas required additional excavation and sampling. Soil samples were analyzed for lead, TCLP cadmium, and TCLP lead. The cleanup objectives for the site were the EPA industrial RML of 800 mg/kg for lead compounds, the CFR TCLP regulatory limit for cadmium of 1 mg/L, and the CFR TCLP regulatory limit for lead of 5 mg/L.

Confirmation soil samples were collected by START to determine (1) total lead concentrations in Area 1–West following removal activities on the site (see Appendix B Table 4 and Table 5); and (2) TCLP lead concentrations in excavated soil removed from the designated TCLP lead exceedance zones in Areas 4 and 8 (see Appendix B Table 6 and Table 7);

### 5.2.1 Area 1 – West - XRF Screening and Confirmation Soil Sampling

On December 2 and 3, 2015, START conducted XRF screening in Area 1–West, following excavation work and prior to backfilling with gravel. Based on the XRF screening results for lead and at the discretion of the EPA OSC, START collected five soil confirmation samples (PASS-A1W-P3-120215, PASS-A1W-P5-120315, P6, P7, and P8) and one duplicate confirmation sample (PASS-A1W-P5-120315-D). See Table 4 for a summary of the soil sample points XRF screened and confirmation soil samples collected provided in Appendix B.

Since XRF screening of soil from the 3-5-inch interval at Sample Points 1 and 2 indicated lead concentrations below the EPA industrial soil RML, no additional excavation work was necessary in the vicinity of these points. RW Collins completed excavation work at 3 inches bgs in this area.

XRF screening of soil from the 6-8-inch interval at Sample Point 3 indicated lead concentrations below the EPA industrial soil RML. Soil sample PASS-A1W-P3-120215 was collected from Sample Point 3 for verification purposes to determine if lead soil concentrations would meet the EPA residential soil RML of 800 mg/kg. Sample PASS-A1W-P3-120215 had a lead concentration of 480 mg/kg. No additional excavation work was necessary in the vicinity of this point because lead concentrations were below the EPA industrial soil RML. RW Collins completed excavation work at 6 inches bgs in this area.

Soil from the 6-8-inch interval at Sample Point 4 was XRF screened, and had a lead concentration above the EPA industrial soil RML. Brick pavers were observed in the vicinity of this sample point. Soil above brick pavers was determined to potentially have elevated lead concentrations. RW Collins removed all the brick pavers and a second XRF screening was conducted in this area. Sample Point 5 (in the vicinity of Sample Point 4) was also XRF screened after brick pavers were removed. Soil from the 6-8-inch interval at Sample Point 5 had a lead concentration below the EPA industrial soil RML. Soil sample PASS-A1W-P5-120215 was collected at Sample Point 5 to verify the XRF screening results. No additional excavation work was necessary in the vicinity of this point because lead concentrations were below the EPA industrial soil RML. RW Collins completed excavation work at 6 inches bgs in this area. Table 5 in Appendix B summarizes Area 1–West excavation area confirmation soil sample results.

Soil from the 6-8-inch interval at Sample Points 6, 7, and 8 were XRF screened and found to have lead concentrations below the EPA industrial soil RML. Soil samples PASS-A1W-P6-120215, PASS-A1W-P7-120215, and PASS-A1W-P8-120215 were collected from Sample Points 6, 7, and 8, respectively, to verify the XRF screening results. A duplicate sample, PASS-A1W-P8-120215-D, was collected at Sample Point 8. Only Sample PASS-A1W-P8-120215 had a lead concentration above the EPA industrial soil RML for lead. The EPA OSC elected to average the lead results of PASS-A1W-P6-120215, PASS-A1W-P7-120215, PASS-A1W-P8-120215, and PASS-A1W-P8-120215-D. The average lead concentration was below the EPA industrial soil RML and no additional excavation work was necessary in the vicinity of these points. RW Collins completed excavation work at 6 inches bgs in this area. No additional confirmation soil samples were collected from Area 1-West. Table 5 in Appendix B summarizes Area 1–West excavation area confirmation soil sample results.

START stopped XRF screening of soil from the 6-8-inch interval at Sample Point 9 after two screens because lead concentrations were too close to the EPA industrial soil RML. Sample Point 10, located further to the east, was selected for screening to determine if lead concentrations decreased to the east. START stopped initial XRF screening of soil from the 6-8-inch interval at Sample Point 10 after one screen because lead concentrations were above the EPA industrial soil RML. The EPA OSC requested

that RW Collins excavate an additional 3 inches of soil for a second XRF screen at Sample Point 10 to determine if lead concentrations decreased with depth. Soil from the 9-11-inch interval at Sample Point 10 was also XRF screened and had a lead concentration above the EPA industrial soil RML. Due to the lead concentrations being above the EPA industrial soil RML, the EPA OSC and GHD agreed that over-excavation to 2 feet bgs should be done from Sample Point 9 to the east end of Area 1–West in order to provide sufficient depth for an engineered barrier. No additional XRF screening was conducted in Area 1–West. RW Collins completed excavation work at 2 feet bgs in this area.

See Figure 5 in Appendix A for sample point locations. See Figure 6 in Appendix A for sample point location XRF lead screening results and lead concentrations. Laboratory analytical data packages containing removal confirmation lead results are provided as Attachment 1.

### 5.2.2 Areas 4 and 8 – TCLP Cadmium and Lead Confirmation Soil Sampling

A total of seven confirmation soil samples were collected from excavated soil stock piled at the site from Area 4 and a portion of Area 8 where TCLP lead concentrations exceeded the CFR regulatory limit for TCLP lead of 5 mg/L (Figure 7 in Appendix A). RW Collins treated soil in these areas utilizing Free Flow 200 and 300 to decrease TCLP lead concentrations to below the CFR regulatory limit for TCLP lead . The soil samples were collected to verify that TCLP lead concentrations were below the CFR regulatory limit for TCLP lead following treatment. Once the TCLP lead concentrations were confirmed to be below the CFR regulatory limit of 5 mg/L, the soil was then transported to the Waste Management Laraway RDF facility in Elwood, Illinois, to be disposed of as non-hazardous waste. See Table 6 for a summary of the confirmation soil samples collected for TCLP analysis provided in Appendix B. See Table 7 for a summary of TCLP results provided in Appendix B.

On November 24, 2015, START collected two spilt confirmation soil samples with GHD, Samples S-112415-GW-01-ES and S-112415-GW-02-ES. The samples were collected from the excavated soil RW Collins removed from Area 4. These samples were analyzed for TCLP lead. The results of the two samples indicated the TCLP lead concentrations were below the CFR regulatory limit of 5 mg/L.

On November 25, 2015, START collected two spilt confirmation soil samples with GHD, Samples S-112515-ML-04-ES and S-112515-ML-05-ES. The samples were collected from the excavated soil RW Collins removed from the Area 8. These samples were analyzed for TCLP lead. The results of the two samples indicated the TCLP lead concentrations were below the CFR regulatory limit of 5 mg/L. However, the GHD Sample S-112515-ML-05-ES exceeded the CFR regulatory limit of 5 mg/L. As a

result, RW Collins mixed additional Free Flow 200 with the soil in the western 50 feet of the Area 8 TCLP lead zone.

On December 2, 201,5 START collected two spilt confirmation soil samples with GHD. Samples S-120215-ML-07-ES and S-120215-ML-08-ES were collected after additional Free Flow was mixed with the soil in the western 50 feet of Area 8. The soil was split into two piles by RW Collins. Sample S-120215-ML-07-ES was collected from the soil in the eastern 30 feet of the western 50 feet of Area 8, which was excavated to 12 inches bgs. Sample S-120215-ML-08-ES was collected from the soil in the western 20 feet of the western 50 feet of the treated Area 8 TCLP area, which was excavated to 18 inches bgs. These samples were analyzed for TCLP lead. The results of the two samples indicated the TCLP lead concentrations were above the CFR regulatory limit of 5 mg/L. As a result, RW Collins mixed additional Free Flow 200 with the soil in the western 50 feet of Area 8.

On December 8, 2015, START collected one split confirmation soil sample with GHD. Sample S-120815-AK-009-ES was collected after additional Free Flow 200 was mixed in with the soil in the western 50 feet of Area 8. The EPA OSC requested that the sample be analyzed for TCLP cadmium as well as TCLP lead and pH. The sample results indicated a TCLP cadmium concentration below the CFR regulatory limit of 1 mg/L, but a TCLP lead concentration above the CFR regulatory limit of 5 mg/L. As a result, RW Collins mixed Free Flow 300 with the soil in the western 50 feet of Area 8.

On December 9, 2015, START collected one split confirmation soil sample with GHD. Sample S-120915-AK-10-ES was collected after additional Free Flow 300 was mixed in with the soil in the western 50 feet of the Area 8 TCLP lead zone. The GHD sample analysis was completed first, and it indicated the TCLP lead concentration was below the CFR regulatory limit of 5 mg/L. The START split sample was to be analyzed for TCLP lead but START cancelled the analysis at the request of the EPA OSC.

Prior to receiving the GHD final Sample S-120915-AK-10-ES result with a TCLP lead concentration below the CFR regulatory limit of 5 mg/L, the EPA OSC suggested that soil pH may be effecting the TCLP lead concentration. GHD and START began monitoring soil pH. GHD obtained an Oakton pH meter, however this required mixing the soil with water to create a solution for pH screening, which was determined to potentially result in inaccurate soil pH due to water pH. START obtained a Hanna soil pH meter to directly screen soil for pH. START screened Area 1–West stockpiled soil for pH, and the results were determined to be a lower pH than recorded in Area 8. RW Collins mixed the non-hazardous Area 1–West stockpiled soil with the Area 8 soil in attempt lower the Area 8 soil pH. See Table 8 for a summary of the soil pH screening activities provided in Appendix B.

Once results from the confirmation soil samples collected from Area 4 and the Area 8 TCLP lead zone were below applicable CFR regulatory limits, the soil was then transported off-site as non-hazardous waste. The soils excavated from Area 4 and the TCLP lead soil area in Area 8 were transported off-site and disposed of as non-hazardous waste at the Waste Management Laraway RDF facility in Elwood, Illinois. TCLP lead zone confirmation soil sample results are summarized in Table 7 provided in Appendix B. Laboratory analytical data packages containing removal confirmation TCLP cadmium and lead results are provided as Attachment 1.

## 6.0 RP REMOVAL COMPLETION SUMMARY

This section provides a summary of removal activities completed at the Pilsen OU1 site from November 16 to December 30, 2015. This includes documentation and oversight, railroad debris removal, excavation of contaminated soil, and backfilling operations. Following excavation activities, an orange geotextile liner was utilized to demarcate depth of lead impacted soil in all areas but Area 5. Intact brick pavers were discovered by RW Collins in Area 5. The intact brick pavers were determined by GHD and EPA to provide an engineered barrier and they were left in place. A thin layer of gravel was placed and graded over the brick pavers for placement of an asphalt cap. Clean gravel was utilized to backfill over excavation areas to act as an engineered barrier to prevent direct contact to lead-impacted soil. An asphalt cap was also placed over the gravel layer in Area 1-East, Areas 2, 4, 5, 6, 7, 8, 9, and 10. Asphalt capping activities were conducted by CDOT and the RP contractors, GHD and RW Collins, from May to September 2016. Gravel cover placement, grading, and asphalt-capping activities were completed in the southern portion of Area 1 – East and Area 2 on September 16, 2016. Asphalt capping activities were overseen by EPA and START. See Figure 8 in Appendix A for excavation area depths and engineered barrier thickness.

The Benito Juarez High School property is associated with the Pilsen Soils OU3 site. The northern portion of the Benito Juarez High School property overlaps with the south side of Area 1–East and Area 2 associated with the Pilsen Area Soils OU1 site. Additional gravel cover placement, grading, and asphalt capping was conducted by the City of Chicago to address the overlapping portion of the Pilsen Soils OU3 site. START conducted investigative sampling under the Pilsen Soils OU3 site prior to the capping work by the City of Chicago. Sample results are provided in the final Site Assessment Report for the Pilsen Soils OU3 site submitted to the EPA on August 3, 2016 (Tetra Tech 2016).

From November 16 to December 30, 2015, EPA and START oversaw the removal action at the PASS OU1 site in Chicago, Cook County, Illinois. For the duration of the project, START and GHD conducted daily perimeter air monitoring for particulates to ensure that particulates were not migrating off site and that particulate levels did not exceed the protection criteria of the PPE worn by the workers at the site. During the removal activities, particulate concentrations at the site perimeter were below the action levels set for each area based on observed concentrations in the soil.

From November 16 to 19, 2015, Compliance One removed and staged railroad rails and ties in the PASS OU1 site. On November 18 and 19, 2015, Compliance One hauled the staged railroad rail and tie pile off-site via haul truck. The rails and ties were put onto trucks and brought to a BNSF property for proper disposal.

From November 23 to December 30, 2015, RW Collins excavated and removed 708 tons (37 truckloads) of lead-impacted soil from the PASS OU1 (Areas 1- 10). RW Collins also grubbed vegetation and removed trash. The City of Chicago DSS transported three loads (34.8 tons) of solid waste (trash) and vegetation collected from Areas 1 and 2 off-site to the Shred-All solid waste transfer station (43rd and Racine) in Chicago, Illinois.

Soil above the TCLP standard of 5 mg/L was treated on site using Free Flow 200 and 300 to lower the concentration of TCLP lead below the CFR regulatory limit of 5 mg/L prior to transporting the soil off-site for disposal as non-hazardous waste.

From December 4 to December 30, 2015, RW Collins backfilled excavated areas in PASS OU1. The gravel used for grading and backfilling was purchased by BNSF and RW Collins, and was supplied by Pershing Recycle. Pershing Recycle gravel came from Vulcan Materials Company, which produced the gravel from natural deposits such as granite, limestone, and trap rock. Because the gravel backfill originated from natural sources, the EPA OSC requested only XRF lead screening to verify lead concentrations. On December 7, 2015, START collected two composite samples from two separate on-site gravel piles, from Pershing Recycle, for XRF screening prior to placement in Area 1. The gravel samples were placed in resealable plastic bags, homogenized, and then screened three times with the XRF. The average XRF reading for lead was 64 +/- 3 mg/kg for the composite from the first gravel pile and the average XRF reading for lead was 70 +/- 2 mg/kg for the composite from the second gravel pile. The XRF was calibrated prior to use. The gravel used for grading and backfilling purchased by CDOT was supplied by Reliable Asphalt. Reliable Asphalt provided clean fill gravel that has been tested to meet IEPA standards. XRF screening and sampling was not conducted due to Reliable Asphalt fill material meeting IEPA standards. BNSF provided the gravel used as backfill in Area 1. RW Collins provided the gravel used as backfill in Areas 2, 5, 10, a portion of Area 6, and a portion of Area 8. CDOT provided the gravel used as backfill in Area 4, most of Area 6, Area 7, most of Area 8, and Area 9.

RW Collins laid geotextile fabric in the bottom of all excavation areas, except for Area 5. RW Collins backfilled excavated areas with gravel and graded the gravel prior to asphalt cap placement in all areas except Area 1–West. The western approximately 50 feet of Area 1-West was excavated to 3 inches bgs for a 3-inch gravel cover, the eastern 54 feet of Area 1–West was excavated to 2 feet bgs for a 2-foot gravel cover, and the remainder of Area 1–West was excavated to 6 inches bgs, providing a 6-inch gravel cover.

Area 1–East and Area 2 were graded after trash was removed by the City of Chicago DSS and a 3-inch gravel layer was placed. Area 1–East and Area 2 were then asphalt capped in June 2016 by RW Collins.

Additional gravel placement and grading was completed on the south side of Area 1–East and Area 2 on September 16, 2016.

Area 4 was excavated to 6 inches bgs and a 6-inch gravel layer was placed and graded. Area 4 was asphalt capped in June 2016 by RW Collins.

Minimal excavation work took place in the Area 5 TCLP lead soil zone as an already-intact engineered barrier of brick pavers was uncovered by RW Collins during the removal work. The Area 5 TCLP lead soil zone was excavated to approximately 6 inches bgs. The remainder of Area 5 soil was graded and minimal gravel was brought in and graded for asphalt capping. Area 5 asphalt capping was completed by CDOT in August 2016.

Areas 6 and 7 were excavated and graded for a 6-inch layer of gravel, which was graded for asphalt capping. Area 6 asphalt capping was completed by RW Collins in June 2016. Area 7 asphalt capping was completed by CDOT in June 2016.

The eastern 80 feet of the Area 8 TCLP lead soil zone was excavated to 12 inches bgs. The western 20 feet of the Area 8 TCLP lead soil zone was excavated to 18 inches bgs. The remainder of Area 8 was graded for a 6-inch gravel cover. Gravel was placed in the areas where sample results exceeded EPA RMLs for TCLP lead; the gravel matched the grade of the 6-inch gravel layer throughout the remainder of Area 8. Area 8 asphalt capping was completed by CDOT in June 2016.

Minor excavation work occurred in Area 9 to allow for placement and grading of a 6-inch bgs gravel cover. Area 9 asphalt capping was completed in June 2016.

No excavation work occurred in Area 10. The soil was graded to allow for placement and grading of a 6 in bgs gravel cover. Area 10 was asphalt capped by RW Collins in June 2016.

There is no longer a direct contact threat posed by any lead-impacted soil at the site, after completion of site restoration with gravel and using asphalt caps as engineered barriers. See Figure 8 in Appendix A for excavation area depths. See Figure 9 in Appendix A for engineered barrier thickness.

## REFERENCES


EPA 2015. Administrative Settlement Agreement and Order on Consent for Removal Action in the Matter of Pilsen Soil Operable Unit 1 Railroad Spur and Alley Site, Chicago, Illinois. October.

GHD 2015a. Removal Plan for Alley (Revision 3) – Railroad: Pilsen Soil Operable Unit 1 Railroad Spur and Alley Site, Chicago, Illinois. September.

GHD 2015b. Site Specific Health and Safety Plan: Pilsen Soil Operable Unit 1 Railroad Spur and Alley Site, Chicago, Illinois. November.

GHD 2016. Draft Removal Action Completion Report: Alley and Railroad OU1 Pilsen Soil Site, Chicago, Illinois. December.

Pilsen Environmental Rights & Reform Organization (PERRO) 2016. About Our Campaign. http://pilsenperro.org/about/. December.

Tetra Tech2015a. Draft Sampling and Analysis Plan (SAP). Pilsen Area Soil Site OU1. April.

Tetra Tech 2015b. Quality Assurance Project Plan (QAPP), Superfund Technical Assessment and Response Team (START IV), EPA Region 5, Contract No. EP-S5-EP-01. July.

Tetra Tech 2015c. Draft Air Monitoring Plan. Pilsen Area Soil Site OU1. September.

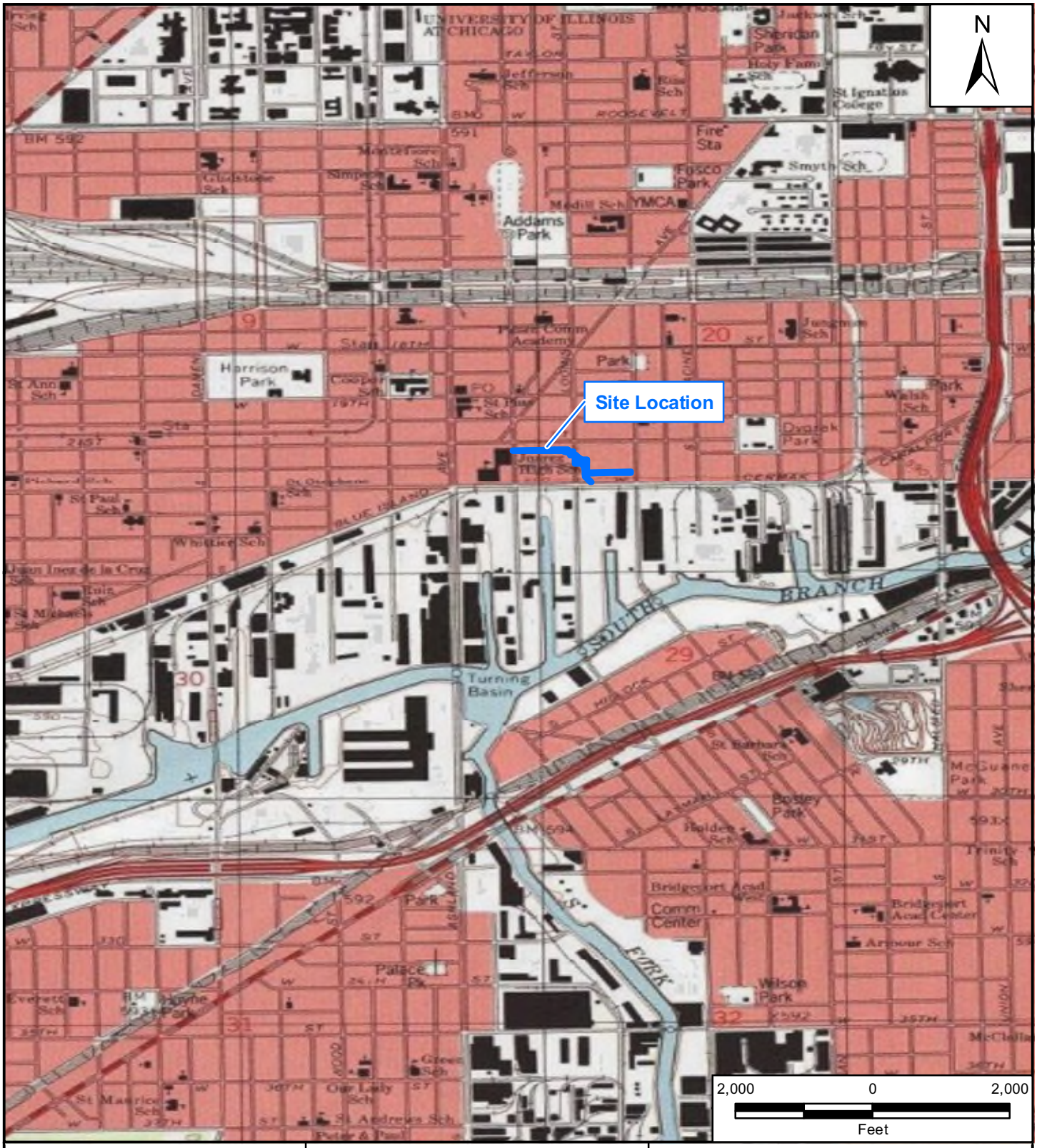
Tetra Tech 2015d. Final Removal SAP. Pilsen Area Soil Site OU1. November.

Tetra Tech 2016. Final Site Assessment Report. Pilsen Soils OU3. August.

Weston Solutions, Inc 2014. Site Assessment Report for Pilsen Area Soil Site: Railroad/Alley, Chicago, Cook County, Illinois. April.

# APPENDIX A

# FIGURES




**Reference Map**


Source: USGS 7.5-Minute Topographic Quadrangle Map: Chicago, IL 1993

Pilsen Area Soils Site OU1
21st Street and South Loomis Street
Chicago, Cook County, Illinois

**Figure 1**
***Site Location Map***

TETRA TECH

Prepared For: EPA

Prepared By: Tetra Tech Inc.

File Path: G:\G\G9026-START IV\Illinois\Pilsen Area Soils Site\mxd\2016-12\Fig1-SiteLocation.mxd

Date Saved: 12/27/2016

EPA Contract No.: EP-S5-13-01

TDD No.: S05-0001-1504-007

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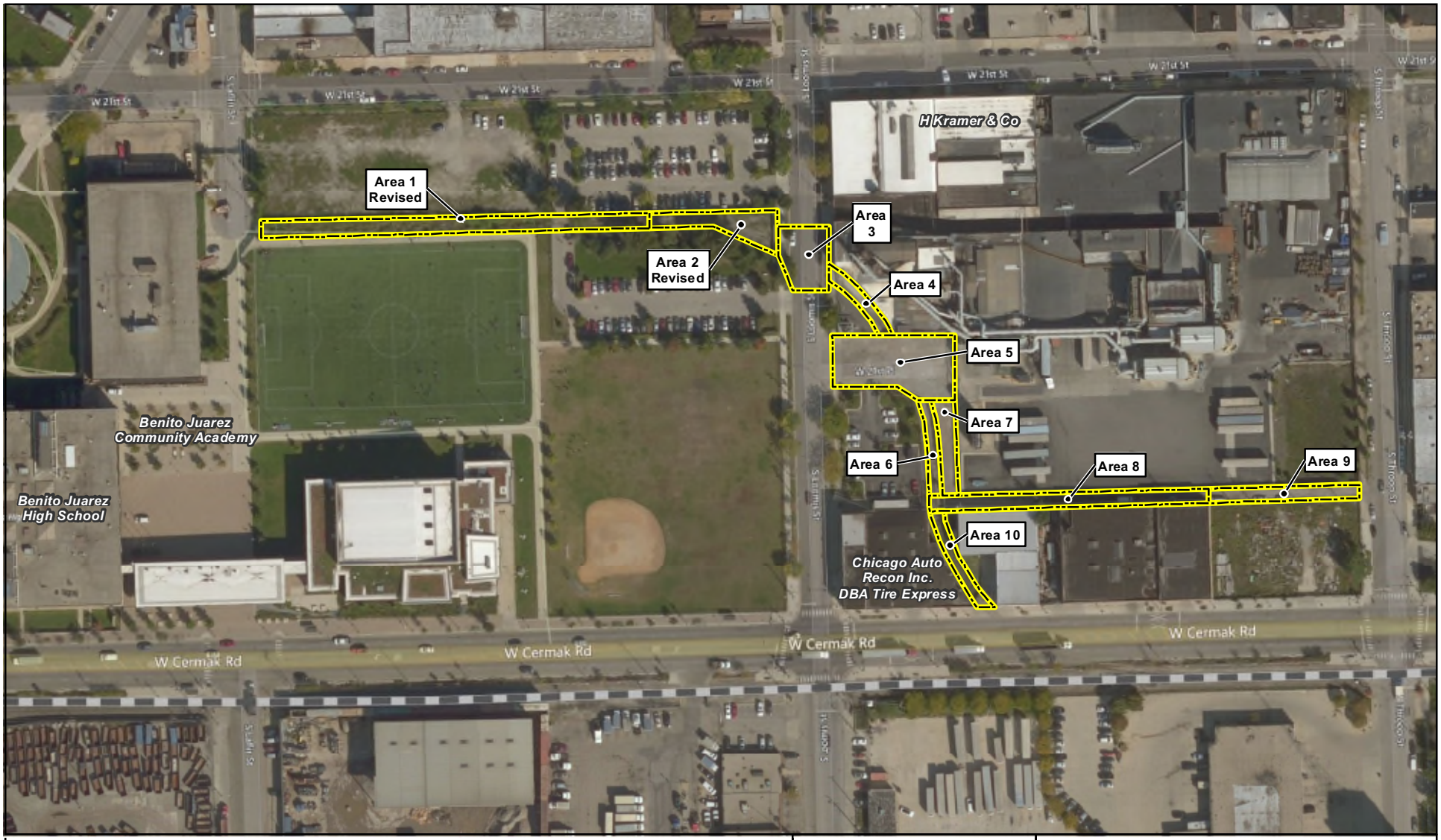


**Legend**

Site Boundary

Source: Bing Maps Hybrid, 2013

N

100 0 100

Feet

Pilsen Area Soils Site OU1
21st Street and South Loomis Street
Chicago, Cook County, Illinois

**Figure 2**
***Site Layout***

TETRA TECH

Prepared For: EPA

Prepared By: Tetra Tech Inc.

File Path: G:\G\G9026-START IV\Illinois\Pilsen Area Soils Site\mxd\2016-12\Fig2-SiteLayout.mxd

Date Saved: 12/28/2016

EPA Contract No.: EP-S5-13-01

TDD No.: S05-0001-1504-007

Coordinate System: GCS WGS 1984
Datum: WGS 1984
Units: Degree


**Legend**

- Sampling Location
- Site Boundary

Source: Bing Maps Hybrid, 2013

N

50 0 50

Feet

Pilsen Area Soils Site OU1
21st Street and South Loomis Street
Chicago, Cook County, Illinois

**Figure 3**
***Removal Assessment Sample Locations***

TETRA TECH

Prepared For: EPA

Prepared By: Tetra Tech Inc.

File Path: G:\G\G9026-START IV\Illinois\Pilsen Area Soils Site\mxd\2016-12\Fig3-RemovalAssessmentSamples.mxd

Date Saved: 12/28/2016

EPA Contract No.: EP-S5-13-01

TDD No.: S05-0001-1504-007

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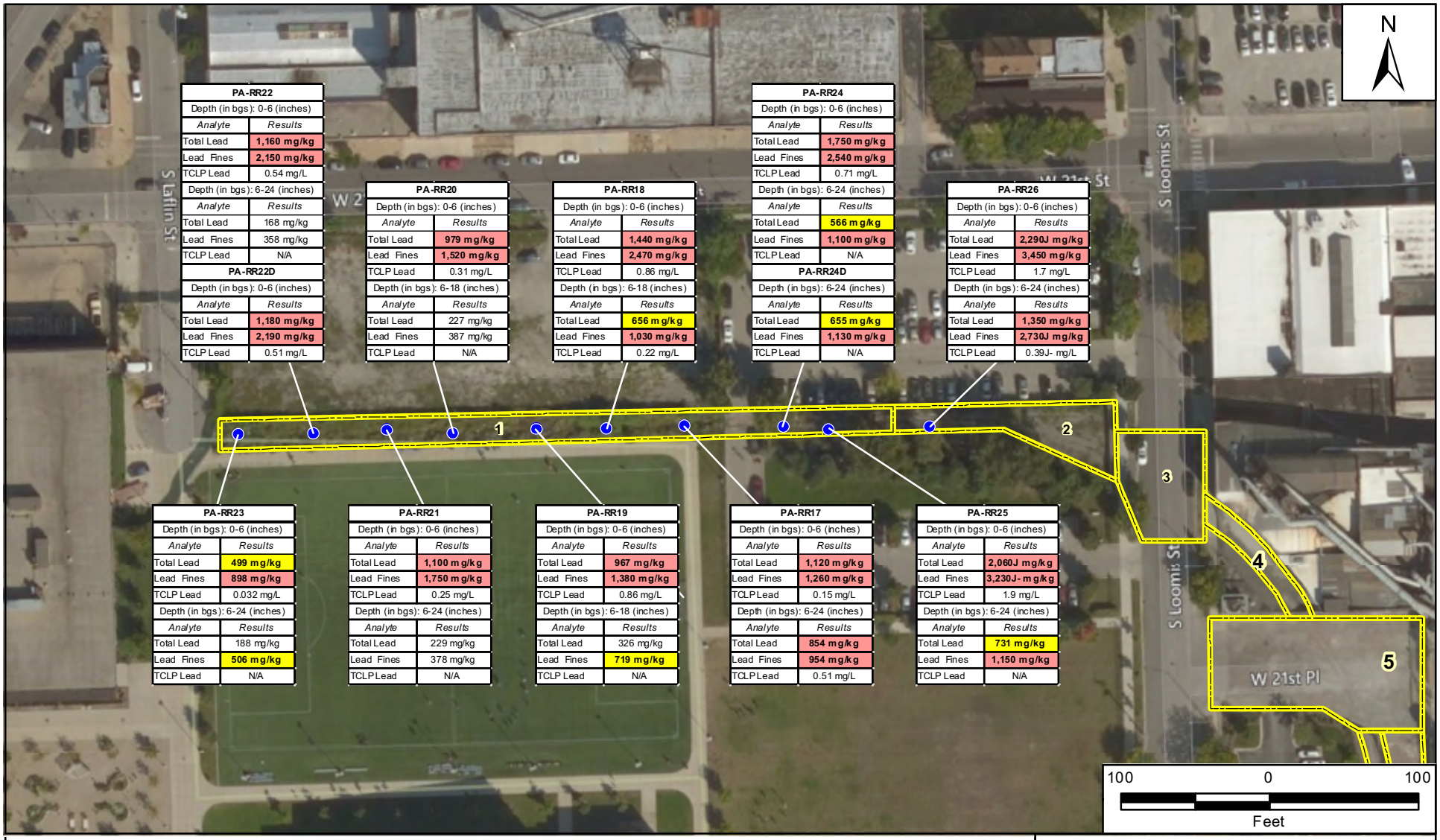


| PA-RR22 | |
|---|---|
| Depth (in bgs): 0-6 (inches) | |
| *Analyte* | *Results* |
| Total Lead | **1,160 mg/kg** |
| Lead Fines | **2,150 mg/kg** |
| TCLP Lead | 0.54 mg/L |
| Depth (in bgs): 6-24 (inches) | |
| *Analyte* | *Results* |
| Total Lead | 168 mg/kg |
| Lead Fines | 358 mg/kg |
| TCLP Lead | N/A |

| PA-RR22D | |
|---|---|
| Depth (in bgs): 0-6 (inches) | |
| *Analyte* | *Results* |
| Total Lead | **1,180 mg/kg** |
| Lead Fines | **2,190 mg/kg** |
| TCLP Lead | 0.51 mg/L |

| PA-RR20 | |
|---|---|
| Depth (in bgs): 0-6 (inches) | |
| *Analyte* | *Results* |
| Total Lead | **979 mg/kg** |
| Lead Fines | **1,520 mg/kg** |
| TCLP Lead | 0.31 mg/L |
| Depth (in bgs): 6-18 (inches) | |
| *Analyte* | *Results* |
| Total Lead | 227 mg/kg |
| Lead Fines | 387 mg/kg |
| TCLP Lead | N/A |

| PA-RR18 | |
|---|---|
| Depth (in bgs): 0-6 (inches) | |
| *Analyte* | *Results* |
| Total Lead | **1,440 mg/kg** |
| Lead Fines | **2,470 mg/kg** |
| TCLP Lead | 0.86 mg/L |
| Depth (in bgs): 6-18 (inches) | |
| *Analyte* | *Results* |
| Total Lead | **656 mg/kg** |
| Lead Fines | **1,030 mg/kg** |
| TCLP Lead | 0.22 mg/L |

| PA-RR24 | |
|---|---|
| Depth (in bgs): 0-6 (inches) | |
| *Analyte* | *Results* |
| Total Lead | **1,750 mg/kg** |
| Lead Fines | **2,540 mg/kg** |
| TCLP Lead | 0.71 mg/L |
| Depth (in bgs): 6-24 (inches) | |
| *Analyte* | *Results* |
| Total Lead | **566 mg/kg** |
| Lead Fines | **1,100 mg/kg** |
| TCLP Lead | N/A |

| PA-RR24D | |
|---|---|
| Depth (in bgs): 6-24 (inches) | |
| *Analyte* | *Results* |
| Total Lead | **655 mg/kg** |
| Lead Fines | **1,130 mg/kg** |
| TCLP Lead | N/A |

| PA-RR26 | |
|---|---|
| Depth (in bgs): 0-6 (inches) | |
| *Analyte* | *Results* |
| Total Lead | **2,290J mg/kg** |
| Lead Fines | **3,450 mg/kg** |
| TCLP Lead | 1.7 mg/L |
| Depth (in bgs): 6-24 (inches) | |
| *Analyte* | *Results* |
| Total Lead | **1,350 mg/kg** |
| Lead Fines | **2,730J mg/kg** |
| TCLP Lead | 0.39J- mg/L |

| PA-RR23 | |
|---|---|
| Depth (in bgs): 0-6 (inches) | |
| *Analyte* | *Results* |
| Total Lead | **499 mg/kg** |
| Lead Fines | **898 mg/kg** |
| TCLP Lead | 0.032 mg/L |
| Depth (in bgs): 6-24 (inches) | |
| *Analyte* | *Results* |
| Total Lead | 188 mg/kg |
| Lead Fines | **506 mg/kg** |
| TCLP Lead | N/A |

| PA-RR21 | |
|---|---|
| Depth (in bgs): 0-6 (inches) | |
| *Analyte* | *Results* |
| Total Lead | **1,100 mg/kg** |
| Lead Fines | **1,750 mg/kg** |
| TCLP Lead | 0.25 mg/L |
| Depth (in bgs): 6-24 (inches) | |
| *Analyte* | *Results* |
| Total Lead | 229 mg/kg |
| Lead Fines | 378 mg/kg |
| TCLP Lead | N/A |

| PA-RR19 | |
|---|---|
| Depth (in bgs): 0-6 (inches) | |
| *Analyte* | *Results* |
| Total Lead | **967 mg/kg** |
| Lead Fines | **1,380 mg/kg** |
| TCLP Lead | 0.86 mg/L |
| Depth (in bgs): 6-18 (inches) | |
| *Analyte* | *Results* |
| Total Lead | 326 mg/kg |
| Lead Fines | **719 mg/kg** |
| TCLP Lead | N/A |

| PA-RR17 | |
|---|---|
| Depth (in bgs): 0-6 (inches) | |
| *Analyte* | *Results* |
| Total Lead | **1,120 mg/kg** |
| Lead Fines | **1,260 mg/kg** |
| TCLP Lead | 0.15 mg/L |
| Depth (in bgs): 6-24 (inches) | |
| *Analyte* | *Results* |
| Total Lead | **854 mg/kg** |
| Lead Fines | **954 mg/kg** |
| TCLP Lead | 0.51 mg/L |

| PA-RR25 | |
|---|---|
| Depth (in bgs): 0-6 (inches) | |
| *Analyte* | *Results* |
| Total Lead | **2,060J mg/kg** |
| Lead Fines | **3,230J- mg/kg** |
| TCLP Lead | 1.9 mg/L |
| Depth (in bgs): 6-24 (inches) | |
| *Analyte* | *Results* |
| Total Lead | **731 mg/kg** |
| Lead Fines | **1,150 mg/kg** |
| TCLP Lead | N/A |

**Legend**

- Sampling Location
- Site Boundary

mg/kg = milligrams per kilogram
mg/L = milligrams per liter
J = The analyte was positively identified. The associated value is an approximate concentration
J- = Analyte detected, associated value is an approximate concentration of the analyte in the sample and may be biased low
TCLP = Toxicity Characteristic Leaching Procedure
bgs = below ground surface
NA = Not analyzed
506 = Concentration exceeds EPA residential soil RML (May 2016)
854 = Concentration exceeds EPA residential and industrial soil RML (May 2016)

| Analyte | EPA Residential Soil RML (May 2016) | EPA Residential and Industrial Soil RML (May 2016) |
|---|---|---|
| Total Lead | 400 mg/kg | 800 mg/kg |
| Lead Fines | 400 mg/kg | 800 mg/kg |
| TCLP Lead | -- | -- |

Pilsen Area Soils Site OU1
21st Street and South Loomis Street
Chicago, Cook County, Illinois

**Figure 4**
***Removal Assessment Soil Sample Results***

TETRA TECH

Prepared For: EPA | Prepared By: Tetra Tech Inc.

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Coordinate System: GCS WGS 1984
Datum: WGS 1984
Units: Degree


**Legend**

- Removal Confirmation Sample Location
- XRF Screening Location
- Site Boundary
- **P1** = Point 1

Source: Bing Maps Hybrid, 2013

N

50 0 50

Feet

Pilsen Area Soils Site OU1
21st Street and South Loomis Street
Chicago, Cook County, Illinois

**Figure 5**
***Removal Confirmation Sample and XRF Screening Locations***

TETRA TECH

Prepared For: EPA

Prepared By: Tetra Tech Inc.

File Path: G:\G\G9026-START IV\Illinois\Pilsen Area Soils Site\mxd\2016-12\Fig5-XRF_RemovalSampleLocations.mxd

Date Saved: 12/28/2016

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TDD No.: S05-0001-1504-007

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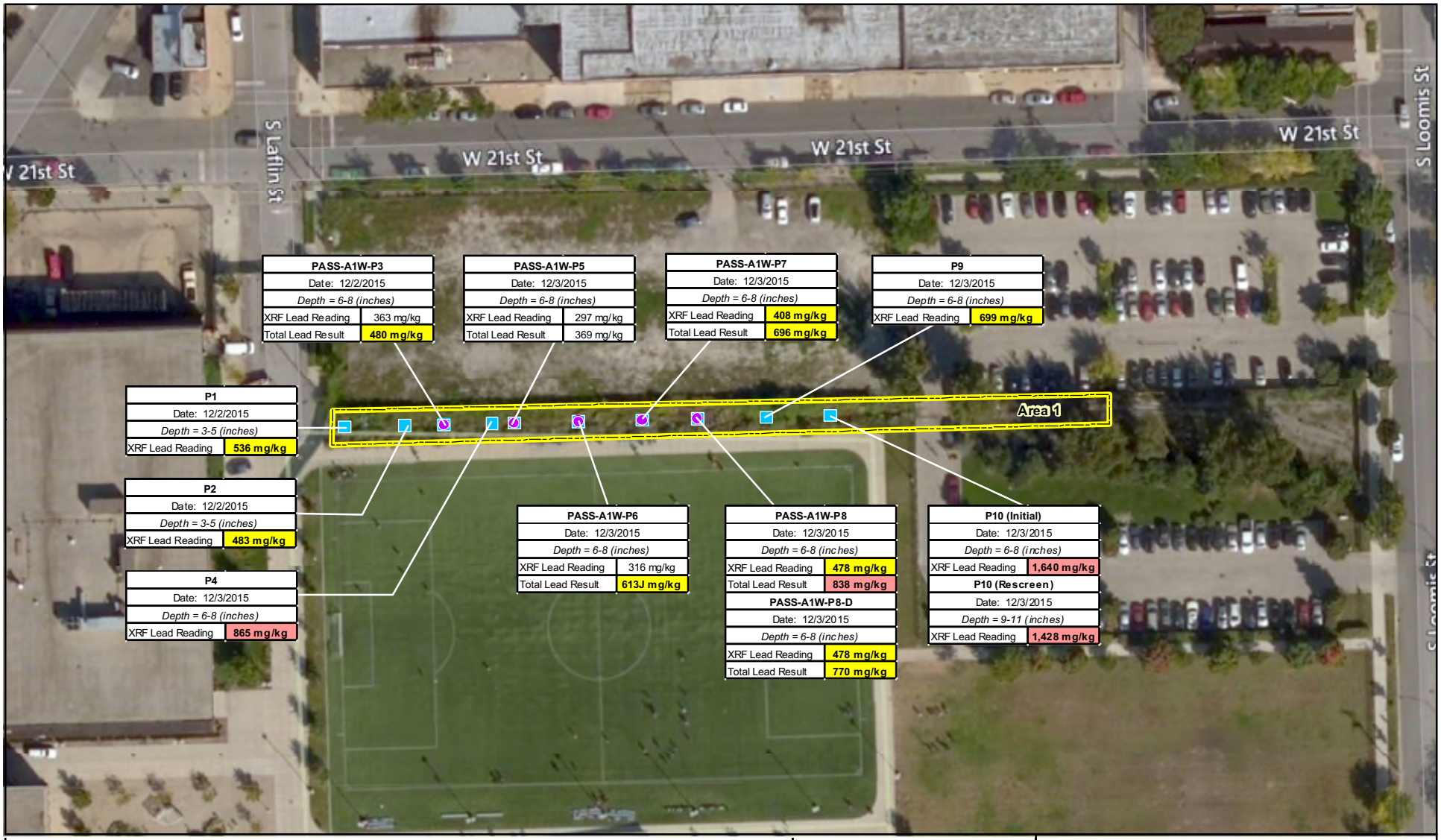


**Legend**

- Removal Confirmation Sample Location
- XRF Screening Location
- Site Boundary

XRF = X-ray flourescence analyzer
mg/kg = milligrams per kilogram
J = The analyte was positively identified. The associated value is an approximate concentration

478 = Concentration exceeds EPA residential soil RML (May 2016)

838 = Concentration exceeds EPA residential and industrial soil RML (May 2016)

| Analyte | EPA Residential Soil RML (May 2016) | EPA Residential and Industrial Soil RML (May 2016) |
|---|---|---|
| Total Lead | 400 mg/kg | 800 mg/kg |

Source: Bing Maps Hybrid, 2013

N

50 0 50

Feet

Pilsen Area Soils Site OU1
21st Street and South Loomis Street
Chicago, Cook County, Illinois

**Figure 6**
***Removal Confirmation Sample and XRF Screening Results***

TETRA TECH

Prepared For: EPA | Prepared By: Tetra Tech Inc.

File Path: G:\G\G9026-START IV\Illinois\Pilsen Area Soils Site\mxd\2016-12\Fig6-XRF_RemovalSampleResults.mxd

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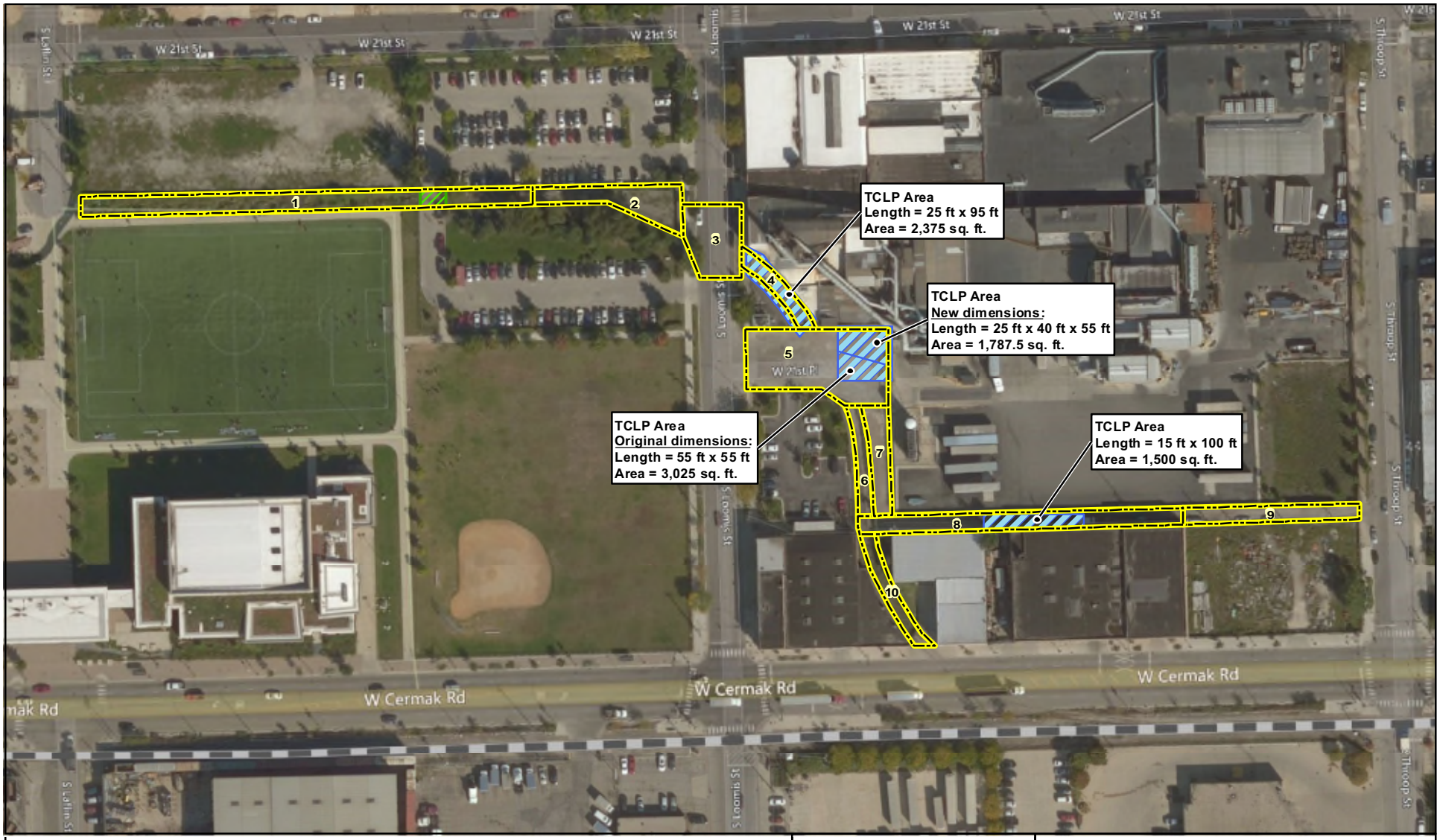
Datum: WGS 1984
Units: Degree




**Legend**

- Site Boundary
- Paved Driveway is not included in the OUI Remediation Area
- TCLP Area

Source: Bing Maps Hybrid, 2013

N

100 0 100

Feet

Pilsen Area Soils Site OU1
21st Street and South Loomis Street
Chicago, Cook County, Illinois

**Figure 7**
***TCLP Removal Areas***

TETRA TECH

Prepared For: EPA

Prepared By: Tetra Tech Inc.

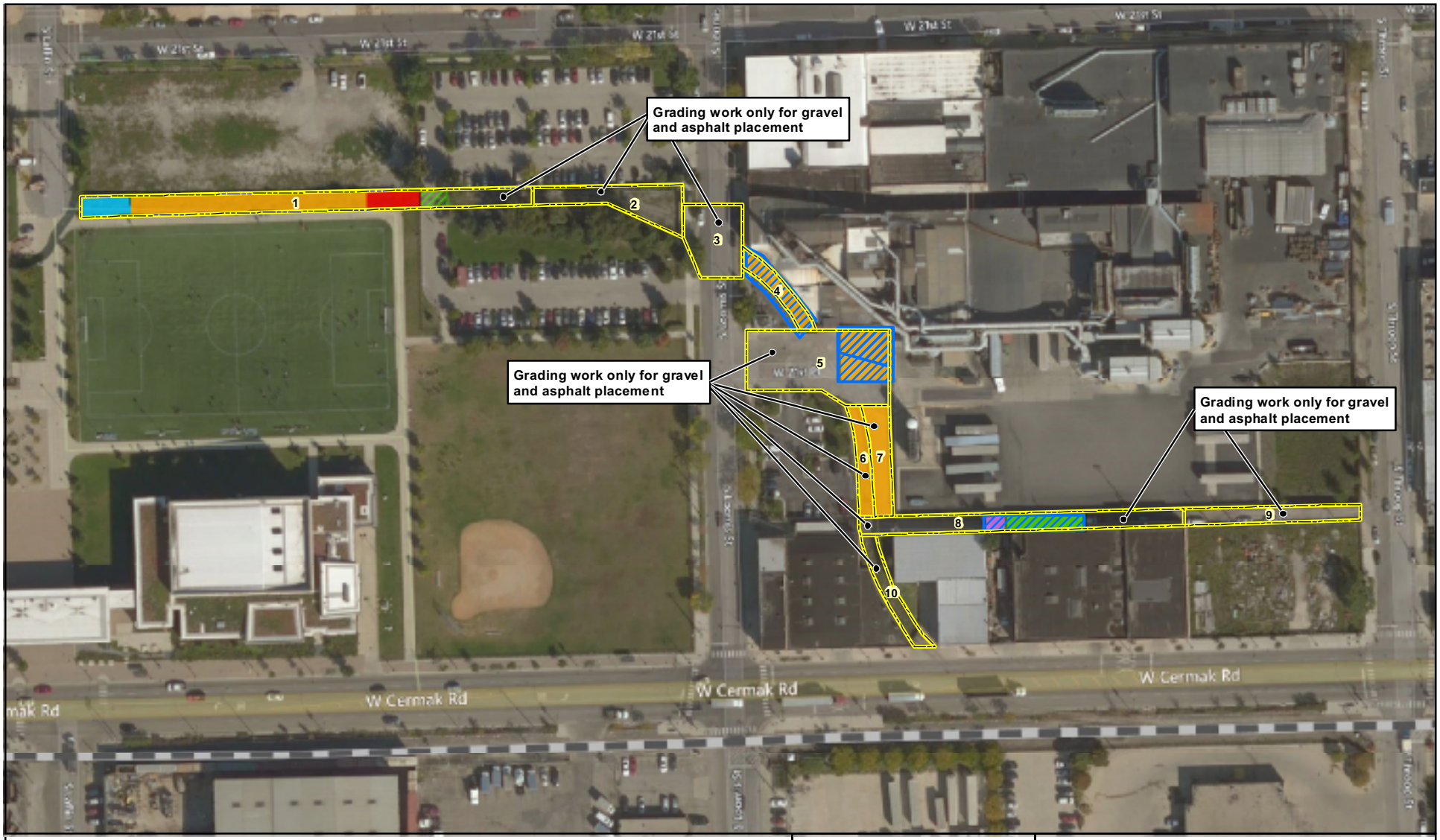
File Path: G:\G\G9026-START IV\Illinois\Pilsen Area Soils Site\mxd\2016-12\Fig7-TCLP_RemovalAreas.mxd

Date Saved: 12/28/2016

EPA Contract No.: EP-S5-13-01

TDD No.: S05-0001-1504-007

Coordinate System: GCS WGS 1984
Datum: WGS 1984
Units: Degree




**Legend**

bgs = below ground surface

- 3" bgs excavation
- 6" bgs excavation
- 12" bgs excavation
- 18" bgs excavation
- 24" bgs excavation
- Paved Driveway is not included in the OUI RA
- TCLP Area
- Site Boundary

Source: Bing Maps Hybrid, 2013

N

100 0 100

Feet

Pilsen Area Soils Site OU1
21st Street and South Loomis Street
Chicago, Cook County, Illinois

**Figure 8**
***Excavation Depths***

TETRA TECH

Prepared For: EPA

Prepared By: Tetra Tech Inc.

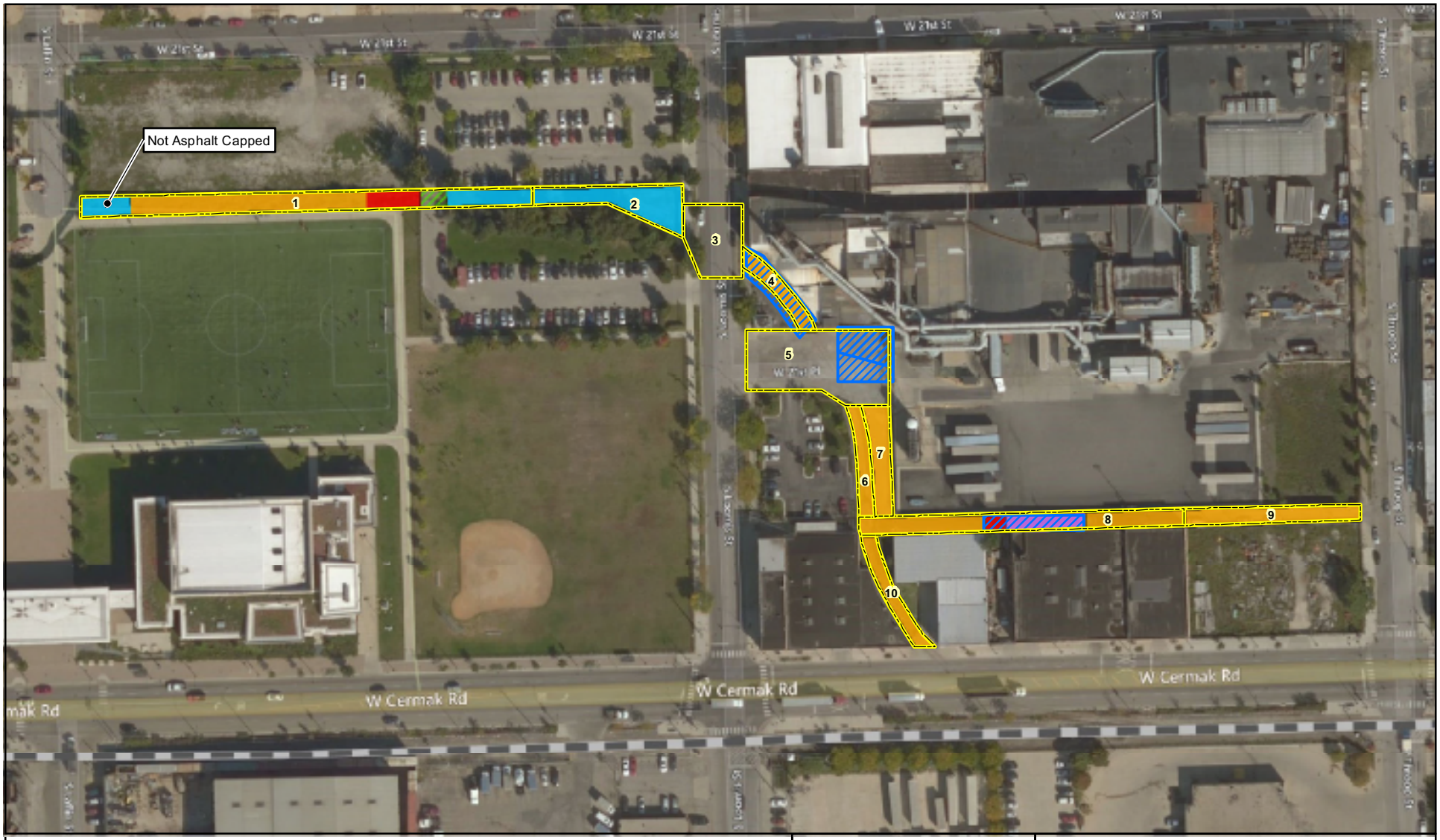
File Path: G:\G\G9026-START IV\Illinois\Pilsen Area Soils Site\mxd\2016-12\Fig8-ExcavationDepths.mxd

Date Saved: 1/3/2017

EPA Contract No.: EP-S5-13-01

TDD No.: S05-0001-1504-007

Coordinate System: GCS WGS 1984
Datum: WGS 1984
Units: Degree




**Legend**

- 3" Gravel cover
- 6" Gravell cover
- 12" Gravel cover
- 18" Gravel cover
- 24" Gravel cover
- Paved Driveway is not included in the OUI RA
- TCLP Area
- Site Boundary

All areas were asphalt capped except for the west portion of Area 1

Source: Bing Maps Hybrid, 2013

N

100 0 100

Feet

Pilsen Area Soils Site OU1
21st Street and South Loomis Street
Chicago, Cook County, Illinois

**Figure 9**
***Gravel Cover Depths***

TETRA TECH

Prepared For: EPA

Prepared By: Tetra Tech Inc.

File Path: G:\G\G9026-START IV\Illinois\Pilsen Area Soils Site\mxd\2016-12\Fig9-CoverDepths.mxd

Date Saved: 1/3/2017

EPA Contract No.: EP-S5-13-01

TDD No.: S05-0001-1504-007

Coordinate System: GCS WGS 1984
Datum: WGS 1984
Units: Degree

# APPENDIX B

# TABLES

**Table 1**
**Site Areas**
**Pilsen Area Soils Site OU1**

| Area | Approximate Size (feet) | Location Description |
|---|---|---|
| Area 1 – West | 18 x 340 | Between South Laflin Street and the west side of the Benito Juarez High School teachers' parking lot. A vacant commercial property is to the north and the Benito Juarez High School soccer field is to the south. |
| Area 1 – East | 18 x 95 | Between the west side of the Benito Juarez High School teachers' parking lot and the west side of Area 2. The Benito Juarez High School teachers' parking lot is located to the north and south. |
| Area 2 | Irregular shape, 18 to 45 x 120 | East of Area 1 and west of South Loomis Street. The Benito Juarez High School teachers' parking lot is located to the north and south. |
| Area 3 | Irregular shape, 75 x 95 | The portion of the site where the railroad tracks formerly crossed South Loomis Street. The rails and ties from the railroad were removed from this area of the site and street pavement or concrete sidewalks now cover this area. |
| Area 4 | 25 x 95 | Between South Loomis Street and 21st Place. |
| Area 5 | 135 x 75 | East of South Loomis Street and the main truck entrance to the H. Kramer facility. |
| Area 6 | 15 x 110 | South of Area 5, north of Area 8, east of the H. Kramer parking lot, and west of Area 7. |
| Area 7 | 25 x 110 | South of Area 5, north of Area 8, east of Area 6, and west of the H. Kramer property. |
| Area 8 | 18 x 325 | South of the H. Kramer property, north of commercial properties, east of the southeast corner of the H. Kramer parking lot, and west of Area 9. |
| Area 9 | 18 x 175 | South of the H. Kramer property, north of commercial properties, east of Area 8, and west of South Throop Street. |
| Area 10 | 15 x 120 | South of Area 8, between commercial properties to the east and west, and north of Cermak Road. |

**Table 2**
**Removal Assessment Sample Collection Summary**
**Pilsen Area Soils Site OU1**

| Sample Location | Samples Collected | Sample Depths | Sample Analysis | Analysis Method |
|---|---|---|---|---|
| PA-RR17 | PP-RR17-0006 and PA-RR17-0624 | 0-6 inches and 6-24 inches | Cadmium, Copper, Lead, Lead (Fines), Lead (TCLP), Tin, and Zinc | SW-846 6010C (ICP-AES) |
| PA-RR18 | PP-RR18-0006 and PA-RR18-0618 | 0-6 inches and 6-18 inches | Cadmium, Copper, Lead, Lead (Fines), Lead (TCLP), Tin, and Zinc | SW-846 6010C (ICP-AES) |
| PA-RR19 | PP-RR19-0006 and PA-RR19-0618 | 0-6 inches and 6-18 inches | Cadmium, Copper, Lead, Lead (Fines), Lead (TCLP), Tin, and Zinc | SW-846 6010C (ICP-AES) |
| PA-RR20 | PP-RR20-0006 and PA-RR20-0618 | 0-6 inches and 6-18 inches | Cadmium, Copper, Lead, Lead (Fines), Lead (TCLP), Tin, and Zinc | SW-846 6010C (ICP-AES) |
| PA-RR21 | PP-RR21-0006 and PA-RR21-0624 | 0-6 inches and 6-24 inches | Cadmium, Copper, Lead, Lead (Fines), Lead (TCLP), Tin, and Zinc | SW-846 6010C (ICP-AES) |
| PA-RR22 | PP-RR22-0006, PP-RR22-0006D, and PA-RR22-0624 | 0-6 inches and 6-24 inches | Cadmium, Copper, Lead, Lead (Fines), Lead (TCLP), Tin, and Zinc | SW-846 6010C (ICP-AES) |
| PA-RR23 | PP-RR23-0006 and PP-RR23-0624 | 0-6 inches and 6-24 inches | Cadmium, Copper, Lead, Lead (Fines), Lead (TCLP), Tin, and Zinc | SW-846 6010C (ICP-AES) |
| PA-RR24 | PP-RR24-0006, PP-RR24-0006D, and PA-RR24-0624 | 0-6 inches and 6-24 inches | Cadmium, Copper, Lead, Lead (Fines), Lead (TCLP), Tin, and Zinc | SW-846 6010C (ICP-AES) |
| PA-RR25 | PP-RR25-0006 and PP-RR25-0624 | 0-6 inches and 6-24 inches | Cadmium, Copper, Lead, Lead (Fines), Lead (TCLP), Tin, and Zinc | SW-846 6010C (ICP-AES) |
| PA-RR26 | PP-RR26-0006 and PP-RR26-0624 | 0-6 inches and 6-24 inches | Cadmium, Copper, Lead, Lead (Fines), Lead (TCLP), Tin, and Zinc | SW-846 6010C (ICP-AES) |

**Notes:**
ICP-AES = Inductively Coupled Plasma - Atomic Emission Spectroscopy
PA = Pilsen Area
RR = Railroad
TCLP = Toxicity Characteristic Leaching Procedure

**Table 3**
**Western and Eastern Area 1 - Removal Assessment Soil Samples**
**XRF Screening Lead Results and Metal Lab 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), May 2016 (mg/kg)[1,2] | | Maximum Concentration of Contaminants for the Toxicity Characteristic, September 2016 (mg/L)[3] | PA-RR17-0006 | | | PA-RR17-0624 | | | PA-RR18-0006 | | | PA-RR18-0618 | | | PA-RR19-0006 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (in bgs): | | | | | | 0-6 | | | 6-24 | | | 0-6 | | | 6-18 | | | 0-6 | | |
| Matrix : | | | | | | soil | | | soil | | | soil | | | soil | | | soil | | |
| Laboratory: | | | | | | CT Laboratories | | | CT Laboratories | | | CT Laboratories | | | CT Laboratories | | | CT Laboratories | | |
| Sample Date: | | | | | | 4/27/2015 | | | 4/27/2015 | | | 4/27/2015 | | | 4/27/2015 | | | 4/27/2015 | | |
| Sample Time: | | | | | | 16:40 | | | 16:45 | | | 16:50 | | | 16:56 | | | 17:05 | | |
| Duplicate: | | | | | | | | | | | | | | | | | | | | |
| **Compound** | **CAS #** | **Units** | **Residential** | **Industrial** | **Regulatory Level** | **Result** | **Qualifier** | **XRF** | **Result** | **Qualifier** | **XRF** | **Result** | **Qualifier** | **XRF** | **Result** | **Qualifier** | **XRF** | **Result** | **Qualifier** | **XRF** |
| Cadmium | 7440-43-9 | mg/kg | 210 | 2900 | -- | 2.8 | | | 3.4 | | | 3.6 | | | 2.6 | | | 3.0 | | |
| Copper | 7440-50-8 | mg/kg | 9400 | 140000 | -- | 2820 | | | 2260 | | | 5140 | | | 1500 | | | 2400 | | |
| Lead | 7439-92-1 | mg/kg | 400 | 800 | -- | 1120 | | 694 | 854 | | 477 | 1440 | | 1613 | 656 | | 487 | 967 | | 343 |
| Lead, Fines | 7439-92-1 | mg/kg | 400 | 800 | -- | 1260 | | | 954 | | | 2470 | | | 1030 | | | 1380 | | |
| Lead, TCLP | 7439-92-1 | mg/L | – | -- | 5 | 0.15 | | | 0.51 | | | 0.86 | | | 0.22 | | | 0.34 | | |
| Tin | 7440-31-5 | mg/kg | 140000 | 2100000 | -- | 993 | | | 580 | | | 1120 | | | 308 | | | 641 | | |
| Zinc | 7440-66-6 | mg/kg | 70000 | 1100000 | -- | 22500 | | | 19000 | | | 27200 | | | 9630 | | | 14500 | | |

| Sample Number: | | | EPA Regional Cumulative RML Soil Supporting Table (a TR level of 10-4 for carcinogen and a HQ or HI of 3 for non-carcinogen), May 2016 (mg/kg)[1,2] | | Maximum Concentration of Contaminants for the Toxicity Characteristic, September 2016 (mg/L)[3] | PA-RR19-0618 | | | PA-RR20-0006 | | | PA-RR20-0618 | | | PA-RR21-0006 | | | PA-RR21-0624 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (in bgs): | | | | | | 6-18 | | | 0-6 | | | 6-18 | | | 0-6 | | | 6-24 | | |
| Matrix : | | | | | | soil | | | soil | | | soil | | | soil | | | soil | | |
| Laboratory: | | | | | | CT Laboratories | | | CT Laboratories | | | CT Laboratories | | | CT Laboratories | | | CT Laboratories | | |
| Sample Date: | | | | | | 4/27/2015 | | | 4/27/2015 | | | 4/27/2015 | | | 4/27/2015 | | | 4/27/2015 | | |
| Sample Time: | | | | | | 17:10 | | | 17:20 | | | 17:25 | | | 17:30 | | | 17:40 | | |
| Duplicate: | | | | | | | | | | | | | | | | | | | | |
| **Compound** | **CAS #** | **Units** | **Residential** | **Industrial** | **Regulatory Level** | **Result** | **Qualifier** | **XRF** | **Result** | **Qualifier** | **XRF** | **Result** | **Qualifier** | **XRF** | **Result** | **Qualifier** | **XRF** | **Result** | **Qualifier** | **XRF** |
| Cadmium | 7440-43-9 | mg/kg | 210 | 2900 | -- | 4.1 | | | 2.7 | | | 1.5 | | | 4.2 | | | 1.5 | | |
| Copper | 7440-50-8 | mg/kg | 9400 | 140000 | -- | 487 | | | 2400 | | | 464 | | | 2670 | | | 531 | | |
| Lead | 7439-92-1 | mg/kg | 400 | 800 | -- | 326 | | 363 | 979 | | 851 | 227 | | 193 | 1100 | | 993 | 229 | | 172 |
| Lead, Fines | 7439-92-1 | mg/kg | 400 | 800 | -- | 719 | | | 1520 | | | 387 | | | 1750 | | | 378 | | |
| Lead, TCLP | 7439-92-1 | mg/L | – | -- | 5 | NA | | | 0.31 | | | NA | | | 0.25 | | | NA | | |
| Tin | 7440-31-5 | mg/kg | 140000 | 2100000 | -- | 76.7 | | | 699 | | | 131 | | | 583 | | | 104 | | |
| Zinc | 7440-66-6 | mg/kg | 70000 | 1100000 | -- | 2560 | | | 17600 | | | 2810 | | | 16900 | | | 2730 | | |

| Sample Number: | | | EPA Regional Cumulative RML Soil Supporting Table (a TR level of 10-4 for carcinogen and a HQ or HI of 3 for non-carcinogen), May 2016 (mg/kg)[1,2] | | Maximum Concentration of Contaminants for the Toxicity Characteristic, September 2016 (mg/L)[3] | PA-RR22-0006 | | | PA-RR22-0006D | | | PA-RR22-0624 | | | PA-RR23-0006 | | | PA-RR23-0624 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (in bgs): | | | | | | 0-6 | | | 0-6 | | | 6-24 | | | 0-6 | | | 6-24 | | |
| Matrix : | | | | | | soil | | | soil | | | soil | | | soil | | | soil | | |
| Laboratory: | | | | | | CT Laboratories | | | CT Laboratories | | | CT Laboratories | | | CT Laboratories | | | CT Laboratories | | |
| Sample Date: | | | | | | 4/27/2015 | | | 4/27/2015 | | | 4/27/2015 | | | 4/27/2015 | | | 4/27/2015 | | |
| Sample Time: | | | | | | 17:45 | | | 17:45 | | | 17:58 | | | 18:05 | | | 18:12 | | |
| Duplicate: | | | | | | PA-RR22-0006D | | | PA-RR22-0006 | | | | | | | | | | | |
| **Compound** | **CAS #** | **Units** | **Residential** | **Industrial** | **Regulatory Level** | **Result** | **Qualifier** | **XRF** | **Result** | **Qualifier** | **XRF** | **Result** | **Qualifier** | **XRF** | **Result** | **Qualifier** | **XRF** | **Result** | **Qualifier** | **XRF** |
| Cadmium | 7440-43-9 | mg/kg | 210 | 2900 | -- | 4.0 | | | 4.1 | | | 1.3 | | | 2.6 | | | 1.4 | | |
| Copper | 7440-50-8 | mg/kg | 9400 | 140000 | -- | 3420 | | | 3770 | | | 224 | | | 558 | | | 235 | | |
| Lead | 7439-92-1 | mg/kg | 400 | 800 | -- | 1160 | | 1410 | 1180 | | 1410 | 168 | | 150 | 499 | | 342 | 188 | | 246 |
| Lead, Fines | 7439-92-1 | mg/kg | 400 | 800 | -- | 2150 | | | 2190 | | | 358 | | | 898 | | | 506 | | |
| Lead, TCLP | 7439-92-1 | mg/L | – | -- | 5 | 0.54 | | | 0.51 | | | NA | | | 0.032 | | | NA | | |
| Tin | 7440-31-5 | mg/kg | 140000 | 2100000 | -- | 873 | | | 801 | | | 43.4 | | | 49.1 | | | 82.5 | | |
| Zinc | 7440-66-6 | mg/kg | 70000 | 1100000 | -- | 17600 | | | 21500 | | | 1150 | | | 2500 | | | 1440 | | |

**Table 3**
**Western and Eastern Area 1 - Removal Assessment Soil Samples**
**XRF Screening Lead Results and Metal Lab Results**
**Pilsen Area Soils Site OU1**

| Sample Number: | | | EPA Regional Cumulative RML Soil Supporting Table (a TR level of 10-4 for carcinogen and a HQ or HI of 3 for non-carcinogen), May 2016 (mg/kg)[1,2] | | Maximum Concentration of Contaminants for the Toxicity Characteristic, September 2016 (mg/L)[3] | PA-RR24-0006 | | | PA-RR24-0624 | | | PA-RR24-0624D | | | PA-RR25-0006 | | | PA-RR25-0624 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (in bgs): | | | | | | 0-6 | | | 6-24 | | | 6-24 | | | 0-6 | | | 6-24 | | |
| Matrix : | | | | | | soil | | | soil | | | soil | | | soil | | | soil | | |
| Laboratory: | | | | | | CT Laboratories | | | CT Laboratories | | | CT Laboratories | | | CT Laboratories | | | CT Laboratories | | |
| Sample Date: | | | | | | 4/27/2015 | | | 4/27/2015 | | | 4/27/2015 | | | 4/27/2015 | | | 4/27/2015 | | |
| Sample Time: | | | | | | 18:20 | | | 18:35 | | | 18:35 | | | 18:45 | | | 19:00 | | |
| Duplicate: | | | | | | | | | PA-RR24-0624D | | | PA-RR24-0624 | | | | | | | | |
| **Compound** | **CAS #** | **Units** | **Residential** | **Industrial** | **Regulatory Level** | **Result** | **Qualifier** | **XRF** | **Result** | **Qualifier** | **XRF** | **Result** | **Qualifier** | **XRF** | **Result** | **Qualifier** | **XRF** | **Result** | **Qualifier** | **XRF** |
| Cadmium | 7440-43-9 | mg/kg | 210 | 2900 | -- | 8.2 | | | 28.6 | J | | 3.1 | J | | 7.7 | J- | | 5.0 | | |
| Copper | 7440-50-8 | mg/kg | 9400 | 140000 | -- | 798 | | | 818 | | | 1040 | | | 3330 | J | | 820 | | |
| Lead | 7439-92-1 | mg/kg | 400 | 800 | -- | 1750 | | 1324 | 566 | | 543 | 655 | | 543 | 2060 | J | 2204 | 731 | | 509 |
| Lead, Fines | 7439-92-1 | mg/kg | 400 | 800 | -- | 2540 | | | 1100 | | | 1130 | | | 3230 | J- | | 1150 | | |
| Lead, TCLP | 7439-92-1 | mg/L | – | -- | 5 | 0.71 | | | NA | | | NA | | | 1.9 | | | NA | | |
| Tin | 7440-31-5 | mg/kg | 140000 | 2100000 | -- | 1070 | | | 294 | J | | 713 | J | | 590 | | | 212 | | |
| Zinc | 7440-66-6 | mg/kg | 70000 | 1100000 | -- | 7320 | | | 7090 | | | 7900 | | | 15600 | J | | 5880 | | |

| Sample Number: | | | EPA Regional Cumulative RML Soil Supporting Table (a TR level of 10-4 for carcinogen and a HQ or HI of 3 for non-carcinogen), May 2016 (mg/kg)[1,2] | | Maximum Concentration of Contaminants for the Toxicity Characteristic, September 2016 (mg/L)[3] | 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** | **Industrial** | **Regulatory Level** | **Result** | **Qualifier** | **XRF** | **Result** | **Qualifier** | **XRF** |
| Cadmium | 7440-43-9 | mg/kg | 210 | 2900 | -- | 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 | | | 0.39 | J- | |
| Tin | 7440-31-5 | mg/kg | 140000 | 2100000 | -- | 767 | J | | 151 | | |
| Zinc | 7440-66-6 | mg/kg | 70000 | 1100000 | -- | 20500 | J | | 5280 | | |

**Notes:**
-- = Not Applicable
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 flourescence analyzer
**Color indicates highest RML exceeded for appropriate matrix**
400 conc exceeds EPA residential soil RML (May 2016)
800 conc exceeds EPA residential and industrial soil RML (May 2016)
1 - The cumulative RMLs above can be located at https://www.epa.gov/risk/regional-removal-management-levels-chemicals-rmls
2 - Cumulative RMLs are adjusted to a $10^{-4}$ risk level for carcinogens and an HQ of 3 for noncarcinogens
3 - The CFR Title 40 Part 261 Section 24 Toxicity Characteristics above can be located at
https://www.gpo.gov/fdsys/pkg/CFR-2012-title40-vol27/xml/CFR-2012-title40-vol27-part261.xml#seqnum261.24

**Table 4**
**XRF Screening and Confirmation Soil Sample Collection Summary**
**Pilsen Area Soils Site OU1**

| Point | Sample ID | XRF Lead Reading (mg/kg) | Error (+/-) | Screening Counts | Depth (inches) | Date (2015) | Time | Location |
|---|---|---|---|---|---|---|---|---|
| 1 | No Sample Collected | 536 | 6 | 3 | 5-Mar | 2-Dec | 1259 | 7.5' E of W end of Area 1 West |
| 2 | No Sample Collected | 483 | 6 | 3 | 5-Mar | 2-Dec | 1345 | 35' E of P1 |
| 3 | PASS-A1W-P3-120215 | 363 | 5 | 3 | 8-Jun | 2-Dec | 1411 | 22.5' E of P2 |
| 4 | No Sample Collected | 865 | 9 | 3 | 8-Jun | 3-Dec | 855 | 28' E of P3 |
| 5 | PASS-A1W-P5-120215 | 297 | 5 | 3 | 8-Jun | 3-Dec | 935 | 13' E of P4 |
| 6 | PASS-A1W-P6-120215 | 316 | 5 | 3 | 8-Jun | 3-Dec | 1000 | 37.5' E of P5 |
| 7 | PASS-A1W-P7-120215 | 408 | 6 | 3 | 8-Jun | 3-Dec | 1025 | 37' E of P6 |
| 8 | PASS-A1W-P8-120215 | 478 | 6 | 5 | 8-Jun | 3-Dec | 1235 | 32' E of P7 |
| 8 | PASS-A1W-P8-120215-D | 478 | 6 | 5 | 8-Jun | 3-Dec | 1235 | 32' E of P7 |
| 9 | No Sample Collected | 699 | 8 | 2 | 8-Jun | 3-Dec | 1325 | 40' E of P8 |
| 10 (Intitial) | No Sample Collected | 1640 | 14 | 1 | 8-Jun | 3-Dec | 1405 | 37.5' E of P9 |

**Notes:**
A1W = Area 1 West
D = Duplicate
E = East
W = West
P1 = Point 1
PASS = Pilsen Area Soils Site
XRF = X-ray fluorescence

**Table 5**
**Western Area 1 - Excavation Confirmation Soil Samples**
**XRF Screening and Lab 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] of 3 for non-carcinogen), May 2016 (mg/kg)[1,2] | | PASS-A1W-P3-120215 | | | PASS-A1W-P5-120215 | | | PASS-A1W-P6-120215 | | | PASS-A1W-P7-120215 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (in bgs): | | | | 6-8 | | | 6-8 | | | 6-8 | | | 6-8 | | |
| Matrix : | | | | soil | | | soil | | | soil | | | soil | | |
| Units: | | | | mg/kg | | | mg/kg | | | mg/kg | | | mg/kg | | |
| Laboratory: | | | | CT Laboratories | | | CT Laboratories | | | CT Laboratories | | | CT Laboratories | | |
| Sample Date: | | | | 12/2/2015 | | | 12/3/2015 | | | 12/3/2015 | | | 12/3/2015 | | |
| Sample Time: | | | | 14:11 | | | 9:35 | | | 10:00 | | | 10:25 | | |
| Duplicate: | | | | | | | | | | | | | | | |
| **Analyte** | **CAS #** | **Residential** | **Industrial** | **Lab Result** | **TT Qualifier** | **XRF Result** | **Lab Result** | **TT Qualifier** | **XRF Result** | **Lab Result** | **TT Qualifier** | **XRF Result** | **Lab Result** | **TT Qualifier** | **XRF Result** |
| Lead | 7439-92-1 | 400 | 800 | 480 | | 363 | 396 | | 297 | 613 | J | 316 | 696 | | 408 |

| Sample Number : | | EPA Regional Cumulative RML Soil Supporting Table (a TR level of $10^{-4}$ for carcinogen and a HQ of 3 for non-carcinogen), May 2016 (mg/kg)[1,2] | | PASS-A1W-P8-120215 | | | PASS-A1W-P8-120215-D | | |
|---|---|---|---|---|---|---|---|---|---|
| Depth (in bgs): | | | | 6-8 | | | 6-8 | | |
| Matrix : | | | | soil | | | soil | | |
| Units: | | | | mg/kg | | | mg/kg | | |
| Laboratory: | | | | CT Laboratories | | | CT Laboratories | | |
| Sample Date: | | | | 12/3/2015 | | | 12/3/2015 | | |
| Sample Time: | | | | 12:35 | | | 12:35 | | |
| Duplicate: | | | | | | | | | |
| **Analyte** | **CAS #** | **Residential** | **Industrial** | **Lab Result** | **TT Qualifier** | **XRF Result** | **Lab Result** | **TT Qualifier** | **XRF Result** |
| Lead | 7439-92-1 | 400 | 800 | 838 | | 478 | 770 | | 478 |

**Notes:**
A1W = Area 1 West
bgs = below ground surface
CAS # = Chemical Abstracts Service Registry Number
D = duplicate sample
in = inch
J = Analyte detected, associated value is an approximate concentration of the analyte in the sample
mg/kg = milligram per kilogram
P = Point
PASS = Pilsen Area Soil Site
XRF = X-ray flourescence analyzer
**Color indicates highest RML exceeded for appropriate matrix**

| | |
|---|---|
| 400 | conc exceeds EPA residential soil RML (May 2016) |
| 800 | conc exceeds EPA residential and industrial soil RML (May 2016) |

1 - The cumulative RMLs above can be located at https://www.epa.gov/risk/regional-removal-management-levels-chemicals-rmls
2 - Cumulative RMLs are adjusted to a $10^{-4}$ risk level for carcinogens and an HQ of 3 for noncarcinogens

**Table 6**
**TCLP Cadmium and Lead Confirmation Soil Sample Collection Summary**
**Pilsen Area Soils Site OU1**

| Sample ID | Depth Below Surface (inches) | Date | Time | Composite Points | Comment |
|---|---|---|---|---|---|
| S-112415-GW-01-ES | 0-6 | 11/24/2015 | 1202 | 5 | Northernmost soil pile in Area 4 |
| S-112415-GW-02-ES | 0-6 | 11/24/2015 | 1208 | 5 | Southernmost soil pile in Area 4. |
| S-112515-ML-04-ES | 0-6 | 11/25/2015 | 1300 | 5 | Surface soil of the eastern 50' of the treated Area 8 TCLP area |
| S-112515-ML-05-ES | 0-6 | 11/25/2015 | 1300 | 5 | Surface soil of the western 50' of the treated Area 8 TCLP area |
| S-120215-AK-07-ES | 0-6 | 12/2/2015 | 925 | 5 | Surface soil of the eastern 30' of the western 50' of the treated Area 8 TCLP area excavated to 12" bgs. |
| S-120215-AK-08-ES | 0-6 | 12/2/2015 | 935 | 5 | Surface soil of the western 20' of the western 50' of the treated Area 8 TCLP area excavated to 18" bgs. |
| S-120815-AK-09-ES | 0-6 | 12/8/2015 | 1350 | 7 | Soil pile of the western 50' of the treated Area 8 TCLP area. |
| S-120915-AK-10-ES | 0-6 | 12/9/2015 | 1310 | 5 | Soil pile of the western 50' of the treated Area 8 TCLP area. |

**Notes:**
AK, GW, and ML = Initials of GHD Personnel Collecting the Sample
ES = EPA Split
S = Soil
TCLP = Toxicity Characteristic Leaching Procedure

**Table 7**
**Area 4 and 8 TCLP Areas - Excavation Confirmation Soil Samples**
**TCLP Cadmium and Lead Results**
**Pilsen Area Soils Site OU1**

| Sample Number : | | CFR Title 40 Part 261 Section 24, July 2012 (mg/L)[1] | S-112415-GW-01-ES | | S-112415-GW-02-ES | | S-112515-ML-04-ES | | S-112515-ML-05-ES | |
|---|---|---|---|---|---|---|---|---|---|---|
| Depth (in bgs): | | | 0-6 | | 0-6 | | 0-6 | | 0-6 | |
| Matrix : | | | soil | | soil | | soil | | soil | |
| Units: | | | mg/L | | mg/L | | mg/L | | mg/L | |
| Laboratory: | | | CT Laboratories | | CT Laboratories | | CT Laboratories | | CT Laboratories | |
| Sample Location: | | | A4 N TCLP Soil Pile | | A4 S TCLP Soil Pile | | A8 E 50' TCLP Area | | A8 W 50' TCLP Area | |
| Sample Date: | | | 11/24/2015 | | 11/24/2015 | | 11/25/2015 | | 11/25/2015 | |
| Sample Time: | | | 12:02 | | 12:08 | | 13:00 | | 13:00 | |
| Duplicate: | | | | | | | | | | |
| **Analyte** | **CAS #** | **Toxicity Characteristic** | **Lab Result** | **TT Qualifier** | **Lab Result** | **TT Qualifier** | **Lab Result** | **TT Qualifier** | **Lab Result** | **TT Qualifier** |
| Cadmium, TCLP | 7440-43-9 | 1.0 | NA | | NA | | NA | | NA | |
| Lead, TCLP | 7439-92-1 | 5.0 | 0.23 | | 0.80 | | 0.029 | J- | 2.4 | |

| Sample Number : | | CFR Title 40 Part 261 Section 24, July 2012 (mg/L)[1] | S-120215-AK-007-ES | | S-120215-AK-008-ES | | S-120815-AK-009-ES | |
|---|---|---|---|---|---|---|---|---|
| Depth (in bgs): | | | 0-6 | | 0-6 | | 0-6 | |
| Matrix : | | | soil | | soil | | soil | |
| Units: | | | mg/L | | mg/L | | mg/L | |
| Laboratory: | | | CT Laboratories | | CT Laboratories | | CT Laboratories | |
| Sample Area: | | | E 30' of A8 W 50' TCLP Area | | W 20' of A8 W 50' TCLP Area | | A8 W 50' TCLP Soil Pile | |
| Sample Date: | | | 12/2/2015 | | 12/2/2015 | | 12/8/2015 | |
| Sample Time: | | | 9:25 | | 9:35 | | 13:50 | |
| Duplicate: | | | | | | | | |
| **Analyte** | **CAS #** | **Toxicity Characteristic** | **Lab Result** | **TT Qualifier** | **Lab Result** | **TT Qualifier** | **Lab Result** | **TT Qualifier** |
| Cadmium, TCLP | 7440-43-9 | 1.0 | NA | | NA | | 0.00039 | J |
| Lead, TCLP | 7439-92-1 | 5.0 | 9.1 | | 11 | | 8.1 | J |

**Notes:**
A4 = Area 4
A8 = Area 8
AK, GW, and ML = Initials of GHD Personnel Collecting the Sample
bgs = below ground surface
CAS # = Chemical Abstracts Service Registry Number
CFR = Code of Federal Regulations
E = East
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/L = milligram per liter
N = North
NA = Not analyzed
S = South
TCLP = Toxicity characteristic leaching procedure
W = West
**Color indicates highest RML exceeded for appropriate matrix**
9.1 concentration exceeds CFR Title 40 Part 261 Section 24 Toxicity Characteristic (January 2016)
1 - The CFR Title 40 Part 261 Section 24 Toxicity Characteristics above can be located at
https://www.gpo.gov/fdsys/pkg/CFR-2012-title40-vol27/xml/CFR-2012-title40-vol27-part261.xml#seqnum261.24

**Table 8**
**pH Screening Summary**
**Pilsen Area Soils Site OU1**

| Location or Sample ID | pH (S.U.) | Depth (inches) | Date | Time | Comment |
|---|---|---|---|---|---|
| S-120915-AK-010 | 13.17 | NA | 12/10/2015 | 845 | pH screening with Oakton pH Meter. Soil from sample mixed with water at a 1:1 ratio. Distilled water used (pH of 10.46). |
| S-120915-AK-010 | 13.1 | NA | 12/10/2015 | 1036 | pH screening with Oakton pH Meter. Soil from sample mixed with water at a 1:1 ratio. Tapwater used (pH of 8.24). |
| S-120915-AK-010 | 12.3 | NA | 12/10/2015 | 1050 | pH screening with Hanna direct soil pH meter. Soil from sample mixed with water at a 1:1 ratio. Tapwater used (pH of 8.24). |
| S-120915-AK-010 | 12.3 | 0-1 | 12/10/2015 | 1050 | pH screening with Hanna direct soil pH meter. Soil from sample directly screened with Hanna meter. |
| Stock piled soil excavated from western Area 1 | 7.63 | 0-6 | 12/10/2015 | 1200 | Direct soil pH screening with Hanna meter. pH screening result is an average of the 4 point screening of the western center portion of the western Area 1 stock piled soil, located on the eastern side of the vacant lot to the north of western Area 1. |
| Soil from the western 50 feet of the Area 8 TCLP lead zone | 12.44 | 0-6 | 12/10/2015 | 1320 | Direct soil pH screening with Hanna meter. pH screening result is an average of the 4 point screening of a mixed soil pile of the western 50 feet Area 8 TCLP lead zone with one truck load of western Area 1 stock piled soil. |
| Western 50 feet of the Area 8 TCLP lead zone | 12.53 | 0-6 | 12/11/2015 | 1240 | Direct soil pH screening with Hanna meter. pH screening result is an average of the 5 point screening of western 50 feet Area 8 TCLP lead zone surface soil following mixing with one truck load of western Area 1 stock piled soil. Rain event expected over the weekend, screening conducted to determine if the rain changed the soil pH. |
| Western 50 feet of the Area 8 TCLP lead zone | 12.88 | 0-6 | 12/14/2015 | 1155 | Direct soil pH screening with Hanna meter. pH screening result is an average of the 5-point screening of western 50 feet Area 8 TCLP lead zone surface soil following mixing with one truck load of western Area 1 stockpiled soil. Screening conducted after the weekend rain event to determine if the rain changed the soil pH. |

**Notes:**
AK = Initials of GHD Personnel Collecting the Sample
NA = Not Applicable
S = Soil
S.U. = Standard Unit
TCLP = Toxicity Characteristic Leaching Procedure

# APPENDIX C

# FIELD LOGBOOK NOTES

MADE IN TACOMA
SINCE 1916
Rite in the Rain
DEFYING MOTHER NATURE

Name _____

**START FIELD LOGBOOK**

Logbook Tracking Number CH069

Site Name Pilsen Area Soils Site OU1 BB

Issue to Paul Pallardy

Date Issued 4/30/15

TDD # 0001/505-0001-1504-007

RiteintheRain.com

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| 8-9 | Sign placement in Pilsen OU1 Area | 7-17-15 |
| 11-48 | Pilsen OU1 Rem Work | 11-16-15 to 11-30-15 |

Pilsen Aera Soils Site OU1 4-27-15

0800 - START on-site. Project number 103x902600015051412100. Weather 47°F partly cloudy, wind N 11.5 mph. —— EG

0815 - EPA R5 on-site OSC Ramon Mendoza.

0830 - START + EPA mobilize to west side of site to set up on sidewalk to the north of field of High School (Benito Juarez Community Academy). Safety meeting held to review HASP and site specific hazards. Planned originally to wear boot covers. However, due to vegetation + trash and concerns over footing START + EPA opt to go without boot covers. —— EG

0835 - START begins marking off boring locations on the west side of the site. Boring locations are set starting near the western end of the site and then 50 feet apart to the east. The 50 foot distance between sample locations was determined utilizing measuring



PASS OU1 4-27-15

0835 cont - tape. —— EG

0850 - Seven boring/sample locations were placed on the western side of the site. A fence + driveway divide the western side of the site to the eastern side. —— EG START mobilizes to the western portion of the site. —— EG

0900 - Sample/boring locations on the western end of the site could not be placed exactly 50ft apart due to debris + railway ties.

0905 - Three sample locations were placed on the western portion of the site. —— EG

0915 - One START member begins setting up XRF unit + laptop to collect soil sample screening results. Second START member mobilizes to begin collecting soil samples utilizing a hand auger. OSC Ramon Mendoza to assist with sample collection. START + EPA have two hand augers for sample collection.

PASS OU1 4-27-15

0915 cont.- one hand auger will be used to collect soil from the 0-6"bgs interval and a second hand auger will be used to collect the 6-24"bgs interval. Hand augers to be deconed w/ Alconox between sample locations. Sample intervals collected will be placed on clean visquine to be collected in plastic ziploc bags to be transferred to glass sample jars. Visquine will be changed between the 0-6"bgs + 6-24"bgs sample intervals.

0930 - Soil samples collected from soil sample location PA-RR-17 from 0-6"bgs + 6-24"bgs intervals. Samples placed in ziploc bags to be XRF analyzed. — EC

0940 - Sampling equipment deconed.

0950 - Soil samples collected from PA-RR-18. PA-RR-17 sample location first of seven sample locations on the west side of the site. PA-RR-17 eastern most sample location on the westside of the site.

PASS OU1 4-27-15

0950 cont.- PA-RR-18 approximately 50ft west of PA-RR-18. — EC

1000 - START member has XRF running to screen samples. Determined it would be more efficient to assist second START member with sample collection + XRF samples following completion of sample collection. — EC

1005 - START members to collect soil samples, OSC Ramon Mendoza to assist with equipment deco

1015 - Samples collected from PA-RR-19 intervals 0-6" + 6-18"bgs. PA-RR approximately 50ft east of PA-RR-18. START to GPS locate sample locations following completi of sample collection. PA-RR-18 sample intervals collected were 0-6"bgs + 6-18". — EC

1020 - Equipment decon. — EC

1028 - Soil samples collected from PA-RR-20 0-6"bgs + 6-18"bgs interval. — EC

PASS OU1 4-27-15

1035 – Equipment decon — EC

1048 – Samples collected from PA-RR-21 0-6" bgs + 6-24" bgs, intervals. — EC

1055 – Equipment decon — EC

1116 – Samples collected from PA-RR-22 0-6" + 6-24" bgs intervals. — EC

1120 – Equipment decon — EC

1128 – Samples collected from PA-RR-23 0-6" + 6-24" bgs interval. — EC

1135 – Equipment decon. START + EPA mobilize to western portion of the site to collect samples from 3 sample locations on western portion of site. — EC

1205 – Samples collected from PA-RR-24 0-6" + 6-24" bgs intervals. — EC

1210 – Equipment decon. — EC

1215 – Samples collected from PA-RR-25 0-6" + 6-24" bgs intervals. — EC



PASS OU1 4-27-15

1220 – Equipment decon. — EC

1230 – Samples collected from PA-RR-26 0-6" bgs + 6-24" bgs intervals. — EC

1240 – Final equipment decon. All collected samples in ziplock bags homogenized + placed in cooler to be screened with the XRF + sampled placed in glass jars to be shipped to CT Labs for analysis of Total lead, Lead Fines + TCLP Lead. XRF + sample collection to be done off-site. — EC

1245 – START begins demobe process. All sample/boring locations to be back filled with betonite + sample location flags removed. — EC

EPA OSC off-site. — EC

1400 – START off-site. — EC

[illegible] 4-27-15

PASS OU1 7-17-15

1130 - START on-site for donot excavate or add material Sign placement at RR + Alley area. Preping signs for placement 87°F Sunny wind W 9mph. GEG

1300 - Sign placed E end of section 2 RR area facing S Loomis St.

1315 - Sign placed W end of sect. 4 RR facing S Loomis St. - GEG

1345 - Sign placed at W end of sect. 1 RR facing S Laflin St. — GEG

1400 - Sign placed in center of W A1 sect on South side facing W 21st St. — GEG

1415 - Sign placed in center of sect. 7 Alley on W side facing H. Kramer — GEG

1430 - Sign placed in center of sect. 6 RR on E side facing H. Kramer parking lot. — GEG

1440 - Sign placed near center of sect. 8 Alley on N side facing W Cermak Rd.

1455 - Sign placed near E end of sect. 9 Alley on N side facing W Cermak Rd.



PASS OU1 7-17-15

1515 - Sign placed near S end of Sect. 10 RR on E side facing S. Loomis St. — GEG

1530 - Sign hanging complete. START pallardy off-site. — GEG

7-17-15

7-17-15



Pass 001 11-16-15

0800 - START on-site. GHD, C1, Hygieneering, Inc. & RW Collins on-site. GHD is a contractor for H. Kramer & the railroad. GHD managing project & dust monitoring. C1 contractor for the BNSF railroad. Will be removing railroad ties on-site. Also known as DF Rail Group. Hygieneering on-site to conduct personal air monitoring metal particulates on C1 workers in hot zone, specifically lead & arsenic. RW Collins providing laborers & will conduct excavation work following railroad tie removal. Weather sunny 57°F wind 12mph SSE, humidity 41%. GHD discussing plan with C1 for day. Plan is for C1 & DF to begin railway tie removal in area 10. GHD will place upwind & downwind air monitors for Dust, utilize TSI DusTTrakes,

PASS OU1 11-16-15

0800 cont - Model 8520-1. Downwind DustTrak will be placed NW of railway tie removal work. Specifically monitoring for PM10 or less particle size.

0815 - Ruman Mendoza (OSC) on-site. Discussing plan with GHD + DF. RW Collins placing fencing. OSC + START sign GHD HASP. Hygieneering will conduct personnel monitoring for lead + arsenic particulate on 3 personnel.

0850 - OSC + Walt Pochron of GHD leave site to meet with principal of Benito Juarez High School.

0910 - START speaking with Daniel Roberts of Hygieneering will utilize 3 Aircheck Model 2054's with MCE 37mm filters at 2L/m for Lead + arsenic particulate sampling. GHD using DustTraks for PM10 dust monitoring.

0915 - START zeros DataRAM 4 in fresh air + calibrates flow on Gilian pump. START utilizing GilAir5 pumps.



PASS OU1 11-16-15

0915 cont - START calibrates GilAir5 pump OS-PSP 003 to 2L/m with Bios Defender 500 series dry cal. Collect 10 point flow average. Pump flow at 2.002 L/m avg.

0920 - RW Collins placing fencing. DF off-site to pick up trucks + equipment.

Utility locators on-site to locate utilities. GPRS utility locator on-site as private utility locator.

0945 - DF back on-site with truck + trailer for transport of railroad ties as they are removed + truck with crane for railroad tie movement.

0955 - GHD prepping upwind + ~~downwind~~ downwind DustTraks.

1000 - GHD places upwind + downwind DustTraks + begins monitoring. START places downwind DataRAM 4 + begins monitoring. 0.0169 mg/m$^3$ at start of dust monitoring.

1040 - GPRS continues private utility locate public locators off-site.

PASS OU1 11-16-15

1045 - RW Collins continues fence placement. GHD + DF waiting on water truck to wet down Area 10 to begin railway tie + rail removal activities. — JEG

1050 - Truck for railway ties + rail transport is truck # 23, trailer A304.

1055 - Water truck to wet down area 10 upon arrival will remain on-site to conduct additional wetting as needed. GHD + START upwind particulate monitoring location near NW corner of Area 6. — JEG

1105 - GHD upwind DustTrak air monitor near central south end of Area 10.

1115 - Weather mostly cloudy, 56°F, wind S 13 mph, humidity 40% — JEG
USIC on-site for additional utility locate.

1120 - United rental on-site with water truck for wetting of work areas.

1135 - DF personnel will run water truck. Prepping to fill truck water tanks.

1140 - START off-site for lunch. — JEG

1155 - START on-site. — JEG



PASS OU1 11-16-15

1220 - Downwind DataRAM 4 [redacted] JEG
reading 0.0131 mg/m³, [redacted] JEG
0.0139 mg/m³ avg. — JEG
GHD, DF, RW Collins + Hygieneering, Inc
breaking for lunch. — JEG

* Based on meeting with principal, Ramon Mendoza OSC would like to conduct downwind particulate monitoring + collect 2 lead particulate downwind samples of area 1 work. — JEG

1235 - DF back on-site from lunch. — JEG
Hygieneering back on-site from lunch

1250 - DF prepping to begin railway tie + rail removal work in Area 10. Setting up PPE doning and doffing zone. Exclusion zone is fence line area. — JEG

1300 - DF donning Level C PPE to begin rail tie + rail removal work in Area 10. Hygieneering outfitting 3 personnel of DF with Airchek Model 224-52. Pump rate 2 L/min for Arsenic + Lead.

1305 - START donning Level C PPE. Donning Gilian pump, pump rate 2 L/min.

PASS OU1 11-16-15

1320 - START begun air sampling with Gilian pump at 1320. Hygieneering begun air sampling at 1305.

1330 - DF begins cutting rails on s end of Area 10.

1340 - Utilizing crane to scrape top gravel cover away for rail cutting.

1353 - DF attempting to remove first portion of ~~removed~~ cut rail. Encountering difficulty, rail likely embedded in tie.

1400 - Western rail of southern rail line in Area 10 has been cut. DF moving to eastern rail.

* START entered exclusion zone at 1325.

1420 - Southern most cuts made on rail. DF moving to north 40' to make second cuts on East + West rail.

Weather 56° cloudy wind 14mph SSE humidity 46%.

1425 - DF begins cutting rail on western side. 40' N of first cut.



PASS OU1 11-16-15

1435 - DF placing rails on western side of alleyway. Railway ties being placed on western side of alleyway.

1501 - DF completes rail + rail tie removal work for day. Begin Level C doffing process out of EZ. Hygieneering collecting MCE filters for particulate sampling from DF personnel.

1510 - START exits exclusion zone begins doffing Level C PPE.

1516 - START completes particulate air sampling with Gilian pump 2L/min, start at 1320, end 1516, 116 min, total volume 232L.

1520 - START ending air monitoring run on Data RAM 4. Currently 0.0182 mg/m³ + 0.0161 mg/m³ avg. Run stopped.

1530 - GHD, DF, RW Collins, Hygieneering off-site.

1545 - START + EPA OSC offsite.

* Particulate sample P1 with TB.

PASS OU1 11-17-15

0700 - START on-site. GHD on-site + hygieneering on-site. Waiting for DF to arrive on-site. Weather 54° F, cloudy, wind SE 14 mph. Rain possible all day, ground wet from rain last night.

0715 - DF on-site, safety meeting held. Discussed appropriate PPE, pinch points, weather, + blowtorch use. Hygieneering will continue to monitor with particulate air samples. Daniel Roberts of Hygieneering stated yesterdays results will be in this afternoon. —GEG

0730 - GHD begins placing downwind and upwind Dust Trak air particulate monitors.

0740 - START places downwind DataRAM 4 and begins monitoring. 0.0155 mg/m³ current reading. Particulate air monitors in same location as yesterday.



PASS OU1 11-17-15

0740 cont. - downwind GHD + START monitors near NW corner of area 6, downwind of rail + rail tie removal work in area 10. —GEG

DF move trucks into position in Area 5. DF personnel begin donning Level C PPE to conduct work in Area 10 in exclusion zone. Hygieneering placing Aircheck Model 224-52's on DF personnel for sampling metal particulates lead + arsenic. 3 personnel with 3 aircheck's. GHD's upwind particulate monitor Dust Trak S of Area 10. —GEG

0750 - DF entering exclusion zone. No wetting conducted today because of rain last night. BNSF rep on-site Rafel Nicholas.

0755 - DF continues rail cutting + rail tie removal activities.

PASS OU1 11-17-15

0840 - DF continues working north in Area 10 cutting rail. At northern portion of Area 10. Current DataRAM 4 reading 0.0132 mg/m³, avg 0.0123 mg/m³

0900 - DF continues cutting rail and working north. In southern portion of Area 6. JEG

0915 - DF cutting rail in northern portion of Area 6. Current DataRAM 4 reading 0.0165 mg/m³, avg. 0.0141 mg/m³. JEG

0920 - DF personnel taking a break.

0940 - DF continues rail cutting + rail + rail tie removal activities in northern portion of Area 6. During rail cutting DataRAM 4 reading 0.0665 mg/m³ downwind. Avg 0.0138 mg/m³. JEG
3NSF Rep off-site. JEG

1015 - OSC Mendoza on-site. DF begins rail cutting north of Area 6 south center of Area 5. START moves DataRAM 4 downwind of rail cutting.



PASS OU1 11-17-15

1015 cont. - near SW corner of Area 4 on North center portion of Area 5

1040 - DF moves to Area 4 to continue rail cutting. Leaving northern portion of rail undisturbed in Area 5 to coordinate with H-Hramir track traffic. START places DataRAM 4 downwind of rail cutting work in Area 4 on north central side of Area 4.

1100 - Current DataRAM 4 reading 0.0141 mg/m³, avg. 0.0140 mg/m

1115 - DF personnel breaking for lunch. DF personnel exit exclusion zone to don Level C PPE for lunch. DF will cut and remove rail in Area 5 after lunch and leave ties until likely tomorrow in Area 5. Area 4 rail cutting complete.

1125 - DF + Hygieneering off-site for lunch

1140 - Hygieneering on-site from lunch. Weather 56°F cloudy, 19 mph SE. Raining on-site currently.

PASS OU1 11-17-15

1230 - Significant rainfall, OSC Mendoza instructs START to take down DataRAM4 for dust air monitoring. — GEG

1235 - DF back on-site for lunch, want to wait for rain to stop to continue work. DF has skid steer coming for ~~[illegible]~~ tomorrow to pick up rail ties while group with grapple hook truck and blow torch works in Area 2. — GEG

1250 - DF discontinues work for the day. — GEG

Demobbing for day. — GEG

* BNSF Rep back on-site at 1230.

1300 - DF + BNSF Rep off-site. GHD taking down downwind + upwind DustTrack dust air monitors.

1315 - OSC Mendoza + START Pallardy off-site. — GEG

11-17-15



PASS OU1 11-18-15

0700 - START pallardy on-site. Hygieneering on-site, DF on-site BNSF on-site. Weather 62°F cloudy, wind 27 mph SE.

0705 - OSC Mendoza on-site. — GEG

0710 - DF holds tailgate safety meeting. Discuss heavy equipment use, slip, trip + falls, pinch points, skid steer use, hot work (torch), proper PPE, + traffic.

0715 - START + OSC check Area 2 to see if it is clear of people before work begins in Area 2

0725 - Area clear. DF prepping to begin railcutting work in Area 2.

0745 - DF moving grapple hook truck into Area 2. Ground wet from rain the past 2 days. Water truck nearby for precaution with debris in area + torch cutting. START zeroing DataRAM4 + pDR (MIE pDR 1500) with clean air. — GEG

0750 - Zeroing complete START to

PASS OU1 11-18-15

0750 cont - place DataRAM 4 NW of DF rail cutting & removal work, downwind. — EG

0800 - DataRAM 4 placed to the NW of the NW corner of Area 2, downwind of Area 2 removal activities, current DataRAM 4 reading 0.0054 mg/m3. GHD Dust Trak placed upwind & downwind. Downwind Dust Trak next to START DataRAM 4. DF cutting rail on East side of Area 2. Will work west.

0820 - Completed 40' of rail cutting and removal on East side of Area 2. START standing downwind of work area, pDR reading 0.0038 mg/m3 for dust in air. — EG
Hygieneering continues to sample for metal particulates in air on DF personnel for lead & arsenic with Aircheck 224-526. DF personnel downgraded to Level D PPE. — EG



PASS OU1 11-18-15

0825 - Begins to rain lightly.

0845 - DF continues rail cutting activities in Area 2. DF begins rail tie removal with fork lift in Area 10. — EG

0910 - START sets alarm on DataRAM 4 to match Area 2 action level of 3.19 mg/m3. — EG
Current DataRAM 4 reading 0.0059 mg/m3. — EG

0920 - START directly downwind of rail cutting and removal in Area 2. Current pDR dust in air reading 0.0034 mg/m3, avg. 0.0038 mg/m3.

0935 - START directly downwind of rail cutting activity. Highest observed dust in air reading on pDR 0.1350 mg/m3, avg. 0.0095 mg/m3. Current DataRAM 4 reading 0.0078 mg/m3, avg 0.0068 mg/m3 dust in air conc. — EG

0945 - DF continues rail cutting

Rite in the Rain

PASS OU1 11-18-15

0945 cont - rail removal in Area 2.
Weather currently 62°F,
wind 23 mph SSE, light rain
cloudy. — GEG

0955 - DF removing rail ties in
Area 10. pDR dust in
air conc. reading 0.0048 mg/m³,
avg. 0.0075 mg/m³.

1010 - START downwind of rail cutting
in Area 2. pDR dust in air
reading 0.0645 mg/m³, avg.
0.0071 mg/m³. — GEG

1035 - Current DataRAM 4 reading
0.0139 mg/m³, avg. 0.0069 mg/m³.
DF continues to cut rail &
remove rail in area 2.

1045 - DF cutting rail on western
end of Area 2. — GEG

1105 - Rail cutting complete in Area 2 on
main line. DF to work on line on
south side of Area 2. — GEG
OSC Mendoza off-site. — GEG

1130 - DF continues to work on South line.

1145 - DF breaks for lunch. — GEG

PASS OU1 11-18-15

1200 - START breaking for lun

1230 - DF moved equipment to vaca
lot north of Area 1. Current
weather cloudy, 62°F, wind S 16
START placing DataRAM4 No
of rail cutting & removal work
in Area 1, downwind. — G
Placed in northwest portion of
vacant lot north of western
portion of Area 1, where DF is
cutting rail ties and moving

1300 - DF working east in Area 1
START moves DataRAM 4
to the east with DF rail cutti
work. START continues to
monitor downwind with
pDR. Current dataRAM4
reading 0.0093 mg/m³, avg. 0.00
Current pDR reading 0.0063 mg/
avg. 0.0081 mg/m³. —

1328 - DF at eastern end of Area 1.
DF continues with rail tie rema
in Area 10. — G

1337 - START downwind of rail cutti

Rite in the

PASS OU1 11-18-15

1337 cont - with pDR. Highest observed reading 0.3350 mg/m³, avg. 0.0127 mg/m³. — GEG

1345 - Area 1 rail cutting complete. Rails placed on north side of Area 1 in vacant property.

1415 - DF begins removing ties from western end of Area 1 with grapple hook. DF continues rail tie removal in Area 10, 6, + 4. — GEG

1445 - START moves DataRAM4 to be positioned downwind of DF rail tie removal activities in Area 1. — GEG

1500 - DF stockpiling removed rail ties from Area 10 + 6 on north end of Area 6. DF stockpiling removed rail ties from Area 4 on south end of Area 4. Rail ties will be picked up with grapel hook truck and placed on haul truck to be taken offsite. — GEG

1510 - DF continues with rail tie



PASS OU1 11-18-15

1510 cont - removal in Area 1. START moves data RAM4 East with DF rail tie removal work to be downwind. — GEG

1545 - DF stops rail tie removal in Area 1 for day. DF demobs for day will continue with rail tie removal tommorow.

1555 - DF off-site, BNSF, GHD off site.

1615 - EPA OSC Mendoza + START Pallardy off site. — GEG

11-18-15

11-19-15 PASS 041

0700 · EPA (Ramon) START (Pelloy & Kondreck)
onsite DHS, ~~EPA~~, GHD, DF Rail group, ABNSF

0720 Site Safety meeting, biological & medical hazards
school let out at 2:30pm therefore leaves
buffer

0755 Begin removing RR ties in Area 2 next
to Looms Rd START PDR 1500 Dust
monitor on Kondreck

Bucknole Weather Mostly sunny cool (41°F) breezy
to the east

0815 Loading RR ties in area 5/7 onto a truck
Leaf Asbell Excavating Co is the truck
hauler (47) 619-1269 #23, Jeff Asbell #198
is the loader

Bucknole 0730 Pelloy leaves site (Dirk Ram 4)

Bucknole ~0800 setup air monitor on terminus of
Looms Rd & Area 2.

0820 Truck #23 leaves w/ RR ties

0833 Repositioning RR tracks in AREA ~~5/7~~ 7
RR Ties to Blue Island BNSF Facility, 100' of
track 1550 ties (every 2 feet in a tie)

0853 Manor Crew adjacent to Area 2 day ~~tasks~~
~~expect~~ landscaping therefore Air Monitoring
results may be elevated



PASS 041 11-19-15

0907 Stacy Leaf Asbell #23 truck in ID parking
lot at Area #2 to remove RR ties

0907 DataRam 350s 49 µg/m3 due to landscapers blowing
leaves & mulching w/ lawnmower

Bucknole One ~~person~~ person (DF Rail) is wearing
a sample cartridge for personal air monitor
sample

Bucknole PDR & Data Ram Zeroed prior to use

0925 Photo (DH) Loading RR ties onto
Leaf Asbell truck for BNSF Facility
at Blue Island

0935 Truck #23 leaves; soil most from previous
days rain

0953 Truck #23 returns, begins loading RR ties
DF Rail watting area #5 for dust control

1000 Truck leaves (x3)

1025 Truck returns load lot of RR ties

1030 Truck leaves (x4)

1037 EPA to discuss project with Alderman Rep

1051 Loading Steel RR tracks (BNSF, GHD
observing activities)

Bucknole 1037 talks to alderman about Tenant
vehicle

1115 Truck #23 leaves w/ RR tracks (x)

11-19-15 PASS OU1

1120 Move monitor to area #5 from Area #2 & Coons Rd. Pallardy next to portapotty & fence for factory

1130 Lunch

1200 End lunch. Kondrick leaves site. Pallardy crash

1210 - DF begins rail cutting in Area 5 near H. Kramer entrance. Weather currently sunny 44° F wind WSW 25 mph. — EC

1240 - DF completes rail cutting in Area 5. — EC

1250 - DF begins loading rail in truck bed from Area 5. — EC

1305 - DF completes loading cut rail from Area 5. Begin loading cut rail stockpiled in Area 4.

1315 - Current Data RAM 4 reading 0.0116 mg/m³, avg. 0.0166 mg/m³. Current pDR reading 0.0067 mg/m³, avg. 0.0129 mg/m³. — EC

1325 - DF loading stock piled rail east of Area 6 onto truck bed

1430 - DF unloads rail in vacant lot north of Area 1.



11-19-15 PASS OU1

1430 cont - DF continues to conduct rail tie removal in area 5. Rails appear to have been asphalted in between. — EC

1515 - DF completes rail tie removal in Area 5. Current Data RAM 4 reading 0.0186 mg/m³, avg. 0.0189 mg/m³. Current pDR reading 0.0146 mg/m³, avg. 0.0115 mg/m³. — EC

1523 - DF loading rail ties with grapple hook truck into truck bed

1540 - Rail ties loaded on truck. DF completed rail & rail tie removal activities. — EC

1545 - OSC Mendoza off-site, GHD off-site. DF demobing. — EC

1600 - START Pallardy off-site. — EC

11-19-15

Rite in the Rain

11-23-15 PASS OU1

0700 - START Pallardy on-site. GHD (2) on-site, RW Collins (4) on-site. RW Collins unloading equipment and prepping for site work. Weather 30°F, sunny, wind SSW 10mph.

0730 - GHD + RW Collins hold safety meeting, discuss proper PPE, cold weather work, tight quarters, slip, trips, + falls with ice on the ground.

0745 - RW Collins conducting site walk with personnel. JEG

0750 - OSC Mendoza (EPA) on-site. RW Collins will recieve additional equipment + treatment reagent for in-situ treatment of TCLP soils. Treatment reagent is Free Flow Heavy Metals Treatment Reagent by Free Flow Technologies Ltd. Will be mixed at a 4% application rate in soil.

0800 - RW Collins equipment trailer arrives on-site.

0825 - Free Flow + geotextile fabric arrives on-site. RW Collins begins unloading.

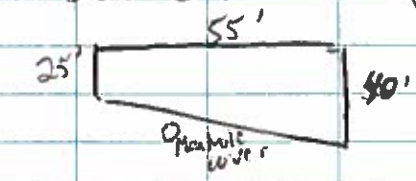
0910 - Unloading complete. JEG

0925 - GHD remeasuring Area 5 for



11-23-15 PASS OU1

0925 cont - TCLP area in NE corner. East side 40', N + S side 55', W side 25'. JEG




0945 - START, EPA, + GHD check TCLP removal area in Area 8. 20' E of W border treat 12", 80' W of E border treat 6". Area 4 treat 6". Area 5 new boundary scrape top 6" treat 1'0". JEG

1045 - START, EPA, + GHD placing new stakes + measuring Area 2 ~~Area~~ cover area. JEG START places flags 6' outside stakes on western end + 8' outside of stakes on eastern end where the rail curves for potential additional cover area. RW Collins on break for lunch.

1135 - GHD + START place downwind dust monitors. E of Area 2 NW of Area 4 work area

11-23-15 PASS OUT

1135 cont. – GHD places upwind Dust Trak dust monitor near NW corner of Area 8. — GEC

1145 – START breaks for lunch.

1200 – START on-site from lunch. OSC off-site for lunch. — GEC

1215 – RW Collins placing Free Flow in Area 4, prepping for mixing with top 6" TCLP soil.

1230 – RW Collins begins soil mixing work on north side of Area 4.

1315 – 8 EPA lawyers on-site. — GEC

1335 – RW Collins continues soil mixing. Current pDR reading downwind of soil mixing 0.0258 mg/m³, avg 0.0147 mg/m³. Current DataRAM4 reading 0.0220 mg/m³, avg. 0.0186 mg/m³. — GEC

1405 – RW Collins completes mixing in Area 4. Begin prep work, moving Free Flow material to stove + moving fences. Mixed TCLP area soil ~~will be~~ transported to Lairaway RDF was te Mangement facility. — GEC

* Hygieneering off-site 1345, collected RW Collins personnel samples x 3 — GEC

2 RW collins personnel in Level C today.



11-23-15 PASS OUT

1545 – RW Collins demobing, OSC Mendoza off-site, GHD + START take down air monitoring equipment. — GEC

1510 – RW Collins off-site. — GEC

1515 – START off-site. — GEC

11-23-15

11-24-15 PASS OU1

0700 - START Pallardy on-site, RW Collins(4) on-site. Weather partly cloudy, 34°F, wind WSW 2 mph.

0705 - GHD (1) on-site.

0710 - Hygieneering (1) on-site

0725 - Safety meeting held, discussion, appropriate PPE, truck traffic, + pinch points.

0730 - RW Collins prepping TCLP mixing area in Area 5, placing fencing.

0740 - GHD + START place air monitors. Downwind NW side Area 4. GHD upwind DustTrak SW corner Area 8.

0830 - RW Collins donning Level C PPE to begin TCLP soil free flow mixing in Area 5.

0850 - RW Collins begins scrapping off 0-6" bgs in TCLP area NE corner of Area 5.

0925 - RW Collins loading 0-6" bgs material on small truck to stock pile in Area 6.

1030 - RW Collins continues 0-6" bgs removal in Area 5. Current DataRAM 4 reading 0.0577 mg/m³, avg. 0.0718 mg/m³. Current pDR reading 0.0466 mg/m³, avg. 0.0351 mg/m³

1040 - RW Collins uncovered old brick road 6" bgs as well as concrete pad for former truck dock



11-24-15 PASS OU1

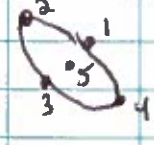
1045 - EPA Fields on-site for GPS points (2).

1100 - EPA Fields, START + OSC taking GPS points of Area 2 coverage area.

1120 - START + OSC Mendoza inspecting Area 5 for intact brick road + concrete cover. Area 5 6" bgs is covered with an intact brick + concrete cover. Cover will remain in place and will be covered with asphalt. No Free Flow soil mixing for TCLP Lead will occur

1130 - EPA Fields collecting GPS points in Area 5 for new boundary. START inspecting soil removal and mixing depth in Area 4. Approximately 6" on boundary + 9" towards center.

1202 - START + GHD collect sample of stock piled 0-6" bgs soil from Area 4 for TCLP Lead. Collect 5 pt. comp. sample from northern stock pile in Area 4. Comp. pts. collected from pile at waiste level on four sides and one point on top.




Sample ID S-112415-GW-01-ES

11-24-15 PASSOUT

1208 - START collects S-112415-GW02-ES with GHD. GHD collects duplicate. Same stockpile sampling procedure used. Pile is southernmost stockpile in Area 4 with 0-6" bgs Area 4 material.

1210 - EPA lawyers on-site (3). — EC

1220 - START, EPA Fields, OSC off-site for lunch. RW Collins + GHD break for lunch. — EC

1310 - START, EPA Fields, OSC on-site. RW Collins complete with Area 5 and dismantled temporary fence Area 6 + 7. Prepping for Free Flow soil mixing tomorrow in Area 8. Moving Free Flow bags to be staged in the morning

1315 - EPA Fields + OSC off-site. — EC

1345 - Area 5 0-6" bgs material stock piled in Area 6 + covered with visquine for overnight. START takes down DataRAM 4. — EC

1350 - START off-site. — EC



11-25-15 PASSOUT

0700 - START Pallardy on-site. RW Collins on-site (4). — EC
Weather 42°F wind 11 mph SSE.

0715 - GHD on-site (2), hygieneering on-site (1).

0725 - Safety meeting held, discuss PPE, pinch points in Area 8 tight quarters, ice in Area 8. Plan for day is to complete mixing in Area 8, samples for TCLP lead will taken from Free Flow mixed soil.

0750 - START places DataRAM 4 downwind of Area 8 work area near NW corner of Area 6. GHD places downwind Dust Trak near NW corner of Area 6. Upwind GHD Dust Trak near E side of Area 8. RW Collins donning Level C to enter exclusion zone in Area 8 to begin soil mixing with Free Flow. Hygieneering placing Aircheck 224 52's on RW Collins personnel for lead + arsenic particulate sampling for work in Area 8 exclusion zone.

0815 - RW Collins begins work in Area 8.

11-25-15 PASS 0012

0845 - RW Collins completed E 20' of Free Flow soil mixing for TCLP lead in Area 8. pDR reading 0.0354 mg/m³, 0.0279 mg/m³ avg. GEG

0850 - 8-10" bgs at beginning of E 40' section RW Collins observed asphalt barrier. RW Collins will remove the asphalt. GEG While GEG RW collins excavated reading on pDR of 0.180 mg/m³.

0912 - The eastern 80' of the Area 8 TCLP area soil will be mixed and removed to 12" bgs. The western 20' of the Area 8 TCLP area soil will be mixed and removed to 18" bgs

0940 - E 40' complete with Free Flow mixing. RW Collins mixing Free Flow in section 60' W of eastern end of Area 8.

1033 - Free flow mixing in 60' W of E end of Area 8 complete. GEG

1040 - RW Collins on break. GEG

1048 - DataRAM4 reading 0.0209 mg/m³, avg. 0.0199 mg/m³. GEG



11-25-15 PASS 0011

1125 - RW Collins mixing Free Flow in area 8 TCLP area 80' W of E end. GEG

1155 - TCLP area 80' W of E end mixed. RW Collins begins mixing Free Flow in area 20' E of W end of area 8 TCLP area. GEG

1230 - RW Collins completes mixing with Free Flow in Area 8 TCLP area. Begins Demobe. GEG

1300 - GHD + START collect TCLP lead samples from Area 8 TCLP area. Area split in half for 2 composite 5 pt samples from East + West side of TCLP Area. Sample ID S-112515-ML-04-ES collected from East 50' Area 8 TCLP area as 5 pt. composite. Sample ID S-112515-ML-05-ES collected from West 50' of Area 8 TCLP area same methods. GHD collects an additional MS/MSD sample from S-112515-ML-06 ES.

11-25-15 PASS OUT

1325 - START takes down DataRAM 4 + stops pDR for day, pDR avg. 0.0145 mg/m³, DataRAM 4 avg. 0.0204 mg/m³.

1330 - RW Collins + GHD + hygieneering demobing.

1345 - START off-site. —

11-25-15



11-30-15 PASS OUT

0700 - START, GHD(3), RW Collins(4), + Hygieneering (1) on-site. —

0715 - EPA OSC Mendoza on-site. —

Weather 40°F cloudy wind E 12 mph. RW Collins prepping equipment. Hygieneering placing Aircheck 224 526 on RW collins personnel for lead + arsenic air particulate sampling.

0730 - Daily safety meeting held discuss tight quarters work, downgrade to level D based on air particulate sample results, slip, trips, + falls. Plan for the day is to begin removal of woody vegetation, debris + trash from Area 1. —

0745 - START + OSC check Area 1 + 2 for homeless people prior to work, area clear

0815 - GHD begins prepping Dust Trak upwind + downwind dust particulate monitors for the day. START zeros DataRAM 4 + pDR for the day.

0835 - START + GHD place dust monitors near the NW corner of the vacant lot to the north of Area 1.

11-30-15 PASS OU1

0835 cont - GHD placed upwind dust monitor near the SW corner of Area 2.

0910 - RW Collins mobilizing equipment into Area 1 to begin removal work. RW Collins to start on W side of Area 1 + work E.

0940 - START places Gillian pump at DataRAM4 dust monitoring documenting location following pump calibration to 2.00 L/min for air lead particulate sampling downwind of removal work in Area 1.

0945 - RW Collins placed two areas of visqueen near the SE corner of the vacant lot north of area 1 for stock piling of removed woody debris, vegetation, + garbage. RW Collins begins cutting of small trees and bushes in Area 1 with a chainsaw.

1030 - Current DataRAM4 reading 0.0262 mg/m³, avg 0.0265 mg/m³. Current pDR reading 0.0166 mg/m³, avg 0.0165 mg/m³.

1055 - RW Collins continues removal of vegetation + garbage. Working from E to W instead of W to E to avoid moving equipment down



11-30-15 PASS OU1

1055 cont - Area 1 over debris.

1115 - RW Collins taking lunch. START off-site for lunch.

1130 - START on-site.

1145 - OSC off-site for lunch.

1200 - RW Collins continues removal work in Area 1.

1215 - Current pDR reading 0.0121 mg/m³, avg 0.0127 mg/m³. Current DataRAM4 reading 0.0251 mg/m³, avg 0.0261 mg/m³.

1415 - RW Collins continues removal work, reaching midway point of Area 1. Current DataRAM4 reading 0.0197 mg/m³, avg 0.0233 mg/m³. Current pDR reading 0.0123 mg/m³, avg. 0.0118 mg/m³.

1430 - RW Collins demobing for the day.

1445 - START takes down pDR + DataRAM4. PDR reading 0.0109 mg/m³, avg. 0.0119 mg/m³. DataRAM4 reading 0.0015 mg/m³, avg 0.0230 mg/m³.

1455 - START stops Gillian lead air particulate sampling.

1505 - RW Collins off-site, GHD, Hygiene crew, OSC off-site.

1515 - START off-site.

11-30-15

11-30-15

## ENTERING INFORMATION IN THE LOGBOOK

Enter the following information at the beginning of each day or whenever warranted during the course of a day:

*Est RR tracking
GIS

- Date
- Starting time
- Specific location
- General weather conditions and approximate temperature
- Names of personnel present at the site. Note the affiliation(s) and designation(s) of all personnel
- Equipment calibration and equipment models used.
- Changes in instructions or activities at the site
- Levels of personal protective clothing and equipment
- A general title of the first task undertaken (for example, well installation at MW-11, decon at borehole BH-11, groundwater sampling at MW-11)
- Approximate scale for all diagrams. If this can't be done, write "not to scale" on the diagram.
- Indicate the north direction on all maps and cross-sections. Label features on each diagram.
- Corrections, if necessary, necessarily including a single line through the entry being corrected. Initial and date any corrections made in the logbook.
- After last entry on each page, initials of the person recording notes. No information is to be entered in the area following these initials.
- At the end of the day, signature of the person recording notes and date at the bottom of the last page. Indicate the end of the work day by writing "Left site at (time)." A diagonal line must be drawn across any remaining blank space at the bottom of this last page.

The following information should be recorded in the logbook after taking a photograph:

- Time, date, location, direction, and, if appropriate, weather conditions
- Description of the subject photographed and the reason for taking the picture
- Sequential number of the photograph and the film roll number or disposable camera used (if applicable)
- Name of the photographer.

The following information should be entered into the logbook when collecting samples:

- Location description
- Name(s) of sampler(s)
- Collection time
- Designation of sample as a grab or composite sample
- Type of sample (water, sediment, soil gas, etc.)
- On-site measurement data (pH, temperature, specific conductivity)
- Field observations (odors, colors, weather, etc.)
- Preliminary sample description
- Type of preservative used
- Instrument readings.

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## CONTENTS

| PAGE | REFERENCE | DATE |
|---|---|---|
| 2-48 | Pilsen OU1 Rem Work | 12-1-15 to 12-16-15 |

12-1-15 PASS OU1

0700 - START on-site, GHD(1) + RW Collins (4) on-site. — JEG

0710 - safety meeting held, discussed tight work area work, safety while cleaning garbage, level D PPE + slip, trips, falls. — JEG

0720 - EPA OSC Mendoza on-site. — JEG
RW Collins mobilizing equipment to Area 1 for vegetation + garbage removal. — JEG
Weather Cloudy 42° F wind 12mph WSW.

0755 - START Pallardy + GHD placing dust monitors. START places DataRAM4 NE of Area 1 in teachers parking lot next to GHD's Dusttrak for downwind monitoring. GHD places upwind monitor Dusttrak SW of Area 1. START zeroed DataRAM4 prior to placement + zeroed pDR for monitoring for day. RW Collins clearing vegetation + garbage from Area 1. — JEG

0955 - RW Collins continues removal, on western end of Area 1. — JEG



12-1-15 PASS OU1

1005 - Current pDR reading 0.0063 mg/m³ avg. 0.0058 mg/m³. Current DataRAM4 reading 0.0090 mg/m³ avg 0.0097 mg/m³. — JEG

1010 - Current weather partly cloudy 42°F 19 mph WSW. — JEG

1020 - RW Collins cutting utility or telephone poles located near NW corner of Area 1. — JEG

1040 - Telephone poles cut and stack piled on E side of vacant lot north of Area 1

1100 - RW Collins breaks for lunch.

1130 - RW Collins continues vegetation + garbage removal on W side of Area 1

1205 - Current pDR reading 0.0054 mg/m³, avg 0.0052 mg/m³
Current DataRAM4 reading 0.0092 mg/m³, avg. 0.0096 mg/m³

1245 - RW Collins identifies an additional rail spur portion on E end of Area 1. Spur on N side of Area 1 and lies at least 3' inside heads NW buried under vacant lot N of Area 1. — JEG
Vacant lot + additional spur outside of agreement scope. — JEG

1315 - RW Collins completes vegetation removal

12-1-15 PASS OU1

1315 cont - and garbage removal in Western Area 1 south of vacant lot. Moving equipment to continue grubbing in eastern Area 1

1325 - OSC discusses with GHD the railway spur, plan to work around and leave in place. EG

1355 - RW Collins working on vegetation + garbage removal in Area 2. OSC states to take down DataRAM instead of moving downwind because dust monitoring can be conducted with pDR for remainder of the day.

1430 - RW Collins completes Area 2 garbage + vegetation removal for the day

1440 - RW Collins creating small trench + sump to pool standing water away from work area.

1445 - RW Collins demobing equipment.

1455 - OSC off-site. EG

1500 - Final pDR reading 0.0075 mg/m3, avg. 0.0070 mg/m3. START Pallardy off-site.

12-01-15



12-02-15 PASS OU1

0700 - START Pallardy on-site. GHD (1), RW Collins (5), + Chicago Streets + Sanitation (6) on-site. EG

Weather cloudy 34°F light snow wind 9 mph W. EG

0715 - Streets + Sanitation on-site to remove vegetation, garbage + telephone poles stockpiled in the vacant lot north of Area 1 + haul off-site. Chicago Streets + Sanitation to also remove + haul vegetation + garbage from the south sides of Area 1 + 2. RW Collins to begin day with mixing of western 50' of 100' TCLP area in Area 8 as TCLP analysis did not pass. western 20' of 50' area to be mixed to 18" bgs + eastern 30' of 50' area to be mixed to 6" bgs.

0730 - RW Collins mobilizing equipment to Area 8 + bringing over Free Flow Streets + Sanitation mobilizing equipment to vacant lot north of Area 1 for stockpile removal.

12-02-15 PASS DU1

0745- RW Collins begins mixing Free Flow in Area 8 western 50' TCLP area. START zeroing DataRAM 4 + pDR for the day. DataRAM 4 to be placed downwind of Streets + Sanitation work in Area 1 + 2 as this work area is closer to the school. — GEC

GEC

Streets + Sanitation using end loader to load truck with stock piled material to haul off-site to Shredall 43rd + Racine.

0815- START places DataRAM 4 near SE corner of Area 8. OSC EPA Mendoza on-site. Streets + Sanitation brought additional end loader, working in Area 2 and eastern Area 1 removing vegetation + garbage. — GEC

0840- loading + hauling of western Area 1 vacant lot stock piled vegetation + garbage complete. 2nd end loader to assist in Area 1 + 2 vegetation + garbage removal.

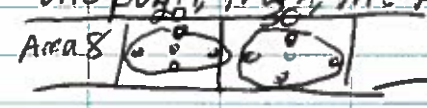


12-02-15 PASS DU1

0900- GHD placed downwind Dust Trak monitor next to DataRAM 4 near SE corner of Area 2. GHD placed upwind Dust Trak in center of vacant lot north of Area 1. RW Collins completes mixing in Area 8. GHD to collect samples for TCLP lead analysis. START to collect split samples.

0915- RW Collins mixed soil with Free Flow in two piles. The western 20' 18" bgs mixed soil is the western pile. The eastern 30', 6" bgs (of 50' western portion of Area 8 TCLP area) is the eastern pile.

0925- GHD collects composite sample as 5 pt composite from western pile with one point N, S, E & W + one point from the top of the pile.




Points were collected at waiste height on pile and as indicated in the diagram

GEC sample ID S-120215-AK-007-ES.

START collects split sample.

12-02-15 PASS OU1

0935 - GHD collects composite sample with the same methodology from eastern 30' 6" bgs pile. EPA collects split sample ID S-120215-AK-008-ES.

0940 - RW Collins grading mixed soil in Area 8.

0945 - Manager of Streets + Sanitation is John Spitzzery. He will provide tonnage of material (vegetation + garbage) hauled offsite.

1035 - RW Collins continues grading in Area 8. Streets + Sanitation continues vegetation + garbage removal work in Area 2. 2nd end loader from streets + sanitation off-site.

1045 - 1st load 5.01 tons, 9.50 tons for 2nd load, + 3rd load is being loaded now + will be last load.
1st load all stock piled material from western Area 1 in vacant lot.
2nd load mix of western Area 1



12-02-15 PASS OU1

1045 cont - stock piled material + eastern Area 1 + Area 2 material.
3rd load will be mix of eastern Area 1 + Area 2 material

1115 - RW Collins clearing left over garbage in Area 2 + eastern Area 1 by hand. Mobilizing excavator to western end of Area 1 to begin scraping up surface soil.

1125 - Current pDR reading 0.0155 mg/m³, avg 0.0[illegible] mg/m³
Current DataRAM 4 reading 0.0255 mg/m³ avg. 0.0173 mg/m³.

1130 - RW Collins on lunch break.

1210 - RW Collins back from lunch.

1215 - RW Collins begins scraping back soil piled on western end of Area 1. will pull soil back 50' from western end to about 3" bgs. 50' area has lowest lead level. START will collect a composite of soil from this area to screen with XRF. If results not near 800 ppm for lead, no additional excavation.

12-02-15 PASS OU1

1225- RW Collins placing excavated soil on small truck to be stock piled on E side of vacant lot. RW Collins using laser level to keep soil excavation level consistent.

1259- Point 1 from Area 1 3-5" 515 ppm +/- 6 for lead 1st screen, 2nd 568 ppm +/- 7, 3rd 524 ppm +/- 6. Avg 536 +/- 6. below goal of 800 ppm lead.

1315- Streets + sanitation sweeper street cleaner in teachers parking lot sweeping tracked dirt from streets + sanitation equipment

1330- Current DataRAM4 reading 0.013 mg/m3, avg 0.0174 mg/m3. Current pDR reading 0.0075 mg/m3, avg 0.0089 mg/m3. —GSC

1345- Area 1 point 2 3-5" 1st screen 485 ppm lead +/- 6, 2nd 530 +/- 7, 3rd 435 +/- 6, Avg 483 +/- 6 ppm lead.

1356- Final 3rd load for streets + sanitation of vegetation + garbage from E Area 1 + Area 2 20.29 tons. RW Collins complete 3" excavation



12-02-15 PASS OU1

1356 cont- of western 50' of Area 1 now beginning 6" excavation of remainder of Area 1.

1411- A1 pt 3 6-8" 1st screen 417 +/- 6, 2nd screen 362 +/- 5, 3rd screen 310 +/- 5 Avg. [redacted] 363 +/- 5 ppm lead. —GSC

1430- RW Collins demobing for day.

1435- START shuts down pDR for day. Current reading 0.0059 mg/m3, avg. 0.0090 mg/m3. —GSC

1440- RW Collins covering western Area 2 stock piled soil with visqueen on E side of vacant lot N of Area 1.

1445- START takes down DataRAM4 for day. Current reading 0.0144 mg/m3, avg. 0.0165 mg/m3.

* XRF was calibrated prior to screening collected soil in Area 1. —GSC

1455- EPA OSC Mendoza off-site. START Pallardy off-site. —GSC

12-02-15

Rite in the Rain

12-03-15 PASS OU1

0700- START Pallardy, GHD(2), RW Collins (5), W-T Land Surveying Inc (2) on-site. Daily safety meeting held, discuss PPE, slip, trip, or falls, tight work quarters, + cold work. —GEG

Plan for day is for RW Collins to continue excavation in western A1. WT surveyors will begin surveying in A2 + EA1.

0715- OSC EPA Mendoza on-site. —GEG

RW Collins mobilizing equipment to A1 W. —GEG

0745- START zeroing DataRAM4 + pDR for day. Weather cloudy 37° wind 7mph west. RW Collins begins excavation in A1 W. W-T setting up for surveying.

0810- START places DataRAM 4 near SW (SE of A1W) corner of the teachers parking lot. Wind appears to be coming from NW.

0815- START initializes XRF + calibrates for WA1 soil screening. —GEG

0830- GHD places downwind Dust trak dust monitor next to DataRAM4. GHD places upwind Dust trak on center western boundary of vacant lot north of A1 W. —GEG



12-03-15 PASS OU1

0855- A1 P4 6-8" 1st screen 821+/-8, 2nd 1060+/-10, 3rd 715+/-8, Avg. 865+/-9 ppm Lead. A1 P4 above 800 ppm goal, RW Collins to remove bricks + START will rescreen area. —GEG

0920- START checking surveyor lay out in A2 + E A1 for asphalt + gravel cover. —GEG

Distances match discussion. —GEG

0935- START screening A1 P5 6-8" in vicinity of A1 P4, 1st screen 291+/-5, 2nd 251 ± 4, 3rd 348+/-5. Avg. 297+/-5 ppm lead. —GEG

1000- START screening A1 P6 6-8" about 50' E of A1 P5, 1st screen 306+/-5, 2nd 330+/-5, 3rd 313 ± 5, Avg. 316+/-5 ppm lead. —GEG

1025- START screening A1 P7 6-8" about 50' E of A1 P6. 1st screen 537+/-7, 2nd 343+/-5, 3rd 345+/-5. —GEG Avg. 408 ± 6 ppm lead. —GEG

1035- RW Collins over halfway complete with 6" excavation of A1 W.

12-03-15 PASS OUT

1040 - START + GHD measure collected soil points for XRF screening. A1 P1 7.5' E of W end of A1 West. P2 35' E of P1, P3 22.5' E of P2, P4 28' E of P3, P5 13' E of P4. P6 37.5' E of P5. P7 37' E of P6.

1045 - RW Collins placing additional Visqueen for additional soil stockpiling.

1130 - RW Collins off-site for lunch.

1200 - RW Collins mobilizing equipment to A1 W to continue excavation.

1215 - RW Collins continues excavation work.

1235 - START screening A1 P8 6-8" bgs A1 P8 32' E of A1 P7. 1st screen 423 +/- 5, 2nd 491 +/- 6, 3rd 549 +/- 7, 4th 472 +/- 6, 5th 454 +/- 6. Avg. 478 +/- 6 ppm lead. GEC

1305 - Current DataRAM4 reading 0.0490 mg/m³ GEC avg 0.0369 mg/m³. GEC

1310 - Current pDR reading 0.0299 mg/m³, avg. 0.0159 mg/m³. GEC

* START screened A1 P8 5 times with XRF due to additional soil volume for QA/QC sample.



12-03-15 PASS OUT

1320 - A1 P9 40' E of A1 P8. GEC

1325 - START screening A1 P9. Will screen with XRF 5 times because of additional soil volume for QA/QC sample. A1 P9 6-8" 1st screen 701 ± 8, 2nd 696 ± 8. Screening too close to clean up goals, RW Collins will excavate an additional amount to reach soil that will screen below goal. GEC

1405 - START screening final soil sample location A1 P10 6-8". 1st screen 1640 ± 14 ppm lead. RW Collins to excavate additional approximately 2" from A1 P9 to eastern end of western Area 1. GEC START will sample + rescreen A1 P9 + A1 P10. GEC

1430 - RW Collins completes additional 3" excavation from P9 to end of A1 West. START collects a new A1 P10 sample 9-11" and screens with XRF. 1st screen 1515 ± 14, 2nd 1933 ± 15, 3rd 1264 ± 11, 4th 1130 ± 10, 5th 1298 ± 12.

12-03-15 PASS OU1

1430 cont. — Avg. 1428 ± 12 ppm lead.
RW Collins demobbing for the day. —

1455 – A1 P9 40' E of P8. A1 P10 37.5' E of P9. —
A1 P10 to asphalt 54'. —
A1 Western area 344' total.

1500 – START stops pDR for day, current reading 0.0238 mg/m³, avg 0.0176 mg/m³

1510 – START stops DataRAM 4 for day, current reading 0.0410 mg/m³ Avg 0.0405 mg/m³. —

1520 – START Pallardy, EPA OSC Mendoza RW Collins off-site. GHD demobing. WT remains surveying on-site.

12-03-15



12-04-15 PASS OU1

0700 – START Pallardy, GHD(1), & RW Collins (5) on-site. Safety meeting held, discuss tight work area excavating, slip, trips, & falls, cold work, + Level D PPE. Weather 35°F cloudy, wind 9 mph SW.

0710 – START zeros DataRAM4 + pDR for day. START places DataRAM4 ~~NE of~~ downwind near NE corner of Area 2 downwind of Area 1+2 work today. GHD places downwind Dust trak near DataRAM4. GHD places upwind Dust trak S center side of WA1

0735 – RW Collins mobilizes equipment to western Area 1 will excavate to 2' bgs from A1 P10 54' East to east end of western A1 to asphalt.

0730 – EPA OSC Mendoza on-site. —

0740 – RW Collins begins excavation.

0815 – Truck arrives on-site with a load of gravel for backfill + grading load #1. Dallas Exp. Inc. Tracking. Gravel stockpiled near SW corner of vacant lot north of W Area 1.

Rite in the Rain

12-04-15 PASS OUT

0820- 2nd truck load of gravel on-site. 1st truck off site.

0905 - 3rd + 4th truck load of gravel on-site. RW Collins continues excavation activities in WA1. —GEG

0937- RW Collins near eastern end of WA1 with 2' bgs excavation.

0941 - 5th + 6th truck load of gravel on-site.

0945- 5th + 6th trucks off-site.
* 3rd + 4th trucks off-site at 0910.

0950- Current pDR reading 0.0599 mg/m³, avg 0.0544 mg/m³. Current DataRAM4 reading 0.0965 mg/m³, avg 0.0934 mg/m³ —GEG

0953- Area 4 TCLP lead Free flow treated soil piles covered with visqueen for the weekend —GEG

1027- 7th, 8th, + 9th truck loads of gravel on-site

1037- 7th, 8th, + 9th trucks off-site. —GEG
RW Collins continues excavation at eastern end of WA1. —GEG

1045 - Excavation WA1 complete for day. Confirmation sampling will determine if additional excavation is necessary. —GEG



12-04-15 PASS OUT

1050- RW Collins mobilizing equipment to EA1 + A2 to begin grading work. —GEG

1055- RW Collins moving fence out for grading on E side of Area 2.

1115 - RW Collins taking lunch break.

1200- RW Collins back from lunch discussing grading plan in EA1 + A2. —GEG

1215- RW Collins begins grading work on E end of Area 2. RW Collins will remove remaining vegetation + debris from grading area. —GEG

1220- Current pDR reading 0.0319 mg/m³, avg. 0.0449 mg/m³. Current DataRAM4 reading 0.0568 mg/m³, avg. 0.0774 mg/m³.

1259- 14 loads of gravel have been delivered to the vacant lot N of WA1. GHD expects 3 more loads. —GEG
GHD + RW Collins expect that grading plan may be incorrect. Following grading plan for now, will follow up to confirm. —GEG

12-04-15 PASS OUT

1400 - RW Collins continues grading Area 2. Covering stockpiled excavated soil on E side of vacant lot north of WA1 with visquen for weekend.

* 1330 - EPA OSC Mendoza off-site.

1440 - Last load of gravel of day arrives on-site. Truckload #17 total tons of gravel stock piled in vacant lot N of WA1 is 366.62. Gravel was recieved from Pershing Recycle 3910 S. Racine in Chicago. RW Collins demobing for the day.

1450 - START stops pDR for day + stops DataRAM4 for the day. Avg. DataRAM4 reading 0.066 mg/m³. Avg pDR reading. RW Collins covering grading piles of soil in Area 2 for weekend.

1510 - Covering of piles comple. GHD, RW Collins + START Pallardy off-site.

12-04-15



12-07-15 PASS OUT

0700 - START Pallardy on site. GHD (2) + RW Collins (6) on-site. Daily safety meeting held, discuss tight quarters work, cold work, PPE, + slip, trips, + falls. Weather 39°F cloudy wind 5mph WNW.

0715 - Discuss plan for the day to begin filling gravel in on western 50' of WA1 + eastern 54' of 2' excavation of WA1. Rest of WA1 will continue when total lead results from WA1 samples come in.

0735 - RW Collins mobilizing equipment to WA1. START calibrates XRF for gravel screening.

0740 - START collects 5 pt. comp. from gravel pile 0-6" below surface. Screening gravel pile 1 with XRF, 1st reading 55±2, 2nd 66±3, + 70±3, Avg. 64±3 ppm lead.

0750 - START collects 2nd comp. from another gravel pile.

12-07-15 PASS OU1

0750 cont - Screening gravel pile 2, 1st reading 53±2, 2nd 9/±3, 3rd 62±2, Avg. 70±2.

0800 - START zeroing DataRAM4 + pDR for the day. RW Collins begins placing geotextile fabric + grading gravel over top.

0815 - START places DataRAM4 near SE corner of WA1 downwind of grading work. GHD downwind dust monitoring dust trak next to DataRAM 4. Upwind GHD dusttrak near NW corner of WA1.

0830 - Total lead results from WA1 recieved from lab. P3 480 ppm total Lead, P5 396 ppm, P6 613 ppm, P7 616 ppm, P8 838 ppm, + P8-D 770 ppm. EPA OSC Mendoza states to use average of results for clean up goal. Avg. of total lead results 632 ppm. GHD informed they can geotextile line



12-07-15 PASS OU1

0830 cont - all of WA1 + grade with gravel
* OSC Mendoza on-site 0745.
* GHD TCLP lead results for remived soil in A8 above 5mg/L. GHD determining plan for A8 TCLP lead soil area.

1000 - RW collins lining WA1 with geotextile fabric + grading gravel on top. Utilizing excavator to initially spread + compact gravel, RW Collins then utilizing a vibrating roller + flat compactor to continue flatting + grading process. Geotextile along southern fence cut to fit around concrete for fence posts.

1030 - Gravel for fill + grading in WA1 is classified as class 6 gravel.

1050 - RW Collins reaching halfway point of WA1 with geotextile fabric + gravel cover.

1100 - Current DataRAM4 reading: 1.172 mg/m³, Avg. 0.0864 mg/m³. Current pDR reading 0.0584 mg/m³, Avg. 0.0514 mg/m³.

12-07-15 PASS OU1

1100 cont. - RW Collins breaks for lunch.

1140 - RW Collins continues placement of geotextile liner + gravel grading.

1230 - Weather currently cloudy 42°F wind 6mph SSW. START moves DataRAM4 to the NE corner of the vacant lot to the N of WA1 down wind of gravel filling + grading of WA1. GG

1250 - GHD moving Dust Trak dust monitors. Upwind near SW corner of WA1, downwind near DataRAM4.

1410 - RW Collins continues geotextile fabric placement, gravel filling, + grading of WA1. Working on the eastern 2' excavation section of WA1, final approx. 54' GG

1430 - RW Collins demobing for day. START + GHD measuring gravel cover area in EA1 + A2. GG

1450 - START takes down DataRAM4 + pDR for day. Final DataRAM4 reading 0.0093 mg/m³, avg. 0.0070 mg/m³. Final avg. pDR reading 0.0509 mg/m³ GG



12-07-15 PASS OU1

1500 - RW Collins + GHD continue demobe. EPA OSC Mendoza + START Pillardy off-site.

12-07-15

12-08-15 PASS OU1

0700 - START on-site, GHD (1), RW Collins (6) on-site. Safety meeting held, discuss tight quarters, level D, footing, + cold work. Weather cloudy 41°F wind S 13 mph.

0715 - RW Collins mobilizing equipment. Will continue geotextile fabric placement in WA1 + gravel grading. START zeroing DataRAM4 + pDR for the day.

0730 - START places DataRAM4 near the NE corner of A2. wind will shift to SSW later in the day + RW collins will be conducting grading work in EA1 + A2 today. GHD places down wind Dust trak next to DataRAM4. GHD places upwind Dust trak center of WA1.

0740 - RW collins begins gravel placement + geotextile fabric placement on E side of WA1.

0755 - EPA OSC Mendoza on-site.

0805 - Free Flow 300 expected on-site later today for mixing in Area 8 TCLP lead area.



12-08-15 PASS OU1

0945 - Current DataRAM4 reading 0.0721 mg/m³, avg 0.0650 mg/m³.

1005 - Current pDR reading 0.0334 mg/m³ avg. 0.0319 mg/m³.

1130 - Gravel filling + geotextile fabric placement placement complete in WA1. RW Collins to complete grading after lunch. OSC Mendoza off-site.

1145 - RW Collins breaks for lunch.

1220 - RW Collins back from lunch.

1230 - Free Flow 300 arrives on-site. 2 sacks of Free Flow to mix in Area 8 TCLP lead area W 50'. RW Collins mobilizing equipment to mix Free Flow in Area 8 TCLP lead area.

1240 - RW Collins begins mixing Free Flow in 50' western A8 TCLP lead area.

1330 - RW Collins free flow mixing complete. RW Collins grading EA1 + A2.

1350 - GHD collects comp sample of free flow mixed soil pile in A8 collected as a 7pt comp for a larger pile.

12-08-15 PASS OU1

1350 - 


Simple ID S-120815-AK-009-E5

START collects split sample for TCLP lead + cadmium analysis.

1420 - RW Collins completes grading in EA1 + A2 for the day. — GEG

1435 - RW Collins flattening free flow mixed soil pile in A8. — GEG

1450 - RW Collins demobing for the day.

1455 - START taking down DataRAM4 + pDR for the day. DataRAM4 reading 0.0544 mg/m³, avg. 0.0625 mg/m³. pDR reading 0.0402 mg/m³, avg. 0.0333 mg/m³. GHD taking down Dust Traks + demobing. — GEG

1500 - START Pallardy off site.

12-08-15



12-09-15 PASS OU1

0700 - START Pallardy on-site, GHD (1) + RW Collins (6) on-site. — GEG Safety meeting held. Weather 46°F sunny wind 7mph WSW.

0710 - START zeroing DataRAM4 + pDR for day. RW Collins placing metal plates on the east side of Area 2 on the sidewalk for trucks bringing in loads of gravel to A2 + EA1. — GEG

0730 - START places DataRAM4 near the NE corner of A2. — GEG

0740 - RW Collins mobilizing equipment to A2 + EA1 to continue grading and to place geotextile fabric.

0755 - RW Collins begins grading work in A2 + EA1. — GEG

0815 - RW Collins, GHD, + START complete marking off southern boundary of grading area in A2 + EA1 with spray paint for the excavator.

0920 - RW Collins continue grading in A2 + EA1. Placing geotextile fabric in NE corner of A2. Gravel brought directly onto geotextile fabric by truck load.

12-09-15 PASS OU1

0920 cont- for fill + grading.

1025 - Current DataRAM 4 reading 0.0458 mg/m³, Avg 0.0493 mg/m³. Current pDR reading 0.0414 mg/m³, avg. 0.0259 mg/m³. RW Collins continues geotextile fabric placement, gravel filling, + grading work in EA1 & A2.

1130 - RW Collins breaks for lunch.

1200 - RW Collins continues grading, geotextile fabric placement, + gravel filling work in EA1 + A2.

1310 - GHD collects soil sample from W 50' of A8 TCLP lead area. Collects as a 5 pt comp to 6" bgs. START collects split S-120915-AK-010-ES will analyze for TCLP lead, TCLP cadmium + pH.

1333 - Current DataRAM 4 reading 0.0330 mg/m³, avg. 0.0407 mg/m³. Current pDR reading 0.0280 mg/m³, avg. 0.0249 mg/m³.

1400 - pH results from TCLP samples upon reciept of sample at lab, 6.27 for S-112515-ML-07-ES + 7.78 for S-112515-ML-08-ES.

1430 - RW Collins finishing work for day + begin demobe. START taking down



12-09-15 PASS OU1

1430 cont. - DataRAM 4, avg. 0.0393 mg/m³ + pDR for day, avg 0.0231 mg/m³.

1440 - START Pallardy off-site.

sample S-120815-AK-009-ES initial sample pH from lab 12.15.

GHD, RW Collins, + EPA OSC Mendez remain on-site. START to obtain pH paper + additional field equipment for pH screening on-site tomorrow.

12-09-15

12-10-15 PASS OU1

0700 - START Pallardy on-site. GHD(2), RW Collins (6), + W-T Land + Surveying (W-T) (2), on-site.

Safety meeting held, discuss traffic work, tight quarters, level D, street crossing.

W-T to conduct additional surveying RW Collins to conduct grading work in EA1 + A2, may need additional gravel.

0725 - RW Collins mobilizing equipment to EA1 + A2.

0735 - EPA OSC Mendoza on-site.

0745 - START zeroing DataRAM4 + pDR for day. Weather 54°F cloudy wind SSW 18 mph.

0750 - START places DataRAM4 near the NE corner of A2. GHD places Dust Trak downwind next to DataRAM4. Upwind Dust Trak near the SW corner of EA1. RW Collins grading in EA1 + A2. W-T conducting surveying.

0845 - START + GHD mixing 1:1 weight ratio water to soil



12-10-15 PASS OU1

0845 cont - sample S-120915-AK010. Mix + will let sit for 20 min to test pH.

0920 - pH of 13.17 after soil settle. pH of distilled water 10.46, Bottled water - 8.55, tap water 8.24. Mixing tap water with soil for 2nd test.

RW collins continues grading work

1036 - 2nd test pH 13.10 with oakton.

1050 - START recieves Hanna direct soil reading pH instrument. Tests S-120915-AK-010 soil and solution pH. Soil 12.30, mix of tap water + soil 12.30.

1115 - RW collins breaks for lunch. START recalibrates Hanna for 2 pt 7 + 10 pH. Hanna calibrated

1200 - START GHD, + EPA in vacant lot N of WA1 to ~~test~~ screen stock piled soil from W portion of WA1. Plan is to use WA1 soil to stabilize pH in A8 TCLP lead area to 9-10 pH range. START calibrates XRF.

12-10-15 PASS OU1

1200 cont - START, GHD + EPA start screening in W center of stock piled soil which is soil from W end of WA1.
Point 1 - pH = 8.4 XRF = 452 ± 6 ppm lead
Point 2 - pH = 7.49 XRF = 261 ± 4 ppm lead
Pt 3 - pH = 7.14 XRF = 645 ± 8 ppm lead
Pt 4 - pH = 7.47 XRF = 349 ± 5 ppm lead
RW Collins completes grading in A2 + EA1.

1220 - RW Collins mobilizes small truck + skid steer to vacant lot to haul screened stock pile soil to A8 TCLP lead area for mixing. Goal to mix WA1 soil with A8 TCLP area lead soil to drop pH to 9-10 range to allow for TCLP lead analysis to pass (under 5 mg/L) to ship off-site as non-hazardous waste. Low pH + low lead concentration stock piled soil selected through screening.

1250 - Current DataRAM4 reading 0.0155 mg/m³, avg. 0.0339 mg/m³. Current pDR reading 0.0081 mg/m³, avg. 0.0190 mg/m³.



12-10-15 PASS OU1

1255 - RW Collins mixing WA1 screened stock piled soil with A8 TCLP lead area soil (W 50').

1320 - RW Collins completes mixing. START + GHD screening pile with Hanna pH meter. 4 pt screening, 2 on N side, 2 on S side, 1st pt SW corner 12.83, 2nd pt S center 12.11, 3rd pt NE 12.37, + 4th pt NW 12.44.
pH too high sample not collected. If recent samples are above 5 mg/L for TCLP lead, Area 8 TCLP soil will be shipped off-site as hazardous.

1350 - RW Collins mobilizing equipment to A10 to begin grading work.

1435 - RW Collins + GHD discussing grading plan for A10. Plan is to raise final grade, will keep grading to commence with less soil removal.

1500 - RW Collins demobing GHD demobing. EPA OSC off-site. START taking down pDR + DataRAM4 for day. pDR reading avg. 0.0172 mg/m³ DataRAM4 avg. 0.0282 mg/m³

1510 - START Pallady off-site 12-10-15

12-11-15 PASS OU1

0715 - START Pallardy on-site. GHD(1) + RW Collins (4) on-site. Weather 47°F partly cloudy wind 6mph SW. RW Collins beginning grading work in A10. START zeroing DataRAM4 + pDR for the day

0745 - START places DataRAM4 near SW corner of A8 downwind + NE of A10 grading work. GHD places downwind Dust Trak near DataRAM4. GHD upwind Dust Trak placed on SW corner of H. Kramer parking lot.

0820 - RW Collins laying geotextile fabric down in graded portions of A10 for gravel fill. — EG

0850 - RW Collins breaking up concrete pad on the north side of A7.

0905 - A truck load of gravel arrives on-site for fill + grading.

0920 - RW Collins loading gravel on truck to place in A10 for grading.

0935 - A 2nd load of gravel arrives on-site. RW Collins continues placing gravel in A10.

1035 - RW Collins grading gravel in A10.



12-11-15 PASS OU1

1035 cont - Current DataRAM4 reading 0.0343 mg/m³, avg. 0.0338 mg/m³. Current pDR reading 0.0229 mg/m³ avg. 0.0204 mg/m³. — EG

1050 - Field Environmental picks up pDR. pDR no longer needed for additional dust monitoring coverage as all work will be E of Loomis St. — EG DataRAM4 will continue to be utilized for downwind dust monitoring.

1100 - RW Collins breaks for lunch.

1130 - RW Collins continues geotextile fabric placement + gravel grading in A10. — EG

1220 - START conducts calibration of Hanna direct soil pH meter. 2 pt (7+10 pH) calibration complete. — EG

1240 - START conducts 5 pt ~~comp~~ pH screening of western A8 TCLP lead soil area, pt 1 NE corner 12.76, pt 2 10ft W 12.19, pt 3 10ft W 12.55, pt 4 10ft W 12.68, pt 5 NW corner 12.45, avg. pH 12.53 — EG

1350 - RW Collins continues grading work in A10.

12-11-15 PASS OUT

1405- RW Collins begins demobe process. RW Collins equipment for truck loading Mon expected to arrive on-site this afternoon.

RW Collins grading stockpiled A5 soil back into A5.

Gravel grading in A10 complete.

1425- RW Collins continues demobe. START + GHD taking down dust monitors for the day. Avg. DataRAM4 reading 0.0325 mg/m³

1440- Large excavator for Mon morning arrives on-site. Will be staged in vacant lot N of W A1 for weekend.

1500- START Pallardy off-site.

12-11-15



12-14-15 PASS OUT

0700- START Pallardy. GHD (1), RW Collins (3) on-site. Trucks on-site for hauling stockpiled excavated soil off-site.

0710- RW Collins mobilizing equipment to A4 to load a truck with stockpiled soil from A4.

0725- RW Collins begins loading 1st truck of the day with A4 stockpiled soil. Weather 55°F cloudy wind SSW 19 mph.

0755- START places DataRAM4 near NE corner of A2 downwind of A4. DataRAM4 zeroed prior to placement. RW Collins completes loading 1st truck of the day.

0800- RW Collins begins loading 2nd truck of the day with A4 stockpiled soil. GHD places Dust Trak near the NW corner of A6 for upwind monitoring + downwind Dust Trak near DataRAM4.

0830- starts to rain, projected to rain the remainder of the day. START takes down DataRAM4 for the day.

0845- Quality Metals Corps. on-site in vacant

12-14-15 PASS OU1

0845 cont. lot to the north of A1W loading cut rails on a truck to haul off site. Cut rails will be hauled to Quality Metals Corporation location in Harvey, IL. 2nd truck loaded and off-site. RW Collins begins loading 3rd truck of day with A4 stock piled soil.

0905 - RW Collins completes loading A4 stock piled soil. 3rd truck of the day moves to vacant lot to the north of WA1 with RW collins to load stock piled soil from WA1. —

0920 - RW Collins continues loading 3rd truck of the day with WA1 stock piled soil.

0926 - RW Collins completes loading 3rd truck of the day & begins loading 4th truck of the day.

0933 - 4th truck of the day loaded. —

0940 - 5th truck of the day loaded. RW Collins begins loading 6th truck of the day. Quality Metals Corporation hauls 1st load of metal rails off-site. GHD moves Dust tracks, downwind NE corner of teachers parking lot, upwind SW corner of WA1. —



12-14-15 PASS OU1

0950 - 6th truck of the day loaded.

1025 - RW Collins begins loading 7th truck of the day. —

1030 - 7th truck of the day loaded.

1108 - 8th truck of the day loaded.

1115 - Quality Metals Corp hit entrance gate pulling their 2nd truck in. Running rail for entrance gate knocked down. QMC trying to fix gate. QMC 2 on-site. —

0730 EPA OSC Mendoza on-site until 0930 today. —

1145 - Gate appears to be repaired.

1150 - START calibrates Hanna direct soil pH meter with 7 + 10 pH. Calibrated.

1155 - START screening TCLP lead soil area W 50' A8. 1st pt near SE corner 13.03, 2nd pt 12' W center of 1st pt 12.44, 3rd pt 12' W N of 2nd pt 12.96, 4th pt 20' W S of 3rd pt 12.88, 5th pt near NW corner 13.10. Average pH reading 12.88.

1245 - 13 trucks loaded by RW Collins.

1300 - START off-site for lunch.

12-14-15 PASS OU1

1315- START back on-site. —
1330 - RW Collins loading truck # 14.
1350 - All rails have been taken offsite by QMC. Truck # 14 loaded. RW Collins waiting for truck #15
1415 - GHD takes down Dust traks for day.
1427 - Truck 15 being loaded. —
1435 - 15th truck loaded + off-site. GHD + RW Collins demobing for the day. —
1445 - START Pallardy off-site.



12-15-15 PASS OU1

0700 - START Pallardy on-site. GHD(1), RW Collins (4) onsite. Weather 41° cloudy wind NW 10 mph.
0715 - RW Collins mobilizing equipment to Area 4 to begin soil grading work. Plan for the day to grade A4, A6 + A7. —
0730 - RW Collins begins soil grading in A4. GHD placing Dust traks, upwind near NE corner of A2 + downwind near SW corner of A8. —
START zeroing DataRAM 4 for day.
0745 - START places DataRAM 4 near SW corner of A8 downwind of grading work
0850 - RW Collins placing geotextile fabric in A4. —
RW Collins recieved pump to pump surface water out of A6 for grading.
0945 - RW Collins placing gravel in A4 to begin grading. —
1005 - Current DataRAM 4 reading 0.0074 mg/m³, avg. 0.0059 mg/m³. —
1130 - RW Collins grading gravel in A4. A truck load of gravel arrives on-site.

12-15-15 PASS OUT

1200 - RW Collins on break for lunch.

1212 - 2nd truck load of gravel arrival on-site.

1230 - RW Collins continues gravel grading in Area 4.

1310 - Current DataRAM4 reading 0.0060 mg/m³ Avg 0.0075 mg/m³.

1330 - RW Collins continues gravel grading in A4. Excavator mobilizes to A7 to begin concrete pad break up/removal.

1400 - A4 gravel grading complete. Concrete pad removal continues in A7.

1415 - RW Collins begins demobing activities.

1435 - GHD taking down Dust traks for day.

1445 - RW Collins continues demobe. START takes down DataRAM4 for day. Average DataRAM4 reading 0.0074 mg/m³.

1500 - START Pallardy off-site.

Lv. 12-15-15



12-16-15 PASS OUT

0715 - START on-site. GHD (1) + RW Collins (3) on-site. Weather cloudy 44°F wind SE 13 mph. RW Collins mobilizing equipment to Area 6 + 7 for concrete pad removal + soil grading. START zeroing DataRAM4 for the day.

0745 - START places DataRAM4 downwind near SW corner of A4. GHD places downwind Dust trak near DataRAM4 + upwind Dust trak near SW corner A4. RW Collins breaking up + removing concrete from the north side of A6+7. Loading concrete on truck to haul to Pershing Recycling at 3910 S Racine in Chicago.

0815 - 1st truck load of broken up concrete loaded + off-site.

0835 - RW Collins loading 2nd truck load of broken up concrete.

0857 - 2nd truck load of broken up concrete loaded + off-site. Final load of concrete.

0905 - RW Collins begins soil grading on N side of A6 + 7.

12-16-15 PASS OUT

0930- RW Collins stock piling excess soil from A6+7 grading on N side of A5. —GEC

0950- Current DataRAM4 reading 0.033mg/m³, average 0.0317 mg/m³. —GEC

1015- Batteries out in laser level, RW Collins heading off-site to obtain batteries

1030- RW Collins picking up large excavator used for truck loading —GEC

1100- RW Collins breaks for lunch

1130- RW Collins continues soil grading in Area 6+7. —GEC

1155- RW Collins continues soil grading, Geotextile fabric placed on NE corner of A7. Load of gravel placed on geotextile fabric for gravel grading. —GEC

1215- RW Collins begins grading gravel in A6+A7.

1230- 2 additional gravel loads arrive on-site

1320- Another load of gravel arrives on-site. RW Collins continues soil grading, geotextile fabric placement, + gravel grading

1400- Another load of gravel arrives on-site. RW Collins continues soil grading, geotextile fabric placing + gravel grading.



12-16-15 PASS OUT

1450- RW Collins demobing for the day. Covering stock piled soil in A5 with visqueen. GHD taking down Dust tracks for the day. —GEC

1505- START taking down DataRAM4 for the day. Average reading 0.0261 mg/m³

1515- START Pallardy off-site. —GEC

12-16-15

12-16-15

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| 2-26 | Pilsen OU1 Rem Work | 12-17 to 12-30-13 |
| 27-28 | Pilsen OU1 Capping Work | 5-27-16 |

12-17-15 PASS OU1

0710 - START Pallardy on-site. GHD (1); RW Collins (4) on-site. Weather 31°F cloudy wind W 15 mph. RW Collins mobilizing equipment to A6+7 and A5. —

0720 - GHD placing Dust traks for the day. GHD places upwind Dusttrak near the SW corner of the H. Kramer parking lot GHD places downwind Dust trak near SW corner of A8.

0725 - RW Collins begins loading 1st truck of the day with stock piled excavated material in A5 from A6+7. —
START zeroing DataRAM4 for the day.

0735 - START placing DataRAM4 downwind near SW corner of A8. RW Collins completes loading 1st truck of the day. RW Collins continues A6+7 soil grading work.

0815 - RW Collins placing additional geotextile fabric in A6+7.

0855 - RW Collins continues gravel grading on geotextile fabric areas in A6+7.

0950 - Current DataRAM4 reading 0.0006 mg/m³



12-17-15 Pilsen OU1

0950 cont - Avg. 0.0006 mg/m³. RW Collins continues gravel grading over geotextile fabric in A6+7. —

1015 - RW Collins loading 2nd truck with excavated material from A6+7 stockpiled in A5. —

1035 - 2nd truck loaded by RW Collins. Gravel grading continues.

1130 - RW Collins continues gravel grading.

1140 - RW Collins breaks for lunch. —

1220 - RW Collins continues gravel grading, 6" excavation + soil removal in Area 6+7. —

1320 - 3rd truck arrives on-site. RW Collins begins loading stockpiled material from A6+7. —

1340 - RW Collins completes loading of 3rd truck. Continues excavation soil grading, fabric placement + gravel grading in Area 6+7.

1445 - RW Collins done with excavating, soil grading, fabric placement + gravel grading in A6+7 for the day. RW Collins demobing for the day.

12-17-15 PASS OUT

1445 cont - START takes down DataRAM4 for the day. Current reading 0.0086 mg/m³, avg. 0.0089 mg/m³.

1450 - GHD taking down Dust trakes for day + demobing. — EG

1515 - START Pallardy off-site. — EG

12-17-15



12-18-15 PASS OUT.

0700 - START Pallardy (1) on-site, GHD (1) & RW Collins (5) on-site. 1st truck of day on-site to be loaded with stock piled excavated material from A6+7. RW Collins mobilizing excavator to load truck. START zeroing DataRAM4 for the day. Weather cloudy 28°F wind W 12mph. — EG

0715 - RW Collins begins loading 1st truck.

0730 - START places DataRAM4 downwind of A8 in the center of A9 on the S side. GHD places downwind Dusttrak next to DataRAM4. Upwind Dusttrak on SW corner of Hikramer parking lot. — EG

0740 - RW Collins completes loading 1st truck. RW Collins begins soil grading, geotextile fabric placement + gravel grading on S side of A6 + 7. — EG

0840 - Gravel load arrives on-site. Truck direct loads gravel in A6 S side. RW Collins continues soil grading, fabric placement + gravel grading.

1000 - Soil grading + fabric placement in A6+7 complete

Rite in the Rain

12-18-15 PASS 041

1000 cont. - RW collins continues gravel grading in A6+A7. —

1030 - 2nd truck arrives on-site to haul stockpiled A6+7 excavated material off-site. RW Collins begins loading truck.

1040 - An additional gravel load arrives onsite. Gravel placed in S A6+7 for grading.

1050 - RW Collins completes loading 2nd truck. RW Collins continues gravel grading in A6+7.

1145 - RW Collins breaks for lunch. —

1215 - RW collins continues gravel grading in A6+7. An additional truck arrives on-site for RW collins. RW Collins will use larger truck to transport TCLP Lead soil from A8 to be stock piled in A5.

1220 - RW Collins begins loading truck with A8 TCLP lead soil. Western 20' 18" excavation portion. —

1245 - First truck load complete, material placed in A5 for stock piling.

1255 - RW Collins loading 2nd truck load of Western 20' 18" excavation TCLP lead area 8 soil. —

1315 - 2nd truck load complete. 3rd truck



12-18-15 PASS 041

1315 cont. — arrives on-site to be loaded with excavated material from A6+7 stock piled in A5.

1320 - RW Collins begins loading 3rd truck with A6+7 stockpiled material.

* Ramon Mendoza EPA OSC was on-site today at 0800. Alderman Vince arrived on-site at 0845 to walk Area 1+2 with OSC. Alderman off-site at 0945, OSC off-site at 1030. —

1342 - RW Collins completes loading 3rd truck. 3rd truck hauling A6+7 material off-site. 2nd truck with A8 TCLP lead area soil places material in A5. —

1350 - RW Collins loading 3rd truck load of A8 TCLP lead area soil. —

1410 - 3rd truck A8 TCLP lead area soil loading complete, placed in A5. —

1415 - RW Collins begins loading 4th truck with A8 TCLP lead area soil.

1435 - 4th truck A8 TCLP lead area soil loading complete, placed in A5.

1440 - RW begins loading 5th truck with A8 TCLP soil.

1455 - RW Collins completes loading 5th truck

12-18-15 PASS OU1

1455 cont - Excavated material from A8 TCLP lead area stock piled in A5. RW Collins + GHD begin demobing.

1505 - GHD + START take down Dusttraks + DataRAM4 for the day. Avg. DataRAM4 reading 0.040 mg/m³. RW Collins covering stock piled material in A5 for the weekend with visqueen. RW Collins completed excavation of western 50' of A8 TCLP lead soil area.

1525 - START Pallardy off-site.

12-18-15



12-21-15 PASS OU1

0700 - START Pallardy, GHD(1), + RW Collins (5) on-site. Weather 44°F cloudy + raining wind S 11mph. Expected to rain all day, START will not be utilizing a DataRAM4 today.

0715 - RW Collins mobilizing equipment to continue excavation + soil grading in A8 TCLP lead soil area.

0725 - RW Collins begins excavation activities. Loading 1st truck load of the day with A8 TCLP lead area soil (A8 TCLP soil).

0745 - 1st truck load complete material placed in A5.

0750 - RW Collins begins loading 2nd truck load of the day.

0805 - 2nd truck load complete, loaded in A5 for stockpiling. EPA OSC Mendoza on-site.

0815 - RW Collins loading 3rd truck of the day with A8 TCLP soil. OSC + START walk A2 to determine how many rail ties were left.

Rite in the Rain

12-21-15 PASSOUT

0815 cont - approximately 30 cubic yds left.
0825 - RW Collins completes loading 3rd truck of the day, material stock piled in A5. — GEC
0845 - RW Collins begins loading 4th truck
0900 - 4th truck loaded + material placed in A5.
0905 - RW Collins begins loading 5th truck with A8 TCLP soil. — GEC
0926 - 5th truck loaded + material placed in A5. RW Collins begins excavating + grading on the west end of A8. A8 TCLP lead soil area excavation complete.
0950 - Western portion of A8 TCLP area excavation has standing water. RW Collins is utilizing a pump to pump water out to A10 to help with grading.
1030 - Pumping complete, RW Collins taking down pump. — GEC
1041 - RW Collins continues excavation + soil grading in W A8. Surface soil from W A8 will be used to fill A8 TCLP Area to grade.



12-21-15 PASSOUT

1200 - RW Collins breaks for lunch. START off-site for lunch. GEC Mendoza off-site for the day.
1230 - RW Collins continues excavation + soil grading in A8. — GEC
1330 - Western A8 TCLP soil area is wet from rain. RW Collins cannot grade as the soil is not dry enough to be compacted. RW Collins will grade soil to the west of the A8 TCLP area. A8 TCLP area wet soil will be removed to grade area
1415 - RW Collins continues soil excavation + grading work in western A8.
1430 - RW Collins + GHD demobing for the day. Area west of A8 TCLP area soil graded. — GEC
1500 - START Pallardy off-site. — GEC

12-21-15

12-22-15 PASS 011

0700 - START Pallardy on-site, GHD (2), + RW Collins (1) on-site. Weather cloudy 40°F wind W 9mph. RW Collins mobilizing equipment for gravel grading on W side of A8.

0710 - START zeroing DataRAM4 for the day. — GEC

0720 - GHD places Dust trak downwind on center south side of A9. Upwind near SW corner of H. Kramer.

0730 - START places downwind DATARAM4 on the S center side of A9. RW Collins placing geotextile fabric on W side of A8 to the W of the A8 TCLP Area. Load of gravel arrives + is placed on W side of A8 for grade grading. — GEC

0755 - RW Collins grading gravel on W side of A8. EPA OSC Meadows on-site. — GEC

0815 - 2nd load of gravel arrives on-site, placed on W end of A8. — GEC RW Collins continues grading.



12-22-15 PASS 012

0915 - RW Collins piling up soil in the A8 TCLP area for excavation. RW Collins continues gravel grading on W end of A8.

0940 - RW Collins begins loading small truck with stock piled soil material in the A8 TCLP area. Removed soil to be stock piled in A5.

1025 - 3rd truck load of soil excavated from A8 TCLP area + stock piled in A5. — GEC

1035 - 4th truck load of soil excavated and stock piled in A5. — GEC

1047 - 5th truck load of soil excavated + stock piled in A5. — GEC

1056 - 6th truck loaded + soil piled in A5.

1103 - 7th truckload complete + soil piled in A5.

1118 - 8th truckload complete + soil piled in A5.

1127 - 9th truckload complete. — GEC

1136 - 10th truckload complete. — GEC

1150 - 11th truck load complete. — GEC

1202 - 12th truck load complete. — GEC

1212 - 13th truck load complete. — GEC

1220 - Saturated soil excavation from

12-22-15 PASS OUT

1220 cont - A8 TCLP Area complete. RW Collins grading soil for geotextile fabric placement + for trucks to enter from A9 to dump gravel. Soil portion of A9 saturated at surface, removing surface soil for harder surface for trucks.

1240 - RW Collins breaking for lunch

1310 - RW Collins back from lunch. Truck on-site with gravel to begin grading A8 TCLP excavation area. GEC

1320 - RW Collins grading gravel.

1330 - 2nd truck on-site with gravel for the A8 TCLP excavation area.

1340 - RW Collins ~~GEC~~ GEC continues gravel grading.

1415 - 3rd truck on-site with gravel for A8 TCLP area excavation. GEC

1425 - RW Collins continues gravel grading.

1515 - RW Collins completing gravel grading for the day. Gravel graded in A8 TCLP area excavation. Gravel not graded to final grade. Additional gravel placement + grading will occur ~~later~~ tomorrow. GEC



12-22-15 PASS OUT

1530 - RW Collins demobing for the day. GHD taking down Dust trakers! START takes down DataRAM4. Average for the day 0.0388 mg/m³

1545 - START Pallardy off-site.

12-22-15

12-23-15 PASS OUT

0700 - START Pallardy on-site. GHD(1) + RW Collins (4) on-site, RW Collins holds safety meeting, discuss PPE, tight quarters work, slip, trip + falls. Weather 51°F foggy + cloudy, wind SE 13mph. GEC

0725 - RW Collins mobilizing equipment to A8. START zeroing DataRAM4 for the day. GEC

0730 - GHD placing Dust traks for the day. Downwind near SW corner of H. Kramer parking lot. Upwind Dust trak s center side of A9. START places downwind DataRAM4 near SW corner of H. Kramer parking lot.

0735 - RW collins begins grading gravel in A8. GEC

0805 - 1st truck load of gravel of day arrives on-site for grading in A8. Gravel unloaded on E side of A8 TCLP lead area.

0815 - EPA OSC Mendoza on-site.

0855 - 2nd truck with gravel on-site, unloaded in A8. RW Collins



12-23-15 PASS OUT

0855 cont - continues gravel grading in A8.

0940 - 3rd load of gravel of the day arrives on-site. Unloaded in A8. RW Collins continues gravel grading

1035 - 4th load of gravel arrives on-site. RW Collins continues gravel grading. Weather now cloudy with rain, 56°F Wind 16mph SE.

1100 - START + GHD take down Dust traks + DataRAM4 for the day due to rain. Avg. reading for the DataRAM4 0.0712 mg/m³. GEC

1110 - RW Collins completes A8 grading for the day. Heavy rains expected for the rest of the day, work ended due to weather. A8 grading will continue next week. RW Collins + GHD demobing for the day. GEC

1130 - START Pallardy off-site

12-23-15

12-28-15 PASS OUT

0700 – START Pallardy, GHD (1) & RW Collins (15) on-site. RW Collins mobilizing equipment for work today. Weather currently 32°F cloudy, snowing, wind 23mph ENE. START will not place DataRAM4 today due to snow/rain expected all day. —GEC

0720 – RW Collins excavating to the E of the A8 TCLP Soil Area to 6" bgs. Loading truck with excavated material to unload in A5 for stock piling. —GEC

0740 – Truck load of gravel arrives onsite. Gravel unloaded in Area 8 for grading. To the west of the current excavation on the E end of the A8 TCLP lead soil area. —GEC

0745 – 1st truck load of eastern A8 excavated soil stock piled in A5. —GEC

0815 – 2nd load of E A8 excavated soil stock piled in A5. —GEC

0840 – 3rd load of E A8 excavated soil stock piled in A5. —GEC



12-28-15 PASS OUT

0910 – 4th load of E A8 excavated soil stock piled in A5. —GEC

0940 – 5th load of E A8 excavated soil stock piled in A5. —GEC
Excavation of A8 complete.

0945 – RW Collins placing geotextile fabric for gravel placement in A8. RW Collins begins gravel grading in A8. —GEC

1030 – RW Collins + GHD break for lunch. —GEC

1100 – 2nd truck load of gravel on-site. —GEC
RW Collins back from lunch.

1125 – Gravel placed on E side of A8. RW Collins continues gravel grading in A8.

1250 – RW Collins continues gravel grading

1300 – 3rd truck load of gravel on-site. Placed near the SE corner of A6. RW Collins continues A8 gravel grading.

1330 – RW Collins not getting good compaction while grading gravel due to snow + water on surface of gravel.

12-28-15 PASS OU1

1330cont - RW Collins demobing due to weather, will continue grading with drier weather. GHD taking down Dust traks for the day + demobing. — JEG

1355 - RW Collins covering stock piled soil in A5 for the day. — JEG

1420 - RW Collins completes covering A5 stock piled soil for the day. — JEG

1430 - START Pallardy off-site. — JEG

12-28-15



12-29-15 PASS OU1

0700 - START Pallardy, GHD (1), + RW Collins (3) on-site. Daily safety meeting discussed tight quarters work, PPE, truck traffic, + cold work. Weather 35°F cloudy, wind 15 mph WSW. Large excavator on-site for loading stock piled material in A5 onto trucks to haul off-site. — JEG

0715 - START zeroing DataRAM4 for day.

0730 - START places DataRAM4 near the NE corner of A7 downwind. RW Collins begins loading 1st truck of the day with stock piled soil from A5. 219 truck number. — JEG

0737 - Truck #219 loaded + hauling material off-site. RW Collins loading truck #714. — JEG

0742 - Truck #714 loaded + hauling material off-site. RW Collins loading truck #150. Truck #116 + #175 waiting to be loaded. — JEG

0748 - Truck #150 loaded + hauling material off-site. RW Collins loading Truck #116.

12-29-15 PASS OUT

0759- Truck #116 loaded + hauling material off-site. RW Collins loading truck #175.

0807- Truck #175 loaded + hauling material off-site.

5 truckloads of stock piled material from A5 hauled off-site.

0953- Current Data RAM4 reading 0.0255 mg/m³
Current Avg reading 0.0204 mg/m³

0957- Truck #150 back on-site. RW Collins loading truck #150. 6th truck load of soil from stockpile in A5 of the day.

1003- Truck #150 loaded + hauling material off-site. RW Collins begins loading 7th truck load of the day. Truck #219.

1011- Truck #219 loaded + hauling material off-site. RW Collins begins loading Truck #714, 8th truck load of the day.

1019- Truck #714 loaded + hauling material off-site.

1034- RW Collins loading truck #175, 9th truck load of the day.

1044- Truck #175 loaded + hauling material off-site. RW Collins loading truck #116.



12-29-15 PASS OUT

1050- Truck #116 loaded + hauling material off-site. 10th truck load of the day.

1115- RW Collins breaking for lunch.

1145- RW Collins back from lunch break.

1229- RW Collins loading truck #150, 11th truck load of the day.

1237- Truck #150 loaded + hauling material off-site. RW Collins loading Truck #219. 12th truck load of the day.

1250- Truck #219 loaded + hauling material off-site.

1306- RW Collins loading truck #175.

1316- Truck #175 loaded + hauling material off-site. 13th truck load of the day.

1320- RW Collins loading truck #116 with remaining stock piled soil. Will not be a full load.

1343- Truck #116 loaded + hauling material off-site. 14th truck load of day. stock piled soil removal from A5 complete.

1410- RW Collins using gravel stock piled on the E side of A7 to fill in low spots in A5.

12-29-15 PASS OUT

1458 - Gravel placement in A5 complete. RW Collins demobing for the day. GHD taking down Dusttraks for the day. START taking down DataRAM 4 for the day. Avg. for the day 0.0183 mg/m³. —GEG

1515 - START Pallardy off-site. —GEG

Carl Pallardy 12-29-15



12-30-15 PASS OUT

0700 - START Pallardy on-site. GHD (2) + GEG RW Collins (3) on-site. Daily ~~safety~~ safety meeting held, discuss cold work, tight quarters, slips, trips, + falls. Weather 30°F cloudy snowing wind 10mph WSW.

0720 - RW Collins mobilizing equipment. GHD setting Dusttraks for the day. GHD placing downwind Dusttrak to the E of A8. GHD placing upwind Dusttrak near the SW corner of the H. Kramer parking lot.

0745 - Load of gravel arrives on-site. Placed on E side of A7.

0805 - EPA OSC Mendoza arrives on-site. Conducting final site walk with GHD, START + EPA. RW Collins removing snow from A8 to fill in low spots with gravel. START did not place DataRAM 4 today as snow is likely for most of the day. —GEG

0830 - RW Collins working on grading in A8 with gravel in low spots. United Rental on-site to pick

12-30-15 PASS OUT

0830 cont- water truck + skid steer.

0845- EPA OSC Mendoza off-site for the day. EG

0900- RW Collins ceases filling in low areas + grading because it is too difficult with the snow. RW Collins moving fences in place to secure site for the winter. Fence on E side of A9 moved to the W side of A8 for the winter. Moving fence on W side of EA1 to the inside of the curb E for the ~~winter~~. EG

0935- Remainder of the day RW Collins will be moving equipment off-site + demobing. ~~to~~ Equipment may also be demoted + taken off-site tomorrow if not taken off-site today. EG

0945- START Pallardy off-site. EG

12-30-15



5-27-16 PASS OUT

1215- START Pallardy on-site. Gravel grading of A5 underway prior to arrival of asphalt. Asphalt anticipated between 1300* & 1400. EG

GHD Walt Pochran on-site.

Chicago Department of Trasportation (CDOT) on-site for grading work + will also conduct asphalt placement + grading. EG

Weather cloudy chance of rain wind S at 13 mph. EG

1300- Grading work prior to asphalt laying + grading continues.

1330- Asphalt loads arrive on-site begin in SE corner and work west to north with laying of asphalt off of the trucks and compaction and grading with rollers. EG

* Backlog @ 1230 START Pallardy walks Area 9, 8 + 7 [redacted] to collect photo of final asphalt cap. Area 10 + 6 will be asphalt capped by GHD.

5-27-16 PASS OUT

1430 - Grading + Asphalt laying work continues on south side of Area 5.

1500 - Asphalt laying complete through half of Area 5.

1530 - Asphalt laying complete through majority of Area 5, completing NW corner. CDOT rolling + compacting remainder of Area 5.

1615 - Asphalt + compaction of Area 5 complete. START Pallardy takes photos CDOT off-site.

1630 - GHD Pochran off-site.

1645 - START Pallardy off-site.

5-27-16

# APPENDIX D

# PHOTOGRAPHIC LOG

**Photograph:** 1

**Direction:** West

**Date:** 4/15/2015

**Photographer:**
Paul Pallardy

**Description:**
View of the east side of Area 1 – West during the removal site assessment.

**Photograph:** 2

**Direction:** East

**Date:** 4/15/2015

**Photographer:**
Paul Pallardy

**Description:**
View of the west side of Area 1 – West during the removal site assessment.

**Photograph:** 3

**Direction:** West

**Date:** 7/17/2015

**Photographer:**
Paul Pallardy

**Description:**
View of do not excavate or add material sign placed by START on the east side of Area 2.


**Photograph:** 4

**Direction:** Southwest

**Date:** 11/16/2015

**Photographer:**
Paul Pallardy

**Description:**
View of GHD calibrating air monitoring equipment at the beginning of the day.

**Photograph:** 5

**Direction:** South

**Date:** 11/16/2015

**Photographer:**
Paul Pallardy

**Description:**
View of Area 6 and the north side of Area 10 prior to removal work.

**Photograph:** 6

**Direction:** Southeast

**Date:** 11/16/2015

**Photographer:**
Paul Pallardy

**Description:**
Compliance 1 employees donning Level C Personal Protective Equipment (PPE) prior to beginning railroad rail and tie removal in Area 10.

**Photograph:** 7

**Direction:** South

**Date:** 11/16/2015

**Photographer:**
Paul Pallardy

**Description:**
Compliance 1 personnel removing rails and railroad ties in Area 10.

**Photograph:** 8

**Direction:** Southeast

**Date:** 11/17/2015

**Photographer:**
Paul Pallardy

**Description:**
Compliance 1 personnel utilizing a blow torch to cut rails for removal in Area 4.

**Photograph:** 9

**Direction:** West

**Date:** 11/17/2015

**Photographer:**
Paul Pallardy

**Description:**
View of Area 2 and Area 1 – East prior to removal work.

**Photograph:** 10

**Direction:** South

**Date:** 11/17/2015

**Photographer:**
Paul Pallardy

**Description:**
View of Area 6 following rail and rail tie removal by Compliance 1.

**Photograph:** 11

**Direction:** West

**Date:** 11/18/2015

**Photographer:**
Paul Pallardy

**Description:**
Compliance 1 personnel removing rails and rail ties in Area 2.

**Photograph:** 12

**Direction:** Southeast

**Date:** 11/18/2015

**Photographer:**
Paul Pallardy

**Description:**
Compliance 1 personnel conducting rail tie removal with a skid steer in Area 6 and 10.

**Photograph:** 13

**Direction:** Northeast

**Date:** 11/18/2015

**Photographer:**
Paul Pallardy

**Description:**
Compliance 1 personnel loading a truck with removed rails and rail ties from Area 1 - West.


**Photograph:** 14

**Direction:** Northwest

**Date:** 11/23/2015

**Photographer:**
Paul Pallardy

**Description:**
View of RW Collins personnel mixing Free Flow 200 with soil in Area 4 where Toxicity Characteristic Leaching Procedure (TCLP) lead concentrations exceeded applicable standards.

**Photograph:** 15

**Direction:** Overview

**Date:** 11/24/2015

**Photographer:**
Paul Pallardy

**Description:**
View of START verifying excavation depth to 6 inches below ground surface (bgs) in Area 4.

**Photograph:** 16

**Direction:** Northwest

**Date:** 11/24/2015

**Photographer:**
Paul Pallardy

**Description:**
View of Free Flow 200 treated Area 4 soil stock piled for transportation off-site and disposal as non-hazardous waste at the Waste Management Laraway RDF facility in Elwood, Illinois.

**Photograph:** 17

**Direction:** West

**Date:** 11/25/2015

**Photographer:**
Paul Pallardy

**Description:**
RW Collins personnel mixing Free Flow 200 with soil in Area 8 where Toxicity Characteristic Leaching Procedure (TCLP) lead concentrations exceeded applicable standards.

**Photograph:** 18

**Direction:** Overview

**Date:** 11/30/2015

**Photographer:**
Paul Pallardy

**Description:**
View of START calibrating a Gillian pump flow rate to 2.00 liters per minute with a Bios DryCal Defender 510.

**Photograph:** 19

**Direction:** Southeast

**Date:** 11/30/2015

**Photographer:**
Paul Pallardy

**Description:**
View of GHD and START particulate monitoring downwind of excavation area.

**Photograph:** 20

**Direction:** East

**Date:** 10/22/2015

**Photographer:**
Paul Pallardy

**Description:**
View of visqueen placed by RW Collins personnel on the east side of the vacant property to the north of Area 1 – West for excavated soil stock piling.

**Photograph:** 21

**Direction:** East

**Date:** 12/01/2015

**Photographer:**
Paul Pallardy

**Description:**
View of RW Collins personnel grubbing vegetation from Area 2.

**Photograph:** 22

**Direction:** Northeast

**Date:** 12/02/2015

**Photographer:**
Paul Pallardy

**Description:**
View of GHD personnel collecting a soil sample from Free Flow 200 treated TCLP lead soil in Area 8 for TCLP lead analysis.

**Photograph:** 23

**Direction:** Southeast

**Date:** 12/02/2015

**Photographer:**
Paul Pallardy

**Description:**
View of RW Collins personnel conducting excavation work in Area 1 – West.

**Photograph:** 24

**Direction:** South

**Date:** 12/02/2015

**Photographer:**
Paul Pallardy

**Description:**
RW Collins personnel surveying the excavation depth in Area 1 - West.

**Photograph:** 25

**Direction:** Overview

**Date:** 12/02/2015

**Photographer:**
Paul Pallardy

**Description:**
View of START utilizing an Olympus InnovX DELTA X-ray fluorescence analyzer to screen soil for lead concentrations at the bottom of the excavation in Area 1 – West.

**Photograph:** 26

**Direction:** Northeast

**Date:** 12/03/2015

**Photographer:**
Paul Pallardy

**Description:**
View of stock piled soil and debris excavated from Area 1 - West.

**Photograph:** 27

**Direction:** South

**Date:** 12/04/2015

**Photographer:**
Paul Pallardy

**Description:**
View of gravel for use as backfill material placed at the south side of the vacant property to the north of Area 1 - West.

**Photograph:** 28

**Direction:** Northeast

**Date:** 12/04/2015

**Photographer:**
Paul Pallardy

**Description:**
View of stock piled graded soil and debris in Area 2.

**Photograph:** 29

**Direction:** Northeast

**Date:** 12/07/2015

**Photographer:**
Paul Pallardy

**Description:**
View of RW Collins personnel placing orange demarcation barrier fabric, placing gravel cover, and grading gravel cover in Area 1 - West.

**Photograph:** 30

**Direction:** Northwest

**Date:** 12/09/2015

**Photographer:**
Paul Pallardy

**Description:**
View of RW Collins personnel placing orange demarcation barrier fabric in Area 2.

**Photograph:** 31

**Direction:** East

**Date:** 12/10/2015

**Photographer:**
Paul Pallardy

**Description:**
View of graded gravel cover in Area 1 – East and Area 2.

**Photograph:** 32

**Direction:** Southwest

**Date:** 12/11/2015

**Photographer:**
Paul Pallardy

**Description:**
View of RW Collins personnel conducting grading work and placing orange demarcation barrier in Area 10 and Area 6.

**Photograph:** 33

**Direction:** Overview

**Date:** 12/14/2015

**Photographer:**
Paul Pallardy

**Description:**
View of START conducting soil pH screening with Hanna soil pH meter in Area 8 TCLP lead zone.

**Photograph:** 34

**Direction:** Northwest

**Date:** 12/16/2015

**Photographer:**
Paul Pallardy

**Description:**
View of gravel placed in Area 5 for grading for placement of an asphalt cover.

**Photograph:** 35

**Direction:** Northeast

**Date:** 12/16/2015

**Photographer:**
Paul Pallardy

**Description:**
RW Collins personnel conducting grading work in Area 6 and 7.


**Photograph:** 36

**Direction:** Northwest

**Date:** 12/17/2015

**Photographer:**
Paul Pallardy

**Description:**
RW Collins placing and grading gravel cover over orange demarcation barrier fabric in Area 6 and 7.

**Photograph:** 37

**Direction:** East

**Date:** 12/18/2015

**Photographer:**
Paul Pallardy

**Description:**
RW Collins personnel removing Free Flow 200 and 300 treated Area 8 TCLP lead soil.


**Photograph:** 38

**Direction:** Northeast

**Date:** 12/22/2015

**Photographer:**
Paul Pallardy

**Description:**
RW Collins placing and grading gravel cover over orange demarcation barrier fabric in Area 8.

**Photograph:** 39

**Direction:** Northwest

**Date:** 12/29/2015

**Photographer:**
Paul Pallardy

**Description:**
RW Collins personnel loading a truck with excavated stock piled soil removed from Area 4 and Area 8 for off-site disposal as non-hazardous waste at the Waste Management Laraway RDF facility in Elwood, Illinois.


**Photograph:** 40

**Direction:** North

**Date:** 12/29/2015

**Photographer:**
Paul Pallardy

**Description:**
RW Collins personnel conducting grading work in Area 5 for asphalt cover placement.

**Photograph:** 41

**Direction:** West

**Date:** 5/27/2016

**Photographer:**
Paul Pallardy

**Description:**
View of Chicago Department of Transportation personnel conducting asphalt placement and grading in Area 5.

**Photograph:** 42

**Direction:** Southwest

**Date:** 5/27/2016

**Photographer:**
Paul Pallardy

**Description:**
View of asphalt cover in Area 5.

**Photograph:** 43

**Direction:** West

**Date:** 5/27/2016

**Photographer:**
Paul Pallardy

**Description:**
View of asphalt cover in Area 8 and 9.

**Photograph:** 44

**Direction:** North

**Date:** 5/27/2016

**Photographer:**
Paul Pallardy

**Description:**
View of asphalt cover in Area 6 and 7.

**Photograph:** 45

**Direction:** East

**Date:** 9/16/2016

**Photographer:**
EPA OSC Mendoza

**Description:**
View of final asphalt and gravel cover in Area 1 – East and Area 2.

# APPENDIX E

# REMOVAL ASSESSMENT BORING LOGS

# Sample Collection Field Sheet

US EPA Region 5
Chicago, IL

**Project:** Pilsen Area Soils Site

**Matrix:** Soil (0-24")

**PROJECT ID:** 103X9026000 1S051504007 **ADDRESS:** 21st St and S Loomis St, Chicago

| Sample Identifier | | Sample Date | Sample Time | Sampler | Sample Location Description | GPS (check box) | Photo (check box) |
|---|---|---|---|---|---|---|---|
| PA-RR-17-0006 | 0-2", 2-6", 6-12", 12-24" | 4-27-15 | 0930 | Aaron Stevens + Paul Pallardy | Location on property: Soil description: 0-6" Dark Brown Sandy silt w/ tr gravel | ✓ | Location: Samples |
| PA-RR-17-0624 | 0-2", 2-6", 6-12", 12-24" | 4-27-15 | 0930 | AS + PP | Location on property: Soil description: 6-24" Dk br sandy silt w/ gravel | ✓ | |
| PA-RR-18-0006 | 0-2", 2-6", 6-12", 12-24" | 4-27-15 | 0950 | AS + PP | Location on property: Soil description: 0-6" Dk br silt w some sand | ✓ | |
| PA-RR-18-0618 | 0-2", 2-6", 6-12", 12-24" | " | 0950 | " | Location on property: Soil description: 6-18" Dk br sandy silt | ✓ | |
| PA-RR-19-0006 | 0-2", 2-6", 6-12", 12-24" | " | 1015 | " | Location on property: Soil description: 0-6" Dk br sandy silt | ✓ | |
| PA-RR-19-0618 | 0-2", 2-6", 6-12", 12-24" | " | 1015 | " | Location on property: Soil description: 6-18" Dk br sandy silt w/ tr gr | ✓ | |
| PA-RR-20-0006 | 0-2", 2-6", 6-12", 12-24" | " | 1028 | " | Location on property: Soil description: 0-6" Dk br sandy silt w/ tr gr | ✓ | |
| PA-RR-20-0618 | 0-2", 2-6", 6-12", 12-24" | " | 1028 | " | Location on property: Soil description: 6-18" Dk br sandy silt w/ gr | ✓ | |
| PA-RR-21-0006 | 0-2", 2-6", 6-12", 12-24" | " | 1048 | " | Location on property: Soil description: 0-6" Dk br silt w some sand | ✓ | |
| PA-RR-21-0624 | 0-2", 2-6", 6-12", 12-24" | " | 1048 | " | Location on property: Soil description: 6-24" Dk br silt w some sand, gravel + fill | ✓ | |

# Sample Collection Field Sheet

US EPA Region 5

Chicago, IL

Project: Pilsen Area Soils Site

Matrix: Soil (0-24")

**PROJECT ID: 103X90260001S051504007** **ADDRESS: 21st St and S Loomis St, Chicago**

| Sample Identifier | | Sample Date | Sample Time | Sampler | Sample Location Description | GPS | Photo |
|---|---|---|---|---|---|---|---|
| PA-RR-22-0006 | 0-2" | " | 1116 | " | Location on property: | ✓ | Location |
| | 2-6" | | | | | | |
| | 6-12" | | | | Soil description: 0-6" Dk Br silt w/some sand + tr gr | | Samples |
| | 12-24" | | | | | | |
| PA-RR-22-0624 | 0-2" | " | 1116 | " | Location on property: | ✓ | |
| | 2-6" | | | | | | |
| | 6-12" | | | | Soil description: 6-24" Dk br silt w/some sand + tr gr | | |
| | 12-24" | | | | | | |
| PA-RR-23-0006 | 0-2" | " | 1128 | " | Location on property: | ✓ | |
| | 2-6" | | | | | | |
| | 6-12" | | | | Soil description: 0-6" Dk br sandy silt w/ tr gr | | |
| | 12-24" | | | | | | |
| PA-RR-23-0624 | 0-2" | " | 1128 | " | Location on property: | ✓ | |
| | 2-6" | | | | | | |
| | 6-12" | | | | Soil description: 6-24" Dk br sandy silt w/ tr gr | | |
| | 12-24" | | | | | | |
| PA-RR-24-0006 | 0-2" | " | 1205 | " | Location on property: | ✓ | |
| | 2-6" | | | | | | |
| | 6-12" | | | | Soil description: 0-6" Dk br sandy silt w/ tr gr intermittent (fill?) | | |
| | 12-24" | | | | | | |
| PA-RR-24-0624 | 0-2" | " | 1205 | " | Location on property: | ✓ | |
| | 2-6" | | | | | | |
| | 6-12" | | | | Soil description: 6-24" Dk br mottled reddish br sandy silt w/ tr gr | | |
| | 12-24" | | | | | | |
| PA-RR-25-0006 | 0-2" | " | 1215 | " | Location on property: | ✓ | |
| | 2-6" | | | | | | |
| | 6-12" | | | | Soil description: 0-6" Dk reddish br sandy silt w/ tr gr | | |
| | 12-24" | | | | | | |
| PA-RR-25-0624 | 0-2" | " | 1215 | " | Location on property: | ✓ | |
| | 2-6" | | | | | | |
| | 6-12" | | | | Soil description: 6-24" Dk br sandy silt w/ tr gr | | |
| | 12-24" | | | | | | |
| PA-RR-26-0006 | 0-2" | " | 1230 | " | Location on property: | ✓ | |
| | 2-6" | | | | | | |
| | 6-12" | | | | Soil description: 0-6" Dk br sandy silt w/ tr gr | | |
| | 12-24" | | | | | | |
| PA-RR-26-0624 | 0-2" | " | 1230 | " | Location on property: | ✓ | |
| | 2-6" | | | | | | |
| | 6-12" | | | | Soil description: 6-24" Dk br sandy silt w/ tr gr | | |
| | 12-24" | | | | | | |

# APPENDIX F

# CHAIN OF CUSTODY FORMS

Rev 8/2014

# CHAIN OF CUSTODY



Company: Tetra Tech
Project Contact: Paul Pallardy
Telephone: 630-464-4101
Project Name: Pilsen Area Soils Site
Project #: 103X9026000150515040007
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

Folder #: 110900
Company: TETRA TECH
Project: PILSEN AREA SOILS SIT
Logged By: TKR PM: PM

Program:
QSM RCRA SDWA NPDES
Solid Waste Other None

PO # 1111200

Report To:
EMAIL: paul.pallardy@tetratech.com
Company: Tetra Tech
Address: 1 Swatker Dr, Suite 3700, Chicago, IL

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

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

Client Special Instructions

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

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

ANALYSES REQUESTED

| Collection Date | Collection Time | Matrix | Grab/ Comp | Sample # | Sample ID Description | Filtered? Y/N | Total Lead | Lead Fines | TCLP Lead | Total # Containers | Designated MS/MSD | CT Lab ID # (Lab use only) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4-27-15 | 1610 | S | G | 1 | PA-RR-17-0006 | N | X | X | X | 1 | | 579498/499 |
| | 1615 | | | 2 | PA-RR-17-0618 | | X | X | X | | | 579500/501 |
| | 1650 | | | 3 | PA-RR-18-0006 | | X | X | X | | | 579502/503 |
| | 1656 | | | 4 | PA-RR-18-0618 | | X | X | X | | | 579504/505 |
| | 1705 | | | 5 | PA-RR-19-0006 | | X | X | X | | | 579506/507 |
| | 1710 | | | 6 | PA-RR-19-0618 | | X | X | | | | 579508 |
| | 1720 | | | 7 | PA-RR-20-0006 | | X | X | X | | | 579509/510 |
| | 1725 | | | 8 | PA-RR-20-0618 | | X | X | | | | 579511 |
| | 1730 | | | 9 | PA-RR-21-0006 | | X | X | X | | | 579512/513 |
| | 1740 | | | 10 | PA-RR-21-0624 | | X | X | | | | 579514 |
| | 1745 | | | 11 | PA-RR-22-0006 | | X | X | X | | | 579515/516 |
| | 1745 | | | 11 | PA-RR-22-0006D | | X | X | X | | | 579517/518 |

Fill in Spaces with Bottles per Test

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [signature] | 4/28/15 1200 | TWR | 4/29/15 1310 |
| Received by: | Date/Time | Received for Laboratory by: | Date/Time |
| | | TWR | 4/29/15 1441 |

Lab Use Only
Ice Present Yes No
Temp 2.6° IR Gun # 4
Cooler # 5325

# CT Laboratories Terms and Conditions

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

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

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

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

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

**2. PAYMENT TERMS**

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

**3. CHANGE ORDERS, TERMINATION**

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

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

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

**4. WARRANTIES AND LIABILITY**

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

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

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

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

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

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

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

**5. RESULTS, WORK PRODUCT**

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

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

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

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

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

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

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

**6. INSURANCE**

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

**7. AUDIT**

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

Rev 8/2014

# CHAIN OF CUSTODY



Company: Tetra Tech
Project Contact: Paul Pallardy
Telephone: 630-464-4101
Project Name: PASS
Project #: 103X9026000150515040007
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

Lab Use Only
Place Header Sticker Here:

Program:
QSM RCRA SDWA NPDES
Solid Waste Other None

PO # 1111200

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

Client Special Instructions

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

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%

ANALYSES REQUESTED

| Collection Date | Collection Time | Matrix | Grab/ Comp | Sample # | Sample ID Description | Filtered? Y/N | Total Lead | Lead Fines | TCLP Lead | Total # Containers | Designated MS/MSD | CT Lab ID # (Lab use only) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 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 | | | 579520/521 |
| | 1812 | | | 14 | PA-RR-23-0624 | | X | X | | | | 579524 |
| | 1820 | | | 15 | PA-RR-24-0006 | | X | X | X | | | 579525/529 |
| | 1835 | | | 16 | PA-RR-24-0624 | | X | X | | | | 579551 |
| | 1835 | | | 16 | PA-RR-24-0624D | | X | X | | | | 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 | | | 579556/557 |
| | 1910 | | | 20 | PA-RR-26-0624 | | X | X | X | | | 579558/559 |

Fill in Spaces with Bottles per Test

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [signature] | 4/28/15 1200 | TLR | 4/29/15 1310 |
| Received by: | Date/Time | Received for Laboratory by: | Date/Time |
| | | TLR | 4/29/15 1441 |

Lab Use Only
Ice Present (Yes) No
Temp 2.6 IR Gun # 4
Cooler # 5325

# CT Laboratories Terms and Conditions

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

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

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

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

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

**2. PAYMENT TERMS**

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

**3. CHANGE ORDERS, TERMINATION**

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

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

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

**4. WARRANTIES AND LIABILITY**

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

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

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

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

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

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

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

**5. RESULTS, WORK PRODUCT**

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

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

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

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

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

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

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

**6. INSURANCE**

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

**7. AUDIT**

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

# Cooler Receipt Form

Ice Present YES NO

Temperature 2.6°

IR Gun # 4

Initials TKr

Date 4/29/15 Time 1310

Cooler #: 5325

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
ACTWGT: 40.2 LB MAN
DIMS: 18x12x12 IN
BILL SENDER

TO PATRICK LETTERER
CT LABS
1230 LANGE COURT

BARABOO WI 53913
(608) 356-2760
REF: 103X9026000 1S051504007

FedEx Express

WED - 29 APR AA
STANDARD OVERNIGHT

TRK# 0201 5987 5142 8018

55 MSNA

53913
WI-US MSN

CUSTODY SEAL
DATE 4-28-15
SIGNATURE

QEC
Quality Environmental Containers
800-255-3950 • 304-255-3900

CUSTODY SEAL
DATE 4-28-15
SIGNATURE

QEC
Quality Environmental Containers
800-255-3950 • 304-255-3900

Folder #: 111014
Company: TETRA TECH
Project: PILSEN AREA SOILS SIT
Logged By: JLS PM: PM

Rev 8/2014



Company: Tetra Tech
Project Contact: Paul Pallardy
Telephone: 630-461-4101
Project Name: Pilsen Area Soils Site
Project #: 103X9026000150515040007
Location: Chicago, IL
Sampled By: Paul Pallardy

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

Folder #: 110900
Company: TETRA TECH
Project: PILSEN AREA SOILS SIT
Logged By: TKR PM: PM
111014

QSM RCRA SDWA NPDES
Solid Waste Other None

PO # 1111200

**Report To:**
EMAIL: paul.pallardy@tetratech.com
Company: Tetra Tech
Address: 1 Swatker Dr, Suite 3700, Chicago, IL

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

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

**Client Special Instructions**
@ Added on 05/06/15 per email from Paul Pallardy on 05/05/15.

**Turnaround Time**
Normal RUSH*
Date Needed: 7 day TAT
*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

ANALYSES REQUESTED

| Collection Date | Collection Time | Matrix | Grab/ Comp | Sample # | Sample ID Description | Filtered? Y/N | Total Lead | Lead Fines | TCLP Lead | | Cd, Cu, Zn @ | Sn @ | | | | | | | | | Total # Containers | Designated MS/MSD | CT Lab ID # (Lab use only) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Fill in Spaces with Bottles per Test | | | | | | | | | | | | | | | | |
| 4/27/15 | 1640 | S | G | 1 | PA-RR-17-0006 | N | X | X | X | | ✓ | ✓ | | | 581728 | | | | | | 1 | | 579498/499 |
| | 1645 | | | 2 | PA-RR-17-06[redacted] | | X | X | X | | ✓ | ✓ | | | 581730 | | | | | | | | 579500/501 |
| | 1650 | | | 3 | PA-RR-18-0006 | | X | X | X | | ✓ | ✓ | | | 581732 | | | | | | | | 579502/503 |
| | 1656 | | | 4 | PA-RR-18-0618 | | X | X | X | | ✓ | ✓ | | | 581734 | | | | | | | | 579504/505 |
| | 1705 | | | 5 | PA-RR-19-0006 | | X | X | X | | ✓ | ✓ | | | 581736 | | | | | | | | 579506/507 |
| | 1710 | | | 6 | PA-RR-19-0618 | | X | X | | | ✓ | ✓ | | | 581738 | | | | | | | | 579508 |
| | 1720 | | | 7 | PA-RR-20-0006 | | X | X | X | | ✓ | ✓ | | | 581739 | | | | | | | | 579509/510 |
| | 1725 | | | 8 | PA-RR-20-0618 | | X | X | | | ✓ | ✓ | | | 581741 | | | | | | | | 579511 |
| | 1730 | | | 9 | PA-RR-21-0006 | | X | X | X | | ✓ | ✓ | | | 581742 | | | | | | | | 579512/513 |
| | 1740 | | | 10 | PA-RR-21-0624 | | X | X | | | ✓ | ✓ | | | 581744 | | | | | | | | 579514 |
| | 1745 | | | 11 | PA-RR-22-0006 | | X | X | X | | ✓ | ✓ | | | 581745 | | | | | | | | 579515/516 |
| | 1745 | | | 11 | PA-RR-22-0006D | | X | X | X | | ✓ | ✓ | | | 581747 | | | | | | | | 579517/518 |

| Relinquished By: | Date/Time | Received By: | Date/Time | Lab Use Only |
|---|---|---|---|---|
| [signature] | 4/28/15 1200 | TWr | 4/29/15 1310 | Ice Present (Yes) No |
| Received by: | Date/Time | Received for Laboratory by: | Date/Time | Temp 2.6° IR Gun # 4 |
| | | TWr | 4/29/15 1441 | Cooler # 5325 |

Rev 8/2014

# CHAIN OF CUSTODY



Company: Tetra Tech
Project Contact: Paul Pallardy
Telephone: 630-464-4101
Project Name: PASS
Project #: 103X9026000150515040007
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

Lab Use Only
Place Header Sticker Here:

Program:
QSM RCRA SDWA NPDES
Solid Waste Other None

PO # 1111200

**Report To:**
EMAIL: paul.pallardy@tetratech.com
Company: Tetra Tech
Address: 1 S 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

**Client Special Instructions**
@ Added on 05/06/15 per email from Paul Pallardy on 05/05/15.

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

**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%

**ANALYSES REQUESTED**

| Collection Date | Collection Time | Matrix | Grab/ Comp | Sample # | Sample ID Description | Filtered? Y/N | Total Lead | Lead Fines | TCLP Lead | | Cd, Cu, Zn @ | Sn @ | | | | | | | | Total # Containers | Designated MS/MSD | CT Lab ID # (Lab use only) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Fill in Spaces with Bottles per Test | | | | | | | | | | | | | | | |
| 4/27/15 | 1758 | S | G | 12 | PA-RR-22-0624 | N | X | X | | | ✓ | ✓ | | | 581749 | | | | | 1 | | 579519 |
| | 1805 | | | 13 | PA-RR-23-0006 | | X | X | X | | ✓ | ✓ | | | 581750 | | | | | | | 579520/521 |
| | 1812 | | | 14 | PA-RR-23-0624 | | X | X | | | ✓ | ✓ | | | 581752 | | | | | | | 579524 |
| | 1820 | | | 15 | PA-RR-24-0006 | | X | X | X | | ✓ | ✓ | | | 581753 | | | | | | | 579525/529 |
| | 1835 | | | 16 | PA-RR-24-0624 | | X | X | | | ✓ | ✓ | | | 581755 | | | | | | | 579551 |
| | 1835 | | | 16 | PA-RR-24-0624D | | X | X | | | ✓ | ✓ | | | 581756 | | | | | | | 579552 |
| | 1845 | | | 17 | PA-RR-25-0006 | | X | X | X | | ✓ | ✓ | | | 581757 | | | | | 2 | X | 579553/554 |
| | 1900 | | | 18 | PA-RR-25-0624 | | X | X | | | ✓ | ✓ | | | 581759 | | | | | 1 | | 579555 |
| | 1905 | | | 19 | PA-RR-26-0006 | | X | X | X | | ✓ | ✓ | | | 581760 | | | | | | | 579556/557 |
| | 1910 | | | 20 | PA-RR-26-0624 | | X | X | X | | ✓ | ✓ | | | 581762 | | | | | | | 579558/559 |

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [signature] | 4/28/15 1200 | TLR | 4/29/15 1310 |
| Received by: | Date/Time | Received for Laboratory by: | Date/Time |
| | | TLR | 4/29/15 1441 |

*Lab Use Only*
Ice Present (Yes) No
Temp 2.6° IR Gun # 4
Cooler # 5325

Rev 8/2014

# CHAIN OF CUSTODY



Company: Tetra Tech
Project Contact: Paul Pallardy
Telephone: 630-464-4101
Project Name: PASS
Project #: 103X9026000150515040007
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

Folder #: 111568
Company: TETRA TECH
Project: PILSEN AREA SOILS SIT
Logged By: PML PM: PM

Program:
DSM RCRA SDWA NPDES
Solid Waste Other None

PO # 1111200

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

Client Special Instructions

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

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%

| Collection Date | Collection Time | Matrix | Grab/ Comp | Sample # | Sample ID Description | Filtered? Y/N | Total Lead | Lead Fixes | TCLP Lead | TCLP Lead 6-2-15 | Total # Containers | Designated MS/MSD | CT Lab ID # (Lab use only) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 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 | | | | 579520/521 |
| | 1812 | | | 14 | PA-RR-23-0624 | | X | X | | | | | 579524 |
| | 1820 | | | 15 | PA-RR-24-0006 | | X | X | X | | | | 579525/529 |
| | 1835 | | | 16 | PA-RR-24-0624 | | X | X | | | | | 579551 |
| | 1835 | | | 16 | PA-RR-24-0624D | | X | X | | | | | 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 | | | | 579556/557 |
| | 1910 | | | 20 | PA-RR-26-0624 | | X | X | X | ⊗ | | | 579558/559 |
| | | | | | | | | | | 590906 | | | |

Fill in Spaces with Bottles per Test

| Relinquished By: | Date/Time | Received By: | Date/Time | Lab Use Only |
|---|---|---|---|---|
| [signature] | 4/28/15 1200 | TLR | 4/29/15 1310 | Ice Present (Yes) No |
| Received by: | Date/Time | Received for Laboratory by: | Date/Time | Temp 2.6 IR Gun # 4 |
| | | TLR | 4/29/15 1441 | Cooler # 5325 |

⊗ PML 06-02-15, Per Paul Pallardy. PML 06-02-15 1346

# CT Laboratories Terms and Conditions

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

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

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

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

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

**2. PAYMENT TERMS**

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

**3. CHANGE ORDERS, TERMINATION**

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

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

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**4. WARRANTIES AND LIABILITY**

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

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

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

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

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

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

**5. RESULTS, WORK PRODUCT**

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

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

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

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

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

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

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

**6. INSURANCE**

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

**7. AUDIT**

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

# Cooler Receipt Form

Ice Present (YES) NO

Temperature 2.6°

IR Gun # 4

Initials TKr

Date 4/29/15 Time 1310

Cooler #: 5325

ORIGIN ID:CHIA (312) 201-7760
MAILROOM
TETRA TECH INC - EMI DIVISION
1 S. WACKER DR
37TH FLOOR
CHICAGO, IL 60606
UNITED STATES US

SHIP DATE: 28APR15
ACTWGT: 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

TRK# 0201 5987 5142 8018

WED - 29 APR AA
STANDARD OVERNIGHT

55 MSNA

53913
WI-US MSN

CUSTODY SEAL
DATE
SIGNATURE

QEC
Quality Environmental Containers
800-255-3950 • 304-255-3900

CUSTODY SEAL
DATE
SIGNATURE

QEC
Quality Environmental Containers
800-255-3950 • 304-255-3900

Rev 8/2014

# CHAIN OF CUSTODY

Page 1 of 1

Company: Tetra Tech
Project Contact: Paul Pallardy
Telephone: 630-464-4101
~~Project Name:~~ Pilsen Area Soils Site 041
Project #: 103X9026000150515040 07
Location: Pilsen, Chicago, IL
Sampled By: PP

Folder #: 115630
Company: TETRA TECH
Project: EAST PILSEN SOIL SITE
Logged By: JLS PM: PM

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

Program: RCRA SDWA NPDES
Waste Other X

1111200

Report To:
EMAIL: paul.pallardy@tetratech.com
Company: Tetra Tech
Address: 1 Swacker Dr, Suite 3700 Chicago, IL 60606

~~Invoice To:~~*
EMAIL: "
Company: "
Address: "

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

**Client Special Instructions**

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

Turnaround Time: Normal RUSH*
Date Needed: 12-01-15 Tuesday
*Rush analysis requires prior CT Laboratories' approval*
Surcharges:
24 hr 200%
2-3 days 100%
4-9 days 50%

ANALYSES REQUESTED: TCLP Lead

| Collection Date | Collection Time | Matrix | Grab/ Comp | Sample # | Sample ID Description | Filtered? Y/N | TCLP Lead | Total # Containers | Designated MS/MSD | CT Lab ID # (Lab use only) |
|---|---|---|---|---|---|---|---|---|---|---|
| 11-24-15 | 1202 | S | C | 1 | S-112415-GW-01-ES | N | X | | | 63004 |
| 11-24-15 | 1208 | S | C | 2 | S-112415-GW-02-ES | N | X | | | 63005 |

Fill in Spaces with Bottles per Test

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [signature] | 11-24-15/1430 | [signature] | 11/25/15 1046 |
| Received By: | Date/Time | Received for Laboratory by: [signature] | Date/Time 11/25/15 |

Lab Use Only
Ice Present Yes No
Temp 2.8 IR Gun # 10
Cooler # 5582

# CT Laboratories Terms and Conditions

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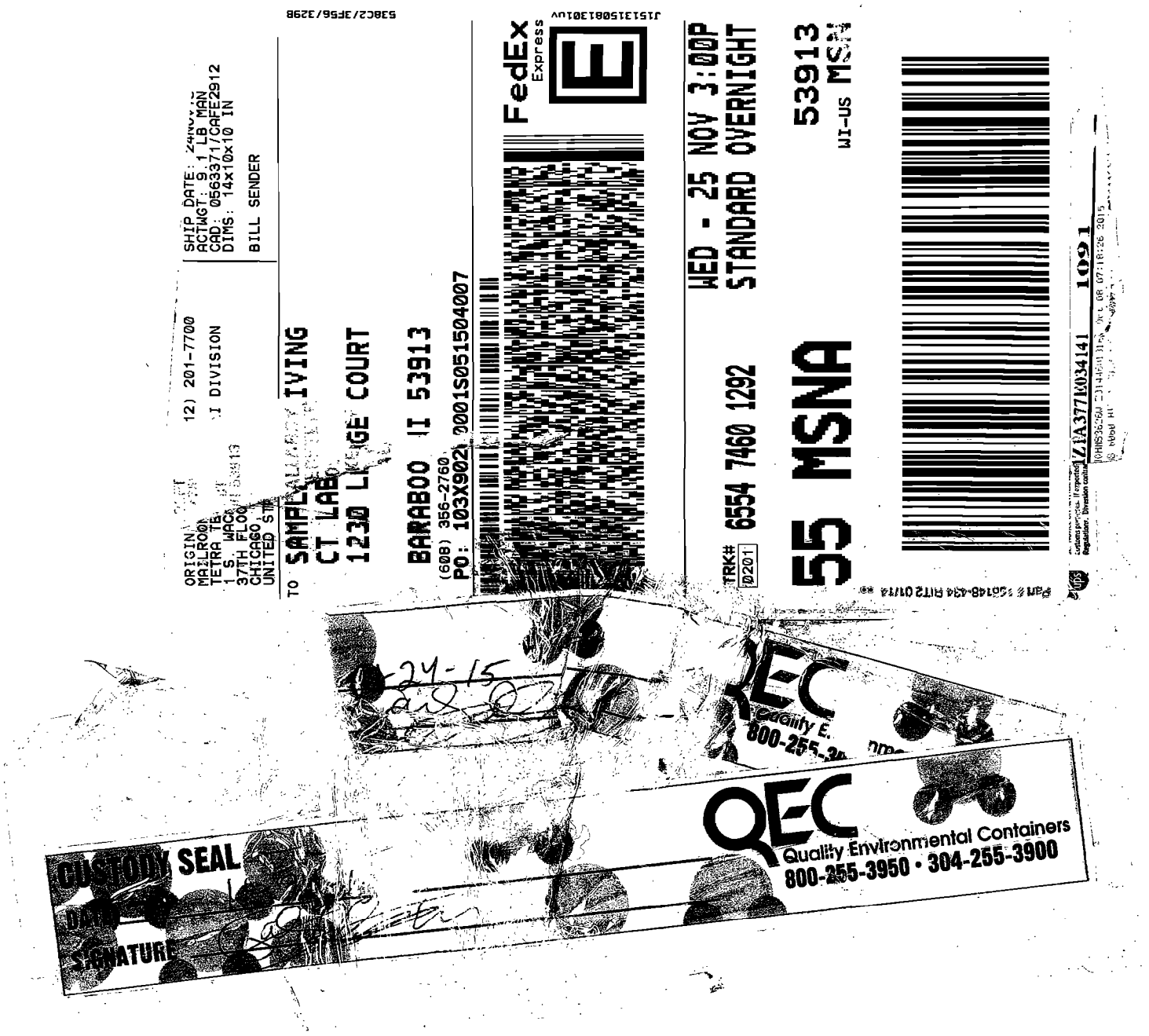


Ice Present (Yes) No

Temperature 2.8 #10

Initials DL

Date 11/25/15 Time 10:30

Cooler # 5582

Rev 8/2014

# CHAIN OF CUSTODY

Page 1 of 1

Company: Tetra Tech
Project Contact: Paul Pallardy
Telephone: 630-464-4101
Project Name: PASS OU1
Project #: 103X9026000150515 04007
Location: Pilsen, Chicago, IL
Sampled By: PP

CT LABORATORIES

Folder #: 115683
Company: TETRA TECH
Project: PILSEN AREA SOILS SIT
Logged By: JLS PM: PM

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

ogram:
iM RCRA SDWA NPDES
lid Waste Other X
) # 1111200

Report To:
EMAIL: paul.pallardy@tetratech.com
Company: Tetra Tech
Address: 1 Swacker Dr, Suite 3700
Chicago, IL 60606

Invoice To:*
EMAIL: "
Company: "
Address: "

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

**Client Special Instructions**

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

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

ANALYSES REQUESTED: TCLP Lead

Fill in Spaces with Bottles per Test

| Collection Date | Collection Time | Matrix | Grab/ Comp | Sample # | Sample ID Description | Filtered? Y/N | TCLP Lead | Total # Containers | Designated MS/MSD | CT Lab ID # (Lab use only) |
|---|---|---|---|---|---|---|---|---|---|---|
| 11-25-15 | 1300 | S | C | 1 | S-112515-ML-04-ES | N | X | | | 663923 |
| 11-25-15 | 1300 | S | C | 2 | S-112515-ML-05-ES | N | X | | | 663924 |

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [signature] | 11-25-15 / 1200 | | |
| Received by: | Date/Time | Received for Laboratory by: | Date/Time |
| | | [signature] | 12/1/15 1139 |

Lab Use Only
Ice Present Yes No
Temp 6.3 IR Gun # 11
Cooler # 3755

12/1/15 1034 [signature]

# CT Laboratories Terms and Conditions

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

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

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

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

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

**2. PAYMENT TERMS**

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

**3. CHANGE ORDERS, TERMINATION**

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

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

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

**4. WARRANTIES AND LIABILITY**

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

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

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

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

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

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

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

**5. RESULTS, WORK PRODUCT**

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

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

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

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

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

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

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

**6. INSURANCE**

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

**7. AUDIT**

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

Rev 8/2014

# CHAIN OF CUSTODY



Company: Tetra Tech
Project Contact: Paul Pallardy
Telephone: 630-464-4101
Project Name: Pilsen Area Soils Site OU1
Project #: 103X9020000505
Location: Pilsen, Chicago, IL
Sampled By: Paul Pallardy

CT LABORATORIES

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

**********
Folder #: 115772
Company: TETRA TECH
Project: PILSEN AREA SOILS SIT
Logged By: JLS PM: PM
**********

ogram:
SM RCRA SDWA NPDES
lid Waste Other X
) # 1111200

Report To:
EMAIL: paul.pallardy@tetratech.com
Company: Tetra Tech
Address: 1 S Wacker Dr, St 3700
Chicago, IL 60606

Invoice To:*
EMAIL: Same As Above
Company:
Address:

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

**Client Special Instructions**

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

Turnaround Time
Normal RUSH*
Date Needed: 72hr TAT
*Rush analysis requires prior CT Laboratories' approval*
Surcharges:
24 hr 200%
2-3 days 100%
4-9 days 50%

ANALYSES REQUESTED

| Collection Date | Collection Time | Matrix | Grab/ Comp | Sample # | Sample ID Description | Filtered? Y/N | TCLP Lead | | | | | | | | | | | | | | | Total # Containers | Designated MS/MSD | CT Lab ID # (Lab use only) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Fill in Spaces with Bottles per Test | | | | | | | | | | | | | | | | | |
| 12-02-15 | 925 | S | C | 1 | S-120215-AK-007-ES | N | X | | | | | | | | | | | | | | | | | 665219 |
| 12-02-15 | 935 | S | C | 2 | S-120215-AK-008-ES | N | X | | | | | | | | | | | | | | | | | 665261 |

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [signature] | 12-2-15/1545 | | |
| Received by: | Date/Time | Received for Laboratory by: | Date/Time |
| | | [signature] | 12/3/15 1306 |

Lab Use Only
Ice Present Yes No
Temp 4.3 IR Gun # 10
Cooler # 5718

12/3/15 1210 [illegible]

# CT Laboratories Terms and Conditions

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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).

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**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.

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STODY SEAL
TE 12-02-15
GNATURE

QEC
Quality Environmental Containers
800-255-3950 • 304-255-3900

16 LBS

ORIGIN ID:GYYA (630) 464-4101
PAUL PALLARDY
1 S WACKER DR FL 37
CHICAGO, IL 60606
UNITED STATES US

SHIP DATE: 02DEC15
ACTWGT: 15.00 LB
CAD: 006996416/SSFE162:
DIMS: 18x12x10 IN
BILL THIRD PARTY

0685
2.03
D

TO

CT LABORTORIES
1230 LANGE COURT

BARABOO WI 53913
(608) 356-2760
INV:
PO:
REF:
DEPT:

FedEx
Express
E
REL#
3765346

TRK# 0201 7818 4192 0685

THU - 03 DEC 3:00P
STANDARD OVERNIGHT

55 MSNA

53913
WI-US MSN

Cooler 5718
on ice
4.3° in #10
12/3/15 1210
jb

STODY SEAL
TE 12-02-15
GNATURE

QEC
Quality Environmental Containers
800-255-3950 • 304-255-3900

Rev 8/2014

# CHAIN OF CUSTODY

Page 1 of 1

Company: Tetra Tech
Project Contact: Paul Pallardy
Telephone: 630-464-4101
Project Name: PASS OU1
Project #: 103X9026000150515 007
Location: Pilsen, Chicago, IL
Sampled By: Paul Pallardy

CT LABORATORIES

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

Folder #: 115794
Company: TETRA TECH
Project: PILSEN AREA SOILS SH
Logged By: JLS PM PM

ogram:
M RCRA SDWA NPDES
lid Waste Other X
# 1111200

Report To:
EMAIL: paul.pallardy@tetratechdam
Company: Tetra Tech
Address: 1 S Wacker Dr, St 3700 Chicago, IL 60606

Invoice To:*
EMAIL: "
Company: "
Address: "

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

**Client Special Instructions**

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

Turnaround Time
Normal RUSH*
Date Needed: Monday 12-7
*Rush analysis requires prior CT Laboratories' approval*
Surcharges:
24 hr 200%
2-3 days 100%
4-9 days 50%

ANALYSES REQUESTED: Total Lead

Fill in Spaces with Bottles per Test

| Collection Date | Collection Time | Matrix | Grab/ Comp | Sample # | Sample ID Description | Filtered? Y/N | Total Lead | Total # Containers | Designated MS/MSD | CT Lab ID # (Lab use only) |
|---|---|---|---|---|---|---|---|---|---|---|
| 12-2-15 | 1411 | S | C | 1 | PASS-AIW-P3-120215 | N | | 1 8oz | | 665825 |
| 12-3-15 | 0935 | ↓ | ↓ | 2 | PASS-AIW-P5-120315 | ↓ | | ↓ | | 826 |
| 12-3-15 | 1000 | ↓ | ↓ | 3 | PASS-AIW-P6-120315 | ↓ | | 2 8oz | X | 827 |
| ↓ | 1025 | ↓ | ↓ | 4 | PASS-AIW-P7-120315 | ↓ | | 1 8oz | | 828 |
| ↓ | 1235 | ↓ | ↓ | 5 | PASS-AIW-P8-120315 | ↓ | | ↓ | | 829 |
| 12-3-15 | 1235 | S | C | 6 | PASS-AIW-P8-120315-D | N | | ↓ | | 830 |

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [signature] | 12-3-15/1645 | | |
| Received by: | Date/Time | Received for Laboratory by: | Date/Time |
| | | [signature] | 12/4/15 1021 |

Lab Use Only
Ice Present Yes No
Temp 4.3 IR Gun # 11
Cooler # 5490

12/07/15 1035

# CT Laboratories Terms and Conditions

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

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

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

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

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

**2. PAYMENT TERMS**

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

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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

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: 03DEC15
ACTWGT: 20.2 LB MAN
CAD: 0563371/CAFE2912
DIMS: 22x20x12 IN

BILL SENDER

TO SAMPLE RECEIVING
CT LABS
1230 LANGE COURT

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

538C1/1308/3258

FedEx Express

FRI - 04 DEC 3:00P
STANDARD OVERNIGHT

TRK# 0201 6554 7460 1535

53913
WI-US MSN

55 MSNA

Part # 156148-434 Rev 0

CUSTODY SEAL
DATE
SIGNATURE

Quality Environmental Containers
800-255-3950 • 304-255-3900

CUSTODY SEAL
DATE
SIGNATURE

Quality Environmental Containers
800-255-3950 • 304-255-3900

Cooler 5690
12/4/15 1035 [illegible]
4.3° IR #11
on ice

Rev 8/2014

# CHAIN OF CUSTODY



Company: Tetra Tech
Project Contact: Paul Pallardy
Telephone: 630-464-4101
Project Name: PASS OU1
Project #: 103X9020001505/504 007
Location: Pilsen, Chicago, IL
Sampled By: Paul Pallardy

CT LABORATORIES

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

Folder #: 115903
Company: TETRA TECH
Project: EAST PILSEN SOIL SITE
Logged By: JLS PM: PM

Program: RCRA SDWA NPDES Waste Other X

1111200

Report To:
EMAIL: paul.pallardy@tetratech.com
Company: Tetra Tech
Address: 1 S Wacker Dr, Ste 3700 Chicago, IL 60606

Invoice To:*
EMAIL: "
Company: "
Address: "

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

Client Special Instructions

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

Turnaround Time
Normal RUSH*
Date Needed: 12-14
72 hr TAT
Rush analysis requires prior CT Laboratories' approval
Surcharges:
24 hr 200%
2-3 days 100%
4-9 days 50%

ANALYSES REQUESTED

| Collection Date | Collection Time | Matrix | Grab/ Comp | Sample # | Sample ID Description | Filtered? Y/N | TCLP lead | TCLP cadmium | Total # Containers | Designated MS/MSD | CT Lab ID # (Lab use only) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 12-8-15 | 1350 | S | C | 1 | S-120815-AK-009-ES | N | X | X | 1 8oz | | 667558 |

Fill in Spaces with Bottles per Test

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [signature] | 12-8-15/1530 | [signature] | 12/8/15 1044 |
| Received by: | Date/Time | Received for Laboratory by: | Date/Time |
| | | [signature] | 12/9/15 10:30 |

Lab Use Only
Ice Present Yes No
Temp 1.1 IR Gun # 8
Cooler # 5162

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Part # 156297-[illegible]

ORIGIN ID:GYYA (630) 464-4101
PAUL PALLARODY
REF#103X9026000150515040 07
1 [illegible] WACKER DR FL 37
CHICAGO, IL 60606
UNITED STATES US

SHIP DATE: 08DEC15
ACTWGT: 9.00 LB
CAD: 0069 9418/SSFE1621
DIMS: 13x9x9 IN
THIRD PARTY

TO
CTLABORATRIES
1230 LANGE COURT
BARABOO WI 53913
(608) 356-2760
INV:
PO:
REF:
DEPT:

FedEx Express
REL# 3765346

WED - 09 DEC 3:00P
STANDARD OVERNIGHT

53913
WI-US MSN

TRK# 7818 8983 8656
0201

55 MSNA

RT 327 FZ

D 1 16:00 8656 12.09

CUSTODY SEAL
DATE 12-8-15
SIGNATURE

QEC
Quality Environmental Containers
800-255-3950 • 304-255-3900

CUSTODY SEAL
DATE 12-8-15
SIGNATURE

QEC
Quality Environmental Containers
800-255-3950 • 304-255-3900

Ice Present Yes No #8
Temperature 1.1
Initials DL
Date 12/9/15 Time 10:30
Cooler # 5162

ALS | Environmental
4388 Glendale Milford Rd.
Cincinnati, Ohio 45242
Phone: (800)-458-1493 or (513) 733-5336
Fax: (513) 733-5347

# ANALYTICAL REQUEST FORM

14166

☐ **REGULAR Status** 151770

☒ **RUSH Status Required - ADDITIONAL CHARGE**
RESULTS REQUIRED BY 11-23-15 (DATE)
CONTACT ALS LABORATORY GROUP PRIOR TO SENDING SAMPLES

Date 11-16-15 Purchase Order No. 111200
Company Name Tetra Tech
Address 15 Wacker Dr, Suite 3700
Chicago (City) IL (State) 60606 (Zip)
Send Report To Paul Pallardy
Email Address paul.pallardy@tetratech.com
Telephone (630) 464-4101
Fax Telephone ( )

Billing Address (if different)

Quote No. 150915 through CT Laboratories
Sampling Site Pilsen Area Soils Site OU1
Date/Time of Collection 11-16-15 1516
Project No. 103X90260001505 1504007

| Lab Use Only | Client Sample Number | Media Type | Sample Volume (Liters) | ANALYSES REQUESTED - Use Method Number if Known |
|---|---|---|---|---|
| 01 | PI-A10-111615 | Particulate MCE Filter | 232L | Method 7300, Arsenic, Cadmium, Chromium, Lead |
| 02 | TB-111615 | " | NA | " |

**Failure to complete all portions of this form may delay analysis. Please fill in this form *LEGIBLY*.**

## CHAIN OF CUSTODY

| Relinquished by: (Signature) | Date / Time | Received by: (Signature) | Date / Time |
|---|---|---|---|
| [signature] | 11-16-15 1915 | [signature] | 11/17/15 1:50 |
| Relinquished by: (Signature) | Date / Time | Received by: (Signature) | Date / Time |

**ALS LAB USE ONLY**

COOLER TEMP: 2.6 °C pH ADJUSTMENTS:
COOLING METHOD: NONE COOLER WET ICE DRY ICE ICE PACK

DELIVERY METHOD: STD MAIL PRTY MAIL CLIENT ALS DROP BOX COURIER FEDEX OTHER: UPS
CUSTODY SEALS: NONE COOLER PACKAGE SAMPLES
EQUIP. RETURNED:

# APPENDIX G

# TRUCK LOADS AND TONNAGE DOCUMENTATION

15K0413

**Customer Summary Report**
**Criteria: 12/01/2015 12:00 AM to 12/31/2015 11:59 PM**
**Business Unit Name: Laraway RDF - S04121 (USA)**
**Customer Name: RW COLLINS 613405IL (RW COLLINS 613405IL)**

| Ticket Date | Ticket ID | Customer | Generator | Truck | Material | Rate Unit | Tons |
|---|---|---|---|---|---|---|---|
| 12/14/2015 | 716436 | RW COLLINS 613405IL | 117-H KRAMER AND COMPANY | 103 | Declass Soil-Tons | TON | 19.94 |
| 12/14/2015 | 716460 | RW COLLINS 613405IL | 117-H KRAMER AND COMPANY | 226 | Declass Soil-Tons | TON | 19.80 |
| 12/14/2015 | 716508 | RW COLLINS 613405IL | 117-H KRAMER AND COMPANY | 21 | Declass Soil-Tons | TON | 19.30 |
| 12/14/2015 | 716510 | RW COLLINS 613405IL | 117-H KRAMER AND COMPANY | 59 | Declass Soil-Tons | TON | 17.94 |
| 12/14/2015 | 716524 | RW COLLINS 613405IL | 117-H KRAMER AND COMPANY | 426 | Declass Soil-Tons | TON | 17.97 |
| 12/14/2015 | 716532 | RW COLLINS 613405IL | 117-H KRAMER AND COMPANY | 35 | Declass Soil-Tons | TON | 19.89 |
| 12/14/2015 | 716557 | RW COLLINS 613405IL | 117-H KRAMER AND COMPANY | 103 | Declass Soil-Tons | TON | 18.16 |
| 12/14/2015 | 716582 | RW COLLINS 613405IL | 117-H KRAMER AND COMPANY | 226 | Declass Soil-Tons | TON | 18.25 |
| 12/14/2015 | 716626 | RW COLLINS 613405IL | 117-H KRAMER AND COMPANY | 21 | Declass Soil-Tons | TON | 20.10 |
| 12/14/2015 | 716638 | RW COLLINS 613405IL | 117-H KRAMER AND COMPANY | 426 | Declass Soil-Tons | TON | 21.99 |
| 12/14/2015 | 716640 | RW COLLINS 613405IL | 117-H KRAMER AND COMPANY | 59 | Declass Soil-Tons | TON | 20.62 |
| 12/14/2015 | 716643 | RW COLLINS 613405IL | 117-H KRAMER AND COMPANY | 35 | Declass Soil-Tons | TON | 17.56 |
| 12/14/2015 | 716665 | RW COLLINS 613405IL | 117-H KRAMER AND COMPANY | 103 | Declass Soil-Tons | TON | 20.19 |
| 12/14/2015 | 716690 | RW COLLINS 613405IL | 117-H KRAMER AND COMPANY | 226 | Declass Soil-Tons | TON | 15.91 |
| 12/14/2015 | 716713 | RW COLLINS 613405IL | 117-H KRAMER AND COMPANY | 426 | Declass Soil-Tons | TON | 7.79 |
| | | | | | | | 275.41 |
| | | | | | | | |
| 12/17/2015 | 717688 | RW COLLINS 613405IL | 117-H KRAMER AND COMPANY | 116-ALUMINUM | Declass Soil-Tons | TON | 17.43 |
| 12/17/2015 | 717915 | RW COLLINS 613405IL | 117-H KRAMER AND COMPANY | 116 | Declass Soil-Tons | TON | 17.71 |
| 12/17/2015 | 718112 | RW COLLINS 613405IL | 117-H KRAMER AND COMPANY | 116 | Declass Soil-Tons | TON | 19.18 |
| | | | | | | | 54.32 |
| | | | | | | | |
| 12/18/2015 | 718276 | RW COLLINS 613405IL | 117-H KRAMER AND COMPANY | 4952 | Declass Soil-Tons | TON | 19.79 |
| 12/18/2015 | 718483 | RW COLLINS 613405IL | 117-H KRAMER AND COMPANY | 4952 | Declass Soil-Tons | TON | 20.78 |
| 12/18/2015 | 718671 | RW COLLINS 613405IL | 117-H KRAMER AND COMPANY | 4952 | Declass Soil-Tons | TON | 25.52 |
| | | | | | | | 66.09 |
| | | | | | | | |
| 12/29/2015 | 720609 | RW COLLINS 613405IL | 117-H KRAMER AND COMPANY | 150 | Declass Soil-Tons | TON | 19.08 |
| 12/29/2015 | 720611 | RW COLLINS 613405IL | 117-H KRAMER AND COMPANY | 219 | Declass Soil-Tons | TON | 21.55 |
| 12/29/2015 | 720616 | RW COLLINS 613405IL | 117-H KRAMER AND COMPANY | 714 | Declass Soil-Tons | TON | 21.64 |
| 12/29/2015 | 720619 | RW COLLINS 613405IL | 117-H KRAMER AND COMPANY | 116-ALUMINUM | Declass Soil-Tons | TON | 18.15 |
| 12/29/2015 | 720628 | RW COLLINS 613405IL | 117-H KRAMER AND COMPANY | 175 | Declass Soil-Tons | TON | 20.66 |
| 12/29/2015 | 720735 | RW COLLINS 613405IL | 117-H KRAMER AND COMPANY | 150 | Declass Soil-Tons | TON | 21.97 |
| 12/29/2015 | 720742 | RW COLLINS 613405IL | 117-H KRAMER AND COMPANY | 219 | Declass Soil-Tons | TON | 23.36 |
| 12/29/2015 | 720748 | RW COLLINS 613405IL | 117-H KRAMER AND COMPANY | 714 | Declass Soil-Tons | TON | 19.14 |
| 12/29/2015 | 720784 | RW COLLINS 613405IL | 117-H KRAMER AND COMPANY | 175 | Declass Soil-Tons | TON | 25.60 |
| 12/29/2015 | 720796 | RW COLLINS 613405IL | 117-H KRAMER AND COMPANY | 116-ALUMINUM | Declass Soil-Tons | TON | 22.91 |
| 12/29/2015 | 720862 | RW COLLINS 613405IL | 117-H KRAMER AND COMPANY | 150 | Declass Soil-Tons | TON | 23.09 |
| 12/29/2015 | 720887 | RW COLLINS 613405IL | 117-H KRAMER AND COMPANY | 219 | Declass Soil-Tons | TON | 24.54 |
| 12/29/2015 | 720914 | RW COLLINS 613405IL | 117-H KRAMER AND COMPANY | 175 | Declass Soil-Tons | TON | 23.00 |
| 12/29/2015 | 720954 | RW COLLINS 613405IL | 117-H KRAMER AND COMPANY | 116-ALUMINUM | Declass Soil-Tons | TON | 8.36 |
| | | | | | | | 293.05 |
| | | | | | | | |
| **Material Total** | 35 | | | | | | 688.87 |
| **Customer Total** | 35 | | | | | | 688.87 |
| **Ticket Totals** | 35 | | | | | | 688.87 |

15K0413

**Customer Summary Report**
**Criteria: 06/15/2016 12:00 AM to 07/15/2016 11:59 PM**
**Business Unit Name: Laraway RDF - S04121 (USA)**
**Customer Name: RW COLLINS 613405IL (RW COLLINS 613405IL)**

| Ticket Date | Ticket ID | Customer | Generator | Truck | Material | Rate Unit | Tons |
|---|---|---|---|---|---|---|---|
| 6/20/2016 | 783499 | RW COLLINS 613405IL | 117-H KRAMER AND COMPANY | 76 | Declass Soil-Tons | TON | 17.75 |
| 7/6/2016 | 788076 | RW COLLINS 613405IL | 117-H KRAMER AND COMPANY | 51 | Declass Soil-Tons | TON | 1.67 |
| **Material Total** | 2 | | | | | | 19.42 |
| **Customer Total** | 2 | | | | | | 19.42 |
| **Ticket Totals** | 2 | | | | | | 19.42 |
| | | | | | | | |

# APPENDIX H

# DAILY AIR MONITORING DATA

| | | | | |
|---|---|---|---|---|
| "Model Nu | "DataRAM | 106 | | |
| "Serial no. | "D232 " | | | |
| "Device nc | 1 | | | |
| "Tag Numl | 61 | | | |
| "Start Tim | 10:22:17 | | | |
| "Start Dat | 16-Nov-2015 | | | |
| "Log Perio | 00:05:00 | | | |
| "Number | 59 | | | |
| "CalFactor | 1 | | | |
| "Unit ' | 0 | | | |
| "Unit Nam | "(MASS )ug/m3" | | | |
| "SIZE_COF | "DISABLED" | | | |
| "TEMPUNI | C | | | |
| "Max MAS | 24.43168 | | | |
| "Max MAS | 58 | 15:12:17 | ######## | |
| "Avg MAS | 16.09234 | | | |
| "Max Dian | 1.557171 | | | |
| "Max Dian | 7 | 10:57:17 | ######## | |
| "Avg Diam | 0.962979 | | | |
| "ALARM | "ENABLED" | | | |
| "ALARM_L | 1190 | | | |
| "AUTO_ZE | "DISABLED" | | | |
| "AZ INTER | 1 | | | |
| "Errors | 0 | | | |

| record | (MASS )ug/ | Temp | RHumidity | Diameter | | |
|---|---|---|---|---|---|---|
| 1 | 15.3 | 25.2 | 0 | 0.9978 | 10:27:17 | ######## |
| 2 | 14.7 | 24.8 | 0 | 0.9669 | 10:32:17 | ######## |
| 3 | 14.8 | 24.5 | 0 | 0.8512 | 10:37:17 | ######## |
| 4 | 10.5 | 24.2 | 0 | 0.7787 | 10:42:17 | ######## |
| 5 | 11.5 | 24.1 | 0 | 0.8564 | 10:47:17 | ######## |
| 6 | 15.1 | 24.1 | 0 | 1.4852 | 10:52:17 | ######## |
| 7 | 17.1 | 24.1 | 0 | 1.5572 | 10:57:17 | ######## |
| 8 | 14.7 | 23.8 | 0 | 1.352 | 11:02:17 | ######## |
| 9 | 12.2 | 23.3 | 0 | 0.9926 | 11:07:17 | ######## |
| 10 | 11.3 | 22.8 | 0 | 0.7289 | 11:12:17 | ######## |
| 11 | 12.4 | 22.2 | 0 | 0.7374 | 11:17:17 | ######## |
| 12 | 12.8 | 21.6 | 0 | 0.7582 | 11:22:17 | ######## |
| 13 | 13.1 | 21.1 | 0 | 0.8626 | 11:27:17 | ######## |
| 14 | 13.9 | 20.8 | 0 | 0.9524 | 11:32:17 | ######## |
| 15 | 17.4 | 20.6 | 0 | 1.0913 | 11:37:17 | ######## |
| 16 | 13.4 | 20.5 | 0 | 0.7966 | 11:42:17 | ######## |
| 17 | 15.2 | 20.3 | 0 | 1.0417 | 11:47:17 | ######## |
| 18 | 14.9 | 20.1 | 0 | 1.0438 | 11:52:17 | ######## |
| 19 | 14.6 | 19.9 | 0 | 1.0185 | 11:57:17 | ######## |
| 20 | 13.6 | 19.7 | 0 | 0.9091 | 12:02:17 | ######## |
| 21 | 14.4 | 19.7 | 0 | 0.9796 | 12:07:17 | ######## |
| 22 | 13.1 | 19.6 | 0 | 0.8585 | 12:12:17 | ######## |

| | | | | | | |
|---|---|---|---|---|---|---|
| 23 | 14.8 | 19.5 | 0 | 1.2725 | 12:17:17 | ######## |
| 24 | 13.2 | 19.3 | 0 | 0.9481 | 12:22:17 | ######## |
| 25 | 12.3 | 19.2 | 0 | 0.9669 | 12:27:17 | ######## |
| 26 | 13.9 | 19.1 | 0 | 1.0572 | 12:32:17 | ######## |
| 27 | 13.9 | 18.9 | 0 | 0.9026 | 12:37:17 | ######## |
| 28 | 14.4 | 18.8 | 0 | 0.8609 | 12:42:17 | ######## |
| 29 | 16.2 | 18.6 | 0 | 0.7878 | 12:47:17 | ######## |
| 30 | 16.3 | 18.4 | 0 | 0.8569 | 12:52:17 | ######## |
| 31 | 17.1 | 18.2 | 0 | 0.8554 | 12:57:17 | ######## |
| 32 | 14.8 | 18 | 0 | 0.873 | 13:02:17 | ######## |
| 33 | 14.6 | 17.8 | 0 | 0.8935 | 13:07:17 | ######## |
| 34 | 16.6 | 17.7 | 0 | 0.938 | 13:12:17 | ######## |
| 35 | 16.8 | 17.5 | 0 | 1.0679 | 13:17:17 | ######## |
| 36 | 17.4 | 17.3 | 0 | 0.9117 | 13:22:17 | ######## |
| 37 | 17.5 | 17.2 | 0 | 1.0559 | 13:27:17 | ######## |
| 38 | 15 | 17.1 | 0 | 1.0569 | 13:32:17 | ######## |
| 39 | 17.1 | 16.9 | 0 | 1.1167 | 13:37:17 | ######## |
| 40 | 17.7 | 16.8 | 0 | 1.0561 | 13:42:17 | ######## |
| 41 | 22.9 | 16.7 | 0 | 1.4724 | 13:47:17 | ######## |
| 42 | 17.8 | 16.6 | 0 | 0.9612 | 13:52:17 | ######## |
| 43 | 18.6 | 16.5 | 0 | 0.8285 | 13:57:17 | ######## |
| 44 | 17.4 | 16.4 | 0 | 0.9355 | 14:02:17 | ######## |
| 45 | 18.1 | 16.4 | 0 | 0.9427 | 14:07:17 | ######## |
| 46 | 20.2 | 16.3 | 0 | 0.9243 | 14:12:17 | ######## |
| 47 | 17.4 | 16.2 | 0 | 0.8578 | 14:17:17 | ######## |
| 48 | 17.5 | 16.2 | 0 | 0.7529 | 14:22:17 | ######## |
| 49 | 17.2 | 16.1 | 0 | 0.8398 | 14:27:17 | ######## |
| 50 | 18.8 | 16.1 | 0 | 0.7979 | 14:32:17 | ######## |
| 51 | 19.6 | 16 | 0 | 0.9431 | 14:37:17 | ######## |
| 52 | 17.8 | 15.9 | 0 | 0.8959 | 14:42:17 | ######## |
| 53 | 20.6 | 15.8 | 0 | 0.9841 | 14:47:17 | ######## |
| 54 | 16.3 | 15.7 | 0 | 0.8869 | 14:52:17 | ######## |
| 55 | 16.5 | 15.7 | 0 | 0.7869 | 14:57:17 | ######## |
| 56 | 19.5 | 15.6 | 0 | 0.8782 | 15:02:17 | ######## |
| 57 | 21.1 | 15.6 | 0 | 1.0508 | 15:07:17 | ######## |
| 58 | 24.4 | 15.5 | 0 | 0.9868 | 15:12:17 | ######## |
| 59 | 22.1 | 15.3 | 0 | 0.9957 | 15:17:17 | ######## |

| | | | | |
|---|---|---|---|---|
| Model Nur | "DataRAM | 106 | | |
| "Serial no. | "D232 " | | | |
| "Device nc | 1 | | | |
| "Tag Numl | 62 | | | |
| "Start Tim | 07:41:54 | | | |
| "Start Dat | 17-Nov-2015 | | | |
| "Log Perio | 00:05:00 | | | |
| "Number | 58 | | | |
| "CalFactor | 1 | | | |
| "Unit ' | 0 | | | |
| "Unit Nam | "(MASS )ug/m3" | | | |
| "SIZE_COF | "DISABLED" | | | |
| "TEMPUNI | C | | | |
| "Max MAS | 23.38466 | | | |
| "Max MAS | 32 | 10:21:54 | ######## | |
| "Avg MAS | 13.27388 | | | |
| "Max Dian | 1.159338 | | | |
| "Max Dian | 36 | 10:41:54 | ######## | |
| "Avg Diam | 0.745586 | | | |
| "ALARM | "ENABLED" | | | |
| "ALARM_L | 1190 | | | |
| "AUTO_ZE | "DISABLED" | | | |
| "AZ INTER | 1 | | | |
| "Errors | 0 | | | |

| record | (MASS )ug/ | Temp | RHumidity | Diameter | | |
|---|---|---|---|---|---|---|
| 1 | 10.3 | 22 | 0 | 0.6032 | 7:46:54 | ######## |
| 2 | 12 | 21.2 | 0 | 0.5846 | 7:51:54 | ######## |
| 3 | 11.1 | 20.5 | 0 | 0.5608 | 7:56:54 | ######## |
| 4 | 11.6 | 20 | 0 | 0.6047 | 8:01:54 | ######## |
| 5 | 11.6 | 19.6 | 0 | 0.56 | 8:06:54 | ######## |
| 6 | 11.9 | 19.3 | 0 | 0.5366 | 8:11:54 | ######## |
| 7 | 13.1 | 19 | 0 | 0.6418 | 8:16:54 | ######## |
| 8 | 12.3 | 18.7 | 0 | 0.5898 | 8:21:54 | ######## |
| 9 | 12.2 | 18.5 | 0 | 0.5914 | 8:26:54 | ######## |
| 10 | 13.3 | 18.3 | 0 | 0.6388 | 8:31:54 | ######## |
| 11 | 14.1 | 18.1 | 0 | 0.6539 | 8:36:54 | ######## |
| 12 | 14.3 | 18 | 0 | 0.6919 | 8:41:54 | ######## |
| 13 | 14.6 | 17.8 | 0 | 0.7837 | 8:46:54 | ######## |
| 14 | 14 | 17.7 | 0 | 0.6363 | 8:51:54 | ######## |
| 15 | 16.3 | 17.7 | 0 | 0.6626 | 8:56:54 | ######## |
| 16 | 18.4 | 17.6 | 0 | 0.7287 | 9:01:54 | ######## |
| 17 | 17.4 | 17.6 | 0 | 0.6983 | 9:06:54 | ######## |
| 18 | 21.9 | 17.7 | 0 | 0.9227 | 9:11:54 | ######## |
| 19 | 17.2 | 17.9 | 0 | 0.8233 | 9:16:54 | ######## |
| 20 | 13.5 | 18 | 0 | 0.742 | 9:21:54 | ######## |
| 21 | 11.1 | 18.2 | 0 | 0.6463 | 9:26:54 | ######## |
| 22 | 9.7 | 18.2 | 0 | 0.6294 | 9:31:54 | ######## |

| | | | | | | |
|---|---|---|---|---|---|---|
| 23 | 10.7 | 18.3 | 0 | 0.5907 | 9:36:54 | ######## |
| 24 | 9.9 | 18.3 | 0 | 0.6856 | 9:41:54 | ######## |
| 25 | 11.9 | 18.3 | 0 | 0.7126 | 9:46:54 | ######## |
| 26 | 22.5 | 18.2 | 0 | 0.8779 | 9:51:54 | ######## |
| 27 | 12.3 | 18.2 | 0 | 0.6689 | 9:56:54 | ######## |
| 28 | 17.5 | 18.2 | 0 | 0.8207 | 10:01:54 | ######## |
| 29 | 18.2 | 18.3 | 0 | 0.7725 | 10:06:54 | ######## |
| 30 | 12.9 | 18.5 | 0 | 0.9253 | 10:11:54 | ######## |
| 31 | 17.9 | 18.5 | 0 | 0.6236 | 10:16:54 | ######## |
| 32 | 23.4 | 18.5 | 0 | 0.8012 | 10:21:54 | ######## |
| 33 | 17.8 | 18.5 | 0 | 0.8354 | 10:26:54 | ######## |
| 34 | 11 | 18.4 | 0 | 0.7868 | 10:31:54 | ######## |
| 35 | 13.3 | 18.2 | 0 | 0.88 | 10:36:54 | ######## |
| 36 | 15.6 | 18.2 | 0 | 1.1593 | 10:41:54 | ######## |
| 37 | 9.1 | 18.1 | 0 | 0.6683 | 10:46:54 | ######## |
| 38 | 22.4 | 18.1 | 0 | 1.0671 | 10:51:54 | ######## |
| 39 | 16.7 | 18.2 | 0 | 1.0692 | 10:56:54 | ######## |
| 40 | 19.9 | 18.2 | 0 | 0.9713 | 11:01:54 | ######## |
| 41 | 21.9 | 18.3 | 0 | 1.061 | 11:06:54 | ######## |
| 42 | 10.1 | 18.3 | 0 | 0.8287 | 11:11:54 | ######## |
| 43 | 9.5 | 18.3 | 0 | 0.7817 | 11:16:54 | ######## |
| 44 | 10 | 18.3 | 0 | 0.8851 | 11:21:54 | ######## |
| 45 | 8.7 | 18.3 | 0 | 0.6386 | 11:26:54 | ######## |
| 46 | 8.4 | 18.3 | 0 | 0.7599 | 11:31:54 | ######## |
| 47 | 8.2 | 18.3 | 0 | 0.6433 | 11:36:54 | ######## |
| 48 | 9.2 | 18.3 | 0 | 0.7104 | 11:41:54 | ######## |
| 49 | 8.7 | 18.3 | 0 | 0.6496 | 11:46:54 | ######## |
| 50 | 8.1 | 18.3 | 0 | 0.6121 | 11:51:54 | ######## |
| 51 | 9.2 | 18.3 | 0 | 0.7576 | 11:56:54 | ######## |
| 52 | 8.7 | 18.2 | 0 | 0.6599 | 12:01:54 | ######## |
| 53 | 8.7 | 18.2 | 0 | 0.6901 | 12:06:54 | ######## |
| 54 | 8.8 | 18.1 | 0 | 0.6116 | 12:11:54 | ######## |
| 55 | 10.5 | 18 | 0 | 0.9934 | 12:16:54 | ######## |
| 56 | 10.5 | 17.9 | 0 | 0.8032 | 12:21:54 | ######## |
| 57 | 10.9 | 17.7 | 0 | 0.8208 | 12:26:54 | ######## |
| 58 | 14.7 | 17.6 | 0 | 0.8895 | 12:31:54 | ######## |

```
"Model Number", "DataRAM 4 ", 106
"Serial no.  ", "D232      "
"Device no.  ", 1
"Tag Number  ", 63
"Start Time  ", 07:41:18
"Start Date  ", 19-Nov-2015
"Log Period  ", 00:01:00
"Number      ", 5
"CalFactor   ", 1.000000
"Unit        ", 0
"Unit Name   ", "(MASS )ug/m3"
"SIZE_CORRECT", "DISABLED"
"TEMPUNITS   ", C
"Max MASS    ", 22.658230
"Max MASS  @ ", 2  ,07:43:18  ,19-Nov-2015
"Avg MASS    ", 15.514490
"Max Diam    ", 4.108186
"Max Diam @  ", 5  ,07:46:18  ,19-Nov-2015
"Avg Diam    ", 3.120117
"ALARM       ", "ENABLED"
"ALARM_LEVEL ", 3190.0
"AUTO_ZERO   ", "DISABLED"
"AZ INTERVAL ", 1
"Errors      ", 0000
record,"(MASS )ug/m3", Temp, RHumidity, Diameter
     1,       14.4,  -8.7,    0,   1.2393  ,07:42:18  ,19-Nov-2015
     2,       22.7,  -7.7,    0,   3.0267  ,07:43:18  ,19-Nov-2015
     3,       16.8,  -7.7,    0,   4.1029  ,07:44:18  ,19-Nov-2015
     4,       11.6,  -7.2,    0,   3.1236  ,07:45:18  ,19-Nov-2015
     5,       12.1,  -8.2,    0,   4.1082  ,07:46:18  ,19-Nov-2015
```

```
"Model Number", "DataRAM 4 ", 106
"Serial no.  ", "D232      "
"Device no.  ", 1
"Tag Number  ", 64
"Start Time  ", 08:01:17
"Start Date  ", 19-Nov-2015
"Log Period  ", 00:01:00
"Number      ", 459
"CalFactor   ", 1.000000
"Unit        ", 0
"Unit Name   ", "(MASS )ug/m3"
"SIZE_CORRECT", "DISABLED"
"TEMPUNITS   ", C
"Max MASS    ", 324.118500
"Max MASS  @ ", 66  ,09:07:17  ,19-Nov-2015
"Avg MASS    ", 18.378310
"Max Diam    ", 4.127007
"Max Diam @  ", 39  ,08:40:17  ,19-Nov-2015
"Avg Diam    ", 3.203864
"ALARM       ", "ENABLED"
"ALARM_LEVEL ", 3190.0
"AUTO_ZERO   ", "DISABLED"
"AZ INTERVAL ", 1
"Errors      ", 0000
record,"(MASS )ug/m3", Temp, RHumidity, Diameter
     1,        7.5, -11.3,    0,   1.0407  ,08:02:17  ,19-Nov-2015
     2,        9.3, -11.0,    0,   1.9689  ,08:03:17  ,19-Nov-2015
     3,        9.5, -11.7,    0,   3.5878  ,08:04:17  ,19-Nov-2015
     4,       10.4, -11.9,    0,   3.9109  ,08:05:17  ,19-Nov-2015
     5,        8.3, -12.2,    0,   2.5101  ,08:06:17  ,19-Nov-2015
     6,       10.9, -12.0,    0,   3.1737  ,08:07:17  ,19-Nov-2015
     7,       10.7, -12.1,    0,   3.8848  ,08:08:17  ,19-Nov-2015
     8,        9.8, -12.0,    0,   3.1242  ,08:09:17  ,19-Nov-2015
     9,       10.1, -12.0,    0,   2.5011  ,08:10:17  ,19-Nov-2015
    10,       11.3, -11.7,    0,   3.9668  ,08:11:17  ,19-Nov-2015
    11,        9.5, -11.8,    0,   3.2627  ,08:12:17  ,19-Nov-2015
    12,        9.1, -12.0,    0,   2.8859  ,08:13:17  ,19-Nov-2015
    13,        9.1, -12.0,    0,   3.5051  ,08:14:17  ,19-Nov-2015
    14,        9.1, -12.0,    0,   2.0156  ,08:15:17  ,19-Nov-2015
    15,       14.5, -11.8,    0,   2.2898  ,08:16:17  ,19-Nov-2015
    16,        8.9, -12.0,    0,   1.3130  ,08:17:17  ,19-Nov-2015
    17,        9.6, -12.0,    0,   1.1754  ,08:18:17  ,19-Nov-2015
    18,       13.3, -11.8,    0,   3.4134  ,08:19:17  ,19-Nov-2015
    19,       13.9, -11.6,    0,   1.8405  ,08:20:17  ,19-Nov-2015
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436,        19.7, -12.6,    0,   3.9033  ,15:17:17  ,19-Nov-2015
437,         9.8, -12.8,    0,   2.0932  ,15:18:17  ,19-Nov-2015
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458,        11.1, -12.9,    0,   3.7677  ,15:39:17  ,19-Nov-2015
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     3,       16.7, -13.6,    0,   0.5617  ,11:39:13  ,23-Nov-2015
     4,       16.3, -13.6,    0,   0.5820  ,11:40:13  ,23-Nov-2015
     5,       15.9, -13.7,    0,   0.7079  ,11:41:13  ,23-Nov-2015
     6,       13.8, -13.8,    0,   0.5689  ,11:42:13  ,23-Nov-2015
     7,       15.2, -13.8,    0,   0.6342  ,11:43:13  ,23-Nov-2015
     8,       14.9, -13.7,    0,   0.5371  ,11:44:13  ,23-Nov-2015
     9,       14.5, -13.7,    0,   0.5844  ,11:45:13  ,23-Nov-2015
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178,        26.9, -13.2,    0,   0.7897  ,14:34:13  ,23-Nov-2015
179,        26.0, -13.2,    0,   0.7339  ,14:35:13  ,23-Nov-2015
180,        24.3, -13.3,    0,   0.7572  ,14:36:13  ,23-Nov-2015
181,        21.6, -13.5,    0,   0.7305  ,14:37:13  ,23-Nov-2015
182,        21.8, -13.5,    0,   0.8135  ,14:38:13  ,23-Nov-2015
183,        19.0, -13.6,    0,   0.6018  ,14:39:13  ,23-Nov-2015
184,        17.9, -13.7,    0,   0.6307  ,14:40:13  ,23-Nov-2015
185,        18.8, -13.7,    0,   0.7122  ,14:41:13  ,23-Nov-2015
186,        18.5, -13.7,    0,   0.7487  ,14:42:13  ,23-Nov-2015
187,        18.2, -13.6,    0,   0.5515  ,14:43:13  ,23-Nov-2015
188,        20.7, -13.5,    0,   0.6847  ,14:44:13  ,23-Nov-2015
189,        22.1, -13.4,    0,   0.6487  ,14:45:13  ,23-Nov-2015
190,        24.8, -13.3,    0,   0.6756  ,14:46:13  ,23-Nov-2015
191,        23.1, -13.4,    0,   0.7379  ,14:47:13  ,23-Nov-2015
192,        21.7, -13.5,    0,   0.7311  ,14:48:13  ,23-Nov-2015
193,        21.0, -13.5,    0,   0.6027  ,14:49:13  ,23-Nov-2015
194,        21.6, -13.5,    0,   0.6339  ,14:50:13  ,23-Nov-2015
195,        20.4, -13.5,    0,   0.6053  ,14:51:13  ,23-Nov-2015
196,        20.0, -13.5,    0,   0.6177  ,14:52:13  ,23-Nov-2015
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0,      5,       59.8, -11.2,    0,   0.5844
0,      6,       59.0, -11.3,    0,   0.6750
0,      7,       60.1, -11.1,    0,   0.6039
0,      8,       60.0, -11.1,    0,   0.6357
0,      9,       63.4, -10.8,    0,   0.6093
0,     10,       62.2, -10.9,    0,   0.5896
0,     11,       65.3, -10.7,    0,   0.5819
0,     12,       61.7, -11.0,    0,   0.6416
0,     13,       61.8, -11.0,    0,   0.6297
0,     14,       65.4, -10.9,    0,   0.6920
0,     15,       61.2, -11.1,    0,   0.6259
0,     16,       67.5, -10.8,    0,   0.6779
0,     17,       66.2, -10.8,    0,   0.6735
0,     18,       64.6, -10.9,    0,   0.6261
0,     19,       64.9, -10.6,    0,   0.6156
0,     20,       63.6, -10.8,    0,   0.5889
0,     21,       66.8, -10.8,    0,   0.6825
0,     22,       69.8, -10.7,    0,   0.6824
0,     23,       69.6, -10.7,    0,   0.6724
0,     24,       74.3, -10.3,    0,   0.6514
0,     25,       74.8, -10.3,    0,   0.6575
0,     26,       79.2, -10.0,    0,   0.6482
0,     27,       78.9,  -9.9,    0,   0.6199
0,     28,       74.0, -10.2,    0,   0.6797
0,     29,       79.2,  -9.4,    0,   0.6162
0,     30,       93.3,  -8.3,    0,   0.6859
0,     31,       76.0,  -9.1,    0,   0.6409
0,     32,       80.3,  -8.9,    0,   0.6347
0,     33,       69.9,  -8.4,    0,   0.5972
0,     34,       69.3,  -7.6,    0,   0.5814
0,     35,       68.3,  -7.3,    0,   0.5542
0,     36,       68.6,  -7.1,    0,   0.5445
0,     37,       69.1,  -7.1,    0,   0.5498
0,     38,       70.1,  -6.7,    0,   0.5544
0,     39,       72.9,  -6.1,    0,   0.5688
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| 0, | 40, | 76.8, | -5.0, | 0, | 0.5987 |
| 0, | 41, | 76.1, | -4.5, | 0, | 0.6009 |
| 0, | 42, | 73.6, | -3.9, | 0, | 0.5685 |
| 0, | 43, | 77.4, | -5.0, | 0, | 0.5876 |
| 0, | 44, | 77.5, | -6.6, | 0, | 0.5592 |
| 0, | 45, | 76.6, | -7.6, | 0, | 0.5702 |
| 0, | 46, | 77.5, | -7.1, | 0, | 0.5457 |
| 0, | 47, | 76.3, | -6.9, | 0, | 0.5581 |
| 0, | 48, | 79.7, | -6.4, | 0, | 0.5863 |
| 0, | 49, | 84.2, | -6.3, | 0, | 0.6808 |
| 0, | 50, | 84.1, | -6.2, | 0, | 0.6677 |
| 0, | 51, | 87.0, | -5.8, | 0, | 0.6951 |
| 0, | 52, | 90.1, | -4.4, | 0, | 0.7806 |
| 0, | 53, | 93.6, | -1.6, | 0, | 0.8312 |
| 0, | 54, | 89.8, | 2.8, | 0, | 0.8403 |
| 0, | 55, | 87.9, | 3.7, | 0, | 0.6914 |
| 0, | 56, | 99.4, | 5.8, | 0, | 0.6875 |
| 0, | 57, | 93.6, | 6.5, | 0, | 0.8425 |
| 0, | 58, | 89.0, | 5.9, | 0, | 0.8258 |
| 0, | 59, | 89.8, | 3.6, | 0, | 0.8437 |
| 0, | 60, | 93.4, | 0.4, | 0, | 0.9062 |
| 0, | 61, | 90.8, | -1.0, | 0, | 0.8199 |
| 0, | 62, | 100.7, | -2.4, | 0, | 0.8816 |
| 0, | 63, | 96.2, | -3.3, | 0, | 0.9114 |
| 0, | 64, | 92.0, | -5.1, | 0, | 0.8465 |
| 0, | 65, | 91.1, | -3.8, | 0, | 0.8505 |
| 0, | 66, | 88.8, | -3.7, | 0, | 0.8268 |
| 0, | 67, | 87.5, | -1.5, | 0, | 0.7920 |
| 0, | 68, | 93.0, | -1.9, | 0, | 0.7970 |
| 0, | 69, | 92.9, | -6.9, | 0, | 0.8285 |
| 0, | 70, | 87.5, | -7.9, | 0, | 0.8172 |
| 0, | 71, | 83.8, | -8.8, | 0, | 0.7884 |
| 0, | 72, | 81.4, | -9.8, | 0, | 0.7384 |
| 0, | 73, | 80.5, | -9.9, | 0, | 0.7369 |
| 0, | 74, | 86.3, | -9.7, | 0, | 0.7826 |
| 0, | 75, | 92.7, | -9.6, | 0, | 0.8296 |
| 0, | 76, | 84.1, | -9.8, | 0, | 0.7213 |
| 0, | 77, | 84.0, | -9.8, | 0, | 0.7310 |
| 0, | 78, | 76.8, | -10.2, | 0, | 0.6496 |
| 0, | 79, | 70.5, | -10.3, | 0, | 0.5871 |
| 0, | 80, | 71.4, | -10.2, | 0, | 0.4179 |
| 0, | 155, | 62.9, | -10.2, | 0, | 0.3990 |
| 0, | 156, | 64.3, | -10.0, | 0, | 0.3799 |
| 0, | 157, | 63.2, | -10.3, | 0, | 0.4179 |
| 0, | 158, | 62.8, | -10.3, | 0, | 0.4086 |
| 0, | 159, | 61.6, | -10.4, | 0, | 0.4043 |
| 0, | 160, | 62.2, | -10.4, | 0, | 0.4268 |
| 0, | 161, | 61.6, | -10.5, | 0, | 0.4169 |
| 0, | 162, | 61.3, | -10.5, | 0, | 0.4366 |
| 0, | 163, | 62.9, | -10.3, | 0, | 0.4162 |
| 0, | 164, | 62.8, | -10.4, | 0, | 0.4179 |
| 0, | 165, | 62.9, | -10.4, | 0, | 0.4367 |
| 0, | 166, | 64.1, | -10.3, | 0, | 0.4148 |
| 0, | 167, | 60.0, | -10.4, | 0, | 0.3936 |
| 0, | 168, | 59.7, | -10.6, | 0, | 0.4149 |
| 0, | 169, | 58.8, | -10.5, | 0, | 0.3977 |
| 0, | 170, | 62.7, | -10.4, | 0, | 0.4356 |
| 0, | 171, | 57.4, | -10.6, | 0, | 0.4260 |
| 0, | 172, | 57.4, | -10.6, | 0, | 0.4088 |
| 0, | 173, | 58.6, | -10.6, | 0, | 0.4201 |
| 0, | 174, | 57.9, | -10.6, | 0, | 0.4358 |
| 0, | 175, | 57.8, | -10.6, | 0, | 0.4274 |
| 0, | 176, | 57.6, | -10.6, | 0, | 0.4072 |

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| 0, | 177, | 57.7, | -10.6, | 0, | 0.4130 |
| 0, | 178, | 57.3, | -10.7, | 0, | 0.3993 |
| 0, | 179, | 57.5, | -10.7, | 0, | 0.4237 |
| 0, | 180, | 60.2, | -10.5, | 0, | 0.4294 |
| 0, | 181, | 58.8, | -10.6, | 0, | 0.4106 |
| 0, | 182, | 60.8, | -10.5, | 0, | 0.4269 |
| 0, | 183, | 59.5, | -10.5, | 0, | 0.4302 |
| 0, | 184, | 59.9, | -10.6, | 0, | 0.4410 |
| 0, | 185, | 71.9, | -10.1, | 0, | 0.4910 |
| 0, | 186, | 56.4, | -10.5, | 0, | 0.4198 |
| 0, | 187, | 58.4, | -10.6, | 0, | 0.4297 |
| 0, | 188, | 59.2, | -10.6, | 0, | 0.4231 |
| 0, | 189, | 59.4, | -10.6, | 0, | 0.4225 |
| 0, | 190, | 58.2, | -10.8, | 0, | 0.4495 |
| 0, | 191, | 57.2, | -10.6, | 0, | 0.4061 |
| 0, | 192, | 56.6, | -10.7, | 0, | 0.3915 |
| 0, | 193, | 56.7, | -10.7, | 0, | 0.4175 |
| 0, | 194, | 60.6, | -10.6, | 0, | 0.4381 |
| 0, | 195, | 57.3, | -10.6, | 0, | 0.4016 |
| 0, | 196, | 56.1, | -10.7, | 0, | 0.4084 |
| 0, | 197, | 62.6, | -10.2, | 0, | 0.4266 |
| 0, | 198, | 60.2, | -10.6, | 0, | 0.4419 |
| 0, | 199, | 57.4, | -10.6, | 0, | 0.4129 |
| 0, | 200, | 59.5, | -10.6, | 0, | 0.4198 |
| 0, | 201, | 56.3, | -10.7, | 0, | 0.4144 |
| 0, | 202, | 61.6, | -10.3, | 0, | 0.4249 |
| 0, | 203, | 57.0, | -10.6, | 0, | 0.4116 |
| 0, | 204, | 60.1, | -10.6, | 0, | 0.4104 |
| 0, | 205, | 59.8, | -10.6, | 0, | 0.4293 |
| 0, | 206, | 58.3, | -10.5, | 0, | 0.4024 |
| 0, | 207, | 61.5, | -10.5, | 0, | 0.4340 |
| 0, | 208, | 54.6, | -10.8, | 0, | 0.4324 |
| 0, | 209, | 52.8, | -11.0, | 0, | 0.4290 |
| 0, | 210, | 55.1, | -10.9, | 0, | 0.4231 |
| 0, | 211, | 54.5, | -11.0, | 0, | 0.4472 |
| 0, | 212, | 55.6, | -10.8, | 0, | 0.4299 |
| 0, | 213, | 53.2, | -11.0, | 0, | 0.4350 |
| 0, | 214, | 57.0, | -10.8, | 0, | 0.4488 |
| 0, | 215, | 53.7, | -10.9, | 0, | 0.4435 |
| 0, | 216, | 52.9, | -11.0, | 0, | 0.4299 |
| 0, | 217, | 51.3, | -11.1, | 0, | 0.4409 |
| 0, | 218, | 50.8, | -11.1, | 0, | 0.4161 |
| 0, | 219, | 52.9, | -11.0, | 0, | 0.4381 |
| 0, | 220, | 52.9, | -11.0, | 0, | 0.4460 |
| 0, | 221, | 52.5, | -11.0, | 0, | 0.4231 |
| 0, | 222, | 54.6, | -10.9, | 0, | 0.4264 |
| 0, | 223, | 53.6, | -10.9, | 0, | 0.4289 |
| 0, | 224, | 56.6, | -10.8, | 0, | 0.4366 |
| 0, | 225, | 55.0, | -10.8, | 0, | 0.4381 |
| 0, | 226, | 56.0, | -10.8, | 0, | 0.4240 |
| 0, | 227, | 53.3, | -10.9, | 0, | 0.4312 |
| 0, | 228, | 56.6, | -10.9, | 0, | 0.4684 |
| 0, | 229, | 55.5, | -10.9, | 0, | 0.4643 |
| 0, | 230, | 55.4, | -10.8, | 0, | 0.4447 |
| 0, | 231, | 52.1, | -11.0, | 0, | 0.4180 |
| 0, | 232, | 51.9, | -11.1, | 0, | 0.4530 |
| 0, | 233, | 50.4, | -11.2, | 0, | 0.4293 |
| 0, | 234, | 51.1, | -11.1, | 0, | 0.4279 |
| 0, | 235, | 52.6, | -11.0, | 0, | 0.4309 |
| 0, | 236, | 49.2, | -11.2, | 0, | 0.4294 |
| 0, | 237, | 49.2, | -11.3, | 0, | 0.4297 |
| 0, | 238, | 50.3, | -11.2, | 0, | 0.4321 |
| 0, | 239, | 51.9, | -11.0, | 0, | 0.4247 |

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0,    327,       33.3, -12.3,    0,   0.4821
0,    328,       33.8, -12.3,    0,   0.4785
0,    329,       33.9, -12.2,    0,   0.4875
0,    330,       32.7, -12.3,    0,   0.4945
0,    331,       31.7, -12.4,    0,   0.4903
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0,    342,       32.2, -12.2,    0,   0.4520
0,    343,       32.3, -12.2,    0,   0.4394
0,    344,       34.2, -12.1,    0,   0.4456
0,    345,       34.8, -12.2,    0,   0.4778
0,    346,       34.7, -12.1,    0,   0.4586
0,    347,       34.3, -12.1,    0,   0.4853
0,    348,       33.7, -12.2,    0,   0.4420
0,    349,       33.8, -12.3,    0,   0.4892
0,    350,       36.6, -12.1,    0,   0.4911
0,    351,       35.1, -12.2,    0,   0.5109
0,    352,       34.2, -12.4,    0,   0.4755
0,    353,       38.2, -12.2,    0,   0.5949
0,    354,       37.2, -12.3,    0,   0.5952
0,    355,       34.5, -12.3,    0,   0.5069
0,    356,       34.5, -12.2,    0,   0.5018
0,    357,       34.6, -12.1,    0,   0.4904
0,    358,       34.6, -12.1,    0,   0.4952
0,    359,       35.4, -12.2,    0,   0.5034
0,    360,       36.0, -12.0,    0,   0.5228
0,    361,       36.7, -12.0,    0,   0.5107
0,    362,       33.8, -12.2,    0,   0.4551
0,    363,       38.9, -11.9,    0,   0.4970
0,    364,       33.6, -11.9,    0,   0.5104
0,    365,       32.7, -11.8,    0,   0.4719
0,    366,       32.2, -11.7,    0,   0.4538
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0,      6,       20.0,  19.5,    0,   0.6200
0,      7,       19.2,  19.2,    0,   0.5948
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0,     10,       17.6,  18.4,    0,   0.5031
0,     11,       17.3,  18.1,    0,   0.4692
0,     12,       16.8,  17.9,    0,   0.4944
0,     13,       16.0,  17.6,    0,   0.4717
0,     14,       18.4,  17.4,    0,   0.5340
0,     15,       21.9,  17.1,    0,   0.6508
0,     16,       17.6,  16.9,    0,   0.6122
0,     17,       19.6,  16.7,    0,   0.6538
0,     18,       21.0,  16.5,    0,   0.6440
0,     19,       19.9,  16.3,    0,   0.5413
0,     20,       19.1,  16.1,    0,   0.5030
0,     21,       20.5,  16.0,    0,   0.5969
0,     22,       18.3,  15.8,    0,   0.5641
0,     23,       17.5,  15.7,    0,   0.6586
0,     24,       17.2,  15.6,    0,   0.5713
0,     25,       18.0,  15.5,    0,   0.5817
0,     26,       16.5,  15.4,    0,   0.5454
0,     27,       18.4,  15.2,    0,   0.5897
0,     28,       20.7,  15.1,    0,   0.7197
0,     29,       20.1,  15.0,    0,   0.6874
0,     30,       19.9,  14.9,    0,   0.6362
0,     31,       19.6,  14.8,    0,   0.7159
0,     32,       18.1,  14.7,    0,   0.5779
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0,     37,       19.9,  14.4,    0,   0.5844
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0,     39,       21.3,  14.3,    0,   0.6694
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0,     79,       30.5,  12.6,    0,   1.3961
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0,    133,       22.8,  14.0,    0,   0.9736
0,    134,       17.0,  14.0,    0,   0.8794
0,    135,       23.4,  14.0,    0,   1.2131
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0,    138,       16.3,  14.0,    0,   1.0732
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| 0, | 142, | 15.8, | 14.1, | 0, | 1.0321 |
| 0, | 143, | 16.9, | 14.2, | 0, | 0.9273 |
| 0, | 144, | 18.0, | 14.2, | 0, | 1.0319 |
| 0, | 145, | 15.1, | 14.3, | 0, | 0.7311 |
| 0, | 146, | 17.8, | 14.3, | 0, | 0.9024 |
| 0, | 147, | 15.8, | 14.4, | 0, | 0.8074 |
| 0, | 148, | 16.5, | 14.4, | 0, | 0.6894 |
| 0, | 149, | 19.1, | 14.4, | 0, | 1.1033 |
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| 0, | 151, | 26.7, | 14.5, | 0, | 1.1380 |
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| 0, | 153, | 21.5, | 14.6, | 0, | 1.1293 |
| 0, | 154, | 23.7, | 14.7, | 0, | 1.6861 |
| 0, | 155, | 18.1, | 14.7, | 0, | 1.2405 |
| 0, | 156, | 17.3, | 14.8, | 0, | 1.0554 |
| 0, | 157, | 16.6, | 14.8, | 0, | 0.9871 |
| 0, | 158, | 16.5, | 14.9, | 0, | 0.8518 |
| 0, | 159, | 17.4, | 14.9, | 0, | 0.7509 |
| 0, | 160, | 19.9, | 15.0, | 0, | 0.9957 |
| 0, | 161, | 22.4, | 15.0, | 0, | 1.1800 |
| 0, | 162, | 22.2, | 15.1, | 0, | 1.2379 |
| 0, | 163, | 20.3, | 15.1, | 0, | 0.9807 |
| 0, | 164, | 20.4, | 15.2, | 0, | 0.9181 |
| 0, | 165, | 19.5, | 15.2, | 0, | 0.8920 |
| 0, | 166, | 17.0, | 15.3, | 0, | 0.9585 |
| 0, | 167, | 17.0, | 15.3, | 0, | 0.7531 |
| 0, | 168, | 15.3, | 15.3, | 0, | 0.5991 |
| 0, | 169, | 20.4, | 15.3, | 0, | 0.7355 |
| 0, | 170, | 24.2, | 15.3, | 0, | 0.9049 |
| 0, | 171, | 18.4, | 15.3, | 0, | 0.8220 |
| 0, | 172, | 16.7, | 15.3, | 0, | 0.7637 |
| 0, | 173, | 17.1, | 15.3, | 0, | 0.7983 |
| 0, | 174, | 19.6, | 15.3, | 0, | 0.8318 |
| 0, | 175, | 21.4, | 15.2, | 0, | 0.6576 |
| 0, | 176, | 22.7, | 15.2, | 0, | 0.6784 |
| 0, | 177, | 21.3, | 15.2, | 0, | 0.7410 |
| 0, | 178, | 21.5, | 15.2, | 0, | 0.7498 |
| 0, | 179, | 20.2, | 15.2, | 0, | 0.7658 |
| 0, | 180, | 26.8, | 15.2, | 0, | 0.9605 |
| 0, | 181, | 23.9, | 15.2, | 0, | 0.9286 |
| 0, | 182, | 20.5, | 15.2, | 0, | 0.9866 |
| 0, | 183, | 22.7, | 15.2, | 0, | 1.3056 |
| 0, | 184, | 18.6, | 15.2, | 0, | 1.0107 |
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| 0, | 187, | 17.9, | 15.2, | 0, | 0.6458 |
| 0, | 188, | 21.0, | 15.1, | 0, | 0.8037 |
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| 0, | 192, | 29.4, | 15.1, | 0, | 0.8333 |
| 0, | 193, | 35.5, | 15.1, | 0, | 0.9180 |
| 0, | 194, | 27.1, | 15.1, | 0, | 0.9536 |
| 0, | 195, | 27.5, | 15.1, | 0, | 0.8716 |
| 0, | 196, | 23.1, | 15.1, | 0, | 0.8201 |
| 0, | 197, | 31.9, | 15.1, | 0, | 1.2756 |
| 0, | 198, | 24.7, | 15.1, | 0, | 0.9277 |
| 0, | 199, | 20.9, | 15.0, | 0, | 0.8665 |
| 0, | 200, | 24.2, | 15.0, | 0, | 0.9641 |
| 0, | 201, | 28.7, | 15.1, | 0, | 1.0997 |

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0,    273,       15.4,  16.5,    0,   0.7038
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0,    292,       15.6,  16.6,    0,   0.6784
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0,    294,       17.0,  16.5,    0,   0.7362
0,    295,       18.2,  16.5,    0,   0.9041
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0,    297,       15.0,  16.4,    0,   0.6368
0,    298,       16.6,  16.3,    0,   0.7016
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| | | | | | |
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| 0, | 299, | 18.8, | 16.3, | 0, | 0.8558 |
| 0, | 300, | 15.5, | 16.2, | 0, | 0.7890 |
| 0, | 301, | 14.5, | 16.2, | 0, | 0.6268 |
| 0, | 302, | 15.1, | 16.1, | 0, | 0.6422 |
| 0, | 303, | 15.5, | 16.1, | 0, | 0.6224 |
| 0, | 304, | 14.8, | 16.0, | 0, | 0.6278 |
| 0, | 305, | 15.2, | 16.0, | 0, | 0.6618 |
| 0, | 306, | 17.0, | 15.9, | 0, | 0.7145 |
| 0, | 307, | 16.7, | 15.8, | 0, | 0.6014 |
| 0, | 308, | 18.5, | 15.8, | 0, | 0.7825 |
| 0, | 309, | 17.3, | 15.7, | 0, | 0.7068 |
| 0, | 310, | 14.4, | 15.7, | 0, | 0.5349 |
| 0, | 311, | 17.1, | 15.7, | 0, | 0.7859 |
| 0, | 312, | 14.9, | 15.6, | 0, | 0.7513 |
| 0, | 313, | 14.3, | 15.6, | 0, | 0.6041 |
| 0, | 314, | 16.0, | 15.5, | 0, | 0.6347 |
| 0, | 315, | 15.7, | 15.5, | 0, | 0.6192 |
| 0, | 316, | 17.3, | 15.5, | 0, | 0.6862 |
| 0, | 317, | 16.0, | 15.4, | 0, | 0.6328 |
| 0, | 318, | 17.0, | 15.4, | 0, | 0.5556 |
| 0, | 319, | 19.0, | 15.3, | 0, | 0.7313 |
| 0, | 320, | 21.8, | 15.3, | 0, | 0.9298 |
| 0, | 321, | 28.1, | 15.2, | 0, | 1.6438 |
| 0, | 322, | 26.5, | 15.2, | 0, | 1.2375 |
| 0, | 323, | 26.3, | 15.1, | 0, | 1.2643 |
| 0, | 324, | 27.3, | 15.1, | 0, | 1.0792 |
| 0, | 325, | 18.7, | 15.1, | 0, | 0.8803 |
| 0, | 326, | 22.5, | 15.0, | 0, | 0.9919 |
| 0, | 327, | 23.8, | 15.0, | 0, | 0.9203 |
| 0, | 328, | 23.6, | 15.0, | 0, | 0.8461 |
| 0, | 329, | 24.2, | 15.0, | 0, | 0.8028 |
| 0, | 330, | 24.3, | 14.9, | 0, | 0.8800 |
| 0, | 331, | 27.7, | 14.9, | 0, | 1.0403 |
| 0, | 332, | 23.2, | 14.9, | 0, | 0.9249 |
| 0, | 333, | 19.7, | 14.9, | 0, | 0.7901 |
| 0, | 334, | 24.2, | 14.8, | 0, | 1.0263 |
| 0, | 335, | 22.8, | 14.8, | 0, | 0.7842 |
| 0, | 336, | 17.3, | 14.8, | 0, | 0.7608 |
| 0, | 337, | 22.0, | 14.8, | 0, | 0.6248 |
| 0, | 338, | 17.0, | 14.7, | 0, | 0.6168 |
| 0, | 339, | 18.6, | 14.7, | 0, | 0.6361 |

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 "Device no.  ", 1
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0, "Unit Name   ", "(MASS )ug/m3"
0, "SIZE_CORRECT", "DISABLED"
0, "TEMPUNITS   ", C
0, "Max MASS    ", 32.691710
0, "Max MASS  @ ",   ,08:34:59  ,30-Dec-1899
0, "Avg MASS    ", 23.010860
0, "Max Diam    ", 0.969179
0, "Max Diam @  ", 3  ,08:34:59  ,30-Dec-1899
0, "Avg Diam    ", 0.665117
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0, "ALARM_LEVEL ", 3192.0
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0,      3,       21.5, -12.7,    0,   0.5457
0,      4,       22.1, -12.7,    0,   0.5319
0,      5,       21.6, -12.8,    0,   0.5215
0,      6,       22.9, -12.7,    0,   0.5858
0,      7,       25.2, -12.6,    0,   0.5694
0,      8,       24.0, -12.6,    0,   0.5033
0,      9,       23.9, -12.6,    0,   0.5167
0,     10,       23.3, -12.6,    0,   0.4919
0,     11,       21.9, -12.8,    0,   0.5144
0,     12,       22.4, -11.4,    0,   0.5884
0,     13,       21.7, -12.8,    0,   0.5626
0,     14,       22.3, -12.8,    0,   0.5644
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0,     16,       22.9, -12.3,    0,   0.6193
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0,     39,       25.2, -13.0,    0,   0.6393
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0,     41,       25.8, -12.9,    0,   0.6372
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0,     69,       27.8, -13.0,    0,   0.6481
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0,     71,       27.2, -13.0,    0,   0.6675
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0,     76,       29.6, -12.9,    0,   0.6864
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0,    102,       28.4, -13.0,    0,   0.7117
0,    103,       28.4, -12.9,    0,   0.7248
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0,    105,       27.4, -13.0,    0,   0.6161
0,    106,       28.2, -13.0,    0,   0.6917
0,    107,       29.8, -12.9,    0,   0.7597
0,    108,       29.2, -12.9,    0,   0.7496
0,    109,       27.2, -13.0,    0,   0.6610
0,    110,       28.7, -12.9,    0,   0.6861
0,    111,       27.5, -13.0,    0,   0.6883
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0,    113,       25.6, -13.1,    0,   0.6869
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| 0, | 115, | 25.8, | -13.1, | 0, | 0.6981 |
| 0, | 116, | 26.2, | -13.1, | 0, | 0.7130 |
| 0, | 117, | 26.4, | -13.1, | 0, | 0.6857 |
| 0, | 118, | 26.1, | -13.1, | 0, | 0.7052 |
| 0, | 119, | 25.7, | -13.2, | 0, | 0.7573 |
| 0, | 120, | 27.2, | -13.1, | 0, | 0.7244 |
| 0, | 121, | 26.0, | -13.1, | 0, | 0.7169 |
| 0, | 122, | 24.3, | -13.2, | 0, | 0.6894 |
| 0, | 123, | 24.8, | -13.2, | 0, | 0.7006 |
| 0, | 124, | 24.0, | -13.1, | 0, | 0.6483 |
| 0, | 125, | 24.2, | -13.2, | 0, | 0.7198 |
| 0, | 126, | 22.7, | -13.3, | 0, | 0.6601 |
| 0, | 127, | 24.0, | -13.2, | 0, | 0.7138 |
| 0, | 128, | 24.1, | -13.2, | 0, | 0.6806 |
| 0, | 129, | 24.5, | -13.2, | 0, | 0.6490 |
| 0, | 130, | 24.5, | -13.2, | 0, | 0.6700 |
| 0, | 131, | 24.3, | -13.2, | 0, | 0.6814 |
| 0, | 132, | 23.9, | -13.2, | 0, | 0.6371 |
| 0, | 133, | 24.2, | -13.1, | 0, | 0.6685 |
| 0, | 134, | 23.3, | -13.3, | 0, | 0.7361 |
| 0, | 135, | 23.8, | -13.2, | 0, | 0.6640 |
| 0, | 136, | 24.9, | -13.2, | 0, | 0.7740 |
| 0, | 137, | 23.3, | -13.2, | 0, | 0.6965 |
| 0, | 138, | 22.8, | -13.2, | 0, | 0.6202 |
| 0, | 139, | 23.4, | -13.2, | 0, | 0.6196 |
| 0, | 140, | 23.9, | -13.2, | 0, | 0.7314 |
| 0, | 141, | 24.8, | -13.1, | 0, | 0.6867 |
| 0, | 142, | 24.7, | -13.1, | 0, | 0.6723 |
| 0, | 143, | 24.6, | -13.1, | 0, | 0.6173 |
| 0, | 144, | 25.1, | -13.2, | 0, | 0.7312 |
| 0, | 145, | 26.2, | -13.2, | 0, | 0.7868 |
| 0, | 146, | 30.1, | -13.0, | 0, | 0.7204 |
| 0, | 147, | 24.5, | -13.2, | 0, | 0.6267 |
| 0, | 148, | 26.1, | -13.1, | 0, | 0.7044 |
| 0, | 149, | 27.5, | -13.1, | 0, | 0.7946 |
| 0, | 150, | 27.2, | -13.0, | 0, | 0.7442 |
| 0, | 151, | 25.6, | -13.1, | 0, | 0.6639 |
| 0, | 152, | 27.3, | -13.1, | 0, | 0.7601 |
| 0, | 153, | 27.6, | -13.1, | 0, | 0.7236 |
| 0, | 154, | 28.6, | -13.0, | 0, | 0.8391 |
| 0, | 155, | 26.9, | -13.1, | 0, | 0.7515 |
| 0, | 156, | 25.8, | -13.1, | 0, | 0.6963 |
| 0, | 157, | 24.7, | -13.1, | 0, | 0.6849 |
| 0, | 158, | 23.7, | -13.2, | 0, | 0.6477 |
| 0, | 159, | 23.0, | -13.2, | 0, | 0.6729 |
| 0, | 160, | 24.0, | -13.2, | 0, | 0.6381 |
| 0, | 161, | 23.0, | -13.2, | 0, | 0.6564 |
| 0, | 162, | 23.5, | -13.2, | 0, | 0.6362 |
| 0, | 163, | 23.8, | -13.2, | 0, | 0.6267 |
| 0, | 164, | 23.4, | -13.2, | 0, | 0.7097 |
| 0, | 165, | 23.8, | -13.1, | 0, | 0.6604 |
| 0, | 166, | 24.4, | -13.1, | 0, | 0.6353 |
| 0, | 167, | 24.0, | -13.2, | 0, | 0.7169 |
| 0, | 168, | 24.3, | -13.2, | 0, | 0.6716 |
| 0, | 169, | 25.0, | -13.1, | 0, | 0.6133 |
| 0, | 170, | 25.5, | -13.1, | 0, | 0.6507 |
| 0, | 171, | 25.7, | -13.1, | 0, | 0.6472 |
| 0, | 172, | 26.4, | -13.0, | 0, | 0.6872 |
| 0, | 173, | 25.8, | -12.9, | 0, | 0.6149 |
| 0, | 174, | 26.0, | -13.0, | 0, | 0.6433 |
| 0, | 175, | 26.3, | -13.0, | 0, | 0.6457 |
| 0, | 176, | 27.1, | -12.9, | 0, | 0.6308 |

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0,    212,       26.9, -12.9,    0,   0.6599
0,    213,       26.2, -13.0,    0,   0.7063
0,    214,       25.5, -13.0,    0,   0.6945
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0,    217,       25.8, -13.0,    0,   0.6716
0,    218,       26.3, -13.0,    0,   0.6638
0,    219,       25.8, -13.0,    0,   0.6612
0,    220,       26.6, -13.0,    0,   0.6929
0,    221,       26.4, -13.0,    0,   0.7112
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0,    257,       17.4, -13.5,    0,   0.6245
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0,    260,       16.5, -13.6,    0,   0.7072
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| 0, | 263, | 18.3, | -13.4, | 0, | 0.6480 |
| 0, | 264, | 19.0, | -13.5, | 0, | 0.6449 |
| 0, | 265, | 22.1, | -13.2, | 0, | 0.6634 |
| 0, | 266, | 23.2, | -13.3, | 0, | 0.7985 |
| 0, | 267, | 21.3, | -13.4, | 0, | 0.8959 |
| 0, | 268, | 19.1, | -13.5, | 0, | 0.7490 |
| 0, | 269, | 18.1, | -13.5, | 0, | 0.6624 |
| 0, | 270, | 18.8, | -13.4, | 0, | 0.6483 |
| 0, | 271, | 17.9, | -13.5, | 0, | 0.6639 |
| 0, | 272, | 17.8, | -13.5, | 0, | 0.6174 |
| 0, | 273, | 17.9, | -13.5, | 0, | 0.6465 |
| 0, | 274, | 17.4, | -13.5, | 0, | 0.6497 |
| 0, | 275, | 17.8, | -13.5, | 0, | 0.6334 |
| 0, | 276, | 17.7, | -13.5, | 0, | 0.6353 |
| 0, | 277, | 18.0, | -13.5, | 0, | 0.6186 |
| 0, | 278, | 18.7, | -13.5, | 0, | 0.6639 |
| 0, | 279, | 19.1, | -13.3, | 0, | 0.5835 |
| 0, | 280, | 20.5, | -13.4, | 0, | 0.7213 |
| 0, | 281, | 18.7, | -13.4, | 0, | 0.6384 |
| 0, | 282, | 18.6, | -13.5, | 0, | 0.6230 |
| 0, | 283, | 18.5, | -13.4, | 0, | 0.6244 |
| 0, | 284, | 20.2, | -13.4, | 0, | 0.7634 |
| 0, | 285, | 19.4, | -13.4, | 0, | 0.7246 |
| 0, | 286, | 19.9, | -13.3, | 0, | 0.6817 |
| 0, | 287, | 18.8, | -13.4, | 0, | 0.6171 |
| 0, | 288, | 19.5, | -13.4, | 0, | 0.6533 |
| 0, | 289, | 20.8, | -13.4, | 0, | 0.7803 |
| 0, | 290, | 19.0, | -13.4, | 0, | 0.7731 |
| 0, | 291, | 18.8, | -13.4, | 0, | 0.6549 |
| 0, | 292, | 17.9, | -13.4, | 0, | 0.5713 |
| 0, | 293, | 18.8, | -13.5, | 0, | 0.6870 |
| 0, | 294, | 19.5, | -13.4, | 0, | 0.7509 |
| 0, | 295, | 18.8, | -13.4, | 0, | 0.7566 |
| 0, | 296, | 18.4, | -13.4, | 0, | 0.6792 |
| 0, | 297, | 18.4, | -13.4, | 0, | 0.6909 |
| 0, | 298, | 18.1, | -13.5, | 0, | 0.6369 |
| 0, | 299, | 17.4, | -13.5, | 0, | 0.6582 |
| 0, | 300, | 18.1, | -13.4, | 0, | 0.6473 |
| 0, | 301, | 18.2, | -13.4, | 0, | 0.6215 |
| 0, | 302, | 17.7, | -13.5, | 0, | 0.6408 |
| 0, | 303, | 17.5, | -13.5, | 0, | 0.7542 |
| 0, | 304, | 17.6, | -13.4, | 0, | 0.7274 |
| 0, | 305, | 17.5, | -13.5, | 0, | 0.6252 |
| 0, | 306, | 17.2, | -13.5, | 0, | 0.6698 |
| 0, | 307, | 20.2, | -13.4, | 0, | 0.8253 |
| 0, | 308, | 18.4, | -13.5, | 0, | 0.7216 |
| 0, | 309, | 19.9, | -13.4, | 0, | 0.8357 |
| 0, | 310, | 17.6, | -13.5, | 0, | 0.7332 |
| 0, | 311, | 18.2, | -13.5, | 0, | 0.6754 |
| 0, | 312, | 18.5, | -13.4, | 0, | 0.7017 |
| 0, | 313, | 18.6, | -13.4, | 0, | 0.6632 |
| 0, | 314, | 17.9, | -13.5, | 0, | 0.6834 |
| 0, | 315, | 18.8, | -13.4, | 0, | 0.7151 |
| 0, | 316, | 21.3, | -13.4, | 0, | 0.9692 |
| 0, | 317, | 18.0, | -13.4, | 0, | 0.7185 |
| 0, | 318, | 16.8, | -13.5, | 0, | 0.6396 |
| 0, | 319, | 17.2, | -13.5, | 0, | 0.7444 |
| 0, | 320, | 17.1, | -13.6, | 0, | 0.7385 |
| 0, | 321, | 16.7, | -13.5, | 0, | 0.6469 |
| 0, | 322, | 17.6, | -13.4, | 0, | 0.6228 |
| 0, | 323, | 18.1, | -13.5, | 0, | 0.7023 |
| 0, | 324, | 18.1, | -13.5, | 0, | 0.6750 |
| 0, | 325, | 17.2, | -13.5, | 0, | 0.6698 |

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| 0, | 326, | 16.4, | -13.5, | 0, | 0.6462 |
| 0, | 327, | 16.6, | -13.5, | 0, | 0.6192 |
| 0, | 328, | 17.0, | -13.5, | 0, | 0.6633 |
| 0, | 329, | 16.4, | -13.6, | 0, | 0.7237 |
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| 0, | 331, | 17.3, | -13.5, | 0, | 0.6499 |
| 0, | 332, | 16.9, | -13.5, | 0, | 0.6967 |
| 0, | 333, | 16.3, | -13.5, | 0, | 0.6045 |
| 0, | 334, | 16.1, | -13.5, | 0, | 0.6201 |
| 0, | 335, | 16.2, | -13.4, | 0, | 0.5735 |
| 0, | 336, | 16.3, | -13.5, | 0, | 0.6241 |
| 0, | 337, | 16.2, | -13.5, | 0, | 0.6621 |
| 0, | 338, | 15.6, | -13.5, | 0, | 0.6477 |
| 0, | 339, | 16.1, | -13.5, | 0, | 0.5973 |
| 0, | 340, | 17.2, | -13.5, | 0, | 0.7047 |
| 0, | 341, | 18.5, | -13.4, | 0, | 0.6171 |
| 0, | 342, | 19.5, | -13.4, | 0, | 0.7300 |
| 0, | 343, | 18.8, | -13.4, | 0, | 0.6991 |
| 0, | 344, | 18.5, | -13.5, | 0, | 0.7014 |
| 0, | 345, | 16.3, | -13.5, | 0, | 0.5938 |
| 0, | 346, | 16.9, | -13.5, | 0, | 0.6176 |
| 0, | 347, | 17.3, | -13.5, | 0, | 0.6567 |
| 0, | 348, | 17.0, | -13.5, | 0, | 0.6480 |
| 0, | 349, | 16.3, | -13.6, | 0, | 0.6384 |
| 0, | 350, | 16.3, | -13.6, | 0, | 0.6730 |
| 0, | 351, | 16.9, | -13.5, | 0, | 0.6134 |
| 0, | 352, | 16.8, | -13.5, | 0, | 0.6596 |
| 0, | 353, | 17.1, | -13.6, | 0, | 0.6034 |
| 0, | 354, | 16.3, | -13.6, | 0, | 0.6393 |
| 0, | 355, | 16.1, | -13.5, | 0, | 0.5772 |
| 0, | 356, | 16.7, | -13.5, | 0, | 0.6541 |
| 0, | 357, | 17.4, | -13.4, | 0, | 0.6508 |
| 0, | 358, | 15.8, | -13.6, | 0, | 0.5791 |
| 0, | 359, | 16.4, | -13.5, | 0, | 0.5687 |
| 0, | 360, | 15.9, | -13.6, | 0, | 0.5891 |
| 0, | 361, | 16.3, | -13.6, | 0, | 0.6922 |
| 0, | 362, | 17.2, | -13.5, | 0, | 0.6320 |
| 0, | 363, | 17.1, | -13.5, | 0, | 0.6556 |
| 0, | 364, | 17.8, | -13.5, | 0, | 0.6873 |
| 0, | 365, | 17.8, | -13.5, | 0, | 0.7315 |
| 0, | 366, | 17.5, | -13.5, | 0, | 0.6456 |
| 0, | 367, | 18.7, | -13.4, | 0, | 0.6158 |
| 0, | 368, | 17.7, | -13.5, | 0, | 0.5419 |
| 0, | 369, | 16.5, | -13.5, | 0, | 0.5906 |
| 0, | 370, | 18.1, | -13.5, | 0, | 0.6617 |
| 0, | 371, | 18.5, | -13.4, | 0, | 0.6845 |
| 0, | 372, | 17.7, | -13.5, | 0, | 0.6173 |
| 0, | 373, | 18.3, | -13.5, | 0, | 0.6459 |
| 0, | 374, | 16.6, | -13.6, | 0, | 0.6489 |

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0,      6,        7.4,  20.0,    0,   0.7363
0,      7,        8.5,  19.7,    0,   0.7772
0,      8,        7.5,  19.4,    0,   0.5454
0,      9,        7.1,  19.0,    0,   0.5391
0,     10,        5.6,  18.7,    0,   0.4767
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0,     39,       12.5,  12.0,    0,   0.6046
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| 0, | 204, | 8.9, | 9.5, | 0, | 0.6766 |
| 0, | 205, | 9.5, | 9.4, | 0, | 0.8527 |
| 0, | 206, | 8.3, | 9.3, | 0, | 0.7793 |
| 0, | 207, | 8.0, | 9.3, | 0, | 0.6195 |
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| 0, | 209, | 8.5, | 9.1, | 0, | 0.8234 |
| 0, | 210, | 9.6, | 9.1, | 0, | 0.7491 |
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| 0, | 220, | 11.0, | 8.7, | 0, | 0.5971 |
| 0, | 221, | 12.1, | 8.7, | 0, | 0.7728 |
| 0, | 222, | 12.6, | 8.6, | 0, | 0.8667 |
| 0, | 223, | 14.6, | 8.6, | 0, | 0.9762 |
| 0, | 224, | 11.8, | 8.6, | 0, | 0.7976 |
| 0, | 225, | 11.5, | 8.6, | 0, | 0.7834 |
| 0, | 226, | 13.5, | 8.6, | 0, | 0.6866 |
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| 0, | 260, | 11.0, | 9.8, | 0, | 1.1645 |
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0, "Avg MASS    ", 16.549100
0, "Max Diam    ", 0.942371
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0,      9,        9.4,  18.0,    0,   0.4876
0,     10,        9.3,  17.6,    0,   0.4727
0,     11,       13.5,  17.3,    0,   0.3816
0,     12,       11.0,  17.1,    0,   0.4715
0,     13,        8.1,  16.8,    0,   0.4466
0,     14,       13.4,  16.5,    0,   0.4868
0,     15,        8.4,  16.2,    0,   0.4334
0,     16,        6.9,  16.0,    0,   0.3784
0,     17,        9.9,  15.7,    0,   0.5432
0,     18,       10.7,  15.5,    0,   0.5844
0,     19,       10.4,  15.2,    0,   0.5298
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0,     22,        9.1,  14.5,    0,   0.4576
0,     23,        7.4,  14.3,    0,   0.4469
0,     24,       11.4,  14.1,    0,   0.3936
0,     25,        9.8,  13.9,    0,   0.4566
0,     26,       11.2,  13.7,    0,   0.4858
0,     27,        8.7,  13.5,    0,   0.4119
0,     28,        9.4,  13.3,    0,   0.4616
0,     29,        8.1,  13.1,    0,   0.4342
0,     30,        8.1,  13.0,    0,   0.4577
0,     31,        8.3,  12.8,    0,   0.4360
0,     32,        8.5,  12.6,    0,   0.4424
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0,     37,       10.0,  11.8,    0,   0.4459
0,     38,       32.9,  11.7,    0,   0.9424
0,     39,       17.5,  11.6,    0,   0.8656
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| | | | | | |
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| 0, | 41, | 17.6, | 11.3, | 0, | 0.5870 |
| 0, | 42, | 18.9, | 11.2, | 0, | 0.6000 |
| 0, | 43, | 13.2, | 11.1, | 0, | 0.7577 |
| 0, | 44, | 13.2, | 11.0, | 0, | 0.5450 |
| 0, | 45, | 12.2, | 10.9, | 0, | 0.4126 |
| 0, | 46, | 13.4, | 10.8, | 0, | 0.4364 |
| 0, | 47, | 15.0, | 10.7, | 0, | 0.5075 |
| 0, | 48, | 14.4, | 10.6, | 0, | 0.5192 |
| 0, | 49, | 11.7, | 10.5, | 0, | 0.4916 |
| 0, | 50, | 12.0, | 10.5, | 0, | 0.5138 |
| 0, | 51, | 11.2, | 10.4, | 0, | 0.4603 |
| 0, | 52, | 11.5, | 10.3, | 0, | 0.4957 |
| 0, | 53, | 17.5, | 10.2, | 0, | 0.5120 |
| 0, | 54, | 20.9, | 10.2, | 0, | 0.5482 |
| 0, | 55, | 20.3, | 10.1, | 0, | 0.6868 |
| 0, | 56, | 16.7, | 10.0, | 0, | 0.6006 |
| 0, | 57, | 13.8, | 10.0, | 0, | 0.5091 |
| 0, | 58, | 21.4, | 9.9, | 0, | 0.5337 |
| 0, | 59, | 15.6, | 9.8, | 0, | 0.5492 |
| 0, | 60, | 10.8, | 9.8, | 0, | 0.4290 |
| 0, | 61, | 11.5, | 9.7, | 0, | 0.4512 |
| 0, | 62, | 11.4, | 9.7, | 0, | 0.4720 |
| 0, | 63, | 11.3, | 9.6, | 0, | 0.4413 |
| 0, | 64, | 11.9, | 9.6, | 0, | 0.4271 |
| 0, | 65, | 11.8, | 9.5, | 0, | 0.4316 |
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| 0, | 68, | 12.5, | 9.3, | 0, | 0.4170 |
| 0, | 69, | 11.8, | 9.3, | 0, | 0.4179 |
| 0, | 70, | 12.5, | 9.2, | 0, | 0.4676 |
| 0, | 71, | 19.0, | 9.1, | 0, | 0.5408 |
| 0, | 72, | 16.5, | 9.1, | 0, | 0.5181 |
| 0, | 73, | 14.5, | 9.1, | 0, | 0.4603 |
| 0, | 74, | 13.9, | 9.0, | 0, | 0.4483 |
| 0, | 75, | 14.4, | 8.9, | 0, | 0.5123 |
| 0, | 76, | 13.7, | 8.9, | 0, | 0.4668 |
| 0, | 77, | 16.8, | 8.8, | 0, | 0.4347 |
| 0, | 78, | 15.7, | 8.8, | 0, | 0.4431 |
| 0, | 79, | 16.4, | 8.8, | 0, | 0.5092 |
| 0, | 80, | 16.2, | 8.7, | 0, | 0.6515 |
| 0, | 81, | 19.5, | 8.6, | 0, | 0.5302 |
| 0, | 82, | 14.4, | 8.6, | 0, | 0.4848 |
| 0, | 83, | 18.4, | 8.6, | 0, | 0.4636 |
| 0, | 84, | 15.9, | 8.6, | 0, | 0.4657 |
| 0, | 85, | 16.3, | 8.5, | 0, | 0.5170 |
| 0, | 86, | 16.0, | 8.5, | 0, | 0.5315 |
| 0, | 87, | 20.9, | 8.5, | 0, | 0.5560 |
| 0, | 88, | 15.3, | 8.5, | 0, | 0.4974 |
| 0, | 89, | 14.8, | 8.4, | 0, | 0.5154 |
| 0, | 90, | 21.9, | 8.4, | 0, | 0.5049 |
| 0, | 91, | 16.7, | 8.4, | 0, | 0.5676 |
| 0, | 92, | 15.8, | 8.4, | 0, | 0.4859 |
| 0, | 93, | 14.0, | 8.3, | 0, | 0.4273 |
| 0, | 94, | 18.3, | 8.3, | 0, | 0.5275 |
| 0, | 95, | 19.8, | 8.3, | 0, | 0.5566 |
| 0, | 96, | 15.1, | 8.3, | 0, | 0.5305 |
| 0, | 97, | 17.8, | 8.3, | 0, | 0.4720 |
| 0, | 98, | 13.8, | 8.3, | 0, | 0.5178 |
| 0, | 99, | 14.7, | 8.2, | 0, | 0.4736 |
| 0, | 100, | 14.6, | 8.2, | 0, | 0.4468 |
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| 0, | 102, | 15.1, | 8.2, | 0, | 0.4893 |

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0,    148,   4929
0,    215,       21.6,   8.3,    0,   0.4788
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| 0, | 236, | 16.9, | 9.3, | 0, | 0.4599 |
| 0, | 237, | 16.2, | 9.3, | 0, | 0.4932 |
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| 0, | 251, | 15.7, | 9.6, | 0, | 0.4331 |
| 0, | 252, | 15.2, | 9.6, | 0, | 0.4269 |
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| 0, | 315, | 15.5, | 9.0, | 0, | 0.4799 |
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| 0, | 318, | 16.2, | 8.9, | 0, | 0.4484 |
| 0, | 319, | 15.4, | 8.9, | 0, | 0.4624 |
| 0, | 320, | 15.8, | 8.9, | 0, | 0.4630 |
| 0, | 321, | 12.7, | 8.8, | 0, | 0.4063 |
| 0, | 322, | 12.9, | 8.8, | 0, | 0.4599 |
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| 0, | 324, | 13.8, | 8.8, | 0, | 0.4344 |
| 0, | 325, | 13.9, | 8.8, | 0, | 0.4703 |
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| 0, | 327, | 13.5, | 8.8, | 0, | 0.4379 |
| 0, | 328, | 13.1, | 8.9, | 0, | 0.4352 |
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| 0, | 330, | 15.3, | 8.9, | 0, | 0.5499 |
| 0, | 331, | 12.6, | 8.9, | 0, | 0.4525 |
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| 0, | 336, | 12.9, | 9.1, | 0, | 0.4470 |
| 0, | 337, | 13.4, | 9.1, | 0, | 0.4394 |
| 0, | 338, | 12.8, | 9.1, | 0, | 0.4130 |
| 0, | 339, | 12.7, | 9.1, | 0, | 0.4092 |
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| 0, | 342, | 13.4, | 9.2, | 0, | 0.4513 |
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| 0, | 348, | 13.2, | 9.2, | 0, | 0.4577 |
| 0, | 349, | 12.2, | 9.2, | 0, | 0.4264 |
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| 0, | 354, | 12.4, | 9.1, | 0, | 0.4327 |
| 0, | 355, | 12.2, | 9.1, | 0, | 0.4018 |
| 0, | 356, | 12.7, | 9.1, | 0, | 0.4165 |
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| 0, | 358, | 13.5, | 9.1, | 0, | 0.4454 |
| 0, | 359, | 13.2, | 9.1, | 0, | 0.4475 |
| 0, | 360, | 13.1, | 9.0, | 0, | 0.4181 |
| 0, | 361, | 13.3, | 9.0, | 0, | 0.4265 |
| 0, | 362, | 12.6, | 9.0, | 0, | 0.4255 |
| 0, | 363, | 13.4, | 8.9, | 0, | 0.4557 |
| 0, | 364, | 14.1, | 8.9, | 0, | 0.4638 |
| 0, | 365, | 14.6, | 8.9, | 0, | 0.4515 |
| 0, | 366, | 13.9, | 8.8, | 0, | 0.4414 |
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| 0, | 368, | 14.1, | 8.7, | 0, | 0.4526 |
| 0, | 369, | 13.7, | 8.7, | 0, | 0.4236 |
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| 0, | 373, | 14.7, | 8.6, | 0, | 0.4361 |
| 0, | 374, | 14.2, | 8.6, | 0, | 0.4285 |
| 0, | 375, | 14.3, | 8.6, | 0, | 0.4487 |
| 0, | 376, | 14.2, | 8.6, | 0, | 0.4576 |
| 0, | 377, | 14.1, | 8.6, | 0, | 0.4571 |
| 0, | 378, | 13.7, | 8.7, | 0, | 0.4776 |
| 0, | 379, | 14.1, | 8.7, | 0, | 0.4494 |
| 0, | 380, | 13.2, | 8.7, | 0, | 0.4699 |
| 0, | 381, | 14.0, | 8.8, | 0, | 0.4354 |
| 0, | 382, | 11.9, | 8.9, | 0, | 0.4396 |
| 0, | 383, | 9.2, | 8.9, | 0, | 0.4239 |
| 0, | 384, | 10.2, | 8.9, | 0, | 0.4431 |
| 0, | 385, | 10.1, | 9.0, | 0, | 0.4465 |
| 0, | 386, | 9.0, | 9.0, | 0, | 0.4268 |
| 0, | 387, | 9.0, | 9.0, | 0, | 0.4552 |
| 0, | 388, | 21.9, | 9.0, | 0, | 0.5850 |
| 0, | 389, | 10.7, | 9.0, | 0, | 0.6229 |
| 0, | 390, | 10.0, | 9.0, | 0, | 0.4574 |
| 0, | 391, | 10.0, | 9.0, | 0, | 0.5018 |
| 0, | 392, | 9.2, | 9.0, | 0, | 0.4231 |
| 0, | 393, | 9.1, | 9.0, | 0, | 0.4633 |
| 0, | 394, | 8.9, | 9.0, | 0, | 0.4123 |
| 0, | 395, | 10.2, | 9.0, | 0, | 0.4848 |
| 0, | 396, | 11.9, | 9.0, | 0, | 0.5860 |
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0, "TEMPUNITS   ", C
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0, "Max Diam @  ", 4  ,08:05:19  ,30-Dec-1899
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0,      4,       28.0,  19.5,    0,   0.8214
0,      5,       28.0,  19.2,    0,   0.7947
0,      6,       32.3,  18.9,    0,   1.0667
0,      7,       29.3,  18.5,    0,   0.8362
0,      8,       32.3,  18.1,    0,   0.8538
0,      9,       30.4,  17.7,    0,   0.8472
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0,     11,       27.3,  17.0,    0,   0.6807
0,     12,       28.6,  16.6,    0,   0.7864
0,     13,       28.7,  16.2,    0,   0.7561
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0,     33,       38.6,  10.5,    0,   0.6761
0,     34,       41.4,  10.2,    0,   0.6947
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0,     39,       36.5,   9.4,    0,   0.6620
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0,     44,       31.7,   8.7,    0,   0.7048
0,     45,       30.2,   8.6,    0,   0.6703
0,     46,       31.2,   8.5,    0,   0.7851
0,     47,       29.6,   8.3,    0,   0.7602
0,     48,       28.9,   8.2,    0,   0.7263
0,     49,       29.8,   8.1,    0,   0.7693
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0,     52,       31.2,   7.8,    0,   0.7553
0,     53,       31.1,   7.7,    0,   0.8335
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0,     55,       30.9,   7.5,    0,   0.7873
0,     56,       29.9,   7.5,    0,   0.7905
0,     57,       28.9,   7.4,    0,   0.7613
0,     58,       28.4,   7.3,    0,   0.7485
0,     59,       29.3,   7.3,    0,   0.8117
0,     60,       28.9,   7.2,    0,   0.7851
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0,     62,       29.2,   7.1,    0,   0.8490
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0,     65,       27.3,   6.9,    0,   0.7464
0,     66,       28.1,   6.8,    0,   0.7818
0,     67,       29.6,   6.8,    0,   0.8593
0,     68,       29.7,   6.7,    0,   0.8008
0,     69,       30.3,   6.7,    0,   0.8133
0,     70,       30.1,   6.6,    0,   0.8176
0,     71,       29.6,   6.6,    0,   0.7835
0,     72,       29.6,   6.6,    0,   0.8533
0,     73,       28.5,   6.5,    0,   0.8736
0,     74,       26.9,   6.5,    0,   0.8429
0,     75,       26.0,   6.5,    0,   0.8941
0,     76,       25.9,   6.4,    0,   0.8607
0,     77,       25.9,   6.4,    0,   0.8448
0,     78,       25.9,   6.3,    0,   0.8442
0,     79,       24.2,   6.3,    0,   0.8327
0,     80,        146,       30.6,   5.5,    0,   1.0671
0,    147,       32.6,   5.5,    0,   1.0496
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0,    157,       37.6,   5.5,    0,   1.0036
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0,    159,       38.1,   5.4,    0,   1.0524
0,    160,       38.1,   5.4,    0,   1.0768
0,    161,       39.2,   5.4,    0,   1.1595
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0,    163,       37.4,   5.4,    0,   1.0234
0,    164,       37.4,   5.4,    0,   1.0646
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0,    166,       38.9,   5.4,    0,   1.0179
0,    167,       39.8,   5.4,    0,   1.0472
0,    168,       40.9,   5.4,    0,   1.0749
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| 0, | 169, | 42.0, | 5.3, | 0, | 1.0474 |
| 0, | 170, | 42.9, | 5.3, | 0, | 1.1080 |
| 0, | 171, | 42.0, | 5.3, | 0, | 1.1522 |
| 0, | 172, | 43.7, | 5.3, | 0, | 0.9710 |
| 0, | 173, | 42.7, | 5.3, | 0, | 1.0230 |
| 0, | 174, | 43.1, | 5.3, | 0, | 1.0092 |
| 0, | 175, | 43.3, | 5.3, | 0, | 1.0691 |
| 0, | 176, | 43.2, | 5.3, | 0, | 1.1044 |
| 0, | 177, | 44.1, | 5.3, | 0, | 0.9802 |
| 0, | 178, | 45.0, | 5.3, | 0, | 1.0447 |
| 0, | 179, | 46.4, | 5.3, | 0, | 1.0890 |
| 0, | 180, | 46.8, | 5.3, | 0, | 1.1118 |
| 0, | 181, | 47.5, | 5.3, | 0, | 1.1731 |
| 0, | 182, | 47.5, | 5.3, | 0, | 1.1057 |
| 0, | 183, | 46.9, | 5.3, | 0, | 1.0584 |
| 0, | 184, | 48.6, | 5.3, | 0, | 1.0878 |
| 0, | 185, | 46.4, | 5.3, | 0, | 1.1119 |
| 0, | 186, | 45.2, | 5.3, | 0, | 1.0699 |
| 0, | 187, | 46.4, | 5.3, | 0, | 1.2456 |
| 0, | 188, | 44.9, | 5.3, | 0, | 1.2614 |
| 0, | 189, | 44.1, | 5.3, | 0, | 1.1224 |
| 0, | 190, | 43.2, | 5.3, | 0, | 1.0433 |
| 0, | 191, | 42.7, | 5.3, | 0, | 1.1918 |
| 0, | 192, | 44.2, | 5.3, | 0, | 1.1588 |
| 0, | 193, | 44.4, | 5.2, | 0, | 1.1477 |
| 0, | 194, | 42.6, | 5.2, | 0, | 1.1477 |
| 0, | 195, | 43.6, | 5.2, | 0, | 1.0777 |
| 0, | 196, | 44.4, | 5.2, | 0, | 1.1362 |
| 0, | 197, | 41.7, | 5.2, | 0, | 1.2363 |
| 0, | 198, | 42.0, | 5.2, | 0, | 1.2056 |
| 0, | 199, | 41.0, | 5.2, | 0, | 1.1440 |
| 0, | 200, | 41.8, | 5.2, | 0, | 1.2101 |
| 0, | 201, | 39.1, | 5.2, | 0, | 1.1102 |
| 0, | 202, | 42.4, | 5.2, | 0, | 1.2209 |
| 0, | 203, | 41.8, | 5.2, | 0, | 1.3110 |
| 0, | 204, | 42.3, | 5.1, | 0, | 1.3294 |
| 0, | 205, | 43.6, | 5.1, | 0, | 1.2115 |
| 0, | 206, | 44.4, | 5.1, | 0, | 1.2740 |
| 0, | 207, | 44.6, | 5.1, | 0, | 1.3350 |
| 0, | 208, | 44.7, | 5.1, | 0, | 1.3041 |
| 0, | 209, | 46.6, | 5.1, | 0, | 1.1980 |
| 0, | 210, | 45.1, | 5.1, | 0, | 1.2020 |
| 0, | 211, | 43.7, | 5.1, | 0, | 1.2815 |
| 0, | 212, | 43.2, | 5.1, | 0, | 1.2073 |
| 0, | 213, | 42.2, | 5.1, | 0, | 1.3238 |
| 0, | 214, | 41.6, | 5.1, | 0, | 1.2544 |
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| 0, | 217, | 41.0, | 5.1, | 0, | 1.2043 |
| 0, | 218, | 40.9, | 5.1, | 0, | 1.2102 |
| 0, | 219, | 40.7, | 5.1, | 0, | 1.1377 |
| 0, | 220, | 40.8, | 5.1, | 0, | 1.0906 |
| 0, | 221, | 41.1, | 5.1, | 0, | 1.0791 |
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| 0, | 225, | 41.5, | 5.1, | 0, | 1.1740 |
| 0, | 226, | 40.6, | 5.1, | 0, | 1.0140 |
| 0, | 227, | 42.0, | 5.1, | 0, | 1.0282 |
| 0, | 228, | 42.9, | 5.1, | 0, | 1.2045 |
| 0, | 229, | 42.7, | 5.0, | 0, | 1.1317 |
| 0, | 230, | 43.4, | 5.1, | 0, | 1.0213 |
| 0, | 231, | 44.3, | 5.0, | 0, | 1.0737 |

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| 0, | 233, | 48.7, | 5.0, | 0, | 1.2308 |
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| 0, | 235, | 46.8, | 5.1, | 0, | 1.0621 |
| 0, | 236, | 45.6, | 5.1, | 0, | 1.1234 |
| 0, | 253, | 48.3, | 5.1, | 0, | 1.1335 |
| 0, | 254, | 49.9, | 5.1, | 0, | 1.1874 |
| 0, | 255, | 48.2, | 5.1, | 0, | 1.1284 |
| 0, | 256, | 48.0, | 5.1, | 0, | 1.1332 |
| 0, | 257, | 47.7, | 5.1, | 0, | 1.0367 |
| 0, | 258, | 47.4, | 5.1, | 0, | 1.0613 |
| 0, | 259, | 45.4, | 5.1, | 0, | 1.0687 |
| 0, | 260, | 45.5, | 5.1, | 0, | 1.0949 |
| 0, | 261, | 45.5, | 5.1, | 0, | 1.0764 |
| 0, | 262, | 46.2, | 5.1, | 0, | 1.1678 |
| 0, | 263, | 46.5, | 5.1, | 0, | 1.1331 |
| 0, | 264, | 45.2, | 5.2, | 0, | 1.0459 |
| 0, | 265, | 45.6, | 5.2, | 0, | 1.1080 |
| 0, | 266, | 45.8, | 5.2, | 0, | 1.0584 |
| 0, | 267, | 45.0, | 5.2, | 0, | 1.0941 |
| 0, | 268, | 44.5, | 5.2, | 0, | 1.0946 |
| 0, | 269, | 45.8, | 5.2, | 0, | 1.0424 |
| 0, | 270, | 44.1, | 5.2, | 0, | 1.0792 |
| 0, | 271, | 43.1, | 5.2, | 0, | 1.0190 |
| 0, | 272, | 42.1, | 5.2, | 0, | 1.0389 |
| 0, | 273, | 44.8, | 5.2, | 0, | 1.0013 |
| 0, | 274, | 44.5, | 5.2, | 0, | 1.0071 |
| 0, | 275, | 46.3, | 5.2, | 0, | 1.1441 |
| 0, | 276, | 47.8, | 5.2, | 0, | 1.1124 |
| 0, | 277, | 47.2, | 5.2, | 0, | 1.0365 |
| 0, | 278, | 48.6, | 5.2, | 0, | 1.0610 |
| 0, | 279, | 47.7, | 5.2, | 0, | 1.0268 |
| 0, | 280, | 46.5, | 5.2, | 0, | 1.0462 |
| 0, | 281, | 48.1, | 5.2, | 0, | 1.1154 |
| 0, | 282, | 48.4, | 5.2, | 0, | 1.0633 |
| 0, | 283, | 49.6, | 5.2, | 0, | 1.0049 |
| 0, | 284, | 49.3, | 5.2, | 0, | 1.0384 |
| 0, | 285, | 50.0, | 5.2, | 0, | 1.1317 |
| 0, | 286, | 51.8, | 5.2, | 0, | 1.0525 |
| 0, | 287, | 49.7, | 5.2, | 0, | 1.0942 |
| 0, | 288, | 47.3, | 5.2, | 0, | 1.0505 |
| 0, | 289, | 49.0, | 5.2, | 0, | 1.2545 |
| 0, | 290, | 49.0, | 5.2, | 0, | 1.0519 |
| 0, | 291, | 51.2, | 5.1, | 0, | 1.1963 |
| 0, | 292, | 51.1, | 5.1, | 0, | 1.1641 |
| 0, | 293, | 50.1, | 5.1, | 0, | 1.0793 |
| 0, | 294, | 49.6, | 5.1, | 0, | 1.0371 |
| 0, | 295, | 48.9, | 5.1, | 0, | 1.0776 |
| 0, | 296, | 49.8, | 5.1, | 0, | 1.1355 |
| 0, | 297, | 49.4, | 5.1, | 0, | 1.1822 |
| 0, | 298, | 49.0, | 5.1, | 0, | 1.1733 |
| 0, | 299, | 48.5, | 5.1, | 0, | 1.1606 |
| 0, | 300, | 49.5, | 5.1, | 0, | 1.1455 |
| 0, | 301, | 50.7, | 5.1, | 0, | 1.1233 |
| 0, | 302, | 52.9, | 5.1, | 0, | 1.0562 |
| 0, | 303, | 56.3, | 5.1, | 0, | 1.0096 |
| 0, | 304, | 55.3, | 5.1, | 0, | 1.0373 |
| 0, | 305, | 55.5, | 5.1, | 0, | 1.0515 |
| 0, | 306, | 53.8, | 5.1, | 0, | 1.1098 |
| 0, | 307, | 52.3, | 5.1, | 0, | 1.1479 |
| 0, | 308, | 51.8, | 5.1, | 0, | 1.2378 |
| 0, | 309, | 50.9, | 5.1, | 0, | 1.1933 |
| 0, | 310, | 50.6, | 5.1, | 0, | 1.2888 |

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|---|---|---|---|---|---|
| 0, | 311, | 49.7, | 5.1, | 0, | 1.2481 |
| 0, | 312, | 46.1, | 5.0, | 0, | 1.1822 |
| 0, | 313, | 46.4, | 5.0, | 0, | 1.1841 |
| 0, | 314, | 46.1, | 5.0, | 0, | 1.1555 |
| 0, | 315, | 45.3, | 5.0, | 0, | 1.1716 |
| 0, | 316, | 46.0, | 5.0, | 0, | 1.2229 |
| 0, | 317, | 44.8, | 5.0, | 0, | 1.1055 |
| 0, | 318, | 44.2, | 5.0, | 0, | 1.1021 |
| 0, | 319, | 45.0, | 5.0, | 0, | 1.1164 |
| 0, | 320, | 46.9, | 4.9, | 0, | 1.2344 |
| 0, | 321, | 47.5, | 4.9, | 0, | 1.0863 |
| 0, | 322, | 49.4, | 4.9, | 0, | 1.0119 |
| 0, | 323, | 51.2, | 4.9, | 0, | 1.0197 |
| 0, | 324, | 53.5, | 4.9, | 0, | 0.9652 |
| 0, | 325, | 54.6, | 4.9, | 0, | 0.9729 |
| 0, | 326, | 54.8, | 4.9, | 0, | 0.9742 |
| 0, | 327, | 56.2, | 4.9, | 0, | 0.9697 |
| 0, | 328, | 54.3, | 4.9, | 0, | 0.8903 |
| 0, | 329, | 55.6, | 4.9, | 0, | 0.9026 |
| 0, | 330, | 58.8, | 4.8, | 0, | 0.9396 |
| 0, | 331, | 62.7, | 4.8, | 0, | 1.0616 |
| 0, | 332, | 62.1, | 4.8, | 0, | 0.9211 |
| 0, | 333, | 64.3, | 4.8, | 0, | 0.9984 |
| 0, | 334, | 61.6, | 4.8, | 0, | 1.0053 |
| 0, | 335, | 58.2, | 4.8, | 0, | 1.0004 |
| 0, | 336, | 58.3, | 4.8, | 0, | 1.0056 |
| 0, | 337, | 58.7, | 4.8, | 0, | 1.0549 |
| 0, | 338, | 56.8, | 4.8, | 0, | 1.0970 |
| 0, | 339, | 55.7, | 4.8, | 0, | 1.0365 |
| 0, | 340, | 54.6, | 4.8, | 0, | 1.0132 |
| 0, | 341, | 51.1, | 4.8, | 0, | 1.1460 |
| 0, | 342, | 51.4, | 4.8, | 0, | 1.0209 |
| 0, | 343, | 53.9, | 4.7, | 0, | 1.0105 |
| 0, | 344, | 51.8, | 4.7, | 0, | 1.0228 |
| 0, | 345, | 51.2, | 4.7, | 0, | 1.1443 |
| 0, | 346, | 50.2, | 4.7, | 0, | 1.0807 |
| 0, | 347, | 50.2, | 4.7, | 0, | 1.0720 |
| 0, | 348, | 47.0, | 4.7, | 0, | 1.0745 |
| 0, | 349, | 45.0, | 4.7, | 0, | 1.1511 |
| 0, | 350, | 47.6, | 4.7, | 0, | 1.3000 |
| 0, | 351, | 45.6, | 4.7, | 0, | 1.0889 |
| 0, | 352, | 46.0, | 4.7, | 0, | 1.2013 |
| 0, | 353, | 45.7, | 4.6, | 0, | 1.1928 |
| 0, | 354, | 45.7, | 4.6, | 0, | 1.3173 |
| 0, | 355, | 46.3, | 4.6, | 0, | 1.4110 |
| 0, | 356, | 48.0, | 4.6, | 0, | 1.3096 |
| 0, | 357, | 46.8, | 4.6, | 0, | 1.3659 |
| 0, | 358, | 45.0, | 4.6, | 0, | 1.3129 |
| 0, | 359, | 43.3, | 4.6, | 0, | 1.2595 |
| 0, | 360, | 44.7, | 4.6, | 0, | 1.3352 |
| 0, | 361, | 43.8, | 4.6, | 0, | 1.2232 |
| 0, | 362, | 44.8, | 4.6, | 0, | 1.3152 |
| 0, | 363, | 43.9, | 4.6, | 0, | 1.3019 |
| 0, | 364, | 44.1, | 4.6, | 0, | 1.2951 |
| 0, | 365, | 44.7, | 4.6, | 0, | 1.2795 |
| 0, | 366, | 44.7, | 4.6, | 0, | 1.2520 |
| 0, | 367, | 45.5, | 4.5, | 0, | 1.4634 |
| 0, | 368, | 44.8, | 4.5, | 0, | 1.3604 |
| 0, | 369, | 44.8, | 4.5, | 0, | 1.4094 |
| 0, | 370, | 44.5, | 4.5, | 0, | 1.2574 |
| 0, | 371, | 46.0, | 4.5, | 0, | 1.2832 |
| 0, | 372, | 47.1, | 4.5, | 0, | 1.1971 |
| 0, | 373, | 46.4, | 4.5, | 0, | 1.2545 |

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| 0, | 374, | 45.2, | 4.5, | 0, | 1.2314 |
| 0, | 375, | 44.2, | 4.5, | 0, | 1.2535 |
| 0, | 376, | 44.3, | 4.5, | 0, | 1.3767 |
| 0, | 377, | 44.7, | 4.5, | 0, | 1.3650 |
| 0, | 378, | 45.2, | 4.5, | 0, | 1.4414 |
| 0, | 379, | 44.9, | 4.5, | 0, | 1.2429 |
| 0, | 380, | 45.6, | 4.5, | 0, | 1.3483 |
| 0, | 381, | 47.1, | 4.5, | 0, | 1.2066 |
| 0, | 382, | 49.6, | 4.5, | 0, | 1.1480 |
| 0, | 383, | 58.6, | 4.5, | 0, | 1.0647 |
| 0, | 384, | 61.0, | 4.5, | 0, | 1.0131 |
| 0, | 385, | 60.9, | 4.4, | 0, | 0.9855 |
| 0, | 386, | 59.2, | 4.5, | 0, | 1.0229 |
| 0, | 387, | 58.0, | 4.4, | 0, | 1.1061 |
| 0, | 388, | 50.2, | 4.4, | 0, | 1.1193 |
| 0, | 389, | 51.7, | 4.4, | 0, | 1.1118 |
| 0, | 390, | 50.7, | 4.4, | 0, | 1.2348 |
| 0, | 391, | 52.1, | 4.4, | 0, | 1.2364 |
| 0, | 392, | 51.2, | 4.4, | 0, | 1.1502 |
| 0, | 393, | 49.1, | 4.4, | 0, | 1.2099 |
| 0, | 394, | 48.3, | 4.4, | 0, | 1.2320 |
| 0, | 395, | 50.0, | 4.4, | 0, | 1.1270 |
| 0, | 396, | 47.8, | 4.3, | 0, | 1.2492 |
| 0, | 397, | 49.6, | 4.3, | 0, | 1.3132 |
| 0, | 398, | 50.2, | 4.3, | 0, | 1.4524 |
| 0, | 399, | 49.1, | 4.3, | 0, | 1.2041 |
| 0, | 400, | 47.7, | 4.3, | 0, | 1.2071 |
| 0, | 401, | 47.5, | 4.3, | 0, | 1.2508 |
| 0, | 402, | 50.0, | 4.3, | 0, | 1.1350 |
| 0, | 403, | 47.8, | 4.3, | 0, | 1.2201 |
| 0, | 404, | 46.9, | 4.3, | 0, | 1.0734 |
| 0, | 405, | 46.3, | 4.3, | 0, | 1.2365 |
| 0, | 406, | 46.4, | 4.3, | 0, | 1.3599 |
| 0, | 407, | 45.1, | 4.3, | 0, | 1.3228 |
| 0, | 408, | 44.5, | 4.3, | 0, | 1.2714 |
| 0, | 409, | 44.7, | 4.3, | 0, | 1.5188 |
| 0, | 410, | 45.1, | 4.3, | 0, | 1.4835 |
| 0, | 411, | 44.1, | 4.3, | 0, | 1.2501 |
| 0, | 412, | 42.8, | 4.3, | 0, | 1.2510 |
| 0, | 413, | 42.7, | 4.3, | 0, | 1.1948 |
| 0, | 414, | 42.4, | 4.3, | 0, | 1.2313 |
| 0, | 415, | 43.3, | 4.2, | 0, | 1.1452 |
| 0, | 416, | 42.9, | 4.2, | 0, | 1.1631 |
| 0, | 417, | 44.7, | 4.2, | 0, | 1.3301 |
| 0, | 418, | 43.6, | 4.2, | 0, | 1.1895 |
| 0, | 419, | 42.3, | 4.2, | 0, | 1.2118 |
| 0, | 420, | 43.0, | 4.2, | 0, | 1.4002 |
| 0, | 421, | 42.6, | 4.2, | 0, | 1.3137 |
| 0, | 422, | 44.6, | 4.2, | 0, | 1.3939 |
| 0, | 423, | 44.2, | 4.2, | 0, | 1.2237 |
| 0, | 424, | 43.6, | 4.2, | 0, | 1.1321 |
| 0, | 425, | 43.1, | 4.2, | 0, | 1.1531 |
| 0, | 426, | 46.8, | 4.2, | 0, | 1.1016 |
| 0, | 427, | 42.6, | 4.2, | 0, | 1.1370 |
| 0, | 428, | 40.2, | 4.2, | 0, | 1.0091 |

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"Model Number", "DataRAM 4 ", 106
"Serial no.  ", "D232      "
"Device no.  ", 1
"Tag Number  ", 72
"Start Time  ", 07:29:32
"Start Date  ", 04-Dec-2015
"Log Period  ", 00:01:00
"Number      ", 448
"CalFactor   ", 1.000000
"Unit        ", 0
"Unit Name   ", "(MASS )ug/m3"
"SIZE_CORRECT", "DISABLED"
"TEMPUNITS   ", C
"Max MASS    ", 117.616800
"Max MASS  @ ", 77  ,08:46:32  ,04-Dec-2015
"Avg MASS    ", 66.149910
"Max Diam    ", 1.696945
"Max Diam @  ", 412  ,14:21:32  ,04-Dec-2015
"Avg Diam    ", 1.021641
"ALARM       ", "ENABLED"
"ALARM_LEVEL ", 3192.0
"AUTO_ZERO   ", "DISABLED"
"AZ INTERVAL ", 1
"Errors      ", 1000
record,"(MASS )ug/m3", Temp, RHumidity, Diameter
     1,       63.5,  -4.6,    0,   0.5548  ,07:30:32  ,04-Dec-2015
     2,       70.7,  -4.6,    0,   0.7463  ,07:31:32  ,04-Dec-2015
     3,       67.9,  -4.7,    0,   0.7324  ,07:32:32  ,04-Dec-2015
     4,       65.7,  -4.9,    0,   0.7204  ,07:33:32  ,04-Dec-2015
     5,       64.7,  -4.9,    0,   0.7124  ,07:34:32  ,04-Dec-2015
     6,       63.0,  -5.0,    0,   0.6989  ,07:35:32  ,04-Dec-2015
     7,       62.6,  -5.3,    0,   0.8005  ,07:36:32  ,04-Dec-2015
     8,       60.8,  -5.5,    0,   0.7058  ,07:37:32  ,04-Dec-2015
     9,       62.0,  -5.5,    0,   0.7162  ,07:38:32  ,04-Dec-2015
    10,       63.1,  -5.7,    0,   0.7948  ,07:39:32  ,04-Dec-2015
    11,       64.8,  -5.8,    0,   0.8633  ,07:40:32  ,04-Dec-2015
    12,       63.1,  -5.9,    0,   0.7791  ,07:41:32  ,04-Dec-2015
    13,       63.4,  -6.0,    0,   0.7279  ,07:42:32  ,04-Dec-2015
    14,       63.3,  -6.1,    0,   0.7543  ,07:43:32  ,04-Dec-2015
    15,       60.3,  -6.4,    0,   0.7135  ,07:44:32  ,04-Dec-2015
    16,       60.8,  -6.5,    0,   0.7638  ,07:45:32  ,04-Dec-2015
    17,       58.2,  -6.6,    0,   0.7564  ,07:46:32  ,04-Dec-2015
    18,       57.7,  -6.6,    0,   0.7422  ,07:47:32  ,04-Dec-2015
    19,       58.9,  -6.7,    0,   0.8199  ,07:48:32  ,04-Dec-2015
    20,       59.3,  -6.7,    0,   0.7738  ,07:49:32  ,04-Dec-2015
    21,       59.1,  -6.8,    0,   0.7449  ,07:50:32  ,04-Dec-2015
    22,       60.5,  -6.9,    0,   0.7699  ,07:51:32  ,04-Dec-2015
    23,       62.6,  -6.8,    0,   0.7701  ,07:52:32  ,04-Dec-2015
    24,       65.9,  -6.8,    0,   0.8626  ,07:53:32  ,04-Dec-2015
    25,       65.5,  -6.8,    0,   0.8288  ,07:54:32  ,04-Dec-2015
    26,       70.3,  -6.7,    0,   0.8392  ,07:55:32  ,04-Dec-2015
    27,       70.3,  -6.8,    0,   0.8294  ,07:56:32  ,04-Dec-2015
    28,       73.7,  -6.7,    0,   0.8892  ,07:57:32  ,04-Dec-2015
    29,       74.2,  -6.8,    0,   0.8850  ,07:58:32  ,04-Dec-2015
    30,       77.6,  -6.7,    0,   0.9101  ,07:59:32  ,04-Dec-2015
    31,       77.5,  -6.7,    0,   0.9450  ,08:00:32  ,04-Dec-2015
    32,       79.4,  -6.7,    0,   0.9410  ,08:01:32  ,04-Dec-2015
    33,       79.0,  -6.8,    0,   0.9537  ,08:02:32  ,04-Dec-2015
    34,       78.6,  -6.8,    0,   0.9196  ,08:03:32  ,04-Dec-2015
    35,       78.5,  -7.0,    0,   0.8905  ,08:04:32  ,04-Dec-2015
    36,       78.7,  -6.9,    0,   0.8784  ,08:05:32  ,04-Dec-2015
    37,       79.8,  -6.9,    0,   0.8778  ,08:06:32  ,04-Dec-2015
    38,       79.9,  -6.9,    0,   0.9109  ,08:07:32  ,04-Dec-2015
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| 39, | 79.8, | -7.0, | 0, | 0.9524 | ,08:08:32 | ,04-Dec-2015 |
| 40, | 79.8, | -7.0, | 0, | 0.9928 | ,08:09:32 | ,04-Dec-2015 |
| 41, | 81.1, | -7.0, | 0, | 0.9672 | ,08:10:32 | ,04-Dec-2015 |
| 42, | 80.4, | -7.0, | 0, | 0.9720 | ,08:11:32 | ,04-Dec-2015 |
| 43, | 83.2, | -7.1, | 0, | 1.0405 | ,08:12:32 | ,04-Dec-2015 |
| 44, | 85.0, | -7.0, | 0, | 1.0895 | ,08:13:32 | ,04-Dec-2015 |
| 45, | 86.3, | -7.0, | 0, | 1.0507 | ,08:14:32 | ,04-Dec-2015 |
| 46, | 87.2, | -6.9, | 0, | 1.0511 | ,08:15:32 | ,04-Dec-2015 |
| 47, | 89.0, | -7.0, | 0, | 1.1128 | ,08:16:32 | ,04-Dec-2015 |
| 48, | 88.7, | -7.0, | 0, | 1.1021 | ,08:17:32 | ,04-Dec-2015 |
| 49, | 91.2, | -6.8, | 0, | 1.0836 | ,08:18:32 | ,04-Dec-2015 |
| 50, | 93.8, | -6.9, | 0, | 1.1982 | ,08:19:32 | ,04-Dec-2015 |
| 51, | 94.3, | -6.9, | 0, | 1.2258 | ,08:20:32 | ,04-Dec-2015 |
| 52, | 92.0, | -7.0, | 0, | 1.1613 | ,08:21:32 | ,04-Dec-2015 |
| 53, | 93.8, | -7.0, | 0, | 1.1979 | ,08:22:32 | ,04-Dec-2015 |
| 54, | 91.6, | -7.2, | 0, | 1.1312 | ,08:23:32 | ,04-Dec-2015 |
| 55, | 95.0, | -7.0, | 0, | 1.1599 | ,08:24:32 | ,04-Dec-2015 |
| 56, | 98.3, | -6.9, | 0, | 1.1943 | ,08:25:32 | ,04-Dec-2015 |
| 57, | 96.9, | -6.9, | 0, | 1.1694 | ,08:26:32 | ,04-Dec-2015 |
| 58, | 98.4, | -7.0, | 0, | 1.1941 | ,08:27:32 | ,04-Dec-2015 |
| 59, | 101.9, | -6.8, | 0, | 1.3168 | ,08:28:32 | ,04-Dec-2015 |
| 60, | 98.3, | -7.0, | 0, | 1.2644 | ,08:29:32 | ,04-Dec-2015 |
| 61, | 99.4, | -6.9, | 0, | 1.2634 | ,08:30:32 | ,04-Dec-2015 |
| 62, | 101.2, | -6.9, | 0, | 1.2672 | ,08:31:32 | ,04-Dec-2015 |
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| 64, | 105.0, | -6.9, | 0, | 1.3493 | ,08:33:32 | ,04-Dec-2015 |
| 65, | 105.6, | -6.8, | 0, | 1.3642 | ,08:34:32 | ,04-Dec-2015 |
| 66, | 108.5, | -6.8, | 0, | 1.4149 | ,08:35:32 | ,04-Dec-2015 |
| 67, | 108.1, | -6.7, | 0, | 1.4106 | ,08:36:32 | ,04-Dec-2015 |
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| 69, | 104.0, | -7.0, | 0, | 1.4921 | ,08:38:32 | ,04-Dec-2015 |
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| 72, | 107.3, | -6.8, | 0, | 1.3437 | ,08:41:32 | ,04-Dec-2015 |
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| 74, | 113.4, | -6.6, | 0, | 1.4852 | ,08:43:32 | ,04-Dec-2015 |
| 75, | 114.0, | -6.6, | 0, | 1.3872 | ,08:44:32 | ,04-Dec-2015 |
| 76, | 116.2, | -6.5, | 0, | 1.5346 | ,08:45:32 | ,04-Dec-2015 |
| 77, | 117.6, | -6.5, | 0, | 1.5158 | ,08:46:32 | ,04-Dec-2015 |
| 78, | 115.5, | -6.6, | 0, | 1.3850 | ,08:47:32 | ,04-Dec-2015 |
| 79, | 113.7, | -6.5, | 0, | 1.3156 | ,08:48:32 | ,04-Dec-2015 |
| 80, | 115.1, | -6.7, | 0, | 1.2723 | ,08:49:32 | ,04-Dec-2015 |
| 81, | 116.6, | -6.6, | 0, | 1.4796 | ,08:50:32 | ,04-Dec-2015 |
| 82, | 114.0, | -6.5, | 0, | 1.4032 | ,08:51:32 | ,04-Dec-2015 |
| 83, | 109.8, | -6.8, | 0, | 1.4255 | ,08:52:32 | ,04-Dec-2015 |
| 84, | 105.8, | -6.9, | 0, | 1.3044 | ,08:53:32 | ,04-Dec-2015 |
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| 101, | 112.2, | -6.8, | 0, | 1.4717 | ,09:10:32 | ,04-Dec-2015 |

| | | | | | | |
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| 102, | 112.9, | -6.8, | 0, | 1.4230 | ,09:11:32 | ,04-Dec-2015 |
| 103, | 113.2, | -6.7, | 0, | 1.3875 | ,09:12:32 | ,04-Dec-2015 |
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| 107, | 107.6, | -7.0, | 0, | 1.4233 | ,09:16:32 | ,04-Dec-2015 |
| 108, | 106.4, | -7.1, | 0, | 1.4834 | ,09:17:32 | ,04-Dec-2015 |
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| 114, | 106.6, | -6.9, | 0, | 1.4210 | ,09:23:32 | ,04-Dec-2015 |
| 115, | 106.8, | -6.9, | 0, | 1.3784 | ,09:24:32 | ,04-Dec-2015 |
| 116, | 104.2, | -7.1, | 0, | 1.3578 | ,09:25:32 | ,04-Dec-2015 |
| 117, | 106.5, | -7.0, | 0, | 1.4636 | ,09:26:32 | ,04-Dec-2015 |
| 118, | 108.6, | -7.0, | 0, | 1.5098 | ,09:27:32 | ,04-Dec-2015 |
| 119, | 106.5, | -7.0, | 0, | 1.4513 | ,09:28:32 | ,04-Dec-2015 |
| 120, | 106.0, | -7.1, | 0, | 1.4241 | ,09:29:32 | ,04-Dec-2015 |
| 121, | 108.2, | -6.9, | 0, | 1.4840 | ,09:30:32 | ,04-Dec-2015 |
| 122, | 108.5, | -6.9, | 0, | 1.3964 | ,09:31:32 | ,04-Dec-2015 |
| 123, | 108.3, | -6.9, | 0, | 1.4499 | ,09:32:32 | ,04-Dec-2015 |
| 124, | 109.7, | -6.8, | 0, | 1.3640 | ,09:33:32 | ,04-Dec-2015 |
| 125, | 103.0, | -6.9, | 0, | 1.3382 | ,09:34:32 | ,04-Dec-2015 |
| 126, | 98.7, | -7.2, | 0, | 1.3392 | ,09:35:32 | ,04-Dec-2015 |
| 127, | 94.9, | -7.4, | 0, | 1.2907 | ,09:36:32 | ,04-Dec-2015 |
| 128, | 95.8, | -7.3, | 0, | 1.2443 | ,09:37:32 | ,04-Dec-2015 |
| 129, | 94.7, | -7.3, | 0, | 1.2147 | ,09:38:32 | ,04-Dec-2015 |
| 130, | 100.6, | -6.9, | 0, | 1.3357 | ,09:39:32 | ,04-Dec-2015 |
| 131, | 93.8, | -7.2, | 0, | 1.1908 | ,09:40:32 | ,04-Dec-2015 |
| 132, | 94.5, | -7.2, | 0, | 1.2135 | ,09:41:32 | ,04-Dec-2015 |
| 133, | 94.6, | -7.1, | 0, | 1.1818 | ,09:42:32 | ,04-Dec-2015 |
| 134, | 95.0, | -7.0, | 0, | 1.1680 | ,09:43:32 | ,04-Dec-2015 |
| 135, | 92.3, | -7.1, | 0, | 1.1706 | ,09:44:32 | ,04-Dec-2015 |
| 136, | 89.3, | -7.2, | 0, | 1.0562 | ,09:45:32 | ,04-Dec-2015 |
| 137, | 98.2, | -7.1, | 0, | 1.3116 | ,09:46:32 | ,04-Dec-2015 |
| 138, | 90.5, | -7.1, | 0, | 1.1448 | ,09:47:32 | ,04-Dec-2015 |
| 139, | 93.1, | -7.0, | 0, | 1.1287 | ,09:48:32 | ,04-Dec-2015 |
| 140, | 92.1, | -7.1, | 0, | 1.1688 | ,09:49:32 | ,04-Dec-2015 |
| 141, | 87.4, | -7.2, | 0, | 1.0177 | ,09:50:32 | ,04-Dec-2015 |
| 142, | 96.3, | -6.8, | 0, | 1.1762 | ,09:51:32 | ,04-Dec-2015 |
| 143, | 89.5, | -7.0, | 0, | 1.0648 | ,09:52:32 | ,04-Dec-2015 |
| 144, | 87.5, | -6.9, | 0, | 1.0122 | ,09:53:32 | ,04-Dec-2015 |
| 145, | 83.0, | -7.1, | 0, | 1.0045 | ,09:54:32 | ,04-Dec-2015 |
| 146, | 82.0, | -7.2, | 0, | 0.9941 | ,09:55:32 | ,04-Dec-2015 |
| 147, | 81.5, | -7.0, | 0, | 0.9174 | ,09:56:32 | ,04-Dec-2015 |
| 148, | 79.5, | -7.1, | 0, | 0.9212 | ,09:57:32 | ,04-Dec-2015 |
| 149, | 80.8, | -7.1, | 0, | 0.9957 | ,09:58:32 | ,04-Dec-2015 |
| 150, | 80.4, | -7.1, | 0, | 0.9518 | ,09:59:32 | ,04-Dec-2015 |
| 151, | 81.0, | -7.0, | 0, | 0.9728 | ,10:00:32 | ,04-Dec-2015 |
| 152, | 74.5, | -7.2, | 0, | 0.9313 | ,10:01:32 | ,04-Dec-2015 |
| 153, | 74.7, | -7.1, | 0, | 0.9281 | ,10:02:32 | ,04-Dec-2015 |
| 154, | 75.2, | -7.3, | 0, | 0.9575 | ,10:03:32 | ,04-Dec-2015 |
| 155, | 90.5, | -6.7, | 0, | 1.0185 | ,10:04:32 | ,04-Dec-2015 |
| 156, | 74.0, | -7.0, | 0, | 0.8551 | ,10:05:32 | ,04-Dec-2015 |
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| 158, | 72.5, | -7.1, | 0, | 0.8784 | ,10:07:32 | ,04-Dec-2015 |
| 159, | 76.3, | -7.0, | 0, | 0.9715 | ,10:08:32 | ,04-Dec-2015 |
| 160, | 72.5, | -7.1, | 0, | 0.9262 | ,10:09:32 | ,04-Dec-2015 |
| 161, | 67.6, | -7.2, | 0, | 0.8456 | ,10:10:32 | ,04-Dec-2015 |
| 162, | 66.6, | -7.2, | 0, | 0.7896 | ,10:11:32 | ,04-Dec-2015 |
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| 164, | 66.5, | -7.2, | 0, | 0.8282 | ,10:13:32 | ,04-Dec-2015 |

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| 165, | 71.1, | -7.0, | 0, | 0.9325 | ,10:14:32 | ,04-Dec-2015 |
| 166, | 69.9, | -6.9, | 0, | 0.7867 | ,10:15:32 | ,04-Dec-2015 |
| 167, | 64.8, | -7.0, | 0, | 0.7118 | ,10:16:32 | ,04-Dec-2015 |
| 168, | 64.5, | -7.1, | 0, | 0.8160 | ,10:17:32 | ,04-Dec-2015 |
| 169, | 66.0, | -7.0, | 0, | 0.7726 | ,10:18:32 | ,04-Dec-2015 |
| 170, | 64.5, | -7.1, | 0, | 0.8273 | ,10:19:32 | ,04-Dec-2015 |
| 171, | 73.4, | -6.9, | 0, | 0.9460 | ,10:20:32 | ,04-Dec-2015 |
| 172, | 69.7, | -6.9, | 0, | 0.9844 | ,10:21:32 | ,04-Dec-2015 |
| 173, | 63.5, | -7.1, | 0, | 0.9055 | ,10:22:32 | ,04-Dec-2015 |
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| 177, | 58.9, | -7.1, | 0, | 0.7609 | ,10:26:32 | ,04-Dec-2015 |
| 178, | 61.5, | -7.0, | 0, | 0.7452 | ,10:27:32 | ,04-Dec-2015 |
| 179, | 59.5, | -7.1, | 0, | 0.7518 | ,10:28:32 | ,04-Dec-2015 |
| 180, | 60.7, | -6.9, | 0, | 0.7496 | ,10:29:32 | ,04-Dec-2015 |
| 181, | 64.5, | -6.9, | 0, | 0.7776 | ,10:30:32 | ,04-Dec-2015 |
| 182, | 64.3, | -6.9, | 0, | 0.7916 | ,10:31:32 | ,04-Dec-2015 |
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| 184, | 58.4, | -7.0, | 0, | 0.7491 | ,10:33:32 | ,04-Dec-2015 |
| 185, | 68.3, | -6.8, | 0, | 1.0175 | ,10:34:32 | ,04-Dec-2015 |
| 186, | 58.2, | -7.0, | 0, | 0.7975 | ,10:35:32 | ,04-Dec-2015 |
| 187, | 68.4, | -6.8, | 0, | 1.0068 | ,10:36:32 | ,04-Dec-2015 |
| 188, | 61.3, | -7.0, | 0, | 1.0315 | ,10:37:32 | ,04-Dec-2015 |
| 189, | 59.1, | -7.0, | 0, | 0.7651 | ,10:38:32 | ,04-Dec-2015 |
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| 192, | 68.2, | -6.5, | 0, | 0.8465 | ,10:41:32 | ,04-Dec-2015 |
| 193, | 67.0, | -6.7, | 0, | 1.0639 | ,10:42:32 | ,04-Dec-2015 |
| 194, | 60.5, | -6.9, | 0, | 1.0191 | ,10:43:32 | ,04-Dec-2015 |
| 195, | 58.0, | -6.9, | 0, | 0.9270 | ,10:44:32 | ,04-Dec-2015 |
| 196, | 56.7, | -6.9, | 0, | 0.9116 | ,10:45:32 | ,04-Dec-2015 |
| 197, | 61.6, | -6.8, | 0, | 0.9292 | ,10:46:32 | ,04-Dec-2015 |
| 198, | 64.3, | -6.5, | 0, | 0.9390 | ,10:47:32 | ,04-Dec-2015 |
| 199, | 63.0, | -6.7, | 0, | 0.9526 | ,10:48:32 | ,04-Dec-2015 |
| 200, | 57.2, | -6.8, | 0, | 0.7792 | ,10:49:32 | ,04-Dec-2015 |
| 201, | 58.3, | -6.6, | 0, | 0.7279 | ,10:50:32 | ,04-Dec-2015 |
| 202, | 53.9, | -6.9, | 0, | 0.8009 | ,10:51:32 | ,04-Dec-2015 |
| 203, | 54.2, | -6.9, | 0, | 0.7798 | ,10:52:32 | ,04-Dec-2015 |
| 204, | 58.1, | -6.7, | 0, | 0.8073 | ,10:53:32 | ,04-Dec-2015 |
| 205, | 56.6, | -6.9, | 0, | 0.8277 | ,10:54:32 | ,04-Dec-2015 |
| 206, | 58.5, | -6.7, | 0, | 0.8147 | ,10:55:32 | ,04-Dec-2015 |
| 207, | 65.7, | -6.7, | 0, | 1.0760 | ,10:56:32 | ,04-Dec-2015 |
| 208, | 61.5, | -6.7, | 0, | 0.9040 | ,10:57:32 | ,04-Dec-2015 |
| 209, | 72.0, | -6.2, | 0, | 0.9046 | ,10:58:32 | ,04-Dec-2015 |
| 210, | 59.6, | -6.9, | 0, | 0.9773 | ,10:59:32 | ,04-Dec-2015 |
| 211, | 56.6, | -6.8, | 0, | 0.8736 | ,11:00:32 | ,04-Dec-2015 |
| 212, | 54.8, | -6.9, | 0, | 0.7989 | ,11:01:32 | ,04-Dec-2015 |
| 213, | 56.2, | -6.9, | 0, | 0.8536 | ,11:02:32 | ,04-Dec-2015 |
| 214, | 58.6, | -6.7, | 0, | 0.8480 | ,11:03:32 | ,04-Dec-2015 |
| 215, | 54.5, | -6.9, | 0, | 0.7706 | ,11:04:32 | ,04-Dec-2015 |
| 216, | 59.7, | -6.8, | 0, | 0.8874 | ,11:05:32 | ,04-Dec-2015 |
| 217, | 57.7, | -6.9, | 0, | 0.8589 | ,11:06:32 | ,04-Dec-2015 |
| 218, | 58.2, | -6.7, | 0, | 0.8122 | ,11:07:32 | ,04-Dec-2015 |
| 219, | 58.2, | -6.8, | 0, | 0.9113 | ,11:08:32 | ,04-Dec-2015 |
| 220, | 58.3, | -6.8, | 0, | 0.8623 | ,11:09:32 | ,04-Dec-2015 |
| 221, | 55.9, | -6.9, | 0, | 0.7743 | ,11:10:32 | ,04-Dec-2015 |
| 222, | 53.3, | -7.0, | 0, | 0.7875 | ,11:11:32 | ,04-Dec-2015 |
| 223, | 64.3, | -6.6, | 0, | 0.9299 | ,11:12:32 | ,04-Dec-2015 |
| 224, | 53.9, | -7.0, | 0, | 0.8458 | ,11:13:32 | ,04-Dec-2015 |
| 225, | 56.1, | -6.9, | 0, | 0.8050 | ,11:14:32 | ,04-Dec-2015 |
| 226, | 64.8, | -6.8, | 0, | 1.0183 | ,11:15:32 | ,04-Dec-2015 |
| 227, | 74.9, | -6.4, | 0, | 1.2237 | ,11:16:32 | ,04-Dec-2015 |

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| 228, | 58.1, | -6.9, | 0, | 0.9935 | ,11:17:32 | ,04-Dec-2015 |
| 229, | 55.8, | -7.0, | 0, | 0.9712 | ,11:18:32 | ,04-Dec-2015 |
| 230, | 55.7, | -6.9, | 0, | 0.8449 | ,11:19:32 | ,04-Dec-2015 |
| 231, | 51.9, | -7.1, | 0, | 0.8315 | ,11:20:32 | ,04-Dec-2015 |
| 232, | 55.3, | -6.9, | 0, | 0.8098 | ,11:21:32 | ,04-Dec-2015 |
| 233, | 61.5, | -6.7, | 0, | 0.9156 | ,11:22:32 | ,04-Dec-2015 |
| 234, | 60.0, | -6.9, | 0, | 0.9435 | ,11:23:32 | ,04-Dec-2015 |
| 235, | 56.9, | -7.0, | 0, | 1.0249 | ,11:24:32 | ,04-Dec-2015 |
| 236, | 57.0, | -6.8, | 0, | 0.8539 | ,11:25:32 | ,04-Dec-2015 |
| 237, | 59.2, | -6.9, | 0, | 0.9033 | ,11:26:32 | ,04-Dec-2015 |
| 238, | 60.7, | -6.9, | 0, | 1.0078 | ,11:27:32 | ,04-Dec-2015 |
| 239, | 59.8, | -6.9, | 0, | 0.9451 | ,11:28:32 | ,04-Dec-2015 |
| 240, | 56.2, | -7.0, | 0, | 0.9562 | ,11:29:32 | ,04-Dec-2015 |
| 241, | 55.7, | -7.0, | 0, | 0.9524 | ,11:30:32 | ,04-Dec-2015 |
| 242, | 57.3, | -6.6, | 0, | 0.8485 | ,11:31:32 | ,04-Dec-2015 |
| 243, | 59.2, | -6.7, | 0, | 0.8488 | ,11:32:32 | ,04-Dec-2015 |
| 244, | 53.3, | -7.0, | 0, | 0.8622 | ,11:33:32 | ,04-Dec-2015 |
| 245, | 55.7, | -7.0, | 0, | 0.8995 | ,11:34:32 | ,04-Dec-2015 |
| 246, | 68.0, | -6.6, | 0, | 0.9451 | ,11:35:32 | ,04-Dec-2015 |
| 247, | 84.0, | -6.4, | 0, | 1.6220 | ,11:36:32 | ,04-Dec-2015 |
| 248, | 57.3, | -7.0, | 0, | 0.9510 | ,11:37:32 | ,04-Dec-2015 |
| 249, | 57.7, | -7.0, | 0, | 0.9732 | ,11:38:32 | ,04-Dec-2015 |
| 250, | 53.3, | -7.0, | 0, | 0.9834 | ,11:39:32 | ,04-Dec-2015 |
| 251, | 56.8, | -6.8, | 0, | 0.8563 | ,11:40:32 | ,04-Dec-2015 |
| 252, | 53.4, | -7.0, | 0, | 0.9074 | ,11:41:32 | ,04-Dec-2015 |
| 253, | 55.1, | -6.9, | 0, | 0.8865 | ,11:42:32 | ,04-Dec-2015 |
| 254, | 58.5, | -6.7, | 0, | 0.9576 | ,11:43:32 | ,04-Dec-2015 |
| 255, | 57.2, | -6.9, | 0, | 0.9907 | ,11:44:32 | ,04-Dec-2015 |
| 256, | 56.6, | -6.8, | 0, | 0.8772 | ,11:45:32 | ,04-Dec-2015 |
| 257, | 54.0, | -7.0, | 0, | 0.8684 | ,11:46:32 | ,04-Dec-2015 |
| 258, | 54.9, | -6.9, | 0, | 0.9304 | ,11:47:32 | ,04-Dec-2015 |
| 259, | 61.0, | -6.6, | 0, | 0.9148 | ,11:48:32 | ,04-Dec-2015 |
| 260, | 71.4, | -6.3, | 0, | 0.9681 | ,11:49:32 | ,04-Dec-2015 |
| 261, | 88.9, | -6.2, | 0, | 1.5043 | ,11:50:32 | ,04-Dec-2015 |
| 262, | 76.0, | -6.5, | 0, | 1.6478 | ,11:51:32 | ,04-Dec-2015 |
| 263, | 69.5, | -6.7, | 0, | 1.2028 | ,11:52:32 | ,04-Dec-2015 |
| 264, | 61.5, | -6.9, | 0, | 1.1046 | ,11:53:32 | ,04-Dec-2015 |
| 265, | 57.0, | -6.9, | 0, | 0.9516 | ,11:54:32 | ,04-Dec-2015 |
| 266, | 58.5, | -6.9, | 0, | 0.8811 | ,11:55:32 | ,04-Dec-2015 |
| 267, | 54.8, | -7.0, | 0, | 0.8050 | ,11:56:32 | ,04-Dec-2015 |
| 268, | 62.1, | -6.8, | 0, | 0.9239 | ,11:57:32 | ,04-Dec-2015 |
| 269, | 55.4, | -6.9, | 0, | 0.9672 | ,11:58:32 | ,04-Dec-2015 |
| 270, | 52.1, | -7.0, | 0, | 0.7696 | ,11:59:32 | ,04-Dec-2015 |
| 271, | 55.5, | -7.1, | 0, | 0.9289 | ,12:00:32 | ,04-Dec-2015 |
| 272, | 57.2, | -6.9, | 0, | 0.8657 | ,12:01:32 | ,04-Dec-2015 |
| 273, | 57.5, | -6.8, | 0, | 0.9819 | ,12:02:32 | ,04-Dec-2015 |
| 274, | 55.5, | -7.0, | 0, | 0.9471 | ,12:03:32 | ,04-Dec-2015 |
| 275, | 53.4, | -6.9, | 0, | 0.8962 | ,12:04:32 | ,04-Dec-2015 |
| 276, | 62.3, | -6.7, | 0, | 1.0853 | ,12:05:32 | ,04-Dec-2015 |
| 277, | 54.5, | -7.0, | 0, | 0.9868 | ,12:06:32 | ,04-Dec-2015 |
| 278, | 53.3, | -6.9, | 0, | 0.8946 | ,12:07:32 | ,04-Dec-2015 |
| 279, | 52.3, | -7.0, | 0, | 0.8759 | ,12:08:32 | ,04-Dec-2015 |
| 280, | 56.9, | -6.9, | 0, | 1.0024 | ,12:09:32 | ,04-Dec-2015 |
| 281, | 58.9, | -6.7, | 0, | 0.8842 | ,12:10:32 | ,04-Dec-2015 |
| 282, | 61.5, | -6.8, | 0, | 1.0247 | ,12:11:32 | ,04-Dec-2015 |
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| 284, | 61.5, | -6.7, | 0, | 1.2536 | ,12:13:32 | ,04-Dec-2015 |
| 285, | 49.3, | -7.0, | 0, | 0.8649 | ,12:14:32 | ,04-Dec-2015 |
| 286, | 48.0, | -7.0, | 0, | 0.8001 | ,12:15:32 | ,04-Dec-2015 |
| 287, | 59.8, | -6.7, | 0, | 0.9325 | ,12:16:32 | ,04-Dec-2015 |
| 288, | 62.8, | -6.3, | 0, | 0.9232 | ,12:17:32 | ,04-Dec-2015 |
| 289, | 54.8, | -6.9, | 0, | 0.9992 | ,12:18:32 | ,04-Dec-2015 |
| 290, | 53.6, | -6.8, | 0, | 1.0096 | ,12:19:32 | ,04-Dec-2015 |

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| 291, | 57.0, | -6.7, | 0, | 1.0021 | ,12:20:32 | ,04-Dec-2015 |
| 292, | 56.9, | -6.6, | 0, | 0.9240 | ,12:21:32 | ,04-Dec-2015 |
| 293, | 60.5, | -6.5, | 0, | 1.0024 | ,12:22:32 | ,04-Dec-2015 |
| 294, | 56.8, | -6.6, | 0, | 0.9870 | ,12:23:32 | ,04-Dec-2015 |
| 295, | 55.2, | -6.7, | 0, | 0.9690 | ,12:24:32 | ,04-Dec-2015 |
| 296, | 60.0, | -6.6, | 0, | 1.1477 | ,12:25:32 | ,04-Dec-2015 |
| 297, | 53.6, | -6.7, | 0, | 0.9328 | ,12:26:32 | ,04-Dec-2015 |
| 298, | 53.2, | -6.7, | 0, | 0.9416 | ,12:27:32 | ,04-Dec-2015 |
| 299, | 61.1, | -6.5, | 0, | 1.1291 | ,12:28:32 | ,04-Dec-2015 |
| 300, | 50.7, | -6.8, | 0, | 1.0437 | ,12:29:32 | ,04-Dec-2015 |
| 301, | 53.9, | -6.6, | 0, | 0.9999 | ,12:30:32 | ,04-Dec-2015 |
| 302, | 55.2, | -6.5, | 0, | 1.0354 | ,12:31:32 | ,04-Dec-2015 |
| 303, | 59.1, | -6.4, | 0, | 0.9560 | ,12:32:32 | ,04-Dec-2015 |
| 304, | 63.8, | -6.0, | 0, | 0.9138 | ,12:33:32 | ,04-Dec-2015 |
| 305, | 52.4, | -6.4, | 0, | 0.8292 | ,12:34:32 | ,04-Dec-2015 |
| 306, | 57.5, | -6.3, | 0, | 1.0264 | ,12:35:32 | ,04-Dec-2015 |
| 307, | 50.4, | -6.6, | 0, | 0.9188 | ,12:36:32 | ,04-Dec-2015 |
| 308, | 57.6, | -6.3, | 0, | 0.9453 | ,12:37:32 | ,04-Dec-2015 |
| 309, | 42.0, | -6.8, | 0, | 0.8568 | ,12:38:32 | ,04-Dec-2015 |
| 310, | 43.5, | -6.8, | 0, | 1.0509 | ,12:39:32 | ,04-Dec-2015 |
| 311, | 41.7, | -6.7, | 0, | 1.1259 | ,12:40:32 | ,04-Dec-2015 |
| 312, | 48.6, | -6.4, | 0, | 0.9710 | ,12:41:32 | ,04-Dec-2015 |
| 313, | 42.5, | -6.5, | 0, | 0.8783 | ,12:42:32 | ,04-Dec-2015 |
| 314, | 42.1, | -6.6, | 0, | 0.8957 | ,12:43:32 | ,04-Dec-2015 |
| 315, | 57.3, | -6.0, | 0, | 0.8268 | ,12:44:32 | ,04-Dec-2015 |
| 316, | 57.0, | -6.0, | 0, | 0.9181 | ,12:45:32 | ,04-Dec-2015 |
| 317, | 51.6, | -6.2, | 0, | 0.9268 | ,12:46:32 | ,04-Dec-2015 |
| 318, | 50.7, | -6.3, | 0, | 1.0460 | ,12:47:32 | ,04-Dec-2015 |
| 319, | 46.5, | -6.2, | 0, | 0.8911 | ,12:48:32 | ,04-Dec-2015 |
| 320, | 56.8, | -6.0, | 0, | 1.0625 | ,12:49:32 | ,04-Dec-2015 |
| 321, | 53.9, | -5.9, | 0, | 0.8977 | ,12:50:32 | ,04-Dec-2015 |
| 322, | 54.7, | -5.9, | 0, | 1.0222 | ,12:51:32 | ,04-Dec-2015 |
| 323, | 50.6, | -6.0, | 0, | 0.8911 | ,12:52:32 | ,04-Dec-2015 |
| 324, | 50.2, | -6.0, | 0, | 0.9354 | ,12:53:32 | ,04-Dec-2015 |
| 325, | 54.3, | -5.7, | 0, | 0.9356 | ,12:54:32 | ,04-Dec-2015 |
| 326, | 56.7, | -5.7, | 0, | 0.9847 | ,12:55:32 | ,04-Dec-2015 |
| 327, | 49.0, | -5.9, | 0, | 0.9370 | ,12:56:32 | ,04-Dec-2015 |
| 328, | 50.1, | -5.7, | 0, | 0.9059 | ,12:57:32 | ,04-Dec-2015 |
| 329, | 54.9, | -5.5, | 0, | 0.9403 | ,12:58:32 | ,04-Dec-2015 |
| 330, | 56.7, | -5.5, | 0, | 0.8632 | ,12:59:32 | ,04-Dec-2015 |
| 331, | 53.8, | -5.6, | 0, | 0.9557 | ,13:00:32 | ,04-Dec-2015 |
| 332, | 63.5, | -5.3, | 0, | 0.9573 | ,13:01:32 | ,04-Dec-2015 |
| 333, | 56.8, | -5.6, | 0, | 1.1296 | ,13:02:32 | ,04-Dec-2015 |
| 334, | 51.6, | -5.6, | 0, | 1.0521 | ,13:03:32 | ,04-Dec-2015 |
| 335, | 47.7, | -5.6, | 0, | 0.8871 | ,13:04:32 | ,04-Dec-2015 |
| 336, | 49.5, | -5.6, | 0, | 0.9161 | ,13:05:32 | ,04-Dec-2015 |
| 337, | 46.7, | -5.6, | 0, | 0.7997 | ,13:06:32 | ,04-Dec-2015 |
| 338, | 47.3, | -5.6, | 0, | 0.8661 | ,13:07:32 | ,04-Dec-2015 |
| 339, | 49.5, | -5.5, | 0, | 0.9970 | ,13:08:32 | ,04-Dec-2015 |
| 340, | 59.4, | -5.2, | 0, | 1.1021 | ,13:09:32 | ,04-Dec-2015 |
| 341, | 58.0, | -5.3, | 0, | 1.2852 | ,13:10:32 | ,04-Dec-2015 |
| 342, | 54.9, | -5.2, | 0, | 1.2163 | ,13:11:32 | ,04-Dec-2015 |
| 343, | 49.0, | -5.3, | 0, | 0.9171 | ,13:12:32 | ,04-Dec-2015 |
| 344, | 49.2, | -5.3, | 0, | 0.9321 | ,13:13:32 | ,04-Dec-2015 |
| 345, | 51.3, | -5.3, | 0, | 0.9568 | ,13:14:32 | ,04-Dec-2015 |
| 346, | 54.5, | -5.1, | 0, | 1.0050 | ,13:15:32 | ,04-Dec-2015 |
| 347, | 59.0, | -5.0, | 0, | 1.0608 | ,13:16:32 | ,04-Dec-2015 |
| 348, | 53.4, | -5.2, | 0, | 1.1411 | ,13:17:32 | ,04-Dec-2015 |
| 349, | 53.6, | -5.1, | 0, | 1.1440 | ,13:18:32 | ,04-Dec-2015 |
| 350, | 51.6, | -5.0, | 0, | 1.0021 | ,13:19:32 | ,04-Dec-2015 |
| 351, | 53.1, | -5.1, | 0, | 1.0601 | ,13:20:32 | ,04-Dec-2015 |
| 352, | 45.6, | -5.3, | 0, | 0.9153 | ,13:21:32 | ,04-Dec-2015 |
| 353, | 49.8, | -5.1, | 0, | 0.8975 | ,13:22:32 | ,04-Dec-2015 |

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| 354, | 50.5, | -5.0, | 0, | 0.9503 | ,13:23:32 | ,04-Dec-2015 |
| 355, | 52.4, | -4.9, | 0, | 1.0465 | ,13:24:32 | ,04-Dec-2015 |
| 356, | 48.0, | -5.1, | 0, | 1.0337 | ,13:25:32 | ,04-Dec-2015 |
| 357, | 43.7, | -5.2, | 0, | 0.8575 | ,13:26:32 | ,04-Dec-2015 |
| 358, | 44.6, | -5.0, | 0, | 0.8680 | ,13:27:32 | ,04-Dec-2015 |
| 359, | 43.7, | -5.0, | 0, | 0.7571 | ,13:28:32 | ,04-Dec-2015 |
| 360, | 52.4, | -4.8, | 0, | 1.0810 | ,13:29:32 | ,04-Dec-2015 |
| 361, | 47.5, | -4.9, | 0, | 0.9191 | ,13:30:32 | ,04-Dec-2015 |
| 362, | 51.0, | -5.0, | 0, | 1.1317 | ,13:31:32 | ,04-Dec-2015 |
| 363, | 58.5, | -4.6, | 0, | 0.9737 | ,13:32:32 | ,04-Dec-2015 |
| 364, | 62.0, | -4.6, | 0, | 1.2456 | ,13:33:32 | ,04-Dec-2015 |
| 365, | 65.9, | -4.6, | 0, | 1.4133 | ,13:34:32 | ,04-Dec-2015 |
| 366, | 49.0, | -4.9, | 0, | 0.9549 | ,13:35:32 | ,04-Dec-2015 |
| 367, | 46.3, | -5.0, | 0, | 0.9076 | ,13:36:32 | ,04-Dec-2015 |
| 368, | 47.5, | -4.8, | 0, | 0.8847 | ,13:37:32 | ,04-Dec-2015 |
| 369, | 57.3, | -4.6, | 0, | 0.9942 | ,13:38:32 | ,04-Dec-2015 |
| 370, | 56.6, | -4.6, | 0, | 1.3313 | ,13:39:32 | ,04-Dec-2015 |
| 371, | 44.5, | -5.0, | 0, | 0.8648 | ,13:40:32 | ,04-Dec-2015 |
| 372, | 46.1, | -4.9, | 0, | 0.9249 | ,13:41:32 | ,04-Dec-2015 |
| 373, | 47.7, | -4.8, | 0, | 0.8988 | ,13:42:32 | ,04-Dec-2015 |
| 374, | 57.9, | -4.3, | 0, | 0.9945 | ,13:43:32 | ,04-Dec-2015 |
| 375, | 54.1, | -4.6, | 0, | 1.1425 | ,13:44:32 | ,04-Dec-2015 |
| 376, | 45.2, | -4.8, | 0, | 0.9084 | ,13:45:32 | ,04-Dec-2015 |
| 377, | 40.4, | -4.9, | 0, | 0.7130 | ,13:46:32 | ,04-Dec-2015 |
| 378, | 39.3, | -5.0, | 0, | 0.7443 | ,13:47:32 | ,04-Dec-2015 |
| 379, | 44.8, | -4.9, | 0, | 0.8871 | ,13:48:32 | ,04-Dec-2015 |
| 380, | 47.7, | -4.5, | 0, | 0.8875 | ,13:49:32 | ,04-Dec-2015 |
| 381, | 55.8, | -4.6, | 0, | 1.2809 | ,13:50:32 | ,04-Dec-2015 |
| 382, | 54.4, | -4.5, | 0, | 1.0742 | ,13:51:32 | ,04-Dec-2015 |
| 383, | 51.4, | -4.7, | 0, | 0.9811 | ,13:52:32 | ,04-Dec-2015 |
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| 385, | 57.1, | -4.4, | 0, | 1.1506 | ,13:54:32 | ,04-Dec-2015 |
| 386, | 46.5, | -4.6, | 0, | 1.0111 | ,13:55:32 | ,04-Dec-2015 |
| 387, | 42.9, | -4.8, | 0, | 0.7725 | ,13:56:32 | ,04-Dec-2015 |
| 388, | 41.7, | -4.6, | 0, | 0.7813 | ,13:57:32 | ,04-Dec-2015 |
| 389, | 42.3, | -4.7, | 0, | 0.8568 | ,13:58:32 | ,04-Dec-2015 |
| 390, | 38.3, | -4.8, | 0, | 0.7731 | ,13:59:32 | ,04-Dec-2015 |
| 391, | 40.9, | -4.8, | 0, | 0.6874 | ,14:00:32 | ,04-Dec-2015 |
| 392, | 47.9, | -4.5, | 0, | 1.0177 | ,14:01:32 | ,04-Dec-2015 |
| 393, | 41.7, | -4.7, | 0, | 0.8836 | ,14:02:32 | ,04-Dec-2015 |
| 394, | 39.2, | -4.8, | 0, | 0.8322 | ,14:03:32 | ,04-Dec-2015 |
| 395, | 35.8, | -4.9, | 0, | 0.8101 | ,14:04:32 | ,04-Dec-2015 |
| 396, | 38.8, | -4.8, | 0, | 0.8366 | ,14:05:32 | ,04-Dec-2015 |
| 397, | 41.2, | -4.8, | 0, | 0.9881 | ,14:06:32 | ,04-Dec-2015 |
| 398, | 36.5, | -4.9, | 0, | 0.8398 | ,14:07:32 | ,04-Dec-2015 |
| 399, | 38.8, | -4.8, | 0, | 0.8315 | ,14:08:32 | ,04-Dec-2015 |
| 400, | 36.9, | -4.9, | 0, | 0.9383 | ,14:09:32 | ,04-Dec-2015 |
| 401, | 33.1, | -5.1, | 0, | 0.8596 | ,14:10:32 | ,04-Dec-2015 |
| 402, | 36.4, | -5.0, | 0, | 1.0380 | ,14:11:32 | ,04-Dec-2015 |
| 403, | 34.0, | -5.0, | 0, | 0.8640 | ,14:12:32 | ,04-Dec-2015 |
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| 406, | 29.2, | -5.0, | 0, | 0.7577 | ,14:15:32 | ,04-Dec-2015 |
| 407, | 36.1, | -4.7, | 0, | 0.8435 | ,14:16:32 | ,04-Dec-2015 |
| 408, | 31.6, | -4.9, | 0, | 0.8392 | ,14:17:32 | ,04-Dec-2015 |
| 409, | 36.3, | -4.7, | 0, | 0.9533 | ,14:18:32 | ,04-Dec-2015 |
| 410, | 33.6, | -4.8, | 0, | 0.8126 | ,14:19:32 | ,04-Dec-2015 |
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| 412, | 43.2, | -4.7, | 0, | 1.6969 | ,14:21:32 | ,04-Dec-2015 |
| 413, | 29.9, | -5.0, | 0, | 0.9520 | ,14:22:32 | ,04-Dec-2015 |
| 414, | 37.1, | -4.8, | 0, | 1.3660 | ,14:23:32 | ,04-Dec-2015 |
| 415, | 33.4, | -4.8, | 0, | 1.1427 | ,14:24:32 | ,04-Dec-2015 |
| 416, | 33.0, | -4.8, | 0, | 0.9274 | ,14:25:32 | ,04-Dec-2015 |

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| 417, | 32.0, | -4.8, | 0, | 0.9804 | ,14:26:32 | ,04-Dec-2015 |
| 418, | 29.1, | -4.8, | 0, | 0.7229 | ,14:27:32 | ,04-Dec-2015 |
| 419, | 33.9, | -4.8, | 0, | 1.1553 | ,14:28:32 | ,04-Dec-2015 |
| 420, | 31.9, | -4.9, | 0, | 1.0433 | ,14:29:32 | ,04-Dec-2015 |
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| 422, | 37.6, | -4.6, | 0, | 1.0932 | ,14:31:32 | ,04-Dec-2015 |
| 423, | 38.2, | -4.7, | 0, | 1.1978 | ,14:32:32 | ,04-Dec-2015 |
| 424, | 29.7, | -4.9, | 0, | 0.8034 | ,14:33:32 | ,04-Dec-2015 |
| 425, | 25.0, | -5.0, | 0, | 0.8364 | ,14:34:32 | ,04-Dec-2015 |
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| 427, | 27.4, | -4.9, | 0, | 0.8598 | ,14:36:32 | ,04-Dec-2015 |
| 428, | 33.7, | -4.7, | 0, | 0.9050 | ,14:37:32 | ,04-Dec-2015 |
| 429, | 32.5, | -4.8, | 0, | 1.4748 | ,14:38:32 | ,04-Dec-2015 |
| 430, | 31.7, | -4.7, | 0, | 1.2538 | ,14:39:32 | ,04-Dec-2015 |
| 431, | 33.4, | -4.8, | 0, | 1.2167 | ,14:40:32 | ,04-Dec-2015 |
| 432, | 33.5, | -4.9, | 0, | 1.0767 | ,14:41:32 | ,04-Dec-2015 |
| 433, | 33.4, | -4.9, | 0, | 1.1300 | ,14:42:32 | ,04-Dec-2015 |
| 434, | 31.3, | -5.0, | 0, | 1.1014 | ,14:43:32 | ,04-Dec-2015 |
| 435, | 30.8, | -5.0, | 0, | 0.8985 | ,14:44:32 | ,04-Dec-2015 |
| 436, | 34.7, | -5.0, | 0, | 1.1181 | ,14:45:32 | ,04-Dec-2015 |
| 437, | 29.2, | -5.1, | 0, | 0.9293 | ,14:46:32 | ,04-Dec-2015 |
| 438, | 40.8, | -4.7, | 0, | 0.9630 | ,14:47:32 | ,04-Dec-2015 |
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| 443, | 28.1, | -5.1, | 0, | 0.9282 | ,14:52:32 | ,04-Dec-2015 |
| 444, | 31.9, | -5.1, | 0, | 1.0891 | ,14:53:32 | ,04-Dec-2015 |
| 445, | 33.0, | -5.0, | 0, | 1.1200 | ,14:54:32 | ,04-Dec-2015 |
| 446, | 25.3, | -5.2, | 0, | 0.8653 | ,14:55:32 | ,04-Dec-2015 |
| 447, | 25.1, | -5.2, | 0, | 0.8035 | ,14:56:32 | ,04-Dec-2015 |
| 448, | 26.4, | -5.1, | 0, | 0.7847 | ,14:57:32 | ,04-Dec-2015 |

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"Start Time  ", 08:18:36
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"Unit        ", 0
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"Avg MASS    ", 106.947000
"Max Diam    ", 3.141978
"Max Diam @  ", 289  ,13:07:36  ,07-Dec-2015
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"ALARM_LEVEL ", 3192.0
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"AZ INTERVAL ", 1
"Errors      ", 0000
record,"(MASS )ug/m3", Temp, RHumidity, Diameter
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     4,       60.8, -11.4,    0,   0.8299  ,08:22:36  ,07-Dec-2015
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     6,       58.9, -11.5,    0,   0.8476  ,08:24:36  ,07-Dec-2015
     7,       59.3, -11.5,    0,   0.8027  ,08:25:36  ,07-Dec-2015
     8,       60.3, -11.6,    0,   0.8701  ,08:26:36  ,07-Dec-2015
     9,       60.1, -11.5,    0,   0.8596  ,08:27:36  ,07-Dec-2015
    10,       60.3, -11.5,    0,   0.9083  ,08:28:36  ,07-Dec-2015
    11,       60.8, -11.5,    0,   0.8551  ,08:29:36  ,07-Dec-2015
    12,       60.8, -11.4,    0,   0.8834  ,08:30:36  ,07-Dec-2015
    13,       61.7, -11.3,    0,   0.8164  ,08:31:36  ,07-Dec-2015
    14,       61.3, -11.4,    0,   0.8404  ,08:32:36  ,07-Dec-2015
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    17,       64.3, -11.2,    0,   0.8414  ,08:35:36  ,07-Dec-2015
    18,       65.5, -11.2,    0,   0.8840  ,08:36:36  ,07-Dec-2015
    19,       63.7, -11.4,    0,   0.9283  ,08:37:36  ,07-Dec-2015
    20,       64.2, -11.3,    0,   0.8769  ,08:38:36  ,07-Dec-2015
    21,       64.2, -11.4,    0,   0.9407  ,08:39:36  ,07-Dec-2015
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    27,       66.2, -11.2,    0,   0.9447  ,08:45:36  ,07-Dec-2015
    28,       66.8, -11.2,    0,   0.9448  ,08:46:36  ,07-Dec-2015
    29,       68.5, -11.2,    0,   0.9434  ,08:47:36  ,07-Dec-2015
    30,       68.9, -11.2,    0,   0.9526  ,08:48:36  ,07-Dec-2015
    31,       69.4, -11.1,    0,   0.9604  ,08:49:36  ,07-Dec-2015
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    35,       72.1, -11.1,    0,   1.0203  ,08:53:36  ,07-Dec-2015
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    37,       72.3, -11.1,    0,   1.0240  ,08:55:36  ,07-Dec-2015
    38,       72.9, -11.0,    0,   1.0060  ,08:56:36  ,07-Dec-2015
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| 39, | 73.1, | -11.0, | 0, | 1.0263 | ,08:57:36 | ,07-Dec-2015 |
| 40, | 76.5, | -10.9, | 0, | 1.1209 | ,08:58:36 | ,07-Dec-2015 |
| 41, | 74.9, | -10.9, | 0, | 1.0496 | ,08:59:36 | ,07-Dec-2015 |
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| 43, | 75.6, | -10.9, | 0, | 0.9789 | ,09:01:36 | ,07-Dec-2015 |
| 44, | 77.8, | -10.7, | 0, | 1.0194 | ,09:02:36 | ,07-Dec-2015 |
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| 46, | 79.6, | -10.7, | 0, | 1.0060 | ,09:04:36 | ,07-Dec-2015 |
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| 51, | 79.1, | -10.7, | 0, | 1.0070 | ,09:09:36 | ,07-Dec-2015 |
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| 62, | 90.8, | -10.2, | 0, | 1.1008 | ,09:20:36 | ,07-Dec-2015 |
| 63, | 90.4, | -10.2, | 0, | 1.1050 | ,09:21:36 | ,07-Dec-2015 |
| 64, | 90.7, | -10.2, | 0, | 1.1620 | ,09:22:36 | ,07-Dec-2015 |
| 65, | 91.1, | -10.1, | 0, | 1.0965 | ,09:23:36 | ,07-Dec-2015 |
| 66, | 90.7, | -10.2, | 0, | 1.1557 | ,09:24:36 | ,07-Dec-2015 |
| 67, | 91.1, | -10.1, | 0, | 1.1346 | ,09:25:36 | ,07-Dec-2015 |
| 68, | 91.8, | -10.2, | 0, | 1.1307 | ,09:26:36 | ,07-Dec-2015 |
| 69, | 91.4, | -10.2, | 0, | 1.1087 | ,09:27:36 | ,07-Dec-2015 |
| 70, | 89.9, | -10.3, | 0, | 1.1743 | ,09:28:36 | ,07-Dec-2015 |
| 71, | 89.1, | -10.3, | 0, | 1.2042 | ,09:29:36 | ,07-Dec-2015 |
| 72, | 90.4, | -10.3, | 0, | 1.1789 | ,09:30:36 | ,07-Dec-2015 |
| 73, | 89.6, | -10.2, | 0, | 1.1450 | ,09:31:36 | ,07-Dec-2015 |
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| 76, | 93.8, | -10.1, | 0, | 1.2100 | ,09:34:36 | ,07-Dec-2015 |
| 77, | 94.8, | -10.2, | 0, | 1.2277 | ,09:35:36 | ,07-Dec-2015 |
| 78, | 97.1, | -9.9, | 0, | 1.3205 | ,09:36:36 | ,07-Dec-2015 |
| 79, | 95.9, | -10.1, | 0, | 1.2785 | ,09:37:36 | ,07-Dec-2015 |
| 80, | 94.9, | -10.0, | 0, | 1.2308 | ,09:38:36 | ,07-Dec-2015 |
| 81, | 96.2, | -10.1, | 0, | 1.2736 | ,09:39:36 | ,07-Dec-2015 |
| 82, | 93.4, | -10.2, | 0, | 1.2669 | ,09:40:36 | ,07-Dec-2015 |
| 83, | 93.6, | -10.2, | 0, | 1.2999 | ,09:41:36 | ,07-Dec-2015 |
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| 86, | 92.2, | -10.1, | 0, | 1.1580 | ,09:44:36 | ,07-Dec-2015 |
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| 91, | 91.3, | -10.1, | 0, | 1.1496 | ,09:49:36 | ,07-Dec-2015 |
| 92, | 93.4, | -10.2, | 0, | 1.2231 | ,09:50:36 | ,07-Dec-2015 |
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| 102, | 93.2, | -10.2, | 0, | 1.2294 | ,10:00:36 | ,07-Dec-2015 |
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| 365, | 94.1, | -7.1, | 0, | 1.0588 | ,14:23:36 | ,07-Dec-2015 |
| 366, | 91.6, | -7.3, | 0, | 1.0427 | ,14:24:36 | ,07-Dec-2015 |
| 367, | 100.2, | -7.0, | 0, | 1.1781 | ,14:25:36 | ,07-Dec-2015 |
| 368, | 104.0, | -6.6, | 0, | 1.0664 | ,14:26:36 | ,07-Dec-2015 |
| 369, | 90.4, | -7.2, | 0, | 1.0477 | ,14:27:36 | ,07-Dec-2015 |
| 370, | 97.3, | -6.9, | 0, | 1.0785 | ,14:28:36 | ,07-Dec-2015 |
| 371, | 95.9, | -7.0, | 0, | 1.0691 | ,14:29:36 | ,07-Dec-2015 |
| 372, | 102.8, | -6.8, | 0, | 1.1903 | ,14:30:36 | ,07-Dec-2015 |
| 373, | 94.1, | -7.1, | 0, | 1.1955 | ,14:31:36 | ,07-Dec-2015 |
| 374, | 95.6, | -6.9, | 0, | 1.0393 | ,14:32:36 | ,07-Dec-2015 |
| 375, | 103.6, | -6.7, | 0, | 1.1929 | ,14:33:36 | ,07-Dec-2015 |
| 376, | 94.9, | -7.0, | 0, | 1.1341 | ,14:34:36 | ,07-Dec-2015 |
| 377, | 95.0, | -7.0, | 0, | 1.0424 | ,14:35:36 | ,07-Dec-2015 |
| 378, | 90.4, | -7.2, | 0, | 1.0563 | ,14:36:36 | ,07-Dec-2015 |
| 379, | 94.7, | -7.1, | 0, | 1.1581 | ,14:37:36 | ,07-Dec-2015 |
| 380, | 90.3, | -7.1, | 0, | 1.0744 | ,14:38:36 | ,07-Dec-2015 |
| 381, | 100.9, | -6.9, | 0, | 1.2377 | ,14:39:36 | ,07-Dec-2015 |
| 382, | 88.9, | -7.3, | 0, | 1.1408 | ,14:40:36 | ,07-Dec-2015 |
| 383, | 89.2, | -7.2, | 0, | 1.0959 | ,14:41:36 | ,07-Dec-2015 |
| 384, | 89.0, | -7.2, | 0, | 1.0505 | ,14:42:36 | ,07-Dec-2015 |
| 385, | 95.1, | -7.0, | 0, | 1.1066 | ,14:43:36 | ,07-Dec-2015 |
| 386, | 96.9, | -6.9, | 0, | 1.1715 | ,14:44:36 | ,07-Dec-2015 |
| 387, | 89.3, | -7.2, | 0, | 1.0396 | ,14:45:36 | ,07-Dec-2015 |
| 388, | 96.1, | -7.0, | 0, | 1.1372 | ,14:46:36 | ,07-Dec-2015 |
| 389, | 105.0, | -6.9, | 0, | 1.4298 | ,14:47:36 | ,07-Dec-2015 |
| 390, | 115.9, | -6.4, | 0, | 1.5269 | ,14:48:36 | ,07-Dec-2015 |
| 391, | 99.7, | -6.9, | 0, | 1.2866 | ,14:49:36 | ,07-Dec-2015 |
| 392, | 96.9, | -7.0, | 0, | 1.2031 | ,14:50:36 | ,07-Dec-2015 |
| 393, | 94.8, | -7.1, | 0, | 1.1078 | ,14:51:36 | ,07-Dec-2015 |

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"Serial no.  ", "D232      "
"Device no.  ", 1
"Tag Number  ", 74
"Start Time  ", 07:39:11
"Start Date  ", 08-Dec-2015
"Log Period  ", 00:01:00
"Number      ", 437
"CalFactor   ", 1.000000
"Unit        ", 0
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"SIZE_CORRECT", "DISABLED"
"TEMPUNITS   ", C
"Max MASS    ", 105.550700
"Max MASS  @ ", 76  ,08:55:11  ,08-Dec-2015
"Avg MASS    ", 62.455940
"Max Diam    ", 2.427756
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"Avg Diam    ", 0.930229
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"ALARM_LEVEL ", 3192.0
"AUTO_ZERO   ", "DISABLED"
"AZ INTERVAL ", 1
"Errors      ", 0000
record,"(MASS )ug/m3", Temp, RHumidity, Diameter
     1,       54.6,  -5.1,    0,   0.6900  ,07:40:11  ,08-Dec-2015
     2,       75.4,  -3.8,    0,   0.8674  ,07:41:11  ,08-Dec-2015
     3,       84.1,  -4.5,    0,   1.2658  ,07:42:11  ,08-Dec-2015
     4,       81.7,  -4.4,    0,   1.1882  ,07:43:11  ,08-Dec-2015
     5,       74.8,  -4.7,    0,   1.0430  ,07:44:11  ,08-Dec-2015
     6,       76.5,  -4.8,    0,   1.1193  ,07:45:11  ,08-Dec-2015
     7,       72.0,  -5.2,    0,   1.3206  ,07:46:11  ,08-Dec-2015
     8,       53.0,  -5.7,    0,   0.7820  ,07:47:11  ,08-Dec-2015
     9,       57.9,  -5.5,    0,   0.8059  ,07:48:11  ,08-Dec-2015
    10,       77.0,  -5.3,    0,   1.2701  ,07:49:11  ,08-Dec-2015
    11,       83.5,  -5.1,    0,   1.2192  ,07:50:11  ,08-Dec-2015
    12,       58.1,  -5.8,    0,   0.8965  ,07:51:11  ,08-Dec-2015
    13,       51.5,  -5.9,    0,   0.6518  ,07:52:11  ,08-Dec-2015
    14,       51.8,  -6.3,    0,   0.7862  ,07:53:11  ,08-Dec-2015
    15,       54.4,  -6.1,    0,   0.7058  ,07:54:11  ,08-Dec-2015
    16,       51.9,  -6.5,    0,   0.7891  ,07:55:11  ,08-Dec-2015
    17,       54.3,  -6.5,    0,   0.9567  ,07:56:11  ,08-Dec-2015
    18,       54.7,  -6.4,    0,   0.8125  ,07:57:11  ,08-Dec-2015
    19,       61.3,  -6.1,    0,   0.7427  ,07:58:11  ,08-Dec-2015
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    21,       69.1,  -6.2,    0,   0.8560  ,08:00:11  ,08-Dec-2015
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    24,       54.1,  -6.7,    0,   0.7504  ,08:03:11  ,08-Dec-2015
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    27,       60.5,  -6.8,    0,   0.8634  ,08:06:11  ,08-Dec-2015
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    30,       62.3,  -6.8,    0,   0.9167  ,08:09:11  ,08-Dec-2015
    31,       57.1,  -7.0,    0,   0.7605  ,08:10:11  ,08-Dec-2015
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    33,       52.7,  -7.2,    0,   0.7384  ,08:12:11  ,08-Dec-2015
    34,       57.9,  -7.1,    0,   0.7719  ,08:13:11  ,08-Dec-2015
    35,       61.1,  -7.1,    0,   0.9060  ,08:14:11  ,08-Dec-2015
    36,       67.1,  -7.0,    0,   1.1995  ,08:15:11  ,08-Dec-2015
    37,       67.6,  -7.0,    0,   1.2542  ,08:16:11  ,08-Dec-2015
    38,       60.1,  -7.2,    0,   0.8217  ,08:17:11  ,08-Dec-2015
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| 39, | 73.0, | -6.9, | 0, | 0.9160 | ,08:18:11 | ,08-Dec-2015 |
| 40, | 65.7, | -7.1, | 0, | 1.0021 | ,08:19:11 | ,08-Dec-2015 |
| 41, | 57.5, | -7.3, | 0, | 0.8221 | ,08:20:11 | ,08-Dec-2015 |
| 42, | 64.0, | -7.2, | 0, | 0.8823 | ,08:21:11 | ,08-Dec-2015 |
| 43, | 59.4, | -7.4, | 0, | 0.8882 | ,08:22:11 | ,08-Dec-2015 |
| 44, | 56.4, | -7.2, | 0, | 0.7249 | ,08:23:11 | ,08-Dec-2015 |
| 45, | 56.2, | -7.4, | 0, | 0.7421 | ,08:24:11 | ,08-Dec-2015 |
| 46, | 56.4, | -7.5, | 0, | 0.8278 | ,08:25:11 | ,08-Dec-2015 |
| 47, | 53.4, | -7.5, | 0, | 0.7693 | ,08:26:11 | ,08-Dec-2015 |
| 48, | 57.4, | -7.4, | 0, | 0.7567 | ,08:27:11 | ,08-Dec-2015 |
| 49, | 59.5, | -7.4, | 0, | 0.7721 | ,08:28:11 | ,08-Dec-2015 |
| 50, | 64.5, | -7.2, | 0, | 0.9590 | ,08:29:11 | ,08-Dec-2015 |
| 51, | 59.1, | -7.5, | 0, | 0.7948 | ,08:30:11 | ,08-Dec-2015 |
| 52, | 61.5, | -7.4, | 0, | 0.8796 | ,08:31:11 | ,08-Dec-2015 |
| 53, | 60.9, | -7.3, | 0, | 0.7640 | ,08:32:11 | ,08-Dec-2015 |
| 54, | 59.9, | -7.4, | 0, | 0.7585 | ,08:33:11 | ,08-Dec-2015 |
| 55, | 59.4, | -7.4, | 0, | 0.7615 | ,08:34:11 | ,08-Dec-2015 |
| 56, | 53.3, | -7.7, | 0, | 0.7801 | ,08:35:11 | ,08-Dec-2015 |
| 57, | 61.4, | -7.4, | 0, | 0.7565 | ,08:36:11 | ,08-Dec-2015 |
| 58, | 62.4, | -7.4, | 0, | 0.9141 | ,08:37:11 | ,08-Dec-2015 |
| 59, | 59.5, | -7.6, | 0, | 0.8719 | ,08:38:11 | ,08-Dec-2015 |
| 60, | 67.6, | -7.5, | 0, | 1.0760 | ,08:39:11 | ,08-Dec-2015 |
| 61, | 84.5, | -6.8, | 0, | 1.2935 | ,08:40:11 | ,08-Dec-2015 |
| 62, | 88.6, | -6.5, | 0, | 1.2240 | ,08:41:11 | ,08-Dec-2015 |
| 63, | 76.6, | -7.2, | 0, | 1.4019 | ,08:42:11 | ,08-Dec-2015 |
| 64, | 73.6, | -7.2, | 0, | 1.0913 | ,08:43:11 | ,08-Dec-2015 |
| 65, | 68.8, | -7.3, | 0, | 1.0289 | ,08:44:11 | ,08-Dec-2015 |
| 66, | 63.2, | -7.4, | 0, | 0.9639 | ,08:45:11 | ,08-Dec-2015 |
| 67, | 61.7, | -7.4, | 0, | 0.8583 | ,08:46:11 | ,08-Dec-2015 |
| 68, | 60.5, | -7.5, | 0, | 0.8117 | ,08:47:11 | ,08-Dec-2015 |
| 69, | 63.3, | -7.4, | 0, | 0.8515 | ,08:48:11 | ,08-Dec-2015 |
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| 71, | 61.8, | -7.6, | 0, | 0.8632 | ,08:50:11 | ,08-Dec-2015 |
| 72, | 73.7, | -7.2, | 0, | 0.9945 | ,08:51:11 | ,08-Dec-2015 |
| 73, | 76.8, | -7.0, | 0, | 0.9684 | ,08:52:11 | ,08-Dec-2015 |
| 74, | 71.1, | -7.3, | 0, | 1.0213 | ,08:53:11 | ,08-Dec-2015 |
| 75, | 81.6, | -7.1, | 0, | 1.2589 | ,08:54:11 | ,08-Dec-2015 |
| 76, | 105.6, | -6.6, | 0, | 2.4278 | ,08:55:11 | ,08-Dec-2015 |
| 77, | 78.6, | -7.1, | 0, | 1.4835 | ,08:56:11 | ,08-Dec-2015 |
| 78, | 68.7, | -7.2, | 0, | 0.9857 | ,08:57:11 | ,08-Dec-2015 |
| 79, | 70.0, | -7.1, | 0, | 0.8480 | ,08:58:11 | ,08-Dec-2015 |
| 80, | 67.8, | -7.5, | 0, | 1.0626 | ,08:59:11 | ,08-Dec-2015 |
| 81, | 63.1, | -7.5, | 0, | 0.9535 | ,09:00:11 | ,08-Dec-2015 |
| 82, | 57.5, | -7.7, | 0, | 0.8065 | ,09:01:11 | ,08-Dec-2015 |
| 83, | 63.0, | -7.6, | 0, | 0.8914 | ,09:02:11 | ,08-Dec-2015 |
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| 86, | 64.1, | -7.5, | 0, | 0.9526 | ,09:05:11 | ,08-Dec-2015 |
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| 91, | 70.4, | -7.3, | 0, | 0.8963 | ,09:10:11 | ,08-Dec-2015 |
| 92, | 71.4, | -7.3, | 0, | 1.0370 | ,09:11:11 | ,08-Dec-2015 |
| 93, | 69.9, | -7.4, | 0, | 0.9321 | ,09:12:11 | ,08-Dec-2015 |
| 94, | 80.7, | -7.1, | 0, | 1.2298 | ,09:13:11 | ,08-Dec-2015 |
| 95, | 71.2, | -7.4, | 0, | 1.0434 | ,09:14:11 | ,08-Dec-2015 |
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| 101, | 58.4, | -7.6, | 0, | 0.8251 | ,09:20:11 | ,08-Dec-2015 |

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| 102, | 58.9, | -7.6, | 0, | 0.7881 | ,09:21:11 | ,08-Dec-2015 |
| 103, | 61.9, | -7.4, | 0, | 0.7456 | ,09:22:11 | ,08-Dec-2015 |
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| 106, | 60.9, | -7.6, | 0, | 0.9147 | ,09:25:11 | ,08-Dec-2015 |
| 107, | 68.3, | -7.3, | 0, | 0.9401 | ,09:26:11 | ,08-Dec-2015 |
| 108, | 68.9, | -7.3, | 0, | 0.9762 | ,09:27:11 | ,08-Dec-2015 |
| 109, | 75.0, | -7.2, | 0, | 1.1091 | ,09:28:11 | ,08-Dec-2015 |
| 110, | 70.6, | -7.3, | 0, | 1.2011 | ,09:29:11 | ,08-Dec-2015 |
| 111, | 69.6, | -7.3, | 0, | 1.0655 | ,09:30:11 | ,08-Dec-2015 |
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| 113, | 66.4, | -7.3, | 0, | 0.9000 | ,09:32:11 | ,08-Dec-2015 |
| 114, | 68.7, | -7.1, | 0, | 0.9027 | ,09:33:11 | ,08-Dec-2015 |
| 115, | 75.4, | -6.8, | 0, | 0.8901 | ,09:34:11 | ,08-Dec-2015 |
| 116, | 70.5, | -7.2, | 0, | 0.9595 | ,09:35:11 | ,08-Dec-2015 |
| 117, | 78.7, | -7.1, | 0, | 1.0813 | ,09:36:11 | ,08-Dec-2015 |
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| 119, | 68.4, | -7.3, | 0, | 1.0504 | ,09:38:11 | ,08-Dec-2015 |
| 120, | 77.0, | -7.3, | 0, | 1.5429 | ,09:39:11 | ,08-Dec-2015 |
| 121, | 67.9, | -7.3, | 0, | 1.0418 | ,09:40:11 | ,08-Dec-2015 |
| 122, | 65.7, | -7.3, | 0, | 1.0255 | ,09:41:11 | ,08-Dec-2015 |
| 123, | 64.6, | -7.5, | 0, | 1.0514 | ,09:42:11 | ,08-Dec-2015 |
| 124, | 61.8, | -7.7, | 0, | 1.1280 | ,09:43:11 | ,08-Dec-2015 |
| 125, | 61.4, | -7.7, | 0, | 1.0960 | ,09:44:11 | ,08-Dec-2015 |
| 126, | 61.5, | -7.5, | 0, | 0.9864 | ,09:45:11 | ,08-Dec-2015 |
| 127, | 69.9, | -7.3, | 0, | 1.0963 | ,09:46:11 | ,08-Dec-2015 |
| 128, | 75.6, | -7.2, | 0, | 1.4031 | ,09:47:11 | ,08-Dec-2015 |
| 129, | 69.1, | -7.4, | 0, | 1.3285 | ,09:48:11 | ,08-Dec-2015 |
| 130, | 61.4, | -7.6, | 0, | 1.1423 | ,09:49:11 | ,08-Dec-2015 |
| 131, | 58.3, | -7.6, | 0, | 0.9960 | ,09:50:11 | ,08-Dec-2015 |
| 132, | 59.1, | -7.6, | 0, | 0.9957 | ,09:51:11 | ,08-Dec-2015 |
| 133, | 64.2, | -7.3, | 0, | 0.9927 | ,09:52:11 | ,08-Dec-2015 |
| 134, | 61.4, | -7.4, | 0, | 1.0338 | ,09:53:11 | ,08-Dec-2015 |
| 135, | 57.1, | -7.5, | 0, | 0.8273 | ,09:54:11 | ,08-Dec-2015 |
| 136, | 58.2, | -7.5, | 0, | 0.8741 | ,09:55:11 | ,08-Dec-2015 |
| 137, | 60.8, | -7.5, | 0, | 0.9374 | ,09:56:11 | ,08-Dec-2015 |
| 138, | 69.0, | -7.1, | 0, | 0.9674 | ,09:57:11 | ,08-Dec-2015 |
| 139, | 64.9, | -7.3, | 0, | 0.9505 | ,09:58:11 | ,08-Dec-2015 |
| 140, | 56.8, | -7.6, | 0, | 0.8704 | ,09:59:11 | ,08-Dec-2015 |
| 141, | 58.3, | -7.6, | 0, | 0.8969 | ,10:00:11 | ,08-Dec-2015 |
| 142, | 76.1, | -7.1, | 0, | 1.0175 | ,10:01:11 | ,08-Dec-2015 |
| 143, | 61.7, | -7.4, | 0, | 1.0203 | ,10:02:11 | ,08-Dec-2015 |
| 144, | 59.7, | -7.5, | 0, | 0.8643 | ,10:03:11 | ,08-Dec-2015 |
| 145, | 58.4, | -7.5, | 0, | 0.8807 | ,10:04:11 | ,08-Dec-2015 |
| 146, | 65.8, | -7.5, | 0, | 1.0792 | ,10:05:11 | ,08-Dec-2015 |
| 147, | 59.1, | -7.6, | 0, | 1.0865 | ,10:06:11 | ,08-Dec-2015 |
| 148, | 67.9, | -7.3, | 0, | 1.0016 | ,10:07:11 | ,08-Dec-2015 |
| 149, | 55.5, | -7.7, | 0, | 0.9885 | ,10:08:11 | ,08-Dec-2015 |
| 150, | 52.8, | -7.7, | 0, | 0.8584 | ,10:09:11 | ,08-Dec-2015 |
| 151, | 57.2, | -7.6, | 0, | 0.9483 | ,10:10:11 | ,08-Dec-2015 |
| 152, | 56.1, | -7.5, | 0, | 0.8068 | ,10:11:11 | ,08-Dec-2015 |
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| 154, | 57.4, | -7.4, | 0, | 0.8036 | ,10:13:11 | ,08-Dec-2015 |
| 155, | 59.2, | -7.4, | 0, | 0.8203 | ,10:14:11 | ,08-Dec-2015 |
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| 157, | 63.8, | -7.3, | 0, | 1.0316 | ,10:16:11 | ,08-Dec-2015 |
| 158, | 59.7, | -7.4, | 0, | 0.9091 | ,10:17:11 | ,08-Dec-2015 |
| 159, | 68.9, | -7.0, | 0, | 1.0474 | ,10:18:11 | ,08-Dec-2015 |
| 160, | 66.9, | -7.3, | 0, | 1.1281 | ,10:19:11 | ,08-Dec-2015 |
| 161, | 54.4, | -7.6, | 0, | 1.0340 | ,10:20:11 | ,08-Dec-2015 |
| 162, | 57.4, | -7.4, | 0, | 0.8973 | ,10:21:11 | ,08-Dec-2015 |
| 163, | 61.6, | -7.3, | 0, | 0.8917 | ,10:22:11 | ,08-Dec-2015 |
| 164, | 56.3, | -7.4, | 0, | 0.8522 | ,10:23:11 | ,08-Dec-2015 |

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| 165, | 53.8, | -7.5, | 0, | 0.8997 | ,10:24:11 | ,08-Dec-2015 |
| 166, | 54.4, | -7.5, | 0, | 1.0015 | ,10:25:11 | ,08-Dec-2015 |
| 167, | 54.8, | -7.4, | 0, | 0.9364 | ,10:26:11 | ,08-Dec-2015 |
| 168, | 55.9, | -7.5, | 0, | 0.9351 | ,10:27:11 | ,08-Dec-2015 |
| 169, | 53.0, | -7.6, | 0, | 0.8867 | ,10:28:11 | ,08-Dec-2015 |
| 170, | 50.6, | -7.6, | 0, | 0.8505 | ,10:29:11 | ,08-Dec-2015 |
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| 183, | 54.4, | -7.2, | 0, | 0.8257 | ,10:42:11 | ,08-Dec-2015 |
| 184, | 53.8, | -7.2, | 0, | 0.8101 | ,10:43:11 | ,08-Dec-2015 |
| 185, | 52.4, | -7.4, | 0, | 0.8530 | ,10:44:11 | ,08-Dec-2015 |
| 186, | 55.6, | -7.3, | 0, | 0.9700 | ,10:45:11 | ,08-Dec-2015 |
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| 191, | 56.7, | -7.1, | 0, | 0.9196 | ,10:50:11 | ,08-Dec-2015 |
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| 377, | 54.0, | -6.4, | 0, | 0.8360 | ,13:56:11 | ,08-Dec-2015 |
| 378, | 56.0, | -6.3, | 0, | 0.9162 | ,13:57:11 | ,08-Dec-2015 |
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| 381, | 70.5, | -6.2, | 0, | 1.3012 | ,14:00:11 | ,08-Dec-2015 |
| 382, | 57.8, | -6.3, | 0, | 1.0583 | ,14:01:11 | ,08-Dec-2015 |
| 383, | 57.3, | -6.2, | 0, | 0.9238 | ,14:02:11 | ,08-Dec-2015 |
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| 391, | 56.5, | -6.1, | 0, | 0.6757 | ,14:10:11 | ,08-Dec-2015 |
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| 395, | 68.0, | -5.7, | 0, | 0.7460 | ,14:14:11 | ,08-Dec-2015 |
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"Start Date  ", 09-Dec-2015
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"Number      ", 406
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"Max MASS  @ ", 344  ,13:25:18  ,09-Dec-2015
"Avg MASS    ", 39.303020
"Max Diam    ", 3.547747
"Max Diam @  ", 344  ,13:25:18  ,09-Dec-2015
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"AUTO_ZERO   ", "DISABLED"
"AZ INTERVAL ", 1
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     3,       40.8, -11.5,    0,   0.5182  ,07:44:18  ,09-Dec-2015
     4,       37.8, -11.6,    0,   0.4915  ,07:45:18  ,09-Dec-2015
     5,       41.6, -11.5,    0,   0.5230  ,07:46:18  ,09-Dec-2015
     6,      102.3,  -8.1,    0,   0.5989  ,07:47:18  ,09-Dec-2015
     7,       39.7, -10.7,    0,   0.5154  ,07:48:18  ,09-Dec-2015
     8,       36.4,  -5.5,    0,   0.4888  ,07:49:18  ,09-Dec-2015
     9,       36.9,  -6.5,    0,   0.4769  ,07:50:18  ,09-Dec-2015
    10,       39.2,  -6.9,    0,   0.4956  ,07:51:18  ,09-Dec-2015
    11,       41.1,  17.6,    0,   0.5149  ,07:52:18  ,09-Dec-2015
    12,       44.5,  18.3,    0,   0.4956  ,07:53:18  ,09-Dec-2015
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| 78, | 57.5, | -6.9, | 0, | 0.5417 | ,08:59:18 | ,09-Dec-2015 |
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| 126, | 32.8, | -6.2, | 0, | 0.4889 | ,09:47:18 | ,09-Dec-2015 |
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| 141, | 32.4, | -6.6, | 0, | 0.5150 | ,10:02:18 | ,09-Dec-2015 |
| 142, | 34.2, | -5.8, | 0, | 0.5340 | ,10:03:18 | ,09-Dec-2015 |
| 143, | 33.1, | -6.0, | 0, | 0.5471 | ,10:04:18 | ,09-Dec-2015 |
| 144, | 37.2, | -5.9, | 0, | 0.5533 | ,10:05:18 | ,09-Dec-2015 |
| 145, | 34.0, | -5.9, | 0, | 0.5733 | ,10:06:18 | ,09-Dec-2015 |
| 146, | 38.0, | -5.1, | 0, | 0.6042 | ,10:07:18 | ,09-Dec-2015 |
| 147, | 57.4, | -4.8, | 0, | 0.6325 | ,10:08:18 | ,09-Dec-2015 |
| 148, | 33.7, | -4.6, | 0, | 0.5357 | ,10:09:18 | ,09-Dec-2015 |
| 149, | 36.2, | -5.5, | 0, | 0.6190 | ,10:10:18 | ,09-Dec-2015 |
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| 154, | 38.4, | -4.1, | 0, | 0.7028 | ,10:15:18 | ,09-Dec-2015 |
| 155, | 31.5, | -3.9, | 0, | 0.5756 | ,10:16:18 | ,09-Dec-2015 |
| 156, | 50.6, | -3.3, | 0, | 0.6207 | ,10:17:18 | ,09-Dec-2015 |
| 157, | 54.3, | -2.6, | 0, | 0.6459 | ,10:18:18 | ,09-Dec-2015 |
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| 161, | 70.2, | -0.1, | 0, | 0.9739 | ,10:22:18 | ,09-Dec-2015 |
| 162, | 65.5, | -1.6, | 0, | 1.1415 | ,10:23:18 | ,09-Dec-2015 |
| 163, | 33.5, | -0.9, | 0, | 0.6490 | ,10:24:18 | ,09-Dec-2015 |
| 164, | 32.4, | 1.0, | 0, | 0.5624 | ,10:25:18 | ,09-Dec-2015 |

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| 165, | 66.0, | 0.2, | 0, | 1.2437 | ,10:26:18 | ,09-Dec-2015 |
| 166, | 45.9, | 0.4, | 0, | 0.5659 | ,10:27:18 | ,09-Dec-2015 |
| 167, | 31.8, | 2.8, | 0, | 0.5963 | ,10:28:18 | ,09-Dec-2015 |
| 168, | 28.5, | 3.6, | 0, | 0.5460 | ,10:29:18 | ,09-Dec-2015 |
| 169, | 35.7, | 3.7, | 0, | 0.6421 | ,10:30:18 | ,09-Dec-2015 |
| 170, | 36.5, | 4.2, | 0, | 0.6755 | ,10:31:18 | ,09-Dec-2015 |
| 171, | 32.8, | 1.4, | 0, | 0.7079 | ,10:32:18 | ,09-Dec-2015 |
| 172, | 27.0, | 3.6, | 0, | 0.5155 | ,10:33:18 | ,09-Dec-2015 |
| 173, | 30.1, | 3.4, | 0, | 0.5410 | ,10:34:18 | ,09-Dec-2015 |
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| 176, | 30.0, | 0.0, | 0, | 0.5299 | ,10:37:18 | ,09-Dec-2015 |
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| 178, | 29.2, | -2.6, | 0, | 0.5304 | ,10:39:18 | ,09-Dec-2015 |
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| 182, | 46.1, | 0.0, | 0, | 0.8436 | ,10:43:18 | ,09-Dec-2015 |
| 183, | 38.4, | -1.5, | 0, | 0.7832 | ,10:44:18 | ,09-Dec-2015 |
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| 191, | 67.1, | -2.1, | 0, | 0.6197 | ,10:52:18 | ,09-Dec-2015 |
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| 298, | 68.2, | 22.7, | 0, | 1.3716 | ,12:39:18 | ,09-Dec-2015 |
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| 312, | 32.9, | 23.2, | 0, | 0.9976 | ,12:53:18 | ,09-Dec-2015 |
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"Device no.  ", 1
"Tag Number  ", 76
"Start Time  ", 00:17:51
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"Log Period  ", 00:01:00
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"Avg MASS    ", 28.146080
"Max Diam    ", 4.127007
"Max Diam @  ", 30  ,00:47:51  ,25-Jan-2000
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"AUTO_ZERO   ", "DISABLED"
"AZ INTERVAL ", 1
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record,"(MASS )ug/m3", Temp, RHumidity, Diameter
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     3,       24.2,  -9.3,    0,   3.0746  ,00:20:51  ,25-Jan-2000
     4,       29.5,  -9.4,    0,   2.9023  ,00:21:51  ,25-Jan-2000
     5,       29.0,  -9.6,    0,   2.7245  ,00:22:51  ,25-Jan-2000
     6,       25.3,  -8.0,    0,   1.7544  ,00:23:51  ,25-Jan-2000
     7,       21.0,  -7.8,    0,   3.4092  ,00:24:51  ,25-Jan-2000
     8,       33.6,  -6.6,    0,   4.1238  ,00:25:51  ,25-Jan-2000
     9,       29.9,  -7.3,    0,   4.0337  ,00:26:51  ,25-Jan-2000
    10,       33.2,  -6.8,    0,   3.7728  ,00:27:51  ,25-Jan-2000
    11,       52.1,  -6.7,    0,   1.5321  ,00:28:51  ,25-Jan-2000
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| 344, | 21.4, | -12.0, | 0, | 3.2484 | ,13:28:59 | ,11-Dec-2015 |
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| 346, | 22.5, | -11.7, | 0, | 3.3327 | ,13:30:59 | ,11-Dec-2015 |
| 347, | 20.9, | -12.1, | 0, | 1.5172 | ,13:31:59 | ,11-Dec-2015 |
| 348, | 63.1, | -10.9, | 0, | 2.7296 | ,13:32:59 | ,11-Dec-2015 |
| 349, | 50.8, | -10.8, | 0, | 3.8785 | ,13:33:59 | ,11-Dec-2015 |
| 350, | 136.9, | -8.0, | 0, | 3.9006 | ,13:34:59 | ,11-Dec-2015 |
| 351, | 59.8, | -10.5, | 0, | 4.1270 | ,13:35:59 | ,11-Dec-2015 |
| 352, | 65.1, | -10.3, | 0, | 3.7051 | ,13:36:59 | ,11-Dec-2015 |
| 353, | 77.7, | -9.9, | 0, | 2.7216 | ,13:37:59 | ,11-Dec-2015 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 354, | 49.3, | -10.9, | 0, | 3.6964 | ,13:38:59 | ,11-Dec-2015 |
| 355, | 33.9, | -11.5, | 0, | 2.0149 | ,13:39:59 | ,11-Dec-2015 |
| 356, | 31.1, | -11.3, | 0, | 2.3523 | ,13:40:59 | ,11-Dec-2015 |
| 357, | 24.7, | -11.3, | 0, | 2.5576 | ,13:41:59 | ,11-Dec-2015 |
| 358, | 26.2, | -11.4, | 0, | 3.4434 | ,13:42:59 | ,11-Dec-2015 |
| 359, | 24.8, | -10.1, | 0, | 3.0209 | ,13:43:59 | ,11-Dec-2015 |
| 360, | 20.9, | -10.7, | 0, | 1.7961 | ,13:44:59 | ,11-Dec-2015 |
| 361, | 23.0, | -10.8, | 0, | 1.0488 | ,13:45:59 | ,11-Dec-2015 |
| 362, | 24.9, | -10.7, | 0, | 1.1914 | ,13:46:59 | ,11-Dec-2015 |
| 363, | 24.4, | -10.7, | 0, | 1.5033 | ,13:47:59 | ,11-Dec-2015 |
| 364, | 23.0, | -11.4, | 0, | 1.8660 | ,13:48:59 | ,11-Dec-2015 |
| 365, | 20.3, | -11.6, | 0, | 2.3850 | ,13:49:59 | ,11-Dec-2015 |
| 366, | 21.9, | -11.5, | 0, | 2.9648 | ,13:50:59 | ,11-Dec-2015 |
| 367, | 27.9, | -11.4, | 0, | 2.5169 | ,13:51:59 | ,11-Dec-2015 |
| 368, | 30.1, | -10.9, | 0, | 3.3123 | ,13:52:59 | ,11-Dec-2015 |
| 369, | 32.5, | -10.9, | 0, | 3.9470 | ,13:53:59 | ,11-Dec-2015 |
| 370, | 24.4, | -10.8, | 0, | 4.0117 | ,13:54:59 | ,11-Dec-2015 |
| 371, | 21.2, | -11.0, | 0, | 3.2539 | ,13:55:59 | ,11-Dec-2015 |
| 372, | 19.4, | -11.2, | 0, | 1.5269 | ,13:56:59 | ,11-Dec-2015 |
| 373, | 19.0, | -10.9, | 0, | 1.4169 | ,13:57:59 | ,11-Dec-2015 |
| 374, | 23.8, | -10.2, | 0, | 2.2147 | ,13:58:59 | ,11-Dec-2015 |
| 375, | 27.9, | -10.0, | 0, | 3.9351 | ,13:59:59 | ,11-Dec-2015 |
| 376, | 26.1, | -11.4, | 0, | 2.4311 | ,14:00:59 | ,11-Dec-2015 |
| 377, | 23.6, | -11.8, | 0, | 2.1673 | ,14:01:59 | ,11-Dec-2015 |
| 378, | 26.2, | -11.9, | 0, | 2.8121 | ,14:02:59 | ,11-Dec-2015 |
| 379, | 28.6, | -11.8, | 0, | 3.6450 | ,14:03:59 | ,11-Dec-2015 |
| 380, | 23.7, | -11.6, | 0, | 3.7865 | ,14:04:59 | ,11-Dec-2015 |
| 381, | 20.1, | -12.2, | 0, | 1.6525 | ,14:05:59 | ,11-Dec-2015 |
| 382, | 19.7, | -12.2, | 0, | 3.7321 | ,14:06:59 | ,11-Dec-2015 |
| 383, | 18.5, | -11.7, | 0, | 3.9088 | ,14:07:59 | ,11-Dec-2015 |
| 384, | 17.1, | -12.3, | 0, | 3.2584 | ,14:08:59 | ,11-Dec-2015 |
| 385, | 18.8, | -12.5, | 0, | 4.1096 | ,14:09:59 | ,11-Dec-2015 |
| 386, | 17.7, | -12.6, | 0, | 3.0907 | ,14:10:59 | ,11-Dec-2015 |
| 387, | 18.9, | -12.4, | 0, | 2.8750 | ,14:11:59 | ,11-Dec-2015 |
| 388, | 22.1, | -12.3, | 0, | 3.6884 | ,14:12:59 | ,11-Dec-2015 |
| 389, | 21.7, | -12.1, | 0, | 2.7142 | ,14:13:59 | ,11-Dec-2015 |
| 390, | 23.1, | -12.0, | 0, | 2.5413 | ,14:14:59 | ,11-Dec-2015 |
| 391, | 23.5, | -12.0, | 0, | 3.1241 | ,14:15:59 | ,11-Dec-2015 |
| 392, | 17.0, | -12.4, | 0, | 2.0663 | ,14:16:59 | ,11-Dec-2015 |
| 393, | 17.0, | -12.4, | 0, | 2.3938 | ,14:17:59 | ,11-Dec-2015 |
| 394, | 17.6, | -12.3, | 0, | 2.8358 | ,14:18:59 | ,11-Dec-2015 |
| 395, | 19.1, | -12.3, | 0, | 3.4392 | ,14:19:59 | ,11-Dec-2015 |
| 396, | 18.0, | -12.7, | 0, | 3.0613 | ,14:20:59 | ,11-Dec-2015 |
| 397, | 19.7, | -12.7, | 0, | 2.2912 | ,14:21:59 | ,11-Dec-2015 |
| 398, | 20.1, | -12.3, | 0, | 2.2972 | ,14:22:59 | ,11-Dec-2015 |
| 399, | 27.2, | -11.8, | 0, | 2.1457 | ,14:23:59 | ,11-Dec-2015 |
| 400, | 42.8, | -11.6, | 0, | 4.1270 | ,14:24:59 | ,11-Dec-2015 |
| 401, | 25.2, | -12.3, | 0, | 2.7257 | ,14:25:59 | ,11-Dec-2015 |
| 402, | 26.1, | -12.4, | 0, | 3.0165 | ,14:26:59 | ,11-Dec-2015 |
| 403, | 27.8, | -12.2, | 0, | 3.5096 | ,14:27:59 | ,11-Dec-2015 |

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"Model Number", "DataRAM 4 ", 106
"Serial no.  ", "D232      "
"Device no.  ", 1
"Tag Number  ", 78
"Start Time  ", 07:49:47
"Start Date  ", 14-Dec-2015
"Log Period  ", 00:01:00
"Number      ", 48
"CalFactor   ", 1.000000
"Unit        ", 0
"Unit Name   ", "(MASS )ug/m3"
"SIZE_CORRECT", "DISABLED"
"TEMPUNITS   ", C
"Max MASS    ", 41.789650
"Max MASS  @ ", 5  ,07:54:47  ,14-Dec-2015
"Avg MASS    ", 16.264900
"Max Diam    ", 3.295042
"Max Diam @  ", 27  ,08:16:47  ,14-Dec-2015
"Avg Diam    ", 1.720689
"ALARM       ", "ENABLED"
"ALARM_LEVEL ", 1190.0
"AUTO_ZERO   ", "DISABLED"
"AZ INTERVAL ", 1
"Errors      ", 0000
record,"(MASS )ug/m3", Temp, RHumidity, Diameter
     1,       37.1,  23.2,    0,   0.5431  ,07:50:47  ,14-Dec-2015
     2,       23.0,  23.0,    0,   0.8315  ,07:51:47  ,14-Dec-2015
     3,       15.8,  22.7,    0,   1.1527  ,07:52:47  ,14-Dec-2015
     4,       12.1,  22.6,    0,   1.2988  ,07:53:47  ,14-Dec-2015
     5,       41.8,  22.4,    0,   1.6257  ,07:54:47  ,14-Dec-2015
     6,       19.9,  22.2,    0,   1.3485  ,07:55:47  ,14-Dec-2015
     7,       17.4,  22.0,    0,   2.4000  ,07:56:47  ,14-Dec-2015
     8,       27.8,  21.9,    0,   1.4872  ,07:57:47  ,14-Dec-2015
     9,       24.1,  21.7,    0,   2.0723  ,07:58:47  ,14-Dec-2015
    10,       29.6,  21.6,    0,   2.0241  ,07:59:47  ,14-Dec-2015
    11,       12.0,  21.4,    0,   1.1366  ,08:00:47  ,14-Dec-2015
    12,       12.1,  21.3,    0,   3.2282  ,08:01:47  ,14-Dec-2015
    13,        6.1,  21.2,    0,   0.7910  ,08:02:47  ,14-Dec-2015
    14,       11.3,  21.0,    0,   0.7349  ,08:03:47  ,14-Dec-2015
    15,       13.1,  20.9,    0,   1.6137  ,08:04:47  ,14-Dec-2015
    16,       19.3,  20.8,    0,   1.9235  ,08:05:47  ,14-Dec-2015
    17,       14.4,  20.7,    0,   0.9282  ,08:06:47  ,14-Dec-2015
    18,       17.5,  20.6,    0,   1.0132  ,08:07:47  ,14-Dec-2015
    19,       15.2,  20.5,    0,   1.7712  ,08:08:47  ,14-Dec-2015
    20,       22.9,  20.4,    0,   3.2387  ,08:09:47  ,14-Dec-2015
    21,       14.3,  20.3,    0,   2.2238  ,08:10:47  ,14-Dec-2015
    22,       11.7,  20.2,    0,   2.7841  ,08:11:47  ,14-Dec-2015
    23,        9.2,  20.1,    0,   1.8418  ,08:12:47  ,14-Dec-2015
    24,       16.9,  20.0,    0,   2.5312  ,08:13:47  ,14-Dec-2015
    25,        6.6,  19.9,    0,   1.0565  ,08:14:47  ,14-Dec-2015
    26,        5.4,  19.8,    0,   0.7267  ,08:15:47  ,14-Dec-2015
    27,       31.9,  19.7,    0,   3.2950  ,08:16:47  ,14-Dec-2015
    28,       18.8,  19.6,    0,   2.8524  ,08:17:47  ,14-Dec-2015
    29,       14.3,  19.6,    0,   2.8861  ,08:18:47  ,14-Dec-2015
    30,       17.7,  19.5,    0,   3.2469  ,08:19:47  ,14-Dec-2015
    31,       19.8,  19.4,    0,   2.3854  ,08:20:47  ,14-Dec-2015
    32,       11.1,  19.3,    0,   1.4188  ,08:21:47  ,14-Dec-2015
    33,       18.2,  19.2,    0,   2.3995  ,08:22:47  ,14-Dec-2015
    34,       10.5,  19.2,    0,   1.3504  ,08:23:47  ,14-Dec-2015
    35,       20.4,  19.1,    0,   1.1609  ,08:24:47  ,14-Dec-2015
    36,       27.9,  19.0,    0,   1.5554  ,08:25:47  ,14-Dec-2015
    37,       16.2,  19.0,    0,   0.8496  ,08:26:47  ,14-Dec-2015
    38,       19.2,  18.9,    0,   2.2478  ,08:27:47  ,14-Dec-2015
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39,       16.8,  18.8,    0,   1.3332  ,08:28:47  ,14-Dec-2015
40,       10.5,  18.7,    0,   2.2114  ,08:29:47  ,14-Dec-2015
41,       13.4,  18.7,    0,   2.5854  ,08:30:47  ,14-Dec-2015
42,        9.0,  18.6,    0,   2.2034  ,08:31:47  ,14-Dec-2015
43,        7.3,  18.5,    0,   2.0529  ,08:32:47  ,14-Dec-2015
44,        4.8,  18.4,    0,   0.8371  ,08:33:47  ,14-Dec-2015
45,        3.7,  18.3,    0,   0.8319  ,08:34:47  ,14-Dec-2015
46,        5.0,  18.3,    0,   0.9777  ,08:35:47  ,14-Dec-2015
47,       17.6,  18.2,    0,   0.7810  ,08:36:47  ,14-Dec-2015
48,       10.1,  18.1,    0,   0.8036  ,08:37:47  ,14-Dec-2015
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"Model Number", "DataRAM 4 ", 106
"Serial no.  ", "D232      "
"Device no.  ", 1
"Tag Number  ", 79
"Start Time  ", 07:45:32
"Start Date  ", 15-Dec-2015
"Log Period  ", 00:01:00
"Number      ", 422
"CalFactor   ", 1.000000
"Unit        ", 0
"Unit Name   ", "(MASS )ug/m3"
"SIZE_CORRECT", "DISABLED"
"TEMPUNITS   ", C
"Max MASS    ", 26.881410
"Max MASS  @ ", 172  ,10:37:32  ,15-Dec-2015
"Avg MASS    ", 7.426560
"Max Diam    ", 3.849072
"Max Diam @  ", 242  ,11:47:32  ,15-Dec-2015
"Avg Diam    ", 0.769686
"ALARM       ", "ENABLED"
"ALARM_LEVEL ", 1190.0
"AUTO_ZERO   ", "DISABLED"
"AZ INTERVAL ", 1
"Errors      ", 0000
record,"(MASS )ug/m3", Temp, RHumidity, Diameter
     1,        5.6, -14.5,    0,   0.4874  ,07:46:32  ,15-Dec-2015
     2,        5.1, -14.6,    0,   1.1167  ,07:47:32  ,15-Dec-2015
     3,        4.9, -14.5,    0,   0.8988  ,07:48:32  ,15-Dec-2015
     4,        5.1, -14.5,    0,   0.7264  ,07:49:32  ,15-Dec-2015
     5,        5.2, -14.5,    0,   0.6966  ,07:50:32  ,15-Dec-2015
     6,        6.1, -14.5,    0,   1.5085  ,07:51:32  ,15-Dec-2015
     7,        5.9, -14.5,    0,   1.2814  ,07:52:32  ,15-Dec-2015
     8,        5.4, -14.5,    0,   0.8031  ,07:53:32  ,15-Dec-2015
     9,        5.9, -14.5,    0,   0.9599  ,07:54:32  ,15-Dec-2015
    10,        5.7, -14.6,    0,   0.9190  ,07:55:32  ,15-Dec-2015
    11,        5.3, -14.5,    0,   0.9080  ,07:56:32  ,15-Dec-2015
    12,        4.7, -14.4,    0,   0.6472  ,07:57:32  ,15-Dec-2015
    13,        4.4, -14.6,    0,   0.5217  ,07:58:32  ,15-Dec-2015
    14,        4.7, -14.6,    0,   1.3352  ,07:59:32  ,15-Dec-2015
    15,        3.9, -14.7,    0,   1.2791  ,08:00:32  ,15-Dec-2015
    16,        3.6, -14.6,    0,   0.5784  ,08:01:32  ,15-Dec-2015
    17,        3.3, -14.6,    0,   0.4396  ,08:02:32  ,15-Dec-2015
    18,        2.4, -14.7,    0,   0.4319  ,08:03:32  ,15-Dec-2015
    19,        3.1, -14.6,    0,   0.4987  ,08:04:32  ,15-Dec-2015
    20,        4.1, -14.7,    0,   0.8361  ,08:05:32  ,15-Dec-2015
    21,        4.9, -14.5,    0,   0.8243  ,08:06:32  ,15-Dec-2015
    22,        6.6, -14.6,    0,   1.6034  ,08:07:32  ,15-Dec-2015
    23,        5.1, -14.7,    0,   1.7929  ,08:08:32  ,15-Dec-2015
    24,        4.5, -14.7,    0,   1.8051  ,08:09:32  ,15-Dec-2015
    25,        4.5, -14.7,    0,   1.6161  ,08:10:32  ,15-Dec-2015
    26,        3.9, -14.7,    0,   1.9883  ,08:11:32  ,15-Dec-2015
    27,        4.6, -14.7,    0,   2.2620  ,08:12:32  ,15-Dec-2015
    28,        5.4, -14.6,    0,   1.4734  ,08:13:32  ,15-Dec-2015
    29,        7.1, -14.5,    0,   0.9275  ,08:14:32  ,15-Dec-2015
    30,        6.8, -14.5,    0,   0.9667  ,08:15:32  ,15-Dec-2015
    31,        3.5, -14.7,    0,   0.6455  ,08:16:32  ,15-Dec-2015
    32,        4.2, -14.7,    0,   0.5155  ,08:17:32  ,15-Dec-2015
    33,        3.5, -14.7,    0,   0.5185  ,08:18:32  ,15-Dec-2015
    34,        5.2, -14.6,    0,   0.7148  ,08:19:32  ,15-Dec-2015
    35,        4.2, -14.6,    0,   0.5833  ,08:20:32  ,15-Dec-2015
    36,        4.0, -14.6,    0,   0.6773  ,08:21:32  ,15-Dec-2015
    37,        5.4, -14.6,    0,   0.6298  ,08:22:32  ,15-Dec-2015
    38,        5.0, -14.7,    0,   0.9515  ,08:23:32  ,15-Dec-2015
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| | | | | | | |
|---|---|---|---|---|---|---|
| 39, | 4.9, | -14.6, | 0, | 1.0531 | ,08:24:32 | ,15-Dec-2015 |
| 40, | 5.7, | -14.6, | 0, | 1.7584 | ,08:25:32 | ,15-Dec-2015 |
| 41, | 6.0, | -14.6, | 0, | 1.9160 | ,08:26:32 | ,15-Dec-2015 |
| 42, | 5.6, | -14.6, | 0, | 1.6357 | ,08:27:32 | ,15-Dec-2015 |
| 43, | 8.2, | -14.5, | 0, | 1.3009 | ,08:28:32 | ,15-Dec-2015 |
| 44, | 6.7, | -14.6, | 0, | 1.0346 | ,08:29:32 | ,15-Dec-2015 |
| 45, | 5.8, | -14.6, | 0, | 1.4898 | ,08:30:32 | ,15-Dec-2015 |
| 46, | 4.7, | -14.6, | 0, | 0.6414 | ,08:31:32 | ,15-Dec-2015 |
| 47, | 3.8, | -14.6, | 0, | 0.4951 | ,08:32:32 | ,15-Dec-2015 |
| 48, | 5.9, | -14.6, | 0, | 0.9227 | ,08:33:32 | ,15-Dec-2015 |
| 49, | 5.2, | -14.6, | 0, | 0.8753 | ,08:34:32 | ,15-Dec-2015 |
| 50, | 4.5, | -14.6, | 0, | 0.5741 | ,08:35:32 | ,15-Dec-2015 |
| 51, | 4.9, | -14.6, | 0, | 0.7051 | ,08:36:32 | ,15-Dec-2015 |
| 52, | 5.3, | -14.6, | 0, | 0.9254 | ,08:37:32 | ,15-Dec-2015 |
| 53, | 5.2, | -14.5, | 0, | 0.6981 | ,08:38:32 | ,15-Dec-2015 |
| 54, | 5.5, | -14.6, | 0, | 0.7133 | ,08:39:32 | ,15-Dec-2015 |
| 55, | 6.4, | -14.6, | 0, | 1.8620 | ,08:40:32 | ,15-Dec-2015 |
| 56, | 5.2, | -14.6, | 0, | 0.9249 | ,08:41:32 | ,15-Dec-2015 |
| 57, | 6.8, | -14.6, | 0, | 1.3186 | ,08:42:32 | ,15-Dec-2015 |
| 58, | 7.6, | -14.5, | 0, | 1.8934 | ,08:43:32 | ,15-Dec-2015 |
| 59, | 5.5, | -14.6, | 0, | 0.8598 | ,08:44:32 | ,15-Dec-2015 |
| 60, | 4.1, | -14.7, | 0, | 0.6395 | ,08:45:32 | ,15-Dec-2015 |
| 61, | 3.6, | -14.7, | 0, | 0.6525 | ,08:46:32 | ,15-Dec-2015 |
| 62, | 3.7, | -14.7, | 0, | 0.5981 | ,08:47:32 | ,15-Dec-2015 |
| 63, | 3.7, | -14.7, | 0, | 0.5433 | ,08:48:32 | ,15-Dec-2015 |
| 64, | 3.5, | -14.7, | 0, | 0.5668 | ,08:49:32 | ,15-Dec-2015 |
| 65, | 5.3, | -14.6, | 0, | 0.9863 | ,08:50:32 | ,15-Dec-2015 |
| 66, | 4.0, | -14.7, | 0, | 0.7169 | ,08:51:32 | ,15-Dec-2015 |
| 67, | 3.4, | -14.7, | 0, | 0.7191 | ,08:52:32 | ,15-Dec-2015 |
| 68, | 3.9, | -14.7, | 0, | 0.6516 | ,08:53:32 | ,15-Dec-2015 |
| 69, | 3.0, | -14.7, | 0, | 0.5997 | ,08:54:32 | ,15-Dec-2015 |
| 70, | 3.2, | -14.7, | 0, | 0.6436 | ,08:55:32 | ,15-Dec-2015 |
| 71, | 3.8, | -14.7, | 0, | 0.8331 | ,08:56:32 | ,15-Dec-2015 |
| 72, | 5.0, | -14.7, | 0, | 0.9168 | ,08:57:32 | ,15-Dec-2015 |
| 73, | 5.5, | -14.7, | 0, | 1.5930 | ,08:58:32 | ,15-Dec-2015 |
| 74, | 5.3, | -14.6, | 0, | 1.3582 | ,08:59:32 | ,15-Dec-2015 |
| 75, | 3.7, | -14.7, | 0, | 0.6751 | ,09:00:32 | ,15-Dec-2015 |
| 76, | 3.7, | -14.7, | 0, | 0.7175 | ,09:01:32 | ,15-Dec-2015 |
| 77, | 4.0, | -14.7, | 0, | 0.6372 | ,09:02:32 | ,15-Dec-2015 |
| 78, | 4.8, | -14.7, | 0, | 0.7333 | ,09:03:32 | ,15-Dec-2015 |
| 79, | 6.3, | -14.5, | 0, | 0.7627 | ,09:04:32 | ,15-Dec-2015 |
| 80, | 5.9, | -14.6, | 0, | 0.7889 | ,09:05:32 | ,15-Dec-2015 |
| 81, | 4.4, | -14.7, | 0, | 0.8983 | ,09:06:32 | ,15-Dec-2015 |
| 82, | 4.0, | -14.7, | 0, | 0.9947 | ,09:07:32 | ,15-Dec-2015 |
| 83, | 6.1, | -14.6, | 0, | 0.9863 | ,09:08:32 | ,15-Dec-2015 |
| 84, | 5.9, | -14.6, | 0, | 0.9894 | ,09:09:32 | ,15-Dec-2015 |
| 85, | 6.3, | -14.6, | 0, | 0.9837 | ,09:10:32 | ,15-Dec-2015 |
| 86, | 7.6, | -14.5, | 0, | 0.8629 | ,09:11:32 | ,15-Dec-2015 |
| 87, | 9.9, | -14.4, | 0, | 1.3243 | ,09:12:32 | ,15-Dec-2015 |
| 88, | 5.3, | -14.5, | 0, | 0.5446 | ,09:13:32 | ,15-Dec-2015 |
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| 93, | 5.2, | -14.6, | 0, | 0.5138 | ,09:18:32 | ,15-Dec-2015 |
| 94, | 6.3, | -14.5, | 0, | 0.5090 | ,09:19:32 | ,15-Dec-2015 |
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| 96, | 5.3, | -14.6, | 0, | 0.4362 | ,09:21:32 | ,15-Dec-2015 |
| 97, | 5.8, | -14.5, | 0, | 0.4552 | ,09:22:32 | ,15-Dec-2015 |
| 98, | 6.3, | -14.5, | 0, | 0.5903 | ,09:23:32 | ,15-Dec-2015 |
| 99, | 6.6, | -14.5, | 0, | 0.5574 | ,09:24:32 | ,15-Dec-2015 |
| 100, | 5.8, | -14.5, | 0, | 0.4596 | ,09:25:32 | ,15-Dec-2015 |
| 101, | 7.8, | -14.4, | 0, | 0.5722 | ,09:26:32 | ,15-Dec-2015 |

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| 107, | 10.7, | -14.2, | 0, | 0.7742 | ,09:32:32 | ,15-Dec-2015 |
| 108, | 12.2, | -14.2, | 0, | 0.7810 | ,09:33:32 | ,15-Dec-2015 |
| 109, | 16.2, | -13.9, | 0, | 0.6731 | ,09:34:32 | ,15-Dec-2015 |
| 110, | 12.3, | -14.2, | 0, | 0.8207 | ,09:35:32 | ,15-Dec-2015 |
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| 188, | 10.2, | -14.4, | 0, | 2.0351 | ,10:53:32 | ,15-Dec-2015 |
| 189, | 13.2, | -14.3, | 0, | 2.3938 | ,10:54:32 | ,15-Dec-2015 |
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| 191, | 11.9, | -14.3, | 0, | 0.8646 | ,10:56:32 | ,15-Dec-2015 |
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| 194, | 6.6, | -14.5, | 0, | 0.7878 | ,10:59:32 | ,15-Dec-2015 |
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| 294, | 6.7, | -14.5, | 0, | 0.5540 | ,12:39:32 | ,15-Dec-2015 |
| 295, | 6.0, | -14.5, | 0, | 0.4653 | ,12:40:32 | ,15-Dec-2015 |
| 296, | 5.3, | -14.6, | 0, | 0.5000 | ,12:41:32 | ,15-Dec-2015 |
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| 298, | 5.1, | -14.6, | 0, | 0.4431 | ,12:43:32 | ,15-Dec-2015 |
| 299, | 10.0, | -14.4, | 0, | 0.5433 | ,12:44:32 | ,15-Dec-2015 |
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| 302, | 6.9, | -14.5, | 0, | 0.7292 | ,12:47:32 | ,15-Dec-2015 |
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| 304, | 6.7, | -14.4, | 0, | 0.4552 | ,12:49:32 | ,15-Dec-2015 |
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| 307, | 6.7, | -14.5, | 0, | 0.6135 | ,12:52:32 | ,15-Dec-2015 |
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| 311, | 6.9, | -14.5, | 0, | 0.7673 | ,12:56:32 | ,15-Dec-2015 |
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| 313, | 4.6, | -14.6, | 0, | 0.4300 | ,12:58:32 | ,15-Dec-2015 |
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| 337, | 6.2, | -14.6, | 0, | 0.6568 | ,13:22:32 | ,15-Dec-2015 |
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| 361, | 7.6, | -14.4, | 0, | 0.6033 | ,13:46:32 | ,15-Dec-2015 |
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| 396, | 6.4, | -14.5, | 0, | 0.4626 | ,14:21:32 | ,15-Dec-2015 |
| 397, | 6.7, | -14.4, | 0, | 0.4967 | ,14:22:32 | ,15-Dec-2015 |
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| 401, | 16.5, | -14.1, | 0, | 1.5515 | ,14:26:32 | ,15-Dec-2015 |
| 402, | 11.8, | -14.3, | 0, | 1.1458 | ,14:27:32 | ,15-Dec-2015 |
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| 413, | 8.5, | -14.4, | 0, | 0.6118 | ,14:38:32 | ,15-Dec-2015 |
| 414, | 6.1, | -14.5, | 0, | 0.4486 | ,14:39:32 | ,15-Dec-2015 |
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| 416, | 5.5, | -14.5, | 0, | 0.4108 | ,14:41:32 | ,15-Dec-2015 |

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417,        5.8, -14.5,    0,   0.4122  ,14:42:32  ,15-Dec-2015
418,        6.2, -14.5,    0,   0.4448  ,14:43:32  ,15-Dec-2015
419,        6.4, -14.4,    0,   0.4307  ,14:44:32  ,15-Dec-2015
420,        7.0, -14.5,    0,   0.4610  ,14:45:32  ,15-Dec-2015
421,        7.6, -14.4,    0,   0.4945  ,14:46:32  ,15-Dec-2015
422,        6.6, -14.4,    0,   0.4220  ,14:47:32  ,15-Dec-2015
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"Serial no.  ", "D232      "
"Device no.  ", 1
"Tag Number  ", 80
"Start Time  ", 07:40:17
"Start Date  ", 16-Dec-2015
"Log Period  ", 00:01:00
"Number      ", 444
"CalFactor   ", 1.000000
"Unit        ", 0
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"TEMPUNITS   ", C
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"Max MASS  @ ", 128  ,09:48:17  ,16-Dec-2015
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"Max Diam    ", 1.511573
"Max Diam @  ", 432  ,14:52:17  ,16-Dec-2015
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"AUTO_ZERO   ", "DISABLED"
"AZ INTERVAL ", 1
"Errors      ", 0000
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     3,       20.9, -12.9,    0,   0.5715  ,07:43:17  ,16-Dec-2015
     4,       20.8, -13.1,    0,   0.5892  ,07:44:17  ,16-Dec-2015
     5,       25.4, -12.9,    0,   0.6570  ,07:45:17  ,16-Dec-2015
     6,       28.4, -12.7,    0,   0.7188  ,07:46:17  ,16-Dec-2015
     7,       30.1, -12.7,    0,   0.7011  ,07:47:17  ,16-Dec-2015
     8,       25.7, -12.9,    0,   0.7060  ,07:48:17  ,16-Dec-2015
     9,       23.9, -13.0,    0,   0.6704  ,07:49:17  ,16-Dec-2015
    10,       33.3, -12.6,    0,   0.6763  ,07:50:17  ,16-Dec-2015
    11,       34.2, -12.7,    0,   0.8408  ,07:51:17  ,16-Dec-2015
    12,       26.8, -12.9,    0,   0.6475  ,07:52:17  ,16-Dec-2015
    13,       26.7, -12.8,    0,   0.6313  ,07:53:17  ,16-Dec-2015
    14,       21.7, -13.1,    0,   0.5901  ,07:54:17  ,16-Dec-2015
    15,       28.7, -12.8,    0,   0.7025  ,07:55:17  ,16-Dec-2015
    16,       26.3, -12.9,    0,   0.6950  ,07:56:17  ,16-Dec-2015
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    18,       22.8, -13.0,    0,   0.5669  ,07:58:17  ,16-Dec-2015
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    22,       28.5, -12.7,    0,   0.6312  ,08:02:17  ,16-Dec-2015
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    24,       37.4, -12.4,    0,   0.8556  ,08:04:17  ,16-Dec-2015
    25,       29.0, -12.8,    0,   0.7499  ,08:05:17  ,16-Dec-2015
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    27,       28.4, -12.7,    0,   0.6661  ,08:07:17  ,16-Dec-2015
    28,       31.8, -12.6,    0,   0.7117  ,08:08:17  ,16-Dec-2015
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    37,       37.5, -12.3,    0,   0.7079  ,08:17:17  ,16-Dec-2015
    38,       28.6, -12.7,    0,   0.6499  ,08:18:17  ,16-Dec-2015
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| 39, | 26.2, | -12.9, | 0, | 0.6155 | ,08:19:17 | ,16-Dec-2015 |
| 40, | 26.4, | -12.8, | 0, | 0.6317 | ,08:20:17 | ,16-Dec-2015 |
| 41, | 26.4, | -12.9, | 0, | 0.6307 | ,08:21:17 | ,16-Dec-2015 |
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| 61, | 28.5, | -12.8, | 0, | 0.7053 | ,08:41:17 | ,16-Dec-2015 |
| 62, | 31.0, | -12.8, | 0, | 0.7353 | ,08:42:17 | ,16-Dec-2015 |
| 63, | 30.1, | -12.7, | 0, | 0.7417 | ,08:43:17 | ,16-Dec-2015 |
| 64, | 32.7, | -12.6, | 0, | 0.6960 | ,08:44:17 | ,16-Dec-2015 |
| 65, | 30.5, | -12.7, | 0, | 0.7325 | ,08:45:17 | ,16-Dec-2015 |
| 66, | 28.8, | -12.9, | 0, | 0.7084 | ,08:46:17 | ,16-Dec-2015 |
| 67, | 34.2, | -12.7, | 0, | 0.8471 | ,08:47:17 | ,16-Dec-2015 |
| 68, | 31.7, | -12.8, | 0, | 0.7852 | ,08:48:17 | ,16-Dec-2015 |
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| 71, | 33.2, | -12.6, | 0, | 0.7121 | ,08:51:17 | ,16-Dec-2015 |
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| 83, | 39.1, | -12.2, | 0, | 0.5794 | ,09:03:17 | ,16-Dec-2015 |
| 84, | 33.8, | -12.5, | 0, | 0.6648 | ,09:04:17 | ,16-Dec-2015 |
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| 88, | 28.7, | -12.8, | 0, | 0.6717 | ,09:08:17 | ,16-Dec-2015 |
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    27,        9.1, -14.3,    0,   1.1769  ,08:06:59  ,17-Dec-2015
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    38,        4.6, -14.6,    0,   0.7283  ,08:17:59  ,17-Dec-2015
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354,       23.8, -13.9,    0,   4.1270  ,13:26:48  ,18-Dec-2015
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381,       20.3, -13.8,    0,   1.6711  ,13:53:48  ,18-Dec-2015
382,       13.3, -14.1,    0,   2.3964  ,13:54:48  ,18-Dec-2015
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"Tag Number  ", 83
"Start Time  ", 07:34:53
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"Number      ", 199
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    18,       32.4, -12.9,    0,   0.7165  ,07:52:53  ,22-Dec-2015
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    38,       38.3, -12.7,    0,   0.7960  ,08:12:53  ,22-Dec-2015
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| 41, | 41.8, | -12.5, | 0, | 0.7827 | ,08:15:53 | ,22-Dec-2015 |
| 42, | 40.8, | -12.4, | 0, | 0.7470 | ,08:16:53 | ,22-Dec-2015 |
| 43, | 43.6, | -12.2, | 0, | 0.8045 | ,08:17:53 | ,22-Dec-2015 |
| 44, | 44.4, | -12.3, | 0, | 0.7831 | ,08:18:53 | ,22-Dec-2015 |
| 45, | 44.7, | -12.2, | 0, | 0.7343 | ,08:19:53 | ,22-Dec-2015 |
| 46, | 49.6, | -12.0, | 0, | 0.7442 | ,08:20:53 | ,22-Dec-2015 |
| 47, | 46.5, | -12.3, | 0, | 0.8722 | ,08:21:53 | ,22-Dec-2015 |
| 48, | 44.0, | -12.3, | 0, | 0.8614 | ,08:22:53 | ,22-Dec-2015 |
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| 54, | 39.4, | -12.6, | 0, | 0.7898 | ,08:28:53 | ,22-Dec-2015 |
| 55, | 41.5, | -12.5, | 0, | 0.9829 | ,08:29:53 | ,22-Dec-2015 |
| 56, | 39.8, | -12.8, | 0, | 0.9689 | ,08:30:53 | ,22-Dec-2015 |
| 57, | 37.8, | -12.7, | 0, | 0.8691 | ,08:31:53 | ,22-Dec-2015 |
| 58, | 38.4, | -12.8, | 0, | 0.8554 | ,08:32:53 | ,22-Dec-2015 |
| 59, | 36.9, | -12.8, | 0, | 0.7737 | ,08:33:53 | ,22-Dec-2015 |
| 60, | 36.9, | -12.8, | 0, | 0.8583 | ,08:34:53 | ,22-Dec-2015 |
| 61, | 39.4, | -12.7, | 0, | 0.8473 | ,08:35:53 | ,22-Dec-2015 |
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| 63, | 37.2, | -12.7, | 0, | 0.7506 | ,08:37:53 | ,22-Dec-2015 |
| 64, | 38.3, | -12.7, | 0, | 0.7872 | ,08:38:53 | ,22-Dec-2015 |
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| 69, | 42.7, | -12.5, | 0, | 0.8291 | ,08:43:53 | ,22-Dec-2015 |
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| 71, | 44.6, | -12.4, | 0, | 0.8274 | ,08:45:53 | ,22-Dec-2015 |
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| 73, | 45.3, | -12.3, | 0, | 0.8211 | ,08:47:53 | ,22-Dec-2015 |
| 74, | 48.6, | -12.3, | 0, | 0.8954 | ,08:48:53 | ,22-Dec-2015 |
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| 83, | 53.7, | -11.8, | 0, | 0.8910 | ,08:57:53 | ,22-Dec-2015 |
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| 114, | 42.9, | -12.4, | 0, | 0.8625 | ,09:28:53 | ,22-Dec-2015 |
| 115, | 41.9, | -12.5, | 0, | 0.8250 | ,09:29:53 | ,22-Dec-2015 |
| 116, | 42.2, | -12.6, | 0, | 0.8675 | ,09:30:53 | ,22-Dec-2015 |
| 117, | 44.2, | -12.4, | 0, | 0.8955 | ,09:31:53 | ,22-Dec-2015 |
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| 144, | 37.3, | -12.8, | 0, | 0.8298 | ,09:58:53 | ,22-Dec-2015 |
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186,        41.3, -12.3,    0,   0.5588  ,10:40:53  ,22-Dec-2015
187,        40.6, -12.4,    0,   0.6018  ,10:41:53  ,22-Dec-2015
188,        41.1, -12.2,    0,   0.6048  ,10:42:53  ,22-Dec-2015
189,        41.2, -12.3,    0,   0.5881  ,10:43:53  ,22-Dec-2015
190,        38.6, -12.5,    0,   0.5872  ,10:44:53  ,22-Dec-2015
191,        37.2, -12.6,    0,   0.5937  ,10:45:53  ,22-Dec-2015
192,        36.2, -12.6,    0,   0.6118  ,10:46:53  ,22-Dec-2015
193,        36.4, -12.7,    0,   0.6607  ,10:47:53  ,22-Dec-2015
194,        29.3, -13.1,    0,   0.6476  ,10:48:53  ,22-Dec-2015
195,        27.4, -13.2,    0,   0.7479  ,10:49:53  ,22-Dec-2015
196,        29.6, -13.2,    0,   0.7717  ,10:50:53  ,22-Dec-2015
197,        29.2, -13.2,    0,   0.8508  ,10:51:53  ,22-Dec-2015
198,        30.2, -13.3,    0,   1.0153  ,10:52:53  ,22-Dec-2015
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"Start Date  ", 23-Dec-2015
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"TEMPUNITS   ", C
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"Max MASS  @ ", 142  ,10:00:16  ,23-Dec-2015
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| 40, | 53.7, | -12.0, | 0, | 1.1024 | ,08:18:16 | ,23-Dec-2015 |
| 41, | 53.8, | -12.0, | 0, | 1.1512 | ,08:19:16 | ,23-Dec-2015 |
| 42, | 52.2, | -12.1, | 0, | 1.0940 | ,08:20:16 | ,23-Dec-2015 |
| 43, | 53.4, | -12.0, | 0, | 1.1606 | ,08:21:16 | ,23-Dec-2015 |
| 44, | 54.2, | -12.0, | 0, | 1.1469 | ,08:22:16 | ,23-Dec-2015 |
| 45, | 53.0, | -12.0, | 0, | 1.1452 | ,08:23:16 | ,23-Dec-2015 |
| 46, | 54.9, | -12.0, | 0, | 1.1358 | ,08:24:16 | ,23-Dec-2015 |
| 47, | 54.1, | -12.0, | 0, | 1.1461 | ,08:25:16 | ,23-Dec-2015 |
| 48, | 53.6, | -12.0, | 0, | 1.0788 | ,08:26:16 | ,23-Dec-2015 |
| 49, | 54.2, | -12.0, | 0, | 1.1199 | ,08:27:16 | ,23-Dec-2015 |
| 50, | 56.5, | -11.9, | 0, | 1.1417 | ,08:28:16 | ,23-Dec-2015 |
| 51, | 56.0, | -11.8, | 0, | 1.0759 | ,08:29:16 | ,23-Dec-2015 |
| 52, | 55.9, | -11.9, | 0, | 1.1798 | ,08:30:16 | ,23-Dec-2015 |
| 53, | 57.4, | -11.8, | 0, | 1.1070 | ,08:31:16 | ,23-Dec-2015 |
| 54, | 58.3, | -11.7, | 0, | 1.0847 | ,08:32:16 | ,23-Dec-2015 |
| 55, | 57.1, | -11.8, | 0, | 1.0910 | ,08:33:16 | ,23-Dec-2015 |
| 56, | 57.7, | -11.8, | 0, | 1.1843 | ,08:34:16 | ,23-Dec-2015 |
| 57, | 57.5, | -11.8, | 0, | 1.0913 | ,08:35:16 | ,23-Dec-2015 |
| 58, | 58.9, | -11.6, | 0, | 1.0398 | ,08:36:16 | ,23-Dec-2015 |
| 59, | 59.3, | -11.7, | 0, | 1.1154 | ,08:37:16 | ,23-Dec-2015 |
| 60, | 60.4, | -11.7, | 0, | 1.2250 | ,08:38:16 | ,23-Dec-2015 |
| 61, | 59.9, | -11.7, | 0, | 1.2235 | ,08:39:16 | ,23-Dec-2015 |
| 62, | 63.8, | -11.5, | 0, | 1.1227 | ,08:40:16 | ,23-Dec-2015 |
| 63, | 62.7, | -11.4, | 0, | 1.0621 | ,08:41:16 | ,23-Dec-2015 |
| 64, | 63.0, | -11.4, | 0, | 1.0767 | ,08:42:16 | ,23-Dec-2015 |
| 65, | 65.0, | -11.5, | 0, | 1.1722 | ,08:43:16 | ,23-Dec-2015 |
| 66, | 70.4, | -11.1, | 0, | 1.1513 | ,08:44:16 | ,23-Dec-2015 |
| 67, | 69.1, | -11.2, | 0, | 1.1883 | ,08:45:16 | ,23-Dec-2015 |
| 68, | 69.0, | -11.1, | 0, | 0.9604 | ,08:46:16 | ,23-Dec-2015 |
| 69, | 70.7, | -11.3, | 0, | 1.2233 | ,08:47:16 | ,23-Dec-2015 |
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| 71, | 75.9, | -11.1, | 0, | 1.4332 | ,08:49:16 | ,23-Dec-2015 |
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| 74, | 78.5, | -11.0, | 0, | 1.2446 | ,08:52:16 | ,23-Dec-2015 |
| 75, | 78.9, | -10.9, | 0, | 1.2684 | ,08:53:16 | ,23-Dec-2015 |
| 76, | 79.0, | -10.7, | 0, | 1.2576 | ,08:54:16 | ,23-Dec-2015 |
| 77, | 78.8, | -10.8, | 0, | 1.2202 | ,08:55:16 | ,23-Dec-2015 |
| 78, | 79.5, | -10.8, | 0, | 1.2812 | ,08:56:16 | ,23-Dec-2015 |
| 79, | 79.5, | -10.7, | 0, | 1.1741 | ,08:57:16 | ,23-Dec-2015 |
| 80, | 79.6, | -10.7, | 0, | 1.1609 | ,08:58:16 | ,23-Dec-2015 |
| 81, | 81.5, | -10.7, | 0, | 1.2684 | ,08:59:16 | ,23-Dec-2015 |
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| 83, | 80.7, | -10.8, | 0, | 1.3670 | ,09:01:16 | ,23-Dec-2015 |
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| 86, | 77.3, | -10.9, | 0, | 1.3206 | ,09:04:16 | ,23-Dec-2015 |
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| 89, | 74.6, | -11.0, | 0, | 1.2738 | ,09:07:16 | ,23-Dec-2015 |
| 90, | 73.7, | -11.1, | 0, | 1.4215 | ,09:08:16 | ,23-Dec-2015 |
| 91, | 80.1, | -10.9, | 0, | 1.4747 | ,09:09:16 | ,23-Dec-2015 |
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| 101, | 71.3, | -11.2, | 0, | 1.2425 | ,09:19:16 | ,23-Dec-2015 |

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| 104, | 76.3, | -11.0, | 0, | 1.2983 | ,09:22:16 | ,23-Dec-2015 |
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| 112, | 82.4, | -10.7, | 0, | 1.2944 | ,09:30:16 | ,23-Dec-2015 |
| 113, | 82.8, | -10.7, | 0, | 1.3137 | ,09:31:16 | ,23-Dec-2015 |
| 114, | 83.9, | -10.6, | 0, | 1.3571 | ,09:32:16 | ,23-Dec-2015 |
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| 119, | 84.9, | -10.6, | 0, | 1.3638 | ,09:37:16 | ,23-Dec-2015 |
| 120, | 84.2, | -10.6, | 0, | 1.2307 | ,09:38:16 | ,23-Dec-2015 |
| 121, | 83.2, | -10.6, | 0, | 1.2815 | ,09:39:16 | ,23-Dec-2015 |
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| 123, | 85.7, | -10.6, | 0, | 1.3439 | ,09:41:16 | ,23-Dec-2015 |
| 124, | 84.9, | -10.5, | 0, | 1.2682 | ,09:42:16 | ,23-Dec-2015 |
| 125, | 85.3, | -10.5, | 0, | 1.3190 | ,09:43:16 | ,23-Dec-2015 |
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| 140, | 94.9, | -10.2, | 0, | 1.4517 | ,09:58:16 | ,23-Dec-2015 |
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| 143, | 94.0, | -10.3, | 0, | 1.5139 | ,10:01:16 | ,23-Dec-2015 |
| 144, | 92.7, | -10.4, | 0, | 1.4970 | ,10:02:16 | ,23-Dec-2015 |
| 145, | 92.9, | -10.3, | 0, | 1.4548 | ,10:03:16 | ,23-Dec-2015 |
| 146, | 92.3, | -10.3, | 0, | 1.5017 | ,10:04:16 | ,23-Dec-2015 |
| 147, | 90.6, | -10.3, | 0, | 1.4332 | ,10:05:16 | ,23-Dec-2015 |
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| 153, | 84.6, | -10.6, | 0, | 1.4372 | ,10:11:16 | ,23-Dec-2015 |
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| 158, | 85.2, | -10.6, | 0, | 1.5849 | ,10:16:16 | ,23-Dec-2015 |
| 159, | 88.5, | -10.5, | 0, | 1.5671 | ,10:17:16 | ,23-Dec-2015 |
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| 161, | 82.0, | -10.8, | 0, | 1.5846 | ,10:19:16 | ,23-Dec-2015 |
| 162, | 81.9, | -10.8, | 0, | 1.5707 | ,10:20:16 | ,23-Dec-2015 |
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| 164, | 80.0, | -10.8, | 0, | 1.4731 | ,10:22:16 | ,23-Dec-2015 |

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| 166, | 79.0, | -10.9, | 0, | 1.5305 | ,10:24:16 | ,23-Dec-2015 |
| 167, | 78.4, | -10.9, | 0, | 1.3311 | ,10:25:16 | ,23-Dec-2015 |
| 168, | 76.5, | -11.0, | 0, | 1.3480 | ,10:26:16 | ,23-Dec-2015 |
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| 171, | 75.2, | -11.1, | 0, | 1.4540 | ,10:29:16 | ,23-Dec-2015 |
| 172, | 75.4, | -11.1, | 0, | 1.4982 | ,10:30:16 | ,23-Dec-2015 |
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| 174, | 75.1, | -11.1, | 0, | 1.3335 | ,10:32:16 | ,23-Dec-2015 |
| 175, | 75.2, | -11.1, | 0, | 1.2959 | ,10:33:16 | ,23-Dec-2015 |
| 176, | 74.6, | -11.1, | 0, | 1.3405 | ,10:34:16 | ,23-Dec-2015 |
| 177, | 75.2, | -11.1, | 0, | 1.4517 | ,10:35:16 | ,23-Dec-2015 |
| 178, | 81.9, | -10.9, | 0, | 1.5569 | ,10:36:16 | ,23-Dec-2015 |
| 179, | 79.3, | -11.0, | 0, | 1.6811 | ,10:37:16 | ,23-Dec-2015 |
| 180, | 77.3, | -10.9, | 0, | 1.4911 | ,10:38:16 | ,23-Dec-2015 |
| 181, | 73.6, | -11.1, | 0, | 1.3633 | ,10:39:16 | ,23-Dec-2015 |
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| 183, | 74.9, | -11.0, | 0, | 1.4178 | ,10:41:16 | ,23-Dec-2015 |
| 184, | 74.0, | -11.1, | 0, | 1.3521 | ,10:42:16 | ,23-Dec-2015 |
| 185, | 72.7, | -11.0, | 0, | 1.2960 | ,10:43:16 | ,23-Dec-2015 |
| 186, | 68.7, | -11.3, | 0, | 1.2966 | ,10:44:16 | ,23-Dec-2015 |
| 187, | 68.6, | -11.3, | 0, | 1.2584 | ,10:45:16 | ,23-Dec-2015 |
| 188, | 70.1, | -11.3, | 0, | 1.2698 | ,10:46:16 | ,23-Dec-2015 |
| 189, | 69.8, | -11.3, | 0, | 1.2884 | ,10:47:16 | ,23-Dec-2015 |
| 190, | 69.5, | -11.3, | 0, | 1.3432 | ,10:48:16 | ,23-Dec-2015 |
| 191, | 67.8, | -11.3, | 0, | 1.2080 | ,10:49:16 | ,23-Dec-2015 |
| 192, | 67.0, | -11.4, | 0, | 1.2619 | ,10:50:16 | ,23-Dec-2015 |
| 193, | 67.5, | -11.3, | 0, | 1.2122 | ,10:51:16 | ,23-Dec-2015 |
| 194, | 68.1, | -11.4, | 0, | 1.2873 | ,10:52:16 | ,23-Dec-2015 |
| 195, | 64.3, | -11.5, | 0, | 1.2741 | ,10:53:16 | ,23-Dec-2015 |
| 196, | 71.0, | -11.3, | 0, | 1.5139 | ,10:54:16 | ,23-Dec-2015 |
| 197, | 70.2, | -11.3, | 0, | 1.4812 | ,10:55:16 | ,23-Dec-2015 |
| 198, | 67.5, | -11.3, | 0, | 1.1783 | ,10:56:16 | ,23-Dec-2015 |
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| 200, | 77.1, | -10.9, | 0, | 1.4881 | ,10:58:16 | ,23-Dec-2015 |
| 201, | 81.2, | -10.7, | 0, | 1.3821 | ,10:59:16 | ,23-Dec-2015 |
| 202, | 84.9, | -10.7, | 0, | 1.4243 | ,11:00:16 | ,23-Dec-2015 |
| 203, | 66.5, | -11.6, | 0, | 1.6015 | ,11:01:16 | ,23-Dec-2015 |
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"Serial no.  ", "D232      "
"Device no.  ", 1
"Tag Number  ", 85
"Start Time  ", 07:32:33
"Start Date  ", 29-Dec-2015
"Log Period  ", 00:01:00
"Number      ", 448
"CalFactor   ", 1.000000
"Unit        ", 0
"Unit Name   ", "(MASS )ug/m3"
"SIZE_CORRECT", "DISABLED"
"TEMPUNITS   ", C
"Max MASS    ", 30.442980
"Max MASS  @ ", 122  ,09:34:33  ,29-Dec-2015
"Avg MASS    ", 18.304040
"Max Diam    ", 0.835196
"Max Diam @  ", 151  ,10:03:33  ,29-Dec-2015
"Avg Diam    ", 0.553731
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"ALARM_LEVEL ", 812.0
"AUTO_ZERO   ", "DISABLED"
"AZ INTERVAL ", 1
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     1,       17.9, -13.7,    0,   0.6300  ,07:33:33  ,29-Dec-2015
     2,       14.3, -13.9,    0,   0.5732  ,07:34:33  ,29-Dec-2015
     3,       15.1, -13.9,    0,   0.6982  ,07:35:33  ,29-Dec-2015
     4,       10.8, -14.1,    0,   0.6382  ,07:36:33  ,29-Dec-2015
     5,       11.4, -14.1,    0,   0.5012  ,07:37:33  ,29-Dec-2015
     6,       13.0, -14.1,    0,   0.6698  ,07:38:33  ,29-Dec-2015
     7,       15.0, -14.1,    0,   0.7309  ,07:39:33  ,29-Dec-2015
     8,       12.5, -14.0,    0,   0.5464  ,07:40:33  ,29-Dec-2015
     9,       12.5, -14.1,    0,   0.5887  ,07:41:33  ,29-Dec-2015
    10,       18.5, -13.7,    0,   0.6839  ,07:42:33  ,29-Dec-2015
    11,       11.9, -14.0,    0,   0.5083  ,07:43:33  ,29-Dec-2015
    12,       12.2, -14.0,    0,   0.5533  ,07:44:33  ,29-Dec-2015
    13,       12.7, -14.0,    0,   0.5262  ,07:45:33  ,29-Dec-2015
    14,       14.2, -14.0,    0,   0.5736  ,07:46:33  ,29-Dec-2015
    15,       13.9, -13.9,    0,   0.5672  ,07:47:33  ,29-Dec-2015
    16,       12.9, -14.0,    0,   0.5505  ,07:48:33  ,29-Dec-2015
    17,       12.6, -14.0,    0,   0.4618  ,07:49:33  ,29-Dec-2015
    18,       11.9, -14.0,    0,   0.4204  ,07:50:33  ,29-Dec-2015
    19,       12.4, -14.0,    0,   0.4375  ,07:51:33  ,29-Dec-2015
    20,       12.9, -14.0,    0,   0.4654  ,07:52:33  ,29-Dec-2015
    21,       13.4, -13.9,    0,   0.4841  ,07:53:33  ,29-Dec-2015
    22,       13.7, -13.9,    0,   0.4654  ,07:54:33  ,29-Dec-2015
    23,       13.3, -13.9,    0,   0.4535  ,07:55:33  ,29-Dec-2015
    24,       13.8, -13.9,    0,   0.4482  ,07:56:33  ,29-Dec-2015
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    26,       15.5, -13.8,    0,   0.4485  ,07:58:33  ,29-Dec-2015
    27,       14.6, -13.9,    0,   0.5011  ,07:59:33  ,29-Dec-2015
    28,       14.1, -13.8,    0,   0.4128  ,08:00:33  ,29-Dec-2015
    29,       13.5, -13.9,    0,   0.4224  ,08:01:33  ,29-Dec-2015
    30,       14.2, -13.9,    0,   0.4737  ,08:02:33  ,29-Dec-2015
    31,       15.0, -13.8,    0,   0.4619  ,08:03:33  ,29-Dec-2015
    32,       14.5, -13.8,    0,   0.4147  ,08:04:33  ,29-Dec-2015
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    35,       17.5, -13.6,    0,   0.5068  ,08:07:33  ,29-Dec-2015
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    37,       15.9, -13.8,    0,   0.4717  ,08:09:33  ,29-Dec-2015
    38,       19.2, -13.5,    0,   0.4372  ,08:10:33  ,29-Dec-2015
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| Serial no. | "0115248028" | |
| Tag Numbe | 1 | |
| Start Time | 07:10:00 | |
| Start Date | 18-Nov-2015 | |
| Log Period | 00:01:00 | |
| Number | 39 | |
| CalFactor | 1 | |
| Unit | 0 | |
| Unit Name | "ug/m3" | |
| TEMPUNIT | C | |
| RH CORRE( | "DISABLED" | |
| Max Disp | 14.26503 | |
| Max Disp @ | 07:29:08 | 18-Nov-2015 |
| Max STEL | 4.778433 | |
| Max STEL ( | 07:34:00 | 18-Nov-2015 |
| Avg point | 3.768127 | |
| ALARM | "DISABLED" | |
| ALARM_LE | 0 | |
| Errors | 0 | |
| Inlet Type | "TOTAL " | |
| FlowRate | 2 | |
| 50% AED | -1 | |
| Site Name | "Factory default" | |

| record | "ug/m3" | Temp | RHumidity | AtmoPres | Flags | | |
|---|---|---|---|---|---|---|---|
| 1 | 3.44 | 16.1 | 58 | 736 | 1 | 07:11:00 | 18-Nov-2015 |
| 2 | 4.6 | 16.1 | 64 | 736 | 0 | 07:12:00 | 18-Nov-2015 |
| 3 | 3.26 | 16.1 | 64 | 736 | 0 | 07:13:00 | 18-Nov-2015 |
| 4 | 3.51 | 16 | 65 | 736 | 0 | 07:14:00 | 18-Nov-2015 |
| 5 | 3.63 | 16 | 65 | 736 | 0 | 07:15:00 | 18-Nov-2015 |
| 6 | 3.71 | 15.9 | 66 | 734 | 0 | 07:16:00 | 18-Nov-2015 |
| 7 | 4.52 | 15.9 | 66 | 736 | 0 | 07:17:00 | 18-Nov-2015 |
| 8 | 3.7 | 15.9 | 66 | 734 | 0 | 07:18:00 | 18-Nov-2015 |
| 9 | 4.47 | 15.8 | 66 | 734 | 0 | 07:19:00 | 18-Nov-2015 |
| 10 | 4.81 | 15.8 | 66 | 734 | 0 | 07:20:00 | 18-Nov-2015 |
| 11 | 3.82 | 15.8 | 67 | 736 | 0 | 07:21:00 | 18-Nov-2015 |
| 12 | 3.86 | 15.7 | 67 | 736 | 0 | 07:22:00 | 18-Nov-2015 |
| 13 | 4.06 | 15.7 | 67 | 736 | 0 | 07:23:00 | 18-Nov-2015 |
| 14 | 5.75 | 15.6 | 68 | 734 | 0 | 07:24:00 | 18-Nov-2015 |
| 15 | 4.31 | 15.6 | 68 | 736 | 0 | 07:25:00 | 18-Nov-2015 |
| 16 | 5.14 | 15.6 | 68 | 736 | 0 | 07:26:00 | 18-Nov-2015 |
| 17 | 5.24 | 15.5 | 68 | 736 | 0 | 07:27:00 | 18-Nov-2015 |
| 18 | 4.35 | 15.4 | 68 | 736 | 0 | 07:28:00 | 18-Nov-2015 |
| 19 | 5.11 | 15.4 | 68 | 736 | 0 | 07:29:00 | 18-Nov-2015 |
| 20 | 7.1 | 15.3 | 69 | 736 | 3 | 07:30:00 | 18-Nov-2015 |
| 21 | 3.87 | 15.2 | 70 | 736 | 1 | 07:31:00 | 18-Nov-2015 |
| 22 | 4.63 | 15.1 | 70 | 736 | 0 | 07:32:00 | 18-Nov-2015 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 23 | 4.38 | 15.1 | 70 | 736 | 0 | 07:33:00 | 18-Nov-2015 |
| 24 | 5.25 | 15 | 70 | 736 | 0 | 07:34:00 | 18-Nov-2015 |
| 25 | 2.62 | 15 | 71 | 736 | 0 | 07:35:00 | 18-Nov-2015 |
| 26 | 2.42 | 14.9 | 66 | 736 | 0 | 07:36:00 | 18-Nov-2015 |
| 27 | 2.59 | 14.9 | 66 | 736 | 0 | 07:37:00 | 18-Nov-2015 |
| 28 | 2.55 | 14.9 | 67 | 736 | 0 | 07:38:00 | 18-Nov-2015 |
| 29 | 2.58 | 14.9 | 67 | 736 | 0 | 07:39:00 | 18-Nov-2015 |
| 30 | 2.54 | 15 | 67 | 736 | 0 | 07:40:00 | 18-Nov-2015 |
| 31 | 2.52 | 15 | 67 | 736 | 0 | 07:41:00 | 18-Nov-2015 |
| 32 | 2.46 | 15 | 67 | 736 | 0 | 07:42:00 | 18-Nov-2015 |
| 33 | 2.37 | 15.1 | 67 | 736 | 0 | 07:43:00 | 18-Nov-2015 |
| 34 | 2.43 | 15.1 | 67 | 736 | 0 | 07:44:00 | 18-Nov-2015 |
| 35 | 2.51 | 15.1 | 67 | 736 | 0 | 07:45:00 | 18-Nov-2015 |
| 36 | 2.42 | 15.1 | 67 | 736 | 0 | 07:46:00 | 18-Nov-2015 |
| 37 | 2.31 | 15.2 | 67 | 736 | 0 | 07:47:00 | 18-Nov-2015 |
| 38 | 4.12 | 15.2 | 67 | 736 | 0 | 07:48:00 | 18-Nov-2015 |
| 39 | 4 | 15.3 | 70 | 736 | 0 | 07:49:00 | 18-Nov-2015 |

| | | |
|---|---|---|
| >"Model N | "PDR-150( | 1.34 |
| Serial no. | "0115248028" | |
| Tag Numbe | 2 | |
| Start Time | 08:01:13 | |
| Start Date | 18-Nov-2015 | |
| Log Period | 00:05:00 | |
| Number | 32 | |
| CalFactor | 1 | |
| Unit | 0 | |
| Unit Name | "ug/m3" | |
| TEMPUNIT | C | |
| RH CORRE( | "DISABLED" | |
| Max Disp | 147.0086 | |
| Max Disp @ | 08:28:30 | 18-Nov-2015 |
| Max STEL | 15.01463 | |
| Max STEL ( | 08:35:13 | 18-Nov-2015 |
| Avg point | 7.78548 | |
| ALARM | "INSTANT " | |
| ALARM_LE | 3.19 | |
| Errors | 0 | |
| Inlet Type | "RED CYCLONE " | |
| FlowRate | 2 | |
| 50% AED | 5.521563 | |
| Site Name | "Factory default" | |

| record | "ug/m3" | Temp | RHumidity | AtmoPres | Flags | | |
|---|---|---|---|---|---|---|---|
| 1 | 4.06 | 14.4 | 72 | 736 | 0 | 08:06:13 | 18-Nov-2015 |
| 2 | 3.77 | 14.4 | 74 | 736 | 0 | 08:11:13 | 18-Nov-2015 |
| 3 | 3.71 | 14.5 | 76 | 736 | 0 | 08:16:13 | 18-Nov-2015 |
| 4 | 5.53 | 14.6 | 78 | 736 | 0 | 08:21:13 | 18-Nov-2015 |
| 5 | 8.16 | 14.6 | 80 | 736 | 0 | 08:26:13 | 18-Nov-2015 |
| 6 | 30.74 | 14.6 | 81 | 736 | 1 | 08:31:13 | 18-Nov-2015 |
| 7 | 5.23 | 14.6 | 81 | 736 | 0 | 08:36:13 | 18-Nov-2015 |
| 8 | 4.82 | 14.6 | 79 | 736 | 0 | 08:41:13 | 18-Nov-2015 |
| 9 | 5.96 | 14.6 | 76 | 736 | 0 | 08:46:13 | 18-Nov-2015 |
| 10 | 4.48 | 14.5 | 77 | 736 | 0 | 08:51:13 | 18-Nov-2015 |
| 11 | 4.1 | 14.5 | 80 | 736 | 0 | 08:56:13 | 18-Nov-2015 |
| 12 | 6.11 | 14.5 | 77 | 736 | 0 | 09:01:13 | 18-Nov-2015 |
| 13 | 17.27 | 14.5 | 78 | 736 | 0 | 09:06:13 | 18-Nov-2015 |
| 14 | 4.74 | 14.5 | 80 | 736 | 0 | 09:11:13 | 18-Nov-2015 |
| 15 | 3.63 | 14.5 | 75 | 734 | 0 | 09:16:13 | 18-Nov-2015 |
| 16 | 7.93 | 14.5 | 73 | 734 | 0 | 09:21:13 | 18-Nov-2015 |
| 17 | 11.23 | 14.6 | 73 | 734 | 0 | 09:26:13 | 18-Nov-2015 |
| 18 | 7.75 | 14.6 | 71 | 734 | 0 | 09:31:13 | 18-Nov-2015 |
| 19 | 8.04 | 14.6 | 67 | 736 | 0 | 09:36:13 | 18-Nov-2015 |
| 20 | 12.52 | 14.6 | 64 | 736 | 0 | 09:41:13 | 18-Nov-2015 |
| 21 | 15.31 | 14.5 | 63 | 736 | 0 | 09:46:13 | 18-Nov-2015 |
| 22 | 7.8 | 14.5 | 62 | 734 | 0 | 09:51:13 | 18-Nov-2015 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 23 | 4.52 | 14.4 | 62 | 734 | 0 | 09:56:13 | 18-Nov-2015 |
| 24 | 4.34 | 14.4 | 62 | 736 | 0 | 10:01:13 | 18-Nov-2015 |
| 25 | 3.76 | 14.4 | 60 | 734 | 0 | 10:06:13 | 18-Nov-2015 |
| 26 | 4.43 | 14.4 | 60 | 734 | 0 | 10:11:13 | 18-Nov-2015 |
| 27 | 5.16 | 14.4 | 61 | 734 | 0 | 10:16:13 | 18-Nov-2015 |
| 28 | 5.14 | 14.4 | 60 | 734 | 0 | 10:21:13 | 18-Nov-2015 |
| 29 | 14.91 | 14.4 | 59 | 734 | 0 | 10:26:13 | 18-Nov-2015 |
| 30 | 11.25 | 14.5 | 57 | 734 | 0 | 10:31:13 | 18-Nov-2015 |
| 31 | 6.61 | 14.5 | 58 | 734 | 0 | 10:36:13 | 18-Nov-2015 |
| 32 | 6.09 | 14.5 | 58 | 734 | 0 | 10:41:13 | 18-Nov-2015 |

| | | |
|---|---|---|
| >"Model N | "PDR-150( | 1.34 |
| Serial no. | "0115248028" | |
| Tag Numbe | 3 | |
| Start Time | 11:56:14 | |
| Start Date | 18-Nov-2015 | |
| Log Period | 00:05:00 | |
| Number | 34 | |
| CalFactor | 1 | |
| Unit | 0 | |
| Unit Name | "ug/m3" | |
| TEMPUNIT | C | |
| RH CORRE( | "DISABLED" | |
| Max Disp | 333.6697 | |
| Max Disp @ | 12:29:53 | 18-Nov-2015 |
| Max STEL | 21.89682 | |
| Max STEL ( | 12:44:14 | 18-Nov-2015 |
| Avg point | 6.876453 | |
| ALARM | "INSTANT " | |
| ALARM_LE | 3.19 | |
| Errors | 0 | |
| Inlet Type | "RED CYCLONE " | |
| FlowRate | 2 | |
| 50% AED | 5.521563 | |
| Site Name | "Factory default" | |

| record | "ug/m3" | Temp | RHumidity | AtmoPres | Flags | | |
|---|---|---|---|---|---|---|---|
| 1 | 9.07 | 18.6 | 44 | 734 | 3 | 12:01:14 | 18-Nov-2015 |
| 2 | 6.49 | 18.8 | 41 | 734 | 3 | 12:06:14 | 18-Nov-2015 |
| 3 | 9.32 | 18.8 | 42 | 734 | 0 | 12:11:14 | 18-Nov-2015 |
| 4 | 4.19 | 18.7 | 40 | 734 | 0 | 12:16:14 | 18-Nov-2015 |
| 5 | 4.67 | 18.5 | 40 | 734 | 0 | 12:21:14 | 18-Nov-2015 |
| 6 | 4.85 | 18.3 | 42 | 734 | 0 | 12:26:14 | 18-Nov-2015 |
| 7 | 38.65 | 18.1 | 46 | 734 | 0 | 12:31:14 | 18-Nov-2015 |
| 8 | 21.84 | 17.9 | 41 | 734 | 0 | 12:36:14 | 18-Nov-2015 |
| 9 | 4.95 | 17.7 | 41 | 734 | 0 | 12:41:14 | 18-Nov-2015 |
| 10 | 4.95 | 17.4 | 43 | 734 | 0 | 12:46:14 | 18-Nov-2015 |
| 11 | 6.65 | 17.1 | 44 | 734 | 0 | 12:51:14 | 18-Nov-2015 |
| 12 | 5.87 | 16.9 | 44 | 734 | 0 | 12:56:14 | 18-Nov-2015 |
| 13 | 5.89 | 16.6 | 44 | 734 | 0 | 13:01:14 | 18-Nov-2015 |
| 14 | 5.45 | 16.4 | 45 | 734 | 0 | 13:06:14 | 18-Nov-2015 |
| 15 | 4.37 | 16.2 | 45 | 734 | 0 | 13:11:14 | 18-Nov-2015 |
| 16 | 3.87 | 16 | 46 | 734 | 0 | 13:16:14 | 18-Nov-2015 |
| 17 | 4.42 | 15.8 | 47 | 734 | 0 | 13:21:14 | 18-Nov-2015 |
| 18 | 4.72 | 15.7 | 47 | 734 | 0 | 13:26:14 | 18-Nov-2015 |
| 19 | 3.83 | 15.5 | 48 | 734 | 0 | 13:31:14 | 18-Nov-2015 |
| 20 | 5.38 | 15.4 | 49 | 734 | 0 | 13:36:14 | 18-Nov-2015 |
| 21 | 5.52 | 15.2 | 49 | 734 | 0 | 13:41:14 | 18-Nov-2015 |
| 22 | 6.82 | 15.1 | 52 | 734 | 0 | 13:46:14 | 18-Nov-2015 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 23 | 4.95 | 15.1 | 50 | 734 | 0 | 13:51:14 | 18-Nov-2015 |
| 24 | 5.53 | 15 | 50 | 734 | 0 | 13:56:14 | 18-Nov-2015 |
| 25 | 4.89 | 14.9 | 58 | 734 | 0 | 14:01:14 | 18-Nov-2015 |
| 26 | 5.98 | 14.9 | 51 | 734 | 0 | 14:06:14 | 18-Nov-2015 |
| 27 | 4.43 | 15 | 50 | 734 | 0 | 14:11:14 | 18-Nov-2015 |
| 28 | 4.19 | 14.9 | 51 | 734 | 0 | 14:16:14 | 18-Nov-2015 |
| 29 | 4.79 | 14.7 | 51 | 734 | 0 | 14:21:14 | 18-Nov-2015 |
| 30 | 4.42 | 14.6 | 52 | 734 | 0 | 14:26:14 | 18-Nov-2015 |
| 31 | 5.76 | 14.5 | 53 | 734 | 0 | 14:31:14 | 18-Nov-2015 |
| 32 | 5.18 | 14.4 | 53 | 734 | 0 | 14:36:14 | 18-Nov-2015 |
| 33 | 5.33 | 14.3 | 53 | 734 | 0 | 14:41:14 | 18-Nov-2015 |
| 34 | 6.58 | 14.2 | 54 | 734 | 0 | 14:46:14 | 18-Nov-2015 |

| | | |
|---|---|---|
| >"Model N | "PDR-150( | 1.34 |
| Serial no. | "0115248028" | |
| Tag Numbe | 5 | |
| Start Time | 06:45:09 | |
| Start Date | 19-Nov-2015 | |
| Log Period | 00:05:00 | |
| Number | 95 | |
| CalFactor | 1 | |
| Unit | 0 | |
| Unit Name | "ug/m3" | |
| TEMPUNIT | C | |
| RH CORRE( | "DISABLED" | |
| Max Disp | 450.0996 | |
| Max Disp @ | 08:06:47 19-Nov-2015 | |
| Max STEL | 45.50715 | |
| Max STEL ( | 08:07:39 19-Nov-2015 | |
| Avg point | 11.48092 | |
| ALARM | "INSTANT " | |
| ALARM_LE | 3.19 | |
| Errors | 0 | |
| Inlet Type | "RED CYCLONE " | |
| FlowRate | 2 | |
| 50% AED | 5.521563 | |
| Site Name | "Factory default" | |

| record | "ug/m3" | Temp | RHumidity | AtmoPres | Flags | | |
|---|---|---|---|---|---|---|---|
| 1 | 14.36 | 15.9 | 30 | 742 | 7 | 06:50:09 | 19-Nov-2015 |
| 2 | 8.41 | 14.7 | 28 | 742 | 0 | 06:55:09 | 19-Nov-2015 |
| 3 | 10.94 | 13.7 | 28 | 744 | 0 | 07:00:09 | 19-Nov-2015 |
| 4 | 9.86 | 12.8 | 30 | 742 | 0 | 07:05:09 | 19-Nov-2015 |
| 5 | 13.43 | 12 | 32 | 744 | 0 | 07:10:09 | 19-Nov-2015 |
| 6 | 13.85 | 11.3 | 33 | 744 | 0 | 07:15:09 | 19-Nov-2015 |
| 7 | 10.91 | 10.7 | 36 | 744 | 0 | 07:20:09 | 19-Nov-2015 |
| 8 | 10.69 | 10.2 | 37 | 744 | 0 | 07:25:09 | 19-Nov-2015 |
| 9 | 15.05 | 9.9 | 38 | 744 | 0 | 07:30:09 | 19-Nov-2015 |
| 10 | 11 | 9.4 | 40 | 744 | 0 | 07:35:09 | 19-Nov-2015 |
| 11 | 10.19 | 9.1 | 39 | 744 | 0 | 07:40:09 | 19-Nov-2015 |
| 12 | 15.84 | 8.9 | 36 | 744 | 0 | 07:45:09 | 19-Nov-2015 |
| 13 | 8.04 | 8.7 | 37 | 744 | 0 | 07:50:09 | 19-Nov-2015 |
| 14 | 23.91 | 8.7 | 35 | 744 | 0 | 07:55:09 | 19-Nov-2015 |
| 15 | 13 | 8.7 | 34 | 744 | 0 | 08:00:09 | 19-Nov-2015 |
| 16 | 51.91 | 8.7 | 35 | 744 | 0 | 08:05:09 | 19-Nov-2015 |
| 17 | 69.73 | 8.7 | 35 | 744 | 0 | 08:10:09 | 19-Nov-2015 |
| 18 | 9.29 | 8.9 | 35 | 744 | 0 | 08:15:09 | 19-Nov-2015 |
| 19 | 37.34 | 9.1 | 34 | 744 | 0 | 08:20:09 | 19-Nov-2015 |
| 20 | 15.88 | 9.2 | 34 | 744 | 0 | 08:25:09 | 19-Nov-2015 |
| 21 | 35.18 | 9.4 | 34 | 744 | 0 | 08:30:09 | 19-Nov-2015 |
| 22 | 15.11 | 9.6 | 32 | 744 | 0 | 08:35:09 | 19-Nov-2015 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 23 | 10.75 | 9.7 | 31 | 744 | 0 | 08:40:09 | 19-Nov-2015 |
| 24 | 15.4 | 9.8 | 31 | 744 | 0 | 08:45:09 | 19-Nov-2015 |
| 25 | 12.59 | 9.7 | 32 | 744 | 0 | 08:50:09 | 19-Nov-2015 |
| 26 | 16.79 | 9.8 | 31 | 744 | 0 | 08:55:09 | 19-Nov-2015 |
| 27 | 19.84 | 9.7 | 30 | 744 | 0 | 09:00:09 | 19-Nov-2015 |
| 28 | 8.56 | 9.5 | 31 | 744 | 0 | 09:05:09 | 19-Nov-2015 |
| 29 | 8.23 | 9.3 | 30 | 744 | 0 | 09:10:09 | 19-Nov-2015 |
| 30 | 8.25 | 9 | 30 | 744 | 0 | 09:15:09 | 19-Nov-2015 |
| 31 | 7.78 | 8.9 | 31 | 744 | 0 | 09:20:09 | 19-Nov-2015 |
| 32 | 8.16 | 8.7 | 30 | 746 | 0 | 09:25:09 | 19-Nov-2015 |
| 33 | 9.27 | 8.5 | 30 | 744 | 0 | 09:30:09 | 19-Nov-2015 |
| 34 | 9.39 | 8.3 | 30 | 744 | 0 | 09:35:09 | 19-Nov-2015 |
| 35 | 21.83 | 8 | 30 | 744 | 0 | 09:40:09 | 19-Nov-2015 |
| 36 | 11.53 | 7.8 | 31 | 744 | 0 | 09:45:09 | 19-Nov-2015 |
| 37 | 10.55 | 7.7 | 32 | 744 | 0 | 09:50:09 | 19-Nov-2015 |
| 38 | 12.55 | 7.7 | 32 | 744 | 0 | 09:55:09 | 19-Nov-2015 |
| 39 | 8.14 | 7.8 | 31 | 744 | 0 | 10:00:09 | 19-Nov-2015 |
| 40 | 10.33 | 7.7 | 31 | 744 | 0 | 10:05:09 | 19-Nov-2015 |
| 41 | 11.29 | 7.6 | 31 | 744 | 0 | 10:10:09 | 19-Nov-2015 |
| 42 | 9.85 | 7.4 | 31 | 744 | 0 | 10:15:09 | 19-Nov-2015 |
| 43 | 13.74 | 7.4 | 30 | 744 | 0 | 10:20:09 | 19-Nov-2015 |
| 44 | 11.15 | 7.3 | 33 | 746 | 0 | 10:25:09 | 19-Nov-2015 |
| 45 | 3.5 | 7.6 | 38 | 744 | 0 | 10:30:09 | 19-Nov-2015 |
| 46 | 2.93 | 7.9 | 40 | 746 | 0 | 10:35:09 | 19-Nov-2015 |
| 47 | 2.4 | 8.2 | 41 | 746 | 0 | 10:40:09 | 19-Nov-2015 |
| 48 | 2.27 | 8.7 | 41 | 746 | 0 | 10:45:09 | 19-Nov-2015 |
| 49 | 2.29 | 9.2 | 41 | 746 | 0 | 10:50:09 | 19-Nov-2015 |
| 50 | 2.4 | 9.7 | 41 | 746 | 0 | 10:55:09 | 19-Nov-2015 |
| 51 | 4.01 | 10.3 | 40 | 746 | 0 | 11:00:09 | 19-Nov-2015 |
| 52 | 3.29 | 10.9 | 41 | 746 | 0 | 11:05:09 | 19-Nov-2015 |
| 53 | 16.34 | 11.6 | 38 | 746 | 0 | 11:10:09 | 19-Nov-2015 |
| 54 | 10.57 | 12.2 | 35 | 746 | 0 | 11:15:09 | 19-Nov-2015 |
| 55 | 5.11 | 12.7 | 34 | 746 | 0 | 11:20:09 | 19-Nov-2015 |
| 56 | 26.78 | 13.1 | 26 | 746 | 3 | 11:25:09 | 19-Nov-2015 |
| 57 | 8.28 | 13.1 | 24 | 746 | 0 | 11:30:09 | 19-Nov-2015 |
| 58 | 7.58 | 12.9 | 23 | 746 | 0 | 11:35:09 | 19-Nov-2015 |
| 59 | 6.37 | 12.4 | 22 | 746 | 0 | 11:40:09 | 19-Nov-2015 |
| 60 | 8.56 | 11.9 | 23 | 746 | 0 | 11:45:09 | 19-Nov-2015 |
| 61 | 6.4 | 11.5 | 23 | 746 | 0 | 11:50:09 | 19-Nov-2015 |
| 62 | 12.61 | 11.2 | 23 | 746 | 0 | 11:55:09 | 19-Nov-2015 |
| 63 | 8.05 | 11 | 21 | 746 | 0 | 12:00:09 | 19-Nov-2015 |
| 64 | 9.74 | 10.5 | 22 | 746 | 0 | 12:05:09 | 19-Nov-2015 |
| 65 | 7.58 | 10.1 | 22 | 746 | 0 | 12:10:09 | 19-Nov-2015 |
| 66 | 8.63 | 9.8 | 23 | 746 | 0 | 12:15:09 | 19-Nov-2015 |
| 67 | 8.25 | 9.5 | 24 | 746 | 0 | 12:20:09 | 19-Nov-2015 |
| 68 | 7.96 | 9.2 | 23 | 746 | 0 | 12:25:09 | 19-Nov-2015 |
| 69 | 5.59 | 9 | 24 | 746 | 0 | 12:30:09 | 19-Nov-2015 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 70 | 7.63 | 8.6 | 25 | 746 | 0 | 12:35:09 | 19-Nov-2015 |
| 71 | 7.14 | 8.3 | 24 | 746 | 0 | 12:40:09 | 19-Nov-2015 |
| 72 | 5.79 | 8.1 | 25 | 746 | 0 | 12:45:09 | 19-Nov-2015 |
| 73 | 5.38 | 8 | 26 | 746 | 0 | 12:50:09 | 19-Nov-2015 |
| 74 | 7.61 | 7.9 | 26 | 746 | 0 | 12:55:09 | 19-Nov-2015 |
| 75 | 7.12 | 7.8 | 26 | 746 | 0 | 13:00:09 | 19-Nov-2015 |
| 76 | 8.48 | 7.7 | 25 | 746 | 0 | 13:05:09 | 19-Nov-2015 |
| 77 | 7.9 | 7.7 | 25 | 746 | 0 | 13:10:09 | 19-Nov-2015 |
| 78 | 9.74 | 7.6 | 25 | 746 | 0 | 13:15:09 | 19-Nov-2015 |
| 79 | 13.91 | 7.5 | 25 | 746 | 0 | 13:20:09 | 19-Nov-2015 |
| 80 | 7.55 | 7.3 | 25 | 746 | 0 | 13:25:09 | 19-Nov-2015 |
| 81 | 5.37 | 7.2 | 25 | 746 | 0 | 13:30:09 | 19-Nov-2015 |
| 82 | 7.56 | 7.1 | 26 | 746 | 0 | 13:35:09 | 19-Nov-2015 |
| 83 | 8.08 | 7 | 34 | 746 | 0 | 13:40:09 | 19-Nov-2015 |
| 84 | 6.09 | 7.1 | 40 | 746 | 0 | 13:45:09 | 19-Nov-2015 |
| 85 | 10.57 | 7.3 | 34 | 746 | 0 | 13:50:09 | 19-Nov-2015 |
| 86 | 9.52 | 7.5 | 26 | 746 | 0 | 13:55:09 | 19-Nov-2015 |
| 87 | 5.93 | 7.6 | 25 | 746 | 0 | 14:00:09 | 19-Nov-2015 |
| 88 | 11.45 | 7.4 | 25 | 746 | 0 | 14:05:09 | 19-Nov-2015 |
| 89 | 7.55 | 7.2 | 25 | 746 | 0 | 14:10:09 | 19-Nov-2015 |
| 90 | 11.14 | 7 | 25 | 746 | 0 | 14:15:09 | 19-Nov-2015 |
| 91 | 14.73 | 6.7 | 27 | 746 | 0 | 14:20:09 | 19-Nov-2015 |
| 92 | 10.78 | 6.4 | 27 | 746 | 0 | 14:25:09 | 19-Nov-2015 |
| 93 | 10 | 6 | 28 | 746 | 0 | 14:30:09 | 19-Nov-2015 |
| 94 | 7.92 | 5.6 | 29 | 746 | 0 | 14:35:09 | 19-Nov-2015 |
| 95 | 8.37 | 5.4 | 29 | 746 | 0 | 14:40:09 | 19-Nov-2015 |

| | | |
|---|---|---|
| >"Model N | "PDR-150( | 1.34 |
| Serial no. | "0115248028" | |
| Tag Numbe | 6 | |
| Start Time | 11:24:29 | |
| Start Date | 23-Nov-2015 | |
| Log Period | 00:05:00 | |
| Number | 29 | |
| CalFactor | 1 | |
| Unit | 0 | |
| Unit Name | "ug/m3" | |
| TEMPUNIT | C | |
| RH CORRE( | "DISABLED" | |
| Max Disp | 452.1207 | |
| Max Disp @ | 13:40:46 | 23-Nov-2015 |
| Max STEL | 26.80876 | |
| Max STEL ( | 13:26:39 | 23-Nov-2015 |
| Avg point | 17.40415 | |
| ALARM | "INSTANT " | |
| ALARM_LE | 1.19 | |
| Errors | 0 | |
| Inlet Type | "RED CYCLONE " | |
| FlowRate | 2 | |
| 50% AED | 5.521563 | |
| Site Name | "Factory default" | |

| record | "ug/m3" | Temp | RHumidity | AtmoPres | Flags | | |
|---|---|---|---|---|---|---|---|
| 1 | 10.07 | 11.9 | 33 | 748 | 1 | 11:29:29 | 23-Nov-2015 |
| 2 | 18.6 | 11.2 | 33 | 748 | 0 | 11:34:29 | 23-Nov-2015 |
| 3 | 27.4 | 10.8 | 34 | 748 | 0 | 11:39:29 | 23-Nov-2015 |
| 4 | 13.35 | 10.4 | 34 | 748 | 0 | 11:44:29 | 23-Nov-2015 |
| 5 | 14.69 | 9.9 | 36 | 748 | 0 | 11:49:29 | 23-Nov-2015 |
| 6 | 13.86 | 9.4 | 37 | 748 | 0 | 11:54:29 | 23-Nov-2015 |
| 7 | 11.89 | 9 | 37 | 748 | 0 | 11:59:29 | 23-Nov-2015 |
| 8 | 13.92 | 8.6 | 38 | 748 | 0 | 12:04:29 | 23-Nov-2015 |
| 9 | 12.94 | 8.2 | 38 | 748 | 0 | 12:09:29 | 23-Nov-2015 |
| 10 | 13 | 7.9 | 39 | 748 | 0 | 12:14:29 | 23-Nov-2015 |
| 11 | 14.33 | 7.7 | 39 | 748 | 0 | 12:19:29 | 23-Nov-2015 |
| 12 | 12.65 | 7.6 | 40 | 748 | 0 | 12:24:29 | 23-Nov-2015 |
| 13 | 13.22 | 7.6 | 41 | 748 | 0 | 12:29:29 | 23-Nov-2015 |
| 14 | 15.61 | 7.8 | 41 | 748 | 0 | 12:34:29 | 23-Nov-2015 |
| 15 | 15.39 | 7.8 | 40 | 748 | 0 | 12:39:29 | 23-Nov-2015 |
| 16 | 17.37 | 7.8 | 39 | 748 | 0 | 12:44:29 | 23-Nov-2015 |
| 17 | 13.68 | 7.8 | 39 | 748 | 0 | 12:49:29 | 23-Nov-2015 |
| 18 | 16.39 | 7.7 | 40 | 748 | 0 | 12:54:29 | 23-Nov-2015 |
| 19 | 21.85 | 7.7 | 42 | 748 | 0 | 12:59:29 | 23-Nov-2015 |
| 20 | 19.98 | 7.9 | 41 | 748 | 0 | 13:04:29 | 23-Nov-2015 |
| 21 | 15.42 | 8 | 40 | 748 | 0 | 13:09:29 | 23-Nov-2015 |
| 22 | 27.66 | 8.2 | 40 | 748 | 0 | 13:14:29 | 23-Nov-2015 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 23 | 29.85 | 8.3 | 40 | 748 | 0 | 13:19:29 | 23-Nov-2015 |
| 24 | 19.61 | 8.3 | 40 | 748 | 0 | 13:24:29 | 23-Nov-2015 |
| 25 | 21.24 | 8.2 | 40 | 748 | 0 | 13:29:29 | 23-Nov-2015 |
| 26 | 15.36 | 8 | 40 | 748 | 0 | 13:34:29 | 23-Nov-2015 |
| 27 | 16.45 | 7.8 | 41 | 748 | 0 | 13:39:29 | 23-Nov-2015 |
| 28 | 31.18 | 7.6 | 42 | 748 | 3 | 13:44:29 | 23-Nov-2015 |
| 29 | 17.76 | 7.5 | 42 | 748 | 0 | 13:49:29 | 23-Nov-2015 |

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|---|---|---|
| >"Model N | "PDR-150( | 1.34 |
| Serial no. | "0115248028" | |
| Tag Numbe | 8 | |
| Start Time | 07:07:06 | |
| Start Date | 24-Nov-2015 | |
| Log Period | 00:05:00 | |
| Number | 12 | |
| CalFactor | 1 | |
| Unit | 0 | |
| Unit Name | "ug/m3" | |
| TEMPUNIT | C | |
| RH CORRE( | "DISABLED" | |
| Max Disp | 248.3193 | |
| Max Disp @ | 07:07:36 24-Nov-2015 | |
| Max STEL | 60.64204 | |
| Max STEL ( | 07:35:46 24-Nov-2015 | |
| Avg point | 42.85568 | |
| ALARM | "INSTANT " | |
| ALARM_LE | 1.19 | |
| Errors | 0 | |
| Inlet Type | "RED CYCLONE " | |
| FlowRate | 2 | |
| 50% AED | 5.521563 | |
| Site Name | "Factory default" | |

| record | "ug/m3" | Temp | RHumidity | AtmoPres | Flags | | |
|---|---|---|---|---|---|---|---|
| 1 | 55.45 | 12.9 | 32 | 756 | 1 | 07:12:06 | 24-Nov-2015 |
| 2 | 49.45 | 12.6 | 31 | 756 | 0 | 07:17:06 | 24-Nov-2015 |
| 3 | 51.21 | 12.2 | 31 | 756 | 0 | 07:22:06 | 24-Nov-2015 |
| 4 | 55.39 | 11.7 | 33 | 756 | 0 | 07:27:06 | 24-Nov-2015 |
| 5 | 60.6 | 11.2 | 34 | 756 | 0 | 07:32:06 | 24-Nov-2015 |
| 6 | 63.01 | 10.7 | 35 | 756 | 0 | 07:37:06 | 24-Nov-2015 |
| 7 | 35.65 | 10.2 | 40 | 756 | 0 | 07:42:06 | 24-Nov-2015 |
| 8 | 32.64 | 10.1 | 43 | 756 | 0 | 07:47:06 | 24-Nov-2015 |
| 9 | 28.09 | 10.5 | 44 | 756 | 0 | 07:52:06 | 24-Nov-2015 |
| 10 | 29.15 | 11.1 | 41 | 756 | 0 | 07:57:06 | 24-Nov-2015 |
| 11 | 26.78 | 11.9 | 38 | 756 | 0 | 08:02:06 | 24-Nov-2015 |
| 12 | 26.87 | 12.9 | 35 | 756 | 0 | 08:07:06 | 24-Nov-2015 |

| | | |
|---|---|---|
| >"Model N | "PDR-150( | 1.34 |
| Serial no. | "0115248028" | |
| Tag Numbe | 10 | |
| Start Time | 09:14:01 | |
| Start Date | 24-Nov-2015 | |
| Log Period | 00:05:00 | |
| Number | 35 | |
| CalFactor | 1 | |
| Unit | 0 | |
| Unit Name | "ug/m3" | |
| TEMPUNIT | C | |
| RH CORRE( | "DISABLED" | |
| Max Disp | 148.843 | |
| Max Disp @ | 09:17:08 | 24-Nov-2015 |
| Max STEL | 37.25714 | |
| Max STEL ( | 09:30:11 | 24-Nov-2015 |
| Avg point | 23.67016 | |
| ALARM | "INSTANT " | |
| ALARM_LE | 1.19 | |
| Errors | 0 | |
| Inlet Type | "RED CYCLONE " | |
| FlowRate | 2 | |
| 50% AED | 5.521563 | |
| Site Name | "Factory default" | |

| record | "ug/m3" | Temp | RHumidity | AtmoPres | Flags | | |
|---|---|---|---|---|---|---|---|
| 1 | 39.35 | 20.5 | 27 | 756 | 1 | 09:19:01 | 24-Nov-2015 |
| 2 | 31.57 | 21.1 | 22 | 756 | 0 | 09:24:01 | 24-Nov-2015 |
| 3 | 38.62 | 21 | 23 | 756 | 3 | 09:29:01 | 24-Nov-2015 |
| 4 | 33.44 | 20.6 | 23 | 756 | 0 | 09:34:01 | 24-Nov-2015 |
| 5 | 32.01 | 19.9 | 24 | 756 | 0 | 09:39:01 | 24-Nov-2015 |
| 6 | 33.21 | 19.1 | 26 | 756 | 0 | 09:44:01 | 24-Nov-2015 |
| 7 | 33.97 | 18.5 | 26 | 756 | 0 | 09:49:01 | 24-Nov-2015 |
| 8 | 33.78 | 17.9 | 26 | 756 | 0 | 09:54:01 | 24-Nov-2015 |
| 9 | 34.14 | 17.5 | 27 | 756 | 0 | 09:59:01 | 24-Nov-2015 |
| 10 | 32.26 | 16.9 | 28 | 756 | 0 | 10:04:01 | 24-Nov-2015 |
| 11 | 31.69 | 16.4 | 29 | 756 | 0 | 10:09:01 | 24-Nov-2015 |
| 12 | 34.26 | 15.8 | 30 | 756 | 0 | 10:14:01 | 24-Nov-2015 |
| 13 | 32.37 | 15.4 | 31 | 756 | 0 | 10:19:01 | 24-Nov-2015 |
| 14 | 34.14 | 15.2 | 31 | 754 | 0 | 10:24:01 | 24-Nov-2015 |
| 15 | 32.56 | 15.1 | 30 | 754 | 0 | 10:29:01 | 24-Nov-2015 |
| 16 | 30.32 | 14.9 | 30 | 754 | 0 | 10:34:01 | 24-Nov-2015 |
| 17 | 30.94 | 14.6 | 31 | 754 | 0 | 10:39:01 | 24-Nov-2015 |
| 18 | 27.12 | 14.3 | 32 | 754 | 0 | 10:44:01 | 24-Nov-2015 |
| 19 | 20.84 | 14.1 | 33 | 754 | 0 | 10:49:01 | 24-Nov-2015 |
| 20 | 17.73 | 14 | 35 | 754 | 0 | 10:54:01 | 24-Nov-2015 |
| 21 | 16.57 | 13.9 | 37 | 754 | 0 | 10:59:01 | 24-Nov-2015 |
| 22 | 15.03 | 14 | 37 | 754 | 0 | 11:04:01 | 24-Nov-2015 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 23 | 13.93 | 14 | 37 | 754 | 0 | 11:09:01 | 24-Nov-2015 |
| 24 | 18.04 | 14.1 | 36 | 754 | 0 | 11:14:01 | 24-Nov-2015 |
| 25 | 17.64 | 14.2 | 36 | 754 | 0 | 11:19:01 | 24-Nov-2015 |
| 26 | 15.08 | 14.2 | 36 | 754 | 0 | 11:24:01 | 24-Nov-2015 |
| 27 | 14.02 | 14.3 | 36 | 754 | 0 | 11:29:01 | 24-Nov-2015 |
| 28 | 12.97 | 14.3 | 36 | 754 | 0 | 11:34:01 | 24-Nov-2015 |
| 29 | 12.14 | 14.4 | 36 | 754 | 0 | 11:39:01 | 24-Nov-2015 |
| 30 | 11.56 | 14.4 | 36 | 754 | 0 | 11:44:01 | 24-Nov-2015 |
| 31 | 10.9 | 14.4 | 36 | 754 | 0 | 11:49:01 | 24-Nov-2015 |
| 32 | 10.18 | 14.5 | 35 | 754 | 0 | 11:54:01 | 24-Nov-2015 |
| 33 | 9.6 | 14.5 | 35 | 754 | 0 | 11:59:01 | 24-Nov-2015 |
| 34 | 8.79 | 14.5 | 35 | 754 | 0 | 12:04:01 | 24-Nov-2015 |
| 35 | 7.68 | 14.5 | 35 | 754 | 0 | 12:09:01 | 24-Nov-2015 |

| | | |
|---|---|---|
| >"Model N | "PDR-150( | 1.34 |
| Serial no. | "0115248028" | |
| Tag Numbe | 11 | |
| Start Time | 07:31:39 | |
| Start Date | 25-Nov-2015 | |
| Log Period | 00:05:00 | |
| Number | 57 | |
| CalFactor | 1 | |
| Unit | 0 | |
| Unit Name | "ug/m3" | |
| TEMPUNIT | C | |
| RH CORRE( | "DISABLED" | |
| Max Disp | 410.7467 | |
| Max Disp @ | 08:18:51 | 25-Nov-2015 |
| Max STEL | 33.2728 | |
| Max STEL ( | 11:09:29 | 25-Nov-2015 |
| Avg point | 14.43304 | |
| ALARM | "INSTANT " | |
| ALARM_LE | 0.81 | |
| Errors | 0 | |
| Inlet Type | "RED CYCLONE " | |
| FlowRate | 2 | |
| 50% AED | 5.521563 | |
| Site Name | "Factory default" | |

| record | "ug/m3" | Temp | RHumidity | AtmoPres | Flags | | |
|---|---|---|---|---|---|---|---|
| 1 | 24.22 | 17.9 | 27 | 754 | 3 | 07:36:39 | 25-Nov-2015 |
| 2 | 21.01 | 18.4 | 25 | 754 | 0 | 07:41:39 | 25-Nov-2015 |
| 3 | 40.13 | 18.2 | 26 | 754 | 0 | 07:46:39 | 25-Nov-2015 |
| 4 | 30.49 | 17.7 | 26 | 754 | 0 | 07:51:39 | 25-Nov-2015 |
| 5 | 15.51 | 17.1 | 27 | 754 | 1 | 07:56:39 | 25-Nov-2015 |
| 6 | 7.99 | 16.9 | 28 | 754 | 1 | 08:01:39 | 25-Nov-2015 |
| 7 | 6.08 | 16.9 | 29 | 754 | 1 | 08:06:39 | 25-Nov-2015 |
| 8 | 6.52 | 17.2 | 29 | 754 | 1 | 08:11:39 | 25-Nov-2015 |
| 9 | 7.16 | 17.6 | 27 | 754 | 3 | 08:16:39 | 25-Nov-2015 |
| 10 | 39.41 | 18.1 | 26 | 754 | 3 | 08:21:39 | 25-Nov-2015 |
| 11 | 14.31 | 18.2 | 26 | 754 | 0 | 08:26:39 | 25-Nov-2015 |
| 12 | 15.12 | 17.9 | 26 | 754 | 0 | 08:31:39 | 25-Nov-2015 |
| 13 | 18.01 | 17.5 | 26 | 754 | 0 | 08:36:39 | 25-Nov-2015 |
| 14 | 32.65 | 17 | 27 | 752 | 0 | 08:41:39 | 25-Nov-2015 |
| 15 | 20.94 | 16.4 | 27 | 754 | 0 | 08:46:39 | 25-Nov-2015 |
| 16 | 24.71 | 15.9 | 28 | 754 | 3 | 08:51:39 | 25-Nov-2015 |
| 17 | 9.8 | 15.4 | 29 | 754 | 0 | 08:56:39 | 25-Nov-2015 |
| 18 | 6.94 | 15.1 | 31 | 754 | 0 | 09:01:39 | 25-Nov-2015 |
| 19 | 7.54 | 15.3 | 31 | 752 | 0 | 09:06:39 | 25-Nov-2015 |
| 20 | 6.89 | 15.6 | 30 | 752 | 0 | 09:11:39 | 25-Nov-2015 |
| 21 | 6.1 | 16.1 | 30 | 752 | 0 | 09:16:39 | 25-Nov-2015 |
| 22 | 6.34 | 16.6 | 30 | 752 | 0 | 09:21:39 | 25-Nov-2015 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 23 | 16.75 | 17.2 | 29 | 752 | 0 | 09:26:39 | 25-Nov-2015 |
| 24 | 14.42 | 17.7 | 27 | 752 | 0 | 09:31:39 | 25-Nov-2015 |
| 25 | 7.95 | 17.8 | 28 | 752 | 0 | 09:36:39 | 25-Nov-2015 |
| 26 | 8.74 | 18.1 | 28 | 752 | 0 | 09:41:39 | 25-Nov-2015 |
| 27 | 9.43 | 18.4 | 27 | 752 | 0 | 09:46:39 | 25-Nov-2015 |
| 28 | 6.29 | 18.7 | 27 | 752 | 0 | 09:51:39 | 25-Nov-2015 |
| 29 | 6.57 | 19 | 27 | 752 | 0 | 09:56:39 | 25-Nov-2015 |
| 30 | 5.88 | 19.3 | 27 | 752 | 0 | 10:01:39 | 25-Nov-2015 |
| 31 | 8.51 | 19.5 | 27 | 752 | 0 | 10:06:39 | 25-Nov-2015 |
| 32 | 9.87 | 19.7 | 26 | 752 | 0 | 10:11:39 | 25-Nov-2015 |
| 33 | 21.61 | 20 | 25 | 752 | 0 | 10:16:39 | 25-Nov-2015 |
| 34 | 18.73 | 20.4 | 25 | 752 | 0 | 10:21:39 | 25-Nov-2015 |
| 35 | 10.61 | 20.7 | 25 | 752 | 0 | 10:26:39 | 25-Nov-2015 |
| 36 | 13.88 | 21 | 25 | 752 | 0 | 10:31:39 | 25-Nov-2015 |
| 37 | 9.98 | 21.2 | 25 | 752 | 0 | 10:36:39 | 25-Nov-2015 |
| 38 | 7.18 | 21.5 | 24 | 752 | 0 | 10:41:39 | 25-Nov-2015 |
| 39 | 8.71 | 21.8 | 23 | 752 | 0 | 10:46:39 | 25-Nov-2015 |
| 40 | 26.89 | 22.2 | 21 | 752 | 0 | 10:51:39 | 25-Nov-2015 |
| 41 | 24.66 | 22.2 | 22 | 752 | 0 | 10:56:39 | 25-Nov-2015 |
| 42 | 29.94 | 21.9 | 22 | 752 | 0 | 11:01:39 | 25-Nov-2015 |
| 43 | 31.62 | 21.4 | 22 | 752 | 0 | 11:06:39 | 25-Nov-2015 |
| 44 | 34.58 | 20.8 | 23 | 752 | 3 | 11:11:39 | 25-Nov-2015 |
| 45 | 9.85 | 20.2 | 26 | 752 | 0 | 11:16:39 | 25-Nov-2015 |
| 46 | 6.95 | 19.8 | 26 | 752 | 0 | 11:21:39 | 25-Nov-2015 |
| 47 | 6.46 | 19.8 | 26 | 752 | 0 | 11:26:39 | 25-Nov-2015 |
| 48 | 10.81 | 19.9 | 25 | 752 | 0 | 11:31:39 | 25-Nov-2015 |
| 49 | 12.69 | 20 | 26 | 752 | 0 | 11:36:39 | 25-Nov-2015 |
| 50 | 21.76 | 20.2 | 26 | 752 | 0 | 11:41:39 | 25-Nov-2015 |
| 51 | 12.83 | 20.1 | 27 | 752 | 0 | 11:46:39 | 25-Nov-2015 |
| 52 | 8.69 | 20.1 | 26 | 752 | 0 | 11:51:39 | 25-Nov-2015 |
| 53 | 6.58 | 20 | 26 | 752 | 0 | 11:56:39 | 25-Nov-2015 |
| 54 | 5.65 | 20 | 26 | 752 | 0 | 12:01:39 | 25-Nov-2015 |
| 55 | 5.19 | 20 | 26 | 752 | 0 | 12:06:39 | 25-Nov-2015 |
| 56 | 4.7 | 20 | 26 | 752 | 0 | 12:11:39 | 25-Nov-2015 |
| 57 | 9.87 | 20 | 26 | 752 | 0 | 12:16:39 | 25-Nov-2015 |

| | | |
|---|---|---|
| >"Model N | "PDR-150( | 1.34 |
| Serial no. | "0115248028" | |
| Tag Numbe | 12 | |
| Start Time | 08:52:10 | |
| Start Date | 30-Nov-2015 | |
| Log Period | 00:05:00 | |
| Number | 57 | |
| CalFactor | 1 | |
| Unit | 0 | |
| Unit Name | "ug/m3" | |
| TEMPUNIT | C | |
| RH CORRE( | "DISABLED" | |
| Max Disp | 181.1345 | |
| Max Disp @ | 08:54:19 | 30-Nov-2015 |
| Max STEL | 18.02112 | |
| Max STEL ( | 09:07:30 | 30-Nov-2015 |
| Avg point | 11.90119 | |
| ALARM | "INSTANT " | |
| ALARM_LE | 3.19 | |
| Errors | 0 | |
| Inlet Type | "RED CYCLONE " | |
| FlowRate | 2 | |
| 50% AED | 5.521563 | |
| Site Name | "Factory default" | |

| record | "ug/m3" | Temp | RHumidity | AtmoPres | Flags | | |
|---|---|---|---|---|---|---|---|
| 1 | 22.78 | 22.8 | 28 | 752 | 3 | 08:57:10 | 30-Nov-2015 |
| 2 | 14.72 | 23.3 | 23 | 752 | 1 | 09:02:10 | 30-Nov-2015 |
| 3 | 16.27 | 23.7 | 22 | 752 | 1 | 09:07:10 | 30-Nov-2015 |
| 4 | 14.34 | 23.8 | 22 | 752 | 1 | 09:12:10 | 30-Nov-2015 |
| 5 | 17.01 | 23.8 | 21 | 752 | 1 | 09:17:10 | 30-Nov-2015 |
| 6 | 15.13 | 23.8 | 21 | 752 | 1 | 09:22:10 | 30-Nov-2015 |
| 7 | 13.78 | 23.7 | 21 | 752 | 3 | 09:27:10 | 30-Nov-2015 |
| 8 | 17.98 | 23.3 | 21 | 752 | 0 | 09:32:10 | 30-Nov-2015 |
| 9 | 11.48 | 22.5 | 21 | 752 | 0 | 09:37:10 | 30-Nov-2015 |
| 10 | 16.95 | 21.8 | 23 | 752 | 1 | 09:42:10 | 30-Nov-2015 |
| 11 | 7.29 | 21.5 | 24 | 750 | 1 | 09:47:10 | 30-Nov-2015 |
| 12 | 6.79 | 21.6 | 25 | 750 | 1 | 09:52:10 | 30-Nov-2015 |
| 13 | 15.86 | 21.8 | 24 | 752 | 3 | 09:57:10 | 30-Nov-2015 |
| 14 | 15.17 | 21.8 | 23 | 750 | 0 | 10:02:10 | 30-Nov-2015 |
| 15 | 12 | 21.6 | 25 | 750 | 0 | 10:07:10 | 30-Nov-2015 |
| 16 | 7.81 | 21.4 | 27 | 750 | 0 | 10:12:10 | 30-Nov-2015 |
| 17 | 10.69 | 21.5 | 28 | 750 | 0 | 10:17:10 | 30-Nov-2015 |
| 18 | 10.98 | 21.6 | 27 | 750 | 0 | 10:22:10 | 30-Nov-2015 |
| 19 | 12.87 | 21.8 | 26 | 750 | 3 | 10:27:10 | 30-Nov-2015 |
| 20 | 17.64 | 22.1 | 26 | 750 | 0 | 10:32:10 | 30-Nov-2015 |
| 21 | 8.58 | 22.3 | 25 | 750 | 0 | 10:37:10 | 30-Nov-2015 |
| 22 | 7.28 | 22.6 | 25 | 750 | 0 | 10:42:10 | 30-Nov-2015 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 23 | 6.33 | 22.9 | 25 | 750 | 0 | 10:47:10 | 30-Nov-2015 |
| 24 | 6.2 | 23.3 | 25 | 750 | 0 | 10:52:10 | 30-Nov-2015 |
| 25 | 7.5 | 23.7 | 25 | 750 | 0 | 10:57:10 | 30-Nov-2015 |
| 26 | 14.76 | 24.1 | 24 | 750 | 0 | 11:02:10 | 30-Nov-2015 |
| 27 | 13.92 | 24.4 | 22 | 750 | 0 | 11:07:10 | 30-Nov-2015 |
| 28 | 13.93 | 24.1 | 22 | 750 | 0 | 11:12:10 | 30-Nov-2015 |
| 29 | 12.3 | 23.6 | 22 | 750 | 0 | 11:17:10 | 30-Nov-2015 |
| 30 | 10.79 | 22.9 | 22 | 750 | 0 | 11:22:10 | 30-Nov-2015 |
| 31 | 9.88 | 22.1 | 22 | 750 | 0 | 11:27:10 | 30-Nov-2015 |
| 32 | 9.6 | 21.3 | 22 | 750 | 0 | 11:32:10 | 30-Nov-2015 |
| 33 | 10.09 | 20.6 | 23 | 750 | 0 | 11:37:10 | 30-Nov-2015 |
| 34 | 20.37 | 19.8 | 25 | 750 | 0 | 11:42:10 | 30-Nov-2015 |
| 35 | 6.43 | 19.3 | 27 | 750 | 0 | 11:47:10 | 30-Nov-2015 |
| 36 | 6.1 | 19.1 | 27 | 750 | 0 | 11:52:10 | 30-Nov-2015 |
| 37 | 7.03 | 19.2 | 28 | 750 | 0 | 11:57:10 | 30-Nov-2015 |
| 38 | 6.82 | 19.4 | 27 | 750 | 0 | 12:02:10 | 30-Nov-2015 |
| 39 | 7.11 | 19.7 | 27 | 748 | 0 | 12:07:10 | 30-Nov-2015 |
| 40 | 7.02 | 20 | 26 | 748 | 0 | 12:12:10 | 30-Nov-2015 |
| 41 | 9.47 | 20.4 | 25 | 748 | 0 | 12:17:10 | 30-Nov-2015 |
| 42 | 14.36 | 20.7 | 24 | 748 | 0 | 12:22:10 | 30-Nov-2015 |
| 43 | 11.03 | 20.7 | 24 | 748 | 0 | 12:27:10 | 30-Nov-2015 |
| 44 | 11.86 | 20.3 | 24 | 748 | 0 | 12:32:10 | 30-Nov-2015 |
| 45 | 11.77 | 19.7 | 24 | 748 | 0 | 12:37:10 | 30-Nov-2015 |
| 46 | 15.44 | 19 | 25 | 748 | 0 | 12:42:10 | 30-Nov-2015 |
| 47 | 16.12 | 18.4 | 26 | 748 | 0 | 12:47:10 | 30-Nov-2015 |
| 48 | 11.28 | 17.9 | 27 | 748 | 0 | 12:52:10 | 30-Nov-2015 |
| 49 | 10.86 | 17.3 | 27 | 748 | 0 | 12:57:10 | 30-Nov-2015 |
| 50 | 9.96 | 16.7 | 29 | 748 | 0 | 13:02:10 | 30-Nov-2015 |
| 51 | 9.5 | 16.2 | 30 | 748 | 0 | 13:07:10 | 30-Nov-2015 |
| 52 | 11.32 | 15.7 | 31 | 748 | 0 | 13:12:10 | 30-Nov-2015 |
| 53 | 10.99 | 15.2 | 32 | 748 | 0 | 13:17:10 | 30-Nov-2015 |
| 54 | 11.67 | 14.7 | 33 | 748 | 0 | 13:22:10 | 30-Nov-2015 |
| 55 | 16.82 | 14.3 | 35 | 748 | 0 | 13:27:10 | 30-Nov-2015 |
| 56 | 11.23 | 13.8 | 36 | 748 | 0 | 13:32:10 | 30-Nov-2015 |
| 57 | 15.13 | 13.4 | 38 | 748 | 0 | 13:37:10 | 30-Nov-2015 |

| | | |
|---|---|---|
| >"Model N | "PDR-150( | 1.34 |
| Serial no. | "0115248028" | |
| Tag Numbe | 13 | |
| Start Time | 07:00:17 | |
| Start Date | 01-Dec-2015 | |
| Log Period | 00:05:00 | |
| Number | 82 | |
| CalFactor | 1 | |
| Unit | 0 | |
| Unit Name | "ug/m3" | |
| TEMPUNIT | C | |
| RH CORRE( | "DISABLED" | |
| Max Disp | 72.27452 | |
| Max Disp @ | 12:43:18 | 01-Dec-2015 |
| Max STEL | 14.19421 | |
| Max STEL ( | 13:43:37 | 01-Dec-2015 |
| Avg point | 6.960217 | |
| ALARM | "INSTANT " | |
| ALARM_LE | 3.19 | |
| Errors | 0 | |
| Inlet Type | "RED CYCLONE " | |
| FlowRate | 2 | |
| 50% AED | 5.521563 | |
| Site Name | "Factory default" | |

| record | "ug/m3" | Temp | RHumidity | AtmoPres | Flags | | |
|---|---|---|---|---|---|---|---|
| 1 | 7.62 | 14.7 | 37 | 742 | 1 | 07:05:17 | 01-Dec-2015 |
| 2 | 7.23 | 15.1 | 34 | 742 | 0 | 07:10:17 | 01-Dec-2015 |
| 3 | 7.81 | 15 | 35 | 742 | 0 | 07:15:17 | 01-Dec-2015 |
| 4 | 8.12 | 14.7 | 35 | 742 | 0 | 07:20:17 | 01-Dec-2015 |
| 5 | 11.48 | 14.3 | 36 | 742 | 0 | 07:25:17 | 01-Dec-2015 |
| 6 | 7.28 | 13.8 | 36 | 742 | 0 | 07:30:17 | 01-Dec-2015 |
| 7 | 8.19 | 13.3 | 37 | 742 | 0 | 07:35:17 | 01-Dec-2015 |
| 8 | 6.78 | 12.9 | 38 | 742 | 0 | 07:40:17 | 01-Dec-2015 |
| 9 | 6.88 | 12.4 | 39 | 742 | 0 | 07:45:17 | 01-Dec-2015 |
| 10 | 8.97 | 12 | 39 | 742 | 0 | 07:50:17 | 01-Dec-2015 |
| 11 | 4.27 | 11.6 | 45 | 742 | 0 | 07:55:17 | 01-Dec-2015 |
| 12 | 2.39 | 11.5 | 47 | 744 | 0 | 08:00:17 | 01-Dec-2015 |
| 13 | 5.25 | 11.8 | 48 | 742 | 0 | 08:05:17 | 01-Dec-2015 |
| 14 | 4.2 | 12.5 | 46 | 744 | 0 | 08:10:17 | 01-Dec-2015 |
| 15 | 5.11 | 13.4 | 46 | 742 | 0 | 08:15:17 | 01-Dec-2015 |
| 16 | 3.36 | 14.3 | 45 | 742 | 0 | 08:20:17 | 01-Dec-2015 |
| 17 | 2.65 | 15.1 | 43 | 742 | 0 | 08:25:17 | 01-Dec-2015 |
| 18 | 2.4 | 15.8 | 41 | 742 | 0 | 08:30:17 | 01-Dec-2015 |
| 19 | 2.99 | 16.4 | 39 | 742 | 0 | 08:35:17 | 01-Dec-2015 |
| 20 | 3.98 | 16.9 | 34 | 742 | 0 | 08:40:17 | 01-Dec-2015 |
| 21 | 2.97 | 17.3 | 36 | 742 | 0 | 08:45:17 | 01-Dec-2015 |
| 22 | 4.8 | 17.5 | 34 | 742 | 0 | 08:50:17 | 01-Dec-2015 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 23 | 6.25 | 17.7 | 30 | 742 | 0 | 08:55:17 | 01-Dec-2015 |
| 24 | 8.36 | 17.5 | 29 | 742 | 0 | 09:00:17 | 01-Dec-2015 |
| 25 | 7.11 | 17.1 | 30 | 742 | 0 | 09:05:17 | 01-Dec-2015 |
| 26 | 8.97 | 16.4 | 34 | 742 | 0 | 09:10:17 | 01-Dec-2015 |
| 27 | 6.47 | 16.1 | 36 | 742 | 0 | 09:15:17 | 01-Dec-2015 |
| 28 | 4.49 | 16.1 | 31 | 742 | 0 | 09:20:17 | 01-Dec-2015 |
| 29 | 4.92 | 16.1 | 30 | 742 | 0 | 09:25:17 | 01-Dec-2015 |
| 30 | 5.97 | 15.8 | 30 | 742 | 0 | 09:30:17 | 01-Dec-2015 |
| 31 | 4.58 | 15.5 | 32 | 742 | 0 | 09:35:17 | 01-Dec-2015 |
| 32 | 2.82 | 15.1 | 37 | 742 | 0 | 09:40:17 | 01-Dec-2015 |
| 33 | 2.56 | 15.1 | 38 | 742 | 0 | 09:45:17 | 01-Dec-2015 |
| 34 | 2.51 | 15.2 | 39 | 742 | 0 | 09:50:17 | 01-Dec-2015 |
| 35 | 3.35 | 15.4 | 38 | 742 | 0 | 09:55:17 | 01-Dec-2015 |
| 36 | 3.22 | 15.7 | 38 | 742 | 0 | 10:00:17 | 01-Dec-2015 |
| 37 | 2.72 | 16 | 38 | 742 | 0 | 10:05:17 | 01-Dec-2015 |
| 38 | 2.45 | 16.3 | 38 | 742 | 0 | 10:10:17 | 01-Dec-2015 |
| 39 | 2.94 | 16.6 | 34 | 742 | 0 | 10:15:17 | 01-Dec-2015 |
| 40 | 3.21 | 16.9 | 31 | 742 | 0 | 10:20:17 | 01-Dec-2015 |
| 41 | 3.68 | 17.2 | 30 | 742 | 0 | 10:25:17 | 01-Dec-2015 |
| 42 | 3.4 | 17.6 | 27 | 742 | 0 | 10:30:17 | 01-Dec-2015 |
| 43 | 4.71 | 18.1 | 25 | 742 | 0 | 10:35:17 | 01-Dec-2015 |
| 44 | 3.69 | 18.6 | 24 | 742 | 0 | 10:40:17 | 01-Dec-2015 |
| 45 | 7.53 | 19 | 23 | 742 | 0 | 10:45:17 | 01-Dec-2015 |
| 46 | 5.08 | 19.2 | 24 | 742 | 0 | 10:50:17 | 01-Dec-2015 |
| 47 | 6.56 | 19.4 | 26 | 742 | 0 | 10:55:17 | 01-Dec-2015 |
| 48 | 8.44 | 19.6 | 22 | 742 | 0 | 11:00:17 | 01-Dec-2015 |
| 49 | 7.31 | 19.5 | 21 | 742 | 0 | 11:05:17 | 01-Dec-2015 |
| 50 | 8.05 | 19.1 | 21 | 742 | 0 | 11:10:17 | 01-Dec-2015 |
| 51 | 8.23 | 18.5 | 21 | 742 | 0 | 11:15:17 | 01-Dec-2015 |
| 52 | 7.77 | 17.9 | 22 | 742 | 0 | 11:20:17 | 01-Dec-2015 |
| 53 | 9.19 | 17.2 | 23 | 742 | 0 | 11:25:17 | 01-Dec-2015 |
| 54 | 6.44 | 16.5 | 23 | 742 | 0 | 11:30:17 | 01-Dec-2015 |
| 55 | 6.44 | 15.9 | 24 | 742 | 0 | 11:35:17 | 01-Dec-2015 |
| 56 | 6.1 | 15.4 | 25 | 742 | 0 | 11:40:17 | 01-Dec-2015 |
| 57 | 6.15 | 14.9 | 27 | 742 | 0 | 11:45:17 | 01-Dec-2015 |
| 58 | 9.65 | 14.5 | 36 | 742 | 0 | 11:50:17 | 01-Dec-2015 |
| 59 | 7.96 | 14.3 | 34 | 742 | 0 | 11:55:17 | 01-Dec-2015 |
| 60 | 7.23 | 14.4 | 28 | 742 | 0 | 12:00:17 | 01-Dec-2015 |
| 61 | 6.55 | 14.3 | 27 | 742 | 0 | 12:05:17 | 01-Dec-2015 |
| 62 | 9.36 | 14.2 | 28 | 742 | 0 | 12:10:17 | 01-Dec-2015 |
| 63 | 11.4 | 14 | 28 | 742 | 0 | 12:15:17 | 01-Dec-2015 |
| 64 | 10.09 | 13.9 | 28 | 742 | 0 | 12:20:17 | 01-Dec-2015 |
| 65 | 9.74 | 13.6 | 28 | 742 | 0 | 12:25:17 | 01-Dec-2015 |
| 66 | 9.42 | 13.3 | 29 | 742 | 0 | 12:30:17 | 01-Dec-2015 |
| 67 | 9.2 | 12.9 | 30 | 742 | 0 | 12:35:17 | 01-Dec-2015 |
| 68 | 9.16 | 12.5 | 30 | 742 | 0 | 12:40:17 | 01-Dec-2015 |
| 69 | 14.73 | 12.1 | 31 | 742 | 0 | 12:45:17 | 01-Dec-2015 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 70 | 7.82 | 11.7 | 32 | 742 | 0 | 12:50:17 | 01-Dec-2015 |
| 71 | 5.47 | 11.6 | 32 | 742 | 0 | 12:55:17 | 01-Dec-2015 |
| 72 | 6.29 | 11.5 | 32 | 742 | 0 | 13:00:17 | 01-Dec-2015 |
| 73 | 7.42 | 11.6 | 32 | 742 | 0 | 13:05:17 | 01-Dec-2015 |
| 74 | 11.92 | 11.7 | 32 | 742 | 0 | 13:10:17 | 01-Dec-2015 |
| 75 | 13.02 | 11.5 | 33 | 742 | 0 | 13:15:17 | 01-Dec-2015 |
| 76 | 14.13 | 11.3 | 33 | 742 | 0 | 13:20:17 | 01-Dec-2015 |
| 77 | 12.68 | 11.1 | 34 | 742 | 0 | 13:25:17 | 01-Dec-2015 |
| 78 | 10.54 | 10.8 | 34 | 742 | 0 | 13:30:17 | 01-Dec-2015 |
| 79 | 13.4 | 10.5 | 34 | 742 | 0 | 13:35:17 | 01-Dec-2015 |
| 80 | 13.48 | 10.3 | 35 | 742 | 0 | 13:40:17 | 01-Dec-2015 |
| 81 | 14.98 | 10 | 36 | 742 | 0 | 13:45:17 | 01-Dec-2015 |
| 82 | 8.73 | 9.8 | 36 | 742 | 0 | 13:50:17 | 01-Dec-2015 |

| | | |
|---|---|---|
| >"Model N | "PDR-150( | 1.34 |
| Serial no. | "0115248028" | |
| Tag Numbe | 14 | |
| Start Time | 08:39:06 | |
| Start Date | 02-Dec-2015 | |
| Log Period | 00:05:00 | |
| Number | 32 | |
| CalFactor | 1 | |
| Unit | 0 | |
| Unit Name | "ug/m3" | |
| TEMPUNIT | C | |
| RH CORRE( | "DISABLED" | |
| Max Disp | 51.92592 | |
| Max Disp @ | 10:16:16 | 02-Dec-2015 |
| Max STEL | 13.4689 | |
| Max STEL ( | 10:21:56 | 02-Dec-2015 |
| Avg point | 9.456437 | |
| ALARM | "INSTANT " | |
| ALARM_LE | 3.19 | |
| Errors | 0 | |
| Inlet Type | "RED CYCLONE " | |
| FlowRate | 2 | |
| 50% AED | 5.521563 | |
| Site Name | "Factory default" | |

| record | "ug/m3" | Temp | RHumidity | AtmoPres | Flags | | |
|---|---|---|---|---|---|---|---|
| 1 | 9.27 | 15.5 | 33 | 740 | 1 | 08:44:06 | 02-Dec-2015 |
| 2 | 8.84 | 15.7 | 31 | 740 | 0 | 08:49:06 | 02-Dec-2015 |
| 3 | 10.11 | 16.3 | 28 | 740 | 0 | 08:54:06 | 02-Dec-2015 |
| 4 | 9.5 | 17.3 | 27 | 740 | 0 | 08:59:06 | 02-Dec-2015 |
| 5 | 9.47 | 18.3 | 26 | 740 | 0 | 09:04:06 | 02-Dec-2015 |
| 6 | 11.74 | 19.4 | 24 | 742 | 0 | 09:09:06 | 02-Dec-2015 |
| 7 | 11.7 | 20.6 | 21 | 742 | 0 | 09:14:06 | 02-Dec-2015 |
| 8 | 11.51 | 21.8 | 21 | 740 | 0 | 09:19:06 | 02-Dec-2015 |
| 9 | 9.41 | 23 | 20 | 740 | 0 | 09:24:06 | 02-Dec-2015 |
| 10 | 13.44 | 24 | 22 | 740 | 0 | 09:29:06 | 02-Dec-2015 |
| 11 | 9.36 | 24.4 | 18 | 740 | 0 | 09:34:06 | 02-Dec-2015 |
| 12 | 8.72 | 23.9 | 18 | 740 | 0 | 09:39:06 | 02-Dec-2015 |
| 13 | 12.47 | 22.8 | 20 | 740 | 0 | 09:44:06 | 02-Dec-2015 |
| 14 | 12 | 21.7 | 21 | 740 | 0 | 09:49:06 | 02-Dec-2015 |
| 15 | 10.01 | 20.5 | 21 | 740 | 0 | 09:54:06 | 02-Dec-2015 |
| 16 | 11.32 | 19.4 | 23 | 740 | 0 | 09:59:06 | 02-Dec-2015 |
| 17 | 11.34 | 18.3 | 24 | 740 | 0 | 10:04:06 | 02-Dec-2015 |
| 18 | 12.26 | 17.4 | 25 | 740 | 0 | 10:09:06 | 02-Dec-2015 |
| 19 | 12.69 | 16.4 | 27 | 740 | 0 | 10:14:06 | 02-Dec-2015 |
| 20 | 13.81 | 15.4 | 36 | 740 | 0 | 10:19:06 | 02-Dec-2015 |
| 21 | 11.88 | 14.9 | 35 | 740 | 0 | 10:24:06 | 02-Dec-2015 |
| 22 | 8.19 | 15 | 33 | 740 | 0 | 10:29:06 | 02-Dec-2015 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 23 | 6.59 | 15.5 | 34 | 740 | 0 | 10:34:06 | 02-Dec-2015 |
| 24 | 6.15 | 16.3 | 34 | 740 | 0 | 10:39:06 | 02-Dec-2015 |
| 25 | 5.53 | 17.3 | 31 | 740 | 0 | 10:44:06 | 02-Dec-2015 |
| 26 | 5.02 | 18.2 | 27 | 740 | 0 | 10:49:06 | 02-Dec-2015 |
| 27 | 6.68 | 19.1 | 25 | 740 | 0 | 10:54:06 | 02-Dec-2015 |
| 28 | 5.2 | 19.9 | 24 | 740 | 0 | 10:59:06 | 02-Dec-2015 |
| 29 | 5.39 | 20.6 | 24 | 740 | 0 | 11:04:06 | 02-Dec-2015 |
| 30 | 7.85 | 21.4 | 23 | 740 | 0 | 11:09:06 | 02-Dec-2015 |
| 31 | 8.29 | 22.2 | 22 | 740 | 0 | 11:14:06 | 02-Dec-2015 |
| 32 | 6.87 | 22.9 | 21 | 740 | 0 | 11:19:06 | 02-Dec-2015 |

| | | |
|---|---|---|
| >"Model N | "PDR-150( | 1.34 |
| Serial no. | "0115248028" | |
| Tag Numbe | 16 | |
| Start Time | 12:15:53 | |
| Start Date | 02-Dec-2015 | |
| Log Period | 00:05:00 | |
| Number | 15 | |
| CalFactor | 1 | |
| Unit | 0 | |
| Unit Name | "ug/m3" | |
| TEMPUNIT | C | |
| RH CORRE( | "DISABLED" | |
| Max Disp | 40.27196 | |
| Max Disp @ | 13:30:23 | 02-Dec-2015 |
| Max STEL | 9.79514 | |
| Max STEL ( | 12:30:53 | 02-Dec-2015 |
| Avg point | 9.029916 | |
| ALARM | "INSTANT " | |
| ALARM_LE | 3.19 | |
| Errors | 0 | |
| Inlet Type | "RED CYCLONE " | |
| FlowRate | 2 | |
| 50% AED | 5.521563 | |
| Site Name | "Factory default" | |

| record | "ug/m3" | Temp | RHumidity | AtmoPres | Flags | | |
|---|---|---|---|---|---|---|---|
| 1 | 9.6 | 17 | 26 | 740 | 5 | 12:20:53 | 02-Dec-2015 |
| 2 | 8.31 | 16.8 | 26 | 740 | 0 | 12:25:53 | 02-Dec-2015 |
| 3 | 11.47 | 16.3 | 27 | 740 | 0 | 12:30:53 | 02-Dec-2015 |
| 4 | 8.84 | 15.7 | 27 | 742 | 0 | 12:35:53 | 02-Dec-2015 |
| 5 | 8.43 | 15 | 31 | 740 | 0 | 12:40:53 | 02-Dec-2015 |
| 6 | 9.24 | 14.3 | 33 | 742 | 0 | 12:45:53 | 02-Dec-2015 |
| 7 | 8.43 | 13.7 | 32 | 742 | 0 | 12:50:53 | 02-Dec-2015 |
| 8 | 7.65 | 13.1 | 29 | 742 | 0 | 12:55:53 | 02-Dec-2015 |
| 9 | 8.05 | 12.4 | 31 | 742 | 0 | 13:00:53 | 02-Dec-2015 |
| 10 | 8.53 | 11.7 | 33 | 742 | 0 | 13:05:53 | 02-Dec-2015 |
| 11 | 8.83 | 11 | 35 | 742 | 0 | 13:10:53 | 02-Dec-2015 |
| 12 | 9.44 | 10.5 | 36 | 742 | 0 | 13:15:53 | 02-Dec-2015 |
| 13 | 9.58 | 10 | 35 | 742 | 0 | 13:20:53 | 02-Dec-2015 |
| 14 | 9.35 | 9.6 | 36 | 742 | 0 | 13:25:53 | 02-Dec-2015 |
| 15 | 9.69 | 9.3 | 37 | 742 | 0 | 13:30:53 | 02-Dec-2015 |

| | | |
|---|---|---|
| >"Model N | "PDR-150( | 1.34 |
| Serial no. | "0115248028" | |
| Tag Numbe | 17 | |
| Start Time | 07:04:23 | |
| Start Date | 03-Dec-2015 | |
| Log Period | 00:05:00 | |
| Number | 82 | |
| CalFactor | 1 | |
| Unit | 0 | |
| Unit Name | "ug/m3" | |
| TEMPUNIT | C | |
| RH CORRE( | "DISABLED" | |
| Max Disp | 109.2761 | |
| Max Disp @ | 07:30:34 | 03-Dec-2015 |
| Max STEL | 25.52719 | |
| Max STEL ( | 12:40:03 | 03-Dec-2015 |
| Avg point | 17.59101 | |
| ALARM | "INSTANT " | |
| ALARM_LE | 3.19 | |
| Errors | 0 | |
| Inlet Type | "RED CYCLONE " | |
| FlowRate | 2 | |
| 50% AED | 5.521563 | |
| Site Name | "Factory default" | |

| record | "ug/m3" | Temp | RHumidity | AtmoPres | Flags | | |
|---|---|---|---|---|---|---|---|
| 1 | 18.97 | 12.7 | 34 | 752 | 0 | 07:09:23 | 03-Dec-2015 |
| 2 | 16.59 | 12.6 | 35 | 752 | 0 | 07:14:23 | 03-Dec-2015 |
| 3 | 13.11 | 12.9 | 35 | 752 | 0 | 07:19:23 | 03-Dec-2015 |
| 4 | 13.78 | 13.4 | 34 | 754 | 0 | 07:24:23 | 03-Dec-2015 |
| 5 | 14.08 | 14 | 32 | 754 | 0 | 07:29:23 | 03-Dec-2015 |
| 6 | 28.4 | 14.7 | 31 | 752 | 2 | 07:34:23 | 03-Dec-2015 |
| 7 | 21.91 | 15.1 | 28 | 754 | 0 | 07:39:23 | 03-Dec-2015 |
| 8 | 19.82 | 14.9 | 28 | 754 | 0 | 07:44:23 | 03-Dec-2015 |
| 9 | 16.64 | 14.4 | 29 | 754 | 0 | 07:49:23 | 03-Dec-2015 |
| 10 | 17.18 | 13.8 | 30 | 754 | 0 | 07:54:23 | 03-Dec-2015 |
| 11 | 17.46 | 13.1 | 31 | 754 | 0 | 07:59:23 | 03-Dec-2015 |
| 12 | 16.68 | 12.4 | 32 | 754 | 0 | 08:04:23 | 03-Dec-2015 |
| 13 | 15.74 | 11.7 | 34 | 754 | 0 | 08:09:23 | 03-Dec-2015 |
| 14 | 13.58 | 11.1 | 37 | 754 | 0 | 08:14:23 | 03-Dec-2015 |
| 15 | 11.65 | 10.6 | 39 | 754 | 0 | 08:19:23 | 03-Dec-2015 |
| 16 | 13.91 | 10.4 | 36 | 754 | 0 | 08:24:23 | 03-Dec-2015 |
| 17 | 14.74 | 10.1 | 37 | 754 | 0 | 08:29:23 | 03-Dec-2015 |
| 18 | 14.22 | 9.7 | 37 | 754 | 0 | 08:34:23 | 03-Dec-2015 |
| 19 | 13.56 | 9.3 | 38 | 754 | 0 | 08:39:23 | 03-Dec-2015 |
| 20 | 12.17 | 8.9 | 40 | 754 | 0 | 08:44:23 | 03-Dec-2015 |
| 21 | 13.02 | 8.5 | 40 | 754 | 0 | 08:49:23 | 03-Dec-2015 |
| 22 | 13.42 | 8.1 | 41 | 754 | 0 | 08:54:23 | 03-Dec-2015 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 23 | 14.55 | 7.7 | 42 | 754 | 0 | 08:59:23 | 03-Dec-2015 |
| 24 | 14.35 | 7.4 | 42 | 754 | 0 | 09:04:23 | 03-Dec-2015 |
| 25 | 15.42 | 7 | 52 | 754 | 0 | 09:09:23 | 03-Dec-2015 |
| 26 | 10.35 | 7 | 56 | 754 | 0 | 09:14:23 | 03-Dec-2015 |
| 27 | 9.4 | 7.7 | 48 | 754 | 0 | 09:19:23 | 03-Dec-2015 |
| 28 | 8.51 | 8.8 | 43 | 754 | 0 | 09:24:23 | 03-Dec-2015 |
| 29 | 10.83 | 10.1 | 40 | 754 | 0 | 09:29:23 | 03-Dec-2015 |
| 30 | 16.29 | 11.4 | 35 | 754 | 0 | 09:34:23 | 03-Dec-2015 |
| 31 | 18.95 | 12.1 | 34 | 754 | 0 | 09:39:23 | 03-Dec-2015 |
| 32 | 18 | 12.2 | 33 | 754 | 0 | 09:44:23 | 03-Dec-2015 |
| 33 | 19.86 | 12 | 34 | 754 | 0 | 09:49:23 | 03-Dec-2015 |
| 34 | 16.29 | 11.6 | 37 | 754 | 1 | 09:54:23 | 03-Dec-2015 |
| 35 | 16.74 | 11.4 | 40 | 754 | 3 | 09:59:23 | 03-Dec-2015 |
| 36 | 22.68 | 11.5 | 36 | 754 | 3 | 10:04:23 | 03-Dec-2015 |
| 37 | 20.51 | 11.6 | 34 | 754 | 0 | 10:09:23 | 03-Dec-2015 |
| 38 | 20.89 | 11.3 | 35 | 754 | 0 | 10:14:23 | 03-Dec-2015 |
| 39 | 23.17 | 10.8 | 37 | 754 | 0 | 10:19:23 | 03-Dec-2015 |
| 40 | 8.64 | 10.5 | 43 | 754 | 0 | 10:24:23 | 03-Dec-2015 |
| 41 | 10.7 | 10.9 | 41 | 754 | 0 | 10:29:23 | 03-Dec-2015 |
| 42 | 10.74 | 12 | 38 | 754 | 0 | 10:34:23 | 03-Dec-2015 |
| 43 | 10.42 | 13.3 | 35 | 754 | 0 | 10:39:23 | 03-Dec-2015 |
| 44 | 10.04 | 14.6 | 32 | 754 | 0 | 10:44:23 | 03-Dec-2015 |
| 45 | 10.29 | 15.9 | 30 | 754 | 0 | 10:49:23 | 03-Dec-2015 |
| 46 | 10.64 | 17.1 | 28 | 754 | 0 | 10:54:23 | 03-Dec-2015 |
| 47 | 11.13 | 18.3 | 26 | 754 | 0 | 10:59:23 | 03-Dec-2015 |
| 48 | 10.95 | 19.3 | 24 | 754 | 0 | 11:04:23 | 03-Dec-2015 |
| 49 | 10.87 | 20.3 | 23 | 754 | 0 | 11:09:23 | 03-Dec-2015 |
| 50 | 10.91 | 21.3 | 22 | 754 | 0 | 11:14:23 | 03-Dec-2015 |
| 51 | 15.81 | 22.1 | 22 | 754 | 0 | 11:19:23 | 03-Dec-2015 |
| 52 | 17.61 | 22.8 | 20 | 754 | 0 | 11:24:23 | 03-Dec-2015 |
| 53 | 17.58 | 22.9 | 19 | 754 | 0 | 11:29:23 | 03-Dec-2015 |
| 54 | 17 | 22.4 | 20 | 754 | 0 | 11:34:23 | 03-Dec-2015 |
| 55 | 19.31 | 21.5 | 21 | 754 | 0 | 11:39:23 | 03-Dec-2015 |
| 56 | 19.7 | 20.6 | 22 | 754 | 0 | 11:44:23 | 03-Dec-2015 |
| 57 | 20.68 | 19.6 | 23 | 754 | 0 | 11:49:23 | 03-Dec-2015 |
| 58 | 21.11 | 18.7 | 23 | 754 | 3 | 11:54:23 | 03-Dec-2015 |
| 59 | 19.96 | 17.9 | 24 | 754 | 0 | 11:59:23 | 03-Dec-2015 |
| 60 | 26.6 | 17 | 27 | 754 | 0 | 12:04:23 | 03-Dec-2015 |
| 61 | 23.94 | 16.3 | 28 | 754 | 0 | 12:09:23 | 03-Dec-2015 |
| 62 | 20.74 | 15.9 | 27 | 754 | 0 | 12:14:23 | 03-Dec-2015 |
| 63 | 19.47 | 15.4 | 27 | 754 | 0 | 12:19:23 | 03-Dec-2015 |
| 64 | 21.59 | 14.7 | 29 | 754 | 0 | 12:24:23 | 03-Dec-2015 |
| 65 | 23.3 | 13.9 | 31 | 754 | 0 | 12:29:23 | 03-Dec-2015 |
| 66 | 26.33 | 13.2 | 32 | 754 | 3 | 12:34:23 | 03-Dec-2015 |
| 67 | 26.64 | 12.5 | 32 | 754 | 2 | 12:39:23 | 03-Dec-2015 |
| 68 | 23.04 | 11.9 | 33 | 754 | 0 | 12:44:23 | 03-Dec-2015 |
| 69 | 22.61 | 11.2 | 34 | 754 | 0 | 12:49:23 | 03-Dec-2015 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 70 | 24.15 | 10.5 | 35 | 754 | 0 | 12:54:23 | 03-Dec-2015 |
| 71 | 24.74 | 9.9 | 36 | 754 | 0 | 12:59:23 | 03-Dec-2015 |
| 72 | 20.17 | 9.2 | 38 | 754 | 0 | 13:04:23 | 03-Dec-2015 |
| 73 | 20.97 | 8.7 | 39 | 754 | 0 | 13:09:23 | 03-Dec-2015 |
| 74 | 20.62 | 8.2 | 40 | 754 | 0 | 13:14:23 | 03-Dec-2015 |
| 75 | 26.23 | 7.8 | 41 | 754 | 0 | 13:19:23 | 03-Dec-2015 |
| 76 | 23.19 | 7.4 | 43 | 754 | 0 | 13:24:23 | 03-Dec-2015 |
| 77 | 24.41 | 7 | 45 | 754 | 0 | 13:29:23 | 03-Dec-2015 |
| 78 | 23.89 | 6.7 | 46 | 754 | 0 | 13:34:23 | 03-Dec-2015 |
| 79 | 22.42 | 6.4 | 46 | 754 | 0 | 13:39:23 | 03-Dec-2015 |
| 80 | 21.69 | 6.1 | 46 | 754 | 0 | 13:44:23 | 03-Dec-2015 |
| 81 | 22.25 | 5.8 | 48 | 754 | 0 | 13:49:23 | 03-Dec-2015 |
| 82 | 21.94 | 5.6 | 48 | 754 | 0 | 13:54:23 | 03-Dec-2015 |

| | | |
|---|---|---|
| >"Model N | "PDR-150( | 1.34 |
| Serial no. | "0115248028" | |
| Tag Numbe | 18 | |
| Start Time | 07:02:02 | |
| Start Date | 04-Dec-2015 | |
| Log Period | 00:05:00 | |
| Number | 81 | |
| CalFactor | 1 | |
| Unit | 0 | |
| Unit Name | "ug/m3" | |
| TEMPUNIT | C | |
| RH CORRE( | "DISABLED" | |
| Max Disp | 344.2713 | |
| Max Disp @ | 13:17:36 04-Dec-2015 | |
| Max STEL | 59.02812 | |
| Max STEL ( | 07:51:42 04-Dec-2015 | |
| Avg point | 39.22873 | |
| ALARM | "INSTANT " | |
| ALARM_LE | 3.19 | |
| Errors | 0 | |
| Inlet Type | "RED CYCLONE " | |
| FlowRate | 2 | |
| 50% AED | 5.521563 | |
| Site Name | "Factory default" | |

| record | "ug/m3" | Temp | RHumidity | AtmoPres | Flags | | |
|---|---|---|---|---|---|---|---|
| 1 | 49.02 | 15.6 | 31 | 758 | 1 | 07:07:02 | 04-Dec-2015 |
| 2 | 52.91 | 14.9 | 30 | 758 | 0 | 07:12:02 | 04-Dec-2015 |
| 3 | 59.44 | 14.1 | 31 | 758 | 0 | 07:17:02 | 04-Dec-2015 |
| 4 | 57.87 | 13.3 | 32 | 760 | 0 | 07:22:02 | 04-Dec-2015 |
| 5 | 55.48 | 12.6 | 34 | 760 | 0 | 07:27:02 | 04-Dec-2015 |
| 6 | 59.85 | 12 | 34 | 760 | 0 | 07:32:02 | 04-Dec-2015 |
| 7 | 54.01 | 11.6 | 36 | 760 | 0 | 07:37:02 | 04-Dec-2015 |
| 8 | 60.99 | 11.3 | 36 | 760 | 0 | 07:42:02 | 04-Dec-2015 |
| 9 | 59.64 | 11.1 | 36 | 760 | 0 | 07:47:02 | 04-Dec-2015 |
| 10 | 56.13 | 11 | 36 | 760 | 0 | 07:52:02 | 04-Dec-2015 |
| 11 | 54.05 | 11 | 36 | 760 | 0 | 07:57:02 | 04-Dec-2015 |
| 12 | 52.57 | 11 | 36 | 760 | 0 | 08:02:02 | 04-Dec-2015 |
| 13 | 54.47 | 11.1 | 36 | 760 | 0 | 08:07:02 | 04-Dec-2015 |
| 14 | 50.49 | 11.2 | 36 | 760 | 0 | 08:12:02 | 04-Dec-2015 |
| 15 | 52.18 | 11.4 | 36 | 760 | 0 | 08:17:02 | 04-Dec-2015 |
| 16 | 53.75 | 11.6 | 36 | 760 | 0 | 08:22:02 | 04-Dec-2015 |
| 17 | 52.25 | 11.9 | 36 | 760 | 0 | 08:27:02 | 04-Dec-2015 |
| 18 | 53 | 12.2 | 35 | 760 | 1 | 08:32:02 | 04-Dec-2015 |
| 19 | 50.16 | 12.6 | 34 | 760 | 0 | 08:37:02 | 04-Dec-2015 |
| 20 | 49.6 | 12.8 | 34 | 760 | 0 | 08:42:02 | 04-Dec-2015 |
| 21 | 51.67 | 12.8 | 34 | 760 | 0 | 08:47:02 | 04-Dec-2015 |
| 22 | 49.91 | 12.7 | 34 | 760 | 0 | 08:52:02 | 04-Dec-2015 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 23 | 48.57 | 12.6 | 34 | 760 | 0 | 08:57:02 | 04-Dec-2015 |
| 24 | 50.86 | 12.3 | 35 | 760 | 0 | 09:02:02 | 04-Dec-2015 |
| 25 | 45.18 | 11.9 | 35 | 760 | 0 | 09:07:02 | 04-Dec-2015 |
| 26 | 43.63 | 11.6 | 36 | 760 | 0 | 09:12:02 | 04-Dec-2015 |
| 27 | 41.24 | 11.4 | 36 | 760 | 0 | 09:17:02 | 04-Dec-2015 |
| 28 | 40.57 | 11.3 | 37 | 760 | 0 | 09:22:02 | 04-Dec-2015 |
| 29 | 42.15 | 11.4 | 36 | 760 | 0 | 09:27:02 | 04-Dec-2015 |
| 30 | 52.06 | 11.5 | 38 | 760 | 0 | 09:32:02 | 04-Dec-2015 |
| 31 | 46.99 | 11.5 | 38 | 760 | 0 | 09:37:02 | 04-Dec-2015 |
| 32 | 38.54 | 11.5 | 37 | 760 | 0 | 09:42:02 | 04-Dec-2015 |
| 33 | 39.27 | 11.5 | 37 | 760 | 0 | 09:47:02 | 04-Dec-2015 |
| 34 | 39.06 | 11.5 | 37 | 760 | 0 | 09:52:02 | 04-Dec-2015 |
| 35 | 39.07 | 11.6 | 39 | 760 | 0 | 09:57:02 | 04-Dec-2015 |
| 36 | 37.98 | 11.7 | 39 | 760 | 0 | 10:02:02 | 04-Dec-2015 |
| 37 | 36.25 | 11.9 | 39 | 760 | 0 | 10:07:02 | 04-Dec-2015 |
| 38 | 36.19 | 12.2 | 37 | 760 | 0 | 10:12:02 | 04-Dec-2015 |
| 39 | 34.3 | 12.3 | 36 | 760 | 0 | 10:17:02 | 04-Dec-2015 |
| 40 | 34.2 | 12.5 | 35 | 760 | 0 | 10:22:02 | 04-Dec-2015 |
| 41 | 36 | 12.8 | 35 | 760 | 0 | 10:27:02 | 04-Dec-2015 |
| 42 | 32.61 | 13.1 | 35 | 760 | 0 | 10:32:02 | 04-Dec-2015 |
| 43 | 32.25 | 13.5 | 34 | 760 | 0 | 10:37:02 | 04-Dec-2015 |
| 44 | 32.43 | 13.8 | 34 | 760 | 0 | 10:42:02 | 04-Dec-2015 |
| 45 | 31.53 | 14.1 | 33 | 760 | 0 | 10:47:02 | 04-Dec-2015 |
| 46 | 31.38 | 14.4 | 33 | 760 | 0 | 10:52:02 | 04-Dec-2015 |
| 47 | 31.49 | 14.6 | 32 | 760 | 0 | 10:57:02 | 04-Dec-2015 |
| 48 | 31.33 | 14.8 | 32 | 760 | 0 | 11:02:02 | 04-Dec-2015 |
| 49 | 27.39 | 15 | 32 | 760 | 0 | 11:07:02 | 04-Dec-2015 |
| 50 | 31.64 | 15.2 | 32 | 760 | 0 | 11:12:02 | 04-Dec-2015 |
| 51 | 31.91 | 15.4 | 33 | 760 | 0 | 11:17:02 | 04-Dec-2015 |
| 52 | 34.76 | 15.4 | 32 | 760 | 0 | 11:22:02 | 04-Dec-2015 |
| 53 | 32.38 | 15.4 | 33 | 760 | 0 | 11:27:02 | 04-Dec-2015 |
| 54 | 31.97 | 15.3 | 32 | 758 | 0 | 11:32:02 | 04-Dec-2015 |
| 55 | 26.97 | 15.2 | 32 | 758 | 0 | 11:37:02 | 04-Dec-2015 |
| 56 | 33.8 | 15.2 | 34 | 758 | 0 | 11:42:02 | 04-Dec-2015 |
| 57 | 34.01 | 15.1 | 34 | 760 | 0 | 11:47:02 | 04-Dec-2015 |
| 58 | 33.01 | 15.2 | 34 | 760 | 0 | 11:52:02 | 04-Dec-2015 |
| 59 | 35.45 | 15.3 | 34 | 758 | 0 | 11:57:02 | 04-Dec-2015 |
| 60 | 31.94 | 15.4 | 33 | 760 | 0 | 12:02:02 | 04-Dec-2015 |
| 61 | 37.31 | 15.4 | 33 | 758 | 0 | 12:07:02 | 04-Dec-2015 |
| 62 | 34.98 | 15.3 | 33 | 758 | 0 | 12:12:02 | 04-Dec-2015 |
| 63 | 29.29 | 15.3 | 32 | 758 | 0 | 12:17:02 | 04-Dec-2015 |
| 64 | 27.69 | 15.3 | 31 | 758 | 0 | 12:22:02 | 04-Dec-2015 |
| 65 | 27.89 | 15.3 | 32 | 758 | 0 | 12:27:02 | 04-Dec-2015 |
| 66 | 28.86 | 15.5 | 32 | 758 | 0 | 12:32:02 | 04-Dec-2015 |
| 67 | 28.23 | 15.6 | 32 | 758 | 0 | 12:37:02 | 04-Dec-2015 |
| 68 | 26.99 | 15.7 | 32 | 758 | 0 | 12:42:02 | 04-Dec-2015 |
| 69 | 26.88 | 15.9 | 31 | 758 | 0 | 12:47:02 | 04-Dec-2015 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 70 | 36.21 | 16 | 32 | 758 | 3 | 12:52:02 | 04-Dec-2015 |
| 71 | 28.26 | 16 | 31 | 758 | 0 | 12:57:02 | 04-Dec-2015 |
| 72 | 26.91 | 16.1 | 31 | 758 | 1 | 13:02:02 | 04-Dec-2015 |
| 73 | 25.96 | 16.2 | 31 | 758 | 0 | 13:07:02 | 04-Dec-2015 |
| 74 | 30.74 | 16.2 | 31 | 758 | 0 | 13:12:02 | 04-Dec-2015 |
| 75 | 23.98 | 16.1 | 30 | 758 | 0 | 13:17:02 | 04-Dec-2015 |
| 76 | 37.32 | 16 | 30 | 758 | 1 | 13:22:02 | 04-Dec-2015 |
| 77 | 22.68 | 15.9 | 30 | 758 | 0 | 13:27:02 | 04-Dec-2015 |
| 78 | 20.53 | 15.7 | 31 | 758 | 0 | 13:32:02 | 04-Dec-2015 |
| 79 | 24.29 | 15.6 | 31 | 758 | 0 | 13:37:02 | 04-Dec-2015 |
| 80 | 24.07 | 15.4 | 31 | 758 | 0 | 13:42:02 | 04-Dec-2015 |
| 81 | 28.67 | 15.2 | 32 | 760 | 0 | 13:47:02 | 04-Dec-2015 |

| | | |
|---|---|---|
| >"Model N | "PDR-150( | 1.34 |
| Serial no. | "0115248028" | |
| Tag Numbe | 19 | |
| Start Time | 07:45:16 | |
| Start Date | 07-Dec-2015 | |
| Log Period | 00:05:00 | |
| Number | 69 | |
| CalFactor | 1 | |
| Unit | 0 | |
| Unit Name | "ug/m3" | |
| TEMPUNIT | C | |
| RH CORRE( | "DISABLED" | |
| Max Disp | 423.4746 | |
| Max Disp @ | 07:45:47 07-Dec-2015 | |
| Max STEL | 78.86697 | |
| Max STEL ( | 12:09:36 07-Dec-2015 | |
| Avg point | 52.93685 | |
| ALARM | "INSTANT " | |
| ALARM_LE | 3.19 | |
| Errors | 0 | |
| Inlet Type | "RED CYCLONE " | |
| FlowRate | 2 | |
| 50% AED | 5.521563 | |
| Site Name | "Factory default" | |

| record | "ug/m3" | Temp | RHumidity | AtmoPres | Flags | | |
|---|---|---|---|---|---|---|---|
| 1 | 60.1 | 15 | 36 | 752 | 3 | 07:50:16 | 07-Dec-2015 |
| 2 | 43.68 | 15.5 | 34 | 752 | 0 | 07:55:16 | 07-Dec-2015 |
| 3 | 45.77 | 15.6 | 33 | 752 | 0 | 08:00:16 | 07-Dec-2015 |
| 4 | 49.64 | 15.4 | 34 | 752 | 0 | 08:05:16 | 07-Dec-2015 |
| 5 | 47.02 | 15.1 | 34 | 752 | 0 | 08:10:16 | 07-Dec-2015 |
| 6 | 47.36 | 14.7 | 35 | 752 | 0 | 08:15:16 | 07-Dec-2015 |
| 7 | 50.23 | 14.5 | 35 | 752 | 0 | 08:20:16 | 07-Dec-2015 |
| 8 | 50.34 | 14.2 | 36 | 752 | 0 | 08:25:16 | 07-Dec-2015 |
| 9 | 49.37 | 13.9 | 37 | 752 | 0 | 08:30:16 | 07-Dec-2015 |
| 10 | 51.87 | 13.7 | 37 | 752 | 0 | 08:35:16 | 07-Dec-2015 |
| 11 | 48.2 | 13.6 | 37 | 752 | 0 | 08:40:16 | 07-Dec-2015 |
| 12 | 48.81 | 13.5 | 37 | 752 | 0 | 08:45:16 | 07-Dec-2015 |
| 13 | 53.93 | 13.3 | 38 | 752 | 0 | 08:50:16 | 07-Dec-2015 |
| 14 | 53.74 | 13.2 | 38 | 752 | 0 | 08:55:16 | 07-Dec-2015 |
| 15 | 49.32 | 13 | 38 | 752 | 0 | 09:00:16 | 07-Dec-2015 |
| 16 | 47.89 | 12.7 | 39 | 752 | 0 | 09:05:16 | 07-Dec-2015 |
| 17 | 45.09 | 12.3 | 40 | 752 | 0 | 09:10:16 | 07-Dec-2015 |
| 18 | 43.35 | 11.9 | 41 | 752 | 0 | 09:15:16 | 07-Dec-2015 |
| 19 | 45.79 | 11.5 | 42 | 752 | 0 | 09:20:16 | 07-Dec-2015 |
| 20 | 51.73 | 11.1 | 43 | 752 | 0 | 09:25:16 | 07-Dec-2015 |
| 21 | 51.63 | 10.7 | 44 | 752 | 0 | 09:30:16 | 07-Dec-2015 |
| 22 | 53.35 | 10.4 | 44 | 752 | 0 | 09:35:16 | 07-Dec-2015 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 23 | 54.11 | 10.1 | 45 | 752 | 0 | 09:40:16 | 07-Dec-2015 |
| 24 | 62.13 | 9.8 | 46 | 752 | 0 | 09:45:16 | 07-Dec-2015 |
| 25 | 65.31 | 9.5 | 46 | 752 | 0 | 09:50:16 | 07-Dec-2015 |
| 26 | 63.44 | 9.2 | 47 | 752 | 0 | 09:55:16 | 07-Dec-2015 |
| 27 | 62.85 | 9 | 48 | 752 | 0 | 10:00:16 | 07-Dec-2015 |
| 28 | 40.32 | 8.8 | 56 | 752 | 0 | 10:05:16 | 07-Dec-2015 |
| 29 | 14.89 | 8.9 | 67 | 752 | 0 | 10:10:16 | 07-Dec-2015 |
| 30 | 31.81 | 9.4 | 67 | 752 | 0 | 10:15:16 | 07-Dec-2015 |
| 31 | 32.27 | 10.2 | 60 | 752 | 0 | 10:20:16 | 07-Dec-2015 |
| 32 | 32.2 | 11.2 | 55 | 752 | 0 | 10:25:16 | 07-Dec-2015 |
| 33 | 32.56 | 12.2 | 49 | 752 | 0 | 10:30:16 | 07-Dec-2015 |
| 34 | 35 | 13.2 | 46 | 752 | 0 | 10:35:16 | 07-Dec-2015 |
| 35 | 35.04 | 14.2 | 42 | 752 | 0 | 10:40:16 | 07-Dec-2015 |
| 36 | 40.72 | 15.2 | 39 | 752 | 0 | 10:45:16 | 07-Dec-2015 |
| 37 | 36.28 | 16 | 35 | 752 | 0 | 10:50:16 | 07-Dec-2015 |
| 38 | 60.59 | 16.8 | 33 | 750 | 1 | 10:55:16 | 07-Dec-2015 |
| 39 | 60.98 | 17.5 | 31 | 750 | 1 | 11:00:16 | 07-Dec-2015 |
| 40 | 63.03 | 17.8 | 31 | 750 | 1 | 11:05:16 | 07-Dec-2015 |
| 41 | 66.67 | 17.8 | 30 | 750 | 1 | 11:10:16 | 07-Dec-2015 |
| 42 | 59.85 | 17.8 | 30 | 752 | 1 | 11:15:16 | 07-Dec-2015 |
| 43 | 56.58 | 17.6 | 31 | 752 | 3 | 11:20:16 | 07-Dec-2015 |
| 44 | 46.1 | 17.5 | 31 | 752 | 1 | 11:25:16 | 07-Dec-2015 |
| 45 | 54.08 | 17.8 | 31 | 750 | 3 | 11:30:16 | 07-Dec-2015 |
| 46 | 45.09 | 18.2 | 31 | 750 | 2 | 11:35:16 | 07-Dec-2015 |
| 47 | 63.13 | 18.8 | 30 | 750 | 3 | 11:40:16 | 07-Dec-2015 |
| 48 | 68.9 | 19.2 | 28 | 750 | 0 | 11:45:16 | 07-Dec-2015 |
| 49 | 73.84 | 19.2 | 28 | 750 | 0 | 11:50:16 | 07-Dec-2015 |
| 50 | 70.29 | 18.8 | 28 | 750 | 0 | 11:55:16 | 07-Dec-2015 |
| 51 | 83.16 | 18.3 | 30 | 750 | 0 | 12:00:16 | 07-Dec-2015 |
| 52 | 79.33 | 17.7 | 30 | 750 | 0 | 12:05:16 | 07-Dec-2015 |
| 53 | 73.97 | 17.1 | 31 | 750 | 0 | 12:10:16 | 07-Dec-2015 |
| 54 | 71.07 | 16.5 | 31 | 750 | 0 | 12:15:16 | 07-Dec-2015 |
| 55 | 73.69 | 15.9 | 32 | 750 | 0 | 12:20:16 | 07-Dec-2015 |
| 56 | 77.3 | 15.2 | 33 | 750 | 0 | 12:25:16 | 07-Dec-2015 |
| 57 | 63.26 | 14.6 | 34 | 750 | 0 | 12:30:16 | 07-Dec-2015 |
| 58 | 54 | 14 | 34 | 750 | 0 | 12:35:16 | 07-Dec-2015 |
| 59 | 58.5 | 13.4 | 36 | 750 | 0 | 12:40:16 | 07-Dec-2015 |
| 60 | 52.51 | 12.8 | 37 | 750 | 0 | 12:45:16 | 07-Dec-2015 |
| 61 | 55.02 | 12.2 | 39 | 750 | 1 | 12:50:16 | 07-Dec-2015 |
| 62 | 50.75 | 11.6 | 39 | 750 | 0 | 12:55:16 | 07-Dec-2015 |
| 63 | 49.57 | 11.1 | 41 | 750 | 0 | 13:00:16 | 07-Dec-2015 |
| 64 | 47.4 | 10.6 | 42 | 750 | 0 | 13:05:16 | 07-Dec-2015 |
| 65 | 46.97 | 10.2 | 43 | 750 | 0 | 13:10:16 | 07-Dec-2015 |
| 66 | 69.31 | 9.8 | 50 | 750 | 1 | 13:15:16 | 07-Dec-2015 |
| 67 | 43.08 | 9.6 | 47 | 750 | 1 | 13:20:16 | 07-Dec-2015 |
| 68 | 41.26 | 9.6 | 45 | 750 | 1 | 13:25:16 | 07-Dec-2015 |
| 69 | 46.19 | 9.7 | 45 | 750 | 1 | 13:30:16 | 07-Dec-2015 |

| | | |
|---|---|---|
| >"Model N | "PDR-150( | 1.34 |
| Serial no. | "0115248028" | |
| Tag Numbe | 20 | |
| Start Time | 06:37:33 | |
| Start Date | 08-Dec-2015 | |
| Log Period | 00:05:00 | |
| Number | 86 | |
| CalFactor | 1 | |
| Unit | 0 | |
| Unit Name | "ug/m3" | |
| TEMPUNIT | C | |
| RH CORRE( | "DISABLED" | |
| Max Disp | 516.0163 | |
| Max Disp @ | 12:48:38 | 08-Dec-2015 |
| Max STEL | 51.7423 | |
| Max STEL ( | 12:15:03 | 08-Dec-2015 |
| Avg point | 33.2991 | |
| ALARM | "INSTANT " | |
| ALARM_LE | 3.19 | |
| Errors | 0 | |
| Inlet Type | "RED CYCLONE " | |
| FlowRate | 2 | |
| 50% AED | 5.521563 | |
| Site Name | "Factory default" | |

| record | "ug/m3" | Temp | RHumidity | AtmoPres | Flags | | |
|---|---|---|---|---|---|---|---|
| 1 | 26.58 | 14 | 37 | 744 | 0 | 06:42:33 | 08-Dec-2015 |
| 2 | 27.85 | 13.7 | 38 | 744 | 0 | 06:47:33 | 08-Dec-2015 |
| 3 | 28.11 | 13.4 | 38 | 744 | 0 | 06:52:33 | 08-Dec-2015 |
| 4 | 35.68 | 13 | 40 | 744 | 0 | 06:57:33 | 08-Dec-2015 |
| 5 | 33.44 | 12.5 | 41 | 744 | 0 | 07:02:33 | 08-Dec-2015 |
| 6 | 34.72 | 11.9 | 43 | 744 | 0 | 07:07:33 | 08-Dec-2015 |
| 7 | 32.92 | 11.2 | 43 | 744 | 0 | 07:12:33 | 08-Dec-2015 |
| 8 | 35.6 | 10.7 | 45 | 744 | 0 | 07:17:33 | 08-Dec-2015 |
| 9 | 30.93 | 10.3 | 46 | 744 | 0 | 07:22:33 | 08-Dec-2015 |
| 10 | 24.5 | 9.9 | 53 | 744 | 0 | 07:27:33 | 08-Dec-2015 |
| 11 | 18.99 | 9.8 | 52 | 744 | 0 | 07:32:33 | 08-Dec-2015 |
| 12 | 19.01 | 10.1 | 52 | 744 | 0 | 07:37:33 | 08-Dec-2015 |
| 13 | 18.46 | 10.6 | 50 | 744 | 0 | 07:42:33 | 08-Dec-2015 |
| 14 | 30.41 | 11.2 | 48 | 744 | 0 | 07:47:33 | 08-Dec-2015 |
| 15 | 36.51 | 11.6 | 43 | 744 | 0 | 07:52:33 | 08-Dec-2015 |
| 16 | 32.4 | 11.6 | 43 | 744 | 0 | 07:57:33 | 08-Dec-2015 |
| 17 | 42.4 | 11.3 | 44 | 744 | 0 | 08:02:33 | 08-Dec-2015 |
| 18 | 40.33 | 10.9 | 45 | 744 | 0 | 08:07:33 | 08-Dec-2015 |
| 19 | 33.19 | 10.5 | 46 | 744 | 0 | 08:12:33 | 08-Dec-2015 |
| 20 | 30.64 | 10.2 | 47 | 744 | 0 | 08:17:33 | 08-Dec-2015 |
| 21 | 34.29 | 9.9 | 47 | 744 | 3 | 08:22:33 | 08-Dec-2015 |
| 22 | 34.35 | 9.6 | 48 | 744 | 0 | 08:27:33 | 08-Dec-2015 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 23 | 31.4 | 9.3 | 49 | 744 | 0 | 08:32:33 | 08-Dec-2015 |
| 24 | 30.92 | 9.1 | 50 | 744 | 0 | 08:37:33 | 08-Dec-2015 |
| 25 | 32.63 | 8.9 | 50 | 744 | 0 | 08:42:33 | 08-Dec-2015 |
| 26 | 30.16 | 8.8 | 50 | 744 | 0 | 08:47:33 | 08-Dec-2015 |
| 27 | 30.63 | 8.7 | 50 | 744 | 0 | 08:52:33 | 08-Dec-2015 |
| 28 | 53.36 | 8.6 | 51 | 744 | 3 | 08:57:33 | 08-Dec-2015 |
| 29 | 35.54 | 8.4 | 52 | 744 | 0 | 09:02:33 | 08-Dec-2015 |
| 30 | 33.57 | 8.3 | 52 | 744 | 0 | 09:07:33 | 08-Dec-2015 |
| 31 | 37.37 | 8.1 | 52 | 744 | 0 | 09:12:33 | 08-Dec-2015 |
| 32 | 32.64 | 8 | 53 | 744 | 0 | 09:17:33 | 08-Dec-2015 |
| 33 | 32.17 | 7.9 | 53 | 744 | 0 | 09:22:33 | 08-Dec-2015 |
| 34 | 35.3 | 7.9 | 53 | 744 | 0 | 09:27:33 | 08-Dec-2015 |
| 35 | 34.98 | 7.8 | 54 | 744 | 0 | 09:32:33 | 08-Dec-2015 |
| 36 | 40.29 | 7.8 | 54 | 744 | 0 | 09:37:33 | 08-Dec-2015 |
| 37 | 43.45 | 7.8 | 55 | 744 | 0 | 09:42:33 | 08-Dec-2015 |
| 38 | 41.68 | 7.8 | 55 | 744 | 0 | 09:47:33 | 08-Dec-2015 |
| 39 | 34.92 | 8 | 54 | 744 | 0 | 09:52:33 | 08-Dec-2015 |
| 40 | 35.32 | 8.1 | 53 | 744 | 0 | 09:57:33 | 08-Dec-2015 |
| 41 | 33.01 | 8.1 | 53 | 744 | 0 | 10:02:33 | 08-Dec-2015 |
| 42 | 31.36 | 8.1 | 53 | 744 | 0 | 10:07:33 | 08-Dec-2015 |
| 43 | 33.15 | 8.1 | 53 | 744 | 0 | 10:12:33 | 08-Dec-2015 |
| 44 | 30.44 | 8.1 | 53 | 744 | 0 | 10:17:33 | 08-Dec-2015 |
| 45 | 33.58 | 8 | 54 | 744 | 0 | 10:22:33 | 08-Dec-2015 |
| 46 | 40.14 | 8 | 54 | 744 | 0 | 10:27:33 | 08-Dec-2015 |
| 47 | 41.08 | 8 | 54 | 744 | 0 | 10:32:33 | 08-Dec-2015 |
| 48 | 47.76 | 7.9 | 55 | 744 | 0 | 10:37:33 | 08-Dec-2015 |
| 49 | 37.08 | 7.9 | 55 | 744 | 0 | 10:42:33 | 08-Dec-2015 |
| 50 | 20.69 | 7.8 | 57 | 744 | 0 | 10:47:33 | 08-Dec-2015 |
| 51 | 17.14 | 8.2 | 59 | 744 | 0 | 10:52:33 | 08-Dec-2015 |
| 52 | 18.65 | 8.8 | 59 | 744 | 0 | 10:57:33 | 08-Dec-2015 |
| 53 | 17.03 | 9.5 | 58 | 744 | 0 | 11:02:33 | 08-Dec-2015 |
| 54 | 17.75 | 10.3 | 56 | 744 | 0 | 11:07:33 | 08-Dec-2015 |
| 55 | 22.76 | 11.1 | 53 | 744 | 1 | 11:12:33 | 08-Dec-2015 |
| 56 | 15.88 | 12 | 51 | 744 | 1 | 11:17:33 | 08-Dec-2015 |
| 57 | 15.02 | 13.2 | 48 | 744 | 1 | 11:22:33 | 08-Dec-2015 |
| 58 | 28 | 14.4 | 46 | 742 | 1 | 11:27:33 | 08-Dec-2015 |
| 59 | 31.1 | 15.7 | 44 | 744 | 1 | 11:32:33 | 08-Dec-2015 |
| 60 | 32.13 | 16.9 | 42 | 744 | 1 | 11:37:33 | 08-Dec-2015 |
| 61 | 27.2 | 18 | 39 | 744 | 3 | 11:42:33 | 08-Dec-2015 |
| 62 | 33.06 | 19 | 34 | 744 | 3 | 11:47:33 | 08-Dec-2015 |
| 63 | 34.84 | 19.4 | 31 | 744 | 1 | 11:52:33 | 08-Dec-2015 |
| 64 | 31.74 | 19.4 | 31 | 742 | 0 | 11:57:33 | 08-Dec-2015 |
| 65 | 35.26 | 19.2 | 34 | 742 | 3 | 12:02:33 | 08-Dec-2015 |
| 66 | 37.5 | 18.9 | 33 | 742 | 0 | 12:07:33 | 08-Dec-2015 |
| 67 | 70.32 | 18.5 | 33 | 742 | 0 | 12:12:33 | 08-Dec-2015 |
| 68 | 47.11 | 18.2 | 35 | 742 | 0 | 12:17:33 | 08-Dec-2015 |
| 69 | 31.04 | 17.9 | 36 | 742 | 0 | 12:22:33 | 08-Dec-2015 |

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|---|---|---|---|---|---|---|---|
| 70 | 36.82 | 17.6 | 36 | 742 | 0 | 12:27:33 | 08-Dec-2015 |
| 71 | 34.34 | 17.3 | 36 | 742 | 0 | 12:32:33 | 08-Dec-2015 |
| 72 | 31.35 | 17 | 36 | 742 | 0 | 12:37:33 | 08-Dec-2015 |
| 73 | 31.27 | 16.8 | 38 | 742 | 0 | 12:42:33 | 08-Dec-2015 |
| 74 | 31.05 | 16.5 | 36 | 742 | 3 | 12:47:33 | 08-Dec-2015 |
| 75 | 52.55 | 16.2 | 37 | 742 | 3 | 12:52:33 | 08-Dec-2015 |
| 76 | 30.07 | 16 | 38 | 742 | 0 | 12:57:33 | 08-Dec-2015 |
| 77 | 36.83 | 16 | 39 | 742 | 0 | 13:02:33 | 08-Dec-2015 |
| 78 | 37.21 | 15.9 | 38 | 742 | 0 | 13:07:33 | 08-Dec-2015 |
| 79 | 38.54 | 15.8 | 38 | 742 | 0 | 13:12:33 | 08-Dec-2015 |
| 80 | 33.76 | 15.5 | 39 | 742 | 0 | 13:17:33 | 08-Dec-2015 |
| 81 | 37.72 | 15.3 | 40 | 742 | 3 | 13:22:33 | 08-Dec-2015 |
| 82 | 46.97 | 15 | 41 | 742 | 0 | 13:27:33 | 08-Dec-2015 |
| 83 | 37.33 | 14.7 | 40 | 742 | 0 | 13:32:33 | 08-Dec-2015 |
| 84 | 33.27 | 14.4 | 40 | 742 | 0 | 13:37:33 | 08-Dec-2015 |
| 85 | 34.9 | 14.2 | 41 | 742 | 0 | 13:42:33 | 08-Dec-2015 |
| 86 | 40.3 | 14 | 42 | 742 | 3 | 13:47:33 | 08-Dec-2015 |

| | | |
|---|---|---|
| >"Model N | "PDR-150( | 1.34 |
| Serial no. | "0115248028" | |
| Tag Numbe | 21 | |
| Start Time | 06:37:39 | |
| Start Date | 09-Dec-2015 | |
| Log Period | 00:05:00 | |
| Number | 82 | |
| CalFactor | 1 | |
| Unit | 0 | |
| Unit Name | "ug/m3" | |
| TEMPUNIT | C | |
| RH CORRE( | "DISABLED" | |
| Max Disp | 439.3467 | |
| Max Disp @ | 12:24:40 | 09-Dec-2015 |
| Max STEL | 37.03349 | |
| Max STEL ( | 10:11:29 | 09-Dec-2015 |
| Avg point | 23.0905 | |
| ALARM | "INSTANT " | |
| ALARM_LE | 3.19 | |
| Errors | 0 | |
| Inlet Type | "RED CYCLONE " | |
| FlowRate | 2 | |
| 50% AED | 5.521563 | |
| Site Name | "Factory default" | |

| record | "ug/m3" | Temp | RHumidity | AtmoPres | Flags | | |
|---|---|---|---|---|---|---|---|
| 1 | 27.79 | 15.5 | 41 | 738 | 1 | 06:42:39 | 09-Dec-2015 |
| 2 | 28.77 | 15.1 | 42 | 738 | 0 | 06:47:39 | 09-Dec-2015 |
| 3 | 28.26 | 14.7 | 43 | 738 | 0 | 06:52:39 | 09-Dec-2015 |
| 4 | 34.5 | 14.3 | 44 | 738 | 0 | 06:57:39 | 09-Dec-2015 |
| 5 | 30.29 | 13.9 | 44 | 738 | 0 | 07:02:39 | 09-Dec-2015 |
| 6 | 35.97 | 13.5 | 45 | 738 | 0 | 07:07:39 | 09-Dec-2015 |
| 7 | 33.27 | 13.3 | 46 | 738 | 0 | 07:12:39 | 09-Dec-2015 |
| 8 | 32.37 | 13.1 | 47 | 738 | 0 | 07:17:39 | 09-Dec-2015 |
| 9 | 29.9 | 12.8 | 47 | 738 | 0 | 07:22:39 | 09-Dec-2015 |
| 10 | 29.01 | 12.6 | 47 | 738 | 0 | 07:27:39 | 09-Dec-2015 |
| 11 | 28.39 | 12.5 | 48 | 738 | 0 | 07:32:39 | 09-Dec-2015 |
| 12 | 31.84 | 12.5 | 48 | 738 | 0 | 07:37:39 | 09-Dec-2015 |
| 13 | 28.79 | 12.6 | 48 | 738 | 0 | 07:42:39 | 09-Dec-2015 |
| 14 | 27.52 | 12.6 | 48 | 738 | 0 | 07:47:39 | 09-Dec-2015 |
| 15 | 28.6 | 12.8 | 48 | 738 | 1 | 07:52:39 | 09-Dec-2015 |
| 16 | 30.19 | 12.9 | 49 | 738 | 0 | 07:57:39 | 09-Dec-2015 |
| 17 | 29.91 | 13 | 47 | 738 | 0 | 08:02:39 | 09-Dec-2015 |
| 18 | 27.23 | 13.1 | 46 | 738 | 0 | 08:07:39 | 09-Dec-2015 |
| 19 | 31.99 | 13.4 | 46 | 738 | 0 | 08:12:39 | 09-Dec-2015 |
| 20 | 29.79 | 13.7 | 47 | 738 | 0 | 08:17:39 | 09-Dec-2015 |
| 21 | 28.05 | 13.9 | 46 | 738 | 0 | 08:22:39 | 09-Dec-2015 |
| 22 | 14.98 | 14 | 49 | 738 | 0 | 08:27:39 | 09-Dec-2015 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 23 | 10.9 | 14.3 | 54 | 738 | 0 | 08:32:39 | 09-Dec-2015 |
| 24 | 9.63 | 14.8 | 53 | 740 | 0 | 08:37:39 | 09-Dec-2015 |
| 25 | 14.29 | 15.4 | 49 | 740 | 2 | 08:42:39 | 09-Dec-2015 |
| 26 | 21.52 | 15.8 | 40 | 740 | 0 | 08:47:39 | 09-Dec-2015 |
| 27 | 23.76 | 16.1 | 39 | 740 | 0 | 08:52:39 | 09-Dec-2015 |
| 28 | 21.52 | 16.3 | 38 | 738 | 0 | 08:57:39 | 09-Dec-2015 |
| 29 | 20.31 | 16.4 | 38 | 738 | 0 | 09:02:39 | 09-Dec-2015 |
| 30 | 19.79 | 16.6 | 37 | 738 | 0 | 09:07:39 | 09-Dec-2015 |
| 31 | 19 | 16.8 | 36 | 738 | 0 | 09:12:39 | 09-Dec-2015 |
| 32 | 20.16 | 17.1 | 36 | 738 | 0 | 09:17:39 | 09-Dec-2015 |
| 33 | 26.62 | 17.6 | 36 | 738 | 0 | 09:22:39 | 09-Dec-2015 |
| 34 | 24.37 | 18 | 37 | 738 | 0 | 09:27:39 | 09-Dec-2015 |
| 35 | 27.67 | 18.1 | 36 | 738 | 0 | 09:32:39 | 09-Dec-2015 |
| 36 | 31.33 | 18.1 | 36 | 738 | 0 | 09:37:39 | 09-Dec-2015 |
| 37 | 32.42 | 18.1 | 35 | 738 | 0 | 09:42:39 | 09-Dec-2015 |
| 38 | 23.45 | 18 | 35 | 738 | 0 | 09:47:39 | 09-Dec-2015 |
| 39 | 26.38 | 17.9 | 34 | 738 | 0 | 09:52:39 | 09-Dec-2015 |
| 40 | 39.31 | 17.7 | 35 | 738 | 0 | 09:57:39 | 09-Dec-2015 |
| 41 | 36.63 | 17.5 | 34 | 738 | 0 | 10:02:39 | 09-Dec-2015 |
| 42 | 34.05 | 17.4 | 34 | 738 | 0 | 10:07:39 | 09-Dec-2015 |
| 43 | 34.14 | 17.2 | 35 | 738 | 0 | 10:12:39 | 09-Dec-2015 |
| 44 | 17.07 | 17 | 35 | 738 | 0 | 10:17:39 | 09-Dec-2015 |
| 45 | 11.75 | 16.9 | 39 | 738 | 0 | 10:22:39 | 09-Dec-2015 |
| 46 | 8.12 | 16.8 | 42 | 738 | 0 | 10:27:39 | 09-Dec-2015 |
| 47 | 13.57 | 16.9 | 40 | 738 | 0 | 10:32:39 | 09-Dec-2015 |
| 48 | 11.72 | 17.2 | 39 | 738 | 0 | 10:37:39 | 09-Dec-2015 |
| 49 | 12.05 | 17.4 | 38 | 738 | 0 | 10:42:39 | 09-Dec-2015 |
| 50 | 10.24 | 17.6 | 36 | 738 | 0 | 10:47:39 | 09-Dec-2015 |
| 51 | 9.38 | 17.8 | 34 | 738 | 0 | 10:52:39 | 09-Dec-2015 |
| 52 | 8.9 | 17.9 | 35 | 738 | 0 | 10:57:39 | 09-Dec-2015 |
| 53 | 8.91 | 18.1 | 33 | 738 | 0 | 11:02:39 | 09-Dec-2015 |
| 54 | 8.31 | 18.2 | 33 | 738 | 0 | 11:07:39 | 09-Dec-2015 |
| 55 | 13.83 | 18.3 | 33 | 738 | 0 | 11:12:39 | 09-Dec-2015 |
| 56 | 23.69 | 18.2 | 34 | 738 | 0 | 11:17:39 | 09-Dec-2015 |
| 57 | 25.44 | 18.3 | 34 | 738 | 0 | 11:22:39 | 09-Dec-2015 |
| 58 | 33.44 | 18.2 | 35 | 738 | 0 | 11:27:39 | 09-Dec-2015 |
| 59 | 23.82 | 18.2 | 35 | 738 | 0 | 11:32:39 | 09-Dec-2015 |
| 60 | 30.29 | 18.2 | 33 | 738 | 0 | 11:37:39 | 09-Dec-2015 |
| 61 | 28.39 | 18.2 | 34 | 738 | 0 | 11:42:39 | 09-Dec-2015 |
| 62 | 30.21 | 17.9 | 34 | 738 | 0 | 11:47:39 | 09-Dec-2015 |
| 63 | 35.05 | 17.6 | 35 | 738 | 0 | 11:52:39 | 09-Dec-2015 |
| 64 | 26.09 | 17.2 | 36 | 738 | 3 | 11:57:39 | 09-Dec-2015 |
| 65 | 26.99 | 16.9 | 37 | 738 | 3 | 12:02:39 | 09-Dec-2015 |
| 66 | 30.54 | 16.5 | 37 | 738 | 3 | 12:07:39 | 09-Dec-2015 |
| 67 | 39.85 | 16.1 | 38 | 738 | 0 | 12:12:39 | 09-Dec-2015 |
| 68 | 29.84 | 15.8 | 39 | 738 | 0 | 12:17:39 | 09-Dec-2015 |
| 69 | 19.5 | 15.6 | 39 | 738 | 0 | 12:22:39 | 09-Dec-2015 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 70 | 39.65 | 15.4 | 39 | 738 | 3 | 12:27:39 | 09-Dec-2015 |
| 71 | 26.44 | 15.3 | 38 | 738 | 1 | 12:32:39 | 09-Dec-2015 |
| 72 | 23.22 | 15.4 | 37 | 738 | 1 | 12:37:39 | 09-Dec-2015 |
| 73 | 16.23 | 15.6 | 40 | 740 | 0 | 12:42:39 | 09-Dec-2015 |
| 74 | 12.36 | 15.7 | 40 | 740 | 0 | 12:47:39 | 09-Dec-2015 |
| 75 | 9.33 | 15.9 | 40 | 738 | 0 | 12:52:39 | 09-Dec-2015 |
| 76 | 10.34 | 16.1 | 37 | 738 | 0 | 12:57:39 | 09-Dec-2015 |
| 77 | 9.35 | 16.3 | 36 | 738 | 0 | 13:02:39 | 09-Dec-2015 |
| 78 | 10.43 | 16.5 | 36 | 738 | 0 | 13:07:39 | 09-Dec-2015 |
| 79 | 8.65 | 16.7 | 35 | 738 | 0 | 13:12:39 | 09-Dec-2015 |
| 80 | 8.73 | 16.9 | 35 | 738 | 0 | 13:17:39 | 09-Dec-2015 |
| 81 | 8.61 | 17.1 | 34 | 738 | 0 | 13:22:39 | 09-Dec-2015 |
| 82 | 8.44 | 17.3 | 34 | 738 | 0 | 13:27:39 | 09-Dec-2015 |

| | | |
|---|---|---|
| >"Model N | "PDR-150( | 1.34 |
| Serial no. | "0115248028" | |
| Tag Numbe | 22 | |
| Start Time | 06:52:38 | |
| Start Date | 10-Dec-2015 | |
| Log Period | 00:05:00 | |
| Number | 85 | |
| CalFactor | 1 | |
| Unit | 0 | |
| Unit Name | "ug/m3" | |
| TEMPUNIT | C | |
| RH CORRE( | "DISABLED" | |
| Max Disp | 3919.681 | |
| Max Disp @ | 11:11:43 | 10-Dec-2015 |
| Max STEL | 62.1033 | |
| Max STEL ( | 11:26:08 | 10-Dec-2015 |
| Avg point | 17.20367 | |
| ALARM | "INSTANT " | |
| ALARM_LE | 3.19 | |
| Errors | 0 | |
| Inlet Type | "RED CYCLONE " | |
| FlowRate | 2 | |
| 50% AED | 5.521563 | |
| Site Name | "Factory default" | |

| record | "ug/m3" | Temp | RHumidity | AtmoPres | Flags | | |
|---|---|---|---|---|---|---|---|
| 1 | 22.07 | 13.8 | 39 | 736 | 1 | 06:57:38 | 10-Dec-2015 |
| 2 | 18.98 | 13.2 | 41 | 736 | 0 | 07:02:38 | 10-Dec-2015 |
| 3 | 5.64 | 12.8 | 44 | 736 | 0 | 07:07:38 | 10-Dec-2015 |
| 4 | 5.03 | 12.7 | 46 | 736 | 0 | 07:12:38 | 10-Dec-2015 |
| 5 | 5.15 | 12.9 | 47 | 736 | 0 | 07:17:38 | 10-Dec-2015 |
| 6 | 10.28 | 13.2 | 46 | 736 | 0 | 07:22:38 | 10-Dec-2015 |
| 7 | 7.93 | 13.7 | 45 | 736 | 0 | 07:27:38 | 10-Dec-2015 |
| 8 | 8.47 | 14.3 | 44 | 736 | 0 | 07:32:38 | 10-Dec-2015 |
| 9 | 15.07 | 14.9 | 41 | 736 | 0 | 07:37:38 | 10-Dec-2015 |
| 10 | 21.28 | 15.5 | 39 | 736 | 0 | 07:42:38 | 10-Dec-2015 |
| 11 | 25.91 | 16 | 38 | 736 | 0 | 07:47:38 | 10-Dec-2015 |
| 12 | 22.85 | 16.2 | 37 | 736 | 0 | 07:52:38 | 10-Dec-2015 |
| 13 | 27.22 | 16.5 | 36 | 736 | 0 | 07:57:38 | 10-Dec-2015 |
| 14 | 24.8 | 16.6 | 36 | 736 | 0 | 08:02:38 | 10-Dec-2015 |
| 15 | 18.46 | 16.7 | 35 | 736 | 0 | 08:07:38 | 10-Dec-2015 |
| 16 | 21.41 | 16.6 | 36 | 736 | 0 | 08:12:38 | 10-Dec-2015 |
| 17 | 23.69 | 16.4 | 36 | 736 | 0 | 08:17:38 | 10-Dec-2015 |
| 18 | 16.77 | 16.1 | 37 | 736 | 0 | 08:22:38 | 10-Dec-2015 |
| 19 | 16.46 | 15.8 | 37 | 736 | 0 | 08:27:38 | 10-Dec-2015 |
| 20 | 20.3 | 15.6 | 37 | 736 | 0 | 08:32:38 | 10-Dec-2015 |
| 21 | 24.28 | 15.3 | 38 | 736 | 0 | 08:37:38 | 10-Dec-2015 |
| 22 | 23.21 | 15.1 | 39 | 736 | 0 | 08:42:38 | 10-Dec-2015 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 23 | 22.25 | 14.9 | 39 | 736 | 0 | 08:47:38 | 10-Dec-2015 |
| 24 | 19.7 | 14.7 | 39 | 736 | 0 | 08:52:38 | 10-Dec-2015 |
| 25 | 26.22 | 14.6 | 39 | 736 | 0 | 08:57:38 | 10-Dec-2015 |
| 26 | 22.14 | 14.6 | 39 | 736 | 0 | 09:02:38 | 10-Dec-2015 |
| 27 | 19.06 | 14.5 | 39 | 736 | 0 | 09:07:38 | 10-Dec-2015 |
| 28 | 23.1 | 14.5 | 40 | 736 | 0 | 09:12:38 | 10-Dec-2015 |
| 29 | 13.84 | 14.6 | 39 | 736 | 0 | 09:17:38 | 10-Dec-2015 |
| 30 | 14.99 | 14.6 | 39 | 736 | 0 | 09:22:38 | 10-Dec-2015 |
| 31 | 21.65 | 14.8 | 39 | 736 | 0 | 09:27:38 | 10-Dec-2015 |
| 32 | 23.47 | 14.9 | 39 | 736 | 0 | 09:32:38 | 10-Dec-2015 |
| 33 | 16.79 | 15.2 | 38 | 736 | 0 | 09:37:38 | 10-Dec-2015 |
| 34 | 24.13 | 15.4 | 38 | 736 | 0 | 09:42:38 | 10-Dec-2015 |
| 35 | 19.48 | 15.6 | 38 | 734 | 0 | 09:47:38 | 10-Dec-2015 |
| 36 | 30.9 | 15.8 | 37 | 734 | 0 | 09:52:38 | 10-Dec-2015 |
| 37 | 19.42 | 16 | 36 | 734 | 0 | 09:57:38 | 10-Dec-2015 |
| 38 | 39.03 | 16.2 | 37 | 734 | 1 | 10:02:38 | 10-Dec-2015 |
| 39 | 16.55 | 16.6 | 38 | 736 | 0 | 10:07:38 | 10-Dec-2015 |
| 40 | 7.21 | 17 | 38 | 736 | 0 | 10:12:38 | 10-Dec-2015 |
| 41 | 15.31 | 17.5 | 35 | 734 | 0 | 10:17:38 | 10-Dec-2015 |
| 42 | 24.85 | 17.9 | 33 | 734 | 0 | 10:22:38 | 10-Dec-2015 |
| 43 | 14.88 | 18.2 | 33 | 734 | 0 | 10:27:38 | 10-Dec-2015 |
| 44 | 12.51 | 18.5 | 32 | 734 | 0 | 10:32:38 | 10-Dec-2015 |
| 45 | 11.52 | 18.7 | 32 | 734 | 1 | 10:37:38 | 10-Dec-2015 |
| 46 | 12.43 | 19.1 | 33 | 734 | 1 | 10:42:38 | 10-Dec-2015 |
| 47 | 10.82 | 19.6 | 31 | 734 | 1 | 10:47:38 | 10-Dec-2015 |
| 48 | 3.87 | 20.3 | 30 | 734 | 1 | 10:52:38 | 10-Dec-2015 |
| 49 | 3.82 | 21 | 29 | 734 | 1 | 10:57:38 | 10-Dec-2015 |
| 50 | 3.98 | 21.7 | 28 | 734 | 1 | 11:02:38 | 10-Dec-2015 |
| 51 | 4.01 | 22.5 | 26 | 734 | 1 | 11:07:38 | 10-Dec-2015 |
| 52 | 157.22 | 23.2 | 26 | 734 | 3 | 11:12:38 | 10-Dec-2015 |
| 53 | 11.62 | 23.8 | 24 | 734 | 0 | 11:17:38 | 10-Dec-2015 |
| 54 | 15.48 | 23.9 | 23 | 734 | 0 | 11:22:38 | 10-Dec-2015 |
| 55 | 7.18 | 23.7 | 23 | 734 | 0 | 11:27:38 | 10-Dec-2015 |
| 56 | 12.2 | 23.3 | 24 | 734 | 0 | 11:32:38 | 10-Dec-2015 |
| 57 | 10.29 | 22.9 | 26 | 734 | 0 | 11:37:38 | 10-Dec-2015 |
| 58 | 11.57 | 22.5 | 27 | 734 | 0 | 11:42:38 | 10-Dec-2015 |
| 59 | 17.7 | 22 | 28 | 734 | 0 | 11:47:38 | 10-Dec-2015 |
| 60 | 21.7 | 21.7 | 28 | 734 | 3 | 11:52:38 | 10-Dec-2015 |
| 61 | 14.87 | 21.2 | 29 | 734 | 0 | 11:57:38 | 10-Dec-2015 |
| 62 | 10.38 | 20.9 | 29 | 734 | 0 | 12:02:38 | 10-Dec-2015 |
| 63 | 12.22 | 20.5 | 30 | 734 | 0 | 12:07:38 | 10-Dec-2015 |
| 64 | 21.74 | 20.1 | 31 | 734 | 0 | 12:12:38 | 10-Dec-2015 |
| 65 | 17.15 | 19.7 | 32 | 734 | 0 | 12:17:38 | 10-Dec-2015 |
| 66 | 19.8 | 19.3 | 33 | 734 | 0 | 12:22:38 | 10-Dec-2015 |
| 67 | 14.2 | 19 | 33 | 734 | 0 | 12:27:38 | 10-Dec-2015 |
| 68 | 12.91 | 18.6 | 34 | 734 | 0 | 12:32:38 | 10-Dec-2015 |
| 69 | 8.95 | 18.3 | 35 | 734 | 0 | 12:37:38 | 10-Dec-2015 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 70 | 14.42 | 18 | 35 | 734 | 0 | 12:42:38 | 10-Dec-2015 |
| 71 | 15.84 | 17.7 | 36 | 734 | 0 | 12:47:38 | 10-Dec-2015 |
| 72 | 14.97 | 17.4 | 37 | 734 | 0 | 12:52:38 | 10-Dec-2015 |
| 73 | 15.85 | 17.2 | 37 | 734 | 0 | 12:57:38 | 10-Dec-2015 |
| 74 | 9.32 | 16.9 | 38 | 734 | 0 | 13:02:38 | 10-Dec-2015 |
| 75 | 7.99 | 16.7 | 38 | 734 | 0 | 13:07:38 | 10-Dec-2015 |
| 76 | 10.57 | 16.5 | 39 | 734 | 0 | 13:12:38 | 10-Dec-2015 |
| 77 | 10.71 | 16.3 | 39 | 734 | 0 | 13:17:38 | 10-Dec-2015 |
| 78 | 10.62 | 16.1 | 40 | 734 | 0 | 13:22:38 | 10-Dec-2015 |
| 79 | 10.67 | 15.9 | 40 | 734 | 0 | 13:27:38 | 10-Dec-2015 |
| 80 | 10.06 | 15.8 | 41 | 734 | 0 | 13:32:38 | 10-Dec-2015 |
| 81 | 8.35 | 15.7 | 41 | 734 | 0 | 13:37:38 | 10-Dec-2015 |
| 82 | 8.37 | 15.5 | 41 | 734 | 0 | 13:42:38 | 10-Dec-2015 |
| 83 | 11.16 | 15.4 | 41 | 734 | 0 | 13:47:38 | 10-Dec-2015 |
| 84 | 10.34 | 15.4 | 41 | 734 | 0 | 13:52:38 | 10-Dec-2015 |
| 85 | 12.74 | 15.3 | 41 | 734 | 0 | 13:57:38 | 10-Dec-2015 |

**ATTACHMENT 1**

**LABORATORY DATA PACKAGES**

# *Case Narrative*

**Client:** Tetra Tech
**Project:** Pilsen Area Soil Site OU1
**Sample Receipt Date:** 04/29/2015
**SDG #:** 110900

Twenty-two soil samples were received for the analyses reported below. The assigned sample ID number, date sampled, and date received are indicated in the attached Project Summary. The samples were received intact and at a temperature within method specified acceptance limits. A breakdown of sample receipt information can be found on the Sample Condition Report located in the last section of the data package and any exceptions are noted below.

**Sample Analysis and Quality Control**

***Metals Analysis:***

The samples were analyzed using US EPA SW-846 methodology 6010C. All samples were analyzed within the holding time. The following summaries of quality control procedures are included:

Initial and Continuing Calibration Verification
Blanks Summary
ICP Interference Check Data
Spike Sample Recovery
Duplicates Data
Laboratory Control Sample Data
Analysis Run Log

All analysis results met the method specified quality control criteria with the following exceptions:

**ICP Metals Analyses**

Continuing Calibration Verification (CCV) standards were analyzed at two levels (CCV1 & CCV2) with potentially differing wavelengths. Data associated with CCV's were evaluated based on the concentration of the element in the samples and compared to the appropriate CCV level/wavelength.

Some samples may have been analyzed and/or reanalyzed diluted to obtain results for all target analytes within the calibration range of the instrument.

<u>Analytical Run # 114581</u>

Lead was detected above the Method Detection Limit (MDL) but less than ½ the Reporting Limit (RL) in the Method Blank (MB). Samples were reported without qualification because the MB lead result was less than 1/10$^{th}$ of the sample results.

**Client:** Tetra Tech
**Project:** Pilsen Area Soil Site OU1
**Sample Receipt Date:** 04/29/2015
**SDG #:** 110900

***Metals Analysis Continued:***

The Serial Dilution (L) for sample # 579553 was not acceptable for lead because the result exceeded the Relative Percent Difference (RPD) limit. A Post Digestion Spike (PDS) was analyzed and had an unacceptable recovery. The parent sample was reported and qualified with an "M" flag.

The Matrix Spike (MS) and Matrix Spike Duplicate (MSD) for sample # 579553 had unacceptable recoveries for lead. A PDS was analyzed and was unacceptable. The parent sample was reported and qualified with an "M" flag for lead.

Analytical Run # 114582

Lead was detected above the MDL and greater than ½ the RL in the MB. Samples were reported without reanalysis and qualification because the MB result was less than 1/10$^{th}$ of the sample results.

The L for sample # 579556 was not acceptable for lead because the result exceeded the RPD limit. A PDS was analyzed and had an unacceptable recovery. The parent sample was reported and qualified with an "M" flag.

The MS and MSD for sample # 579556 had unacceptable recoveries for lead. A PDS was analyzed and was unacceptable. The parent sample was reported and qualified with an "M" flag for lead.

Analytical Run # 114598

There were no non-conformities on this analytical run.

Analytical Run # 114604

The L for sample # 579553 was not acceptable for lead because the result exceeded the RPD limit. A PDS was analyzed and had an unacceptable recovery. The parent sample was reported and qualified with an "M" flag.

The MS for sample # 579553 had an unacceptable recovery for lead. A PDS was analyzed and was unacceptable. The parent sample was reported and qualified with an "M" flag.

Analytical Run # 114606

The L for sample # 579558 was not acceptable for lead because the result exceeded the RPD limit. A PDS was analyzed and had an acceptable recovery. The parent sample was reported and not qualified.

The MS for sample # 579558 had an unacceptable recovery for lead. A PDS was analyzed and was acceptable. The parent sample was reported and not qualified.

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## Data Qualifiers

| Code | Description |
|---|---|
| A | Analyte averaged calibration criteria within acceptable limits. |
| B | Analyte detected in 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. |
| 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 not above the detection level. |
| 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 | Calibration criteria exceeded. |

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## MANUAL INTEGRATION REASON CODES

CTLaboratories has identified four general cases with valid reasons supporting the use of manual integration techniques. These codes are used on chromatograms in this data package to document the reasons for manual integrations per CTLaboratories' SOP SS-10 current revision.

**#1**: **Data system failed to select the correct peak or missed the peak entirely.**
In some cases the chromatography system selects and integrates the "wrong peak". In this case the analyst must correct the selection and force the system to integrate the proper peak. In other instances the system may miss the peak completely. In this case the analyst manually integrated the peak

**#2**: **Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak.**
This phenomenon is common at low concentrations where the signal to noise ratio is low. A single compound (peak) is incorrectly split into multiple peaks or integrated as a main peak with one or more rider peaks resulting in low or high area counts for the target compound.

**#3: Improperly Integrated Isomers and/or coeluting compounds.**
For when the system fails to distinguish coeluting compounds and or isomers. The integration areas and concentrations may be inaccurate, and they must be corrected by manual integration. Prime examples are compounds that are unresolved and integrated improperly when present at low concentrations in standards or samples.

**#4: System Established Incorrect Baseline.**
There are numerous situations in chromatography where the system establishes the baseline incorrectly. Some baseline errors will be obvious to the analyst and may be corrected via manual procedures.

**#5: Miscellaneous.**
Some situations involving integration errors may require in-depth review and technical judgment. These cases should be brought to the attention of the group supervisor. If the form of manual integration is not clearly covered by these four cases, then review and approval by the group supervisor or the *QA/QC* Supervisor will be required.

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# Sample Delivery Group
## 110900

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

Project Name: PILSEN AREA SOILS SITE OU1
Project #: 103X90260001S0515040

| CT Sample # | Folder # | Client Sample # | Sample Description | Matrix | Date Sampled | Date Received |
|---|---|---|---|---|---|---|
| 579498 | 110900 | | PA-RR-17-0006 | SOIL | 04/27/2015 | 04/29/2015 |
| 579499 | 110900 | | PA-RR-17-0006 | TCLP | 04/27/2015 | 04/29/2015 |
| 579500 | 110900 | | PA-RR-17-0624 | SOIL | 04/27/2015 | 04/29/2015 |
| 579501 | 110900 | | PA-RR-17-0624 | TCLP | 04/27/2015 | 04/29/2015 |
| 579502 | 110900 | | PA-RR-18-0006 | SOIL | 04/27/2015 | 04/29/2015 |
| 579503 | 110900 | | PA-RR-18-0006 | TCLP | 04/27/2015 | 04/29/2015 |
| 579504 | 110900 | | PA-RR-18-0618 | SOIL | 04/27/2015 | 04/29/2015 |
| 579505 | 110900 | | PA-RR-18-0618 | TCLP | 04/27/2015 | 04/29/2015 |
| 579506 | 110900 | | PA-RR-19-0006 | SOIL | 04/27/2015 | 04/29/2015 |
| 579507 | 110900 | | PA-RR-19-0006 | TCLP | 04/27/2015 | 04/29/2015 |
| 579508 | 110900 | | PA-RR-19-0618 | SOIL | 04/27/2015 | 04/29/2015 |
| 579509 | 110900 | | PA-RR-20-0006 | SOIL | 04/27/2015 | 04/29/2015 |
| 579510 | 110900 | | PA-RR-20-0006 | TCLP | 04/27/2015 | 04/29/2015 |
| 579511 | 110900 | | PA-RR-20-0618 | SOIL | 04/27/2015 | 04/29/2015 |
| 579512 | 110900 | | PA-RR-21-0006 | SOIL | 04/27/2015 | 04/29/2015 |
| 579513 | 110900 | | PA-RR-21-0006 | TCLP | 04/27/2015 | 04/29/2015 |
| 579514 | 110900 | | PA-RR-21-0624 | SOIL | 04/27/2015 | 04/29/2015 |
| 579515 | 110900 | | PA-RR-22-0006 | SOIL | 04/27/2015 | 04/29/2015 |
| 579516 | 110900 | | PA-RR-22-0006 | TCLP | 04/27/2015 | 04/29/2015 |
| 579517 | 110900 | | PA-RR-22-0006D | SOIL | 04/27/2015 | 04/29/2015 |
| 579518 | 110900 | | PA-RR-22-0006D | TCLP | 04/27/2015 | 04/29/2015 |
| 579519 | 110900 | | PA-RR-22-0624 | SOIL | 04/27/2015 | 04/29/2015 |
| 579520 | 110900 | | PA-RR-23-0006 | SOIL | 04/27/2015 | 04/29/2015 |
| 579521 | 110900 | | PA-RR-23-0006 | TCLP | 04/27/2015 | 04/29/2015 |
| 579524 | 110900 | | PA-RR-23-0624 | SOIL | 04/27/2015 | 04/29/2015 |
| 579525 | 110900 | | PA-RR-24-0006 | SOIL | 04/27/2015 | 04/29/2015 |
| 579529 | 110900 | | PA-RR-24-0006 | TCLP | 04/27/2015 | 04/29/2015 |
| 579551 | 110900 | | PA-RR-24-0624 | SOIL | 04/27/2015 | 04/29/2015 |
| 579552 | 110900 | | PA-RR-24-0624D | SOIL | 04/27/2015 | 04/29/2015 |
| 579553 | 110900 | | PA-RR-25-0006 | SOIL | 04/27/2015 | 04/29/2015 |
| 579554 | 110900 | | PA-RR-25-0006 | TCLP | 04/27/2015 | 04/29/2015 |
| 579555 | 110900 | | PA-RR-25-0624 | SOIL | 04/27/2015 | 04/29/2015 |

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# Sample Delivery Group
## 110900

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

Project Name: PILSEN AREA SOILS SITE OU1
Project #: 103X90260001S0515040

| CT Sample # | Folder # | Client Sample # | Sample Description | Matrix | Date Sampled | Date Received |
|---|---|---|---|---|---|---|
| 579556 | 110900 | | PA-RR-26-0006 | SOIL | 04/27/2015 | 04/29/2015 |
| 579557 | 110900 | | PA-RR-26-0006 | TCLP | 04/27/2015 | 04/29/2015 |
| 579558 | 110900 | | PA-RR-26-0624 | SOIL | 04/27/2015 | 04/29/2015 |
| 579559 | 110900 | | PA-RR-26-0624 | TCLP | 04/27/2015 | 04/29/2015 |

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# QC Batch Cross Reference Summary



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

| | |
|---|---|
| Project Name: | PILSEN AREA SOILS SIT |
| Project #: | 103X90260001S0515040 |
| Report Date: | 05/06/2015 |
| Date Received: | 04/29/2015 |
| SDG #: | 110900 |

## *Inorganic Parameters*

| CTI LAB#: | Parameter | Matrix | Prep Batch # | Analytical Run # |
|---|---|---|---|---|
| 579498 | Solids, Percent | SOIL | | 114563 |
| 579500 | Solids, Percent | SOIL | | 114563 |
| 579502 | Solids, Percent | SOIL | | 114563 |
| 579504 | Solids, Percent | SOIL | | 114563 |
| 579506 | Solids, Percent | SOIL | | 114563 |
| 579508 | Solids, Percent | SOIL | | 114563 |
| 579509 | Solids, Percent | SOIL | | 114563 |
| 579511 | Solids, Percent | SOIL | | 114563 |
| 579512 | Solids, Percent | SOIL | | 114563 |
| 579514 | Solids, Percent | SOIL | | 114563 |
| 579515 | Solids, Percent | SOIL | | 114563 |
| 579517 | Solids, Percent | SOIL | | 114563 |
| 579519 | Solids, Percent | SOIL | | 114563 |
| 579520 | Solids, Percent | SOIL | | 114563 |
| 579524 | Solids, Percent | SOIL | | 114563 |
| 579525 | Solids, Percent | SOIL | | 114563 |
| 579551 | Solids, Percent | SOIL | | 114563 |
| 579552 | Solids, Percent | SOIL | | 114563 |
| 579553 | Solids, Percent | SOIL | | 114563 |
| 579555 | Solids, Percent | SOIL | | 114563 |
| 579556 | Solids, Percent | SOIL | | 114564 |
| 579558 | Solids, Percent | SOIL | | 114564 |

## *Metal Parameters*

| CTI LAB#: | Parameter | Matrix | Prep Batch # | Analytical Run # |
|---|---|---|---|---|
| 579498 | ICP Metals | SOIL | 52392 | 114604 |
| 579500 | ICP Metals | SOIL | 52392 | 114604 |
| 579502 | ICP Metals | SOIL | 52392 | 114604 |

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Project Name: PILSEN AREA SOILS SIT
Project #: 103X90260001S0515040
SDG #: 110900

| CTI LAB#: | Parameter | Matrix | Prep Batch # | Analytical Run # |
|---|---|---|---|---|
| 579504 | ICP Metals | SOIL | 52392 | 114604 |
| 579506 | ICP Metals | SOIL | 52392 | 114604 |
| 579508 | ICP Metals | SOIL | 52392 | 114604 |
| 579509 | ICP Metals | SOIL | 52392 | 114604 |
| 579511 | ICP Metals | SOIL | 52392 | 114604 |
| 579512 | ICP Metals | SOIL | 52392 | 114604 |
| 579514 | ICP Metals | SOIL | 52392 | 114604 |
| 579515 | ICP Metals | SOIL | 52392 | 114604 |
| 579517 | ICP Metals | SOIL | 52392 | 114604 |
| 579519 | ICP Metals | SOIL | 52392 | 114604 |
| 579520 | ICP Metals | SOIL | 52392 | 114604 |
| 579524 | ICP Metals | SOIL | 52392 | 114604 |
| 579525 | ICP Metals | SOIL | 52392 | 114604 |
| 579551 | ICP Metals | SOIL | 52392 | 114604 |
| 579552 | ICP Metals | SOIL | 52392 | 114604 |
| 579553 | ICP Metals | SOIL | 52392 | 114604 |
| 579555 | ICP Metals | SOIL | 52392 | 114604 |
| 579556 | ICP Metals | SOIL | 52393 | 114606 |
| 579558 | ICP Metals | SOIL | 52393 | 114606 |

| CTI LAB#: | Parameter | Matrix | Prep Batch # | Analytical Run # |
|---|---|---|---|---|
| 579498 | ICP Metals QSM | SOIL | 52386 | 114581 |
| 579500 | ICP Metals QSM | SOIL | 52386 | 114581 |
| 579502 | ICP Metals QSM | SOIL | 52386 | 114581 |
| 579504 | ICP Metals QSM | SOIL | 52386 | 114581 |
| 579506 | ICP Metals QSM | SOIL | 52386 | 114581 |
| 579508 | ICP Metals QSM | SOIL | 52386 | 114581 |
| 579509 | ICP Metals QSM | SOIL | 52386 | 114581 |
| 579511 | ICP Metals QSM | SOIL | 52386 | 114581 |
| 579512 | ICP Metals QSM | SOIL | 52386 | 114581 |
| 579514 | ICP Metals QSM | SOIL | 52386 | 114581 |
| 579515 | ICP Metals QSM | SOIL | 52386 | 114581 |
| 579517 | ICP Metals QSM | SOIL | 52386 | 114581 |
| 579519 | ICP Metals QSM | SOIL | 52386 | 114581 |
| 579520 | ICP Metals QSM | SOIL | 52386 | 114581 |
| 579524 | ICP Metals QSM | SOIL | 52386 | 114581 |
| 579525 | ICP Metals QSM | SOIL | 52386 | 114581 |
| 579551 | ICP Metals QSM | SOIL | 52386 | 114581 |
| 579552 | ICP Metals QSM | SOIL | 52386 | 114581 |
| 579553 | ICP Metals QSM | SOIL | 52386 | 114581 |
| 579555 | ICP Metals QSM | SOIL | 52386 | 114581 |
| 579556 | ICP Metals QSM | SOIL | 52387 | 114582 |

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Project Name: PILSEN AREA SOILS SIT
Project #: 103X90260001S0515040
SDG #: 110900

| CTI LAB#: | Parameter | Matrix | Prep Batch # | Analytical Run # |
|---|---|---|---|---|
| 579558 | ICP Metals QSM | SOIL | 52387 | 114582 |

| CTI LAB#: | Parameter | Matrix | Prep Batch # | Analytical Run # |
|---|---|---|---|---|
| 579499 | ICP Metals QSM TCLP | TCLP | 52390 | 114598 |
| 579501 | ICP Metals QSM TCLP | TCLP | 52390 | 114598 |
| 579503 | ICP Metals QSM TCLP | TCLP | 52390 | 114598 |
| 579505 | ICP Metals QSM TCLP | TCLP | 52390 | 114598 |
| 579507 | ICP Metals QSM TCLP | TCLP | 52390 | 114598 |
| 579510 | ICP Metals QSM TCLP | TCLP | 52390 | 114598 |
| 579513 | ICP Metals QSM TCLP | TCLP | 52390 | 114598 |
| 579516 | ICP Metals QSM TCLP | TCLP | 52390 | 114598 |
| 579518 | ICP Metals QSM TCLP | TCLP | 52390 | 114598 |
| 579521 | ICP Metals QSM TCLP | TCLP | 52390 | 114598 |
| 579529 | ICP Metals QSM TCLP | TCLP | 52390 | 114598 |
| 579554 | ICP Metals QSM TCLP | TCLP | 52390 | 114598 |
| 579557 | ICP Metals QSM TCLP | TCLP | 52390 | 114598 |
| 579559 | ICP Metals QSM TCLP | TCLP | 52390 | 114598 |

# METALS
# CLP FORMS
# DOCUMENTS

CT LABORATORIES
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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-17-0006**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | TCLP | SDG No.: | 110900 |
| % Solids: | | Lab Sample ID: | 579499 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | 05/01/2015 07:00 |
| Analytical Run #: | 114598 | Analysis Date/Time | 05/04/2015 13:27 |
| Analytical Prep Batch #: | 52390 | Prep. Date/Time: | 05/01/2015 11:00 |
| ICAL Calibration #: | | Concentration Units: | mg/L |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7439-92-1 | Lead | 0.15 | | 0.0014 | 0.0020 | 0.0040 | 0.0040 |

CT LABORATORIES
delivering more than data from your environmental analyses

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-17-0006**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 110900 |
| % Solids: | 87.9 | Lab Sample ID: | 579498 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114581 | Analysis Date/Time | 05/04/2015 15:15 |
| Analytical Prep Batch #: | 52386 | Prep. Date/Time: | 05/01/2015 07:00 |
| ICAL Calibration #: | | Concentration Units: | mg/kg |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7439-92-1 | Lead | 1120 | | 0.046 | 0.14 | 0.29 | 0.29 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-17-0006**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 110900 |
| % Solids: | 87.9 | Lab Sample ID: | 579498 |
| 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 20:47 |
| 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 | 1260 | | 0.25 | | | 0.85 |

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Sample Description

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**PA-RR-17-0624**

***INORGANIC ANALYSIS DATA SHEET***

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | TCLP | SDG No.: | 110900 |
| % Solids: | | Lab Sample ID: | 579501 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | 05/01/2015 07:00 |
| Analytical Run #: | 114598 | Analysis Date/Time | 05/04/2015 13:31 |
| Analytical Prep Batch #: | 52390 | Prep. Date/Time: | 05/01/2015 11:00 |
| ICAL Calibration #: | | Concentration Units: | mg/L |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7439-92-1 | Lead | 0.51 | | 0.0014 | 0.0020 | 0.0040 | 0.0040 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-17-0624**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 110900 |
| % Solids: | 82.4 | Lab Sample ID: | 579500 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114581 | Analysis Date/Time | 05/04/2015 15:20 |
| Analytical Prep Batch #: | 52386 | Prep. Date/Time: | 05/01/2015 07:00 |
| ICAL Calibration #: | | Concentration Units: | mg/kg |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7439-92-1 | Lead | 854 | | 0.048 | 0.15 | 0.30 | 0.30 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-17-0624**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 110900 |
| % Solids: | 82.4 | Lab Sample ID: | 579500 |
| 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 20:51 |
| 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 | 954 | | 0.23 | | | 0.75 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-18-0006**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | TCLP | SDG No.: | 110900 |
| % Solids: | | Lab Sample ID: | 579503 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | 05/01/2015 07:00 |
| Analytical Run #: | 114598 | Analysis Date/Time | 05/04/2015 13:35 |
| Analytical Prep Batch #: | 52390 | Prep. Date/Time: | 05/01/2015 11:00 |
| ICAL Calibration #: | | Concentration Units: | mg/L |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7439-92-1 | Lead | 0.86 | | 0.0014 | 0.0020 | 0.0040 | 0.0040 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-18-0006**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 110900 |
| % Solids: | 81.5 | Lab Sample ID: | 579502 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114581 | Analysis Date/Time | 05/04/2015 15:25 |
| Analytical Prep Batch #: | 52386 | Prep. Date/Time: | 05/01/2015 07:00 |
| ICAL Calibration #: | | Concentration Units: | mg/kg |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7439-92-1 | Lead | 1440 | | 0.048 | 0.15 | 0.30 | 0.30 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-18-0006**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 110900 |
| % Solids: | 81.5 | Lab Sample ID: | 579502 |
| 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 20:55 |
| 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 | 2470 | | 0.27 | | | 0.90 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-18-0618**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | TCLP | SDG No.: | 110900 |
| % Solids: | | Lab Sample ID: | 579505 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | 05/01/2015 07:00 |
| Analytical Run #: | 114598 | Analysis Date/Time | 05/04/2015 13:39 |
| Analytical Prep Batch #: | 52390 | Prep. Date/Time: | 05/01/2015 11:00 |
| ICAL Calibration #: | | Concentration Units: | mg/L |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7439-92-1 | Lead | 0.22 | | 0.0014 | 0.0020 | 0.0040 | 0.0040 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-18-0618**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 110900 |
| % Solids: | 81.5 | Lab Sample ID: | 579504 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114581 | Analysis Date/Time | 05/04/2015 15:30 |
| Analytical Prep Batch #: | 52386 | Prep. Date/Time: | 05/01/2015 07:00 |
| ICAL Calibration #: | | Concentration Units: | mg/kg |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7439-92-1 | Lead | 656 | | 0.049 | 0.15 | 0.30 | 0.30 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-18-0618**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 110900 |
| % Solids: | 81.5 | Lab Sample ID: | 579504 |
| 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 20:58 |
| 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 | 1030 | | 0.29 | | | 0.97 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-19-0006**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | TCLP | SDG No.: | 110900 |
| % Solids: | | Lab Sample ID: | 579507 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | 05/01/2015 07:00 |
| Analytical Run #: | 114598 | Analysis Date/Time | 05/04/2015 13:44 |
| Analytical Prep Batch #: | 52390 | Prep. Date/Time: | 05/01/2015 11:00 |
| ICAL Calibration #: | | Concentration Units: | mg/L |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7439-92-1 | Lead | 0.34 | | 0.0014 | 0.0020 | 0.0040 | 0.0040 |

CT LABORATORIES
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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-19-0006**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 110900 |
| % Solids: | 81.5 | Lab Sample ID: | 579506 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114581 | Analysis Date/Time | 05/04/2015 15:34 |
| Analytical Prep Batch #: | 52386 | Prep. Date/Time: | 05/01/2015 07:00 |
| ICAL Calibration #: | | Concentration Units: | mg/kg |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7439-92-1 | Lead | 967 | | 0.050 | 0.16 | 0.31 | 0.31 |

CT LABORATORIES
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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-19-0006**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 110900 |
| % Solids: | 81.5 | Lab Sample ID: | 579506 |
| 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 21:06 |
| 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 | 1380 | | 0.29 | | | 0.97 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-19-0618**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 110900 |
| % Solids: | 79.2 | Lab Sample ID: | 579508 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114581 | Analysis Date/Time | 05/04/2015 15:38 |
| Analytical Prep Batch #: | 52386 | Prep. Date/Time: | 05/01/2015 07:00 |
| ICAL Calibration #: | | Concentration Units: | mg/kg |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7439-92-1 | Lead | 326 | | 0.049 | 0.15 | 0.31 | 0.31 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-19-0618**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 110900 |
| % Solids: | 79.2 | Lab Sample ID: | 579508 |
| 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 21:21 |
| 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 | 719 | | 0.25 | | | 0.84 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-20-0006**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | TCLP | SDG No.: | 110900 |
| % Solids: | | Lab Sample ID: | 579510 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | 05/01/2015 07:00 |
| Analytical Run #: | 114598 | Analysis Date/Time | 05/04/2015 13:48 |
| Analytical Prep Batch #: | 52390 | Prep. Date/Time: | 05/01/2015 11:00 |
| ICAL Calibration #: | | Concentration Units: | mg/L |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7439-92-1 | Lead | 0.31 | | 0.0014 | 0.0020 | 0.0040 | 0.0040 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-20-0006**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 110900 |
| % Solids: | 78.4 | Lab Sample ID: | 579509 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114581 | Analysis Date/Time | 05/04/2015 15:42 |
| Analytical Prep Batch #: | 52386 | Prep. Date/Time: | 05/01/2015 07:00 |
| ICAL Calibration #: | | Concentration Units: | mg/kg |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7439-92-1 | Lead | 979 | | 0.051 | 0.16 | 0.32 | 0.32 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-20-0006**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 110900 |
| % Solids: | 78.4 | Lab Sample ID: | 579509 |
| 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 21:25 |
| 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 | 1520 | | 0.23 | | | 0.78 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-20-0618**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 110900 |
| % Solids: | 79.4 | Lab Sample ID: | 579511 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114581 | Analysis Date/Time | 05/04/2015 15:57 |
| Analytical Prep Batch #: | 52386 | Prep. Date/Time: | 05/01/2015 07:00 |
| ICAL Calibration #: | | Concentration Units: | mg/kg |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7439-92-1 | Lead | 227 | | 0.052 | 0.16 | 0.32 | 0.32 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-20-0618**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 110900 |
| % Solids: | 79.4 | Lab Sample ID: | 579511 |
| 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 21:28 |
| 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 | 387 | | 0.25 | | | 0.84 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-21-0006**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | TCLP | SDG No.: | 110900 |
| % Solids: | | Lab Sample ID: | 579513 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | 05/01/2015 07:00 |
| Analytical Run #: | 114598 | Analysis Date/Time | 05/04/2015 13:52 |
| Analytical Prep Batch #: | 52390 | Prep. Date/Time: | 05/01/2015 11:00 |
| ICAL Calibration #: | | Concentration Units: | mg/L |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7439-92-1 | Lead | 0.25 | | 0.0014 | 0.0020 | 0.0040 | 0.0040 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-21-0006**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 110900 |
| % Solids: | 84.1 | Lab Sample ID: | 579512 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114581 | Analysis Date/Time | 05/04/2015 16:01 |
| Analytical Prep Batch #: | 52386 | Prep. Date/Time: | 05/01/2015 07:00 |
| ICAL Calibration #: | | Concentration Units: | mg/kg |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7439-92-1 | Lead | 1100 | | 0.049 | 0.15 | 0.31 | 0.31 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-21-0006**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 110900 |
| % Solids: | 84.1 | Lab Sample ID: | 579512 |
| 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 21:32 |
| 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 | 1750 | | 0.18 | | | 0.62 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-21-0624**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 110900 |
| % Solids: | 81.1 | Lab Sample ID: | 579514 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114581 | Analysis Date/Time | 05/04/2015 16:06 |
| Analytical Prep Batch #: | 52386 | Prep. Date/Time: | 05/01/2015 07:00 |
| ICAL Calibration #: | | Concentration Units: | mg/kg |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7439-92-1 | Lead | 229 | | 0.049 | 0.15 | 0.31 | 0.31 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-21-0624**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 110900 |
| % Solids: | 81.1 | Lab Sample ID: | 579514 |
| 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 21:40 |
| 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 | 378 | | 0.26 | | | 0.87 |

CT LABORATORIES
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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-22-0006**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | TCLP | SDG No.: | 110900 |
| % Solids: | | Lab Sample ID: | 579516 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | 05/01/2015 07:00 |
| Analytical Run #: | 114598 | Analysis Date/Time | 05/04/2015 13:56 |
| Analytical Prep Batch #: | 52390 | Prep. Date/Time: | 05/01/2015 11:00 |
| ICAL Calibration #: | | Concentration Units: | mg/L |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7439-92-1 | Lead | 0.54 | | 0.0014 | 0.0020 | 0.0040 | 0.0040 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-22-0006**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 110900 |
| % Solids: | 79.9 | Lab Sample ID: | 579515 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114581 | Analysis Date/Time | 05/04/2015 16:10 |
| Analytical Prep Batch #: | 52386 | Prep. Date/Time: | 05/01/2015 07:00 |
| ICAL Calibration #: | | Concentration Units: | mg/kg |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7439-92-1 | Lead | 1160 | | 0.049 | 0.15 | 0.31 | 0.31 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-22-0006**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 110900 |
| % Solids: | 79.9 | Lab Sample ID: | 579515 |
| 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 21:43 |
| 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 | 2150 | | 0.29 | | | 0.97 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-22-0006D**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | TCLP | SDG No.: | 110900 |
| % Solids: | | Lab Sample ID: | 579518 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | 05/01/2015 07:00 |
| Analytical Run #: | 114598 | Analysis Date/Time | 05/04/2015 14:12 |
| Analytical Prep Batch #: | 52390 | Prep. Date/Time: | 05/01/2015 11:00 |
| ICAL Calibration #: | | Concentration Units: | mg/L |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7439-92-1 | Lead | 0.51 | | 0.0014 | 0.0020 | 0.0040 | 0.0040 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-22-0006D**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 110900 |
| % Solids: | 81.7 | Lab Sample ID: | 579517 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114581 | Analysis Date/Time | 05/04/2015 16:14 |
| Analytical Prep Batch #: | 52386 | Prep. Date/Time: | 05/01/2015 07:00 |
| ICAL Calibration #: | | Concentration Units: | mg/kg |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7439-92-1 | Lead | 1180 | | 0.049 | 0.15 | 0.31 | 0.31 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-22-0006D**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 110900 |
| % Solids: | 81.7 | Lab Sample ID: | 579517 |
| 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 21:47 |
| 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 | 2190 | | 0.22 | | | 0.72 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-22-0624**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 110900 |
| % Solids: | 81.1 | Lab Sample ID: | 579519 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114581 | Analysis Date/Time | 05/04/2015 16:19 |
| Analytical Prep Batch #: | 52386 | Prep. Date/Time: | 05/01/2015 07:00 |
| ICAL Calibration #: | | Concentration Units: | mg/kg |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7439-92-1 | Lead | 168 | | 0.048 | 0.15 | 0.30 | 0.30 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-22-0624**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 110900 |
| % Solids: | 81.1 | Lab Sample ID: | 579519 |
| 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 21:51 |
| 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 | 358 | | 0.29 | | | 0.98 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-23-0006**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | TCLP | SDG No.: | 110900 |
| % Solids: | | Lab Sample ID: | 579521 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | 05/01/2015 07:00 |
| Analytical Run #: | 114598 | Analysis Date/Time | 05/04/2015 14:16 |
| Analytical Prep Batch #: | 52390 | Prep. Date/Time: | 05/01/2015 11:00 |
| ICAL Calibration #: | | Concentration Units: | mg/L |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7439-92-1 | Lead | 0.032 | | 0.0014 | 0.0020 | 0.0040 | 0.0040 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-23-0006**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 110900 |
| % Solids: | 80.2 | Lab Sample ID: | 579520 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114581 | Analysis Date/Time | 05/04/2015 16:23 |
| Analytical Prep Batch #: | 52386 | Prep. Date/Time: | 05/01/2015 07:00 |
| ICAL Calibration #: | | Concentration Units: | mg/kg |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7439-92-1 | Lead | 499 | | 0.050 | 0.16 | 0.31 | 0.31 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-23-0006**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 110900 |
| % Solids: | 80.2 | Lab Sample ID: | 579520 |
| 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 21:55 |
| 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 | 898 | | 0.29 | | | 0.99 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-23-0624**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 110900 |
| % Solids: | 83.8 | Lab Sample ID: | 579524 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114581 | Analysis Date/Time | 05/04/2015 16:27 |
| Analytical Prep Batch #: | 52386 | Prep. Date/Time: | 05/01/2015 07:00 |
| ICAL Calibration #: | | Concentration Units: | mg/kg |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7439-92-1 | Lead | 188 | | 0.046 | 0.14 | 0.29 | 0.29 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-23-0624**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 110900 |
| % Solids: | 83.8 | Lab Sample ID: | 579524 |
| 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 22:14 |
| 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 | 506 | | 0.20 | | | 0.66 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-24-0006**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | TCLP | SDG No.: | 110900 |
| % Solids: | | Lab Sample ID: | 579529 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | 05/01/2015 07:00 |
| Analytical Run #: | 114598 | Analysis Date/Time | 05/04/2015 14:20 |
| Analytical Prep Batch #: | 52390 | Prep. Date/Time: | 05/01/2015 11:00 |
| ICAL Calibration #: | | Concentration Units: | mg/L |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7439-92-1 | Lead | 0.71 | | 0.0014 | 0.0020 | 0.0040 | 0.0040 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-24-0006**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 110900 |
| % Solids: | 86.9 | Lab Sample ID: | 579525 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114581 | Analysis Date/Time | 05/04/2015 16:31 |
| Analytical Prep Batch #: | 52386 | Prep. Date/Time: | 05/01/2015 07:00 |
| ICAL Calibration #: | | Concentration Units: | mg/kg |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7439-92-1 | Lead | 1750 | | 0.046 | 0.14 | 0.29 | 0.29 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-24-0006**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 110900 |
| % Solids: | 86.9 | Lab Sample ID: | 579525 |
| 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 22:18 |
| 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 | 2540 | | 0.20 | | | 0.68 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-24-0624**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 110900 |
| % Solids: | 78.0 | Lab Sample ID: | 579551 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114581 | Analysis Date/Time | 05/04/2015 16:36 |
| Analytical Prep Batch #: | 52386 | Prep. Date/Time: | 05/01/2015 07:00 |
| ICAL Calibration #: | | Concentration Units: | mg/kg |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7439-92-1 | Lead | 566 | | 0.050 | 0.16 | 0.31 | 0.31 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-24-0624**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 110900 |
| % Solids: | 78.0 | Lab Sample ID: | 579551 |
| 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 22:22 |
| 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 | 1100 | | 0.29 | | | 0.96 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-24-0624D**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 110900 |
| % Solids: | 77.4 | Lab Sample ID: | 579552 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114581 | Analysis Date/Time | 05/04/2015 16:52 |
| Analytical Prep Batch #: | 52386 | Prep. Date/Time: | 05/01/2015 07:00 |
| ICAL Calibration #: | | Concentration Units: | mg/kg |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7439-92-1 | Lead | 655 | | 0.050 | 0.16 | 0.31 | 0.31 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-24-0624D**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 110900 |
| % Solids: | 77.4 | Lab Sample ID: | 579552 |
| 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 22:25 |
| 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 | 1130 | | 0.31 | | | 1.0 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-25-0006**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | TCLP | SDG No.: | 110900 |
| % Solids: | | Lab Sample ID: | 579554 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | 05/01/2015 07:00 |
| Analytical Run #: | 114598 | Analysis Date/Time | 05/04/2015 14:24 |
| Analytical Prep Batch #: | 52390 | Prep. Date/Time: | 05/01/2015 11:00 |
| ICAL Calibration #: | | Concentration Units: | mg/L |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7439-92-1 | Lead | 1.9 | | 0.0014 | 0.0020 | 0.0040 | 0.0040 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-25-0006**

| | | | |
|---|---|---|---|
| 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 #: | 114581 | Analysis Date/Time | 05/04/2015 16:56 |
| Analytical Prep Batch #: | 52386 | Prep. Date/Time: | 05/01/2015 07:00 |
| ICAL Calibration #: | | Concentration Units: | mg/kg |

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

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-25-0006**

| | | | |
|---|---|---|---|
| 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 | M | 0.30 | | | 1.0 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-25-0624**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 110900 |
| % Solids: | 78.7 | Lab Sample ID: | 579555 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114604 | Analysis Date/Time | 05/05/2015 10:22 |
| 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 | 1150 | | 0.31 | | | 1.0 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-25-0624**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 110900 |
| % Solids: | 78.7 | Lab Sample ID: | 579555 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114581 | Analysis Date/Time | 05/04/2015 17:23 |
| Analytical Prep Batch #: | 52386 | Prep. Date/Time: | 05/01/2015 07:00 |
| ICAL Calibration #: | | Concentration Units: | mg/kg |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7439-92-1 | Lead | 731 | | 0.051 | 0.16 | 0.32 | 0.32 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-26-0006**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 110900 |
| % Solids: | 82.1 | Lab Sample ID: | 579556 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114606 | Analysis Date/Time | 05/05/2015 10:37 |
| Analytical Prep Batch #: | 52393 | 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 | 3540 | | 0.30 | | | 1.0 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-26-0006**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | TCLP | SDG No.: | 110900 |
| % Solids: | | Lab Sample ID: | 579557 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | 05/01/2015 07:00 |
| Analytical Run #: | 114598 | Analysis Date/Time | 05/04/2015 14:48 |
| Analytical Prep Batch #: | 52390 | Prep. Date/Time: | 05/01/2015 11:00 |
| ICAL Calibration #: | | Concentration Units: | mg/L |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7439-92-1 | Lead | 1.7 | | 0.0014 | 0.0020 | 0.0040 | 0.0040 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-26-0006**

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

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

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-26-0624**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 110900 |
| % Solids: | 79.2 | Lab Sample ID: | 579558 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114606 | Analysis Date/Time | 05/05/2015 10:41 |
| Analytical Prep Batch #: | 52393 | 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 | 2730 | | 0.22 | | | 0.74 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-26-0624**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | TCLP | SDG No.: | 110900 |
| % Solids: | | Lab Sample ID: | 579559 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | 05/01/2015 07:00 |
| Analytical Run #: | 114598 | Analysis Date/Time | 05/04/2015 15:03 |
| Analytical Prep Batch #: | 52390 | Prep. Date/Time: | 05/01/2015 11:00 |
| ICAL Calibration #: | | Concentration Units: | mg/L |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7439-92-1 | Lead | 13 | | 0.0014 | 0.0020 | 0.0040 | 0.0040 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-26-0624**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 110900 |
| % Solids: | 79.2 | Lab Sample ID: | 579558 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114582 | Analysis Date/Time | 05/04/2015 18:14 |
| Analytical Prep Batch #: | 52387 | Prep. Date/Time: | 05/01/2015 07:00 |
| ICAL Calibration #: | | Concentration Units: | mg/kg |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7439-92-1 | Lead | 1350 | | 0.049 | 0.15 | 0.30 | 0.30 |

# *Case Narrative*

**Client:** Tetra Tech
**Project:** Pilsen Area Soil Site OU1
**Sample Receipt Date:** 04/29/2015
**SDG #:** 111014

Twenty-two soil samples were originally received on 04/29/15 for lead analysis. On 5/5/15 the client requested that we analyze for four additional metals (cadmium, copper, tin and zinc) on a rush TAT. The assigned sample ID number, date sampled, and date received are indicated in the attached Project Summary. The samples were received intact and at a temperature within method specified acceptance limits. A breakdown of sample receipt information can be found on the Sample Condition Report located in the last section of the data package and any exceptions are noted below.

**Sample Analysis and Quality Control**

***Metals Analysis:***

The samples were analyzed using US EPA SW-846 methodology 6010C. All samples were analyzed within the holding time. The following summaries of quality control procedures are included:

Initial and Continuing Calibration Verification
Blanks Summary
ICP Interference Check Data
Spike Sample Recovery
Duplicates Data
Laboratory Control Sample Data
Analysis Run Log

All analysis results met the method specified quality control criteria with the following exceptions:

**ICP Metals Analysis**

Continuing Calibration Verification (CCV) standards were analyzed at two levels (CCV1 & CCV2) with potentially differing wavelengths. Data associated with CCV's were evaluated based on the concentration of the element in the samples and compared to the appropriate CCV level/wavelength.

Some samples may have been analyzed and/or reanalyzed diluted to obtain results for all target analytes within the calibration range of the instrument.

<u>Analytical Run # 114709</u>

Zinc was detected above the LOD in a Calibration Blank (**CC**B). Affected samples with results less than the LOD were reported without qualification. If the CCB result was greater than one-tenth that of the samples', respective samples were reanalyzed. Finally, for samples that were above the LOD and the blank were less than one-tenth of the results, the samples were "B" qualified and reported.

**Client:** Tetra Tech
**Project:** Pilsen Area Soil Site OU1
**Sample Receipt Date:** 04/29/2015
**SDG #:** 111014

***Metals Analysis Continued:***

Copper and zinc were detected above the LOD and magnesium was greater than ½ of the Reporting Limit (RL) in the Method Blank (MB). The MB results for these elements that were less than one-tenth of the sample results and were reported without qualification, otherwise reported sample results were "B" qualified.

The Serial Dilutions (L) for sample # 581757 exceeded RPD limits for cadmium, copper, and zinc. The Post Digestion Spike(s) (PDS) for this sample had unacceptable recoveries for cadmium, copper and zinc. Sample results were reported and "M" qualified.

The Matrix Spike (MS) and/or MSD for sample # 581757 exceeded recovery limits for cadmium, copper, and zinc. The elements with unacceptable Serial Dilution results and failing PDS recoveries were qualified with an "M" flag in the parent sample.

Analytical Run # 114710

Zinc was detected above the LOD in a Calibration Blank (**CC**B). Affected samples with results less than the LOD were reported without qualification. If the CCB result was greater than one-tenth that of the samples', respective samples were reanalyzed. Finally, for samples that were above the LOD and the blank were less than one-tenth of the results, the samples were "B" qualified and reported.

Copper and zinc were detected above the LOD and magnesium was greater than ½ of the Reporting Limit (RL) in the Method Blank (MB). The MB results for these elements that were less than one-tenth of the sample results and were reported without qualification, otherwise reported sample results were "B" qualified.

The L for sample # 581760 exceeded RPD limits for cadmium, copper, and zinc. The PDS for this sample had unacceptable recoveries for cadmium, copper and zinc. Sample results were reported and "M" qualified.

The MS and/or MSD for sample # 581760 exceeded recovery limits for cadmium, copper, and zinc. The elements with unacceptable Serial Dilution results and failing PDS recoveries were qualified with an "M" flag in the parent sample.

**ICP Metals Analysis (Tin)**

Analytical Run # 114733

Tin was detected above the LOD in the CCB standard. Affected samples were qualified with a "B" flag and not reanalyzed because the CCB results were less than 1/10$^{th}$ of the sample results.

**Client:** Tetra Tech
**Project:** Pilsen Area Soil Site OU1
**Sample Receipt Date:** 04/29/2015
**SDG #:** 111014

***Metals Analysis Continued:***

The MS and MSD for sample # 581728 had unacceptable recoveries for tin. A PDS was analyzed and was acceptable. The parent sample was reported and not qualified.

Analytical Run # 114734

Tin was detected above the LOD in the CCB standard. Affected samples were qualified with a "B" flag and not reanalyzed because the CCB results were less than 1/10$^{th}$ of the sample results.

The L for sample # 581760 was not acceptable for tin because the result exceeded the RPD limit. A PDS was analyzed and was acceptable. The parent sample was reported and not qualified.

The MS and MSD for sample # 581760 had unacceptable recoveries for tin. A PDS was analyzed and was acceptable. The parent sample was reported and not qualified.

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## Data Qualifiers

| Code | Description |
|---|---|
| A | Analyte averaged calibration criteria within acceptable limits. |
| B | Analyte detected in 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. |
| 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 not above the detection level. |
| 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 | Calibration criteria exceeded. |

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## MANUAL INTEGRATION REASON CODES

CTLaboratories has identified four general cases with valid reasons supporting the use of manual integration techniques. These codes are used on chromatograms in this data package to document the reasons for manual integrations per CTLaboratories' SOP SS-10 current revision.

**#1**: **Data system failed to select the correct peak or missed the peak entirely.**
In some cases the chromatography system selects and integrates the "wrong peak". In this case the analyst must correct the selection and force the system to integrate the proper peak. In other instances the system may miss the peak completely. In this case the analyst manually integrated the peak

**#2**: **Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak.**
This phenomenon is common at low concentrations where the signal to noise ratio is low. A single compound (peak) is incorrectly split into multiple peaks or integrated as a main peak with one or more rider peaks resulting in low or high area counts for the target compound.

**#3: Improperly Integrated Isomers and/or coeluting compounds.**
For when the system fails to distinguish coeluting compounds and or isomers. The integration areas and concentrations may be inaccurate, and they must be corrected by manual integration. Prime examples are compounds that are unresolved and integrated improperly when present at low concentrations in standards or samples.

**#4: System Established Incorrect Baseline.**
There are numerous situations in chromatography where the system establishes the baseline incorrectly. Some baseline errors will be obvious to the analyst and may be corrected via manual procedures.

**#5: Miscellaneous.**
Some situations involving integration errors may require in-depth review and technical judgment. These cases should be brought to the attention of the group supervisor. If the form of manual integration is not clearly covered by these four cases, then review and approval by the group supervisor or the *QA/QC* Supervisor will be required.

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# Sample Delivery Group

## 111014

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

Project Name: PILSEN AREA SOILS SITE OU1
Project #: 103X90260001S0515040

| CT Sample # | Folder # | Client Sample # | Sample Description | Matrix | Date Sampled | Date Received |
|---|---|---|---|---|---|---|
| 581728 | 111014 | | PA-RR-17-0006 | SOIL | 04/27/2015 | 04/29/2015 |
| 581730 | 111014 | | PA-RR-17-0624 | SOIL | 04/27/2015 | 04/29/2015 |
| 581732 | 111014 | | PA-RR-18-0006 | SOIL | 04/27/2015 | 04/29/2015 |
| 581734 | 111014 | | PA-RR-18-0618 | SOIL | 04/27/2015 | 04/29/2015 |
| 581736 | 111014 | | PA-RR-19-0006 | SOIL | 04/27/2015 | 04/29/2015 |
| 581738 | 111014 | | PA-RR-19-0618 | SOIL | 04/27/2015 | 04/29/2015 |
| 581739 | 111014 | | PA-RR-20-0006 | SOIL | 04/27/2015 | 04/29/2015 |
| 581741 | 111014 | | PA-RR-20-0618 | SOIL | 04/27/2015 | 04/29/2015 |
| 581742 | 111014 | | PA-RR-21-0006 | SOIL | 04/27/2015 | 04/29/2015 |
| 581744 | 111014 | | PA-RR-21-0624 | SOIL | 04/27/2015 | 04/29/2015 |
| 581745 | 111014 | | PA-RR-22-0006 | SOIL | 04/27/2015 | 04/29/2015 |
| 581747 | 111014 | | PA-RR-22-0006D | SOIL | 04/27/2015 | 04/29/2015 |
| 581749 | 111014 | | PA-RR-22-0624 | SOIL | 04/27/2015 | 04/29/2015 |
| 581750 | 111014 | | PA-RR-23-0006 | SOIL | 04/27/2015 | 04/29/2015 |
| 581752 | 111014 | | PA-RR-23-0624 | SOIL | 04/27/2015 | 04/29/2015 |
| 581753 | 111014 | | PA-RR-24-0006 | SOIL | 04/27/2015 | 04/29/2015 |
| 581755 | 111014 | | PA-RR-24-0624 | SOIL | 04/27/2015 | 04/29/2015 |
| 581756 | 111014 | | PA-RR-24-0624D | SOIL | 04/27/2015 | 04/29/2015 |
| 581757 | 111014 | | PA-RR-25-0006 | SOIL | 04/27/2015 | 04/29/2015 |
| 581759 | 111014 | | PA-RR-25-0624 | SOIL | 04/27/2015 | 04/29/2015 |
| 581760 | 111014 | | PA-RR-26-0006 | SOIL | 04/27/2015 | 04/29/2015 |
| 581762 | 111014 | | PA-RR-26-0624 | SOIL | 04/27/2015 | 04/29/2015 |

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# QC Batch Cross Reference Summary



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

| | |
|---|---|
| Project Name: | PILSEN AREA SOILS SIT |
| Project #: | 103X90260001S0515040 |
| Report Date: | 05/12/2015 |
| Date Received: | 05/06/2015 |
| SDG #: | 111014 |

## *Inorganic Parameters*

| CTI LAB#: | Parameter | Matrix | Prep Batch # | Analytical Run # |
|---|---|---|---|---|
| 581728 | Solids, Percent | SOIL | | 114724 |
| 581730 | Solids, Percent | SOIL | | 114724 |
| 581732 | Solids, Percent | SOIL | | 114724 |
| 581734 | Solids, Percent | SOIL | | 114724 |
| 581736 | Solids, Percent | SOIL | | 114724 |
| 581738 | Solids, Percent | SOIL | | 114724 |
| 581739 | Solids, Percent | SOIL | | 114724 |
| 581741 | Solids, Percent | SOIL | | 114724 |
| 581742 | Solids, Percent | SOIL | | 114724 |
| 581744 | Solids, Percent | SOIL | | 114724 |
| 581745 | Solids, Percent | SOIL | | 114724 |
| 581747 | Solids, Percent | SOIL | | 114724 |
| 581749 | Solids, Percent | SOIL | | 114724 |
| 581750 | Solids, Percent | SOIL | | 114724 |
| 581752 | Solids, Percent | SOIL | | 114724 |
| 581753 | Solids, Percent | SOIL | | 114724 |
| 581755 | Solids, Percent | SOIL | | 114724 |
| 581756 | Solids, Percent | SOIL | | 114724 |
| 581757 | Solids, Percent | SOIL | | 114724 |
| 581759 | Solids, Percent | SOIL | | 114724 |
| 581760 | Solids, Percent | SOIL | | 114725 |
| 581762 | Solids, Percent | SOIL | | 114725 |

## *Metal Parameters*

| CTI LAB#: | Parameter | Matrix | Prep Batch # | Analytical Run # |
|---|---|---|---|---|
| 581728 | ICP Metals QSM | SOIL | 52432 | 114709 |
| 581730 | ICP Metals QSM | SOIL | 52432 | 114709 |
| 581732 | ICP Metals QSM | SOIL | 52432 | 114709 |

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Project Name: PILSEN AREA SOILS SIT
Project #: 103X90260001S0515040
SDG #: 111014

| CTI LAB#: | Parameter | Matrix | Prep Batch # | Analytical Run # |
|---|---|---|---|---|
| 581734 | ICP Metals QSM | SOIL | 52432 | 114709 |
| 581736 | ICP Metals QSM | SOIL | 52432 | 114709 |
| 581738 | ICP Metals QSM | SOIL | 52432 | 114709 |
| 581739 | ICP Metals QSM | SOIL | 52432 | 114709 |
| 581741 | ICP Metals QSM | SOIL | 52432 | 114709 |
| 581742 | ICP Metals QSM | SOIL | 52432 | 114709 |
| 581744 | ICP Metals QSM | SOIL | 52432 | 114709 |
| 581745 | ICP Metals QSM | SOIL | 52432 | 114709 |
| 581747 | ICP Metals QSM | SOIL | 52432 | 114709 |
| 581749 | ICP Metals QSM | SOIL | 52432 | 114709 |
| 581750 | ICP Metals QSM | SOIL | 52432 | 114709 |
| 581752 | ICP Metals QSM | SOIL | 52432 | 114709 |
| 581753 | ICP Metals QSM | SOIL | 52432 | 114709 |
| 581755 | ICP Metals QSM | SOIL | 52432 | 114709 |
| 581756 | ICP Metals QSM | SOIL | 52432 | 114709 |
| 581757 | ICP Metals QSM | SOIL | 52432 | 114709 |
| 581759 | ICP Metals QSM | SOIL | 52432 | 114709 |
| 581760 | ICP Metals QSM | SOIL | 52433 | 114710 |
| 581762 | ICP Metals QSM | SOIL | 52433 | 114710 |
| 581728 | ICP Metals QSM | SOIL | 52432 | 114709 |
| 581730 | ICP Metals QSM | SOIL | 52432 | 114709 |
| 581732 | ICP Metals QSM | SOIL | 52432 | 114709 |
| 581734 | ICP Metals QSM | SOIL | 52432 | 114709 |
| 581736 | ICP Metals QSM | SOIL | 52432 | 114709 |
| 581739 | ICP Metals QSM | SOIL | 52432 | 114709 |
| 581742 | ICP Metals QSM | SOIL | 52432 | 114709 |
| 581745 | ICP Metals QSM | SOIL | 52432 | 114709 |
| 581747 | ICP Metals QSM | SOIL | 52432 | 114709 |
| 581753 | ICP Metals QSM | SOIL | 52432 | 114709 |
| 581755 | ICP Metals QSM | SOIL | 52432 | 114709 |
| 581756 | ICP Metals QSM | SOIL | 52432 | 114709 |
| 581757 | ICP Metals QSM | SOIL | 52432 | 114709 |
| 581759 | ICP Metals QSM | SOIL | 52432 | 114709 |
| 581760 | ICP Metals QSM | SOIL | 52433 | 114710 |
| 581762 | ICP Metals QSM | SOIL | 52433 | 114710 |

| CTI LAB#: | Parameter | Matrix | Prep Batch # | Analytical Run # |
|---|---|---|---|---|
| 581728 | ICP Metals, List 2 QSM | SOIL | 52440 | 114733 |
| 581730 | ICP Metals, List 2 QSM | SOIL | 52440 | 114733 |
| 581732 | ICP Metals, List 2 QSM | SOIL | 52440 | 114733 |
| 581734 | ICP Metals, List 2 QSM | SOIL | 52440 | 114733 |
| 581736 | ICP Metals, List 2 QSM | SOIL | 52440 | 114733 |

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Project Name: PILSEN AREA SOILS SIT
Project #: 103X90260001S0515040
SDG #: 111014

| CTI LAB#: | Parameter | Matrix | Prep Batch # | Analytical Run # |
|---|---|---|---|---|
| 581738 | ICP Metals, List 2 QSM | SOIL | 52440 | 114733 |
| 581739 | ICP Metals, List 2 QSM | SOIL | 52440 | 114733 |
| 581741 | ICP Metals, List 2 QSM | SOIL | 52440 | 114733 |
| 581742 | ICP Metals, List 2 QSM | SOIL | 52440 | 114733 |
| 581744 | ICP Metals, List 2 QSM | SOIL | 52440 | 114733 |
| 581745 | ICP Metals, List 2 QSM | SOIL | 52440 | 114733 |
| 581747 | ICP Metals, List 2 QSM | SOIL | 52440 | 114733 |
| 581749 | ICP Metals, List 2 QSM | SOIL | 52440 | 114733 |
| 581750 | ICP Metals, List 2 QSM | SOIL | 52440 | 114733 |
| 581752 | ICP Metals, List 2 QSM | SOIL | 52440 | 114733 |
| 581753 | ICP Metals, List 2 QSM | SOIL | 52440 | 114733 |
| 581755 | ICP Metals, List 2 QSM | SOIL | 52440 | 114733 |
| 581756 | ICP Metals, List 2 QSM | SOIL | 52440 | 114733 |
| 581757 | ICP Metals, List 2 QSM | SOIL | 52440 | 114733 |
| 581759 | ICP Metals, List 2 QSM | SOIL | 52440 | 114733 |
| 581760 | ICP Metals, List 2 QSM | SOIL | 52441 | 114734 |
| 581762 | ICP Metals, List 2 QSM | SOIL | 52441 | 114734 |

# METALS
# CLP FORMS
# DOCUMENTS

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-17-0006**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 111014 |
| % Solids: | 87.9 | Lab Sample ID: | 581728 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 5.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114733 | Analysis Date/Time | 05/08/2015 12:46 |
| Analytical Prep Batch #: | 52440 | Prep. Date/Time: | 05/07/2015 10:00 |
| ICAL Calibration #: | | Concentration Units: | mg/kg |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7440-31-5 | Tin | 993 | B | 0.53 | 1.5 | 2.9 | 2.9 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-17-0006**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 111014 |
| % Solids: | 87.9 | Lab Sample ID: | 581728 |
| 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 15:15 |
| 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 | 2.8 | | 0.0069 | 0.023 | 0.046 | 0.046 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-17-0006**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 111014 |
| % Solids: | 87.9 | Lab Sample ID: | 581728 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 10.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114709 | Analysis Date/Time | 05/06/2015 15:30 |
| 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 |
|---|---|---|---|---|---|---|---|
| 7440-50-8 | Copper | 2820 | | 0.80 | 2.3 | 4.6 | 4.6 |
| 7440-66-6 | Zinc | 22500 | | 0.57 | 1.7 | 3.4 | 3.4 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-17-0624**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 111014 |
| % Solids: | 82.4 | Lab Sample ID: | 581730 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 5.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114733 | Analysis Date/Time | 05/08/2015 13:18 |
| Analytical Prep Batch #: | 52440 | Prep. Date/Time: | 05/07/2015 10:00 |
| ICAL Calibration #: | | Concentration Units: | mg/kg |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7440-31-5 | Tin | 580 | B | 0.54 | 1.5 | 3.0 | 3.0 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-17-0624**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 111014 |
| % Solids: | 82.4 | Lab Sample ID: | 581730 |
| 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 15:20 |
| 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 | 3.4 | | 0.0071 | 0.024 | 0.048 | 0.048 |
| 7440-50-8 | Copper | 2260 | | 0.083 | 0.24 | 0.48 | 0.48 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-17-0624**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 111014 |
| % Solids: | 82.4 | Lab Sample ID: | 581730 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 10.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114709 | Analysis Date/Time | 05/06/2015 15:34 |
| 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 |
|---|---|---|---|---|---|---|---|
| 7440-66-6 | Zinc | 19000 | | 0.59 | 1.8 | 3.6 | 3.6 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-18-0006**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 111014 |
| % Solids: | 81.5 | Lab Sample ID: | 581732 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 5.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114733 | Analysis Date/Time | 05/08/2015 13:22 |
| Analytical Prep Batch #: | 52440 | Prep. Date/Time: | 05/07/2015 10:00 |
| ICAL Calibration #: | | Concentration Units: | mg/kg |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7440-31-5 | Tin | 1120 | B | 0.54 | 1.5 | 3.0 | 3.0 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-18-0006**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 111014 |
| % Solids: | 81.5 | Lab Sample ID: | 581732 |
| 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 15:25 |
| 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 | 3.6 | | 0.0072 | 0.024 | 0.048 | 0.048 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-18-0006**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 111014 |
| % Solids: | 81.5 | Lab Sample ID: | 581732 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 10.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114709 | Analysis Date/Time | 05/06/2015 15:37 |
| 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 |
|---|---|---|---|---|---|---|---|
| 7440-50-8 | Copper | 5140 | | 0.84 | 2.4 | 4.8 | 4.8 |
| 7440-66-6 | Zinc | 27200 | | 0.60 | 1.8 | 3.6 | 3.6 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-18-0618**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 111014 |
| % Solids: | 81.5 | Lab Sample ID: | 581734 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114733 | Analysis Date/Time | 05/08/2015 10:45 |
| Analytical Prep Batch #: | 52440 | Prep. Date/Time: | 05/07/2015 10:00 |
| ICAL Calibration #: | | Concentration Units: | mg/kg |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7440-31-5 | Tin | 308 | | 0.11 | 0.31 | 0.62 | 0.62 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-18-0618**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 111014 |
| % Solids: | 81.5 | Lab Sample ID: | 581734 |
| 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 15:30 |
| 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 | 2.6 | | 0.0073 | 0.024 | 0.049 | 0.049 |
| 7440-50-8 | Copper | 1500 | | 0.085 | 0.24 | 0.49 | 0.49 |

CT LABORATORIES
delivering more than data from your environmental analyses

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-18-0618**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 111014 |
| % Solids: | 81.5 | Lab Sample ID: | 581734 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 10.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114709 | Analysis Date/Time | 05/06/2015 15:41 |
| 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 |
|---|---|---|---|---|---|---|---|
| 7440-66-6 | Zinc | 9630 | | 0.61 | 1.8 | 3.6 | 3.6 |

CT LABORATORIES
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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-19-0006**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 111014 |
| % Solids: | 81.5 | Lab Sample ID: | 581736 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 5.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114733 | Analysis Date/Time | 05/08/2015 13:26 |
| Analytical Prep Batch #: | 52440 | Prep. Date/Time: | 05/07/2015 10:00 |
| ICAL Calibration #: | | Concentration Units: | mg/kg |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7440-31-5 | Tin | 641 | B | 0.54 | 1.5 | 3.0 | 3.0 |

CT LABORATORIES
delivering more than data from your environmental analyses

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-19-0006**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 111014 |
| % Solids: | 81.5 | Lab Sample ID: | 581736 |
| 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 15:34 |
| 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 | 3.0 | | 0.0075 | 0.025 | 0.050 | 0.050 |
| 7440-50-8 | Copper | 2400 | | 0.088 | 0.25 | 0.50 | 0.50 |

CT LABORATORIES
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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-19-0006**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 111014 |
| % Solids: | 81.5 | Lab Sample ID: | 581736 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 10.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114709 | Analysis Date/Time | 05/06/2015 15:45 |
| 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 |
|---|---|---|---|---|---|---|---|
| 7440-66-6 | Zinc | 14500 | | 0.63 | 1.9 | 3.8 | 3.8 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-19-0618**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 111014 |
| % Solids: | 79.2 | Lab Sample ID: | 581738 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114733 | Analysis Date/Time | 05/08/2015 10:53 |
| Analytical Prep Batch #: | 52440 | Prep. Date/Time: | 05/07/2015 10:00 |
| ICAL Calibration #: | | Concentration Units: | mg/kg |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7440-31-5 | Tin | 76.7 | | 0.12 | 0.32 | 0.64 | 0.64 |

CT LABORATORIES
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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-19-0618**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 111014 |
| % Solids: | 79.2 | Lab Sample ID: | 581738 |
| 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 15:38 |
| 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 | 4.1 | | 0.0074 | 0.025 | 0.049 | 0.049 |
| 7440-50-8 | Copper | 487 | | 0.086 | 0.25 | 0.49 | 0.49 |
| 7440-66-6 | Zinc | 2560 | B | 0.062 | 0.18 | 0.37 | 0.37 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-20-0006**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 111014 |
| % Solids: | 78.4 | Lab Sample ID: | 581739 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 5.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114733 | Analysis Date/Time | 05/08/2015 13:30 |
| Analytical Prep Batch #: | 52440 | Prep. Date/Time: | 05/07/2015 10:00 |
| ICAL Calibration #: | | Concentration Units: | mg/kg |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7440-31-5 | Tin | 699 | B | 0.59 | 1.6 | 3.3 | 3.3 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-20-0006**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 111014 |
| % Solids: | 78.4 | Lab Sample ID: | 581739 |
| 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 15:42 |
| 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 | 2.7 | | 0.0077 | 0.026 | 0.051 | 0.051 |
| 7440-50-8 | Copper | 2400 | | 0.089 | 0.26 | 0.51 | 0.51 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-20-0006**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 111014 |
| % Solids: | 78.4 | Lab Sample ID: | 581739 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 10.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114709 | Analysis Date/Time | 05/06/2015 15:49 |
| 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 |
|---|---|---|---|---|---|---|---|
| 7440-66-6 | Zinc | 17600 | | 0.64 | 1.9 | 3.8 | 3.8 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-20-0618**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 111014 |
| % Solids: | 79.4 | Lab Sample ID: | 581741 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114733 | Analysis Date/Time | 05/08/2015 11:00 |
| Analytical Prep Batch #: | 52440 | Prep. Date/Time: | 05/07/2015 10:00 |
| ICAL Calibration #: | | Concentration Units: | mg/kg |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7440-31-5 | Tin | 131 | | 0.11 | 0.32 | 0.63 | 0.63 |

CT LABORATORIES
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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-20-0618**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 111014 |
| % Solids: | 79.4 | Lab Sample ID: | 581741 |
| 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 15:57 |
| 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 | 1.5 | | 0.0078 | 0.026 | 0.052 | 0.052 |
| 7440-50-8 | Copper | 464 | | 0.091 | 0.26 | 0.52 | 0.52 |
| 7440-66-6 | Zinc | 2810 | B | 0.065 | 0.19 | 0.39 | 0.39 |

CT LABORATORIES
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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-21-0006**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 111014 |
| % Solids: | 84.1 | Lab Sample ID: | 581742 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 5.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114733 | Analysis Date/Time | 05/08/2015 13:34 |
| Analytical Prep Batch #: | 52440 | Prep. Date/Time: | 05/07/2015 10:00 |
| ICAL Calibration #: | | Concentration Units: | mg/kg |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7440-31-5 | Tin | 583 | B | 0.54 | 1.5 | 3.0 | 3.0 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-21-0006**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 111014 |
| % Solids: | 84.1 | Lab Sample ID: | 581742 |
| 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 16:01 |
| 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 | 4.2 | | 0.0074 | 0.025 | 0.049 | 0.049 |
| 7440-50-8 | Copper | 2670 | | 0.086 | 0.25 | 0.49 | 0.49 |

CT LABORATORIES
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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-21-0006**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 111014 |
| % Solids: | 84.1 | Lab Sample ID: | 581742 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 10.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114709 | Analysis Date/Time | 05/06/2015 16:04 |
| 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 |
|---|---|---|---|---|---|---|---|
| 7440-66-6 | Zinc | 16900 | B | 0.61 | 1.8 | 3.7 | 3.7 |

CT LABORATORIES
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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-21-0624**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 111014 |
| % Solids: | 81.1 | Lab Sample ID: | 581744 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114733 | Analysis Date/Time | 05/08/2015 11:09 |
| Analytical Prep Batch #: | 52440 | Prep. Date/Time: | 05/07/2015 10:00 |
| ICAL Calibration #: | | Concentration Units: | mg/kg |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7440-31-5 | Tin | 104 | | 0.11 | 0.31 | 0.63 | 0.63 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-21-0624**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 111014 |
| % Solids: | 81.1 | Lab Sample ID: | 581744 |
| 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 16:06 |
| 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 | 1.5 | | 0.0073 | 0.024 | 0.049 | 0.049 |
| 7440-50-8 | Copper | 531 | | 0.085 | 0.24 | 0.49 | 0.49 |
| 7440-66-6 | Zinc | 2730 | B | 0.061 | 0.18 | 0.37 | 0.37 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-22-0006**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 111014 |
| % Solids: | 79.9 | Lab Sample ID: | 581745 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 5.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114733 | Analysis Date/Time | 05/08/2015 13:38 |
| Analytical Prep Batch #: | 52440 | Prep. Date/Time: | 05/07/2015 10:00 |
| ICAL Calibration #: | | Concentration Units: | mg/kg |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7440-31-5 | Tin | 873 | B | 0.56 | 1.6 | 3.1 | 3.1 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-22-0006**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 111014 |
| % Solids: | 79.9 | Lab Sample ID: | 581745 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 10.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114709 | Analysis Date/Time | 05/06/2015 16:08 |
| 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 |
|---|---|---|---|---|---|---|---|
| 7440-50-8 | Copper | 3420 | | 0.85 | 2.4 | 4.9 | 4.9 |
| 7440-66-6 | Zinc | 17600 | B | 0.61 | 1.8 | 3.7 | 3.7 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-22-0006**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 111014 |
| % Solids: | 79.9 | Lab Sample ID: | 581745 |
| 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 16:10 |
| 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 | 4.0 | | 0.0073 | 0.024 | 0.049 | 0.049 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-22-0006D**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 111014 |
| % Solids: | 81.7 | Lab Sample ID: | 581747 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 5.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114733 | Analysis Date/Time | 05/08/2015 13:42 |
| Analytical Prep Batch #: | 52440 | Prep. Date/Time: | 05/07/2015 10:00 |
| ICAL Calibration #: | | Concentration Units: | mg/kg |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7440-31-5 | Tin | 801 | B | 0.54 | 1.5 | 3.0 | 3.0 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-22-0006D**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 111014 |
| % Solids: | 81.7 | Lab Sample ID: | 581747 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 10.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114709 | Analysis Date/Time | 05/06/2015 16:11 |
| 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 |
|---|---|---|---|---|---|---|---|
| 7440-50-8 | Copper | 3770 | | 0.87 | 2.5 | 4.9 | 4.9 |
| 7440-66-6 | Zinc | 21500 | B | 0.62 | 1.9 | 3.7 | 3.7 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-22-0006D**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 111014 |
| % Solids: | 81.7 | Lab Sample ID: | 581747 |
| 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 16:14 |
| 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 | 4.1 | | 0.0074 | 0.025 | 0.049 | 0.049 |

CT LABORATORIES
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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-22-0624**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 111014 |
| % Solids: | 81.1 | Lab Sample ID: | 581749 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114733 | Analysis Date/Time | 05/08/2015 11:21 |
| Analytical Prep Batch #: | 52440 | Prep. Date/Time: | 05/07/2015 10:00 |
| ICAL Calibration #: | | Concentration Units: | mg/kg |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7440-31-5 | Tin | 43.4 | | 0.11 | 0.30 | 0.61 | 0.61 |

CT LABORATORIES
delivering more than data from your environmental analyses

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-22-0624**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 111014 |
| % Solids: | 81.1 | Lab Sample ID: | 581749 |
| 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 16:19 |
| 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 | 1.3 | | 0.0073 | 0.024 | 0.048 | 0.048 |
| 7440-50-8 | Copper | 224 | | 0.085 | 0.24 | 0.48 | 0.48 |
| 7440-66-6 | Zinc | 1150 | B | 0.060 | 0.18 | 0.36 | 0.36 |

CT LABORATORIES
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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-23-0006**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 111014 |
| % Solids: | 80.2 | Lab Sample ID: | 581750 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114733 | Analysis Date/Time | 05/08/2015 11:33 |
| Analytical Prep Batch #: | 52440 | Prep. Date/Time: | 05/07/2015 10:00 |
| ICAL Calibration #: | | Concentration Units: | mg/kg |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7440-31-5 | Tin | 49.1 | | 0.12 | 0.32 | 0.65 | 0.65 |

CT LABORATORIES
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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-23-0006**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 111014 |
| % Solids: | 80.2 | Lab Sample ID: | 581750 |
| 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 16:23 |
| 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 | 2.6 | | 0.0075 | 0.025 | 0.050 | 0.050 |
| 7440-50-8 | Copper | 558 | | 0.087 | 0.25 | 0.50 | 0.50 |
| 7440-66-6 | Zinc | 2500 | B | 0.062 | 0.19 | 0.37 | 0.37 |

CT LABORATORIES
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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-23-0624**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 111014 |
| % Solids: | 83.8 | Lab Sample ID: | 581752 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114733 | Analysis Date/Time | 05/08/2015 11:37 |
| Analytical Prep Batch #: | 52440 | Prep. Date/Time: | 05/07/2015 10:00 |
| ICAL Calibration #: | | Concentration Units: | mg/kg |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7440-31-5 | Tin | 82.5 | | 0.11 | 0.29 | 0.58 | 0.58 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-23-0624**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 111014 |
| % Solids: | 83.8 | Lab Sample ID: | 581752 |
| 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 16:27 |
| 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 | 1.4 | | 0.0070 | 0.023 | 0.046 | 0.046 |
| 7440-50-8 | Copper | 235 | | 0.081 | 0.23 | 0.46 | 0.46 |
| 7440-66-6 | Zinc | 1440 | B | 0.058 | 0.17 | 0.35 | 0.35 |

CT LABORATORIES
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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-24-0006**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 111014 |
| % Solids: | 86.9 | Lab Sample ID: | 581753 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 5.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114733 | Analysis Date/Time | 05/08/2015 13:46 |
| Analytical Prep Batch #: | 52440 | Prep. Date/Time: | 05/07/2015 10:00 |
| ICAL Calibration #: | | Concentration Units: | mg/kg |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7440-31-5 | Tin | 1070 | B | 0.52 | 1.4 | 2.9 | 2.9 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-24-0006**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 111014 |
| % Solids: | 86.9 | Lab Sample ID: | 581753 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 10.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114709 | Analysis Date/Time | 05/06/2015 16:15 |
| 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 |
|---|---|---|---|---|---|---|---|
| 7440-50-8 | Copper | 798 | | 0.81 | 2.3 | 4.6 | 4.6 |
| 7440-66-6 | Zinc | 7320 | B | 0.58 | 1.7 | 3.5 | 3.5 |

CT LABORATORIES
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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-24-0006**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 111014 |
| % Solids: | 86.9 | Lab Sample ID: | 581753 |
| 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 16:31 |
| 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 | 8.2 | | 0.0069 | 0.023 | 0.046 | 0.046 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-24-0624**

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

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

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-24-0624**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 111014 |
| % Solids: | 78.0 | Lab Sample ID: | 581755 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 10.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114709 | Analysis Date/Time | 05/06/2015 16:19 |
| 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 |
|---|---|---|---|---|---|---|---|
| 7440-66-6 | Zinc | 7090 | B | 0.62 | 1.9 | 3.7 | 3.7 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-24-0624**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 111014 |
| % Solids: | 78.0 | Lab Sample ID: | 581755 |
| 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 16:36 |
| 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 | 28.6 | | 0.0075 | 0.025 | 0.050 | 0.050 |
| 7440-50-8 | Copper | 818 | | 0.087 | 0.25 | 0.50 | 0.50 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-24-0624D**

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

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

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-24-0624D**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 111014 |
| % Solids: | 77.4 | Lab Sample ID: | 581756 |
| 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 16:52 |
| 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 | 3.1 | | 0.0075 | 0.025 | 0.050 | 0.050 |
| 7440-50-8 | Copper | 1040 | | 0.087 | 0.25 | 0.50 | 0.50 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-24-0624D**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 111014 |
| % Solids: | 77.4 | Lab Sample ID: | 581756 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 10.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114709 | Analysis Date/Time | 05/07/2015 18:27 |
| 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 |
|---|---|---|---|---|---|---|---|
| 7440-66-6 | Zinc | 7900 | | 0.62 | 1.9 | 3.7 | 3.7 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**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: | 5.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114733 | Analysis Date/Time | 05/08/2015 14:02 |
| Analytical Prep Batch #: | 52440 | Prep. Date/Time: | 05/07/2015 10:00 |
| ICAL Calibration #: | | Concentration Units: | mg/kg |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7440-31-5 | Tin | 590 | B | 0.55 | 1.5 | 3.1 | 3.1 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**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: | 10.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114709 | Analysis Date/Time | 05/06/2015 16:23 |
| 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 |
|---|---|---|---|---|---|---|---|
| 7440-50-8 | Copper | 3330 | M | 0.90 | 2.6 | 5.1 | 5.1 |
| 7440-66-6 | Zinc | 15600 | M,B | 0.64 | 1.9 | 3.8 | 3.8 |

CT LABORATORIES
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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**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 | M | 0.0077 | 0.026 | 0.051 | 0.051 |

CT LABORATORIES
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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-25-0624**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 111014 |
| % Solids: | 78.7 | Lab Sample ID: | 581759 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114733 | Analysis Date/Time | 05/08/2015 11:57 |
| Analytical Prep Batch #: | 52440 | Prep. Date/Time: | 05/07/2015 10:00 |
| ICAL Calibration #: | | Concentration Units: | mg/kg |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7440-31-5 | Tin | 212 | | 0.12 | 0.32 | 0.65 | 0.65 |

CT LABORATORIES
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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-25-0624**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 111014 |
| % Solids: | 78.7 | Lab Sample ID: | 581759 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 10.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114709 | Analysis Date/Time | 05/06/2015 16:57 |
| 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 |
|---|---|---|---|---|---|---|---|
| 7440-66-6 | Zinc | 5880 | B | 0.64 | 1.9 | 3.8 | 3.8 |

CT LABORATORIES
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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-25-0624**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 111014 |
| % Solids: | 78.7 | Lab Sample ID: | 581759 |
| 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 17:23 |
| 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 | 5.0 | | 0.0076 | 0.025 | 0.051 | 0.051 |
| 7440-50-8 | Copper | 820 | | 0.089 | 0.25 | 0.51 | 0.51 |

CT LABORATORIES
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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-26-0006**

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

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7440-31-5 | Tin | 767 | B | 0.53 | 1.5 | 3.0 | 3.0 |

CT LABORATORIES
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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-26-0006**

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

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

CT LABORATORIES
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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-26-0006**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 111014 |
| % Solids: | 82.1 | Lab Sample ID: | 581760 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114710 | Analysis Date/Time | 05/04/2015 17:47 |
| Analytical Prep Batch #: | 52433 | 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 | 7.9 | M | 0.0072 | 0.024 | 0.048 | 0.048 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-26-0624**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 111014 |
| % Solids: | 79.2 | Lab Sample ID: | 581762 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114734 | Analysis Date/Time | 05/08/2015 12:42 |
| Analytical Prep Batch #: | 52441 | Prep. Date/Time: | 05/07/2015 10:00 |
| ICAL Calibration #: | | Concentration Units: | mg/kg |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7440-31-5 | Tin | 151 | B | 0.11 | 0.31 | 0.62 | 0.62 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-26-0624**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 111014 |
| % Solids: | 79.2 | Lab Sample ID: | 581762 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 10.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114710 | Analysis Date/Time | 05/06/2015 17:23 |
| Analytical Prep Batch #: | 52433 | Prep. Date/Time: | 05/01/2015 07:00 |
| ICAL Calibration #: | | Concentration Units: | mg/kg |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7440-66-6 | Zinc | 5280 | B | 0.61 | 1.8 | 3.7 | 3.7 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-26-0624**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 111014 |
| % Solids: | 79.2 | Lab Sample ID: | 581762 |
| Analytical Method: | EPA 6010C | Date Received: | 04/29/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 114710 | Analysis Date/Time | 05/04/2015 18:14 |
| Analytical Prep Batch #: | 52433 | 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 | 13.3 | | 0.0073 | 0.024 | 0.049 | 0.049 |
| 7440-50-8 | Copper | 976 | | 0.085 | 0.24 | 0.49 | 0.49 |

# *Case Narrative*

**Client:** Tetra Tech
**Project:** Pilsen Area Soil Site OU1
**Sample Receipt Date:** 04/29/2015
**SDG #:** 111568

One soil samples was originally received on 04/29/15 for lead analysis. On 06/02/15 the client requested that we perform the TCLP Leaching procedure on sample PA-RR-26-0624 again and this time please do not include any large gravel or debris in the sample. The sample will then be analyzed for TCLP Lead on a rush TAT. The assigned sample ID number, date sampled, and date received are indicated in the attached Project Summary. The samples were received intact and at a temperature within method specified acceptance limits. A breakdown of sample receipt information can be found on the Sample Condition Report located in the last section of the data package and any exceptions are noted below.

**Sample Analysis and Quality Control**

***Metals Analysis:***

The samples were analyzed using US EPA SW-846 methodology 6010C. All samples were analyzed within the holding time. The following summaries of quality control procedures are included:

Initial and Continuing Calibration Verification
Blanks Summary
ICP Interference Check Data
Spike Sample Recovery
Duplicates Data
Laboratory Control Sample Data
Analysis Run Log

All analysis results met the method specified quality control criteria with the following exceptions:

**ICP Metals Analyses**

Continuing Calibration Verification (CCV) standards were analyzed at two levels (CCV1 & CCV2) with potentially differing wavelengths. Data associated with CCV's were evaluated based on the concentration of the element in the samples and compared to the appropriate CCV level/wavelength.

Some samples may have been analyzed and/or reanalyzed diluted to obtain results for all target analytes within the calibration range of the instrument.

<u>Analytical Run # 115502</u>

The Serial Dilution (L) for sample # 590906 exceeded Relative Percent Difference (RPD) limits for lead. A PDS was analyzed and was also not acceptable. The parent sample result was reported and qualified with an "M" flag.

**Client:** Tetra Tech
**Project:** Pilsen Area Soil Site OU1
**Sample Receipt Date:** 04/29/2015
**SDG #:** 111568

***Metals Analysis Continued:***

The Matrix Spike (MS) and/or Matrix Spike Duplicate (MSD) for sample # 590906 exceeded the recovery limits for lead. A PDS was analyzed and was also unacceptable. The parent sample result was reported and qualified with an "M" flag.

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## Data Qualifiers

| Code | Description |
|---|---|
| A | Analyte averaged calibration criteria within acceptable limits. |
| B | Analyte detected in 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. |
| 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 not above the detection level. |
| 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 | Calibration criteria exceeded. |

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## MANUAL INTEGRATION REASON CODES

CTLaboratories has identified four general cases with valid reasons supporting the use of manual integration techniques. These codes are used on chromatograms in this data package to document the reasons for manual integrations per CTLaboratories' SOP SS-10 current revision.

**#1**: **Data system failed to select the correct peak or missed the peak entirely.**
In some cases the chromatography system selects and integrates the "wrong peak". In this case the analyst must correct the selection and force the system to integrate the proper peak. In other instances the system may miss the peak completely. In this case the analyst manually integrated the peak

**#2**: **Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak.**
This phenomenon is common at low concentrations where the signal to noise ratio is low. A single compound (peak) is incorrectly split into multiple peaks or integrated as a main peak with one or more rider peaks resulting in low or high area counts for the target compound.

**#3: Improperly Integrated Isomers and/or coeluting compounds.**
For when the system fails to distinguish coeluting compounds and or isomers. The integration areas and concentrations may be inaccurate, and they must be corrected by manual integration. Prime examples are compounds that are unresolved and integrated improperly when present at low concentrations in standards or samples.

**#4: System Established Incorrect Baseline.**
There are numerous situations in chromatography where the system establishes the baseline incorrectly. Some baseline errors will be obvious to the analyst and may be corrected via manual procedures.

**#5: Miscellaneous.**
Some situations involving integration errors may require in-depth review and technical judgment. These cases should be brought to the attention of the group supervisor. If the form of manual integration is not clearly covered by these four cases, then review and approval by the group supervisor or the *QA/QC* Supervisor will be required.

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# Sample Delivery Group

## 111568

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

Project Name: PILSEN AREA SOILS SITE OU1
Project #: 103X90260001S0515040

| CT Sample # | Folder # | Client Sample # | Sample Description | Matrix | Date Sampled | Date Received |
|---|---|---|---|---|---|---|
| 590906 | 111568 | | PA-RR-26-0624 | TCLP | 04/27/2015 | 06/02/2015 |

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# QC Batch Cross Reference Summary



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

| | |
|---|---|
| Project Name: | PILSEN AREA SOILS SIT |
| Project #: | 103X90260001S0515040 |
| Report Date: | 06/09/2015 |
| Date Received: | 06/02/2015 |
| SDG #: | 111568 |

## *Metal Parameters*

| CTI LAB#: | Parameter | Matrix | Prep Batch # | Analytical Run # |
|---|---|---|---|---|
| 590906 | ICP Metals QSM TCLP | TCLP | 52758 | 115502 |

# METALS
# CLP FORMS
# DOCUMENTS

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-26-0624**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | TCLP | SDG No.: | 111568 |
| % Solids: | | Lab Sample ID: | 590906 |
| Analytical Method: | EPA 6010C | Date Received: | 06/02/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | 06/04/2015 07:00 |
| Analytical Run #: | 115502 | Analysis Date/Time | 06/04/2015 22:14 |
| Analytical Prep Batch #: | 52758 | Prep. Date/Time: | 06/04/2015 08:00 |
| ICAL Calibration #: | | Concentration Units: | mg/L |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7439-92-1 | Lead | 0.39 | M | 0.0014 | 0.0020 | 0.0040 | 0.0040 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PA-RR-26-0624**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | TCLP | SDG No.: | 111568 |
| % Solids: | | Lab Sample ID: | 590906 |
| Analytical Method: | EPA 6010C | Date Received: | 06/02/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | 06/04/2015 07:00 |
| Analytical Run #: | 115502 | Analysis Date/Time | 06/04/2015 22:14 |
| Analytical Prep Batch #: | 52758 | Prep. Date/Time: | 06/04/2015 08:00 |
| ICAL Calibration #: | | Concentration Units: | mg/L |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7439-92-1 | Lead | 0.39 | M | 0.0014 | 0.0020 | 0.0040 | 0.0040 |

# *Case Narrative*

**Client:** Tetra Tech
**Project:** Pilsen Area Soil Site OU1
**Sample Receipt Date:** 11/25/2015 & 12/01/2015
**SDG #:** 115630

Four soil samples were received for lead analysis. The assigned sample ID number, date sampled, and date received are indicated in the attached Project Summary. The samples were received intact and at a temperature within method specified acceptance limits. A breakdown of sample receipt information can be found on the Sample Condition Report located in the last section of the data package and any exceptions are noted below.

**Sample Analysis and Quality Control**

***Metals Analysis:***

The samples were analyzed using US EPA SW-846 methodology 6010C. All samples were analyzed within the holding time. The following summaries of quality control procedures are included:

Initial and Continuing Calibration Verification
Blanks Summary
ICP Interference Check Data
Spike Sample Recovery
Duplicates Data
Laboratory Control Sample Data
Analysis Run Log

All analysis results met the method specified quality control criteria with the following exceptions:

**ICP Metals Analyses**

Continuing Calibration Verification (CCV) standards were analyzed at two levels (CCV1 & CCV2) with potentially differing wavelengths. Data associated with CCV's were evaluated based on the concentration of the element in the samples and compared to the appropriate CCV level/wavelength.

Some samples may have been analyzed and/or reanalyzed diluted to obtain results for all target analytes within the calibration range of the instrument.

<u>Analytical Run # 121400</u>

The Serial Dilution (L) for sample # 662941 was not applicable for silver, arsenic, chromium, lead, and selenium because the parent sample raw results were less than 50 times the Limit of Quantitation (LOQ). A Post Digestion Spike (PDS) was analyzed and was unacceptable for lead. The parent sample was reported and qualified with an "M" flag for lead.

**Client:** Tetra Tech
**Project:** Pilsen Area Soil Site OU1
**Sample Receipt Date:** 11/25/2015 & 12/01/2015
**SDG #:** 115630

***Metals Analysis Continued:***

The L for sample # 662941 was not acceptable for barium and cadmium because the results exceeded the Relative Percent Difference (RPD) limit. A PDS was analyzed and was unacceptable for cadmium. The parent sample was reported and qualified with an "M" flag for the failing element.

The Duplicate (DUP) for sample # 662941 was not applicable for arsenic, selenium, silver, and chromium because the parent sample results were less than five times the LOQ. A Matrix Spike Duplicate (MSD) was analyzed to demonstrate precision and was acceptable. The parent sample was reported and not qualified.

The Matrix Spike (MS) and MSD for sample # 662941 exceeded the recovery limit for cadmium. A PDS was analyzed and was unacceptable. The parent sample was reported and qualified with an "M" flag for cadmium.

<u>Analytical Run # 121439</u>

The L for sample # 663923 was not applicable for lead because the parent sample raw result was less than 50 times the LOQ. A PDS was analyzed and was unacceptable for lead. The parent sample was reported and qualified with an "M" flag.

The MS and MSD for sample # 663923 exceeded the recovery limit for lead. A PDS was analyzed and was unacceptable. The parent sample was reported and qualified with an "M" flag for lead.

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## Data Qualifiers

| Code | Description |
|---|---|
| A | Analyte averaged calibration criteria within acceptable limits. |
| B | Analyte detected in 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. |
| 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 not above the detection level. |
| 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 | Calibration criteria exceeded. |

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## MANUAL INTEGRATION REASON CODES

CTLaboratories has identified four general cases with valid reasons supporting the use of manual integration techniques. These codes are used on chromatograms in this data package to document the reasons for manual integrations per CTLaboratories' SOP SS-10 current revision.

**#1**: **Data system failed to select the correct peak or missed the peak entirely.**
In some cases the chromatography system selects and integrates the "wrong peak". In this case the analyst must correct the selection and force the system to integrate the proper peak. In other instances the system may miss the peak completely. In this case the analyst manually integrated the peak

**#2**: **Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak.**
This phenomenon is common at low concentrations where the signal to noise ratio is low. A single compound (peak) is incorrectly split into multiple peaks or integrated as a main peak with one or more rider peaks resulting in low or high area counts for the target compound.

**#3: Improperly Integrated Isomers and/or coeluting compounds.**
For when the system fails to distinguish coeluting compounds and or isomers. The integration areas and concentrations may be inaccurate, and they must be corrected by manual integration. Prime examples are compounds that are unresolved and integrated improperly when present at low concentrations in standards or samples.

**#4: System Established Incorrect Baseline.**
There are numerous situations in chromatography where the system establishes the baseline incorrectly. Some baseline errors will be obvious to the analyst and may be corrected via manual procedures.

**#5: Miscellaneous.**
Some situations involving integration errors may require in-depth review and technical judgment. These cases should be brought to the attention of the group supervisor. If the form of manual integration is not clearly covered by these four cases, then review and approval by the group supervisor or the *QA/QC* Supervisor will be required.

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# Sample Delivery Group

## 115630

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

Project Name: PILSEN AREA SOIL SITE
Project #: 103X9026000150515040

| CT Sample # | Folder # | Client Sample # | Sample Description | Matrix | Date Sampled | Date Received |
|---|---|---|---|---|---|---|
| 663004 | 115630 | | S-112415-GW-01-ES | TCLP | 11/24/2015 | 11/25/2015 |
| 663005 | 115630 | | S-112415-GW-02-ES | TCLP | 11/24/2015 | 11/25/2015 |
| 663923 | 115683 | | S-112515-ML-04-ES | TCLP | 11/25/2015 | 12/01/2015 |
| 663924 | 115683 | | S-112515-ML-05-ES | TCLP | 11/25/2015 | 12/01/2015 |

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# QC Batch Cross Reference Summary



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

| | |
|---|---|
| Project Name: | PILSEN AREA SOIL SITE |
| Project #: | 103X9026000150515040 |
| Report Date: | 12/14/2015 |
| Date Received: | 11/25/2015 |
| SDG #: | 115630 |

## *Metal Parameters*

| CTI LAB#: | Parameter | Method | Matrix | Prep Batch # | Analytical Run # |
|---|---|---|---|---|---|
| 663004 | ICP Metals QSM TCLP | EPA 6010C | TCLP | 55293 | 121400 |
| 663005 | ICP Metals QSM TCLP | EPA 6010C | TCLP | 55293 | 121400 |
| 663923 | ICP Metals QSM TCLP | EPA 6010C | TCLP | 55323 | 121439 |
| 663924 | ICP Metals QSM TCLP | EPA 6010C | TCLP | 55323 | 121439 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**S-112415-GW-01-ES**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOIL SITE |
| Matrix (soil/water): | TCLP | SDG No.: | 115630 |
| % Solids: | | Lab Sample ID: | 663004 |
| Analytical Method: | EPA 6010C | Date Received: | 11/25/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | 12/01/2015 09:30 |
| Analytical Run #: | 121400 | Analysis Date/Time | 12/02/2015 11:29 |
| Analytical Prep Batch #: | 55293 | Prep. Date/Time: | 12/01/2015 13:00 |
| ICAL Calibration #: | | Concentration Units: | mg/L |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7439-92-1 | Lead | 0.23 | | 0.0014 | 0.0020 | 0.0040 | 0.0040 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**S-112415-GW-02-ES**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOIL SITE |
| Matrix (soil/water): | TCLP | SDG No.: | 115630 |
| % Solids: | | Lab Sample ID: | 663005 |
| Analytical Method: | EPA 6010C | Date Received: | 11/25/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | 12/01/2015 09:30 |
| Analytical Run #: | 121400 | Analysis Date/Time | 12/02/2015 11:34 |
| Analytical Prep Batch #: | 55293 | Prep. Date/Time: | 12/01/2015 13:00 |
| ICAL Calibration #: | | Concentration Units: | mg/L |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7439-92-1 | Lead | 0.80 | | 0.0014 | 0.0020 | 0.0040 | 0.0040 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**S-112515-ML-04-ES**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | TCLP | SDG No.: | 115630 |
| % Solids: | | Lab Sample ID: | 663923 |
| Analytical Method: | EPA 6010C | Date Received: | 12/01/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | 12/02/2015 07:00 |
| Analytical Run #: | 121439 | Analysis Date/Time | 12/03/2015 11:16 |
| Analytical Prep Batch #: | 55323 | Prep. Date/Time: | 12/03/2015 06:00 |
| ICAL Calibration #: | | Concentration Units: | mg/L |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7439-92-1 | Lead | 0.029 | M | 0.0014 | 0.0020 | 0.0040 | 0.0040 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**S-112515-ML-05-ES**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | TCLP | SDG No.: | 115630 |
| % Solids: | | Lab Sample ID: | 663924 |
| Analytical Method: | EPA 6010C | Date Received: | 12/01/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | 12/03/2015 07:00 |
| Analytical Run #: | 121439 | Analysis Date/Time | 12/03/2015 12:00 |
| Analytical Prep Batch #: | 55323 | Prep. Date/Time: | 12/03/2015 06:00 |
| ICAL Calibration #: | | Concentration Units: | mg/L |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7439-92-1 | Lead | 2.4 | | 0.0014 | 0.0020 | 0.0040 | 0.0040 |

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# *Case Narrative*

**Client:** Tetra Tech, Chicago, IL
**Project:** East Pilsen site, Chicago, IL
**Sample Receipt Date(s):** 12-03-2015
**SDG #: 115772**

Two samples were analyzed for TCLP lead. The assigned sample ID numbers, date sampled, and date received are indicated in the attached Project Summary. The samples were received intact and at a temperature within method specified acceptance limits. Any exceptions are noted below. The analyses were performed following the project requirements.

Manual integrations may have been performed on the data provided with this package. If manual integrations were performed, Reason #(s) were included on the raw data that corresponds to the "Index Key for Manual Integration Rationale." The raw data includes a "Before" and "After" manual integration illustration. The manual integrations were initialed and dated by the analyst, as well as, by the person reviewing the data.

## Sample Analysis and Quality Control

***Metals:***

The samples were analyzed using US EPA Method 6010C (ICP). All samples were analyzed within the holding time. The following summaries of quality control procedures are included:

Initial and Continuing Calibration Verification
Blanks Summary
ICP Interference Check Data
Spike Sample Recovery
Duplicates Data
Laboratory Control Sample Data
Analysis Run Log

All analysis results met the method specified quality control criteria with the following exceptions:

Continuing Calibration Verifications standards were analyzed at two levels (CCV1 & CCV2) with potentially differing wavelengths. Data associated with CCV's were evaluated based on the concentration of the element in the samples and compared to the appropriate CCV level/wavelength.

Some samples may have been analyzed and/or reanalyzed diluted to obtain results for all target analytes within the calibration range of the instrument.

**ICP Metals (6010C) TCLP Analysis**

Analytical Run # 121604

The Serial Dilution (L) for sample # 665219 was not acceptable for lead because the result exceeded the Relative Percent Difference (RPD) limit. A Post Digestion Spike (PDS) was analyzed and was unacceptable. The parent sample was reported and qualified with an “M” flag for lead.

The Matrix Spike (MS) and Matrix Spike Duplicate (MSD) for sample # 665219 exceeded the recovery limit for lead. A PDS was analyzed and was unacceptable. The parent sample was reported and qualified with an “M” flag for lead.

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## Data Qualifiers

| Code | Description |
|---|---|
| A | Analyte averaged calibration criteria within acceptable limits. |
| B | Analyte detected in 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. |
| 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 not above the detection level. |
| 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 | Calibration criteria exceeded. |

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## MANUAL INTEGRATION REASON CODES

CTLaboratories has identified four general cases with valid reasons supporting the use of manual integration techniques. These codes are used on chromatograms in this data package to document the reasons for manual integrations per CTLaboratories' SOP SS-10 current revision.

**#1**: **Data system failed to select the correct peak or missed the peak entirely.**
In some cases the chromatography system selects and integrates the "wrong peak". In this case the analyst must correct the selection and force the system to integrate the proper peak. In other instances the system may miss the peak completely. In this case the analyst manually integrated the peak

**#2**: **Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak.**
This phenomenon is common at low concentrations where the signal to noise ratio is low. A single compound (peak) is incorrectly split into multiple peaks or integrated as a main peak with one or more rider peaks resulting in low or high area counts for the target compound.

**#3: Improperly Integrated Isomers and/or coeluting compounds.**
For when the system fails to distinguish coeluting compounds and or isomers. The integration areas and concentrations may be inaccurate, and they must be corrected by manual integration. Prime examples are compounds that are unresolved and integrated improperly when present at low concentrations in standards or samples.

**#4: System Established Incorrect Baseline.**
There are numerous situations in chromatography where the system establishes the baseline incorrectly. Some baseline errors will be obvious to the analyst and may be corrected via manual procedures.

**#5: Miscellaneous.**
Some situations involving integration errors may require in-depth review and technical judgment. These cases should be brought to the attention of the group supervisor. If the form of manual integration is not clearly covered by these four cases, then review and approval by the group supervisor or the *QA/QC* Supervisor will be required.

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# Sample Delivery Group

## 115772

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

Project Name: PILSEN AREA SOILS SITE OU1
Project #: 103X90260001S0515040

| CT Sample # | Folder # | Client Sample # | Sample Description | Matrix | Date Sampled | Date Received |
|---|---|---|---|---|---|---|
| 665219 | 115772 | | S-120215-AK-007-ES | TCLP | 12/02/2015 | 12/03/2015 |
| 665261 | 115772 | | S-120215-AK-008-ES | TCLP | 12/02/2015 | 12/03/2015 |

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# QC Batch Cross Reference Summary



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

| | |
|---|---|
| Project Name: | PILSEN AREA SOILS SITE OU1 |
| Project #: | 103X90260001S0515040 |
| Report Date: | 12/14/2015 |
| Date Received: | 12/03/2015 |
| SDG #: | 115772 |

## *Metal Parameters*

| CTI LAB#: | Parameter | Method | Matrix | Prep Batch # | Analytical Run # |
|---|---|---|---|---|---|
| 665219 | ICP Metals QSM TCLP | EPA 6010C | TCLP | 55382 | 121604 |
| 665261 | ICP Metals QSM TCLP | EPA 6010C | TCLP | 55382 | 121604 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**S-120215-AK-007-ES**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | TCLP | SDG No.: | 115772 |
| % Solids: | | Lab Sample ID: | 665219 |
| Analytical Method: | EPA 6010C | Date Received: | 12/03/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | 12/05/2015 08:00 |
| Analytical Run #: | 121604 | Analysis Date/Time | 12/08/2015 11:46 |
| Analytical Prep Batch #: | 55382 | Prep. Date/Time: | 12/07/2015 15:00 |
| ICAL Calibration #: | | Concentration Units: | mg/L |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7439-92-1 | Lead | 9.1 | M | 0.0014 | 0.0020 | 0.0040 | 0.0040 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**S-120215-AK-008-ES**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | TCLP | SDG No.: | 115772 |
| % Solids: | | Lab Sample ID: | 665261 |
| Analytical Method: | EPA 6010C | Date Received: | 12/03/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | 12/05/2015 08:00 |
| Analytical Run #: | 121604 | Analysis Date/Time | 12/08/2015 12:17 |
| Analytical Prep Batch #: | 55382 | Prep. Date/Time: | 12/07/2015 15:00 |
| ICAL Calibration #: | | Concentration Units: | mg/L |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7439-92-1 | Lead | 11 | | 0.0014 | 0.0020 | 0.0040 | 0.0040 |

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# *Case Narrative*

**Client:** Tetra Tech, Chicago, IL
**Project:** East Pilsen site, Chicago, IL
**Sample Receipt Date(s):** 12-04-2015
**SDG #: 115794**

Six soil samples were for lead. The assigned sample ID numbers, date sampled, and date received are indicated in the attached Project Summary. The samples were received intact and at a temperature within method specified acceptance limits. Any exceptions are noted below. The analyses were performed following the project requirements.

Manual integrations may have been performed on the data provided with this package. If manual integrations were performed, Reason #(s) were included on the raw data that corresponds to the "Index Key for Manual Integration Rationale." The raw data includes a "Before" and "After" manual integration illustration. The manual integrations were initialed and dated by the analyst, as well as, by the person reviewing the data.

## Sample Analysis and Quality Control

***Metals:***

The samples were analyzed using US EPA Method 6010C (ICP). All samples were analyzed within the holding time. The following summaries of quality control procedures are included:

Initial and Continuing Calibration Verification
Blanks Summary
ICP Interference Check Data
Spike Sample Recovery
Duplicates Data
Laboratory Control Sample Data
Analysis Run Log

All analysis results met the method specified quality control criteria with the following exceptions:

Continuing Calibration Verifications standards were analyzed at two levels (CCV1 & CCV2) with potentially differing wavelengths. Data associated with CCV's were evaluated based on the concentration of the element in the samples and compared to the appropriate CCV level/wavelength.

Some samples may have been analyzed and/or reanalyzed diluted to obtain results for all target analytes within the calibration range of the instrument.

**ICP Metals (6010C) Soil Analysis**

Analytical Run # 121525

The Duplicate (DUP) for sample # 665827 was not acceptable for lead because the result exceeded the Relative Percent Difference (RPD) limit. The parent sample was reported and qualified with a "Y" flag for lead.

The Matrix Spike (MS) and Matrix Spike Duplicate (MSD) for sample # 665827 exceeded the recovery limit for lead. A Post Digestion Spike (PDS) was analyzed and was acceptable. The parent sample was reported and not qualified.

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## Data Qualifiers

| Code | Description |
|---|---|
| A | Analyte averaged calibration criteria within acceptable limits. |
| B | Analyte detected in 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. |
| 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 not above the detection level. |
| 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 | Calibration criteria exceeded. |

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## MANUAL INTEGRATION REASON CODES

CTLaboratories has identified four general cases with valid reasons supporting the use of manual integration techniques. These codes are used on chromatograms in this data package to document the reasons for manual integrations per CTLaboratories' SOP SS-10 current revision.

**#1**: **Data system failed to select the correct peak or missed the peak entirely.**
In some cases the chromatography system selects and integrates the "wrong peak". In this case the analyst must correct the selection and force the system to integrate the proper peak. In other instances the system may miss the peak completely. In this case the analyst manually integrated the peak

**#2**: **Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak.**
This phenomenon is common at low concentrations where the signal to noise ratio is low. A single compound (peak) is incorrectly split into multiple peaks or integrated as a main peak with one or more rider peaks resulting in low or high area counts for the target compound.

**#3: Improperly Integrated Isomers and/or coeluting compounds.**
For when the system fails to distinguish coeluting compounds and or isomers. The integration areas and concentrations may be inaccurate, and they must be corrected by manual integration. Prime examples are compounds that are unresolved and integrated improperly when present at low concentrations in standards or samples.

**#4: System Established Incorrect Baseline.**
There are numerous situations in chromatography where the system establishes the baseline incorrectly. Some baseline errors will be obvious to the analyst and may be corrected via manual procedures.

**#5: Miscellaneous.**
Some situations involving integration errors may require in-depth review and technical judgment. These cases should be brought to the attention of the group supervisor. If the form of manual integration is not clearly covered by these four cases, then review and approval by the group supervisor or the *QA/QC* Supervisor will be required.

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# Sample Delivery Group

## 115794

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

Project Name: PILSEN AREA SOILS SITE OU1
Project #: 103X90260001S0515040

| CT Sample # | Folder # | Client Sample # | Sample Description | Matrix | Date Sampled | Date Received |
|---|---|---|---|---|---|---|
| 665825 | 115794 | | PASS-A1W-P3-120215 | SOIL | 12/02/2015 | 12/04/2015 |
| 665826 | 115794 | | PASS-A1W-P5-120215 | SOIL | 12/03/2015 | 12/04/2015 |
| 665827 | 115794 | | PASS-A1W-P6-120215 | SOIL | 12/03/2015 | 12/04/2015 |
| 665828 | 115794 | | PASS-A1W-P7-120215 | SOIL | 12/03/2015 | 12/04/2015 |
| 665829 | 115794 | | PASS-A1W-P8-120215 | SOIL | 12/03/2015 | 12/04/2015 |
| 665830 | 115794 | | PASS-A1W-P8-120215-D | SOIL | 12/03/2015 | 12/04/2015 |

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# QC Batch Cross Reference Summary



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

| | |
|---|---|
| Project Name: | PILSEN AREA SOILS SITE OU1 |
| Project #: | 103X90260001S0515040 |
| Report Date: | 12/14/2015 |
| Date Received: | 12/04/2015 |
| SDG #: | 115794 |

## *Inorganic Parameters*

| CTI LAB#: | Parameter | Method | Matrix | Prep Batch # | Analytical Run # |
|---|---|---|---|---|---|
| 665825 | Solids, Percent | EPA 8000C | SOIL | | 121521 |
| 665826 | Solids, Percent | EPA 8000C | SOIL | | 121521 |
| 665827 | Solids, Percent | EPA 8000C | SOIL | | 121521 |
| 665828 | Solids, Percent | EPA 8000C | SOIL | | 121521 |
| 665829 | Solids, Percent | EPA 8000C | SOIL | | 121521 |
| 665830 | Solids, Percent | EPA 8000C | SOIL | | 121521 |

## *Metal Parameters*

| CTI LAB#: | Parameter | Method | Matrix | Prep Batch # | Analytical Run # |
|---|---|---|---|---|---|
| 665825 | ICP Metals QSM | EPA 6010C | SOIL | 55358 | 121525 |
| 665826 | ICP Metals QSM | EPA 6010C | SOIL | 55358 | 121525 |
| 665827 | ICP Metals QSM | EPA 6010C | SOIL | 55358 | 121525 |
| 665828 | ICP Metals QSM | EPA 6010C | SOIL | 55358 | 121525 |
| 665829 | ICP Metals QSM | EPA 6010C | SOIL | 55358 | 121525 |
| 665830 | ICP Metals QSM | EPA 6010C | SOIL | 55358 | 121525 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PASS-A1W-P3-120215**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 115794 |
| % Solids: | 75.7 | Lab Sample ID: | 665825 |
| Analytical Method: | EPA 6010C | Date Received: | 12/04/2015 |
| Dilution Factor: | 5.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 121525 | Analysis Date/Time | 12/04/2015 14:16 |
| Analytical Prep Batch #: | 55358 | Prep. Date/Time: | 12/04/2015 10:55 |
| ICAL Calibration #: | | Concentration Units: | mg/kg |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7439-92-1 | Lead | 480 | | 0.26 | 0.81 | 1.6 | 1.6 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PASS-A1W-P5-120215**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 115794 |
| % Solids: | 82.1 | Lab Sample ID: | 665826 |
| Analytical Method: | EPA 6010C | Date Received: | 12/04/2015 |
| Dilution Factor: | 5.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 121525 | Analysis Date/Time | 12/04/2015 14:20 |
| Analytical Prep Batch #: | 55358 | Prep. Date/Time: | 12/04/2015 10:55 |
| ICAL Calibration #: | | Concentration Units: | mg/kg |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7439-92-1 | Lead | 396 | | 0.24 | 0.77 | 1.5 | 1.5 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PASS-A1W-P6-120215**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 115794 |
| % Solids: | 84.6 | Lab Sample ID: | 665827 |
| Analytical Method: | EPA 6010C | Date Received: | 12/04/2015 |
| Dilution Factor: | 5.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 121525 | Analysis Date/Time | 12/04/2015 14:24 |
| Analytical Prep Batch #: | 55358 | Prep. Date/Time: | 12/04/2015 10:55 |
| ICAL Calibration #: | | Concentration Units: | mg/kg |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7439-92-1 | Lead | 613 | Y | 0.23 | 0.73 | 1.5 | 1.5 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PASS-A1W-P7-120215**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 115794 |
| % Solids: | 77.2 | Lab Sample ID: | 665828 |
| Analytical Method: | EPA 6010C | Date Received: | 12/04/2015 |
| Dilution Factor: | 5.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 121525 | Analysis Date/Time | 12/04/2015 16:32 |
| Analytical Prep Batch #: | 55358 | Prep. Date/Time: | 12/04/2015 10:55 |
| ICAL Calibration #: | | Concentration Units: | mg/kg |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7439-92-1 | Lead | 696 | | 0.26 | 0.83 | 1.7 | 1.7 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PASS-A1W-P8-120215**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 115794 |
| % Solids: | 81.4 | Lab Sample ID: | 665829 |
| Analytical Method: | EPA 6010C | Date Received: | 12/04/2015 |
| Dilution Factor: | 5.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 121525 | Analysis Date/Time | 12/04/2015 16:36 |
| Analytical Prep Batch #: | 55358 | Prep. Date/Time: | 12/04/2015 10:55 |
| ICAL Calibration #: | | Concentration Units: | mg/kg |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7439-92-1 | Lead | 838 | | 0.24 | 0.76 | 1.5 | 1.5 |

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***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**PASS-A1W-P8-120215-D**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-PILSEN AREA SOILS SITE OU1 |
| Matrix (soil/water): | SOIL | SDG No.: | 115794 |
| % Solids: | 81.2 | Lab Sample ID: | 665830 |
| Analytical Method: | EPA 6010C | Date Received: | 12/04/2015 |
| Dilution Factor: | 5.00 | TCLP/SPLP Extraction Date/time: | |
| Analytical Run #: | 121525 | Analysis Date/Time | 12/04/2015 16:40 |
| Analytical Prep Batch #: | 55358 | Prep. Date/Time: | 12/04/2015 10:55 |
| ICAL Calibration #: | | Concentration Units: | mg/kg |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7439-92-1 | Lead | 770 | | 0.25 | 0.77 | 1.5 | 1.5 |

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# *Case Narrative*

**Client:** Tetra Tech, Chicago, IL
**Project:** East Pilsen site, Chicago, IL
**Sample Receipt Date(s):** 12-09-2015
**SDG #: 115903**

One sample was analyzed for TCLP cadmium and lead. The assigned sample ID numbers, date sampled, and date received are indicated in the attached Project Summary. The samples were received intact and at a temperature within method specified acceptance limits. Any exceptions are noted below. The analyses were performed following the project requirements.

Manual integrations may have been performed on the data provided with this package. If manual integrations were performed, Reason #(s) were included on the raw data that corresponds to the "Index Key for Manual Integration Rationale." The raw data includes a "Before" and "After" manual integration illustration. The manual integrations were initialed and dated by the analyst, as well as, by the person reviewing the data.

## Sample Analysis and Quality Control

***Metals:***

The samples were analyzed using US EPA Method 6010C (ICP). All samples were analyzed within the holding time. The following summaries of quality control procedures are included:

Initial and Continuing Calibration Verification
Blanks Summary
ICP Interference Check Data
Spike Sample Recovery
Duplicates Data
Laboratory Control Sample Data
Analysis Run Log

All analysis results met the method specified quality control criteria with the following exceptions:

Continuing Calibration Verifications standards were analyzed at two levels (CCV1 & CCV2) with potentially differing wavelengths. Data associated with CCV's were evaluated based on the concentration of the element in the samples and compared to the appropriate CCV level/wavelength.

Some samples may have been analyzed and/or reanalyzed diluted to obtain results for all target analytes within the calibration range of the instrument.

**ICP Metals (6010C) TCLP Analysis**

Analytical Run # 121782

The Serial Dilution (L) for sample # 667958 was not applicable for cadmium because the parent sample raw result was less than 50 times the Limit of Quantitation (LOQ). A Post Digestion Spike (PDS) was analyzed and was acceptable. The parent sample was reported and not qualified.

The L for sample # 667958 was not acceptable for lead because the result exceeded the Relative Percent Difference (RPD) limit. A PDS was analyzed and was acceptable. The parent sample was reported and not qualified.

The Duplicate (DUP) for sample # 667958 was not applicable for cadmium because the parent sample result was less than five times the LOQ. A Matrix Spike Duplicate (MSD) was analyzed to demonstrate precision and was acceptable. The parent sample was reported and not qualified.

The MSD for sample # 667958 exceeded the recovery limit for lead. A PDS was analyzed and was acceptable. The parent sample was reported and not qualified.

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## Data Qualifiers

| Code | Description |
|---|---|
| A | Analyte averaged calibration criteria within acceptable limits. |
| B | Analyte detected in 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. |
| 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 not above the detection level. |
| 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 | Calibration criteria exceeded. |

CT LABORATORIES

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## MANUAL INTEGRATION REASON CODES

CTLaboratories has identified four general cases with valid reasons supporting the use of manual integration techniques. These codes are used on chromatograms in this data package to document the reasons for manual integrations per CTLaboratories' SOP SS-10 current revision.

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In some cases the chromatography system selects and integrates the "wrong peak". In this case the analyst must correct the selection and force the system to integrate the proper peak. In other instances the system may miss the peak completely. In this case the analyst manually integrated the peak

**#2**: **Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak.**
This phenomenon is common at low concentrations where the signal to noise ratio is low. A single compound (peak) is incorrectly split into multiple peaks or integrated as a main peak with one or more rider peaks resulting in low or high area counts for the target compound.

**#3: Improperly Integrated Isomers and/or coeluting compounds.**
For when the system fails to distinguish coeluting compounds and or isomers. The integration areas and concentrations may be inaccurate, and they must be corrected by manual integration. Prime examples are compounds that are unresolved and integrated improperly when present at low concentrations in standards or samples.

**#4: System Established Incorrect Baseline.**
There are numerous situations in chromatography where the system establishes the baseline incorrectly. Some baseline errors will be obvious to the analyst and may be corrected via manual procedures.

**#5: Miscellaneous.**
Some situations involving integration errors may require in-depth review and technical judgment. These cases should be brought to the attention of the group supervisor. If the form of manual integration is not clearly covered by these four cases, then review and approval by the group supervisor or the *QA/QC* Supervisor will be required.

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# Sample Delivery Group

## 115903

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

Project Name: EAST PILSEN SOIL SITE
Project #:

| CT Sample # | Folder # | Client Sample # | Sample Description | Matrix | Date Sampled | Date Received |
|---|---|---|---|---|---|---|
| 667958 | 115903 | | S-120815-AK-009-ES | TCLP | 12/08/2015 | 12/09/2015 |

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# QC Batch Cross Reference Summary



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

| | |
|---|---|
| Project Name: | EAST PILSEN SOIL SITE |
| Project #: | |
| Report Date: | 12/23/2015 |
| Date Received: | 12/09/2015 |
| SDG #: | 115903 |

## *Metal Parameters*

| CTI LAB#: | Parameter | Method | Matrix | Prep Batch # | Analytical Run # |
|---|---|---|---|---|---|
| 667958 | ICP Metals QSM TCLP | EPA 6010C | TCLP | 55493 | 121782 |

# METALS
# CLP FORMS
# DOCUMENTS

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1

***INORGANIC ANALYSIS DATA SHEET***

Sample Description

**S-120815-AK-009-ES**

| | | | |
|---|---|---|---|
| Lab Name: | CT Laboratories | Contract: | TETRA TECH-EAST PILSEN SOIL SITE |
| Matrix (soil/water): | TCLP | SDG No.: | 115903 |
| % Solids: | | Lab Sample ID: | 667958 |
| Analytical Method: | EPA 6010C | Date Received: | 12/09/2015 |
| Dilution Factor: | 1.00 | TCLP/SPLP Extraction Date/time: | 12/10/2015 09:00 |
| Analytical Run #: | 121782 | Analysis Date/Time | 12/11/2015 09:44 |
| Analytical Prep Batch #: | 55493 | Prep. Date/Time: | 12/10/2015 13:00 |
| ICAL Calibration #: | | Concentration Units: | mg/L |

| CAS # | Analyte | Concentration | Qualifiers | DL | LOD | LOQ | RL |
|---|---|---|---|---|---|---|---|
| 7440-43-9 | Cadmium | 0.00039 | J | 0.00030 | 0.0010 | 0.0020 | 0.0020 |
| 7439-92-1 | Lead | 8.1 | | 0.0014 | 0.0020 | 0.0040 | 0.0040 |

# ALS Environmental

*Date: 23-Nov-15*

**Client:** CT Laboratories
**Project:** Pilson Area Soils Site OU1; Project No.: 103X9026000150
**Work Order:** 1511770

## Case Narrative

The sample condition upon receipt was acceptable except where noted.

Results relate only to the items tested and are not blank corrected unless indicated.

# ALS Environmental

**Date:** *23-Nov-15*

**Client:** CT Laboratories
**Project:** Pilson Area Soils Site OU1; Project No.: 103X90260
**Sample ID:** P1-A10-111615
**Collection Date:** 11/16/2015 03:16 PM

**Work Order:** 1511770
**Lab ID:** 1511770-01
**Matrix:** AIR

# Analytical Results

**Analyses**

**METALS BY NIOSH 7300 MOD.** Method: **N7300** Air Volume (L): **232** Analyst: **VAW**

Date Analyzed: 11/23/2015 14:54

| | µg/sample | Reporting Limit µg/sample | mg/m3 |
|---|---|---|---|
| Arsenic | ND | 1.0 | <0.0043 |
| Cadmium | ND | 0.10 | <0.00043 |
| Chromium | ND | 1.0 | <0.0043 |
| Lead | ND | 1.0 | <0.0043 |

**Note:**

# ALS Environmental

**Date:** *23-Nov-15*

**Client:** CT Laboratories
**Project:** Pilson Area Soils Site OU1; Project No.: 103X90260
**Sample ID:** TB-111615
**Collection Date:** 11/16/2015 03:16 PM

**Work Order:** 1511770
**Lab ID:** 1511770-02
**Matrix:** AIR

# Analytical Results

**Analyses**

**METALS BY NIOSH 7300 MOD.** Method: **N7300** Air Volume (L): **0** Analyst: **VAW**

Date Analyzed: 11/23/2015 14:57

| | µg/sample | Reporting Limit µg/sample | mg/m3 |
|---|---|---|---|
| Arsenic | ND | 1.0 | NA |
| Cadmium | ND | 0.10 | NA |
| Chromium | ND | 1.0 | NA |
| Lead | ND | 1.0 | NA |

**Note:**

# ALS Environmental

Date: 23-Nov-15

**Client:** CT Laboratories
**Work Order:** 1511770
**Project:** Pilson Area Soils Site OU1; Project No.: 103X9026

## QC BATCH REPORT

Batch ID: **32227** Instrument ID **ICP1** Method: **N7300**

**MBLK** Sample ID: **mblk-32227-32227** Units: **µg/sample** Analysis Date: **11/23/2015 02:01 PM**
Client ID: Run ID: **ICP1_151123B** SeqNo: **1178082** Prep Date: **11/23/2015** DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | ND | 1.0 | | | | | | | | |
| Cadmium | ND | 0.10 | | | | | | | | |
| Chromium | ND | 1.0 | | | | | | | | |
| Lead | ND | 1.0 | | | | | | | | |

**LCS** Sample ID: **lcs-32227-32227** Units: **µg/sample** Analysis Date: **11/23/2015 02:08 PM**
Client ID: Run ID: **ICP1_151123B** SeqNo: **1178084** Prep Date: **11/23/2015** DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 20.7 | 1.0 | 20 | 0 | 104 | 80-120 | 0 | | | |
| Cadmium | 20.15 | 0.10 | 20 | 0 | 101 | 80-120 | 0 | | | |
| Chromium | 20.81 | 1.0 | 20 | 0 | 104 | 80-120 | 0 | | | |
| Lead | 20.1 | 1.0 | 20 | 0 | 100 | 80-120 | 0 | | | |

**LCSD** Sample ID: **lcsd-32227-32227** Units: **µg/sample** Analysis Date: **11/23/2015 02:11 PM**
Client ID: Run ID: **ICP1_151123B** SeqNo: **1178085** Prep Date: **11/23/2015** DF: **1**

| Analyte | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 20.2 | 1.0 | 20 | 0 | 101 | 80-120 | 20.7 | 2.44 | 20 | |
| Cadmium | 19.85 | 0.10 | 20 | 0 | 99.2 | 80-120 | 20.15 | 1.54 | 20 | |
| Chromium | 20.55 | 1.0 | 20 | 0 | 103 | 80-120 | 20.81 | 1.26 | 20 | |
| Lead | 19.76 | 1.0 | 20 | 0 | 98.8 | 80-120 | 20.1 | 1.7 | 20 | |

**The following samples were analyzed in this batch:** 1511770-01a 1511770-02a

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

# ALS Environmental

Date: 23-Nov-15

**Client:** CT Laboratories
**Project:** Pilson Area Soils Site OU1; Project No.: 103X90260
**WorkOrder:** **1511770**

## QUALIFIERS, ACRONYMS, UNITS

| Qualifier | Description |
|---|---|
| * | Value exceeds Regulatory Limit |
| a | Not accredited |
| B | Analyte detected in the associated Method Blank above the Reporting Limit |
| E | Value above quantitation range |
| H | Analyzed outside of Holding Time |
| J | Analyte detected below quantitation limit |
| n | Not offered for accreditation |
| ND | Not Detected at the Reporting Limit |
| O | Sample amount is > 4 times amount spiked |
| P | Dual Column results percent difference > 40% |
| R | RPD above laboratory control limit |
| S | Spike Recovery outside laboratory control limits |
| U | Analyzed but not detected above the MDL |

| Acronym | Description |
|---|---|
| DUP | Method Duplicate |
| E | EPA Method |
| LCS | Laboratory Control Sample |
| LCSD | Laboratory Control Sample Duplicate |
| MBLK | Method Blank |
| MDL | Method Detection Limit |
| MQL | Method Quantitation Limit |
| MS | Matrix Spike |
| MSD | Matrix Spike Duplicate |
| PDS | Post Digestion Spike |
| PQL | Practical Quantitaion Limit |
| SDL | Sample Detection Limit |
| SW | SW-846 Method |

| Units Reported | Description |
|---|---|
| µg/sample | |