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FINAL SEDIMENT INVESTIGATION BENEATH FORMER PARCELS B AND C PIER AND WHARF STRUCTURES AND BATHYMETRIC SURVEY FOR PARCEL F

10/25/2018

ECC - INSIGHT, LLC

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Naval Facilities Engineering Command Southwest
BRAC PMO West
San Diego, CA

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Contract Number: N62473-12-D-2004; Task Order No. 0014 DCN: INEC-2004-0014-0008

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Appendix B Daily Contractor Production Reports and Photographic Log

Appendix C Sediment Sampling Logs

Appendix D Radiological Screening of Sediment Samples

Appendix E Laboratory Analytical Data Reports and Data Validation Reports

Appendix F Waste Disposal Documentation

Appendix G Response to Comments

ACRONYMS AND ABBREVIATIONS

µg/kg	micrograms per kilogram
AWA	area-weighted average
Barajas	Barajas and Associates
BBL	Blasland, Bouck & Lee, Inc.
BCT	BRAC Cleanup Team
bml	below mudline
BRAC	Base Realignment and Closure
cm	centimeters
CMR+	Compact Measurement Record
COC	chemical of concern
CSM	Conceptual Site Model
ECC-Insight	ECC-Insight LLC
EPA	Environmental Protection Agency
ER-M	Effects Range-Median
ERS	ERS Joint Venture
FS	Feasibility Study
FSDG	Feasibility Study Data Gap
Fugro	Fugro Pelagos, Inc.
GNSS	global navigation satellite system
GPS	global positioning system
HPNS	Hunters Point Naval Shipyard
ID	Identification
IDW	investigation-derived waste
KCH	CH2M Hill Kleinfelder, Joint Venture
L	liters
LFR	Levine-Fricke-Recon
mg/kg	milligrams per kilogram
MLLW	mean lower low water
M/V	marine vessel
NAD83	North American Datum of 1983
NAVD88	North American Vertical Datum of 1988
NOAA	National Oceanic and Atmospheric Administration
PAL	Project Action Level
PCB	polychlorinated biphenyl
POS MV	Position and Orientation System for Marine Vessels
PRC	PRC Environmental Management, Inc.
PRG	preliminary remediation goal
QC	quality control
RACSR	Removal Action Completion Summary Report

ACRONYMS AND ABBREVIATIONS

RG	Remedial Goal
RTK	Real-Time Kinematic
RAO	remedial action objective
ROD	Record of Decision
SAP	Sampling and Analysis Plan

1 INTRODUCTION

This report was prepared by ECC-Insight LLC (ECC-Insight) and CDM Smith to summarize sediment sampling and bathymetric survey activities of Parcel F sediments at Hunters Point Naval Shipyard (HPNS), San Francisco, California (**Figures 1-1** and **1-2**). This work was performed for Naval Facilities Engineering Command Southwest under Contract No. N62473-12-D-2004, Task Order No. 0014.

Field activities were conducted between January 29 and February 3, 2018, in accordance with the *Final Work Plan for Sediment Investigation and Bathymetric Survey for Parcel F* (ECC-Insight and CDM Smith, 2017). Field activities included collection of grab surface sediment samples from the seafloor within the footprint of six separate former Parcels B and C pier and wharf structures (ERS, 2012) (**Figures 1-3** and **1-4**). The six (6) former structures (Pier B, Pier C, Berth 61, Berth 64, the wooden Quay Wall, and Wharf #2) are herein referred to as "former pier and wharf structures" (**Figure 1-3**). The sediment sampling effort was in response to regulatory comments made by the Base Realignment and Closure (BRAC) Cleanup Team (BCT) on the Removal Action Completion Summary Report (RACSR), Pier Radiological Surveys and Removal (ERS, 2012).

In addition, a bathymetric survey was conducted at the following locations to provide a detailed bathymetric survey of the sediment bed to support planned remedial design and construction activities at Parcel F: 1) within the footprint of the former pier and wharf structures, 2) Area III, and 3) Areas IX and X (**Figure 1-5**). The data will be used to fill identified data gaps in the Conceptual Site Model (CSM) (**Figure 1-6**), to address regulatory comments on the removal action at the former pier and wharf structures, and refine the remedial alternatives for Parcel F in support of the Record of Decision (ROD) and the remedial design. In addition, bathymetric survey results were compared to previous bathymetric surveys, when possible, to determine overall changes in bathymetry.

Prior to initiation of field activities, ECC-Insight conducted a pre-construction meeting on January 16, 2018, with the Navy to discuss the overall project scope and schedule. The bathymetric survey and sediment sampling subcontractor was Fugro Pelagos, Inc. (Fugro). Fugro summarized their field operations in a report presented in **Appendix A**.

1.1 Objectives and Scope

The primary objective of this report is to present the results of sediment sampling conducted in the footprint of the previously removed former pier and wharf structures (ERS, 2012) and to present current bathymetric data to address previously identified data gaps associated with offshore sediments at Parcel F. This document will be used to address BCT comments on the former pier and wharf structures and to present an updated bathymetric survey to support remedial design and construction activities.

1.2 Data Gaps in Conceptual Site Model

In 2011, demolition and removal of several wooden pier structures within the boundary of Parcel F was conducted (ERS, 2012). The associated structures were adjacent to Parcels B and C which included wooden and steel pilings and pier structures at Submarine Piers B and C, the wooden portion of the submarine Quay Wall, the wooden remnants of Berths 61 and 64, and the wooden decking and pilings at Wharf #2 (ERS, 2012) (**Figure 1-3**). Per BCT comments on the ERS (2012) report, additional sampling was proposed to assess if sediments beneath and adjacent to the former pier and wharf structures were impacted by

previously identified chemicals of concern (COCs) at Parcel F as well as identify any change in erosional patterns as a result of removal of these piers (ECC-Insight and CDM Smith, 2017).

In addition, bathymetric surveys were completed for Areas III, IX, and X which are the areas requiring active remedial action for Parcel F. An updated bathymetric survey was necessary to accurately estimate the volume of sediments proposed for removal and/or remediation, to identify the placement of fill and capping materials during implementation of the selected remedial alternative, and to estimate sediment erosion/deposition in Areas III, IX, and X. The survey data will also be used in the remedial design to determine whether the installation of cofferdams is a viable option in Areas IX and X.

1.3 Report Organization

This report is organized as follows:

Section 1.0 Introduction – presents an introduction, objectives and scope of the report.

Section 2.0 Background and Site Conditions – provides a site description, a summary of previous investigations, remedial action objectives (RAOs), CSM, and understanding of the contaminant distribution.

Section 3.0 Bathymetric Survey Results - presents results of the bathymetric surveys, including a comparison of current bathymetry data with previous bathymetry data.

Section 4.0 Former Pier and Wharf Structures Sediment Investigation - presents sediment sample analytical results for composite and analyzed sediment sub-samples.

Section 5.0 Summary and Recommendations – presents the conclusions and recommendations from the results of the sediment sampling and bathymetric survey.

Section 6.0 References – presents the references used in the preparation of this report.

The following appendices are referenced as appropriate to support the information presented in this report (on compact disc):

Appendix A Field Operations Report Sediment Investigation and Bathymetric Survey – Fugro Pelagos

Appendix B Daily Contractor Production Reports and Photographic Log

Appendix C Sediment Sampling Logs

Appendix D Radiological Screening of Sediment Samples

Appendix E Laboratory Analytical Data Reports and Data Validation Reports

Appendix F Waste Disposal Documentation

Appendix G Response to Comments

2 BACKGROUND AND SITE CONDITIONS

This section includes site-specific description and history, a summary of relevant previous investigations, RAOs, remedial goals (RGs), and contaminant distribution.

2.1 Site Description and History

HPNS is located in the southeastern part of San Francisco on a long promontory that extends east into San Francisco Bay (**Figure 1-1**). HPNS comprises 866 acres: 420 acres on land and 446 acres under water in the San Francisco Bay (Parcel F). In 1940, the Navy obtained ownership of HPNS for ship-building, repair, and maintenance. After World War II, activities at HPNS shifted to submarine maintenance and repair. HPNS was also the site of the Naval Radiological Defense Laboratory. HPNS was deactivated in 1974 and remained relatively unused until 1976. Between 1976 and 1986, the Navy leased most of HPNS to Triple A Machine Shop, Inc., a private ship-repair company. In 1987, the Navy resumed occupancy of HPNS.

HPNS property was placed on the National Priorities List in 1989 pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act because past shipyard operations had left hazardous substances onsite. In 1991, HPNS was designated for closure pursuant to the Defense Base Closure and Realignment Act of 1990. Closure at HPNS involved conducting environmental remediation and making the property available for non-defense use. HPNS is subdivided into 11 parcels (Parcels B, C, D-1, D-2, E, E-2, F, G, UC-1, UC-2, and UC-3). Former Parcel A was transferred to the City's redevelopment agency in 2004. The offshore portion of HPNS has been designated as Parcel F, the subject of this report (**Figure 1-2**).

Parcels B and C Former Pier and Wharf Structures

During historical operations at HPNS, Berths 61 and 64, Submarine Piers B and C, and Wharf #2 were used for shipbuilding, maintenance and repair (**Figure 1-3**). Operations included metal work and sandblasting. For Area III and the former pier and wharf structures, COCs migrated to offshore sediments from stormwater discharge, a drainage tunnel that was used to rapidly drain water from Dry Docks 2 and 3, and surface runoff and groundwater discharge from Site IR-26 in Parcel B (Battelle, Blasland, Bouck, & Lee (BBL), and Neptune & Company [Battelle et al.], 2005). In 2011, a removal action was conducted of wooden pier structures that were deemed potentially radiologically impacted as documented by the RACSR (ERS, 2012).

2.2 Previous Investigations

Since 1991, numerous investigations were conducted to evaluate shoreline and offshore contamination at Parcel F. Detailed summaries of previous investigations are provided in the Feasibility Study (FS) Report (Barajas and Associates [Barajas], 2008) and the FS Addendum (CH2M Hill Kleinfelder, Joint Venture [KCH], 2017). Key investigations include:

- Ecological Risk Assessments (PRC Environmental Management, Inc. [PRC], 1994 and 1996),
- 1998 FS (Tetra Tech and Levine-Fricke-Recon [LFR], 1998),
- 2000 Validation Study (Battelle et al., 2005),
- 2002 Shoreline Investigation (SulTech, 2005),
- FS Data Gaps (FSDGs) Investigation Technical Memorandum (Barajas et al., 2007),

- Phase 1 and Phase 2a Radiological Screening Survey (Battelle and Sea Engineering, 2013),
- Phase 2b Radiological Data Gap Investigation (ITSI Gilbane & SAIC, 2013), and
- Final Addendum to the FS (KCH, 2017).

A Proposed Plan was completed in April 2018 (Navy, 2018) and a Public Meeting was conducted on April 11, 2018. Comments from the Public Meeting are being incorporated into the ROD for stakeholder review.

2.3 Remedial Action Objectives and Remediation Goals

The FS Report for Parcel F (Barajas, 2008) documents the RAOs and defines the areas of Parcel F that require remediation. The following RAOs were identified for Parcel F:

RAO 1: Reduce the risk of benthic feeding and piscivorous birds, including surf scoters, to acceptable levels from exposure to copper, lead, mercury, and polychlorinated biphenyls (PCBs) through consumption of contaminated prey and incidental ingestion of sediment.

RAO 2: Limit or reduce the potential risk to human health from consumption of shellfish from Parcel F.

RAO 3: Limit or reduce the potential biomagnification of total PCBs at higher trophic levels in the food chain to reduce the potential risk to human health from consumption of sport fish.

The COCs (copper, lead, mercury, and total PCBs) in sediment were identified based on potential risks to ecological receptors (**Table 2-1**). In addition, numerical remediation goals were developed for the COCs found in Parcel F sediments with the exception of lead. A numerical remediation goal was not calculated for lead because of the uncertainty associated with both the bioavailability and toxicity of lead (Barajas, 2008). However, the National Oceanic and Atmospheric Administration (NOAA) Effects Range-Median (ER-M) value for the protection of the benthic community will be used as a numeric screening value for lead (218 milligrams per kilogram [mg/kg]). An area-weighted average (AWA) concentration of each COC was calculated for each area to evaluate which areas in Parcel F should be carried forward for remedial evaluation. A conservative approach was taken by using the highest chemical concentrations detected within the top 2 feet to calculate the surface-weighted average concentrations. Only Areas III and X exceeded the preliminary remediation goals (PRGs) on an AWA basis. Although Area IX did not exceed the PRGs, a risk management decision was made to include a portion of the northern shoreline with the evaluation of Area X, which is referred to as Areas IX and X (Barajas, 2008).

An Addendum to the FS for Parcel F was finalized in January 2017 (KCH, 2017), which included results from a three-phased data gap investigation for radionuclides in sediment. The FS Addendum investigation included collection and laboratory analysis of more than 800 sediment samples for radionuclides of concern and concluded that no radioactivity in excess of naturally occurring background levels were present within sediment at Parcel F. No additional radiological investigation, cleanup, or controls for radiological contamination in sediment were recommended. However, institutional controls were recommended to address the potential for radiological objects in dredged sediments (KCH, 2017).

2.4 Previous Remedial Activities

A detailed summary of previous remedial activities associated with Parcel F is provided in the FS Report (Barajas, 2008) and FS Addendum (KCH, 2017). Several source control measures have been implemented along the HPNS shoreline to protect against releases to each subarea of Parcel F. Source removal activities

conducted in the vicinity of the former pier and wharf structures include excavation of over 40,000 cubic yards of waste from Parcel B between 1998 and 2002.

In 2011, wooden pier structures at designated piers and wharfs deemed potentially radiologically impacted were demolished and surveyed as documented in the RACSR (ERS, 2012). The associated structures included pilings and pier structures at Submarine Piers B and C, the wooden portion of the submarine Quay Wall, the wooden remnants of Berths 61 and 64, and the wooden decking and pilings at Wharf #2. The footprints of demolition activities are shown on **Figure 1-3**. The chemical portion of this investigation is focused on the seafloor sediment areas below the footprints of the previously removed structures.

2.5 Current Conceptual Site Model

A current CSM for Parcel F sediments (**Figure 1-6**) is provided in detail in the FS (Barajas, 2008) and the FSDGs Investigation Technical Memorandum (Barajas et al., 2007). A brief discussion of the CSM elements that relate to this investigation are provided in the following subsections.

2.5.1 Hydrodynamic Setting

Area III (Point Avisadero) is a 3.5-acre peninsula located in the northeastern portion of HPNS. It is bordered on the north and east by San Francisco Bay, on the south by Dry Dock 3, and on the west by the remainder of the HPNS property (**Figure 1-2**). Point Avisadero is flat with a steep armored riprap bank. The riprap banks extend well below low tide elevation. A high-resolution bathymetric survey conducted during the FSDGs Investigation shows a shelf of sediment approximately 5 feet below mean lower low water (MLLW) located northwest of the drainage tunnel outfall. This shelf and the eastern bank of Point Avisadero both slope steeply to the northeast to a depth of about minus 35 feet MLLW, after which the bottom continues to deepen to minus 80 feet MLLW in the southeast direction. A sediment dynamics study conducted in Area III indicated that surface sediment was re-suspended 16 percent of the time during the winter and 4 percent of the time during the summer due to strong tidal currents (Barajas, 2008). The distribution of COCs previously reported within Area III suggests that any sediments transported to depths greater than minus 65 feet MLLW were transported away from the Site. The shelf to the north and west of Point Avisadero is a net depositional environment. Evaluation of vertical COC profiles also suggest that deposition has reduced the concentration of surface sediments (Barajas et al., 2007).

Areas IX and X are a shallow basin located south of HPNS (**Figure 1-2**). Circulation in South Basin is restricted and tidal currents are weak. Yosemite Creek enters the South Basin from the west and is characterized as a shallow, tidally influenced channel with no permanent flow. The South Basin is a net depositional environment subject to infrequent resuspension events. The most significant sediment resuspension occurs as a result of storm waves that are generated from southeast winds during the winter. Sediment stability analysis predicts that up to 4.2 centimeters (cm) of erosion may be expected during a winter storm event. Sediment deposition rates within the South Basin were measured using radioisotope data from sediment cores collected within the South Basin. The results of this evaluation determined that the net sediment accumulation rate is approximately 1 centimeter per year. Based on this measured net deposition rate, an average gross sediment deposition rate of about 5 centimeters per year can be estimated. Due to the low advective currents in South Basin, the majority of this deposition represents material that is locally resuspended and deposited while the net deposition rate of about 1 centimeter per year is due to new material entering South Basin from the San Francisco Bay (Barajas et al., 2007).

In 2011, bathymetric surveys (single- and multibeam) were conducted within the former pier and wharf structures investigation study area to verify that the pier structures were properly removed within the demolition footprints. The survey identified that all of the pilings had been removed with the exception of submerged steel pier pilings around Wharf # 2. The steel pilings at Wharf # 2 were subsequently removed (ERS, 2012).

2.5.2 Contaminant Extent and Distribution

The Final Validation Study Report (Battelle et al., 2005) and the FSDG Investigation Technical Memorandum (Barajas et al., 2007) describe in detail the chemical distribution in sediments of Parcel F. The COCs for Parcel F are copper, lead, mercury, and total PCBs (Barajas, 2008; Navy, 2018). Only Areas III, a portion of Area IX, and Area X require remedial action per the FS (Barajas, 2008).

Investigations conducted within Parcel F concluded that the highest chemical concentrations detected in Parcel F sediments are present in Areas III and X. The Final Validation Study Report (Battelle et al. , 2005) concluded that the COCs detected within Area III (copper, lead, mercury, and PCBs) were most likely derived from episodic discharges associated with historical ship painting and maintenance activities that were carried out in the adjacent dry docks. As noted in the Parcel F FS (Barajas 2008), the horizontal and vertical distribution of chemicals in Area III sediments is localized and discontinuous rather than exhibiting a gradient away from a well-defined source. Within Areas IX and X, the COCs were determined to be PCBs, copper, mercury, and lead. The highest concentrations of these chemicals were detected along the eastern shoreline of Area X and decreased with increasing distance from the shoreline.

This investigation focused on the areas beneath the former pier and wharf structures and was designed to address the COCs, in support of the ROD and remedial design for Parcel F.

Area III (Point Avisadero)

The primary ecological risk drivers at Area III (Point Avisadero) are copper and mercury as documented in the FS (Barajas, 2008). Target treatment zones for Area III were identified in the FS (Barajas, 2008) based on the “do not exceed” PRGs. Shoreline areas exceeding the PRGs were remediated in conjunction with previous removal activities in the adjacent upland Parcel B.

Copper was detected in Area III surface sediments during previous investigations at concentrations above the San Francisco Bay ambient threshold and ER-M values. The highest concentration of copper (6,550 mg/kg) was reported in a sample collected immediately offshore of the northeast point of Area III (Point Avisadero). Concentrations of lead (1 sample location) and mercury were also reported in surface sediments above the San Francisco Bay ambient threshold and ER-M values (Barajas, 2008).

The highest concentrations of copper in subsurface sediments (above 500 mg/kg) were reported within approximately 200 feet from the shoreline and extended to depths of approximately 2.0 to 3.0 feet below mudline (bml). Reported concentrations of mercury in subsurface sediments were highest (above 2 mg/kg) within 200 feet of the shoreline from locations north and northeast of Point Avisadero. The highest concentration of mercury (252 mg/kg) was reported in a sample collected from 1.0 to 1.5 feet bml northeast of Point Avisadero (Barajas, 2008).

Concentrations of total PCBs exceeding the ER-M were reported during numerous investigation activities at Area III. The highest total PCB concentrations (between 2,000 and 6,000 micrograms per kilogram

[µg/kg]) were detected in subsurface sediment samples collected between 1.5 to 3.0 feet bml at two locations east to northeast of Point Avisadero (Barajas, 2008).

The horizontal and vertical distribution of COCs in Area III sediments are localized and discontinuous rather than exhibiting a gradient away from a well-defined source.

Areas IX and X (South Basin)

Although the current sediment investigation is not adjacent to Areas IX and X, the extent of contaminants are discussed in relation to the COCs at Parcel F. COCs were reported in surface sediments at Areas IX and X at concentrations exceeding the San Francisco Bay ambient thresholds and ER-M values during previous investigation activities at Parcel F. The highest concentrations of COCs (copper, lead, mercury, and PCBs) in sediment were reported along the eastern shoreline of Area X (Barajas, 2008). Chemical concentrations in this area generally decreased with increasing distance from the eastern shoreline, with the highest concentrations of most COCs found in the 0- to 2-foot interval. The highest PCB concentration found in surface sediment (approximately 7,000 µg/kg) was reported along the northeast shoreline of the South Basin, south of the Parcel E-2 landfill (Barajas, 2008).

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3 BATHYMETRIC SURVEY RESULTS

A bathymetric survey was conducted in the following three areas of Parcel F between February 1 and 3, 2018: 1) area adjacent to and within the footprints of the former pier and wharf structures (**Figure 1-3**); 2) Area III; and 3) Areas IX and X (**Figure 1-5**). The depth of water in Areas IX and X is typically less than 6 feet while the depth of water in Area III is greater than 80 feet. Due to the differences in water depths between these areas, two different bathymetric survey methodologies were utilized: multibeam and singlebeam surveys. Multibeam surveys provide greater resolution than singlebeam surveys but could only be used in deeper waters of the former pier and wharf structures and Area III due to the limitations of the multibeam survey equipment. Within Areas IX and X, the shallow water depths precluded a multibeam survey and therefore a singlebeam survey was performed instead. For the deeper areas (former pier and wharf structures, and Area III), a 27-foot marine vessel (*M/V*) *Julie Ann* equipped with a multibeam bathymetric echo sounder was used. For the shallow areas (Areas IX/X), a 14-foot survey skiff equipped with a singlebeam echo sounder was used. Surveys were conducted perpendicular to the shoreline along survey lines approximately 100 feet apart in the deeper areas (former pier and wharf structures, and Area III), and 50 feet apart in the shallower areas (Areas IX/X) (**Figures 1-5**, **3-1**, and **3-2**). The singlebeam survey was performed during high tide so the skiff could navigate the shallow water. Additional details regarding the bathymetric surveys are provided by Fugro in their Field Operations Report (**Appendix A**). Contour lines were generated at 1-foot intervals for all areas and bathymetry was interpolated between the contours as shown on **Figures 3-1**, **3-2**, and **Appendix A**.

Results of the multibeam and singlebeam bathymetric surveys, including a comparison with previous 2003 surveys conducted in each offshore area, is provided in the following subsections and in **Appendix A**.

3.1 Horizontal and Vertical Controls

Prior to the survey operations, survey control at the project site was established based on North American Datum of 1983 (NAD83), California State Plane Zone 3, and North American Vertical Datum of 1988 (NAVD88) elevations and verified using NOAA Online Positioning User Service. As the primary vertical control for this survey was provided by Real-Time Kinematic (RTK) global navigation satellite system (GNSS) observations, an accurate ellipsoid separation model was used for on-the-fly elevation conversions from the World Geodetic System of 1984 ellipsoid (ellipsoid from which global positioning system [GPS] heights are derived) to NAVD88, and then converted to MLLW (**Appendix A**).

The following referenced control monuments were used on this project to reference data collected to Horizontal Datum, NAD83 Zone 3 in US feet, and Vertical Datum, MLLW, respectively: "HT0613_Hunter West 1" (HTO613) and "HT0616 Benchmark 4" (HTO616) (**Figure 1-2**). The National Geodetic Survey data sheets for HT0613 and HT0616 are provided in **Appendix A**. An RTK base station was set on recovered control monument HTO613, while HTO616 (Tidal Benchmark) was surveyed using a Trimble R8 GNSS rover to establish MLLW elevation at HTO613 (**Appendix A**).

3.2 GPS Positioning and Navigation

For the multibeam survey at the former pier and wharf structures and Area III, horizontal positions were acquired with Position and Orientation System for Marine Vessels (POS MVs) zephyr antennae in RTK mode. A base station was set up at the survey control with a Trimble R-8 dual frequency GPS receiver in RTK mode. The unit transmitted Compact Measurement Record (CMR+) corrections to the POS MV

system onboard the *M/V Julie Ann* to improve horizontal-vertical positioning and provide accurate inertial navigation through GPS outages for up to 30 seconds (**Appendix A**).

Position data was displayed in real time to provide navigation information to the vessel operator. A preliminary coverage plot with survey information was generated in real time to show survey coverage. The helmsman was presented with a plan view of the survey area with the vessel position and track. A color-coded swath of the water coverage was painted to the screen and used to navigate the survey vessel to fill the area (**Appendix A**).

The base station was equipped with a Pacific Crest Advanced Data Link Vantage Pro radio modem and a Yagi antenna that enabled the data link to be transmitted to the receiver outfitted with a similar radio in receiver mode on board the survey vessel. The differentially corrected position and elevation from the Trimble receiver was then transmitted through a CMR+ correction to the POS MV. The POS MV took measurements at regular 1 second epochs and produced position solutions at the same rate. From the POS MV, position, elevation, heading and motion data were then sent to the onboard navigation computer running the Hypack Hysweep navigation and data acquisition software (**Appendix A**).

For the singlebeam survey at Areas IX and X, horizontal positions were acquired using a Trimble R-8 GNSS antenna in RTK mode. A base station was set up at the project site with a Trimble R-8 GNSS receiver transmitting a CMR+ correction via radio link to the survey vessel while logging data at 1-second intervals. The reference receiver (rover) was set up on the *M/V* skiff to collect measurements to the satellites in view and processed them with the base station data. The rover then estimated its location relative to the reference station, obtaining accurate horizontal positions, and water surface information referenced to MLLW (**Appendix A**).

3.3 Former Pier and Wharf Structures and Area III Multibeam Bathymetric Survey

On February 3, 2018, the bathymetric survey was conducted within the deeper area of the former pier and wharf structures and Area III using a high resolution R2 Sonic 2024 multibeam system. The R2 Sonic 2024 works on user selectable frequency ranges so it is adaptable to a wide range of survey depths and conditions. Frequencies are adjusted during the survey without having to shut down the sonar system, change hardware or halt recording data. This system produces a user selectable swath width of 10° to 160° using all 256 beams. The selected swath angle can also be rotated port or starboard, while recording, to direct the highly concentrated beams towards the desired target. The multibeam swath width is approximately 4 times the water depth below the multibeam sensor, providing detailed sediment bed elevation resolution in the deeper areas. The *M/V Julie Ann* tracks are shown in **Appendix A**. The Applanix POS MV was used to provide motion, attitude, and timing for the multibeam echo sounder system. The POS MV delivers full 6-degree-of-freedom position and orientation solutions for marine survey vessels and outputs all motion variables at high rate: position, velocity, heave, roll, pitch, true heading, acceleration vectors, and angular rate vectors. The system combines differential global positioning system with rugged high-quality inertial sensors. The system measures true heading together with roll and pitch to 0.02-degree accuracy or better under dynamic conditions including hard turns and rapid acceleration and deceleration with heave accuracy of 5 cm or 5 percent all in real time. The POS MV system consisted of two Zephyr antennae mounted atop the *M/V Julie Ann* (primary port), a processor, version four, and an inertial measurement unit. The R2 Sonic 2024 outputs digital depth data to the Hypack acquisition system where it is stored with navigation data, motion sensor

data, and heading data that is applied in post processing. Additional information on offset, calibration, a patch test, and processing is presented in **Appendix A**.

Bathymetric soundings for the former pier and wharf structures and Area III ranged from 0 feet MLLW to -85 feet (below MLLW) (**Figure 3-1** and **Chart 2 of Appendix A**). Based on the bathymetric survey area, the steepest gradient is the area directly east of Wharf #2 with bathymetric soundings ranging from -5 feet to -83 feet MLLW, or a distance of 78 feet vertically, over a horizontal distance of approximately 340 feet. A shallow shelf is located in the footprint of the former pier and wharf structures (Berth 64, Berth 61, Piers B and C and Quay wall), and is generally flat, with bathymetric soundings ranging from 0 to -5 feet MLLW vertically over a horizontal distance of approximately 320 feet (**Figure 3-1**). The vertical gradient steepens after the -5 foot MLLW contour, to the east of the shelf. The coastal geometry is consistent with previous findings in the FS (Barajas, 2008).

Comparison of 2018 and 2003 Bathymetric Surveys

Singlebeam data acquired at 100-foot spacing by Fugro in 2003 was used for comparison of the 2018 multibeam bathymetric soundings (**Figure 3-3**; **Chart 3 of Appendix A**). Please note however, that the comparison is not a direct comparison since the multibeam data is of much higher resolution (100% coverage) and the 2003 singlebeam data was interpolated between 100-foot intervals. However, in general, the bathymetric soundings between the 2003 and 2018 appear to show that much of the area has not experienced significant erosion or deposition and is stable with only small areas exhibiting changes in sediment bed elevation greater than 3 feet. Specific areas with erosion and deposition greater than 3 feet are described as follows. The areas with the greatest accumulation change are the northern side of former Pier B and the northeast corner of Berth 64 (up to +11 feet – see **Chart 3 of Appendix A**) while the areas showing the greatest erosional change are an area of approximately 130 feet in diameter, approximately 700 feet north of former Wharf #2 (Dry Dock 3 area) with smaller "scour" areas along the Parcel B shoreline continuing south of Wharf #2 (of -8 feet; see **Chart 3 of Appendix A**). However, it should be cautioned that due to the difference in technologies between the singlebeam and multibeam surveys, conducted between the 2003 and 2018, respectively, these erosion or accumulation points may not have been measured in the 2003 survey due to the 100-foot spacing and may not be an accurate reflection of the changes.

3.4 Areas IX and X Singlebeam Bathymetric Survey

From February 1 to 2, 2018, a singlebeam sediment bathymetric survey was conducted within the shallower Areas IX and X. The singlebeam bathymetric survey was conducted with a survey grade (+/- 0.01 meter accuracy) digital singlebeam echo sounding system (Odom CV-100) on a 14-foot *M/V* skiff. This system provides highly accurate singlebeam profiling depth data below the vessel. The Odom CV-100 echo sounder collected digital profile records as well as digitized depth information for output to the onboard navigational computer. Digital depth data was logged along with date, time, and position, for post processing and mapping. The Global Navigation Satellite System antenna was mounted directly above the single beam transducer and used to resolve any offset issues. Additional information on offset, calibration and processing is presented in **Appendix A**.

The singlebeam bathymetric survey results for Areas IX and X are shown on **Figure 3-2** and also presented in **Chart 1 of Appendix A**. Ninety (90) lines were run at a 50-foot line spacing on a bearing of 038°/218°, perpendicular to the lines run in 2003 to ensure the best comparison. The tracking lines for the *M/V* skiff are depicted in **Appendix A**. Data were collected at high tide to maximize coverage in shallow areas.

Bathymetric soundings ranged from 7 feet (above MLLW) to -5 feet (below MLLW) (**Figure 3-2** and **Chart 1 of Appendix A**). Three distinct areas in Area X where soundings could not be collected are represented by the grey shading on **Figure 3-2** as follows: 1) a shipwreck/obstruction in the northwest corner of Area X, 2) a silt curtain in place within Area X to contain sediment migration from Parcel E remediation activities occurring along the shoreline, and 3) a rock formation above the high tide water along the northwest shoreline of Area X.

The bathymetric survey soundings identify the intertidal and subtidal areas in Areas IX and X at the "0" (zero) MLLW contour line (**Figure 3-2**). The area above the zero MLLW bathymetric soundings represent the intertidal areas for Areas IX and X. The area below the zero MLLW bathymetric soundings represent the subtidal areas for Areas IX and X. This bathymetric sounding refines the intertidal and subtidal areas previously identified in the FS (Barajas, 2008), which will be utilized to refine the areas requiring remedial action in the remedial design.

Comparison of 2018 and 2003 Singlebeam Surveys

Singlebeam data acquired at 100-foot spacing by Fugro in 2003 for a portion of Area IX was used for comparison (**Figure 3-4** and **Chart 4 of Appendix A**). The 2003 bathymetric soundings were conducted only for a portion of Area IX and hence changes in Area X could not be discerned. For the area for which comparative data is available, only small areas show sediment accumulation and erosion of sediment. Generally, the area compared appears stable. It should be noted that the comparison between the 2003 data set, collected at 100-foot spacing, and the 2018 dataset, collected at 50-foot spacing, is not a direct comparison because any data between the acquired singlebeam lines are interpolated. Also, in review of available data, NOAA United States Geological Survey Light Detection and Ranging topographic data was available from 2010 for Area X; however, since horizontal accuracy checks were not performed on the dataset, a meaningful comparison of the two data sets could not be conducted (**Appendix A**).

4 FORMER PIER AND WHARF STRUCTURES SEDIMENT INVESTIGATION

In accordance with the approved Final Work Plan and Sampling and Analysis Plan (SAP) (ECC-Insight and CDM Smith, 2017), composite sediment samples were collected from within the footprint of the following six former structures between January 30 and 31, 2018: Berth 64; Berth 61; Pier B; Pier C; the wooden Quay Wall; and Wharf #2. Surface sediment composite sediment sample locations and sub-sample locations are shown on **Figures 1-4** and **4-1** and are summarized in **Table 4-1**. Daily Contractor Production Reports and a photographic log are included in **Appendix B**. Sediment sample logs are presented in **Appendix C**. **Appendix D** contains a summary of the radiological screening of sediment samples. Sediment sampling investigation activities, analytical results, data validation, and investigation-derived waste (IDW) handling are discussed in the following subsections.

4.1 Sediment Sample Collection

A total of 36 individual surface sediment sub-samples, excluding quality control (QC) samples, were collected from beneath the six former pier and wharf structures. These sub-samples were then composited by the laboratory to create nine (9) composite sediment samples (four sub-samples per composite sample). Larger structures such as former Pier B, former Pier C and former Wharf #2 required two composite samples each to ensure a denser coverage, while smaller structures required only a single composite sample each as follows (**Figure 4-1**):

- Former Berth 64 Area sample location HPF-Berth64-CS01: Four (4) sub-samples to create one (1) composite sample (HPP-FSS-001),
- Former Berth 61 Area sample location HPF-Berth61-CS01: Four (4) sub-samples to create one (1) composite sample (HPP-FSS-002),
- Former Pier B Area consisted of two (2) sample locations: HPF-PierB-CS01 and HPF-PierB-CS02. Sample location HPF-PierB-CS01 consisted of four (4) sub-samples to create one (1) composite sample HPP-FSS-003. Sample location HPF-PierB-CS02 consisted of four (4) sub-samples to create one (1) composite sample HPP-FSS-004.
- Former Pier C Area consisted of two (2) sample locations: HPF-PierC-CS01 and HPF-PierC-CS02. Sample location HPF-PierC-CS01 consisted of four (4) sub-samples to create one (1) composite sample HPP-FSS-005. Sample location HPF-PierC-CS02 consisted of four (4) sub-samples to create one (1) composite sample HPP-FSS-006.
- Former Quay Wall Area sample location HPF-QuayWall-CS01: Four (4) sub-samples to create one (1) composite sample (HPP-FSS-007), and
- Former Wharf #2 Area consisted of two sample locations: HPF-Wharf2-CS01 and HPF-Wharf2-CS02. Sample location HPF-Wharf2-CS01 consisted of four (4) sub-samples to create one (1) composite sample (HPP-FSS-008). An additional four (4) sub-samples were collected from sample location HPF-Wharf2-CS01 to create one (1) composite field duplicate sample (HPP-FSS-010). Sample location HPF-Wharf2-CS02 consisted of four (4) sub-samples to create one (1) composite sample (HPP-FSS-009).

Surface sediment sub-samples were collected from the 27-foot survey vessel using either a Petite Ponar or Standard Ponar grab sampler equipped with a polypropylene rope. The sampler was deployed and retrieved

either manually or with a hand-operated davit and pulley system. With the exception of sample location HPF-Wharf2-CS02 (sub-sample location HPP-FSS-009D) in the Former Wharf #2 Area, all surface sediment sub-samples were collected with a 6” x 6” Petite Ponar sampler with a maximum sample volume of 2.4 liters (L). Due to insufficient volume of sediments acquired utilizing the Petite Ponar sampler at sub-sample location HPP-FSS-009D, the sediment sub-sample was collected with a 9” x 9” Standard Ponar sampler with a maximum sample volume of 8.2 L.

All surface sediment sub-samples were collected from the original proposed sample locations proposed in the Final Work Plan (ECC-Insight and CDM Smith, 2017), with the exception of sediment sub-samples HPP-FSS-007A through D (sample location HPF-QuayWall-CS01), HPP-FSS-008C (sample location HPF-Wharf2-CS01), and HPP-FSS-009D (sample location HPF-Wharf2-CS02). The Quay Wall sub-sample locations (HPP-FSS-007A through D) were moved further offshore by approximately 10 feet due to rip rap encountered at the originally proposed locations. Sediment sub-sample locations HPP-FSS-008C and HPP-FSS-009D were moved approximately 90 feet northwest and 45 feet east, respectively, after multiple attempts to collect a sediment sample, due to debris encountered on the sediment surface (e.g., concrete) (**Figure 4-1**).

Following collection, sediment sub-samples were extruded from the grab sampler into a plastic-lined container, lined with single use plastic bag liners, and the sediment was transferred into glass sample containers using new disposable nitrile gloves for each sample. Surface sediment sub-samples were collected from approximately the upper 2-inches (5 centimeters) of the bay floor surface at all locations. Following collection, the sub-samples were properly labeled, documented on a chain-of-custody form (**Appendix E**), and immediately placed in a cooler with ice before being transported to the laboratory for compositing and chemical analysis. All excess sample volume was placed into sealable 5-gallon buckets and treated as IDW.

4.1.1 Equipment Decontamination

Decontamination of all non-disposable sampling equipment was performed to prevent the introduction of extraneous materials into samples and to prevent potential cross-contamination between samples. Decontamination of non-disposable sampling equipment, including the Ponar grab samplers, was conducted as follows:

1) The equipment was cleaned between each sample location with a brush, using laboratory grade detergent (Liquinox®) and a potable water solution; followed by a potable water rinse, and a final rinse with deionized water. The equipment was scrubbed and rinsed in three separate plastic containers.
2) The equipment was reassembled and placed on a clean sheet of plastic.
3) An equipment blank and field blank from the decontamination source water was collected in accordance with the Final SAP and analyzed for COCs to provide a QC check on the decontamination procedure.

COCs were below detection levels in the equipment and field blanks.

4.1.2 Chemical Analysis

The sub-samples were composited by Enthalpy Analytical Laboratory to create nine, 4 sub-sample composite sediment samples and analyzed for the following:

- Copper by Environmental Protection Agency (EPA) Method 6020,
- Lead by EPA Method 6020,
- Mercury by EPA Method 7471A, and
- PCBs by EPA Method 8082.

In accordance with the Final Work Plan and SAP (ECC-Insight and CDM Smith, 2017), composite sediment sample results were compared to Project Action Levels (PALs), i.e., the RAO 2 "Area Weighted Average" PRG for PCBs and the RAO 1 "Do-Not-Exceed" PRGs for metals, with the exception of lead. The NOAA ER-M value for the protection of the benthic community was used as the PAL for lead (218 mg/kg) (NOAA, 1999; **Table 4-2**). If composite sediment sample COC concentrations from any former pier or wharf structure areas exceeded half (½) the PALs, then all individual sub-samples for that composite were analyzed for the Parcel F COCs (PCBs, copper, mercury, and lead) to further refine any area of contamination below the former pier and wharf structures. Sediment sample results are presented in **Tables 4-3** and **4-4** and discussed in **Section 4.3**.

4.2 Sediment Sample Description

With the exception of three sub-samples (HPP-FSS-003A, HPP-FSS-009B and HPP-FSS-009D), located at sample location HPF-Wharf2-CS02, surface sediment samples consisted primarily of unconsolidated fine grained materials, which were predominantly slightly silty clay (**Appendix C**). A mixture of slightly silty clay with minimal amounts of very fine sand was observed in sub-sample HPP-FSS-003A (sample location HPF-PierB-CS01). More coarse grained material consisting of silty sand was observed in sub-samples HPP-FSS-009B and HPP-FSS-009D (sample location HPF-Wharf2-CS02). Worm tubes were frequently observed within the sediment surface samples, along with worms, shell fragments, and miscellaneous debris and are documented in the Sediment Sampling Logs (**Appendix C**).

4.3 Sediment Sample Results

In accordance with the Final Work Plan and SAP (ECC-Insight and CDM Smith, 2017), composite sediment sample results were screened against ½ the PALs (**Table 4-2**). For composite sample(s) with COCs exceeding ½ the PALs, the individual sub-samples which comprise the applicable composite sample were further analyzed for all COCs, and screened against the PAL. Analytical results for composite sediment samples and individual sediment sub-samples are provided in **Tables 4-3** and **4-4**, and **Figures 4-1** and **4-2**, respectively. Laboratory analytical data reports are presented in **Appendix E**.

Lead was detected above reporting limits in all nine (9) composite samples at a maximum concentration of 40,000 µg/kg (40 mg/kg) from sample location HPF-Wharf2-CS01 (composite sample ID HPP-FSS-008), which is below ½ the PAL of 109,000 µg/kg for lead (**Table 4-3** and **Figure 4-1**).

Copper was detected above reporting limits in all nine (9) composite samples at a maximum concentration of 140,000 µg/kg (140 mg/kg) from sample location HPF-Wharf2-CS02 (composite sample ID HPP-FSS-009), which exceeds ½ the PAL of 135,500 µg/kg for copper. All other copper concentrations are below ½ the PAL for copper (**Table 4-3** and **Figure 4-1**).

Mercury was detected above reporting limits in all nine (9) composite samples at a maximum concentration of 1,300 µg/kg (1.3 mg/kg) from sample location HPF-Wharf2-CS02 (composite sample ID HPP-FSS-

009), which exceeds ½ the PAL of 935 µg/kg for mercury. All other mercury concentrations are below ½ the PAL for mercury (**Table 4-3** and **Figure 4-1**).

For the nine (9) composite sediment samples analyzed for PCBs by EPA Method 8082, excluding the field duplicate (composite sample ID HPP-FSS-010), only Aroclor 1254 and Aroclor 1260 were reported above the laboratory detection limits (**Table 4-3** and **Figure 4-1**). Aroclor 1254 was detected in one (1) of the nine (9) samples, sample location HPF-Wharf2-CS02 (composite sample ID HPP-FSS-009), at 74 µg/kg. Aroclor 1260 was detected in five (5) of the nine (9) composite samples at a maximum concentration of 200 µg/kg from sample location HPF-QuayWall-CS01 (composite sample ID HPP-FSS-007) (**Table 4-3** and **Figure 4-1**). All total PCB composite sample results were below ½ the PAL for total PCBs (675 µg/kg). Composite sediment sample analytical results are provided in **Table 4-3**.

In accordance with the approved Final Work Plan and SAP (ECC-Insight and CDM Smith, 2017), since the analytical results for copper and mercury in composite sample HPP-FSS-009 exceeded ½ the PALs, the four (4) sub-samples (HPP-FSS-009A through 009D) that were collected from sample location HPF-Wharf2-CS02 (composite sample ID HPP-FSS-009) were individually analyzed for all the COC analytes (**Figure 4-2**) and are summarized as follows (**Table 4-4**, **Figure 4-2**):

- Lead was detected above reporting limits in all four (4) sub-samples at a maximum concentration of 130,000 µg/kg (130 mg/kg) for sub-sample HPP-FSS-009D, which is below the PAL of 218,000 µg/kg for lead (NOAA ER-M).
- Copper was detected above reporting limits in all four (4) sub-samples at a maximum concentration of 660,000 µg/kg (660 mg/kg) for sub-sample HPP-FSS-009D which exceeds the PAL of 271,000 µg/kg for copper. Results from the other three sub-samples (HPP-FSS-009A, B, and C) were below the PAL for copper.
- Mercury was detected above reporting limits in all four (4) sub-samples at a maximum concentration of 3,700 µg/kg (3.7 mg/kg) from sub-sample HPP-FSS-009C, which exceeds the PAL of 1,870 µg/kg for mercury. Mercury concentrations for sub-samples HPP-FSS-009B (3,300 µg/kg [3.3 mg/kg]) and HPP-FSS-009D (2,200 µg/kg [2.2 mg/kg]) also exceeded the PAL for mercury. The mercury result for sub-sample HPP-FSS-009A was below the PAL for mercury.
- For PCBs, only Aroclor-1260 was detected above reporting limits in the four (4) sub-samples. Aroclor-1260 was detected in all four (4) sub-samples with a maximum concentration of 7,600 µg/kg from sediment sub-sample HPP-FSS-009D, which exceeds the PAL of 1,240 µg/kg for Total PCBs. Total PCB results from sub-sample HPP-FSS-009B (1,400 µg/kg) also exceeded the PAL for Total PCBs. PCB results for sub-samples HPP-FSS-009A and C were below the PAL for Total PCBs.

4.4 Radiological Screening Results

Radiological screening (alpha/beta measurements of surface smear samples, alpha/beta direct scan measurements, and gross exposure dose rate measurements) of all sediment samples and IDW generated during sampling activities was conducted by the Navy's basewide radiological safety subcontractor (APTIM). Samples were screened pursuant to the Final Accident Prevention Plan, Sediment Investigation and Bathymetric Survey for Parcel F (ECC-Insight and CDM Smith, 2017) and are presented in **Appendix D**. All sediment samples and IDW generated as part of this project were radiologically cleared for release. No low-level radiological objects were identified in the sediment samples or IDW.

4.5 Data Validation and Quality Assessment

Data collected from this investigation was validated in accordance with the Final SAP (ECC-Insight and CDM Smith, 2017). Data validation reports are presented in **Appendix E**. All sample results were subjected to Level III data validation, which comprises an evaluation of QC summary results. All analyses were conducted within all specifications of the method. No results were rejected as a result of data validation.

Copper and lead results for composite sample ID HPP-FSS-007 (sample location HPF-QuayWall-CS01) were flagged as estimated due to an issue with matrix spike/matrix spike duplicate percent recovery (**Table 4-3**). Aroclor-1260 for sub-sample HPP-FSS-009C (sample location HPF-Wharf2-CS02) was flagged as estimated due to compound quantification (relative percent difference between two columns) (**Table 4-4**). Mercury for sub-sample HPP-FSS-009A (sample location HPF-Wharf2-CS02) was flagged as estimated due to matrix spike/matrix spike duplicate percent recovery (**Table 4-4**).

A field duplicate was collected from sample location HPF-Wharf2-CS01 (composite sample ID HPP-FSS-008, with sub-sample IDs HPP-FSS-008A through D) and submitted as a blind quality control sample. Sample results for the field duplicate sample from the HPF-Wharf2-CS01 location were composited by the laboratory into sample ID HPP-FSS-010 and are presented in **Table 4-3** and **Figure 4-2**.

A field blank sample of the source water used to perform the final rinse of the sampling equipment was collected (HPP-FSS-FB01). An equipment blank sample was collected by pouring source water over the Petite Ponar sampler after decontamination (HPP-FSS-EB01). No analytes were reported above reporting limits for the field blank and source water samples (**Appendix E**).

Based on review of the data and validation, completeness for this project is 100%, meeting the 90% goal. No data were rejected. All data in this set is comparable, and meets the needs of the project data quality objectives for sensitivity. All samples were collected as planned, following the procedures laid out in the SAP, and are considered representative of the site.

4.6 Investigation-Derived Waste Management

Waste streams generated during this investigation included solid and liquid wastes, consisting of excess sediment from grab samples, disposable sampling equipment, used personal protection equipment, and decontamination rinse water. State and federal hazardous waste regulations were followed during IDW generation, characterization, treatment and management in accordance with Title 22 California Code of Regulations, Sections 66261, 66262, 66264, and 66265 and 40 Code of Federal Regulations, Parts 260, 261, 262, 264 265, and 268. IDW generated on the vessel was placed into sealable 5-gallon buckets and later transferred to onshore personnel for radiological screening. Following screening, all IDW was placed in one (1) Department of Transportation approved 55-gallon drum, sealed, and properly labeled. All wastes were temporarily stored in Building 251. IDW storage areas were inspected weekly. An appropriate EPA site identification number was provided by the Navy. In addition, historical information and data collected from the characterization sampling was submitted for waste profiling. The waste manifest documentation is provided in **Appendix F**. The IDW generated as part of this investigation was transported to U.S. Ecology, Beatty, Nevada (**Appendix F**).

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5 SUMMARY AND RECOMMENDATIONS

This report summarizes sediment sampling and bathymetric survey activities of offshore sediments at Parcel F, conducted in accordance with the Final Work Plan and SAP (ECC-Insight and CDM Smith, 2017) between January 29 and February 3, 2018. Grab sediment samples were collected from the seafloor for analysis of Parcel F COCs (copper, lead, mercury, and PCBs) in the footprint of the former pier and wharf structures per BCT comments on the RACSR (ERS, 2012). A bathymetric survey was conducted in Parcel F at the following locations: 1) within the footprint of the former pier and wharf structure sampling areas, 2) Area III, and 3) Areas IX and X (**Figure 1-5**).

5.1 Summary and Recommendations of the Bathymetric Survey Results

A multibeam bathymetric survey was conducted in the footprint of the former pier and wharf structures and Area III using the 27-foot *M/V Julie Ann* on February 3, 2018. Bathymetric survey maps were prepared at 1-foot contour intervals (**Figure 3-1** and **Chart 2 of Appendix A**). Bathymetric soundings for the former pier and wharf structures and Area III ranged from 0 feet MLLW to -85 feet (below MLLW) (**Figure 3-1** and **Chart 2 of Appendix A**). Singlebeam data acquired at 100-foot spacing by Fugro in 2003 for the former pier and wharf structures and Area III, was used for comparison of the 2018 multibeam bathymetric soundings (**Figure 3-3** and **Chart 3 of Appendix A**). In general, the bathymetric soundings between 2003 and 2018 in the former pier and wharf structures and Area III appear to show that much of the area has not significantly changed and is stable. A few areas reflect deposition (northern side of Pier B) and erosion (East of Wharf #2). However, it should be cautioned that due to the difference in technologies utilized during the 2003 (singlebeam) and 2018 (multibeam) surveys, these erosion or deposition areas may not be a true reflection of the change in bathymetry.

A singlebeam survey was conducted in Areas IX and X using the 14-foot *M/V* skiff at 50-foot spacing, from February 1 – 2, 2018 (**Figure 3-2** and **Chart 1 of Appendix A**). Data were collected at high tide to maximize coverage in shallow areas. Bathymetric soundings ranged from 7 feet (above MLLW) to -5 feet (below MLLW) (**Figure 3-2** and **Chart 1 of Appendix A**). The bathymetric survey soundings identify the intertidal and subtidal areas in Areas IX and X at the "0" (zero) MLLW contour line (**Figure 3-2**). The area above the zero MLLW bathymetric soundings represent the intertidal areas for Areas IX and X. The area below the zero MLLW bathymetric soundings represent the subtidal areas for Areas IX and X. The results of the bathymetric survey for Areas IX and X refine the intertidal and subtidal areas previously identified in the FS (Barajas, 2008), and are recommended to be utilized to refine the areas requiring remedial action for Areas IX and X and to support remedial design and construction activities.

5.2 Summary and Recommendations from the Sediment Sampling Investigation

Nine composite sediment samples were collected from within the footprint of the following six former structures between January 30 and 31, 2018 (**Table 4-3** and **Figure 4-1**): Berth 64, Berth 61, Pier B, Pier C, the wooden Quay Wall, and Wharf #2. Surface sediment sub-samples were collected from the 27-foot *M/V Julie Ann* using a Ponar grab sampler (**Appendix C**). Each composite sample consisted of four sub-samples (**Table 4-3**; **Section 4.1**). The sub-samples were composited by Enthalpy Analytical Laboratory and analyzed for copper (EPA Method 6020), lead (EPA Method 6020), mercury (EPA Method 7471A), and PCBs (EPA Method 8082).

All seven composite sediment samples collected from Berth 64, Berth 61, Piers B and C, and the Quay Wall, and one of the two composite samples collected from Wharf #2 (sample location HPF-Wharf2-CS01/ sample ID HPP-FSS-008) had concentrations of copper, lead, mercury, and PCBs below ½ the PALs (**Table 4-3**). Hence, no further action is recommended for these areas. The results also confirm previous sediment investigation results which did not show COCs above screening levels along the shoreline northwest and outside of the Area III boundary and along the shoreline in Area III.

Only one composite sample collected from the eastern portion of Wharf #2 (sample location HPF-Wharf2-CS02/sample ID HPP-FSS-009) exceeded ½ the PALs for copper and mercury (**Tables 4-3** and **4-4**). Per the criteria set forth in the Final Work Plan and SAP (ECC-Insight and CDM Smith, 2017), individual sub-samples HPP-FSS-009A through -009D were analyzed for all Parcel F COCs and results indicated PAL exceedances for copper, mercury, and Total PCBs (**Table 4-4**). Lead concentrations did not exceed either ½ the PAL or the PAL for lead in composite sample HPP-FSS-009 or sub-samples HPP-FSS-009A through -009D.

The Navy will be conducting additional investigation in Area III, including identifying the extent of contamination above RGs around Wharf #2, to further refine the areal extent of Area III requiring remedial action. Hence, the extent of Area III will be modified during the subsequent investigation and incorporated into the remedial action for Area III. A separate work plan will be prepared and submitted for stakeholder approval prior to implementation of the upcoming additional investigation.

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United States Department of the Navy (Navy). 2018. *Parcel F Proposed Plan for Offshore Sediment Cleanup, Hunters Point Naval Shipyard, San Francisco, California*. April.

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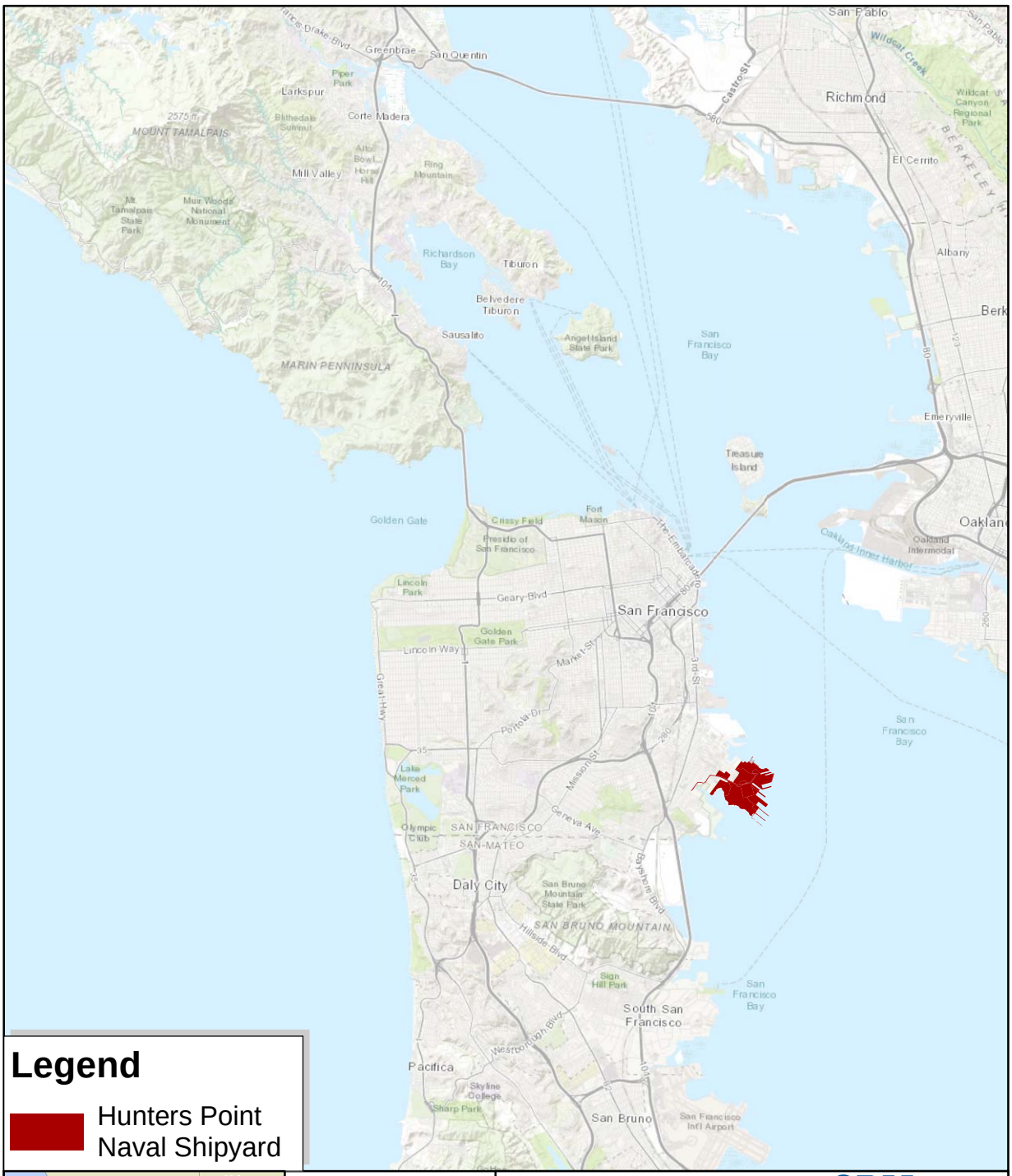
FIGURES



1.5 0 1.5
Miles

1 inch = 3 miles

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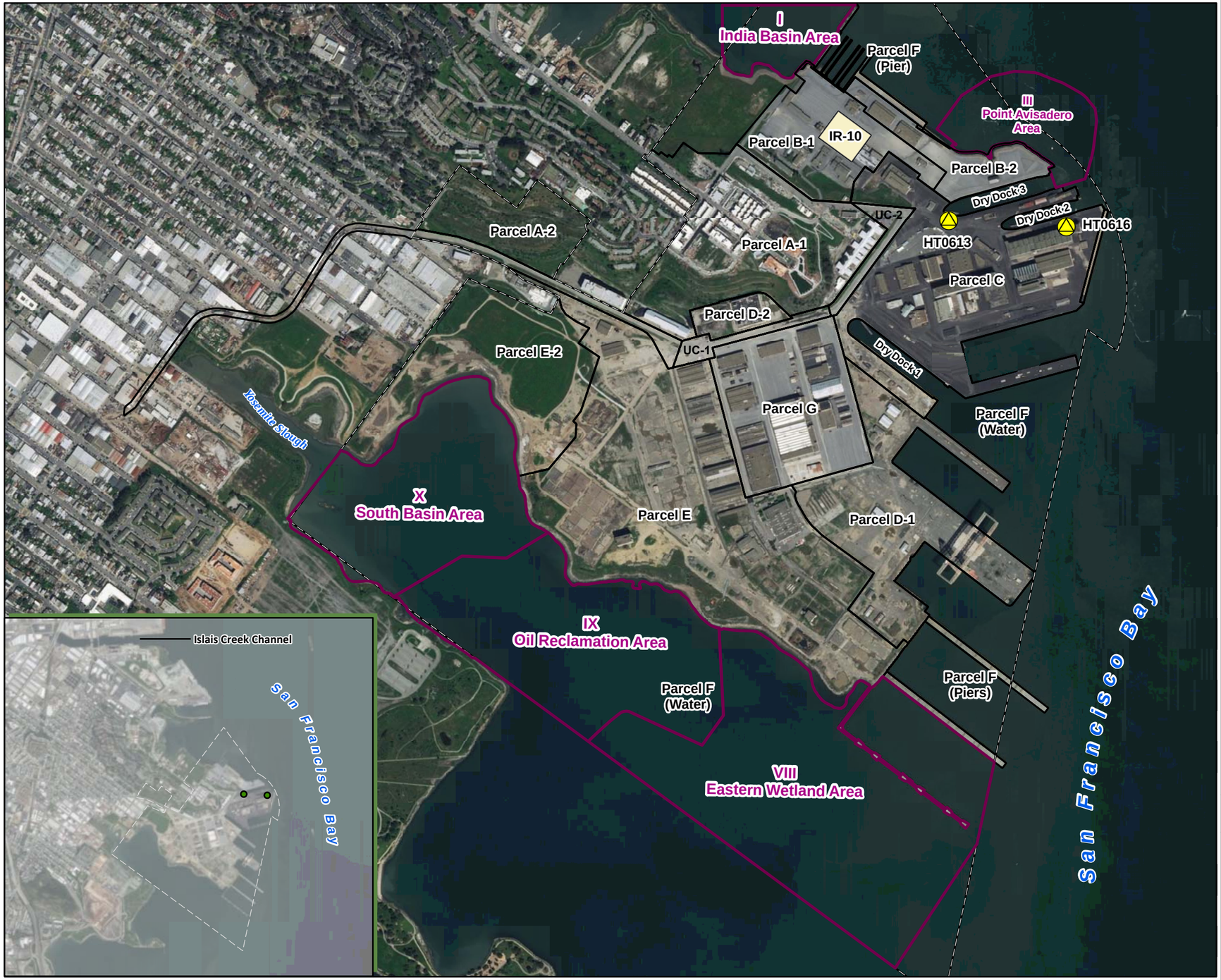
Figure 1-1
Site Location Map

Sediment Investigation and
Bathymetric Survey for Parcel F

Schellerka G:\GIS\212737_HP_ParcelF\Summary\Figure1-1_SiteLocationMap.mxd 5/17/2018



Legend

- Navy Property Boundary
- Parcel Boundary
- Parcel F Subareas - Hunters Point Naval Shipyard
- Survey Control Point

N

1,000 0 1,000
Feet

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Figure 1-2
Parcel F Subareas

Sediment Investigation and
Bathymetric Survey for Parcel F

Schellerka G:\GIS\212737_HP_ParcelF\Summary\Figure1-2_ParcelFSubareas.mxd 5/18/2018

Legend

- Navy Property Boundary
- Parcel Boundary
- Parcel F Subarea - Hunters Point Naval Shipyard
- Parcels B and C Former Pier Structures (Removed in 2011)

Note:
Utilities that existed on the piers were capped at the point of demolition on Berth 64 and Piers B & C at the points indicated by the hash marking (Demolition Area).

N

300 0 300
Feet
1 inch = 300 feet

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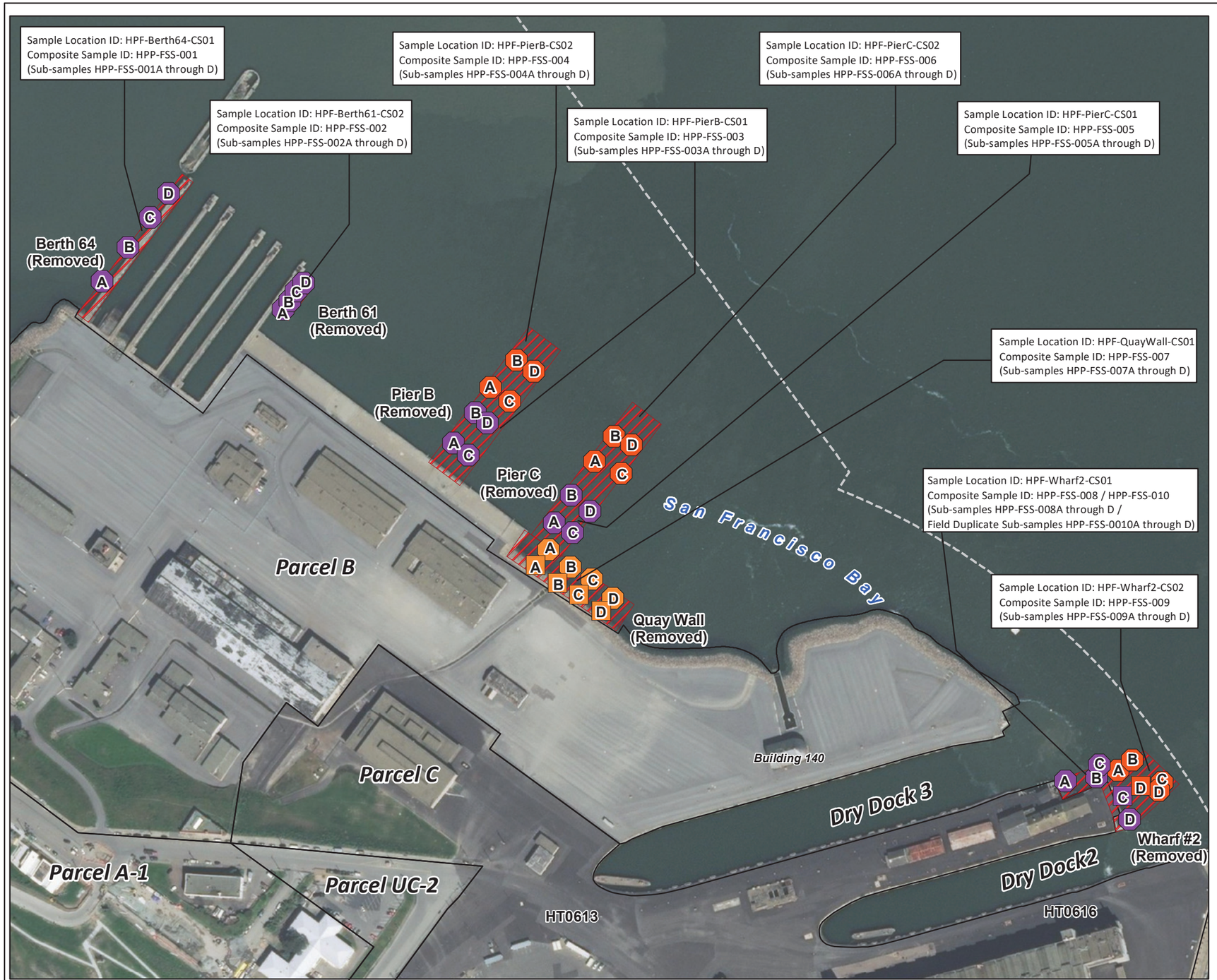
Figure 1-3
Parcels B and C Former Pier Structure Locations

Sediment Investigation and Bathymetric Survey for Parcel F

Schellerka G:\GIS\212737_HP_ParcelF\Summary\Figure1-3_FormerParcelB_CPierStructureLocations.mxd 5/17/2018



Legend

- Navy Property Boundary
- Parcel Boundary
- Parcels B & C Former Pier Structures (Removed in 2011)
- Sample Locations (colors vary to differentiate composite sample sets of four per composite sample)
- Original proposed sediment sub-sample location. The samples could not be collected at the original proposed location due to the presence of debris and/or rip rap. Hence, the sample location was stepped out to the locations shown as a hexagon.

300 0 300
Feet

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Figure 1-4
Composite Sediment Sampling Locations

Sediment Investigation and
Bathymetric Survey for Parcel F

Schellerka D:\GIS\212737_HP_ParcelF\Summary\Figure1-4_SedimentSamplingLocations.mxd 9/20/2018

Legend

- Navy Property Boundary
- Parcel Boundary
- Parcel F Subareas - Hunters Point Naval Shipyard
- Multibeam Bathymetric Survey Area (Approximate 50 foot line spacinng)
- Singlebeam Bathymetric Survey Area (Approximate 100 foot line spacinng)

N

1,000 0 1,000
Feet

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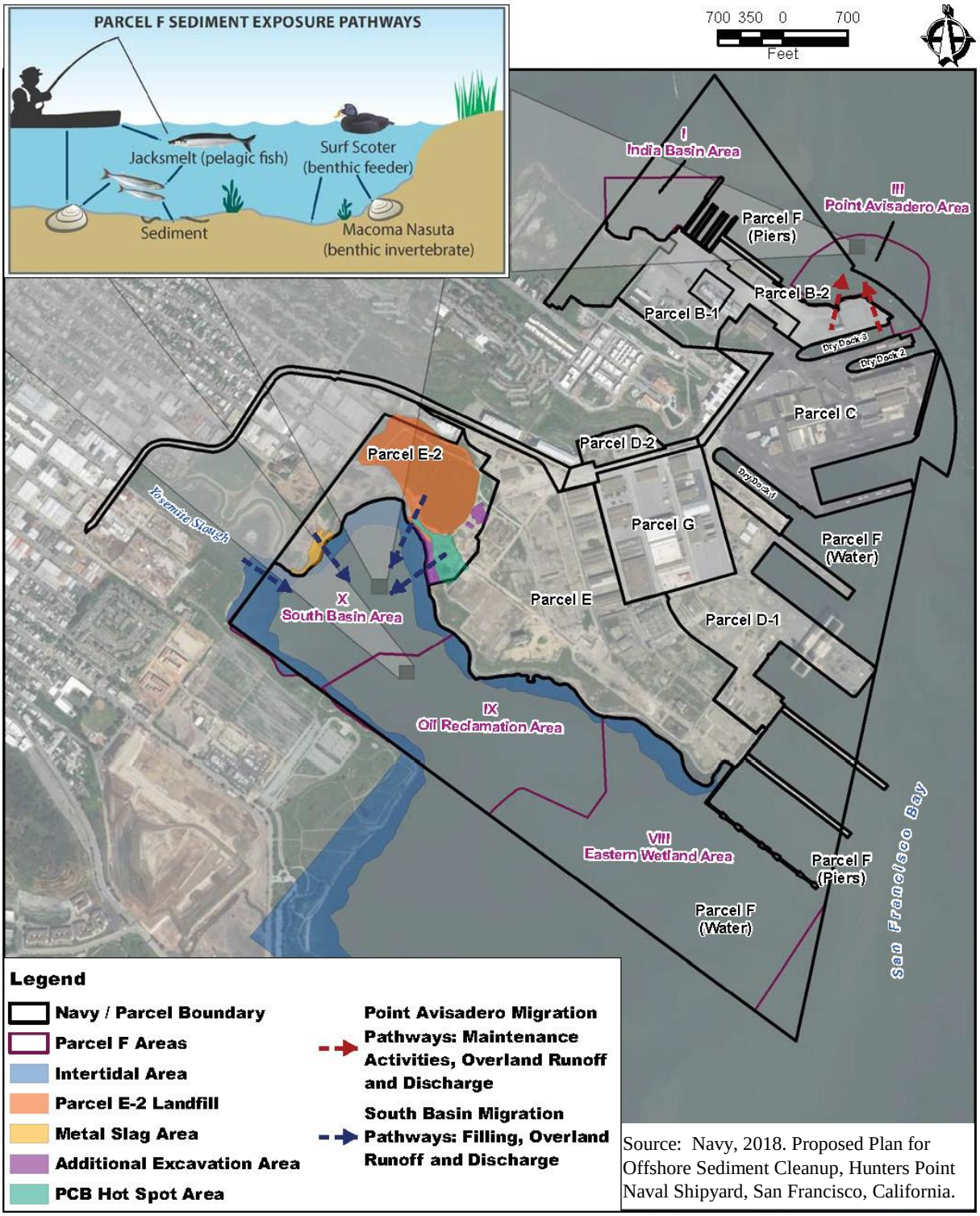
Figure 1-5
Bathymetric Survey Areas

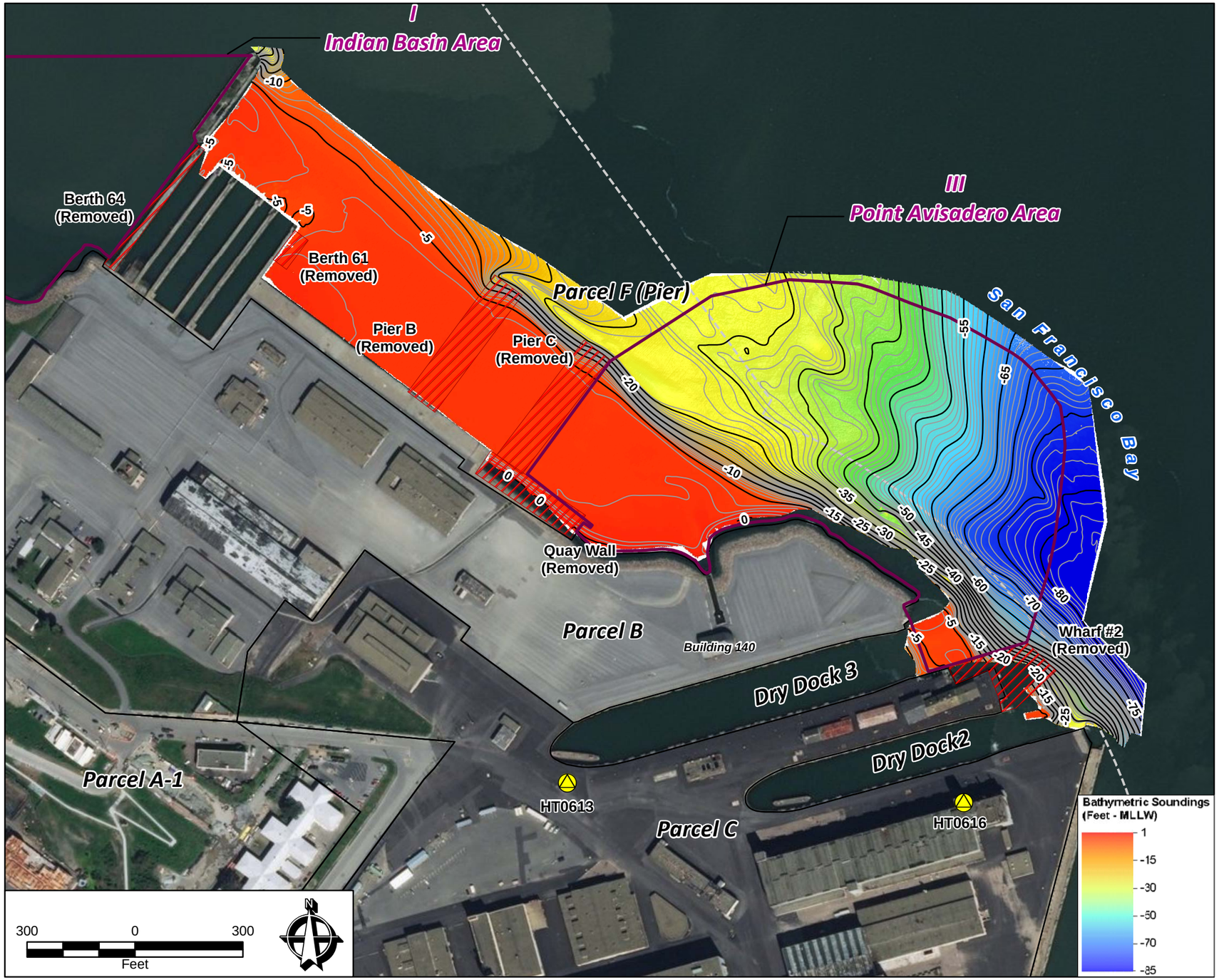
Sediment Investigation and
Bathymetric Survey for Parcel F

Schellerka D:\GIS\212737_HP_ParcelF\Summary\Figure1-5_BathymetricSurveyAreas.mxd 9/24/2018



Source: Navy, 2018. Proposed Plan for Offshore Sediment Cleanup, Hunters Point Naval Shipyard, San Francisco, California.

Figure 1-6. Conceptual Site Model for Parcel F



Legend

- Navy Property Boundary
- Parcel Boundary
- Parcel F Subarea - Hunters Point Naval Shipyard
- Parcels B and C Former Pier Structures (Removed in 2011)
- Major Contour (Interval = 5 feet)
- Minor Contour (Interval = 1 feet)
- Survey Control Point

Note:

1. Bathymetric contours source: Hunters Point Naval Shipyard Parcel F - Area III Multibeam Bathymetric Data, Fugro Pelagos, Inc., 2018.
2. Bathymetric contours are in feet and referenced to MLLW based on Tidal Bench Mark 4 1941 (HT0616) - Elevation=15.75 ft. (MLLW).
3. Control Point Hunter West 1 (HT0613) coordinates are NAD83 (2011) CCS Zone 3 U.S. Survey Feet:
   X: 6023165.37
   Y: 2093017.66
   Elevation: 11.84 feet (MLLW)
4. Horizontal and vertical positioning achieved using RTK
   (Real-Time Kinematic) integrated with Hypack navigation software.
5. Survey equipment utilized during data acquisition included the following systems:
   - R2Sonic 2024 Multibeam System
   - Applanix POS M/V
   - Trimble R8 GNSS Receivers
6. Hydrographic data were collected on February 3, 2018 aboard the M/V Julie Ann.
7. Hillshade background Z value is 1.
8. MLLW - mean lower low water

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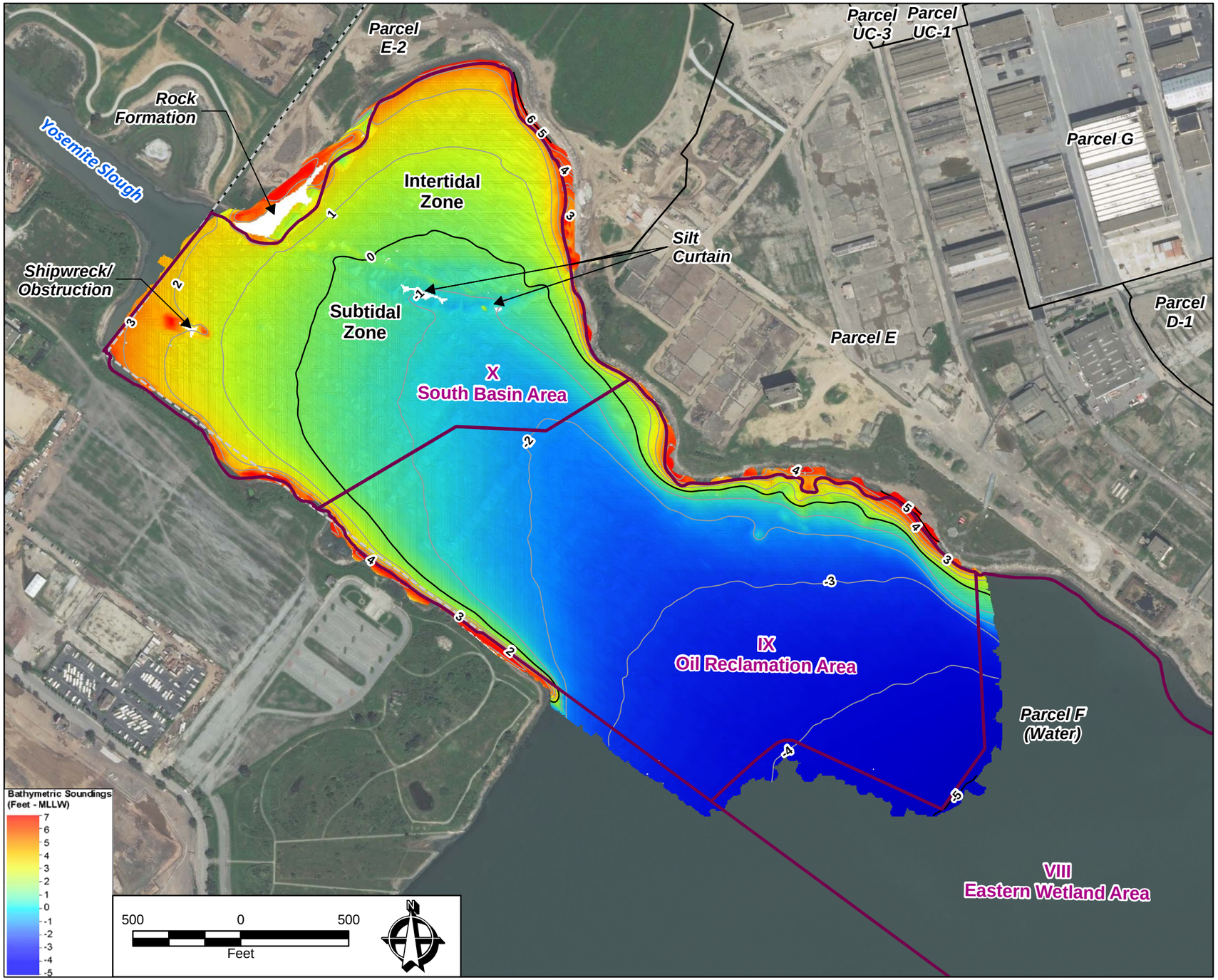
Figure 3-1
Multibeam Bathymetric Survey Data for Parcel F Area III and Former Parcels B and C Pier and Wharf Structures (February 2018)

Sediment Investigation and Bathymetric Survey for Parcel F

Schellerka G:\GIS\212737_HP_ParcelF\Summary\Figure3-1_MultibeamBathymetricSurveyDataforParcelF.mxd 5/23/2018



Legend

- Navy Property Boundary
- Parcel Boundary
- Parcel F Subareas - Hunters Point Naval Shipyard
- Major Contour (Interval = 5 feet)
- Minor Contour (Interval = 1 feet)

Note:

1. Bathymetric contours source: Hunters Point Naval Shipyard Parcel F - Area IX & Area X Singlebeam Bathymetric Data, Fugro Pelagos, Inc., 2018.
2. Bathymetric contours are in feet and referenced to MLLW based on Tidal Bench Mark 4 1941 (HT0616) - Elevation=15.75 ft. (MLLW).
3. Control Point Hunter West 1 (HT0613) coordinates are NAD83 (2011) CCS Zone 3 U.S. Survey Feet:
   X: 6023165.37
   Y: 2093017.66
   Elev.: 11.84 ft. (MLLW)
4. Horizontal and vertical positioning achieved using RTK (Real-Time Kinematic) integrated with Hypack navigation software.
5. Survey equipment utilized during data acquisition included the following systems:
   - Odom CV-100 Singlebeam System
   - Trimble R8 GNSS Receivers
6. Hydrographic data were collected on February 1 - 2, 2018 aboard the M/V Skiff.
7. Hillshade image from interpolated singlebeam data with line spacing at 50 ft. Hillshade background Z value is 1.
8. MLLW - mean lower low water

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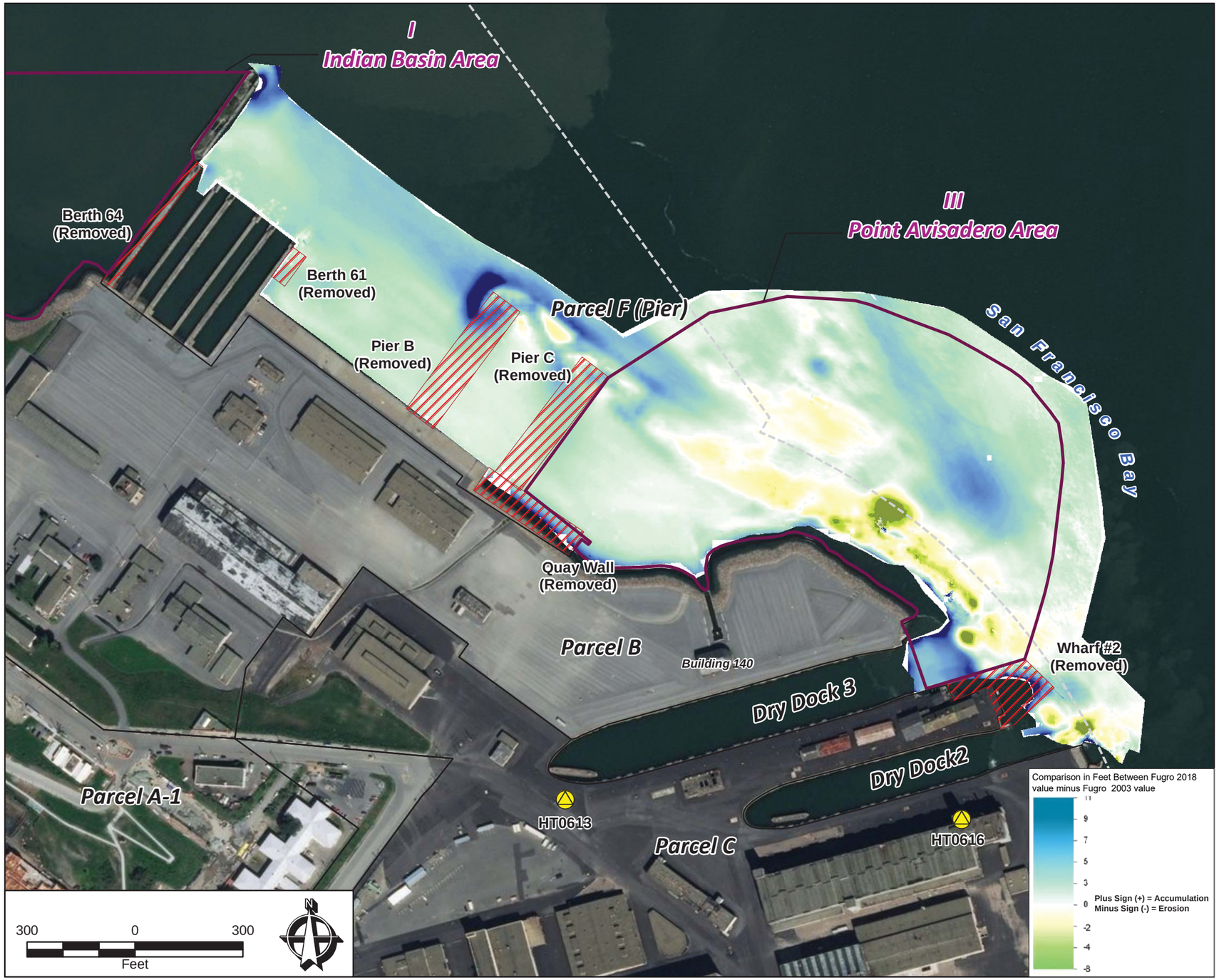
U.S. Department of the Navy, BRAC PMO West

Figure 3-2
Singlebeam Bathymetric Survey Data for Parcel F Areas IX and X (February 2018)

Sediment Investigation and Bathymetric Survey for Parcel F

Schellerka G:\GIS\212737_HP_ParcelF\Summary\Figure3-2_SinglebeamBathymetricSurveyDataforParcelF.mxd 7/9/2018



Legend

- Navy Property Boundary
- Parcel Boundary
- Parcel F Subarea - Hunters Point Naval Shipyard
- Parcels B and C Former Pier Structures (Removed in 2011)
- Survey Control Point

Note:

1. Fugro multibeam data were collected on February 3, 2018 aboard M/V Julie Ann. 100% coverage. Data set was reduced to MLLW using Tidal Bench Mark 4 1941 (HT0616).
2. Fugro singlebeam data were collected on August 15-17, 2003 aboard M/V Chart Maker. Line spacing: 100'. Data set was reduced to MLLW using a coastal self recording tide gauge based on the City of San Francisco vertical datum benchmark 314.
3. Positive comparison values indicate an accumulation of sediment, as negative values indicate removal of sediment between 2003 and 2018.
4. The singlebeam data points were interpolated beyond their coverage in order to compare the singlebeam data (Fugro 2003) with the multibeam data (Fugro 2018).
5. MLLW - mean lower low water
6. M/V - marine vessel

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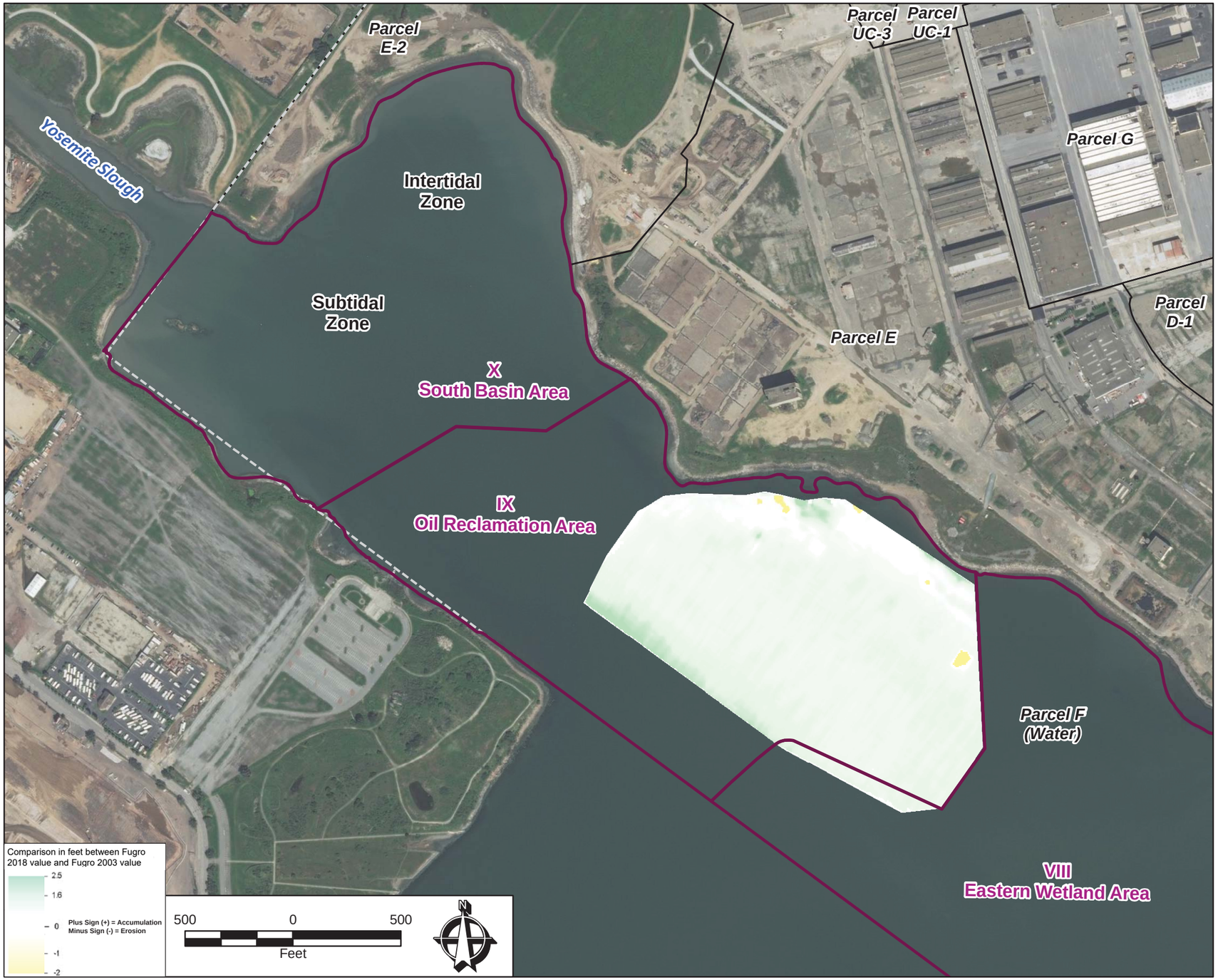
U.S. Department of the Navy, BRAC PMO West

Figure 3-3
Bathymetric Survey Comparison Between 2018 Multibeam Data and 2003 Singlebeam Data for Parcel F Area III and Former Parcels B and C Pier and Wharf Structures
Sediment Investigation and Bathymetric Survey for Parcel F

Schellerka G:\GIS\212737_HP_ParcelF\Summary\Figure3-3_MultibeamBathymetricSurveyComparison.mxd 5/23/2018



Legend

- Parcel F Subareas - Hunters Point Naval Shipyard
- Navy Property Boundary
- Parcel Boundary

Note:

1. Fugro singlebeam data were collected on February 3, 2018 aboard M/V Skiff. Line spacing: 50'. Data set was reduced to MLLW using Tidal Bench Mark 4 1941 (HT0616).
2. Comparison singlebeam data were collected by Fugro on August 15-17, 2003 aboard M/V Chart Maker. Line spacing: 100'. Data set was reduced to MLLW using a coastal self recording tide gauge based on the City of San Francisco vertical datum benchmark 314.
3. Positive comparison values indicate an accumulation of sediment, as negative values indicate removal of sediment between 2003 and 2018.
4. The singlebeam data points were interpolated beyond their coverage in order to compare the singlebeam data (Fugro 2003) with the singlebeam data (Fugro 2018).
5. MLLW - mean lower low water
6. M/V - marine vessel

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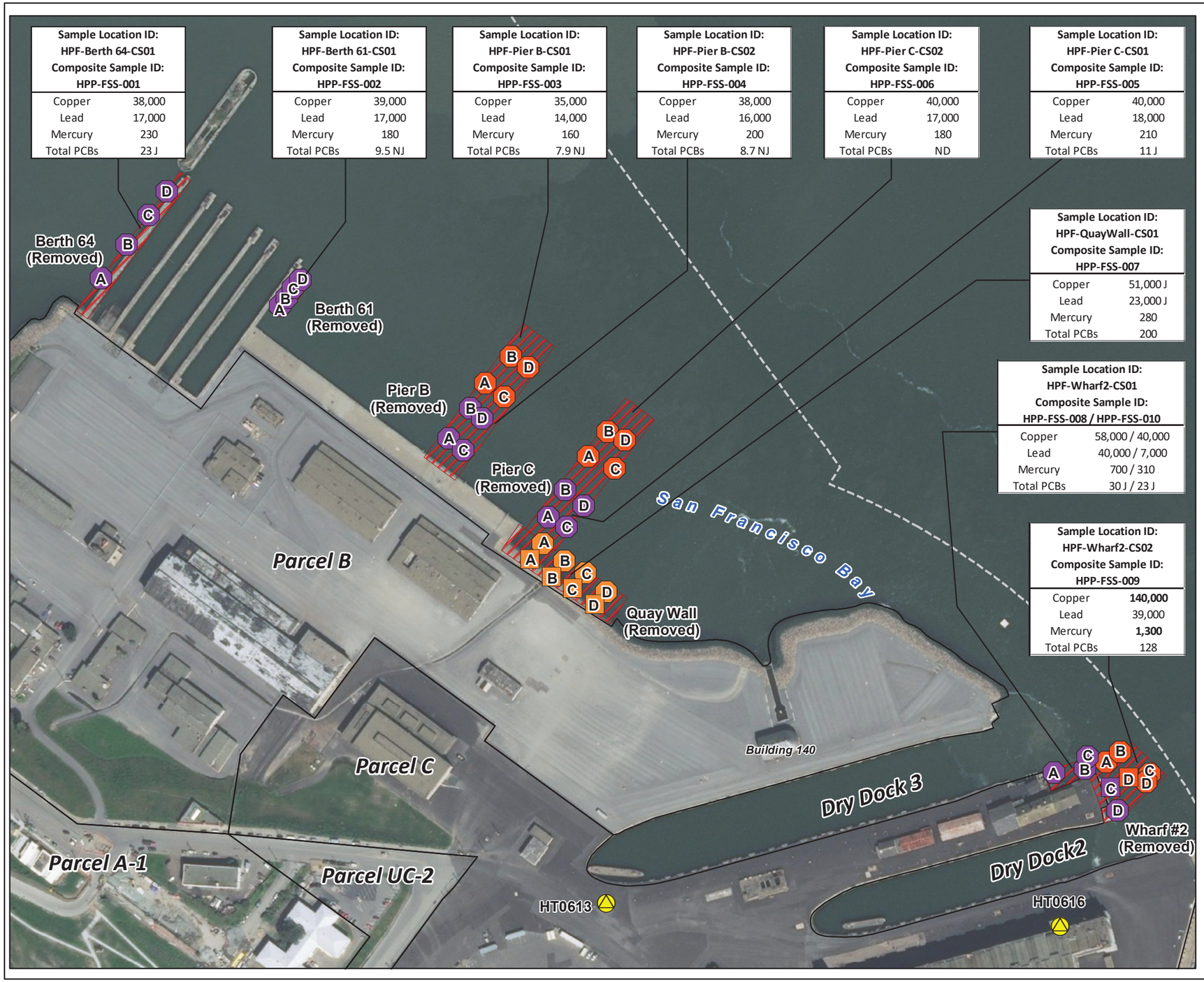
Figure 3-4
Bathymetric Survey Comparison Between 2018 Singlebeam Data and 2003 Singlebeam Data for Parcel F Area IX

Sediment Investigation and Bathymetric Survey for Parcel F

Schellerka G:\GIS\212737_HP_ParcelF\Summary\Figure3-4_SinglebeamBathymetricSurveyComparison.mxd 6/25/2018



Legend

- Navy Property Boundary
- Parcel Boundary
- Parcels B & C Former Pier Structures (Removed in 2011)
- Sample Locations (colors vary to differentiate composite sample sets of four per composite sample)
- Original proposed sediment sub-sample location. The samples could not be collected at the original proposed location due to the presence of debris and/or rip rap. Hence, the sample location was stepped out to the locations shown as a hexagon.
- Survey Control Point

1. Units: micrograms per kilogram
2. Each composite sample consisted of four individual sample locations shown on map.
3. Bolded results exceed the composite scrrening level of 135,500 µg/kg for copper or 935 µg/kg for mercury.
4. Two sets of results for HPP-FSS-008 as a replicate sample was collected.
5. NJ-(Presumptive and estimated): The analysis indicates the presence of a compound or analyte that has been "tentatively identified" and the associated numerical value represents and approximate concentration.
6. J = estimated result
7. ND = PCB aroclors not detected above the laboratory reporting limit.

300 0 300
Feet

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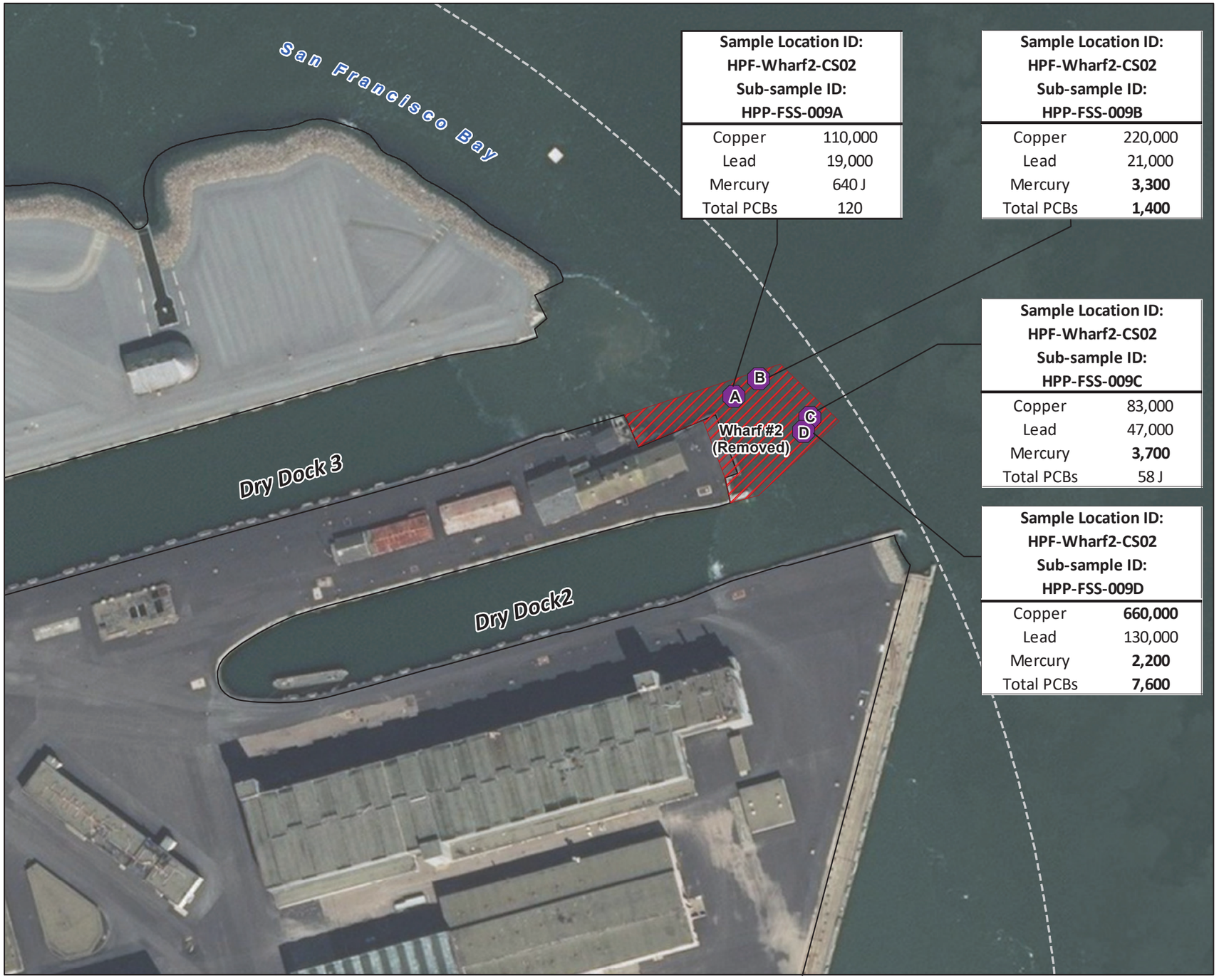
U.S. Department of the Navy, BRAC PMO West

Figure 4-1
Composite Sediment Sample Results

Sediment Investigation and Bathymetric Survey for Parcel F

Schellerka D:\GIS\212737_HP_ParcelF\Summary\Figure4-1_CompositeSedimentSampleResults.mxd 9/20/2018



Sample Location ID: HPF-Wharf2-CS02
Sub-sample ID: HPP-FSS-009A

Copper	110,000
Lead	19,000
Mercury	640 J
Total PCBs	120

Sample Location ID: HPF-Wharf2-CS02
Sub-sample ID: HPP-FSS-009B

Copper	220,000
Lead	21,000
Mercury	**3,300**
Total PCBs	**1,400**

Sample Location ID: HPF-Wharf2-CS02
Sub-sample ID: HPP-FSS-009C

Copper	83,000
Lead	47,000
Mercury	**3,700**
Total PCBs	58 J

Sample Location ID: HPF-Wharf2-CS02
Sub-sample ID: HPP-FSS-009D

Copper	**660,000**
Lead	130,000
Mercury	**2,200**
Total PCBs	**7,600**

Legend

- Navy Property Boundary
- Parcel Boundary
- Parcels B & C Former Pier Structures (Removed in 2011)
- Sediment Samples Location (2018)

1. Units: micrograms per kilogram
2. Each composite sample consisted of four individual sample locations shown on map.
3. Bolded results exceed the individual sub-sample screening level of 271,000 ug/kg for copper, 1,870 ug/kg for mercury, or 1,240 ug/kg for Total PCBs.
4. Two sets of results for HPP-FSS-008 as a replicate sample was collected.
5. NJ-(Presumptive and estimated): The analysis indicates the presence of a compound or analyte that has been "tentatively identified" and the associated numerical value represents and approximate concentration.
6. J = Estimated results
7. ND = PCB aroclors not detected above laboratory reporting limit.

N

150 0 150
Feet

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U.S. Department of the Navy, BRAC PMO West

Figure 4-2
Composite Sample HPP-FSS-009
(Sample Location HPF-Wharf2-CS02)
Sediment Sub-Sample Results

Sediment Investigation and
Bathymetric Survey for Parcel F

Schellerka D:\GIS\212737_HP_ParcelF\Summary\Figure4-2_HPF-Wharf2-CS02DSedimentSampleResults.mxd 9/20/2018

TABLES

Table 2-1
Remedial Action Objectives and Remediation Goals for Chemicals of Concern

RAO	COC	RG/PAL (µg/kg)	Basis
RAO 1	Copper	271,000	Not to exceed threshold
RAO 1	Lead	NE; 218,000 [1]	
RAO 1	Mercury	1,870	
RAO 1	PCBs (total)	1,240	
RAO 2	PCBs (total)	1,350	Area-weighted average
RAO 3	PCBs (total)	200 [2]	

[1]An RG for lead was not established, due to uncertainty associated with bioavailability and toxicity of lead. Lead is collocated with PCBs in sediment, so achieving the cleanup goals for PCBs is expected to address any risks associated with lead. However, the National Oceanic and Atmospheric Administration Effects Range-Median (ER-M) value for the protection of the benthic community will be used as a numeric screening value for lead (218,000 µg/kg).

[2] 200 µg/kg total PCBs is based on background total PCB estimates for nearshore sediments in San Francisco Bay.

µg/kg – micrograms per kilogram
COC – chemical of concern
NE – not established
PAL – project action level
PCB – polychlorinated biphenyl
RAO – remedial action objective
RG – Remediation Goal

Table 4-1
Sediment Sample Collection Information

Sediment Sample Location	Composite Sample Number	Sediment Sub-Sample Collection Information			
		Sub-Sample Number	Collection Date and Time	Latitude	Longitude
HPF-Berth64-CS01	HPP-FSS-001	HPP-FSS-001A	January 30, 2018 at 0910	37° 43' 56.718" N	122° 21' 59.332" W
		HPP-FSS-001B	January 30, 2018 at 0935	37° 43' 57.539" N	122° 21' 58.577" W
		HPP-FSS-001C	January 30, 2018 at 0945	37° 43' 58.256" N	122° 21' 57.933" W
		HPP-FSS-001D	January 30, 2018 at 0958	37° 43' 58.837" N	122° 21' 57.402" W
HPF-Berth61-CS01A	HPP-FSS-002	HPP-FSS-002A	January 30, 2018 at 1012	37° 43' 56.133" N	122° 21' 53.908" W
		HPP-FSS-002B	January 30, 2018 at 0935	37° 43' 56.345" N	122° 21' 53.704" W
		HPP-FSS-002C	January 30, 2018 at 0945	37° 43' 56.575" N	122° 21' 53.525" W
		HPP-FSS-002D	January 30, 2018 at 0958	37° 43' 56.769" N	122° 21' 53.311" W
HPF-PierB-CS01	HPP-FSS-003	HPP-FSS-003A	January 30, 2018 at 1115	37° 43' 53.049" N	122° 21' 48.734" W
		HPP-FSS-003B	January 30, 2018 at 1132	37° 43' 53.774" N	122° 21' 48.102" W
		HPP-FSS-003C	January 30, 2018 at 1140	37° 43' 52.769" N	122° 21' 48.285" W
		HPP-FSS-003D	January 30, 2018 at 1201	37° 43' 53.535" N	122° 21' 47.731" W
HPF-PierB-CS02	HPP-FSS-004	HPP-FSS-004A	January 30, 2018 at 1232	37° 43' 54.382" N	122° 21' 47.658" W
		HPP-FSS-004B	January 30, 2018 at 1246	37° 43' 55.040" N	122° 21' 46.905" W
		HPP-FSS-004C	January 30, 2018 at 1300	37° 43' 54.068" N	122° 21' 47.074" W
		HPP-FSS-004D	January 30, 2018 at 1310	37° 43' 54.784" N	122° 21' 46.379" W
HPF-PierC-CS01	HPP-FSS-005	HPP-FSS-005A	January 30, 2018 at 1325	37° 43' 51.193" N	122° 21' 45.669" W
		HPP-FSS-005B	January 30, 2018 at 1336	37° 43' 51.866" N	122° 21' 45.191" W
		HPP-FSS-005C	January 30, 2018 at 1351	37° 43' 50.968" N	122° 21' 45.117" W
		HPP-FSS-005D	January 30, 2018 at 1405	37° 43' 51.493" N	122° 21' 44.616" W

Table 4-1
Sediment Sample Collection Information

Sediment Sample Location	Composite Sample Number	Sediment Sub-Sample Collection Information			
		Sub-Sample Number	Collection Date and Time	Latitude	Longitude
HPF-PierC-CS02	HPP-FSS-006	HPP-FSS-006A	January 30, 2018 at 1430	37° 43' 52.673" N	122° 21' 44.507" W
		HPP-FSS-006B	January 30, 2018 at 1445	37° 43' 53.277" N	122° 21' 43.938" W
		HPP-FSS-006C	January 30, 2018 at 1453	37° 43' 52.400" N	122° 21' 43.700" W
		HPP-FSS-006D	January 30, 2018 at 1508	37° 43' 53.091" N	122° 21' 43.421" W
HPF-QuayWall-CS01	HPP-FSS-007	HPP-FSS-007A	January 31, 2018 at 0840	37° 43' 50.561" N	122° 21' 45.827" W
		HPP-FSS-007B	January 31, 2018 at 0900	37° 43' 50.163" N	122° 21' 45.164" W
		HPP-FSS-007C	January 31, 2018 at 0920	37° 43' 49.885" N	122° 21' 44.519" W
		HPP-FSS-007D	January 31, 2018 at 0935	37° 43' 49.437" N	122° 21' 43.889" W
HPF-Wharf2-CS01	HPP-FSS-008/ Field Duplicate: HPP-FSS-010	HPP-FSS-008A	January 31, 2018 at 0935	37° 43' 45.310" N	122° 21' 30.256" W
		HPP-FSS-008B	January 31, 2018 at 0950	37° 43' 45.423" N	122° 21' 29.323" W
		HPP-FSS-008C	January 31, 2018 at 1100	37° 43' 45.706" N	122° 21' 29.246" W
		HPP-FSS-008D	January 31, 2018 at 1021	37° 43' 44.431" N	122° 21' 28.306" W
HPF-Wharf2-CS02	HPP-FSS-009	HPP-FSS-009A	January 31, 2018 at 1040	37° 43' 45.595" N	122° 21' 28.683" W
		HPP-FSS-009B	January 31, 2018 at 1132	37° 43' 45.845" N	122° 21' 28.263" W
		HPP-FSS-009C	January 31, 2018 at 1228	37° 43' 45.327" N	122° 21' 27.366" W
		HPP-FSS-009D	January 31, 2018 at 1315	37° 43' 45.132" N	122° 21' 27.465" W

Table 4-2

Sediment Project Action Levels

COC	PAL[1] (µg/kg)	½ PAL (µg/kg)
Copper (Cu)	271,000[3]	135,500[2]
Lead (Pb)	218,000[4]	109,000[2]
Mercury (Hg)	1,870[3]	935[2]
PCBs (total)	1,240[3]	675[5]

[1] Individual sub-samples were screened against the PAL.

[2] Composite samples were screened against ½ the PAL.

[3] RAO 1 – Not to exceed threshold.

[4] The PAL for lead is based on the NOAA ER-M value for the protection of the benthic community (NOAA, 1999).

[5] Composite samples for PCBs were screened against ½ the RAO 2 Area-weighted average.

µg/kg – micrograms per kilogram
COC – chemical of concern
ER-M – Effects Range-Median
NOAA – National Oceanic and Atmospheric Administration
PAL – project action level
PCB – polychlorinated biphenyls
RAO – remedial action objective

Table 4-3
Composite Sediment Sampling Analytical Results Summary

Analyte	1/2 PAL	Units	Sample Location HPF-Berth64-CS01	Sample Location HPF-Berth61-CS01	Sample Location HPF-PierB-CS01	Sample Location HPF-PierB-CS02	Sample Location HPF-PierC-CS01	Sample Location HPF-PierC-CS02	Sample Location HPF-QuayWall-CS01	Sample Location HPF-Wharf2-CS01	Sample Location HPF-Wharf2-CS01	Sample Location HPF-Wharf2-CS02
Composite Sample ID			**HPP-FSS-001**	**HPP-FSS-002**	**HPP-FSS-003**	**HPP-FSS-004**	**HPP-FSS-005**	**HPP-FSS-006**	**HPP-FSS-007**	**HPP-FSS-008**	**HPP-FSS-010***	**HPP-FSS-009**
Metals												
Copper	135,500	µg/kg	38,000	39,000	35,000	38,000	40,000	40,000	51,000J	58,000	40,000	**140,000**
Lead	109,000	µg/kg	17,000	17,000	14,000	16,000	18,000	17,000	23,000J	40,000	17,000	39,000
Mercury	935	µg/kg	230	180	160	200	210	180	280	700	310	**1,300**
Polychlorinated Biphenyls (PCBs)												
Aroclor-1016	N/A	µg/kg	26U	28U	23U	26U	24U	26U	23U	23U	21U	19U
Aroclor-1221	N/A	µg/kg	70U	74U	62U	70U	63U	69U	62U	61U	57U	50U
Aroclor-1232	N/A	µg/kg	35U	37U	31U	35U	31U	35U	31U	31U	29U	25U
Aroclor-1242	N/A	µg/kg	35U	37U	31U	35U	31U	35U	31U	31U	29U	25U
Aroclor-1248	N/A	µg/kg	35U	37U	31U	35U	31U	35U	31U	31U	29U	25U
Aroclor-1254	N/A	µg/kg	26U	28U	23U	26U	24U	26U	23U	21U	30U	74
Aroclor-1260	N/A	µg/kg	23J	28U	23U	26U	11J	26U	200	30J	23J	54
Total PCBs	675	µg/kg	23J	ND	ND	ND	11 J	ND	200	30J	23J	128

Notes:
Bold values indicate analyte was detected above 1/2 the PAL.
µg/kg = migrograms per kilogram
J = Estimated value. All J flags are from the original laboratory data package with the exception of sample HPP-FSS-007. The reported concentrations for copper and lead are estimated due to nonconformances discovered during data validation.
N/A = Not Applicable
ND = All PCB Aroclors were not detected above the laboratory reporting limit.
PAL = project action level
* HPP-FSS-10 is a replicate sample from the same sample material collected at HPP-FSS-008 and was submitted as a blind sample to the laboratory.

Table 4-4
Composite Sample HPP-FSS-009 (Sample Location HPF-Wharf2-CS02) Sediment Sub-Sample Results

Analyte	PAL	Units	Sample Location HPF-Wharf2-CS02	Sample Location HPF-Wharf2-CS02	Sample Location HPF-Wharf2-CS02	Sample Location HPF-Wharf2-CS02
Sub-Sample Number			**HPP-FSS-009A**	**HPP-FSS-009B**	**HPP-FSS-009C**	**HPP-FSS-009D**
Metals						
Copper	271,000	µg/kg	110,000	220,000	83,000	**660,000**
Lead	218,000	µg/kg	19,000	21,000	47,000	130,000
Mercury	1,870	µg/kg	640J	**3,300**	**3,700**	**2,200**
Polychlorinated Biphenyls (PCBs)						
Aroclor-1016	N/A	µg/kg	27U	17U	21U	190U
Aroclor-1221	N/A	µg/kg	72U	45U	56U	500U
Aroclor-1232	N/A	µg/kg	36U	22U	28U	250U
Aroclor-1242	N/A	µg/kg	36U	22U	28U	250U
Aroclor-1248	N/A	µg/kg	36U	22U	28U	250U
Aroclor-1254	N/A	µg/kg	27U	17U	21U	190U
Aroclor-1260	N/A	µg/kg	120	1,400	58J	7,600
Total PCBs	1,240	µg/kg	120	**1,400**	58J	**7,600**

Notes:
Bold values indicate analyte was detected above the PAL.

J = Estimated value. The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to nonconformances discovered during data validation.

N/A = Not Applicable
µg/kg = migrograms per kilogram
PAL = project action level

Appendix A

Field Operations Report Sediment Investigation and Bathymetric Survey – Fugro Pelagos

FUGRO PELAGOS, INC.

FIELD OPERATIONS REPORT SEDIMENT INVESTIGATION AND BATHYMETRIC SURVEY

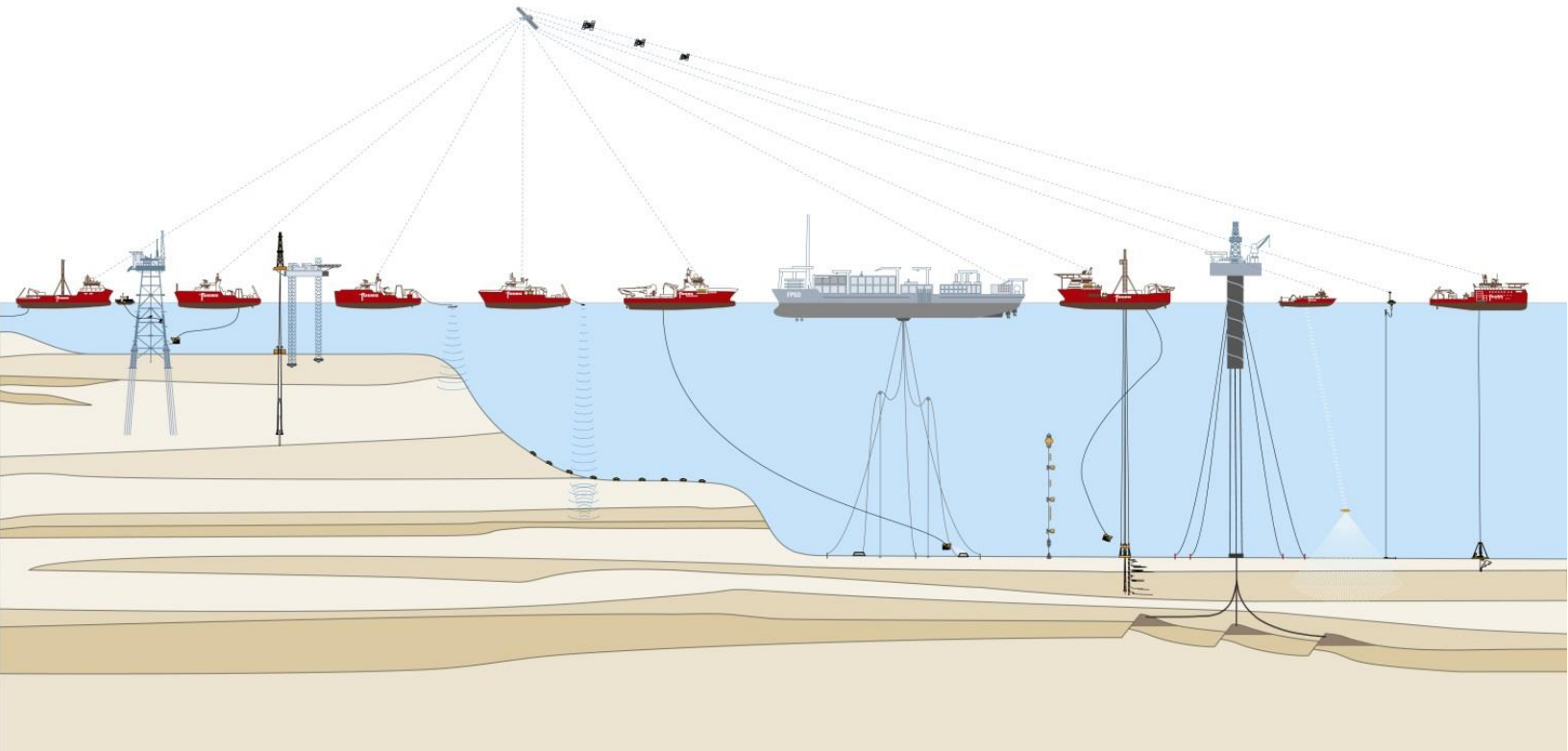
HUNTERS POINT NAVAL SHIPYARD,
SAN FRANCISCO, CALIFORNIA

29th January – 4th February 2018
Fugro Project No.: 02.17041262

ECC-Insight LLC

Volume 1 of 1

Final Release R1



FIELD OPERATIONS REPORT SEDIMENT INVESTIGATION AND BATHYMETRIC SURVEY HUNTERS POINT NAVAL SHIPYARD, SAN FRANCISCO, CALIFORNIA

29th January – 4th February 2018
Fugro Project No.: 02.17041262

Volume 1 of 1

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R1	Final	MM	AT	CP	March 28, 2018
R0	Draft	MM	AT	CP/GS	March 6, 2018
Issue	**Report Status**	**Prepared**	**Checked**	**Approved**	**Date**

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ABBREVIATIONS

ADL	Advanced Data Link
BM	Benchmark
CMR+	Compact Measurement Record
DGPS	Differential Global Positioning System
GIS	Geographic Information System
GNSS	Global Navigation Satellite System
GPS	Global Positioning System
IHO	International Hydrographic Organization
IMU	Inertial Measurement Unit
LiDAR	Light Detection and Ranging
MBES	Multibeam Echosounder
MLLW	Mean Lower Low Water
MRU	Motion Reference Unit
M/V	Motor Vessel
NAD83	North American Datum of 1983
NAVD88	North American Vertical Datum of 1988
NGS	National Geodetic Survey
NOAA	National Oceanic and Atmospheric Administration
OPUS	Online Positioning User Service
POS MV	Position and Orientation System for Marine Vessels
QC	Quality Control
RTK	Real-Time Kinematic
SIM	Sonar Interface Module
SVP	Sound Velocity Profiler
THU	Total Horizontal Uncertainties
TPU	Total Propagated Uncertainties
TVU	Total Vertical Uncertainties
USGS	United States Geological Survey
UTC	Coordinated Universal Time
WGS-84	World Geodetic System 1984

UNITS & CONVENTIONS

Units used on the survey are as follows:

- Horizontal Linear units are U.S. Survey Feet.
- Depth/Elevation units are Feet.
- Angular units are degrees (°).
- Time was recorded as UTC (Coordinated Universal Time) to all data files.

1. INTRODUCTION

ECC-Insight LLC contracted Fugro Pelagos, Inc. (Fugro) to conduct a sediment investigation and bathymetric survey of the Hunters Point Naval Shipyard, San Francisco, California.

This report summarizes the procedures followed to gather and process the bathymetric data collected within the survey areas X, IX, III and former Parcel B and C piers, berths, quay wall and wharf structure shown in Figure 1.1 and proposed sediment grab sample locations shown in Figure 1.2. Multibeam bathymetry data were acquired within Area 3 and Parcel F (Pier) while singlebeam bathymetry data were acquired in Area IX and Area X.

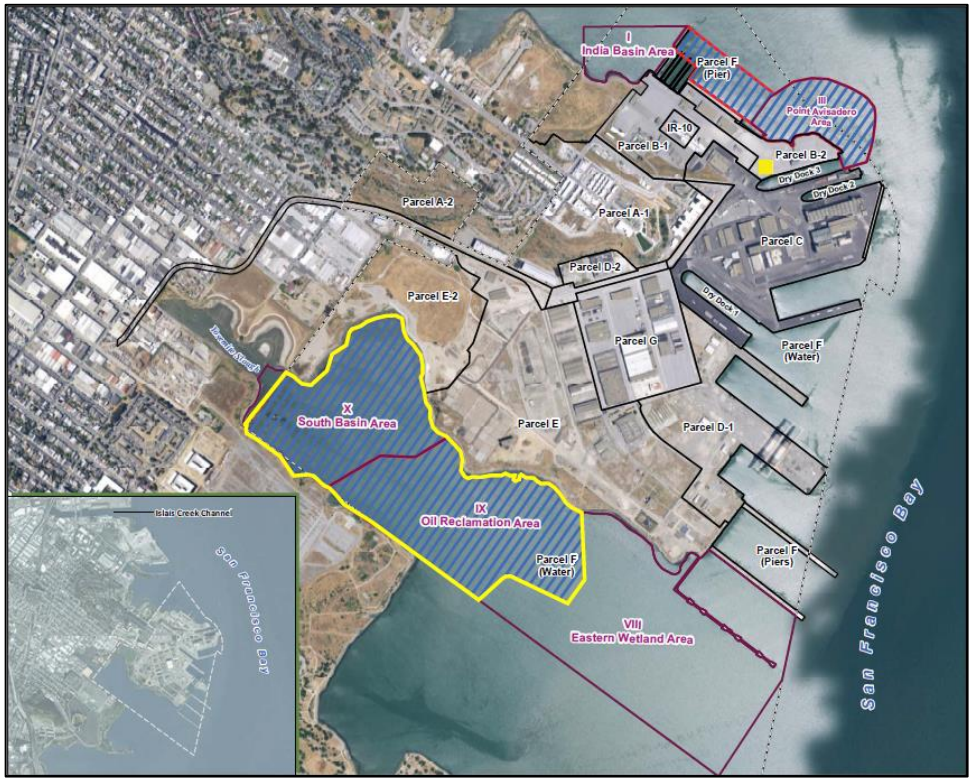

Figure 1.1: Hunters Point Survey Areas (Source: ECC-Insight)

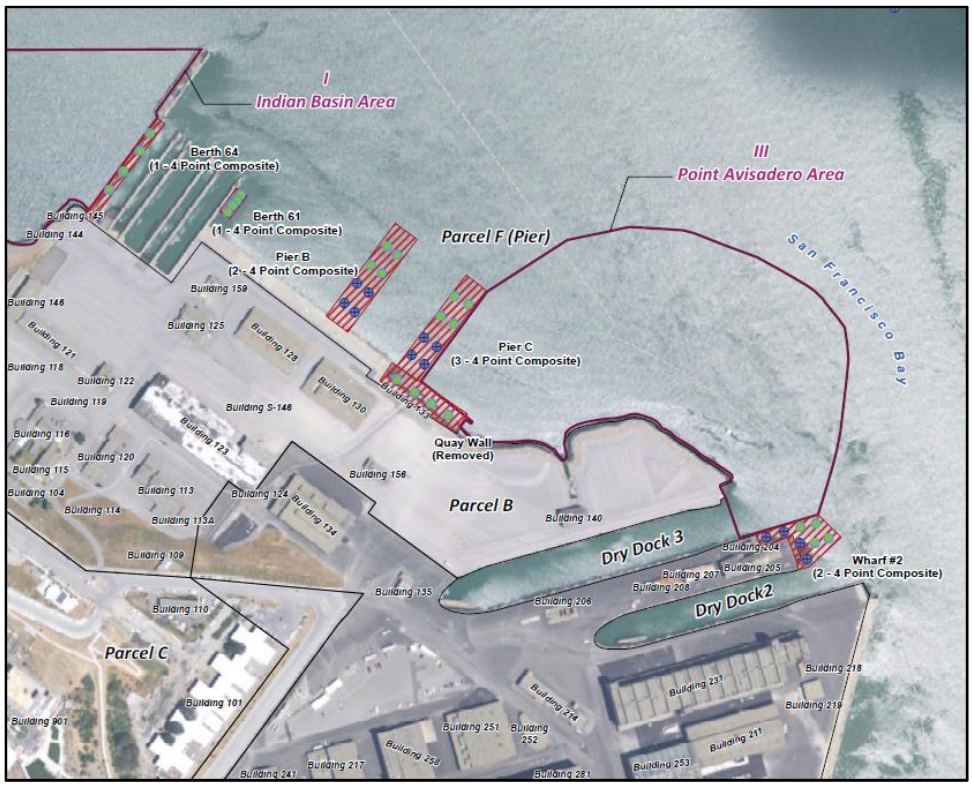

Figure 1.2: Proposed Grab Sample Locations (Source: ECC-Insight)

Between January 29th and February 4th, 2018, Fugro conducted bathymetric surveys and provided positioning for sediment grab sampling utilizing the *M/V Julie Ann* and the *M/V Skiff*. January 29th consisted of mobilizing from Ventura to Oyster Point followed by an induction of the vessel and plans for the following days' work. The grab samples were collected on January 30th and 31st followed by the singlebeam survey of Area IX and Area X conducted on February 1st and 2nd. Final sediment sampling locations are shown in Appendix E on Chart 2. The multibeam survey of Area III and Parcel F (Pier) took place on February 3rd followed by vessel demobilization on the 4th.

For the current program, singlebeam bathymetry data were acquired in both Area IX and Area X. Some of this data overlaps with singlebeam bathymetry data acquired in part of Area IX in 2003. Ninety (90) lines were run at a 50-foot line spacing on a bearing of 038°/218° (perpendicular to the lines run in 2003). Data were collected at high tide to maximize coverage and minimize risk to the vessel and equipment. The data were acquired using RTK GNSS (Real-time Kinematic Global Navigation Satellite System) positioning to give highly accurate real time horizontal and vertical values.

Multibeam bathymetry data were acquired in Area III and Parcel F (Pier) where singlebeam data had previously been acquired in 2003. Data were collected initially parallel to shore from deep to shallow to ensure safety of the equipment. Gaps were then filled with additional passes to ensure 100% coverage, where safe and possible to do so. Some obstructions were observed off the eastern edge of Parcel B-2,

preventing safe passage. Again, the data were acquired using RTK GNSS positioning to give highly accurate real time values.

Aside from the surveys conducted by Fugro, a topographic LiDAR (Light Detection and Ranging) survey was conducted by Terrapoint as part of the USGS (United States Geological Survey) San Francisco Coastal LiDAR Project.

2. METHODS AND RESOLUTION LIMITATIONS

2.1 Survey Control

Prior to the survey operations, survey control at the project site was recovered based on NAD83 (North American Datum of 1983), California State Plane Zone 3, and NAVD-88 (North American Vertical Datum of 1988) elevations and verified using NOAA's (National Oceanographic and Atmospheric Administration) Online Positioning User Service (OPUS). As the primary vertical control for this survey was provided by RTK GNSS observations, it was vital to the project to have an accurate ellipsoid separation model for on-the-fly conversion from the World Geodetic System of 1984 (WGS84) ellipsoid (ellipsoid from which global positioning system (GPS) heights are derived) to NAVD-88, and then converted to mean lower low water (MLLW).

For this project, "HT0613_Hunter West 1" (Figure 2-1) and "HT0616 BM 4" (Figure 2-2) were recovered and used to reference data collected to Horizontal Datum: NAD-83 Zone 3 in US ft., and Vertical Datum: MLLW, respectively. The NGS (National Geodetic Survey) data sheets for HT0613 and HT0616 are provided in Appendix A. An RTK base station was set on recovered control monument Hunter West 1, while Bench Mark 4 (Tidal BM) was surveyed using a Trimble R8 GNSS rover to establish MLLW elevation at Hunter West 1.

Figure 2.1: HT0613 Hunter West 1 (horizontal datum).

<u>Hunter West 1 (HT0613)</u>
Northing = 2,093,017.66 (CCS-3 US ft)
Easting = 6,023,165.37 (CCS-3 US ft)
Elevation = 11.84 (MLLW ft)

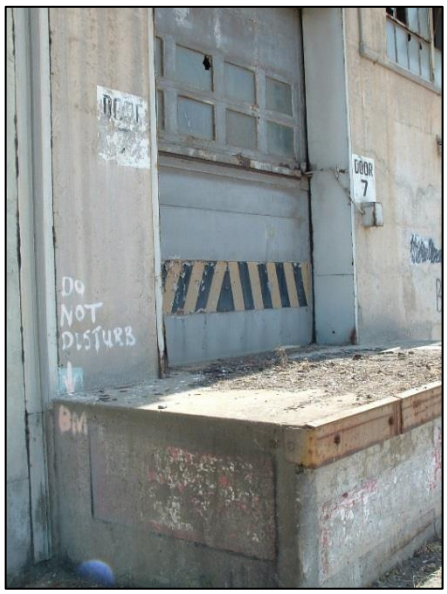

Figure 2.2: Location of HT0616 BM 4 (vertical datum).

<u>Tidal BM 4 (HT0616)</u>
Elevation = 15.75 (MLLW ft)

The difference in elevation (NAVD-88 to MLLW) found by surveying BM 4 from Hunters West 1 was 0.84' (0.255 m). As a QC (quality control) check, Fugro consulted NOAA's website for information on the difference between the two datums (NAVD88 – MLLW) near the survey site and found the same value of 0.84' (Figure 2.3).

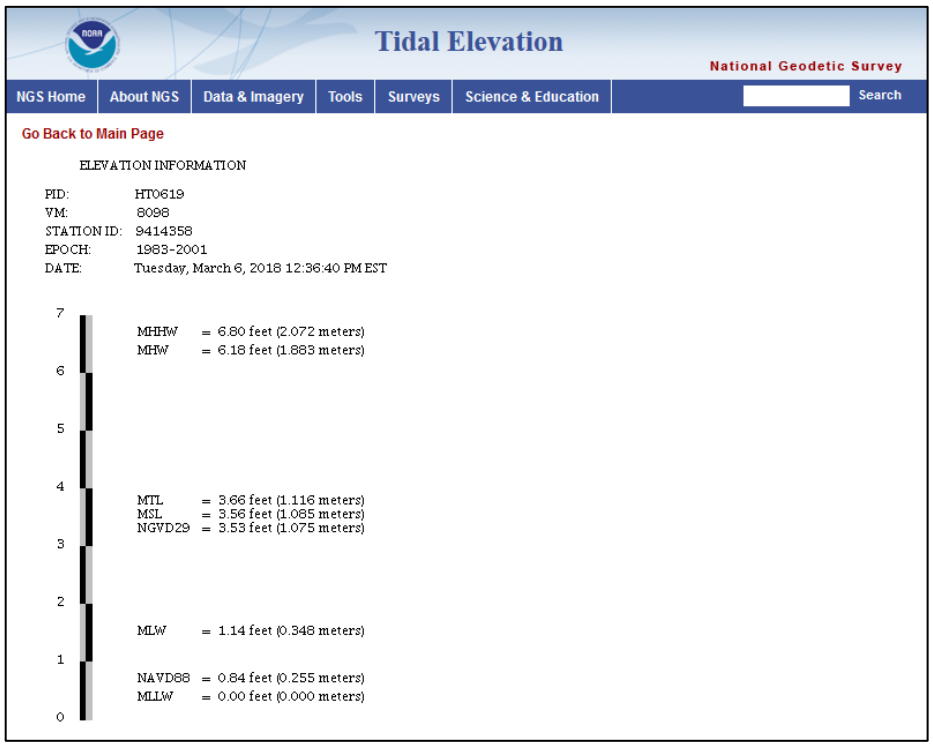

Figure 2.3: Elevation Difference between MLLW and NAVD-88 Datums (NOAA – NGS).

2.2 GPS Positioning and Navigation

For the singlebeam survey, horizontal positions were acquired using a Trimble R-8 GNSS antenna in real-time kinematic (RTK) mode. A base station (Figure 2-4) was set up at the project site with a Trimble R-8 GNSS receiver transmitting a Compact Measurement Record (CMR+) correction via radio link to the survey vessel while logging data at 1-second intervals. The reference receiver (rover) was set up on the (motor vessel) M/V Skiff to collect measurements to the satellites in view and processed them with the base station data. The rover then estimated its location relative to the reference station, obtaining accurate horizontal positions, and water surface information referenced to MLLW.

For the multibeam survey, horizontal positions were acquired with POS MV (Position and Orientation System for Marine Vessels) zephyr antennae in RTK mode. A base station (Figure 2-4) was set up at the survey control with a Trimble R-8 dual frequency GPS receiver in RTK mode. The unit transmitted CMR+ corrections to the POS MV system onboard the *M/V Julie Ann* to improve horizontal-vertical positioning and provide accurate inertial navigation through GPS outages for up to 30 seconds.

Position data was displayed in real time to provide navigation information to the vessel operator. A preliminary coverage plot with survey information was generated in real time to show survey coverage. The helmsman was presented with a plan view of the survey area with the vessel position and track. A color-coded swath of the water coverage was painted to the screen and used to navigate the survey vessel to fill the area.

Figure 2.4: RTK Base Station.

The base station was equipped with a Pacific Crest (Advanced Data Link) ADL Vantage Pro radio modem and a Yagi antenna that enabled the data link to be transmitted to the receiver outfitted with similar radio in receiver mode on board the survey vessel. The differentially corrected position and elevation from the Trimble receiver was then transmitted through a CMR+ correction to the POS MV. The POS MV took measurements at regular 1 second epochs and produced position solutions at the same rate. From the POS MV, position, elevation, heading and motion data were then sent to the onboard navigation computer running the Hypack Hysweep navigation and data acquisition software.

Water surface measurements were obtained by RTK GNSS with on-the-fly ambiguity resolution. Real time water surface elevations referenced to MLLW obtained by RTK GNSS were checked against manual waterline measurements at dry docks 2 and 3.

2.3 Singlebeam Bathymetry

Singlebeam bathymetry coverage of the seafloor was acquired using an Odom CV-100 singlebeam echo-sounder on the *M/V Skiff*. Operating at a high frequency of 200 kHz, the Odom CV-100 collected digital profile records as well as digitized depth information for output to the navigation computer. Digital depth data was logged directly to the navigation computer along with date, time, and position for post processing and mapping. The singlebeam system images a portion of the seafloor directly below the transducer and provides near-continuous imaging along-track.

Offsets. The Trimble R-8 GNSS antenna was mounted directly above the singlebeam transducer resolving any horizontal offset issues.

Calibration. A bar check calibration for speed of sound was carried out prior to commencing survey operations. For the calibration, a flat plate was suspended by a precisely marked line to a known depth below the transducer. Variations between the true bar depth and the observed depth were used to adjust the index value in shallow water and the sound velocity in deeper water until the observed depths were corrected.

Processing. Singlebeam bathymetric data recorded by the navigation computer during data collection was edited using Hypack 2017 to remove outliers and then cross-referenced against the echo sounder digital chart recordings. The data collected at 50-foot spacing were then interpolated between the survey lines using Global Mapper to provide a representation of the entire area. The soundings were already reduced to MLLW by utilizing RTK GNSS during data acquisition. The XYZ data were subsequently contoured at one-foot intervals using Hypack 2017 and Global Mapper and these contours were exported for final charting in ArcGIS (Geographic Information System).

2.4 Multibeam Bathymetry

The R2Sonic 2024 system was used to provide multibeam bathymetry coverage. The R2Sonic 2024 transmits a shaped continuous wave pulse at the user selected frequency (200 KHz to 400 KHz). The transmit pulse is narrow in the along-track direction, but very wide in the across-track direction. The reflected acoustic energy is received via the R2Sonic 2024 receivers. Within the receiver head, the beams are formed and the bottom detection process takes place. The resultant bottom detections (range and bearing) are sent via Ethernet deck lead to the Sonar Interface Module (SIM). The SIM then sends the data out to the sonic control software and the data acquisition software.

The R2 Sonic 2024 works on user selectable frequency ranges so it is adaptable to a wide range of survey depths and conditions. The frequency can be selected on-the-fly without having to shut down the sonar system, change hardware, or halt recording data. This system produces a user selectable swath width of 10 to 160 degrees using all 256 beams; the desired angle can be selected on-the-fly, as well. The selected swath angle can be rotated port or starboard while recording to direct the highly concentrated beams towards the desired target.

The Applanix POS MV was used to provide motion, attitude, and timing for the multibeam echosounder (MBES) system. The POS MV delivers full 6-degree-of-freedom position and orientation solutions for marine survey vessels and outputs all motion variables at high rate: position, velocity, heave, roll, pitch, true heading, acceleration vectors, and angular rate vectors. The system combines GPS/DGPS (Differential Global Positioning System) with rugged high-quality inertial sensors. The system measures true heading together will roll and pitch to 0.02-degree accuracy or better under dynamic conditions including hard turns and rapid acceleration and deceleration with heave accuracy of 5 cm or 5 percent all in real time. The POS MV system consisted of two Zephyr antennae mounted atop the *M/V Julie Ann* (primary port), a processor, version four, and an Inertial Measurement Unit (IMU). Data was fed from the processor to Hypack via

Ethernet at 25 hertz. Delayed heave and position data, used for data post-processing were logged at 50 hertz.

The Odom Digibar was utilized as the sound velocity profiler (SVP) with casts taken approximately every 4 hours.

Offsets. Relevant vessel offsets were measured before the *M/V Julie Ann* started survey operations. All measurements were verified by two personnel. Offset results are presented in table 2.1.

Table 2.1: *M/V Julie Ann* Vessel Offsets

	Physical Offsets (m)		
	Position	MRU	Transducer
Starboard	1.003	1.01	-1.41
Forward	0.11	-0.03	0.06
Vertical (+ Down)	2.086	0.05	0.97

Calibration. A patch test was completed as part of the system calibration procedures. The patch test used seafloor topology to bring multibeam swaths (run at varying speeds, headings, and overlaps) into coincidence. They are employed so that data can be corrected for timing latency, pitch, azimuth, and roll offsets, which may exist between the swath transducer and the IMU. Following this one-time calibration, the POS MV quickly and automatically initialized itself upon power-up, outputting accurate navigation data. In addition, the system continuously monitored its sensors to ensure optimum performance. The Patch Test report for this project is provided in Appendix B.

Table 2.2: Patch Test Calibration Values

Position Latency	0.0 sec
Roll Bias	0.7 º
Pitch Bias	0.0º
Yaw Bias	-2.0º

Total Propagated Uncertainty (TPU). TPU is a method used to quantify the uncertainty of survey measurements to a specified International Hydrographic Organization (IHO) Order, in this case IHO Order 1A. The TPU algorithm makes three primary calculations per beam: a depth uncertainty (TVU), a position uncertainty (THU), and the minimum size target that can be detected. A summary of these three calculations is included in Table 2.2 below, and the complete TPU report can be found in Appendix C.

Table 2.3: TPU Calculations

Depth Uncertainty	0.18 m
Position Uncertainty	0.6 m
Target Detection	0.4 m

Processing. For the bathymetry, the HYSWEEP software package by Hypack, Inc. was used to process and bin the raw data sets by first applying acquisition specific variables such as vessel offsets, seawater sound velocities, vessel draft, and system calibration (patch test) values and then editing the data to remove spurious soundings.

The field recorded raw sounding files were imported into HYSWEEP and the acquisition variables were entered into the vessel configuration file. Once the sounding files were imported, the appropriate SVP file was then loaded into each line and the line corrected for sound refraction. Concurrent with SVP corrections, the bathymetry data was also corrected for dynamic vessel heave, pitch, yaw, and roll. The attitude, heading, navigation, and bathymetry data were then examined for noise and gaps. Nadir beam filters were used to reject data from the outer reaches of the swaths.

After each individual line was examined and cleaned in the HYSWEEP Swath editor, the lines were merged and draft corrections were applied. Adjacent overlapping lines of corrected bathymetry data were examined to identify any vertical offsets, data gaps, sound velocity, and motion errors. Any residual noise in the data set was also rejected at this time.

After all data were filtered and processed, the final data set was binned to 3 ft. x 3 ft. cell size, using the average depth of all depths within the cell. The horizontal location of the representative average depth was the cell center. The soundings were already reduced to MLLW by utilizing RTK GPS for data acquisition. The XYZ data were subsequently contoured at one-foot intervals using Hypack 2017 and Global Mapper and these contours were exported for final charting in ArcGIS.

2.5 Sediment Grab Sampling

Fugro provided two Van Veen grabs, the Petite Ponar (6”x6”) and the Ponar Dredge (9”x9”), for use by Insight in conducting their sediment sampling program. For most of all the sampling, the Petite Ponar was sufficient to provide the required amount of sediment to fill an 8 oz. container. The Ponar Dredge was used at sediment sample location HPF-Wharf-CS02D when multiple attempts with the Petite Ponar were unsuccessful. Owing to its extra weight, the Ponar Dredge grab proved successful at this sampling location. Fugro also provided vessel position during the sampling and took position fixes at each grab attempt to show where the actual position was in relation to the proposed location. In all cases, due care was taken to be as close to the proposed location as possible. Final sampling locations are shown in Appendix E on Chart 2.

3. RESULTS

3.1 Grab Samples

Insight were able to achieve an 8 oz. grab sample at each of the sample sites. A table of the final grab sample locations can be found in Appendix D.

3.2 Bathymetry

All bathymetric soundings are referenced to MLLW utilizing RTK GNSS corrections. In Area IX and X, bathymetric soundings ranged from 7 feet (above MLLW) to -5 feet. In Area X, data were collected at high tide to maximize coverage, and as seen in Figure 3-1 below, the area behind the curtain and a shipwreck are exposed at low tide

Figure 3.1: West corner of Area X South Basin looking to the Northeast.

In Area III and Parcel F (Pier) bathymetric soundings ranged from 0 feet to -85 feet. The charts can be found in Appendix E.

3.3 Comparison with Historical Data

Fugro had acquired singlebeam bathymetry data in part of Area IX and in Area III and Parcel F (Pier) during the survey conducted in 2003. Upon receiving permission to use the 2003 data, a comparison was made between the two datasets. There was also a topographic LiDAR dataset collected by Terrapoint for National Oceanic and Atmospheric Administration (NOAA) and United States Geological Survey (USGS) in the area. However, this dataset has not been used for this comparison as, according to the metadata associated with the dataset, horizontal accuracy checks were not performed on the dataset by Dewberry, the firm tasked with verifying the data.

3.3.1 Area IX

The area of comparison in Area IX shows a difference of +2.5 feet shallowing to -2 feet deepening, where positive values denote an accumulation of sediment and negative values denote removal of sediment. The

majority of the area shows zero to -1 feet of removal, with an increase to -2 feet closer to shore. There are small areas of accumulation around the perimeter of the comparison area. It should be noted that the comparison between the 2003 and 2018 datasets is not a direct comparison because any data between the acquired singlebeam lines are interpolated (unobserved, not measured). The 2003 data were collected at 100-foot line spacing and the 2018 data were collected with a 50-foot line spacing, so there is more interpolation in the 2003 dataset.

3.3.2 Area III and Parcel F (Pier)

A comparison was also made between the 2003 singlebeam data and the 2018 multibeam data collected in Area III and Parcel F (Pier), showing a difference of +11 feet to -8 feet. The mean value of the comparison dataset is +2.05 feet, showing an accumulation of sediment from 2003 to 2018 for most of the survey area. On the Northeast corner of Area 1 and the Northwest corner of the Pier B footprint are two small areas showing +11 feet (of accumulation). Along the Eastern edge of Parcel B-2 and the entrances to Dry Dock 2 and 3, there appear to be small areas showing -8 feet (removal of sediment). However, this comparison again is not a direct comparison as the multibeam data is of a much higher resolution (100% coverage) and the 2003 singlebeam data is interpolated between the acquired lines, which were spaced at 100-foot intervals. Any interpolated data between the lines of actual singlebeam data cannot be considered factual when compared with the actual 2018 multibeam data, and is displayed mainly as a representation. For example, an area showing removal of sediment may not be real if falling between two 2003 singlebeam lines, as this scour/depression may have been present in 2003, but not measured.

The charts showing the comparison can also be found in Appendix E.

APPENDICES

A. NGS DATA SHEETS

B. PATCH TEST REPORT

C. TPU REPORT

D. FINAL GRAB SAMPLE LOCATIONS

E. CHARTS

A. NGS DATA SHEETS

Data Sheet Retrieval
The NGS Data Sheet

See file dsdata.pdf for more information about the datasheet.
PROGRAM = datasheet95, VERSION = 8.12.4
1 National Geodetic Survey, Retrieval Date = JANUARY 30, 2018
HT0616 **********
HT0616 TIDAL BM - This is a Tidal Bench Mark.
HT0616 DESIGNATION - 4
HT0616 PID - HT0616
HT0616 STATE/COUNTY- CA/SAN FRANCISCO
HT0616 COUNTRY - US
HT0616 USGS QUAD - HUNTERS POINT (1993)
HT0616
HT0616 *CURRENT SURVEY CONTROL
HT0616 _____
HT0616* NAD 83(1986) POSITION- 37 43 45. (N) 122 21 31. (W) SCALED
HT0616* NAVD 88 ORTHO HEIGHT - 4.54 (+/-2cm) 14.9 (feet) VERTCON
HT0616 _____
HT0616 GEOID HEIGHT - -32.532 (meters) GEOID12B
HT0616 VERT ORDER - FIRST CLASS II (See Below)
HT0616
HT0616.The horizontal coordinates were scaled from a topographic map and have
HT0616.an estimated accuracy of +/- 6 seconds.
HT0616.
HT0616.The NAVD 88 height was computed by applying the VERTCON shift value to
HT0616.the NGVD 29 height (displayed under SUPERSEDED SURVEY CONTROL.)
HT0616
HT0616.Significant digits in the geoid height do not necessarily reflect accuracy.
HT0616.GEOID12B height accuracy estimate available here.
HT0616
HT0616.The vertical order pertains to the NGVD 29 superseded value.
HT0616
HT0616.This Tidal Bench Mark is designated as VM 8100
HT0616.by the CENTER FOR OPERATIONAL OCEANOGRAPHIC PRODUCTS AND SERVICES.
HT0616
HT0616; North East Units Estimated Accuracy
HT0616;SPC CA 3 - 638,040. 1,836,180. MT (+/- 180 meters Scaled)
HT0616
HT0616_U.S. NATIONAL GRID SPATIAL ADDRESS: 10SEG565759(NAD 83)
HT0616
HT0616 SUPERSEDED SURVEY CONTROL

```
HT0616
HT0616  NGVD 29 (??/??/92)    3.720  (m)          12.20   (f) ADJ UNCH    1 2
HT0616
HT0616.Superseded values are not recommended for survey control.
HT0616
HT0616.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
HT0616.See file dsdata.pdf to determine how the superseded data were derived.
HT0616
HT0616_MARKER: DB = BENCH MARK DISK
HT0616_SETTING: 30 = SET IN A LIGHT STRUCTURE
HT0616_SP_SET: PLATFORM
HT0616_STAMPING: 4 1941
HT0616_STABILITY: D = MARK OF QUESTIONABLE OR UNKNOWN STABILITY
HT0616_SATELLITE: THE SITE LOCATION WAS REPORTED AS NOT SUITABLE FOR
HT0616+SATELLITE: SATELLITE OBSERVATIONS - December 12, 2012
HT0616
HT0616  HISTORY     - Date     Condition       Report By
HT0616  HISTORY     - 1941     MONUMENTED      CGS
HT0616  HISTORY     - 1956     GOOD            CGS
HT0616  HISTORY     - 20121212 GOOD            USACE
HT0616
HT0616                      STATION DESCRIPTION
HT0616
HT0616'DESCRIBED BY COAST AND GEODETIC SURVEY 1956
HT0616'AT HUNTERS POINT.
HT0616'AT HUNTERS POINT, AT THEH SAN FRANCISCO NAVAL SHIPYARDS, AT
HT0616'THE NORTHEAST CORNER OF A LARGE CONCRETE AND METAL MACHINE
HT0616'SHOP BUILDING NO. 231, IN THE TOP OF THE SOUTHEAST CORNER OF THE
HT0616'CONCRETE LOADING PLATFORM ON THE NORTH SIDE AND AT THE NORTHEAST
HT0616'CORNER OF THE BUILDING, 96.0 FEET SOUTH OF THE SOUTH SIDE OF
HT0616'DRY DOCK NO. 2, 0.5 FOOT NORTH OF THE NORTH WALL, AND ABOUT
HT0616'3 FEET HIGHER THAN THE ASPHALT.
HT0616
HT0616                      STATION RECOVERY (2012)
HT0616
HT0616'RECOVERY NOTE BY US ARMY CORPS OF ENGINEERS 2012 (BRB)
HT0616'RECOVERED IN GOOD CONDITION.

*** retrieval complete.
Elapsed Time = 00:00:02
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DATASHEETS Data Sheet Retrieval
The NGS Data Sheet

See file dsdata.pdf for more information about the datasheet.
PROGRAM = datasheet95, VERSION = 8.12.1
1 National Geodetic Survey, Retrieval Date = MAY 19, 2017

```
HT0613 ***********************************************************************
HT0613  HT_MOD      -  This is a Height Modernization Survey Station.
HT0613  TIDAL BM    -  This is a Tidal Bench Mark.
HT0613  DESIGNATION -  HUNTER WEST 1
HT0613  PID         -  HT0613
HT0613  STATE/COUNTY-  CA/SAN FRANCISCO
HT0613  COUNTRY     -  US
HT0613  USGS QUAD   -  HUNTERS POINT (1993)
HT0613
HT0613                    *CURRENT SURVEY CONTROL
HT0613  ___________________________________________________________________________
HT0613* NAD 83(2011) POSITION- 37 43 41.95354(N) 122 21 43.70750(W)   ADJUSTED
HT0613* NAD 83(2011) ELLIP HT-   -29.216 (meters)       (06/27/12)   ADJUSTED
HT0613* NAD 83(2011) EPOCH   -  2010.00
HT0613* NAVD 88 ORTHO HEIGHT -     3.35  (meters)       11.0   (feet) GPS OBS
HT0613  ___________________________________________________________________________
HT0613  NAVD 88 orthometric height was determined with geoid model    GEOIDXU
HT0613  GEOID HEIGHT    -       -32.495 (meters)                  GEOIDXU
HT0613  GEOID HEIGHT    -       -32.534 (meters)                  GEOID12B
HT0613  NAD 83(2011) X  - -2,703,597.059 (meters)                   COMP
HT0613  NAD 83(2011) Y  - -4,266,415.908 (meters)                   COMP
HT0613  NAD 83(2011) Z  -  3,881,619.876 (meters)                   COMP
HT0613  LAPLACE CORR    -         0.47  (seconds)                 DEFLEC12B
HT0613
HT0613  Network accuracy estimates per FGDC Geospatial Positioning Accuracy
HT0613  Standards:
HT0613        FGDC (95% conf, cm)     Standard deviation (cm)     CorrNE
HT0613          Horiz  Ellip          SD_N   SD_E   SD_h      (unitless)
HT0613  ----------------------------------------------------------------
HT0613  NETWORK    0.70   1.22          0.32   0.23   0.62      0.25960024
HT0613  ----------------------------------------------------------------
HT0613  Click here for local accuracies and other accuracy information.
HT0613
HT0613
HT0613.The horizontal coordinates were established by GPS observations
HT0613.and adjusted by the National Geodetic Survey in June 2012.
```

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HT0613
HT0613.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
HT0613.been affixed to the stable North American tectonic plate. See
HT0613.NA2011 for more information.
HT0613
HT0613.The horizontal coordinates are valid at the epoch date displayed above
HT0613.which is a decimal equivalence of Year/Month/Day.
HT0613
HT0613.The orthometric height was determined by GPS observations and a
HT0613.high-resolution geoid model using precise GPS observation and
HT0613.processing techniques.
HT0613
HT0613.Significant digits in the geoid height do not necessarily reflect accuracy.
HT0613.GEOID12B height accuracy estimate available here.
HT0613
HT0613.This Tidal Bench Mark is designated as VM 8102
HT0613.by the CENTER FOR OPERATIONAL OCEANOGRAPHIC PRODUCTS AND SERVICES.
HT0613
HT0613.The X, Y, and Z were computed from the position and the ellipsoidal ht.
HT0613
HT0613.The Laplace correction was computed from DEFLEC12B derived deflections.
HT0613
HT0613.The ellipsoidal height was determined by GPS observations
HT0613.and is referenced to NAD 83.
HT0613
HT0613. The following values were computed from the NAD 83(2011) position.
HT0613
HT0613;                North        East     Units Scale Factor Converg.
HT0613;SPC CA 3     -   637,953.060 1,835,864.477   MT  0.99992926   -1 08 24.2
HT0613;SPC CA 3     - 2,093,017.66  6,023,165.37   sFT  0.99992926   -1 08 24.2
HT0613;UTM  10      - 4,175,863.764   556,208.583   MT  0.99963891   +0 23 25.2
HT0613
HT0613!            -  Elev Factor  x  Scale Factor =   Combined Factor
HT0613!SPC CA 3     -   1.00000458  x   0.99992926  =   0.99993384
HT0613!UTM  10      -   1.00000458  x   0.99963891  =   0.99964349
HT0613
HT0613:              Primary Azimuth Mark                  Grid Az
HT0613:SPC CA 3     -  COLEMAN                              262 08 55.9
HT0613:UTM  10      -  COLEMAN                             260 37 06.5
HT0613
HT0613_U.S. NATIONAL GRID SPATIAL ADDRESS: 10SEG5620875863(NAD 83)
HT0613
```

```
HT0613|---------------------------------------------------------------------|
HT0613| PID    Reference Object                    Distance      Geod. Az  |
HT0613|                                           dddmmss.s |
HT0613| HT0620 HUNTER EAST                          274.036 METERS 07320     |
HT0613| HT2724 BLDG 253                            333.594 METERS 12358     |
HT0613| HT2720 COLEMAN                              APPROX. 0.6 KM 2610031.7 |
HT0613|---------------------------------------------------------------------|
HT0613
HT0613                        SUPERSEDED SURVEY CONTROL
HT0613
HT0613  NAD 83(2007)-  37 43 41.95022(N)    122 21 43.70610(W) AD(2007.00) 0
HT0613  ELLIP H (02/10/07)  -29.221  (m)                    GP(2007.00)
HT0613  NAD 83(1998)-  37 43 41.94615(N)    122 21 43.70174(W) AD(2002.75) B
HT0613  ELLIP H (08/23/04)  -29.147  (m)                    GP(2002.75) 4 1
HT0613  NAD 83(1992)-  37 43 41.93343(N)    122 21 43.68924(W) AD(1991.35) 3
HT0613  NAD 83(1986)-  37 43 41.92727(N)    122 21 43.68750(W) AD(1984.00) 3
HT0613  NAD 27      -  37 43 42.17100(N)    122 21 39.78600(W) AD(       ) 3
HT0613  NGVD 29              2.50   (m)          8.2    (f) LEVELING    3
HT0613  NGVD 29 (??/??/92)    2.498  (m)          8.20   (f) ADJ UNCH    1 2
HT0613  NGVD 29              2.49   (m)          8.2    (f) LEVELING    3
HT0613
HT0613.Superseded values are not recommended for survey control.
HT0613
HT0613.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
HT0613.See file dsdata.pdf to determine how the superseded data were derived.
HT0613
HT0613_MARKER: DR = REFERENCE MARK DISK
HT0613_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
HT0613_STAMPING: HUNTER WEST 1 1941
HT0613_PROJECTION: RECESSED 12 CENTIMETERS
HT0613_MAGNETIC: N = NO MAGNETIC MATERIAL
HT0613_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
HT0613+STABILITY: SURFACE MOTION
HT0613_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
HT0613+SATELLITE: SATELLITE OBSERVATIONS - September 17, 2013
HT0613
HT0613  HISTORY     - Date     Condition        Report By
HT0613  HISTORY     - 1941     MONUMENTED       CGS
HT0613  HISTORY     - 1942     SEE DESCRIPTION  CGS
HT0613  HISTORY     - 1948     SEE DESCRIPTION  CGS
HT0613  HISTORY     - 1948     SEE DESCRIPTION  CGS
HT0613  HISTORY     - 1956     GOOD             CGS
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HT0613  HISTORY     - 1958     SEE DESCRIPTION  CGS
HT0613  HISTORY     - 1964     SEE DESCRIPTION  CGS
HT0613  HISTORY     - 1979     GOOD             NOS
HT0613  HISTORY     - 200209   GOOD             JOHFRA
HT0613  HISTORY     - 20130917 GOOD             INDIV
HT0613
HT0613                     STATION DESCRIPTION
HT0613
HT0613'DESCRIBED BY COAST AND GEODETIC SURVEY 1941 (WDP)
HT0613'STATION IS LOCATED AT THE U.S. NAVY SHIPYARD AT HUNTERS POINT.
HT0613'APPROXIMATELY 30 FEET E OF THE GATE AT THE MAIN ENTRANCE TO
HT0613'THE YARD.  APPROXIMATELY 125 FEET S OF THE DOCK MASTERS HOUSE.
HT0613'
HT0613'STATION MARK IS A BRONZE DISK SET IN CONCRETE THAT WAS POURED
HT0613'INTO A STEEL CYLINDER ABOUT 12 INCHES IN DIAMETER AND 27 INCHES
HT0613'DEEP, TOP OF MARK IS ABOUT 8 INCHES BELOW PRESENT GRADE IN THE
HT0613'YARD.  THERE IS TO BE A STEEL CAP PLACED OVER THE MARK TO
HT0613'PROTECT IT.  THE CAP IS TO BE REMOVABLE.
HT0613
HT0613                     STATION RECOVERY (1942)
HT0613
HT0613'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1942 (GEB)
HT0613'DESTROYED BY CONTRACTOR.  REPLACED JUNE 19, 1942 BY A PRIVATE
HT0613'SURVEYING COMPANY IN WHAT WAS STATED TO BE THE SAME LOCATION
HT0613'BUT A DIFFERENT ELEVATION.
HT0613
HT0613                     STATION RECOVERY (1948)
HT0613
HT0613'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1948 (WMG)
HT0613'STATION IS AT THE SAN FRANCISCO NAVAL SHIPYARD, HUNTERS POINT.
HT0613'IT IS NEAR THE SW END OF DRYDOCK NO. 3, ABOUT 50 FEET FROM
HT0613'THE EDGE OF THE DRYDOCK.
HT0613'
HT0613'STATION MARK IS A REFERENCE DISK STAMPED HUNTER WEST 1 1941.
HT0613'IT IS SET IN CONCRETE IN A CYLINDRICAL HOLE ABOUT 6 INCHES IN
HT0613'DIAMETER, WITH TOP OF THE MARK ABOUT 4 INCHES BELOW GRADE OF
HT0613'THE STREET.  THE HOLE IS COVERED BY A REMOVABLE STEEL CAP.
HT0613
HT0613                     STATION RECOVERY (1948)
HT0613
HT0613'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1948 (EHB)
HT0613'COPIED FROM TIDAL BENCH MARK RECORDS--
```

HT0613'
HT0613'STATION RECOVERED AS DESCRIBED. IT IS STAMPED HUNTER WEST
HT0613'1 1941.
HT0613'
HT0613'AN UNSTAMPED AZIMUTH MARK WAS RECOVERED IN THE SAME LOCALITY.
HT0613'IT IS A BRONZE AZIMUTH DISK, UNSTAMPED, SET IN SUBSURFACE
HT0613'CONCRETE POST WHICH IS ABOUT 6 INCHES BELOW GROUND LEVEL AND
HT0613'HAVING A 10-INCH SQUARE HANDHOLD AROUND MARK. COVER FOR
HT0613'HANDHOLD HAS ONE-INCH HOLE IN CENTER. MARK IS LOCATED AT W
HT0613'END OF DRYDOCK NO. 3, 18 FEET S OF PROLONGATION OF S SIDE
HT0613'OF DRYDOCK NO. 3, 23 FEET W OF MOST W OF LINE OF SNUBBING POSTS
HT0613'ALONG S SIDE OF DRYDOCK NO. 3.
HT0613'
HT0613'NOTE--H.C. WARWICK USED AZIMUTH MARK AS A TIDAL BENCH MARK
HT0613'IN 1945.
HT0613
HT0613 STATION RECOVERY (1956)
HT0613
HT0613'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1956
HT0613'AT HUNTERS POINT.
HT0613'AT HUNTERS POINT, AT THE SAN FRANCISCO NAVAL SHIPYARD, AT THE
HT0613'WEST END OF DRY DOCK 3, 93.0 FEET SOUTH OF THE CENTER OF THE
HT0613'WEST END OF DRY DOCK 3, 90 FEET NORTHWEST OF FIRE PLUG NO. 200
HT0613'ON THE SOUTH SIDE OF THE DOCK AND NEAR THE WEST END, 6.4 FEET
HT0613'WEST OF THE EAST RAIL OF A LARGE WIDE FIFTY TON CRANE TRACK,
HT0613'6.0 FEET EAST OF THE EAST RAIL OF A SMALL SET OF TRACKS INSIDE
HT0613'THE LARGE CRANE TRACKS, AND SET IN THE TOP OF A CONCRETE POST
HT0613'0.5 FOOT UNDERGROUND. NOTE-- ACCESS TO MARK HAD THROUGH A
HT0613'METAL LID.
HT0613
HT0613 STATION RECOVERY (1958)
HT0613
HT0613'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1958 (JCM)
HT0613'THE STATION MARK WAS RECOVERED IN GOOD CONDITION AS DESCRIBED
HT0613'IN 1941 AND 1948.
HT0613
HT0613 STATION RECOVERY (1964)
HT0613
HT0613'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1964 (PAS)
HT0613'THE STATION WAS RECOVERED AS DESCRIBED BY W.M.G. IN 1948.
HT0613
HT0613 STATION RECOVERY (1979)

```
HT0613
HT0613'RECOVERY NOTE BY NATIONAL OCEAN SERVICE 1979 (DRT)
HT0613'STATION WAS RECOVERED IN GOOD CONDITION AS DESCRIBED IN 1948.
HT0613'
HT0613'DESCRIBED BY F.L. ROSARIO
HT0613
HT0613                    STATION RECOVERY (2002)
HT0613
HT0613'RECOVERY NOTE BY JOHNSON-FRANK 2002 (MSP)
HT0613'THE STATION IS AT HUNTERS POINT, AT A FORMER NAVAL SHIPYARD, IN THE
HT0613'SOUTHEAST PART OF  THE CITY AND COUNTY OF SAN FRANCISCO. FROM THE
HT0613'INTERSECTION OF HWY 101 AND 3RD ST, ABOUT 1.4 MI SOUTH OF THE
HT0613'INTERSECTION OF  HW 101 AND INTERSTATE 280, EXIT ON 3RD ST/BAYSHORE
HT0613'BLVD, IN THE VICINITY OF THE FORMER  CANDLESTICK PARK.  DRIVE NORTH ON
HT0613'3RD ST FOR ABOUT 2.0 MI TO EVANS AV.  TURN RIGHT (EAST)  ON EVANS AND
HT0613'DRIVE FOR ABOUT 0.7 MI TO THE INTERSECTION OF JENNINGS ST TO THE LEFT
HT0613'AND  MIDDLEPOINT TO THE RIGHT. FROM THIS INTERSECTION, WHERE EVANS
HT0613'BECOMES HUNTERS POINT  BLVD, CONTINUE ON HUNTERS PT BLVD WHICH CURVES
HT0613'TO THE RIGHT(SOUTHEAST) FOR 0.3 MI TO A  TRIANGULAR INTERSECTION WITH
HT0613'INNES AVE.  TURN LEFT (EAST) AND FOLLOW INNES FOR 0.4 MI TO  THE
HT0613'ENTRANCE INTERSECTION WITH A STREETLIGHT, AND THEN AN ABANDONED GUARD
HT0613'SHACK.   CONTINUE, BEARING LEFT WHEN THE ROAD TURNS/BEARS RIGHT, FOR
HT0613'ABOUT 0.1 MI,  THEN TURN  RIGHT ON GALVEZ.  DRIVE SOUTHEAST ON GALVEZ
HT0613'FOR 0.2 MI, THEN BEAR LEFT ON ROBINSON AND  DRIVE EASTERLY FOR ABOUT
HT0613'0.2 MI TO THE INTERSECTION OF FISHER AVE.  CONTINUE STRAIGHT (ON  SOME
HT0613'MAPS, SOUTH OF FISHER AV ROBINSON TURNS INTO LOCKWOOD ST.  CONTINUE ON
HT0613'THIS ROAD  AND ENTER THROUGH AN OPEN GATE MARKED 'OFFICERS QUARTERS'
HT0613'ON A RUSTY SIGN.  AFTER  PASSING THE GATE, TURN LEFT DRIVING FOR ABOUT
HT0613'0.2 MI  AND THEN RIGHT PAST A BOLLARD. THE STATION IS SET IN A
HT0613'CONCRETE POST AT THE HEAD (WEST END) OF DRY DOCK 3, COVERED  WITH A
HT0613'STEEL COVER PLATE.  THE STATION IS 33.2 M SE OF THE CAPSTAN AT THE
HT0613'WEST END OF DRY  DOCK 3, 16.0 M W OF THE STANDPIPE AT THE 950' MARK ON
HT0613'THE DRY DOCK, 11.9 M E OF A GATE IN  CHAIN LINK FENCE WHICH IS NEAR
HT0613'THE INTERSECTION OF FISHER AV AND SPEAR AV (OUTSIDE THE  FENCE), AND
HT0613'8.7 M E OF A SHORT BOLLARD, AND 1.8 M WEST OF THE INNER RAIL FOR A
HT0613'DOCK CRANE. MARK IS AN 8.9 CM (3.5 IN) BRASS U.S. COAST AND GEODETIC
HT0613'SURVEY REFERENCE MARK DISK  STAMPED 'HUNTER WEST 1 1941' SET IN
HT0613'CONCRETE IN A 15 CM (6 IN)  DIAMETER WELL, DOWN 12 CM (0.4 FT) BELOW
HT0613'THE ASPHALT.  THE LID OF THE  WELL IS 6 CM (0.2 FT) BELOW THE ASPHALT.
HT0613'THIS STATION WAS OBSERVED AS PART OF THE SOUTH SAN FRANCISCO BAY
HT0613'HEIGHT MODERNIZATION  PROJECT.
HT0613
```

HT0613 STATION RECOVERY (2013)
HT0613
HT0613'RECOVERY NOTE BY INDIVIDUAL CONTRIBUTORS 2013 (ALV)
HT0613'RECOVERED AS DESCRIBED.

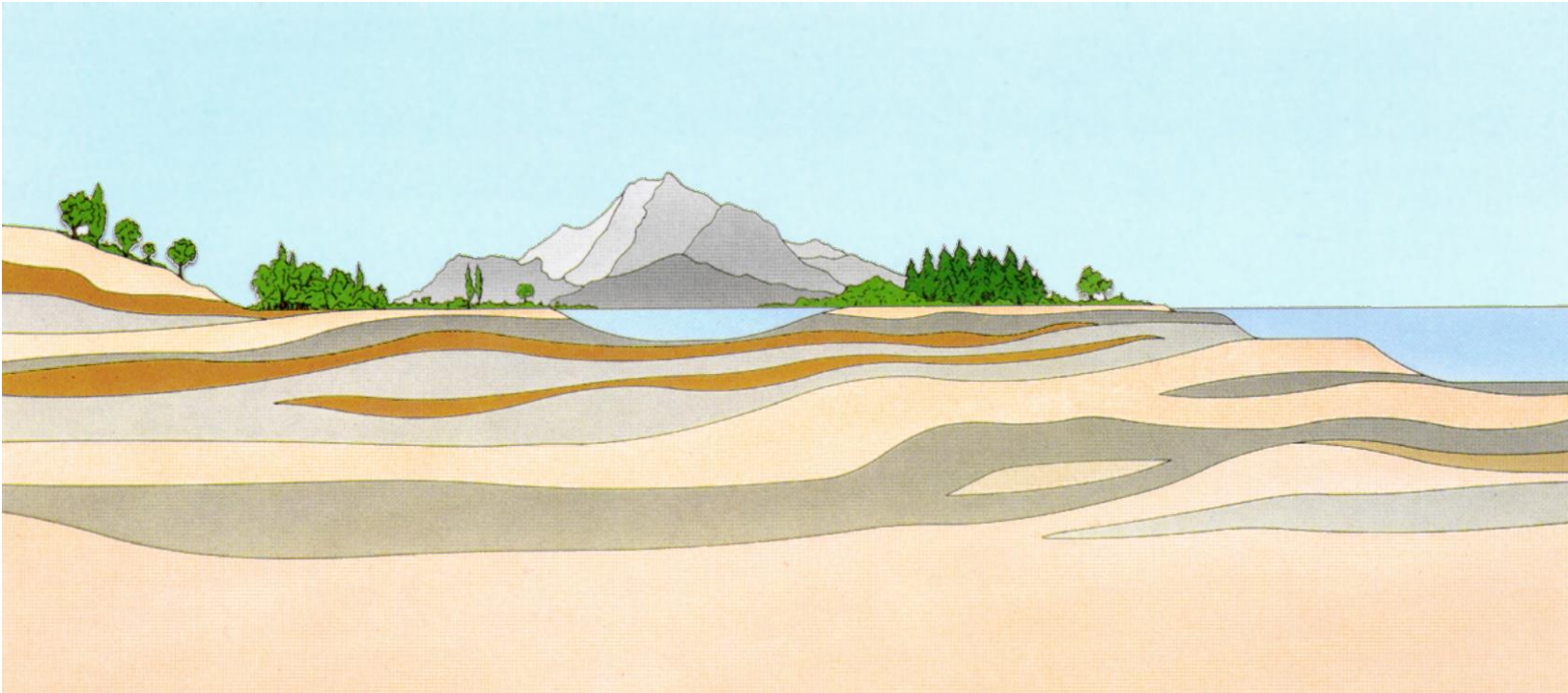
*** retrieval complete.
Elapsed Time = 00:00:02

B. PATCH TEST REPORT

PATCH TEST REPORT

HUNTERS POINT SEDIMENT INVESTIGATION AND BATHYMETRIC SURVEY 2018

HUNTERS POINT NAVAL SHIPYARD, SAN FRANCISCO, CALIFORNIA



1. MULTIBEAM ECHOSOUNDER

A comprehensive patch test calibration was carried out on 3rd February 2018 to calibrate the different components of the multibeam bathymetry system in accordance with industry standards. This calibration procedure measures the angular mounting components of the correction sensors (roll, pitch, and yaw) as errors in these measurements can lead to an inaccurate survey. The calibration test is a data collection and processing procedure to calibrate these angles along with position system latency. Screen grabs (before and after corrections are applied - for documention and clarity in this report) were taken during the different steps of the patch test processing.

Patch Test.

The patch test is performed when a new installation of an inertial measurement unit (IMU) and/or multibeam transducer is carried out, or if either are moved. The patch test involves collecting data over certain types of bottom terrain, and processing of the data using Hypack MB-Max or Caris software. Four elements of the patch test are calculated: positioning latency test (time), a pitch test (angle), a roll test (angle) and a yaw test (angle). The patch test involves two steps: the measurement of all relative sensor offsets which is carried out at time of sensor installation and a field sensor alignment.

Survey lines in water depths ranging from 10 to 53 feet were run for the patch test and are shown in figure 1.1 below.

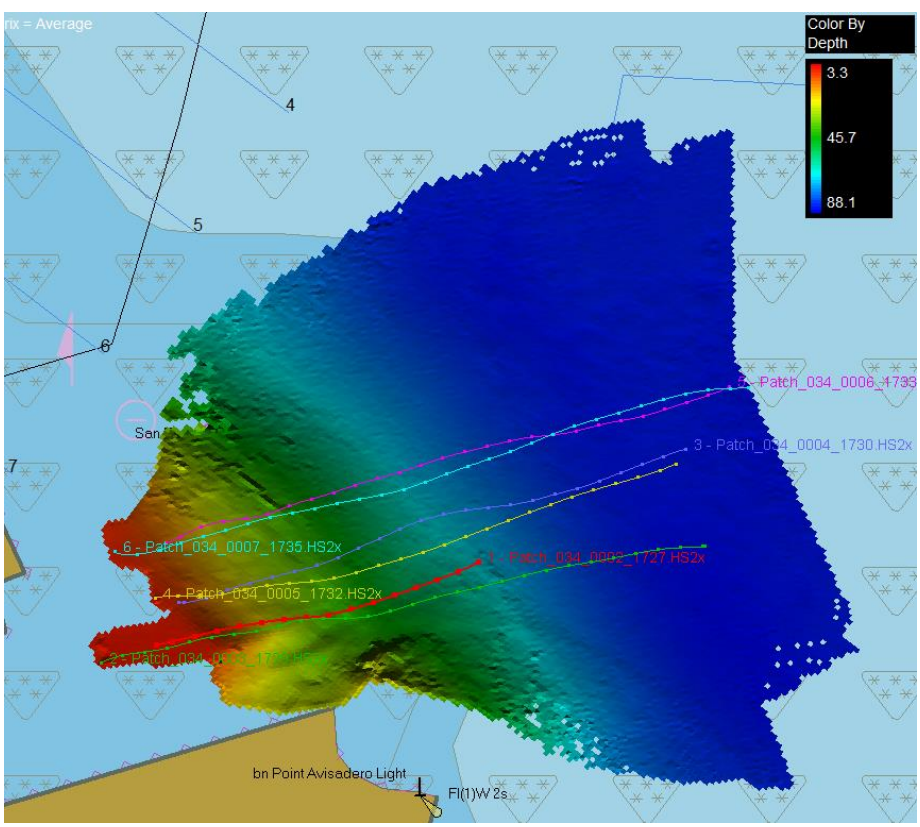


Figure 1.1 - Survey lines run for the Patch Test.

Position Latency

The Latency calibration is carried out over a steep slope or feature on the seafloor. A survey line is created perpendicular (figure 3.2) to the slope or feature and run at least two times in the same direction. The first line surveyed at survey speed and then surveyed again in the same direction but at half the survey speed. No latency was found in the system and these results are shown in figure 3-3.

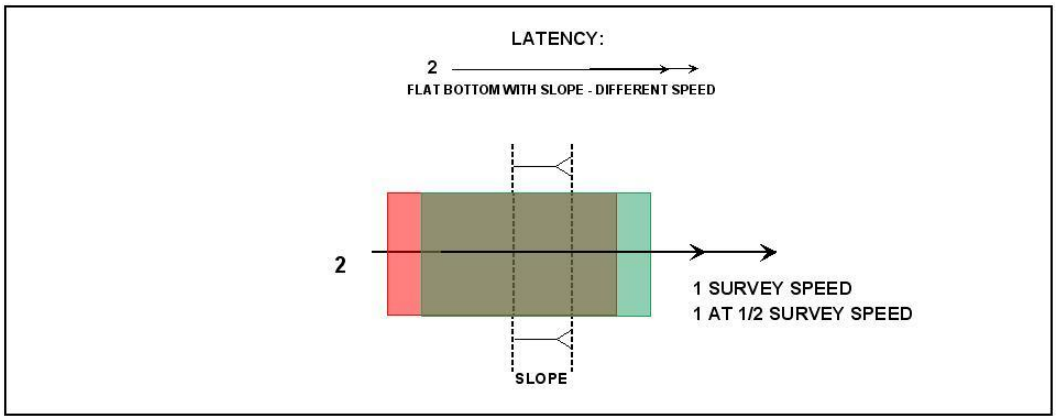


Figure 1.2 - Survey line layout for the latency test.

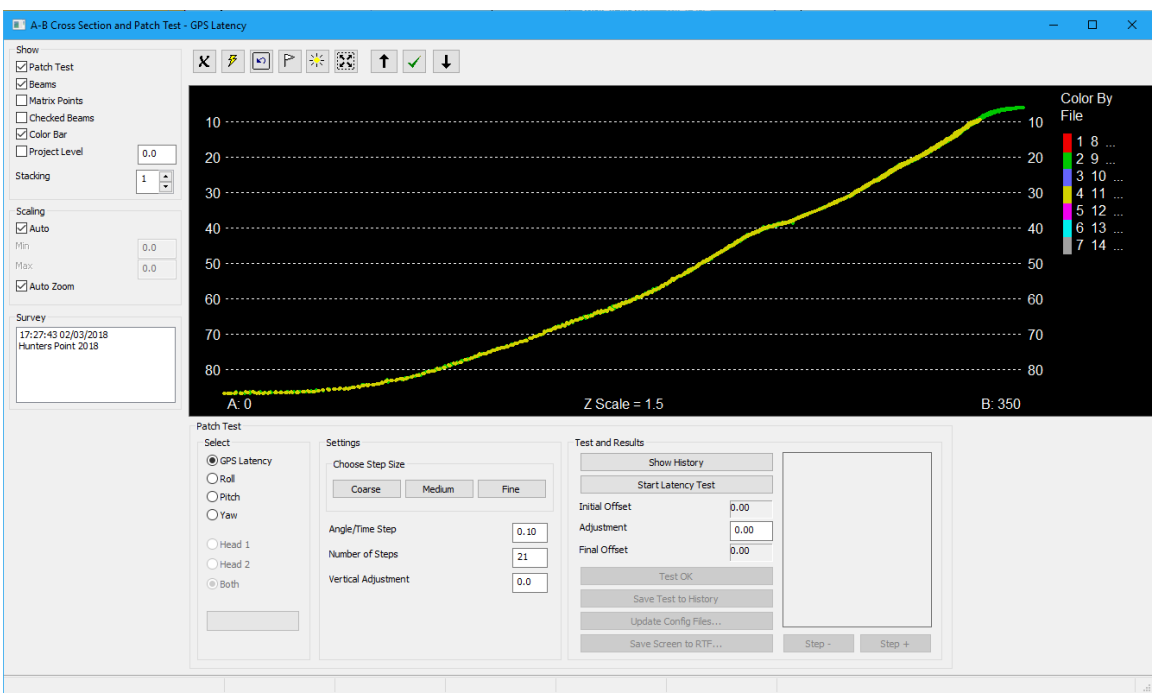


Figure 1.3 – Pre latency with no bias

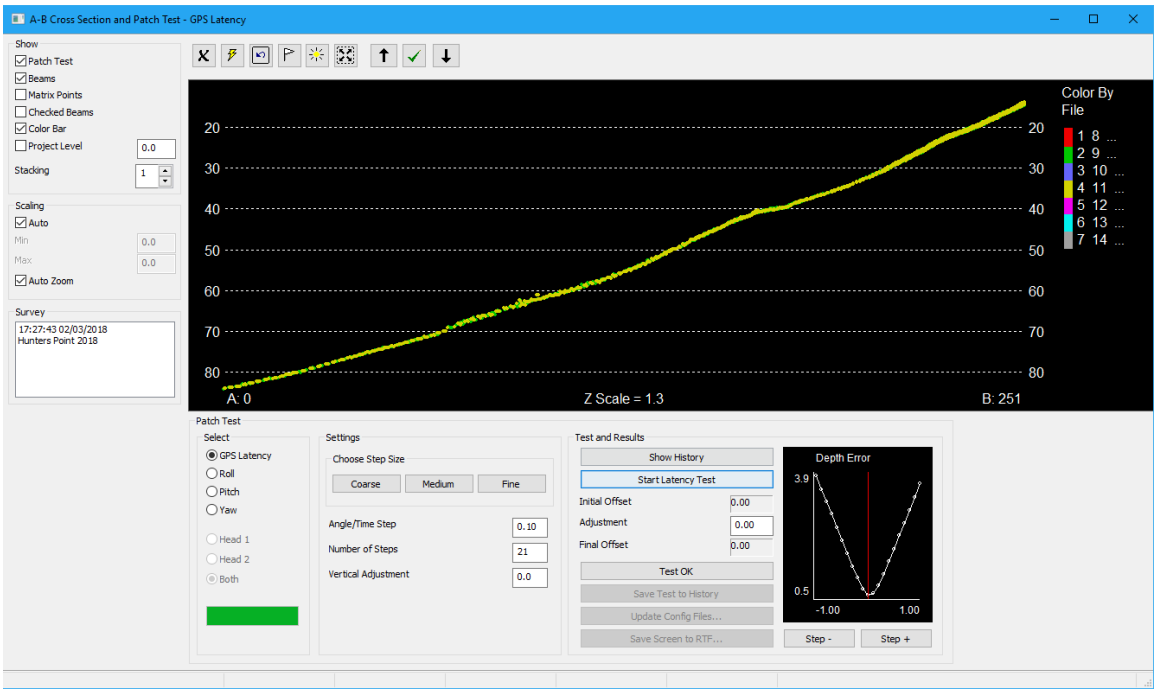


Figure 1.4 - Latency was determine to be 0s for the survey positioning system.

Pitch Test

The pitch calibration is carried out over a steep slope or feature on the seafloor. A survey line is created perpendicular to the slope and run four times in a reciprocal direction and at a typical survey speed taking care to pass over the same exact part of the slope. Having four survey datasets will provide at least three pitch misalignment values where the average of the three will be the final value.

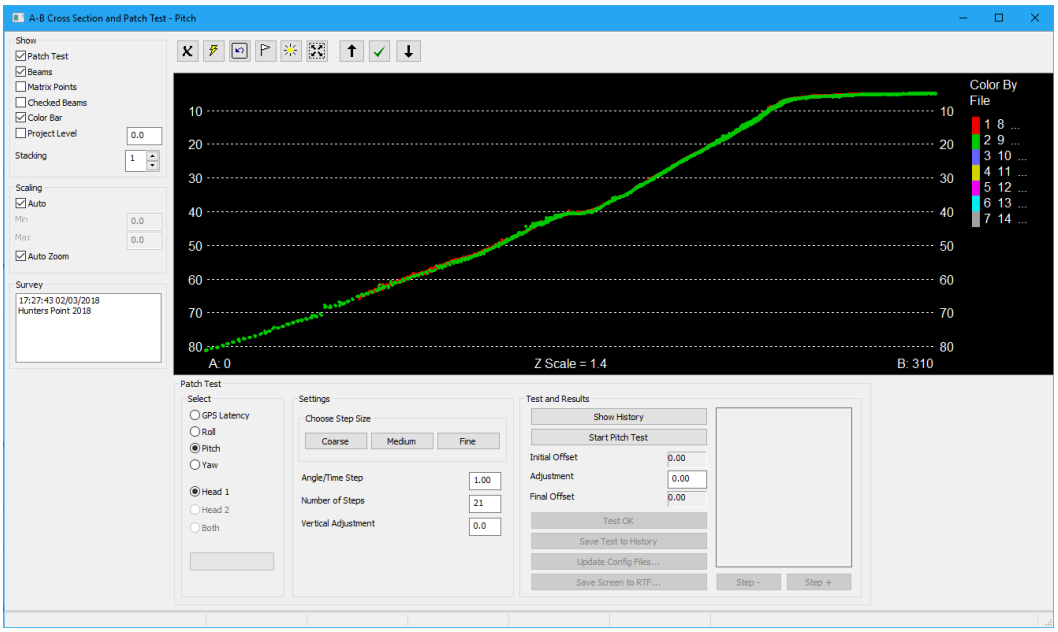


Figure 1.5 - Pre pitch with no bias.

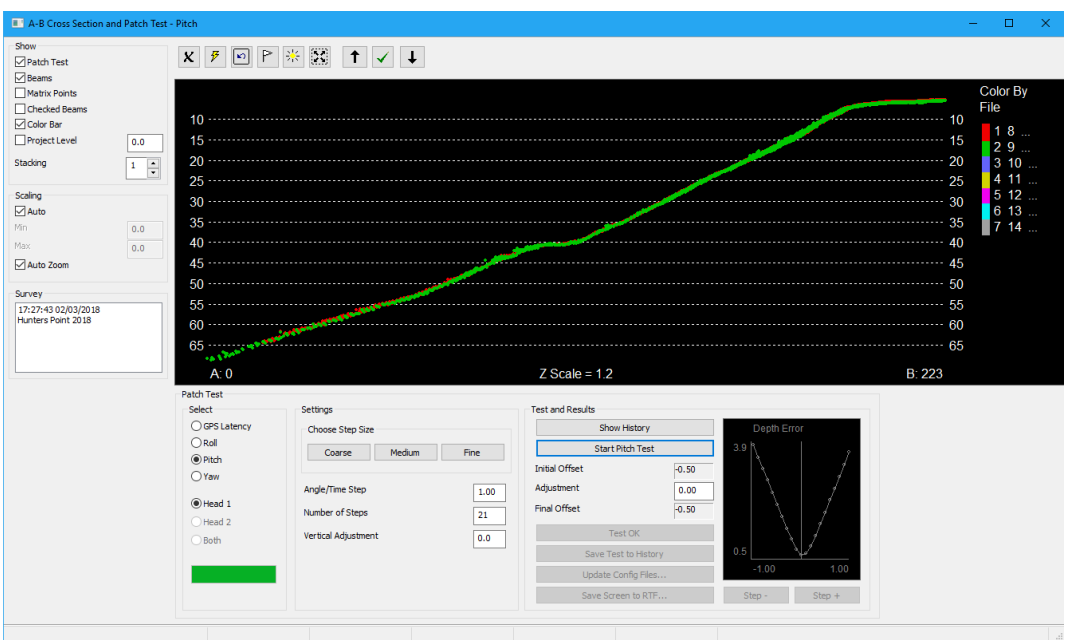


Figure 1.6 - Post pitch showing a pitch bias of -0.5° applied.

Roll Test

The roll calibration is carried out over a flat bottom area. A survey line is created over this terrain and run four times in a reciprocal direction and at typical survey speed. The length of survey line should be around 200m. Having four survey datasets will provide at least three roll misalignment values where the average of the three will be the final value.

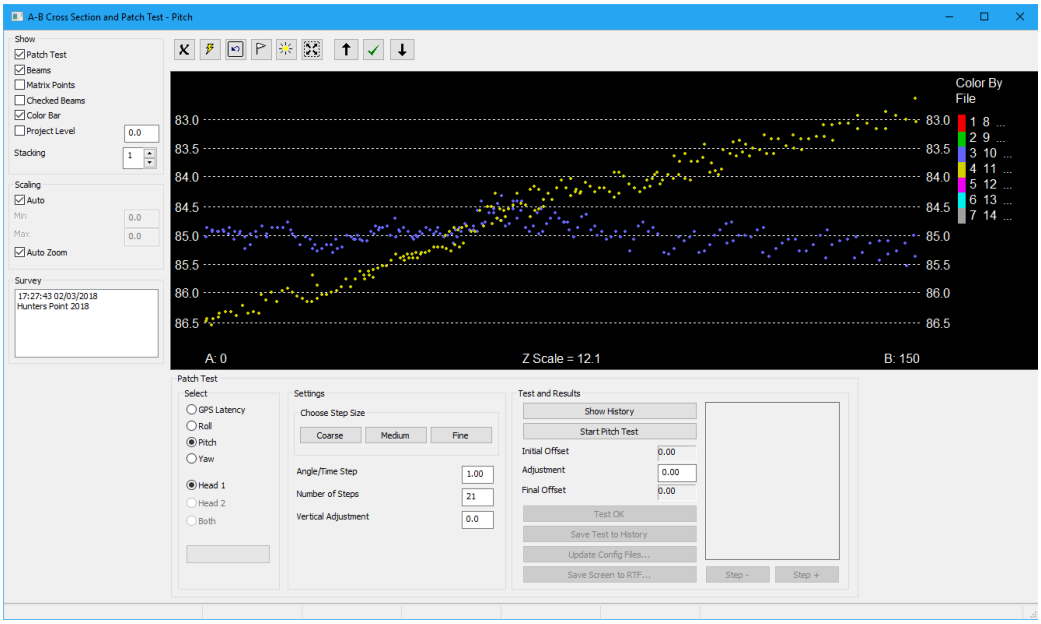


Figure 1.7 - Pre-roll with no bias.

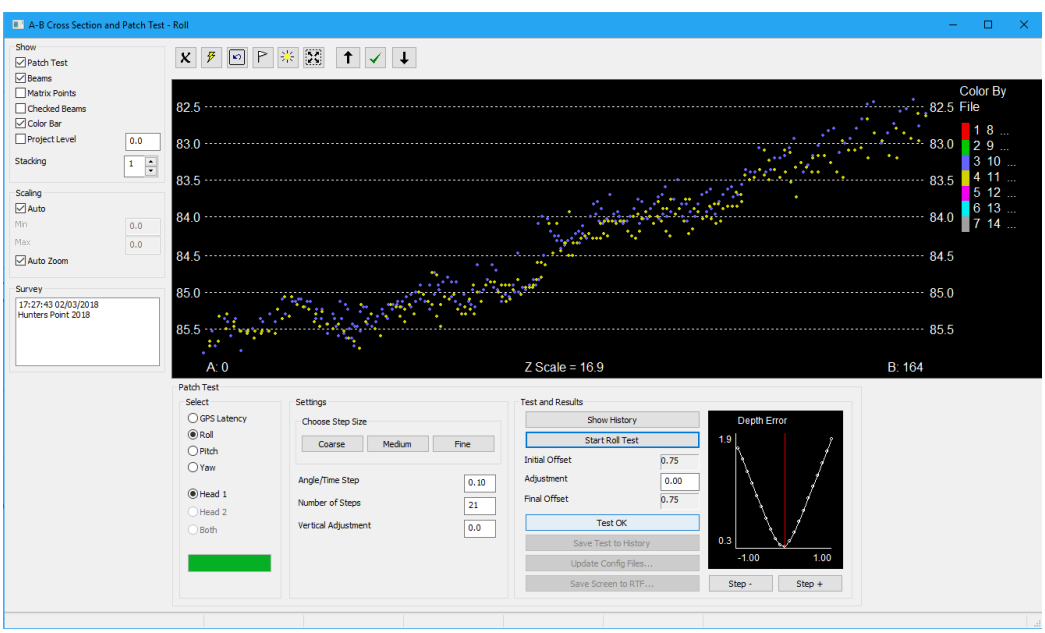


Figure 1.8 - Post roll showing a roll bias of 0.75° applied.

Yaw Test

The yaw calibration is carried out over a steep slope or feature on the seafloor. Two parallel survey lines are created perpendicular to the slope and run three times in the same direction and at typical survey speed taking care to pass over the same exact part of the slope. Having three survey datasets will provide three yaw misalignment values where the average of the three will be the final value.

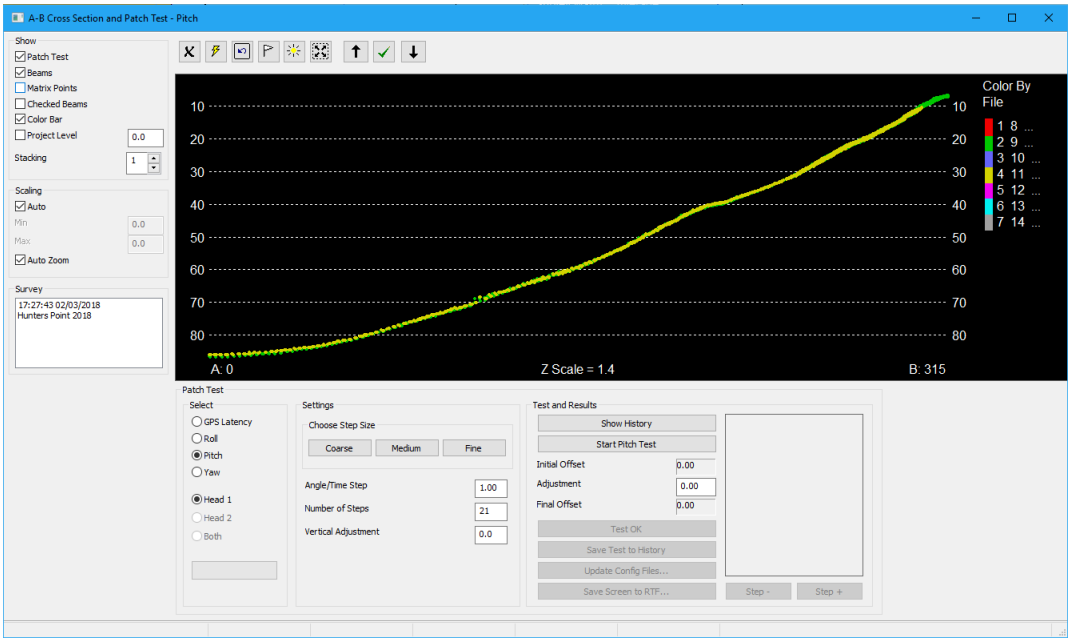


Figure 1.9 - Pre-Yaw with no bias.

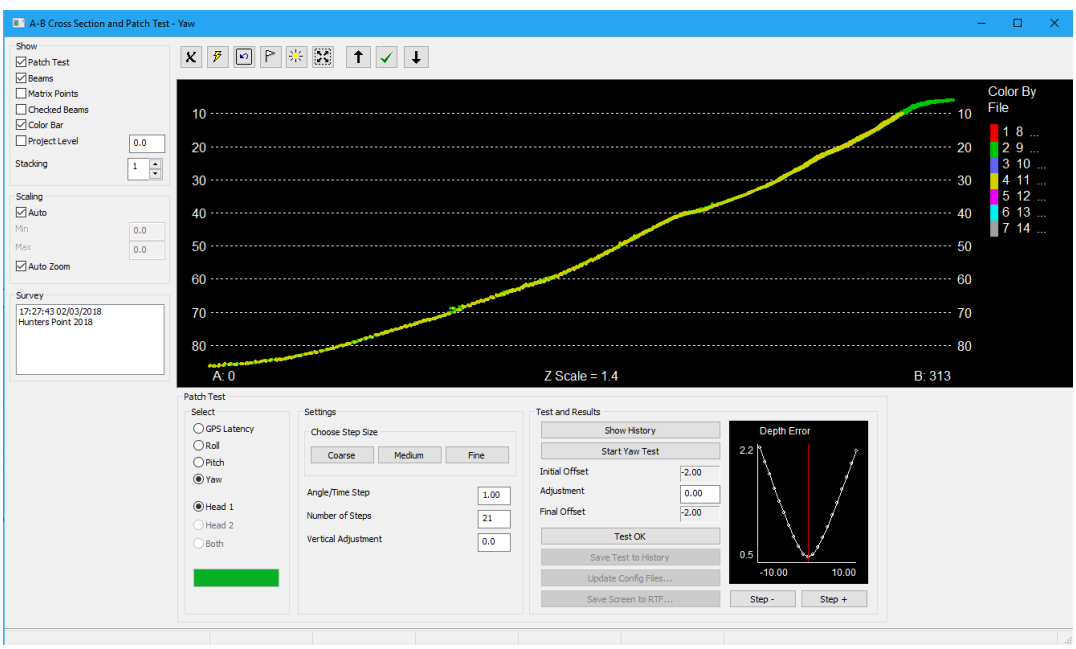
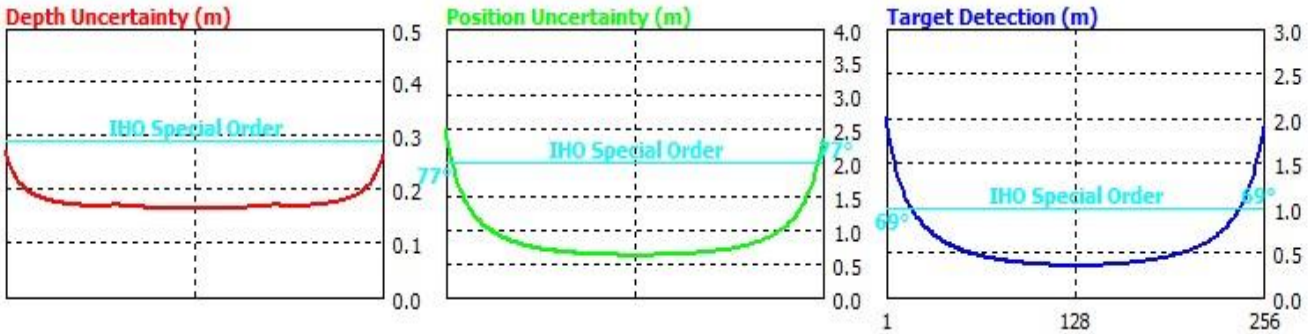


Figure 1.10 - Post yaw showing a yaw bias of -2.00° applied.

C. TPU REPORT

Project Name	Hunters Point 2018
Date Report Generated	02/09/18 11:20:28



General		Tuning Parameters	
Angular Coverage (deg)	160	Amplitude/Phase Measurement Crossover (samples)	12
Maximum Ping Rate (Hz)	60	Amplitude Detect Denominator	6
Along Track Beam Width (deg)	1.0		
Across Track Beam Width (deg)	0.5	**Estimation Graph Parameters**	
Pulse Length (ms)	0.01	Number of Beams	256
Sector Steering Angle (deg)	361	Depth of Bottom (m)	20
Frequency (kHz)	400.0	Roll Angle (deg)	0.0
Receive Bandwidth (kHz)	6	Pitch Angle (deg)	0.0
Range Sampling Resolution (m)	0.0125		

Environment			
Speed of Sound (m/s)	1490	Sound Speed Sensor Uncertainty (m/s)	0.50
Peak-to-Peak Swell (m)	1.0	Surface Sound Speed Uncertainty (m/s)	0.25
F-A Seafloor Slope (deg)	0.0	Spatio-Temporal Variation (m/s)	1.00
P-S Seafloor Slope (deg)	0.0	Thickness of S-T Layer (m)	10.0
Water Level Uncertainty (m)	0.02	Sound Speed Uncertainty Beyond SV Profile	0.00
Spatial Tide Prediction Uncertainty (m)	0.02	Maximum Depth of SV Profile	21.0

Sensor Info

	Physical Offsets			Sensor Offset Uncertainty		
	Position	MRU	Transducer	Position	MRU	Transducer
Starboard	1.003	1.01	-1.41	0.00	0.00	0.00
Forward	0.11	-0.03	0.06	0.00	0.00	0.00
Vertical (+ Down)	2.086	.05	0.97	0.00	0.00	0.00

Survey Speed (kts)	3.5	Fixed Heave Uncertainty (m)	0.05
Speed Uncertainty (m/s)	0.1	Heave (% of Heave Amplitude)	5
Roll Offset Angle of Transducer (deg)	0.7	Roll Sensor Uncertainty (deg)	0.02
Pitch Offset Angle of Transducer (deg)	0.00	Pitch Sensor Uncertainty (deg)	0.02
Heading Offset Angle of Transducer (deg)	-2	Roll Offset Uncertainty (deg)	0.05
Transducer Draft (m)	0.97	Pitch Offset Uncertainty (deg)	0.50
		Yaw Offset Uncertainty (deg)	0.50
Positioning System Uncertainty (m) dmrs	0.1	Positioning Time Lag (ms)	0.20
Heading Uncertainty (deg)	0.1	MRU Time Lag (s)	0.005
		Transducer Time Lag (s)	0.005
Draft Uncertainty (m)	0.02	Latency (s)	0.000
Squat Uncertainty (m)	0.02		
Loading Changes (m)	0.02		

D. FINAL GRAB SAMPLE LOCATIONS

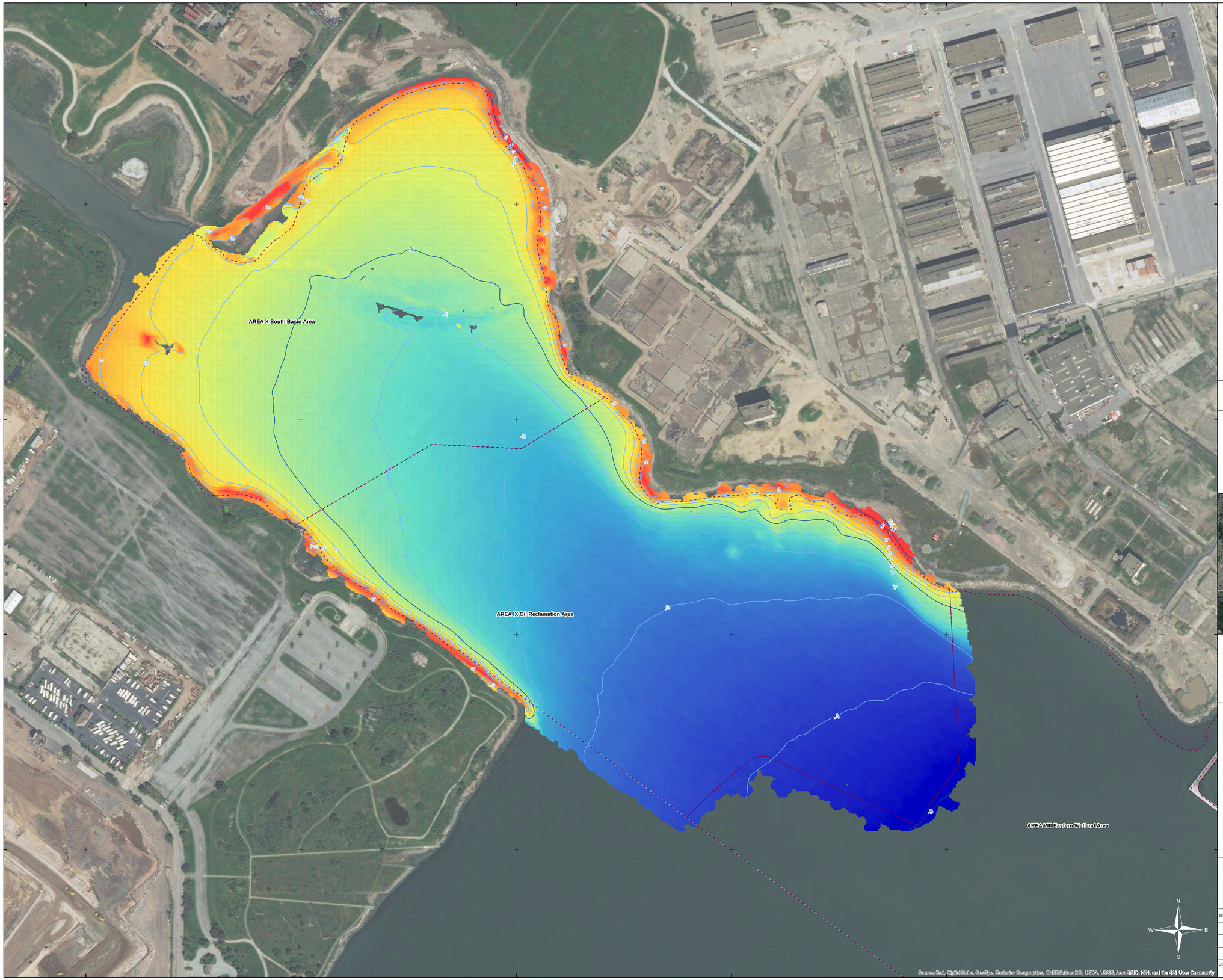
Sediment Sample Locations - HPNS 2018

Location	Latitude	Longitude	Field Name
HPF-Berth64-CS01A	37° 43' 56.718" N	122° 21' 59.332" W	001A_1
HPF-Berth64-CS01B	37° 43' 57.539" N	122° 21' 58.577" W	001B_2
HPF-Berth64-CS01C	37° 43' 58.256" N	122° 21' 57.933" W	001C_1
HPF-Berth64-CS01D	37° 43' 58.837" N	122° 21' 57.402" W	001D_1
HPF-Berth61-CS01A	37° 43' 56.133" N	122° 21' 53.908" W	002A_1
HPF-Berth61-CS01B	37° 43' 56.345" N	122° 21' 53.704" W	002B_1
HPF-Berth61-CS01C	37° 43' 56.575" N	122° 21' 53.525" W	002C_2
HPF-Berth61-CS01D	37° 43' 56.769" N	122° 21' 53.311" W	002D_1
HPF-PierB-CS01A	37° 43' 53.049" N	122° 21' 48.734" W	003A_1
HPF-PierB-CS01B	37° 43' 53.774" N	122° 21' 48.102" W	003B_1
HPF-PierB-CS01C	37° 43' 52.769" N	122° 21' 48.285" W	003C_1
HPF-PierB-CS01D	37° 43' 53.535" N	122° 21' 47.731" W	003D_5
HPF-PierB-CS02A	37° 43' 54.382" N	122° 21' 47.658" W	004A_1
HPF-PierB-CS02B	37° 43' 55.040" N	122° 21' 46.905" W	004B_3
HPF-PierB-CS02C	37° 43' 54.068" N	122° 21' 47.074" W	004C_3
HPF-PierB-CS02D	37° 43' 54.784" N	122° 21' 46.379" W	004D_1
HPF-PierC-CS01A	37° 43' 51.193" N	122° 21' 45.669" W	005A_5
HPF-PierC-CS01B	37° 43' 51.866" N	122° 21' 45.191" W	005B_3
HPF-PierC-CS01C	37° 43' 50.968" N	122° 21' 45.117" W	005C_1
HPF-PierC-CS01D	37° 43' 51.493" N	122° 21' 44.616" W	005D_5
HPF-PierC-CS02A	37° 43' 52.673" N	122° 21' 44.507" W	006A_7
HPF-PierC-CS02B	37° 43' 53.277" N	122° 21' 43.938" W	006B_2
HPF-PierC-CS02C	37° 43' 52.400" N	122° 21' 43.700" W	006C_1
HPF-PierC-CS02D	37° 43' 53.091" N	122° 21' 43.421" W	006D_2
HPF-QuayWall-CS01A	37° 43' 50.561" N	122° 21' 45.827" W	007A_7
HPF-QuayWall-CS01B	37° 43' 50.163" N	122° 21' 45.164" W	007B_9
HPF-QuayWall-CS01C	37° 43' 49.885" N	122° 21' 44.519" W	007C_1
HPF-QuayWall-CS01D	37° 43' 49.437" N	122° 21' 43.889" W	007D_1
HPF-Wharf2-CS01A	37° 43' 45.310" N	122° 21' 30.256" W	008A_3
HPF-Wharf2-CS01B	37° 43' 45.423" N	122° 21' 29.323" W	008B_2

Sediment Sample Locations - HPNS 2018

Location	Latitude	Longitude	Field Name
HPF-Wharf2-CS01C	37° 43' 45.706" N	122° 21' 29.246" W	008C_4
HPF-Wharf2-CS01D	37° 43' 44.431" N	122° 21' 28.306" W	008D_3
HPF-Wharf2-CS02A	37° 43' 45.595" N	122° 21' 28.683" W	009A_4
HPF-Wharf2-CS02B	37° 43' 45.845" N	122° 21' 28.263" W	009B_7
HPF-Wharf2-CS02C	37° 43' 45.327" N	122° 21' 27.366" W	009C_11
HPF-Wharf2-CS02D	37° 43' 45.132" N	122° 21' 27.465" W	009D_22

E. CHARTS



Legend

- Current Map Extent (Key Map)
- Major Contour (Interval = 5 Ft)
- Minor Contour (Interval = 1 Ft)
- Parcel F Subareas - Hunters Point Naval Shipyard
- Navy Property Boundary

Bathymetric Soundings (Feet - MLLW)

7, 6, 5, 4, 3, 2, 1, 0, -1, -2, -3, -4, -5

NOTES:

1. Bathymetric contours are in feet and referenced to MLLW based on Tidal Bench Mark 4 1941 (HT0616) - Elevation=15.75 ft. (MLLW).
2. Control Point Hunter West 1 (HT0613) coordinates are NAD83 (2011) CCS Zone 3 U.S. Survey Feet:
   X: 6023165.37
   Y: 2093017.66
   Elev.: 11.84 ft. (MLLW)
3. Horizontal and vertical positioning achieved using RTK (Real-Time Kinematic) integrated with Hypack navigation software.
4. Survey equipment utilized during data acquisition included the following systems:
   - Odom CV-100 Singlebeam System
   - Trimble R8 GNSS Receivers
5. Hydrographic data were collected on February 1 - 2, 2018 aboard the M/V Skiff.
6. Hillshade image from interpolated singlebeam data with line spacing at 50 ft. Hillshade background Z value is 1.

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GEODETIC INFORMATION

DATUM:	NAD83
PROJECTION:	California Coordinate System (CCS- Lambert Conformal Conic Projection)
ZONE:	Zone 3
UNITS:	U.S. Survey Feet

Fugro Pelagos, Inc.
4820 McGrath St., Suite 100
Ventura, California 93003
Tel: (805) 650-7000
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www.fugro.com

ECC INSIGHT LLC

NAVFAC Naval Facilities Engineering Command

HUNTERS POINT NAVAL SHIPYARD PARCEL F - AREA IX & AREA X SINGLEBEAM BATHYMETRIC DATA

SAN FRANCISCO COUNTY, CA

FEBRUARY 2018

SCALE : 1 " = 200 '

200 100 0 200 400 600 Feet

REV NO:	DATE:	DESCRIPTION:	DRAWN:	CHKD:	APPR:
0	FEB2018	Bathymetric Singlebeam Contours	AT	MM/GS	CP

JOB NUMBER: 02.17041262

CHART NO.: **1 of 4**

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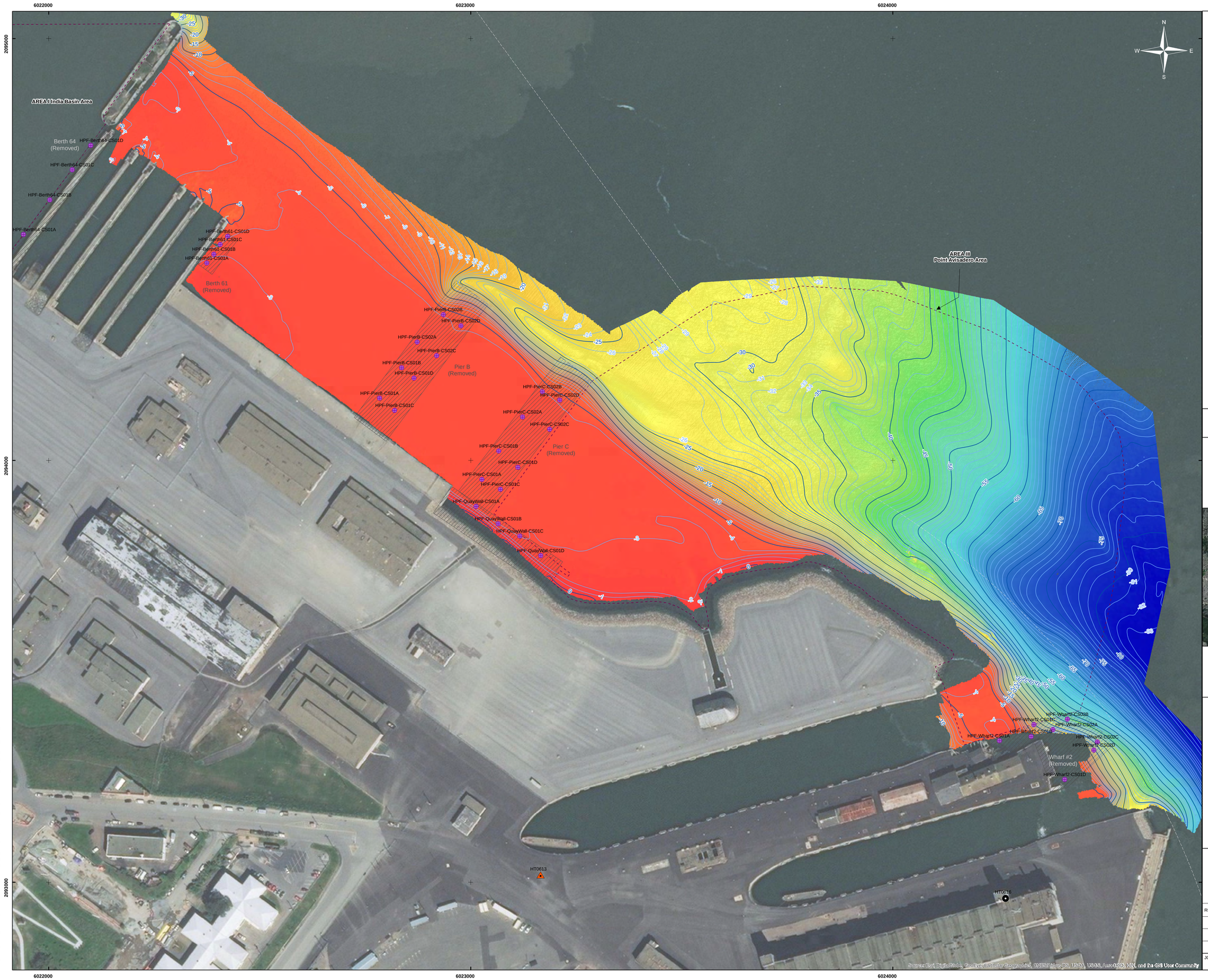

Legend

- Current Map Extent (Key Map)
- Major Contour (Interval = 5 Ft)
- Minor Contour (Interval = 1 Ft)
- Actual Sediment Sample Locations
- Tidal Bench Mark (HT0616)
- Survey Control Point (HT0613)
- Former Pier Structure (Removed in 2011)
- Parcel F Subareas - Hunters Point Naval Shipyard
- Navy Property Boundary

Bathymetric Soundings (Feet - MLLW)

1
-15
-30
-50
-70
-85

NOTES:

1. Bathymetric contours are in feet and referenced to MLLW based on Tidal Bench Mark 4 1941 (HT0616) - Elevation=15.75 ft. (MLLW).
2. Control Point Hunter West 1 (HT0613) coordinates are NAD83 (2011) CCS Zone 3 U.S. Survey Feet:
   X: 6023165.37
   Y: 2093017.66
   Elev.: 11.84 ft. (MLLW)
3. Horizontal and vertical positioning achieved using RTK (Real-Time Kinematic) integrated with Hypack navigation software.
4. Survey equipment utilized during data acquisition included the following systems:
   - R2Sonic 2024 Multibeam System
   - Applanix POS M/V
   - Trimble R8 GNSS Receivers
5. Hydrographic data were collected on February 3, 2018 aboard the M/V Julie Ann.
6. Hillshade background Z value is 1.
7. Sediment Sampling performed January 30 - 31, 2018 with the "Petite Ponar" grab sampler.

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GEODETIC INFORMATION

DATUM:	NAD83
PROJECTION:	California Coordinate System (CCS- Lambert Conformal Conic Projection)
ZONE:	Zone 3
UNITS:	U.S. Survey Feet

KEY MAP

Fugro Pelagos, Inc.
4820 McGrath St., Suite 100
Ventura, California 93003
Tel: (805) 650-7000
Fax: (805) 650-7010
www.fugro.com

ECC INSIGHT LLC

NAVFAC Naval Facilities Engineering Command

HUNTERS POINT NAVAL SHIPYARD PARCEL F - AREA III MULTIBEAM BATHYMETRIC DATA

SAN FRANCISCO COUNTY, CA

FEBRUARY 2018

SCALE : 1 " = 100 '

100 50 0 100 200 300 Feet

REV NO:	DATE:	DESCRIPTION:	DRAWN:	CHKD:	APPR:
0	FEB2018	Bathymetric Multibeam Contours	AT	MM/GS	CP

JOB NUMBER: 02.17041262

CHART NO.: **2 of 4**

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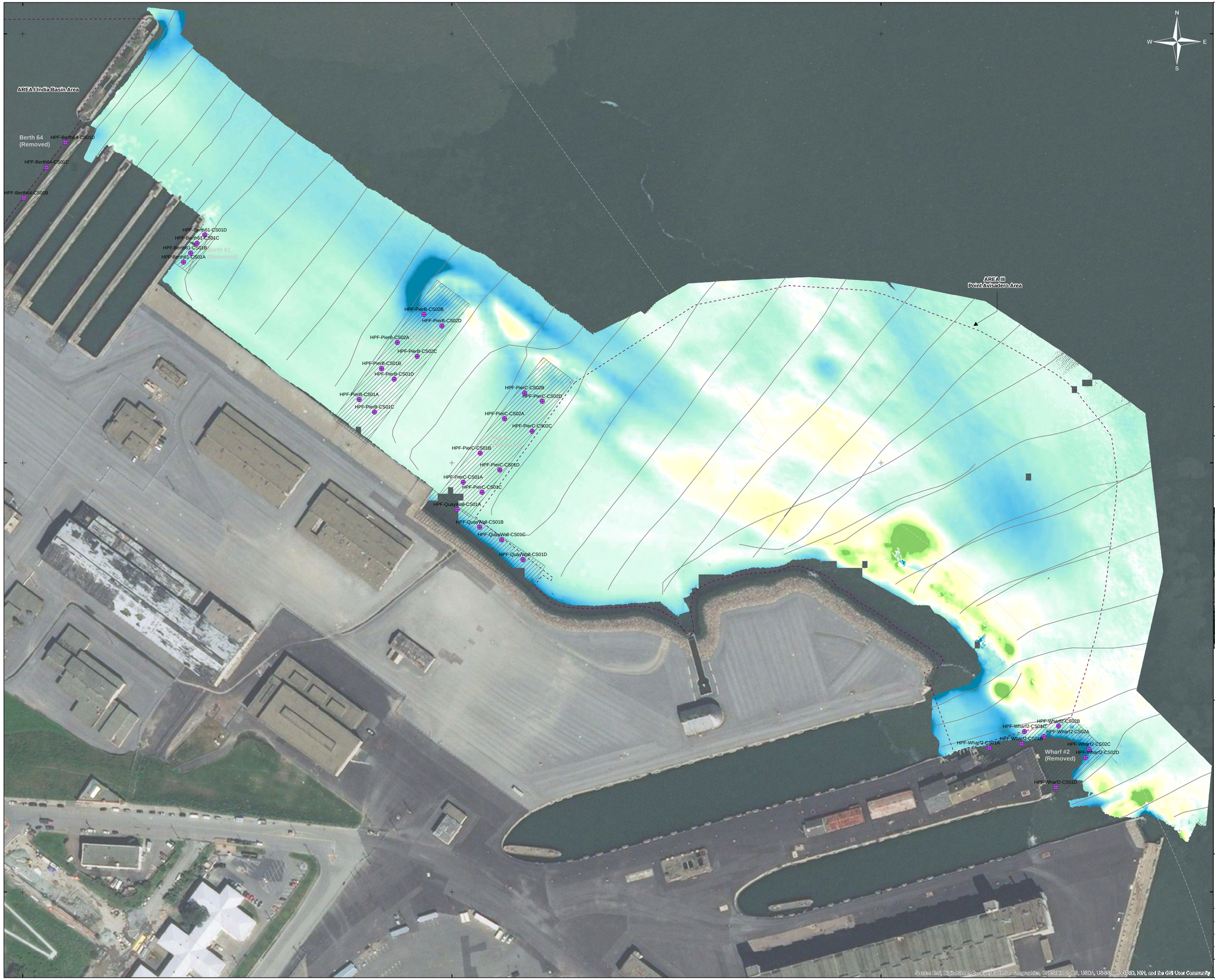

Legend

- Current Map Extent (Key Map)
- Parcel F Subareas - Hunters Point Naval Shipyard
- Navy Property Boundary
- Former Pier Structure (Removed in 2011)
- Actual Sediment Sample Locations
- Singlebeam Tracklines (Fugro 2003)

Comparison in Feet
Fugro 2018 value minus Fugro 2003 value

11
9
7
5
3
0
-2
-4
-8

NOTES:

1. Fugro multibeam data were collected on February 3, 2018 aboard M/V Julie Ann. 100% coverage. Data set was reduced to MLLW using Tidal Bench Mark 4 1941 (HT0616).
2. Fugro singlebeam data were collected on August 15-17, 2003 aboard M/V Chart Maker. Line spacing: 100'. Data set was reduced to MLLW using a coastal self recording tide gauge based on the City of San Francisco vertical datum benchmark 314.
3. Positive comparison values indicate an accumulation of sediment, as negative values indicate removal of sediment between 2003 and 2018.
4. The singlebeam data points were interpolated beyond their coverage in order to compare the singlebeam data (Fugro 2003) with the multibeam data (Fugro 2018) to the full extent of the latter (per client's request). The singlebeam tracklines (Fugro 2003) have been provided to help identify the areas of extrapolation.

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GEODETIC INFORMATION

DATUM:	NAD83
PROJECTION:	California Coordinate System (CCS- Lambert Conformal Conic Projection)
ZONE:	Zone 3
UNITS:	U.S. Survey Feet

KEY MAP

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ECC INSIGHT LLC

NAVFAC Naval Facilities Engineering Command

HUNTERS POINT NAVAL SHIPYARD DEPTHS COMPARISON BETWEEN FUGRO MULTIBEAM DATA (2018) & FUGRO SINGLEBEAM DATA (2003)

SAN FRANCISCO COUNTY, CA

FEBRUARY 2018

SCALE : 1 " = 100 '

100 50 0 100 200 300 Feet

REV NO:	DATE:	DESCRIPTION:	DRAWN:	CHKD:	APPR:
0	FEB2018	Bathymetric Comparison	AT	MM/GS	CP

JOB NUMBER: 02.17041262

CHART NO.: **3 of 4**

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Legend

- Current Map Extent (Key Map)
- Parcel F Subareas - Hunters Point Naval Shipyard
- Navy Property Boundary

Comparison in Feet
Fugro 2018 value minus Fugro 2003 value

- 2.5
- 1.6
- 0
- -1
- -2

NOTES:

1. Fugro singlebeam data were collected on February 3, 2018 aboard M/V Skiff. Line spacing: 50'. Data set was reduced to MLLW using Tidal Bench Mark 4 1941 (HT0616).
2. Fugro singlebeam data were collected on August 15-17, 2003 aboard M/V Chart Maker. Line spacing: 100'. Data set was reduced to MLLW using a coastal self recording tide gauge based on the City of San Francisco vertical datum benchmark 314.
3. Positive comparison values indicate an accumulation of sediment, as negative values indicate removal of sediment between 2003 and 2018. Both data sets were interpolated between their respective line spacing for comparison purposes.
4. The LiDAR dataset collected by NOAA and USGS has not been used in this comparison as according to the metadata associated with the dataset, horizontal accuracy checks were not performed on the dataset.

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GEODETIC INFORMATION

DATUM:	NAD83
PROJECTION:	California Coordinate System (CCS- Lambert conformal Conic Projection)
ZONE:	Zone 3
UNITS:	U.S. Survey Feet

KEY MAP

Fugro Pelagos, Inc.
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ECC INSIGHT LLC

NAVFAC Naval Facilities Engineering Command

HUNTERS POINT NAVAL SHIPYARD DEPTHS COMPARISON BETWEEN FUGRO SINGLEBEAM DATA (2018) & FUGRO SINGLEBEAM DATA (2003)

SAN FRANCISCO COUNTY, CA

FEBRUARY 2018

SCALE : 1 " = 200 '

200 100 0 200 400 600 Feet

REV NO:	DATE:	DESCRIPTION:	DRAWN:	CHKD:	APPR:
0	FEB2018	Bathymetric Comparison	AT	MM/GS	CP

JOB NUMBER: 02.17041262

CHART NO.: **4 of 4**

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Appendix B

Daily Contractor Production Reports and Photographic Log

Daily Contractor Production Reports

ECC-Insight

CONTRACTOR PRODUCTION REPORT

(Attach additional sheets as necessary)

Date **1/29/2018**

Contract No. N62473-12-D-2004, Task Order 0014	Title and Location SEDIMENT INVESTIGATION AND BATHYMETRIC SURVEY FOR PARCEL F, HUNTERS POINT NAVAL SHIPYARD, SAN FRANCISCO, CALIFORNIA	Report No. **1**

Contractor	**ECC-INSIGHT LLC**	Field Representative	**Scott Donovan**

WORK PERFORMED TODAY

Work Location & Description	Employer	No. of employees	Trade	Hours
ECC-Insight mobilized to the site in preparation of sediment investigation and bathymetric survey.	**ECC-Insight**	**1**	**PQCM**	**10**
	ECC-Insight	**1**	**SSHO**	**10**
	ECC-Insight	**1**	**Field Tech**	**10**
	ECC-Insight	**1**	**Field Lead**	**8**
	ECC-Insight	**1**	**PM**	**8**

JOB SAFETY				
Was a job safety meeting held this date? (If YES, attach copy of meeting minutes)	☑ Yes ☐ No	Total hours worked on job site this date	46
Were there any lost time accidents this date? (If YES, attach copy of completed OSHA report)	☐ Yes ☑ No	Cumulative total of work hours from previous report	0
Was trenching/scaffolding/HV electric/high work done? (If YES, attach statement or checklist showing inspection performed)	☐ Yes ☑ No		
Was hazardous material/waste released into the environment? (If YES, attach description of incident and proposed action.)	☐ Yes ☑ No	Total work hours from start of construction	46

List Safety Actions Taken Today/Safety Inspections Conducted

Equipment Received Today to be Incorporated in Job
Boats, Safety Instruments.

Construction & Plant Equipment on Job Site Today. Include Number of Hours Used Today.

Scott Donovan — Field Representative

1/29/2018 — Date

CONTRACTOR QUALITY CONTROL REPORT

(ATTACH ADDITIONAL SHEETS IF NECESSARY)

DATE 1/29/2018

REPORT NO 1

PHASE	CONTRACT NO	N62473-12-D-2004/TO 0014	CONTRACT TITLE	SEDIMENT INVESTIGATION AND BATHYMETRIC SURVEY FOR PARCEL F, HUNTERS POINT NAVAL SHIPYARD, SAN FRANCISCO, CALIFORNIA

PREPARATORY

WAS PREPARATORY PHASE WORK PERFORMED TODAY? YES ☐ NO ☒

IF YES, FILL OUT AND ATTACH SUPPLEMENTAL PREPARATORY PHASE CHECKLIST.

Schedule Activity No.	Definable Feature of Work	Index #
1	ECC-Insight mobilized to the site in preparation of sediment investigation and bathymetric survey.	

INITIAL

WAS INITIAL PHASE WORK PERFORMED TODAY? YES ☒ NO ☐

IF YES, FILL OUT AND ATTACH SUPPLEMENTAL INITIAL PHASE CHECKLIST.

Schedule Activity No.	Definable Feature of Work	Index #

FOLLOW-UP

WORK COMPLIES WITH CONTRACT AS APPROVED DURING INITIAL PHASE? YES ☒ NO ☐

WORK COMPLIES WITH SAFETY REQUIREMENTS? YES ☒ NO ☐

Schedule Activity No.	Description of Work, Testing Performed & By Whom, Definable Feature of Work, Specification Section, Location, and List of Personnel Present
	Weather: partly cloudy, daytime temperature varied between 55 and 60 degrees Fahrenheit, light breeze.
	Personnel Present: Aaron Heidt, Scott Donovan, Jonathon Myers, Dave Marks, and Mitra Fattahipour (ECC-Insight).

REWORK ITEMS IDENTIFIED TODAY (NOT CORRECTED BY CLOSE OF BUSINESS)		REWORK ITEMS CORRECTED TODAY (FROM REWORK ITEMS LIST)	
Schedule Activity No.	Description	Schedule Activity No.	Description

REMARKS (Also Explain Any Follow-Up Phase Checklist Item From Above that was Answered "NO"), Manuf. Rep On-Site, etc.

Schedule Activity No.	Description

On behalf of the contractor, I certify that this report is complete and correct and equipment and material used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge, except as noted in this report.

Scott Donovan

AUTHORIZED QC MANAGER, Scott Donovan

1/29/2018

DATE

GOVERNMENT QUALITY ASSURANCE REPORT

QUALITY ASSURANCE REPRESENTATIVE'S REMARKS AND/OR EXCEPTIONS TO THE REPORT

Schedule Activity No.	Description

GOVERNMENT QUALITY ASSURANCE MANAGER

DATE

ECC-Insight

CONTRACTOR PRODUCTION REPORT

(Attach additional sheets as necessary)

Date **1/30/2018**

Contract No. N62473-12-D-2004, Task Order 0014	Title and Location SEDIMENT INVESTIGATION AND BATHYMETRIC SURVEY FOR PARCEL F, HUNTERS POINT NAVAL SHIPYARD, SAN FRANCISCO, CALIFORNIA	Report No. **2**

Contractor **ECC-INSIGHT LLC**

Field Representative **Scott Donovan**

WORK PERFORMED TODAY

Work Location & Description	Employer	No. of employees	Trade	Hours
ECC-Insight collected sediment samples at Parcel F at six locations (four composite samples at each location). Additionally, survey reference points were set up for the upcoming bathymetric survey.	**Insight**	**2**	**PM**	**20**
	Insight	**1**	**PQCM**	**10**
	Insight	**1**	**SSHO**	**10**
	Insight	**1**	**Field Tech**	**10**
	Fugro	**1**	**PM**	**10**
	Fugro	**1**	**Vessel Operator**	**10**
	Fugro	**1**	**Hydrograph Surveyor**	**10**

JOB SAFETY

Was a job safety meeting held this date? (If YES, attach copy of meeting minutes)	☑ Yes ☐ No	Total hours worked on job site this date	80
Were there any lost time accidents this date? (If YES, attach copy of completed OSHA report)	☐ Yes ☑ No	Cumulative total of work hours from previous report	46
Was trenching/scaffolding/HV electric/high work done? (If YES, attach statement or checklist showing inspection performed)	☐ Yes ☑ No		
Was hazardous material/waste released into the environment? (If YES, attach description of incident and proposed action.)	☐ Yes ☑ No	Total work hours from start of construction	126

List Safety Actions Taken Today/Safety Inspections Conducted

Fugro explained all safety procedures and safety equipment related to working on the vessel prior to the start of work.

Equipment Received Today to be Incorporated in Job

Construction & Plant Equipment on Job Site Today. Include Number of Hours Used Today.

Scott Donovan — Field Representative

1/30/2018 — Date

CONTRACTOR QUALITY CONTROL REPORT

(ATTACH ADDITIONAL SHEETS IF NECESSARY)

DATE	1/30/2018
REPORT NO	2

PHASE	CONTRACT NO	CONTRACT TITLE
	N62473-12-D-2004/TO 0014	SEDIMENT INVESTIGATION AND BATHYMETRIC SURVEY FOR PARCEL F, HUNTERS POINT NAVAL SHIPYARD, SAN FRANCISCO, CALIFORNIA

PREPARATORY

WAS PREPARATORY PHASE WORK PERFORMED TODAY? YES ☐ NO ☒

IF YES, FILL OUT AND ATTACH SUPPLEMENTAL PREPARATORY PHASE CHECKLIST.

Schedule Activity No.	Definable Feature of Work	Index #

INITIAL

WAS INITIAL PHASE WORK PERFORMED TODAY? YES ☒ NO ☐

IF YES, FILL OUT AND ATTACH SUPPLEMENTAL INITIAL PHASE CHECKLIST.

Schedule Activity No.	Definable Feature of Work	Index #
6	ECC-Insight collected composite sediment samples at Berth 64, Berth 61, Pier B, and Pier C (Sample locations HPP-FSS-001 to HPP-FSS-006). Four individual samples were collected from each location for a total of 24 samples. Additionally, reference points were set up for the upcoming bathymetric survey.	

FOLLOW-UP

WORK COMPLIES WITH CONTRACT AS APPROVED DURING INITIAL PHASE? YES ☒ NO ☐

WORK COMPLIES WITH SAFETY REQUIREMENTS? YES ☒ NO ☐

Schedule Activity No.	Description of Work, Testing Performed & By Whom, Definable Feature of Work, Specification Section, Location, and List of Personnel Present
	Weather: Partly cloudy then mostly sunny and clear, high temperature of approximately 60 degrees, light wind.
	Personnel Present: Dave Marks, Mitra Fattahipour, Jonathon Myers, Aaron Heidt, Scott Donovan (Insight), Gilbert Suarez, Herb Tovor, Matt Moulton (Fugro).

REWORK ITEMS IDENTIFIED TODAY (NOT CORRECTED BY CLOSE OF BUSINESS)

Schedule Activity No.	Description

REWORK ITEMS CORRECTED TODAY (FROM REWORK ITEMS LIST)

Schedule Activity No.	Description

REMARKS (Also Explain Any Follow-Up Phase Checklist Item From Above that was Answered "NO"), Manuf. Rep On-Site, etc.

Schedule Activity No.	Description

On behalf of the contractor, I certify that this report is complete and correct and equipment and material used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge, except as noted in this report.

Scott Donovan

AUTHORIZED QC MANAGER, Scott Donovan — DATE 1/30/2018

GOVERNMENT QUALITY ASSURANCE REPORT

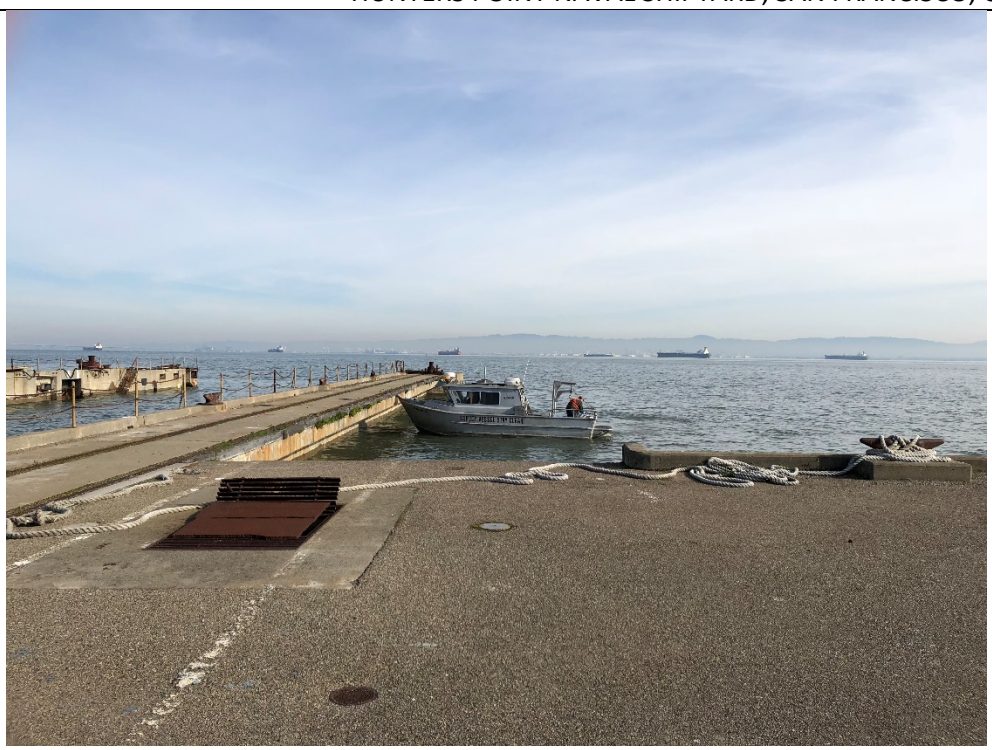
QUALITY ASSURANCE REPRESENTATIVE'S REMARKS AND/OR EXCEPTIONS TO THE REPORT

Schedule Activity No.	Description

GOVERNMENT QUALITY ASSURANCE MANAGER — DATE

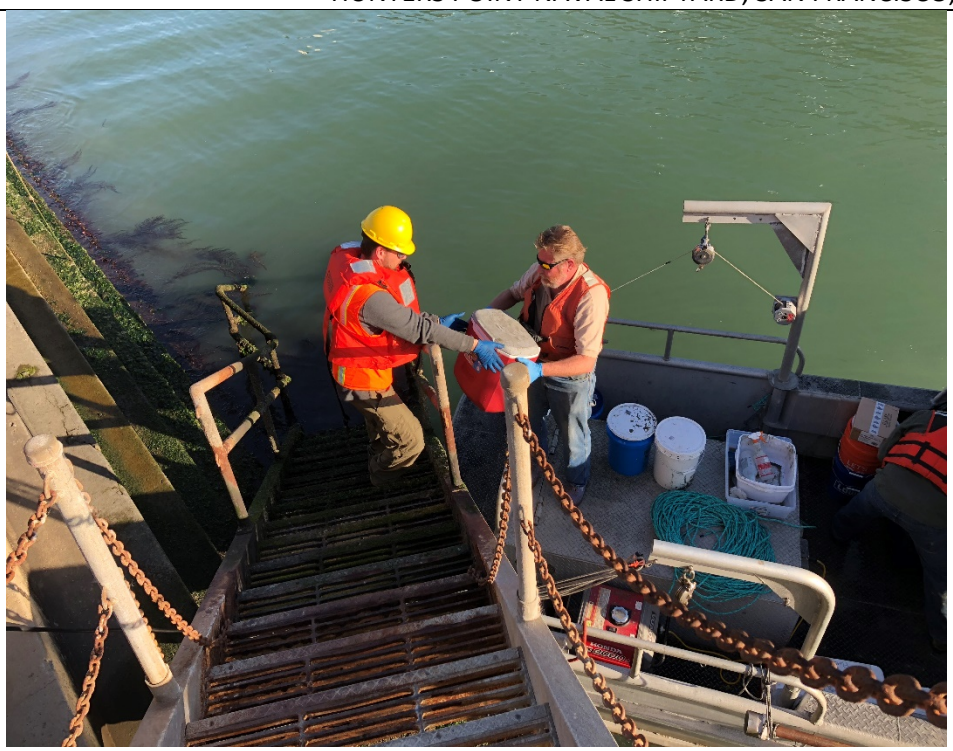
Sediment sampling at Berth 64, looking northeast

Sediment sampling at Berth 64 location, looking north-northwest

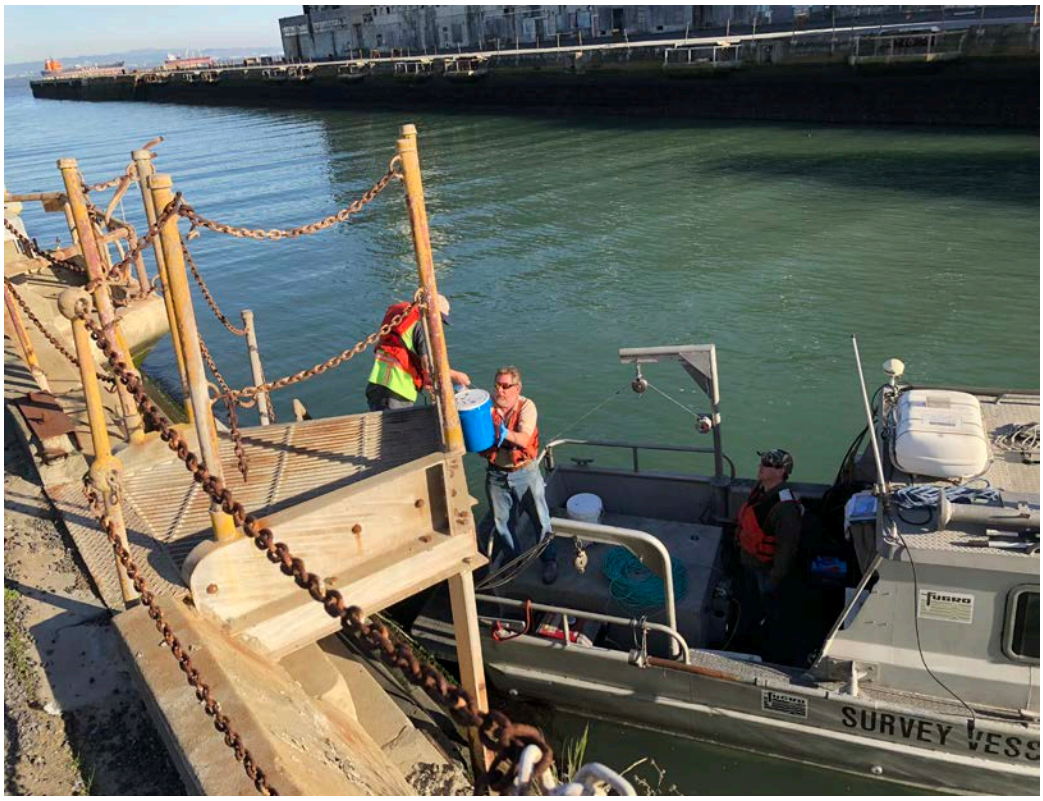


Sediment sampling at Berth 61

Sediment sampling at removed Pier C



Sample transfer at Dry Dock 2



IDW transfer at Dry Dock 2

ECC-Insight

CONTRACTOR PRODUCTION REPORT

(Attach additional sheets as necessary)

Date **1/31/2018**

Contract No. N62473-12-D-2004, Task Order 0014	Title and Location SEDIMENT INVESTIGATION AND BATHYMETRIC SURVEY FOR PARCEL F, HUNTERS POINT NAVAL SHIPYARD, SAN FRANCISCO, CALIFORNIA	Report No. **3**

Contractor **ECC-INSIGHT LLC** Field Representative **Scott Donovan**

WORK PERFORMED TODAY

Work Location & Description	Employer	No. of employees	Trade	Hours
ECC-Insight collected sediment samples at Parcel F at the Quay Wall and Wharf#2 locations. Aptim radiologically screened samples and IDW collected on previous day. These samples were submitted to Enthalpy laboratories. Additionally, survey reference points were set up for the upcoming bathymetric survey.	**Insight**	**1**	**PM**	**10**
	Insight	**1**	**Sr. Geologist**	**10**
	Insight	**1**	**PQCM**	**10**
	Insight	**1**	**SSHO**	**10**
	Fugro	**1**	**Vessel Operator**	**10**
	Fugro	**1**	**Hydrograph Surveyor**	**10**

JOB SAFETY				
Was a job safety meeting held this date? (If YES, attach copy of meeting minutes)	☑ Yes ☐ No	Total hours worked on job site this date	60
Were there any lost time accidents this date? (If YES, attach copy of completed OSHA report)	☐ Yes ☑ No	Cumulative total of work hours from previous report	126
Was trenching/scaffolding/HV electric/high work done? (If YES, attach statement or checklist showing inspection performed)	☐ Yes ☑ No		
Was hazardous material/waste released into the environment? (If YES, attach description of incident and proposed action.)	☐ Yes ☑ No	Total work hours from start of construction	186

List Safety Actions Taken Today/Safety Inspections Conducted

Equipment Received Today to be Incorporated in Job

Construction & Plant Equipment on Job Site Today. Include Number of Hours Used Today.

Scott Donovan 1/31/2018

Field Representative Date

CONTRACTOR QUALITY CONTROL REPORT

(ATTACH ADDITIONAL SHEETS IF NECESSARY)

DATE 1/31/2018

REPORT NO 3

PHASE	CONTRACT NO	CONTRACT TITLE
	N62473-12-D-2004/TO 0014	SEDIMENT INVESTIGATION AND BATHYMETRIC SURVEY FOR PARCEL F, HUNTERS POINT NAVAL SHIPYARD, SAN FRANCISCO, CALIFORNIA

PREPARATORY

WAS PREPARATORY PHASE WORK PERFORMED TODAY? YES ☐ NO ☒

IF YES, FILL OUT AND ATTACH SUPPLEMENTAL PREPARATORY PHASE CHECKLIST.

Schedule Activity No.	Definable Feature of Work	Index #

INITIAL

WAS INITIAL PHASE WORK PERFORMED TODAY? YES ☒ NO ☐

IF YES, FILL OUT AND ATTACH SUPPLEMENTAL INITIAL PHASE CHECKLIST. (one

Schedule Activity No.	Definable Feature of Work	Index #
6	ECC-Insight collected composite sediment samples at the Quay Wall (one composite location HPP-FSS-007), and Wharf #2 (2 composites at locations HPP-FSS-008 and HPP-FSS-009). Four individual samples were collected from each location for a total of 12 samples. QC samples were also collected. Sediment samples and IDW was transferred to HPNS at Dock #2. Aptim radiologically screened sediment samples and IDW from 01/30/2018 samples. IDW was transferred to a drum and labeled and stored in sealed 55-gallon drum in Building 251. All samples were submitted to Enthalpy Laboratories via courier. Team prepared for upcoming bathymetry survey.	

FOLLOW-UP

WORK COMPLIES WITH CONTRACT AS APPROVED DURING INITIAL PHASE? YES ☒ NO ☐

WORK COMPLIES WITH SAFETY REQUIREMENTS? YES ☒ NO ☐

Schedule Activity No.	Description of Work, Testing Performed & By Whom, Definable Feature of Work, Specification Section, Location, and List of Personnel Present
	Weather: Mostly sunny and clear, high temperature of approximately 60 degrees, light wind.
	Personnel Present: Dave Marks, Mitra Fattahipour, Aaron Heidt, Scott Donovan (Insight), Herb Tovor, Matt Moulton (Fugro).

REWORK ITEMS IDENTIFIED TODAY (NOT CORRECTED BY CLOSE OF BUSINESS)

Schedule Activity No.	Description

REWORK ITEMS CORRECTED TODAY (FROM REWORK ITEMS LIST)

Schedule Activity No.	Description

REMARKS (Also Explain Any Follow-Up Phase Checklist Item From Above that was Answered "NO"), Manuf. Rep On-Site, etc.

Schedule Activity No.	Description

On behalf of the contractor, I certify that this report is complete and correct and equipment and material used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge, except as noted in this report.

Scott Donovan

AUTHORIZED QC MANAGER, Scott Donovan — DATE 1/31/2018

GOVERNMENT QUALITY ASSURANCE REPORT

QUALITY ASSURANCE REPRESENTATIVE'S REMARKS AND/OR EXCEPTIONS TO THE REPORT

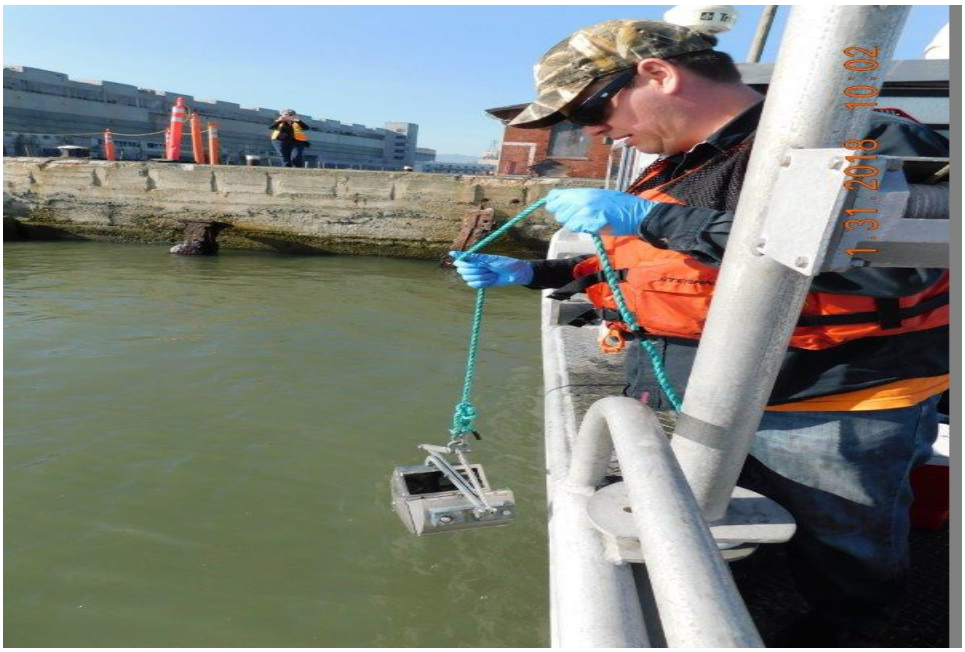
Schedule Activity No.	Description

GOVERNMENT QUALITY ASSURANCE MANAGER — DATE

Sediment sampling at Wharf #2 location – view looking north.

Sediment sampling at Quay Wall -view looking north.

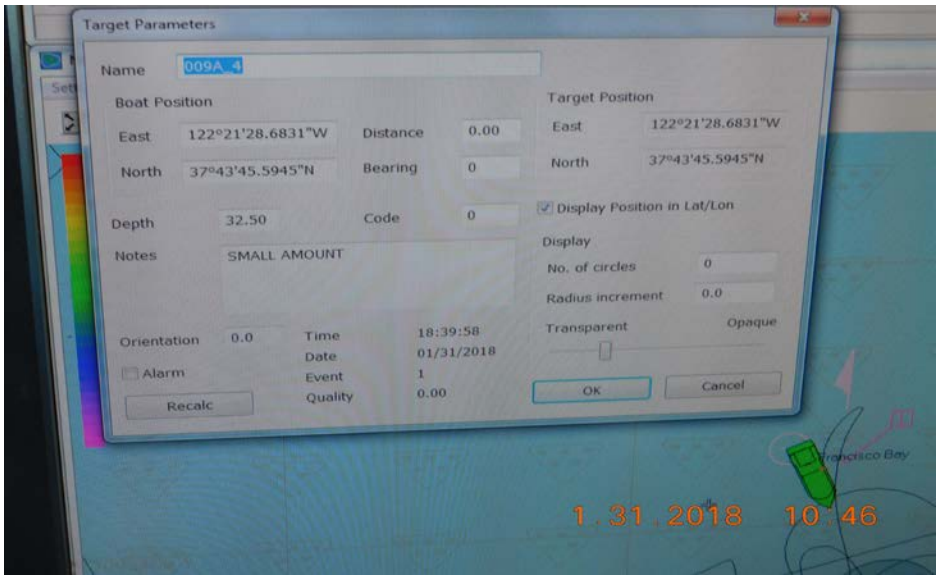
Preparation of Equipment blank sample.



Deploying Ponar Sampler at Wharf #2.

Sediment sub-sample collected from Wharf #2 location.

Sampling equipment decontamination station on vessel.



GPS location data on vessel.

ECC-Insight

CONTRACTOR PRODUCTION REPORT

(Attach additional sheets as necessary)

Date: **2/1/2018**

Contract No. N62473-12-D-2004, Task Order 0014	Title and Location SEDIMENT INVESTIGATION AND BATHYMETRIC SURVEY FOR PARCEL F, HUNTERS POINT NAVAL SHIPYARD, SAN FRANCISCO, CALIFORNIA	Report No. **4**

Contractor **ECC-INSIGHT LLC**

Field Representative **Scott Donovan**

batymetric

Work Location & Description	Employer	No. of employees	Trade	Hours
ECC-Insight started bathymetric survey using single beam sonar, survey performed by Fugro. Aptim radiologically screened yesterday's samples and IDW. The sediment samples were submitted to Enthalpy laboratories. Single beam sonar survey will continue tomorrow.	**ECC-Insight**	**1**	**Sr. Geologist**	**8**
	ECC-Insight	**1**	**PQCM**	**10**
	ECC-Insight	**1**	**SSHO**	**10**
	ECC-Insight	**1**	**Field Tech**	**10**
	Fugro	**1**	**PM**	**10**
	Fugro	**1**	**Vessel Operator**	**10**
	Fugro	**1**	**Hydrograph Surveyor**	**10**

JOB SAFETY

Was a job safety meeting held this date? (If YES, attach copy of meeting minutes)	☑ Yes ☐ No	Total hours worked on job site this date	68
Were there any lost time accidents this date? (If YES, attach copy of completed OSHA report)	☐ Yes ☑ No	Cumulative total of work hours from previous report	186
Was trenching/scaffolding/HV electric/high work done? (If YES, attach statement or checklist showing inspection performed)	☐ Yes ☑ No		
Was hazardous material/waste released into the environment? (If YES, attach description of incident and proposed action.)	☐ Yes ☑ No	Total work hours from start of construction	254

List Safety Actions Taken Today/Safety Inspections Conducted

Equipment Received Today to be Incorporated in Job

Construction & Plant Equipment on Job Site Today. Include Number of Hours Used Today.

Scott Donovan — Field Representative

2/1/2018 — Date

CONTRACTOR QUALITY CONTROL REPORT

(ATTACH ADDITIONAL SHEETS IF NECESSARY)

DATE 2/1/2018

REPORT NO 4

PHASE	CONTRACT NO	N62473-12-D-2004/TO 0014	CONTRACT TITLE	SEDIMENT INVESTIGATION AND BATHYMETRIC SURVEY FOR PARCEL F, HUNTERS POINT NAVAL SHIPYARD, SAN FRANCISCO, CALIFORNIA

PREPARATORY

WAS PREPARATORY PHASE WORK PERFORMED TODAY? YES ☐ NO ☒

IF YES, FILL OUT AND ATTACH SUPPLEMENTAL PREPARATORY PHASE CHECKLIST.

Schedule Activity No.	Definable Feature of Work	Index #

INITIAL

WAS INITIAL PHASE WORK PERFORMED TODAY? YES ☒ NO ☐

IF YES, FILL OUT AND ATTACH SUPPLEMENTAL INITIAL PHASE CHECKLIST. (one

Schedule Activity No.	Definable Feature of Work	Index #
6, 3	ECC-Insight started single beam bathymetry survey at South Basin Area (X) Survey conducted by Fugro. Aptim radiologically screened sediment samples and IDW from 01/31/2018 samples. IDW was transferred to a drum and labeled and stored in sealed 55-gallon drum in Building 251. Sediment samples were submitted to Enthalpy Laboratories via courier. Single beam bathymetry survey will continue tomorrow.	

FOLLOW-UP

WORK COMPLIES WITH CONTRACT AS APPROVED DURING INITIAL PHASE? YES ☒ NO ☐

WORK COMPLIES WITH SAFETY REQUIREMENTS? YES ☒ NO ☐

Schedule Activity No.	Description of Work, Testing Performed & By Whom, Definable Feature of Work, Specification Section, Location, and List of Personnel Present
	Weather: Mostly sunny and clear, high temperature of approximately 66 degrees, light wind.
	Personnel Present: Dave Marks, Aaron Heidt, Jonathon Myers, Scott Donovan (Insight), Gilbert Suarez, Herb Tovor, Matt Moulton (Fugro).

REWORK ITEMS IDENTIFIED TODAY (NOT CORRECTED BY CLOSE OF BUSINESS)

Schedule Activity No.	Description

REWORK ITEMS CORRECTED TODAY (FROM REWORK ITEMS LIST)

Schedule Activity No.	Description

REMARKS (Also Explain Any Follow-Up Phase Checklist Item From Above that was Answered "NO"), Manuf. Rep On-Site, etc.

Schedule Activity No.	Description

On behalf of the contractor, I certify that this report is complete and correct and equipment and material used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge, except as noted in this report.

Scott Donovan

AUTHORIZED QC MANAGER, Scott Donovan

2/1/2018

DATE

GOVERNMENT QUALITY ASSURANCE REPORT

QUALITY ASSURANCE REPRESENTATIVE'S REMARKS AND/OR EXCEPTIONS TO THE REPORT

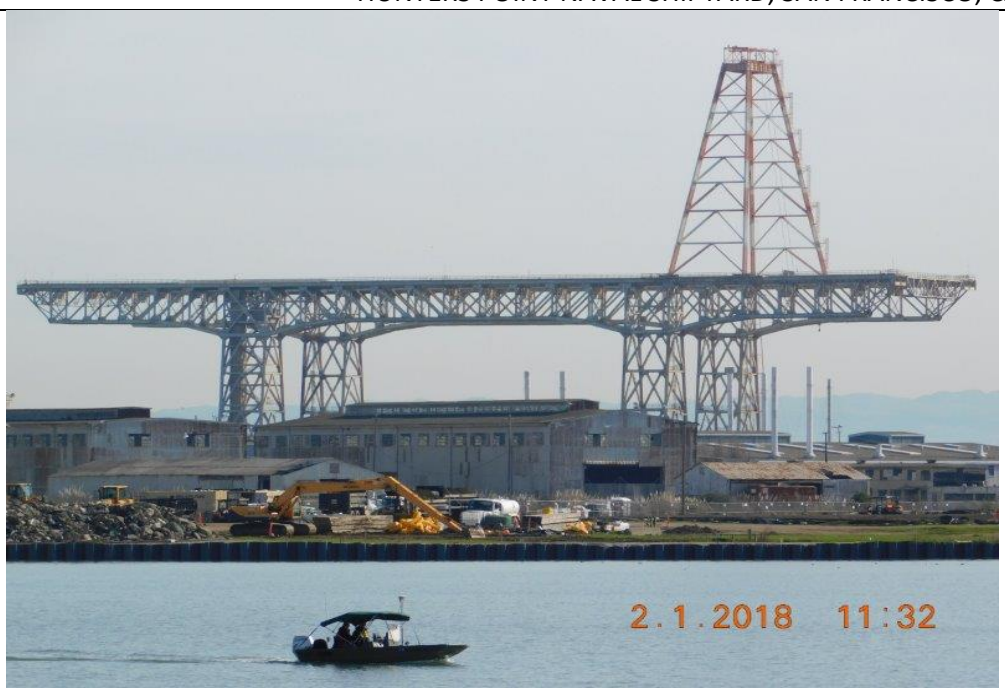
Schedule Activity No.	Description

GOVERNMENT QUALITY ASSURANCE MANAGER

DATE

Single beam bathymetric survey at Parcel F (Area X).

Parcel F bathymetric survey reference station set up.



Single beam bathymetric survey at Parcel F (Area X).

Radiological screening of the sediment samples conducted by Aptim.

ECC-Insight

CONTRACTOR PRODUCTION REPORT

(Attach additional sheets as necessary)

Date **2/2/2018**

Contract No. N62473-12-D-2004, Task Order 0014	Title and Location SEDIMENT INVESTIGATION AND BATHYMETRIC SURVEY FOR PARCEL F, HUNTERS POINT NAVAL SHIPYARD, SAN FRANCISCO, CALIFORNIA	Report No. **5**

Contractor **ECC-INSIGHT LLC**

Field Representative **Scott Donovan**

Work Performed Today

Work Location & Description	Employer	No. of employees	Trade	Hours
ECC-Insight completed bathymetric survey using single beam sonar, survey. Prepared for multi-beam surveying starting tomorrow.	**ECC-Insight**	**1**	**PQCM**	**9**
	ECC-Insight	**1**	**SSHO**	**10**
	ECC-Insight	**1**	**Field Tech**	**10**
	Fugro	**1**	**PM**	**10**
	Fugro	**1**	**Vessel Operator**	**10**
	Fugro	**1**	**Hydrograph Surveyor**	**10**

JOB SAFETY				
Was a job safety meeting held this date? (If YES, attach copy of meeting minutes)	☑ Yes ☐ No	Total hours worked on job site this date	59
Were there any lost time accidents this date? (If YES, attach copy of completed OSHA report)	☐ Yes ☑ No	Cumulative total of work hours from previous report	254
Was trenching/scaffolding/HV electric/high work done? (If YES, attach statement or checklist showing inspection performed)	☐ Yes ☑ No		
Was hazardous material/waste released into the environment? (If YES, attach description of incident and proposed action.)	☐ Yes ☑ No	Total work hours from start of construction	313

List Safety Actions Taken Today/Safety Inspections Conducted

Equipment Received Today to be Incorporated in Job

Construction & Plant Equipment on Job Site Today. Include Number of Hours Used Today.

Scott Donovan — Field Representative

2/2/2018 — Date

CONTRACTOR QUALITY CONTROL REPORT

(ATTACH ADDITIONAL SHEETS IF NECESSARY)

DATE 2/2/2018

REPORT NO 5

PHASE	CONTRACT NO	N62473-12-D-2004/TO 0014	CONTRACT TITLE	SEDIMENT INVESTIGATION AND BATHYMETRIC SURVEY FOR PARCEL F, HUNTERS POINT NAVAL SHIPYARD, SAN FRANCISCO, CALIFORNIA

PREPARATORY

WAS PREPARATORY PHASE WORK PERFORMED TODAY? YES ☐ NO ☒

IF YES, FILL OUT AND ATTACH SUPPLEMENTAL PREPARATORY PHASE CHECKLIST.

Schedule Activity No.	Definable Feature of Work	Index #

INITIAL

WAS INITIAL PHASE WORK PERFORMED TODAY? YES ☒ NO ☐

IF YES, FILL OUT AND ATTACH SUPPLEMENTAL INITIAL PHASE CHECKLIST. (one

Schedule Activity No.	Definable Feature of Work	Index #
3	ECC-Insight completed single beam bathymetry survey at Areas IX/X. Survey conducted by Fugro. Prepared for multi-beam survey.	

FOLLOW-UP

WORK COMPLIES WITH CONTRACT AS APPROVED DURING INITIAL PHASE? YES ☒ NO ☐

WORK COMPLIES WITH SAFETY REQUIREMENTS? YES ☒ NO ☐

Schedule Activity No.	Description of Work, Testing Performed & By Whom, Definable Feature of Work, Specification Section, Location, and List of Personnel Present
	Weather: Mostly sunny and clear, high temperature of approximately 70 degrees, light wind.
	Personnel Present: Aaron Heidt, Jonathon Myers, Scott Donovan (Insight), Gilbert Suarez, Herb Tovor, Matt Moulton (Fugro).

REWORK ITEMS IDENTIFIED TODAY (NOT CORRECTED BY CLOSE OF BUSINESS)

Schedule Activity No.	Description

REWORK ITEMS CORRECTED TODAY (FROM REWORK ITEMS LIST)

Schedule Activity No.	Description

REMARKS (Also Explain Any Follow-Up Phase Checklist Item From Above that was Answered "NO"), Manuf. Rep On-Site, etc.

Schedule Activity No.	Description

On behalf of the contractor, I certify that this report is complete and correct and equipment and material used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge, except as noted in this report.

Scott Donovan

AUTHORIZED QC MANAGER, Scott Donovan — DATE 2/2/2018

GOVERNMENT QUALITY ASSURANCE REPORT

QUALITY ASSURANCE REPRESENTATIVE'S REMARKS AND/OR EXCEPTIONS TO THE REPORT

Schedule Activity No.	Description

GOVERNMENT QUALITY ASSURANCE MANAGER — DATE

Survey vessel for single beam bathymetric survey in Areas IX/X.

Single Beam bathymetric survey at Parcel F (Areas IX/X).

Surf Scoter sighting in Parcel F.

ECC-Insight

CONTRACTOR PRODUCTION REPORT

(Attach additional sheets as necessary)

Date **2/3/2018**

Contract No. N62473-12-D-2004, Task Order 0014	Title and Location SEDIMENT INVESTIGATION AND BATHYMETRIC SURVEY FOR PARCEL F, HUNTERS POINT NAVAL SHIPYARD, SAN FRANCISCO, CALIFORNIA	Report No. **6**

Contractor **ECC-INSIGHT LLC**

Field Representative **Scott Donovan**

Work Performed Today

Work Location & Description	Employer	No. of employees	Trade	Hours
ECC-Insight completed multi-beam bathymetric survey at Parcel F former Parcel B and C piers, wharfs and Area III. ECC-Insight team will demobilize through the weekend.	**ECC-Insight**	**1**	**SSHO**	**10**
	ECC-Insight	**1**	**Field Tech**	**10**
	Fugro	**1**	**PM**	**10**
	Fugro	**1**	**Vessel Operator**	**10**
	Fugro	**1**	**Hydrograph Surveyor**	**10**

JOB SAFETY				
Was a job safety meeting held this date? (If YES, attach copy of meeting minutes)	☑ Yes ☐ No	Total hours worked on job site this date	50
Were there any lost time accidents this date? (If YES, attach copy of completed OSHA report)	☐ Yes ☑ No	Cumulative total of work hours from previous report	313
Was trenching/scaffolding/HV electric/high work done? (If YES, attach statement or checklist showing inspection performed)	☐ Yes ☑ No		
Was hazardous material/waste released into the environment? (If YES, attach description of incident and proposed action.)	☐ Yes ☑ No	Total work hours from start of construction	363

List Safety Actions Taken Today/Safety Inspections Conducted

Equipment Received Today to be Incorporated in Job

Construction & Plant Equipment on Job Site Today. Include Number of Hours Used Today.

Scott Donovan — Field Representative

2/3/2018 — Date

CONTRACTOR QUALITY CONTROL REPORT

(ATTACH ADDITIONAL SHEETS IF NECESSARY)

DATE 2/3/2018

REPORT NO 6

PHASE	CONTRACT NO	N62473-12-D-2004/TO 0014	CONTRACT TITLE	SEDIMENT INVESTIGATION AND BATHYMETRIC SURVEY FOR PARCEL F, HUNTERS POINT NAVAL SHIPYARD, SAN FRANCISCO, CALIFORNIA

PREPARATORY

WAS PREPARATORY PHASE WORK PERFORMED TODAY? YES ☐ NO ☒

IF YES, FILL OUT AND ATTACH SUPPLEMENTAL PREPARATORY PHASE CHECKLIST.

Schedule Activity No.	Definable Feature of Work	Index #

INITIAL

WAS INITIAL PHASE WORK PERFORMED TODAY? YES ☒ NO ☐

IF YES, FILL OUT AND ATTACH SUPPLEMENTAL INITIAL PHASE CHECKLIST. (one

Schedule Activity No.	Definable Feature of Work	Index #
3, 1	ECC-Insight completed multi-beam bathymetry survey at Parcel F former Parcel B and C piers, wharfs and Area III. ECC-Insight team will demobilize through the weekend.	

FOLLOW-UP

WORK COMPLIES WITH CONTRACT AS APPROVED DURING INITIAL PHASE? YES ☒ NO ☐

WORK COMPLIES WITH SAFETY REQUIREMENTS? YES ☒ NO ☐

Schedule Activity No.	Description of Work, Testing Performed & By Whom, Definable Feature of Work, Specification Section, Location, and List of Personnel Present
	Weather: Mostly sunny and clear, high temperature of approximately 70 degrees, light wind.
	Personnel Present: Aaron Heidt, Jonathon Myers (Insight), Gilbert Suarez, Herb Tovor, Matt Moulton (Fugro).

REWORK ITEMS IDENTIFIED TODAY (NOT CORRECTED BY CLOSE OF BUSINESS)

Schedule Activity No.	Description

REWORK ITEMS CORRECTED TODAY (FROM REWORK ITEMS LIST)

Schedule Activity No.	Description

REMARKS (Also Explain Any Follow-Up Phase Checklist Item From Above that was Answered "NO"), Manuf. Rep On-Site, etc.

Schedule Activity No.	Description

On behalf of the contractor, I certify that this report is complete and correct and equipment and material used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge, except as noted in this report.

Scott Donovan

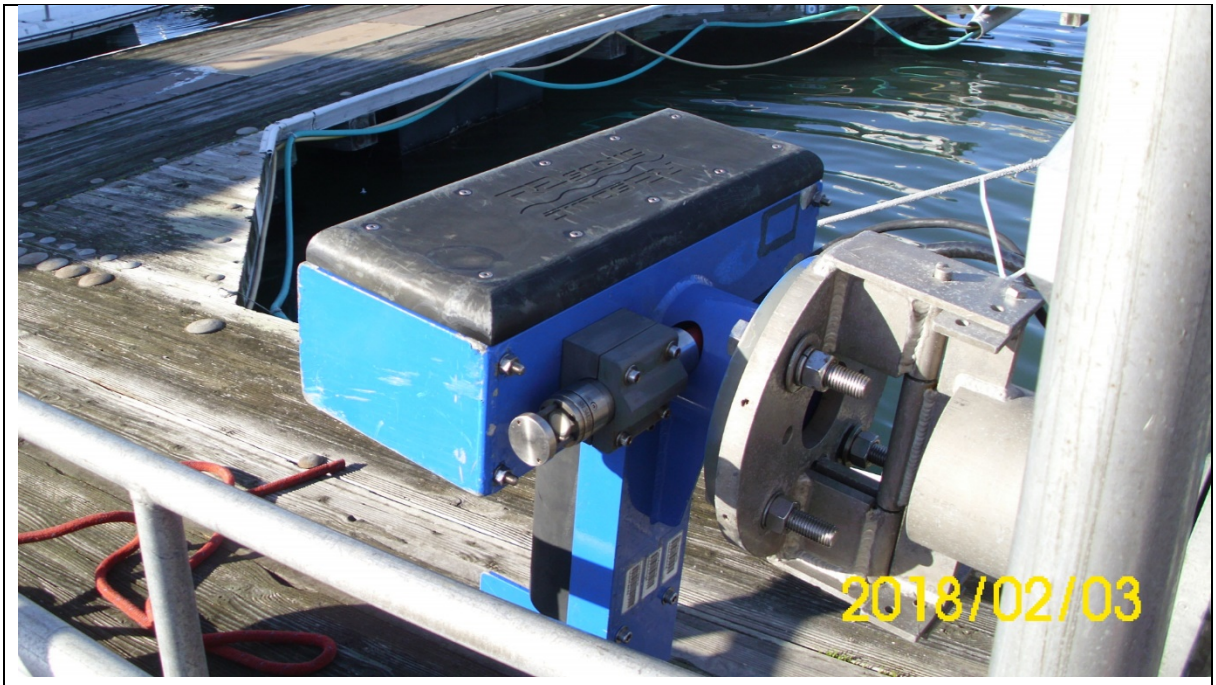
AUTHORIZED QC MANAGER, Scott Donovan — DATE 2/3/2018

GOVERNMENT QUALITY ASSURANCE REPORT

QUALITY ASSURANCE REPRESENTATIVE'S REMARKS AND/OR EXCEPTIONS TO THE REPORT

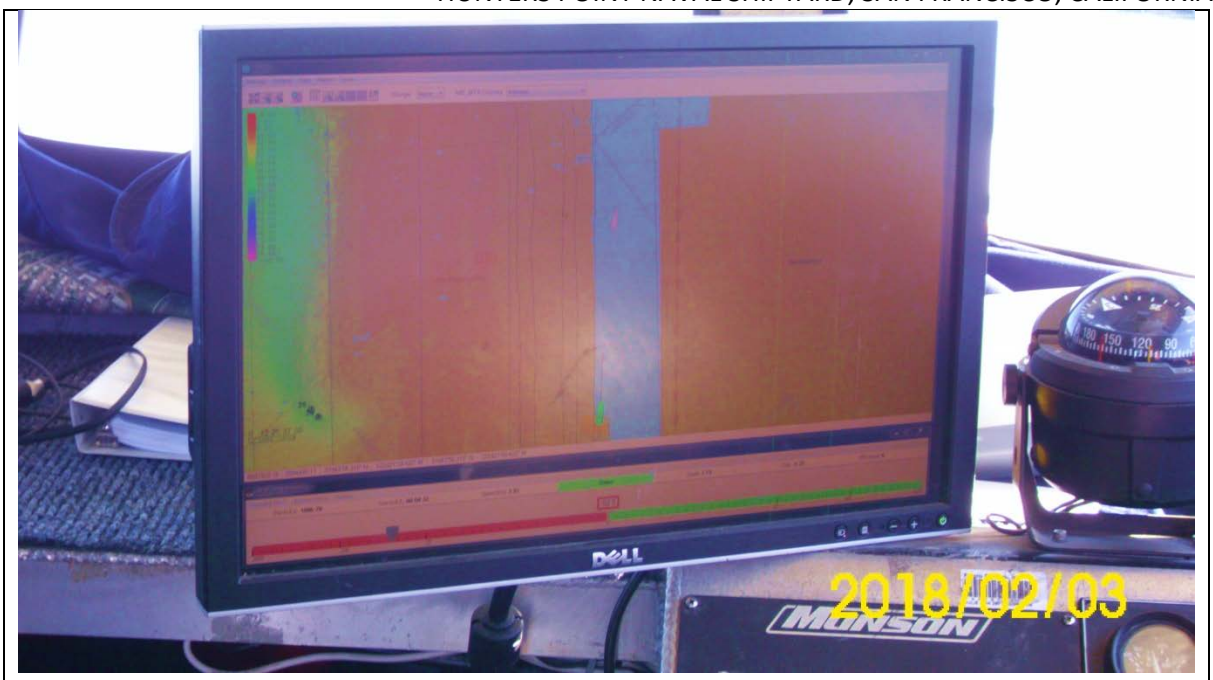
Schedule Activity No.	Description

GOVERNMENT QUALITY ASSURANCE MANAGER — DATE



Multibeam Echo Sounder.

Shoreline Near Dry Dock #3 Pump House (Area III).



Onboard Display Showing Multibeam Survey Coverage.

ECC-Insight

CONTRACTOR PRODUCTION REPORT

(Attach additional sheets as necessary)

Date **10/3/2018**

Contract No. N62473-12-D-2004, Task Order 0014	Title and Location SEDIMENT INVESTIGATION AND BATHYMETRIC SURVEY FOR PARCEL F, HUNTERS POINT NAVAL SHIPYARD, SAN FRANCISCO, CALIFORNIA	Report No. **7**

Contractor **ECC-INSIGHT LLC**

Field Representative **Dave Marks**

Work Performed Today

Work Location & Description	Employer	No. of employees	Trade	Hours
ECC-INSIGHT was onsite to remove and transport 1 IDW drum containing sea sediment generated during the sediment investigation for Parcel F. The IDW is being transported to U.S. Ecology, Beatty, Nevada. The IDW was screened through the HPNS radiological portal by APTIM before leaving HPNS. Battelle provided radiological QC oversight.	**ECC-Insight**	**1**	**SSHO**	**4**
	ECC-Insight	**1**	**Field Tech**	**4**
	Dillard Environmental	**1**	**Driver**	**4**

JOB SAFETY

Was a job safety meeting held this date? (If YES, attach copy of meeting minutes)	☑ Yes ☐ No	Total hours worked on job site this date	12
Were there any lost time accidents this date? (If YES, attach copy of completed OSHA report)	☐ Yes ☑ No	Cumulative total of work hours from previous report	363
Was trenching/scaffolding/HV electric/high work done? (If YES, attach statement or checklist showing inspection performed)	☐ Yes ☑ No		
Was hazardous material/waste released into the environment? (If YES, attach description of incident and proposed action.)	☐ Yes ☑ No	Total work hours from start of construction	375

List Safety Actions Taken Today/Safety Inspections Conducted

Equipment Received Today to be Incorporated in Job

Construction & Plant Equipment on Job Site Today. Include Number of Hours Used Today.

Dave Marks — Field Representative

10/3/2018 — Date

CONTRACTOR QUALITY CONTROL REPORT

(ATTACH ADDITIONAL SHEETS IF NECESSARY)

DATE 10/3/2018

REPORT NO 7

PHASE	CONTRACT NO	CONTRACT TITLE
	N62473-12-D-2004/TO 0014	SEDIMENT INVESTIGATION AND BATHYMETRIC SURVEY FOR PARCEL F, HUNTERS POINT NAVAL SHIPYARD, SAN FRANCISCO, CALIFORNIA

PREPARATORY

WAS PREPARATORY PHASE WORK PERFORMED TODAY? YES ☐ NO ☒

IF YES, FILL OUT AND ATTACH SUPPLEMENTAL PREPARATORY PHASE CHECKLIST.

Schedule Activity No.	Definable Feature of Work	Index #

INITIAL

WAS INITIAL PHASE WORK PERFORMED TODAY? YES ☒ NO ☐

IF YES, FILL OUT AND ATTACH SUPPLEMENTAL INITIAL PHASE CHECKLIST. (one

Schedule Activity No.	Definable Feature of Work	Index #
1	ECC-INSIGHT was onsite to remove and transport 1 IDW drum containing sea sediment generated during the sediment investigation for Parcel F. The IDW is being transported to U.S. Ecology, Beatty, Nevada. The IDW was screened through the HPNS radiological portal by APTIM before leaving HPNS. Battelle provided radiological QC oversight.	

FOLLOW-UP

WORK COMPLIES WITH CONTRACT AS APPROVED DURING INITIAL PHASE? YES ☒ NO ☐

WORK COMPLIES WITH SAFETY REQUIREMENTS? YES ☒ NO ☐

Schedule Activity No.	Description of Work, Testing Performed & By Whom, Definable Feature of Work, Specification Section, Location, and List of Personnel Present
	Weather: Overcast, temperature varied between 64 and 71 degrees Fahrenheit, light wind.
	Personnel Present: Aaron Heidt, Jonathon Myers and Dave Marks (ECC-Insight), Jason Wilson (Dillard Environmental Services.

REWORK ITEMS IDENTIFIED TODAY (NOT CORRECTED BY CLOSE OF BUSINESS)

Schedule Activity No.	Description

REWORK ITEMS CORRECTED TODAY (FROM REWORK ITEMS LIST)

Schedule Activity No.	Description

REMARKS (Also Explain Any Follow-Up Phase Checklist Item From Above that was Answered "NO"), Manuf. Rep On-Site, etc.

Schedule Activity No.	Description

On behalf of the contractor, I certify that this report is complete and correct and equipment and material used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge, except as noted in this report.

AUTHORIZED QC MANAGER, Dave Marks — DATE 10/3/2018

GOVERNMENT QUALITY ASSURANCE REPORT

QUALITY ASSURANCE REPRESENTATIVE'S REMARKS AND/OR EXCEPTIONS TO THE REPORT

Schedule Activity No.	Description

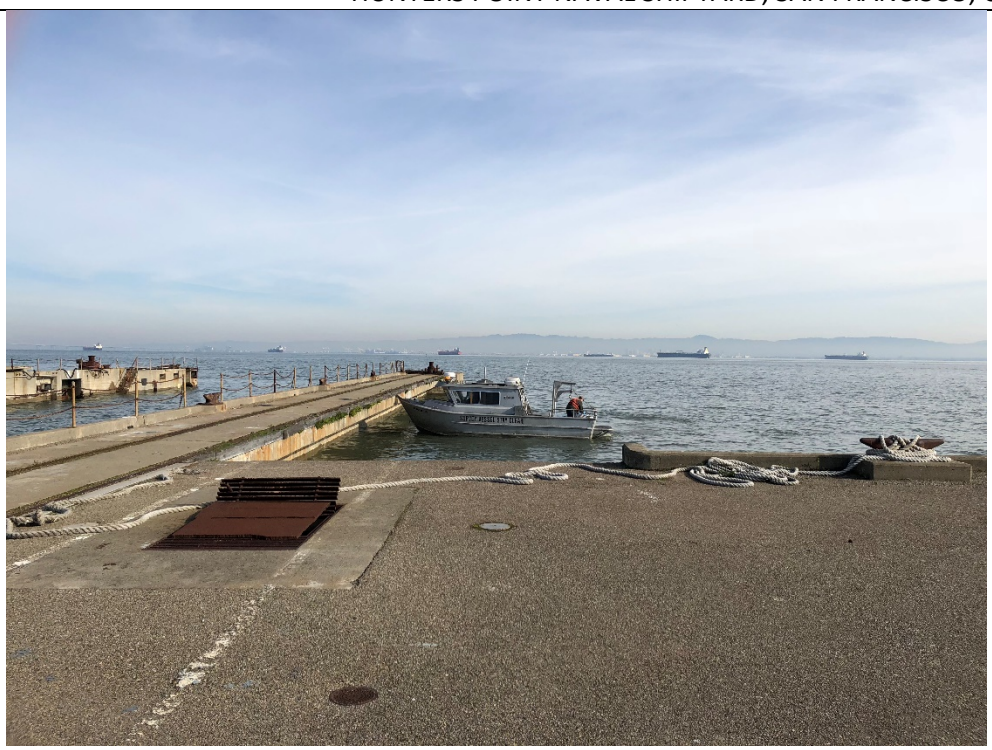
GOVERNMENT QUALITY ASSURANCE MANAGER — DATE

IDW transport through radiological portal for radiological screening by APTIM.

Photographic Log

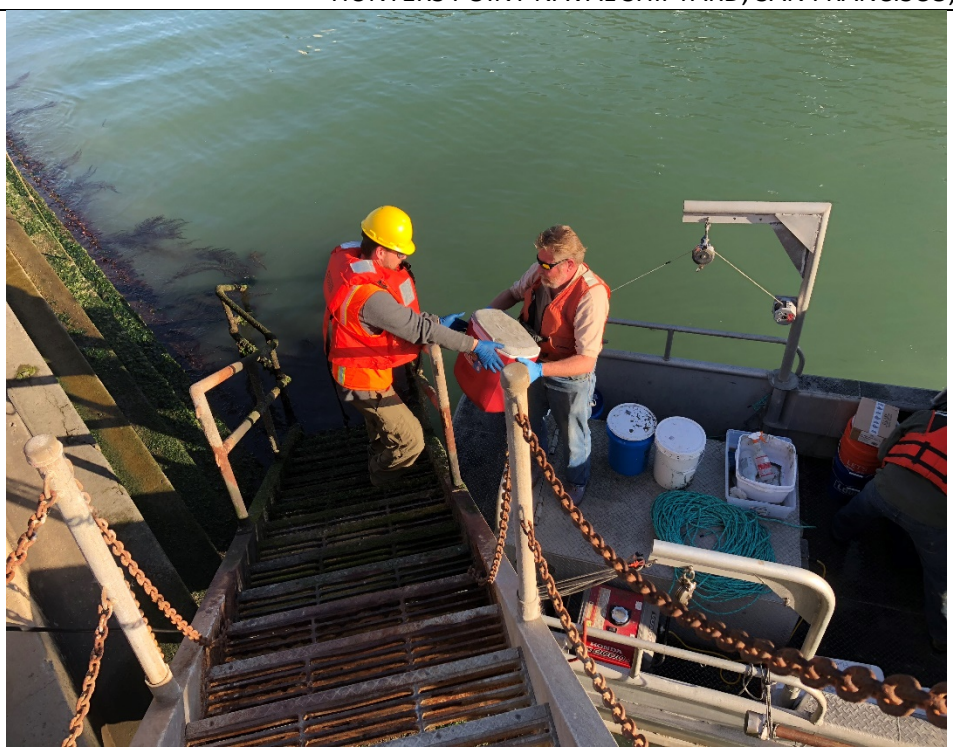
Sediment sampling at Former Berth 64 Area, looking northeast

Sediment sampling at Former Berth 64 Area, looking north-northwest

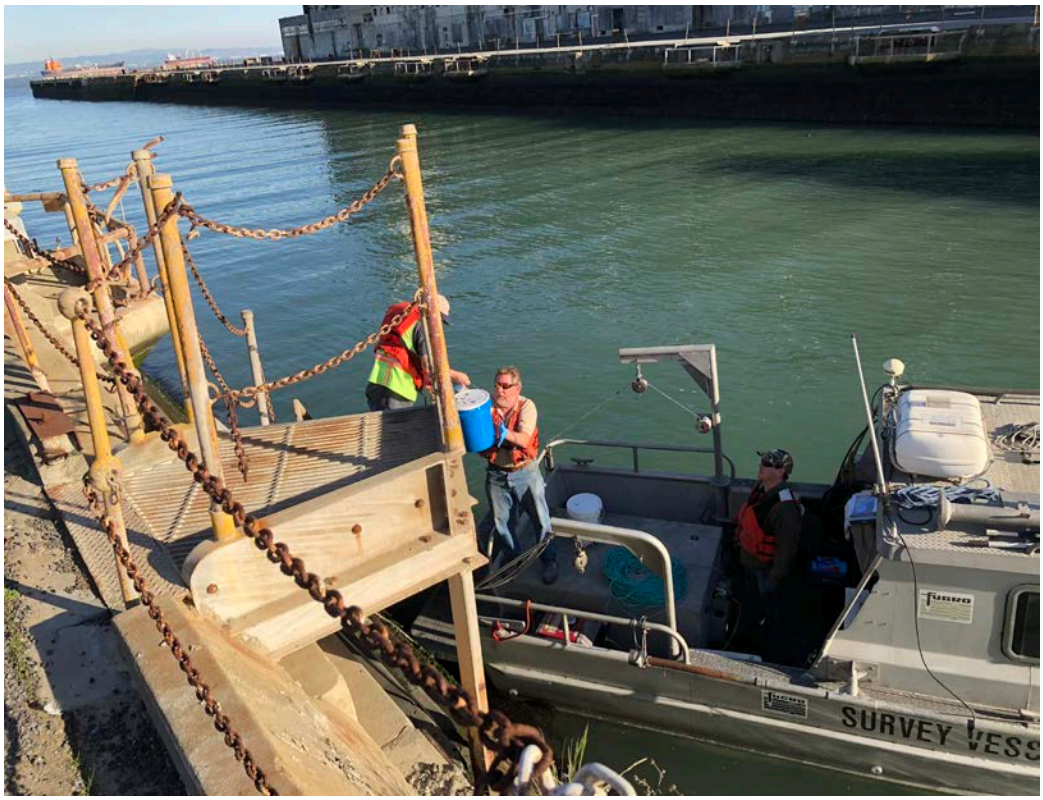


Sediment sampling at Former Berth 61 Area

Sediment Sampling at Former Pier C Area



Sample Transfer at Dry Dock 2



IDW transfer at Dry Dock 2

Worm Tube from HPP-FSS-005D Sediment Sample

Worm from HPP-FSS-005C Sediment Sample

Preparing to Deploy Petite Ponar (6” by 6” area) Sampler at Location HPF-Berth64-CS01/HPP-FSS-001D

Petite Ponar Sampler Into Water at HPF-Berth64-CS01/HPP-FSS-001D

Sediment Sample (HPP-FSS-003A) collected from Former Pier B Area
Location HPF-PierB-CS01

Collection of Sediment Sample at HPP-FSS-003B from Former Pier B Area
Location HPF-PierB-CS01

Sediment sampling at Former Wharf #2 Area – view looking north.

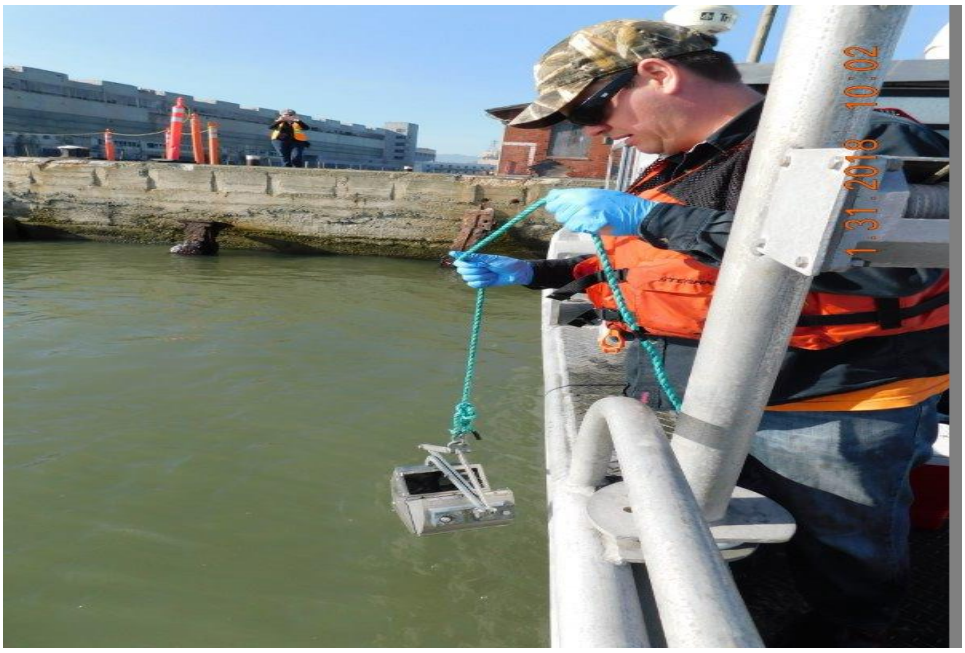
Sediment sampling at Former Quay Wall Area -view looking north.

Preparation of Equipment Blank Sample from Petite Ponar Sampler.

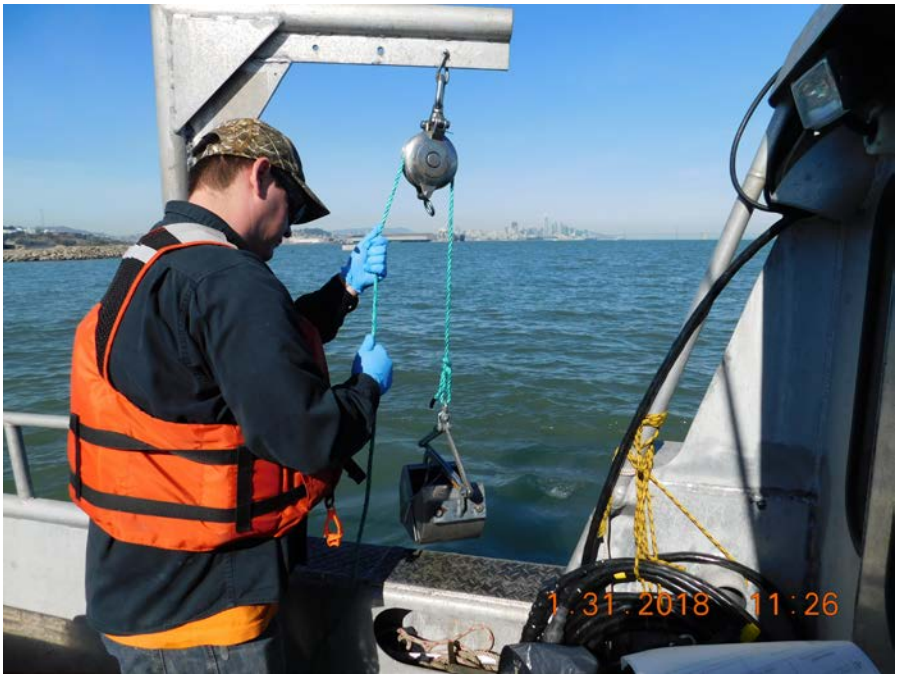
Preparation of Equipment Blank Sample from Petite Ponar Sampler.

Sediment sub-sample (HPP-FSS-007B) collected from Former Quay Wall Sediment Sample Location HPF-QuayWall-CS01.

Sampling equipment decontamination station on vessel.

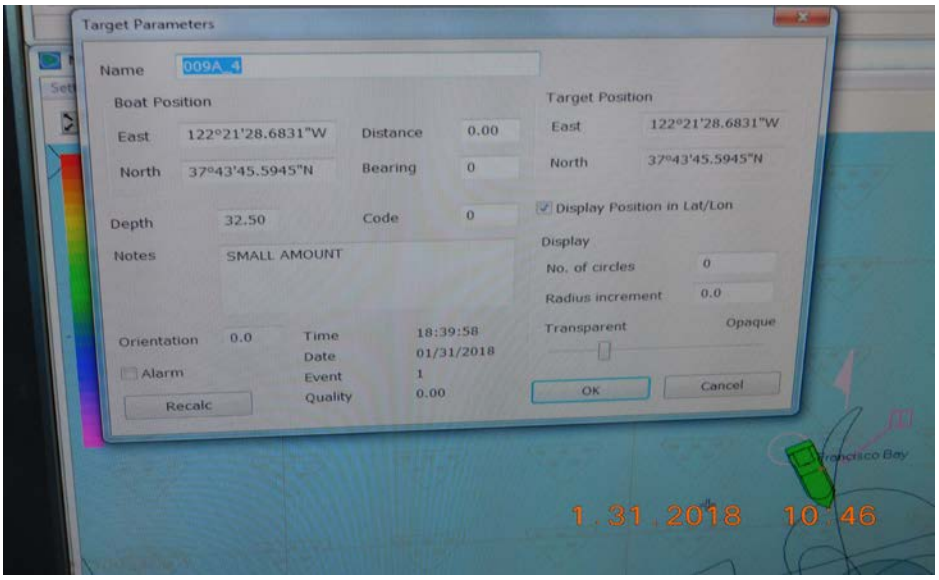


Deploying Petite Ponar Sampler at Former Wharf #2 Sample Location HPF-Wharf2-CS01/HPP-FSS-008C.

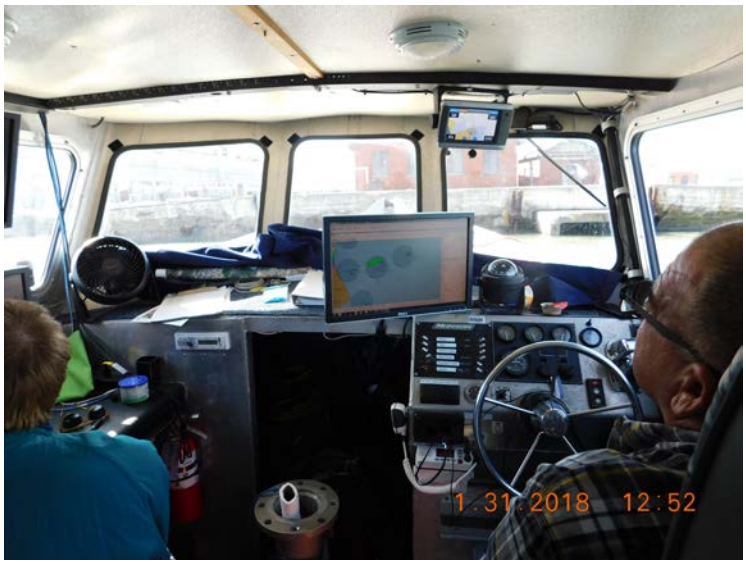


Deploying Petite Ponar Sampler Using Pulley at Former Wharf #2

Sample Location HPF-Wharf2-CS01/HPP-FSS-008C.



GPS location data on vessel for Location HPF-Wharf2-CS02/Sample HPP-FSS-009A.



Navigation Screen on Vessel.

Sediment Sample from HPP-FSS-009B with Many Shell Fragments and Small Pebbles.

Standard Ponar (9” by 9” area) and Smaller (6’ by 6” area) Petite Ponar

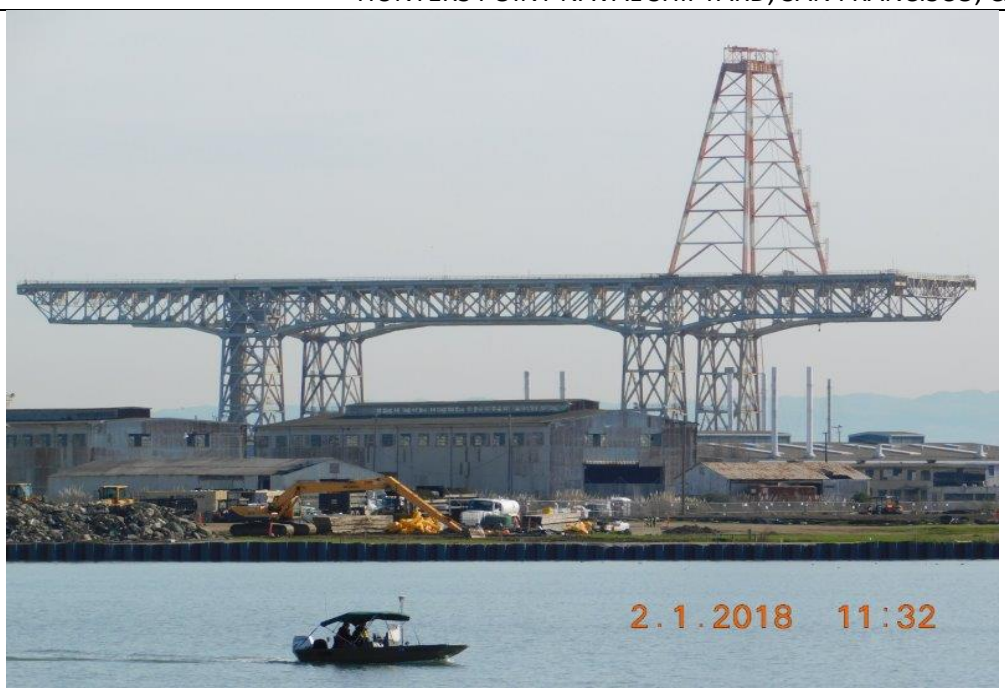
Sediment Samplers.

9” by 9” Standard Ponar Sediment Sampler.

6” by 6” Petite Ponar Sediment Sampler

Single beam bathymetric survey at Parcel F (Area X).

Parcel F bathymetric survey reference station set up.



Single beam bathymetric survey at Parcel F (Area X).

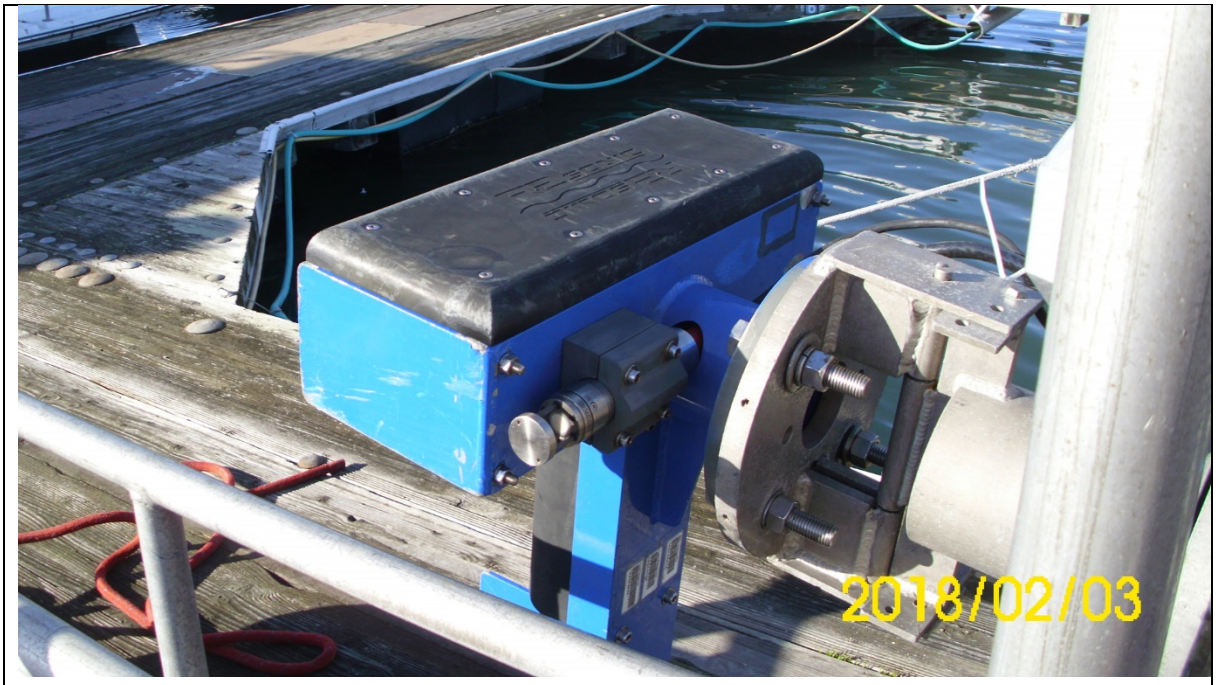
Radiological screening of the sediment samples conducted by Aptim.

Survey vessel for single beam bathymetric survey in Areas IX/X.

Single Beam bathymetric survey at Parcel F (Areas IX/X).

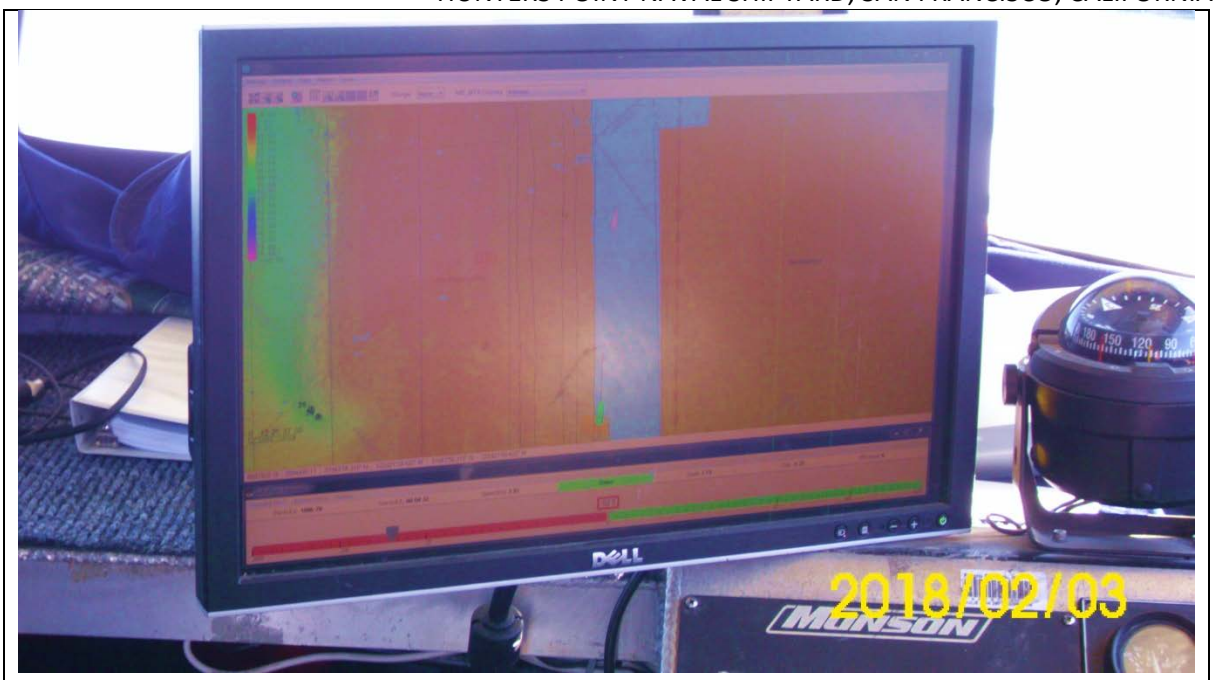
Surf Scoter sighting in Parcel F.

Surf Scoters at Parcel F

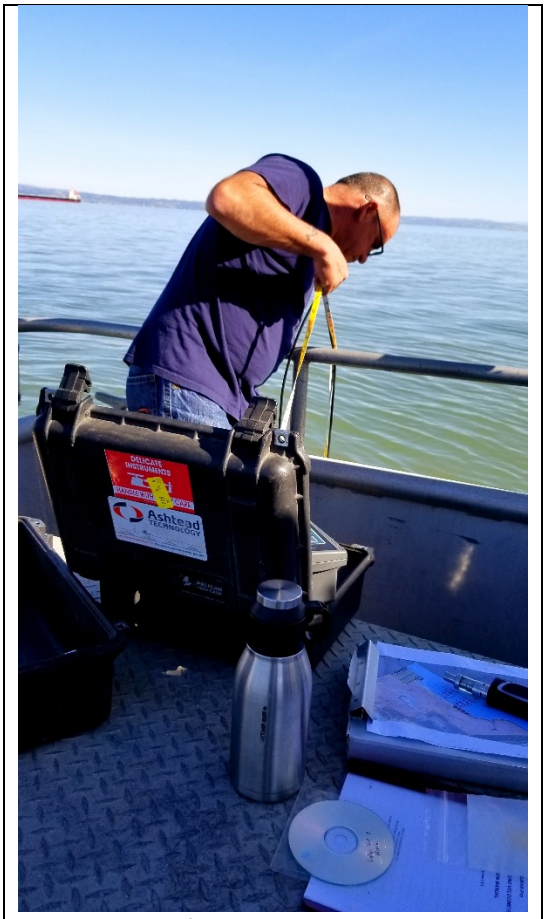


Multibeam Echo Sounder.

Shoreline Near Dry Dock #3 Pump House (Area III).



Onboard Display Showing Multibeam Survey Coverage.



Verifying Water Depth.

Appendix C

Sediment Sampling Logs

SEDIMENT SAMPLE COLLECTION LOG

SEDIMENT SAMPLING AREA: Former Berth 64 Area

Sample Location ID: HPF-Berth64-CS01 (HPP-FSS-001) **Discrete Sample ID: HPP-FSS-001A**

Project Name: Sediment and Bathymetric Survey for Parcel F	Project No: 4-14214	
Date: 1-30-2018	Vessel company: Fugro Pelagos	
Logged by: Scott Donovan	Vessel Type: 27 foot survey vessel	Vessel Name: Julie Ann
Location: Hunter Point Naval Shipyard	Estimated Sample Depth below sea level: 8.8 feet	
Sampling method: Surface sediment using Petite Ponar grab sample device (6" by 6" sample area) Sample collected from approximately upper 5 centimeters of sediment surface on first attempt	Longitude: 122° 21' 59.3"	Latitude: 37° 43' 56.7"

Log Notes

Sediment Description: slightly silty clay (CL)

Color: very dark greenish gray (Gley 1, 3/10Y) with little brownish gray mottling

Objects found in Sample: none

Odor: natural biological (slight)

SEDIMENT SAMPLE COLLECTION LOG

SEDIMENT SAMPLING AREA:Former Berth 64 Area

Sample Location ID: HPF-Berth64-CS01 (HPP-FSS-001) Discrete Sample ID: HPP-FSS-001B

Project Name: Sediment and Bathymetric Survey for Parcel F	Project No: 4-14214	
Date: 1-30-2018	Vessel company: Fugro Pelagos	
Logged by: Scott Donovan	Vessel Type: 27 foot survey vessel	Vessel Name: Julie Ann
Location: Hunter Point Naval Shipyard	Estimated Sample Depth below sea level: 9.0 feet	
Sampling method: Surface sediment using Petite Ponar grab sample device (6" by 6" sample area) Sample collected from approximately upper 5 centimeters of sediment surface on second attempt	Longitude: 122° 21' 58.6"	Latitude: 37° 43' 57.5"

Log Notes

Sediment Description: slightly silty clay (CL)

Color: very dark greenish gray (Gley 1, 3/10Y) with little brownish gray mottling

Objects found in Sample: some worms and worm tubes

Odor: natural biological (slight)

SEDIMENT SAMPLE COLLECTION LOG

SEDIMENT SAMPLING AREA: Former Berth 64 Area

Sample Location ID: HPF-Berth64-CS01 (HPP-FSS-001)	**Discrete Sample ID: HPP-FSS-001C**	
Project Name: Sediment and Bathymetric Survey for Parcel F	Project No: 4-14214	
Date: 1-30-2018	Vessel company: Fugro Pelagos	
Logged by: Scott Donovan	Vessel Type: 27 foot survey vessel	Vessel Name: Julie Ann
Location: Hunter Point Naval Shipyard	Estimated Sample Depth below sea level: 14.2 feet	
Sampling method: Surface sediment using PetitePonar grab sample device (6" by 6" sample area) Sample collected from approximately upper 5 centimeters of sediment surface on first attempt	Longitude: 122° 21' 57.9"	Latitude: 37° 43' 58.3"

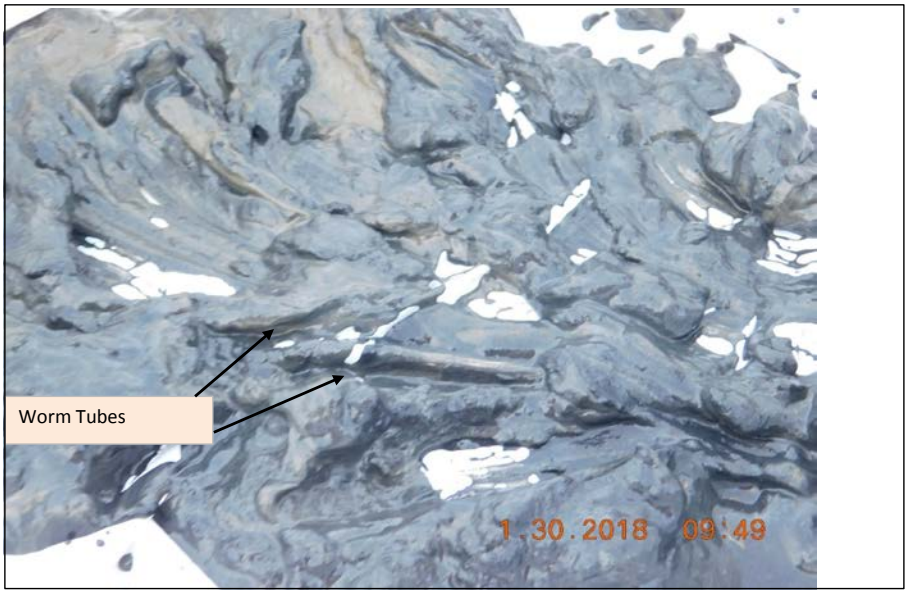
Log Notes

Sediment Description: slightly silty clay (CL)

Color: very dark greenish gray (Gley 1, 3/10Y) with little brownish gray mottling

Objects found in Sample: few worm tubes

Odor: natural biological (slight)



SEDIMENT SAMPLE COLLECTION LOG

SEDIMENT SAMPLING AREA: Former Berth 64 Area

Sample Location ID: HPF-Berth64-CS01 (HPP-FSS-001)	**Discrete Sample ID: HPP-FSS-001D**	
Project Name: Sediment and Bathymetric Survey for Parcel F	Project No: 4-14214	
Date: 1-30-2018	Vessel company: Fugro Pelagos	
Logged by: Scott Donovan	Vessel Type: 27 foot survey vessel	Vessel Name: Julie Ann
Location: Hunter Point Naval Shipyard	Estimated Sample Depth below sea level: 10.5 feet	
Sampling method: Surface sediment using Petite Ponar grab sample device (6" by 6" sample area) Sample collected from approximately upper 5 centimeters of sediment surface on first attempt	Longitude: 122° 21' 57.4"	Latitude: 37° 43' 58.8"

Log Notes

Sediment Description: slightly silty clay (CL)

Color: very dark greenish gray (Gley 1, 3/10Y) with little brownish gray mottling

Objects found in Sample: none

Odor: natural biological (slight)

SEDIMENT SAMPLE COLLECTION LOG

SEDIMENT SAMPLING AREA: Former Berth 61 Area

Sample Location ID: HPF-Berth61-CS01 (HPP-FSS-002)	**Discrete Sample ID: HPP-FSS-002A**	
Project Name: Sediment and Bathymetric Survey for Parcel F	Project No: 4-14214	
Date: 1-30-2018	Vessel company: Fugro Pelagos	
Logged by: Scott Donovan	Vessel Type: 27 foot survey vessel	Vessel Name: Julie Ann
Location: Hunter Point Naval Shipyard	Estimated Sample Depth below sea level: 12.3 feet	
Sampling method: Surface sediment using Petite Ponar grab sample device (6" by 6" sample area) Sample collected from approximately upper 5 centimeters of sediment surface on first attempt	Longitude: 122° 21' 53.9"	Latitude: 37° 43' 56.1"

Log Notes

Sediment Description: slightly silty clay (CL)

Color: very dark greenish gray (Gley 1, 3/10Y) with little brownish gray mottling

Objects found in Sample: few worms and worm tubes

Odor: natural biological (slight)

SEDIMENT SAMPLE COLLECTION LOG

SEDIMENT SAMPLING AREA: Former Berth 61 Area

Sample Location ID: HPF-Berth61-CS01 (HPP-FSS-002)	**Discrete Sample ID: HPP-FSS-002B**	
Project Name: Sediment and Bathymetric Survey for Parcel F	Project No: 4-14214	
Date: 1-30-2018	Vessel company: Fugro Pelagos	
Logged by: Scott Donovan	Vessel Type: 27 foot survey vessel	Vessel Name: Julie Ann
Location: Hunter Point Naval Shipyard	Estimated Sample Depth below sea level: 12.7 feet	
Sampling method: Surface sediment using Petite Ponar grab sample device (6" by 6" sample area) Sample collected from approximately upper 5 centimeters of sediment surface on first attempt	Longitude: 122° 21' 53.7"	Latitude: 37° 43' 56.3"

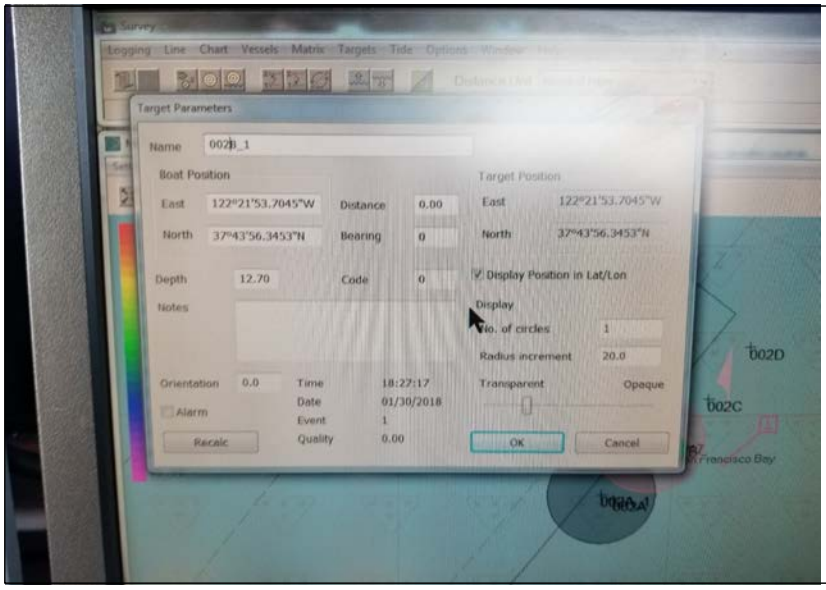
Log Notes

Sediment Description: slightly silty clay (CL)

Color: very dark greenish gray (Gley 1, 3/10Y) with little brownish gray mottling

Objects found in Sample: none

Odor: natural biological (slight)



SEDIMENT SAMPLE COLLECTION LOG

SEDIMENT SAMPLING AREA: Former Berth 61 Area

Sample Location ID: HPF-Berth61-CS01 (HPP-FSS-002) **Discrete Sample ID: HPP-FSS-002C**

Project Name: Sediment and Bathymetric Survey for Parcel F	Project No: 4-14214	
Date: 1-30-2018	Vessel company: Fugro Pelagos	
Logged by: Scott Donovan	Vessel Type: 27 foot survey vessel	Vessel Name: Julie Ann
Location: Hunter Point Naval Shipyard	Estimated Sample Depth below sea level: 13.3 feet first try, 13.1 feet second try	
Sampling method: Surface sediment using Petite Ponar grab sample device (6" by 6" sample area) Sample collected from approximately upper 5 centimeters of sediment surface on second attempt	First Longitude: 122° 21' 53.6" Second Longitude122° 21' 53.5"	First Latitude: 37° 43' 56.5" Second Latitude: 37° 43' 56.6"

Log Notes

Sediment Description: slightly silty clay (CL)

Color: black (Gley 1, 2.5/N) with little brownish gray mottling

Objects found in Sample: none

Odor: natural biological (strong)

SEDIMENT SAMPLE COLLECTION LOG

SEDIMENT SAMPLING AREA: Former Berth 61 Area

Sample Location ID: HPF-Berth61-CS01 (HPP-FSS-002)	**Discrete Sample ID: HPP-FSS-002D**	
Project Name: Sediment and Bathymetric Survey for Parcel F	Project No: 4-14214	
Date: 1-30-2018	Vessel company: Fugro Pelagos	
Logged by: Scott Donovan	Vessel Type: 27 foot survey vessel	Vessel Name: Julie Ann
Location: Hunter Point Naval Shipyard	Estimated Sample Depth below sea level: 13.6 feet	
Sampling method: Surface sediment using Petite Ponar grab sample device (6" by 6" sample area) Sample collected from approximately upper 5 centimeters of sediment surface on first attempt	Longitude: 122° 21' 53.3"	Latitude: 37° 43' 56.8"

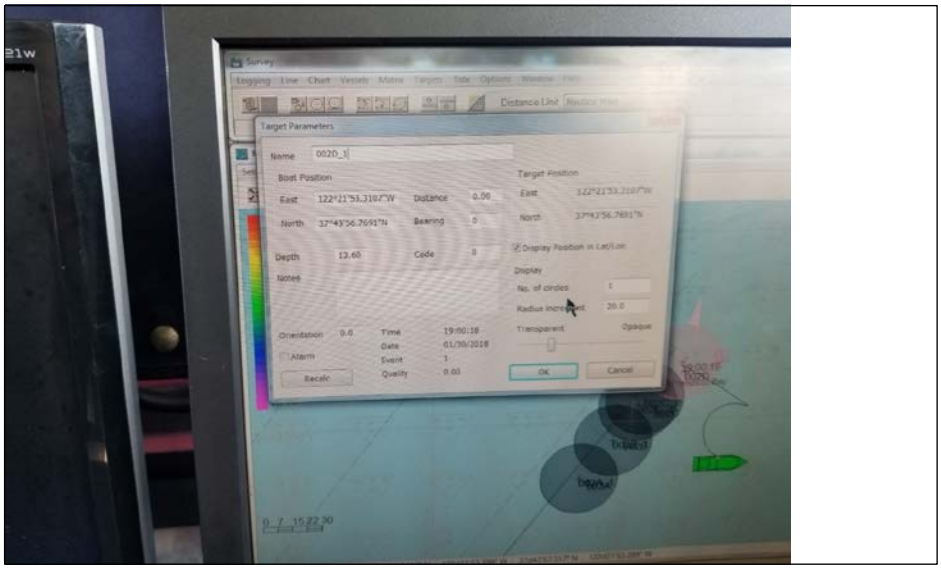
Log Notes

Sediment Description: slightly silty clay (CL)

Color: black (Gley 1, 2.5/N) with little brownish gray mottling

Objects found in Sample: none

Odor: natural biological (strong)



SEDIMENT SAMPLE COLLECTION LOG

SEDIMENT SAMPLING AREA: Former Pier B Area

Sample Location ID: HPF-PierB-CS01 (HPP-FSS-003)	**Discrete Sample ID: HPP-FSS-003A**	
Project Name: Sediment and Bathymetric Survey for Parcel F	Project No: 4-14214	
Date: 1-30-2018	Vessel company: Fugro Pelagos	
Logged by: Scott Donovan	Vessel Type: 27 foot survey vessel	Vessel Name: Julie Ann
Location: Hunter Point Naval Shipyard	Estimated Sample Depth below sea level: 12.5 feet	
Sampling method: Surface sediment using Petite Ponar grab sample device (6" by 6" sample area) Sample collected from approximately upper 5 centimeters of sediment surface on first attempt	Longitude: 122° 21' 48.7"	Latitude: 37° 43' 53.0"

Log Notes

Sediment Description: slightly silty clay (CL) with little very fine sand

Color: very dark greenish gray (Gley 1, 3/10Y) with little brownish gray mottling

Objects found in Sample: none

Odor: natural biological (slight)

SEDIMENT SAMPLE COLLECTION LOG

SEDIMENT SAMPLING AREA: Former Pier B Area

Sample Location ID: HPF-PierB-CS01 (HPP-FSS-003) **Discrete Sample ID: HPP-FSS-003B**

Project Name: Sediment and Bathymetric Survey for Parcel F	Project No: 4-14214	
Date: 1-30-2018	Vessel company: Fugro Pelagos	
Logged by: Scott Donovan	Vessel Type: 27 foot survey vessel	Vessel Name: Julie Ann
Location: Hunter Point Naval Shipyard	Estimated Sample Depth below sea level: 11.9 feet	
Sampling method: Surface sediment using Petite Ponar grab sample device (6" by 6" sample area) Sample collected from approximately upper 5 centimeters of sediment surface on first attempt	Longitude: 122° 21' 48.1"	Latitude: 37° 43' 53.8"

Log Notes

Sediment Description: slightly silty clay (CL)

Color: very dark greenish gray (Gley 1, 3/10Y) with little brownish gray mottling

Objects found in Sample: some worm tubes

Odor: natural biological (slight)

SEDIMENT SAMPLE COLLECTION LOG

SEDIMENT SAMPLING AREA: Former Pier B Area

Sample Location ID: HPF-PierB-CS01 (HPP-FSS-003) **Discrete Sample ID: HPP-FSS-003C**

Project Name: Sediment and Bathymetric Survey for Parcel F	Project No: 4-14214	
Date: 1-30-2018	Vessel company: Fugro Pelagos	
Logged by: Scott Donovan	Vessel Type: 27 foot survey vessel	Vessel Name: Julie Ann
Location: Hunter Point Naval Shipyard	Estimated Sample Depth below sea level: 12.3 feet	
Sampling method: Surface sediment using Petite Ponar grab sample device (6" by 6" sample area) Sample collected from approximately upper 5 centimeters of sediment surface on first attempt	Longitude: 122° 21' 48.3"	Latitude: 37° 43' 52.8"

Log Notes

Sediment Description: slightly silty clay (CL)

Color: very dark greenish gray (Gley 1, 3/10Y)

Objects found in Sample: some worm tubes

Odor: none

SEDIMENT SAMPLE COLLECTION LOG

SEDIMENT SAMPLING AREA: Former Pier B Area

Sample Location ID: HPF-PierB-CS01 (HPP-FSS-003)	**Discrete Sample ID: HPP-FSS-003D**	
Project Name: Sediment and Bathymetric Survey for Parcel F	Project No: 4-14214	
Date: 1-30-2018	Vessel company: Fugro Pelagos	
Logged by: Scott Donovan	Vessel Type: 27 foot survey vessel	Vessel Name: Julie Ann
Location: Hunter Point Naval Shipyard	Estimated Sample Depth below sea level: 11.6	
Sampling method: Surface sediment using Petite Ponar grab sample device (6" by 6" sample area) Sample collected from approximately upper 5 centimeters of sediment surface on fifth attempt	Longitude: 122° 21' 47.7"	Latitude: 37° 43' 53.5"

Log Notes

Sediment Description: slightly silty clay (CL)

Color: very dark greenish gray (Gley 1, 3/10Y)

Objects found in Sample: numerous worm tubes, some algae (long and skinny)

Odor: natural biological (slight)

SEDIMENT SAMPLE COLLECTION LOG

SEDIMENT SAMPLING AREA: Former Pier B Area

Sample Location ID: HPF-PierB-CS02 (HPP-FSS-004)	**Discrete Sample ID: HPP-FSS-004A**	
Project Name: Sediment and Bathymetric Survey for Parcel F	Project No: 4-14214	
Date: 1-30-2018	Vessel company: Fugro Pelagos	
Logged by: Scott Donovan	Vessel Type: 27 foot survey vessel	Vessel Name: Julie Ann
Location: Hunter Point Naval Shipyard	Estimated Sample Depth below sea level: 10.0 feet	
Sampling method: Surface sediment using Petite Ponar grab sample device (6" by 6" sample area) Sample collected from approximately upper 5 centimeters of sediment surface on first attempt	Longitude: 122° 21' 47.7"	Latitude: 37° 43' 54.4"

Log Notes

Sediment Description: slightly silty clay (CL)

Color: very dark greenish gray (Gley 1, 3/10Y)

Objects found in Sample: none

Odor: natural biological (slight)

SEDIMENT SAMPLE COLLECTION LOG

SEDIMENT SAMPLING AREA: Former Pier B Area

Sample Location ID: HPF-PierB-CS02 (HPP-FSS-004) **Discrete Sample ID: HPP-FSS-004B**

Project Name: Sediment and Bathymetric Survey for Parcel F	Project No: 4-14214	
Date: 1-30-2018	Vessel company: Fugro Pelagos	
Logged by: Scott Donovan	Vessel Type: 27 foot survey vessel	Vessel Name: Julie Ann
Location: Hunter Point Naval Shipyard	Estimated Sample Depth below sea level: 10.7 feet	
Sampling method: Surface sediment using Petite Ponar grab sample device (6" by 6" sample area) Sample collected from approximately upper 5 centimeters of sediment surface on third attempt	Longitude: 122° 21' 46.9"	Latitude: 37° 43' 55.0"

Log Notes

Sediment Description: slightly silty clay (CL)

Color: greenish black (Gley 1, 2.5/10Y)

Objects found in Sample: some worm tubes

Odor: none

SEDIMENT SAMPLE COLLECTION LOG

SEDIMENT SAMPLING AREA: Former Pier B Area

Sample Location ID: HPF-PierB-CS02 (HPP-FSS-004) **Discrete Sample ID: HPP-FSS-004C**

Project Name: Sediment and Bathymetric Survey for Parcel F	Project No: 4-14214	
Date: 1-30-2018	Vessel company: Fugro Pelagos	
Logged by: Scott Donovan	Vessel Type: 27 foot survey vessel	Vessel Name: Julie Ann
Location: Hunter Point Naval Shipyard	Estimated Sample Depth below sea level: 9.5 feet	
Sampling method: Surface sediment using Petite Ponar grab sample device (6" by 6" sample area) Sample collected from approximately upper 5 centimeters of sediment surface on third attempt	Longitude: 122° 21' 47.1"	Latitude: 37° 43' 54.1"

Log Notes

Sediment Description: slightly silty clay (CL)

Color: dark greenish gray (Gley 1, 4/10Y)

Objects found in Sample: none

Odor: natural biological (slight)

SEDIMENT SAMPLE COLLECTION LOG

SEDIMENT SAMPLING AREA: Former Pier B Area

Sample Location ID: HPF-PierB-CS02 (HPP-FSS-004) **Discrete Sample ID: HPP-FSS-004D**

Project Name: Sediment and Bathymetric Survey for Parcel F	Project No: 4-14214	
Date: 1-30-2018	Vessel company: Fugro Pelagos	
Logged by: Scott Donovan	Vessel Type: 27 foot survey vessel	Vessel Name: Julie Ann
Location: Hunter Point Naval Shipyard	Estimated Sample Depth below sea level: 10.2 feet	
Sampling method: Surface sediment using Petite Ponar grab sample device (6" by 6" sample area) Sample collected from approximately upper 5 centimeters of sediment surface on first attempt	Longitude: 122° 21' 46.4"	Latitude: 37° 43' 54.8"

Log Notes

Sediment Description: slightly silty clay (CL)

Color: very dark greenish gray (Gley 1, 3/10Y)

Objects found in Sample: few worm tubes

Odor: none

SEDIMENT SAMPLE COLLECTION LOG

SEDIMENT SAMPLING AREA: Former Pier C Area

Sample Location ID: HPF-PierC-CS01 (HPP-FSS-005) **Discrete Sample ID: HPP-FSS-005A**

Project Name: Sediment and Bathymetric Survey for Parcel F	Project No: 4-14214	
Date: 1-30-2018	Vessel company: Fugro Pelagos	
Logged by: Scott Donovan	Vessel Type: 27 foot survey vessel	Vessel Name: Julie Ann
Location: Hunter Point Naval Shipyard	Estimated Sample Depth below sea level: 8.8 feet	
Sampling method: Surface sediment using Petite Ponar grab sample device (6" by 6" sample area) Sample collected from approximately upper 5 centimeters of sediment surface on fifth attempt	Longitude: 122° 21' 45.7"	Latitude: 37° 43' 51.2"

Log Notes

Sediment Description: slightly silty clay (CL)

Color: very dark greenish gray (Gley 1, 3/10Y)

Objects found in Sample: some worm tubes

Odor: none

SEDIMENT SAMPLE COLLECTION LOG

SEDIMENT SAMPLING AREA: Former Pier C Area

Sample Location ID: HPF-PierC-CS01 (HPP-FSS-005) **Discrete Sample ID: HPP-FSS-005B**

Project Name: Sediment and Bathymetric Survey for Parcel F	Project No: 4-14214	
Date: 1-30-2018	Vessel company: Fugro Pelagos	
Logged by: Scott Donovan	Vessel Type: 27 foot survey vessel	Vessel Name: Julie Ann
Location: Hunter Point Naval Shipyard	Estimated Sample Depth below sea level: 8.7 feet	
Sampling method: Surface sediment using Petite Ponar grab sample device (6" by 6" sample area) Sample collected from approximately upper 5 centimeters of sediment surface on third attempt	Longitude: 122° 21' 45.2"	Latitude: 37° 43' 51.9"

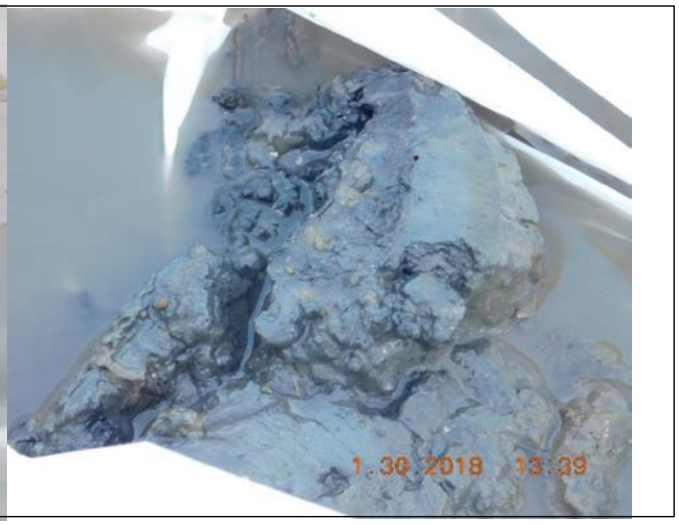
Log Notes

Sediment Description: slightly silty clay (CL)

Color: very dark greenish gray (Gley 1, 3/10Y)

Objects found in Sample: few pieces of wood fragments, one small white shell fragment

Odor: none



SEDIMENT SAMPLE COLLECTION LOG

SEDIMENT SAMPLING AREA: Former Pier C Area

Sample Location ID: HPF-PierC-CS01 (HPP-FSS-005)	**Discrete Sample ID: HPP-FSS-005C**	
Project Name: Sediment and Bathymetric Survey for Parcel F	Project No: 4-14214	
Date: 1-30-2018	Vessel company: Fugro Pelagos	
Logged by: Scott Donovan	Vessel Type: 27 foot survey vessel	Vessel Name: Julie Ann
Location: Hunter Point Naval Shipyard	Estimated Sample Depth below sea level: 8.1 feet	
Sampling method: Surface sediment using Petite Ponar grab sample device (6" by 6" sample area) Sample collected from approximately upper 5 centimeters of sediment surface on first attempt	Longitude: 122° 21' 45.1"	Latitude: 37° 43' 51.0"

Log Notes

Sediment Description: slightly silty clay (CL)

Color: very dark greenish gray (Gley 1, 3/10Y)

Objects found in Sample: some worm tubes, one live worm (photo)

Odor: none

SEDIMENT SAMPLE COLLECTION LOG

SEDIMENT SAMPLING AREA: Former Pier C Area

Sample Location ID: HPF-PierC-CS01 (HPP-FSS-005) **Discrete Sample ID: HPP-FSS-005D**

Project Name: Sediment and Bathymetric Survey for Parcel F	Project No: 4-14214	
Date: 1-30-2018	Vessel company: Fugro Pelagos	
Logged by: Scott Donovan	Vessel Type: 27 foot survey vessel	Vessel Name: Julie Ann
Location: Hunter Point Naval Shipyard	Estimated Sample Depth below sea level: 7.1 feet	
Sampling method: Surface sediment using Petite Ponar grab sample device (6" by 6" sample area) Sample collected from approximately upper 5 centimeters of sediment surface on fifth attempt	Longitude: 122° 21' 44.6"	Latitude: 37° 43' 51.5"

Log Notes

Sediment Description: slightly silty clay (CL)

Color: very dark greenish gray (Gley 1, 3/10Y)

Objects found in Sample: some worm tubes (intact one in photo)

Odor: none

SEDIMENT SAMPLE COLLECTION LOG

SEDIMENT SAMPLING AREA: Former Pier C Area

Sample Location ID: HPF-PierC-CS02 (HPP-FSS-006) Discrete Sample ID: HPP-FSS-006A

Project Name: Sediment and Bathymetric Survey for Parcel F	Project No: 4-14214	
Date: 1-30-2018	Vessel company: Fugro Pelagos	
Logged by: Scott Donovan	Vessel Type: 27 foot survey vessel	Vessel Name: Julie Ann
Location: Hunter Point Naval Shipyard	Estimated Sample Depth below sea level: 6.3 feet	
Sampling method: Surface sediment using Petite Ponar grab sample device (6" by 6" sample area) Sample collected from approximately upper 5 centimeters of sediment surface on seventh attempt	Longitude: 122° 21' 44.5"	Latitude: 37° 43' 52.7"

Log Notes

Sediment Description: slightly silty clay (CL)

Color: black (Gley 1, 2.5/N), some brownish gray mottling

Objects found in Sample: few worm tubes

Odor: none

SEDIMENT SAMPLE COLLECTION LOG

SEDIMENT SAMPLING AREA: Former Pier C Area

Sample Location ID: HPF-PierC-CS02 (HPP-FSS-006) Discrete Sample ID: HPP-FSS-006B

Project Name: Sediment and Bathymetric Survey for Parcel F	Project No: 4-14214	
Date: 1-30-2018	Vessel company: Fugro Pelagos	
Logged by: Scott Donovan	Vessel Type: 27 foot survey vessel	Vessel Name: Julie Ann
Location: Hunter Point Naval Shipyard	Estimated Sample Depth below sea level: 7.7 feet	
Sampling method: Surface sediment using Petite Ponar grab sample device (6" by 6" sample area) Sample collected from approximately upper 5 centimeters of sediment surface on second attempt	Longitude: 122° 21' 43.9"	Latitude: 37° 43' 53.3"

Log Notes

Sediment Description: slightly silty clay (CL)

Color: very dark greenish gray (Gley 1, 3/10Y)

Objects found in Sample: few worm tubes

Odor: none

SEDIMENT SAMPLE COLLECTION LOG

SEDIMENT SAMPLING AREA: Former Pier C Area

Sample Location ID: HPF-PierC-CS02 (HPP-FSS-006)	**Discrete Sample ID: HPP-FSS-006C**	
Project Name: Sediment and Bathymetric Survey for Parcel F	Project No: 4-14214	
Date: 1-30-2018	Vessel company: Fugro Pelagos	
Logged by: Scott Donovan	Vessel Type: 27 foot survey vessel	Vessel Name: Julie Ann
Location: Hunter Point Naval Shipyard	Estimated Sample Depth below sea level: 6.2 feet	
Sampling method: Surface sediment using Petite Ponar grab sample device (6" by 6" sample area) Sample collected from approximately upper 5 centimeters of sediment surface on first attempt	Longitude: 122° 21' 43.7"	Latitude: 37° 43' 52.4"

Log Notes

Sediment Description: slightly silty clay (CL)

Color: greenish black (Gley 1, 2.5/10Y)

Objects found in Sample: numerous worm tubes

Odor: none

SEDIMENT SAMPLE COLLECTION LOG

SEDIMENT SAMPLING AREA: Former Pier C Area

Sample Location ID: HPF-PierC-CS02 (HPP-FSS-006) Discrete Sample ID: HPP-FSS-006D

Project Name: Sediment and Bathymetric Survey for Parcel F	Project No: 4-14214	
Date: 1-30-2018	Vessel company: Fugro Pelagos	
Logged by: Scott Donovan	Vessel Type: 27 foot survey vessel	Vessel Name: Julie Ann
Location: Hunter Point Naval Shipyard	Estimated Sample Depth below sea level: 7.2 feet	
Sampling method: Surface sediment using Petite Ponar grab sample device (6" by 6" sample area) Sample collected from approximately upper 5 centimeters of sediment surface on second attempt	Longitude: 122° 21' 43.4"	Latitude: 37° 43' 53.1"

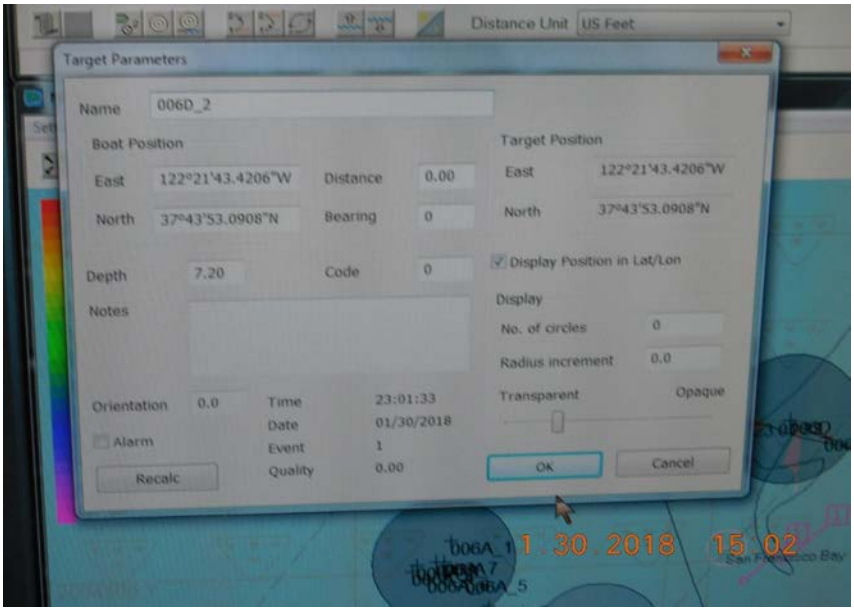
Log Notes

Sediment Description: slightly silty clay (CL)

Color: very dark greenish gray (Gley 1, 3/10Y)

Objects found in Sample: some worm tubes

Odor: none



SEDIMENT SAMPLE COLLECTION LOG

SEDIMENT SAMPLING AREA: Former Quay Wall Area

Sample Location ID: HPF-QuayWall-CS01 (HPP-FSS-007) Discrete Sample ID: HPP-FSS-007A		
Project Name: Sediment and Bathymetric Survey for Parcel F	Project No: 4-14214	
Date: 1-31-2018	Vessel company: Fugro Pelagos	
Logged by: Scott Donovan	Vessel Type: 27 foot survey vessel	Vessel Name: Julie Ann
Location: Hunter Point Naval Shipyard	Estimated Sample Depth below sea level: 10.2 feet	
Sampling method: Surface sediment using Petite Ponar grab sample device (6" by 6" sample area) Sample collected from approximately upper 5 centimeters of sediment surface on seventh attempt	Longitude: 122° 21' 45.8"	Latitude: 37° 43' 50.6"

Log Notes

Sediment Description: slightly silty clay (CL)

Color: black (Gley 1, 2.5/N), some brownish gray mottling

Objects found in Sample: few worm tubes

Odor: none

SEDIMENT SAMPLE COLLECTION LOG

SEDIMENT SAMPLING AREA: Former Quay Wall Area

Sample Location ID: HPF-QuayWall-CS01 (HPP-FSS-007)	**Discrete Sample ID: HPP-FSS-007B**	
Project Name: Sediment and Bathymetric Survey for Parcel F	Project No: 4-14214	
Date: 1-31-2018	Vessel company: Fugro Pelagos	
Logged by: Scott Donovan	Vessel Type: 27 foot survey vessel	Vessel Name: Julie Ann
Location: Hunter Point Naval Shipyard	Estimated Sample Depth below sea level: 10.8 feet	
Sampling method: Surface sediment using Petite Ponar grab sample device (6" by 6" sample area) Sample collected from approximately upper 5 centimeters of sediment surface on ninth attempt	Longitude: 122° 21' 45.2"	Latitude: 37° 43' 50.2"

Log Notes

Sediment Description: slightly silty clay (CL)

Color: very dark greenish gray (Gley 1, 3/10Y)

Objects found in Sample: few worm tubes

Odor: none

SEDIMENT SAMPLE COLLECTION LOG

SEDIMENT SAMPLING AREA: Former Quay Wall Area

Sample Location ID: HPF-QuayWall-CS01 (HPP-FSS-007) Discrete Sample ID: HPP-FSS-007C

Project Name: Sediment and Bathymetric Survey for Parcel F	Project No: 4-14214	
Date: 1-31-2018	Vessel company: Fugro Pelagos	
Logged by: Scott Donovan	Vessel Type: 27 foot survey vessel	Vessel Name: Julie Ann
Location: Hunter Point Naval Shipyard	Estimated Sample Depth below sea level: 11.0	
Sampling method: Surface sediment using Petite Ponar grab sample device (6" by 6" sample area) Sample collected from approximately upper 5 centimeters of sediment surface on first attempt	Longitude: 122° 21' 44.5"	Latitude: 37° 43' 49.9"

Log Notes

Sediment Description: slightly silty clay (CL)

Color: greenish black (Gley 1, 2.5/10Y)

Objects found in Sample: few worm tubes

Odor: none

SEDIMENT SAMPLE COLLECTION LOG

SEDIMENT SAMPLING AREA: Former Quay Wall Area

Sample Location ID: HPF-QuayWall-CS01 (HPP-FSS-007) Discrete Sample ID: HPP-FSS-007D		
Project Name: Sediment and Bathymetric Survey for Parcel F	Project No: 4-14214	
Date: 1-31-2018	Vessel company: Fugro Pelagos	
Logged by: Scott Donovan	Vessel Type: 27 foot survey vessel	Vessel Name: Julie Ann
Location: Hunter Point Naval Shipyard	Estimated Sample Depth below sea level: 11.2 feet	
Sampling method: Surface sediment using Petite Ponar grab sample device (6" by 6" sample area) Sample collected from approximately upper 5 centimeters of sediment surface on first attempt	Longitude: 122° 21' 43.9"	Latitude: 37° 43' 49.4"

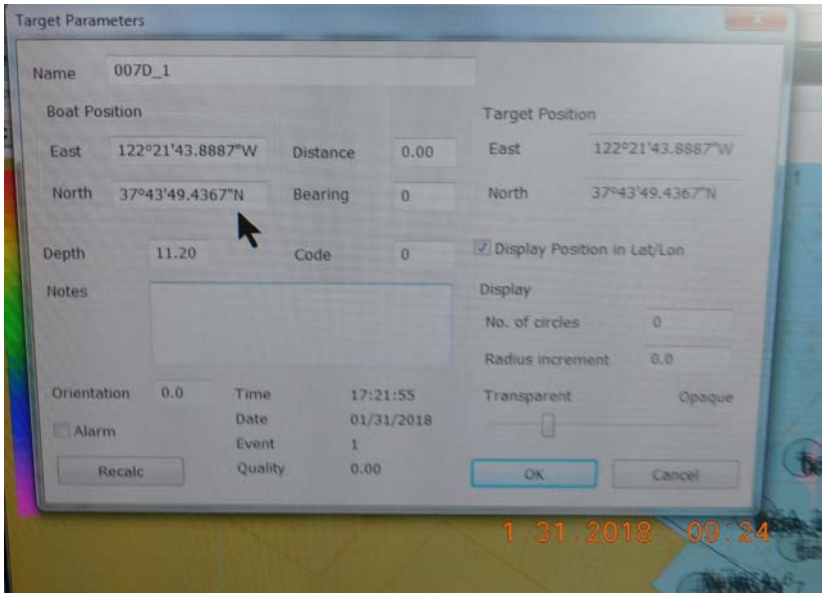
Log Notes

Sediment Description: slightly silty clay (CL)

Color: greenish black (Gley 1, 3/5GY)

Objects found in Sample: none

Odor: none



SEDIMENT SAMPLE COLLECTION LOG

SEDIMENT SAMPLING AREA: Former Wharf #2 Area

Sample Location ID: HPF-Wharf2-CS01 (HPP-FSS-007) Discrete Sample ID: HPP-FSS-008A

Project Name: Sediment and Bathymetric Survey for Parcel F	Project No: 4-14214	
Date: 1-31-2018	Vessel company: Fugro Pelagos	
Logged by: Scott Donovan	Vessel Type: 27 foot survey vessel	Vessel Name: Julie Ann
Location: Hunter Point Naval Shipyard	Estimated Sample Depth below sea level: 12.0 feet	
Sampling method: Surface sediment using Petite Ponar grab sample device (6" by 6" sample area) Sample collected from approximately upper 5 centimeters of sediment surface on third attempt	Longitude: 122° 21' 30.3"	Latitude: 37° 43' 45.3"

Log Notes

Sediment Description: slightly silty clay (CL)

Color: greenish black (Gley 1, 3/5GY), some brownish gray mottling

Objects found in Sample: some worm tubes

Odor: none

SEDIMENT SAMPLE COLLECTION LOG

SEDIMENT SAMPLING AREA: Former Wharf #2 Area

Sample Location ID: HPF-Wharf2-CS01 (HPP-FSS-008) Discrete Sample ID: HPP-FSS-008B		
Project Name: Sediment and Bathymetric Survey for Parcel F	Project No: 4-14214	
Date: 1-31-2018	Vessel company: Fugro Pelagos	
Logged by: Scott Donovan	Vessel Type: 27 foot survey vessel	Vessel Name: Julie Ann
Location: Hunter Point Naval Shipyard	Estimated Sample Depth below sea level: 13.9 feet	
Sampling method: Surface sediment using Petite Ponar grab sample device (6" by 6" sample area) Sample collected from approximately upper 5 centimeters of sediment surface on second attempt	Longitude: 122° 21' 29.3"	Latitude: 37° 43' 45.4"

Log Notes

Sediment Description: slightly silty clay (CL)

Color: greenish black (Gley 1, 2.5/5GY)

Objects found in Sample: few small shell fragments, few small pieces of red brick

Odor: none

SEDIMENT SAMPLE COLLECTION LOG

SEDIMENT SAMPLING AREA: Former Wharf #2 Area

Sample Location ID: HPF-Wharf2-CS01 (HPP-FSS-008) Discrete Sample ID: HPP-FSS-008C		
Project Name: Sediment and Bathymetric Survey for Parcel F	Project No: 4-14214	
Date: 1-31-2018	Vessel company: Fugro Pelagos	
Logged by: Scott Donovan	Vessel Type: 27 foot survey vessel	Vessel Name: Julie Ann
Location: Hunter Point Naval Shipyard	Estimated Sample Depth below sea level: 27.0 feet	
Sampling method: Surface sediment using Petite Ponar grab sample device (6" by 6" sample area) Sample collected from approximately upper 5 centimeters of sediment surface. 10 sample attempts at original location, then moved northwest and collected on fourth attempt	Longitude: 122° 21' 29.2"	Latitude: 37° 43' 45.7"

Log Notes

Sediment Description: slightly silty clay (CL)

Color: greenish black (Gley 1, 2.5/5GY)

Objects found in Sample: some small 3/4 inch rocks, piece thin concrete (2 x 5 inches) in photo on edge of tray

Odor: none

SEDIMENT SAMPLE COLLECTION LOG

SEDIMENT SAMPLING AREA: Former Wharf #2 Area

Sample Location ID: HPF-Wharf2-CS01 (HPP-FSS-008)	**Discrete Sample ID: HPP-FSS-008D**	
Project Name: Sediment and Bathymetric Survey for Parcel F	Project No: 4-14214	
Date: 1-31-2018	Vessel company: Fugro Pelagos	
Logged by: Scott Donovan	Vessel Type: 27 foot survey vessel	Vessel Name: Julie Ann
Location: Hunter Point Naval Shipyard	Estimated Sample Depth below sea level: 13.2 feet	
Sampling method: Surface sediment using Petite Ponar grab sample device (6" by 6" sample area) Sample collected from approximately upper 5 centimeters of sediment surface on third attempt	Longitude: 122° 21' 28.3"	Latitude: 37° 43' 44.4"

Log Notes

Sediment Description: slightly silty clay (CL)

Color: greenish black (Gley 1, 3/5GY)

Objects found in Sample: few very small shell fragments, numerous gravel fragments (3/4 inch), thin piece concrete

Odor: none

SEDIMENT SAMPLE COLLECTION LOG

SEDIMENT SAMPLING AREA: Former Wharf #2 Area

Sample Location ID: HPF-Wharf2-CS02 (HPP-FSS-009) Discrete Sample ID: HPP-FSS-009A

Project Name: Sediment and Bathymetric Survey for Parcel F	Project No: 4-14214	
Date: 1-31-2018	Vessel company: Fugro Pelagos	
Logged by: Scott Donovan	Vessel Type: 27 foot survey vessel	Vessel Name: Julie Ann
Location: Hunter Point Naval Shipyard	Estimated Sample Depth below sea level: 32.5 feet	
Sampling method: Surface sediment using Petite Ponar grab sample device (6" by 6" sample area) Sample collected from approximately upper 5 centimeters of sediment surface on fourth attempt	Longitude: 122° 21' 28.7"	Latitude: 37° 43' 45.6"

Log Notes

Sediment Description: slightly silty clay (CL)

Color: very dark greenish gray (Gley 1, 3/10Y)

Objects found in Sample: some 3/4 inch gravel

Odor: none

SEDIMENT SAMPLE COLLECTION LOG

SEDIMENT SAMPLING AREA: Former Wharf #2 Area

Sample Location ID: HPF-Wharf2-CS02 (HPP-FSS-009) Discrete Sample ID: HPP-FSS-009B

Project Name: Sediment and Bathymetric Survey for Parcel F	Project No: 4-14214	
Date: 1-31-2018	Vessel company: Fugro Pelagos	
Logged by: Scott Donovan	Vessel Type: 27 foot survey vessel	Vessel Name: Julie Ann
Location: Hunter Point Naval Shipyard	Estimated Sample Depth below sea level: 47.8 feet	
Sampling method: Surface sediment using Petite Ponar grab sample device (6" by 6" sample area) Sample collected from approximately upper 5 centimeters of sediment surface on seventh attempt	Longitude: 122° 21' 28.3"	Latitude: 37° 43' 45.8"

Log Notes

Sediment Description: silty sand (SM)

Color: dark greenish gray (Gley 1, 4/10Y)

Objects found in Sample: many shells fragments, piece rock 3 inches long, many small pebbles

Odor: none

SEDIMENT SAMPLE COLLECTION LOG

SEDIMENT SAMPLING AREA: Former Wharf #2 Area

Sample Location ID: HPF-Wharf2-CS02 (HPP-FSS-009) Discrete Sample ID: HPP-FSS-009C

Project Name: Sediment and Bathymetric Survey for Parcel F	Project No: 4-14214	
Date: 1-31-2018	Vessel company: Fugro Pelagos	
Logged by: Scott Donovan	Vessel Type: 27 foot survey vessel	Vessel Name: Julie Ann
Location: Hunter Point Naval Shipyard	Estimated Sample Depth below sea level: 32.3	
Sampling method: Surface sediment using Ponar grab sample device (6" by 6" sample area) Sample collected from approximately upper 5 centimeters of sediment surface on eleventh attempt	Longitude: 122° 21' 27.4"	Latitude: 37° 43' 45.3"

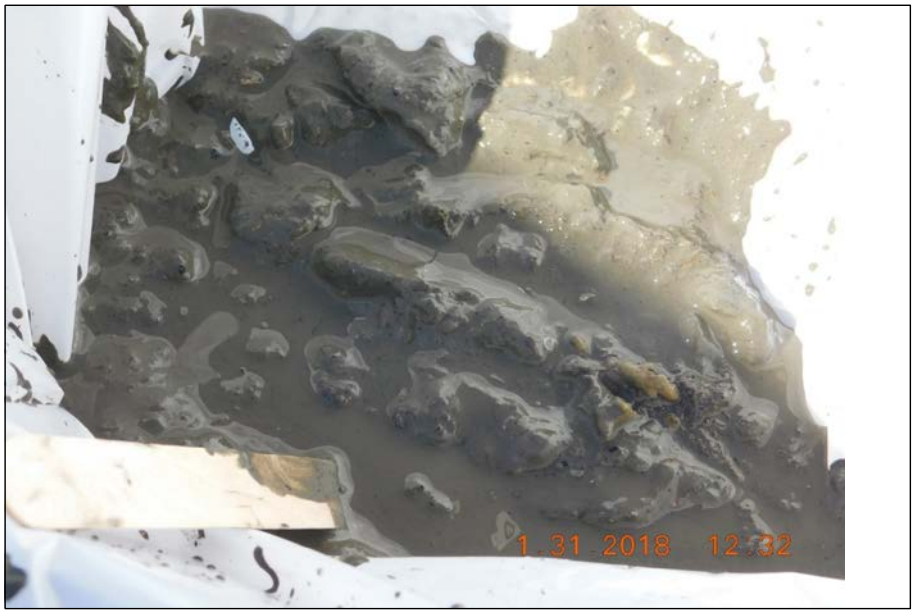
Log Notes

Sediment Description: slightly silty clay (CL)

Color: very dark greenish gray (Gley 1, 3/10Y)

Objects found in Sample: some algae

Odor: none



SEDIMENT SAMPLE COLLECTION LOG

SEDIMENT SAMPLING AREA: Former Wharf #2 Area

Sample Location ID: HPF-Wharf2-CS02 (HPP-FSS-009) Discrete Sample ID: HPP-FSS-009D

Project Name: Sediment and Bathymetric Survey for Parcel F	Project No: 4-14214	
Date: 1-31-2018	Vessel company: Fugro Pelagos	
Logged by: Scott Donovan	Vessel Type: 27 foot survey vessel	Vessel Name: Julie Ann
Location: Hunter Point Naval Shipyard	Estimated Sample Depth below sea level: 24.0 feet	
Sampling method: Surface sediment using Ponar grab sample device (9" by 9" sample area) Sample collected from approximately upper 5 centimeters of sediment surface on twenty second attempt	Longitude: 122° 21' 27.5"	Latitude: 37° 43' 45.1"

Log Notes

Sediment Description: silty sand (SM)

Color: dark greenish gray (Gley 1, 4/10Y)

Objects found in Sample: numerous shell fragments

Odor: none

Appendix D

Radiological Screening of Sediment Samples

CB&I Federal Services, LLC

COPY

RADIOLOGICAL SURVEY FORM

Survey Number: **HPRS- 01312018 F URS 100**

Survey Description: Release of sediment samples collected by ECC/Insight from Parcel F as part of their Bathymetric surveys. Smears, directs and dose rates were collected prior to the samples being shipped off-site for processing.

No surface contamination, abnormal exposure rates, or LLROs were identified.

RWP: 2018 ALL ST 01 0

Start Date: **1/31/2018** Time: **0757** End Date: **1/31/2018** Time: **845**

Surveyor

(Name) Randall Killpack

(Signature) [signature] Date: 1/31/18.

Smear Counter (Inst. #1)			α	β/γ
Model:	3030	4 π Efficiency:	32.3%	31.6%
Serial #:	266003	Bkgd (lab) CPM:	0.1	31.8
Probe #:	N/A	MDA (dpm/100cm²):	14	91
Cal. Due:	3/7/2018	Count Time(min):	1	

Survey Meter (Inst. #2)			α	β/γ
Model:	2360/43-93	2 π Efficiency:	39.79%	30.93%
Serial #:	267587	Bkgd (lab) CPM:	0.50	126.9
Probe / #:	PR286084	MDA (dpm/100cm²):	32	179
Cal. Due:	2/22/2018	Count Time(min):	2	
Probe Area(cm²):	100	Area Bkg (count):	0	302
Surface Efficiency:	α: 0.25 β: 0.50	Sat/Unsat:	SAT	

Survey Meter (Inst. #3)		**Exposure Rate Meter (Inst. #4)**		
Model:		Model:	19	
Serial #:		Serial #:	138426	
Cal. Due:		Cal. Due:	3/17/2018	
Ref Area BKG(Scan):		Bkgd (lab):	5	(μR/hr)
Ref Area IL(Scan):		Area Bkgd:	5	(μR/hr)
Site:		Sat/Unsat:	SAT	

Survey Location	Removable Contamination Inst. #1				Total Contamination Inst. #2				Gamma Inst.# 3		Exposure Rate Inst. #4		Comments
	Count per smear		dpm/100 cm²		Counts		dpm/100 cm²		Gross	< or ≥	μR/hr		
	α	β/γ	α	β/γ	α	β/γ	α	β/γ	cpm	IL	Contact Gross	1 m Gross	
BKG					0	302	<MDA	<MDA					Background
1	0	25	<MDA	<MDA	2	328	<MDA	240			5		Samples 001 A, B, C, D
2	0	33	<MDA	<MDA	2	282	<MDA	<MDA			5		Samples 002 A, B, C, D
3	0	29	<MDA	<MDA	2	255	<MDA	<MDA			5		Samples 004 A, B, C, D
4	0	37	<MDA	<MDA	1	335	<MDA	263			5		Samples 003 A, B, C, D
5	0	34	<MDA	<MDA	2	293	<MDA	<MDA			5		Samples 005 A, B, C, D
6	0	37	<MDA	<MDA	2	299	<MDA	<MDA			5		Samples 006 A, B, C, D
7	2	37	<MDA	<MDA	4	258	<MDA	<MDA			5		Cooler Outside
8	0	28	<MDA	<MDA	0	234	<MDA	<MDA			5		Cooler Inside
BKG					1	270	<MDA	<MDA					Background

Approved By: David Gerg *Print Name* [signature] *Signature* RCS *Title* 1-31-18 *Date*

FRM-TI-01-1

COPY

CB&I Federal Services

Surveyor

(Printed Name) Randall Killpack

(Signature)

Survey Number:

HPRS- 01312018 F URS 100

Date: 1/31/18

Legend	
○ Smear Location	□ *Exposure Rate microR/hr
☆ Static Location	△ Soil Sample Location

FRM-TI-01-4

COPY

Ludlum Measurements,Inc.
Model 3030 Sample Data

1/31/2018
9:37:22 AM

Header 1: 3030 S/N 266003
Header 2: F-URS-100
Header 3: RCT:R Killpack
Header 4:
Header 5:
Header 6:

Calibration Due Date: 3/7/2018

Last QC Check: 03/07/2017 13:36

Sample #	Date	Time	Alpha Count	Beta Count	Count Time	Type	Comment
1	1/31/2018	09:26:23	0	25	1	S	
2	1/31/2018	09:27:35	0	33	1	S	
3	1/31/2018	09:28:52	0	29	1	S	
4	1/31/2018	09:30:04	0	37	1	S	
5	1/31/2018	09:31:29	0	34	1	S	
6	1/31/2018	09:32:38	0	37	1	S	
7	1/31/2018	09:33:56	2	37	1	S	
8	1/31/2018	09:35:13	0	28	1	S	

Surveyor
(Printed Name) Randall Killpack
(Signature) Randall Killpack
Date: 1/31/18

Survey Number: **HPRS- 01312018 F URS 100**

COPY

CB&I Federal Services, LLC

RADIOLOGICAL SURVEY FORM

Survey Number: **HPRS- 02012018 F URS 101**

Survey Description: Release of sediment samples collected by ECC/Insight from Parcel F as part of their Bathymetric surveys. Smears, directs and dose rates were collected prior to the samples being shipped off-site for processing. No surface contamination, abnormal exposure rates, or LLROs were identified.

Smear Counter (Inst. #1)			α	β/γ
Model:	3030	4 π Efficiency:	32.3%	31.6%
Serial #:	266003	Bkgd (lab) CPM:	0.1	31.8
Probe #:	N/A	MDA (dpm/100cm²):	14	91
Cal. Due:	3/7/2018	Count Time(min):	1	

Survey Meter (Inst. #2)			α	β/γ
Model:	2360/43-93-2	2 π Efficiency:	40.14%	27.76%
Serial #:	185768	Bkgd (lab) CPM:	0.05	122.1
Probe / #:	PR230868	MDA (dpm/100cm²):	16	155
Cal. Due:	5/24/2018	Count Time(min):	2	
Probe Area(cm²):	126	Area Bkg (count):	0	268
Surface Efficiency:	α: 0.25 β: 0.50	Sat/Unsat:	SAT	

Survey Meter (Inst. #3)		**Exposure Rate Meter (Inst. #4)**		
Model:		Model:	19	
Serial #:		Serial #:	267072	
Cal. Due:		Cal. Due:	5/12/2018	
Ref Area BKG(Scan):		Bkgd (lab):	5	(μR/hr)
Ref Area IL(Scan):		Area Bkgd:	5	(μR/hr)
Site:		Sat/Unsat:	SAT	

RWP: 2018 ALL ST 01 0

Start Date: **2/1/2018** Time: **0735** End Date: **2/1/2018** Time: **0845**

Surveyor
(Name) Randall Killpack
(Signature) Randall Killpack. Date: 2/1/18.

Survey Location	Removable Contamination Inst. #1				Total Contamination Inst. #2				Gamma Inst.# 3		Exposure Rate Inst. #4		Comments
	Count per smear		dpm/100 cm²		Counts		dpm/100 cm²		Gross	< or ≥	μR/hr		
	α	β/γ	α	β/γ	α	β/γ	α	β/γ	cpm	IL	Contact Gross	1 m Gross	
BKG					0	268	<MDA	<MDA					Background
1	0	34	<MDA	<MDA	1	308	<MDA	182			5		Samples 007 A, B, C, D
					1	254	<MDA	<MDA					Follow-Up
2	1	28	<MDA	<MDA	1	304	<MDA	171			5		Samples 009 A, B, C, D
					0	292	<MDA	<MDA					Follow-Up
3	0	27	<MDA	<MDA	2	285	<MDA	<MDA			5		Samples 010 A, B, C, D
4	0	28	<MDA	<MDA	0	313	<MDA	197			5		Samples 008 A, B, C, D
					2	259	<MDA	<MDA					Follow-Up
5	0	25	<MDA	<MDA	2	221	<MDA	<MDA			5		Samples EB01 #1, #2
6	1	24	<MDA	<MDA	3	318	<MDA	211			5		Samples EB01 #1, #2 (Amber)
					0	296	<MDA	<MDA					Follow-Up
7	0	37	<MDA	<MDA	3	255	<MDA	<MDA			5		Samples 007 & 008 Bags
8	0	30	<MDA	<MDA	4	274	<MDA	<MDA			5		Samples 001 - 006 A, B, C, D (Bags)
					5	229	19	<MDA					Follow-Up
9	0	29	<MDA	<MDA	4	275	<MDA	<MDA			5		Cooler Inside
10	0	25	<MDA	<MDA	1	231	<MDA	<MDA			5		Cooler Outside
BKG					0	267	<MDA	<MDA					Background

Approved By: David Gerg (*Print Name*) David Gerg (*Signature*) RCS (*Title*) 2-6-18 (*Date*)

FRM-TI-01-1

COPY

CB&I Federal Services

Surveyor

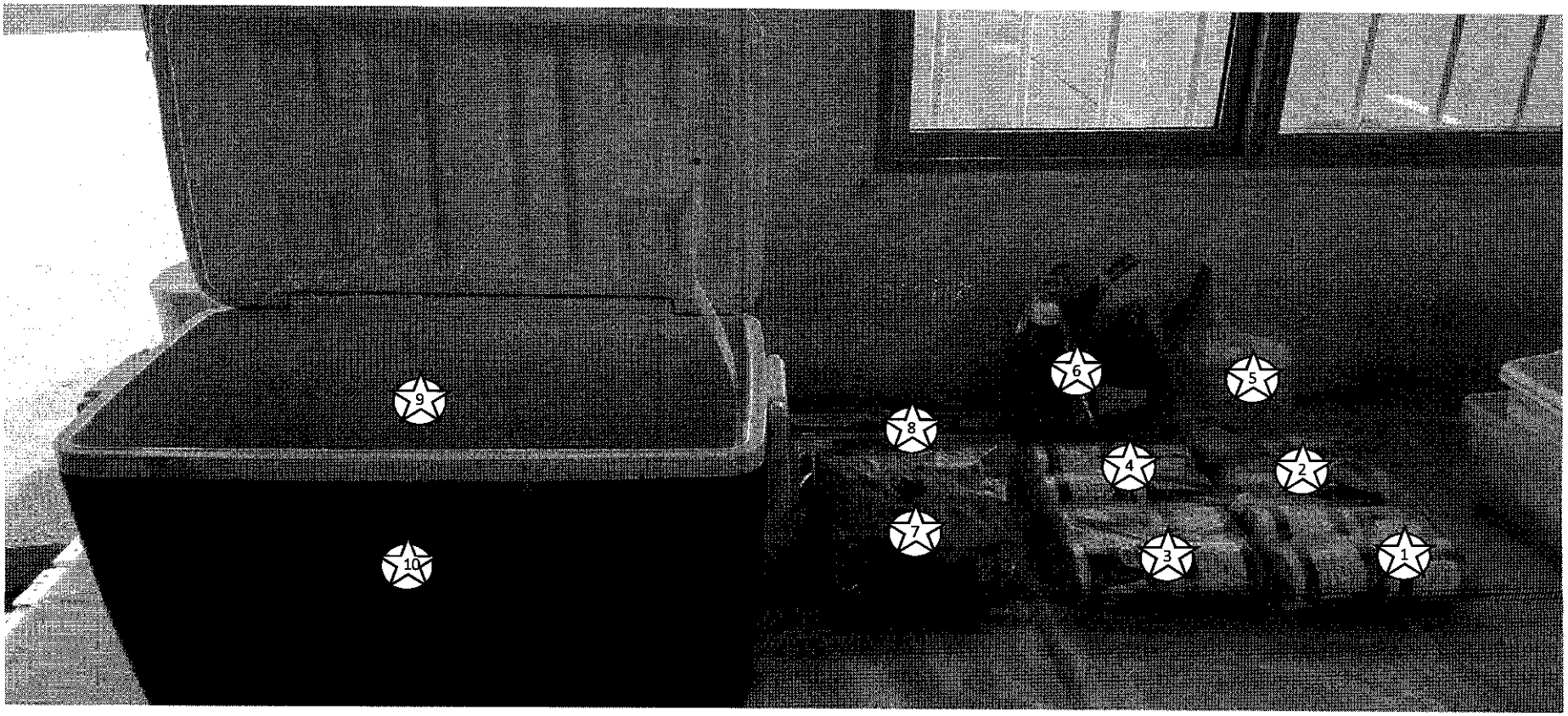
(Printed Name) Randall Killpack

(Signature) [signature]

Survey Number:

HPRS- 02012018 F URS 101

Date: 2/1/18



Legend	
○ Smear Location	□ *Exposure Rate microR/hr
☆ Static Location	△ Soil Sample Location

FRM-TI-01-4

COPY

Ludlum Measurements,Inc.
Model 3030 Sample Data

2/2/2018
9:10:21 AM

Header 1: 3030 S/N 266003
Header 2: F-URS-101
Header 3: RCT: R Killpack
Header 4:
Header 5:
Header 6:

Calibration Due Date: 3/7/2018

Last QC Check: 03/07/2017 13:36

Sample #	Date	Time	Alpha Count	Beta Count	Count Time	Type	Comment
1	2/2/2018	08:56:43	0	34	1	S	
2	2/2/2018	08:58:26	1	28	1	S	
3	2/2/2018	08:59:49	0	27	1	S	
4	2/2/2018	09:00:59	0	28	1	S	
5	2/2/2018	09:02:35	0	25	1	S	
6	2/2/2018	09:03:49	1	24	1	S	
7	2/2/2018	09:04:58	0	37	1	S	
8	2/2/2018	09:06:10	0	30	1	S	
9	2/2/2018	09:07:32	0	29	1	S	
10	2/2/2018	09:08:40	0	25	1	S	

Surveyor
(Printed Name) Randall Killpack
(Signature) Randall Killpack Date: 2/1/18.

Survey Number: **HPRS- 02012018 F URS 101**

Appendix E

Laboratory Analytical Data Reports and Data Validation Reports

Laboratory Analytical Data Reports

ea

ENTHALPY

ANALYTICAL

Enthalpy Analytical

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 296798
ANALYTICAL REPORT

Insight EEC, Inc. 3013 E Miraloma Ave Anaheim, CA 92806	Project : 4-14214 Location : HPNS-Parcel C Level : III

Sample ID	Lab ID	Sample ID	Lab ID
HPP-FSS-001	296798-001	HPP-FSS-004	296798-016
HPP-FSS-001A	296798-002	HPP-FSS-004A	296798-017
HPP-FSS-001B	296798-003	HPP-FSS-004B	296798-018
HPP-FSS-001C	296798-004	HPP-FSS-004C	296798-019
HPP-FSS-001D	296798-005	HPP-FSS-004D	296798-020
HPP-FSS-002	296798-006	HPP-FSS-005	296798-021
HPP-FSS-002A	296798-007	HPP-FSS-005A	296798-022
HPP-FSS-002B	296798-008	HPP-FSS-005B	296798-023
HPP-FSS-002C	296798-009	HPP-FSS-005C	296798-024
HPP-FSS-002D	296798-010	HPP-FSS-005D	296798-025
HPP-FSS-003	296798-011	HPP-FSS-006	296798-026
HPP-FSS-003A	296798-012	HPP-FSS-006A	296798-027
HPP-FSS-003B	296798-013	HPP-FSS-006B	296798-028
HPP-FSS-003C	296798-014	HPP-FSS-006C	296798-029
HPP-FSS-003D	296798-015	HPP-FSS-006D	296798-030

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature which applies to this PDF file as well as any associated electronic data deliverable files. The results contained in this report meet all requirements of NELAP and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: _____ Date: 02/07/2018

Mike Dahlquist
Project Manager
mike.dahlquist@enthalpy.com
(510) 204-2225 Ext 13101

CA ELAP# 2896, NELAP# 4044-001

ENTHALPY ANALYTICAL

CASE NARRATIVE

Laboratory number:	**296798**
Client:	**Insight EEC, Inc.**
Project:	**4-14214**
Location:	**HPNS-Parcel C**
Request Date:	**01/31/18**
Samples Received:	**01/31/18**

This data package contains sample and QC results for six four-point soil composites, requested for the above referenced project on 01/31/18. See attached cooler receipt form for any sample receipt problems or discrepancies.

PCBs (EPA 8082A):
All samples underwent sulfuric acid cleanup using EPA Method 3665A.

All samples underwent sulfur cleanup using the copper option in EPA Method 3660B.

Many samples were diluted due to client history of high non-target or organic acid interference.

No other analytical problems were encountered.

Metals (EPA 6020A and EPA 7471B):
Low recovery was observed for lead in the MSD for batch 256219; the parent sample was not a project sample. High recovery was also observed for lead in the MS for batch 256219.

Response exceeding the instrument's linear range was observed for lead in the MS for batch 256219; affected data was qualified with "Q".

No other analytical problems were encountered.

Moisture (ASTM D2216-98/CLP):
No analytical problems were encountered.

Chain of Custody

Enthalpy Analytical LLC
2323 Fifth Street
Berkeley, CA 94710
(510) 486-0900 Phone
(510) 486-0532 Fax

CHAIN OF CUSTODY

Chain of Custody # : 4-14214-01

C&T LOGIN # 296798

Project No: 4-14214 Hunters Point Naval Shipyard
Project Name: Parcel F Sediment Sampling
EDD Format: _____ Rpt Level: ☐ II ☐ III ☐ IV
Turnaround Time: ☐ RUSH _____ ☐ Standard

Sampler:
Report To: Nick Weinberger & Mitra Fattahipour
Company : Insight
Telephone: # (714) 678-6730
Email: nweinberger@ieeci.com; mfattahipour@ieeci.com

Lab No.	Sample ID.	Sampling Date	Sampling Time	Matrix: Water	Matrix: Soil	Matrix:	Matrix:	# of Containers	Chemical Preservative: HCl	H_2SO_4	HNO_3	NaOH	Methanol	NaHSO4	None	Analytical Request: PCBs (EPA 8082)	Metals (Cu/Pb/Hg, EPA 6020/7471A)						Notes
	HPP-FSS-001				X										X	X	X						Composite at Lab
	HPP-FSS-001A	1/30/18	0910		X			1							X								Sub-sample
	HPP-FSS-001B	1/30/18	0935		X			1							X								Sub-sample
	HPP-FSS-001C	1/30/18	0945		X			1							X								Sub-sample
	HPP-FSS-001D	1/30/18	0958		X			1							X								Sub-sample
	HPP-FSS-002				X										X	X	X						Composite at Lab
	HPP-FSS-002A	1/30/18	1012		X			1							X								Sub-sample
	HPP-FSS-002B	1/30/18	1030		X			1							X								Sub-sample
	HPP-FSS-002C	1/30/18	1045		X			1							X								Sub-sample
	HPP-FSS-002D	1/30/18	1102		X			1							X								Sub-sample

Notes:
Composite A, B, C, and D samples for testing as a composite sample.
Retain sub-samples on hold for possible testing pending composite sample results.

SAMPLE RECEIPT
☐ Intact ☐ Cold
☐ On Ice ☐ Ambient

RELINQUISHED BY:		RECEIVED BY:	
[signature]	1/31/2018 11:55 DATE/TIME	[signature]	1-31 1150 DATE/TIME
[signature]	1.31 1232 DATE/TIME	[signature]	1/31/18 1734 DATE/TIME
	DATE/TIME		DATE/TIME

Enthalpy Analytical LLC
2323 Fifth Street
Berkeley, CA 94710
(510) 486-0900 Phone
(510) 486-0532 Fax

CHAIN OF CUSTODY

Chain of Custody # : 4-14214-01

C&T LOGIN # 296798

Project No: 4-14214 Hunters Point Naval Shipyard
Project Name: Parcel F Sediment Sampling
EDD Format: _____ Rpt Level: ☐ II ☐ III ☐ IV
Turnaround Time: ☐ RUSH _____ ☐ Standard

Sampler:
Report To: Nick Weinberger & Mitra Fattahipour
Company : Insight
Telephone: # (714) 678-6730
Email: nweinberger@ieeci.com; mfattahipour@ieeci.com

Lab No.	Sample ID.	Sampling Date	Sampling Time	Matrix: Water	Matrix: Soil	Matrix:	Matrix:	# of Containers	Chemical Preservative: HCl	H_2SO_4	HNO_3	NaOH	Methanol	NaHSO4	None	Analytical Request: PCBs (EPA 8082)	Metals (Cu/Pb/Hg, EPA 6020/7471A)						Notes
	HPP-FSS-003				X										X	X	X						Composite at Lab
	HPP-FSS-003A	1/30/18	1115		X			1							X								Sub-sample
	HPP-FSS-003B	1/30/18	1132		X			1							X								Sub-sample
	HPP-FSS-003C	1/30/18	1140		X			1							X								Sub-sample
	HPP-FSS-003D	1/30/18	1201		X			1							X								Sub-sample
	HPP-FSS-004				X										X	X	X						Composite at Lab
	HPP-FSS-004A	1/30/18	1232		X			1							X								Sub-sample
	HPP-FSS-004B	1/30/18	1246		X			1							X								Sub-sample
	HPP-FSS-004C	1/30/18	1300		X			1							X								Sub-sample
	HPP-FSS-004D	1/30/18	1310		X			1							X								Sub-sample

Notes:
Composite A, B, C, and D samples for testing as a composite sample.
Retain sub-samples on hold for possible testing pending composite sample results.

SAMPLE RECEIPT
☐ Intact ☐ Cold
☐ On Ice ☐ Ambient

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	DATE/TIME
[signature]	1/31/2018 11:55	[signature]	1-31 1155
[signature]	1-31 1732	[signature]	1/31/18 1734

Enthalpy Analytical LLC
2323 Fifth Street
Berkeley, CA 94710
(510) 486-0900 Phone
(510) 486-0532 Fax

CHAIN OF CUSTODY

Chain of Custody # : 4-14214-01

C&T LOGIN # 296798

Project No: 4-14214 Hunters Point Naval Shipyard
Project Name: Parcel F Sediment Sampling
EDD Format: _____ Rpt Level: ☐ II ☐ III ☐ IV
Turnaround Time: ☐ RUSH _____ ☐ Standard

Sampler:
Report To: Nick Weinberger & Mitra Fattahipour
Company : Insight
Telephone: # (714) 678-6730
Email: nweinberger@ieeci.com; mfattahipour@ieeci.com

Lab No.	Sample ID.	Sampling Date	Sampling Time	Matrix Water	Matrix Soil			# of Containers	Chemical Preservative HCl	H_2SO_4	HNO_3	NaOH	Methanol	NaHSO4	None	Analytical Request PCBs (EPA 8082)	Metals (Cu/Pb/Hg, EPA 6020/7471A)						Notes
	HPP-FSS-005				X										X	X	X						Composite at Lab
	HPP-FSS-005A	1/30/18	1325		X			1							X								Sub-sample
	HPP-FSS-005B	1/30/18	1336		X			1							X								Sub-sample
	HPP-FSS-005C	1/30/18	1351		X			1							X								Sub-sample
	HPP-FSS-005D	1/30/18	1405		X			1							X								Sub-sample
	HPP-FSS-006				X										X	X	X						Composite at Lab
	HPP-FSS-006A	1/30/18	1430		X			1							X								Sub-sample
	HPP-FSS-006B	1/30/18	1445		X			1							X								Sub-sample
	HPP-FSS-006C	1/30/18	1453		X			1							X								Sub-sample
	HPP-FSS-006D	1/30/18	1508		X			1							X								Sub-sample

Notes:
Composite A, B, C, and D samples for testing as a composite sample.
Retain sub-samples on hold for possible testing pending composite sample results.

SAMPLE RECEIPT
☐ Intact ☐ Cold
☐ On Ice ☐ Ambient

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	DATE/TIME
M. Zuniga	1/31/2018 11:55	[signature]	1.31 1155
[signature]	1.31 1732	[signature]	1/31/18 1734

COOLER RECEIPT CHECKLIST

ENTHALPY Berkeley

Login # 296798 Date Received 1/31/18 Number of coolers 1
Client Insight Project Parcel F Sediment Sampling

Date Opened 1/31/18 By (print) Gil (sign) [signature]
Date Logged in 1 By (print) Tky (sign) Tky
Date Labelled 1 By (print) Gil (sign) [signature]

1. Did cooler come with a shipping slip (airbill, etc) _____ YES (NO)
   Shipping info _____

2A. Were custody seals present? .... ☐ YES (circle) on cooler on samples ☒ NO
   How many _____ Name _____ Date _____
2B. Were custody seals intact upon arrival? _____ YES NO (N/A)
3. Were custody papers dry and intact when received? _____ (YES) NO
4. Were custody papers filled out properly (ink, signed, etc)? _____ (YES) NO
5. Is the project identifiable from custody papers? (If so fill out top of form) ___ (YES) NO
6. Indicate the packing in cooler: (if other, describe) _____

☐ Bubble Wrap ☐ Foam blocks ☒ Bags ☐ None
☐ Cloth material ☐ Cardboard ☐ Styrofoam ☐ Paper towels

7. Temperature documentation: * Notify PM if temperature exceeds 6°C

Type of ice used: ☒ Wet ☐ Blue/Gel ☐ None Temp(°C) 1.1

☐ Temperature blank(s) included? ☐ Thermometer# _____ ☒ IR Gun# A

☐ Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? _____ YES (NO)
   If YES, what time were they transferred to freezer? _____
9. Did all bottles arrive unbroken/unopened? _____ (YES) NO
10. Are there any missing / extra samples? _____ YES (NO)
11. Are samples in the appropriate containers for indicated tests? _____ (YES) NO
12. Are sample labels present, in good condition and complete? _____ (YES) NO
13. Do the sample labels agree with custody papers? _____ (YES) NO
14. Was sufficient amount of sample sent for tests requested? _____ (YES) NO
15. Are the samples appropriately preserved? _____ YES NO (N/A)
16. Did you check preservatives for all bottles for each sample? _____ YES NO (N/A)
17. Did you document your preservative check? (pH strip lot# _____) YES NO (N/A)
18. Did you change the hold time in LIMS for unpreserved VOAs? _____ YES NO (N/A)
19. Did you change the hold time in LIMS for preserved terracores? _____ YES NO (N/A)
20. Are bubbles > 6mm absent in VOA samples? _____ YES NO (N/A)
21. Was the client contacted concerning this sample delivery? _____ YES (NO)
   If YES, Who was called? _____ By _____ Date: _____

COMMENTS _____

Rev 14, 8/01/17

ENTHALPY ANALYTICAL

Detections Summary for 296798

Results for any subcontracted analyses are not included in this summary.

Client : Insight EEC, Inc.
Project : 4-14214
Location : HPNS-Parcel C

Client Sample ID : HPP-FSS-001 Laboratory Sample ID : 296798-001

Analyte	Result	Flags	LOQ	DL	Units	Basis	IDF	Method	Prep Method
Aroclor-1260	23	J	36	8.4	ug/Kg	Dry	5.000	EPA 8082A	EPA 3550C
Copper	38		1.3	0.21	mg/Kg	Dry	25.00	EPA 6020A	EPA 3050B
Lead	17		1.3	0.14	mg/Kg	Dry	25.00	EPA 6020A	EPA 3050B
Mercury	0.23		0.037	0.0066	mg/Kg	Dry	1.000	EPA 7471B	METHOD

Client Sample ID : HPP-FSS-002 Laboratory Sample ID : 296798-006

Analyte	Result	Flags	LOQ	DL	Units	Basis	IDF	Method	Prep Method
Copper	39		1.3	0.21	mg/Kg	Dry	25.00	EPA 6020A	EPA 3050B
Lead	17		1.3	0.14	mg/Kg	Dry	25.00	EPA 6020A	EPA 3050B
Mercury	0.18		0.038	0.0066	mg/Kg	Dry	1.000	EPA 7471B	METHOD

Client Sample ID : HPP-FSS-003 Laboratory Sample ID : 296798-011

Analyte	Result	Flags	LOQ	DL	Units	Basis	IDF	Method	Prep Method
Copper	35		1.3	0.21	mg/Kg	Dry	25.00	EPA 6020A	EPA 3050B
Lead	14		1.3	0.14	mg/Kg	Dry	25.00	EPA 6020A	EPA 3050B
Mercury	0.16		0.031	0.0054	mg/Kg	Dry	1.000	EPA 7471B	METHOD

Client Sample ID : HPP-FSS-004 Laboratory Sample ID : 296798-016

Analyte	Result	Flags	LOQ	DL	Units	Basis	IDF	Method	Prep Method
Copper	38		1.4	0.23	mg/Kg	Dry	25.00	EPA 6020A	EPA 3050B
Lead	16		1.4	0.15	mg/Kg	Dry	25.00	EPA 6020A	EPA 3050B
Mercury	0.20		0.036	0.0063	mg/Kg	Dry	1.000	EPA 7471B	METHOD

Client Sample ID : HPP-FSS-005 Laboratory Sample ID : 296798-021

Analyte	Result	Flags	LOQ	DL	Units	Basis	IDF	Method	Prep Method
Aroclor-1260	11	J	33	7.6	ug/Kg	Dry	5.000	EPA 8082A	EPA 3550C
Copper	40		1.2	0.19	mg/Kg	Dry	25.00	EPA 6020A	EPA 3050B
Lead	18		1.2	0.12	mg/Kg	Dry	25.00	EPA 6020A	EPA 3050B
Mercury	0.21		0.036	0.0063	mg/Kg	Dry	1.000	EPA 7471B	METHOD

ENTHALPY ANALYTICAL

Client Sample ID : HPP-FSS-006 Laboratory Sample ID : 296798-026

Analyte	Result	Flags	LOQ	DL	Units	Basis	IDF	Method	Prep Method
Copper	40		1.3	0.21	mg/Kg	Dry	25.00	EPA 6020A	EPA 3050B
Lead	17		1.3	0.14	mg/Kg	Dry	25.00	EPA 6020A	EPA 3050B
Mercury	0.18		0.036	0.0063	mg/Kg	Dry	1.000	EPA 7471B	METHOD

J = Estimated value

Laboratory Job Number 296798

ANALYTICAL REPORT

PCBs

Matrix: Soil

ENTHALPY ANALYTICAL

Polychlorinated Biphenyls (PCBs)

Lab #:	296798	Location:	HPNS-Parcel C
Client:	Insight EEC, Inc.	Prep:	EPA 3550C
Project#:	4-14214	Analysis:	EPA 8082A
Matrix:	Soil	Sampled:	01/30/18
Units:	ug/Kg	Received:	01/31/18
Basis:	dry	Prepared:	02/01/18
Batch#:	256131	Analyzed:	02/02/18

Field ID:	HPP-FSS-001	Moisture:	54%
Type:	SAMPLE	Diln Fac:	5.000
Lab ID:	296798-001		

Analyte	Result	LOQ	DL
Aroclor-1016	26 U	36	13
Aroclor-1221	70 U	72	35
Aroclor-1232	35 U	36	17
Aroclor-1242	35 U	36	16
Aroclor-1248	35 U	36	17
Aroclor-1254	26 U	36	13
Aroclor-1260	23 J	36	8.4

Surrogate	%REC	Limits
TCMX	57	44-130
Decachlorobiphenyl	80	26-153

Field ID:	HPP-FSS-002	Moisture:	57%
Type:	SAMPLE	Diln Fac:	5.000
Lab ID:	296798-006		

Analyte	Result	LOQ	DL
Aroclor-1016	28 U	38	14
Aroclor-1221	74 U	77	37
Aroclor-1232	37 U	38	18
Aroclor-1242	37 U	38	16
Aroclor-1248	37 U	38	18
Aroclor-1254	28 U	38	14
Aroclor-1260	28 U	38	8.9

Surrogate	%REC	Limits
TCMX	54	44-130
Decachlorobiphenyl	66	26-153

J= Estimated value
U= Not Detected at or above DL
DL= Detection Limit
LOQ= Limit of Quantitation

ENTHALPY ANALYTICAL

Polychlorinated Biphenyls (PCBs)

Lab #:	296798	Location:	HPNS-Parcel C
Client:	Insight EEC, Inc.	Prep:	EPA 3550C
Project#:	4-14214	Analysis:	EPA 8082A
Matrix:	Soil	Sampled:	01/30/18
Units:	ug/Kg	Received:	01/31/18
Basis:	dry	Prepared:	02/01/18
Batch#:	256131	Analyzed:	02/02/18

Field ID:	HPP-FSS-003	Moisture:	49%
Type:	SAMPLE	Diln Fac:	5.000
Lab ID:	296798-011		

Analyte	Result	LOQ	DL
Aroclor-1016	23 U	32	11
Aroclor-1221	62 U	64	31
Aroclor-1232	31 U	32	15
Aroclor-1242	31 U	32	14
Aroclor-1248	31 U	32	15
Aroclor-1254	23 U	32	12
Aroclor-1260	23 U	32	7.5

Surrogate	%REC	Limits
TCMX	47	44-130
Decachlorobiphenyl	63	26-153

Field ID:	HPP-FSS-004	Moisture:	54%
Type:	SAMPLE	Diln Fac:	5.000
Lab ID:	296798-016		

Analyte	Result	LOQ	DL
Aroclor-1016	26 U	36	13
Aroclor-1221	70 U	73	35
Aroclor-1232	35 U	36	17
Aroclor-1242	35 U	36	16
Aroclor-1248	35 U	36	17
Aroclor-1254	26 U	36	13
Aroclor-1260	26 U	36	8.5

Surrogate	%REC	Limits
TCMX	55	44-130
Decachlorobiphenyl	81	26-153

J= Estimated value
U= Not Detected at or above DL
DL= Detection Limit
LOQ= Limit of Quantitation

ENTHALPY ANALYTICAL

Polychlorinated Biphenyls (PCBs)

Lab #:	296798	Location:	HPNS-Parcel C
Client:	Insight EEC, Inc.	Prep:	EPA 3550C
Project#:	4-14214	Analysis:	EPA 8082A
Matrix:	Soil	Sampled:	01/30/18
Units:	ug/Kg	Received:	01/31/18
Basis:	dry	Prepared:	02/01/18
Batch#:	256131	Analyzed:	02/02/18

Field ID:	HPP-FSS-005	Moisture:	49%
Type:	SAMPLE	Diln Fac:	5.000
Lab ID:	296798-021		

Analyte	Result	LOQ	DL
Aroclor-1016	24 U	33	12
Aroclor-1221	63 U	66	31
Aroclor-1232	31 U	33	15
Aroclor-1242	31 U	33	14
Aroclor-1248	31 U	33	15
Aroclor-1254	24 U	33	12
Aroclor-1260	11 J	33	7.6

Surrogate	%REC	Limits
TCMX	53	44-130
Decachlorobiphenyl	69	26-153

Field ID:	HPP-FSS-006	Moisture:	54%
Type:	SAMPLE	Diln Fac:	5.000
Lab ID:	296798-026		

Analyte	Result	LOQ	DL
Aroclor-1016	26 U	36	13
Aroclor-1221	69 U	72	35
Aroclor-1232	35 U	36	17
Aroclor-1242	35 U	36	16
Aroclor-1248	35 U	36	17
Aroclor-1254	26 U	36	13
Aroclor-1260	26 U	36	8.4

Surrogate	%REC	Limits
TCMX	56	44-130
Decachlorobiphenyl	63	26-153

J= Estimated value
U= Not Detected at or above DL
DL= Detection Limit
LOQ= Limit of Quantitation

ENTHALPY ANALYTICAL

Polychlorinated Biphenyls (PCBs)

Lab #:	296798	Location:	HPNS-Parcel C
Client:	Insight EEC, Inc.	Prep:	EPA 3550C
Project#:	4-14214	Analysis:	EPA 8082A
Matrix:	Soil	Sampled:	01/30/18
Units:	ug/Kg	Received:	01/31/18
Basis:	dry	Prepared:	02/01/18
Batch#:	256131	Analyzed:	02/02/18

Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC918626		

Analyte	Result	LOQ	DL
Aroclor-1016	2.4 U	4.8	1.2
Aroclor-1221	6.4 U	9.5	3.2
Aroclor-1232	3.2 U	4.8	1.5
Aroclor-1242	3.2 U	4.8	1.4
Aroclor-1248	3.2 U	4.8	1.5
Aroclor-1254	2.4 U	4.8	1.2
Aroclor-1260	2.4 U	4.8	0.77

Surrogate	%REC	Limits
TCMX	92	44-130
Decachlorobiphenyl	80	26-153

J= Estimated value
U= Not Detected at or above DL
DL= Detection Limit
LOQ= Limit of Quantitation

ENTHALPY ANALYTICAL

Batch QC Report

Polychlorinated Biphenyls (PCBs)

Lab #:	296798	Location:	HPNS-Parcel C
Client:	Insight EEC, Inc.	Prep:	EPA 3550C
Project#:	4-14214	Analysis:	EPA 8082A
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC918627	Batch#:	256131
Matrix:	Soil	Prepared:	02/01/18
Units:	ug/Kg	Analyzed:	02/02/18

Analyte	Spiked	Result	%REC	Limits
Aroclor-1016	82.75	87.78	106	47-134
Aroclor-1260	82.75	87.73	106	53-140

Surrogate	%REC	Limits
TCMX	101	44-130
Decachlorobiphenyl	98	26-153

ENTHALPY ANALYTICAL

Batch QC Report

Polychlorinated Biphenyls (PCBs)

Lab #:	296798	Location:	HPNS-Parcel C
Client:	Insight EEC, Inc.	Prep:	EPA 3550C
Project#:	4-14214	Analysis:	EPA 8082A
Field ID:	ZZZZZZZZZZ	Batch#:	256131
MSS Lab ID:	296804-009	Sampled:	01/31/18
Matrix:	Soil	Received:	01/31/18
Units:	ug/Kg	Prepared:	02/01/18
Basis:	as received	Analyzed:	02/02/18
Diln Fac:	1.000		

Type: MS Lab ID: QC918628

Analyte	MSS Result	Spiked	Result	%REC	Limits
Aroclor-1016	<1.197	84.06	93.53	111	47-134
Aroclor-1260	<0.7825	84.06	90.22	107	53-140

Surrogate	%REC	Limits
TCMX	73	44-130
Decachlorobiphenyl	93	26-153

Type: MSD Lab ID: QC918629

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Aroclor-1016	84.03	95.19	113	47-134	2	30
Aroclor-1260	84.03	97.52	116	53-140	8	30

Surrogate	%REC	Limits
TCMX	76	44-130
Decachlorobiphenyl	96	26-153

RPD= Relative Percent Difference

Confirmation Report for 296798 PCBS Soil
Enthalpy Analytical - Berkeley

Units: ug/Kg

Lab ID	Client ID	Analyte	Result	Confirmation	RPD	%D
296798-001	HPP-FSS-001	Aroclor-1260	23.37 J	15.47	41	-34
296798-021	HPP-FSS-005	Aroclor-1260	11.13 J	9.634	14	-13

J=estimated

Initial & Continuing Calibration Data

ENTHALPY INITIAL CALIBRATION FOR 296798 PCBS Soil: EPA 8082A

Inst : GC16
Calnum : 238037991001
Units : pg/ul

Name : ar-1660-026ical
Date : 26-JAN-2018 20:18
X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	026_009	238037991009	PCB100_20	26-JAN-2018 20:18	S35531 (10X)
L2	026_010	238037991010	PCB25_5	26-JAN-2018 20:47	S35530
L3	026_011	238037991011	PCB100_20	26-JAN-2018 21:16	S35531
L4	026_012	238037991012	PCB250_50	26-JAN-2018 21:45	S35532
L5	026_013	238037991013	PCB500_100	26-JAN-2018 22:14	S35533
L6	026_014	238037991014	PCB750_150	26-JAN-2018 22:43	S35534
L7	026_015	238037991015	PCB1000_200	26-JAN-2018 23:12	S35535

Analyte	Ch	L1	L2	L3	L4	L5	L6	L7	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	MxRSD	Flg
Aroclor-1016 Peak # 1	A	593.70	649.52	635.48	546.71	481.97	451.66	488.09	AVRG		0.00182		549.59	14	.99	20	
Aroclor-1016 Peak # 2	A	763.20	819.28	804.88	730.92	600.77	604.74	678.96	AVRG		0.00140		714.68	13	.99	20	
Aroclor-1016 Peak # 3	A	420.70	447.04	459.36	412.09	352.38	353.71	390.49	AVRG		0.00247		405.11	10	.99	20	
Aroclor-1016 Peak # 4	A	278.50	303.04	289.68	263.41	219.28	215.92	233.39	AVRG		0.00388		257.60	14	.99	20	
Aroclor-1016 Peak # 5	A	370.30	398.92	398.85	352.62	302.82	295.94	335.44	AVRG		0.00285		350.70	12	.99	20	
Aroclor-1260 Peak # 1	A	1160.5	1291.9	1321.3	1202.6	928.46	973.66	1077.3	AVRG		8.80E-4		1136.5	13	.99	20	
Aroclor-1260 Peak # 2	A	887.80	1041.4	1086.2	1019.3	804.87	895.64	1015.8	AVRG		0.00104		964.42	11	.99	20	
Aroclor-1260 Peak # 3	A	484.10	532.92	578.63	556.51	446.66	486.43	547.10	AVRG		0.00193		518.91	9	.99	20	
Aroclor-1260 Peak # 4	A	1046.8	1266.9	1336.4	1356.6	1016.7	1159.7	1284.8	AVRG		8.27E-4		1209.7	11	.99	20	
Aroclor-1260 Peak # 5	A	461.40	530.48	590.44	607.45	438.39	533.20	594.84	AVRG		0.00186		536.60	12	.99	20	
TCMX	A	11919	12854	12506	11335	10532	10068	11313	AVRG		8.69E-5		11504	9	.99	20	
Decachlorobiphenyl	A	13389	13769	13987	13255	8719.3	9675.3	10114	AVRG		8.44E-5		11844	19	.99	20	
Aroclor-1016 Peak # 1	B	204.60	213.28	221.02	207.51	183.65	188.51	223.21	AVRG		0.00486		205.97	7	.99	20	
Aroclor-1016 Peak # 2	B	452.70	530.76	597.39	575.73	513.27	550.81	670.95	AVRG		0.00180		555.95	12	.99	20	
Aroclor-1016 Peak # 3	B	268.60	286.56	352.16	335.06	295.69	306.39	347.78	AVRG		0.00319		313.18	10	.99	20	
Aroclor-1016 Peak # 4	B	178.20	205.32	228.75	210.01	184.87	184.61	184.20	AVRG		0.00509		196.57	9	.99	20	
Aroclor-1016 Peak # 5	B	263.70	323.52	340.39	336.93	296.44	302.05	342.47	AVRG		0.00317		315.07	9	.99	20	
Aroclor-1260 Peak # 1	B	428.00	502.80	512.97	462.19	372.15	390.78	456.83	AVRG		0.00224		446.53	12	.99	20	
Aroclor-1260 Peak # 2	B	435.80	555.40	591.40	597.11	527.59	573.01	679.28	AVRG		0.00177		565.66	13	.99	20	
Aroclor-1260 Peak # 3	B	398.50	451.60	451.65	437.48	339.23	378.77	431.21	AVRG		0.00242		412.63	10	.99	20	
Aroclor-1260 Peak # 4	B	549.60	655.48	674.46	679.06	532.89	629.94	707.60	AVRG		0.00158		632.72	11	.99	20	
Aroclor-1260 Peak # 5	B	283.50	421.36	436.86	445.04	322.40	374.22	439.65	AVRG		0.00257		389.00	17	.99	20	
TCMX	B	10416	10920	11708	11025	11073	11211	13690	AVRG		8.75E-5		11435	9	.99	20	
Decachlorobiphenyl	B	12716	12956	12242	11986	8314.4	10102	11022	AVRG		8.82E-5		11334	15	.99	20	

Spiked Amounts / Drifts	Ch	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D	L6	%D	L7	%D
Aroclor-1016 Peak # 1	A	10.000	8	25.000	18	100.00	16	250.00	-1	500.00	-12	750.00	-18	1000.0	-11
Aroclor-1016 Peak # 2	A	10.000	7	25.000	15	100.00	13	250.00	2	500.00	-16	750.00	-15	1000.0	-5
Aroclor-1016 Peak # 3	A	10.000	4	25.000	10	100.00	13	250.00	2	500.00	-13	750.00	-13	1000.0	-4
Aroclor-1016 Peak # 4	A	10.000	8	25.000	18	100.00	12	250.00	2	500.00	-15	750.00	-16	1000.0	-9
Aroclor-1016 Peak # 5	A	10.000	6	25.000	14	100.00	14	250.00	1	500.00	-14	750.00	-16	1000.0	-4
Aroclor-1260 Peak # 1	A	10.000	2	25.000	14	100.00	16	250.00	6	500.00	-18	750.00	-14	1000.0	-5
Aroclor-1260 Peak # 2	A	10.000	-8	25.000	8	100.00	13	250.00	6	500.00	-17	750.00	-7	1000.0	5
Aroclor-1260 Peak # 3	A	10.000	-7	25.000	3	100.00	12	250.00	7	500.00	-14	750.00	-6	1000.0	5
Aroclor-1260 Peak # 4	A	10.000	-13	25.000	5	100.00	10	250.00	12	500.00	-16	750.00	-4	1000.0	6
Aroclor-1260 Peak # 5	A	10.000	-14	25.000	-1	100.00	10	250.00	13	500.00	-18	750.00	-1	1000.0	11
TCMX	A	2.0000	4	5.0000	12	20.000	9	50.000	-1	100.00	-8	150.00	-12	200.00	-2
Decachlorobiphenyl	A	2.0000	13	5.0000	16	20.000	18	50.000	12	100.00	**-26**	150.00	-18	200.00	-15
Aroclor-1016 Peak # 1	B	10.000	-1	25.000	4	100.00	7	250.00	1	500.00	-11	750.00	-8	1000.0	8
Aroclor-1016 Peak # 2	B	10.000	-19	25.000	-5	100.00	7	250.00	4	500.00	-8	750.00	-1	1000.0	**21**
Aroclor-1016 Peak # 3	B	10.000	-14	25.000	-8	100.00	12	250.00	7	500.00	-6	750.00	-2	1000.0	11
Aroclor-1016 Peak # 4	B	10.000	-9	25.000	4	100.00	16	250.00	7	500.00	-6	750.00	-6	1000.0	-6
Aroclor-1016 Peak # 5	B	10.000	-16	25.000	3	100.00	8	250.00	7	500.00	-6	750.00	-4	1000.0	9
Aroclor-1260 Peak # 1	B	10.000	-4	25.000	13	100.00	15	250.00	4	500.00	-17	750.00	-12	1000.0	2
Aroclor-1260 Peak # 2	B	10.000	**-23**	25.000	-2	100.00	5	250.00	6	500.00	-7	750.00	1	1000.0	20
Aroclor-1260 Peak # 3	B	10.000	-3	25.000	9	100.00	9	250.00	6	500.00	-18	750.00	-8	1000.0	5
Aroclor-1260 Peak # 4	B	10.000	-13	25.000	4	100.00	7	250.00	7	500.00	-16	750.00	0	1000.0	12
Aroclor-1260 Peak # 5	B	10.000	**-27**	25.000	8	100.00	12	250.00	14	500.00	-17	750.00	-4	1000.0	13
TCMX	B	2.0000	-9	5.0000	-4	20.000	2	50.000	-4	100.00	-3	150.00	-2	200.00	20
Decachlorobiphenyl	B	2.0000	12	5.0000	14	20.000	8	50.000	6	100.00	**-27**	150.00	-11	200.00	-3

JC1 01/29/18 : Corrected automatically drawn baseline in all levels.

Analyst: JC1 Date: 01/29/18 Reviewer: EAH Date: 01/29/18

Instrument amount = a0 + response * a1 + response^2 * a2; AVRG=Average response factor

ENTHALPY 2ND SOURCE CALIBRATION SUMMARY FOR 296798 PCBS Soil
EPA 8082A

Inst : GC16 Name : ar-1660-026ical
Calnum : 238037991001 Cal Date : 26-JAN-2018

ICV 238037991017 (026_017 27-JAN-2018) stds: S35527

Analyte	Ch	Spiked	Quant	Units	%D	Max	Flags
Aroclor-1016	A	250.0	233.1	pg/ul	-7	20	
Aroclor-1260	A	250.0	221.1	pg/ul	-12	20	
Aroclor-1016	B	250.0	239.0	pg/ul	-4	20	
Aroclor-1260	B	250.0	220.6	pg/ul	-12	20	

Analyst: JC1 Date: 01/29/18 Reviewer: EAH Date: 01/29/18

ENTHALPY CONTINUING CALIBRATION FOR 296798 PCBS Soil
EPA 8082A

Inst : GC16 Run Name : PCB500_100 IDF : 1.0
Seqnum : 238048058002.1 File : 033_002 Time : 02-FEB-2018 09:27
Cal : 238037991001 Caldate : 26-JAN-2018
Standards: S35813

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Aroclor-1016	A			500.0	420.4	pg/ul	-16	20	
Aroclor-1260	A			500.0	416.3	pg/ul	-17	20	
TCMX	A	11504	10024	100.0	87.13	pg/ul	-13	20	
Decachlorobiphenyl	A	11844	8389.3	100.0	70.83	pg/ul	**-29**	20	c-
Aroclor-1016	B			500.0	480.3	pg/ul	-4	20	
Aroclor-1260	B			500.0	453.8	pg/ul	-9	20	
TCMX	B	11435	10462	100.0	91.49	pg/ul	-9	20	
Decachlorobiphenyl	B	11334	7741.9	100.0	68.31	pg/ul	**-32**	20	c-

JC1 02/02/18 : Corrected automatically drawn baseline. [general version]

Analyst: JC1 Date: 02/06/18 Reviewer: EAH Date: 02/07/18

-=low bias c=CCV

ENTHALPY CONTINUING CALIBRATION FOR 296798 PCBS Soil
EPA 8082A

Inst : GC16 Run Name : PCB500_100 IDF : 1.0
Seqnum : 238048058017.1 File : 033_017 Time : 02-FEB-2018 17:16
Cal : 238037991001 Caldate : 26-JAN-2018
Standards: S35813

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Aroclor-1016	A			500.0	437.6	pg/ul	-12	20	
Aroclor-1260	A			500.0	421.6	pg/ul	-16	20	
TCMX	A	11504	10370	100.0	90.15	pg/ul	-10	20	
Decachlorobiphenyl	A	11844	8386.1	100.0	70.80	pg/ul	**-29**	20	c-
Aroclor-1016	B			500.0	493.9	pg/ul	-1	20	
Aroclor-1260	B			500.0	439.9	pg/ul	-12	20	
TCMX	B	11435	10916	100.0	95.46	pg/ul	-5	20	
Decachlorobiphenyl	B	11334	7823.7	100.0	69.03	pg/ul	**-31**	20	c-

RDG 02/05/18 : Corrected automatically drawn baseline for all channels.
[general version]

Analyst: JC1 Date: 02/06/18 Reviewer: EAH Date: 02/07/18

-=low bias c=CCV

Logbooks & Sequences

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 238037991

Instrument : GC16 Begun : 01/26/18 09:11
Method : EPA 8082A SOP Version : pcb_rv11

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	026_001	X	HEX			01/26/18 09:11	1.0		
002	026_002	CCV	PCB500_100			01/26/18 09:40	1.0	1	
003	026_003	CCV	PCB500_100			01/26/18 15:32	1.0	2	
004	026_004	X	PRIMER			01/26/18 17:53	1.0		
005	026_005	X	HEX			01/26/18 18:22	1.0		
006	026_006	X	HEX			01/26/18 18:51	1.0		
007	026_007	X	HEX			01/26/18 19:20	1.0		
008	026_008	IB	CALIB			01/26/18 19:49	1.0		
009	026_009	ICAL	PCB100_20			01/26/18 20:18	1.0	3	
010	026_010	ICAL	PCB25_5			01/26/18 20:47	1.0	4	
011	026_011	ICAL	PCB100_20			01/26/18 21:16	1.0	3	
012	026_012	ICAL	PCB250_50			01/26/18 21:45	1.0	5	
013	026_013	ICAL	PCB500_100			01/26/18 22:14	1.0	1	
014	026_014	ICAL	PCB750_150			01/26/18 22:43	1.0	6	
015	026_015	ICAL	PCB1000_200			01/26/18 23:12	1.0	7	
016	026_016	X	HEX			01/26/18 23:41	1.0		
017	026_017	ICV	ULTRA_1660			01/27/18 00:10	1.0	8	
018	026_018	X	HEX			01/27/18 00:39	1.0		
019	026_019	CHECK	HEX			01/27/18 01:08	1.0		
020	026_020	CCV	PCB500_100			01/27/18 01:37	1.0	2	
021	026_021	CCV	AR2154_500			01/27/18 02:06	1.0	9	
022	026_022	SAMPLE	296418-007	Soil	255791	01/27/18 02:35	2.0		
023	026_023	SAMPLE	296418-008	Soil	255791	01/27/18 03:04	1.0		
024	026_024	SAMPLE	296418-009	Soil	255791	01/27/18 03:33	1.0		
025	026_025	SAMPLE	296418-010	Soil	255791	01/27/18 04:02	1.0		
026	026_026	SAMPLE	296418-011	Soil	255791	01/27/18 04:31	1.0		
027	026_027	SAMPLE	296418-012	Soil	255791	01/27/18 05:00	2.0		
028	026_028	SAMPLE	296418-013	Soil	255791	01/27/18 05:29	1.0		
029	026_029	SAMPLE	296418-014	Soil	255791	01/27/18 05:58	1.0		
030	026_030	SAMPLE	296418-017	Soil	255791	01/27/18 06:27	1.0		1:PCB1260#5=1400
031	026_031	SAMPLE	296418-018	Soil	255791	01/27/18 06:56	1.0		
032	026_032	SAMPLE	296418-019	Soil	255791	01/27/18 07:25	1.0		
033	026_033	SAMPLE	296418-020	Soil	255791	01/27/18 07:54	1.0		
034	026_034	CCV	PCB500_100			01/27/18 08:23	1.0	2	
035	026_035	CCV	AR2154_500			01/27/18 08:52	1.0	9	
036	026_036	SAMPLE	296566-001	Soil	255864	01/27/18 09:21	1.0		
037	026_037	SAMPLE	296560-001	Soil	255864	01/27/18 09:50	1.0		
038	026_038	SAMPLE	296560-002	Soil	255864	01/27/18 10:19	1.0		
039	026_039	SAMPLE	296560-003	Soil	255864	01/27/18 10:48	1.0		
040	026_040	SAMPLE	296560-004	Soil	255864	01/27/18 11:17	1.0		
041	026_041	SAMPLE	296559-001	Soil	255864	01/27/18 11:46	1.0		
042	026_042	SAMPLE	296559-002	Soil	255864	01/27/18 12:15	1.0		
043	026_043	SAMPLE	296565-013	Miscell.	255880	01/27/18 12:44	1.0		
044	026_044	SAMPLE	296565-014	Miscell.	255880	01/27/18 13:13	1.0		
045	026_045	SAMPLE	296565-015	Miscell.	255880	01/27/18 13:42	1.0		
046	026_046	CCV	PCB500_100			01/27/18 14:11	1.0	2	
047	026_047	CCV	AR2154_500			01/27/18 14:40	1.0	9	
048	026_048	MDL	293300-007	Water	254695	01/27/18 15:09	1.0		eh
049	026_049	MDL	293300-008	Water	254695	01/27/18 15:38	1.0		eh
050	026_050	MDL	293298-007	Soil	254655	01/27/18 16:07	1.0		eh
051	026_051	MDL	293298-008	Soil	254655	01/27/18 16:36	1.0		
052	026_052	CCV	PCB500_100			01/27/18 17:05	1.0	2	

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 238037991

Instrument : GC16 Begun : 01/26/18 09:11
Method : EPA 8082A SOP Version : pcb_rv11

JC1 01/29/18 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 52.

Standards used: 1=S35533 2=S35813 3=S35531 4=S35530 5=S35532 6=S35534 7=S35535 8=S35527 9=S35045

Flags used: eh=out of extract hold

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 238048058

Instrument : GC16 Begun : 02/02/18 08:58
Method : EPA 8082A SOP Version : pcb_rv11

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	033_001	X	HEX			02/02/18 08:58	1.0		
002	033_002	CCV	PCB500_100			02/02/18 09:27	1.0	1	
003	033_003	CCV	AR2154_250			02/02/18 09:56	1.0	2	
005	033_005	X	HEX			02/02/18 11:31	1.0		
006	033_006	BLANK	QC918626	Soil	256131	02/02/18 12:00	1.0		
007	033_007	LCS	QC918627	Soil	256131	02/02/18 12:29	1.0		
008	033_008	MS	QC918628	Soil	256131	02/02/18 12:58	1.0		
009	033_009	MSD	QC918629	Soil	256131	02/02/18 13:27	1.0		
010	033_010	MSS	296804-009	Soil	256131	02/02/18 13:56	1.0		
011	033_011	SAMPLE	296798-001	Soil	256131	02/02/18 14:25	5.0		diluted (client history)
012	033_012	SAMPLE	296798-006	Soil	256131	02/02/18 14:54	5.0		diluted (client history)
013	033_013	SAMPLE	296798-011	Soil	256131	02/02/18 15:23	5.0		diluted (client history)
014	033_014	SAMPLE	296798-016	Soil	256131	02/02/18 15:52	5.0		diluted (client history)
015	033_015	SAMPLE	296798-021	Soil	256131	02/02/18 16:19	5.0		diluted (client history)
016	033_016	SAMPLE	296798-026	Soil	256131	02/02/18 16:48	5.0		diluted (client history)
017	033_017	CCV	PCB500_100			02/02/18 17:16	1.0	1	
018	033_018	CCV	AR2154_250			02/02/18 18:01	1.0	2	
019	033_019	BLANK	QC918767	Soil	256161	02/02/18 18:29	1.0		
020	033_020	LCS	QC918768	Soil	256161	02/02/18 18:58	1.0		
021	033_021	MSS	296840-001	Soil	256161	02/02/18 19:27	5.0		diluted (client history)
022	033_022	MS	QC918769	Soil	256161	02/02/18 19:56	5.0		
023	033_023	MSD	QC918770	Soil	256161	02/02/18 20:25	5.0		
024	033_024	SAMPLE	296840-006	Soil	256161	02/02/18 20:54	5.0		diluted (client history)
025	033_025	SAMPLE	296840-013	Soil	256161	02/02/18 21:23	5.0		diluted (client history)
026	033_026	SAMPLE	296840-018	Soil	256161	02/02/18 21:52	5.0		diluted (client history)
027	033_027	SAMPLE	296844-001	Soil	256161	02/02/18 22:21	1.0		
028	033_028	SAMPLE	296826-001	Soil	256161	02/02/18 22:50	1.0		
029	033_029	CCV	PCB500_100			02/02/18 23:19	1.0	1	
030	033_030	CCV	AR2154_250			02/02/18 23:48	1.0	2	
031	033_031	CCV	AR1242_500			02/03/18 00:17	1.0	3	
032	033_032	MDL	294795-007	Soil	254890	02/03/18 00:46	1.0		eh
033	033_033	MDL	294795-008	Soil	254911	02/03/18 01:15	1.0		eh
034	033_034	MDL	294796-007	Water	254870	02/03/18 01:44	1.0		eh
035	033_035	MDL	294796-008	Water	254870	02/03/18 02:13	1.0		eh
036	033_036	CCV	PCB500_100			02/03/18 02:42	1.0	1	
037	033_037	CCV	AR1242_500			02/03/18 03:11	1.0	3	
038	033_038	CCV	AR2154_250			02/03/18 03:40	1.0	2	
039	033_039	BLANK	QC918814	Soil	256176	02/03/18 04:09	1.0		
040	033_040	MDL	296857-001	Soil	256176	02/03/18 04:38	1.0		
041	033_041	MDL	296857-002	Soil	256176	02/03/18 05:07	1.0		
042	033_042	MDL	296857-003	Soil	256176	02/03/18 05:36	1.0		
043	033_043	MDL	296857-004	Soil	256176	02/03/18 06:05	1.0		
044	033_044	MDL	296857-005	Soil	256176	02/03/18 06:34	1.0		
045	033_045	MDL	296857-006	Soil	256176	02/03/18 07:03	1.0		
046	033_046	CCV	PCB500_100			02/03/18 07:32	1.0	1	
047	033_047	CCV	AR2154_250			02/03/18 08:01	1.0	2	

JC1 02/05/18 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 47.

JC1 02/05/18 : Missing run004 because of mis-inject

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 238048058

Instrument : GC16 Begun : 02/02/18 08:58
Method : EPA 8082A SOP Version : pcb_rv11

Standards used: 1=S35813 2=S35044 3=S34921

Flags used: eh=out of extract hold

SAMPLE PREPARATION SUMMARY

Batch # : 256131
Started By : ECI
Method : 3550C
Spike #1 ID : S35128

Prep Date : 01-FEB-2018 14:20
SOP Version : PCB_3550_rv14
Spike #2 ID : S35523

Analysis : PCB
Finished By : ECI
Units : g

Sample	Stype	Matrix	Initial	Final	Clean DF	Prep DF	pH	Sp 1 Vol	Sp 2 Vol	Sp 3 Vol	Clean Method	Analysis	Comments
296798-001		Soil	29.99	10	1	0.3334		.5				PCB	
296798-006		Soil	30.33	10	1	0.3297		.5				PCB	
296798-011		Soil	30.4	10	1	0.3289		.5				PCB	
296798-016		Soil	29.78	10	1	0.3358		.5				PCB	
296798-021		Soil	29.91	10	1	0.3343		.5				PCB	
296798-026		Soil	30.07	10	1	0.3326		.5				PCB	
296804-001		Soil	30.1	10	1	0.3322		.5				PCB	
296804-002		Soil	30.22	10	1	0.3309		.5				PCB	
296804-003		Soil	29.96	10	1	0.3338		.5				PCB	
296804-004		Soil	30.47	10	1	0.3282		.5				PCB	
296804-005		Soil	29.72	10	1	0.3365		.5				PCB	
296804-006		Soil	29.52	10	1	0.3388		.5				PCB	
296804-007		Soil	29.65	10	1	0.3373		.5				PCB	
296804-008		Soil	29.67	10	1	0.337		.5				PCB	
296804-009		Soil	29.66	10	1	0.3372		.5				PCB	
296804-010		Soil	29.55	10	1	0.3384		.5				PCB	
296804-011		Soil	30.24	10	1	0.3307		.5				PCB	
296804-012		Soil	29.51	10	1	0.3389		.5				PCB	
QC918626	BLANK	Soil	30.17	10	1	0.3315		.5				PCB	
QC918627	LCS	Soil	30.21	10	1	0.331		.5	.5			PCB	
QC918628	MS	Soil	29.74	10	1	0.3362		.5	.5			PCB	
QC918629	MSD	Soil	29.75	10	1	0.3361		.5	.5			PCB	

Analyst: JC1 Date: 02/05/18 Reviewer: EAH Date: 02/05/18

PCB (8082) Soil Prep Log version 201711 Enthalpy Analytical LLC - Berkeley

LIMS Batch No: 256131 ☒ EPA 3550b Sonication Page 12

LIMS Analysis PCB ☐ Other _____ **BK 4218**

Date Extracted: 2/1/18

Sample #	Container ID	Sample Wt (g)	Final Vol (mL)	Comments
296798-001	Comp	29.99	☐ 25.0 ☒ 10	Comp of 296798 (2-5) @ 20 g ea
6		30.33	☐ 25.0 ☒ 10	(7-10)
11		30.40	☐ 25.0 ☒ 10	(12-15)
16		29.78	☐ 25.0 ☒ 10	(17-20)
21		29.91	☐ 25.0 ☒ 10	(22-25)
26		30.07	☐ 25.0 ☒ 10	(27-30)
296804-001	A	30.10	☐ 25.0 ☒ 10	
2	A	30.22	☐ 25.0 ☒ 10	
3	A	29.96	☐ 25.0 ☒ 10	
4	A	30.47	☐ 25.0 ☒ 10	
5	A	29.72	☐ 25.0 ☒ 10	
6	A	29.52	☐ 25.0 ☒ 10	
7	A	29.65	☐ 25.0 ☒ 10	
8	A	29.67	☐ 25.0 ☒ 10	
9	A	29.66	☐ 25.0 ☒ 10	MSS
10	A	29.55	☐ 25.0 ☒ 10	
11	A	30.24	☐ 25.0 ☒ 10	
12	A	29.51	☐ 25.0 ☒ 10	
MB QC918626	NA	30.17	☐ 25.0 ☒ 10	
LCS 7	NA	30.21	☐ 25.0 ☒ 10	
MS 8	A	29.74	☐ 25.0 ☒ 10	
MSD 9	A	29.75	☐ 25.0 ☒ 10	
			☐ 25.0 ☐	
			☐ 25.0 ☐	
			☐ 25.0 ☐	JMC 2/2/18

☐ MS/MSD not included due to: ☐ insufficent volume, or ☐ other (reason) _____

☒ Balance ID: B-15 Has been calibrated? ☒ Yes ☐ No

	Mfg & Lot # / LIMS # / Time	Initials / Date
Solvent-rinsed granular Na_2SO_4 weighed out for QC samples	CM16I285202 1/31/18	ECL 2/1/18
dried with CH_2Cl_2-rinsed ☒ granular Na_2SO_4 ☐ powder	CM16I28520	
0.5 mL of surrogate solution was added to all samples	S35128D	
0.5 mL of matrix spiking solution was added to all spikes	S35523C	
1:1 CH_2Cl_2 (lot# CM57230):Acetone(lot# FC174412) was added to all	✓	
Solvent added at (time)	1420	
☒ sonicated 3 times w/ ≥100mL ☐ soxhlet extractors on at:	✓	
Soxhlets off at:	—	
Extracts filtered through baked, CH_2Cl_2-rinsed powdered Na_2SO_4	CM3557C500	
Solvent exchanged with Hexane, Lot#	FC174710	
Concentrated to final volume in boiling H2O bath	✓	
EPA 3665A Clean-up: vortexed w/ H_2SO_4 Lot#	FC176161	
Centrifuged for 1 min; 5mL transferred to labelled vial	✓	
Relinquished to PCB group	✓	

2/1/18

Extraction Chemist / Date

Continued from page _____

Continued on page _____

2/2/18

Reviewed by / Date

REPORTING SUMMARY FOR 296798 PCBS Soil

Sample ID	Analyte	Inst ID	Ch	Date & Time
296798-001	Aroclor-1016	GC16	B	02/02/18 14:25
296798-001	Aroclor-1221	GC16	A	02/02/18 14:25
296798-001	Aroclor-1232	GC16	A	02/02/18 14:25
296798-001	Aroclor-1242	GC16	A	02/02/18 14:25
296798-001	Aroclor-1248	GC16	A	02/02/18 14:25
296798-001	Aroclor-1254	GC16	A	02/02/18 14:25
296798-001	Aroclor-1260	GC16	A	02/02/18 14:25
296798-001	TCMX	GC16	A	02/02/18 14:25
296798-001	Decachlorobiphenyl	GC16	A	02/02/18 14:25
296798-006	Aroclor-1016	GC16	A	02/02/18 14:54
296798-006	Aroclor-1221	GC16	A	02/02/18 14:54
296798-006	Aroclor-1232	GC16	A	02/02/18 14:54
296798-006	Aroclor-1242	GC16	A	02/02/18 14:54
296798-006	Aroclor-1248	GC16	A	02/02/18 14:54
296798-006	Aroclor-1254	GC16	A	02/02/18 14:54
296798-006	Aroclor-1260	GC16	A	02/02/18 14:54
296798-006	TCMX	GC16	A	02/02/18 14:54
296798-006	Decachlorobiphenyl	GC16	A	02/02/18 14:54
296798-011	Aroclor-1016	GC16	B	02/02/18 15:23
296798-011	Aroclor-1221	GC16	A	02/02/18 15:23
296798-011	Aroclor-1232	GC16	A	02/02/18 15:23
296798-011	Aroclor-1242	GC16	A	02/02/18 15:23
296798-011	Aroclor-1248	GC16	A	02/02/18 15:23
296798-011	Aroclor-1254	GC16	A	02/02/18 15:23
296798-011	Aroclor-1260	GC16	A	02/02/18 15:23
296798-011	TCMX	GC16	A	02/02/18 15:23
296798-011	Decachlorobiphenyl	GC16	A	02/02/18 15:23
296798-016	Aroclor-1016	GC16	B	02/02/18 15:52
296798-016	Aroclor-1221	GC16	A	02/02/18 15:52
296798-016	Aroclor-1232	GC16	A	02/02/18 15:52
296798-016	Aroclor-1242	GC16	A	02/02/18 15:52
296798-016	Aroclor-1248	GC16	A	02/02/18 15:52
296798-016	Aroclor-1254	GC16	A	02/02/18 15:52
296798-016	Aroclor-1260	GC16	A	02/02/18 15:52
296798-016	TCMX	GC16	A	02/02/18 15:52
296798-016	Decachlorobiphenyl	GC16	A	02/02/18 15:52
296798-021	Aroclor-1016	GC16	A	02/02/18 16:19
296798-021	Aroclor-1221	GC16	A	02/02/18 16:19
296798-021	Aroclor-1232	GC16	A	02/02/18 16:19
296798-021	Aroclor-1242	GC16	A	02/02/18 16:19
296798-021	Aroclor-1248	GC16	A	02/02/18 16:19
296798-021	Aroclor-1254	GC16	A	02/02/18 16:19
296798-021	Aroclor-1260	GC16	B	02/02/18 16:19
296798-021	TCMX	GC16	A	02/02/18 16:19
296798-021	Decachlorobiphenyl	GC16	A	02/02/18 16:19
296798-026	Aroclor-1016	GC16	A	02/02/18 16:48
296798-026	Aroclor-1221	GC16	A	02/02/18 16:48
296798-026	Aroclor-1232	GC16	A	02/02/18 16:48
296798-026	Aroclor-1242	GC16	A	02/02/18 16:48

REPORTING SUMMARY FOR 296798 PCBS Soil

Sample ID	Analyte	Inst ID	Ch	Date & Time
296798-026	Aroclor-1248	GC16	A	02/02/18 16:48
296798-026	Aroclor-1254	GC16	A	02/02/18 16:48
296798-026	Aroclor-1260	GC16	A	02/02/18 16:48
296798-026	TCMX	GC16	A	02/02/18 16:48
296798-026	Decachlorobiphenyl	GC16	A	02/02/18 16:48
QC918626	Aroclor-1016	GC16	B	02/02/18 12:00
QC918626	Aroclor-1221	GC16	A	02/02/18 12:00
QC918626	Aroclor-1232	GC16	A	02/02/18 12:00
QC918626	Aroclor-1242	GC16	A	02/02/18 12:00
QC918626	Aroclor-1248	GC16	A	02/02/18 12:00
QC918626	Aroclor-1254	GC16	A	02/02/18 12:00
QC918626	Aroclor-1260	GC16	B	02/02/18 12:00
QC918626	TCMX	GC16	A	02/02/18 12:00
QC918626	Decachlorobiphenyl	GC16	A	02/02/18 12:00
QC918627	Aroclor-1016	GC16	B	02/02/18 12:29
QC918627	Aroclor-1260	GC16	B	02/02/18 12:29
QC918627	TCMX	GC16	A	02/02/18 12:29
QC918627	Decachlorobiphenyl	GC16	A	02/02/18 12:29
QC918628	Aroclor-1016	GC16	B	02/02/18 12:58
QC918628	Aroclor-1260	GC16	B	02/02/18 12:58
QC918628	TCMX	GC16	A	02/02/18 12:58
QC918628	Decachlorobiphenyl	GC16	A	02/02/18 12:58
QC918629	Aroclor-1016	GC16	B	02/02/18 13:27
QC918629	Aroclor-1260	GC16	B	02/02/18 13:27
QC918629	TCMX	GC16	A	02/02/18 13:27
QC918629	Decachlorobiphenyl	GC16	A	02/02/18 13:27

Dilutions for 296798 PCBS Soil
Enthalpy Analytical - Berkeley

Type	Sample ID	IDFs
SAMPLE	296798-001	5X
SAMPLE	296798-006	5X
SAMPLE	296798-011	5X
SAMPLE	296798-016	5X
SAMPLE	296798-021	5X
SAMPLE	296798-026	5X

Case Narrative Addendum: Manual Integrations for 296798 PCBS (Soil)

For SAMPLE 296798-001 (GC16_033_011):
Corrected automatically drawn baseline for all channels.

For SAMPLE 296798-006 (GC16_033_012):
Corrected automatically drawn baseline for all channels.

For SAMPLE 296798-011 (GC16_033_013):
Corrected automatically drawn baseline for all channels.

For SAMPLE 296798-016 (GC16_033_014):
Corrected automatically drawn baseline for all channels.

For SAMPLE 296798-021 (GC16_033_015):
Corrected automatically drawn baseline for all channels.

For SAMPLE 296798-026 (GC16_033_016):
Corrected automatically drawn baseline for all channels.

For CCV PCB500_100 (GC16_033_017):
Corrected automatically drawn baseline for all channels.

For CCV PCB500_100 (GC16_033_002):
Corrected automatically drawn baseline.

For BLANK QC918626 (GC16_033_006):
Corrected automatically drawn baseline for all channels.

For LCS QC918627 (GC16_033_007):
Corrected automatically drawn baseline for all channels.

For MSD QC918629 (GC16_033_009):
Corrected automatically drawn baseline for all channels for spike & dup.

For Calibration GC16 (238037991001):
Corrected automatically drawn baseline in all levels.

For ICV ULTRA_1660 (GC16_026_017):
Corrected automatically drawn baseline.

CAS Registry Numbers for 296798 PCBS Soil
Enthalpy Analytical - Berkeley

Analyte	CAS RN
Aroclor-1016	12674-11-2
Aroclor-1221	11104-28-2
Aroclor-1232	11141-16-5
Aroclor-1242	53469-21-9
Aroclor-1248	12672-29-6
Aroclor-1254	11097-69-1
Aroclor-1260	11096-82-5
Decachlorobiphenyl	2051-24-3
TCMX	877-09-8

Laboratory Job Number 296798

ANALYTICAL REPORT

Metals

Matrix: Soil

ENTHALPY ANALYTICAL

Copper

Lab #:	296798	Location:	HPNS-Parcel C
Client:	Insight EEC, Inc.	Prep:	EPA 3050B
Project#:	4-14214	Analysis:	EPA 6020A
Analyte:	Copper	Sampled:	01/30/18
Units:	mg/Kg	Received:	01/31/18
Basis:	dry	Prepared:	02/05/18
Diln Fac:	25.00	Analyzed:	02/06/18
Batch#:	256219		

Field ID	Type	Lab ID	Matrix	Result	LOQ	DL	Moisture
HPP-FSS-001	SAMPLE	296798-001	Soil	38	1.3	0.21	54%
HPP-FSS-002	SAMPLE	296798-006	Soil	39	1.3	0.21	57%
HPP-FSS-003	SAMPLE	296798-011	Soil	35	1.3	0.21	49%
HPP-FSS-004	SAMPLE	296798-016	Soil	38	1.4	0.23	54%
HPP-FSS-005	SAMPLE	296798-021	Soil	40	1.2	0.19	49%
HPP-FSS-006	SAMPLE	296798-026	Soil	40	1.3	0.21	54%
	BLANK	QC918981	Miscell.	0.21 U	0.64	0.10	

U= Not Detected at or above DL
DL= Detection Limit
LOQ= Limit of Quantitation

ENTHALPY ANALYTICAL

Lead

Lab #:	296798	Location:	HPNS-Parcel C
Client:	Insight EEC, Inc.	Prep:	EPA 3050B
Project#:	4-14214	Analysis:	EPA 6020A
Analyte:	Lead	Sampled:	01/30/18
Units:	mg/Kg	Received:	01/31/18
Basis:	dry	Prepared:	02/05/18
Diln Fac:	25.00	Analyzed:	02/06/18
Batch#:	256219		

Field ID	Type	Lab ID	Matrix	Result	LOQ	DL	Moisture
HPP-FSS-001	SAMPLE	296798-001	Soil	17	1.3	0.14	54%
HPP-FSS-002	SAMPLE	296798-006	Soil	17	1.3	0.14	57%
HPP-FSS-003	SAMPLE	296798-011	Soil	14	1.3	0.14	49%
HPP-FSS-004	SAMPLE	296798-016	Soil	16	1.4	0.15	54%
HPP-FSS-005	SAMPLE	296798-021	Soil	18	1.2	0.12	49%
HPP-FSS-006	SAMPLE	296798-026	Soil	17	1.3	0.14	54%
	BLANK	QC918981	Miscell.	0.21 U	0.64	0.069	

U= Not Detected at or above DL
DL= Detection Limit
LOQ= Limit of Quantitation

ENTHALPY ANALYTICAL

Mercury by Cold Vapor AA

Lab #:	296798	Location:	HPNS-Parcel C
Client:	Insight EEC, Inc.	Prep:	METHOD
Project#:	4-14214	Analysis:	EPA 7471B
Analyte:	Mercury	Batch#:	256214
Matrix:	Soil	Sampled:	01/30/18
Units:	mg/Kg	Received:	01/31/18
Basis:	dry	Prepared:	02/05/18
Diln Fac:	1.000	Analyzed:	02/06/18

Field ID	Type	Lab ID	Result	LOQ	DL	Moisture
HPP-FSS-001	SAMPLE	296798-001	0.23	0.037	0.0066	54%
HPP-FSS-002	SAMPLE	296798-006	0.18	0.038	0.0066	57%
HPP-FSS-003	SAMPLE	296798-011	0.16	0.031	0.0054	49%
HPP-FSS-004	SAMPLE	296798-016	0.20	0.036	0.0063	54%
HPP-FSS-005	SAMPLE	296798-021	0.21	0.036	0.0063	49%
HPP-FSS-006	SAMPLE	296798-026	0.18	0.036	0.0063	54%
	BLANK	QC918960	0.0082 U	0.016	0.0029	

U= Not Detected at or above DL
DL= Detection Limit
LOQ= Limit of Quantitation

ENTHALPY ANALYTICAL

Batch QC Report

Mercury by Cold Vapor AA

Lab #:	296798	Location:	HPNS-Parcel C
Client:	Insight EEC, Inc.	Prep:	METHOD
Project#:	4-14214	Analysis:	EPA 7471B
Analyte:	Mercury	Diln Fac:	1.000
Field ID:	HPP-FSS-001	Batch#:	256214
MSS Lab ID:	296798-001	Sampled:	01/30/18
Matrix:	Soil	Received:	01/31/18
Units:	mg/Kg	Prepared:	02/05/18
Basis:	dry	Analyzed:	02/06/18

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	Moisture	RPD	Lim
BS	QC918961		0.1639	0.1454	89	80-124			
BSD	QC918962		0.1563	0.1394	89	80-124		1	20
MS	QC918963	0.2256	0.3814	0.5987	98	80-124	54%		
MSD	QC918964		0.3685	0.5450	87	80-124	54%	7	20

RPD= Relative Percent Difference

ENTHALPY ANALYTICAL

Batch QC Report

Mercury by Cold Vapor AA

Lab #:	296798	Location:	HPNS-Parcel C
Client:	Insight EEC, Inc.	Prep:	METHOD
Project#:	4-14214	Analysis:	EPA 7471B
Analyte:	Mercury	Basis:	dry
Field ID:	HPP-FSS-001	Diln Fac:	5.000
Type:	Serial Dilution	Batch#:	256214
MSS Lab ID:	296798-001	Sampled:	01/30/18
Lab ID:	QC918965	Received:	01/31/18
Matrix:	Soil	Analyzed:	02/06/18
Units:	mg/Kg		

MSS Result	MSS LOQ	Result	LOQ	Moisture	% Diff	Lim
0.2256	0.03748	0.3099	0.1874	54%	NC	10

NC= Not Calculated
LOQ= Limit of Quantitation

ENTHALPY ANALYTICAL

Batch QC Report

Copper

Lab #:	296798	Location:	HPNS-Parcel C
Client:	Insight EEC, Inc.	Prep:	EPA 3050B
Project#:	4-14214	Analysis:	EPA 6020A
Analyte:	Copper	Diln Fac:	25.00
Field ID:	ZZZZZZZZZZ	Batch#:	256219
MSS Lab ID:	296837-001	Sampled:	02/01/18
Matrix:	Miscell.	Received:	02/01/18
Units:	mg/Kg	Prepared:	02/05/18
Basis:	as received	Analyzed:	02/06/18

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim
BS	QC918982		24.75	27.14	110	84-119		
BSD	QC918983		26.32	29.26	111	84-119	1	20
MS	QC918984	17.89	22.73	41.39	103	84-119		
MSD	QC918985		24.27	43.68	106	84-119	2	20

RPD= Relative Percent Difference

ENTHALPY ANALYTICAL

Batch QC Report

Lead

Lab #:	296798	Location:	HPNS-Parcel C
Client:	Insight EEC, Inc.	Prep:	EPA 3050B
Project#:	4-14214	Analysis:	EPA 6020A
Analyte:	Lead	Diln Fac:	25.00
Field ID:	ZZZZZZZZZZ	Batch#:	256219
MSS Lab ID:	296837-001	Sampled:	02/01/18
Matrix:	Miscell.	Received:	02/01/18
Units:	mg/Kg	Prepared:	02/05/18
Basis:	as received	Analyzed:	02/06/18

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim
BS	QC918982		24.75	25.54	103	84-118		
BSD	QC918983		26.32	23.96	91	84-118	13	20
MS	QC918984	29.51	22.73	474.5 >LR Q	1958 *	84-118		
MSD	QC918985		24.27	27.43	-9 *	84-118	NC	20

*= Value outside of QC limits; see narrative
Q= See narrative
NC= Not Calculated
>LR= Response exceeds instrument's linear range
RPD= Relative Percent Difference

ENTHALPY ANALYTICAL

Batch QC Report

Copper			
Lab #:	296798	Location:	HPNS-Parcel C
Client:	Insight EEC, Inc.	Prep:	EPA 3050B
Project#:	4-14214	Analysis:	EPA 6020A
Analyte:	Copper	Basis:	as received
Field ID:	ZZZZZZZZZZ	Diln Fac:	125.0
Type:	Serial Dilution	Batch#:	256219
MSS Lab ID:	296837-001	Sampled:	02/01/18
Lab ID:	QC918986	Received:	02/01/18
Matrix:	Miscell.	Analyzed:	02/06/18
Units:	mg/Kg		

MSS Result	MSS LOQ	Result	LOQ	% Diff	Lim
17.89	0.5952	18.09	2.976	1	10

LOQ= Limit of Quantitation

ENTHALPY ANALYTICAL

Batch QC Report

Lead			
Lab #:	296798	Location:	HPNS-Parcel C
Client:	Insight EEC, Inc.	Prep:	EPA 3050B
Project#:	4-14214	Analysis:	EPA 6020A
Analyte:	Lead	Basis:	as received
Field ID:	ZZZZZZZZZZ	Diln Fac:	125.0
Type:	Serial Dilution	Batch#:	256219
MSS Lab ID:	296837-001	Sampled:	02/01/18
Lab ID:	QC918986	Received:	02/01/18
Matrix:	Miscell.	Analyzed:	02/06/18
Units:	mg/Kg		

MSS Result	MSS LOQ	Result	LOQ	% Diff	Lim
29.51	0.5952	30.90	2.976	5	10

LOQ= Limit of Quantitation

ENTHALPY ANALYTICAL

Batch QC Report

Copper			
Lab #:	296798	Location:	HPNS-Parcel C
Client:	Insight EEC, Inc.	Prep:	EPA 3050B
Project#:	4-14214	Analysis:	EPA 6020A
Analyte:	Copper	Basis:	as received
Field ID:	ZZZZZZZZZZ	Diln Fac:	25.00
Type:	Post Digest Spike	Batch#:	256219
MSS Lab ID:	296837-001	Sampled:	02/01/18
Lab ID:	QC918987	Received:	02/01/18
Matrix:	Miscell.	Analyzed:	02/06/18
Units:	mg/Kg		

MSS Result	Spiked	Result	%REC	Limits
17.89	59.52	82.40	108	80-120

ENTHALPY ANALYTICAL

Batch QC Report

Lead

Lab #:	296798	Location:	HPNS-Parcel C
Client:	Insight EEC, Inc.	Prep:	EPA 3050B
Project#:	4-14214	Analysis:	EPA 6020A
Analyte:	Lead	Basis:	as received
Field ID:	ZZZZZZZZZZ	Diln Fac:	25.00
Type:	Post Digest Spike	Batch#:	256219
MSS Lab ID:	296837-001	Sampled:	02/01/18
Lab ID:	QC918987	Received:	02/01/18
Matrix:	Miscell.	Analyzed:	02/06/18
Units:	mg/Kg		

MSS Result	Spiked	Result	%REC	Limits
29.51	59.52	93.61	108	80-120

REPORTING SUMMARY FOR 296798 METALS Soil
Enthalpy Analytical - Berkeley

Lab ID	Inst ID	Analyzed	IDF	CU	PB	HG
296798-001	MET44	02/05/18 18:31	1.0			
296798-001	MET45	02/06/18 11:47	1.0			
296798-001	MET45	02/06/18 12:00	1.0			+
296798-001	MET26	02/06/18 16:40	25.0	+	+	
296798-006	MET45	02/06/18 12:04	1.0			+
296798-006	MET26	02/06/18 16:45	25.0	+	+	
296798-011	MET45	02/06/18 12:06	1.0			+
296798-011	MET26	02/06/18 17:05	25.0	+	+	
296798-016	MET45	02/06/18 12:07	1.0			+
296798-016	MET26	02/06/18 17:12	25.0	+	+	
296798-021	MET45	02/06/18 12:10	1.0			+
296798-021	MET26	02/06/18 17:17	25.0	+	+	
296798-026	MET45	02/06/18 12:12	1.0			+
296798-026	MET26	02/06/18 17:22	25.0	+	+	
QC918960	MET44	02/05/18 18:27	1.0			
QC918960	MET45	02/06/18 11:44	1.0			
QC918960	MET45	02/06/18 11:57	1.0			+
QC918961	MET44	02/05/18 18:28	1.0			
QC918961	MET45	02/06/18 11:45	1.0			
QC918961	MET45	02/06/18 11:58	1.0			+
QC918962	MET44	02/05/18 18:30	1.0			
QC918962	MET45	02/06/18 11:46	1.0			
QC918962	MET45	02/06/18 11:59	1.0			+
QC918963	MET44	02/05/18 18:35	1.0			
QC918963	MET45	02/06/18 11:48	1.0			
QC918963	MET45	02/06/18 12:01	1.0			+
QC918964	MET44	02/05/18 18:36	1.0			
QC918964	MET45	02/06/18 11:49	1.0			
QC918964	MET45	02/06/18 12:02	1.0			+
QC918965	MET44	02/05/18 18:38	5.0			
QC918965	MET45	02/06/18 11:53	5.0			
QC918965	MET45	02/06/18 12:03	5.0			+
QC918981	MET26	02/06/18 16:01	25.0	+	+	
QC918982	MET26	02/06/18 16:06	25.0	+	+	
QC918983	MET26	02/06/18 16:10	25.0	+	+	
QC918984	MET26	02/06/18 16:20	25.0	+	+	
QC918984	MET26	02/07/18 08:47	25.0			

REPORTING SUMMARY FOR 296798 METALS Soil
Enthalpy Analytical - Berkeley

Lab ID	Inst ID	Analyzed	IDF	CU	PB	HG	
QC918985	MET26	02/06/18 16:25	25.0	+	+		
QC918985	MET26	02/07/18 08:52	25.0				
QC918986	MET26	02/06/18 16:30	125.0	+	+		
QC918987	MET26	02/06/18 16:35	25.0	+	+		

ICPMS Data

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 1018054020

Instrument : MET26 Begun : 02/06/18 12:20
Method : EPA 6020A SOP Version : icpms metals_rv10

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	18b06m00001	X	RINSE			02/06/18 12:20	1.0	1	
002	18b06m00002	TUN				02/06/18 12:25	1.0	2	
003	18b06m00003	X	RINSE			02/06/18 12:29	1.0	1	
004	18b06m00004	X	RINSE			02/06/18 12:34	1.0	1	
005	18b06m00005	ICALBLK	CALBLANK			02/06/18 12:39	1.0	1	
006	18b06m00006	ICAL				02/06/18 12:44	1.0	3 1	
007	18b06m00007	ICAL				02/06/18 12:49	1.0	3 1	
008	18b06m00008	ICAL				02/06/18 12:54	1.0	3 1	
009	18b06m00009	ICAL				02/06/18 12:58	1.0	3 1	
010	18b06m00010	ICAL				02/06/18 13:03	1.0	3 1	
011	18b06m00011	ICAL				02/06/18 13:08	1.0	3 1	
012	18b06m00012	ICAL				02/06/18 13:13	1.0	3 1	
013	18b06m00013	X	RINSE			02/06/18 13:18	1.0	1	
014	18b06m00014	XICV				02/06/18 13:23	1.0	4 1	
015	18b06m00015	XCRI				02/06/18 13:28	1.0	5 1	
016	18b06m00016	ICV				02/06/18 13:36	1.0	6 1	
017	18b06m00017	CRI				02/06/18 13:41	1.0	5 1	
018	18b06m00018	ICB				02/06/18 13:46	1.0	1	
019	18b06m00019	ICSA				02/06/18 13:51	1.0	7 1	8:CA=260000
020	18b06m00020	ICSAB				02/06/18 13:56	1.0	8 1	8:CA=250000
021	18b06m00021	X	RINSE			02/06/18 14:01	1.0	1	
022	18b06m00022	X	RINSE			02/06/18 14:06	1.0	1	
023	18b06m00023	X	RINSE			02/06/18 14:11	1.0	1	
024	18b06m00024	X	RINSE			02/06/18 14:16	1.0	1	
025	18b06m00025	BLANK	QC918868	Water	256192	02/06/18 14:21	1.0	1	
026	18b06m00026	BS	QC918869	Water	256192	02/06/18 14:26	1.0	1	
027	18b06m00027	BSD	QC918870	Water	256192	02/06/18 14:31	1.0	1	
028	18b06m00028	SAMPLE	296659-002	Water	256192	02/06/18 14:36	1.0	1	3:NA=190000
029	18b06m00029	MSS	296659-001	Water	256192	02/06/18 14:41	1.0	1	3:NA=180000
030	18b06m00030	MS	QC918871	Water	256192	02/06/18 14:46	1.0	1	5:NA=200000
031	18b06m00031	MSD	QC918872	Water	256192	02/06/18 14:51	1.0	1	5:NA=200000
032	18b06m00032	X	RINSE			02/06/18 14:56	1.0	1	
033	18b06m00033	BLANK	QC918868	Water	256192	02/06/18 15:01	1.0	1	
034	18b06m00034	MS	QC918191	Water	256031	02/06/18 15:06	10.0	1	
035	18b06m00035	MSD	QC918192	Water	256031	02/06/18 15:11	10.0	1	
036	18b06m00036	CCV				02/06/18 15:16	1.0	6 1	
037	18b06m00037	X	XCCB			02/06/18 15:21	1.0	1	
038	18b06m00038	CCB				02/06/18 15:26	1.0	1	
039	18b06m00039	ICSA				02/06/18 15:30	1.0	7 1	8:CA=260000
040	18b06m00040	ICSAB				02/06/18 15:36	1.0	8 1	8:CA=250000
041	18b06m00041	X	RINSE			02/06/18 15:41	1.0	1	
042	18b06m00042	X	RINSE			02/06/18 15:46	1.0	1	
043	18b06m00043	X	RINSE			02/06/18 15:51	1.0	1	
044	18b06m00044	X	RINSE			02/06/18 15:56	1.0	1	
045	18b06m00045	BLANK	QC918981	Miscell.	256219	02/06/18 16:01	25.0	1	
046	18b06m00046	BS	QC918982	Miscell.	256219	02/06/18 16:06	25.0	1	
047	18b06m00047	BSD	QC918983	Miscell.	256219	02/06/18 16:10	25.0	1	
048	18b06m00048	MSS	296837-001	Miscell.	256219	02/06/18 16:15	25.0	1	
049	18b06m00049	MS	QC918984	Miscell.	256219	02/06/18 16:20	25.0	1	2:PB=420
050	18b06m00050	MSD	QC918985	Miscell.	256219	02/06/18 16:25	25.0	1	
051	18b06m00051	SER	QC918986	Miscell.	256219	02/06/18 16:30	125.0	1	
052	18b06m00052	PDS	QC918987	Miscell.	256219	02/06/18 16:35	25.0	1 9 10 11	

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 1018054020

Instrument : MET26 Begun : 02/06/18 12:20
Method : EPA 6020A SOP Version : icpms metals_rv10

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
053	18b06m00053	SAMPLE	296798-001	Soil	256219	02/06/18 16:40	25.0	1	
054	18b06m00054	SAMPLE	296798-006	Soil	256219	02/06/18 16:45	25.0	1	
055	18b06m00055	CCV				02/06/18 16:50	1.0	6 1	
056	18b06m00056	X	XCCB			02/06/18 16:55	1.0	1	
057	18b06m00057	CCB				02/06/18 17:00	1.0	1	
058	18b06m00058	SAMPLE	296798-011	Soil	256219	02/06/18 17:05	25.0	1	
059	18b06m00059	SAMPLE	296798-016	Soil	256219	02/06/18 17:12	25.0	1	
060	18b06m00060	SAMPLE	296798-021	Soil	256219	02/06/18 17:17	25.0	1	
061	18b06m00061	SAMPLE	296798-026	Soil	256219	02/06/18 17:22	25.0	1	
062	18b06m00062	SAMPLE	296837-002	Miscell.	256219	02/06/18 17:27	25.0	1	
063	18b06m00063	SAMPLE	296837-003	Miscell.	256219	02/06/18 17:32	25.0	1	
064	18b06m00064	SAMPLE	296837-004	Miscell.	256219	02/06/18 17:37	25.0	1	
065	18b06m00065	SAMPLE	296837-005	Miscell.	256219	02/06/18 17:42	25.0	1	
066	18b06m00066	SAMPLE	296837-006	Miscell.	256219	02/06/18 17:47	25.0	1	
067	18b06m00067	SAMPLE	296837-007	Miscell.	256219	02/06/18 17:52	25.0	1	2:CA=23000
068	18b06m00068	CCV				02/06/18 17:57	1.0	6 1	
069	18b06m00069	X	XCCB			02/06/18 18:01	1.0	1	
070	18b06m00070	CCB				02/06/18 18:06	1.0	1	
071	18b06m00071	SAMPLE	296837-008	Miscell.	256219	02/06/18 18:11	25.0	1	
072	18b06m00072	SAMPLE	296837-009	Miscell.	256219	02/06/18 18:16	25.0	1	
073	18b06m00073	SAMPLE	296837-010	Miscell.	256219	02/06/18 18:21	25.0	1	
074	18b06m00074	SAMPLE	296837-011	Miscell.	256219	02/06/18 18:26	25.0	1	
075	18b06m00075	SAMPLE	296837-012	Miscell.	256219	02/06/18 18:31	25.0	1	
076	18b06m00076	SAMPLE	296837-013	Miscell.	256219	02/06/18 18:36	25.0	1	
077	18b06m00077	SAMPLE	296837-014	Miscell.	256219	02/06/18 18:41	25.0	1	
078	18b06m00078	X	RINSE			02/06/18 18:46	1.0	1	
079	18b06m00079	BLANK	QC919024	Water	256228	02/06/18 18:51	1.0	1	
080	18b06m00080	BS	QC919025	Water	256228	02/06/18 18:56	1.0	1	
081	18b06m00081	BSD	QC919026	Water	256228	02/06/18 19:01	1.0	1	
082	18b06m00082	CCV				02/06/18 19:06	1.0	6 1	
083	18b06m00083	X	XCCB			02/06/18 19:11	1.0	1	
084	18b06m00084	CCB				02/06/18 19:16	1.0	1	
085	18b06m00085	SAMPLE	296902-001	Water	256228	02/06/18 19:20	1.0	1	3:CA=86000
086	18b06m00086	SAMPLE	296902-002	Water	256228	02/06/18 19:25	1.0	1	3:CA=140000
087	18b06m00087	SAMPLE	296902-003	Water	256228	02/06/18 19:30	1.0	1	3:CA=140000
088	18b06m00088	CCV				02/06/18 19:35	1.0	6 1	
089	18b06m00089	X	XCCB			02/06/18 19:40	1.0	1	
090	18b06m00090	CCB				02/06/18 19:45	1.0	1	
091	18b06m00091	ICSA				02/06/18 19:50	1.0	7 1	8:CA=260000
092	18b06m00092	ICSAB				02/06/18 19:55	1.0	8 1	8:CA=250000
093	18b06m00093	X	RINSE			02/06/18 20:01	1.0	1	
094	18b06m00094	X	RINSE			02/06/18 20:06	1.0	1	
095	18b06m00095	X	RINSE			02/06/18 20:11	1.0	1	
096	18b06m00096	X	RINSE			02/06/18 20:16	1.0	1	
097	18b06m00097	SAMPLE	296783-013	Water	256073	02/06/18 20:20	1.0	1	3:CA=570000
098	18b06m00098	X	RINSE			02/06/18 20:25	1.0	1	
099	18b06m00099	SAMPLE	296840-011	Water	256192	02/06/18 20:30	1.0	1	
100	18b06m00100	SAMPLE	296840-012	Water	256192	02/06/18 20:35	1.0	1	
101	18b06m00101	X	RINSE			02/06/18 20:40	1.0	1	
102	18b06m00102	SAMPLE	296895-001	Water	256192	02/06/18 20:45	1.0	1	5:NA=300000
103	18b06m00103	X	RINSE			02/06/18 20:50	1.0	1	
104	18b06m00104	SAMPLE	296896-001	Water	256192	02/06/18 20:55	1.0	1	2:NA=26000

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 1018054020

Instrument : MET26 Begun : 02/06/18 12:20
Method : EPA 6020A SOP Version : icpms metals_rv10

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
105	18b06m00105	X	RINSE			02/06/18 21:00	1.0	1	
106	18b06m00106	SER	QC918873	Water	256192	02/06/18 21:05	5.0	1	1:NA=35000
107	18b06m00107	PDS	QC918874	Water	256192	02/06/18 21:10	1.0	1	3:NA=190000
108	18b06m00108	X	RINSE			02/06/18 21:15	1.0	1	
109	18b06m00109	BLANK	QC918313	Filtrate	256064	02/06/18 21:20	1.0	1	
110	18b06m00110	BLANK	QC918329	Filtrate	256068	02/06/18 21:25	1.0	1	
111	18b06m00111	BLANK	QC918511	Filtrate	256106	02/06/18 21:29	1.0	1	
112	18b06m00112	CCV				02/06/18 21:34	1.0	6 1	
113	18b06m00113	X	XCCB			02/06/18 21:39	1.0	1	
114	18b06m00114	CCB				02/06/18 21:44	1.0	1	
115	18b06m00115	BS	QC918314	Filtrate	256064	02/06/18 21:49	1.0	1	
116	18b06m00116	BSD	QC918315	Filtrate	256064	02/06/18 21:54	1.0	1	
117	18b06m00117	BS	QC918330	Filtrate	256068	02/06/18 21:59	1.0	1	
118	18b06m00118	BSD	QC918331	Filtrate	256068	02/06/18 22:04	1.0	1	
119	18b06m00119	SAMPLE	296784-002	Filtrate	256194	02/06/18 22:09	100.0	1	
120	18b06m00120	SAMPLE	296784-008	Filtrate	256194	02/06/18 22:14	100.0	1	
121	18b06m00121	SAMPLE	296784-011	Filtrate	256194	02/06/18 22:19	25.0	1	1:NA=110000
122	18b06m00122	SAMPLE	296783-003	Filtrate	256146	02/06/18 22:24	10.0	1	1:NA=38000
123	18b06m00123	SAMPLE	296733-006	Filtrate	256106	02/06/18 22:29	10.0	1	3:NA=72000
124	18b06m00124	SAMPLE	296733-007	Filtrate	256106	02/06/18 22:34	10.0	1	1:NA=47000
125	18b06m00125	CCV				02/06/18 22:39	1.0	6 1	
126	18b06m00126	X	XCCB			02/06/18 22:44	1.0	1	
127	18b06m00127	CCB				02/06/18 22:49	1.0	1	
128	18b06m00128	SAMPLE	296733-011	Filtrate	256106	02/06/18 22:54	10.0	1	4:NA=170000
129	18b06m00129	MSS	296647-001	Filtrate	256064	02/06/18 22:59	1.0	1	4:NA=440000
130	18b06m00130	MS	QC918316	Filtrate	256064	02/06/18 23:04	1.0	1	4:NA=470000
131	18b06m00131	MSD	QC918317	Filtrate	256064	02/06/18 23:09	1.0	1	4:NA=450000
132	18b06m00132	SAMPLE	296647-002	Filtrate	256064	02/06/18 23:14	1.0	1	4:NA=430000
133	18b06m00133	SAMPLE	296647-003	Filtrate	256064	02/06/18 23:19	1.0	1	4:NA=420000
134	18b06m00134	X	RINSE			02/06/18 23:24	1.0	1	
135	18b06m00135	MSS	296739-001	Filtrate	256068	02/06/18 23:29	1.0	1	4:NA=550000
136	18b06m00136	MS	QC918332	Filtrate	256068	02/06/18 23:34	1.0	1	4:NA=540000
137	18b06m00137	MSD	QC918333	Filtrate	256068	02/06/18 23:39	1.0	1	4:NA=530000
138	18b06m00138	SAMPLE	296739-002	Filtrate	256068	02/06/18 23:44	1.0	1	4:NA=1100000
139	18b06m00139	CCV				02/06/18 23:49	1.0	6 1	
140	18b06m00140	X	XCCB			02/06/18 23:54	1.0	1	
141	18b06m00141	CCB				02/06/18 23:59	1.0	1	
142	18b06m00142	SAMPLE	296739-003	Filtrate	256068	02/07/18 00:04	1.0	1	4:NA=460000
143	18b06m00143	SAMPLE	296739-004	Filtrate	256068	02/07/18 00:09	1.0	1	4:NA=760000
144	18b06m00144	X	RINSE			02/07/18 00:14	1.0	1	
145	18b06m00145	TUN				02/07/18 00:19	1.0	2	
146	18b06m00146	X	RINSE			02/07/18 00:24	1.0	1	
147	18b06m00147	SAMPLE	296739-005	Filtrate	256068	02/07/18 00:29	1.0	1	4:NA=450000
148	18b06m00148	SAMPLE	296739-007	Filtrate	256068	02/07/18 00:34	1.0	1	4:NA=150000
149	18b06m00149	SAMPLE	296739-008	Filtrate	256068	02/07/18 00:39	1.0	1	4:NA=720000
150	18b06m00150	X	RINSE			02/07/18 00:44	1.0	1	
151	18b06m00151	SAMPLE	296599-001	Filtrate	256106	02/07/18 00:49	1.0	1	5:NA=320000
152	18b06m00152	X	RINSE			02/07/18 00:54	1.0	1	
153	18b06m00153	MSS	296733-001	Filtrate	256106	02/07/18 00:59	1.0	1	4:NA=230000
154	18b06m00154	MS	QC918514	Filtrate	256106	02/07/18 01:04	1.0	1	4:NA=230000
155	18b06m00155	MSD	QC918515	Filtrate	256106	02/07/18 01:09	1.0	1	4:NA=230000
156	18b06m00156	SAMPLE	296733-002	Filtrate	256106	02/07/18 01:14	1.0	1	3:NA=390000

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 1018054020

Instrument : MET26 Begun : 02/06/18 12:20
Method : EPA 6020A SOP Version : icpms metals_rv10

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
157	18b06m00157	CCV				02/07/18 01:19	1.0	6 1	
158	18b06m00158	X	XCCB			02/07/18 01:24	1.0	1	
159	18b06m00159	CCB				02/07/18 01:29	1.0	1	
160	18b06m00160	SAMPLE	296733-003	Filtrate	256106	02/07/18 01:34	1.0	1	3:NA=390000
161	18b06m00161	SAMPLE	296733-004	Filtrate	256106	02/07/18 01:39	1.0	1	1:NA=100000
162	18b06m00162	SAMPLE	296733-005	Filtrate	256106	02/07/18 01:44	1.0	1	1:NA=99000
163	18b06m00163	SAMPLE	296733-008	Filtrate	256106	02/07/18 01:49	1.0	1	6:NA=420000
164	18b06m00164	SAMPLE	296733-009	Filtrate	256106	02/07/18 01:54	1.0	1	2:NA=300000
165	18b06m00165	SAMPLE	296733-010	Filtrate	256106	02/07/18 01:59	1.0	1	4:NA=640000
166	18b06m00166	SAMPLE	296733-012	Filtrate	256106	02/07/18 02:04	1.0	1	4:NA=300000
167	18b06m00167	SAMPLE	296733-013	Filtrate	256106	02/07/18 02:09	1.0	1	2:CA=250000
168	18b06m00168	SAMPLE	296733-014	Filtrate	256106	02/07/18 02:14	1.0	1	2:CA=350000
169	18b06m00169	X	RINSE			02/07/18 02:19	1.0	1	
170	18b06m00170	SAMPLE	296734-001	Filtrate	256106	02/07/18 02:24	1.0	1	3:NA=140000
171	18b06m00171	CCV				02/07/18 02:29	1.0	6 1	
172	18b06m00172	X	XCCB			02/07/18 02:34	1.0	1	
173	18b06m00173	CCB				02/07/18 02:39	1.0	1	
174	18b06m00174	SAMPLE	296734-002	Filtrate	256106	02/07/18 02:44	1.0	1	5:NA=400000
175	18b06m00175	SAMPLE	296734-003	Filtrate	256106	02/07/18 02:49	1.0	1	4:NA=390000
176	18b06m00176	SAMPLE	296734-004	Filtrate	256106	02/07/18 02:54	1.0	1	4:NA=1200000
177	18b06m00177	SAMPLE	296734-005	Filtrate	256106	02/07/18 02:59	1.0	1	3:NA=370000
178	18b06m00178	MSS	296734-006	Filtrate	256146	02/07/18 03:04	1.0	1	4:NA=360000
179	18b06m00179	MS	QC918701	Filtrate	256146	02/07/18 03:09	1.0	1	4:NA=350000
180	18b06m00180	MSD	QC918702	Filtrate	256146	02/07/18 03:14	1.0	1	4:NA=330000
181	18b06m00181	SAMPLE	296734-007	Filtrate	256146	02/07/18 03:19	1.0	1	3:CA=620000
182	18b06m00182	SAMPLE	296734-008	Filtrate	256146	02/07/18 03:24	1.0	1	2:NA=97000
183	18b06m00183	SAMPLE	296734-009	Filtrate	256146	02/07/18 03:29	1.0	1	4:NA=440000
184	18b06m00184	CCV				02/07/18 03:34	1.0	6 1	
185	18b06m00185	X	XCCB			02/07/18 03:39	1.0	1	
186	18b06m00186	CCB				02/07/18 03:44	1.0	1	
187	18b06m00187	SAMPLE	296734-010	Filtrate	256146	02/07/18 03:49	1.0	1	3:CA=490000
188	18b06m00188	SAMPLE	296734-011	Filtrate	256146	02/07/18 03:54	1.0	1	5:NA=170000
189	18b06m00189	SAMPLE	296734-012	Filtrate	256146	02/07/18 03:59	1.0	1	4:NA=280000
190	18b06m00190	SAMPLE	296734-013	Filtrate	256146	02/07/18 04:04	1.0	1	3:NA=210000
191	18b06m00191	SAMPLE	296734-014	Filtrate	256146	02/07/18 04:09	1.0	1	4:NA=680000
192	18b06m00192	X	RINSE			02/07/18 04:14	1.0	1	
193	18b06m00193	SAMPLE	296783-001	Filtrate	256146	02/07/18 04:19	1.0	1	3:CA=46000
194	18b06m00194	SAMPLE	296783-002	Filtrate	256146	02/07/18 04:24	1.0	1	3:NA=310000
195	18b06m00195	SAMPLE	296783-004	Filtrate	256146	02/07/18 04:29	1.0	1	4:NA=330000
196	18b06m00196	SAMPLE	296783-005	Filtrate	256146	02/07/18 04:34	1.0	1	5:NA=710000
197	18b06m00197	SAMPLE	296783-006	Filtrate	256146	02/07/18 04:39	1.0	1	3:NA=460000
198	18b06m00198	CCV				02/07/18 04:44	1.0	6 1	
199	18b06m00199	X	XCCB			02/07/18 04:49	1.0	1	
200	18b06m00200	CCB				02/07/18 04:54	1.0	1	
201	18b06m00201	SAMPLE	296783-007	Filtrate	256146	02/07/18 04:59	1.0	1	4:NA=3500000
202	18b06m00202	SAMPLE	296783-008	Filtrate	256146	02/07/18 05:04	1.0	1	4:NA=200000
203	18b06m00203	SAMPLE	296783-009	Filtrate	256146	02/07/18 05:09	1.0	1	6:NA=2300000
204	18b06m00204	SAMPLE	296783-010	Filtrate	256146	02/07/18 05:14	1.0	1	5:NA=800000
205	18b06m00205	SAMPLE	296783-011	Filtrate	256146	02/07/18 05:19	1.0	1	3:NA=210000
206	18b06m00206	X	RINSE			02/07/18 05:24	1.0	1	
207	18b06m00207	BLANK	QC918875	Filtrate	256193	02/07/18 05:29	1.0	1	
208	18b06m00208	BS	QC918876	Filtrate	256193	02/07/18 05:33	1.0	1	

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 1018054020

Instrument : MET26 Begun : 02/06/18 12:20
Method : EPA 6020A SOP Version : icpms metals_rv10

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
209	18b06m00209	BSD	QC918877	Filtrate	256193	02/07/18 05:38	1.0	1	
210	18b06m00210	MSS	296501-001	Filtrate	256193	02/07/18 05:43	1.0	1	
211	18b06m00211	MS	QC918878	Filtrate	256193	02/07/18 05:48	1.0	1	
212	18b06m00212	CCV				02/07/18 05:53	1.0	6 1	
213	18b06m00213	X	XCCB			02/07/18 05:58	1.0	1	
214	18b06m00214	CCB				02/07/18 06:03	1.0	1	
215	18b06m00215	MSD	QC918879	Filtrate	256193	02/07/18 06:08	1.0	1	
216	18b06m00216	SAMPLE	296501-002	Filtrate	256193	02/07/18 06:13	1.0	1	
217	18b06m00217	X	RINSE			02/07/18 06:18	1.0	1	
218	18b06m00218	BLANK	QC918880	Filtrate	256194	02/07/18 06:23	1.0	1	
219	18b06m00219	BS	QC918881	Filtrate	256194	02/07/18 06:27	1.0	1	
220	18b06m00220	BSD	QC918882	Filtrate	256194	02/07/18 06:32	1.0	1	
221	18b06m00221	SAMPLE	296572-001	Filtrate	256194	02/07/18 06:37	1.0	1	5:NA=230000
222	18b06m00222	SAMPLE	296572-002	Filtrate	256194	02/07/18 06:42	1.0	1	5:NA=230000
223	18b06m00223	SAMPLE	296572-003	Filtrate	256194	02/07/18 06:47	1.0	1	4:NA=180000
224	18b06m00224	SAMPLE	296572-004	Filtrate	256194	02/07/18 06:52	1.0	1	4:NA=190000
225	18b06m00225	SAMPLE	296572-005	Filtrate	256194	02/07/18 06:57	1.0	1	4:NA=210000
226	18b06m00226	CCV				02/07/18 07:02	1.0	6 1	
227	18b06m00227	X	XCCB			02/07/18 07:07	1.0	1	
228	18b06m00228	CCB				02/07/18 07:12	1.0	1	
229	18b06m00229	X	RINSE			02/07/18 07:17	1.0	1	
230	18b06m00230	SAMPLE	296784-010	Filtrate	256194	02/07/18 07:22	1.0	1	3:NA=240000
231	18b06m00231	SAMPLE	296784-001	Filtrate	256194	02/07/18 07:27	1.0	1	5:NA=1300000
232	18b06m00232	SAMPLE	296784-003	Filtrate	256194	02/07/18 07:32	1.0	1	3:NA=260000
233	18b06m00233	SAMPLE	296784-004	Filtrate	256194	02/07/18 07:37	1.0	1	6:NA=800000
234	18b06m00234	ICSA				02/07/18 07:42	1.0	7 1	8:FE=190000
235	18b06m00235	ICSAB				02/07/18 07:47	1.0	8 1	8:FE=190000
236	18b06m00236	X	RINSE			02/07/18 07:53	1.0	1	
237	18b06m00237	X	RINSE			02/07/18 07:58	1.0	1	
238	18b06m00238	X	RINSE			02/07/18 08:03	1.0	1	
239	18b06m00239	X	RINSE			02/07/18 08:08	1.0	1	
240	18b06m00240	SAMPLE	296784-005	Filtrate	256194	02/07/18 08:13	1.0	1	4:NA=1100000
241	18b06m00241	SAMPLE	296784-006	Filtrate	256194	02/07/18 08:18	1.0	1	4:NA=780000
242	18b06m00242	SAMPLE	296784-007	Filtrate	256194	02/07/18 08:23	1.0	1	5:NA=710000
243	18b06m00243	SAMPLE	296784-009	Filtrate	256194	02/07/18 08:28	1.0	1	4:NA=180000
244	18b06m00244	CCV				02/07/18 08:33	1.0	6 1	
245	18b06m00245	X	XCCB			02/07/18 08:38	1.0	1	
246	18b06m00246	CCB				02/07/18 08:43	1.0	1	
247	18b06m00247	MS	QC918984	Miscell.	256219	02/07/18 08:47	25.0	1	1:PB=400
248	18b06m00248	MSD	QC918985	Miscell.	256219	02/07/18 08:52	25.0	1	
249	18b06m00249	CCV				02/07/18 08:57	1.0	6 1	
250	18b06m00250	X	XCCB			02/07/18 09:02	1.0	1	
251	18b06m00251	CCB				02/07/18 09:07	1.0	1	
252	18b06m00252	ICSA				02/07/18 09:12	1.0	7 1	8:FE=190000
253	18b06m00253	ICSAB				02/07/18 09:17	1.0	8 1	8:FE=190000
254	18b06m00254	X	RINSE			02/07/18 09:23	1.0	1	
255	18b06m00255	X	RINSE			02/07/18 09:28	1.0	1	
256	18b06m00256	X	RINSE			02/07/18 09:33	1.0	1	
257	18b06m00257	X	RINSE			02/07/18 09:38	1.0	1	

NBB 02/06/18 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 001 through 039.

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 1018054020

Instrument : MET26 Begun : 02/06/18 12:20
Method : EPA 6020A SOP Version : icpms metals_rv10

NBB 02/07/18 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 040 through 253.

Standards used: 1=S35396 2=S35482 3=S35696 4=S35884 5=S35885 6=S35929 7=S35821 8=S35822 9=S34361 10=S34362 11=S34743

CURTIS & TOMPKINS INTERNAL STANDARD SUMMARY FOR SEQUENCE 1018054020

Date : 02/06/18 Reference : 18b06m00005
Sequence : MET26 18b06m00 Analyzed : 02/06/18 12:39

#	Type	Sample ID	LI A	GE H	GE A	GE E	IN A	BI A	Y E	Y H	Y A
		IB+ICALBLK STD	1871599	78194	231040	105165	1846597	2022337	858586	1071043	1808858
		LOWER LIMIT	561480	23458	69312	31550	553979	606701	257576	321313	542657
		UPPER LIMIT	2245919	93833	277248	126198	2215916	2426804	1030303	1285252	2170630
018	ICB		1838939	73826	213256	106178	1682418	1864973	873819	1039045	1644977
019	ICSA		1137119	60080	152037	85613	1151252	1108745	648036	921760	1159871
020	ICSAB		951794	44337	130051	68434	1015548	1036101	531528	702851	995741
025	BLANK	QC918868	1077532	44063	137247	61364	1160705	1491140	512867	654052	1073302
026	BS	QC918869	1119955	49876	139521	70660	1155895	1394948	604914	734701	1117228
027	BSD	QC918870	1137638	49406	136719	70954	1134397	1379529	607213	740110	1099223
030	MS	QC918871	1238656	51040	141347	71633	1177886	1212072	665521	848808	1246332
031	MSD	QC918872	1259045	49712	143737	71998	1188696	1215530	667594	792235	1263617
033	BLANK	QC918868	1307040	54462	162671	78559	1341472	1611633	657876	782194	1283721
034	MS	QC918191	1331467	58289	163314	81258	1332464	1585640	684761	835419	1280608
035	MSD	QC918192	1345858	58175	163522	82186	1337072	1597983	692240	842979	1286435
036	CCV		1300272	58101	153786	79342	1252762	1470208	673374	864897	1228937
038	CCB		1363877	58285	162390	82493	1316061	1599529	686230	851284	1259017
039	ICSA		1111540	53524	145219	80218	1087436	1070984	612887	833649	1088720
040	ICSAB		1036732	48066	135588	68793	1045798	1047120	514428	759753	1032563
045	BLANK	QC918981	1180598	49422	143848	70798	1212901	1505137	602693	731872	1148937
046	BS	QC918982	1092919	49709	132572	70106	1092580	1370402	586090	724597	1032076
047	BSD	QC918983	1217315	53304	147196	70262	1240260	1533998	582107	796382	1172953
048	MSS	296837-001	1284447	58674	156366	76876	1281205	1526387	668357	916300	1282984
049	MS	QC918984	1307002	57597	159425	81130	1294676	1516973	708904	882818	1310636
050	MSD	QC918985	1547193	60431	192561	84691	1599549	1826766	732273	914067	1623643
051	SER	QC918986	1361373	62271	166361	89771	1311180	1582932	759975	909495	1272824
052	PDS	QC918987	1317220	58889	157468	81397	1279809	1481097	712650	897629	1296823
053	SAMPLE	296798-001	1411813	61574	168893	85823	1355850	1584388	729683	923489	1368220
054	SAMPLE	296798-006	1378333	62195	167985	87085	1329621	1539746	743476	919465	1345875
055	CCV		1336811	62353	163713	87791	1320198	1520204	744231	920964	1315742
057	CCB		1416815	64286	171451	90139	1386862	1683656	748960	923238	1329767
058	SAMPLE	296798-011	1461056	63800	178239	91527	1430135	1648622	793557	940951	1452634
059	SAMPLE	296798-016	1517266	73810	186131	98223	1467640	1672778	844504	1080090	1500654
060	SAMPLE	296798-021	1505593	69162	185578	94278	1436679	1644311	798335	1027879	1478097
061	SAMPLE	296798-026	1418319	69947	171136	94544	1334666	1543401	808244	1042224	1368376
062	SAMPLE	296837-002	1492587	66093	177811	92700	1409304	1622597	801427	977753	1445555
063	SAMPLE	296837-003	1498592	66844	179390	95833	1425583	1646953	833479	994502	1443723
064	SAMPLE	296837-004	1514177	65481	183720	95547	1448024	1649805	826211	933394	1482332
065	SAMPLE	296837-005	1509472	68848	183313	97071	1416489	1629888	836109	1023114	1445887
066	SAMPLE	296837-006	1547530	70810	186970	96857	1478414	1686052	821183	1057178	1517475
067	SAMPLE	296837-007	1429673	65618	172058	92066	1382034	1590259	802076	979415	1405847
068	CCV		1478044	67913	178429	93934	1435014	1651687	793488	992871	1423513
070	CCB		1693593	70974	210437	99416	1707651	1983615	825334	1016574	1659213
071	SAMPLE	296837-008	1556290	73475	191082	101484	1483888	1698284	864251	1091176	1519850
072	SAMPLE	296837-009	1560327	73965	188713	100812	1485697	1696482	857406	1090171	1515510
073	SAMPLE	296837-010	1555063	70748	187894	100430	1455130	1674001	867593	1056565	1485461
074	SAMPLE	296837-011	1614235	74148	196397	103160	1534884	1740368	880898	1102641	1566046
075	SAMPLE	296837-012	1597607	73789	195148	102806	1518660	1720513	872470	1092150	1556042
076	SAMPLE	296837-013	1588638	74558	193632	102066	1515080	1716725	868642	1106323	1549209
077	SAMPLE	296837-014	1445242	75159	174164	103107	1329797	1531785	883007	1113782	1368655
079	BLANK	QC919024	1327184	58430	153697	80601	1287368	1582435	700246	890680	1229913
080	BS	QC919025	1304770	56162	150154	78182	1236353	1437292	693885	891657	1230107

CURTIS & TOMPKINS INTERNAL STANDARD SUMMARY FOR SEQUENCE 1018054020

Date : 02/06/18 Reference : 18b06m00005
Sequence : MET26 18b06m00 Analyzed : 02/06/18 12:39

#	Type	Sample ID	LI A	GE H	GE A	GE E	IN A	BI A	Y E	Y H	Y A
081	BSD	QC919026	1298068	55329	150641	73529	1248430	1453264	633990	884708	1238237
082	CCV		1491803	56298	182892	95930	1461768	1668603	808108	764174	1457680
084	CCB		1571545	73390	193945	101943	1558375	1829753	843691	1056886	1504934
085	SAMPLE	296902-001	1278761	55109	149976	77121	1288829	1424641	718323	908072	1296790
086	SAMPLE	296902-002	1315560	55635	148328	76834	1247447	1341838	732446	920293	1273128
087	SAMPLE	296902-003	1330810	52482	154681	72869	1282678	1366047	666654	856243	1311253
088	CCV		1593493	70286	200760	99478	1626126	1825408	847812	1052144	1611952
090	CCB		1707000	81313	216158	111827	1696298	1957044	916209	1150215	1642319
091	ICSA		1362623	71240	181518	101516	1335022	1231367	768804	1091327	1366283
092	ICSAB		1297031	61158	174532	90015	1340339	1237149	700945	970477	1356269
097	SAMPLE	296783-013	557793 *	30797	71455	40882	561916	276826 *	426880	547901	740329
099	SAMPLE	296840-011	1907776	102651 *	255457	122037	2030774	2097518	1016807	1453543 *	2058403
100	SAMPLE	296840-012	1810428	93396	245595	119742	1960948	2040311	999253	1306707 *	1970646
106	SER	QC918873	1526461	81276	216024	104499	1716026	1758658	922009	1162444	1756516
109	BLANK	QC918313	1465032	69566	216560	100203	1796341	2058173	863411	941524	1735917
110	BLANK	QC918329	1427182	74924	206588	98067	1720952	1961895	869683	1070119	1660714
111	BLANK	QC918511	1459647	75714	213063	99223	1820886	2059780	886555	1083960	1765312
112	CCV		1423760	84365	213128	100982	1757024	1898958	887411	1222591	1761309
114	CCB		1498053	83137	226205	107617	1903182	2142193	919100	1151599	1847075
115	BS	QC918314	1446106	71784	206618	96293	1757406	1857491	877908	1021677	1770767
116	BSD	QC918315	1444204	76577	206065	98685	1747480	1844273	893358	1144518	1764257
117	BS	QC918330	1471351	78805	210034	97990	1786837	1889527	886776	1158466	1801091
118	BSD	QC918331	1446363	75896	206665	97426	1740485	1853145	874310	1111647	1752422
119	SAMPLE	296784-002	1449354	79519	211886	100272	1747017	1860206	869784	1133207	1736000
120	SAMPLE	296784-008	1510495	80144	226703	104171	1889038	2034189	901807	1116745	1869708
121	SAMPLE	296784-011	1448580	77671	206413	98280	1708320	1703386	885706	1127298	1748213
122	SAMPLE	296783-003	1484183	84243	218631	99186	1846184	1905883	866172	1230177	1849506
123	SAMPLE	296733-006	1419351	75144	205269	96389	1718153	1716506	860276	1095852	1743528
124	SAMPLE	296733-007	1454901	76840	214458	97074	1778015	1859640	838435	1081700	1780916
125	CCV		1446612	77616	217633	101211	1815399	1952392	883301	1106863	1814865
127	CCB		1484986	80464	227682	106682	1899966	2117545	907268	1099629	1850920
128	SAMPLE	296733-011	1304600	73196	183166	93308	1527702	1498385	855969	1096221	1572955
129	MSS	296647-001	1321137	64995	166470	90552	1499909	1330035	927342	1072969	1578875
130	MS	QC918316	1343345	66296	178938	83141	1536679	1339947	812816	1095629	1666083
131	MSD	QC918317	1296890	66029	173036	87536	1505438	1317187	848769	1068512	1620795
132	SAMPLE	296647-002	1289367	64700	172763	82044	1527066	1359268	805998	1046010	1611480
133	SAMPLE	296647-003	1283169	66859	176244	83684	1537480	1369594	800737	1063318	1612121
135	MSS	296739-001	1320029	67899	179308	85318	1552000	1323256	833782	1089376	1669816
136	MS	QC918332	1177817	71728	165178	89760	1352343	1157664	866559	1156575	1474214
137	MSD	QC918333	1284421	69211	183618	86283	1575334	1330225	829354	1100953	1719896
138	SAMPLE	296739-002	1310030	68295	177618	86207	1432653	1123591	814093	1073312	1605619
139	CCV		1325896	83660	222894	103580	1829455	1910065	892439	1179817	1843488
141	CCB		1309933	85185	230352	104094	1910381	2063839	886464	1180541	1865257
142	SAMPLE	296739-003	1241542	72083	185326	87819	1604624	1374902	838158	1111573	1708136
143	SAMPLE	296739-004	1271170	71231	187343	88320	1540383	1258754	828739	1126045	1695068
147	SAMPLE	296739-005	1228942	72266	190054	89474	1614541	1383563	836463	1098339	1733962
148	SAMPLE	296739-007	1109609	71139	185290	88509	1559851	1469179	816255	1085158	1616839
149	SAMPLE	296739-008	1212171	71117	181545	87378	1485135	1211924	832963	1102836	1631949
151	SAMPLE	296599-001	1113970	69594	182282	86097	1502856	1320237	785269	1032742	1594852
153	MSS	296733-001	1120225	73033	191632	89562	1583632	1447141	802880	1062914	1662287
154	MS	QC918514	1084651	72105	187070	88654	1541277	1418168	803295	1081445	1636406
155	MSD	QC918515	1077094	69336	184169	86064	1576052	1459421	793905	1059341	1656751

CURTIS & TOMPKINS INTERNAL STANDARD SUMMARY FOR SEQUENCE 1018054020

Date : 02/06/18 Reference : 18b06m00005
Sequence : MET26 18b06m00 Analyzed : 02/06/18 12:39

#	Type	Sample ID	LI A	GE H	GE A	GE E	IN A	BI A	Y E	Y H	Y A
156	SAMPLE	296733-002	1099382	70651	184815	88304	1565486	1362828	836272	1074482	1671171
157	CCV		1046912	74319	199950	92203	1633252	1734037	796598	1053211	1629982
159	CCB		1162208	68944	226561	102222	1863996	1960479	869022	876297	1831629
160	SAMPLE	296733-003	1093348	74013	190692	91036	1560033	1345995	827094	1107503	1672072
161	SAMPLE	296733-004	1040946	71238	198442	88031	1648799	1624671	769738	1029435	1661553
162	SAMPLE	296733-005	1060988	74226	201279	91524	1664910	1631457	804839	1062091	1688288
163	SAMPLE	296733-008	1074980	73556	200562	93301	1562602	1361711	834641	1136409	1735259
164	SAMPLE	296733-009	1112884	76393	199327	91191	1664523	1501366	802551	1118313	1733512
165	SAMPLE	296733-010	1163922	70909	189551	88872	1547526	1230243	831248	1103260	1707624
166	SAMPLE	296733-012	1116401	69332	190460	88825	1649902	1472575	827278	1074691	1723435
167	SAMPLE	296733-013	1216124	64439	184498	86905	1389412	933416	826266	1015714	1641922
168	SAMPLE	296733-014	1116431	65656	175031	83136	1349555	906111	809986	1057529	1597762
170	SAMPLE	296734-001	1084336	77914	197141	93015	1737717	1584270	872768	1188092	1776356
171	CCV		1069439	78758	217276	97405	1849776	1911902	855622	1130995	1826651
173	CCB		1063877	81387	225513	101030	1944414	2069254	877813	1137961	1871538
174	SAMPLE	296734-002	1020942	73507	192456	90206	1642826	1404575	844136	1113153	1732613
175	SAMPLE	296734-003	1037410	74278	196004	90205	1672427	1429208	846787	1123146	1758548
176	SAMPLE	296734-004	1064264	67024	178401	85013	1410896	1045729	813679	1051704	1613632
177	SAMPLE	296734-005	939695	68776	176249	81853	1506431	1298344	761985	1068369	1590782
178	MSS	296734-006	951079	69587	188010	85354	1624274	1399390	805010	1068737	1710809
179	MS	QC918701	954068	74100	196937	90507	1713011	1443646	867839	1164623	1834899
180	MSD	QC918702	904109	72048	177437	83785	1444966	1227144	779018	1113017	1565330
181	SAMPLE	296734-007	173768 *	15337 *	50376 *	21683 *	370237 *	149791 *	248216 *	295498 *	515063 *
182	SAMPLE	296734-008	735193	67451	188865	80824	1592497	1413267	737240	993278	1647765
183	SAMPLE	296734-009	709059	63250	184209	80996	1536117	1162983	781836	987168	1676069
184	CCV		791340	76461	212868	92720	1766377	1648640	807869	1088890	1789842
186	CCB		794597	80460	216225	95665	1872684	1861602	840156	1119432	1811366
187	SAMPLE	296734-010	189486 *	17985 *	61552 *	25806 *	449595 *	248379 *	318172	378557	618732
188	SAMPLE	296734-011	531255 *	53886	170048	71728	1444406	1244212	669797	863252	1492490
189	SAMPLE	296734-012	508933 *	54493	165486	66279	1470766	1185720	656155	879740	1543912
190	SAMPLE	296734-013	498604 *	59547	171252	72645	1363681	1135801	662004	902150	1452242
191	SAMPLE	296734-014	418110 *	54308	134628	62308	1218359	971365	608977	828229	1297218
193	SAMPLE	296783-001	482176 *	50965	152951	63027	1468981	1379841	621722	792803	1419104
194	SAMPLE	296783-002	440246 *	47046	136029	58007	1302337	1138025	578490	755764	1306001
195	SAMPLE	296783-004	430701 *	48121	138147	59126	1280945	1084575	581652	775136	1303347
196	SAMPLE	296783-005	375439 *	42869	126264	53995	1133817	865797	538239	697808	1202504
197	SAMPLE	296783-006	355803 *	40618	121803	52033	1177299	974885	517787	649443	1193226
198	CCV		428855 *	50420	151057	61303	1421912	1436170	568253	763563	1340542
200	CCB		447198 *	55891	162379	67578	1533702	1573591	618763	817754	1416923
201	SAMPLE	296783-007	159175 *	22985 *	60145 *	27504 *	559245	364744 *	319568	433171	645546
202	SAMPLE	296783-008	225803 *	28850	93205	36533	968647	848318	384415	488238	941626
203	SAMPLE	296783-009	78962 *	14829 *	37453 *	16493 *	390775 *	297405 *	200445 *	290266 *	413992 *
204	SAMPLE	296783-010	80718 *	13152 *	43685 *	16396 *	474838 *	423922 *	180783 *	237925 *	461948 *
205	SAMPLE	296783-011	99422 *	16432 *	55095 *	19783 *	575683	541162 *	209241 *	264671 *	548228
207	BLANK	QC918875	117091 *	20789 *	68878 *	25129 *	706136	779221	247284 *	309300 *	632293
208	BS	QC918876	125776 *	20037 *	73055	25084 *	698467	738374	242920 *	299433 *	658945
209	BSD	QC918877	147274 *	23373 *	77883	29231 *	702230	750431	283218	347429	664601
211	MS	QC918878	187520 *	26469	89266	32617	866950	905237	319937	404054	832699
212	CCV		208593 *	28790	97082	35828	933142	990030	346631	436692	891152
214	CCB		215323 *	30371	97570	37002	954850	1048907	351881	448103	884478
215	MSD	QC918879	209436 *	28563	94553	34958	895303	947314	339528	429624	868096
218	BLANK	QC918880	212356 *	30349	94898	34827	927240	1048659	326994	436220	856122

CURTIS & TOMPKINS INTERNAL STANDARD SUMMARY FOR SEQUENCE 1018054020

Date : 02/06/18 Reference : 18b06m00005
Sequence : MET26 18b06m00 Analyzed : 02/06/18 12:39

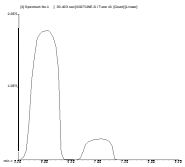
#	Type	Sample ID	LI A	GE H	GE A	GE E	IN A	BI A	Y E	Y H	Y A
219	BS	QC918881	202560 *	28363	92670	34371	864233	932864	331549	418663	835838
220	BSD	QC918882	208797 *	29253	96491	35765	892207	956160	341527	432332	871613
221	SAMPLE	296572-001	187368 *	24096	80058	30334 *	778431	729526	315844	390373	790093
222	SAMPLE	296572-002	181050 *	25386	78414	30631 *	770095	727207	317132	403996	777881
223	SAMPLE	296572-003	184501 *	25701	82228	31152 *	780359	753813	312485	401658	783095
224	SAMPLE	296572-004	184176 *	25097	80542	30719 *	781589	757024	315543	396751	783508
225	SAMPLE	296572-005	180346 *	23886	76679	29062 *	725106	690645	298651	382386	739003
226	CCV		211217 *	29972	97795	36641	898561	964694	351052	452535	871815
228	CCB		208619 *	30612	95163	36662	906411	1008768	342999	445101	853472
230	SAMPLE	296784-010	185514 *	24795	80172	31097 *	761578	752731	311442	374667	770046
231	SAMPLE	296784-001	128718 *	18882 *	52317 *	22042 *	523912 *	451095 *	241824 *	324402	549789
232	SAMPLE	296784-003	165300 *	22918 *	72786	27554 *	700527	689806	274013	349895	699825
233	SAMPLE	296784-004	120442 *	18590 *	56149 *	22085 *	564187	504070 *	239928 *	313937 *	580781
234	ICSA		175666 *	21418 *	116906	36536	721915	673690	266580	333262	721412
235	ICSAB		206968 *	24939	124809	40404	810308	747514	305872	387103	822644
240	SAMPLE	296784-005	214997 *	23540	75210	28666 *	742117	614260	310478	408836	788280
241	SAMPLE	296784-006	255548 *	26888	88656	34168	871188	749804	358993	454731	903665
242	SAMPLE	296784-007	264018 *	29025	92997	36382	912192	790748	375720	489734	934614
243	SAMPLE	296784-009	312794 *	35472	112485	42371	1085295	1016742	428905	569717	1072677
244	CCV		336055 *	38968	126723	47969	1198228	1257213	456347	594251	1143413
246	CCB		321316 *	39163	121394	46752	1159836	1275043	439110	578735	1079499
247	MS	QC918984	324756 *	39793	128403	48272	1174971	1242164	469957	610480	1170515
248	MSD	QC918985	327390 *	40985	128861	49473	1175879	1244543	476174	627837	1171056
249	CCV		317986 *	41570	123000	46281	1146967	1220604	438916	638846	1106457
251	CCB		308503 *	39005	118863	46156	1133972	1257391	431537	564674	1061067
252	ICSA		281321 *	32728	133656	47442	947073	876517	385175	505017	961181
253	ICSAB		263790 *	32059	128598	47001	895688	829875	383010	504597	913946

MET26 QC Tune Report

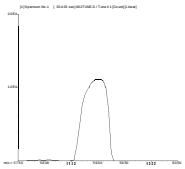
Data File: C:\ICPCHEM\1\DATA\18B06m00.B\002TUNE.D
Date Acquired: Feb 6 2018 12:25 pm
Acq. Method: TN6020K.M
Operator:
Sample Name: tun,s35482
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\TN6020K.M

RSD (%)

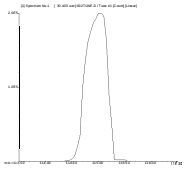
Element	Rep1	Rep2	Rep3	Rep4	Rep5	Actual	Required	Flag
7 Li	146578	149475	150197	151034	151284	1.54	5.00	
59 Co	58060	57855	57869	58289	58196	0.45	5.00	
115 In	946053	976509	957437	959759	959499	1.23	5.00	
205 Tl	74737	74568	74332	74853	74361	0.85	5.00	



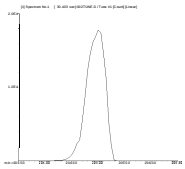
7 Li
Mass Calib.
Actual: 7.00
Required: 6.90 - 7.10
Flag:
Peak Width @ 5%
Actual: 0.60
Required: 0.75
Flag:



59 Co
Mass Calib.
Actual: 59.00
Required: 58.90 - 59.10
Flag:
Peak Width @ 5%
Actual: 0.65
Required: 0.75
Flag:



115 In
Mass Calib.
Actual: 115.00
Required: 114.90 - 115.10
Flag:
Peak Width @ 5%
Actual: 0.65
Required: 0.75
Flag:



205 Tl
Mass Calib.
Actual: 204.95
Required: 204.90 - 205.10
Flag:
Peak Width @ 5%
Actual: 0.65
Required: 0.75
Flag:

ENTHALPY INITIAL CALIBRATION FOR 296798 METALS Soil: EPA 6020A

Inst : MET26
Calnum : 1018054020001
Units : ug/L

Date : 06-FEB-2018 12:39
X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	18b06m00006	1018054020006		06-FEB-2018 12:44	S35696 (400X), S35396
L2	18b06m00007	1018054020007		06-FEB-2018 12:49	S35696 (200X), S35396
L3	18b06m00008	1018054020008		06-FEB-2018 12:54	S35696 (40X), S35396
L4	18b06m00009	1018054020009		06-FEB-2018 12:58	S35696 (20X), S35396
L5	18b06m00010	1018054020010		06-FEB-2018 13:03	S35696 (4X), S35396
L6	18b06m00011	1018054020011		06-FEB-2018 13:08	S35696 (2X), S35396
L7	18b06m00012	1018054020012		06-FEB-2018 13:13	S35696, S35396

Analyte	Ch	L1	L2	L3	L4	L5	L6	L7	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	Flg
Lead	A	0.0121	0.0117	0.0115	0.0112	0.0113	0.0114	0.0116	BLNK	-0.0425	86.7513		0.0115	1.000	0.995	
Copper	E	0.0055	0.0053	0.0043	0.0041	0.0041	0.0038	0.0036	BLNK	-0.1952	273.021		0.0044	0.998	0.995	

Spiked Amounts / Drifts	Ch	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D	L6	%D	L7	%D
Lead	A	0.5000	-3	1.0000	-2	5.0000	-2	10.000	-3	50.000	-2	100.00	-1	200.00	0
Copper	E	0.5000	11	1.0000	**25**	5.0000	13	10.000	11	50.000	11	100.00	3	200.00	-2

Instrument amount = a0 + response * a1 + response^2 * a2; BLNK=Y=aX+[blank]

ENTHALPY 2ND SOURCE CALIBRATION SUMMARY FOR 296798 METALS Soil
EPA 6020A

Inst : MET26
Calnum : 1018054020001 Cal Date : 06-FEB-2018

ICV 1018054020016 (18b06m00016 06-FEB-2018) stds: S35929, S35396

Analyte	Ch	Spiked	Quant	Units	%D	Max	Flags
Lead	A	50.00	47.63	ug/L	-5	10	
Copper	E	50.00	50.52	ug/L	1	10	

ENTHALPY LOW-LEVEL PERFORMANCE VERIFICATION STANDARD FOR 296798 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018054020017.1 File : 18b06m00017 Time : 06-FEB-2018 13:41
Cal : 1018054020001 Caldate : 06-FEB-2018
Standards: S35885, S35396

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Lead	A	1.000	0.9342	ug/L	-7	30	
Copper	E	1.000	1.155	ug/L	16	30	

ISTD (ICALBLK 18b06m00005)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	1871599	1798583	-3.90
Germanium	H	78194	68286	-12.67
Germanium	A	231040	209880	-9.16
Germanium	E	105165	99891	-5.01
Indium	A	1846597	1655745	-10.34
Bismuth	A	2022337	1849603	-8.54
Yttrium	E	858586	814904	-5.09
Yttrium	H	1071043	970417	-9.40
Yttrium	A	1808858	1617349	-10.59

ENTHALPY INSTRUMENT BLANK FOR 296798 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018054020018.2 File : 18b06m00018 Time : 06-FEB-2018 13:46
Cal : 1018054020001 Caldate : 06-FEB-2018

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Lead	A	ND	0.5000	0.1000	ug/L	
Copper	E	ND	0.5000	0.4000	ug/L	

ISTD (ICALBLK 18b06m00005)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	1871599	1838939	-1.75
Germanium	H	78194	73826	-5.59
Germanium	A	231040	213256	-7.70
Germanium	E	105165	106178	0.96
Indium	A	1846597	1682418	-8.89
Bismuth	A	2022337	1864973	-7.78
Yttrium	E	858586	873819	1.77
Yttrium	H	1071043	1039045	-2.99
Yttrium	A	1808858	1644977	-9.06

ENTHALPY CONTINUING CALIBRATION FOR 296798 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018054020036.3 File : 18b06m00036 Time : 06-FEB-2018 15:16
Cal : 1018054020001 Caldate : 06-FEB-2018
Standards: S35929, S35396

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Lead	A	0.0115	0.0110	50.00	47.73	ug/L	-5	10	
Copper	E	0.0044	0.0037	50.00	50.56	ug/L	1	10	

ISTD (ICALBLK 18b06m00005)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	1871599	1300272	-30.53
Germanium	H	78194	58101	-25.70
Germanium	A	231040	153786	-33.44
Germanium	E	105165	79342	-24.55
Indium	A	1846597	1252762	-32.16
Bismuth	A	2022337	1470208	-27.30
Yttrium	E	858586	673374	-21.57
Yttrium	H	1071043	864897	-19.25
Yttrium	A	1808858	1228937	-32.06

ENTHALPY INSTRUMENT BLANK FOR 296798 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018054020038.2 File : 18b06m00038 Time : 06-FEB-2018 15:26
Cal : 1018054020001 Caldate : 06-FEB-2018

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Lead	A	ND	0.5000	0.1000	ug/L	
Copper	E	ND	0.5000	0.4000	ug/L	

ISTD (ICALBLK 18b06m00005)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	1871599	1363877	-27.13
Germanium	H	78194	58285	-25.46
Germanium	A	231040	162390	-29.71
Germanium	E	105165	82493	-21.56
Indium	A	1846597	1316061	-28.73
Bismuth	A	2022337	1599529	-20.91
Yttrium	E	858586	686230	-20.07
Yttrium	H	1071043	851284	-20.52
Yttrium	A	1808858	1259017	-30.40

ENTHALPY INTERFERENCE CHECK STANDARD A FOR 296798 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018054020039.2 File : 18b06m00039 Time : 06-FEB-2018 15:30
Cal : 1018054020001 Caldate : 06-FEB-2018
Standards: S35821, S35396

Analyte	Ch	Quant	IQL	Units	Flags
Lead	A	[0.1033]	0.5000	ug/L	
Copper	E	0.7938	0.5000	ug/L	

Interferent	Ch	Spiked	Quant	Units	%Rec	Flags
Aluminum	A	100000	81780	ug/L	82	
Calcium	A	300000	256000	ug/L	85	
Magnesium	A	100000	81820	ug/L	82	
Molybdenum	A	2000	1978	ug/L	99	
Potassium	A	100000	84390	ug/L	84	
Sodium	E	250000	206000	ug/L	82	
Phosphorus	E	100000	77460	ug/L	77	
Iron	H	250000	235500	ug/L	94	

ISTD (ICALBLK 18b06m00005)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	1871599	1111540	-40.61
Germanium	H	78194	53524	-31.55
Germanium	A	231040	145219	-37.15
Germanium	E	105165	80218	-23.72
Indium	A	1846597	1087436	-41.11
Bismuth	A	2022337	1070984	-47.04
Yttrium	E	858586	612887	-28.62
Yttrium	H	1071043	833649	-22.16
Yttrium	A	1808858	1088720	-39.81

ENTHALPY INTERFERENCE CHECK STANDARD AB FOR 296798 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018054020040.2 File : 18b06m00040 Time : 06-FEB-2018 15:36
Cal : 1018054020001 Caldate : 06-FEB-2018
Standards: S35822, S35396

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Copper	E	200.0	177.9	ug/L	-11	20	

ISTD (ICALBLK 18b06m00005)	Ch	ICALBLK Abund	Abund	%Drift
Germanium	H	78194	48066	-38.53
Germanium	A	231040	135588	-41.31
Germanium	E	105165	68793	-34.59
Indium	A	1846597	1045798	-43.37
Yttrium	E	858586	514428	-40.08
Yttrium	H	1071043	759753	-29.06
Yttrium	A	1808858	1032563	-42.92

ENTHALPY CONTINUING CALIBRATION FOR 296798 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018054020055.1 File : 18b06m00055 Time : 06-FEB-2018 16:50
Cal : 1018054020001 Caldate : 06-FEB-2018
Standards: S35929, S35396

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Lead	A	0.0115	0.0113	50.00	49.09	ug/L	-2	10	
Copper	E	0.0044	0.0037	50.00	50.16	ug/L	0	10	

ISTD (ICALBLK 18b06m00005)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	1871599	1336811	-28.57
Germanium	H	78194	62353	-20.26
Germanium	A	231040	163713	-29.14
Germanium	E	105165	87791	-16.52
Indium	A	1846597	1320198	-28.51
Bismuth	A	2022337	1520204	-24.83
Yttrium	E	858586	744231	-13.32
Yttrium	H	1071043	920964	-14.01
Yttrium	A	1808858	1315742	-27.26

ENTHALPY INSTRUMENT BLANK FOR 296798 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018054020057.1 File : 18b06m00057 Time : 06-FEB-2018 17:00
Cal : 1018054020001 Caldate : 06-FEB-2018

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Lead	A	ND	0.5000	0.1000	ug/L	
Copper	E	ND	0.5000	0.4000	ug/L	

ISTD (ICALBLK 18b06m00005)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	1871599	1416815	-24.30
Germanium	H	78194	64286	-17.79
Germanium	A	231040	171451	-25.79
Germanium	E	105165	90139	-14.29
Indium	A	1846597	1386862	-24.90
Bismuth	A	2022337	1683656	-16.75
Yttrium	E	858586	748960	-12.77
Yttrium	H	1071043	923238	-13.80
Yttrium	A	1808858	1329767	-26.49

ENTHALPY CONTINUING CALIBRATION FOR 296798 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018054020068.1 File : 18b06m00068 Time : 06-FEB-2018 17:57
Cal : 1018054020001 Caldate : 06-FEB-2018
Standards: S35929, S35396

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Lead	A	0.0115	0.0108	50.00	46.89	ug/L	-6	10	
Copper	E	0.0044	0.0038	50.00	52.21	ug/L	4	10	

ISTD (ICALBLK 18b06m00005)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	1871599	1478044	-21.03
Germanium	H	78194	67913	-13.15
Germanium	A	231040	178429	-22.77
Germanium	E	105165	93934	-10.68
Indium	A	1846597	1435014	-22.29
Bismuth	A	2022337	1651687	-18.33
Yttrium	E	858586	793488	-7.58
Yttrium	H	1071043	992871	-7.30
Yttrium	A	1808858	1423513	-21.30

ENTHALPY INSTRUMENT BLANK FOR 296798 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018054020070.1 File : 18b06m00070 Time : 06-FEB-2018 18:06
Cal : 1018054020001 Caldate : 06-FEB-2018

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Lead	A	ND	0.5000	0.1000	ug/L	
Copper	E	ND	0.5000	0.4000	ug/L	

ISTD (ICALBLK 18b06m00005)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	1871599	1693593	-9.51
Germanium	H	78194	70974	-9.23
Germanium	A	231040	210437	-8.92
Germanium	E	105165	99416	-5.47
Indium	A	1846597	1707651	-7.52
Bismuth	A	2022337	1983615	-1.91
Yttrium	E	858586	825334	-3.87
Yttrium	H	1071043	1016574	-5.09
Yttrium	A	1808858	1659213	-8.27

ENTHALPY INTERFERENCE CHECK STANDARD A FOR 296798 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018054020091.1 File : 18b06m00091 Time : 06-FEB-2018 19:50
Cal : 1018054020001 Caldate : 06-FEB-2018
Standards: S35821, S35396

Analyte	Ch	Quant	IQL	Units	Flags
Lead	A	[0.1034]	0.5000	ug/L	
Copper	E	0.8123	0.5000	ug/L	

Interferent	Ch	Spiked	Quant	Units	%Rec	Flags
Aluminum	A	100000	82960	ug/L	83	
Calcium	A	300000	258700	ug/L	86	
Magnesium	A	100000	81880	ug/L	82	
Molybdenum	A	2000	2004	ug/L	100	
Potassium	A	100000	85540	ug/L	86	
Sodium	E	250000	208200	ug/L	83	
Phosphorus	E	100000	79050	ug/L	79	
Iron	H	250000	242900	ug/L	97	

ISTD (ICALBLK 18b06m00005)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	1871599	1362623	-27.19
Germanium	H	78194	71240	-8.89
Germanium	A	231040	181518	-21.43
Germanium	E	105165	101516	-3.47
Indium	A	1846597	1335022	-27.70
Bismuth	A	2022337	1231367	-39.11
Yttrium	E	858586	768804	-10.46
Yttrium	H	1071043	1091327	1.89
Yttrium	A	1808858	1366283	-24.47

ENTHALPY INTERFERENCE CHECK STANDARD AB FOR 296798 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018054020092.1 File : 18b06m00092 Time : 06-FEB-2018 19:55
Cal : 1018054020001 Caldate : 06-FEB-2018
Standards: S35822, S35396

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Copper	E	200.0	160.7	ug/L	-20	20	

ISTD (ICALBLK 18b06m00005)	Ch	ICALBLK Abund	Abund	%Drift
Germanium	H	78194	61158	-21.79
Germanium	A	231040	174532	-24.46
Germanium	E	105165	90015	-14.41
Indium	A	1846597	1340339	-27.42
Yttrium	E	858586	700945	-18.36
Yttrium	H	1071043	970477	-9.39
Yttrium	A	1808858	1356269	-25.02

SAMPLE PREPARATION SUMMARY

Batch # : 256219 Analysis : ICPMS
Started By : DES Prep Date : 05-FEB-2018 14:42 Finished By : DES
Method : 3050B Units : g
Spike #1 ID : S34206 Spike #2 ID : S34207 Spike #3 ID : S35881

Sample	Stype	Matrix	Initial	Final	Clean DF	Prep DF	pH	Sp 1 Vol	Sp 2 Vol	Sp 3 Vol	Clean Method	Analysis	Comments
296798-001		Soil	1.05	50	1	47.62						6020	
296798-006		Soil	1.1	50	1	45.45						6020	
296798-011		Soil	.92	50	1	54.35						6020	
296798-016		Soil	.94	50	1	53.19						6020	
296798-021		Soil	1.05	50	1	47.62						6020	
296798-026		Soil	1.04	50	1	48.08						6020	
296837-001		Miscell.	1.05	50	1	47.62						6020	
296837-002		Miscell.	1.1	50	1	45.45						6020	
296837-003		Miscell.	.91	50	1	54.95						6020	
296837-004		Miscell.	1.02	50	1	49.02						6020	
296837-005		Miscell.	.95	50	1	52.63						6020	
296837-006		Miscell.	1.05	50	1	47.62						6020	
296837-007		Miscell.	1.1	50	1	45.45						6020	
296837-008		Miscell.	1.04	50	1	48.08						6020	
296837-009		Miscell.	1.07	50	1	46.73						6020	
296837-010		Miscell.	.97	50	1	51.55						6020	
296837-011		Miscell.	.94	50	1	53.19						6020	
296837-012		Miscell.	.98	50	1	51.02						6020	
296837-013		Miscell.	1.07	50	1	46.73						6020	
296837-014		Miscell.	1.03	50	1	48.54						6020	
QC918981	BLANK	Miscell.	.97	50	1	51.55							
QC918982	BS	Miscell.	1.01	50	1	49.50		.25	.25	.25			
QC918983	BSD	Miscell.	.95	50	1	52.63		.25	.25	.25			
QC918984	MS	Miscell.	1.1	50	1	45.45		.25	.25	.25			
QC918985	MSD	Miscell.	1.03	50	1	48.54		.25	.25	.25			
QC918986	SER	Miscell.	1.05	50	1	47.62							
QC918987	PDS	Miscell.	1.05	50	1	47.62							

AMP 02/07/18 : Reviewed for Cu, Pb - job 296798$

Analyst: NBB Date: 02/07/18 Reviewer: _____ Date: _____

Soil Digestion for ICP & ICP-MS Enthalpy Analytical LLC - Berkeley Version 11.2, July.2017

LIMS Batch #: 256219 Digestion Method: ☑ EPA 3050b ☐ _____ Time ON: 14:42 Time OFF: 18:02 BK 4198 Page 93

Date Digested: 2·5·18

Digested by: Danielle

Sample #	Container ID	Weight of Sample (g)	Final Volume (mL)	Filtered? (y/n)	ID ✓	Comments
BLANK		0.97	☑ 50 ☐	Y	✓	QC918981
BS		1.01	☑ 50 ☐		✓	2
BSD		0.95	☑ 50 ☐		✓	3
MS		1.10	☑ 50 ☐		✓	4
MSD		1.03	☑ 50 ☐		✓	5
296837-001	B	1.05	☑ 50 ☐		✓	MSS
-002	B	1.10	☑ 50 ☐		✓	
-003	B	0.91	☑ 50 ☐		✓	
-004	B	1.02	☑ 50 ☐		✓	
-005	B	0.95	☑ 50 ☐		✓	
-006	B	1.05	☑ 50 ☐		✓	
-007	A	1.10	☑ 50 ☐		✓	
~~296798-001~~ 296837-008	A	1.04	☑ 50 ☐		✓	~~Comp 296798 (2-5) @~~
~~-006~~ -009	A	1.07	☑ 50 ☐		✓	~~(7-10)~~
~~-011~~ -010	A	0.97	☑ 50 ☐		✓	~~(12-15)~~
~~-016~~ -011	A	0.94	☑ 50 ☐		✓	~~(17-20)~~
~~-021~~ -012	A	0.98	☑ 50 ☐		✓	~~(22-25)~~
~~-026~~ -013	A	1.07	☑ 50 ☐		✓	~~(27-30)~~
-014	A	1.03	☑ 50 ☐		✓	
296798-001		1.05	☑ 50 ☐		✓	Comp 296798 (2-5) @ 20g ea
-006		1.10	☑ 50 ☐		✓	(7-10)
-011		0.92	☑ 50 ☐		✓	(12-15)
-016		0.94	☑ 50 ☐		✓	(17-20)
-021		1.05	☑ 50 ☐		✓	(22-25)
-026		1.04	☑ 50 ☐		✓	(27-30)

DES 2.5.18 DES 2.5.18

Balance ID: B-10 calibration has been checked? ☑ Yes ☐ No

	Reagent ID or LIMS #		Initials / Date
SCP Digestion tubes / ESS Watch glass, lot#	286444-5420	1703076-7192-MF	DES 2·5·18
Blank 'matrix' lot#	chemware 23101423		
0.25 mL of spike solution (Std1) was added to all spikes	S34206		
0.25 mL of spike solution (Std2) was added to all spikes	S34207		
0.25 mL of spike solution (Std3) was added to all spikes	S35881		
Digestion Block ID, Probe Location	Ranier	13	
Temperature (°C), Thermometer ID	95°C; 6412089		
1:1 HNO3 Reagent ID	FS1117080		
concentrated HNO3 lot#	FS1117080		
3mL 30% hydrogen peroxide lot#	~~EMD50~~ DES 2.5.18 EMD5705473G		
concentrated HCl lot#	JTB187518		
☑ filtered thru' Whatman 541, lot#	1140069		
Relinquished to ICP group	ICPMS		

Pipettes

Vol.(mL)	ID
0.25	R2935550
5	29243335
2.5	
1.5	

Danielle Swan 2-5-18

Digestion Chemist / Date

Continued from page Ø

Continued on page _____

Reviewed Online/ See LIMS

Mercury Data

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 388053956

Instrument : MET45 Begun : 02/06/18 11:16
Method : EPA 7471B SOP Version : hg_water_rv19

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	met45	ICALBLK				02/06/18 11:16	1.0		
002	met45	ICAL	ICAL1			02/06/18 11:17	1.0	1	
003	met45	ICAL	ICAL2			02/06/18 11:18	1.0	1	
004	met45	ICAL	ICAL3			02/06/18 11:19	1.0	1	
005	met45	ICAL	ICAL4			02/06/18 11:20	1.0	1	
006	met45	ICAL	ICAL5			02/06/18 11:21	1.0	1	
007	met45	ICV				02/06/18 11:23	1.0	2	
008	met45	ICB				02/06/18 11:24	1.0		
009	met45	BLANK	QC918954	Soil	256213	02/06/18 11:25	1.0		
010	met45	BS	QC918955	Soil	256213	02/06/18 11:26	1.0		
011	met45	BSD	QC918956	Soil	256213	02/06/18 11:27	1.0		
012	met45	MSS	296840-001	Soil	256213	02/06/18 11:28	1.0		
013	met45	MS	QC918957	Soil	256213	02/06/18 11:30	1.0		
014	met45	MSD	QC918958	Soil	256213	02/06/18 11:31	1.0		
015	met45	SER	QC918959	Soil	256213	02/06/18 11:32	5.0		
016	met45	SAMPLE	296834-002	Soil	256213	02/06/18 11:33	1.0		
017	met45	SAMPLE	296834-004	Soil	256213	02/06/18 11:34	1.0		
018	met45	SAMPLE	296834-006	Soil	256213	02/06/18 11:35	1.0		
019	met45	CCV				02/06/18 11:36	1.0	3	
020	met45	CCB				02/06/18 11:38	1.0		
021	met45	SAMPLE	296840-006	Soil	256213	02/06/18 11:39	1.0		
022	met45	SAMPLE	296840-013	Soil	256213	02/06/18 11:40	1.0		1:HG=10
023	met45	SAMPLE	296840-018	Soil	256213	02/06/18 11:41	1.0		
024	met45	X	RINSE			02/06/18 11:43	1.0		
025	met45	BLANK	QC918960	Soil	256214	02/06/18 11:44	1.0		
026	met45	BS	QC918961	Soil	256214	02/06/18 11:45	1.0		spk
027	met45	BSD	QC918962	Soil	256214	02/06/18 11:46	1.0		spk
028	met45	MSS	296798-001	Soil	256214	02/06/18 11:47	1.0		
029	met45	MS	QC918963	Soil	256214	02/06/18 11:48	1.0		
030	met45	MSD	QC918964	Soil	256214	02/06/18 11:49	1.0		
031	met45	CCV				02/06/18 11:51	1.0	3	
032	met45	CCB				02/06/18 11:52	1.0		
033	met45	SER	QC918965	Soil	256214	02/06/18 11:53	5.0		
034	met45	BLANK	QC918960	Soil	256214	02/06/18 11:57	1.0		
035	met45	BS	QC918961	Soil	256214	02/06/18 11:58	1.0		
036	met45	BSD	QC918962	Soil	256214	02/06/18 11:59	1.0		
037	met45	MSS	296798-001	Soil	256214	02/06/18 12:00	1.0		
038	met45	MS	QC918963	Soil	256214	02/06/18 12:01	1.0		
039	met45	MSD	QC918964	Soil	256214	02/06/18 12:02	1.0		
040	met45	SER	QC918965	Soil	256214	02/06/18 12:03	5.0		
041	met45	SAMPLE	296798-006	Soil	256214	02/06/18 12:04	1.0		
042	met45	SAMPLE	296798-011	Soil	256214	02/06/18 12:06	1.0		
043	met45	SAMPLE	296798-016	Soil	256214	02/06/18 12:07	1.0		
044	met45	CCV				02/06/18 12:08	1.0	3	
045	met45	CCB				02/06/18 12:09	1.0		
046	met45	SAMPLE	296798-021	Soil	256214	02/06/18 12:10	1.0		
047	met45	SAMPLE	296798-026	Soil	256214	02/06/18 12:12	1.0		
048	met45	SER	QC918959	Soil	256213	02/06/18 12:13	5.0		
049	met45	SAMPLE	296831-001	Soil	256213	02/06/18 12:14	1.0		
050	met45	SAMPLE	296856-005	Soil	256213	02/06/18 12:15	1.0		
051	met45	CCV				02/06/18 12:16	1.0	3	
052	met45	CCB				02/06/18 12:17	1.0		

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 388053956

Instrument : MET45 Begun : 02/06/18 11:16
Method : EPA 7471B SOP Version : hg_water_rv19

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
053	met45	SAMPLE	296840-013	Soil	256213	02/06/18 12:44	10.0		
054	met45	SAMPLE	296840-018	Soil	256213	02/06/18 12:45	1.0		
055	met45	CCV				02/06/18 12:46	1.0	3	
056	met45	CCB				02/06/18 12:48	1.0		

SL 02/06/18 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 52.

Standards used: 1=S35906 2=S35908 3=S35909

Flags used: spk=5% spike rule

ENTHALPY INITIAL CALIBRATION FOR 296798 METALS Soil: EPA 7471B

Inst : MET45
Calnum : 388053956001
Units : ug/L

Date : 06-FEB-2018 11:16
X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	met45	388053956002	ICAL1	06-FEB-2018 11:17	S35906 (500X)
L2	met45	388053956003	ICAL2	06-FEB-2018 11:18	S35906 (200X)
L3	met45	388053956004	ICAL3	06-FEB-2018 11:19	S35906 (50X)
L4	met45	388053956005	ICAL4	06-FEB-2018 11:20	S35906 (20X)
L5	met45	388053956006	ICAL5	06-FEB-2018 11:21	S35906 (10X)

Analyte	L1	L2	L3	L4	L5	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	Flg
Mercury	0.0790	0.0764	0.0819	0.0820	0.0797	LIN0	-0.0182	12.5064		0.0798	1.000	.99	

Spiked Amounts / Drifts	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D
Mercury	0.2000	-10	0.5000	-8	2.0000	1	5.0000	2	10.000	-1

Instrument amount = a0 + response * a1 + response^2 * a2; LIN0=Linear regression including 0,0 point

ENTHALPY 2ND SOURCE CALIBRATION SUMMARY FOR 296798 METALS Soil
EPA 7471B

Inst : MET45
Calnum : 388053956001 Cal Date : 06-FEB-2018

ICV 388053956007 (06-FEB-2018) stds: S35908

Analyte	Spiked	Quant	Units	%D	Max	Flags
Mercury	5.000	4.982	ug/L	0	10	

ENTHALPY INSTRUMENT BLANK FOR 296798 METALS Soil
EPA 7471B

Inst : MET45 IDF : 1.0
Seqnum : 388053956008.1 File : met45 Time : 06-FEB-2018 11:24
Cal : 388053956001 Caldate : 06-FEB-2018

Analyte	Quant	IQL	LOD	Units	Flags
Mercury	ND	0.2000	0.1000	ug/L	

ENTHALPY CONTINUING CALIBRATION FOR 296798 METALS Soil
EPA 7471B

Inst : MET45 IDF : 1.0
Seqnum : 388053956031.1 File : met45 Time : 06-FEB-2018 11:51
Cal : 388053956001 Caldate : 06-FEB-2018
Standards: S35909

Analyte	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Mercury	0.0798	0.0846	5.000	5.271	ug/L	5	10	

ENTHALPY INSTRUMENT BLANK FOR 296798 METALS Soil
EPA 7471B

Inst : MET45 IDF : 1.0
Seqnum : 388053956032.1 File : met45 Time : 06-FEB-2018 11:52
Cal : 388053956001 Caldate : 06-FEB-2018

Analyte	Quant	IQL	LOD	Units	Flags
Mercury	ND	0.2000	0.1000	ug/L	

ENTHALPY CONTINUING CALIBRATION FOR 296798 METALS Soil
EPA 7471B

Inst : MET45 IDF : 1.0
Seqnum : 388053956044.1 File : met45 Time : 06-FEB-2018 12:08
Cal : 388053956001 Caldate : 06-FEB-2018
Standards: S35909

Analyte	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Mercury	0.0798	0.0724	5.000	4.508	ug/L	-10	10	

ENTHALPY INSTRUMENT BLANK FOR 296798 METALS Soil
EPA 7471B

Inst : MET45 IDF : 1.0
Seqnum : 388053956045.1 File : met45 Time : 06-FEB-2018 12:09
Cal : 388053956001 Caldate : 06-FEB-2018

Analyte	Quant	IQL	LOD	Units	Flags
Mercury	ND	0.2000	0.1000	ug/L	

ENTHALPY CONTINUING CALIBRATION FOR 296798 METALS Soil
EPA 7471B

Inst : MET45 IDF : 1.0
Seqnum : 388053956051.1 File : met45 Time : 06-FEB-2018 12:16
Cal : 388053956001 Caldate : 06-FEB-2018
Standards: S35909

Analyte	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Mercury	0.0798	0.0724	5.000	4.508	ug/L	-10	10	

ENTHALPY INSTRUMENT BLANK FOR 296798 METALS Soil
EPA 7471B

Inst : MET45 IDF : 1.0
Seqnum : 388053956052.1 File : met45 Time : 06-FEB-2018 12:17
Cal : 388053956001 Caldate : 06-FEB-2018

Analyte	Quant	IQL	LOD	Units	Flags
Mercury	ND	0.2000	0.1000	ug/L	

SAMPLE PREPARATION SUMMARY

Batch # : 256214
Started By : SL
Method : METHOD
Spike #1 ID : S35907

Prep Date : 05-FEB-2018 13:35

Analysis : HG
Finished By : SL
Units : g

Sample	Stype	Matrix	Initial	Final	Clean DF	Prep DF	pH	Sp 1 Vol	Sp 2 Vol	Sp 3 Vol	Clean Method	Analysis	Comments
296798-001		Soil	.58	50	1	86.21						7471-HG	
296798-006		Soil	.62	50	1	80.65						7471-HG	
296798-011		Soil	.64	50	1	78.13						7471-HG	
296798-016		Soil	.61	50	1	81.97						7471-HG	
296798-021		Soil	.55	50	1	90.91						7471-HG	
296798-026		Soil	.61	50	1	81.97						7471-HG	
296823-001		Soil	.65	50	1	76.92						T22/HG	
296823-002		Soil	.56	50	1	89.29						T22/HG	
296823-003		Soil	.65	50	1	76.92						T22/HG	
296823-004		Soil	.57	50	1	87.72						T22/HG	
296823-005		Soil	.58	50	1	86.21						T22/HG	
296825-001		Soil	.64	50	1	78.13						T22/HG	
296825-002		Soil	.56	50	1	89.29						T22/HG	
296825-003		Soil	.61	50	1	81.97						T22/HG	
296825-004		Soil	.59	50	1	84.75						T22/HG	
296825-005		Soil	.62	50	1	80.65						T22/HG	
QC918960	BLANK	Soil	.61	50	1	81.97							
QC918961	BS	Soil	.61	50	1	81.97		1					
QC918962	BSD	Soil	.64	50	1	78.13		1					
QC918963	MS	Soil	.57	50	1	87.72		1					
QC918964	MSD	Soil	.59	50	1	84.75		1					
QC918965	SER	Soil	.58	50	1	86.21							

Analyst: SL Date: 02/06/18 Reviewer: AMP Date: 02/07/18

Soil Digestion for Mercury

Enthalpy Analytical LLC - Berkeley

LIMS Batch #: 256214 Digestion Method: ☒ EPA 7471A/ 7471B

BK 4220

Date Digested: 2-5-18 ☐ _____

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Sample #	container ID	Sample Weight (g)	Final Volume (mL)	Filtered? (y/n)	Comments
BLANK		0.61	☑ 50 ☐	Y	QC 918960
BS		0.61	☑ 50 ☐		1
BSD		0.64	☑ 50 ☐		2
MS		0.57	☑ 50 ☐		3
MSD		0.59	☑ 50 ☐		4
296798 - 001		0.58	☑ 50 ☐		MS, comp 296798 (2-5) @ 20g ea.
- 006		0.62	☑ 50 ☐		(7-10)
- 011		0.64	☑ 50 ☐		(12-15)
- 016		0.61	☑ 50 ☐		(17-20)
- 021		0.55	☑ 50 ☐		(22-25)
- 026		0.61	☑ 50 ☐		(27-30)
296823 - 001	A	0.65	☑ 50 ☐		
- 002		0.56	☑ 50 ☐		
- 003		0.65	☑ 50 ☐		
- 004		0.57	☑ 50 ☐		
- 005		0.58	☑ 50 ☐		
296825 - 001	A	0.64	☑ 50 ☐		
- 002		0.56	☑ 50 ☐		
- 003		0.61	☑ 50 ☐		
- 004		0.59	☑ 50 ☐		
- 005		0.62	☑ 50 ☐		
			☐ 50 ☐		
			☐ 50 ☐		
			☐ 50 ☐		
			☐ 50 ☐		

Balance ID: B-9 calibration has been checked? ☒ Yes ☐ No

Standards prepared per SOP: MET 5.2, rev. 20

1 mL of spike standard was added to all spikes

☑ **CAL digested with this batch? ICAL Std S#**

	Reagent ID/ LIMS# / Time	Initials / Date
Digestion Tubes, Lot #	EK17237	SL 2-5-18
Blank/LCS 'matrix' ID	R263-5K013	
	835907	
	835906	
ICV / CCV LIMS S#	835908 / 835909	
Digestion Temperature (°C), and Probe Location	95° / 33	
Digestion block ID	ARCHES	
Thermometer #	6411200	
Digestion Started at (time)	1345	
Aqua Regia (HNO3+ HCl) Reagent ID	020518	
5% $KMnO_4$ / Granular KMnO4 reagent ID	020518 / —	
NaCl.hydroxylamine hydrochloride Reagent ID	020218	
Stannous Chloride Reagent ID	SL 2-5-18 ~~1445~~ 020518	
Digestion Completd at (time)	1415	
☐ filtered thru' 0.45 um syringe filter (lot #)	SS 71618103	

Pipettes

Vol.(mL)	ID
.1	J2881530
.2-1	G15693E
2.5-5	3850158
6-10	4645196

2-5-18

Prep Chemist / Date

Continued from page Ø

Continued on page _____

Reviewed Online / See LIMS

Version 7.2, July.2017

Dilutions for 296798 METALS Soil
Enthalpy Analytical - Berkeley

Type	Sample ID	IDFs
SAMPLE	296798-001	1X, 25X
SAMPLE	296798-006	1X, 25X
SAMPLE	296798-011	1X, 25X
SAMPLE	296798-016	1X, 25X
SAMPLE	296798-021	1X, 25X
SAMPLE	296798-026	1X, 25X
SER	QC918965	5X
BLANK	QC918981	25X
BS	QC918982	25X
BSD	QC918983	25X
MS	QC918984	25X
MSD	QC918985	25X
SER	QC918986	125X
PDS	QC918987	25X

CAS Registry Numbers for 296798 METALS Soil
Enthalpy Analytical - Berkeley

Analyte	CAS RN
Copper	7440-50-8
Lead	7439-92-1
Mercury	7439-97-6

Laboratory Job Number 296798

ANALYTICAL REPORT

Wet Chemistry

Matrix: Soil

Percent Moisture Summary Report

Batch: 256147
Date: 02/01/18
Method: CLP SOW 390
Analyst: MFV

Sample	Tare (g)	Wet (g)	Dry (g)	Percent Solids	Percent Moisture
296798-001	11.21	17.82	14.25	46	54
296798-006	10.96	16.67	13.44	43	57
296798-011	11.18	16.97	14.14	51	49
296798-016	11.13	16.45	13.57	46	54
296798-021	11.25	18.50	14.93	51	49
296798-026	10.90	17.95	14.17	46	54
296829-001	11.29	18.69	18.38	96	4
296829-002	11.33	17.34	17.11	96	4
296829-003	11.62	18.52	18.27	96	4
296829-004	11.36	18.61	18.38	97	3
296829-005	10.88	17.20	16.97	96	4
296834-001	11.03	18.28	17.94	95	5
296834-003	11.32	17.92	17.56	95	5
296834-005	11.06	17.59	17.21	94	6
296838-001	11.28	16.99	16.17	86	14
QC918703	11.05	17.53	17.10	93	7
of 296834-005			RPD:	0.9%	13.1%

Moisture LOG | Enthalpy Analytical LLC - Berkeley | rev.3.2, July 2017

LIMS Batch #: 256147
Date: 2-1-18

Page: **93**
Benchbook#: **BK 4173**

Balance ID: B-13
calibration has been checked? ☑ Yes ☐ No

Sample # / Letter	Dish #	Dish Weight (g)	Sample + Dish Wt (g)	Final Weight (g)	*Comments
BLK	92	11.35	Ø	11.35	
296798-001 A	67	11.21	17.82	14.25	296798-2→5 (20SRA)
-006	7	10.96	16.67	13.44	-7→10
-011	75	11.18	16.97	14.14	-12→15
-016	13	11.13	16.45	13.57	-17→20
-021	51	11.25	18.50	14.93	-22→25
-026	21	10.90	17.95	14.17	-27→30
296829-001	36	11.29	18.69	18.38	
-002	54	11.33	17.34	17.11	
-003	15	11.62	18.52	18.27	
-004	16	11.36	18.61	18.38	
-005	33	10.88	17.20	16.97	
296834-001	73	11.03	18.28	17.94	
-003	93	11.32	17.92	17.56	
-005	10	11.06	17.59	17.21	
296838-001 F	43	11.28	16.99	16.17	
296834-005 A	49	11.05	17.53	17.10	8 DUP
			MW 2-2-18		

	In	Out	In-2	Out-2
Date:	2-1-18	2-2-18		
Time:	2308	2119		
Min/Max Range (°C)	104	104		
Thermometer ID:	P49096	P49096		
Weighed by:	MW	MW		

MW 2-2-18

MW 2-1-18
Analyst Initials / Date

Reviewed Online / See LIMS

PROJECT (B-13) OHAUS SP602 BALANCE CAL.

Notebook No. BK3384

Continued From Page

DATE	0.2g	SET #	500g	SET #	INITIALS
12-15-17	0.20	40417	499.96	28659	MV
12-16-17	0.20	40417	499.93	28659	MV
12-17-17	0.20	40417	499.83	28659	VV
12-19-17	0.20	40417	499.91	28659	MV
12-20-17	0.20	40417	499.93	28659	MV
12-21-17	0.20	40417	499.93	28659	MV
12-22-17	0.20	40417	499.96	28659	MV
12-23-17	0.19	40417	499.86	28659	MV
12-27-17	0.20	40417	499.93	28659	DES
12-28-17	0.20	40417	499.93	28659	MV
12-29-17	0.20	40417	499.96	28659	MV
12-30-17	0.20	40417	499.96	28659	MV
1-3-18	0.20	40417	499.92	28659	MV
1-4-18	0.19	40417	499.95	28659	MBY
1-5-18	0.21	40417	500.02	28659	MBY
1-6-18	0.19	40417	499.97	28659	MV
1-9-18	0.20	40417	499.97	28659	MV
1-10-18	0.20	40417	499.98	28659	MV
1-11-18	0.20	40417	499.97	28659	MV
1-12-18	0.20	40417	499.95	28659	MBY
1-15-18	0.20	40417	499.96	28659	MV
1-16-18	0.20	40417	499.97	28659	MV
1-17-18	0.20	40417	499.97	28659	MV
1-18-18	0.20	40417	499.98	28659	MBY
1-19-18	0.20	40417	499.96	28659	MV
1-20-18	0.20	40417	499.97	28659	MV
1-22-18	0.20	40417	499.96	28659	MV
1-23-18	0.20	40417	499.92	28659	KBR
1-25-18	0.20	40417	499.95	28659	MV
1-27-18	0.20	40417	499.92	28659	MV
1-28-18	0.20	40417	499.91	28659	VV
1-30-18	0.20	40417	499.94	28659	MV
1-31-18	0.20	40417	499.95	28659	MV
2-1-18	0.20	40417	499.93	28659	MV
2-2-18	0.20	40417	499.95	28659	MV

Continued on Page

Read and Understood By

Signed | Date | Signed | Date

ea

ENTHALPY

ANALYTICAL

Enthalpy Analytical

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 296840
ANALYTICAL REPORT
PCBs
Matrix: Water

Insight EEC, Inc. 3013 E Miraloma Ave Anaheim, CA 92806	Project : 4-14214 Location : HPNS-Parcel F Level : IV

Sample ID	Lab ID
HPP-FSS-EB01	296840-011
HPP-FSS-FB01	296840-012

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAP and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: _____ Date: 02/08/2018

Mike Dahlquist
Project Manager
mike.dahlquist@enthalpy.com
(510) 204-2225 Ext 13101

CA ELAP# 2896, NELAP# 4044-001

ENTHALPY ANALYTICAL

CASE NARRATIVE
PCBS (EPA 8082A)
WATER

Laboratory number:	**296840**
Client:	**Insight EEC, Inc.**
Project:	**4-14214**
Location:	**HPNS-Parcel F**
Request Date:	**02/01/18**
Samples Received:	**02/01/18**

This data package contains sample and QC results for two water samples, requested for the above referenced project on 02/01/18. See attached cooler receipt form for any sample receipt problems or discrepancies.

PCBs (EPA 8082A) Water:

All samples underwent sulfuric acid cleanup using EPA Method 3665A.

All samples underwent sulfur cleanup using the copper option in EPA Method 3660B.

No analytical problems were encountered.

Chain of Custody

Enthalpy Analytical LLC
2323 Fifth Street
Berkeley, CA 94710
(510) 486-0900 Phone
(510) 486-0532 Fax

CHAIN OF CUSTODY

Chain of Custody # : 4-14214-02

C&T LOGIN # 296840

Project No: 4-14214 Hunters Point Naval Shipyard
Project Name: Parcel F Sediment Sampling
EDD Format: _____ Rpt Level: ☐ II ☐ III ☐ IV
Turnaround Time: ☐ RUSH _____ ☐ Standard

Sampler:
Report To: Nick Weinberger & Mitra Fattahipour
Company : Insight
Telephone: # (714) 678-6730
Email: nweinberger@ieeci.com; mfattahipour@ieeci.com

Lab No.	Sample ID.	Sampling Date	Sampling Time	Matrix Water	Matrix Soil	# of Containers	Chemical Preservative HCl	H_2SO_4	HNO_3	NaOH	Methanol	NaHSO4	None	Analytical Request PCBs (EPA 8082)	Metals (Cu/Pb/Hg, EPA 6020/7471A)	Notes
	HPP-FSS-007				X								X	X	X	Composite at Lab, MS/MSD
	HPP-FSS-007A	1/31/18	0840		X	1							X			Sub-sample
	HPP-FSS-007B	1/31/18	0900		X	1							X			Sub-sample
	HPP-FSS-007C	1/31/18	0912		X	1							X			Sub-sample
	HPP-FSS-007D	1/31/18	0920		X	1							X			Sub-sample
	HPP-FSS-008				X								X	X	X	Composite at Lab
	HPP-FSS-008A	1/31/18	0935		X	1							X			Sub-sample
	HPP-FSS-008B	1/31/18	0950		X	1							X			Sub-sample
	HPP-FSS-008C	1/31/18	1100		X	1							X			Sub-sample
	HPP-FSS-008D	1/31/18	1021		X	1							X			Sub-sample
	HPP-FSS-EB01	1/31/18	0815	X		4							X	X	X	*Metals not preserved
	HPP-FSS-FB01	1/31/18	1500	X		3							X	X	X	*Metals not preserved

Notes:
Composite A, B, C, and D samples for testing as a composite sample.
Retain sub-samples on hold for possible testing pending composite sample results. *Aqueous samples for metals analysis not preserved. To be preserved by lab.

SAMPLE RECEIPT
☐ Intact ☐ Cold
☐ On Ice ☐ Ambient

RELINQUISHED BY:		RECEIVED BY:	
2-1-18/1415 JMYERS	DATE/TIME	2-1 1415	DATE/TIME
2-1 1602	DATE/TIME	2/1/18 1602	DATE/TIME
	DATE/TIME		DATE/TIME

Enthalpy Analytical LLC
2323 Fifth Street
Berkeley, CA 94710
(510) 486-0900 Phone
(510) 486-0532 Fax

CHAIN OF CUSTODY

Chain of Custody # : 4-14214-02

C&T LOGIN # 296840

Project No: 4-14214 Hunters Point Naval Shipyard
Project Name: Parcel F Sediment Sampling
EDD Format: _____ Rpt Level: ☐ II ☐ III ☐ IV
Turnaround Time: ☐ RUSH _____ ☐ Standard

Sampler:
Report To: Nick Weinberger & Mitra Fattahipour
Company : Insight
Telephone: # (714) 678-6730
Email: nweinberger@ieeci.com; mfattahipour@ieeci.com

Lab No.	Sample ID.	Sampling Date	Sampling Time	Matrix Water	Matrix Soil	Matrix	Matrix	# of Containers	Chemical Preservative HCl	H_2SO_4	HNO_3	NaOH	Methanol	NaHSO4	None	Analytical Request PCBs (EPA 8082)	Metals (Cu/Pb/Hg, EPA 6020/7471A)						Notes
	HPP-FSS-009				X										X	X	X						Composite at Lab
	HPP-FSS-009A	1/31/18	1040		X			1							X								Sub-sample
	HPP-FSS-009B	1/31/18	1132		X			1							X								Sub-sample
	HPP-FSS-009C	1/31/18	1228		X			1							X								Sub-sample
	HPP-FSS-009D	1/31/18	1315		X			1							X								Sub-sample
	HPP-FSS-010				X										X	X	X						Composite at Lab
	HPP-FSS-010A	1/31/18	0936		X			1							X								Sub-sample
	HPP-FSS-010B	1/31/18	0951		X			1							X								Sub-sample
	HPP-FSS-010C	1/31/18	1101		X			1							X								Sub-sample
	HPP-FSS-010D	1/31/18	1022		X			1							X								Sub-sample

Notes:
Composite A, B, C, and D samples for testing as a composite sample. Retain sub-samples on hold for possible testing pending composite sample results.

SAMPLE RECEIPT
☐ Intact ☐ Cold
☐ On Ice ☐ Ambient

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	DATE/TIME
2-1-18 / 1415 JMYERS		2-1	1415
2-1	1805	2/1/18	1805

COOLER RECEIPT CHECKLIST

ENTHALPY Berkeley

Login # 296840 Date Received 02/01/18 Number of coolers 1
Client Insight Project 4-14214 Hunters Point Naval Shipyard

Date Opened 02/01/18 By (print) TKY (sign) TKY
Date Logged in ↓ By (print) EH (sign)
Date Labelled ↓ By (print) TKY (sign) TKY

1. Did cooler come with a shipping slip (airbill, etc) ____ YES (NO)
   Shipping info ____

2A. Were custody seals present? .... ☐ YES (circle) on cooler on samples ☒ NO
   How many ____ Name ____ Date ____
2B. Were custody seals intact upon arrival? ____ YES NO (N/A)
3. Were custody papers dry and intact when received? ____ (YES) NO
4. Were custody papers filled out properly (ink, signed, etc)? ____ (YES) NO
5. Is the project identifiable from custody papers? (If so fill out top of form) ____ (YES) NO
6. Indicate the packing in cooler: (if other, describe) ____

☒ Bubble Wrap ☐ Foam blocks ☒ Bags ☐ None
☐ Cloth material ☐ Cardboard ☐ Styrofoam ☐ Paper towels

7. Temperature documentation: * Notify PM if temperature exceeds 6°C

Type of ice used: ☒ Wet ☐ Blue/Gel ☐ None Temp(°C) 1.7

☐ Temperature blank(s) included? ☐ Thermometer# ____ ☐ IR Gun# A

☐ Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? ____ YES (NO)
   If YES, what time were they transferred to freezer? ____
9. Did all bottles arrive unbroken/unopened? ____ (YES) NO
10. Are there any missing / extra samples? ____ YES (NO)
11. Are samples in the appropriate containers for indicated tests? ____ (YES) NO
12. Are sample labels present, in good condition and complete? ____ (YES) NO
13. Do the sample labels agree with custody papers? ____ (YES) NO
14. Was sufficient amount of sample sent for tests requested? ____ (YES) NO
15. Are the samples appropriately preserved? ____ YES (NO) N/A
16. Did you check preservatives for all bottles for each sample? ____ (YES) NO N/A
17. Did you document your preservative check? (pH strip lot# 803D4497) (YES) NO N/A
18. Did you change the hold time in LIMS for unpreserved VOAs? ____ YES NO (N/A)
19. Did you change the hold time in LIMS for preserved terracores? ____ YES NO (N/A)
20. Are bubbles > 6mm absent in VOA samples? ____ YES NO (N/A)
21. Was the client contacted concerning this sample delivery? ____ YES (NO)
   If YES, Who was called? ____ By ____ Date: ____

COMMENTS
(15) added HNO3 (20170130S3) to make pH<2 @ 1834 on 2/1/18 to samples 11 & 12

Rev 14, 8/01/17

Results & QC Summary

ENTHALPY ANALYTICAL

Polychlorinated Biphenyls (PCBs)

Lab #:	296840	Location:	HPNS-Parcel F
Client:	Insight EEC, Inc.	Prep:	EPA 3520C
Project#:	4-14214	Analysis:	EPA 8082A
Matrix:	Water	Sampled:	01/31/18
Units:	ug/L	Received:	02/01/18
Diln Fac:	1.000	Prepared:	02/05/18
Batch#:	256210	Analyzed:	02/06/18

Field ID: HPP-FSS-EB01 Lab ID: 296840-011
Type: SAMPLE

Analyte	Result	LOQ	DL
Aroclor-1016	0.12 U	0.20	0.064
Aroclor-1221	0.28 U	0.40	0.13
Aroclor-1232	0.12 U	0.20	0.057
Aroclor-1242	0.12 U	0.20	0.063
Aroclor-1248	0.16 U	0.20	0.064
Aroclor-1254	0.12 U	0.20	0.063
Aroclor-1260	0.12 U	0.20	0.054
Aroclor-1268	0.12 U	0.20	0.057

Surrogate	%REC	Limits
TCMX	85	37-122
Decachlorobiphenyl	115	22-139

Field ID: HPP-FSS-FB01 Lab ID: 296840-012
Type: SAMPLE

Analyte	Result	LOQ	DL
Aroclor-1016	0.12 U	0.20	0.063
Aroclor-1221	0.27 U	0.39	0.13
Aroclor-1232	0.12 U	0.20	0.056
Aroclor-1242	0.12 U	0.20	0.062
Aroclor-1248	0.16 U	0.20	0.063
Aroclor-1254	0.12 U	0.20	0.062
Aroclor-1260	0.12 U	0.20	0.053
Aroclor-1268	0.12 U	0.20	0.056

Surrogate	%REC	Limits
TCMX	88	37-122
Decachlorobiphenyl	111	22-139

Type: BLANK Lab ID: QC918947

Analyte	Result	LOQ	DL
Aroclor-1016	0.12 U	0.20	0.064
Aroclor-1221	0.28 U	0.40	0.13
Aroclor-1232	0.12 U	0.20	0.057
Aroclor-1242	0.12 U	0.20	0.063
Aroclor-1248	0.16 U	0.20	0.064
Aroclor-1254	0.12 U	0.20	0.063
Aroclor-1260	0.12 U	0.20	0.054
Aroclor-1268	0.12 U	0.20	0.057

Surrogate	%REC	Limits
TCMX	110	37-122
Decachlorobiphenyl	119	22-139

U= Not Detected at or above DL
DL= Detection Limit
LOQ= Limit of Quantitation

ENTHALPY ANALYTICAL

Batch QC Report

Polychlorinated Biphenyls (PCBs)

Lab #:	296840	Location:	HPNS-Parcel F
Client:	Insight EEC, Inc.	Prep:	EPA 3520C
Project#:	4-14214	Analysis:	EPA 8082A
Matrix:	Water	Batch#:	256210
Units:	ug/L	Prepared:	02/05/18
Diln Fac:	1.000	Analyzed:	02/06/18

Type: BS Lab ID: QC918948

Analyte	Spiked	Result	%REC	Limits
Aroclor-1016	2.500	2.977	119	46-129
Aroclor-1260	2.500	3.315	133	45-134

Surrogate	%REC	Limits
TCMX	88	37-122
Decachlorobiphenyl	109	22-139

Type: BSD Lab ID: QC918949

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Aroclor-1016	2.500	2.809	112	46-129	6	30
Aroclor-1260	2.500	3.223	129	45-134	3	30

Surrogate	%REC	Limits
TCMX	87	37-122
Decachlorobiphenyl	110	22-139

RPD= Relative Percent Difference

ENTHALPY INITIAL CALIBRATION FOR 296840 PCBS Water: EPA 8082A

Inst : GC06
Calnum : 208052389001
Units : pg/uL

Name : ar-1660-036ical
Date : 05-FEB-2018 17:04

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	036_010	208052389010	PCB100_20	05-FEB-2018 17:04	S35531 (10X)
L2	036_011	208052389011	PCB25_5	05-FEB-2018 17:32	S35530
L3	036_012	208052389012	PCB100_20	05-FEB-2018 18:00	S35531
L4	036_013	208052389013	PCB250_50	05-FEB-2018 18:28	S35532
L5	036_014	208052389014	PCB500_100	05-FEB-2018 18:56	S35533
L6	036_015	208052389015	PCB750_150	05-FEB-2018 19:24	S35534
L7	036_016	208052389016	PCB1000_200	05-FEB-2018 19:52	S35535

Analyte	Ch	L1	L2	L3	L4	L5	L6	L7	Type	X	a0	a1	a2	Avg	r^2 %RSD	MnR^2	MxRSD	Flg
Aroclor-1016 Peak # 1	A	282.90	291.08	289.43	265.67	243.03	229.75	251.58	AVRG	R		0.00378		264.78	9	.99	20	
Aroclor-1016 Peak # 2	A	210.20	251.00	254.55	269.98	263.84	267.94	318.73	AVRG	R		0.00381		262.32	12	.99	20	
Aroclor-1016 Peak # 3	A	113.80	159.36	153.85	182.74	183.92	150.30	167.32	AVRG	R		0.00630		158.76	15	.99	20	
Aroclor-1016 Peak # 4	A	84.400	92.960	90.850	87.316	83.868	81.732	94.195	AVRG	R		0.01138		87.903	6	.99	20	
Aroclor-1016 Peak # 5	A	101.60	113.44	120.12	122.02	119.84	116.58	134.68	AVRG	R		0.00845		118.33	8	.99	20	
Aroclor-1260 Peak # 1	A	399.30	429.04	443.94	404.82	393.37	372.70	423.47	AVRG	R		0.00244		409.52	6	.99	20	
Aroclor-1260 Peak # 2	A	356.50	392.56	435.74	380.26	404.48	395.41	434.26	AVRG	R		0.00250		399.89	7	.99	20	
Aroclor-1260 Peak # 3	A	214.90	259.24	266.34	229.84	240.17	220.97	250.42	AVRG	R		0.00416		240.27	8	.99	20	
Aroclor-1260 Peak # 4	A	491.70	534.48	542.12	510.65	487.88	480.28	537.55	AVRG	R		0.00195		512.10	5	.99	20	
Aroclor-1260 Peak # 5	A	238.90	267.20	273.19	266.00	263.18	261.05	295.54	AVRG	R		0.00375		266.44	6	.99	20	
TCMX	A	6751.5	6601.6	6370.6	5876.6	5538.6	5283.4	6083.7	AVRG	R		1.65E-4		6072.3	9	.99	20	
Decachlorobiphenyl	A	10557	10577	9093.1	7760.6	6861.5	6362.9	6838.2	LINR	R	-4.5323	1.53E-4		8292.8	0.996	.99	20	
Aroclor-1016 Peak # 1	B	285.30	311.44	314.11	302.82	290.80	280.69	318.60	AVRG	R		0.00333		300.54	5	.99	20	
Aroclor-1016 Peak # 2	B	66.500	116.36	275.59	314.24	355.51	377.74	429.59	QUAD	A	-1949.5	274.789	0.153745	276.50	0.999	.99	20	
Aroclor-1016 Peak # 3	B	105.70	170.88	203.32	231.67	228.89	224.18	238.34	LINR	R	10.1612	0.00424		200.43	0.999	.99	20	
Aroclor-1016 Peak # 4	B	115.90	108.12	119.12	116.10	101.30	101.51	110.35	AVRG	R		0.00906		110.34	6	.99	20	
Aroclor-1016 Peak # 5	B	128.30	205.64	187.52	191.65	176.76	180.78	207.09	AVRG	R		0.00548		182.53	15	.99	20	
Aroclor-1260 Peak # 1	B	238.90	336.24	369.81	343.21	336.33	328.14	324.08	AVRG	R		0.00307		325.24	13	.99	20	
Aroclor-1260 Peak # 2	B	212.60	273.44	388.92	351.97	391.43	400.69	414.36	LINR	R	15.0715	0.00242		347.63	0.999	.99	20	
Aroclor-1260 Peak # 3	B	245.00	264.60	287.09	246.66	265.76	258.26	289.20	AVRG	R		0.00377		265.22	7	.99	20	
Aroclor-1260 Peak # 4	B	388.10	447.56	484.31	387.15	480.64	478.11	516.62	AVRG	R		0.00220		454.64	11	.99	20	
Aroclor-1260 Peak # 5	B	227.10	268.56	289.09	287.70	291.76	299.93	353.79	AVRG	R		0.00347		288.27	13	.99	20	
TCMX	B	5615.5	5707.4	6013.8	6212.4	6378.4	6273.2	7339.9	AVRG	R		1.61E-4		6220.1	9	.99	20	
Decachlorobiphenyl	B	9744.5	10065	9051.9	8006.1	7473.2	7071.8	7661.3	AVRG	R		1.18E-4		8439.1	14	.99	20	

Spiked Amounts / Drifts	Ch	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D	L6	%D	L7	%D
Aroclor-1016 Peak # 1	A	10.000	7	25.000	10	100.00	9	250.00	0	500.00	-8	750.00	-13	1000.0	-5
Aroclor-1016 Peak # 2	A	10.000	-20	25.000	-4	100.00	-3	250.00	3	500.00	1	750.00	2	1000.0	**22**
Aroclor-1016 Peak # 3	A	10.000	**-28**	25.000	0	100.00	-3	250.00	15	500.00	16	750.00	-5	1000.0	5
Aroclor-1016 Peak # 4	A	10.000	-4	25.000	6	100.00	3	250.00	-1	500.00	-5	750.00	-7	1000.0	7
Aroclor-1016 Peak # 5	A	10.000	-14	25.000	-4	100.00	2	250.00	3	500.00	1	750.00	-1	1000.0	14
Aroclor-1260 Peak # 1	A	10.000	-2	25.000	5	100.00	8	250.00	-1	500.00	-4	750.00	-9	1000.0	3
Aroclor-1260 Peak # 2	A	10.000	-11	25.000	-2	100.00	9	250.00	-5	500.00	1	750.00	-1	1000.0	9
Aroclor-1260 Peak # 3	A	10.000	-11	25.000	8	100.00	11	250.00	-4	500.00	0	750.00	-8	1000.0	4
Aroclor-1260 Peak # 4	A	10.000	-4	25.000	4	100.00	6	250.00	0	500.00	-5	750.00	-6	1000.0	5
Aroclor-1260 Peak # 5	A	10.000	-10	25.000	0	100.00	3	250.00	0	500.00	-1	750.00	-2	1000.0	11
TCMX	A	2.0000	11	5.0000	9	20.000	5	50.000	-3	100.00	-9	150.00	-13	200.00	0
Decachlorobiphenyl	A	2.0000	**-165**	5.0000	**-29**	20.000	16	50.000	10	100.00	0	150.00	-6	200.00	2
Aroclor-1016 Peak # 1	B	10.000	-5	25.000	4	100.00	5	250.00	1	500.00	-3	750.00	-7	1000.0	6
Aroclor-1016 Peak # 2	B	10.000	-5	25.000	**-30**	100.00	2	250.00	3	500.00	2	750.00	-2	1000.0	1
Aroclor-1016 Peak # 3	B	10.000	**46**	25.000	13	100.00	-4	250.00	2	500.00	-1	750.00	-4	1000.0	2
Aroclor-1016 Peak # 4	B	10.000	5	25.000	-2	100.00	8	250.00	5	500.00	-8	750.00	-8	1000.0	0
Aroclor-1016 Peak # 5	B	10.000	**-30**	25.000	13	100.00	3	250.00	5	500.00	-3	750.00	-1	1000.0	13
Aroclor-1260 Peak # 1	B	10.000	**-27**	25.000	3	100.00	14	250.00	6	500.00	3	750.00	1	1000.0	0
Aroclor-1260 Peak # 2	B	10.000	**102**	25.000	**26**	100.00	9	250.00	-9	500.00	-2	750.00	-1	1000.0	2
Aroclor-1260 Peak # 3	B	10.000	-8	25.000	0	100.00	8	250.00	-7	500.00	0	750.00	-3	1000.0	9
Aroclor-1260 Peak # 4	B	10.000	-15	25.000	-2	100.00	7	250.00	-15	500.00	6	750.00	5	1000.0	14
Aroclor-1260 Peak # 5	B	10.000	**-21**	25.000	-7	100.00	0	250.00	0	500.00	1	750.00	4	1000.0	**23**
TCMX	B	2.0000	-10	5.0000	-8	20.000	-3	50.000	0	100.00	3	150.00	1	200.00	18
Decachlorobiphenyl	B	2.0000	15	5.0000	19	20.000	7	50.000	-5	100.00	-11	150.00	-16	200.00	-9

JC1 02/06/18 : Corrected automatically drawn baseline in all levels.

Analyst: JC1 Date: 02/06/18 Reviewer: EAH Date: 02/06/18

X=A: Instrument response = a0 + amount * a1 + amount^2 * a2 (invert equation before quantitating); X=R: Instrument amount = a0 + response * a1 + response^2 * a2; AVRG=Average response factor; LINR=Linear regression; QUAD=Quadratic regression

ENTHALPY 2ND SOURCE CALIBRATION SUMMARY FOR 296840 PCBS Water
EPA 8082A

Inst : GC06 Name : ar-1660-036ical
Calnum : 208052389001 Cal Date : 05-FEB-2018

ICV 208052389018 (036_018 05-FEB-2018) stds: S35527

Analyte	Ch	Spiked	Quant	Units	%D	Max	Flags
Aroclor-1016	A	250.0	250.6	pg/uL	0	20	
Aroclor-1260	A	250.0	256.5	pg/uL	3	20	
Aroclor-1016	B	250.0	268.0	pg/uL	7	20	
Aroclor-1260	B	250.0	258.9	pg/uL	4	20	

Analyst: JC1 Date: 02/06/18 Reviewer: EAH Date: 02/06/18

ENTHALPY CONTINUING CALIBRATION FOR 296840 PCBS Water
EPA 8082A

Inst : GC06 Run Name : PCB250_50 IDF : 1.0
Seqnum : 208053862011.1 File : 037_011 Time : 06-FEB-2018 14:36
Cal : 208052389001 Caldate : 05-FEB-2018
Standards: S35532

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Aroclor-1016	A			250.0	240.9	pg/uL	-4	20	
Aroclor-1260	A			250.0	239.5	pg/uL	-4	20	
TCMX	A	6072.3	5678.0	50.00	46.75	pg/uL	-6	20	
Decachlorobiphenyl	A	8292.8	7605.1	50.00	53.64	pg/uL	7	20	
Aroclor-1016	B			250.0	239.6	pg/uL	-4	20	
Aroclor-1260	B			250.0	230.1	pg/uL	-8	20	
TCMX	B	6220.1	5861.9	50.00	47.12	pg/uL	-6	20	
Decachlorobiphenyl	B	8439.1	7649.6	50.00	45.32	pg/uL	-9	20	

JC1 02/06/18 : Corrected automatically drawn baseline. [general version]

Analyst: JC1 Date: 02/07/18 Reviewer: EAH Date: 02/08/18

ENTHALPY CONTINUING CALIBRATION FOR 296840 PCBS Water
EPA 8082A

Inst : GC06 Run Name : PCB250_50 IDF : 1.0
Seqnum : 208053862024.1 File : 037_024 Time : 06-FEB-2018 22:11
Cal : 208052389001 Caldate : 05-FEB-2018
Standards: S35532

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Aroclor-1016	A			250.0	280.8	pg/uL	12	20	
Aroclor-1260	A			250.0	283.9	pg/uL	14	20	
TCMX	A	6072.3	5915.4	50.00	48.71	pg/uL	-3	20	
Decachlorobiphenyl	A	8292.8	8064.9	50.00	57.16	pg/uL	14	20	
Aroclor-1016	B			250.0	257.6	pg/uL	3	20	
Aroclor-1260	B			250.0	264.3	pg/uL	6	20	
TCMX	B	6220.1	6234.8	50.00	50.12	pg/uL	0	20	
Decachlorobiphenyl	B	8439.1	8675.6	50.00	51.40	pg/uL	3	20	

JC1 02/07/18 : Corrected automatically drawn baseline. [general version]

Analyst: JC1 Date: 02/07/18 Reviewer: EAH Date: 02/08/18

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 208052389

Instrument : GC06 Begun : 02/05/18 09:09
Method : EPA 8082A SOP Version : pcb_rv11

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	036_001	X	HEX			02/05/18 09:09	1.0		
002	036_002	X	HEX			02/05/18 09:37	1.0		
003	036_003	CCV	PCB500_100			02/05/18 10:05	1.0	1	
004	036_004	CCV	AR2154_250			02/05/18 10:33	1.0	2	
005	036_005	X	PRIMER			02/05/18 14:44	1.0		
006	036_006	X	HEX			02/05/18 15:12	1.0		
007	036_007	X	HEX			02/05/18 15:40	1.0		
008	036_008	X	HEX			02/05/18 16:08	1.0		
009	036_009	IB	CALIB			02/05/18 16:36	1.0		
010	036_010	ICAL	PCB100_20			02/05/18 17:04	1.0	3	
011	036_011	ICAL	PCB25_5			02/05/18 17:32	1.0	4	
012	036_012	ICAL	PCB100_20			02/05/18 18:00	1.0	3	
013	036_013	ICAL	PCB250_50			02/05/18 18:28	1.0	5	
014	036_014	ICAL	PCB500_100			02/05/18 18:56	1.0	6	
015	036_015	ICAL	PCB750_150			02/05/18 19:24	1.0	7	
016	036_016	ICAL	PCB1000_200			02/05/18 19:52	1.0	8	
017	036_017	X	HEX			02/05/18 20:20	1.0		
018	036_018	ICV	ULTRA_1660			02/05/18 20:48	1.0	9	
019	036_019	X	HEX			02/05/18 21:16	1.0		

JC1 02/06/18 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 19.

Standards used: 1=S35813 2=S35044 3=S35531 4=S35530 5=S35532 6=S35533 7=S35534 8=S35535 9=S35527

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 208053862

Instrument : GC06 Begun : 02/06/18 09:42
Method : EPA 8082A SOP Version : pcb_rv11

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	037_001	X	HEX			02/06/18 09:42	1.0		
002	037_002	CCV	PCB250_50			02/06/18 10:10	1.0	1	
003	037_003	CCV	AR2154_250			02/06/18 10:39	1.0	2	
004	037_004	CCV	AR1242_500			02/06/18 11:07	1.0	3	
005	037_005	BLANK	QC918739	Soil	256157	02/06/18 11:35	1.0		
006	037_006	SAMPLE	296858-001	Miscell.	256157	02/06/18 12:03	50.0		
007	037_007	BS	QC918740	Soil	256157	02/06/18 12:31	1.0		
008	037_008	BSD	QC918741	Soil	256157	02/06/18 12:59	1.0		
009	037_009	BLANK	QC918924	Soil	256204	02/06/18 13:40	1.0		
010	037_010	LCS	QC918925	Soil	256204	02/06/18 14:08	1.0		
011	037_011	CCV	PCB250_50			02/06/18 14:36	1.0	1	
012	037_012	CCV	AR2154_250			02/06/18 15:04	1.0	2	
013	037_013	CCV	AR1242_500			02/06/18 15:32	1.0	3	
014	037_014	MS	QC918926	Soil	256204	02/06/18 17:31	2.0		
015	037_015	MSD	QC918927	Soil	256204	02/06/18 17:59	2.0		
016	037_016	MSS	296848-003	Soil	256204	02/06/18 18:27	2.0		
017	037_017	SAMPLE	296886-005	Soil	256204	02/06/18 18:55	1.0		
018	037_018	SAMPLE	296856-005	Soil	256204	02/06/18 19:23	1.0		
019	037_019	BLANK	QC918947	Water	256210	02/06/18 19:51	1.0		
020	037_020	BS	QC918948	Water	256210	02/06/18 20:19	1.0		
021	037_021	BSD	QC918949	Water	256210	02/06/18 20:47	1.0		
022	037_022	SAMPLE	296840-011	Water	256210	02/06/18 21:15	1.0		
023	037_023	SAMPLE	296840-012	Water	256210	02/06/18 21:43	1.0		
024	037_024	CCV	PCB250_50			02/06/18 22:11	1.0	1	
025	037_025	CCV	AR2154_250			02/06/18 22:39	1.0	2	
026	037_026	CCV	AR1242_500			02/06/18 23:07	1.0	3	
027	037_027	BLANK	QC918951	Miscell.	256212	02/06/18 23:35	1.0		
028	037_028	BS	QC918952	Miscell.	256212	02/07/18 00:03	1.0		
029	037_029	BSD	QC918953	Miscell.	256212	02/07/18 00:31	1.0		
030	037_030	BLANK	QC918937	Air	256207	02/07/18 00:59	1.0		
031	037_031	BS	QC918938	Air	256207	02/07/18 01:27	1.0		
032	037_032	BSD	QC918939	Air	256207	02/07/18 01:55	1.0		
033	037_033	SAMPLE	296794-005	Soil	256094	02/07/18 02:23	5.0		
034	037_034	SAMPLE	296587-026	Water	255871	02/07/18 02:51	1.0		
035	037_035	CHECK				02/07/18 03:19	1.0	4	
036	037_036	CCV	AR1248_250			02/07/18 03:47	1.0	5	
037	037_037	CCV	PCB250_50			02/07/18 04:15	1.0	1	
038	037_038	CCV	AR2154_250			02/07/18 04:43	1.0	2	
039	037_039	SAMPLE	296804-001	Soil	256131	02/07/18 05:11	1.0		
040	037_040	SAMPLE	296804-002	Soil	256131	02/07/18 05:39	1.0		
041	037_041	SAMPLE	296804-003	Soil	256131	02/07/18 06:07	1.0		
042	037_042	SAMPLE	296804-004	Soil	256131	02/07/18 06:35	1.0		
043	037_043	SAMPLE	296804-005	Soil	256131	02/07/18 07:03	1.0		

JC1 02/07/18 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 43.

Standards used: 1=S35532 2=S35044 3=S34921 4=S35847 5=S34963

SAMPLE PREPARATION SUMMARY

Batch # : 256210
Started By : ECI
Method : 3520C
Spike #1 ID : S35128

Prep Date : 05-FEB-2018 13:11
SOP Version : PCB_3520_rv15
Spike #2 ID : S34913

Analysis : PCB
Finished By : CRC
Units : mL

Sample	Stype	Matrix	Initial	Final	Clean DF	Prep DF	pH	Sp 1 Vol	Sp 2 Vol	Sp 3 Vol	Clean Method	Analysis	Comments
296840-011		Water	1000	10	1	0.01	8	.5				PCB	
296840-012		Water	1020	10	1	0.009804	9	.5				PCB	
296895-001		Water	1050	10	1	0.009524	7	.5				PCB	See comment 1 below
296903-001		Water	900	10	1	0.01111	7	.5				PCB	See comment 2 below
296903-002		Water	900	10	1	0.01111	8	.5				PCB	See comment 3 below
QC918947	BLANK	Water	1000	10	1	0.01		.5				PCB	
QC918948	BS	Water	1000	10	1	0.01		.5	.5			PCB	
QC918949	BSD	Water	1000	10	1	0.01		.5	.5			PCB	

Comment 1: Prepped 06-FEB-2018 11:46; A/O JM2
Comment 2: Prepped 06-FEB-2018 11:46; A/O JM2- murky- 2x acid (10mL) and centrifuged for separation
Comment 3: Prepped 06-FEB-2018 11:46; A/O JM2 -2x acid (10mL)

JC1 02/07/18 : Matrix spikes were not performed for this analysis in batch 256210 due to insufficient sample amount.

Analyst: JC1 Date: 02/07/18 Reviewer: EAH Date: 02/07/18

PCB Water Prep Log Curtis & Tompkins, Ltd.

LIMS Batch No: 256210
LIMS Analysis: PCB
Date Extracted: 2/5/18

Extraction Method:
☑ EPA 3520c cont. L/L
☐ _____

BK 3976
Page 13

Sample #	Container ID	Volume of Sample (mL)	Sample pH	Final Volume (mL)	Comments
296840-011	D	1000	☐7 ☑8	☐ 25.0 ☑10	
2	C	1020	☐7 ☑9	☐ 25.0 ☑10	
MB QC918947	NA	1000	☐7 ☑NA	☐ 25.0 ☑10	
BS 8		1000	☐7 ☑NA	☐ 25.0 ☑10	
PSD 9		1000	☐7 ☑NA	☐ 25.0 ☑10	
296895-001	H	1050	☑7 ☐	☐ 25.0 ☑16	A/O JMZ 2/6/18 11:46
296903-001	G	900	☑7 ☐	☐ 25.0 ☑16	murky - 2X acid + centrifuge for separation
2		900	☐7 ☑8	☐ 25.0 ☑16	2X acid
			☐7 ☐	☐ 25.0 ☐	
			☐7 ☐	☐ 25.0 ☐	
			☐7 ☐	☐ 25.0 ☐	
			☐7 ☐	☐ 25.0 ☐	
			☐7 ☐	☐ 25.0 ☐	
			☐7 ☐	☐ 25.0 ☐	
			☐7 ☐	☐ 25.0 ☐	
			☐7 ☐	☐ 25.0 ☐	
			☐7 ☐	☐ 25.0 ☐	
			☐7 ☐	☐ 25.0 ☐	
			☐7 ☐	☐ 25.0 ☐	
			☐7 ☐	☐ 25.0 ☐	
			☐7 ☐	☐ 25.0 ☐	
			☐7 ☐	☐ 25.0 ☐	
			☐7 ☐	☐ 25.0 ☐	RD 2/7/2018

☑ MS/MSD not included due to: ☑ insufficent volume, or ☐ other (reason) _____

	Lot# / LIMS # / Time	Date/ Initials
checked sample pH using pH strips - lot #	10BDH5261	ECE 2/5/18
0.5 mL of surrogate solution was added to all samples	S35128D	
0.5 mL of matrix spiking solution was added to all spikes	S34913C	
☑ 3520c: Samples were continuously extracted with about 450 mL CH_2Cl_2	EM57236	
Extraction Start Time:	1311 / 11:46	
Extraction End Time:	711 / 05:50	CRE 02/06/18
☑ 3510c: Samples were extracted 3 times with 60 mL of CH_2Cl_2	EM57230	CRE 02/06
Extracts filtered through baked, CH2Cl2-rinsed ~~granular~~ powder Na2SO4	EM3557C600	
Solvent exchanged 2x w/ Hexane lot#	FC176513	
Concentrated to final volume in boiling H2O bath	✓	
EPA 3665A Clean-up: Vortexed w/ H_2SO_4 lot #	FC176161	
Centrifuged for 1min; 5mL transferred to labelled vial	✓	
Relinquished to PCB group	✓	

2/5/18
Extraction Chemist **Date**

Contined from Page ____
Continued on Page ____

2/07/2018
Reviewed by **Date**

REPORTING SUMMARY FOR 296840 PCBS Water

Sample ID	Analyte	Inst ID	Ch	Date & Time
296840-011	Aroclor-1016	GC06	A	02/06/18 21:15
296840-011	Aroclor-1221	GC06	A	02/06/18 21:15
296840-011	Aroclor-1232	GC06	A	02/06/18 21:15
296840-011	Aroclor-1242	GC06	A	02/06/18 21:15
296840-011	Aroclor-1248	GC06	A	02/06/18 21:15
296840-011	Aroclor-1254	GC06	A	02/06/18 21:15
296840-011	Aroclor-1260	GC06	A	02/06/18 21:15
296840-011	Aroclor-1268	GC06	A	02/06/18 21:15
296840-011	TCMX	GC06	A	02/06/18 21:15
296840-011	Decachlorobiphenyl	GC06	A	02/06/18 21:15
296840-012	Aroclor-1016	GC06	A	02/06/18 21:43
296840-012	Aroclor-1221	GC06	A	02/06/18 21:43
296840-012	Aroclor-1232	GC06	A	02/06/18 21:43
296840-012	Aroclor-1242	GC06	A	02/06/18 21:43
296840-012	Aroclor-1248	GC06	A	02/06/18 21:43
296840-012	Aroclor-1254	GC06	A	02/06/18 21:43
296840-012	Aroclor-1260	GC06	A	02/06/18 21:43
296840-012	Aroclor-1268	GC06	A	02/06/18 21:43
296840-012	TCMX	GC06	A	02/06/18 21:43
296840-012	Decachlorobiphenyl	GC06	A	02/06/18 21:43
QC918947	Aroclor-1016	GC06	A	02/06/18 19:51
QC918947	Aroclor-1221	GC06	A	02/06/18 19:51
QC918947	Aroclor-1232	GC06	A	02/06/18 19:51
QC918947	Aroclor-1242	GC06	A	02/06/18 19:51
QC918947	Aroclor-1248	GC06	A	02/06/18 19:51
QC918947	Aroclor-1254	GC06	A	02/06/18 19:51
QC918947	Aroclor-1260	GC06	A	02/06/18 19:51
QC918947	Aroclor-1268	GC06	A	02/06/18 19:51
QC918947	TCMX	GC06	A	02/06/18 19:51
QC918947	Decachlorobiphenyl	GC06	A	02/06/18 19:51
QC918948	Aroclor-1016	GC06	A	02/06/18 20:19
QC918948	Aroclor-1260	GC06	A	02/06/18 20:19
QC918948	TCMX	GC06	A	02/06/18 20:19
QC918948	Decachlorobiphenyl	GC06	A	02/06/18 20:19
QC918949	Aroclor-1016	GC06	A	02/06/18 20:47
QC918949	Aroclor-1260	GC06	A	02/06/18 20:47
QC918949	TCMX	GC06	A	02/06/18 20:47
QC918949	Decachlorobiphenyl	GC06	A	02/06/18 20:47

Case Narrative Addendum: Manual Integrations for 296840 PCBS (Water)

For SAMPLE 296840-011 (GC06_037_022):
Corrected automatically drawn baseline.

For SAMPLE 296840-012 (GC06_037_023):
Corrected automatically drawn baseline.

For CCV PCB250_50 (GC06_037_011):
Corrected automatically drawn baseline.

For CCV PCB250_50 (GC06_037_024):
Corrected automatically drawn baseline.

For BLANK QC918947 (GC06_037_019):
Corrected automatically drawn baseline.

For BSD QC918949 (GC06_037_021):
Corrected automatically drawn baseline.

For Calibration GC06 (208052389001):
Corrected automatically drawn baseline in all levels.

For ICV ULTRA 1660 (GC06_036_018):
Corrected automatically drawn baseline.

CAS Registry Numbers for 296840 PCBS Water
Enthalpy Analytical - Berkeley

Analyte	CAS RN
Aroclor-1016	12674-11-2
Aroclor-1221	11104-28-2
Aroclor-1232	11141-16-5
Aroclor-1242	53469-21-9
Aroclor-1248	12672-29-6
Aroclor-1254	11097-69-1
Aroclor-1260	11096-82-5
Aroclor-1268	11100-14-4
Decachlorobiphenyl	2051-24-3
TCMX	877-09-8

Sample Raw Data

ENTHALPY SAMPLE USER REPORT FOR EPA 8082A

Inst	: GC06	Lab ID	: 296840-011	Client ID	: HPP-FSS-EB01
Seqnum	: 208053862022	Matrix	: Water	Acct	: IEECI (MJD)
File	: 037_022	Batch	: 256210	Time	: 06-FEB-2018 21:15
Cal	: 208052389001	Caldate	: 05-FEB-2018		
IDF	: 1.0	Raw Units	: pg/uL	Units	: ug/L

1000.00 mL --> 10.0 ml = 0.01 ml/ml PDF

Analyte	Ch	Raw	Result	Conf	RPD	RL	Blank	Flags
Aroclor-1016	A	0.6847	ND	ND	168%	0.20		u
Aroclor-1016 Peak # 1	A	1.227	0.01	ND				
Aroclor-1016 Peak # 2	A	0.003812	0.00	ND				
Aroclor-1016 Peak # 3	A	0	ND	ND				
Aroclor-1016 Peak # 4	A	0.3413	0.00	ND				
Aroclor-1016 Peak # 5	A	1.851	0.02	0.00	145%			
Aroclor-1221	A		ND			0.40		u
Aroclor-1232	A		ND			0.20		u
Aroclor-1242	A		ND			0.20		u
Aroclor-1248	A		ND			0.20		u
Aroclor-1254	A		ND			0.20		u
Aroclor-1260	A	0.6987	ND	ND	142%	0.20		u
Aroclor-1260 Peak # 1	A	1.092	0.01	0.01	9%			
Aroclor-1260 Peak # 2	A	0.5377	0.01	0.16	187%			
Aroclor-1260 Peak # 3	A	0	ND	0.02				
Aroclor-1260 Peak # 4	A	1.178	0.01	0.01	19%			
Aroclor-1260 Peak # 5	A	0.6868	0.01	0.00	61%			
Aroclor-1268	A		ND			0.20		u

Surrogate	Ch	Raw	Spiked	Result	%Rec	Limits	Flags
TCMX	A	42.67	0.5000	0.4267	85	37-122	u
Decachlorobiphenyl	A	57.53	0.5000	0.5753	115	22-139	u

JC1 02/07/18 : Corrected automatically drawn baseline.

Analyst: JC1 Date: 02/07/18 Reviewer: EAH Date: 02/08/18

u=use

Sample Name: **296840-011,256210** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\037-022** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\037.seq** Instrument: GC06 (Offline) Vial: 22 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met	Software Version 3.1.7 Run Date: 2/6/2018 9:15:17 PM Analysis Date: 2/7/2018 9:26:35 AM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.770	3.776	259090	42.668
PCB1016#1	5.340	5.347	325	1.227
PCB1016#2	6.387	6.387	1	0.004
PCB1016#3		6.680		0.000 BDL
PCB1016#4	7.117	7.130	30	0.341
PCB1016#5	7.640	7.630	219	1.851
PCB1260#1	11.140	11.150	447	1.092
PCB1260#2	11.790	11.797	215	0.538
PCB1260#3		12.650		0.000 BDL
PCB1260#4	13.390	13.390	603	1.178
PCB1260#5	14.033	14.040	183	0.687
Decachlorobiphenyl	16.630	16.640	405677	57.531

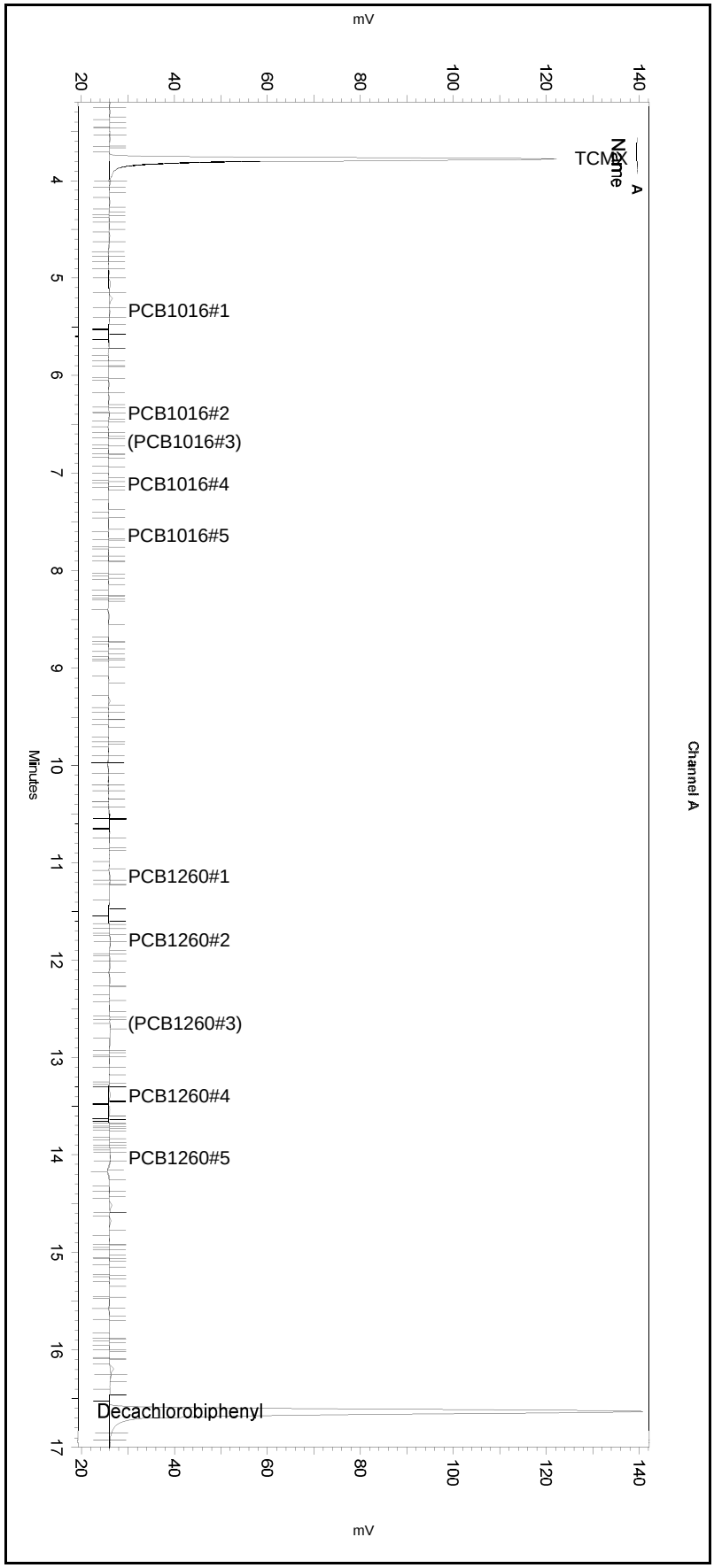
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.947	2.950	270902	43.553
PCB1016#1	4.347	4.350	0	0.000
PCB1016#2		5.237		0.000 BDL
PCB1016#3		5.437		0.000 BDL
PCB1016#4		5.960		0.000 BDL
PCB1016#5	6.640	6.657	54	0.296
PCB1260#1	9.843	9.850	323	0.993
PCB1260#2	10.467	10.470	324	15.855
PCB1260#3	11.390	11.397	514	1.938
PCB1260#4	12.057	12.053	650	1.430
PCB1260#5	12.707	12.723	106	0.368
Decachlorobiphenyl	15.657	15.673	445032	52.735

Sample Name: **296840-011,256210**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\037-022**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\037.seq**
Instrument: GC06 (Offline) Vial: 22 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/6/2018 9:15:17 PM
Analysis Date: 2/7/2018 9:26:35 AM
Sample Amount: 1



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No items selected for this section

---< A >---

No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0

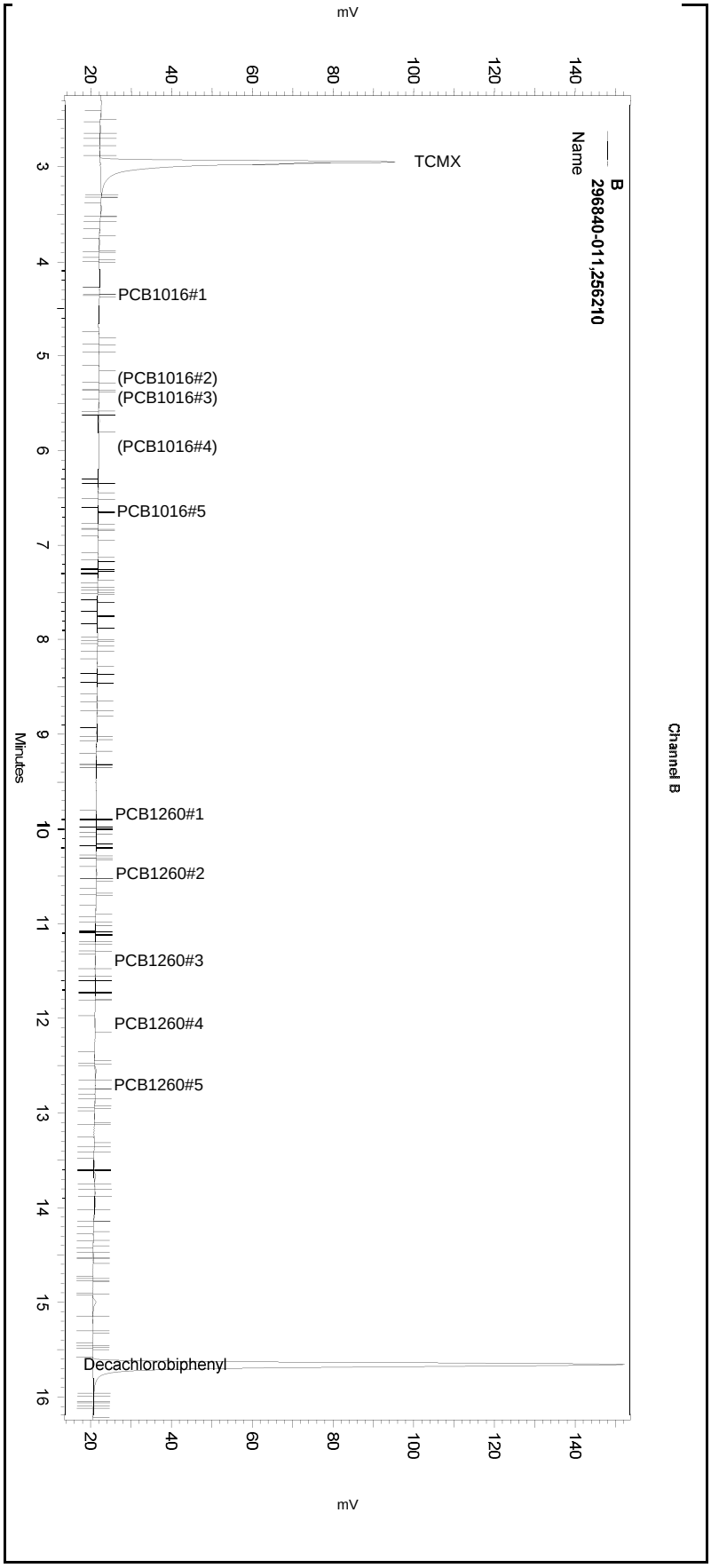
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\037-022

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Valley to Valley	4.258	16.375	0

Sample Name: **296840-011,256210**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\037-022**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\037.seq**
Instrument: GC06 (Offline) Vial: 22 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/6/2018 9:15:17 PM
Analysis Date: 2/7/2018 9:26:35 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\037-022

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Valley to Valley	3.33	15.456	0

Sample Name: **296840-011,256210**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\037-022**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\037.seq**
Instrument: GC06 Vial: 22 Operator: lims2k3\pest3
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/6/2018 9:15:17 PM
Analysis Date: 2/6/2018 9:39:14 PM
Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.770	3.776	259090	42.668
PCB1016#1	5.340	5.347	702	2.651
PCB1016#2	6.387	6.387	621	2.367
PCB1016#3		6.680		0.000 BDL
PCB1016#4	7.117	7.130	91	1.035
PCB1016#5	7.640	7.630	234	1.978
PCB1260#1	11.140	11.150	815	1.990
PCB1260#2	11.790	11.797	584	1.460
PCB1260#3		12.650		0.000 BDL
PCB1260#4	13.390	13.390	1079	2.107
PCB1260#5	14.033	14.040	1782	6.688
Decachlorobiphenyl	16.630	16.640	405677	57.531

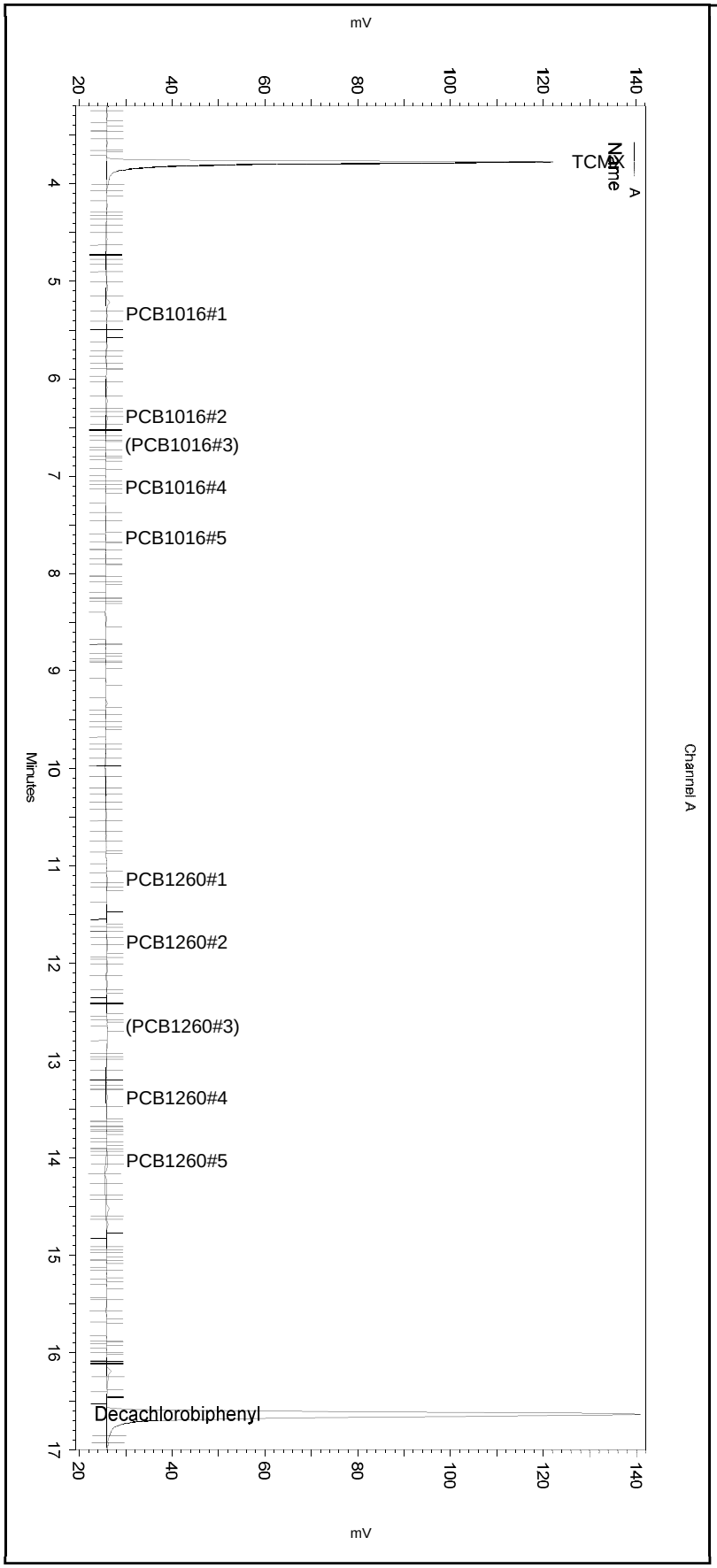
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.947	2.950	278026	44.698
PCB1016#1	4.347	4.350	25	0.083
PCB1016#2		5.237		0.000 BDL
PCB1016#3		5.437		0.000 BDL
PCB1016#4		5.960		0.000 BDL
PCB1016#5	6.640	6.657	54	0.296
PCB1260#1	9.843	9.850	323	0.993
PCB1260#2	10.467	10.470	951	17.370
PCB1260#3	11.390	11.397	514	1.938
PCB1260#4	12.057	12.053	650	1.430
PCB1260#5	12.707	12.723	1126	3.906
Decachlorobiphenyl	15.657	15.673	445032	52.735

Sample Name: **296840-011,256210**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\037-022**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\037.seq**
Instrument: GC06 Vial: 22 Operator: lims2k3\pest3
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/6/2018 9:15:17 PM
Analysis Date: 2/6/2018 9:39:14 PM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0

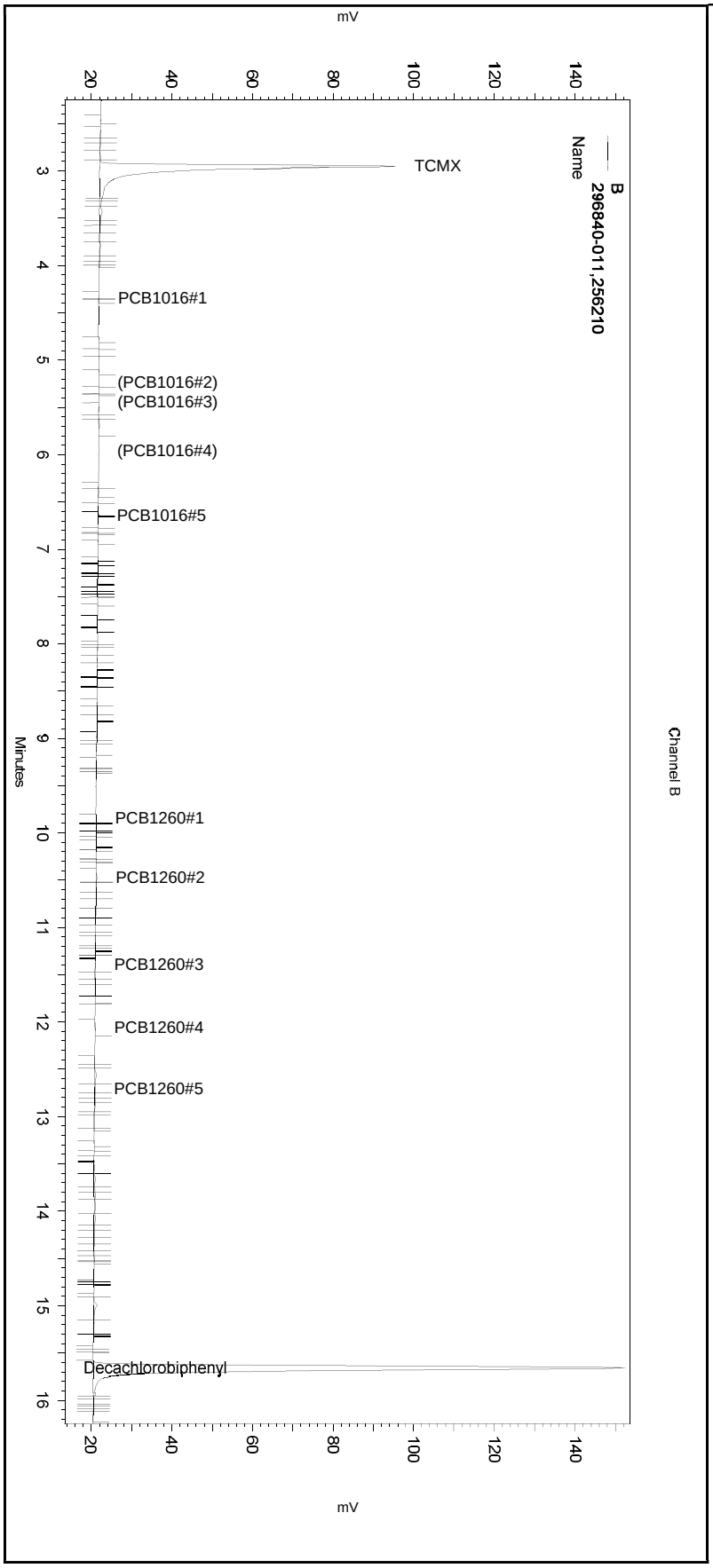
Manual Integration Fixes
==========

Data File: C:\Documents and Settings\All Users\Application Data\ChromatographySystem\Recovery Data\Instrument.10112\037-022_13F4.tmp

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Sample Name: **296840-011,256210**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\037-022**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\037.seq**
Instrument: GC06 Vial: 22 Operator: lims2k3\pest3
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/6/2018 9:15:17 PM
Analysis Date: 2/6/2018 9:39:14 PM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

---< B >----------

No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========
Data File: C:\Documents and Settings\All Users\Application Data\ChromatographySystem\Recovery Data\Instrument.10112\037-022_13F4.tmp

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

ENTHALPY SAMPLE USER REPORT FOR EPA 8082A

Inst	: GC06	Lab ID	: 296840-012	Client ID	: HPP-FSS-FB01
Seqnum	: 208053862023	Matrix	: Water	Acct	: IEECI (MJD)
File	: 037_023	Batch	: 256210	Time	: 06-FEB-2018 21:43
Cal	: 208052389001	Caldate	: 05-FEB-2018		
IDF	: 1.0	Raw Units	: pg/uL	Units	: ug/L

1020.00 mL --> 10.0 ml = 0.009804 ml/ml PDF

Analyte	Ch	Raw	Result	Conf	RPD	RL	Blank	Flags
Aroclor-1016	A	0.3298	ND	ND	151%	0.20		u
Aroclor-1016 Peak # 1	A	0.5967	0.01	ND				
Aroclor-1016 Peak # 2	A	0.1982	0.00	ND				
Aroclor-1016 Peak # 3	A	0.8315	0.01	0.10	170%			
Aroclor-1016 Peak # 4	A	0.02275	0.00	0.02	195%			
Aroclor-1016 Peak # 5	A	0	ND	ND				
Aroclor-1221	A		ND			0.39		u
Aroclor-1232	A		ND			0.20		u
Aroclor-1242	A		ND			0.20		u
Aroclor-1248	A		ND			0.20		u
Aroclor-1254	A		ND			0.20		u
Aroclor-1260	A	0.1192	ND	ND	185%	0.20		u
Aroclor-1260 Peak # 1	A	0.2808	0.00	0.01	58%			
Aroclor-1260 Peak # 2	A	0.3151	0.00	0.15	192%			
Aroclor-1260 Peak # 3	A	0	ND	0.00				
Aroclor-1260 Peak # 4	A	0	ND	ND				
Aroclor-1260 Peak # 5	A	0	ND	ND				
Aroclor-1268	A		ND			0.20		u

Surrogate	Ch	Raw	Spiked	Result	%Rec	Limits	Flags
TCMX	A	44.23	0.4902	0.4337	88	37-122	u
Decachlorobiphenyl	A	55.38	0.4902	0.5429	111	22-139	u

JC1 02/07/18 : Corrected automatically drawn baseline.

Analyst: JC1 Date: 02/07/18 Reviewer: EAH Date: 02/08/18

u=use

Sample Name: **296840-012,256210** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\037-023** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\037.seq** Instrument: GC06 (Offline) Vial: 23 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met	Software Version 3.1.7 Run Date: 2/6/2018 9:43:16 PM Analysis Date: 2/7/2018 9:26:59 AM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.783	3.776	268594	44.233
PCB1016#1	5.340	5.347	158	0.597
PCB1016#2	6.390	6.387	52	0.198
PCB1016#3	6.690	6.680	132	0.831
PCB1016#4	7.157	7.130	2	0.023
PCB1016#5		7.630		0.000 BDL
PCB1260#1	11.140	11.150	115	0.281
PCB1260#2	11.790	11.797	126	0.315
PCB1260#3		12.650		0.000 BDL
PCB1260#4		13.390		0.000 BDL
PCB1260#5		14.040		0.000 BDL
Decachlorobiphenyl	16.643	16.640	391607	55.378

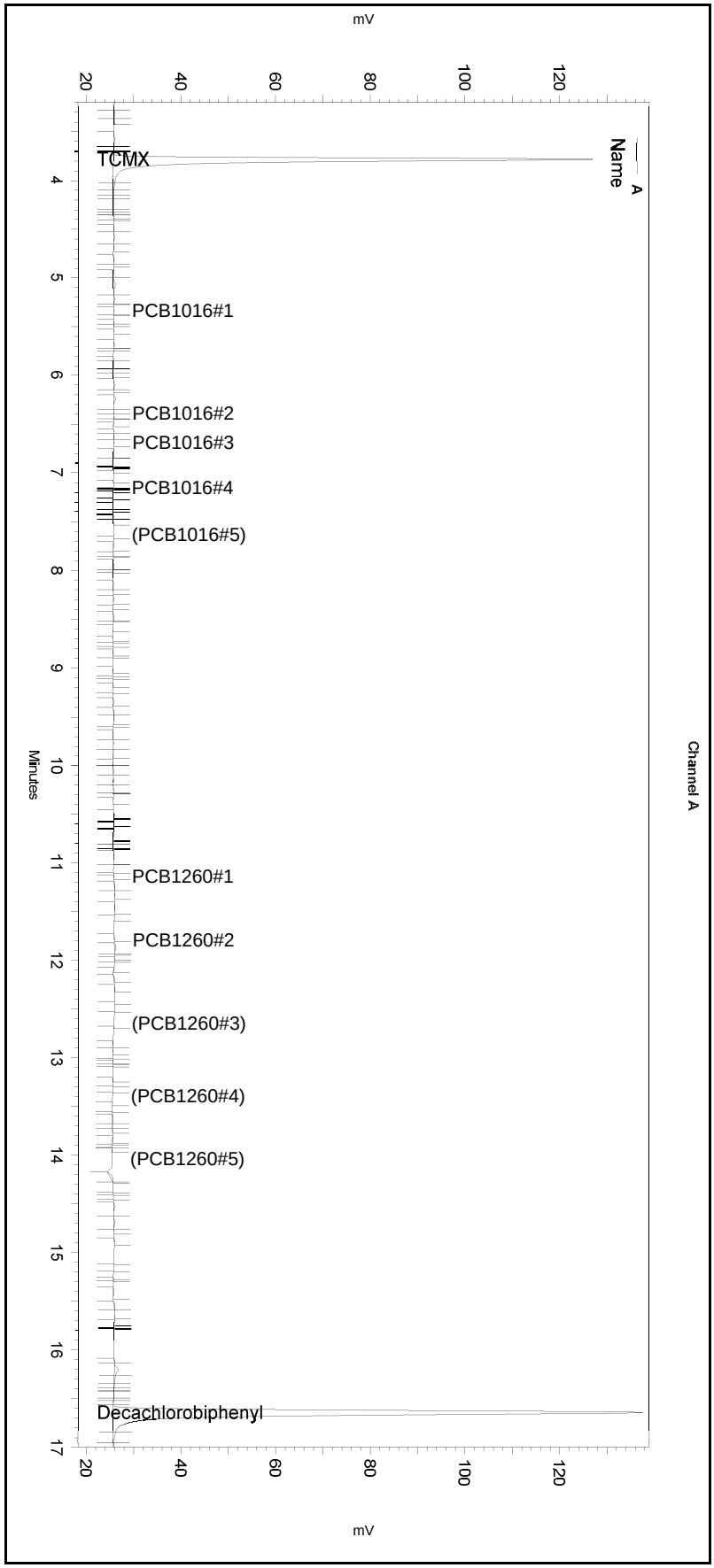
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.957	2.950	282776	45.462
PCB1016#1		4.350		0.000 BDL
PCB1016#2		5.237		0.000 BDL
PCB1016#3	5.413	5.437	2	10.170
PCB1016#4	5.990	5.960	182	1.649
PCB1016#5		6.657		0.000 BDL
PCB1260#1	9.840	9.850	166	0.510
PCB1260#2	10.467	10.470	69	15.238
PCB1260#3	11.390	11.397	14	0.053
PCB1260#4		12.053		0.000 BDL
PCB1260#5	12.720	12.723	0	0.000
Decachlorobiphenyl	15.667	15.673	440342	52.179

Sample Name: **296840-012,256210**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\037-023**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\037.seq**
Instrument: GC06 (Offline) Vial: 23 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/6/2018 9:43:16 PM
Analysis Date: 2/7/2018 9:26:59 AM
Sample Amount: 1



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Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0

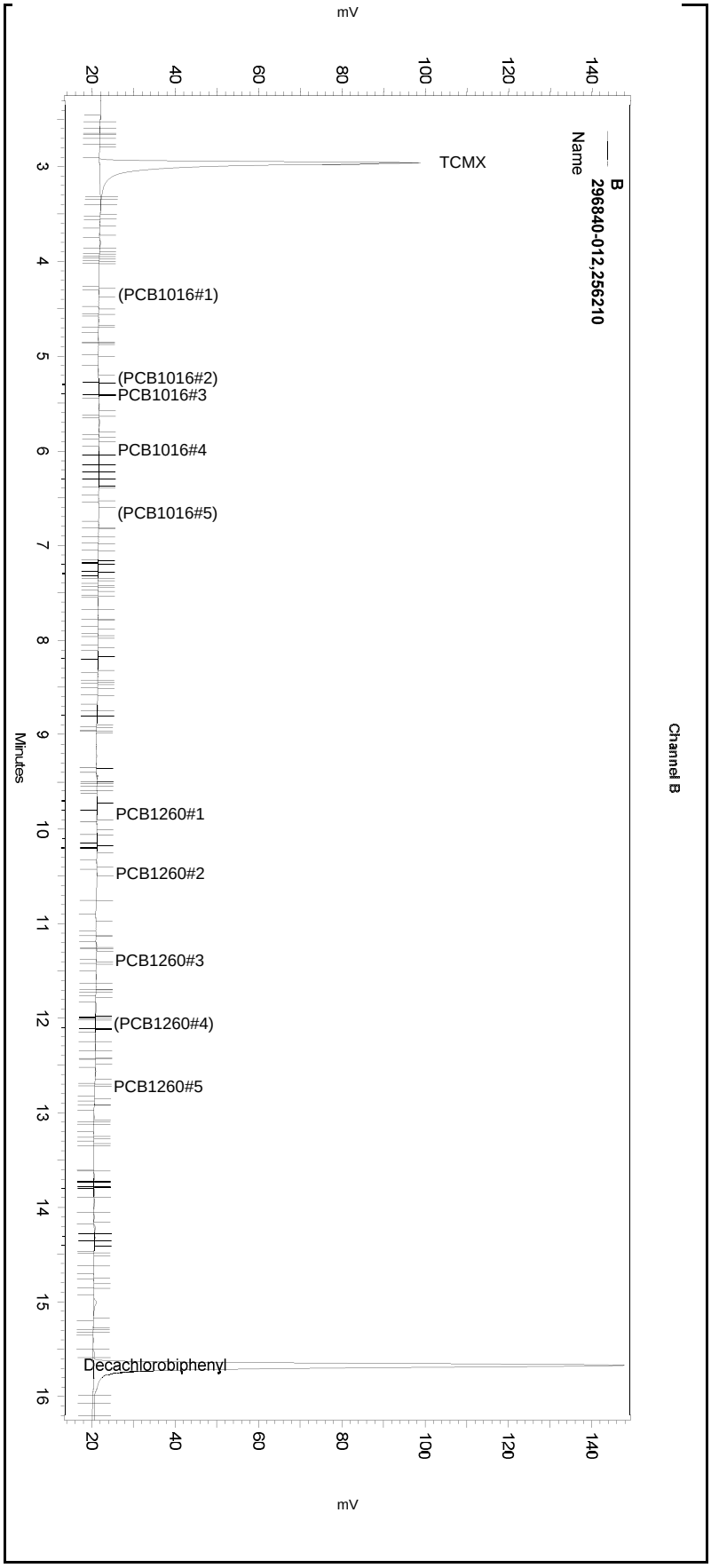
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\037-023

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Valley to Valley	4.423	16.099	0

Sample Name: **296840-012,256210**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\037-023**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\037.seq**
Instrument: GC06 (Offline) Vial: 23 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/6/2018 9:43:16 PM
Analysis Date: 2/7/2018 9:26:59 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\037-023

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Valley to Valley	3.437	15.376	0

Sample Name: **296840-012,256210**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\037-023**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\037.seq**
Instrument: GC06 Vial: 23 Operator: lims2k3\pest3
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/6/2018 9:43:16 PM
Analysis Date: 2/6/2018 10:07:13 PM
Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.783	3.776	268594	44.233
PCB1016#1	5.340	5.347	158	0.597
PCB1016#2	6.390	6.387	475	1.811
PCB1016#3	6.690	6.680	695	4.378
PCB1016#4	7.157	7.130	5	0.057
PCB1016#5		7.630		0.000 BDL
PCB1260#1	11.140	11.150	341	0.833
PCB1260#2	11.790	11.797	324	0.810
PCB1260#3		12.650		0.000 BDL
PCB1260#4		13.390		0.000 BDL
PCB1260#5		14.040		0.000 BDL
Decachlorobiphenyl	16.643	16.640	391607	55.378

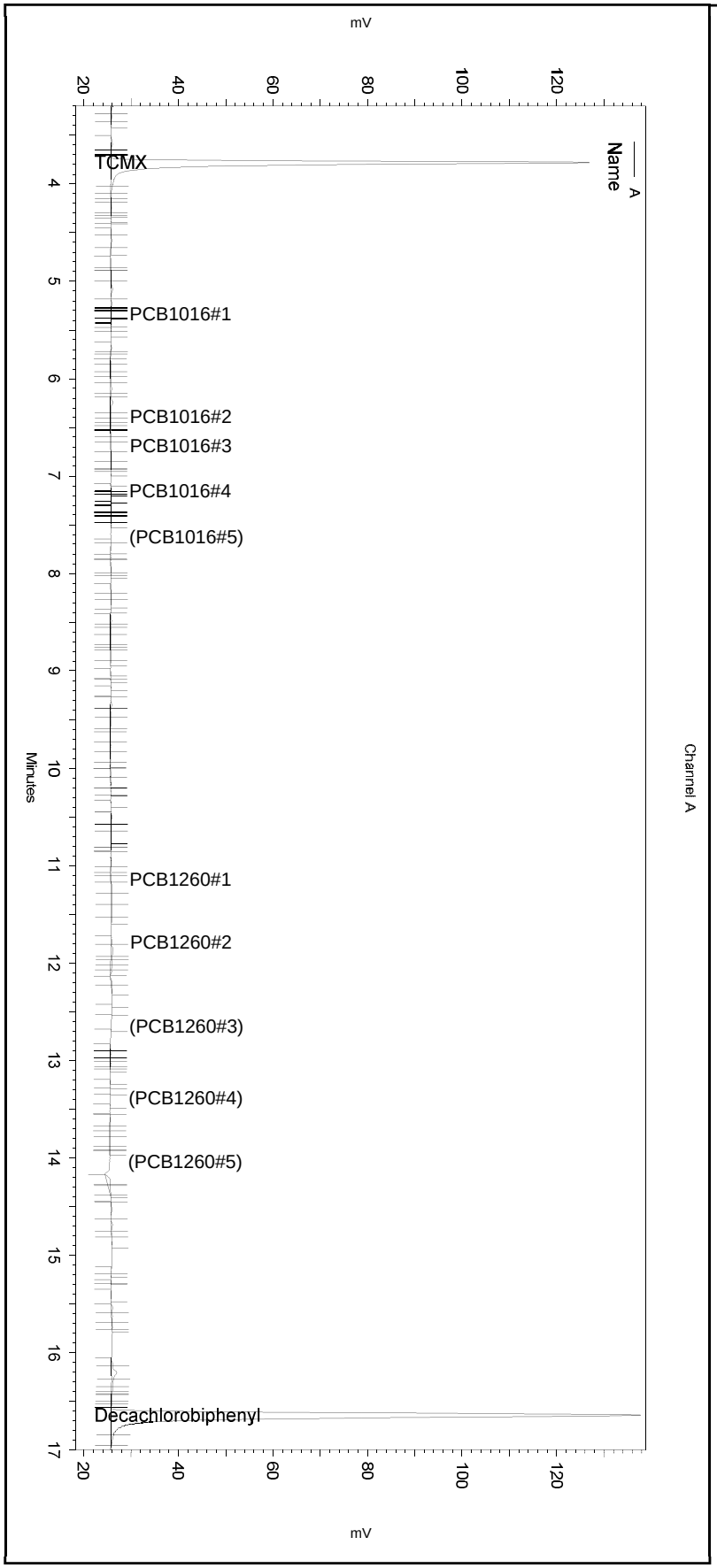
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.957	2.950	286384	46.042
PCB1016#1		4.350		0.000 BDL
PCB1016#2		5.237		0.000 BDL
PCB1016#3	5.413	5.437	2	10.170
PCB1016#4	5.990	5.960	407	3.688
PCB1016#5		6.657		0.000 BDL
PCB1260#1	9.840	9.850	166	0.510
PCB1260#2	10.467	10.470	48	15.187
PCB1260#3	11.390	11.397	416	1.568
PCB1260#4		12.053		0.000 BDL
PCB1260#5	12.720	12.723	83	0.288
Decachlorobiphenyl	15.667	15.673	440457	52.193

Sample Name: **296840-012,256210**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\037-023**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\037.seq**
Instrument: GC06 Vial: 23 Operator: lims2k3\pest3
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/6/2018 9:43:16 PM
Analysis Date: 2/6/2018 10:07:13 PM
Sample Amount: 1



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Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0

Manual Integration Fixes
==========

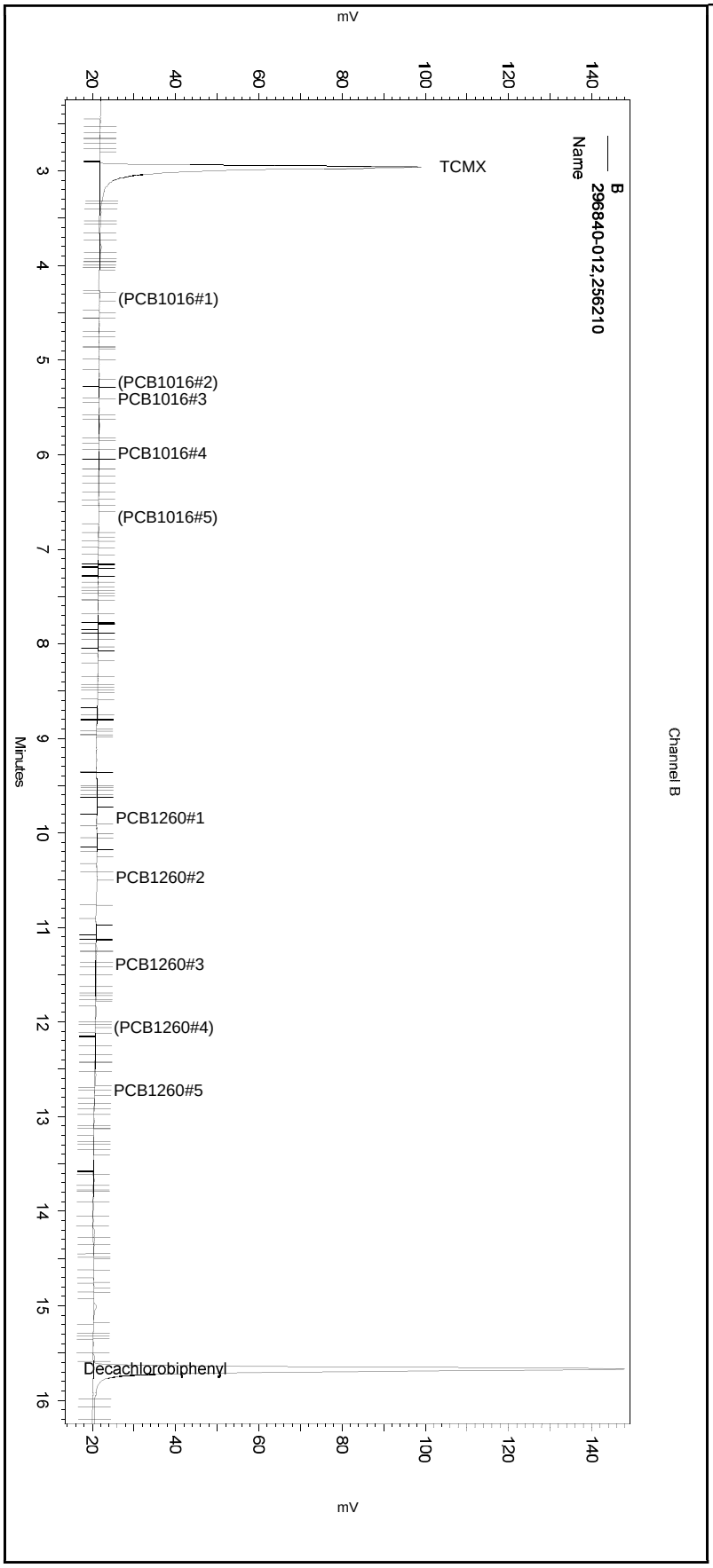
Data File: C:\Documents and Settings\All Users\Application Data\ChromatographySystem\Recovery Data\Instrument.10112\037-023_13F5.tmp

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sample Name: **296840-012,256210**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\037-023**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\037.seq**
Instrument: GC06 Vial: 23 Operator: lims2k3\pest3
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/6/2018 9:43:16 PM
Analysis Date: 2/6/2018 10:07:13 PM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========
Data File: C:\Documents and Settings\All Users\Application Data\ChromatographySystem\Recovery Data\Instrument.10112\037-023_13F5.tmp

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

QC Raw Data

ENTHALPY BLANK USER REPORT FOR 296840 PCBS Water
EPA 8082A

Inst : GC06 Lab ID : QC918947
Seqnum : 208053862019.2 Matrix : Water
File : 037_019 Batch : 256210 Time : 06-FEB-2018 19:51
Cal : 208052389001 Caldate : 05-FEB-2018
IDF : 1.0 Raw Units : pg/uL Units : ug/L

1000.00 mL --> 10.0 ml = 0.01 ml/ml PDF

Analyte	Ch	Raw	Result	Conf	RPD	RL	Flags
Aroclor-1016	A	0.1419	ND	ND	184%	0.20	u
Aroclor-1016 Peak # 1	A	0.4645	0.00	ND			
Aroclor-1016 Peak # 2	A	0.2097	0.00	0.07	188%		
Aroclor-1016 Peak # 3	A	0.01260	0.00	0.10	200%		
Aroclor-1016 Peak # 4	A	0.02275	0.00	0.00	18%		
Aroclor-1016 Peak # 5	A	0	ND	0.00			
Aroclor-1221	A		ND			0.40	u
Aroclor-1232	A		ND			0.20	u
Aroclor-1242	A		ND			0.20	u
Aroclor-1248	A		ND			0.20	u
Aroclor-1254	A		ND			0.20	u
Aroclor-1260	A	0.3915	ND	ND	159%	0.20	u
Aroclor-1260 Peak # 1	A	1.394	0.01	0.01	6%		
Aroclor-1260 Peak # 2	A	0.5552	0.01	0.16	186%		
Aroclor-1260 Peak # 3	A	0	ND	0.00			
Aroclor-1260 Peak # 4	A	0.007811	0.00	ND			
Aroclor-1260 Peak # 5	A	0	ND	ND			
Aroclor-1268	A		ND			0.20	u

Surrogate	Ch	Raw	Spiked	Result	%Rec	Limits	Flags
TCMX	A	55.01	0.5000	0.5501	110	37-122	u
Decachlorobiphenyl	A	59.57	0.5000	0.5957	119	22-139	u

JC1 02/07/18 : Corrected automatically drawn baseline. [general version]

Analyst: JC1 Date: 02/07/18 Reviewer: EAH Date: 02/08/18

u=use

Sample Name: **mb,qc918947,256210** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\037-019** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\037.seq** Instrument: GC06 (Offline) Vial: 19 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met	Software Version 3.1.7 Run Date: 2/6/2018 7:51:15 PM Analysis Date: 2/7/2018 9:22:41 AM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.787	3.776	334037	55.010
PCB1016#1	5.367	5.347	123	0.465
PCB1016#2	6.367	6.387	55	0.210
PCB1016#3	6.657	6.680	2	0.013
PCB1016#4	7.133	7.130	2	0.023
PCB1016#5		7.630		0.000 BDL
PCB1260#1	11.157	11.150	571	1.394
PCB1260#2	11.807	11.797	222	0.555
PCB1260#3		12.650		0.000 BDL
PCB1260#4	13.387	13.390	4	0.008
PCB1260#5		14.040		0.000 BDL
Decachlorobiphenyl	16.650	16.640	418974	59.565

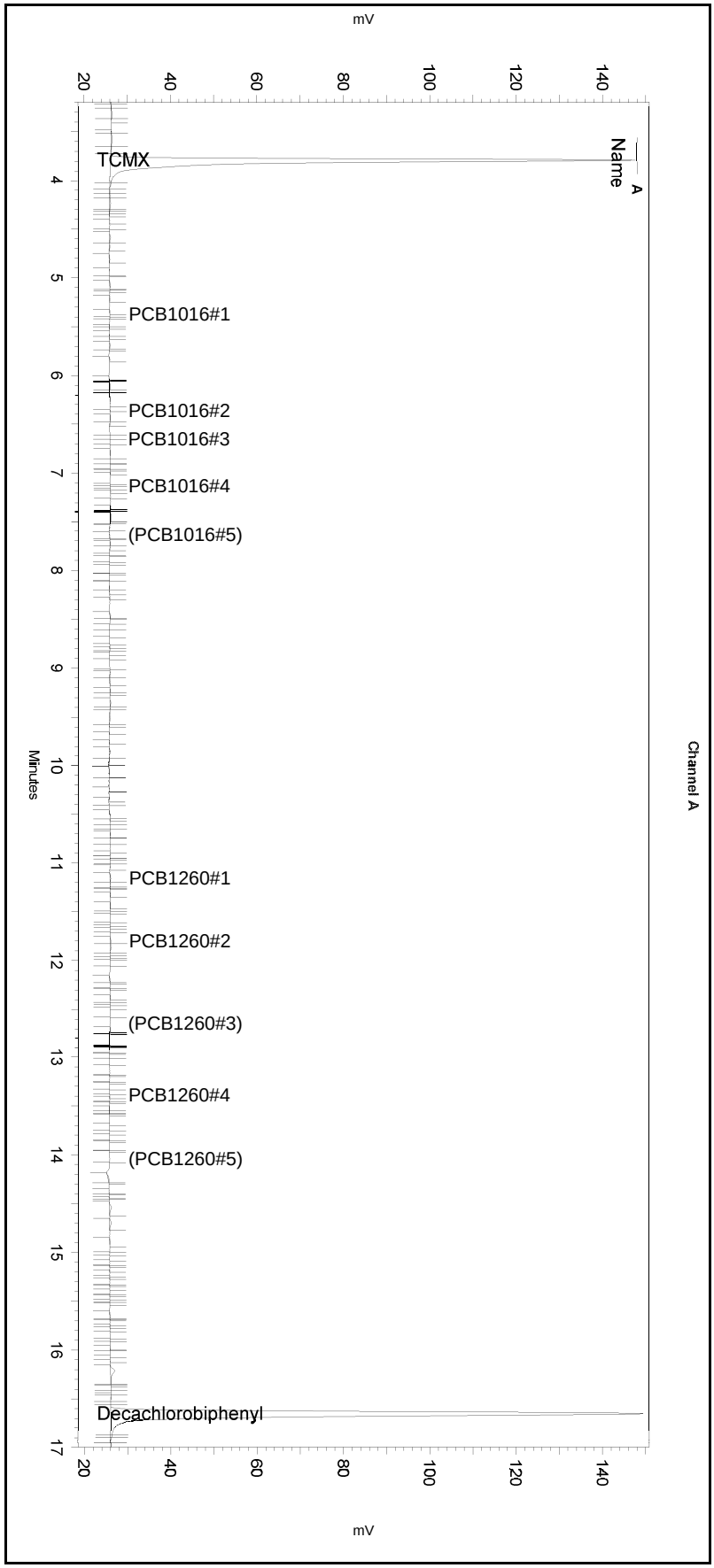
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.960	2.950	348318	55.999
PCB1016#1		4.350		0.000 BDL
PCB1016#2	5.257	5.237	2	7.074
PCB1016#3	5.457	5.437	2	10.170
PCB1016#4	5.983	5.960	3	0.027
PCB1016#5	6.657	6.657	2	0.011
PCB1260#1	9.867	9.850	482	1.482
PCB1260#2	10.467	10.470	250	15.676
PCB1260#3	11.390	11.397	9	0.034
PCB1260#4		12.053		0.000 BDL
PCB1260#5		12.723		0.000 BDL
Decachlorobiphenyl	15.673	15.673	475563	56.352

Sample Name: **mb,qc918947,256210**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\037-019**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\037.seq**
Instrument: GC06 (Offline) Vial: 19 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/6/2018 7:51:15 PM
Analysis Date: 2/7/2018 9:22:41 AM
Sample Amount: 1



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Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0

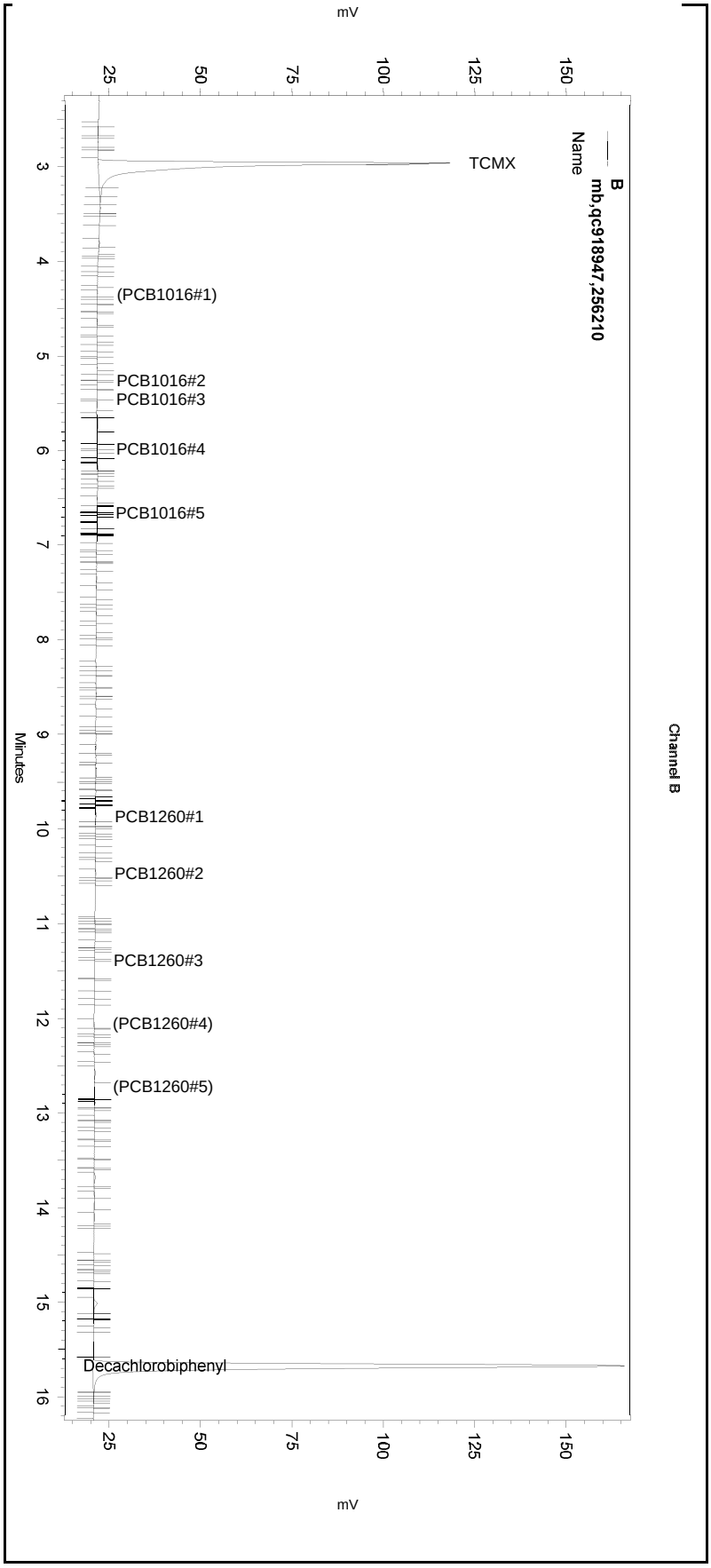
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\037-019

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Valley to Valley	4.368	16.361	0

Sample Name: **mb,qc918947,256210**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\037-019**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\037.seq**
Instrument: GC06 (Offline) Vial: 19 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/6/2018 7:51:15 PM
Analysis Date: 2/7/2018 9:22:41 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\037-019

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Valley to Valley	3.45	15.296	0

Sample Name: **mb,qc918947,256210**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\037-019**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\037.seq**
Instrument: GC06 Vial: 19 Operator: lims2k3\pest3
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/6/2018 7:51:15 PM
Analysis Date: 2/6/2018 8:15:13 PM
Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.787	3.776	334037	55.010
PCB1016#1	5.367	5.347	397	1.499
PCB1016#2	6.367	6.387	578	2.203
PCB1016#3	6.657	6.680	7	0.044
PCB1016#4	7.133	7.130	47	0.535
PCB1016#5		7.630		0.000 BDL
PCB1260#1	11.157	11.150	679	1.658
PCB1260#2	11.807	11.797	420	1.050
PCB1260#3		12.650		0.000 BDL
PCB1260#4	13.387	13.390	91	0.178
PCB1260#5		14.040		0.000 BDL
Decachlorobiphenyl	16.650	16.640	418974	59.565

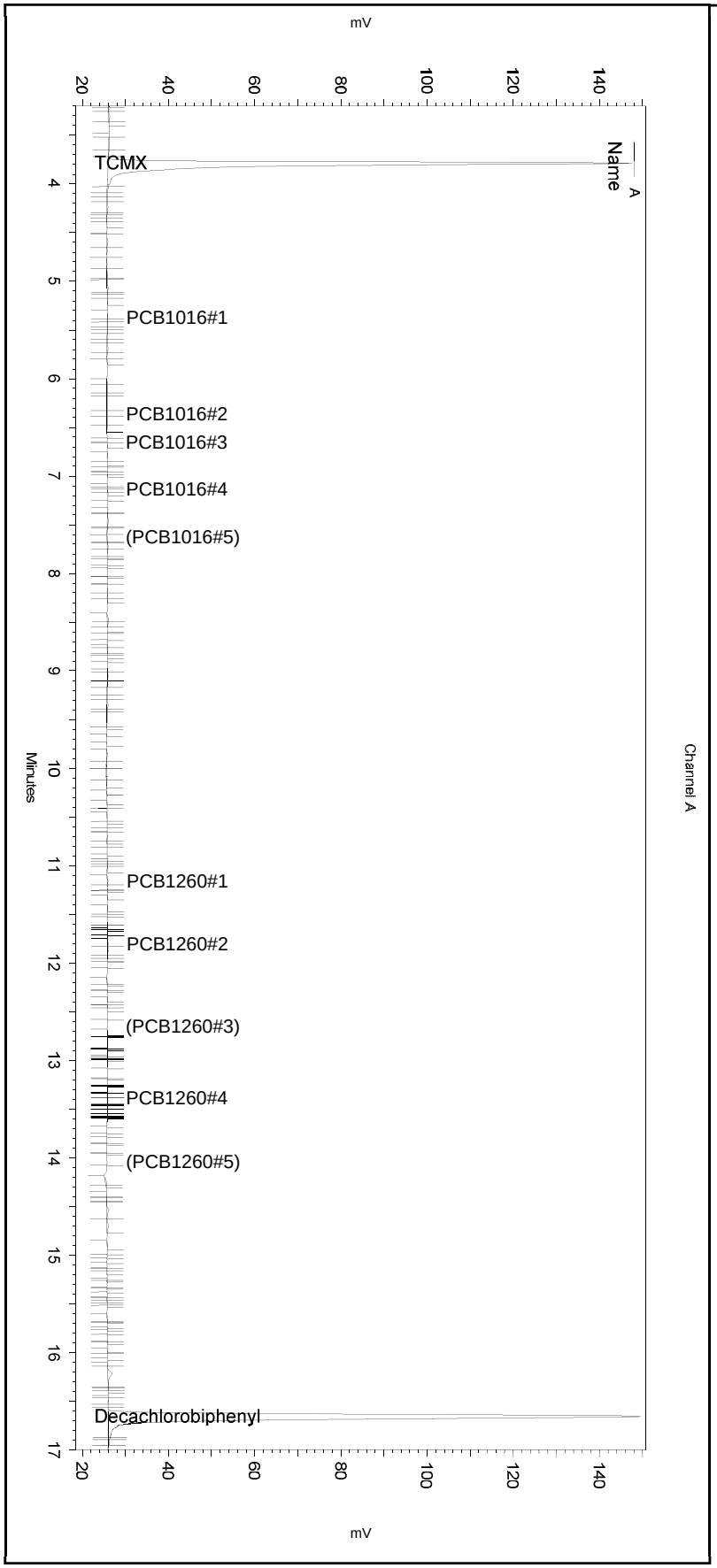
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.960	2.950	350717	56.385
PCB1016#1		4.350		0.000 BDL
PCB1016#2	5.257	5.237	29	7.171
PCB1016#3	5.457	5.437	5	10.182
PCB1016#4	5.983	5.960	9	0.082
PCB1016#5	6.657	6.657	5	0.027
PCB1260#1	9.867	9.850	482	1.482
PCB1260#2	10.467	10.470	506	16.295
PCB1260#3	11.390	11.397	14	0.053
PCB1260#4		12.053		0.000 BDL
PCB1260#5		12.723		0.000 BDL
Decachlorobiphenyl	15.673	15.673	475563	56.352

Sample Name: **mb,qc918947,256210**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\037-019**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\037.seq**
Instrument: GC06 Vial: 19 Operator: lims2k3\pest3
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/6/2018 7:51:15 PM
Analysis Date: 2/6/2018 8:15:13 PM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0

Manual Integration Fixes
==========

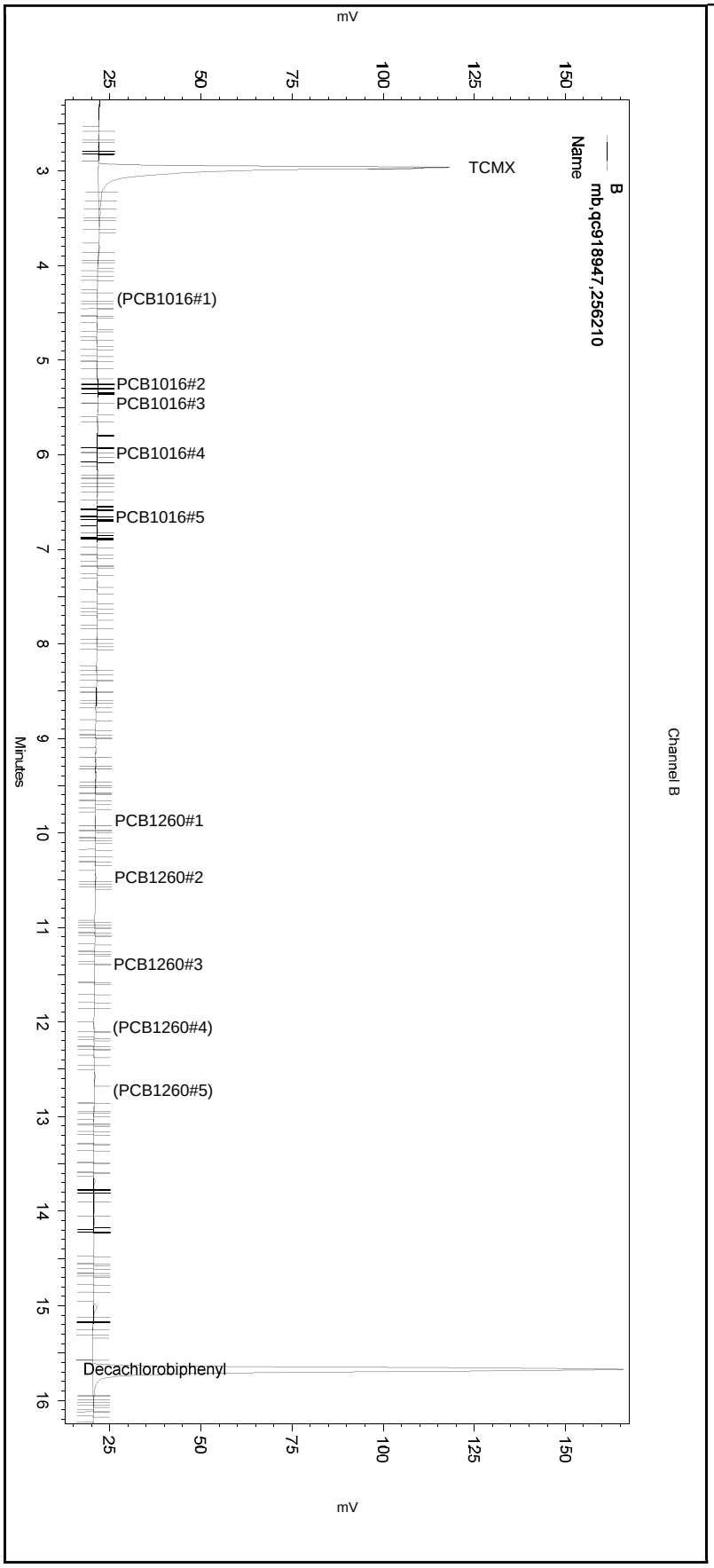
Data File: C:\Documents and Settings\All Users\Application Data\ChromatographySystem\Recovery Data\Instrument.10112\037-019_13F1.tmp

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sample Name: **mb,qc918947,256210**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\037-019**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\037.seq**
Instrument: GC06 Vial: 19 Operator: lims2k3\pest3
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/6/2018 7:51:15 PM
Analysis Date: 2/6/2018 8:15:13 PM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: C:\Documents and Settings\All Users\Application Data\ChromatographySystem\Recovery Data\Instrument.10112\037-019_13F1.tmp

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

ENTHALPY SPIKE USER REPORT FOR 296840 PCBS Water
EPA 8082A

Type : BS
Inst : GC06
Seqnum : 208053862020.2
File : 037_020
IDF : 1.0
Lab ID : QC918948
Matrix : Water
Batch : 256210
Time : 06-FEB-2018 20:19
Cal : 208052389001
Units : ug/L

Type : BSD
Inst : GC06
Seqnum : 208053862021.2
File : 037_021
IDF : 1.0
Lab ID : QC918949
Matrix : Water
Batch : 256210
Time : 06-FEB-2018 20:47
Cal : 208052389001

BS: 1000.00 mL --> 10.0 ml = 0.01 ml/ml PDF
BSD: 1000.00 mL --> 10.0 ml = 0.01 ml/ml PDF

Analyte	Spiked	BS Raw	BS Result	Ch	%Rec	BSD Raw	BSD Result	Ch	%Rec	Limits	RPD	Lim	Flags
Aroclor-1016	2.500	297.7	2.977	A	119	280.9	2.809	A	112	46-129	6	30	u
Aroclor-1016 Peak # 1		265.8	2.658	A		264.0	2.640	A					
Aroclor-1016 Peak # 2		322.9	3.229	A		307.3	3.073	A					
Aroclor-1016 Peak # 3		285.5	2.855	A		272.1	2.721	A					
Aroclor-1016 Peak # 4		289.1	2.891	A		254.9	2.549	A					
Aroclor-1016 Peak # 5		325.1	3.251	A		306.5	3.065	A					
Aroclor-1260	2.500	331.5	3.315	A	133	322.3	3.223	A	129	45-134	3	30	u
Aroclor-1260 Peak # 1		296.7	2.967	A		288.1	2.881	A					
Aroclor-1260 Peak # 2		279.6	2.796	A		274.1	2.741	A					
Aroclor-1260 Peak # 3		362.8	3.628	A		352.1	3.521	A					
Aroclor-1260 Peak # 4		360.1	3.601	A		352.1	3.521	A					
Aroclor-1260 Peak # 5		358.4	3.584	A		345.3	3.453	A					
TCMX	0.5000	44.19	0.4419	A	88	43.51	0.4351	A	87	37-122			u
Decachlorobiphenyl	0.5000	54.65	0.5465	A	109	54.76	0.5476	A	110	22-139			u

JC1 02/07/18 : Corrected automatically drawn baseline. [general version]

Analyst: JC1 Date: 02/07/18 Reviewer: EAH Date: 02/08/18

u=use

Sample Name: **bs,qc918948,256210** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\037-020** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\037.seq** Instrument: GC06 (Offline) Vial: 20 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met	Software Version 3.1.7 Run Date: 2/6/2018 8:19:16 PM Analysis Date: 2/7/2018 9:23:48 AM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.783	3.776	268334	44.190
PCB1016#1	5.350	5.347	70375	265.791
PCB1016#2	6.387	6.387	84708	322.918
PCB1016#3	6.683	6.680	45327	285.515
PCB1016#4	7.133	7.130	25417	289.148
PCB1016#5	7.630	7.630	38467	325.095
PCB1260#1	11.153	11.150	121505	296.701
PCB1260#2	11.800	11.797	111793	279.562
PCB1260#3	12.653	12.650	87177	362.829
PCB1260#4	13.397	13.390	184384	360.058
PCB1260#5	14.043	14.040	95499	358.430
Decachlorobiphenyl	16.647	16.640	386866	54.653

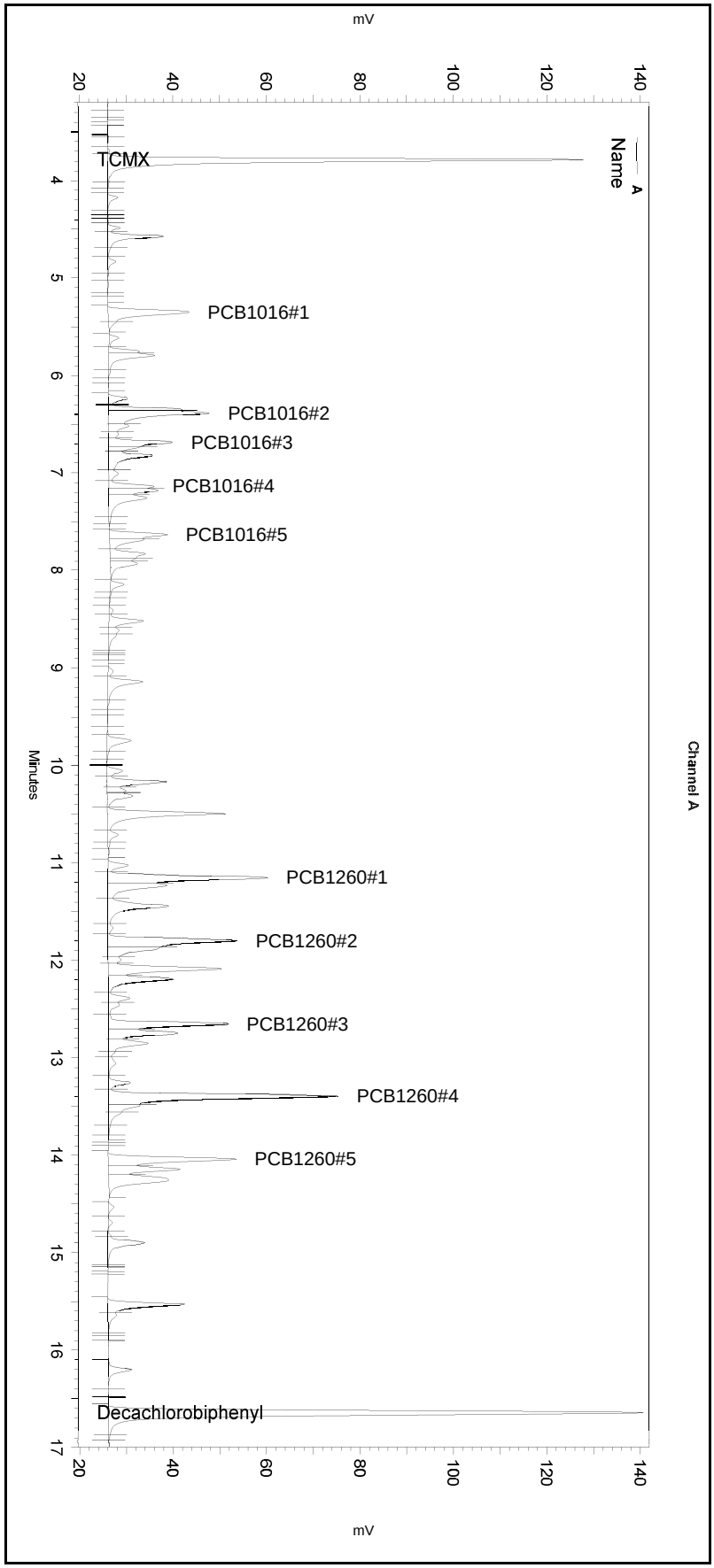
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.957	2.950	286214	46.015
PCB1016#1	4.343	4.350	83685	278.452
PCB1016#2	5.237	5.237	107818	336.215
PCB1016#3	5.440	5.437	69268	303.948
PCB1016#4	5.960	5.960	31699	287.276
PCB1016#5	6.657	6.657	51614	282.763
PCB1260#1	9.847	9.850	94865	291.673
PCB1260#2	10.470	10.470	98754	253.785
PCB1260#3	11.397	11.397	92312	348.054
PCB1260#4	12.053	12.053	156760	344.800
PCB1260#5	12.720	12.723	100935	350.135
Decachlorobiphenyl	15.670	15.673	432181	51.212

Sample Name: **bs,qc918948,256210**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\037-020**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\037.seq**
Instrument: GC06 (Offline) Vial: 20 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/6/2018 8:19:16 PM
Analysis Date: 2/7/2018 9:23:48 AM
Sample Amount: 1



---< General Method Parameters >---

No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0

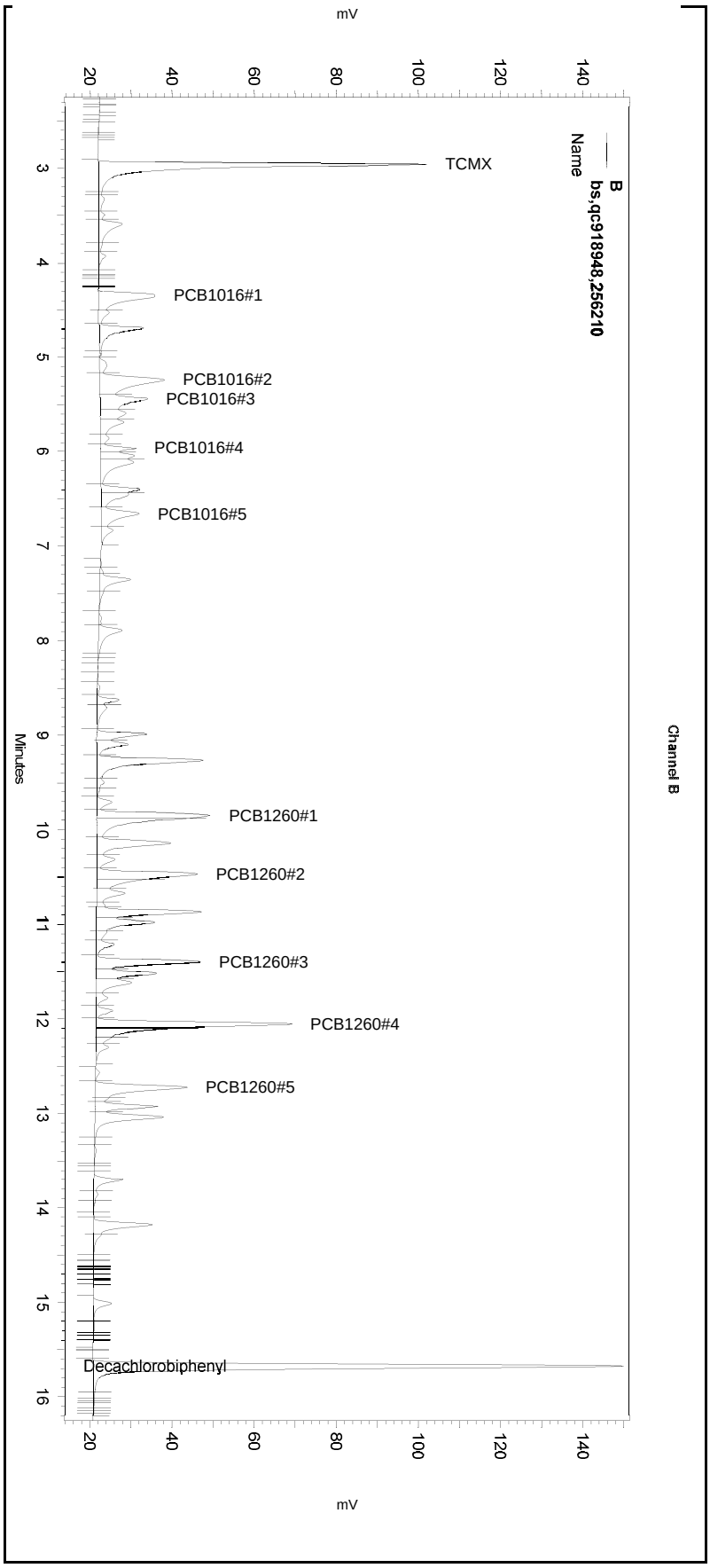
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\037-020

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	5.553	0	0
Yes	Reset Baseline	8.089	0	0
Yes	Reset Baseline	10.939	0	0
Yes	Reset Baseline	14.432	0	0

Sample Name: **bs,qc918948,256210**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\037-020**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\037.seq**
Instrument: GC06 (Offline) Vial: 20 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/6/2018 8:19:16 PM
Analysis Date: 2/7/2018 9:23:48 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\037-020

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	6.987	0	0
Yes	Split Peak	9.876	0	0
Yes	Split Peak	10.519	0	0
Yes	Split Peak	12.093	0	0
Yes	Reset Baseline	12.473	0	0

Sample Name: **bs,qc918948,256210**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\037-020**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\037.seq**
Instrument: GC06 Vial: 20 Operator: lims2k3\pest3
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/6/2018 8:19:16 PM
Analysis Date: 2/6/2018 8:43:13 PM
Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.783	3.776	268334	44.190
PCB1016#1	5.350	5.347	71799	271.169
PCB1016#2	6.387	6.387	86408	329.398
PCB1016#3	6.683	6.680	46799	294.787
PCB1016#4	7.133	7.130	26933	306.395
PCB1016#5	7.630	7.630	41014	346.620
PCB1260#1	11.153	11.150	122675	299.558
PCB1260#2	11.800	11.797	112830	282.155
PCB1260#3	12.653	12.650	87867	365.701
PCB1260#4	13.397	13.390	184640	360.558
PCB1260#5	14.043	14.040	95905	359.954
Decachlorobiphenyl	16.647	16.640	386866	54.653

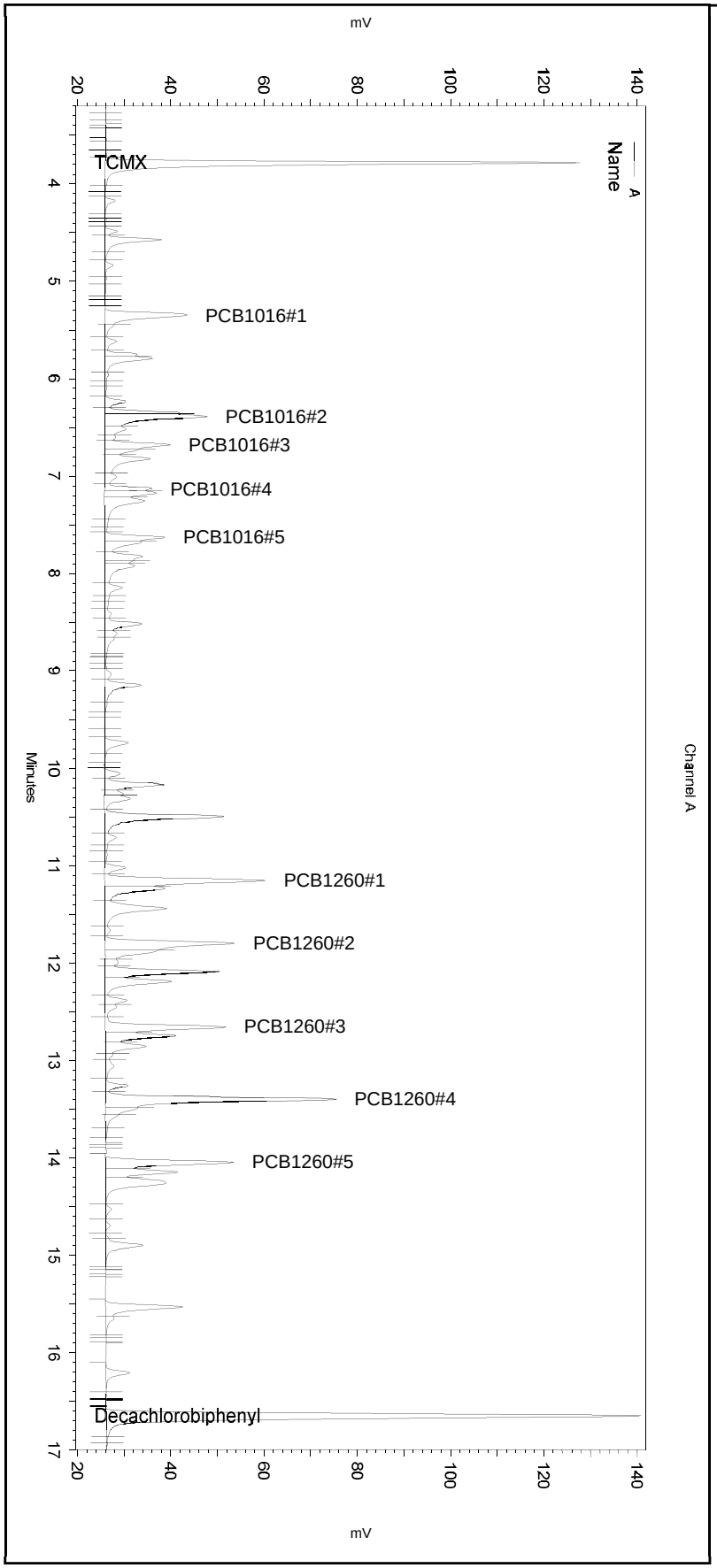
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.957	2.950	286561	46.070
PCB1016#1	4.343	4.350	86278	287.080
PCB1016#2	5.237	5.237	115024	355.124
PCB1016#3	5.440	5.437	75207	329.137
PCB1016#4	5.960	5.960	36479	330.595
PCB1016#5	6.657	6.657	64597	353.889
PCB1260#1	9.847	9.850	174921	537.814
PCB1260#2	10.470	10.470	141438	356.963
PCB1260#3	11.397	11.397	95190	358.905
PCB1260#4	12.053	12.053	216139	475.407
PCB1260#5	12.720	12.723	103815	360.126
Decachlorobiphenyl	15.670	15.673	432181	51.212

Sample Name: **bs,qc918948,256210**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\037-020**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\037.seq**
Instrument: GC06 Vial: 20 Operator: lims2k3\pest3
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/6/2018 8:19:16 PM
Analysis Date: 2/6/2018 8:43:13 PM
Sample Amount: 1



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Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0

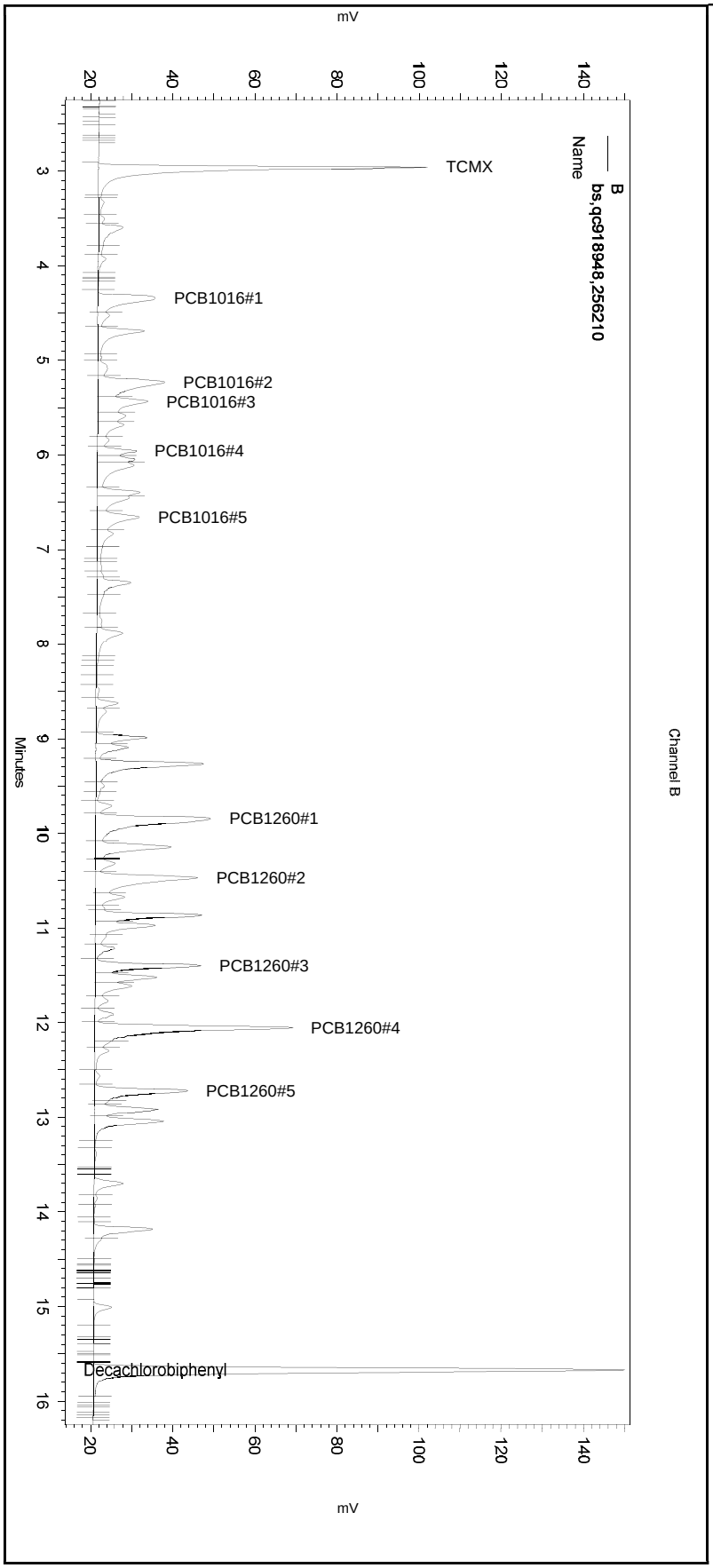
Manual Integration Fixes
==========

Data File: C:\Documents and Settings\All Users\Application Data\ChromatographySystem\Recovery Data\Instrument.10112\037-020_13F2.tmp

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Sample Name: **bs,qc918948,256210**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\037-020**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\037.seq**
Instrument: GC06 Vial: 20 Operator: lims2k3\pest3
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/6/2018 8:19:16 PM
Analysis Date: 2/6/2018 8:43:13 PM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: C:\Documents and Settings\All Users\Application Data\ChromatographySystem\Recovery Data\Instrument.10112\037-020_13F2.tmp

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Sample Name: **bsd,qc918949,256210** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\037-021** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\037.seq** Instrument: GC06 (Offline) Vial: 21 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met	Software Version 3.1.7 Run Date: 2/6/2018 8:47:16 PM Analysis Date: 2/7/2018 9:25:22 AM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.770	3.776	264180	43.506
PCB1016#1	5.333	5.347	69891	263.963
PCB1016#2	6.373	6.387	80615	307.315
PCB1016#3	6.667	6.680	43197	272.098
PCB1016#4	7.117	7.130	22406	254.895
PCB1016#5	7.617	7.630	36261	306.452
PCB1260#1	11.137	11.150	117964	288.055
PCB1260#2	11.783	11.797	109628	274.148
PCB1260#3	12.640	12.650	84588	352.054
PCB1260#4	13.380	13.390	180291	352.065
PCB1260#5	14.030	14.040	91995	345.278
Decachlorobiphenyl	16.630	16.640	387557	54.759

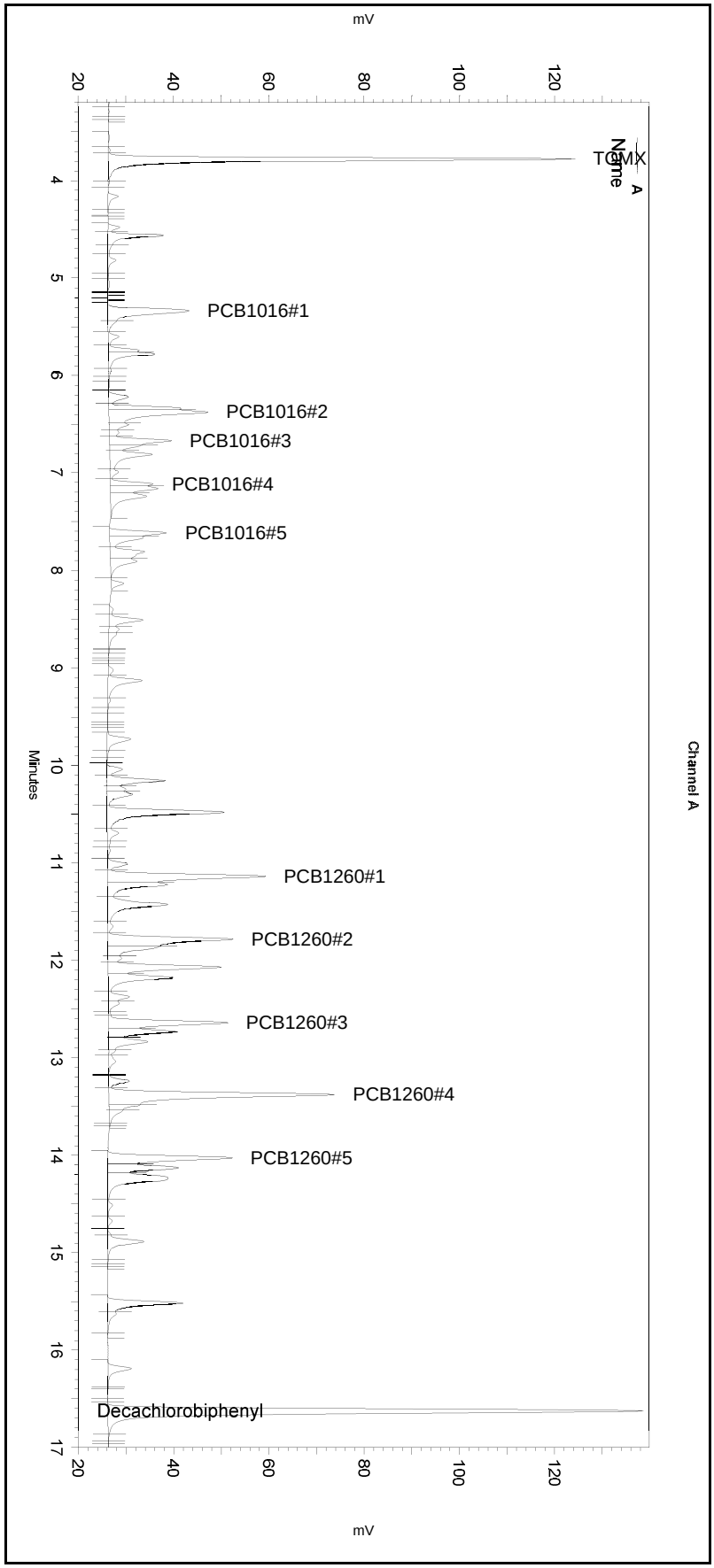
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.943	2.950	277222	44.569
PCB1016#1	4.337	4.350	80783	268.796
PCB1016#2	5.223	5.237	102238	321.370
PCB1016#3	5.427	5.437	67363	295.869
PCB1016#4	5.947	5.960	31369	284.285
PCB1016#5	6.640	6.657	51601	282.691
PCB1260#1	9.833	9.850	97121	298.610
PCB1260#2	10.453	10.470	94833	244.307
PCB1260#3	11.380	11.397	89617	337.892
PCB1260#4	12.037	12.053	152366	335.135
PCB1260#5	12.703	12.723	96600	335.097
Decachlorobiphenyl	15.653	15.673	426546	50.544

Sample Name: **bsd,qc918949,256210**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\037-021**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\037.seq**
Instrument: GC06 (Offline) Vial: 21 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/6/2018 8:47:16 PM
Analysis Date: 2/7/2018 9:25:22 AM
Sample Amount: 1



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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0

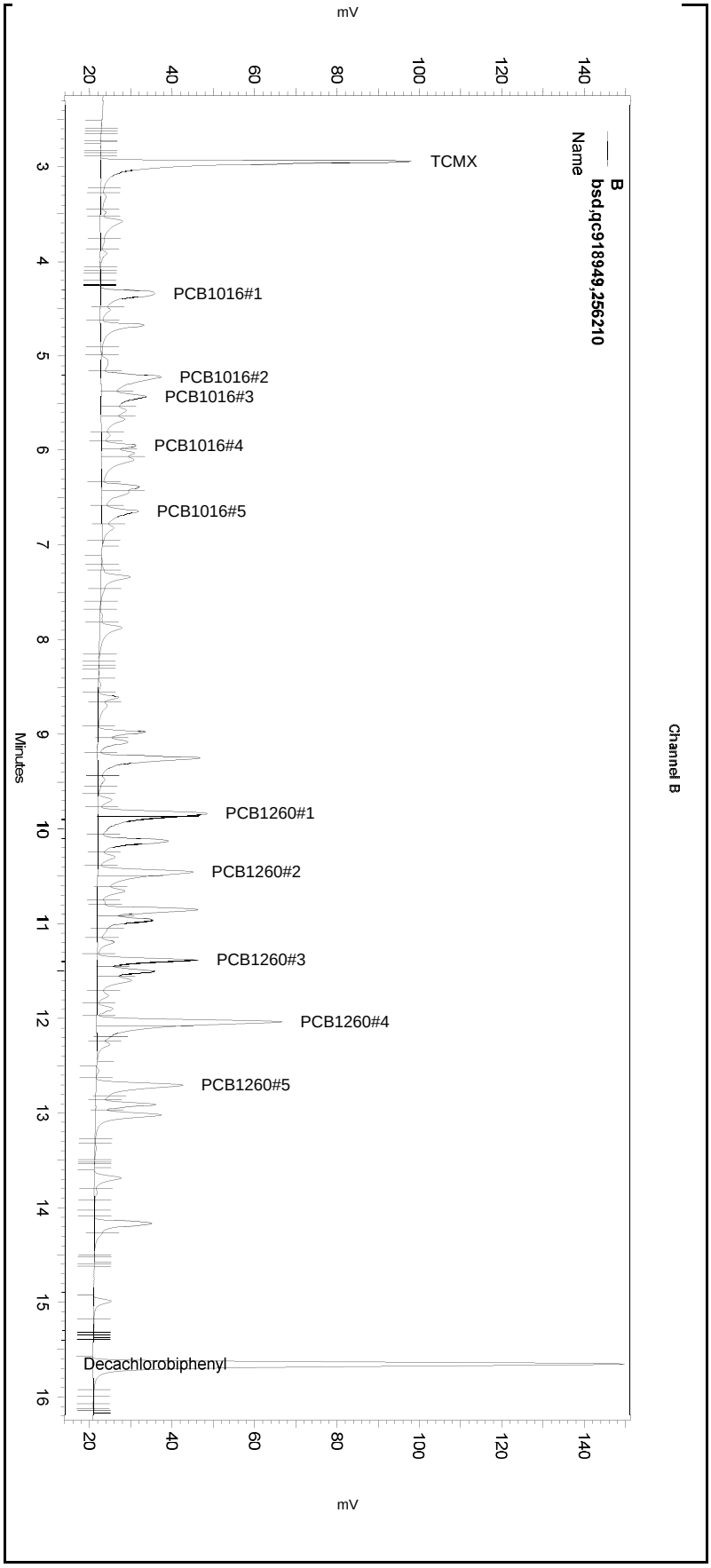
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\037-021

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	7.462	0	0
Yes	Reset Baseline	8.203	0	0
Yes	Reset Baseline	13.716	0	0

Sample Name: **bsd,qc918949,256210**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\037-021**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\037.seq**
Instrument: GC06 (Offline) Vial: 21 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/6/2018 8:47:16 PM
Analysis Date: 2/7/2018 9:25:22 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\037-021

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	7.014	0	0
Yes	Split Peak	9.866	0	0
Yes	Reassign Peak	9.892	9.815	0
Yes	Split Peak	10.506	0	0
Yes	Split Peak	12.079	0	0
Yes	Reset Baseline	12.45	0	0

Sample Name: **bsd,qc918949,256210**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\037-021**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\037.seq**
Instrument: GC06 Vial: 21 Operator: lims2k3\pest3
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/6/2018 8:47:16 PM
Analysis Date: 2/6/2018 9:11:14 PM
Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.770	3.776	264180	43.506
PCB1016#1	5.333	5.347	70124	264.843
PCB1016#2	6.373	6.387	82740	315.416
PCB1016#3	6.667	6.680	45400	285.975
PCB1016#4	7.117	7.130	25094	285.474
PCB1016#5	7.617	7.630	38887	328.645
PCB1260#1	11.137	11.150	118792	290.077
PCB1260#2	11.783	11.797	111137	277.921
PCB1260#3	12.640	12.650	86695	360.823
PCB1260#4	13.380	13.390	183929	359.170
PCB1260#5	14.030	14.040	92490	347.136
Decachlorobiphenyl	16.630	16.640	387557	54.759

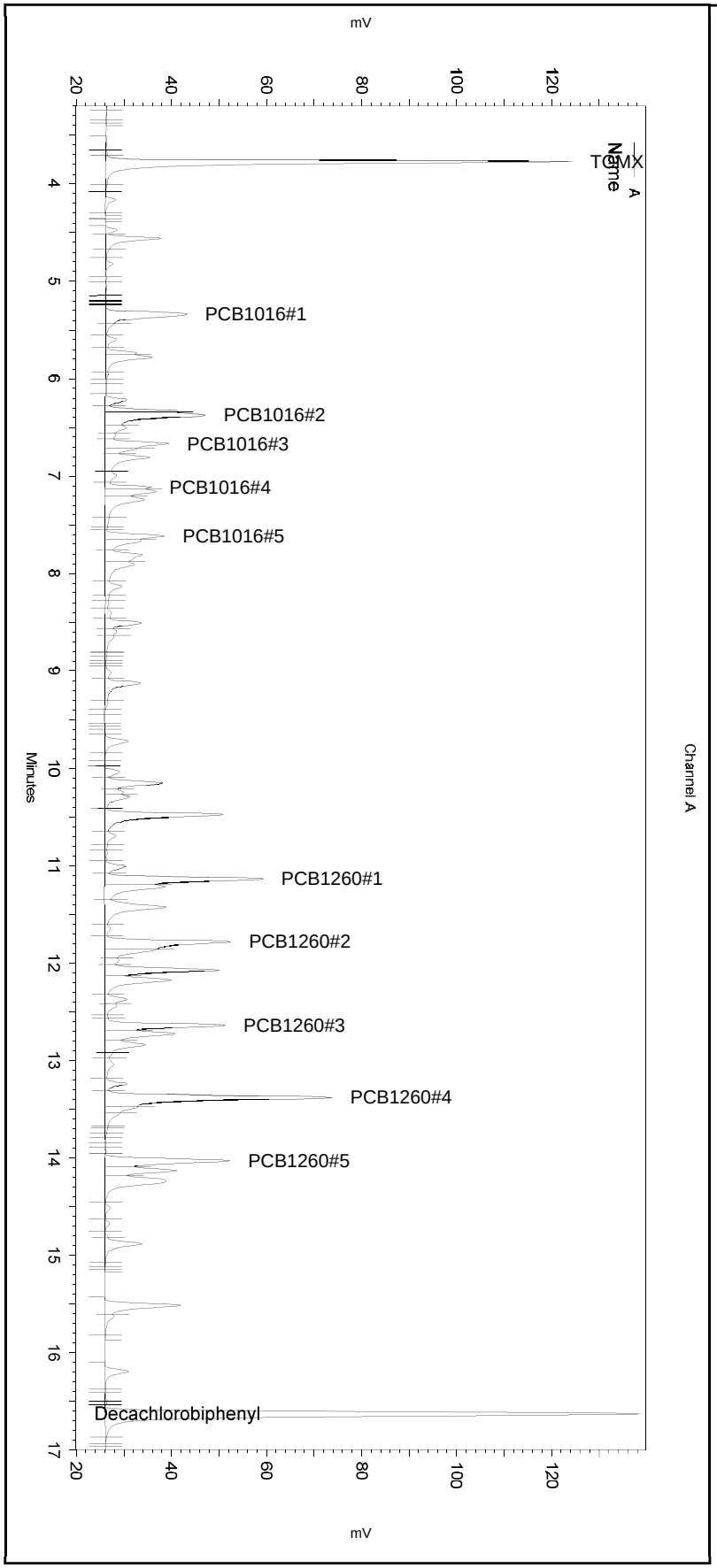
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.943	2.950	277222	44.569
PCB1016#1	4.337	4.350	81274	270.429
PCB1016#2	5.223	5.237	106487	332.690
PCB1016#3	5.427	5.437	71116	311.786
PCB1016#4	5.947	5.960	34606	313.621
PCB1016#5	6.640	6.657	60867	333.454
PCB1260#1	9.833	9.850	168199	517.147
PCB1260#2	10.453	10.470	135017	341.442
PCB1260#3	11.380	11.397	92404	348.401
PCB1260#4	12.037	12.053	212973	468.443
PCB1260#5	12.703	12.723	99752	346.031
Decachlorobiphenyl	15.653	15.673	426546	50.544

Sample Name: **bsd,qc918949,256210**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\037-021**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\037.seq**
Instrument: GC06 Vial: 21 Operator: lims2k3\pest3
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/6/2018 8:47:16 PM
Analysis Date: 2/6/2018 9:11:14 PM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0

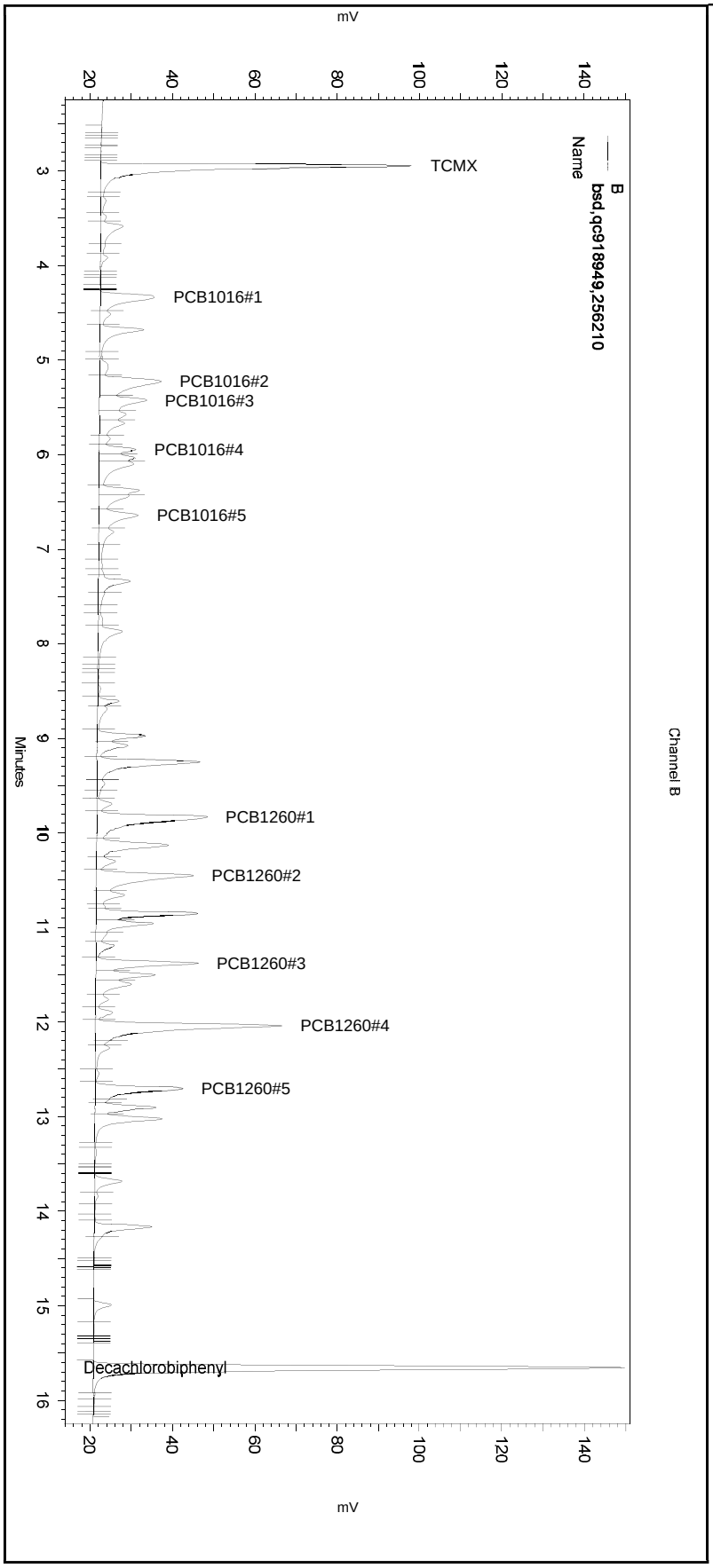
Manual Integration Fixes
==========

Data File: C:\Documents and Settings\All Users\Application Data\ChromatographySystem\Recovery Data\Instrument.10112\037-021_13F3.tmp

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Sample Name: **bsd,qc918949,256210**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\037-021**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\037.seq**
Instrument: GC06 Vial: 21 Operator: lims2k3\pest3
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/6/2018 8:47:16 PM
Analysis Date: 2/6/2018 9:11:14 PM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

---< B >----------

No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: C:\Documents and Settings\All Users\Application Data\ChromatographySystem\Recovery Data\Instrument.10112\037-021_13F3.tmp

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Initial Calibration Raw Data

ENTHALPY INITIAL CALIBRATION FOR 296840 PCBS Water: EPA 8082A

Inst : GC06
Calnum : 208052389001
Units : pg/uL

Name : ar-1660-036ical
Date : 05-FEB-2018 17:04

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	036_010	208052389010	PCB100_20	05-FEB-2018 17:04	S35531 (10X)
L2	036_011	208052389011	PCB25_5	05-FEB-2018 17:32	S35530
L3	036_012	208052389012	PCB100_20	05-FEB-2018 18:00	S35531
L4	036_013	208052389013	PCB250_50	05-FEB-2018 18:28	S35532
L5	036_014	208052389014	PCB500_100	05-FEB-2018 18:56	S35533
L6	036_015	208052389015	PCB750_150	05-FEB-2018 19:24	S35534
L7	036_016	208052389016	PCB1000_200	05-FEB-2018 19:52	S35535

Analyte	Ch	L1	L2	L3	L4	L5	L6	L7	Type	X	a0	a1	a2	Avg	r^2 %RSD	MnR^2	MxRSD	Flg
Aroclor-1016 Peak # 1	A	282.90	291.08	289.43	265.67	243.03	229.75	251.58	AVRG	R		0.00378		264.78	9	.99	20	
Aroclor-1016 Peak # 2	A	210.20	251.00	254.55	269.98	263.84	267.94	318.73	AVRG	R		0.00381		262.32	12	.99	20	
Aroclor-1016 Peak # 3	A	113.80	159.36	153.85	182.74	183.92	150.30	167.32	AVRG	R		0.00630		158.76	15	.99	20	
Aroclor-1016 Peak # 4	A	84.400	92.960	90.850	87.316	83.868	81.732	94.195	AVRG	R		0.01138		87.903	6	.99	20	
Aroclor-1016 Peak # 5	A	101.60	113.44	120.12	122.02	119.84	116.58	134.68	AVRG	R		0.00845		118.33	8	.99	20	
Aroclor-1260 Peak # 1	A	399.30	429.04	443.94	404.82	393.37	372.70	423.47	AVRG	R		0.00244		409.52	6	.99	20	
Aroclor-1260 Peak # 2	A	356.50	392.56	435.74	380.26	404.48	395.41	434.26	AVRG	R		0.00250		399.89	7	.99	20	
Aroclor-1260 Peak # 3	A	214.90	259.24	266.34	229.84	240.17	220.97	250.42	AVRG	R		0.00416		240.27	8	.99	20	
Aroclor-1260 Peak # 4	A	491.70	534.48	542.12	510.65	487.88	480.28	537.55	AVRG	R		0.00195		512.10	5	.99	20	
Aroclor-1260 Peak # 5	A	238.90	267.20	273.19	266.00	263.18	261.05	295.54	AVRG	R		0.00375		266.44	6	.99	20	
TCMX	A	6751.5	6601.6	6370.6	5876.6	5538.6	5283.4	6083.7	AVRG	R		1.65E-4		6072.3	9	.99	20	
Decachlorobiphenyl	A	10557	10577	9093.1	7760.6	6861.5	6362.9	6838.2	LINR	R	-4.5323	1.53E-4		8292.8	0.996	.99	20	
Aroclor-1016 Peak # 1	B	285.30	311.44	314.11	302.82	290.80	280.69	318.60	AVRG	R		0.00333		300.54	5	.99	20	
Aroclor-1016 Peak # 2	B	66.500	116.36	275.59	314.24	355.51	377.74	429.59	QUAD	A	-1949.5	274.789	0.153745	276.50	0.999	.99	20	
Aroclor-1016 Peak # 3	B	105.70	170.88	203.32	231.67	228.89	224.18	238.34	LINR	R	10.1612	0.00424		200.43	0.999	.99	20	
Aroclor-1016 Peak # 4	B	115.90	108.12	119.12	116.10	101.30	101.51	110.35	AVRG	R		0.00906		110.34	6	.99	20	
Aroclor-1016 Peak # 5	B	128.30	205.64	187.52	191.65	176.76	180.78	207.09	AVRG	R		0.00548		182.53	15	.99	20	
Aroclor-1260 Peak # 1	B	238.90	336.24	369.81	343.21	336.33	328.14	324.08	AVRG	R		0.00307		325.24	13	.99	20	
Aroclor-1260 Peak # 2	B	212.60	273.44	388.92	351.97	391.43	400.69	414.36	LINR	R	15.0715	0.00242		347.63	0.999	.99	20	
Aroclor-1260 Peak # 3	B	245.00	264.60	287.09	246.66	265.76	258.26	289.20	AVRG	R		0.00377		265.22	7	.99	20	
Aroclor-1260 Peak # 4	B	388.10	447.56	484.31	387.15	480.64	478.11	516.62	AVRG	R		0.00220		454.64	11	.99	20	
Aroclor-1260 Peak # 5	B	227.10	268.56	289.09	287.70	291.76	299.93	353.79	AVRG	R		0.00347		288.27	13	.99	20	
TCMX	B	5615.5	5707.4	6013.8	6212.4	6378.4	6273.2	7339.9	AVRG	R		1.61E-4		6220.1	9	.99	20	
Decachlorobiphenyl	B	9744.5	10065	9051.9	8006.1	7473.2	7071.8	7661.3	AVRG	R		1.18E-4		8439.1	14	.99	20	

Spiked Amounts / Drifts	Ch	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D	L6	%D	L7	%D
Aroclor-1016 Peak # 1	A	10.000	7	25.000	10	100.00	9	250.00	0	500.00	-8	750.00	-13	1000.0	-5
Aroclor-1016 Peak # 2	A	10.000	-20	25.000	-4	100.00	-3	250.00	3	500.00	1	750.00	2	1000.0	**22**
Aroclor-1016 Peak # 3	A	10.000	**-28**	25.000	0	100.00	-3	250.00	15	500.00	16	750.00	-5	1000.0	5
Aroclor-1016 Peak # 4	A	10.000	-4	25.000	6	100.00	3	250.00	-1	500.00	-5	750.00	-7	1000.0	7
Aroclor-1016 Peak # 5	A	10.000	-14	25.000	-4	100.00	2	250.00	3	500.00	1	750.00	-1	1000.0	14
Aroclor-1260 Peak # 1	A	10.000	-2	25.000	5	100.00	8	250.00	-1	500.00	-4	750.00	-9	1000.0	3
Aroclor-1260 Peak # 2	A	10.000	-11	25.000	-2	100.00	9	250.00	-5	500.00	1	750.00	-1	1000.0	9
Aroclor-1260 Peak # 3	A	10.000	-11	25.000	8	100.00	11	250.00	-4	500.00	0	750.00	-8	1000.0	4
Aroclor-1260 Peak # 4	A	10.000	-4	25.000	4	100.00	6	250.00	0	500.00	-5	750.00	-6	1000.0	5
Aroclor-1260 Peak # 5	A	10.000	-10	25.000	0	100.00	3	250.00	0	500.00	-1	750.00	-2	1000.0	11
TCMX	A	2.0000	11	5.0000	9	20.000	5	50.000	-3	100.00	-9	150.00	-13	200.00	0
Decachlorobiphenyl	A	2.0000	**-165**	5.0000	**-29**	20.000	16	50.000	10	100.00	0	150.00	-6	200.00	2
Aroclor-1016 Peak # 1	B	10.000	-5	25.000	4	100.00	5	250.00	1	500.00	-3	750.00	-7	1000.0	6
Aroclor-1016 Peak # 2	B	10.000	-5	25.000	**-30**	100.00	2	250.00	3	500.00	2	750.00	-2	1000.0	1
Aroclor-1016 Peak # 3	B	10.000	**46**	25.000	13	100.00	-4	250.00	2	500.00	-1	750.00	-4	1000.0	2
Aroclor-1016 Peak # 4	B	10.000	5	25.000	-2	100.00	8	250.00	5	500.00	-8	750.00	-8	1000.0	0
Aroclor-1016 Peak # 5	B	10.000	**-30**	25.000	13	100.00	3	250.00	5	500.00	-3	750.00	-1	1000.0	13
Aroclor-1260 Peak # 1	B	10.000	**-27**	25.000	3	100.00	14	250.00	6	500.00	3	750.00	1	1000.0	0
Aroclor-1260 Peak # 2	B	10.000	**102**	25.000	**26**	100.00	9	250.00	-9	500.00	-2	750.00	-1	1000.0	2
Aroclor-1260 Peak # 3	B	10.000	-8	25.000	0	100.00	8	250.00	-7	500.00	0	750.00	-3	1000.0	9
Aroclor-1260 Peak # 4	B	10.000	-15	25.000	-2	100.00	7	250.00	-15	500.00	6	750.00	5	1000.0	14
Aroclor-1260 Peak # 5	B	10.000	**-21**	25.000	-7	100.00	0	250.00	0	500.00	1	750.00	4	1000.0	**23**
TCMX	B	2.0000	-10	5.0000	-8	20.000	-3	50.000	0	100.00	3	150.00	1	200.00	18
Decachlorobiphenyl	B	2.0000	15	5.0000	19	20.000	7	50.000	-5	100.00	-11	150.00	-16	200.00	-9

JC1 02/06/18 : Corrected automatically drawn baseline in all levels.

Analyst: JC1 Date: 02/06/18 Reviewer: EAH Date: 02/06/18

X=A: Instrument response = a0 + amount * a1 + amount^2 * a2 (invert equation before quantitating); X=R: Instrument amount = a0 + response * a1 + response^2 * a2; AVRG=Average response factor; LINR=Linear regression; QUAD=Quadratic regression

ENTHALPY 2ND SOURCE CALIBRATION SUMMARY FOR 296840 PCBS Water
EPA 8082A

Inst : GC06 Name : ar-1660-036ical
Calnum : 208052389001 Cal Date : 05-FEB-2018

ICV 208052389018 (036_018 05-FEB-2018) stds: S35527

Analyte	Ch	Spiked	Quant	Units	%D	Max	Flags
Aroclor-1016	A	250.0	250.6	pg/uL	0	20	
Aroclor-1260	A	250.0	256.5	pg/uL	3	20	
Aroclor-1016	B	250.0	268.0	pg/uL	7	20	
Aroclor-1260	B	250.0	258.9	pg/uL	4	20	

Analyst: JC1 Date: 02/06/18 Reviewer: EAH Date: 02/06/18

Sample Name: **ical,s35531,pcb100_20,10x** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-010** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq** Instrument: GC06 (Offline) Vial: 12 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met	Software Version 3.1.7 Run Date: 2/5/2018 5:04:16 PM Analysis Date: 2/6/2018 9:14:54 AM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.773	3.776	13503	2.000 CAL
PCB1016#1	5.340	5.347	2829	10.000 CAL
PCB1016#2	6.380	6.387	2102	10.000 CAL
PCB1016#3	6.670	6.680	1138	10.000 CAL
PCB1016#4	7.120	7.130	844	10.000 CAL
PCB1016#5	7.623	7.630	1016	10.000 CAL
PCB1260#1	11.150	11.150	3993	10.000 CAL
PCB1260#2	11.797	11.797	3565	10.000 CAL
PCB1260#3	12.650	12.650	2149	10.000 CAL
PCB1260#4	13.393	13.390	4917	10.000 CAL
PCB1260#5	14.040	14.040	2389	10.000 CAL
Decachlorobiphenyl	16.647	16.640	21113	2.000 CAL

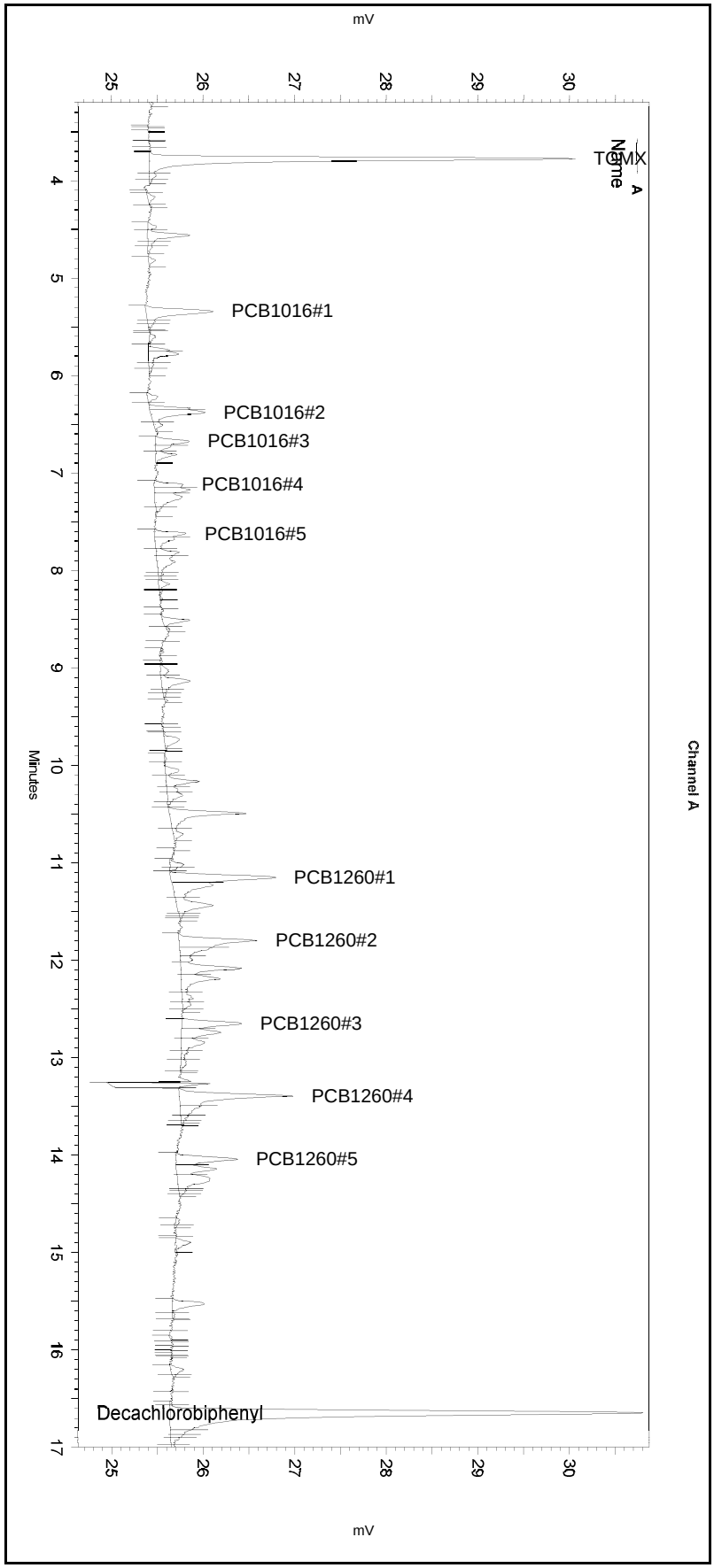
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.950	2.950	11231	2.000 CAL
PCB1016#1	4.343	4.350	2853	10.000 CAL
PCB1016#2	5.240	5.237	665	10.000 CAL
PCB1016#3	5.440	5.437	1057	10.000 CAL
PCB1016#4	5.967	5.960	1159	10.000 CAL
PCB1016#5	6.657	6.657	1283	10.000 CAL
PCB1260#1	9.867	9.850	2389	10.000 CAL
PCB1260#2	10.483	10.470	2126	10.000 CAL
PCB1260#3	11.397	11.397	2450	10.000 CAL
PCB1260#4	12.057	12.053	3881	10.000 CAL
PCB1260#5	12.720	12.723	2271	10.000 CAL
Decachlorobiphenyl	15.673	15.673	19489	2.000 CAL

Sample Name: **ical,s35531,pcb100_20,10x**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-010**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: 12 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 5:04:16 PM
Analysis Date: 2/6/2018 9:14:54 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0

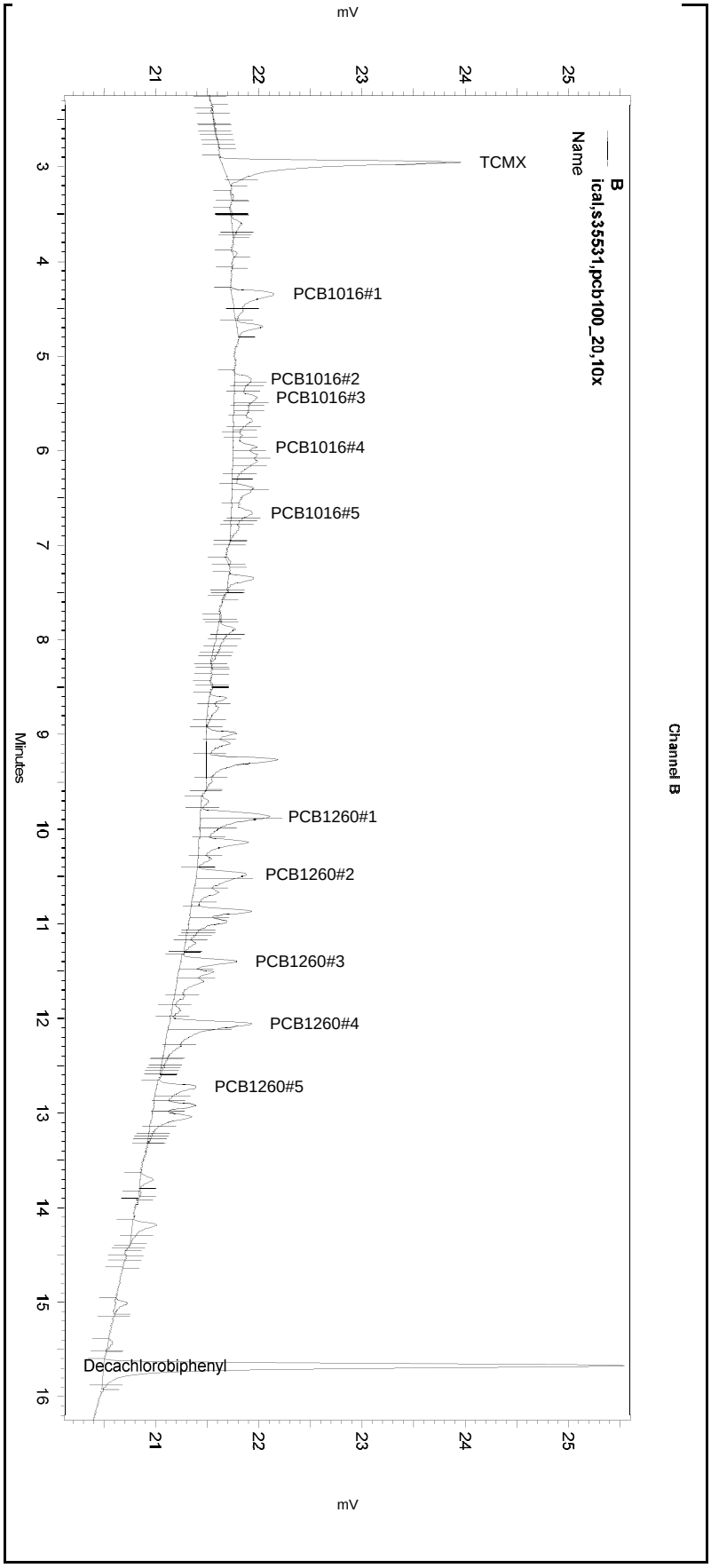
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-010

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	4.037	0	0
Yes	Manual Baseline	11.72	12.537	0
Yes	Manual Baseline	13.322	13.701	0

Sample Name: **ical,s35531,pcb100_20,10x**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-010**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: 12 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 5:04:16 PM
Analysis Date: 2/6/2018 9:14:54 AM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-010

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Manual Baseline	5.144	6.964	0
Yes	Split Peak	5.275	0	0
Yes	Split Peak	5.482	0	0
Yes	Split Peak	9.883	0	0
Yes	Manual Baseline	10.405	11.3	0
Yes	Split Peak	12.119	0	0
Yes	Reset Baseline	15.932	0	0

Sample Name: **ical,s35531,pcb100_20,10x** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-010** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq** Instrument: GC06 (Offline) Vial: 12 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met	Software Version 3.1.7 Run Date: 2/5/2018 5:04:16 PM Analysis Date: 2/6/2018 8:29:36 AM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.773	3.776	13746	0.000
PCB1016#1	5.340	5.347	2829	9.036
PCB1016#2	6.380	6.387	2102	6.304
PCB1016#3	6.670	6.680	1138	5.810
PCB1016#4	7.120	7.130	844	7.419
PCB1016#5	7.623	7.630	1016	5.605
PCB1260#1	11.150	11.150	3993	4.381
PCB1260#2	11.797	11.797	3360	6.106
PCB1260#3	12.650	12.650	2149	7.065
PCB1260#4	13.393	13.390	10636	15.636
PCB1260#5	14.040	14.040	2389	6.807
Decachlorobiphenyl	16.647	16.640	21113	0.000

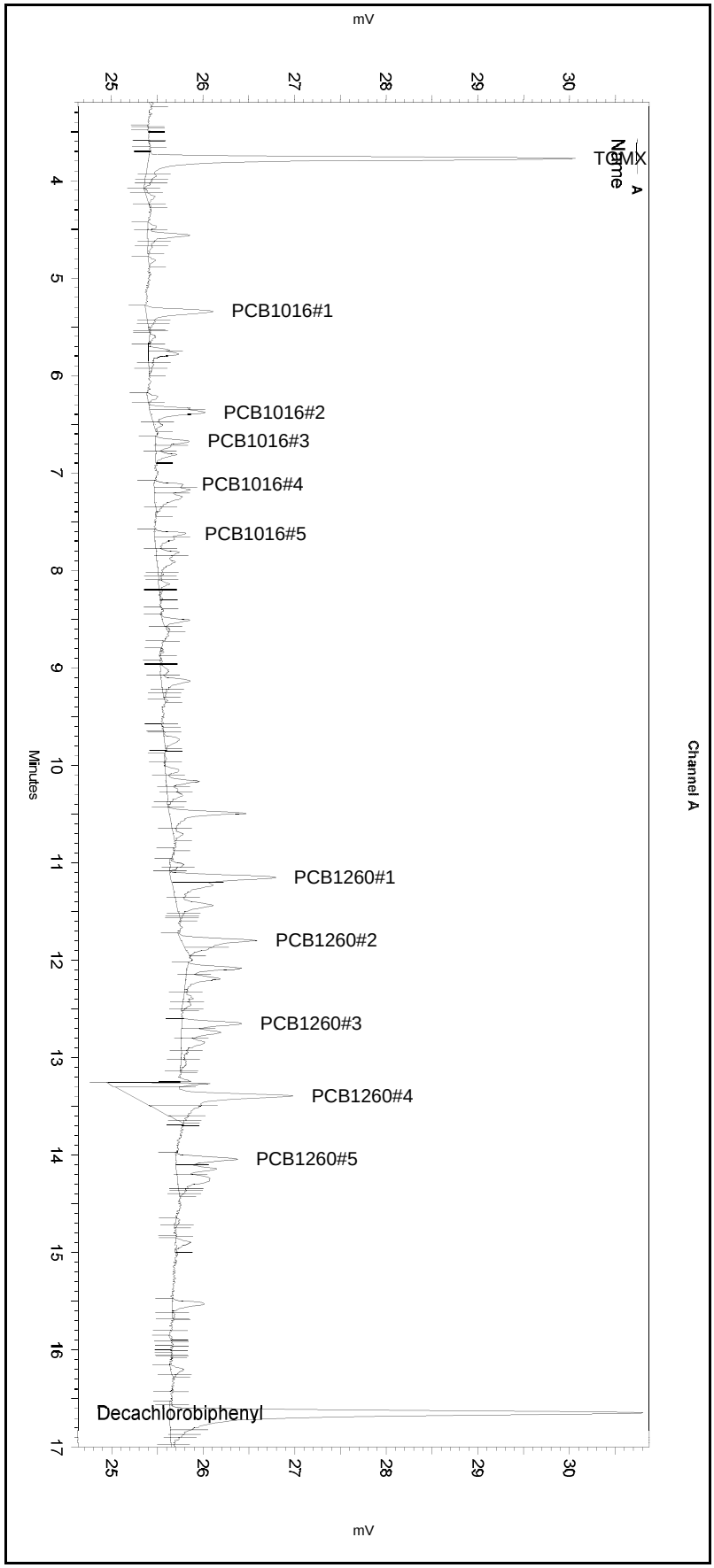
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.950	2.950	11231	1.550
PCB1016#1	4.343	4.350	2853	8.218
PCB1016#2	5.240	5.237	883	20.556
PCB1016#3	5.440	5.437	656	2.572
PCB1016#4	5.967	5.960	731	5.156
PCB1016#5	6.657	6.657	794	3.805
PCB1260#1	9.867	9.850	4694	11.283
PCB1260#2	10.483	10.470	2043	26.787
PCB1260#3	11.397	11.397	2450	8.096
PCB1260#4	12.057	12.053	6129	12.058
PCB1260#5	12.720	12.723	2271	6.499
Decachlorobiphenyl	15.673	15.673	19635	0.657

Sample Name: **ical,s35531,pcb100_20,10x**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-010**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: 12 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 5:04:16 PM
Analysis Date: 2/6/2018 8:29:36 AM
Sample Amount: 1



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No items selected for this section

---< A >---

No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0

Manual Integration Fixes
==========

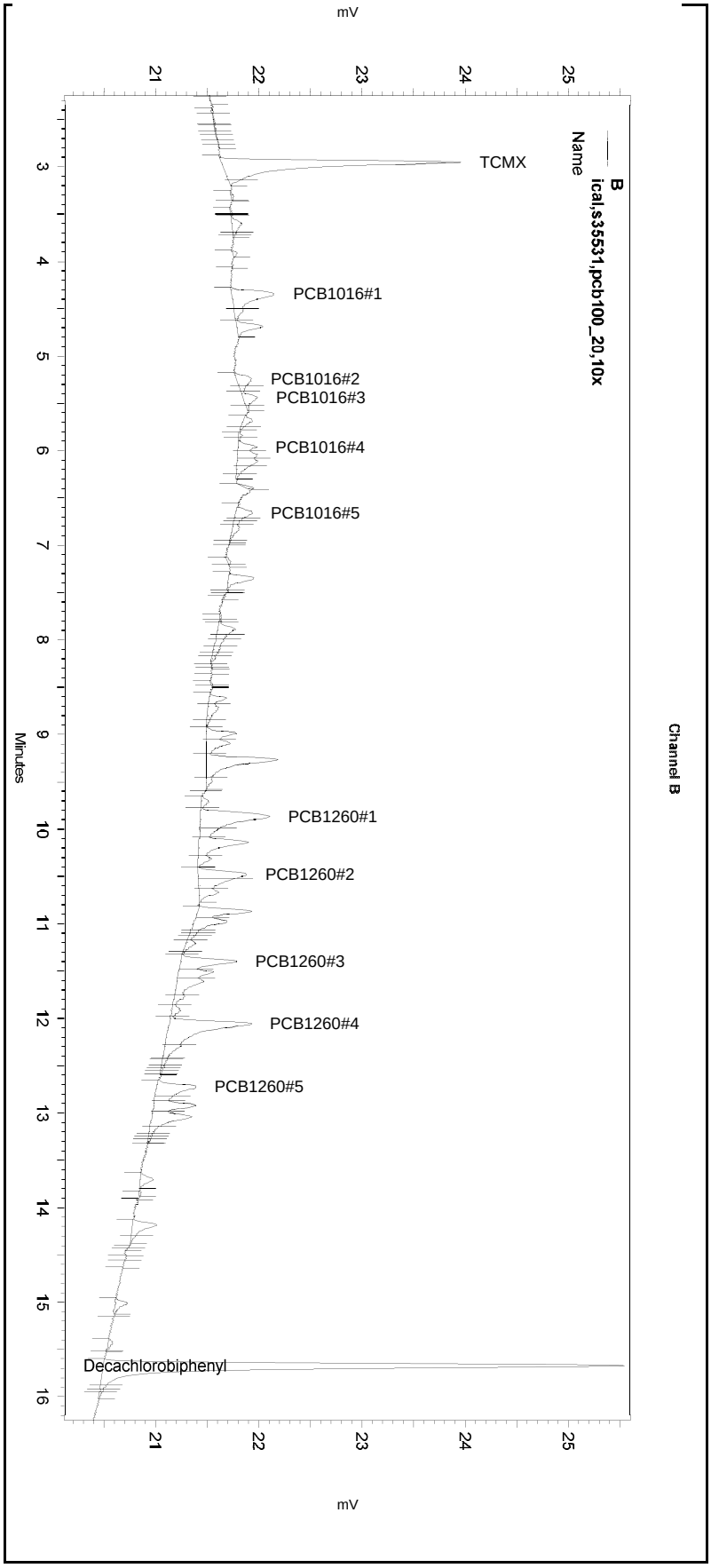
Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-010

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sample Name: **ical,s35531,pcb100_20,10x**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-010**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: 12 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 5:04:16 PM
Analysis Date: 2/6/2018 8:29:36 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-010

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sample Name: **ical,s35530,pcb25_5** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-011** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq** Instrument: GC06 (Offline) Vial: 13 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met	Software Version 3.1.7 Run Date: 2/5/2018 5:32:16 PM Analysis Date: 2/6/2018 9:15:03 AM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.773	3.776	33008	5.000 CAL
PCB1016#1	5.340	5.347	7277	25.000 CAL
PCB1016#2	6.380	6.387	6275	25.000 CAL
PCB1016#3	6.673	6.680	3984	25.000 CAL
PCB1016#4	7.123	7.130	2324	25.000 CAL
PCB1016#5	7.623	7.630	2836	25.000 CAL
PCB1260#1	11.147	11.150	10726	25.000 CAL
PCB1260#2	11.793	11.797	9814	25.000 CAL
PCB1260#3	12.650	12.650	6481	25.000 CAL
PCB1260#4	13.390	13.390	13362	25.000 CAL
PCB1260#5	14.040	14.040	6680	25.000 CAL
Decachlorobiphenyl	16.643	16.640	52883	5.000 CAL

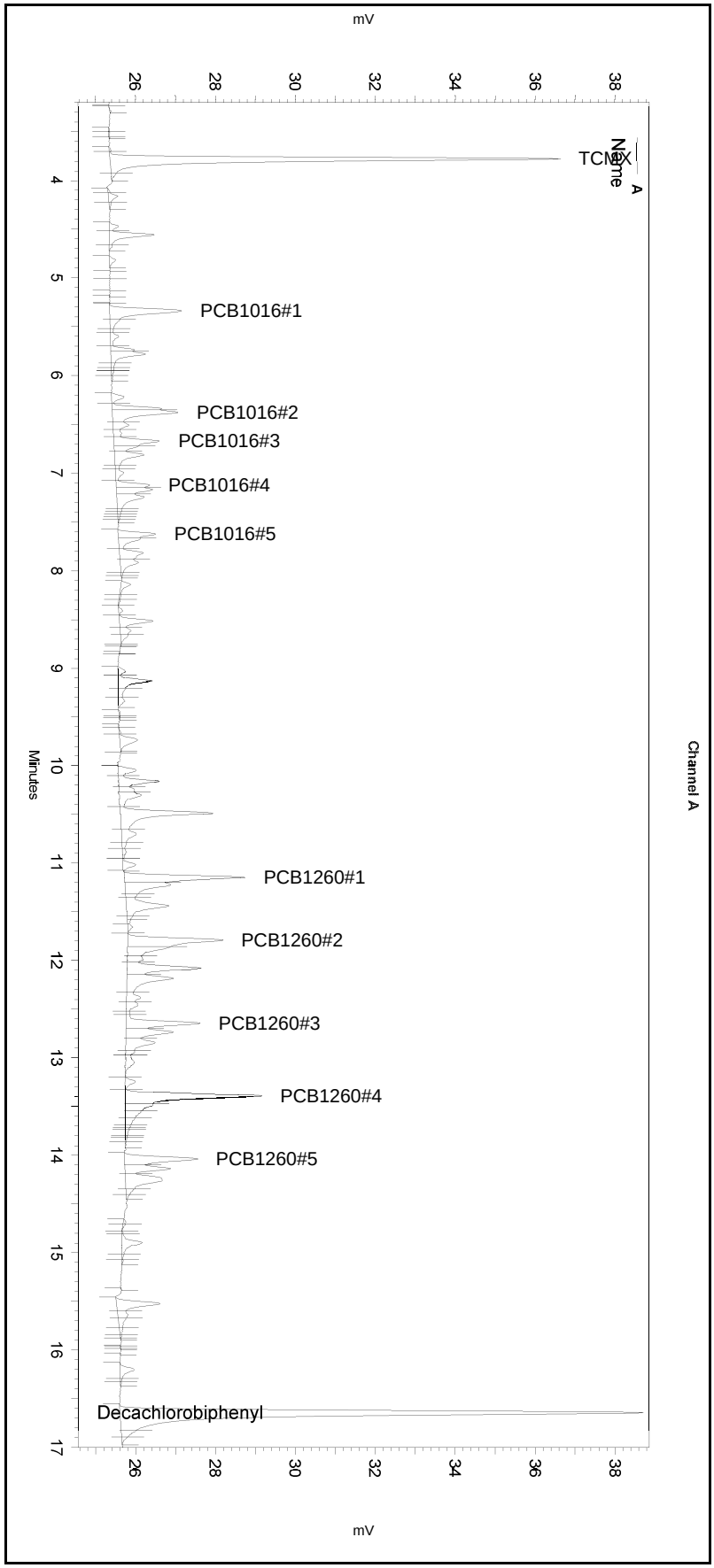
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.950	2.950	28537	5.000 CAL
PCB1016#1	4.347	4.350	7786	25.000 CAL
PCB1016#2	5.240	5.237	2909	25.000 CAL
PCB1016#3	5.440	5.437	4272	25.000 CAL
PCB1016#4	5.957	5.960	2703	25.000 CAL
PCB1016#5	6.657	6.657	5141	25.000 CAL
PCB1260#1	9.867	9.850	8406	25.000 CAL
PCB1260#2	10.473	10.470	6836	25.000 CAL
PCB1260#3	11.393	11.397	6615	25.000 CAL
PCB1260#4	12.057	12.053	11189	25.000 CAL
PCB1260#5	12.720	12.723	6714	25.000 CAL
Decachlorobiphenyl	15.670	15.673	50324	5.000 CAL

Sample Name: **ical,s35530,pcb25_5**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-011**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: 13 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 5:32:16 PM
Analysis Date: 2/6/2018 9:15:03 AM
Sample Amount: 1



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Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0

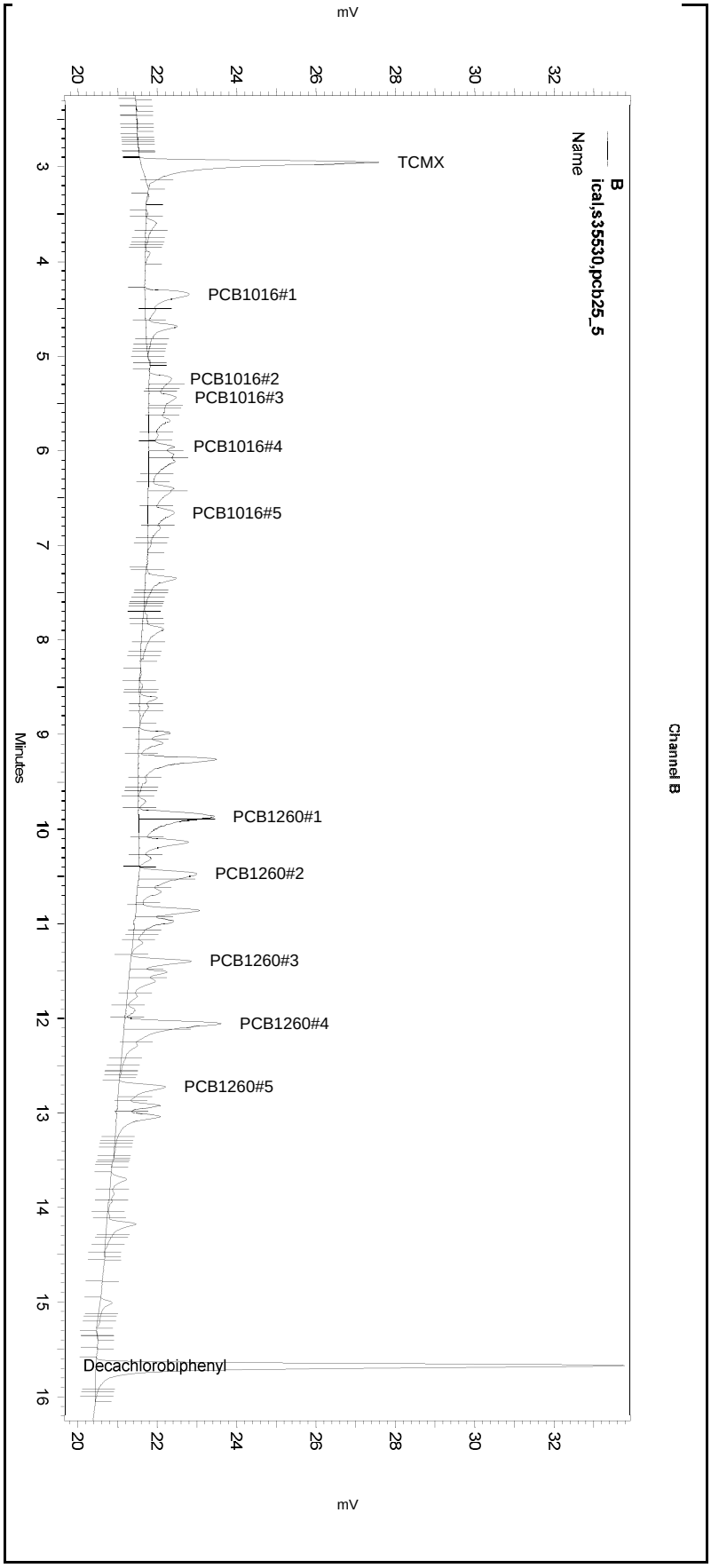
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-011

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	4.013	0	0
Yes	Reset Baseline	8.071	0	0
Yes	Manual Baseline	11.075	11.72	0

Sample Name: **ical,s35530,pcb25_5**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-011**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: 13 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 5:32:16 PM
Analysis Date: 2/6/2018 9:15:03 AM
Sample Amount: 1



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Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-011

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Manual Baseline	5.132	7.076	0
Yes	Reset Baseline	5.888	0	0
Yes	Reset Baseline	7.04	0	0
Yes	Split Peak	9.895	0	0
Yes	Manual Baseline	10.394	11.319	0
Yes	Split Peak	10.527	0	0
Yes	Split Peak	12.117	0	0
Yes	Reset Baseline	16.082	0	0

Sample Name: **ical,s35530,pcb25_5** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-011** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq** Instrument: GC06 (Offline) Vial: 13 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met	Software Version 3.1.7 Run Date: 2/5/2018 5:32:16 PM Analysis Date: 2/6/2018 8:29:45 AM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.773	3.776	33775	2.959
PCB1016#1	5.340	5.347	7277	23.244
PCB1016#2	6.380	6.387	6275	18.820
PCB1016#3	6.673	6.680	3984	20.339
PCB1016#4	7.123	7.130	2324	20.427
PCB1016#5	7.623	7.630	2875	15.862
PCB1260#1	11.147	11.150	10814	18.372
PCB1260#2	11.793	11.797	9814	17.836
PCB1260#3	12.650	12.650	6481	21.308
PCB1260#4	13.390	13.390	13362	19.643
PCB1260#5	14.040	14.040	6680	19.034
Decachlorobiphenyl	16.643	16.640	52883	3.258

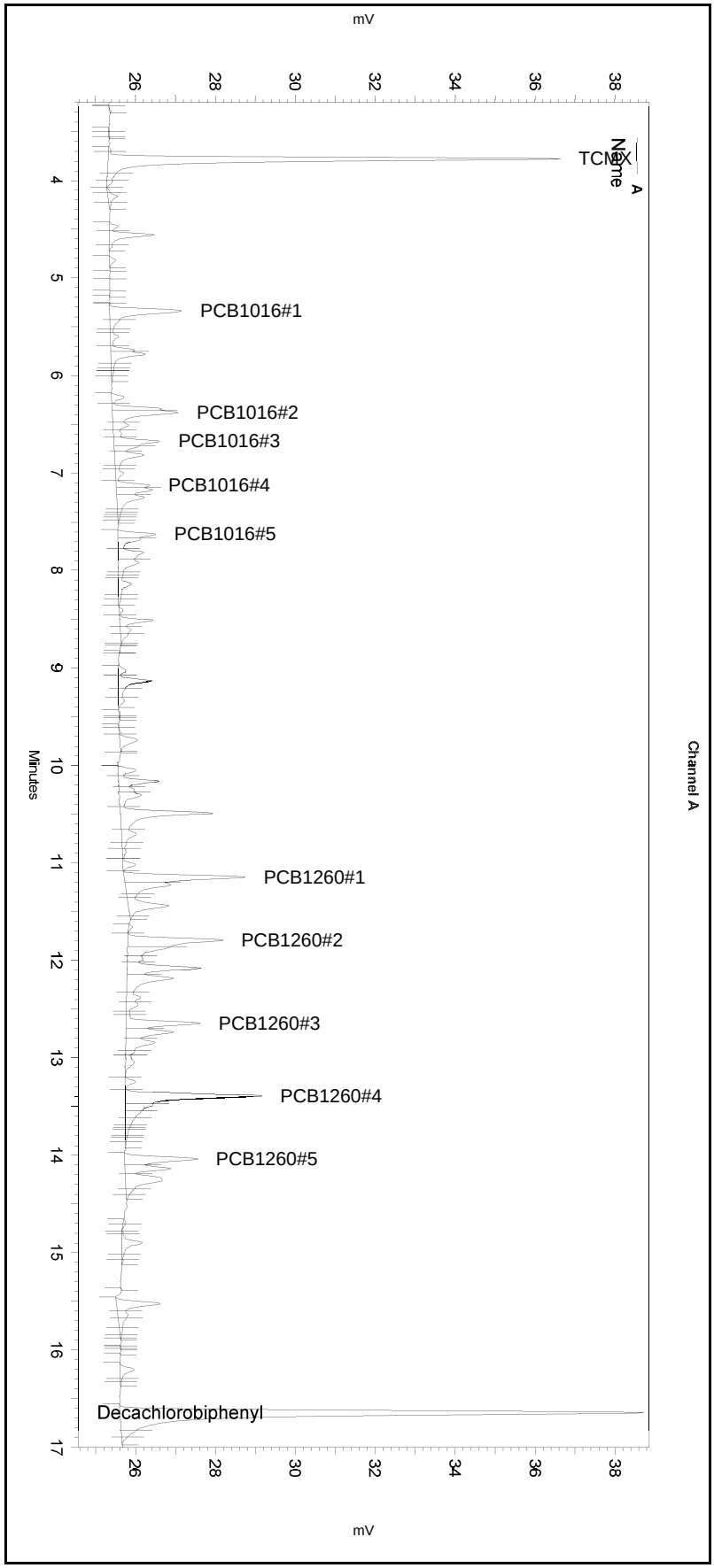
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.950	2.950	28537	3.939
PCB1016#1	4.347	4.350	7786	22.427
PCB1016#2	5.240	5.237	3104	25.411
PCB1016#3	5.440	5.437	4463	17.497
PCB1016#4	5.957	5.960	2842	20.047
PCB1016#5	6.657	6.657	5445	26.093
PCB1260#1	9.867	9.850	14730	35.406
PCB1260#2	10.473	10.470	10083	43.819
PCB1260#3	11.393	11.397	6615	21.860
PCB1260#4	12.057	12.053	16719	32.893
PCB1260#5	12.720	12.723	6714	19.213
Decachlorobiphenyl	15.670	15.673	50535	4.397

Sample Name: **ical,s35530,pcb25_5**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-011**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: 13 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 5:32:16 PM
Analysis Date: 2/6/2018 8:29:45 AM
Sample Amount: 1



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Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0

Manual Integration Fixes
==========

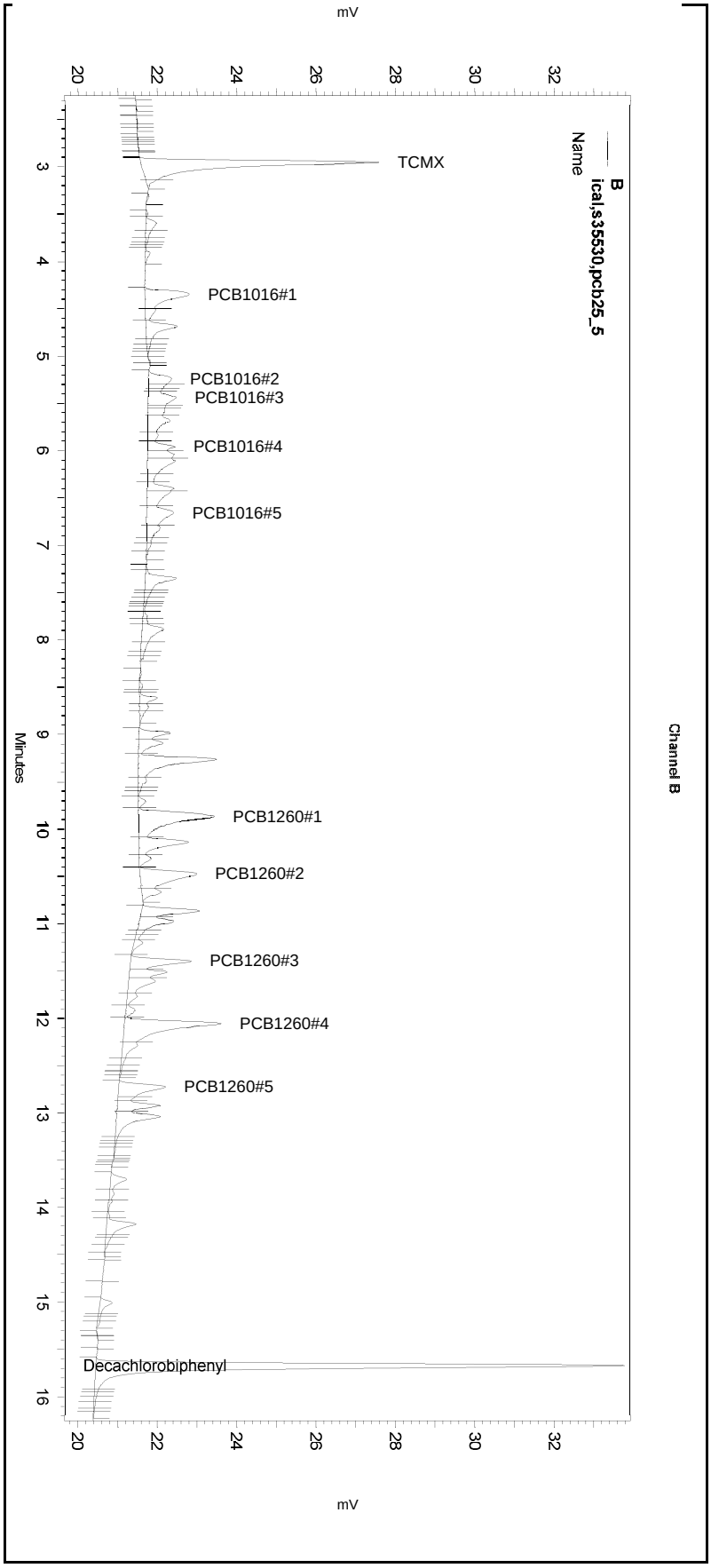
Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-011

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sample Name: **ical,s35530,pcb25_5**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-011**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: 13 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 5:32:16 PM
Analysis Date: 2/6/2018 8:29:45 AM
Sample Amount: 1



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No items selected for this section

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Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-011

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Sample Name: **ical,s35531,pcb100_20** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-012** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq** Instrument: GC06 (Offline) Vial: 14 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met	Software Version 3.1.7 Run Date: 2/5/2018 6:00:15 PM Analysis Date: 2/6/2018 9:15:13 AM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.790	3.776	127412	20.000 CAL
PCB1016#1	5.357	5.347	28943	100.000 CAL
PCB1016#2	6.397	6.387	25455	100.000 CAL
PCB1016#3	6.690	6.680	15385	100.000 CAL
PCB1016#4	7.140	7.130	9085	100.000 CAL
PCB1016#5	7.640	7.630	12012	100.000 CAL
PCB1260#1	11.163	11.150	44394	100.000 CAL
PCB1260#2	11.810	11.797	43574	100.000 CAL
PCB1260#3	12.663	12.650	26634	100.000 CAL
PCB1260#4	13.407	13.390	54212	100.000 CAL
PCB1260#5	14.057	14.040	27319	100.000 CAL
Decachlorobiphenyl	16.660	16.640	181862	20.000 CAL

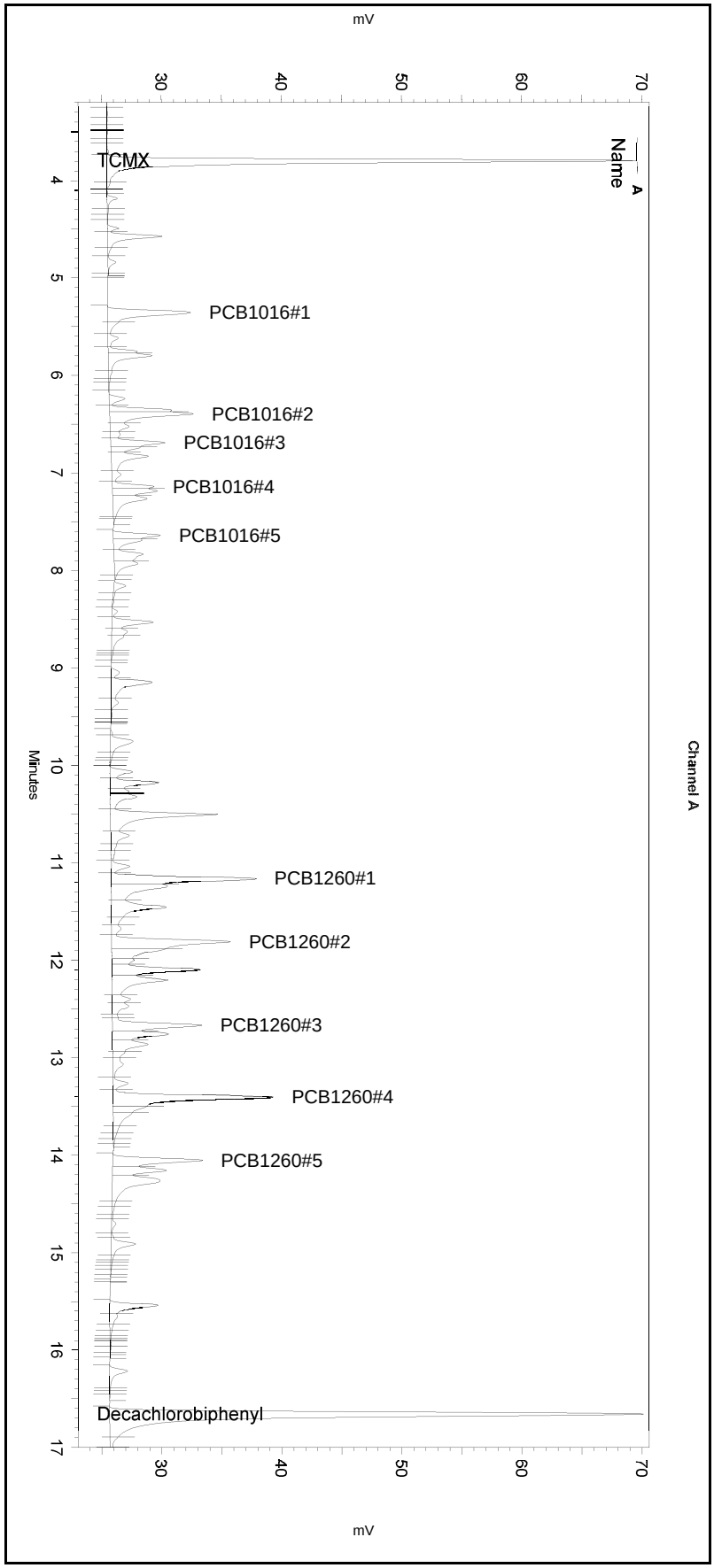
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.967	2.950	120275	20.000 CAL
PCB1016#1	4.363	4.350	31411	100.000 CAL
PCB1016#2	5.257	5.237	27559	100.000 CAL
PCB1016#3	5.457	5.437	20332	100.000 CAL
PCB1016#4	5.973	5.960	11912	100.000 CAL
PCB1016#5	6.667	6.657	18752	100.000 CAL
PCB1260#1	9.880	9.850	36981	100.000 CAL
PCB1260#2	10.490	10.470	38892	100.000 CAL
PCB1260#3	11.413	11.397	28709	100.000 CAL
PCB1260#4	12.070	12.053	48431	100.000 CAL
PCB1260#5	12.737	12.723	28909	100.000 CAL
Decachlorobiphenyl	15.683	15.673	181037	20.000 CAL

Sample Name: **ical,s35531,pcb100_20**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-012**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: 14 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 6:00:15 PM
Analysis Date: 2/6/2018 9:15:13 AM
Sample Amount: 1



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No items selected for this section

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Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0

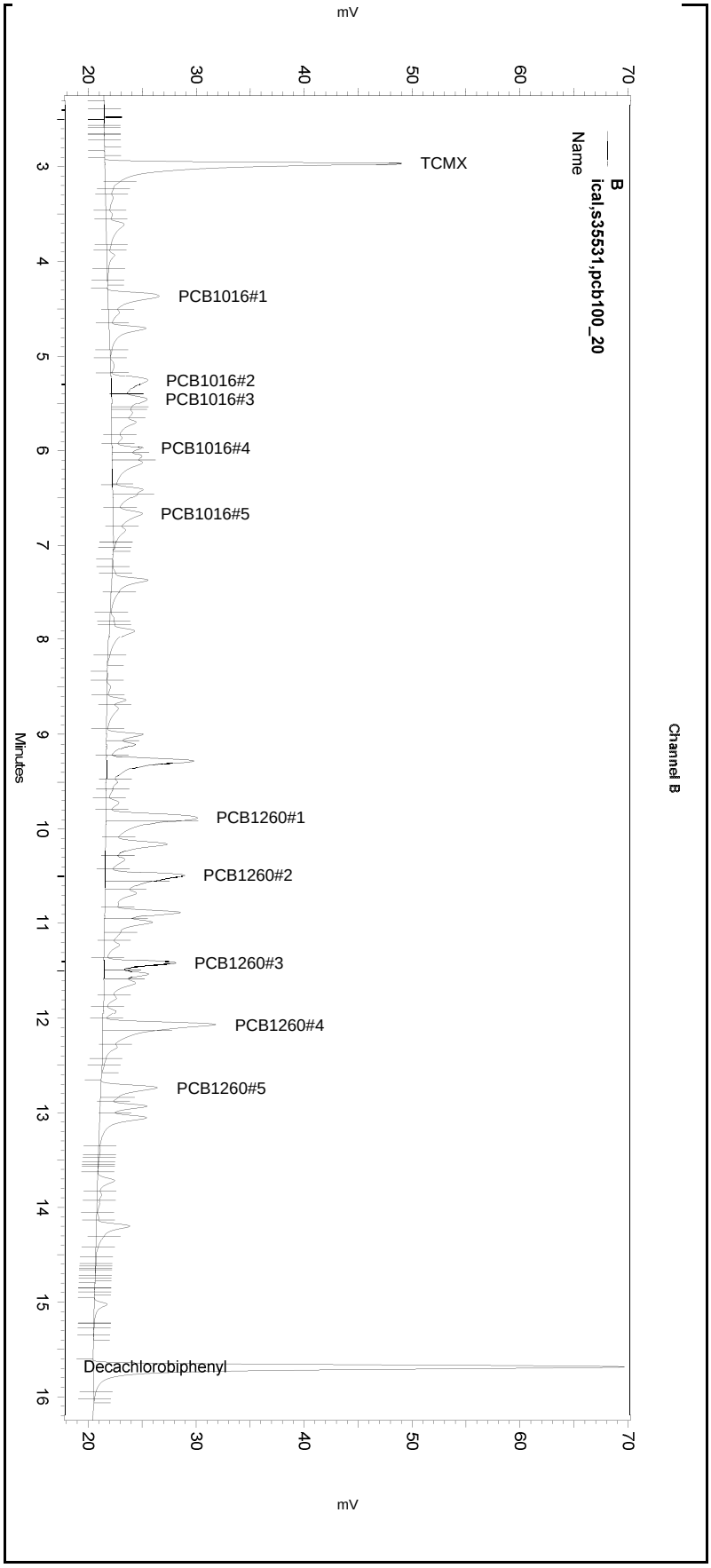
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-012

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	8.092	0	0
Yes	Reset Baseline	13.92	0	0

Sample Name: **ical,s35531,pcb100_20**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-012**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: 14 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 6:00:15 PM
Analysis Date: 2/6/2018 9:15:13 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-012

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Manual Baseline	5.013	7.062	0
Yes	Reset Baseline	5.165	0	0
Yes	Split Peak	5.538	0	0
Yes	Reset Baseline	6.349	0	0
Yes	Reset Baseline	7.107	0	0
Yes	Split Peak	9.908	0	0
Yes	Split Peak	10.553	0	0
Yes	Split Peak	12.132	0	0
Yes	Reset Baseline	12.582	0	0
Yes	Reset Baseline	16.064	0	0

Sample Name: **ical,s35531,pcb100_20** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-012** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq** Instrument: GC06 (Offline) Vial: 14 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met	Software Version 3.1.7 Run Date: 2/5/2018 6:00:15 PM Analysis Date: 2/6/2018 8:29:54 AM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.790	3.776	127412	19.522
PCB1016#1	5.357	5.347	28943	92.448
PCB1016#2	6.397	6.387	25455	76.346
PCB1016#3	6.690	6.680	15385	78.544
PCB1016#4	7.140	7.130	9085	79.855
PCB1016#5	7.640	7.630	12137	66.961
PCB1260#1	11.163	11.150	44974	88.440
PCB1260#2	11.810	11.797	44653	81.152
PCB1260#3	12.663	12.650	28070	92.289
PCB1260#4	13.407	13.390	56578	83.173
PCB1260#5	14.057	14.040	28868	82.258
Decachlorobiphenyl	16.660	16.640	181862	21.720

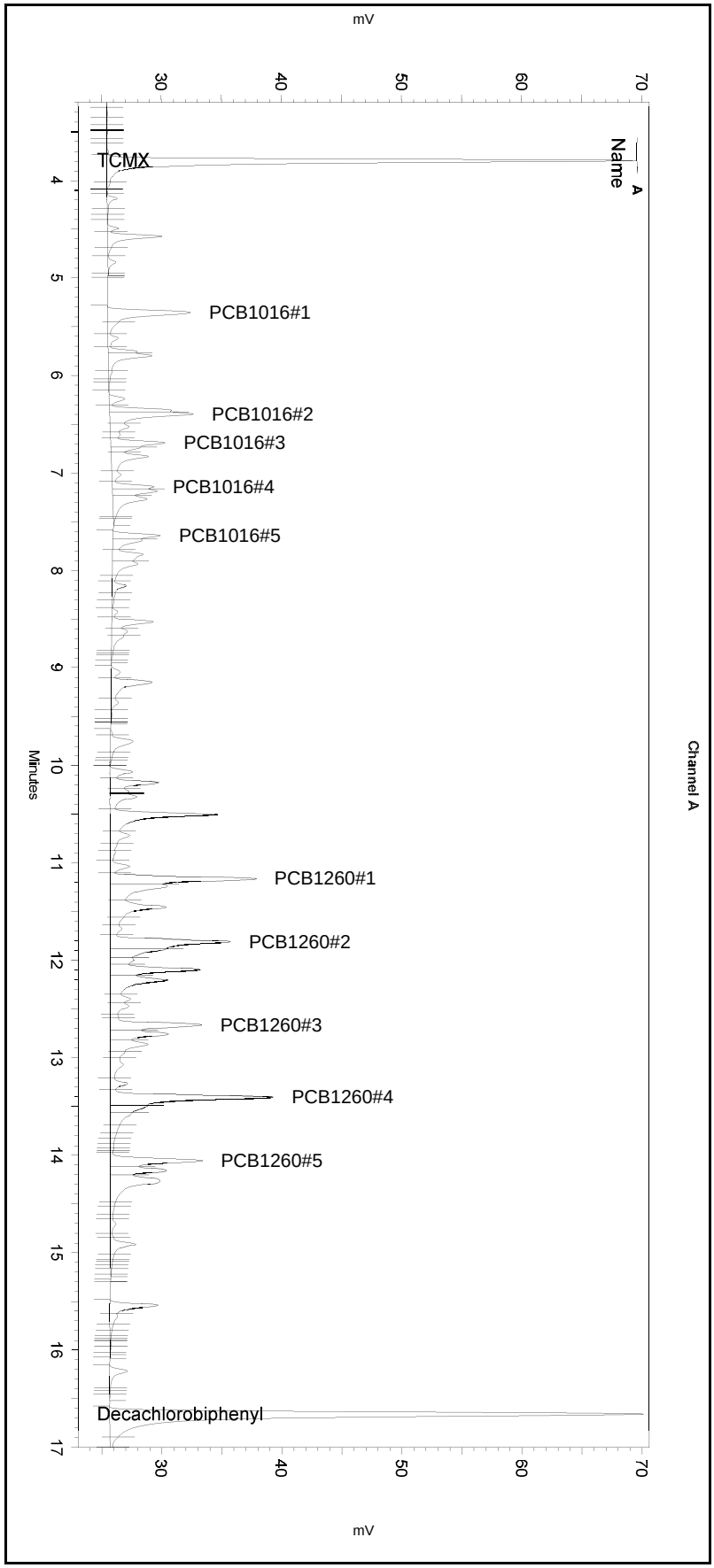
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.967	2.950	120275	16.600
PCB1016#1	4.363	4.350	31995	92.160
PCB1016#2	5.257	5.237	31697	87.909
PCB1016#3	5.457	5.437	26532	104.020
PCB1016#4	5.973	5.960	14294	100.829
PCB1016#5	6.667	6.657	24331	116.597
PCB1260#1	9.880	9.850	69659	167.435
PCB1260#2	10.490	10.470	56565	142.287
PCB1260#3	11.413	11.397	30250	99.963
PCB1260#4	12.070	12.053	73382	144.371
PCB1260#5	12.737	12.723	30818	88.188
Decachlorobiphenyl	15.683	15.673	181979	20.307

Sample Name: **ical,s35531,pcb100_20**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-012**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: 14 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 6:00:15 PM
Analysis Date: 2/6/2018 8:29:54 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0

Manual Integration Fixes
==========

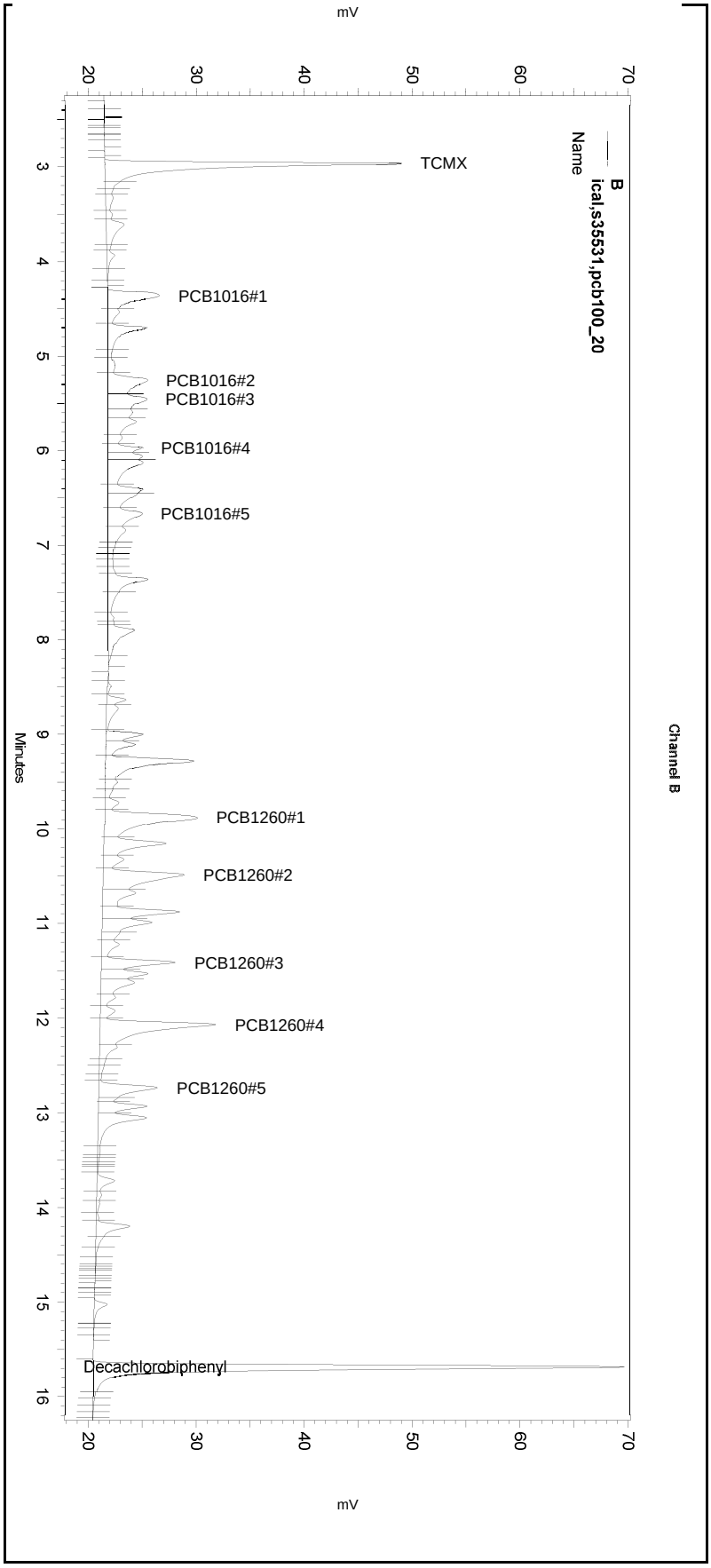
Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-012

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sample Name: **ical,s35531,pcb100_20**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-012**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: 14 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 6:00:15 PM
Analysis Date: 2/6/2018 8:29:54 AM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

---< B >----------

No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========
Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-012

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Sample Name: **ical,s35532,pcb250_50** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-013** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq** Instrument: GC06 (Offline) Vial: N/A Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met	Software Version 3.1.7 Run Date: 2/5/2018 6:28:15 PM Analysis Date: 2/6/2018 9:15:24 AM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.780	3.776	293828	50.000 CAL
PCB1016#1	5.347	5.347	66418	250.000 CAL
PCB1016#2	6.387	6.387	67494	250.000 CAL
PCB1016#3	6.680	6.680	45686	250.000 CAL
PCB1016#4	7.130	7.130	21829	250.000 CAL
PCB1016#5	7.630	7.630	30505	250.000 CAL
PCB1260#1	11.153	11.150	101206	250.000 CAL
PCB1260#2	11.800	11.797	95065	250.000 CAL
PCB1260#3	12.657	12.650	57461	250.000 CAL
PCB1260#4	13.397	13.390	127663	250.000 CAL
PCB1260#5	14.047	14.040	66501	250.000 CAL
Decachlorobiphenyl	16.647	16.640	388028	50.000 CAL

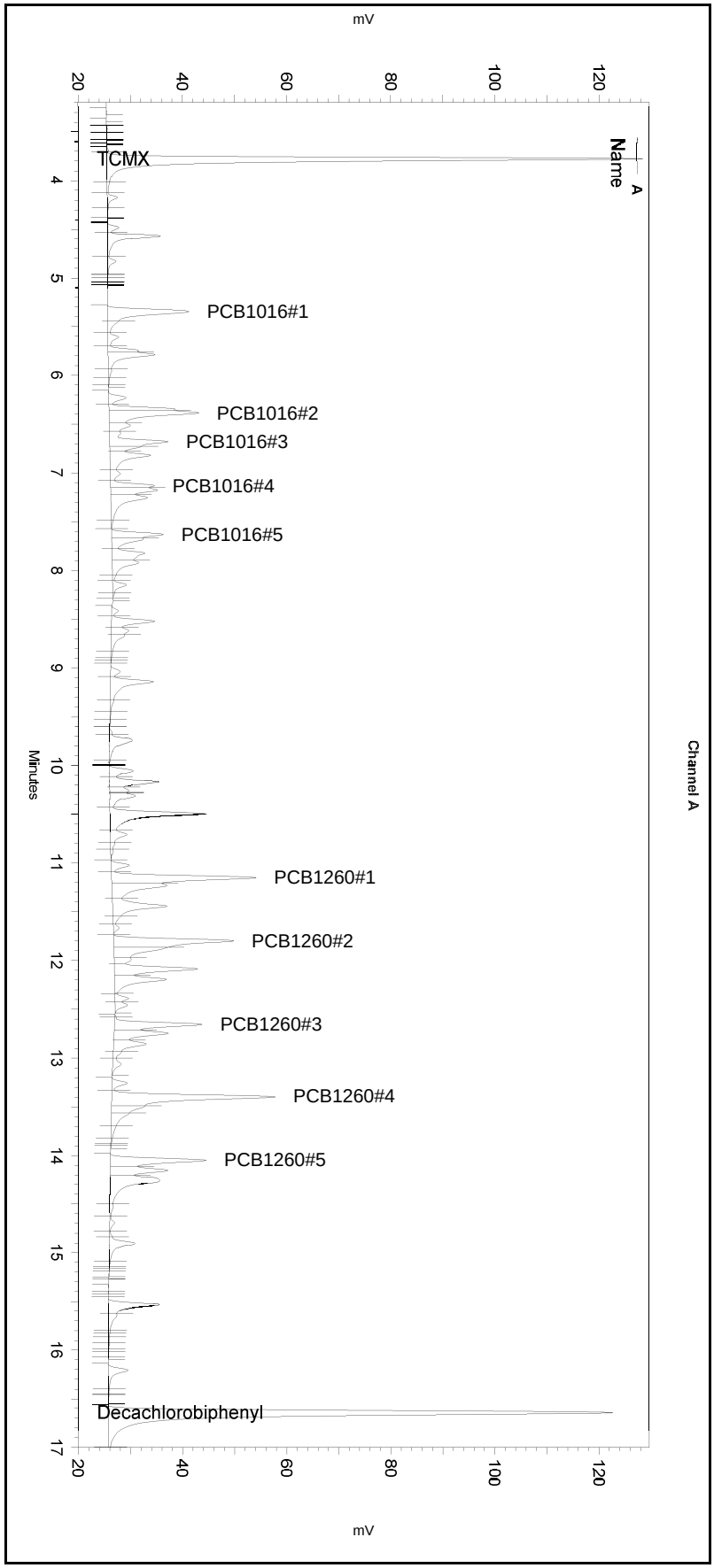
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.953	2.950	310618	50.000 CAL
PCB1016#1	4.350	4.350	75705	250.000 CAL
PCB1016#2	5.243	5.237	78561	250.000 CAL
PCB1016#3	5.443	5.437	57917	250.000 CAL
PCB1016#4	5.963	5.960	29024	250.000 CAL
PCB1016#5	6.657	6.657	47913	250.000 CAL
PCB1260#1	9.863	9.850	85802	250.000 CAL
PCB1260#2	10.477	10.470	87993	250.000 CAL
PCB1260#3	11.400	11.397	61664	250.000 CAL
PCB1260#4	12.057	12.053	96787	250.000 CAL
PCB1260#5	12.727	12.723	71924	250.000 CAL
Decachlorobiphenyl	15.673	15.673	400306	50.000 CAL

Sample Name: **ical,s35532,pcb250_50**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-013**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: N/A Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 6:28:15 PM
Analysis Date: 2/6/2018 9:15:24 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0

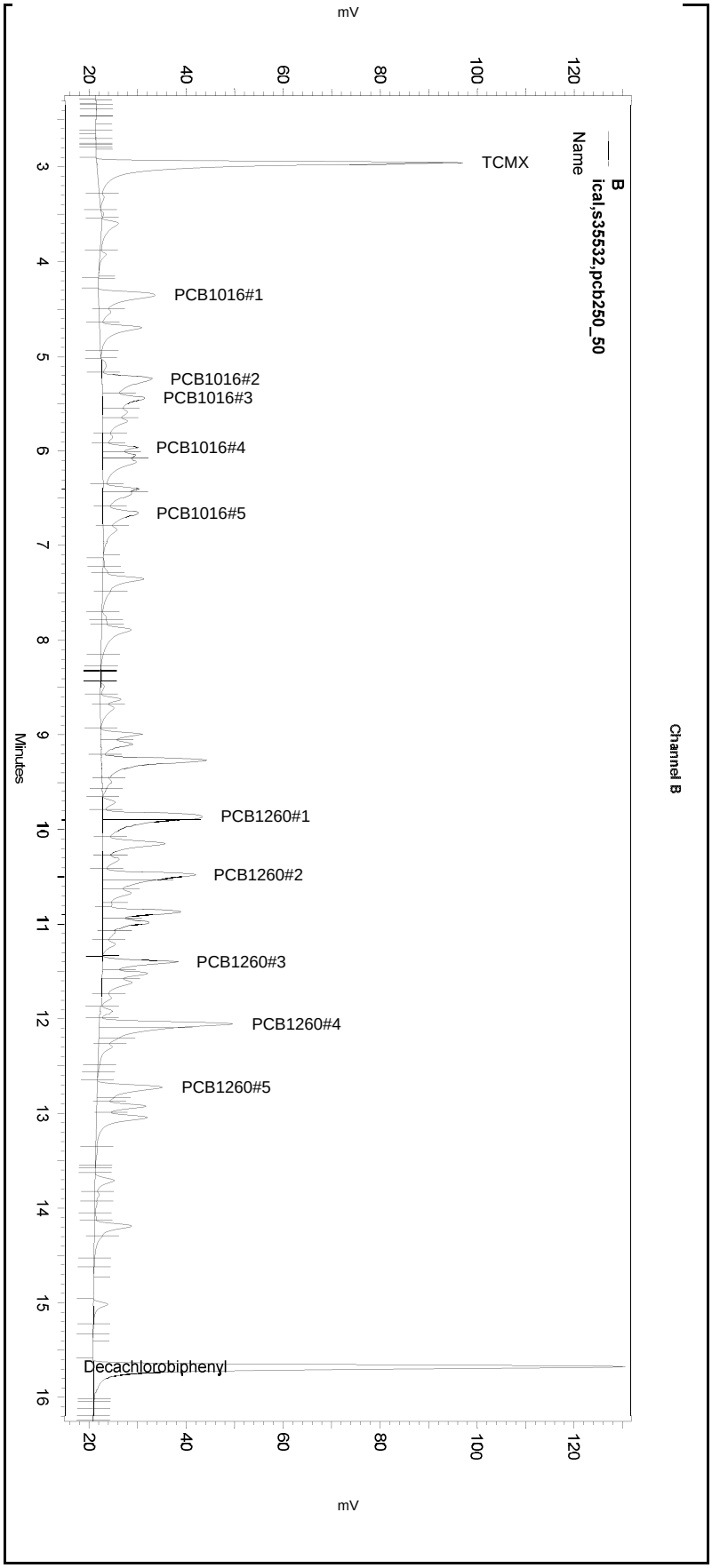
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-013

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	8.311	0	0
Yes	Manual Baseline	11.737	12.537	0

Sample Name: **ical,s35532,pcb250_50**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-013**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: N/A Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 6:28:15 PM
Analysis Date: 2/6/2018 9:15:24 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-013

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	3.532	0	0
Yes	Reset Baseline	5.009	0	0
Yes	Reset Baseline	7.107	0	0
Yes	Manual Baseline	9.652	11.856	0
Yes	Split Peak	9.893	0	0
Yes	Split Peak	10.532	0	0
Yes	Split Peak	12.096	0	0

Sample Name: **ical,s35532,pcb250_50** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-013** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq** Instrument: GC06 (Offline) Vial: N/A Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met	Software Version 3.1.7 Run Date: 2/5/2018 6:28:15 PM Analysis Date: 2/6/2018 8:30:03 AM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.780	3.776	293828	48.960
PCB1016#1	5.347	5.347	66566	212.620
PCB1016#2	6.387	6.387	69186	207.505
PCB1016#3	6.680	6.680	48409	247.139
PCB1016#4	7.130	7.130	23732	208.598
PCB1016#5	7.630	7.630	33879	186.915
PCB1260#1	11.153	11.150	101206	203.780
PCB1260#2	11.800	11.797	88364	160.593
PCB1260#3	12.657	12.650	57461	188.921
PCB1260#4	13.397	13.390	127663	187.672
PCB1260#5	14.047	14.040	66501	189.492
Decachlorobiphenyl	16.647	16.640	388028	51.229

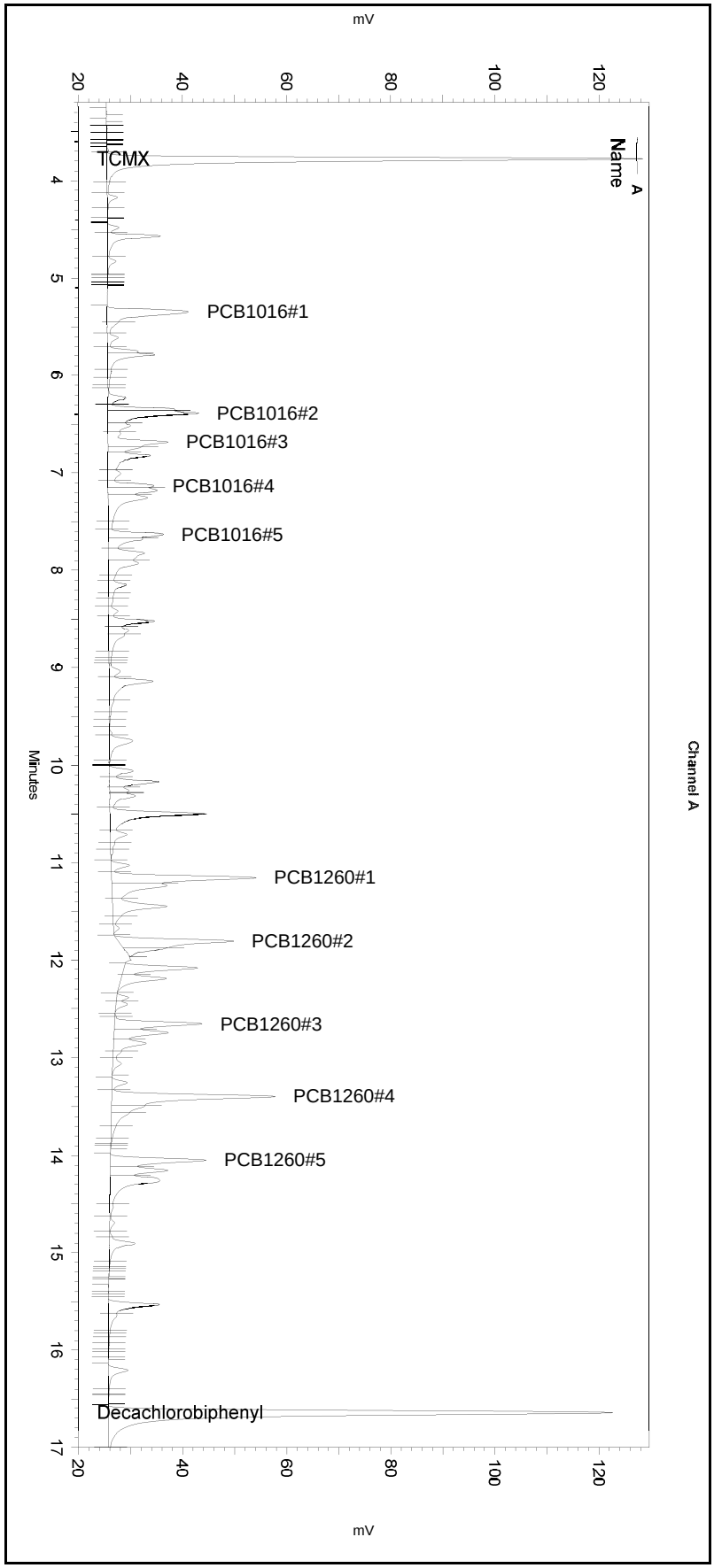
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.953	2.950	317570	43.830
PCB1016#1	4.350	4.350	79915	230.191
PCB1016#2	5.243	5.237	89713	214.721
PCB1016#3	5.443	5.437	65907	258.392
PCB1016#4	5.963	5.960	34007	239.884
PCB1016#5	6.657	6.657	57346	274.809
PCB1260#1	9.863	9.850	145085	348.732
PCB1260#2	10.477	10.470	110645	256.852
PCB1260#3	11.400	11.397	62237	205.667
PCB1260#4	12.057	12.053	150916	296.910
PCB1260#5	12.727	12.723	71924	205.817
Decachlorobiphenyl	15.673	15.673	400306	46.733

Sample Name: **ical,s35532,pcb250_50**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-013**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: N/A Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 6:28:15 PM
Analysis Date: 2/6/2018 8:30:03 AM
Sample Amount: 1



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No items selected for this section

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Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0

Manual Integration Fixes
==========

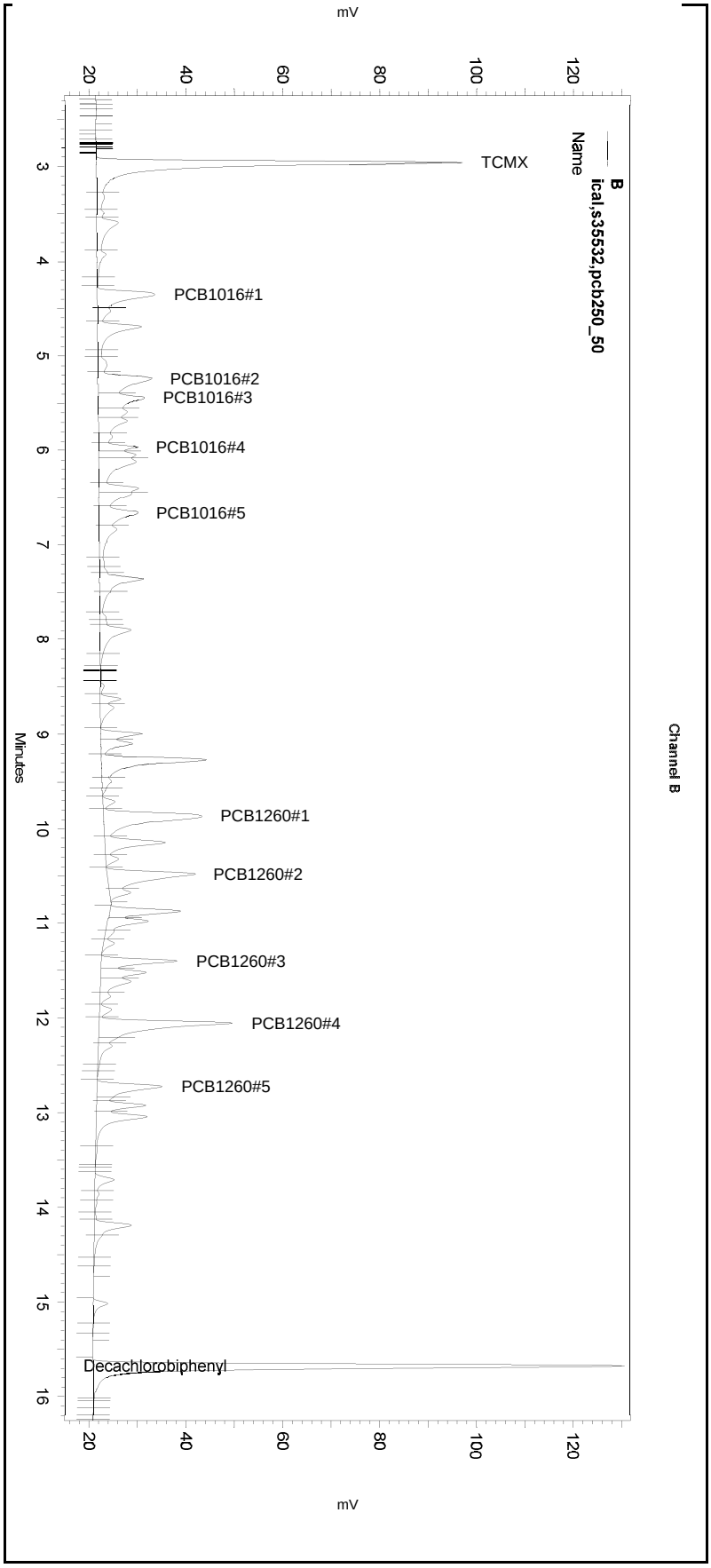
Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-013

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sample Name: **ical,s35532,pcb250_50**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-013**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: N/A Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 6:28:15 PM
Analysis Date: 2/6/2018 8:30:03 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-013

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sample Name: **ical,s35533,pcb500_100** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-014** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq** Instrument: GC06 (Offline) Vial: 15 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met	Software Version 3.1.7 Run Date: 2/5/2018 6:56:15 PM Analysis Date: 2/6/2018 9:15:33 AM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.777	3.776	553863	100.000 CAL
PCB1016#1	5.343	5.347	121513	500.000 CAL
PCB1016#2	6.383	6.387	131922	500.000 CAL
PCB1016#3	6.677	6.680	91959	500.000 CAL
PCB1016#4	7.127	7.130	41934	500.000 CAL
PCB1016#5	7.627	7.630	59921	500.000 CAL
PCB1260#1	11.147	11.150	196683	500.000 CAL
PCB1260#2	11.793	11.797	202242	500.000 CAL
PCB1260#3	12.650	12.650	120087	500.000 CAL
PCB1260#4	13.390	13.390	243942	500.000 CAL
PCB1260#5	14.040	14.040	131588	500.000 CAL
Decachlorobiphenyl	16.640	16.640	686153	100.000 CAL

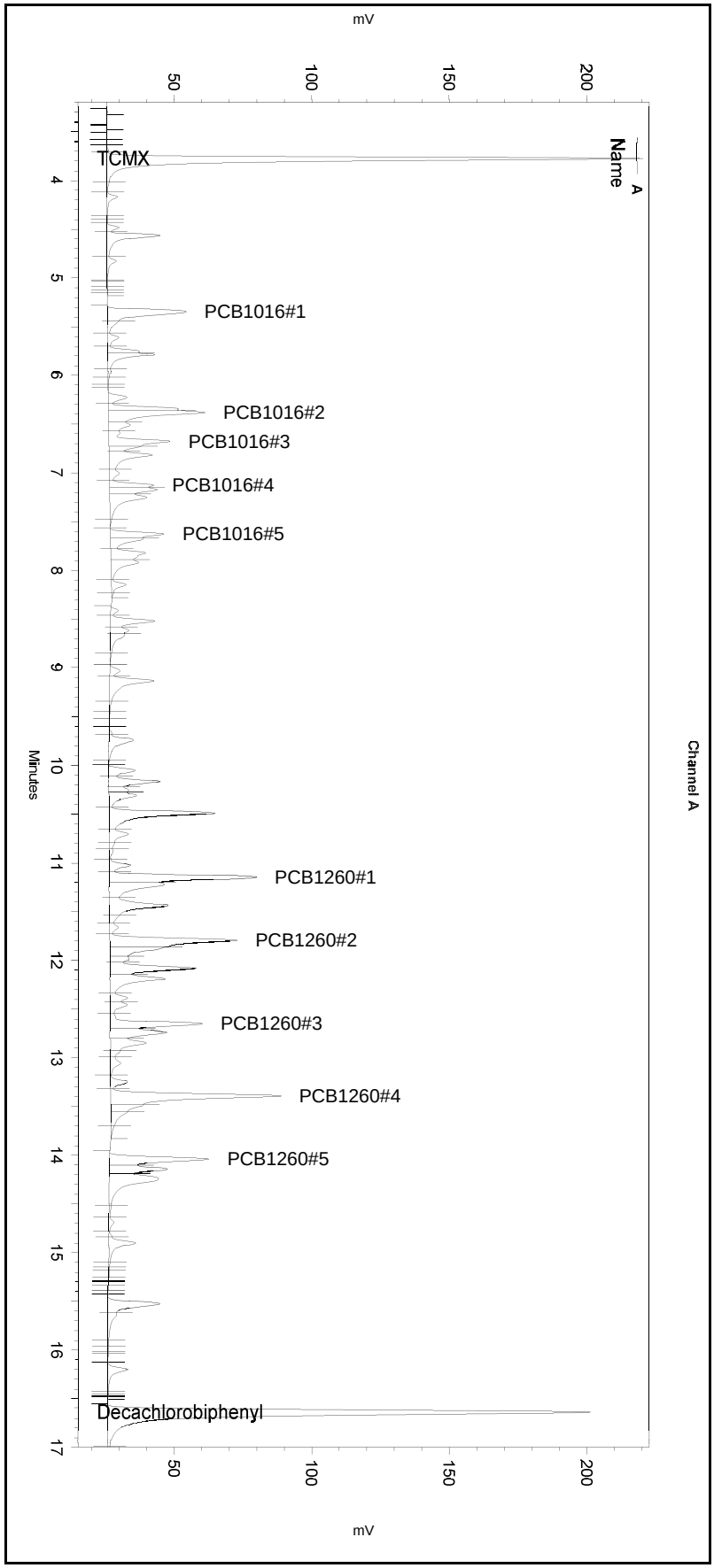
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.950	2.950	637838	100.000 CAL
PCB1016#1	4.347	4.350	145398	500.000 CAL
PCB1016#2	5.233	5.237	177754	500.000 CAL
PCB1016#3	5.437	5.437	114443	500.000 CAL
PCB1016#4	5.957	5.960	50652	500.000 CAL
PCB1016#5	6.653	6.657	88379	500.000 CAL
PCB1260#1	9.850	9.850	168167	500.000 CAL
PCB1260#2	10.470	10.470	195715	500.000 CAL
PCB1260#3	11.393	11.397	132879	500.000 CAL
PCB1260#4	12.050	12.053	240319	500.000 CAL
PCB1260#5	12.720	12.723	145879	500.000 CAL
Decachlorobiphenyl	15.667	15.673	747321	100.000 CAL

Sample Name: **ical,s35533,pcb500_100**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-014**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: 15 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 6:56:15 PM
Analysis Date: 2/6/2018 9:15:33 AM
Sample Amount: 1



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Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0

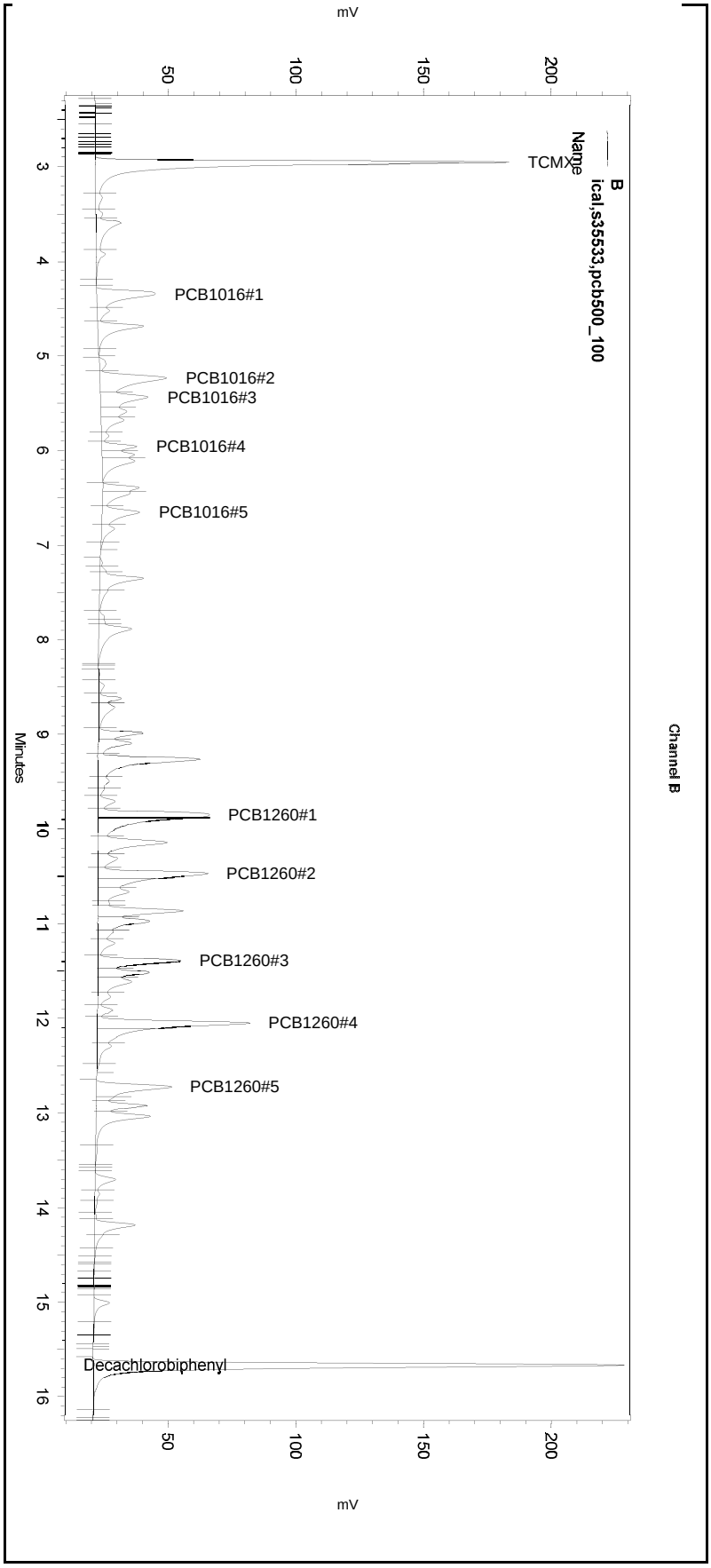
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-014

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	8.281	0	0
Yes	Reset Baseline	13.823	0	0

Sample Name: **ical,s35533,pcb500_100**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-014**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: 15 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 6:56:15 PM
Analysis Date: 2/6/2018 9:15:33 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-014

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	5.004	0	0
Yes	Reset Baseline	6.33	0	0
Yes	Reset Baseline	7.042	0	0
Yes	Split Peak	9.879	0	0
Yes	Split Peak	10.528	0	0
Yes	Split Peak	12.111	0	0
Yes	Reset Baseline	12.569	0	0

Sample Name: **ical,s35533,pcb500_100** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-014** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq** Instrument: GC06 (Offline) Vial: 15 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met	Software Version 3.1.7 Run Date: 2/5/2018 6:56:15 PM Analysis Date: 2/6/2018 8:30:11 AM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.777	3.776	553863	94.958
PCB1016#1	5.343	5.347	121809	389.074
PCB1016#2	6.383	6.387	135050	405.047
PCB1016#3	6.677	6.680	97163	496.040
PCB1016#4	7.127	7.130	45431	399.326
PCB1016#5	7.627	7.630	66341	366.012
PCB1260#1	11.147	11.150	201573	409.647
PCB1260#2	11.793	11.797	208929	379.707
PCB1260#3	12.650	12.650	128972	424.035
PCB1260#4	13.390	13.390	254356	373.919
PCB1260#5	14.040	14.040	136613	389.273
Decachlorobiphenyl	16.640	16.640	686153	93.900

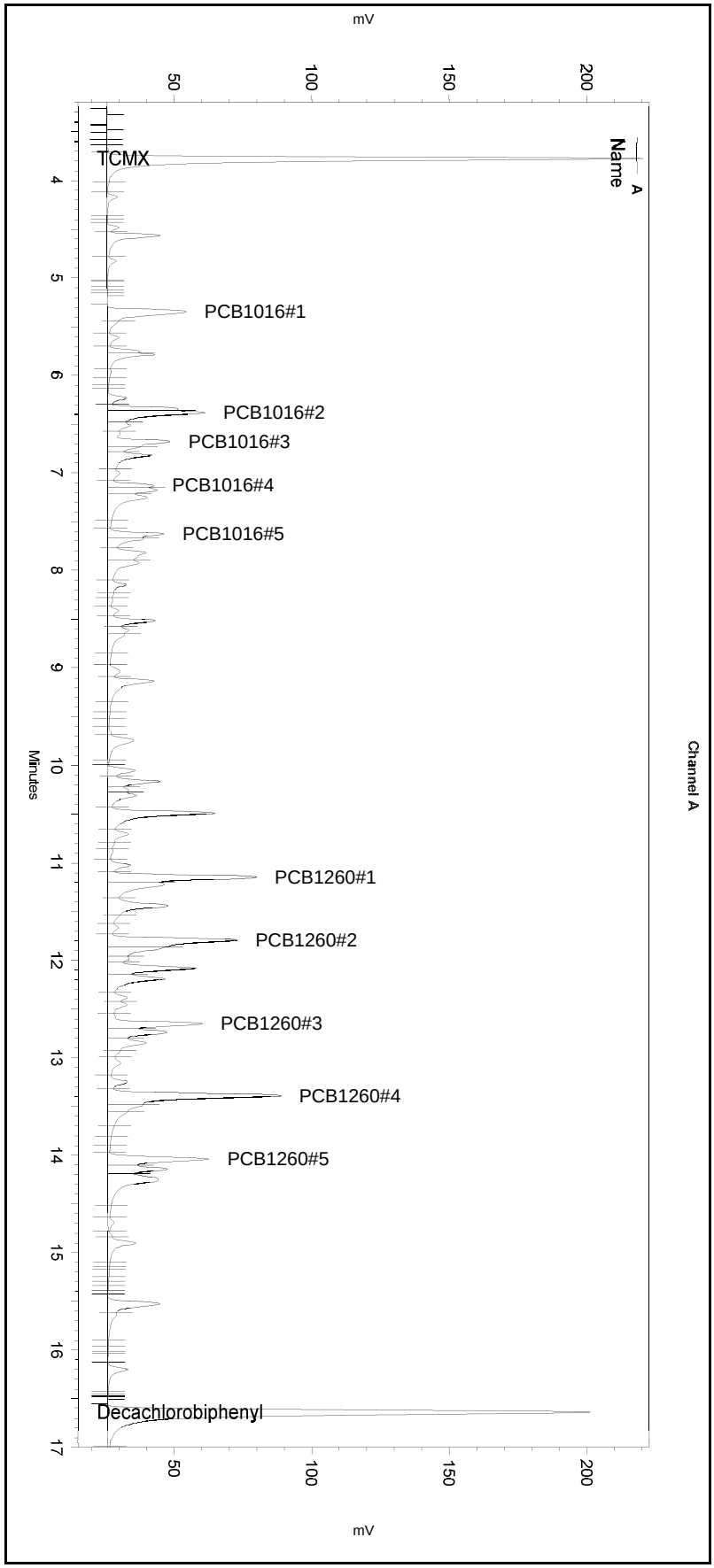
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.950	2.950	643318	88.789
PCB1016#1	4.347	4.350	158506	456.569
PCB1016#2	5.233	5.237	208271	473.864
PCB1016#3	5.437	5.437	138783	544.105
PCB1016#4	5.957	5.960	68702	484.621
PCB1016#5	6.653	6.657	126126	604.412
PCB1260#1	9.850	9.850	337779	811.898
PCB1260#2	10.470	10.470	293928	645.122
PCB1260#3	11.393	11.397	145302	480.162
PCB1260#4	12.050	12.053	354720	697.870
PCB1260#5	12.720	12.723	158284	452.943
Decachlorobiphenyl	15.667	15.673	747321	88.736

Sample Name: **ical,s35533,pcb500_100**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-014**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: 15 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 6:56:15 PM
Analysis Date: 2/6/2018 8:30:11 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0

Manual Integration Fixes
==========

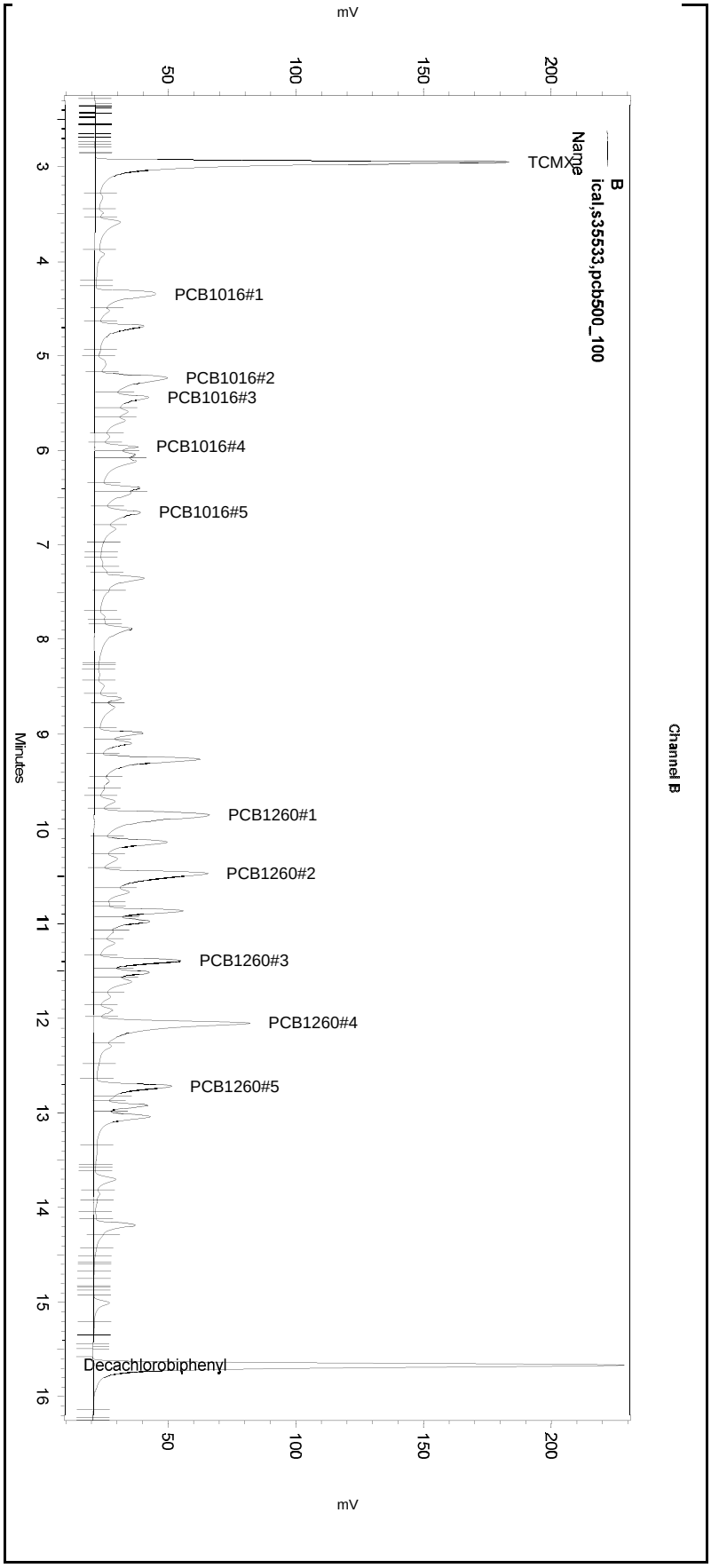
Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-014

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sample Name: **ical,s35533,pcb500_100**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-014**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: 15 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 6:56:15 PM
Analysis Date: 2/6/2018 8:30:11 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-014

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sample Name: **ical,s35534,pcb750_150** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-015** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq** Instrument: GC06 (Offline) Vial: 16 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met	Software Version 3.1.7 Run Date: 2/5/2018 7:24:15 PM Analysis Date: 2/6/2018 9:15:43 AM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.787	3.776	792513	150.000 CAL
PCB1016#1	5.353	5.347	172309	750.000 CAL
PCB1016#2	6.393	6.387	200958	750.000 CAL
PCB1016#3	6.687	6.680	112723	750.000 CAL
PCB1016#4	7.137	7.130	61299	750.000 CAL
PCB1016#5	7.637	7.630	87434	750.000 CAL
PCB1260#1	11.157	11.150	279525	750.000 CAL
PCB1260#2	11.803	11.797	296557	750.000 CAL
PCB1260#3	12.657	12.650	165730	750.000 CAL
PCB1260#4	13.397	13.390	360209	750.000 CAL
PCB1260#5	14.047	14.040	195788	750.000 CAL
Decachlorobiphenyl	16.650	16.640	954432	150.000 CAL

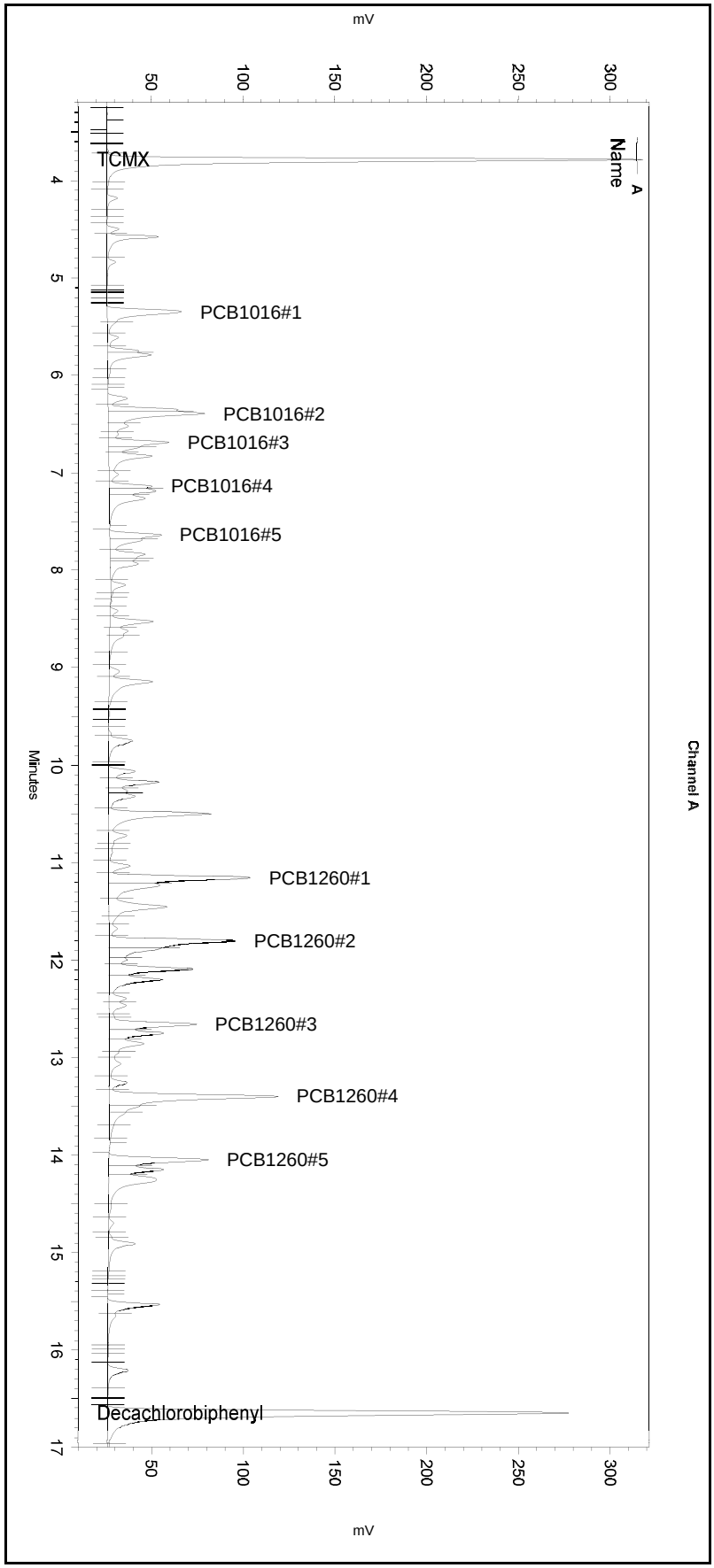
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.960	2.950	940979	150.000 CAL
PCB1016#1	4.343	4.350	210521	750.000 CAL
PCB1016#2	5.243	5.237	283302	750.000 CAL
PCB1016#3	5.443	5.437	168136	750.000 CAL
PCB1016#4	5.967	5.960	76134	750.000 CAL
PCB1016#5	6.660	6.657	135585	750.000 CAL
PCB1260#1	9.853	9.850	246105	750.000 CAL
PCB1260#2	10.477	10.470	300517	750.000 CAL
PCB1260#3	11.403	11.397	193698	750.000 CAL
PCB1260#4	12.057	12.053	358580	750.000 CAL
PCB1260#5	12.727	12.723	224944	750.000 CAL
Decachlorobiphenyl	15.677	15.673	1060764	150.000 CAL

Sample Name: **ical,s35534,pcb750_150**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-015**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: 16 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 7:24:15 PM
Analysis Date: 2/6/2018 9:15:43 AM
Sample Amount: 1



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Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0

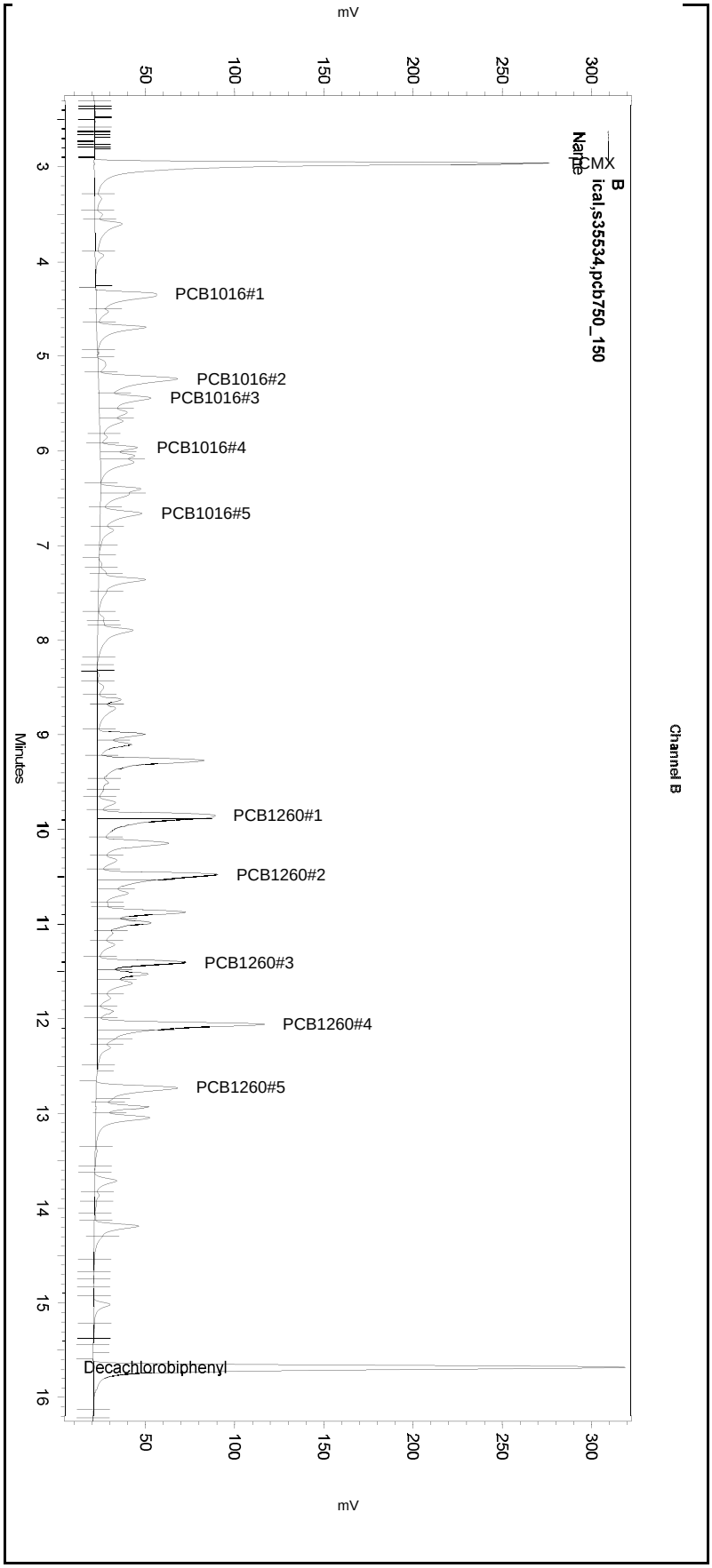
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-015

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	8.279	0	0
Yes	Reset Baseline	13.864	0	0

Sample Name: **ical,s35534,pcb750_150**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-015**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: 16 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 7:24:15 PM
Analysis Date: 2/6/2018 9:15:43 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-015

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	5.01	0	0
Yes	Reset Baseline	6.332	0	0
Yes	Reset Baseline	7.093	0	0
Yes	Split Peak	9.887	0	0
Yes	Split Peak	10.536	0	0
Yes	Split Peak	12.117	0	0
Yes	Reset Baseline	12.56	0	0

Sample Name: **ical,s35534,pcb750_150** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-015** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq** Instrument: GC06 (Offline) Vial: 16 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met	Software Version 3.1.7 Run Date: 2/5/2018 7:24:15 PM Analysis Date: 2/6/2018 8:30:20 AM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.787	3.776	792513	137.172
PCB1016#1	5.353	5.347	172309	550.377
PCB1016#2	6.393	6.387	200958	602.721
PCB1016#3	6.687	6.680	112723	575.477
PCB1016#4	7.137	7.130	61299	538.802
PCB1016#5	7.637	7.630	87889	484.895
PCB1260#1	11.157	11.150	281577	573.747
PCB1260#2	11.803	11.797	300210	545.602
PCB1260#3	12.657	12.650	170564	560.782
PCB1260#4	13.397	13.390	368274	541.385
PCB1260#5	14.047	14.040	200006	569.909
Decachlorobiphenyl	16.650	16.640	954432	132.300

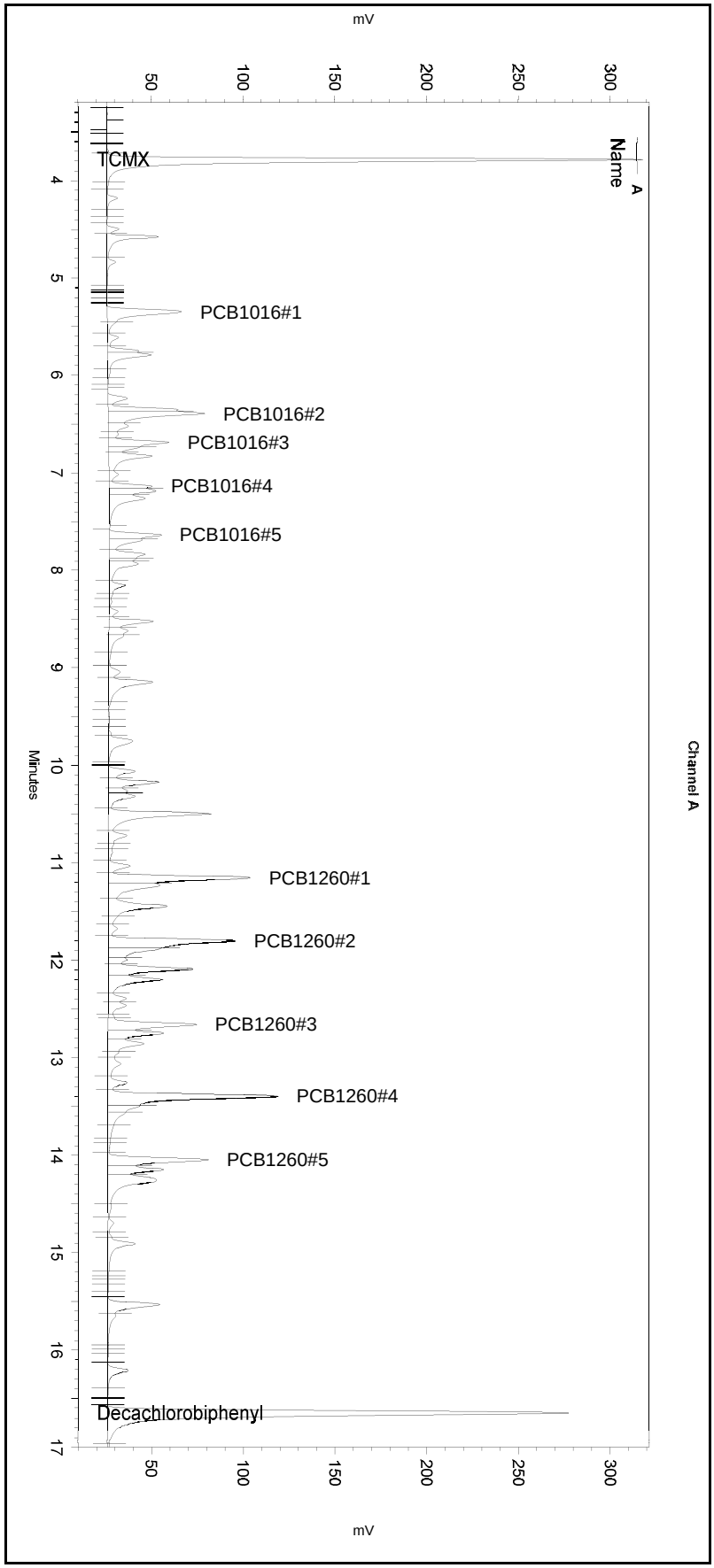
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.960	2.950	944011	130.289
PCB1016#1	4.343	4.350	224910	647.842
PCB1016#2	5.243	5.237	319044	715.992
PCB1016#3	5.443	5.437	196203	769.223
PCB1016#4	5.967	5.960	97633	688.698
PCB1016#5	6.660	6.657	179184	858.673
PCB1260#1	9.853	9.850	474827	1141.312
PCB1260#2	10.477	10.470	430957	935.407
PCB1260#3	11.403	11.397	211640	699.381
PCB1260#4	12.057	12.053	484451	953.101
PCB1260#5	12.727	12.723	241864	692.114
Decachlorobiphenyl	15.677	15.673	1060764	126.675

Sample Name: **ical,s35534,pcb750_150**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-015**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: 16 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 7:24:15 PM
Analysis Date: 2/6/2018 8:30:20 AM
Sample Amount: 1



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Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0

Manual Integration Fixes
==========

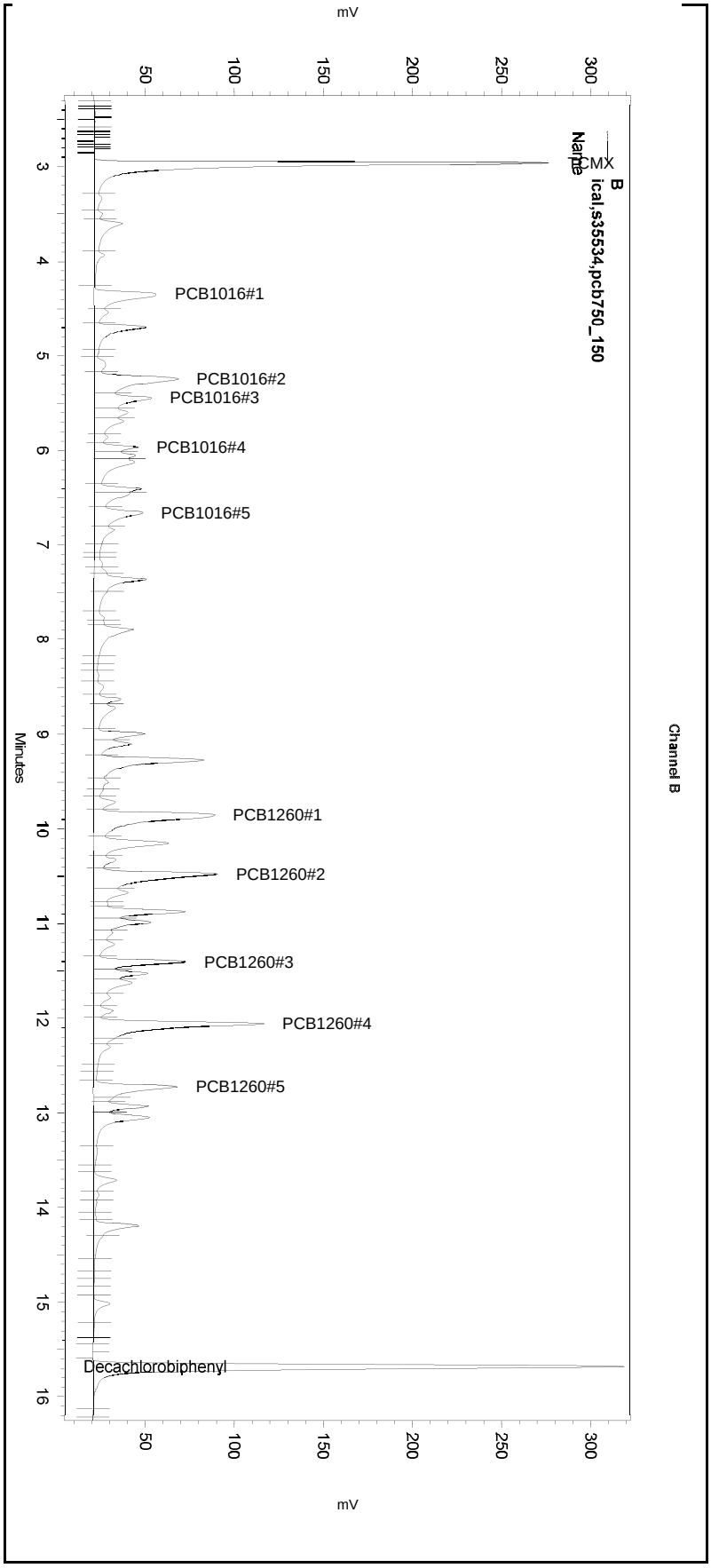
Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-015

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sample Name: **ical,s35534,pcb750_150**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-015**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: 16 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 7:24:15 PM
Analysis Date: 2/6/2018 8:30:20 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-015

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sample Name: **ical,s35535,pcb1000_200** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-016** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq** Instrument: GC06 (Offline) Vial: N/A Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met	Software Version 3.1.7 Run Date: 2/5/2018 7:52:17 PM Analysis Date: 2/6/2018 9:15:52 AM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.760	3.776	1216734	200.000 CAL
PCB1016#1	5.330	5.347	251575	1000.000 CAL
PCB1016#2	6.367	6.387	318730	1000.000 CAL
PCB1016#3	6.663	6.680	167317	1000.000 CAL
PCB1016#4	7.110	7.130	94195	1000.000 CAL
PCB1016#5	7.610	7.630	134677	1000.000 CAL
PCB1260#1	11.133	11.150	423466	1000.000 CAL
PCB1260#2	11.777	11.797	434255	1000.000 CAL
PCB1260#3	12.633	12.650	250420	1000.000 CAL
PCB1260#4	13.373	13.390	537551	1000.000 CAL
PCB1260#5	14.023	14.040	295539	1000.000 CAL
Decachlorobiphenyl	16.627	16.640	1367649	200.000 CAL

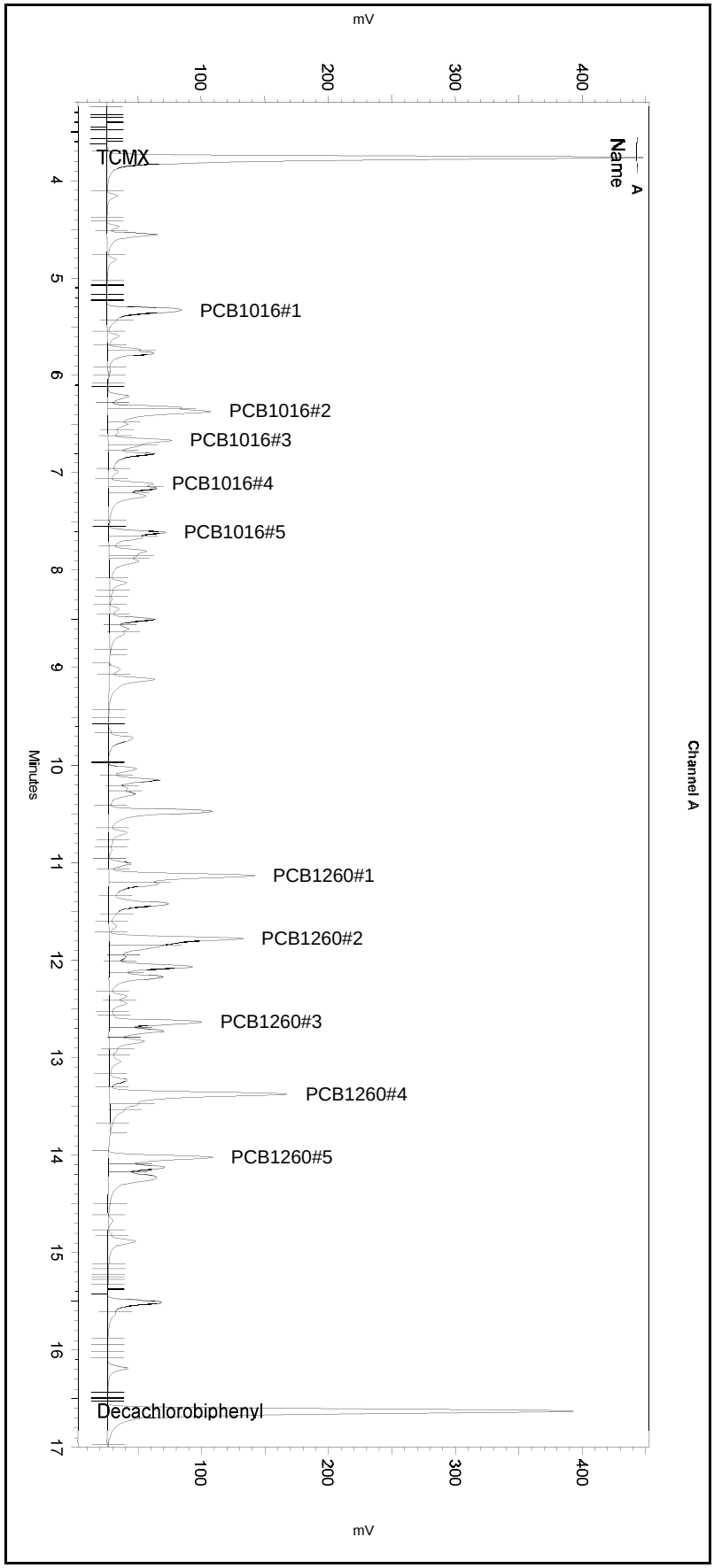
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.933	2.950	1467975	200.000 CAL
PCB1016#1	4.330	4.350	318597	1000.000 CAL
PCB1016#2	5.213	5.237	429594	1000.000 CAL
PCB1016#3	5.417	5.437	238343	1000.000 CAL
PCB1016#4	5.940	5.960	110352	1000.000 CAL
PCB1016#5	6.637	6.657	207093	1000.000 CAL
PCB1260#1	9.827	9.850	324077	1000.000 CAL
PCB1260#2	10.450	10.470	414357	1000.000 CAL
PCB1260#3	11.377	11.397	289196	1000.000 CAL
PCB1260#4	12.030	12.053	516620	1000.000 CAL
PCB1260#5	12.700	12.723	353792	1000.000 CAL
Decachlorobiphenyl	15.650	15.673	1532268	200.000 CAL

Sample Name: **ical,s35535,pcb1000_200**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-016**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: N/A Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 7:52:17 PM
Analysis Date: 2/6/2018 9:15:52 AM
Sample Amount: 1



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Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0

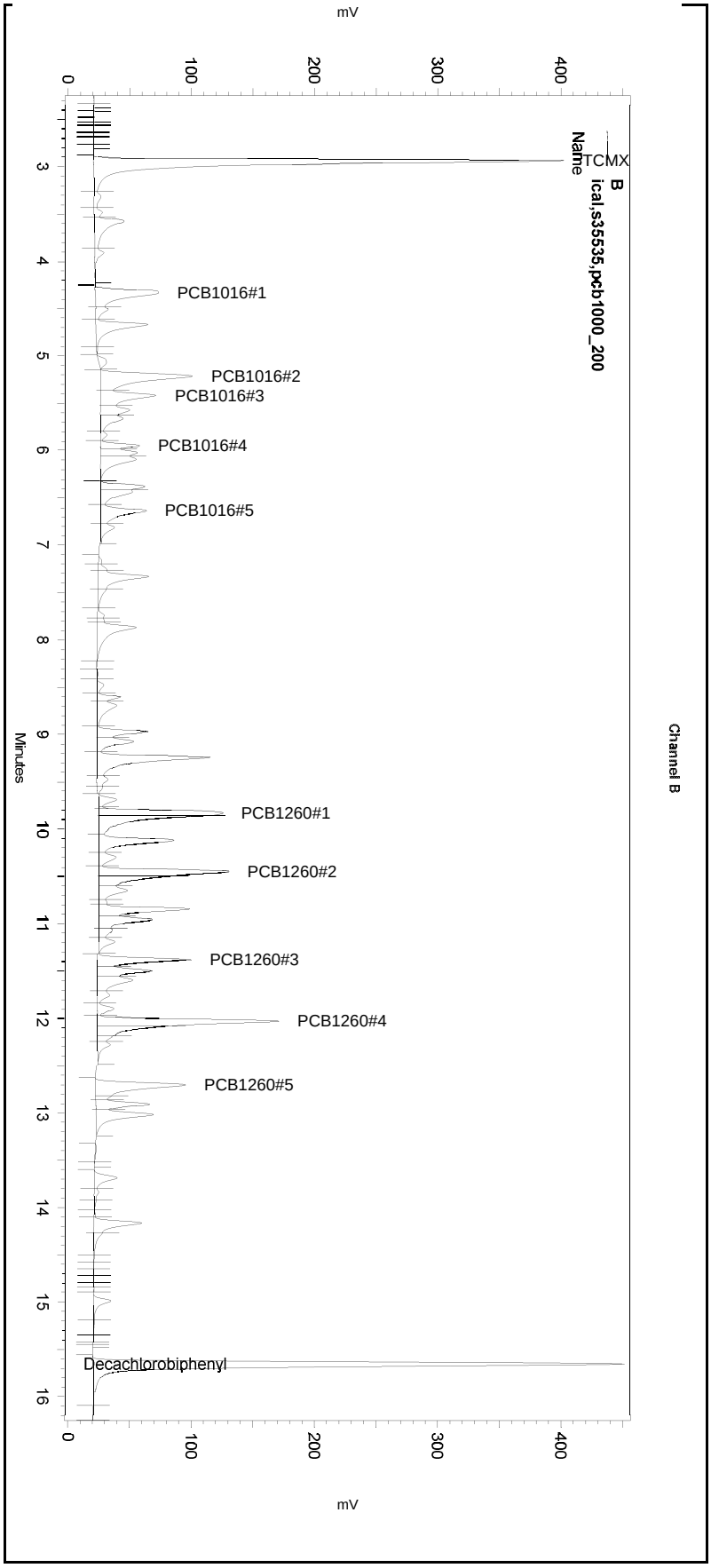
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-016

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	8.866	0	0
Yes	Reset Baseline	13.767	0	0

Sample Name: **ical,s35535,pcb1000_200**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-016**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: N/A Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 7:52:17 PM
Analysis Date: 2/6/2018 9:15:52 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-016

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	5.138	0	0
Yes	Reset Baseline	6.986	0	0
Yes	Reset Baseline	7.032	0	0
Yes	Manual Baseline	9.631	11.31	0
Yes	Manual Peak	9.765	9.854	0
Yes	Split Peak	10.498	0	0
Yes	Split Peak	12.08	0	0
Yes	Reset Baseline	12.488	0	0
Yes	Reset Baseline	12.561	0	0
Yes	Reset Baseline	13.247	0	0

Sample Name: **ical,s35535,pcb1000_200** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-016** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq** Instrument: GC06 (Offline) Vial: N/A Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met	Software Version 3.1.7 Run Date: 2/5/2018 7:52:17 PM Analysis Date: 2/6/2018 8:30:28 AM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.760	3.776	1217271	212.308
PCB1016#1	5.330	5.347	254029	811.401
PCB1016#2	6.367	6.387	324567	973.454
PCB1016#3	6.663	6.680	172452	880.407
PCB1016#4	7.110	7.130	99576	875.246
PCB1016#5	7.610	7.630	143442	791.388
PCB1260#1	11.133	11.150	432274	882.849
PCB1260#2	11.777	11.797	445827	810.246
PCB1260#3	12.633	12.650	263340	865.811
PCB1260#4	13.373	13.390	556760	818.471
PCB1260#5	14.023	14.040	302189	861.075
Decachlorobiphenyl	16.627	16.640	1367649	191.445

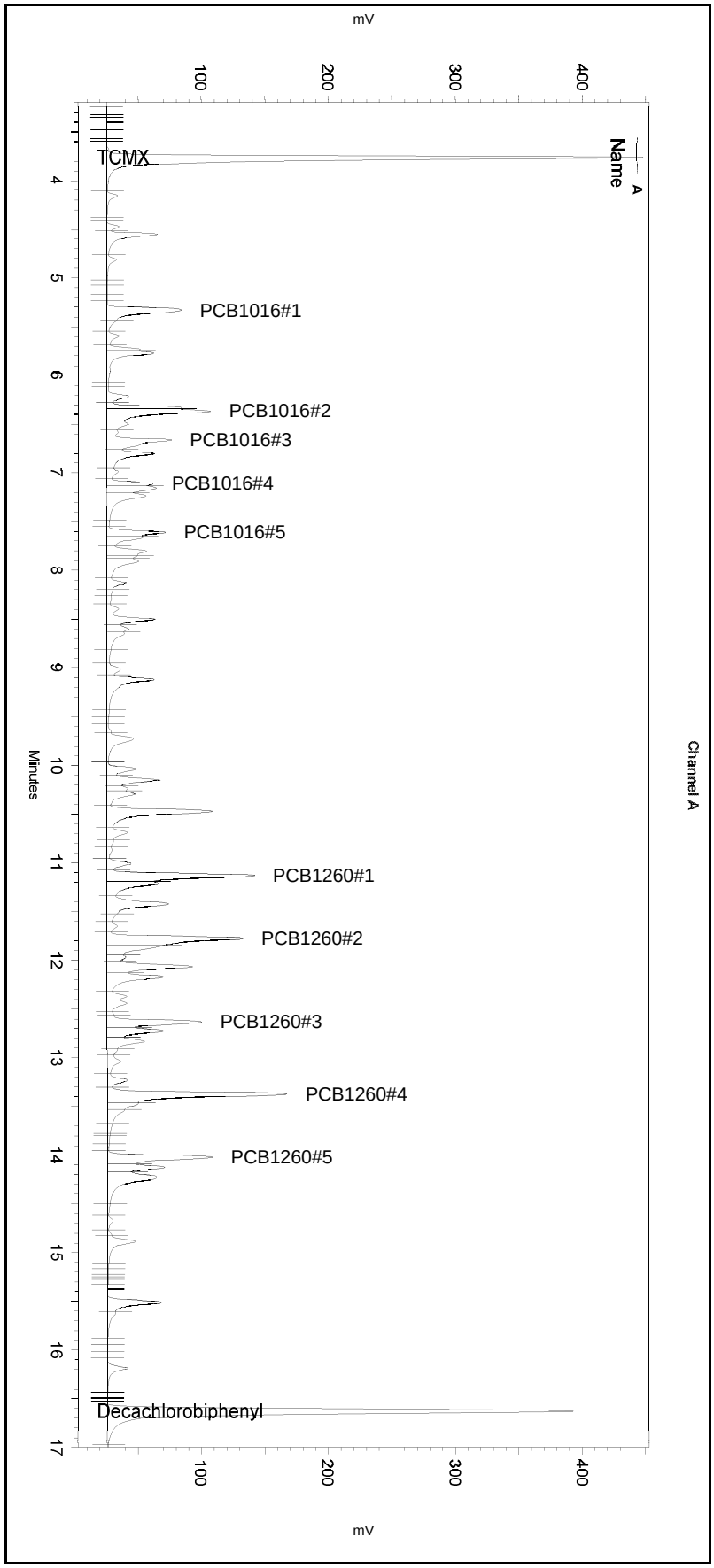
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.933	2.950	1471407	203.079
PCB1016#1	4.330	4.350	337101	971.003
PCB1016#2	5.213	5.237	510792	1135.114
PCB1016#3	5.417	5.437	295103	1156.965
PCB1016#4	5.940	5.960	143488	1012.157
PCB1016#5	6.637	6.657	269785	1292.844
PCB1260#1	9.827	9.850	708817	1703.739
PCB1260#2	10.450	10.470	654713	1409.416
PCB1260#3	11.377	11.397	314144	1038.113
PCB1260#4	12.030	12.053	728675	1433.584
PCB1260#5	12.700	12.723	376385	1077.057
Decachlorobiphenyl	15.650	15.673	1532268	183.746

Sample Name: **ical,s35535,pcb1000_200**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-016**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: N/A Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 7:52:17 PM
Analysis Date: 2/6/2018 8:30:28 AM
Sample Amount: 1



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No items selected for this section

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Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0

Manual Integration Fixes
==========

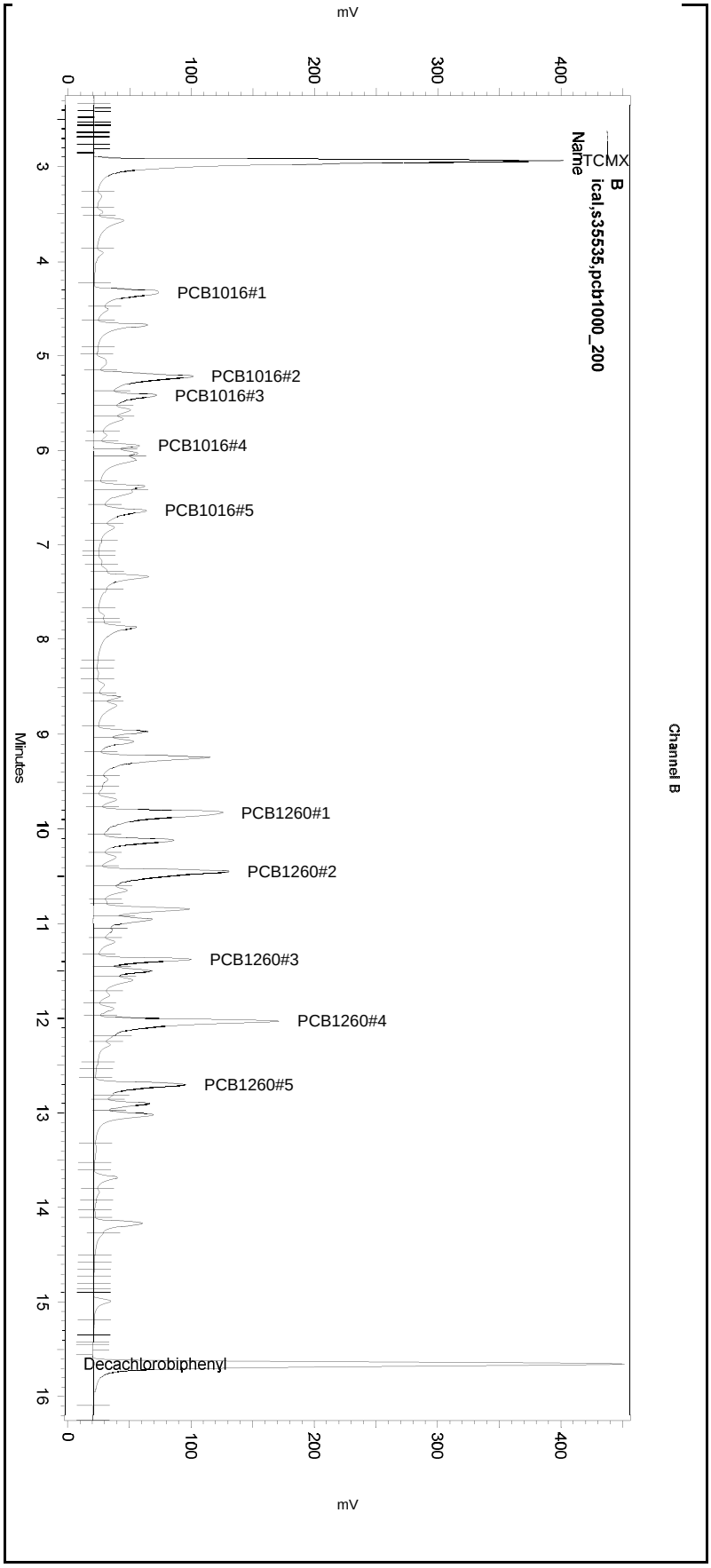
Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-016

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sample Name: **ical,s35535,pcb1000_200**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-016**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: N/A Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 7:52:17 PM
Analysis Date: 2/6/2018 8:30:28 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========
Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-016

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sample Name: **icv,s35527,ULTRA_1660** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-018** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq** Instrument: GC06 (Offline) Vial: 18 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met	Software Version 3.1.7 Run Date: 2/5/2018 8:48:17 PM Analysis Date: 2/6/2018 2:08:19 PM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.780	3.776	293629	48.356
PCB1016#1	5.347	5.347	66859	252.512
PCB1016#2	6.383	6.387	65396	249.298
PCB1016#3	6.677	6.680	40148	252.893
PCB1016#4	7.127	7.130	21119	240.253
PCB1016#5	7.627	7.630	30534	258.051
PCB1260#1	11.150	11.150	94163	229.935
PCB1260#2	11.797	11.797	84354	210.945
PCB1260#3	12.650	12.650	69589	289.628
PCB1260#4	13.390	13.390	146856	286.775
PCB1260#5	14.040	14.040	70604	264.993
Decachlorobiphenyl	16.643	16.640	396259	56.090

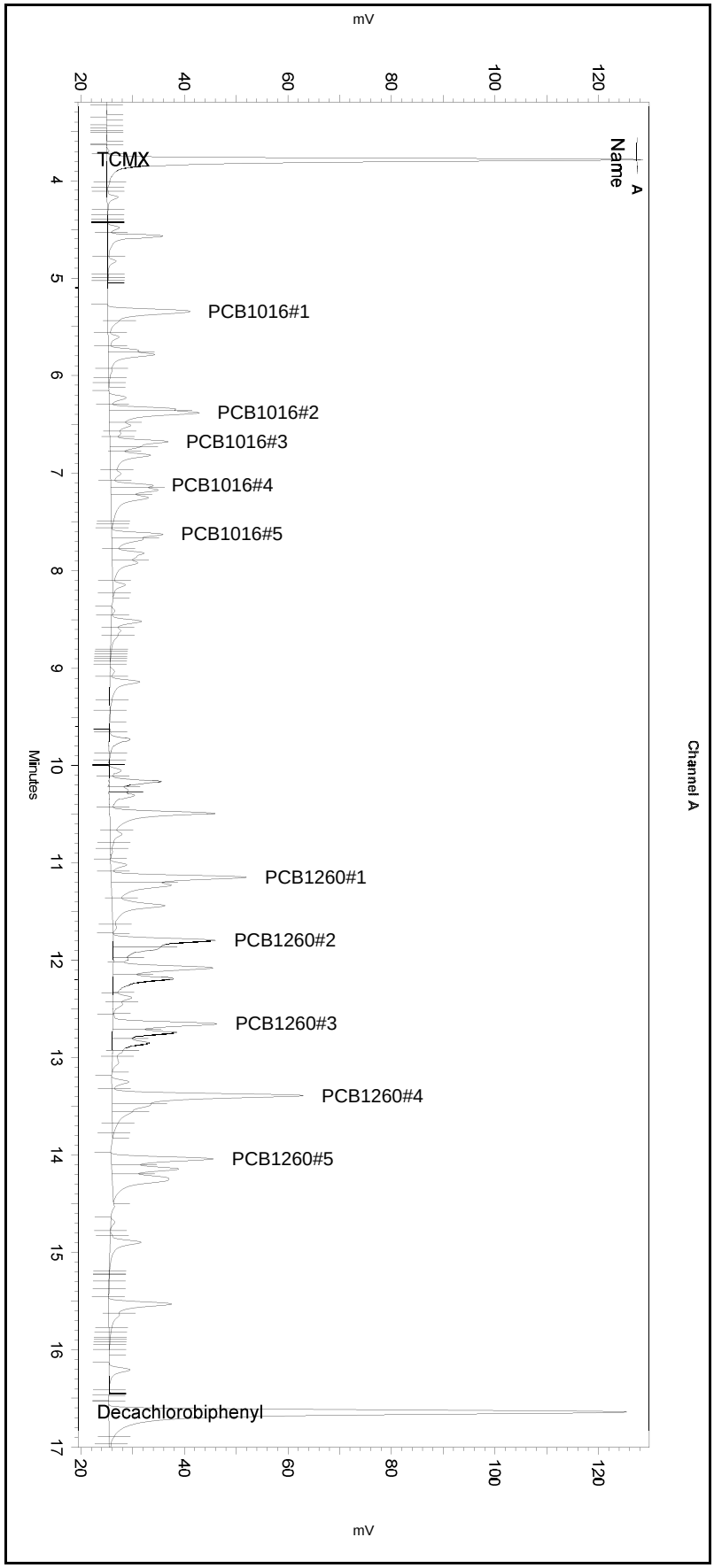
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.957	2.950	313228	50.358
PCB1016#1	4.353	4.350	78175	260.118
PCB1016#2	5.240	5.237	83950	271.392
PCB1016#3	5.443	5.437	62696	276.074
PCB1016#4	5.960	5.960	29535	267.664
PCB1016#5	6.657	6.657	48362	264.947
PCB1260#1	9.857	9.850	84124	258.649
PCB1260#2	10.473	10.470	75866	198.459
PCB1260#3	11.397	11.397	79318	299.061
PCB1260#4	12.053	12.053	124406	273.636
PCB1260#5	12.723	12.723	76343	264.827
Decachlorobiphenyl	15.670	15.673	415451	49.229

Sample Name: **icv,s35527,ULTRA_1660**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-018**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: 18 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 8:48:17 PM
Analysis Date: 2/6/2018 2:08:19 PM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0

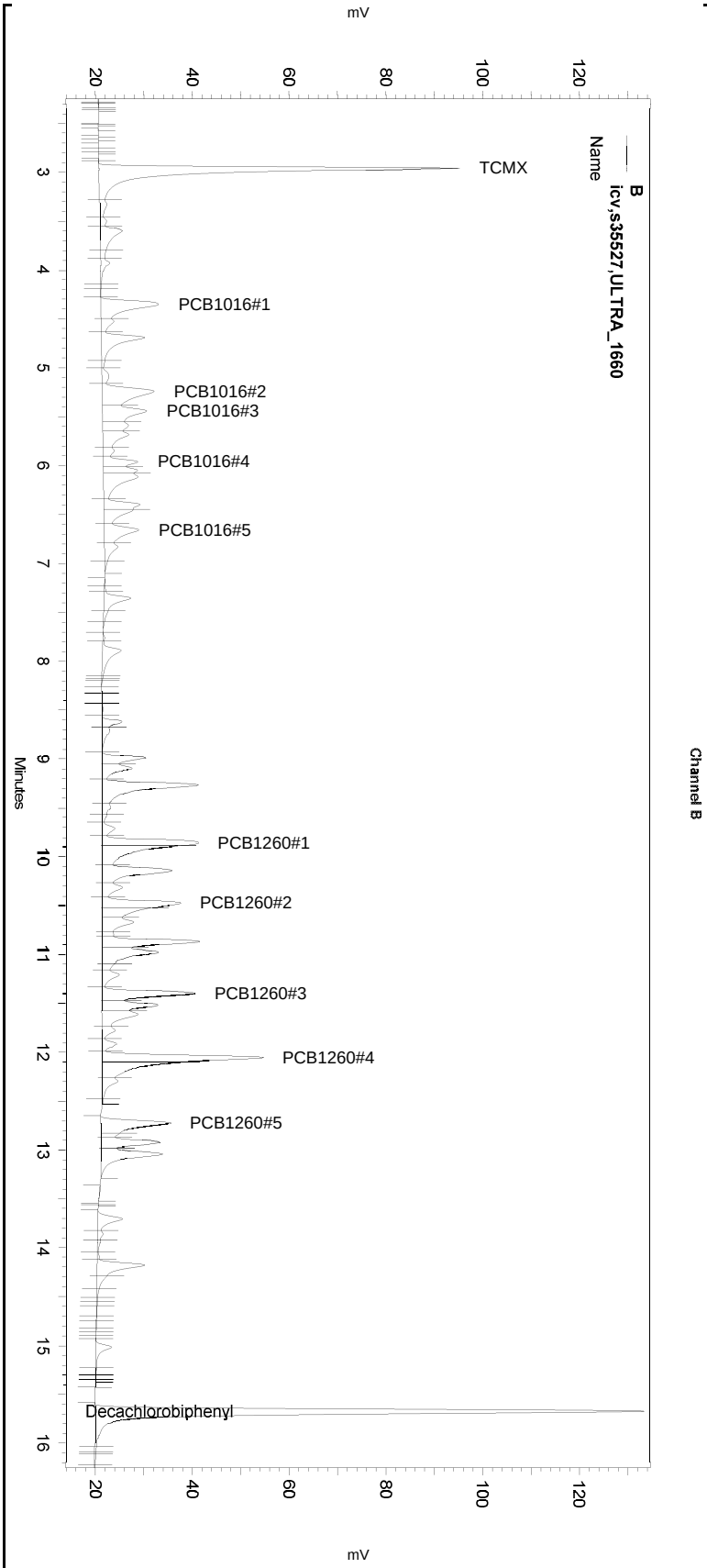
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-018

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	8.279	0	0
Yes	Manual Baseline	11.717	13.151	0
Yes	Reset Baseline	13.832	0	0
Yes	Reset Baseline	14.53	0	0

Sample Name: **icv,s35527,ULTRA_1660**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-018**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: 18 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 8:48:17 PM
Analysis Date: 2/6/2018 2:08:19 PM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-018

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	7.101	0	0
Yes	Split Peak	9.889	0	0
Yes	Split Peak	10.527	0	0
Yes	Split Peak	12.099	0	0
Yes	Reset Baseline	12.531	0	0
Yes	Reset Baseline	13.286	0	0

Sample Name: **icv,s35527,ULTRA_1660** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-018** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq** Instrument: GC06 (Offline) Vial: 18 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met	Software Version 3.1.7 Run Date: 2/5/2018 8:48:17 PM Analysis Date: 2/6/2018 9:20:16 AM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.780	3.776	293629	48.356
PCB1016#1	5.347	5.347	67007	253.071
PCB1016#2	6.383	6.387	67051	255.607
PCB1016#3	6.677	6.680	41944	264.206
PCB1016#4	7.127	7.130	22871	260.185
PCB1016#5	7.627	7.630	33958	286.988
PCB1260#1	11.150	11.150	94163	229.935
PCB1260#2	11.797	11.797	78175	195.493
PCB1260#3	12.650	12.650	67950	282.807
PCB1260#4	13.390	13.390	147972	288.954
PCB1260#5	14.040	14.040	71702	269.114
Decachlorobiphenyl	16.643	16.640	396259	56.090

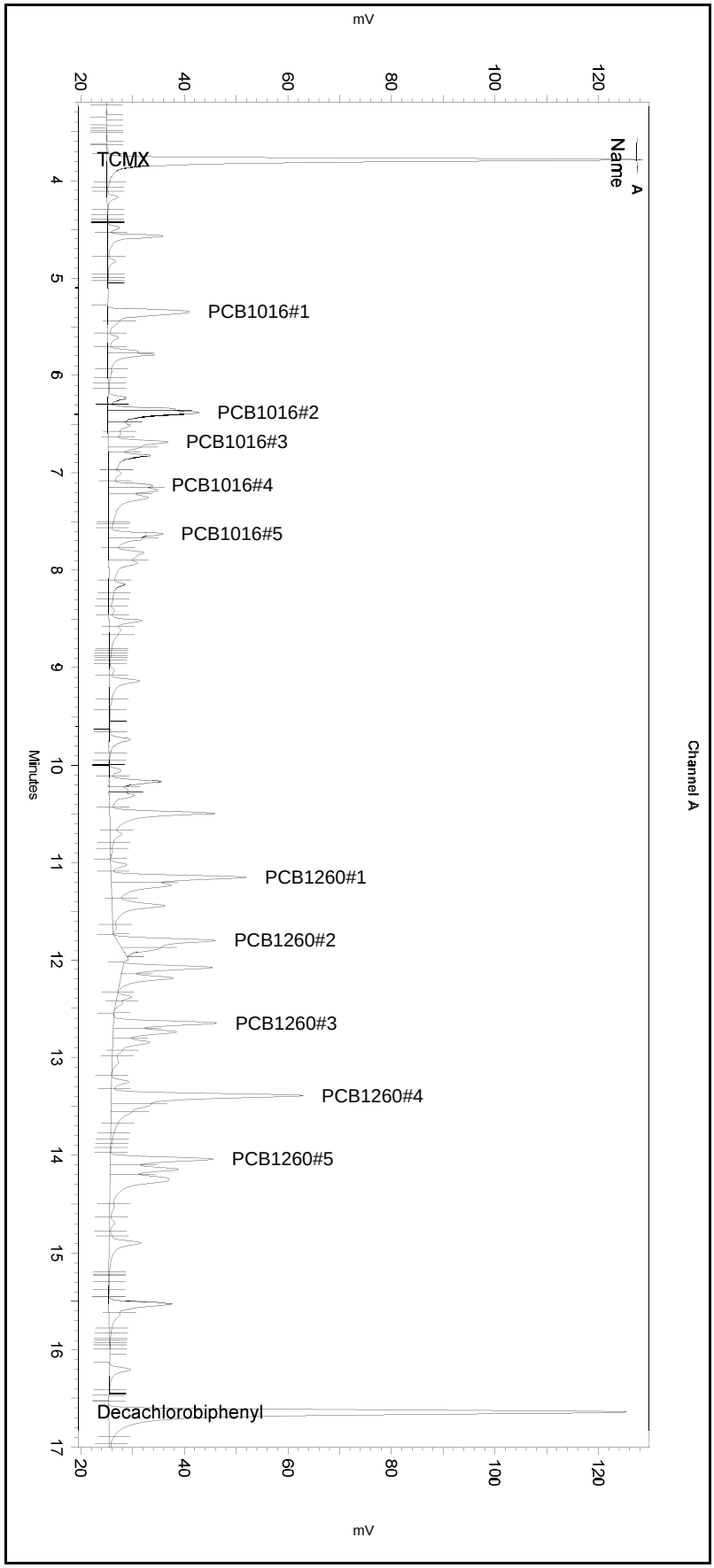
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.957	2.950	315163	50.669
PCB1016#1	4.353	4.350	85662	285.030
PCB1016#2	5.240	5.237	95779	303.957
PCB1016#3	5.443	5.437	72236	316.536
PCB1016#4	5.960	5.960	36556	341.487
PCB1016#5	6.657	6.657	65160	356.973
PCB1260#1	9.857	9.850	167022	513.528
PCB1260#2	10.473	10.470	125647	318.792
PCB1260#3	11.397	11.397	88434	333.432
PCB1260#4	12.053	12.053	209211	460.168
PCB1260#5	12.723	12.723	86205	299.038
Decachlorobiphenyl	15.670	15.673	415451	49.229

Sample Name: **icv,s35527,ULTRA_1660**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-018**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: 18 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 8:48:17 PM
Analysis Date: 2/6/2018 9:20:16 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0

Manual Integration Fixes
==========

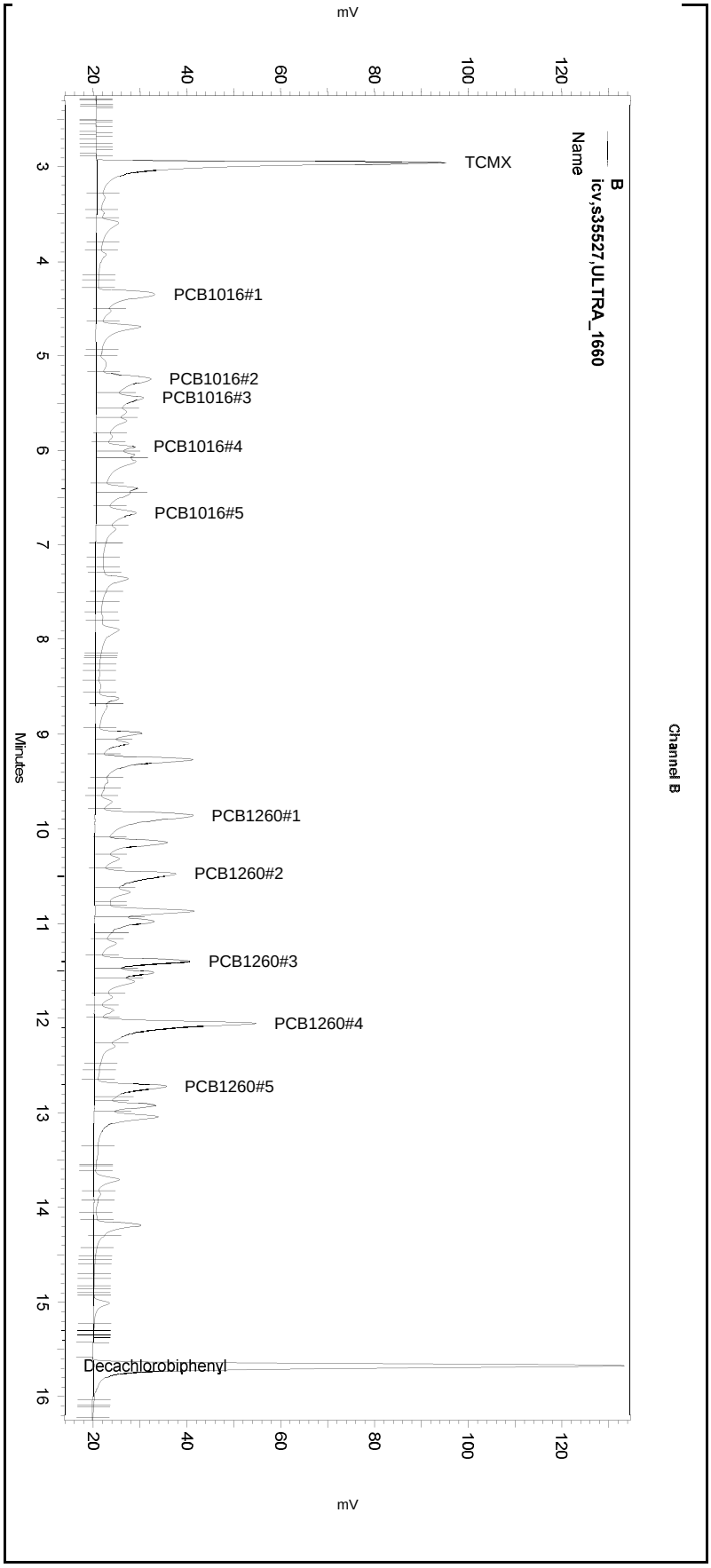
Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-018

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sample Name: **icv,s35527,ULTRA_1660**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-018**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: 18 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 8:48:17 PM
Analysis Date: 2/6/2018 9:20:16 AM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========
Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-018

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Continuing Calibration Verification Raw Data

ENTHALPY CONTINUING CALIBRATION FOR 296840 PCBS Water
EPA 8082A

Inst : GC06 Run Name : PCB250_50 IDF : 1.0
Seqnum : 208053862011.1 File : 037_011 Time : 06-FEB-2018 14:36
Cal : 208052389001 Caldate : 05-FEB-2018
Standards: S35532

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Aroclor-1016	A			250.0	240.9	pg/uL	-4	20	
Aroclor-1260	A			250.0	239.5	pg/uL	-4	20	
TCMX	A	6072.3	5678.0	50.00	46.75	pg/uL	-6	20	
Decachlorobiphenyl	A	8292.8	7605.1	50.00	53.64	pg/uL	7	20	
Aroclor-1016	B			250.0	239.6	pg/uL	-4	20	
Aroclor-1260	B			250.0	230.1	pg/uL	-8	20	
TCMX	B	6220.1	5861.9	50.00	47.12	pg/uL	-6	20	
Decachlorobiphenyl	B	8439.1	7649.6	50.00	45.32	pg/uL	-9	20	

JC1 02/06/18 : Corrected automatically drawn baseline. [general version]

Analyst: JC1 Date: 02/07/18 Reviewer: EAH Date: 02/08/18

Sample Name: **ccv,s35532,pcb250_50** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\037-011** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\037.seq** Instrument: GC06 (Offline) Vial: 13 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met	Software Version 3.1.7 Run Date: 2/6/2018 2:36:42 PM Analysis Date: 2/6/2018 3:02:45 PM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.787	3.776	283901	46.754
PCB1016#1	5.350	5.347	63872	241.231
PCB1016#2	6.390	6.387	63555	242.280
PCB1016#3	6.687	6.680	37547	236.509
PCB1016#4	7.137	7.130	21494	244.520
PCB1016#5	7.637	7.630	28391	239.940
PCB1260#1	11.157	11.150	95944	234.284
PCB1260#2	11.803	11.797	95691	239.295
PCB1260#3	12.660	12.650	60765	252.903
PCB1260#4	13.400	13.390	121712	237.675
PCB1260#5	14.050	14.040	62180	233.376
Decachlorobiphenyl	16.653	16.640	380255	53.642

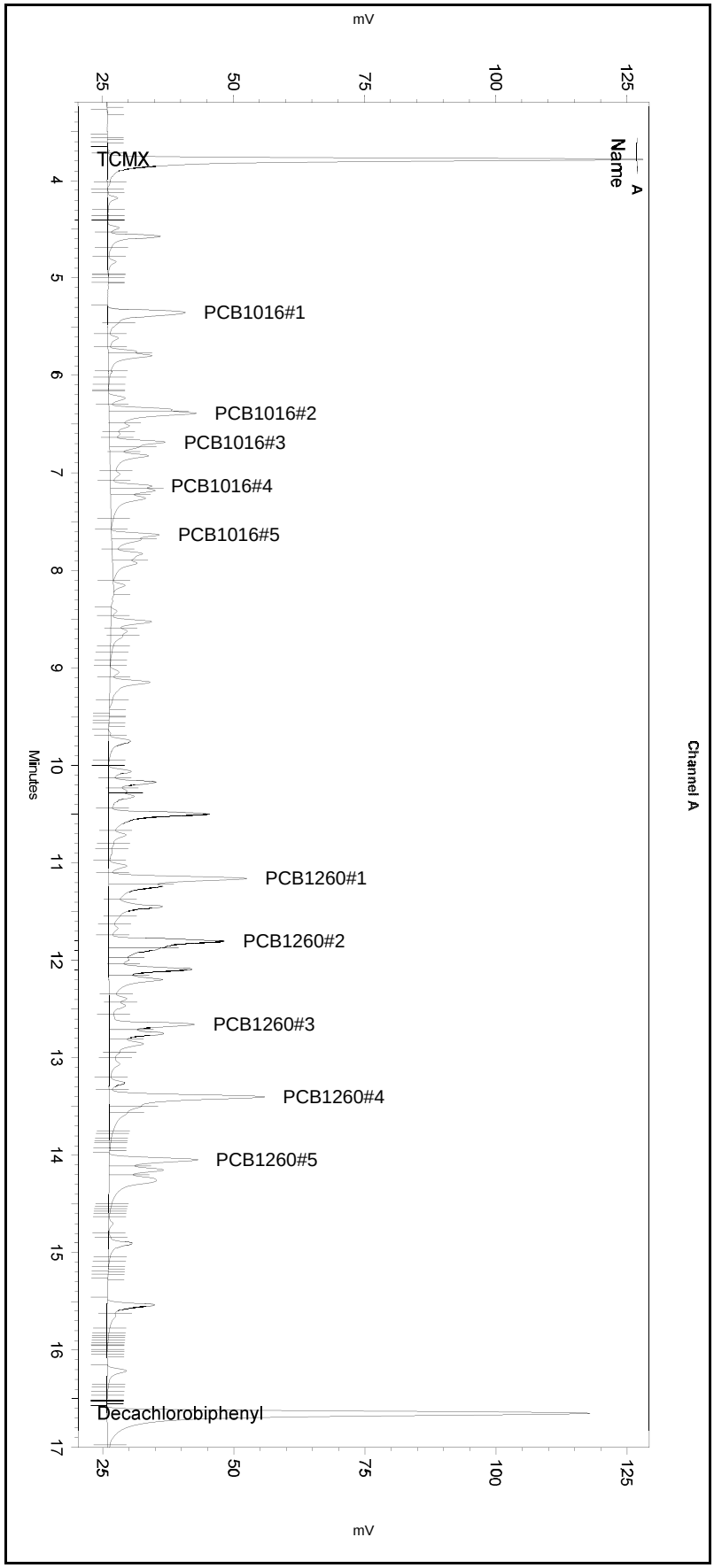
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.960	2.950	293095	47.121
PCB1016#1	4.360	4.350	70498	234.574
PCB1016#2	5.247	5.237	73167	240.893
PCB1016#3	5.447	5.437	54817	242.657
PCB1016#4	5.967	5.960	26420	239.434
PCB1016#5	6.663	6.657	43892	240.458
PCB1260#1	9.867	9.850	84319	259.248
PCB1260#2	10.483	10.470	78516	204.864
PCB1260#3	11.407	11.397	59584	224.656
PCB1260#4	12.063	12.053	98208	216.012
PCB1260#5	12.730	12.723	70872	245.849
Decachlorobiphenyl	15.677	15.673	382479	45.322

Sample Name: **ccv,s35532,pcb250_50**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\037-011**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\037.seq**
Instrument: GC06 (Offline) Vial: 13 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/6/2018 2:36:42 PM
Analysis Date: 2/6/2018 3:02:45 PM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0

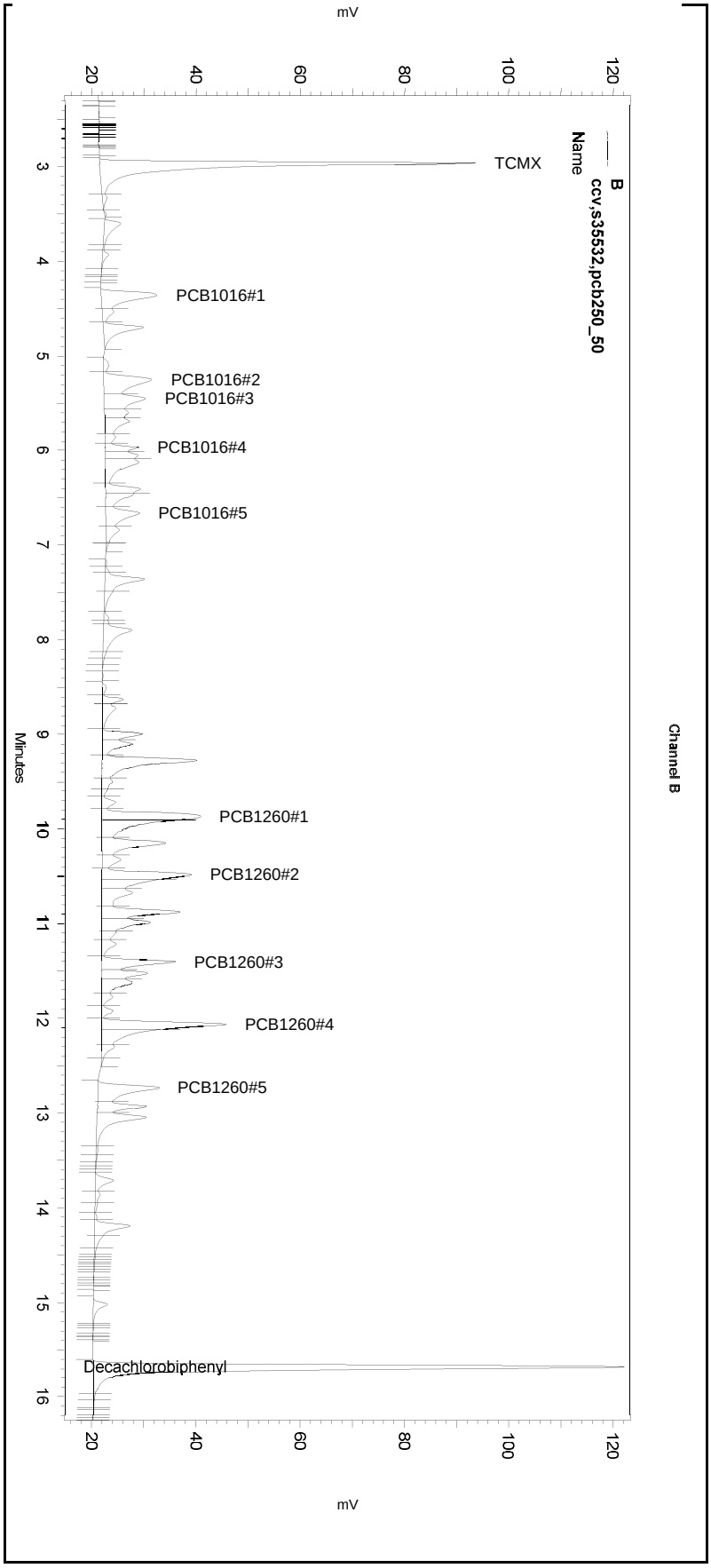
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\037-011

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	8.246	0	0
Yes	Reset Baseline	17.087	0	0

Sample Name: **ccv,s35532,pcb250_50**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\037-011**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\037.seq**
Instrument: GC06 (Offline) Vial: 13 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/6/2018 2:36:42 PM
Analysis Date: 2/6/2018 3:02:45 PM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\037-011

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	3.534	0	0
Yes	Reset Baseline	4.93	0	0
Yes	Reset Baseline	7.069	0	0
Yes	Split Peak	9.902	0	0
Yes	Split Peak	10.535	0	0
Yes	Split Peak	12.118	0	0
Yes	Reset Baseline	12.514	0	0

Sample Name: **ccv,s35532,pcb250_50**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\037-011**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\037.seq**
Instrument: GC06 Vial: 13 Operator: lims2k3\pest3
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/6/2018 2:36:42 PM
Analysis Date: 2/6/2018 3:00:39 PM
Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.787	3.776	283901	46.754
PCB1016#1	5.350	5.347	64013	241.763
PCB1016#2	6.390	6.387	65024	247.880
PCB1016#3	6.687	6.680	39128	246.468
PCB1016#4	7.137	7.130	23351	265.645
PCB1016#5	7.637	7.630	31523	266.409
PCB1260#1	11.157	11.150	95944	234.284
PCB1260#2	11.803	11.797	95691	239.295
PCB1260#3	12.660	12.650	60765	252.903
PCB1260#4	13.400	13.390	121712	237.675
PCB1260#5	14.050	14.040	62180	233.376
Decachlorobiphenyl	16.653	16.640	381721	53.866

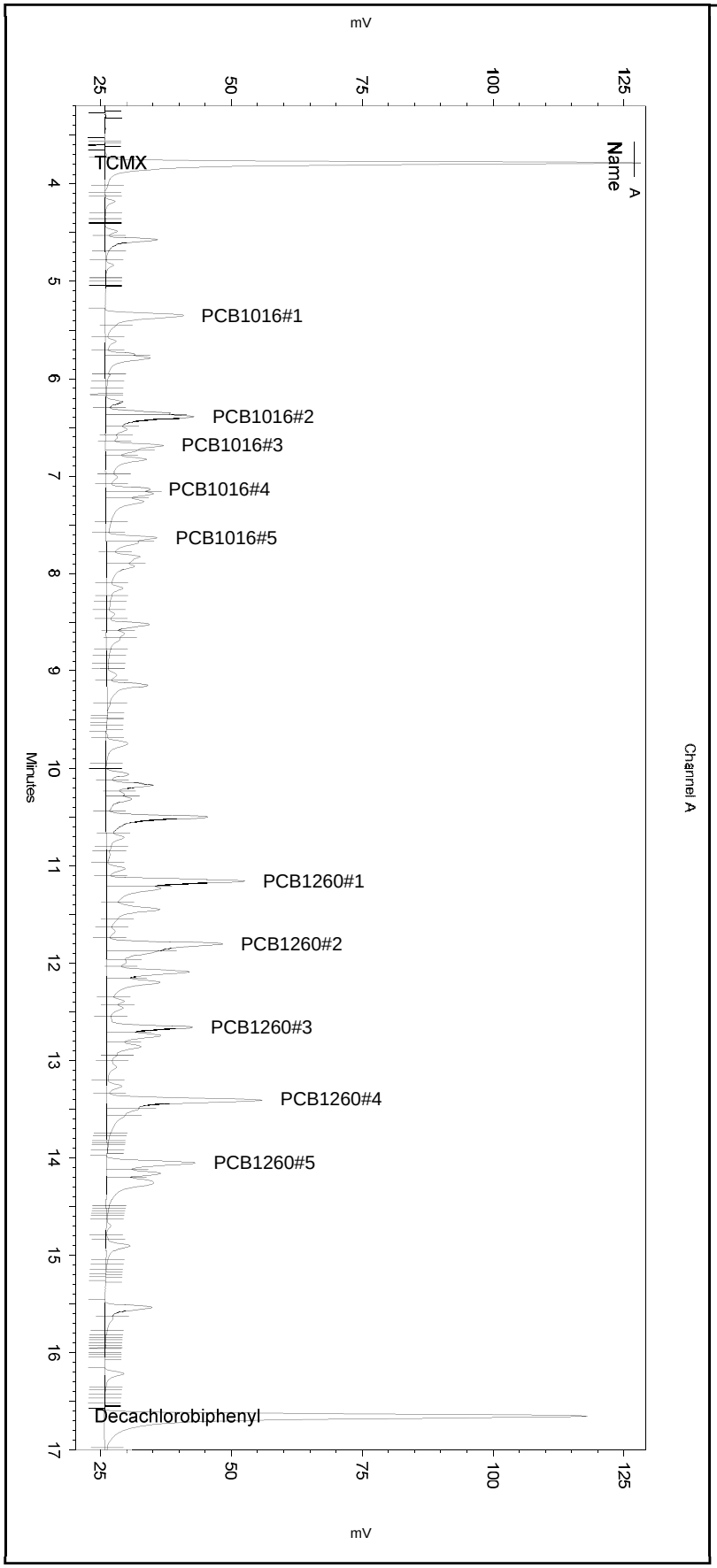
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.960	2.950	301125	48.412
PCB1016#1	4.360	4.350	79135	263.312
PCB1016#2	5.247	5.237	89119	285.733
PCB1016#3	5.447	5.437	66848	293.684
PCB1016#4	5.967	5.960	34609	313.648
PCB1016#5	6.663	6.657	62741	343.721
PCB1260#1	9.867	9.850	164288	505.122
PCB1260#2	10.483	10.470	133960	338.887
PCB1260#3	11.407	11.397	69274	261.191
PCB1260#4	12.063	12.053	165969	365.056
PCB1260#5	12.730	12.723	78778	273.274
Decachlorobiphenyl	15.677	15.673	382479	45.322

Sample Name: **ccv,s35532,pcb250_50**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\037-011**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\037.seq**
Instrument: GC06 Vial: 13 Operator: lims2k3\pest3
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/6/2018 2:36:42 PM
Analysis Date: 2/6/2018 3:00:39 PM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0

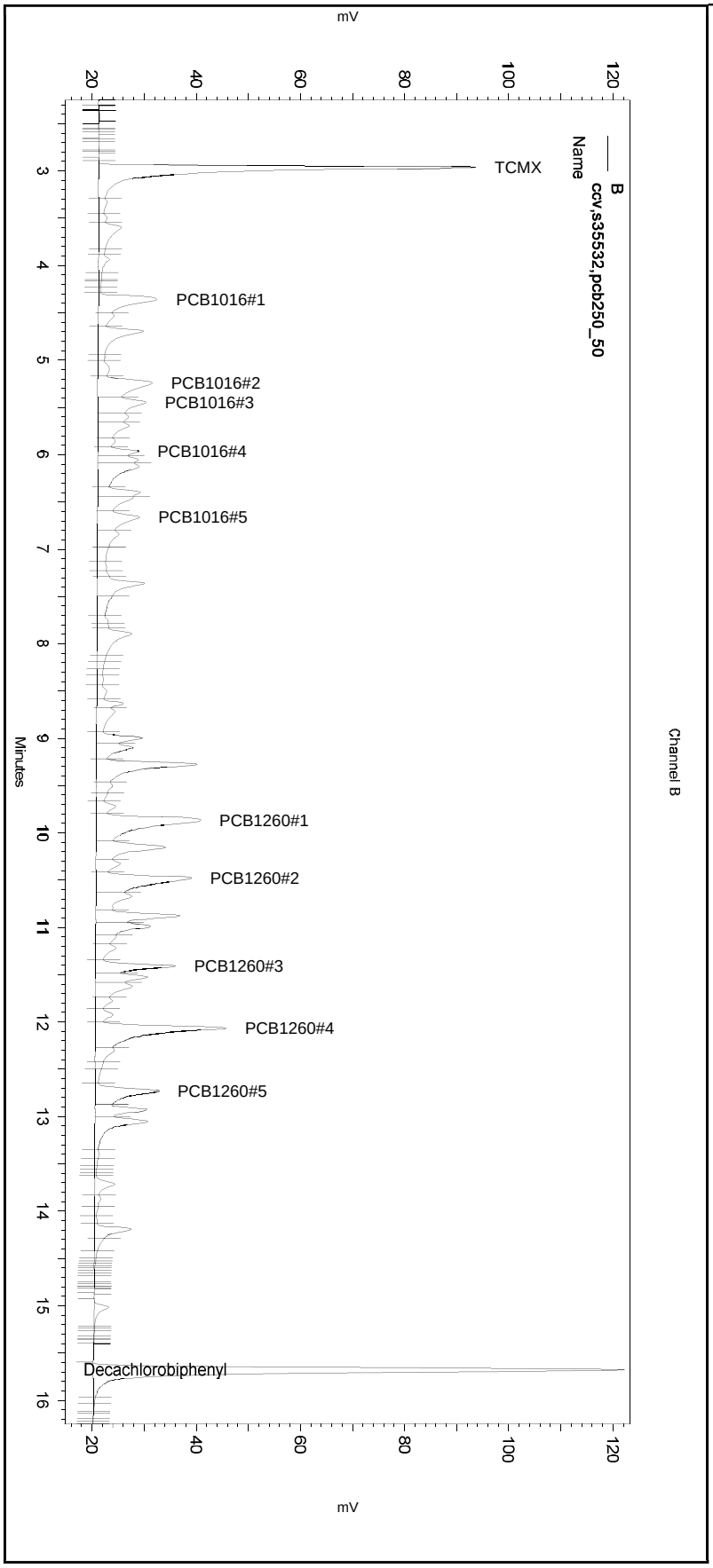
Manual Integration Fixes
==========

Data File: C:\Documents and Settings\All Users\Application Data\ChromatographySystem\Recovery Data\Instrument.10112\037-011_13E9.tmp

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Sample Name: **ccv,s35532,pcb250_50**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\037-011**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\037.seq**
Instrument: GC06 Vial: 13 Operator: lims2k3\pest3
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/6/2018 2:36:42 PM
Analysis Date: 2/6/2018 3:00:39 PM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========
Data File: C:\Documents and Settings\All Users\Application Data\ChromatographySystem\Recovery Data\Instrument.10112\037-011_13E9.tmp

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

ENTHALPY CONTINUING CALIBRATION FOR 296840 PCBS Water
EPA 8082A

Inst : GC06 Run Name : PCB250_50 IDF : 1.0
Seqnum : 208053862024.1 File : 037_024 Time : 06-FEB-2018 22:11
Cal : 208052389001 Caldate : 05-FEB-2018
Standards: S35532

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Aroclor-1016	A			250.0	280.8	pg/uL	12	20	
Aroclor-1260	A			250.0	283.9	pg/uL	14	20	
TCMX	A	6072.3	5915.4	50.00	48.71	pg/uL	-3	20	
Decachlorobiphenyl	A	8292.8	8064.9	50.00	57.16	pg/uL	14	20	
Aroclor-1016	B			250.0	257.6	pg/uL	3	20	
Aroclor-1260	B			250.0	264.3	pg/uL	6	20	
TCMX	B	6220.1	6234.8	50.00	50.12	pg/uL	0	20	
Decachlorobiphenyl	B	8439.1	8675.6	50.00	51.40	pg/uL	3	20	

JC1 02/07/18 : Corrected automatically drawn baseline. [general version]

Analyst: JC1 Date: 02/07/18 Reviewer: EAH Date: 02/08/18

Sample Name: **ccv,s35532,pcb250_50** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\037-024** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\037.seq** Instrument: GC06 (Offline) Vial: 24 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met	Software Version 3.1.7 Run Date: 2/6/2018 10:11:17 PM Analysis Date: 2/7/2018 8:13:00 AM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.770	3.776	295771	48.708
PCB1016#1	5.337	5.347	67708	255.719
PCB1016#2	6.377	6.387	74394	283.600
PCB1016#3	6.670	6.680	46172	290.838
PCB1016#4	7.120	7.130	25495	290.036
PCB1016#5	7.620	7.630	33590	283.878
PCB1260#1	11.140	11.150	117724	287.469
PCB1260#2	11.787	11.797	114593	286.564
PCB1260#3	12.640	12.650	61505	255.983
PCB1260#4	13.383	13.390	147863	288.741
PCB1260#5	14.030	14.040	80148	300.814
Decachlorobiphenyl	16.633	16.640	403243	57.159

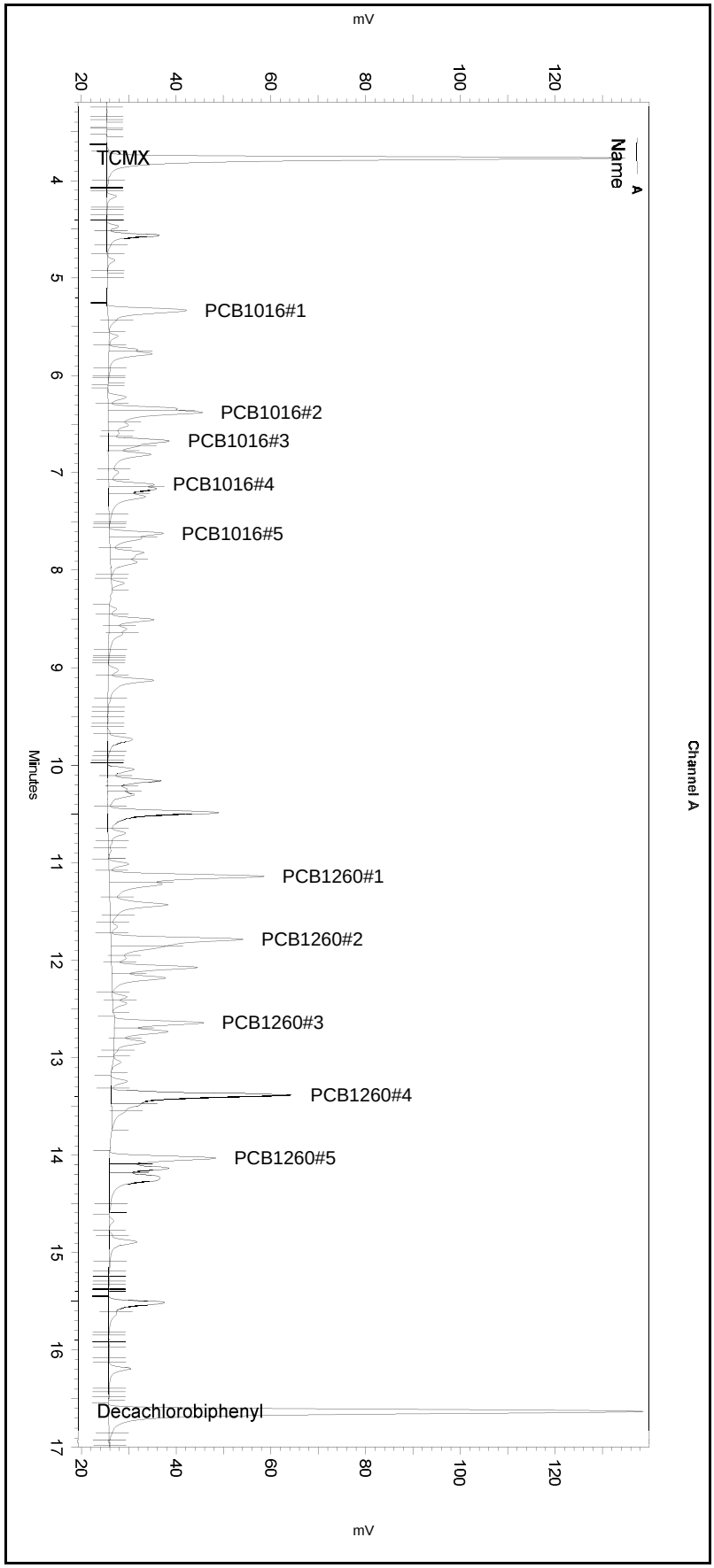
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.947	2.950	311739	50.118
PCB1016#1	4.340	4.350	76778	255.470
PCB1016#2	5.230	5.237	83683	270.647
PCB1016#3	5.430	5.437	56322	249.040
PCB1016#4	5.950	5.960	26799	242.869
PCB1016#5	6.647	6.657	49277	269.960
PCB1260#1	9.840	9.850	80664	248.011
PCB1260#2	10.460	10.470	95157	245.090
PCB1260#3	11.387	11.397	72376	272.887
PCB1260#4	12.040	12.053	118032	259.616
PCB1260#5	12.710	12.723	85300	295.899
Decachlorobiphenyl	15.660	15.673	433781	51.401

Sample Name: **ccv,s35532,pcb250_50**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\037-024**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\037.seq**
Instrument: GC06 (Offline) Vial: 24 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/6/2018 10:11:17 PM
Analysis Date: 2/7/2018 8:13:00 AM
Sample Amount: 1



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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0

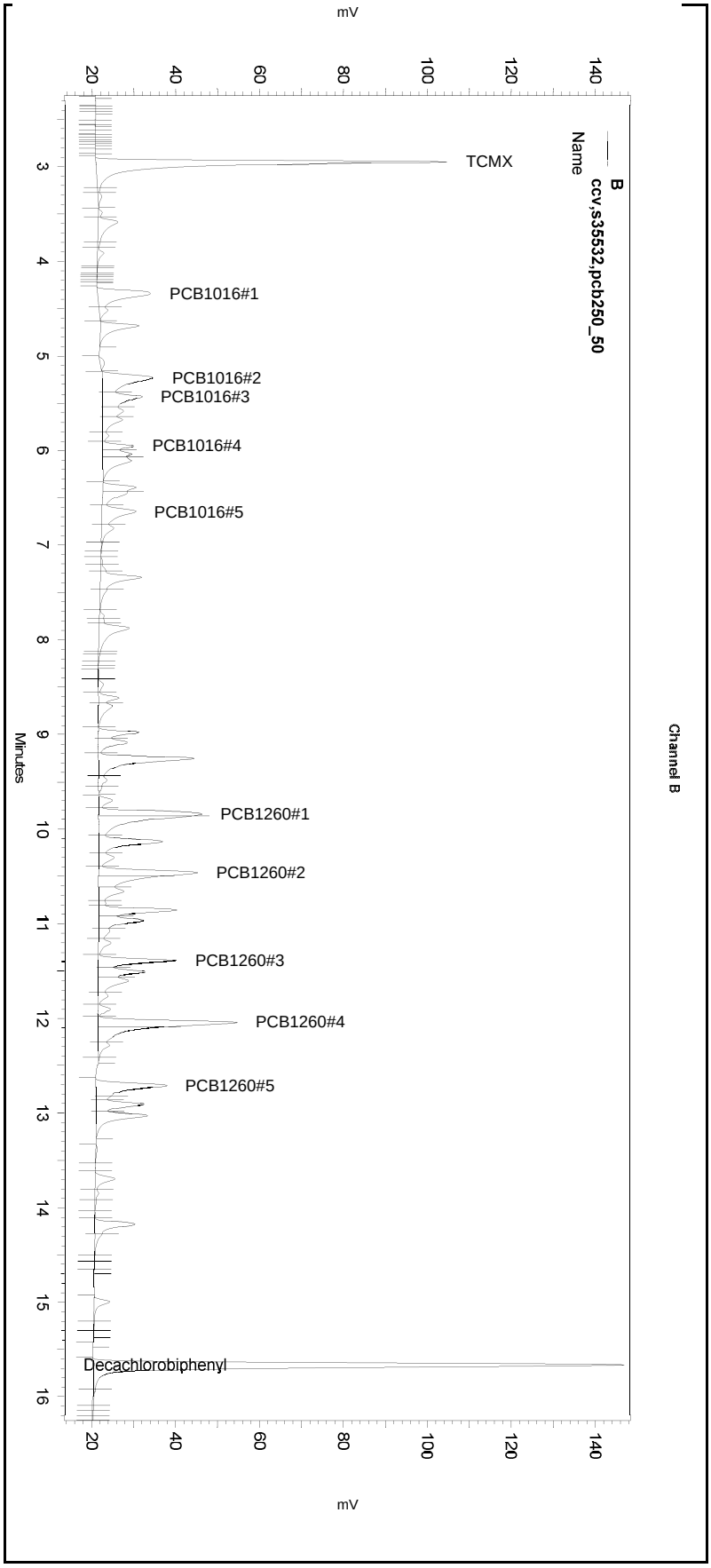
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\037-024

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	5.551	0	0
Yes	Reset Baseline	8.205	0	0
Yes	Reset Baseline	10.953	0	0
Yes	Reset Baseline	12.56	0	0
Yes	Reset Baseline	12.976	0	0
Yes	Reset Baseline	13.737	0	0
Yes	Reset Baseline	14.584	0	0

Sample Name: **ccv,s35532,pcb250_50**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\037-024**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\037.seq**
Instrument: GC06 (Offline) Vial: 24 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/6/2018 10:11:17 PM
Analysis Date: 2/7/2018 8:13:00 AM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\037-024

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	3.426	0	0
Yes	Reset Baseline	4.625	0	0
Yes	Reset Baseline	4.907	0	0
Yes	Reset Baseline	5.149	0	0
Yes	Reset Baseline	6.317	0	0
Yes	Reset Baseline	9.635	0	0
Yes	Split Peak	9.864	0	0
Yes	Split Peak	10.508	0	0
Yes	Split Peak	12.087	0	0
Yes	Reset Baseline	12.479	0	0
Yes	Reset Baseline	13.273	0	0

Sample Name: **ccv,s35532,pcb250_50**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\037-024**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\037.seq**
Instrument: GC06 Vial: 24 Operator: lims2k3\pest3
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/6/2018 10:11:17 PM
Analysis Date: 2/6/2018 10:35:14 PM
Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.770	3.776	295771	48.708
PCB1016#1	5.337	5.347	68723	259.552
PCB1016#2	6.377	6.387	74879	285.448
PCB1016#3	6.670	6.680	46938	295.663
PCB1016#4	7.120	7.130	26549	302.026
PCB1016#5	7.620	7.630	35709	301.786
PCB1260#1	11.140	11.150	120251	293.639
PCB1260#2	11.787	11.797	119952	299.965
PCB1260#3	12.640	12.650	71179	296.246
PCB1260#4	13.383	13.390	154301	301.313
PCB1260#5	14.030	14.040	82685	310.336
Decachlorobiphenyl	16.633	16.640	403243	57.159

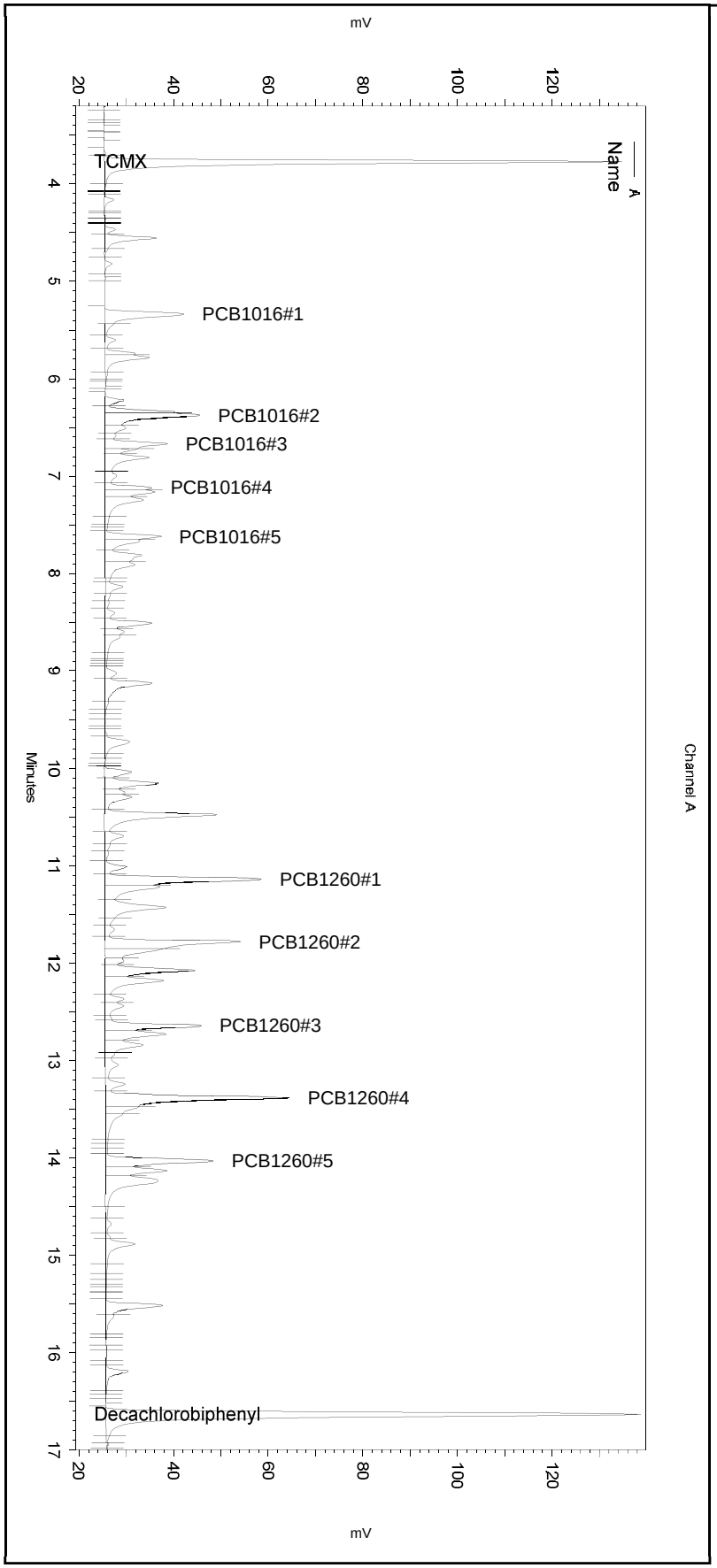
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.947	2.950	316739	50.922
PCB1016#1	4.340	4.350	85279	283.756
PCB1016#2	5.230	5.237	106491	332.701
PCB1016#3	5.430	5.437	72587	318.025
PCB1016#4	5.950	5.960	37154	336.712
PCB1016#5	6.647	6.657	67688	370.823
PCB1260#1	9.840	9.850	180480	554.906
PCB1260#2	10.460	10.470	155561	391.102
PCB1260#3	11.387	11.397	79847	301.056
PCB1260#4	12.040	12.053	190113	418.161
PCB1260#5	12.710	12.723	89705	311.179
Decachlorobiphenyl	15.660	15.673	433781	51.401

Sample Name: **ccv,s35532,pcb250_50**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\037-024**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\037.seq**
Instrument: GC06 Vial: 24 Operator: lims2k3\pest3
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/6/2018 10:11:17 PM
Analysis Date: 2/6/2018 10:35:14 PM
Sample Amount: 1



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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0

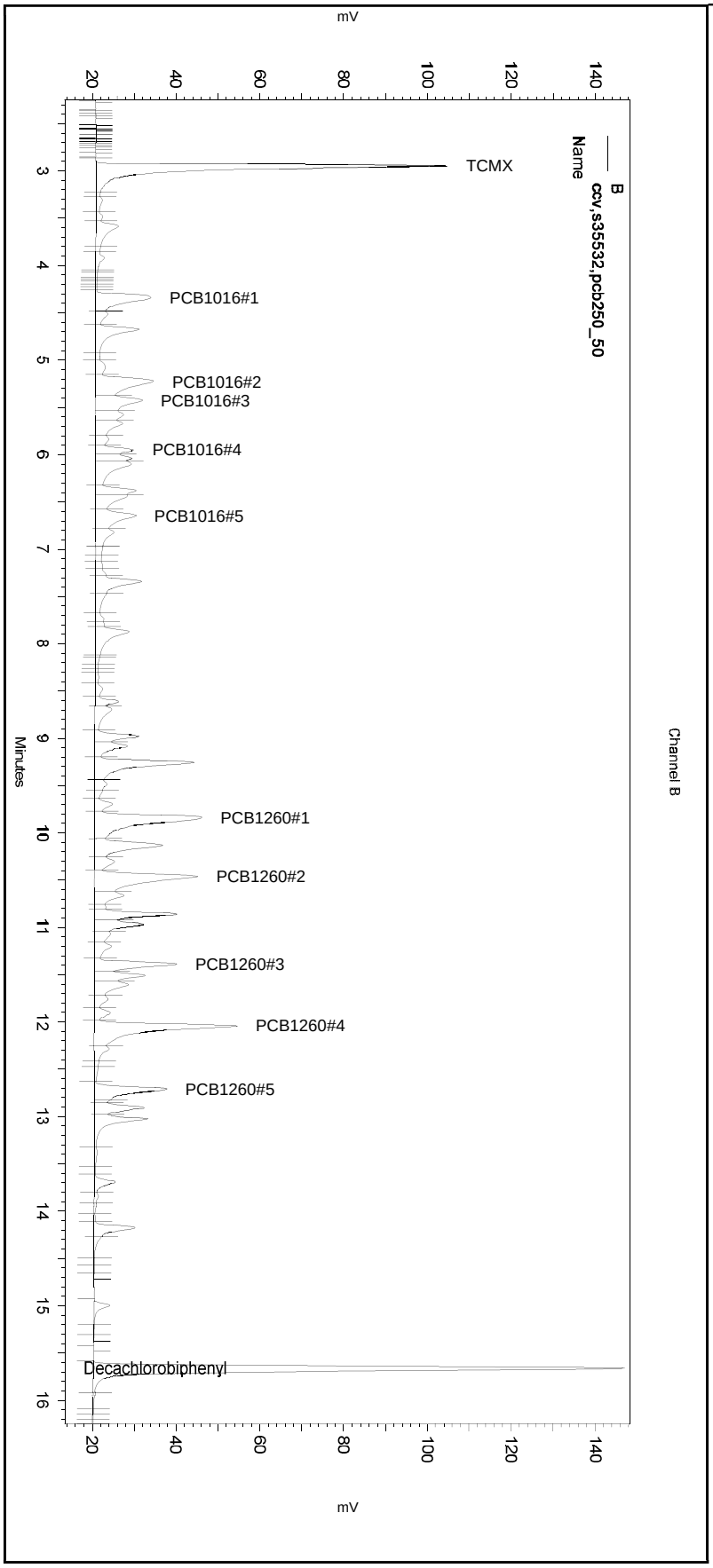
Manual Integration Fixes
==========

Data File: C:\Documents and Settings\All Users\Application Data\ChromatographySystem\Recovery Data\Instrument.10112\037-024_13F6.tmp

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Sample Name: **ccv,s35532,pcb250_50**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\037-024**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\037.seq**
Instrument: GC06 Vial: 24 Operator: lims2k3\pest3
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/6/2018 10:11:17 PM
Analysis Date: 2/6/2018 10:35:14 PM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========
Data File: C:\Documents and Settings\All Users\Application Data\ChromatographySystem\Recovery Data\Instrument.10112\037-024_13F6.tmp

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Enthalpy Analytical

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 296840
ANALYTICAL REPORT
PCBs
Matrix: Soil

Insight EEC, Inc. 3013 E Miraloma Ave Anaheim, CA 92806	Project : 4-14214 Location : HPNS-Parcel F Level : IV

Sample ID	Lab ID
HPP-FSS-007	296840-001
HPP-FSS-008	296840-006
HPP-FSS-009	296840-013
HPP-FSS-010	296840-018

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAP and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: _____ Date: 02/08/2018

Mike Dahlquist
Project Manager
mike.dahlquist@enthalpy.com
(510) 204-2225 Ext 13101

CA ELAP# 2896, NELAP# 4044-001

ENTHALPY ANALYTICAL

CASE NARRATIVE
PCBS (EPA 8082A)
SOIL

Laboratory number:	**296840**
Client:	**Insight EEC, Inc.**
Project:	**4-14214**
Location:	**HPNS-Parcel F**
Request Date:	**02/01/18**
Samples Received:	**02/01/18**

This data package contains sample and QC results for four four-point soil composites, requested for the above referenced project on 02/01/18. See attached cooler receipt form for any sample receipt problems or discrepancies.

PCBs (EPA 8082A) Soil:

All samples underwent sulfuric acid cleanup using EPA Method 3665A.

All samples underwent sulfur cleanup using the copper option in EPA Method 3660B.

A number of samples were diluted due to client history of high non-target or organic acid interference.

No other analytical problems were encountered.

Chain of Custody

Enthalpy Analytical LLC
2323 Fifth Street
Berkeley, CA 94710
(510) 486-0900 Phone
(510) 486-0532 Fax

CHAIN OF CUSTODY

Chain of Custody # : 4-14214-02

C&T LOGIN # 296840

Project No: 4-14214 Hunters Point Naval Shipyard
Project Name: Parcel F Sediment Sampling
EDD Format: _____ Rpt Level: ☐ II ☐ III ☐ IV
Turnaround Time: ☐ RUSH _____ ☐ Standard

Sampler:
Report To: Nick Weinberger & Mitra Fattahipour
Company : Insight
Telephone: # (714) 678-6730
Email: nweinberger@ieeci.com; mfattahipour@ieeci.com

Lab No.	Sample ID.	Sampling Date	Sampling Time	Matrix Water	Matrix Soil	# of Containers	Chemical Preservative HCl	H_2SO_4	HNO_3	NaOH	Methanol	NaHSO4	None	Analytical Request PCBs (EPA 8082)	Metals (Cu/Pb/Hg, EPA 6020/7471A)	Notes
	HPP-FSS-007				X								X	X	X	Composite at Lab, MS/MSD
	HPP-FSS-007A	1/31/18	0840		X	1							X			Sub-sample
	HPP-FSS-007B	1/31/18	0900		X	1							X			Sub-sample
	HPP-FSS-007C	1/31/18	0912		X	1							X			Sub-sample
	HPP-FSS-007D	1/31/18	0920		X	1							X			Sub-sample
	HPP-FSS-008				X								X	X	X	Composite at Lab
	HPP-FSS-008A	1/31/18	0935		X	1							X			Sub-sample
	HPP-FSS-008B	1/31/18	0950		X	1							X			Sub-sample
	HPP-FSS-008C	1/31/18	1100		X	1							X			Sub-sample
	HPP-FSS-008D	1/31/18	1021		X	1							X			Sub-sample
	HPP-FSS-EB01	1/31/18	0815	X		4							X	X	X	*Metals not preserved
	HPP-FSS-FB01	1/31/18	1500	X		3							X	X	X	*Metals not preserved

Notes:
Composite A, B, C, and D samples for testing as a composite sample. Retain sub-samples on hold for possible testing pending composite sample results. *Aqueous samples for metals analysis not preserved. To be preserved by lab.

SAMPLE RECEIPT
☐ Intact ☐ Cold
☐ On Ice ☐ Ambient

RELINQUISHED BY:		RECEIVED BY:	
2-1-18/1415 JMYERS	DATE/TIME	2-1 1415	DATE/TIME
2-1 1602	DATE/TIME	2/1/18 1602	DATE/TIME
	DATE/TIME		DATE/TIME

Enthalpy Analytical LLC
2323 Fifth Street
Berkeley, CA 94710
(510) 486-0900 Phone
(510) 486-0532 Fax

CHAIN OF CUSTODY

Chain of Custody # : 4-14214-02

C&T LOGIN # 296840

Project No: 4-14214 Hunters Point Naval Shipyard
Project Name: Parcel F Sediment Sampling
EDD Format: _____ Rpt Level: ☐ II ☐ III ☐ IV
Turnaround Time: ☐ RUSH _____ ☐ Standard

Sampler:
Report To: Nick Weinberger & Mitra Fattahipour
Company : Insight
Telephone: # (714) 678-6730
Email: nweinberger@ieeci.com; mfattahipour@ieeci.com

Lab No.	Sample ID.	Sampling Date	Sampling Time	Matrix Water	Matrix Soil	Matrix	Matrix	# of Containers	Chemical Preservative HCl	H_2SO_4	HNO_3	NaOH	Methanol	NaHSO4	None	Analytical Request PCBs (EPA 8082)	Metals (Cu/Pb/Hg, EPA 6020/7471A)						Notes
	HPP-FSS-009				X										X	X	X						Composite at Lab
	HPP-FSS-009A	1/31/18	1040		X			1							X								Sub-sample
	HPP-FSS-009B	1/31/18	1132		X			1							X								Sub-sample
	HPP-FSS-009C	1/31/18	1228		X			1							X								Sub-sample
	HPP-FSS-009D	1/31/18	1315		X			1							X								Sub-sample
	HPP-FSS-010				X										X	X	X						Composite at Lab
	HPP-FSS-010A	1/31/18	0936		X			1							X								Sub-sample
	HPP-FSS-010B	1/31/18	0951		X			1							X								Sub-sample
	HPP-FSS-010C	1/31/18	1101		X			1							X								Sub-sample
	HPP-FSS-010D	1/31/18	1022		X			1							X								Sub-sample

Notes:
Composite A, B, C, and D samples for testing as a composite sample. Retain sub-samples on hold for possible testing pending composite sample results.

SAMPLE RECEIPT
☐ Intact ☐ Cold
☐ On Ice ☐ Ambient

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	DATE/TIME
2-1-18 / 1415 JMYERS		2-1	1415
2-1	1805	2/1/18	1805

COOLER RECEIPT CHECKLIST

ENTHALPY Berkeley

Login # 296840 Date Received 02/01/18 Number of coolers 1
Client Insight Project 4-14214 Hunters Point Naval Shipyard

Date Opened 02/01/18 By (print) TKY (sign) TKY
Date Logged in ↓ By (print) EH (sign)
Date Labelled ↓ By (print) TKY (sign) TKY

1. Did cooler come with a shipping slip (airbill, etc) ____ YES (NO)
   Shipping info ____

2A. Were custody seals present? .... ☐ YES (circle) on cooler on samples ☒ NO
   How many ____ Name ____ Date ____
2B. Were custody seals intact upon arrival? ____ YES NO (N/A)
3. Were custody papers dry and intact when received? ____ (YES) NO
4. Were custody papers filled out properly (ink, signed, etc)? ____ (YES) NO
5. Is the project identifiable from custody papers? (If so fill out top of form) ____ (YES) NO
6. Indicate the packing in cooler: (if other, describe) ____

☒ Bubble Wrap ☐ Foam blocks ☒ Bags ☐ None
☐ Cloth material ☐ Cardboard ☐ Styrofoam ☐ Paper towels

7. Temperature documentation: * Notify PM if temperature exceeds 6°C

Type of ice used: ☒ Wet ☐ Blue/Gel ☐ None Temp(°C) 1.7

☐ Temperature blank(s) included? ☐ Thermometer# ____ ☐ IR Gun# A

☐ Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? ____ YES (NO)
   If YES, what time were they transferred to freezer? ____
9. Did all bottles arrive unbroken/unopened? ____ (YES) NO
10. Are there any missing / extra samples? ____ YES (NO)
11. Are samples in the appropriate containers for indicated tests? ____ (YES) NO
12. Are sample labels present, in good condition and complete? ____ (YES) NO
13. Do the sample labels agree with custody papers? ____ (YES) NO
14. Was sufficient amount of sample sent for tests requested? ____ (YES) NO
15. Are the samples appropriately preserved? ____ YES (NO) N/A
16. Did you check preservatives for all bottles for each sample? ____ (YES) NO N/A
17. Did you document your preservative check? (pH strip lot# 80BD4197) (YES) NO N/A
18. Did you change the hold time in LIMS for unpreserved VOAs? ____ YES NO (N/A)
19. Did you change the hold time in LIMS for preserved terracores? ____ YES NO (N/A)
20. Are bubbles > 6mm absent in VOA samples? ____ YES NO (N/A)
21. Was the client contacted concerning this sample delivery? ____ YES (NO)
   If YES, Who was called? ____ By ____ Date: ____

COMMENTS
(15) added HNO3 (20170130S3) to make pH<2 @ 1834 on 2/1/18 to samples 11 & 12

Rev 14, 8/01/17

Results & QC Summary

ENTHALPY ANALYTICAL

Polychlorinated Biphenyls (PCBs)

Lab #:	296840	Location:	HPNS-Parcel F
Client:	Insight EEC, Inc.	Prep:	EPA 3550C
Project#:	4-14214	Analysis:	EPA 8082A
Matrix:	Soil	Sampled:	02/01/18
Units:	ug/Kg	Received:	02/01/18
Basis:	dry	Prepared:	02/02/18
Batch#:	256161	Analyzed:	02/02/18

Field ID:	HPP-FSS-007	Moisture:	48%
Type:	SAMPLE	Diln Fac:	5.000
Lab ID:	296840-001		

Analyte	Result	LOQ	DL
Aroclor-1016	23 U	32	11
Aroclor-1221	62 U	65	31
Aroclor-1232	31 U	32	15
Aroclor-1242	31 U	32	14
Aroclor-1248	31 U	32	15
Aroclor-1254	23 U	32	12
Aroclor-1260	200	32	7.5

Surrogate	%REC	Limits
TCMX	67	44-130
Decachlorobiphenyl	98	26-153

Field ID:	HPP-FSS-008	Moisture:	48%
Type:	SAMPLE	Diln Fac:	5.000
Lab ID:	296840-006		

Analyte	Result	LOQ	DL
Aroclor-1016	23 U	32	11
Aroclor-1221	61 U	64	31
Aroclor-1232	31 U	32	15
Aroclor-1242	31 U	32	14
Aroclor-1248	31 U	32	15
Aroclor-1254	23 U	32	12
Aroclor-1260	30 J	32	7.4

Surrogate	%REC	Limits
TCMX	79	44-130
Decachlorobiphenyl	105	26-153

J= Estimated value
U= Not Detected at or above DL
DL= Detection Limit
LOQ= Limit of Quantitation

ENTHALPY ANALYTICAL

Polychlorinated Biphenyls (PCBs)

Lab #:	296840	Location:	HPNS-Parcel F
Client:	Insight EEC, Inc.	Prep:	EPA 3550C
Project#:	4-14214	Analysis:	EPA 8082A
Matrix:	Soil	Sampled:	02/01/18
Units:	ug/Kg	Received:	02/01/18
Basis:	dry	Prepared:	02/02/18
Batch#:	256161	Analyzed:	02/02/18

Field ID:	HPP-FSS-009	Moisture:	36%
Type:	SAMPLE	Diln Fac:	5.000
Lab ID:	296840-013		

Analyte	Result	LOQ	DL
Aroclor-1016	19 U	26	9.2
Aroclor-1221	50 U	50	25
Aroclor-1232	25 U	26	12
Aroclor-1242	25 U	26	11
Aroclor-1248	25 U	26	12
Aroclor-1254	74	26	9.5
Aroclor-1260	54	26	6.0

Surrogate	%REC	Limits
TCMX	77	44-130
Decachlorobiphenyl	84	26-153

Field ID:	HPP-FSS-010	Moisture:	44%
Type:	SAMPLE	Diln Fac:	5.000
Lab ID:	296840-018		

Analyte	Result	LOQ	DL
Aroclor-1016	21 U	30	11
Aroclor-1221	57 U	60	28
Aroclor-1232	29 U	30	14
Aroclor-1242	29 U	30	13
Aroclor-1248	29 U	30	14
Aroclor-1254	21 U	30	11
Aroclor-1260	23 J	30	6.9

Surrogate	%REC	Limits
TCMX	74	44-130
Decachlorobiphenyl	84	26-153

J= Estimated value
U= Not Detected at or above DL
DL= Detection Limit
LOQ= Limit of Quantitation

ENTHALPY ANALYTICAL

Polychlorinated Biphenyls (PCBs)

Lab #:	296840	Location:	HPNS-Parcel F
Client:	Insight EEC, Inc.	Prep:	EPA 3550C
Project#:	4-14214	Analysis:	EPA 8082A
Matrix:	Soil	Sampled:	02/01/18
Units:	ug/Kg	Received:	02/01/18
Basis:	dry	Prepared:	02/02/18
Batch#:	256161	Analyzed:	02/02/18

Type: BLANK Diln Fac: 1.000
Lab ID: QC918767

Analyte	Result	LOQ	DL
Aroclor-1016	2.4 U	4.8	1.2
Aroclor-1221	6.5 U	9.7	3.2
Aroclor-1232	3.2 U	4.8	1.6
Aroclor-1242	3.2 U	4.8	1.4
Aroclor-1248	3.2 U	4.8	1.5
Aroclor-1254	2.4 U	4.8	1.2
Aroclor-1260	2.4 U	4.8	0.78

Surrogate	%REC	Limits
TCMX	94	44-130
Decachlorobiphenyl	105	26-153

J= Estimated value
U= Not Detected at or above DL
DL= Detection Limit
LOQ= Limit of Quantitation

ENTHALPY ANALYTICAL

Batch QC Report

Polychlorinated Biphenyls (PCBs)

Lab #:	296840	Location:	HPNS-Parcel F
Client:	Insight EEC, Inc.	Prep:	EPA 3550C
Project#:	4-14214	Analysis:	EPA 8082A
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC918768	Batch#:	256161
Matrix:	Soil	Prepared:	02/02/18
Units:	ug/Kg	Analyzed:	02/02/18

Analyte	Spiked	Result	%REC	Limits
Aroclor-1016	84.20	81.14	96	47-134
Aroclor-1260	84.20	87.84	104	53-140

Surrogate	%REC	Limits
TCMX	100	44-130
Decachlorobiphenyl	97	26-153

ENTHALPY ANALYTICAL

Batch QC Report

Polychlorinated Biphenyls (PCBs)

Lab #:	296840	Location:	HPNS-Parcel F
Client:	Insight EEC, Inc.	Prep:	EPA 3550C
Project#:	4-14214	Analysis:	EPA 8082A
Field ID:	HPP-FSS-007	Batch#:	256161
MSS Lab ID:	296840-001	Sampled:	02/01/18
Matrix:	Soil	Received:	02/01/18
Units:	ug/Kg	Prepared:	02/02/18
Basis:	dry	Analyzed:	02/02/18
Diln Fac:	5.000		

Type: MS Moisture: 48%
Lab ID: QC918769

Analyte	MSS Result	Spiked	Result	%REC	Limits
Aroclor-1016	<11.49	162.1	167.2	103	47-134
Aroclor-1260	195.1	162.1	384.0	117	53-140

Surrogate	%REC	Limits
TCMX	86	44-130
Decachlorobiphenyl	97	26-153

Type: MSD Moisture: 48%
Lab ID: QC918770

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Aroclor-1016	160.4	158.5	99	47-134	4	30
Aroclor-1260	160.4	366.0	107	53-140	4	30

Surrogate	%REC	Limits
TCMX	77	44-130
Decachlorobiphenyl	103	26-153

RPD= Relative Percent Difference

Confirmation Report for 296840 PCBS Soil
Enthalpy Analytical - Berkeley

Units: ug/Kg

Lab ID	Client ID	Analyte	Result	Confirmation	RPD	%D
296840-001	HPP-FSS-007	Aroclor-1260	195.1	169.4	14	-13
296840-006	HPP-FSS-008	Aroclor-1260	29.95 J	29.35	2	-2
296840-013	HPP-FSS-009	Aroclor-1254	73.73	53.35	32	-28
296840-013	HPP-FSS-009	Aroclor-1260	53.89	37.63	36	-30
296840-018	HPP-FSS-010	Aroclor-1260	22.59 J	17.92	23	-21

J=estimated

ENTHALPY INITIAL CALIBRATION FOR 296840 PCBS Soil: EPA 8082A

Inst : GC16
Calnum : 238004939001
Units : pg/ul

Name : ar-2154-004ical
Date : 03-JAN-2018 23:07
X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	003_020	238004939020	AR2154_10	03-JAN-2018 23:07	S34680
L2	003_021	238004939021	AR2154_100	03-JAN-2018 23:36	S34681 (2X)
L3	003_022	238004939022	AR2154_100	04-JAN-2018 00:05	S34681
L4	003_023	238004939023	AR2154_250	04-JAN-2018 00:34	S34682
L5	003_024	238004939024	AR2154_500	04-JAN-2018 01:03	S34683
L6	003_025	238004939025	AR2154_1000	04-JAN-2018 01:32	S34684

Analyte	Ch	L1	L2	L3	L4	L5	L6	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	MxRSD	Flg
Aroclor-1221 Peak # 1	A	148.60	187.38	197.10	186.64	186.72	163.34	AVRG		0.00561		178.30	10	.99	20	
Aroclor-1221 Peak # 2	A	110.70	114.50	124.19	116.22	112.49	102.36	AVRG		0.00882		113.41	6	.99	20	
Aroclor-1221 Peak # 3	A	441.30	479.32	501.04	440.72	414.26	376.71	AVRG		0.00226		442.23	10	.99	20	
Aroclor-1221 Peak # 4	A	68.300	66.840	87.020	69.432	69.590	64.551	AVRG		0.01409		70.956	11	.99	20	
Aroclor-1221 Peak # 5	A	46.800	85.600	78.950	73.932	74.358	74.336	AVRG		0.01383		72.329	18	.99	20	
Aroclor-1254 Peak # 1	A	604.50	591.98	610.40	540.07	510.67	467.23	AVRG		0.00180		554.14	10	.99	20	
Aroclor-1254 Peak # 2	A	865.60	834.00	858.26	764.65	708.92	655.82	AVRG		0.00128		781.21	11	.99	20	
Aroclor-1254 Peak # 3	A	587.00	566.62	638.33	550.20	557.74	508.17	AVRG		0.00176		568.01	8	.99	20	
Aroclor-1254 Peak # 4	A	965.70	944.10	1007.1	910.02	882.21	831.38	AVRG		0.00108		923.42	7	.99	20	
Aroclor-1254 Peak # 5	A	851.70	778.62	883.34	807.49	814.13	765.64	AVRG		0.00122		816.82	5	.99	20	
Aroclor-1221 Peak # 1	B	78.600	115.22	130.93	123.45	136.47	132.53	AVRG		0.00837		119.53	18	.99	20	
Aroclor-1221 Peak # 2	B	61.300	77.440	92.620	85.936	91.238	87.451	AVRG		0.01210		82.664	14	.99	20	
Aroclor-1221 Peak # 3	B	242.90	382.92	441.49	399.34	418.63	390.31	AVRG		0.00264		379.27	18	.99	20	
Aroclor-1221 Peak # 4	B	29.200	62.980	71.910	65.900	71.772	73.382	LINR	10.2904	0.01355		62.524	0.999	.99	20	
Aroclor-1221 Peak # 5	B	45.700	38.700	52.120	47.808	52.778	55.144	AVRG		0.02053		48.708	12	.99	20	
Aroclor-1254 Peak # 1	B	548.00	568.96	610.67	554.41	553.65	548.68	AVRG		0.00177		564.06	4	.99	20	
Aroclor-1254 Peak # 2	B	612.40	633.66	676.40	613.58	616.95	613.93	AVRG		0.00159		627.82	4	.99	20	
Aroclor-1254 Peak # 3	B	345.60	352.74	394.54	358.93	378.33	390.54	AVRG		0.00270		370.11	6	.99	20	
Aroclor-1254 Peak # 4	B	598.50	831.62	891.67	818.42	843.95	867.41	AVRG		0.00124		808.60	13	.99	20	
Aroclor-1254 Peak # 5	B	424.00	517.48	594.24	543.42	571.31	586.25	AVRG		0.00185		539.45	12	.99	20	

Spiked Amounts / Drifts	Ch	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D	L6	%D
Aroclor-1221 Peak # 1	A	10.000	-17	50.000	5	100.00	11	250.00	5	500.00	5	1000.0	-8
Aroclor-1221 Peak # 2	A	10.000	-2	50.000	1	100.00	10	250.00	2	500.00	-1	1000.0	-10
Aroclor-1221 Peak # 3	A	10.000	0	50.000	8	100.00	13	250.00	0	500.00	-6	1000.0	-15
Aroclor-1221 Peak # 4	A	10.000	-4	50.000	-6	100.00	**23**	250.00	-2	500.00	-2	1000.0	-9
Aroclor-1221 Peak # 5	A	10.000	**-35**	50.000	18	100.00	9	250.00	2	500.00	3	1000.0	3
Aroclor-1254 Peak # 1	A	10.000	9	50.000	7	100.00	10	250.00	-3	500.00	-8	1000.0	-16
Aroclor-1254 Peak # 2	A	10.000	11	50.000	7	100.00	10	250.00	-2	500.00	-9	1000.0	-16
Aroclor-1254 Peak # 3	A	10.000	3	50.000	0	100.00	12	250.00	-3	500.00	-2	1000.0	-11
Aroclor-1254 Peak # 4	A	10.000	5	50.000	2	100.00	9	250.00	-1	500.00	-4	1000.0	-10
Aroclor-1254 Peak # 5	A	10.000	4	50.000	-5	100.00	8	250.00	-1	500.00	0	1000.0	-6
Aroclor-1221 Peak # 1	B	10.000	**-34**	50.000	-4	100.00	10	250.00	3	500.00	14	1000.0	11
Aroclor-1221 Peak # 2	B	10.000	**-26**	50.000	-6	100.00	12	250.00	4	500.00	10	1000.0	6
Aroclor-1221 Peak # 3	B	10.000	**-36**	50.000	1	100.00	16	250.00	5	500.00	10	1000.0	3
Aroclor-1221 Peak # 4	B	10.000	**42**	50.000	6	100.00	8	250.00	-7	500.00	-1	1000.0	0
Aroclor-1221 Peak # 5	B	10.000	-6	50.000	**-21**	100.00	7	250.00	-2	500.00	8	1000.0	13
Aroclor-1254 Peak # 1	B	10.000	-3	50.000	1	100.00	8	250.00	-2	500.00	-2	1000.0	-3
Aroclor-1254 Peak # 2	B	10.000	-2	50.000	1	100.00	8	250.00	-2	500.00	-2	1000.0	-2
Aroclor-1254 Peak # 3	B	10.000	-7	50.000	-5	100.00	7	250.00	-3	500.00	2	1000.0	6
Aroclor-1254 Peak # 4	B	10.000	**-26**	50.000	3	100.00	10	250.00	1	500.00	4	1000.0	7
Aroclor-1254 Peak # 5	B	10.000	**-21**	50.000	-4	100.00	10	250.00	1	500.00	6	1000.0	9

JC1 01/04/18 : Corrected automatically drawn baseline in all levels.

Analyst: JC1 Date: 01/04/18 Reviewer: EAH Date: 01/04/18

Instrument amount = a0 + response * a1 + response^2 * a2; AVRG=Average response factor; LINR=Linear regression

ENTHALPY 2ND SOURCE CALIBRATION SUMMARY FOR 296840 PCBS Soil
EPA 8082A

Inst : GC16 Name : ar-2154-004ical
Calnum : 238004939001 Cal Date : 03-JAN-2018

ICV 238004939027 (003_027 04-JAN-2018) stds: S34679
ICV 238004939031 (003_031 04-JAN-2018) stds: S34678

Analyte	Ch	ICV Seqnum	Spiked	Quant	Units	%D	Max	Flags
Aroclor-1221	A	238004939031	250.0	213.2	pg/ul	-15	20	
Aroclor-1254	A	238004939027	250.0	248.8	pg/ul	0	20	
Aroclor-1221	B	238004939031	250.0	213.4	pg/ul	-15	20	
Aroclor-1254	B	238004939027	250.0	246.3	pg/ul	-1	20	

238004939027: Analyst: JC1 Date: 01/04/18 Reviewer: EAH Date: 01/04/18
238004939031: Analyst: JC1 Date: 01/04/18 Reviewer: EAH Date: 01/04/18

ENTHALPY INITIAL CALIBRATION FOR 296840 PCBS Soil: EPA 8082A

Inst : GC16
Calnum : 238037991001
Units : pg/ul

Name : ar-1660-026ical
Date : 26-JAN-2018 20:18
X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	026_009	238037991009	PCB100_20	26-JAN-2018 20:18	S35531 (10X)
L2	026_010	238037991010	PCB25_5	26-JAN-2018 20:47	S35530
L3	026_011	238037991011	PCB100_20	26-JAN-2018 21:16	S35531
L4	026_012	238037991012	PCB250_50	26-JAN-2018 21:45	S35532
L5	026_013	238037991013	PCB500_100	26-JAN-2018 22:14	S35533
L6	026_014	238037991014	PCB750_150	26-JAN-2018 22:43	S35534
L7	026_015	238037991015	PCB1000_200	26-JAN-2018 23:12	S35535

Analyte	Ch	L1	L2	L3	L4	L5	L6	L7	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	MxRSD	Flg
Aroclor-1016 Peak # 1	A	593.70	649.52	635.48	546.71	481.97	451.66	488.09	AVRG		0.00182		549.59	14	.99	20	
Aroclor-1016 Peak # 2	A	763.20	819.28	804.88	730.92	600.77	604.74	678.96	AVRG		0.00140		714.68	13	.99	20	
Aroclor-1016 Peak # 3	A	420.70	447.04	459.36	412.09	352.38	353.71	390.49	AVRG		0.00247		405.11	10	.99	20	
Aroclor-1016 Peak # 4	A	278.50	303.04	289.68	263.41	219.28	215.92	233.39	AVRG		0.00388		257.60	14	.99	20	
Aroclor-1016 Peak # 5	A	370.30	398.92	398.85	352.62	302.82	295.94	335.44	AVRG		0.00285		350.70	12	.99	20	
Aroclor-1260 Peak # 1	A	1160.5	1291.9	1321.3	1202.6	928.46	973.66	1077.3	AVRG		8.80E-4		1136.5	13	.99	20	
Aroclor-1260 Peak # 2	A	887.80	1041.4	1086.2	1019.3	804.87	895.64	1015.8	AVRG		0.00104		964.42	11	.99	20	
Aroclor-1260 Peak # 3	A	484.10	532.92	578.63	556.51	446.66	486.43	547.10	AVRG		0.00193		518.91	9	.99	20	
Aroclor-1260 Peak # 4	A	1046.8	1266.9	1336.4	1356.6	1016.7	1159.7	1284.8	AVRG		8.27E-4		1209.7	11	.99	20	
Aroclor-1260 Peak # 5	A	461.40	530.48	590.44	607.45	438.39	533.20	594.84	AVRG		0.00186		536.60	12	.99	20	
TCMX	A	11919	12854	12506	11335	10532	10068	11313	AVRG		8.69E-5		11504	9	.99	20	
Decachlorobiphenyl	A	13389	13769	13987	13255	8719.3	9675.3	10114	AVRG		8.44E-5		11844	19	.99	20	
Aroclor-1016 Peak # 1	B	204.60	213.28	221.02	207.51	183.65	188.51	223.21	AVRG		0.00486		205.97	7	.99	20	
Aroclor-1016 Peak # 2	B	452.70	530.76	597.39	575.73	513.27	550.81	670.95	AVRG		0.00180		555.95	12	.99	20	
Aroclor-1016 Peak # 3	B	268.60	286.56	352.16	335.06	295.69	306.39	347.78	AVRG		0.00319		313.18	10	.99	20	
Aroclor-1016 Peak # 4	B	178.20	205.32	228.75	210.01	184.87	184.61	184.20	AVRG		0.00509		196.57	9	.99	20	
Aroclor-1016 Peak # 5	B	263.70	323.52	340.39	336.93	296.44	302.05	342.47	AVRG		0.00317		315.07	9	.99	20	
Aroclor-1260 Peak # 1	B	428.00	502.80	512.97	462.19	372.15	390.78	456.83	AVRG		0.00224		446.53	12	.99	20	
Aroclor-1260 Peak # 2	B	435.80	555.40	591.40	597.11	527.59	573.01	679.28	AVRG		0.00177		565.66	13	.99	20	
Aroclor-1260 Peak # 3	B	398.50	451.60	451.65	437.48	339.23	378.77	431.21	AVRG		0.00242		412.63	10	.99	20	
Aroclor-1260 Peak # 4	B	549.60	655.48	674.46	679.06	532.89	629.94	707.60	AVRG		0.00158		632.72	11	.99	20	
Aroclor-1260 Peak # 5	B	283.50	421.36	436.86	445.04	322.40	374.22	439.65	AVRG		0.00257		389.00	17	.99	20	
TCMX	B	10416	10920	11708	11025	11073	11211	13690	AVRG		8.75E-5		11435	9	.99	20	
Decachlorobiphenyl	B	12716	12956	12242	11986	8314.4	10102	11022	AVRG		8.82E-5		11334	15	.99	20	

Spiked Amounts / Drifts	Ch	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D	L6	%D	L7	%D
Aroclor-1016 Peak # 1	A	10.000	8	25.000	18	100.00	16	250.00	-1	500.00	-12	750.00	-18	1000.0	-11
Aroclor-1016 Peak # 2	A	10.000	7	25.000	15	100.00	13	250.00	2	500.00	-16	750.00	-15	1000.0	-5
Aroclor-1016 Peak # 3	A	10.000	4	25.000	10	100.00	13	250.00	2	500.00	-13	750.00	-13	1000.0	-4
Aroclor-1016 Peak # 4	A	10.000	8	25.000	18	100.00	12	250.00	2	500.00	-15	750.00	-16	1000.0	-9
Aroclor-1016 Peak # 5	A	10.000	6	25.000	14	100.00	14	250.00	1	500.00	-14	750.00	-16	1000.0	-4
Aroclor-1260 Peak # 1	A	10.000	2	25.000	14	100.00	16	250.00	6	500.00	-18	750.00	-14	1000.0	-5
Aroclor-1260 Peak # 2	A	10.000	-8	25.000	8	100.00	13	250.00	6	500.00	-17	750.00	-7	1000.0	5
Aroclor-1260 Peak # 3	A	10.000	-7	25.000	3	100.00	12	250.00	7	500.00	-14	750.00	-6	1000.0	5
Aroclor-1260 Peak # 4	A	10.000	-13	25.000	5	100.00	10	250.00	12	500.00	-16	750.00	-4	1000.0	6
Aroclor-1260 Peak # 5	A	10.000	-14	25.000	-1	100.00	10	250.00	13	500.00	-18	750.00	-1	1000.0	11
TCMX	A	2.0000	4	5.0000	12	20.000	9	50.000	-1	100.00	-8	150.00	-12	200.00	-2
Decachlorobiphenyl	A	2.0000	13	5.0000	16	20.000	18	50.000	12	100.00	**-26**	150.00	-18	200.00	-15
Aroclor-1016 Peak # 1	B	10.000	-1	25.000	4	100.00	7	250.00	1	500.00	-11	750.00	-8	1000.0	8
Aroclor-1016 Peak # 2	B	10.000	-19	25.000	-5	100.00	7	250.00	4	500.00	-8	750.00	-1	1000.0	**21**
Aroclor-1016 Peak # 3	B	10.000	-14	25.000	-8	100.00	12	250.00	7	500.00	-6	750.00	-2	1000.0	11
Aroclor-1016 Peak # 4	B	10.000	-9	25.000	4	100.00	16	250.00	7	500.00	-6	750.00	-6	1000.0	-6
Aroclor-1016 Peak # 5	B	10.000	-16	25.000	3	100.00	8	250.00	7	500.00	-6	750.00	-4	1000.0	9
Aroclor-1260 Peak # 1	B	10.000	-4	25.000	13	100.00	15	250.00	4	500.00	-17	750.00	-12	1000.0	2
Aroclor-1260 Peak # 2	B	10.000	**-23**	25.000	-2	100.00	5	250.00	6	500.00	-7	750.00	1	1000.0	20
Aroclor-1260 Peak # 3	B	10.000	-3	25.000	9	100.00	9	250.00	6	500.00	-18	750.00	-8	1000.0	5
Aroclor-1260 Peak # 4	B	10.000	-13	25.000	4	100.00	7	250.00	7	500.00	-16	750.00	0	1000.0	12
Aroclor-1260 Peak # 5	B	10.000	**-27**	25.000	8	100.00	12	250.00	14	500.00	-17	750.00	-4	1000.0	13
TCMX	B	2.0000	-9	5.0000	-4	20.000	2	50.000	-4	100.00	-3	150.00	-2	200.00	20
Decachlorobiphenyl	B	2.0000	12	5.0000	14	20.000	8	50.000	6	100.00	**-27**	150.00	-11	200.00	-3

JC1 01/29/18 : Corrected automatically drawn baseline in all levels.

Analyst: JC1 Date: 01/29/18 Reviewer: EAH Date: 01/29/18

Instrument amount = a0 + response * a1 + response^2 * a2; AVRG=Average response factor

ENTHALPY 2ND SOURCE CALIBRATION SUMMARY FOR 296840 PCBS Soil
EPA 8082A

Inst : GC16 Name : ar-1660-026ical
Calnum : 238037991001 Cal Date : 26-JAN-2018

ICV 238037991017 (026_017 27-JAN-2018) stds: S35527

Analyte	Ch	Spiked	Quant	Units	%D	Max	Flags
Aroclor-1016	A	250.0	233.1	pg/ul	-7	20	
Aroclor-1260	A	250.0	221.1	pg/ul	-12	20	
Aroclor-1016	B	250.0	239.0	pg/ul	-4	20	
Aroclor-1260	B	250.0	220.6	pg/ul	-12	20	

Analyst: JC1 Date: 01/29/18 Reviewer: EAH Date: 01/29/18

ENTHALPY CONTINUING CALIBRATION FOR 296840 PCBS Soil
EPA 8082A

Inst : GC16 Run Name : PCB500_100 IDF : 1.0
Seqnum : 238048058017.1 File : 033_017 Time : 02-FEB-2018 17:16
Cal : 238037991001 Caldate : 26-JAN-2018
Standards: S35813

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Aroclor-1016	A			500.0	437.6	pg/ul	-12	20	
Aroclor-1260	A			500.0	421.6	pg/ul	-16	20	
TCMX	A	11504	10370	100.0	90.15	pg/ul	-10	20	
Decachlorobiphenyl	A	11844	8386.1	100.0	70.80	pg/ul	**-29**	20	c-
Aroclor-1016	B			500.0	493.9	pg/ul	-1	20	
Aroclor-1260	B			500.0	439.9	pg/ul	-12	20	
TCMX	B	11435	10916	100.0	95.46	pg/ul	-5	20	
Decachlorobiphenyl	B	11334	7823.7	100.0	69.03	pg/ul	**-31**	20	c-

RDG 02/05/18 : Corrected automatically drawn baseline for all channels.
[general version]

Analyst: JC1 Date: 02/06/18 Reviewer: EAH Date: 02/07/18

-=low bias c=CCV

ENTHALPY CONTINUING CALIBRATION FOR 296840 PCBS Soil
EPA 8082A

Inst : GC16 Run Name : AR2154_250 IDF : 1.0
Seqnum : 238048058018.1 File : 033_018 Time : 02-FEB-2018 18:01
Cal : 238004939001 Caldate : 03-JAN-2018
Standards: S35044

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Aroclor-1221	A	250.0	254.4	pg/ul	2	20	
Aroclor-1254	A	250.0	218.6	pg/ul	-13	20	
Aroclor-1221	B	250.0	266.3	pg/ul	7	20	
Aroclor-1254	B	250.0	238.2	pg/ul	-5	20	

JC1 02/05/18 : Corrected automatically drawn baseline. [general version]

Analyst: JC1 Date: 02/07/18 Reviewer: EAH Date: 02/08/18

ENTHALPY CONTINUING CALIBRATION FOR 296840 PCBS Soil
EPA 8082A

Inst : GC16 Run Name : PCB500_100 IDF : 1.0
Seqnum : 238048058029.1 File : 033_029 Time : 02-FEB-2018 23:19
Cal : 238037991001 Caldate : 26-JAN-2018
Standards: S35813

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Aroclor-1016	A			500.0	454.4	pg/ul	-9	20	
Aroclor-1260	A			500.0	434.7	pg/ul	-13	20	
TCMX	A	11504	10695	100.0	92.97	pg/ul	-7	20	
Decachlorobiphenyl	A	11844	9271.8	100.0	78.28	pg/ul	**-22**	20	c-
Aroclor-1016	B			500.0	532.7	pg/ul	7	20	
Aroclor-1260	B			500.0	470.8	pg/ul	-6	20	
TCMX	B	11435	11508	100.0	100.6	pg/ul	1	20	
Decachlorobiphenyl	B	11334	9432.1	100.0	83.22	pg/ul	-17	20	

RDG 02/05/18 : Corrected automatically drawn baseline for all channels.
[general version]

Analyst: JC1 Date: 02/07/18 Reviewer: EAH Date: 02/08/18

-=low bias c=CCV

ENTHALPY CONTINUING CALIBRATION FOR 296840 PCBS Soil
EPA 8082A

Inst : GC16 Run Name : AR2154_250 IDF : 1.0
Seqnum : 238048058030.1 File : 033_030 Time : 02-FEB-2018 23:48
Cal : 238004939001 Caldate : 03-JAN-2018
Standards: S35044

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Aroclor-1221	A	250.0	241.1	pg/ul	-4	20	
Aroclor-1254	A	250.0	208.9	pg/ul	-16	20	
Aroclor-1221	B	250.0	257.3	pg/ul	3	20	
Aroclor-1254	B	250.0	229.0	pg/ul	-8	20	

JC1 02/05/18 : Corrected automatically drawn baseline. [general version]

Analyst: JC1 Date: 02/07/18 Reviewer: EAH Date: 02/08/18

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 238004939

Instrument : GC16 Begun : 01/03/18 10:19
Method : EPA 8082A SOP Version : pcb_rv11

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	003_001	X	HEX			01/03/18 10:19	1.0		
002	003_002	CCV	PCB500_100			01/03/18 10:48	1.0	1	
003	003_003	CCV	AR2154_500			01/03/18 11:17	1.0	2	
004	003_004	SAMPLE	295259-024	Wipe	254782	01/03/18 15:23	1.0		
005	003_005	BLANK	QC914819	Air	255176	01/03/18 15:52	1.0		
006	003_006	BS	QC914820	Air	255176	01/03/18 16:21	1.0		
007	003_007	BSD	QC914821	Air	255176	01/03/18 16:50	1.0		
008	003_008	BLANK	QC914970	Wipe	255218	01/03/18 17:19	1.0		
009	003_009	BS	QC914971	Wipe	255218	01/03/18 17:48	1.0		
010	003_010	BSD	QC914972	Wipe	255218	01/03/18 18:17	1.0		
011	003_011	BLANK	QC914875	Soil	255189	01/03/18 18:46	1.0		
012	003_012	BS	QC914876	Soil	255189	01/03/18 19:15	1.0		
013	003_013	BSD	QC914877	Soil	255189	01/03/18 19:44	1.0		
014	003_014	CCV	PCB500_100			01/03/18 20:13	1.0	1	
015	003_015	CCV	AR2154_500			01/03/18 20:42	1.0	2	
016	003_016	CCV	PCB500_100			01/03/18 21:11	1.0	1	
017	003_017	X	HEX			01/03/18 21:40	1.0		
018	003_018	X	HEX			01/03/18 22:09	1.0		
019	003_019	IB	CALIB			01/03/18 22:38	1.0		
020	003_020	ICAL	AR2154_10			01/03/18 23:07	1.0	3	
021	003_021	ICAL	AR2154_100			01/03/18 23:36	1.0	4	
022	003_022	ICAL	AR2154_100			01/04/18 00:05	1.0	4	
023	003_023	ICAL	AR2154_250			01/04/18 00:34	1.0	5	
024	003_024	ICAL	AR2154_500			01/04/18 01:03	1.0	6	
025	003_025	ICAL	AR2154_1000			01/04/18 01:32	1.0	7	
026	003_026	X	HEX			01/04/18 02:01	1.0		
027	003_027	ICV	ULTRA_1254			01/04/18 02:30	1.0	8	
028	003_028	X	HEX			01/04/18 02:59	1.0		
029	003_029	ICV	ULTRA_1254			01/04/18 03:28	1.0	8	
030	003_030	X	HEX			01/04/18 03:57	1.0		
031	003_031	ICV	ULTRA_1221			01/04/18 04:26	1.0	9	
032	003_032	X	HEX			01/04/18 04:55	1.0		
033	003_033	ICV	ULTRA_1221			01/04/18 05:24	1.0	9	
034	003_034	X	HEX			01/04/18 05:53	1.0		
035	003_035	XCCV	PCB500_100			01/04/18 06:22	1.0	1	
036	003_036	CCV	AR2154_500			01/04/18 06:51	1.0	2	
037	003_037	CCV	PCB500_100			01/04/18 07:20	1.0	1	
038	003_038	CCV	AR2154_500			01/04/18 07:49	1.0	2	
039	003_039	SAMPLE	295582-001	Soil	255189	01/04/18 08:18	5.0		sh
040	003_040	SAMPLE	295582-002	Soil	255189	01/04/18 08:47	5.0		sh , 1:PCB1221#5=2300
041	003_041	XCCV	PCB500_100			01/04/18 09:16	1.0	1	
042	003_042	CCV	AR2154_500			01/04/18 09:45	1.0	2	
043	003_043	CCV	PCB500_100			01/04/18 10:14	1.0	1	
044	003_044	CCV	AR2154_500			01/04/18 10:43	1.0	2	
045	003_045	BLANK	QC914824	Wipe	255178	01/04/18 11:21	1.0		
046	003_046	LCS	QC914825	Wipe	255178	01/04/18 11:50	1.0		
047	003_047	MS	QC914826	Wipe	255178	01/04/18 12:19	1.0		
048	003_048	MSD	QC914827	Wipe	255178	01/04/18 12:48	1.0		
049	003_049	BLANK	QC914933	Soil	255206	01/04/18 13:28	1.0		
050	003_050	LOQ	295908-006	Soil	255206	01/04/18 13:57	1.0		
051	003_051	LOQ	295908-007	Soil	255206	01/04/18 14:26	1.0		
052	003_052	CCV	PCB500_100			01/04/18 14:55	1.0	1	

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 238004939

Instrument : GC16 Begun : 01/03/18 10:19
Method : EPA 8082A SOP Version : pcb_rv11

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
053	003_053	CCV	AR2154_500			01/04/18 15:24	1.0	2	

JC1 01/05/18 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 53.

Standards used: 1=S34757 2=S35045 3=S34680 4=S34681 5=S34682 6=S34683 7=S34684 8=S34679 9=S34678

Flags used: sh=out of sample hold

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 238037991

Instrument : GC16 Begun : 01/26/18 09:11
Method : EPA 8082A SOP Version : pcb_rv11

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	026_001	X	HEX			01/26/18 09:11	1.0		
002	026_002	CCV	PCB500_100			01/26/18 09:40	1.0	1	
003	026_003	CCV	PCB500_100			01/26/18 15:32	1.0	2	
004	026_004	X	PRIMER			01/26/18 17:53	1.0		
005	026_005	X	HEX			01/26/18 18:22	1.0		
006	026_006	X	HEX			01/26/18 18:51	1.0		
007	026_007	X	HEX			01/26/18 19:20	1.0		
008	026_008	IB	CALIB			01/26/18 19:49	1.0		
009	026_009	ICAL	PCB100_20			01/26/18 20:18	1.0	3	
010	026_010	ICAL	PCB25_5			01/26/18 20:47	1.0	4	
011	026_011	ICAL	PCB100_20			01/26/18 21:16	1.0	3	
012	026_012	ICAL	PCB250_50			01/26/18 21:45	1.0	5	
013	026_013	ICAL	PCB500_100			01/26/18 22:14	1.0	1	
014	026_014	ICAL	PCB750_150			01/26/18 22:43	1.0	6	
015	026_015	ICAL	PCB1000_200			01/26/18 23:12	1.0	7	
016	026_016	X	HEX			01/26/18 23:41	1.0		
017	026_017	ICV	ULTRA_1660			01/27/18 00:10	1.0	8	
018	026_018	X	HEX			01/27/18 00:39	1.0		
019	026_019	CHECK	HEX			01/27/18 01:08	1.0		
020	026_020	CCV	PCB500_100			01/27/18 01:37	1.0	2	
021	026_021	CCV	AR2154_500			01/27/18 02:06	1.0	9	
022	026_022	SAMPLE	296418-007	Soil	255791	01/27/18 02:35	2.0		
023	026_023	SAMPLE	296418-008	Soil	255791	01/27/18 03:04	1.0		
024	026_024	SAMPLE	296418-009	Soil	255791	01/27/18 03:33	1.0		
025	026_025	SAMPLE	296418-010	Soil	255791	01/27/18 04:02	1.0		
026	026_026	SAMPLE	296418-011	Soil	255791	01/27/18 04:31	1.0		
027	026_027	SAMPLE	296418-012	Soil	255791	01/27/18 05:00	2.0		
028	026_028	SAMPLE	296418-013	Soil	255791	01/27/18 05:29	1.0		
029	026_029	SAMPLE	296418-014	Soil	255791	01/27/18 05:58	1.0		
030	026_030	SAMPLE	296418-017	Soil	255791	01/27/18 06:27	1.0		1:PCB1260#5=1400
031	026_031	SAMPLE	296418-018	Soil	255791	01/27/18 06:56	1.0		
032	026_032	SAMPLE	296418-019	Soil	255791	01/27/18 07:25	1.0		
033	026_033	SAMPLE	296418-020	Soil	255791	01/27/18 07:54	1.0		
034	026_034	CCV	PCB500_100			01/27/18 08:23	1.0	2	
035	026_035	CCV	AR2154_500			01/27/18 08:52	1.0	9	
036	026_036	SAMPLE	296566-001	Soil	255864	01/27/18 09:21	1.0		
037	026_037	SAMPLE	296560-001	Soil	255864	01/27/18 09:50	1.0		
038	026_038	SAMPLE	296560-002	Soil	255864	01/27/18 10:19	1.0		
039	026_039	SAMPLE	296560-003	Soil	255864	01/27/18 10:48	1.0		
040	026_040	SAMPLE	296560-004	Soil	255864	01/27/18 11:17	1.0		
041	026_041	SAMPLE	296559-001	Soil	255864	01/27/18 11:46	1.0		
042	026_042	SAMPLE	296559-002	Soil	255864	01/27/18 12:15	1.0		
043	026_043	SAMPLE	296565-013	Miscell.	255880	01/27/18 12:44	1.0		
044	026_044	SAMPLE	296565-014	Miscell.	255880	01/27/18 13:13	1.0		
045	026_045	SAMPLE	296565-015	Miscell.	255880	01/27/18 13:42	1.0		
046	026_046	CCV	PCB500_100			01/27/18 14:11	1.0	2	
047	026_047	CCV	AR2154_500			01/27/18 14:40	1.0	9	
048	026_048	MDL	293300-007	Water	254695	01/27/18 15:09	1.0		eh
049	026_049	MDL	293300-008	Water	254695	01/27/18 15:38	1.0		eh
050	026_050	MDL	293298-007	Soil	254655	01/27/18 16:07	1.0		eh
051	026_051	MDL	293298-008	Soil	254655	01/27/18 16:36	1.0		
052	026_052	CCV	PCB500_100			01/27/18 17:05	1.0	2	

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 238037991

Instrument : GC16 Begun : 01/26/18 09:11
Method : EPA 8082A SOP Version : pcb_rv11

JC1 01/29/18 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 52.

Standards used: 1=S35533 2=S35813 3=S35531 4=S35530 5=S35532 6=S35534 7=S35535 8=S35527 9=S35045

Flags used: eh=out of extract hold

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 238048058

Instrument : GC16 Begun : 02/02/18 08:58
Method : EPA 8082A SOP Version : pcb_rv11

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	033_001	X	HEX			02/02/18 08:58	1.0		
002	033_002	CCV	PCB500_100			02/02/18 09:27	1.0	1	
003	033_003	CCV	AR2154_250			02/02/18 09:56	1.0	2	
005	033_005	X	HEX			02/02/18 11:31	1.0		
006	033_006	BLANK	QC918626	Soil	256131	02/02/18 12:00	1.0		
007	033_007	LCS	QC918627	Soil	256131	02/02/18 12:29	1.0		
008	033_008	MS	QC918628	Soil	256131	02/02/18 12:58	1.0		
009	033_009	MSD	QC918629	Soil	256131	02/02/18 13:27	1.0		
010	033_010	MSS	296804-009	Soil	256131	02/02/18 13:56	1.0		
011	033_011	SAMPLE	296798-001	Soil	256131	02/02/18 14:25	5.0		diluted (client history)
012	033_012	SAMPLE	296798-006	Soil	256131	02/02/18 14:54	5.0		diluted (client history)
013	033_013	SAMPLE	296798-011	Soil	256131	02/02/18 15:23	5.0		diluted (client history)
014	033_014	SAMPLE	296798-016	Soil	256131	02/02/18 15:52	5.0		diluted (client history)
015	033_015	SAMPLE	296798-021	Soil	256131	02/02/18 16:19	5.0		diluted (client history)
016	033_016	SAMPLE	296798-026	Soil	256131	02/02/18 16:48	5.0		diluted (client history)
017	033_017	CCV	PCB500_100			02/02/18 17:16	1.0	1	
018	033_018	CCV	AR2154_250			02/02/18 18:01	1.0	2	
019	033_019	BLANK	QC918767	Soil	256161	02/02/18 18:29	1.0		
020	033_020	LCS	QC918768	Soil	256161	02/02/18 18:58	1.0		
021	033_021	MSS	296840-001	Soil	256161	02/02/18 19:27	5.0		diluted (client history)
022	033_022	MS	QC918769	Soil	256161	02/02/18 19:56	5.0		
023	033_023	MSD	QC918770	Soil	256161	02/02/18 20:25	5.0		
024	033_024	SAMPLE	296840-006	Soil	256161	02/02/18 20:54	5.0		diluted (client history)
025	033_025	SAMPLE	296840-013	Soil	256161	02/02/18 21:23	5.0		diluted (client history)
026	033_026	SAMPLE	296840-018	Soil	256161	02/02/18 21:52	5.0		diluted (client history)
027	033_027	SAMPLE	296844-001	Soil	256161	02/02/18 22:21	1.0		
028	033_028	SAMPLE	296826-001	Soil	256161	02/02/18 22:50	1.0		
029	033_029	CCV	PCB500_100			02/02/18 23:19	1.0	1	
030	033_030	CCV	AR2154_250			02/02/18 23:48	1.0	2	
031	033_031	CCV	AR1242_500			02/03/18 00:17	1.0	3	
032	033_032	MDL	294795-007	Soil	254890	02/03/18 00:46	1.0		eh
033	033_033	MDL	294795-008	Soil	254911	02/03/18 01:15	1.0		eh
034	033_034	MDL	294796-007	Water	254870	02/03/18 01:44	1.0		eh
035	033_035	MDL	294796-008	Water	254870	02/03/18 02:13	1.0		eh
036	033_036	CCV	PCB500_100			02/03/18 02:42	1.0	1	
037	033_037	CCV	AR1242_500			02/03/18 03:11	1.0	3	
038	033_038	CCV	AR2154_250			02/03/18 03:40	1.0	2	
039	033_039	BLANK	QC918814	Soil	256176	02/03/18 04:09	1.0		
040	033_040	MDL	296857-001	Soil	256176	02/03/18 04:38	1.0		
041	033_041	MDL	296857-002	Soil	256176	02/03/18 05:07	1.0		
042	033_042	MDL	296857-003	Soil	256176	02/03/18 05:36	1.0		
043	033_043	MDL	296857-004	Soil	256176	02/03/18 06:05	1.0		
044	033_044	MDL	296857-005	Soil	256176	02/03/18 06:34	1.0		
045	033_045	MDL	296857-006	Soil	256176	02/03/18 07:03	1.0		
046	033_046	CCV	PCB500_100			02/03/18 07:32	1.0	1	
047	033_047	CCV	AR2154_250			02/03/18 08:01	1.0	2	

JC1 02/05/18 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 47.

JC1 02/05/18 : Missing run004 because of mis-inject

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 238048058

Instrument : GC16 Begun : 02/02/18 08:58
Method : EPA 8082A SOP Version : pcb_rv11

Standards used: 1=S35813 2=S35044 3=S34921

Flags used: eh=out of extract hold

SAMPLE PREPARATION SUMMARY

Batch # : 256161
Started By : ECI
Method : 3550C
Spike #1 ID : S35128

Prep Date : 02-FEB-2018 12:52
SOP Version : PCB_3550_rv13
Spike #2 ID : S35523

Analysis : PCB
Finished By : ECI
Units : g

Sample	Stype	Matrix	Initial	Final	Clean DF	Prep DF	pH	Sp 1 Vol	Sp 2 Vol	Sp 3 Vol	Clean Method	Analysis	Comments
296826-001		Soil	29.52	10	1	0.3388		.5				PCB	Prepped 02-FEB-2018 16:42
296840-001		Soil	29.71	10	1	0.3366		.5				PCB	very wet sludge
296840-006		Soil	30.04	10	1	0.3329		.5				PCB	very wet sludge
296840-013		Soil	30.12	10	1	0.332		.5				PCB	very wet sludge
296840-018		Soil	29.94	10	1	0.334		.5				PCB	very wet sludge
296844-001		Soil	30.27	10	1	0.3304		.5				PCB	very wet sludge
QC918767	BLANK	Soil	29.72	10	1	0.3365		.5				PCB	
QC918768	LCS	Soil	29.69	10	1	0.3368		.5	.5			PCB	
QC918769	MS	Soil	29.66	10	1	0.3372		.5	.5			PCB	
QC918770	MSD	Soil	29.98	10	1	0.3336		.5	.5			PCB	

Analyst: JC1 Date: 02/05/18 Reviewer: EAH Date: 02/05/18

PCB (8082) Soil Prep Log version 201711 Enthalpy Analytical LLC - Berkeley

LIMS Batch No: 256161 ☒ EPA 3550C Sonication Page 14 **BK 4218**

LIMS Analysis PCB ☐ Other _____

Date Extracted: 2/2/18

Sample #	Container ID	Sample Wt (g)	Final Vol (mL)	Comments
296840-001	Comp	29.71	☐ 25.0 ☒ 10	Comp of 296840 (2-5) @30g ea, (7-10) @20g ea (14-17) @20g ea (19-22) @20g ea
6		30.04	☐ 25.0 ☒ 10	
13		30.12	☐ 25.0 ☒ 10	
18		29.94	☐ 25.0 ☒ 10	
296844-001		30.27	☐ 25.0 ☒ 10	
MB QC918767	NA	29.72	☐ 25.0 ☒ 10	
LCS 8	NA	29.69	☐ 25.0 ☒ 10	
MS 9	Comp	29.66	☐ 25.0 ☒ 10	Comp of 296840 (2-5) @30g ea
MSD 70	Comp	29.98	☐ 25.0 ☒ 10	
			☐ 25.0 ☐	
296826-001	B	29.52	☐ 25.0 ☒ 10	A/D ECL 2/2/18 1642
			☐ 25.0 ☐	
			☐ 25.0 ☐	
			☐ 25.0 ☐	
			☐ 25.0 ☐	
			☐ 25.0 ☐	
			☐ 25.0 ☐	
			☐ 25.0 ☐	
			☐ 25.0 ☐	
			☐ 25.0 ☐	
			☐ 25.0 ☐	
			☐ 25.0 ☐	
			☐ 25.0 ☐	
			☐ 25.0 ☐	A/D RDI 2/2/18
			☐ 25.0 ☐	
			☐ 25.0 ☐	AKG 2/3/18

☐ MS/MSD not included due to: ☐ insufficent volume, or ☐ other (reason) _____

☒ Balance ID: B-15 Has been calibrated? ☒ Yes ☐ No

	Mfg & Lot # / LIMS # / Time	Initials / Date
Solvent-rinsed granular Na_2SO_4 weighed out for QC samples	EM16E285202 1/31/18	ECL 2/2/18
dried with CH_2Cl_2-rinsed ☐ granular Na_2SO_4 ☒ powder	EM3557C500	
0.5 mL of surrogate solution was added to all samples	351281D	
ECL 2/2/18 0.5 mL of matrix spiking solution was added to all spikes	335523C	
1:1 CH_2Cl_2 (lot# ~~FC~~ EM5728) : Acetone (lot# FC174412) was added to all	✓	
Solvent added at (time)	1252 / 1642	
☒ sonicated 3 times w/ ≥100mL ☐ soxhlet extractors on at:	✓	
Soxhlets off at:	—	
Extracts filtered through baked, CH_2Cl_2-rinsed powdered Na_2SO_4	EM3557C500	
Solvent exchanged with Hexane, Lot#	FC174710	
Concentrated to final volume in boiling H2O bath	✓	
EPA 3665A Clean-up: vortexed w/ H_2SO_4 Lot#	FC176161	
Centrifuged for 1 min; 5mL transferred to labelled vial	✓	
Relinquished to PCB group	✓	—

2/2/18

Extraction Chemist / Date

Continued from page _____

Continued on page _____

2/3/18

Reviewed by / Date

REPORTING SUMMARY FOR 296840 PCBS Soil

Sample ID	Analyte	Inst ID	Ch	Date & Time
296840-001	Aroclor-1016	GC16	A	02/02/18 19:27
296840-001	Aroclor-1221	GC16	A	02/02/18 19:27
296840-001	Aroclor-1232	GC16	A	02/02/18 19:27
296840-001	Aroclor-1242	GC16	A	02/02/18 19:27
296840-001	Aroclor-1248	GC16	A	02/02/18 19:27
296840-001	Aroclor-1254	GC16	A	02/02/18 19:27
296840-001	Aroclor-1260	GC16	B	02/02/18 19:27
296840-001	TCMX	GC16	A	02/02/18 19:27
296840-001	Decachlorobiphenyl	GC16	A	02/02/18 19:27
296840-006	Aroclor-1016	GC16	A	02/02/18 20:54
296840-006	Aroclor-1221	GC16	A	02/02/18 20:54
296840-006	Aroclor-1232	GC16	A	02/02/18 20:54
296840-006	Aroclor-1242	GC16	A	02/02/18 20:54
296840-006	Aroclor-1248	GC16	A	02/02/18 20:54
296840-006	Aroclor-1254	GC16	A	02/02/18 20:54
296840-006	Aroclor-1260	GC16	A	02/02/18 20:54
296840-006	TCMX	GC16	A	02/02/18 20:54
296840-006	Decachlorobiphenyl	GC16	A	02/02/18 20:54
296840-013	Aroclor-1016	GC16	A	02/02/18 21:23
296840-013	Aroclor-1221	GC16	A	02/02/18 21:23
296840-013	Aroclor-1232	GC16	A	02/02/18 21:23
296840-013	Aroclor-1242	GC16	A	02/02/18 21:23
296840-013	Aroclor-1248	GC16	A	02/02/18 21:23
296840-013	Aroclor-1254	GC16	B	02/02/18 21:23
296840-013	Aroclor-1260	GC16	B	02/02/18 21:23
296840-013	TCMX	GC16	A	02/02/18 21:23
296840-013	Decachlorobiphenyl	GC16	A	02/02/18 21:23
296840-018	Aroclor-1016	GC16	A	02/02/18 21:52
296840-018	Aroclor-1221	GC16	A	02/02/18 21:52
296840-018	Aroclor-1232	GC16	A	02/02/18 21:52
296840-018	Aroclor-1242	GC16	A	02/02/18 21:52
296840-018	Aroclor-1248	GC16	A	02/02/18 21:52
296840-018	Aroclor-1254	GC16	A	02/02/18 21:52
296840-018	Aroclor-1260	GC16	A	02/02/18 21:52
296840-018	TCMX	GC16	A	02/02/18 21:52
296840-018	Decachlorobiphenyl	GC16	A	02/02/18 21:52
QC918767	Aroclor-1016	GC16	A	02/02/18 18:29
QC918767	Aroclor-1221	GC16	A	02/02/18 18:29
QC918767	Aroclor-1232	GC16	A	02/02/18 18:29
QC918767	Aroclor-1242	GC16	A	02/02/18 18:29
QC918767	Aroclor-1248	GC16	A	02/02/18 18:29
QC918767	Aroclor-1254	GC16	A	02/02/18 18:29
QC918767	Aroclor-1260	GC16	B	02/02/18 18:29
QC918767	TCMX	GC16	A	02/02/18 18:29
QC918767	Decachlorobiphenyl	GC16	A	02/02/18 18:29
QC918768	Aroclor-1016	GC16	A	02/02/18 18:58
QC918768	Aroclor-1260	GC16	B	02/02/18 18:58
QC918768	TCMX	GC16	A	02/02/18 18:58
QC918768	Decachlorobiphenyl	GC16	A	02/02/18 18:58

REPORTING SUMMARY FOR 296840 PCBS Soil

Sample ID	Analyte	Inst ID	Ch	Date & Time
QC918769	Aroclor-1016	GC16	A	02/02/18 19:56
QC918769	Aroclor-1260	GC16	B	02/02/18 19:56
QC918769	TCMX	GC16	A	02/02/18 19:56
QC918769	Decachlorobiphenyl	GC16	A	02/02/18 19:56
QC918770	Aroclor-1016	GC16	A	02/02/18 20:25
QC918770	Aroclor-1260	GC16	B	02/02/18 20:25
QC918770	TCMX	GC16	A	02/02/18 20:25
QC918770	Decachlorobiphenyl	GC16	A	02/02/18 20:25

Dilutions for 296840 PCBS Soil
Enthalpy Analytical - Berkeley

Type	Sample ID	IDFs
SAMPLE	296840-001	5X
SAMPLE	296840-006	5X
SAMPLE	296840-013	5X
SAMPLE	296840-018	5X
MS	QC918769	5X
MSD	QC918770	5X

Case Narrative Addendum: Manual Integrations for 296840 PCBS (Soil)

For MSS 296840-001 (GC16_033_021):
Corrected automatically drawn baseline.

For SAMPLE 296840-006 (GC16_033_024):
Corrected automatically drawn baseline.

For SAMPLE 296840-013 (GC16_033_025):
Corrected automatically drawn baseline.

For SAMPLE 296840-018 (GC16_033_026):
Corrected automatically drawn baseline.

For CCV AR2154_250 (GC16_033_018):
Corrected automatically drawn baseline.

For CCV AR2154_250 (GC16_033_030):
Corrected automatically drawn baseline.

For CCV PCB500_100 (GC16_033_017):
Corrected automatically drawn baseline for all channels.

For CCV PCB500_100 (GC16_033_029):
Corrected automatically drawn baseline for all channels.

For BLANK QC918767 (GC16_033_019):
Corrected automatically drawn baseline.

For LCS QC918768 (GC16_033_020):
Corrected automatically drawn baseline.

For MSD QC918770 (GC16_033_023):
Corrected automatically drawn baseline.

For Calibration GC16 (238004939001):
Corrected automatically drawn baseline in all levels.

For ICV ULTRA_1254 (GC16_003_027):
Combined split peak.

For ICV ULTRA_1221 (GC16_003_031):
Corrected automatically drawn baseline.

For Calibration GC16 (238037991001):
Corrected automatically drawn baseline in all levels.

For ICV ULTRA_1660 (GC16_026_017):
Corrected automatically drawn baseline.

CAS Registry Numbers for 296840 PCBS Soil
Enthalpy Analytical - Berkeley

Analyte	CAS RN
Aroclor-1016	12674-11-2
Aroclor-1221	11104-28-2
Aroclor-1232	11141-16-5
Aroclor-1242	53469-21-9
Aroclor-1248	12672-29-6
Aroclor-1254	11097-69-1
Aroclor-1260	11096-82-5
Decachlorobiphenyl	2051-24-3
TCMX	877-09-8

Sample Raw Data

ENTHALPY SAMPLE USER REPORT FOR EPA 8082A

Inst	: GC16	Lab ID	: 296840-001	Client ID	: HPP-FSS-007
Seqnum	: 238048058021	Matrix	: Soil	Acct	: IEECI (MJD)
File	: 033_021	Batch	: 256161	Time	: 02-FEB-2018 19:27
Cal	: 238037991001	Caldate	: 26-JAN-2018		
IDF	: 5.0	Raw Units	: pg/ul	Units	: ug/Kg

29.71 g --> 10.0 ml = 0.3366 ml/g PDF

Analyte	Ch	Raw	Result	Conf	RPD	RL	Blank	Flags
Aroclor-1016	A	2.923	ND	ND	63%	17		u
Aroclor-1016 Peak # 1	A	3.541	5.96	ND				
Aroclor-1016 Peak # 2	A	1.640	2.76	ND				
Aroclor-1016 Peak # 3	A	5.917	9.96	ND				
Aroclor-1016 Peak # 4	A	0	ND	9.67				
Aroclor-1016 Peak # 5	A	3.516	5.92	3.11	62%			
Aroclor-1221	A		ND			34		u
Aroclor-1232	A		ND			17		u
Aroclor-1242	A		ND			17		u
Aroclor-1248	A		ND			17		u
Aroclor-1254	A		ND			17		u
Aroclor-1260	B	60.28	100	88	14%	17		u
Aroclor-1260 Peak # 1	B	70.70	118.99	80.75	38%			
Aroclor-1260 Peak # 2	B	53.59	90.19	81.70	10%			
Aroclor-1260 Peak # 3	B	47.33	79.65	90.31	13%			
Aroclor-1260 Peak # 4	B	65.83	110.79	82.93	29%			
Aroclor-1260 Peak # 5	B	63.97	107.65	104.75	3%			

Surrogate	Ch	Raw	Spiked	Result	%Rec	Limits	Flags
TCMX	A	6.684	16.83	11.25	67	44-130	u
Decachlorobiphenyl	A	9.814	16.83	16.52	98	26-153	<c- >c- u

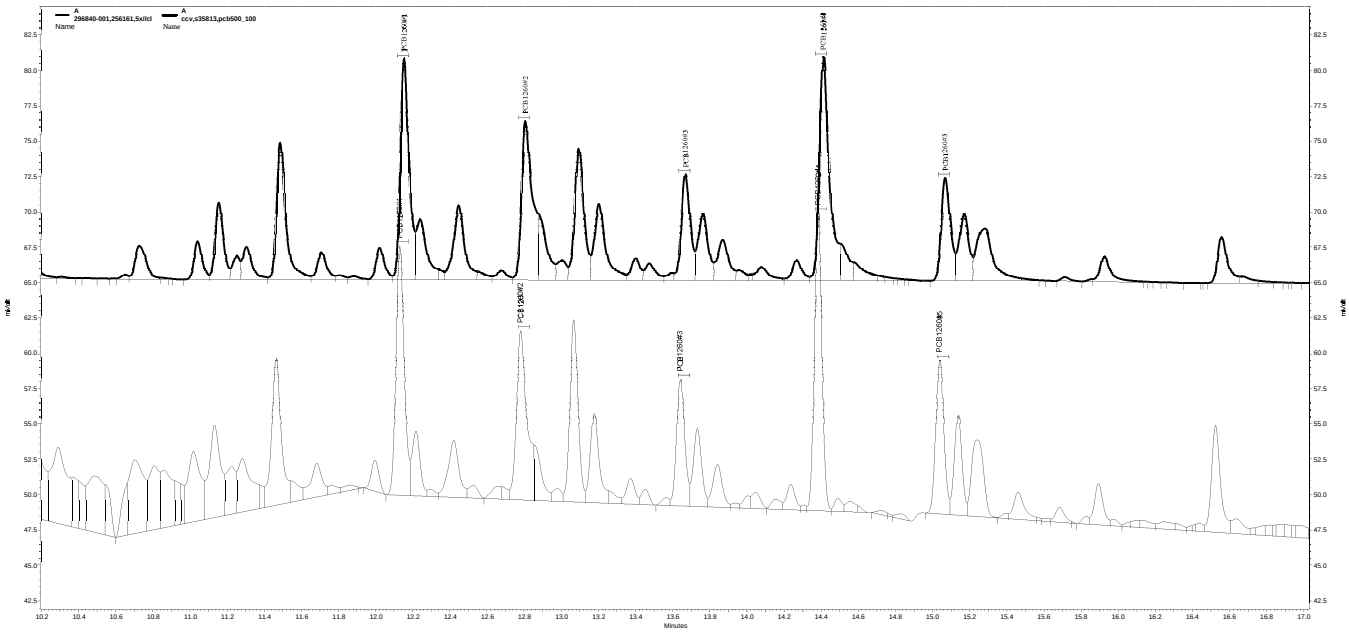
02/02/18 : Was diluted due to client history of high non-target or organic acid interference.

JC1 02/05/18 : Corrected automatically drawn baseline.

JC1 02/05/18 [Decachlorobiphenyl A]: Recovery well within limits despite instrument bias

Analyst: JC1 Date: 02/05/18 Reviewer: EAH Date: 02/05/18

-=low bias <=opening >=closing c=CCV u=use



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\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\032-002, A

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-021**
Sample Name: **296840-001,256161,5x//cl**
Instrument: GC16 (Offline) Vial: 41 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 7:27:19 PM
Analysis Date: 2/5/2018 10:17:02 AM
Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	4.463	4.490	76896	6.684
PCB1016#1	6.187	6.177	1946	3.541
PCB1016#2	7.250	7.270	1172	1.640
PCB1016#3	7.600	7.580	2397	5.917
PCB1016#4		8.043		0.000 BDL
PCB1016#5	8.540	8.563	1233	3.516
PCB1260#1	12.130	12.147	54533	47.982
PCB1260#2	12.780	12.800	46820	48.547
PCB1260#3	13.640	13.660	27847	53.665
PCB1260#4	14.383	14.400	59614	49.280
PCB1260#5	15.037	15.057	33400	62.244
Decachlorobiphenyl	17.643	17.663	116238	9.814

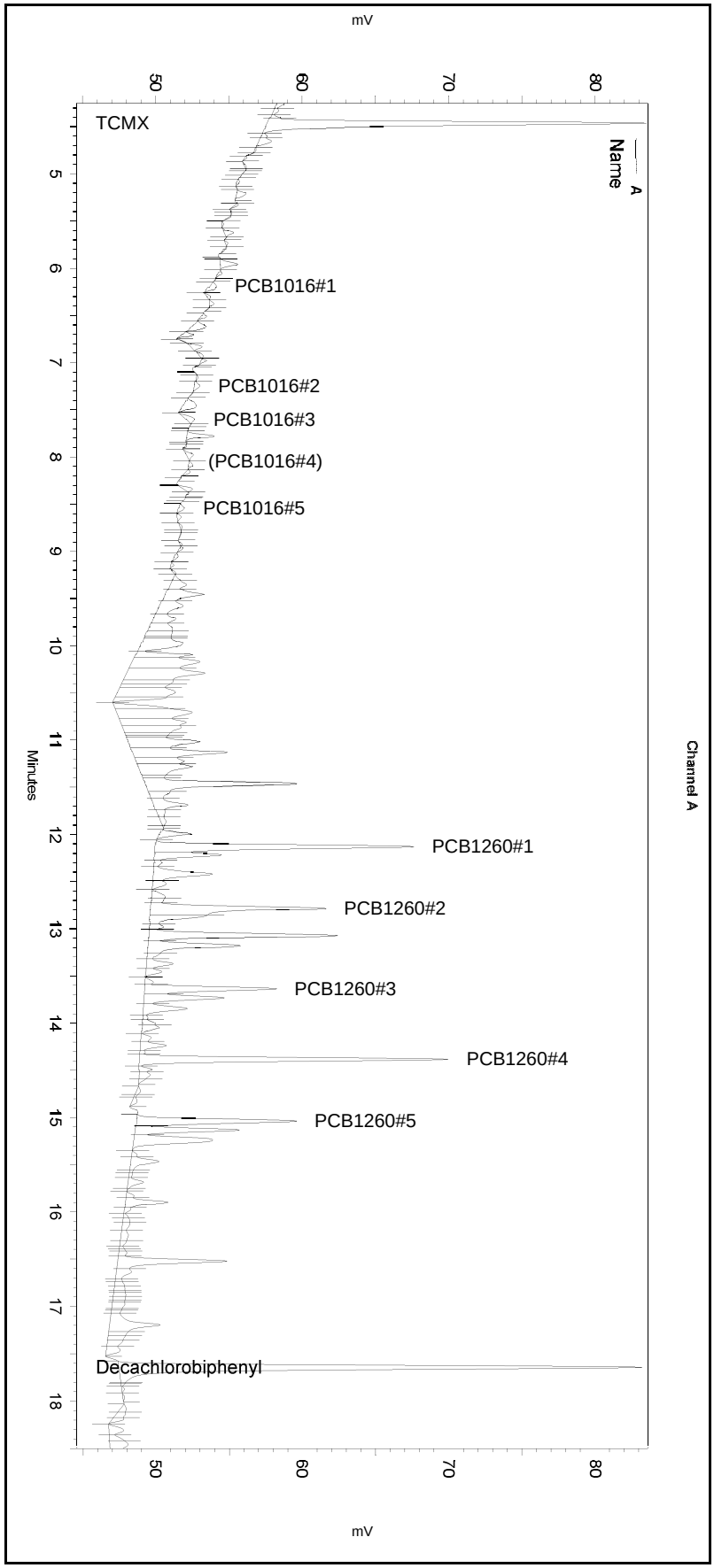
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	3.793	3.810	78844	6.895
PCB1016#1		5.383		0.000 BDL
PCB1016#2		6.357		0.000 BDL
PCB1016#3		6.580		0.000 BDL
PCB1016#4	7.123	7.143	1130	5.749
PCB1016#5	7.870	7.880	582	1.847
PCB1260#1	11.143	11.150	31572	70.705
PCB1260#2	11.783	11.797	30315	53.593
PCB1260#3	12.727	12.743	19529	47.328
PCB1260#4	13.380	13.397	41651	65.829
PCB1260#5	14.053	14.075	24883	63.966
Decachlorobiphenyl	17.033	17.063	97902	8.638

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-021**
Sample Name: **296840-001,256161,5x//cl**
Instrument: GC16 (Offline) Vial: 41 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 7:27:19 PM
Analysis Date: 2/5/2018 10:17:02 AM
Sample Amount: 1



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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	0	0	0

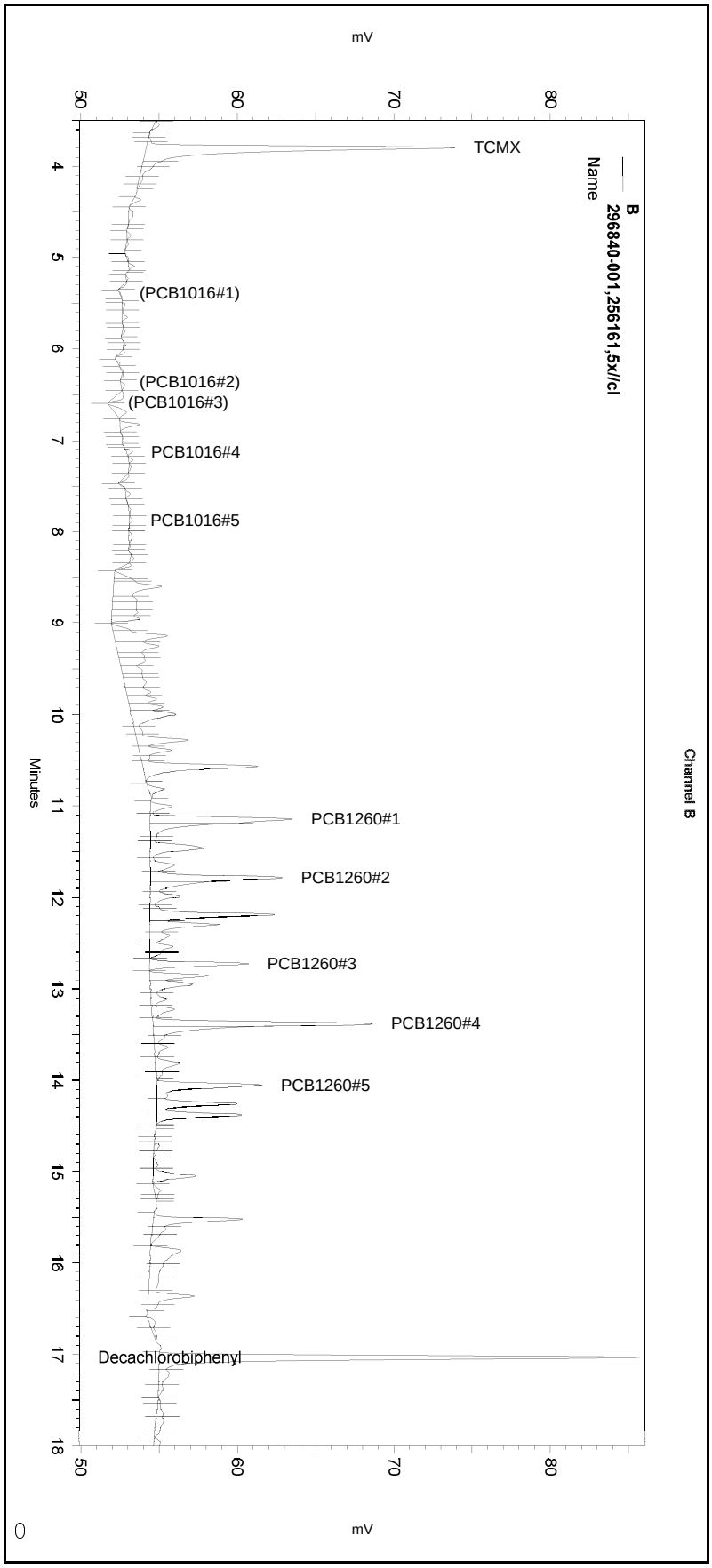
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-021

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Valley to Valley	4.764	9.236	0
Yes	Reset Baseline	11.932	0	0
Yes	Reset Baseline	14.666	0	0
Yes	Reset Baseline	14.936	0	0
Yes	Reset Baseline	17.573	0	0
Yes	Reset Baseline	18.022	0	0

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-021**
Sample Name: **296840-001,256161,5x//cl**
Instrument: GC16 (Offline) Vial: 41 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 7:27:19 PM
Analysis Date: 2/5/2018 10:17:02 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	1.8	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-021

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Valley to Valley	4.279	8.413	0
Yes	Reset Baseline	10.918	0	0
Yes	Split Peak	11.828	0	0
Yes	Split Peak	13.414	0	0
Yes	Reassign Peak	13.42	13.381	0
Yes	Manual Baseline	13.984	14.531	0
Yes	Reset Baseline	16.88	0	0
Yes	Reset Baseline	17.466	0	0

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-021**
Sample Name: **296840-001,256161,5x//cl**
Instrument: GC16 Vial: 41 Operator: lims2k3\pest3
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 7:27:19 PM
Analysis Date: 2/2/2018 7:51:16 PM
Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	4.463	4.490	79262	6.890
PCB1016#1	6.187	6.177	7499	13.645
PCB1016#2	7.250	7.270	14423	20.181
PCB1016#3	7.600	7.580	13035	32.176
PCB1016#4		8.043		0.000 BDL
PCB1016#5	8.540	8.563	13856	39.510
PCB1260#1	12.130	12.147	78391	68.974
PCB1260#2	12.780	12.800	69005	71.551
PCB1260#3	13.640	13.660	43295	83.435
PCB1260#4	14.383	14.400	76175	62.970
PCB1260#5	15.037	15.057	49081	91.466
Decachlorobiphenyl	17.643	17.663	128324	10.835

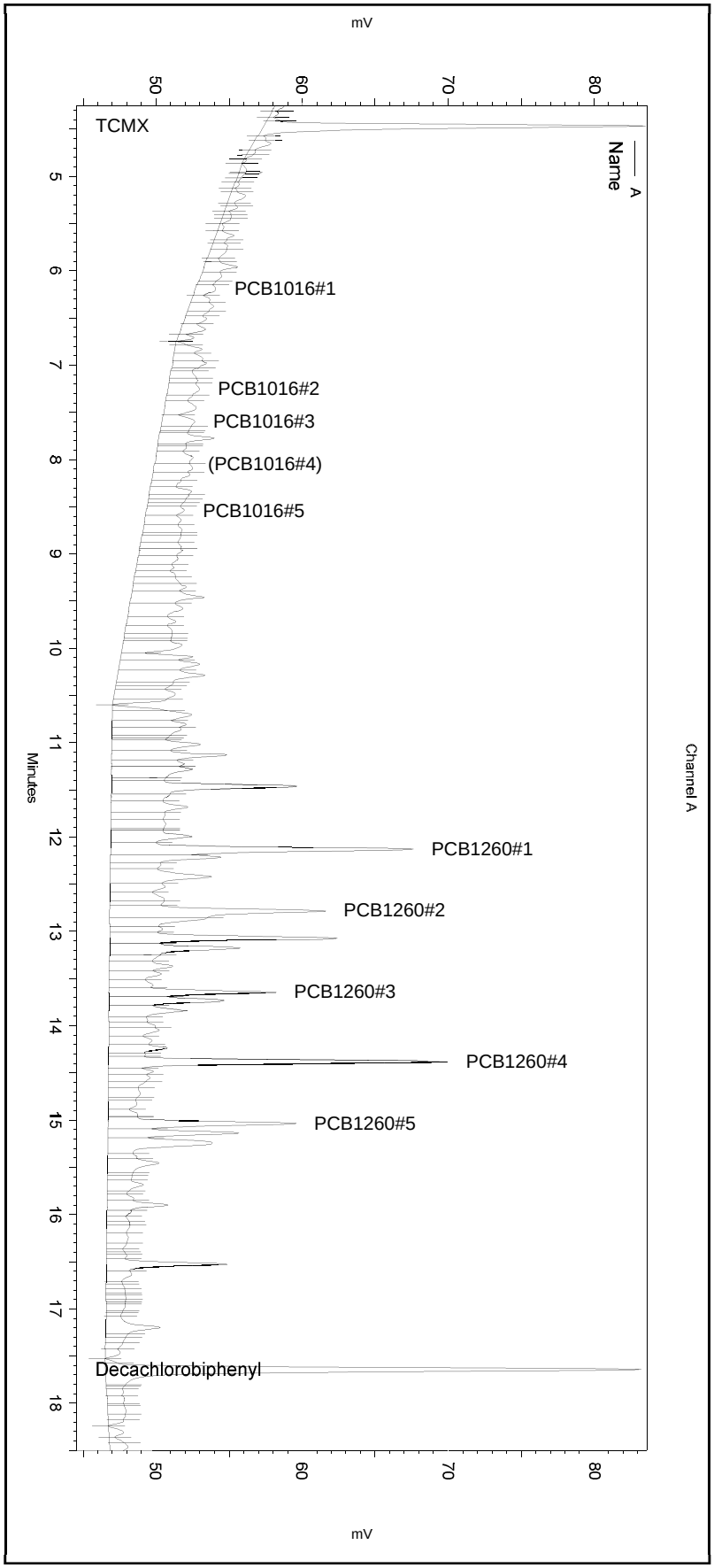
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	3.793	3.810	78844	6.895
PCB1016#1		5.383		0.000 BDL
PCB1016#2		6.357		0.000 BDL
PCB1016#3		6.580		0.000 BDL
PCB1016#4	7.123	7.143	8831	44.926
PCB1016#5	7.870	7.880	8827	28.016
PCB1260#1	11.143	11.150	39782	89.091
PCB1260#2	11.783	11.797	53077	93.833
PCB1260#3	12.727	12.743	21609	52.368
PCB1260#4	13.380	13.397	57384	90.695
PCB1260#5	14.053	14.075	22125	56.876
Decachlorobiphenyl	17.033	17.063	107471	9.482

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-021**
Sample Name: **296840-001,256161,5x//cl**
Instrument: GC16 Vial: 41 Operator: lims2k3\pest3
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 7:27:19 PM
Analysis Date: 2/2/2018 7:51:16 PM
Sample Amount: 1



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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	0	0	0

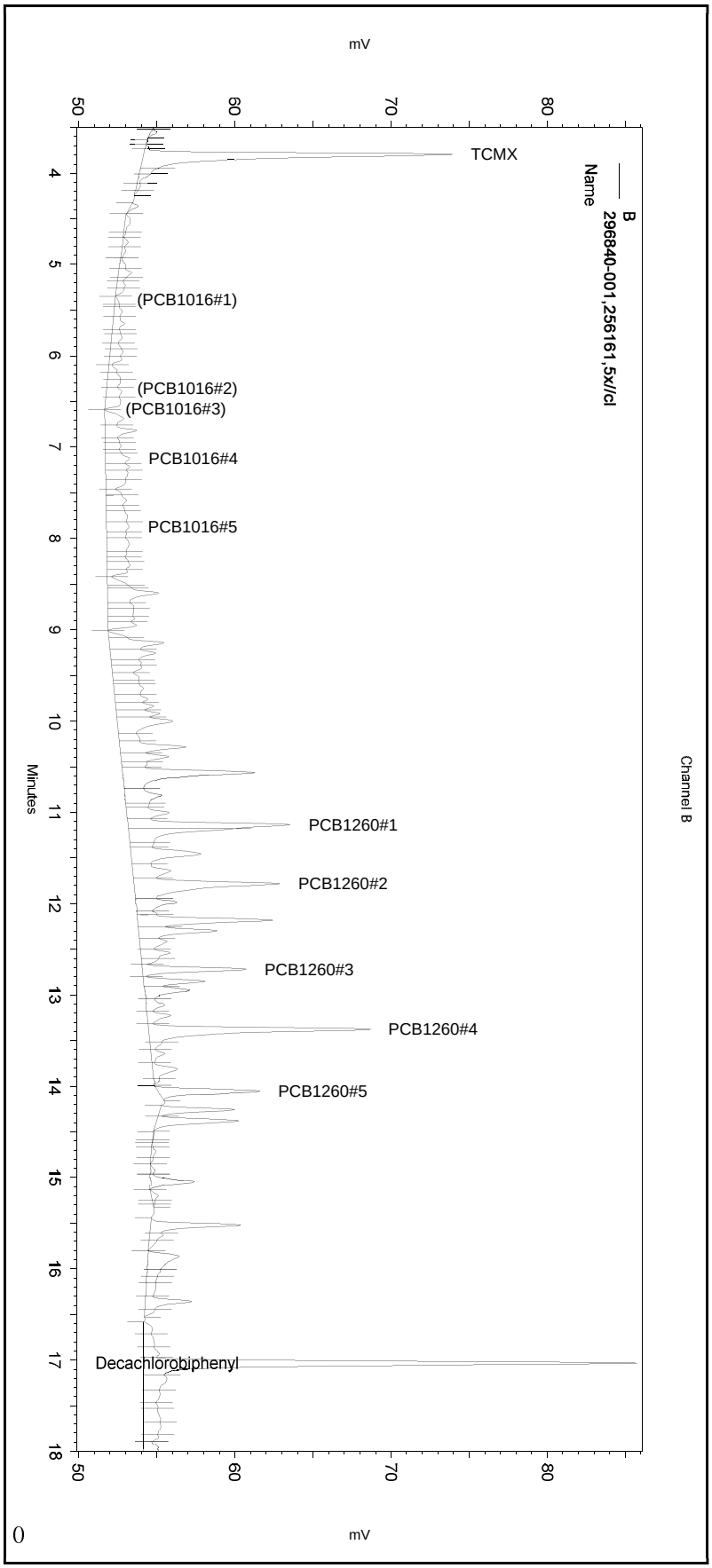
Manual Integration Fixes
==========

Data File: C:\Documents and Settings\All Users\Application Data\ChromatographySystem\Recovery Data\Instrument.10110\033-021_32CF.tmp

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-021**
Sample Name: **296840-001,256161,5x//cl**
Instrument: GC16 Vial: 41 Operator: lims2k3\pest3
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 7:27:19 PM
Analysis Date: 2/2/2018 7:51:16 PM
Sample Amount: 1



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No items selected for this section

---< B >----------

No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	1.8	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========

Data File: C:\Documents and Settings\All Users\Application Data\ChromatographySystem\Recovery Data\Instrument.10110\033-021_32CF.tmp

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

ENTHALPY SAMPLE USER REPORT FOR EPA 8082A

Inst	: GC16	Lab ID	: 296840-006	Client ID	: HPP-FSS-008
Seqnum	: 238048058024	Matrix	: Soil	Acct	: IEECI (MJD)
File	: 033_024	Batch	: 256161	Time	: 02-FEB-2018 20:54
Cal	: 238037991001	Caldate	: 26-JAN-2018		
IDF	: 5.0	Raw Units	: pg/ul	Units	: ug/Kg

30.04 g --> 10.0 ml = 0.3329 ml/g PDF

Analyte	Ch	Raw	Result	Conf	RPD	RL	Blank	Flags
Aroclor-1016	A	0.6245	ND	ND	53%	17		u
Aroclor-1016 Peak # 1	A	0.1037	0.17	ND				
Aroclor-1016 Peak # 2	A	0.005597	0.01	ND				
Aroclor-1016 Peak # 3	A	0.02468	0.04	ND				
Aroclor-1016 Peak # 4	A	0	ND	1.92				
Aroclor-1016 Peak # 5	A	2.988	4.97	1.09	128%			
Aroclor-1221	A		ND			33		u
Aroclor-1232	A		ND			17		u
Aroclor-1242	A		ND			17		u
Aroclor-1248	A		ND			17		u
Aroclor-1254	A		ND			17		u
Aroclor-1260	A	9.356	16 J	15 J	2%	17		u
Aroclor-1260 Peak # 1	A	10.30	17.14	15.77	8%			
Aroclor-1260 Peak # 2	A	8.734	14.54	14.01	4%			
Aroclor-1260 Peak # 3	A	7.913	13.17	13.12	0%			
Aroclor-1260 Peak # 4	A	5.048	8.40 [omit]	14.36	52%			
Aroclor-1260 Peak # 5	A	10.48	17.44	19.04	9%			

Surrogate	Ch	Raw	Spiked	Result	%Rec	Limits	Flags
TCMX	A	7.941	16.64	13.22	79	44-130	u
Decachlorobiphenyl	A	10.53	16.64	17.52	105	26-153	<c- >c- u

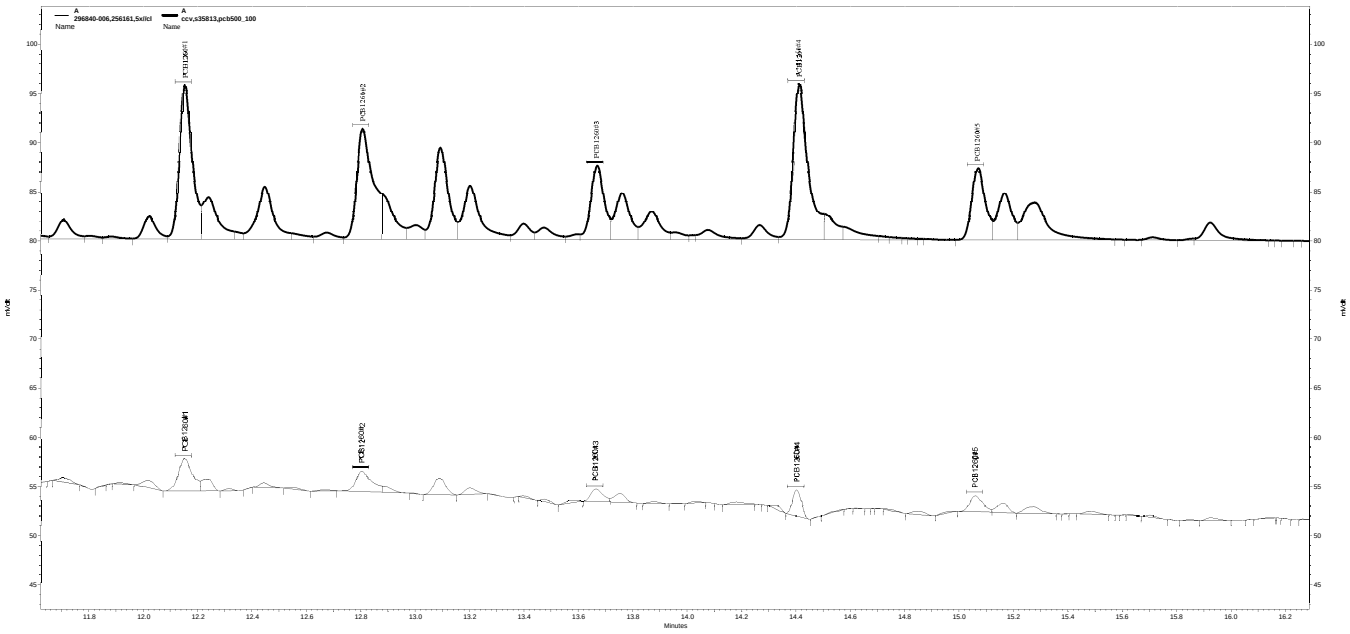
02/05/18 : Was diluted due to client history of high non-target or organic acid interference.

JC1 02/05/18 : Corrected automatically drawn baseline.

JC1 02/07/18 [Decachlorobiphenyl A]: Recovery well within limits despite instrument bias

Analyst: JC1 Date: 02/05/18 Reviewer: EAH Date: 02/08/18

-=low bias <=opening >=closing c=CCV u=use



\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-024, A

\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\032-002, A

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-024**
Sample Name: **296840-006,256161,5x//cl**
Instrument: GC16 (Offline) Vial: 44 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 8:54:19 PM
Analysis Date: 2/5/2018 11:03:21 AM
Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	4.483	4.490	91355	7.941
PCB1016#1	6.207	6.177	57	0.104
PCB1016#2	7.260	7.270	4	0.006
PCB1016#3	7.607	7.580	10	0.025
PCB1016#4		8.043		0.000 BDL
PCB1016#5	8.577	8.563	1048	2.988
PCB1260#1	12.153	12.147	11705	10.299
PCB1260#2	12.803	12.800	8423	8.734
PCB1260#3	13.663	13.660	4106	7.913
PCB1260#4	14.403	14.400	6106	5.048
PCB1260#5	15.060	15.057	5623	10.479
Decachlorobiphenyl	17.663	17.663	124687	10.527

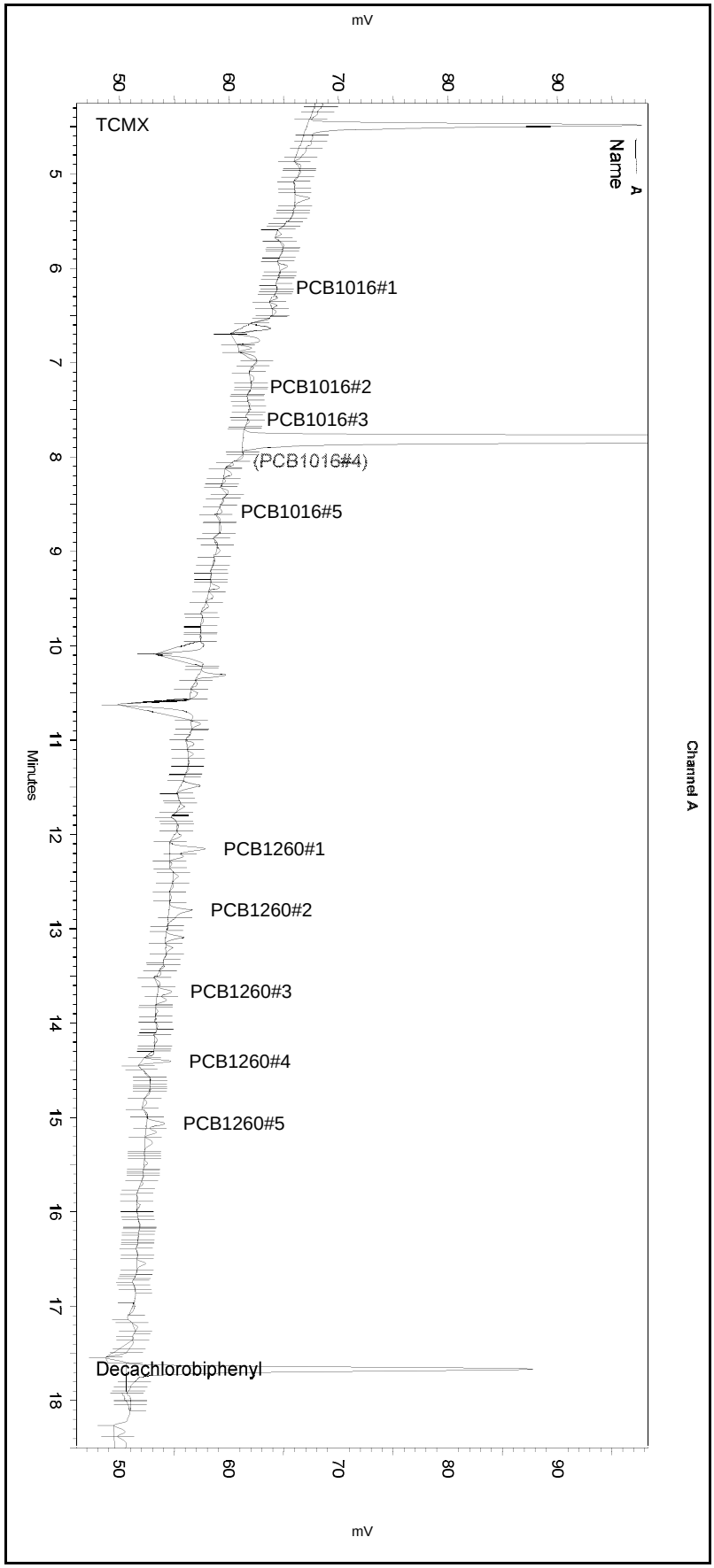
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	3.813	3.810	84536	7.393
PCB1016#1		5.383		0.000 BDL
PCB1016#2		6.357		0.000 BDL
PCB1016#3		6.580		0.000 BDL
PCB1016#4	7.153	7.143	227	1.155
PCB1016#5	7.887	7.880	206	0.654
PCB1260#1	11.163	11.150	4231	9.475
PCB1260#2	11.807	11.797	4761	8.417
PCB1260#3	12.747	12.743	3252	7.881
PCB1260#4	13.400	13.397	5459	8.628
PCB1260#5	14.077	14.075	4450	11.439
Decachlorobiphenyl	17.053	17.063	112373	9.915

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-024**
Sample Name: **296840-006,256161,5x//cl**
Instrument: GC16 (Offline) Vial: 44 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 8:54:19 PM
Analysis Date: 2/5/2018 11:03:21 AM
Sample Amount: 1



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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	0	0	0

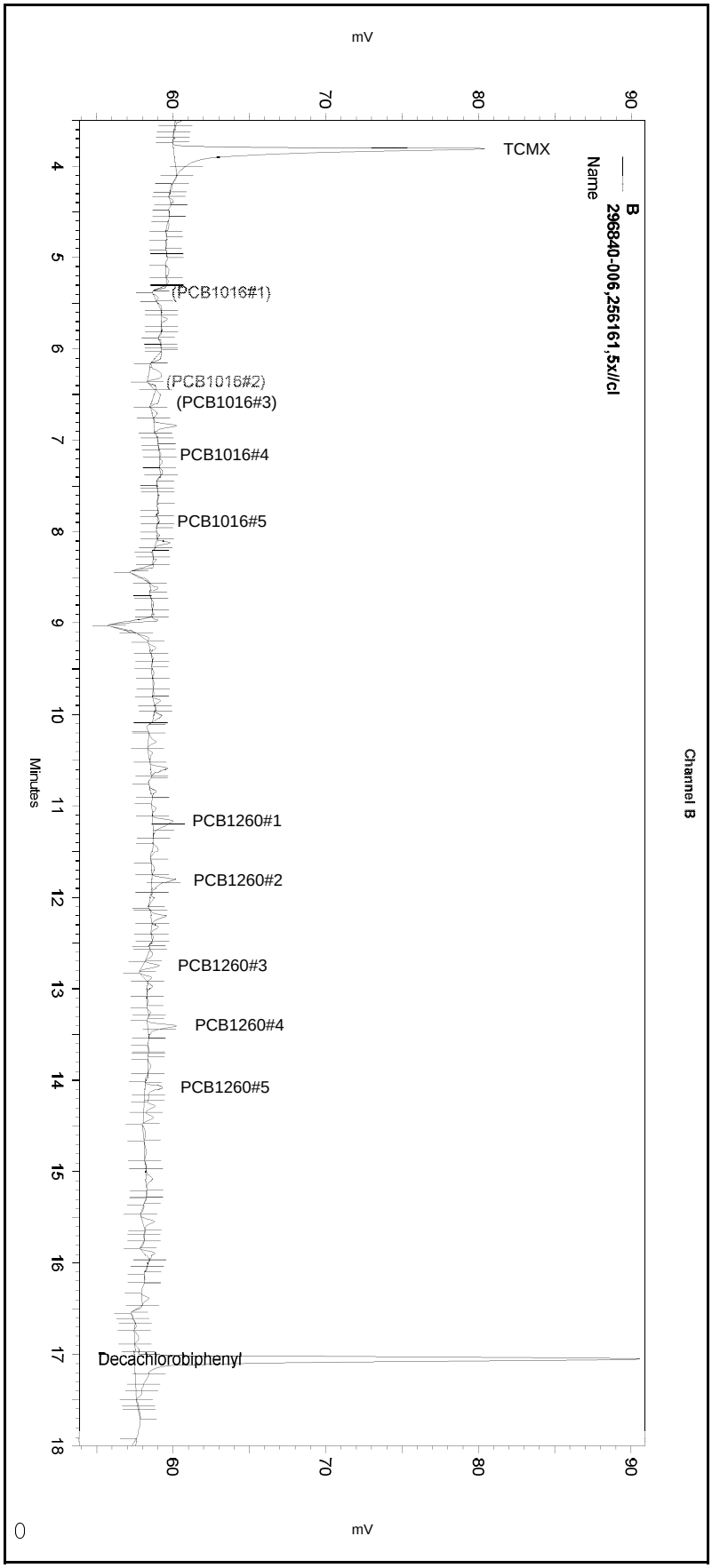
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-024

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Valley to Valley	4.929	17.33	0
Yes	Manual Baseline	12.075	12.278	0
Yes	Manual Baseline	12.71	12.971	0
Yes	Manual Baseline	13.616	13.808	0
Yes	Manual Baseline	14.992	15.211	0
Yes	Manual Baseline	17.599	17.92	0

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-024**
Sample Name: **296840-006,256161,5x//cl**
Instrument: GC16 (Offline) Vial: 44 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 8:54:19 PM
Analysis Date: 2/5/2018 11:03:21 AM
Sample Amount: 1



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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	1.8	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-024

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Valley to Valley	4.158	16.694	0
Yes	Manual Baseline	11.11	11.356	0
Yes	Split Peak	11.843	0	0
Yes	Split Peak	13.436	0	0
Yes	Manual Baseline	14.018	14.459	0

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-024**
Sample Name: **296840-006,256161,5x//cl**
Instrument: GC16 (Offline) Vial: 44 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 8:54:19 PM
Analysis Date: 2/5/2018 11:02:53 AM
Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	4.483	4.490	91778	7.978
PCB1016#1	6.207	6.177	7937	14.442
PCB1016#2	7.260	7.270	3182	4.452
PCB1016#3	7.607	7.580	5140	12.688
PCB1016#4		8.043		0.000 BDL
PCB1016#5	8.577	8.563	1923	5.483
PCB1260#1	12.153	12.147	42951	37.791
PCB1260#2	12.803	12.800	41761	43.302
PCB1260#3	13.663	13.660	17249	33.241
PCB1260#4	14.403	14.400	7790	6.440
PCB1260#5	15.060	15.057	8853	16.498
Decachlorobiphenyl	17.663	17.663	140593	11.870

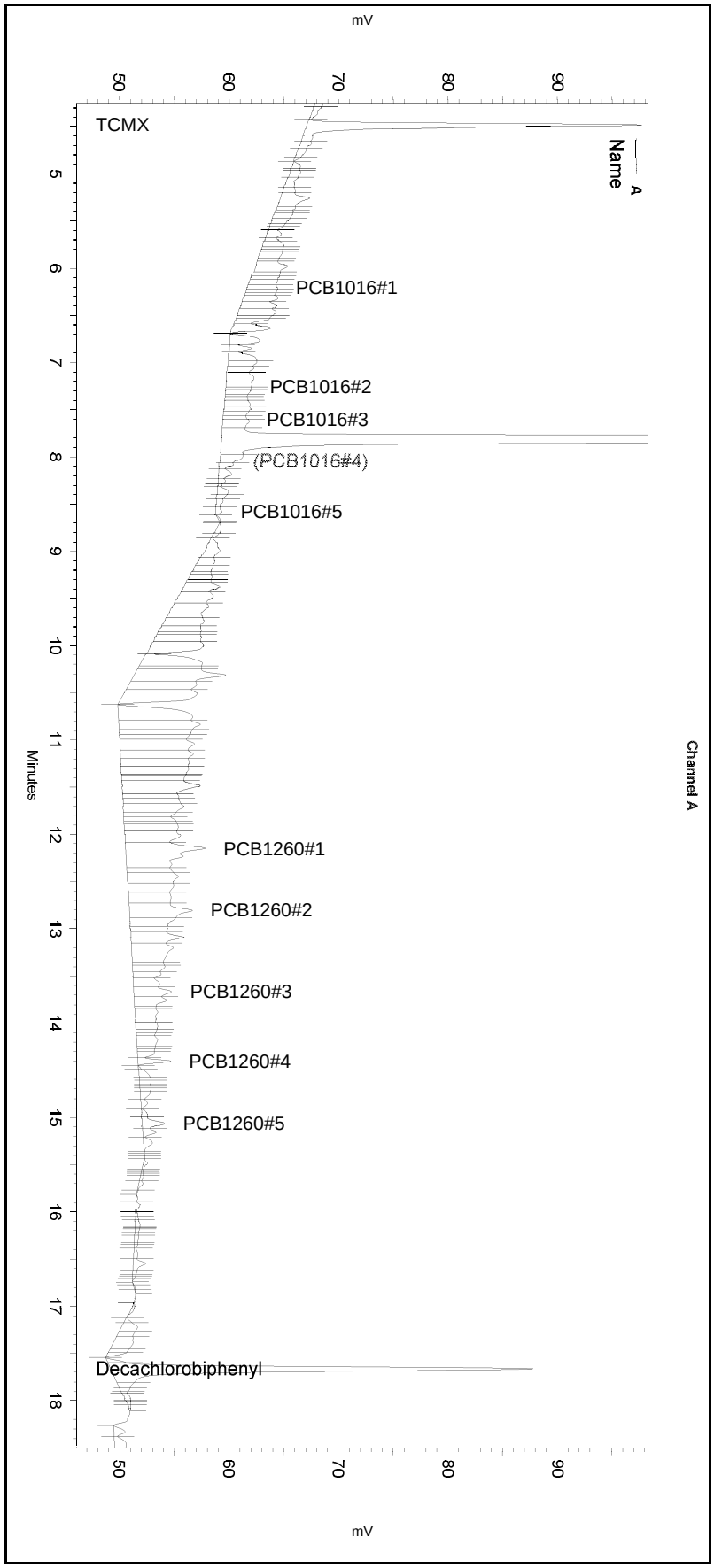
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	3.813	3.810	87154	7.622
PCB1016#1		5.383		0.000 BDL
PCB1016#2		6.357		0.000 BDL
PCB1016#3		6.580		0.000 BDL
PCB1016#4	7.153	7.143	2257	11.482
PCB1016#5	7.887	7.880	1520	4.824
PCB1260#1	11.163	11.150	17509	39.211
PCB1260#2	11.807	11.797	34284	60.609
PCB1260#3	12.747	12.743	13186	31.956
PCB1260#4	13.400	13.397	27650	43.700
PCB1260#5	14.077	14.075	16401	42.161
Decachlorobiphenyl	17.053	17.063	113454	10.010

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-024**
Sample Name: **296840-006,256161,5x//cl**
Instrument: GC16 (Offline) Vial: 44 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 8:54:19 PM
Analysis Date: 2/5/2018 11:02:53 AM
Sample Amount: 1



---< General Method Parameters >---

No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	0	0	0

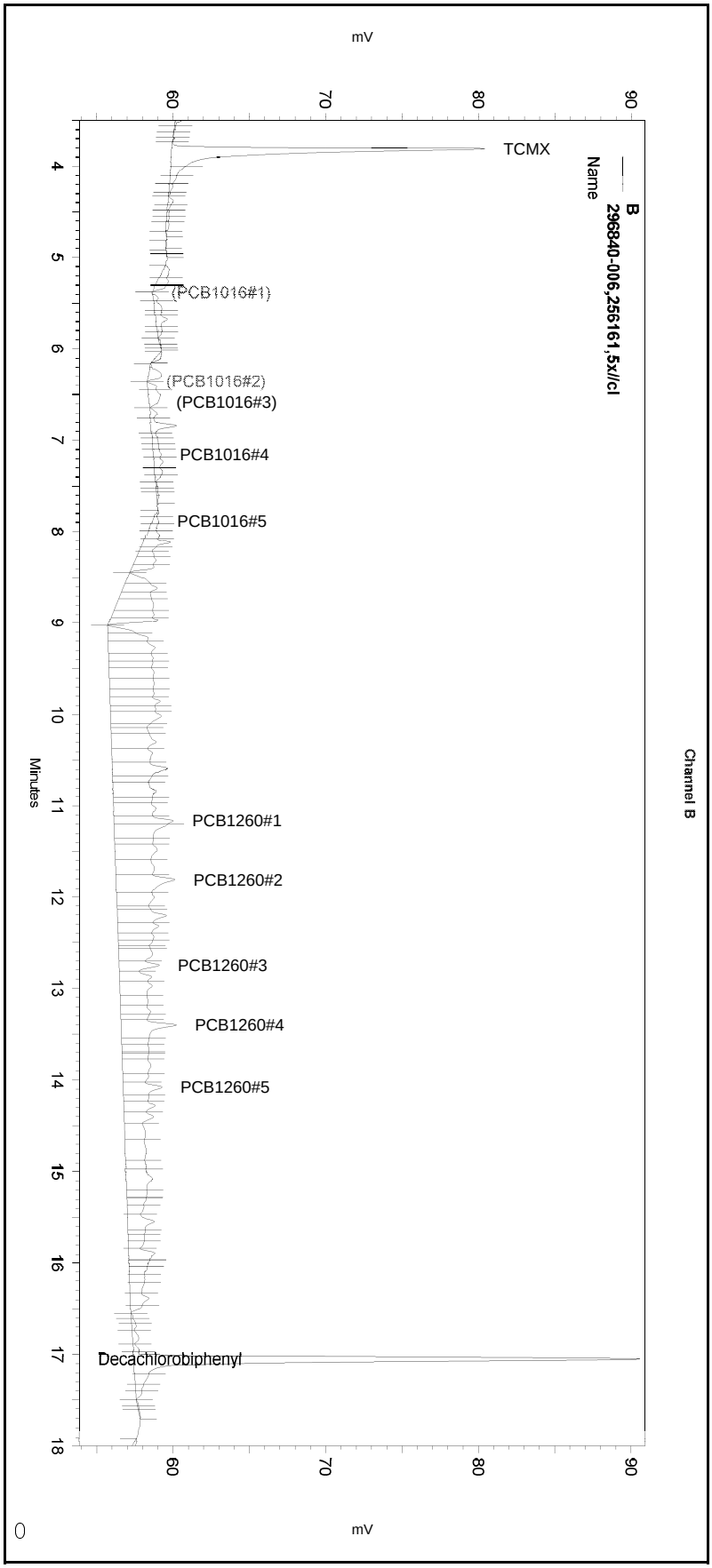
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-024

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
No	Valley to Valley	4.929	17.33	0
No	Manual Baseline	12.075	12.278	0
No	Manual Baseline	12.71	12.971	0
No	Manual Baseline	13.616	13.808	0
No	Manual Baseline	14.992	15.211	0
No	Manual Baseline	17.599	17.92	0

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-024**
Sample Name: **296840-006,256161,5x//cl**
Instrument: GC16 (Offline) Vial: 44 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 8:54:19 PM
Analysis Date: 2/5/2018 11:02:53 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	1.8	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-024

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
No	Valley to Valley	4.158	16.694	0
No	Manual Baseline	11.11	11.356	0
No	Split Peak	11.843	0	0
No	Split Peak	13.436	0	0
No	Manual Baseline	14.018	14.459	0

ENTHALPY SAMPLE USER REPORT FOR EPA 8082A

Inst	: GC16	Lab ID	: 296840-013	Client ID	: HPP-FSS-009
Seqnum	: 238048058025	Matrix	: Soil	Acct	: IEECI (MJD)
File	: 033_025	Batch	: 256161	Time	: 02-FEB-2018 21:23
IDF	: 5.0	Raw Units	: pg/ul	Units	: ug/Kg

30.12 g --> 10.0 ml = 0.332 ml/g PDF

Analyte	Ch	Cal	Raw	Result	Conf	RPD	RL	Blank	Flags
Aroclor-1016	A	238037991001	9.548	16 J	11 J	33%	17		u x
Aroclor-1016 Peak # 1	A	238037991001	0.6714	1.11	ND				
Aroclor-1016 Peak # 2	A	238037991001	25.16	41.77	ND				
Aroclor-1016 Peak # 3	A	238037991001	0.01975	0.03	21.31	199%			
Aroclor-1016 Peak # 4	A	238037991001	0	ND	28.07				
Aroclor-1016 Peak # 5	A	238037991001	21.89	36.34	7.56	131%			
Aroclor-1221	A	238004939001	147.6	250	32 J	154%	32		u x
Aroclor-1221 Peak # 1	A	238004939001	20.63	34.24	69.94	69%			
Aroclor-1221 Peak # 2	A	238004939001	388.7	645.26	ND				
Aroclor-1221 Peak # 3	A	238004939001	3.464	5.75	ND				
Aroclor-1221 Peak # 4	A	238004939001	76.72	127.36	85.99	39%			
Aroclor-1221 Peak # 5	A	238004939001	248.6	412.68	2.01	198%			
Aroclor-1232	A			ND			17		u
Aroclor-1242	A			ND			17		u
Aroclor-1248	A			ND			17		u
Aroclor-1254	B	238004939001	28.43	47	34	32%	17		u
Aroclor-1254 Peak # 1	B	238004939001	35.77	59.38	71.05 [omit]	18%			
Aroclor-1254 Peak # 2	B	238004939001	29.00	48.14	31.47	42%			
Aroclor-1254 Peak # 3	B	238004939001	12.24	20.32 [omit]	43.39	72%			
Aroclor-1254 Peak # 4	B	238004939001	20.51	34.04	33.07	3%			
Aroclor-1254 Peak # 5	B	238004939001	53.51	88.83 [omit]	28.66	102%			
Aroclor-1260	B	238037991001	20.78	34	24	36%	17		u
Aroclor-1260 Peak # 1	B	238037991001	46.90	77.86 [omit]	63.72 [omit]	20%			
Aroclor-1260 Peak # 2	B	238037991001	29.59	49.12	50.68 [omit]	3%			
Aroclor-1260 Peak # 3	B	238037991001	17.88	29.67	26.66	11%			
Aroclor-1260 Peak # 4	B	238037991001	16.31	27.07	18.74	36%			
Aroclor-1260 Peak # 5	B	238037991001	19.34	32.10	26.86	18%			

Surrogate	Ch	Cal	Raw	Spiked	Result	%Rec	Limits	Flags
TCMX	A	238037991001	7.674	16.60	12.74	77	44-130	u
Decachlorobiphenyl	A	238037991001	8.391	16.60	13.93	84	26-153	<c- >c- u

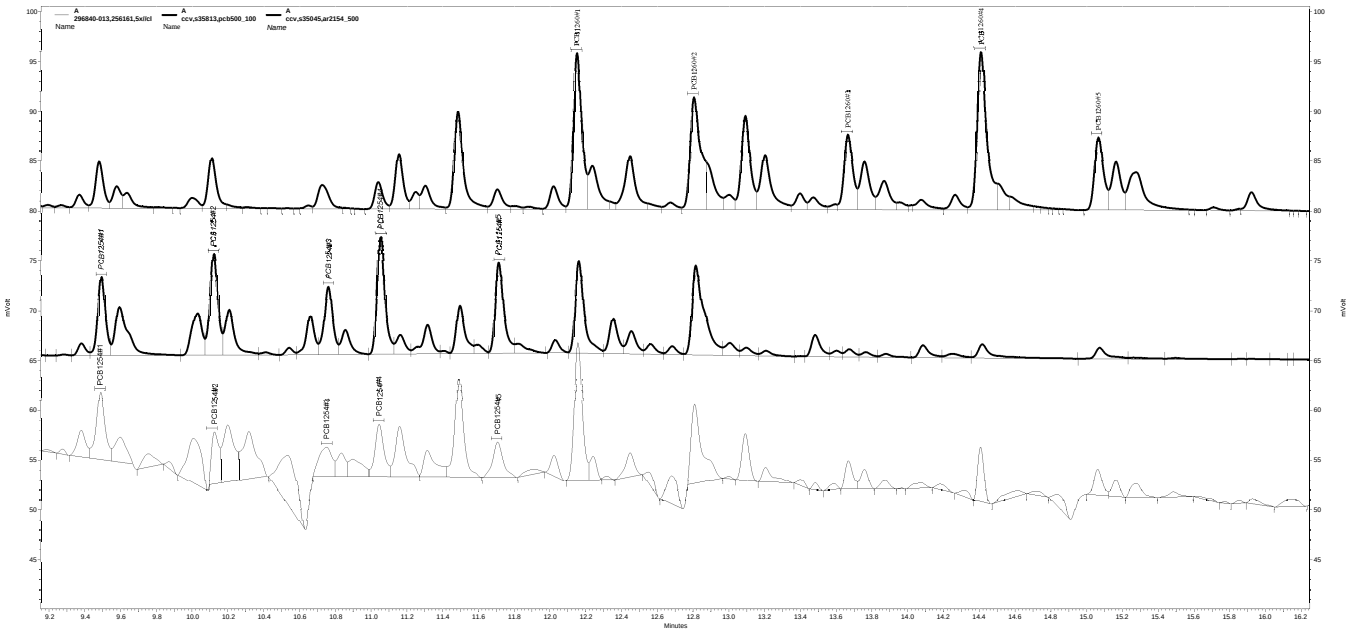
02/05/18 : Was diluted due to client history of high non-target or organic acid interference.

JC1 02/05/18 : Corrected automatically drawn baseline.

JC1 02/05/18 [Decachlorobiphenyl A]: Recovery well within limits despite instrument bias

Analyst: JC1 Date: 02/05/18 Reviewer: EAH Date: 02/08/18

-=low bias <=opening >=closing c=CCV u=use x=false positive



——— \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-025, A

▬▬▬ \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\032-002, A

▬▬▬ \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\029-027, A

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq** Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-025** Sample Name: **296840-013,256161,5x//cl** Instrument: GC16 (Offline) Vial: 45 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-033.met	Software Version 3.1.7 Run Date: 2/2/2018 9:23:20 PM Analysis Date: 2/5/2018 10:59:10 AM Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
PCB1221#1	4.930	4.913	3678	20.628
PCB1221#2	5.243	5.250	44083	388.706
PCB1221#3	5.357	5.343	1532	3.464
PCB1221#4	6.190	6.183	5444	76.724
PCB1221#5	7.263	7.280	17981	248.599
PCB1254#1	9.487	9.483	23718	42.801
PCB1254#2	10.127	10.110	14812	18.960
PCB1254#3	10.753	10.753	14845	26.135
PCB1254#4	11.047	11.043	18397	19.923
PCB1254#5	11.710	11.703	14100	17.262

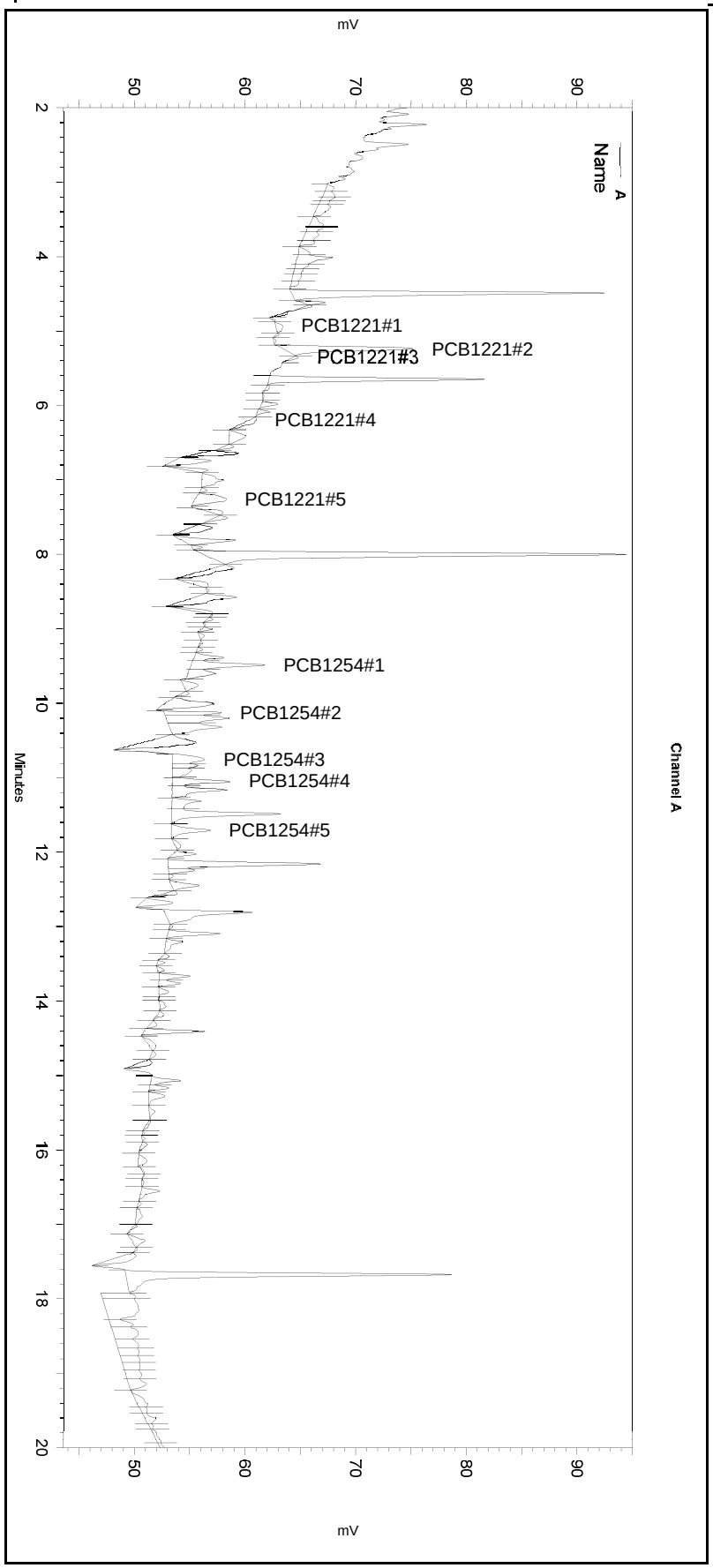
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
PCB1221#1	4.213	4.220	5036	42.130
PCB1221#2		4.420		0.000 BDL
PCB1221#3		4.533		0.000 BDL
PCB1221#4	5.437	5.413	3063	51.803
PCB1221#5	6.340	6.347	59	1.211
PCB1254#1	8.623	8.607	20178	35.773
PCB1254#2	9.167	9.150	18207	29.000
PCB1254#3	9.780	9.770	4530	12.239
PCB1254#4	10.020	10.003	16582	20.507
PCB1254#5	10.590	10.610	28867	53.512

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-025**
Sample Name: **296840-013,256161,5x//cl**
Instrument: GC16 (Offline) Vial: 45 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-033.met

Software Version 3.1.7
Run Date: 2/2/2018 9:23:20 PM
Analysis Date: 2/5/2018 10:59:10 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	3	0
Yes	Shoulder Sensitivity	4.5	20	1000

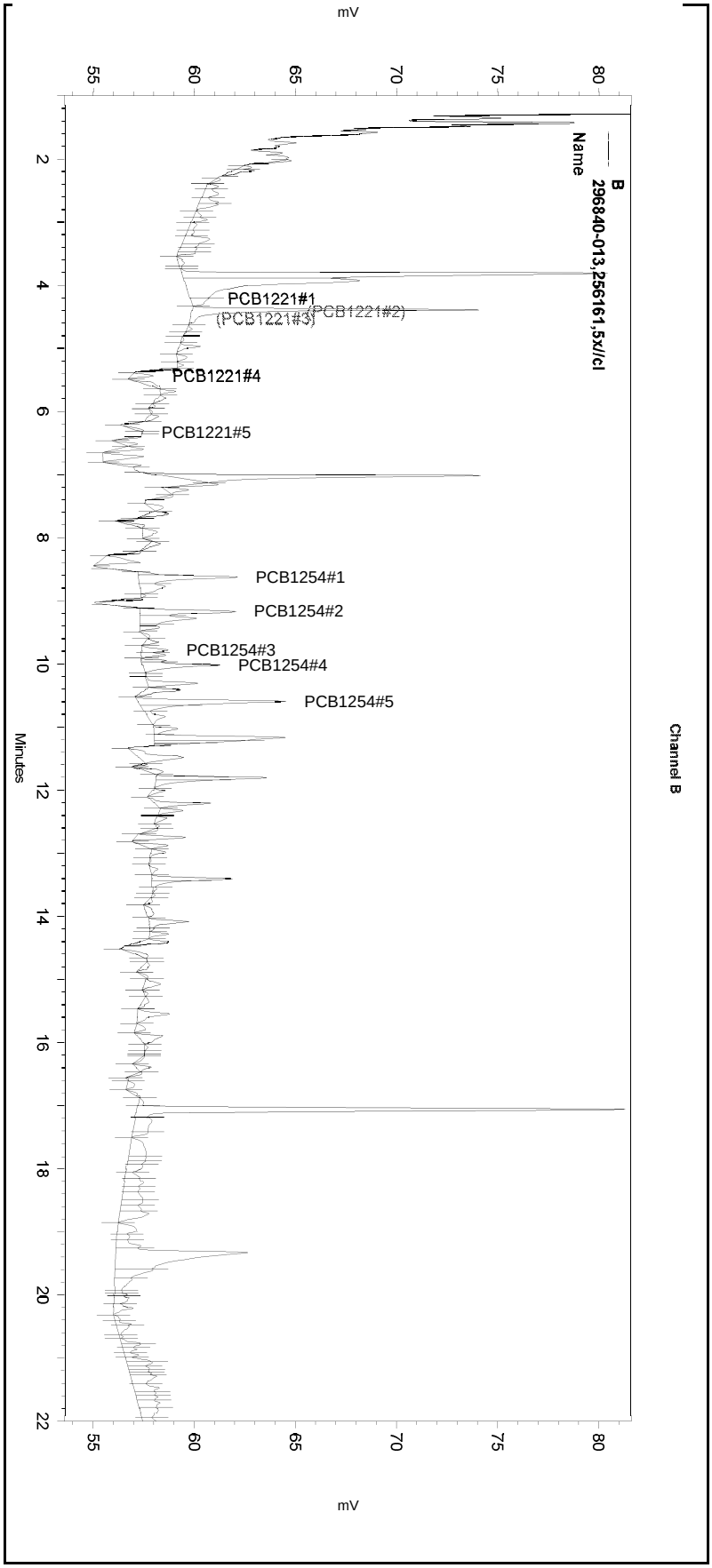
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-025

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Valley to Valley	4.819	17.427	0
Yes	Manual Baseline	9.316	9.67	0
Yes	Manual Baseline	10.093	10.421	0
Yes	Manual Baseline	10.678	11.815	0
Yes	Manual Baseline	12.092	12.371	0
Yes	Manual Baseline	12.771	12.969	0
Yes	Manual Baseline	13.626	13.815	0
Yes	Manual Baseline	15.001	15.221	0
Yes	Manual Baseline	17.607	17.923	0

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-025**
Sample Name: **296840-013,256161,5x//cl**
Instrument: GC16 (Offline) Vial: 45 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-033.met

Software Version 3.1.7
Run Date: 2/2/2018 9:23:20 PM
Analysis Date: 2/5/2018 10:59:10 AM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2	0
Yes	Shoulder Sensitivity	4.5	20	50

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-025

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Valley to Valley	4.333	16.802	0
Yes	Manual Baseline	8.544	8.887	0
Yes	Split Peak	8.586	0	0
Yes	Manual Baseline	9.119	9.471	0
Yes	Manual Baseline	9.712	9.902	0
Yes	Manual Baseline	9.907	10.153	0
Yes	Manual Baseline	10.519	10.973	0
Yes	Split Peak	10.653	0	0
Yes	Manual Baseline	10.959	11.299	0
Yes	Split Peak	11.843	0	0
Yes	Manual Baseline	13.348	13.636	0
Yes	Split Peak	13.433	0	0
Yes	Manual Baseline	14.024	14.246	0

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-025**
Sample Name: **296840-013,256161,5x//cl**
Instrument: GC16 (Offline) Vial: 45 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 9:23:20 PM
Analysis Date: 2/5/2018 10:58:48 AM
Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	4.490	4.490	88277	7.674
PCB1016#1	6.190	6.177	369	0.671
PCB1016#2	7.263	7.270	17981	25.160
PCB1016#3	7.567	7.580	8	0.020
PCB1016#4		8.043		0.000 BDL
PCB1016#5	8.573	8.563	7677	21.891
PCB1260#1	12.157	12.147	43624	38.383
PCB1260#2	12.810	12.800	29443	30.529
PCB1260#3	13.670	13.660	8333	16.059
PCB1260#4	14.410	14.400	13656	11.289
PCB1260#5	15.063	15.057	8682	16.180
Decachlorobiphenyl	17.670	17.663	99378	8.391

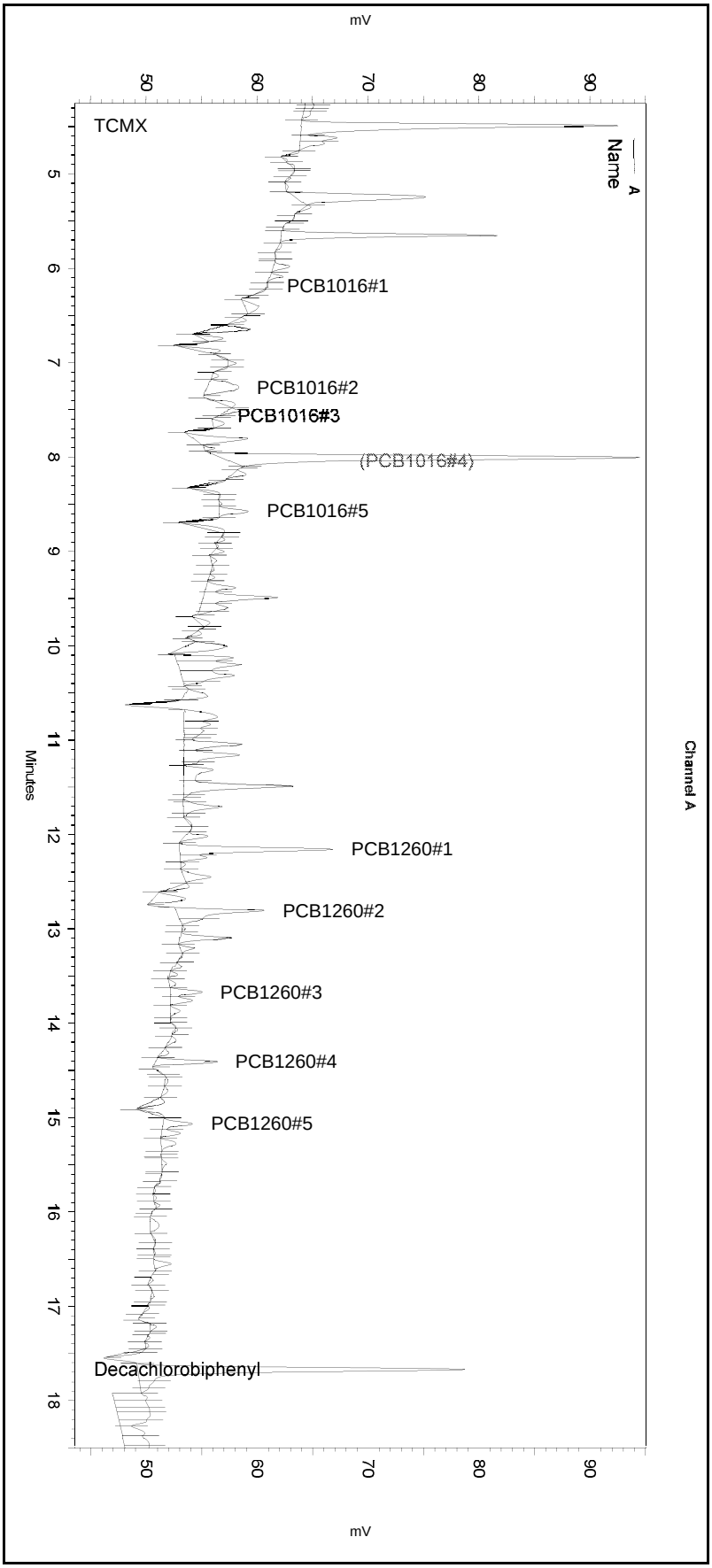
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	3.820	3.810	77261	6.757
PCB1016#1		5.383		0.000 BDL
PCB1016#2		6.357		0.000 BDL
PCB1016#3	6.600	6.580	4020	12.836
PCB1016#4	7.150	7.143	3324	16.910
PCB1016#5	7.910	7.880	1434	4.551
PCB1260#1	11.170	11.150	20944	46.904
PCB1260#2	11.810	11.797	16739	29.592
PCB1260#3	12.753	12.743	7376	17.875
PCB1260#4	13.407	13.397	10319	16.309
PCB1260#5	14.083	14.075	7522	19.337
Decachlorobiphenyl	17.057	17.063	75916	6.698

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-025**
Sample Name: **296840-013,256161,5x//cl**
Instrument: GC16 (Offline) Vial: 45 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 9:23:20 PM
Analysis Date: 2/5/2018 10:58:48 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	0	0	0

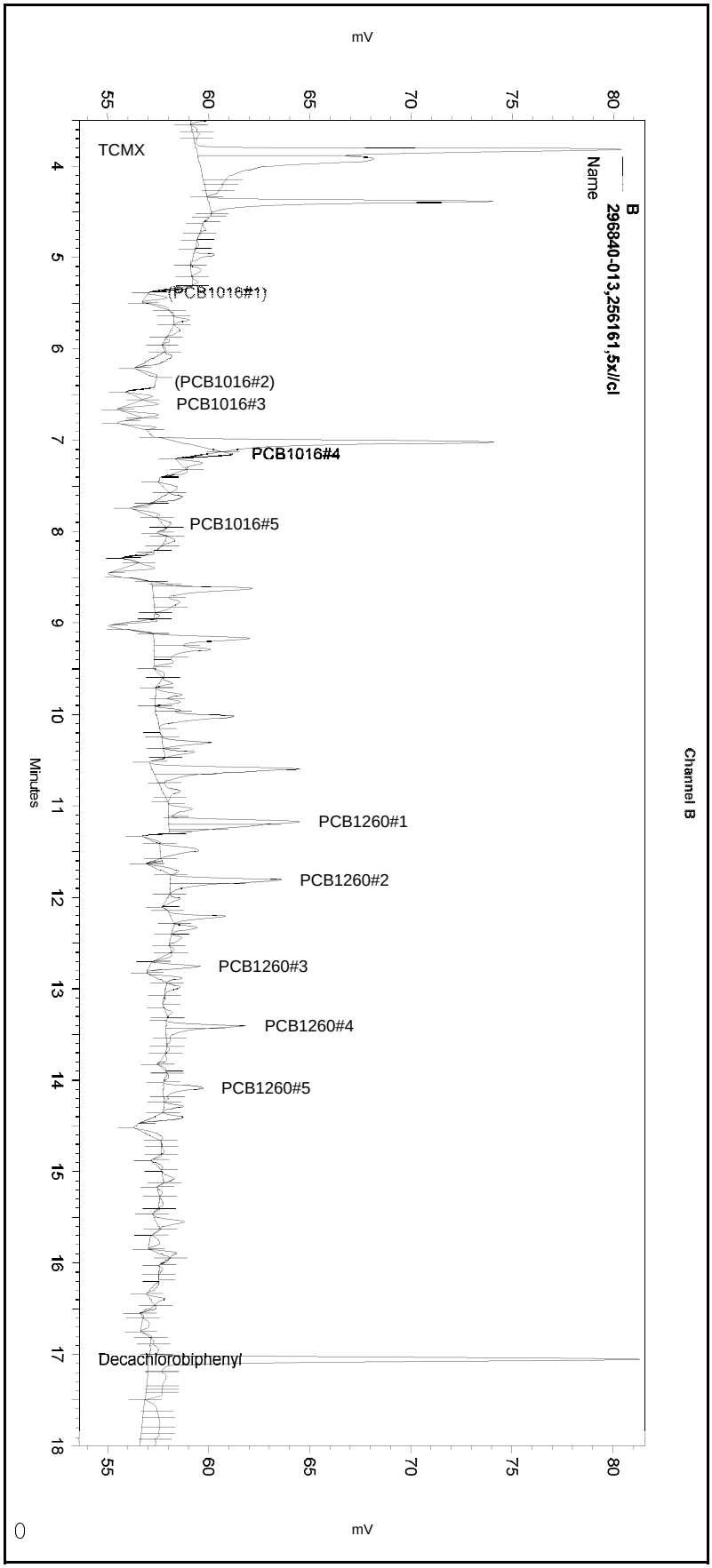
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-025

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Valley to Valley	4.819	17.427	0
Yes	Manual Baseline	9.316	9.67	0
Yes	Manual Baseline	10.093	10.421	0
Yes	Manual Baseline	10.678	11.815	0
Yes	Manual Baseline	12.092	12.371	0
Yes	Manual Baseline	12.771	12.969	0
Yes	Manual Baseline	13.626	13.815	0
Yes	Manual Baseline	15.001	15.221	0
Yes	Manual Baseline	17.607	17.923	0

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-025**
Sample Name: **296840-013,256161,5x//cl**
Instrument: GC16 (Offline) Vial: 45 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 9:23:20 PM
Analysis Date: 2/5/2018 10:58:48 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	1.8	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-025

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Valley to Valley	4.333	16.802	0
Yes	Manual Baseline	8.544	8.887	0
Yes	Split Peak	8.586	0	0
Yes	Manual Baseline	9.119	9.471	0
Yes	Manual Baseline	9.712	9.902	0
Yes	Manual Baseline	9.907	10.153	0
Yes	Manual Baseline	10.519	10.973	0
Yes	Split Peak	10.653	0	0
Yes	Manual Baseline	10.959	11.299	0
Yes	Split Peak	11.843	0	0
Yes	Manual Baseline	13.348	13.636	0
Yes	Split Peak	13.433	0	0
Yes	Manual Baseline	14.024	14.246	0

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-025**
Sample Name: **296840-013,256161,5x//cl**
Instrument: GC16 (Offline) Vial: 45 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 9:23:20 PM
Analysis Date: 2/5/2018 10:05:11 AM
Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	4.490	4.490	110046	9.566
PCB1016#1	6.190	6.177	26143	47.568
PCB1016#2	7.263	7.270	55828	78.116
PCB1016#3	7.567	7.580	7296	18.010
PCB1016#4		8.043		0.000 BDL
PCB1016#5	8.573	8.563	50337	143.533
PCB1260#1	12.157	12.147	86480	76.091
PCB1260#2	12.810	12.800	72055	74.713
PCB1260#3	13.670	13.660	37005	71.313
PCB1260#4	14.410	14.400	36299	30.006
PCB1260#5	15.063	15.057	43091	80.304
Decachlorobiphenyl	17.670	17.663	129513	10.935

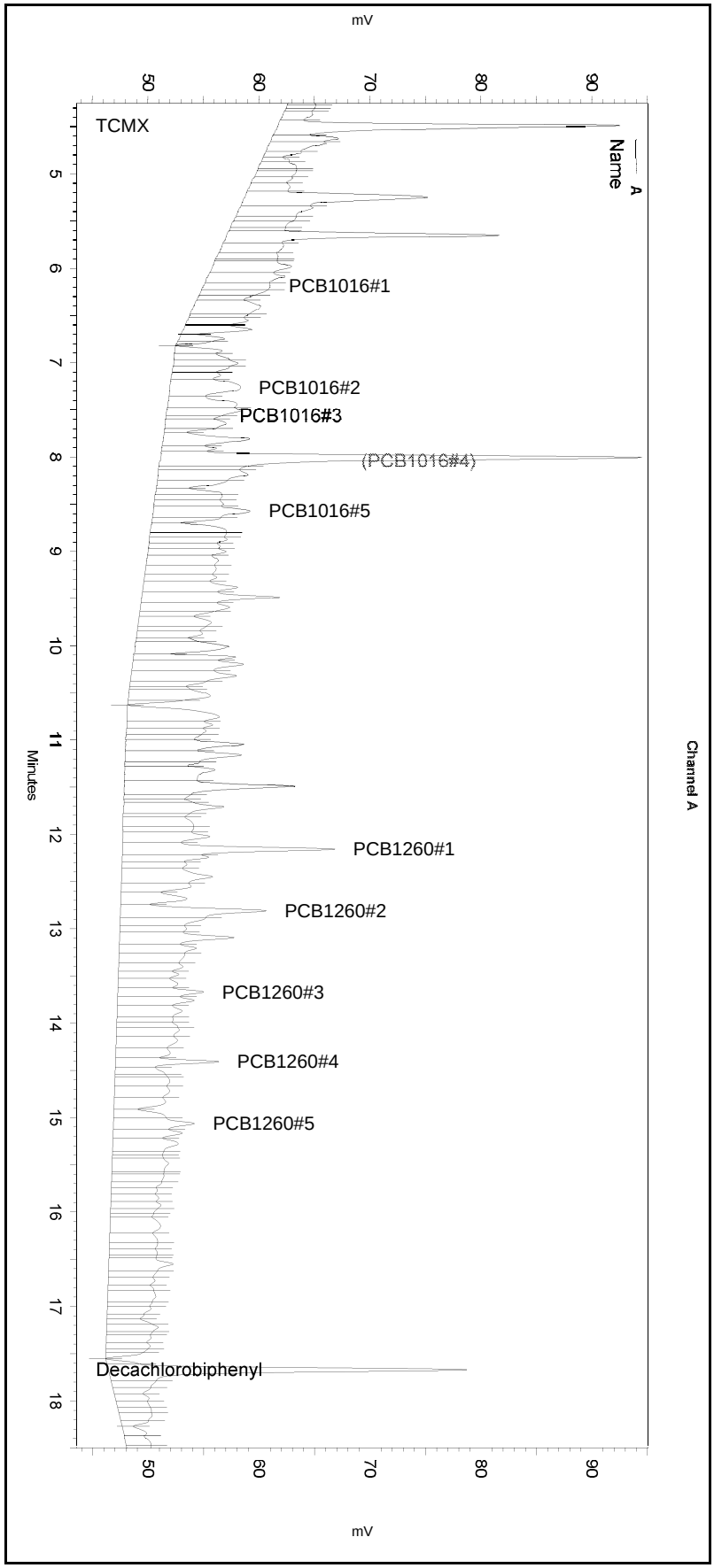
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	3.820	3.810	83615	7.312
PCB1016#1		5.383		0.000 BDL
PCB1016#2		6.357		0.000 BDL
PCB1016#3	6.600	6.580	7050	22.511
PCB1016#4	7.150	7.143	23910	121.638
PCB1016#5	7.910	7.880	17597	55.851
PCB1260#1	11.170	11.150	28161	63.066
PCB1260#2	11.810	11.797	41917	74.103
PCB1260#3	12.753	12.743	11281	27.339
PCB1260#4	13.407	13.397	31605	49.951
PCB1260#5	14.083	14.075	20702	53.218
Decachlorobiphenyl	17.057	17.063	86409	7.624

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-025**
Sample Name: **296840-013,256161,5x//cl**
Instrument: GC16 (Offline) Vial: 45 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 9:23:20 PM
Analysis Date: 2/5/2018 10:05:11 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	0	0	0

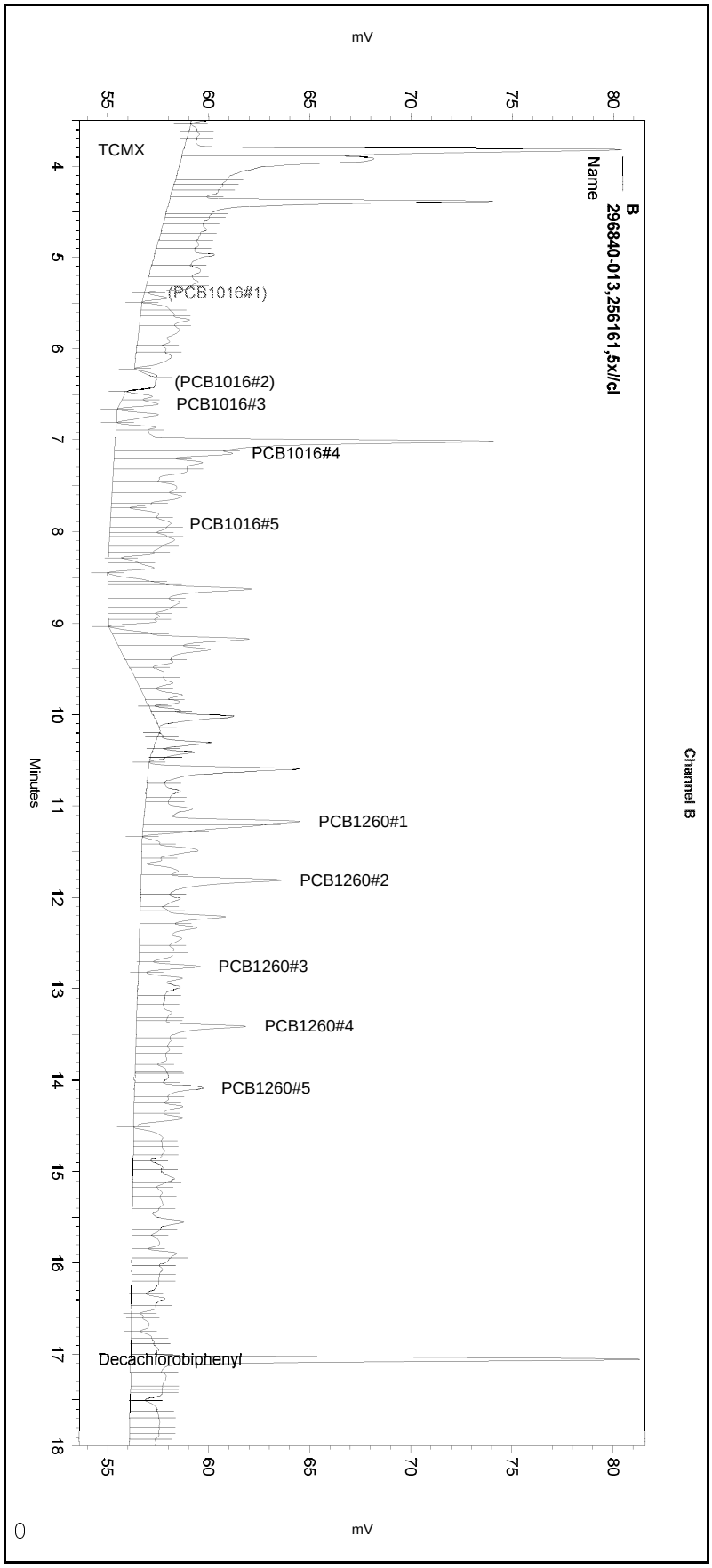
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-025

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-025**
Sample Name: **296840-013,256161,5x//cl**
Instrument: GC16 (Offline) Vial: 45 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 9:23:20 PM
Analysis Date: 2/5/2018 10:05:11 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	1.8	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-025

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

ENTHALPY SAMPLE USER REPORT FOR EPA 8082A

Inst	: GC16	Lab ID	: 296840-018	Client ID	: HPP-FSS-010
Seqnum	: 238048058026	Matrix	: Soil	Acct	: IEECI (MJD)
File	: 033_026	Batch	: 256161	Time	: 02-FEB-2018 21:52
Cal	: 238037991001	Caldate	: 26-JAN-2018		
IDF	: 5.0	Raw Units	: pg/ul	Units	: ug/Kg

29.94 g --> 10.0 ml = 0.334 ml/g PDF

Analyte	Ch	Raw	Result	Conf	RPD	RL	Blank	Flags
Aroclor-1016	A	0.6529	ND	ND	5%	17		u
Aroclor-1016 Peak # 1	A	0.005459	0.01	ND				
Aroclor-1016 Peak # 2	A	0.2253	0.38	ND				
Aroclor-1016 Peak # 3	A	0	ND	0.36				
Aroclor-1016 Peak # 4	A	0	ND	2.67				
Aroclor-1016 Peak # 5	A	3.034	5.07	2.72	60%			
Aroclor-1221	A		ND			33		u
Aroclor-1232	A		ND			17		u
Aroclor-1242	A		ND			17		u
Aroclor-1248	A		ND			17		u
Aroclor-1254	A		ND			17		u
Aroclor-1260	A	7.574	13 J	10 J	23%	17		u
Aroclor-1260 Peak # 1	A	8.513	14.22	11.52	21%			
Aroclor-1260 Peak # 2	A	5.136	8.58 [omit]	8.40	2%			
Aroclor-1260 Peak # 3	A	7.940	13.26	9.26	36%			
Aroclor-1260 Peak # 4	A	2.993	5.00 [omit]	7.99	46%			
Aroclor-1260 Peak # 5	A	6.271	10.47	13.00	22%			

Surrogate	Ch	Raw	Spiked	Result	%Rec	Limits	Flags
TCMX	A	7.408	16.70	12.37	74	44-130	u
Decachlorobiphenyl	A	8.404	16.70	14.03	84	26-153	<c- >c- u

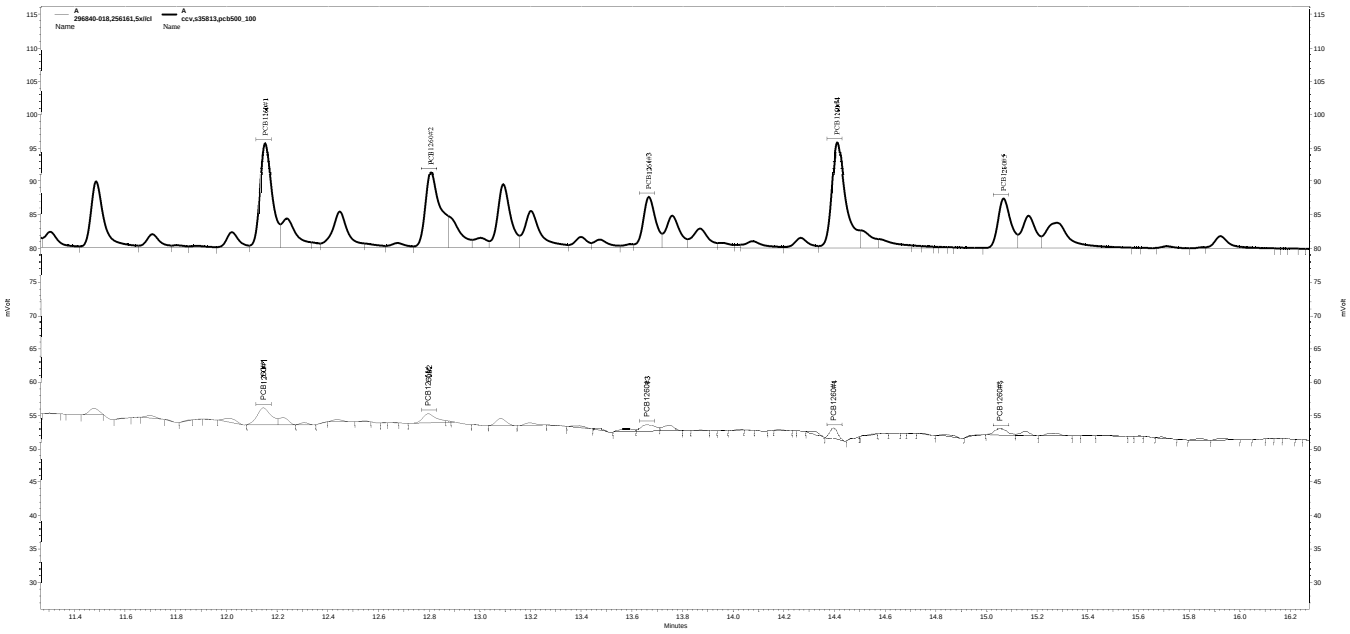
02/05/18 : Was diluted due to client history of high non-target or organic acid interference.

JC1 02/05/18 : Corrected automatically drawn baseline.

JC1 02/05/18 [Decachlorobiphenyl A]: Recovery well within limits despite instrument bias

Analyst: JC1 Date: 02/05/18 Reviewer: EAH Date: 02/08/18

-=low bias <=opening >=closing c=CCV u=use



\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-026, A

\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\032-002, A

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-026**
Sample Name: **296840-018,256161,5x//cl**
Instrument: GC16 (Offline) Vial: 46 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 9:52:21 PM
Analysis Date: 2/5/2018 11:06:32 AM
Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	4.477	4.490	85218	7.408
PCB1016#1	6.180	6.177	3	0.005
PCB1016#2	7.260	7.270	161	0.225
PCB1016#3	7.580	7.580	0	0.000
PCB1016#4		8.043		0.000 BDL
PCB1016#5	8.560	8.563	1064	3.034
PCB1260#1	12.147	12.147	9675	8.513
PCB1260#2	12.797	12.800	4953	5.136
PCB1260#3	13.660	13.660	4120	7.940
PCB1260#4	14.397	14.400	3621	2.993
PCB1260#5	15.053	15.057	3365	6.271
Decachlorobiphenyl	17.660	17.663	99532	8.404

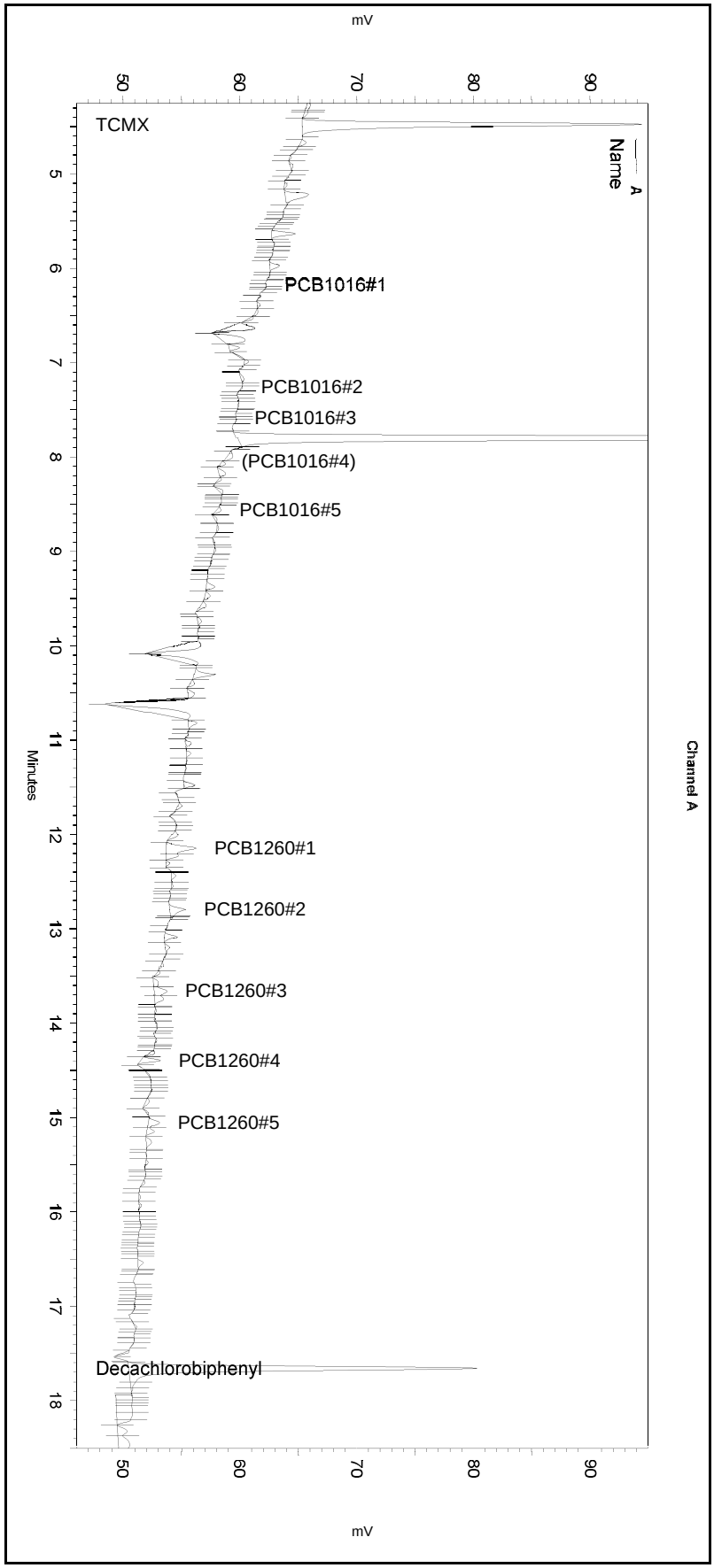
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	3.807	3.810	96068	8.401
PCB1016#1		5.383		0.000 BDL
PCB1016#2		6.357		0.000 BDL
PCB1016#3	6.580	6.580	67	0.214
PCB1016#4	7.147	7.143	314	1.597
PCB1016#5	7.887	7.880	514	1.631
PCB1260#1	11.160	11.150	3081	6.900
PCB1260#2	11.800	11.797	2844	5.028
PCB1260#3	12.740	12.743	2287	5.542
PCB1260#4	13.393	13.397	3026	4.783
PCB1260#5	14.070	14.075	3029	7.787
Decachlorobiphenyl	17.047	17.063	89063	7.858

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-026**
Sample Name: **296840-018,256161,5x//cl**
Instrument: GC16 (Offline) Vial: 46 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 9:52:21 PM
Analysis Date: 2/5/2018 11:06:32 AM
Sample Amount: 1



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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	0	0	0

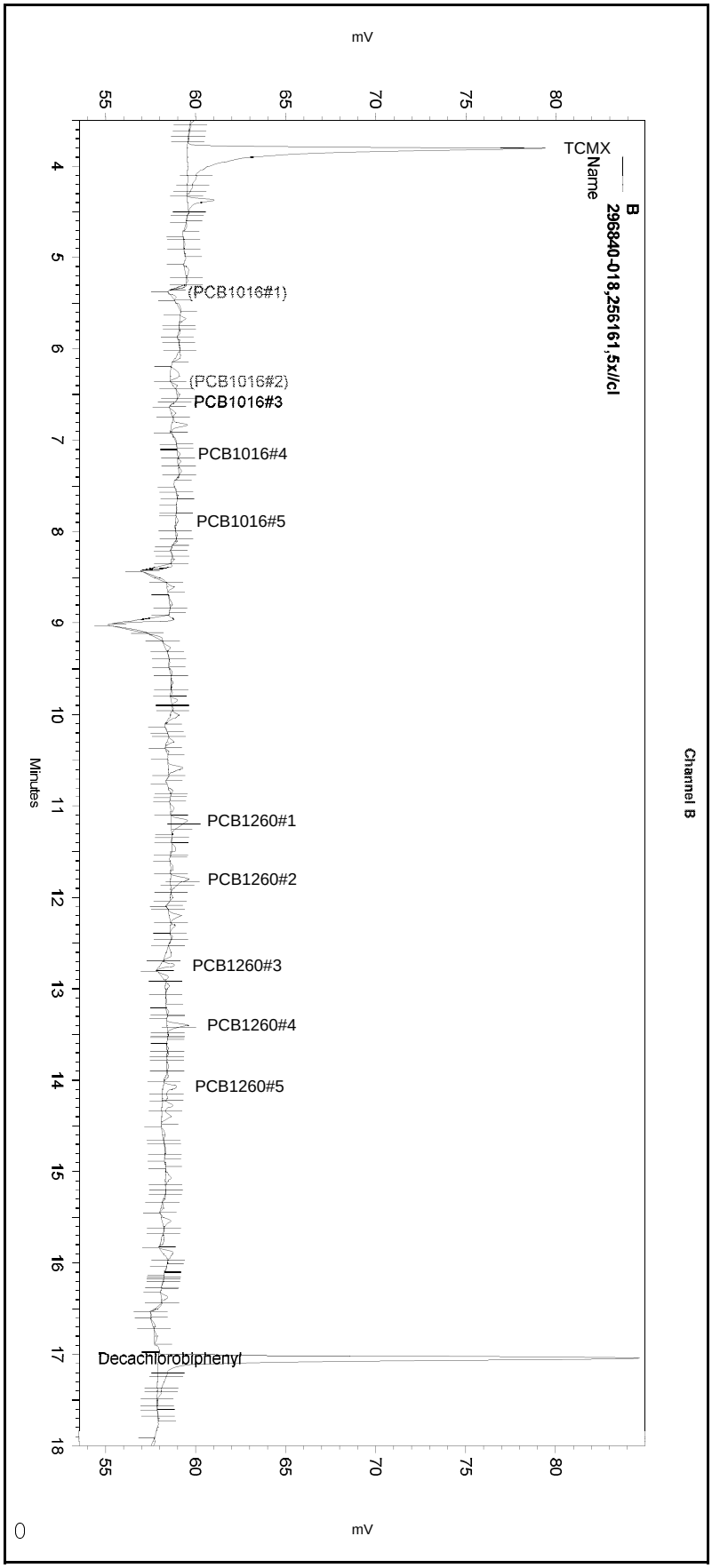
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-026

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Valley to Valley	4.778	17.413	0
Yes	Manual Baseline	12.081	12.342	0
Yes	Manual Baseline	12.717	12.903	0
Yes	Manual Baseline	13.527	13.822	0
Yes	Manual Baseline	14.997	15.199	0
Yes	Manual Baseline	17.587	17.973	0

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-026**
Sample Name: **296840-018,256161,5x//cl**
Instrument: GC16 (Offline) Vial: 46 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 9:52:21 PM
Analysis Date: 2/5/2018 11:06:32 AM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	1.8	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-026

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Valley to Valley	4.509	16.694	0
Yes	Manual Baseline	11.106	11.34	0
Yes	Manual Baseline	11.747	11.949	0
Yes	Split Peak	11.826	0	0
Yes	Split Peak	13.419	0	0
Yes	Manual Baseline	14.016	14.479	0
Yes	Reset Baseline	16.936	0	0

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-026**
Sample Name: **296840-018,256161,5x//cl**
Instrument: GC16 (Offline) Vial: 46 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 9:52:21 PM
Analysis Date: 2/5/2018 10:05:20 AM
Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	4.477	4.490	85218	7.408
PCB1016#1	6.180	6.177	3970	7.224
PCB1016#2	7.260	7.270	15333	21.454
PCB1016#3	7.580	7.580	8920	22.019
PCB1016#4		8.043		0.000 BDL
PCB1016#5	8.560	8.563	24471	69.778
PCB1260#1	12.147	12.147	46749	41.133
PCB1260#2	12.797	12.800	45965	47.661
PCB1260#3	13.660	13.660	21474	41.383
PCB1260#4	14.397	14.400	10900	9.010
PCB1260#5	15.053	15.057	18410	34.309
Decachlorobiphenyl	17.660	17.663	114717	9.686

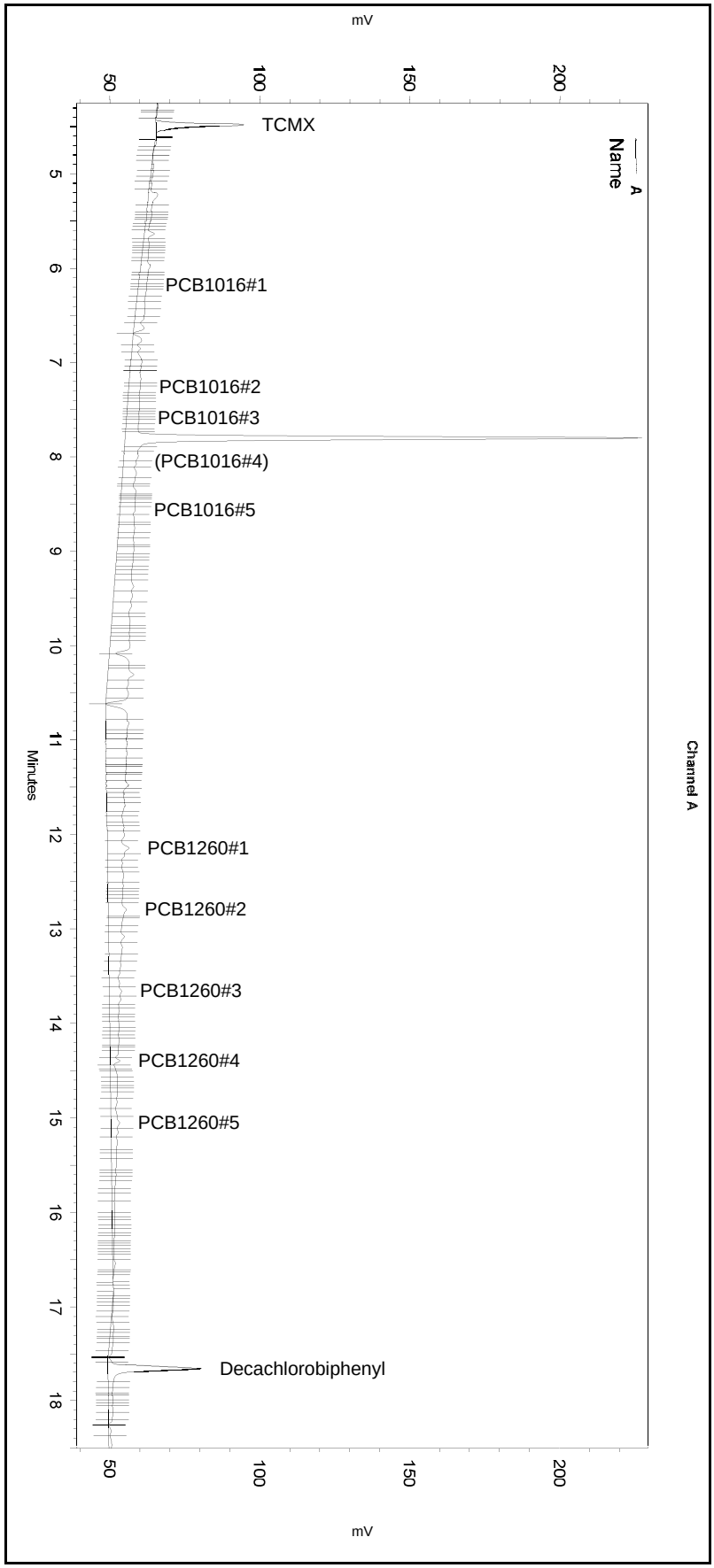
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	3.807	3.810	97155	8.497
PCB1016#1		5.383		0.000 BDL
PCB1016#2		6.357		0.000 BDL
PCB1016#3	6.580	6.580	2602	8.308
PCB1016#4	7.147	7.143	10378	52.796
PCB1016#5	7.887	7.880	24315	77.173
PCB1260#1	11.160	11.150	5766	12.913
PCB1260#2	11.800	11.797	8200	14.496
PCB1260#3	12.740	12.743	3490	8.458
PCB1260#4	13.393	13.397	9532	15.065
PCB1260#5	14.070	14.075	6947	17.858
Decachlorobiphenyl	17.047	17.063	92348	8.148

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-026**
Sample Name: **296840-018,256161,5x//cl**
Instrument: GC16 (Offline) Vial: 46 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 9:52:21 PM
Analysis Date: 2/5/2018 10:05:20 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	0	0	0

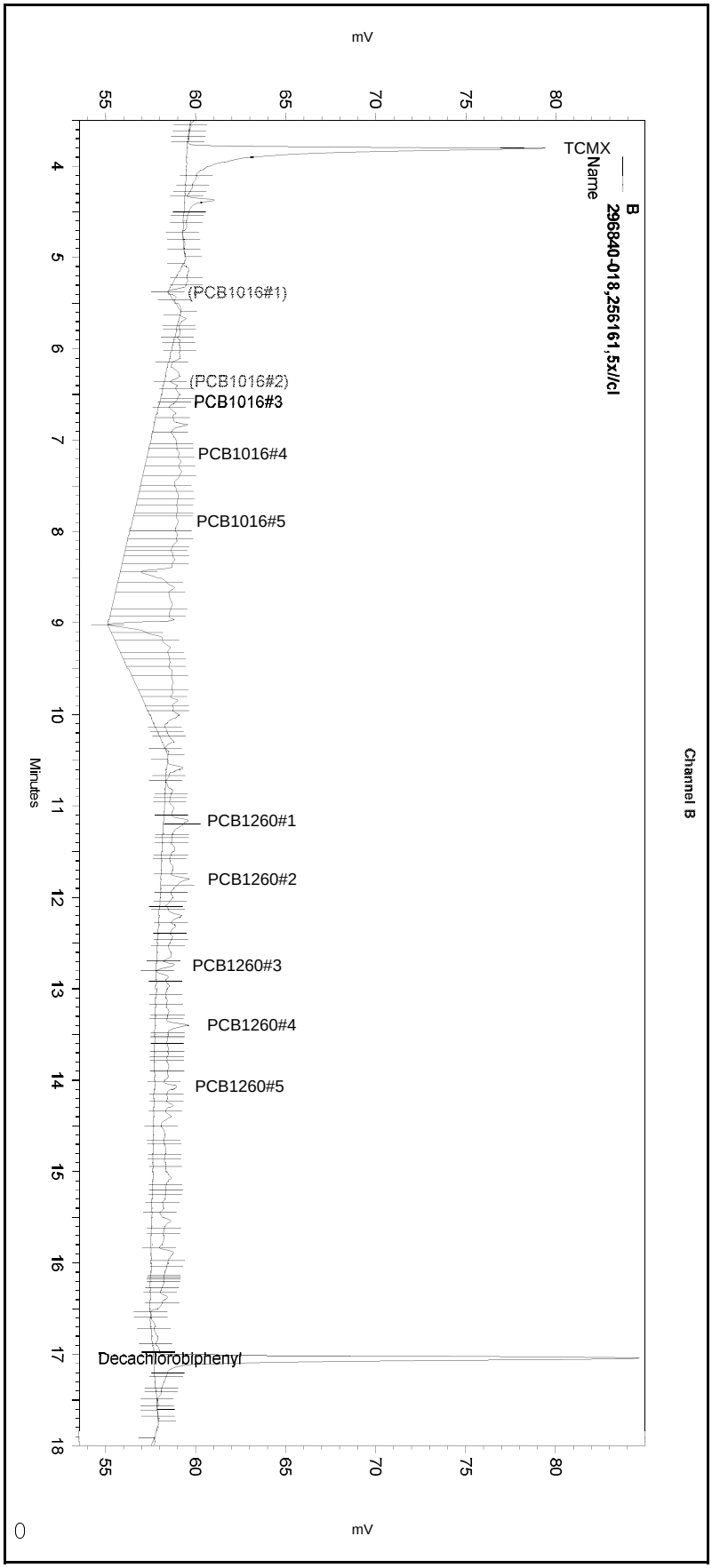
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-026

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-026**
Sample Name: **296840-018,256161,5x//cl**
Instrument: GC16 (Offline) Vial: 46 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 9:52:21 PM
Analysis Date: 2/5/2018 10:05:20 AM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

---< B >----------

No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	1.8	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-026

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

QC Raw Data

ENTHALPY BLANK USER REPORT FOR 296840 PCBS Soil
EPA 8082A

Inst : GC16 Lab ID : QC918767
Seqnum : 238048058019.2 Matrix : Soil
File : 033_019 Batch : 256161 Time : 02-FEB-2018 18:29
Cal : 238037991001 Caldate : 26-JAN-2018
IDF : 1.0 Raw Units : pg/ul Units : ug/Kg

29.72 g --> 10.0 ml = 0.3365 ml/g PDF

Analyte	Ch	Raw	Result	Conf	RPD	RL	Flags
Aroclor-1016	A	0.06721	ND	ND	101%	4.8	u
Aroclor-1221	A		ND			9.7	u
Aroclor-1232	A		ND			4.8	u
Aroclor-1242	A		ND			4.8	u
Aroclor-1248	A		ND			4.8	u
Aroclor-1254	A		ND			4.8	u
Aroclor-1260	B	7.739	2.6 J	1.3 J	70%	4.8	u x

Surrogate	Ch	Raw	Spiked	Result	%Rec	Limits	Flags
TCMX	A	47.02	16.82	15.82	94	44-130	u
Decachlorobiphenyl	A	52.51	16.82	17.67	105	26-153	<c- >c- u

JC1 02/05/18 : ch. B for better ccv [general version]

JC1 02/05/18 : Corrected automatically drawn baseline. [general version]

JC1 02/05/18 [Decachlorobiphenyl A]: Recovery well within limits despite instrument bias [general version]

Analyst: JC1 Date: 02/07/18 Reviewer: EAH Date: 02/08/18

-=low bias <=opening >=closing c=CCV u=use x=false positive

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-019**
Sample Name: **mb,qc918767,256161**
Instrument: GC16 (Offline) Vial: 39 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 6:29:18 PM
Analysis Date: 2/5/2018 10:07:26 AM
Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	4.470	4.490	540928	47.022
PCB1016#1	6.173	6.177	5	0.009
PCB1016#2	7.243	7.270	8	0.011
PCB1016#3	7.570	7.580	2	0.005
PCB1016#4	8.040	8.043	0	0.000
PCB1016#5	8.550	8.563	109	0.311
PCB1260#1	12.150	12.147	119	0.105
PCB1260#2	12.790	12.800	157	0.163
PCB1260#3	13.657	13.660	815	1.571
PCB1260#4	14.400	14.400	58	0.048
PCB1260#5	15.060	15.057	8998	16.769
Decachlorobiphenyl	17.660	17.663	621877	52.506

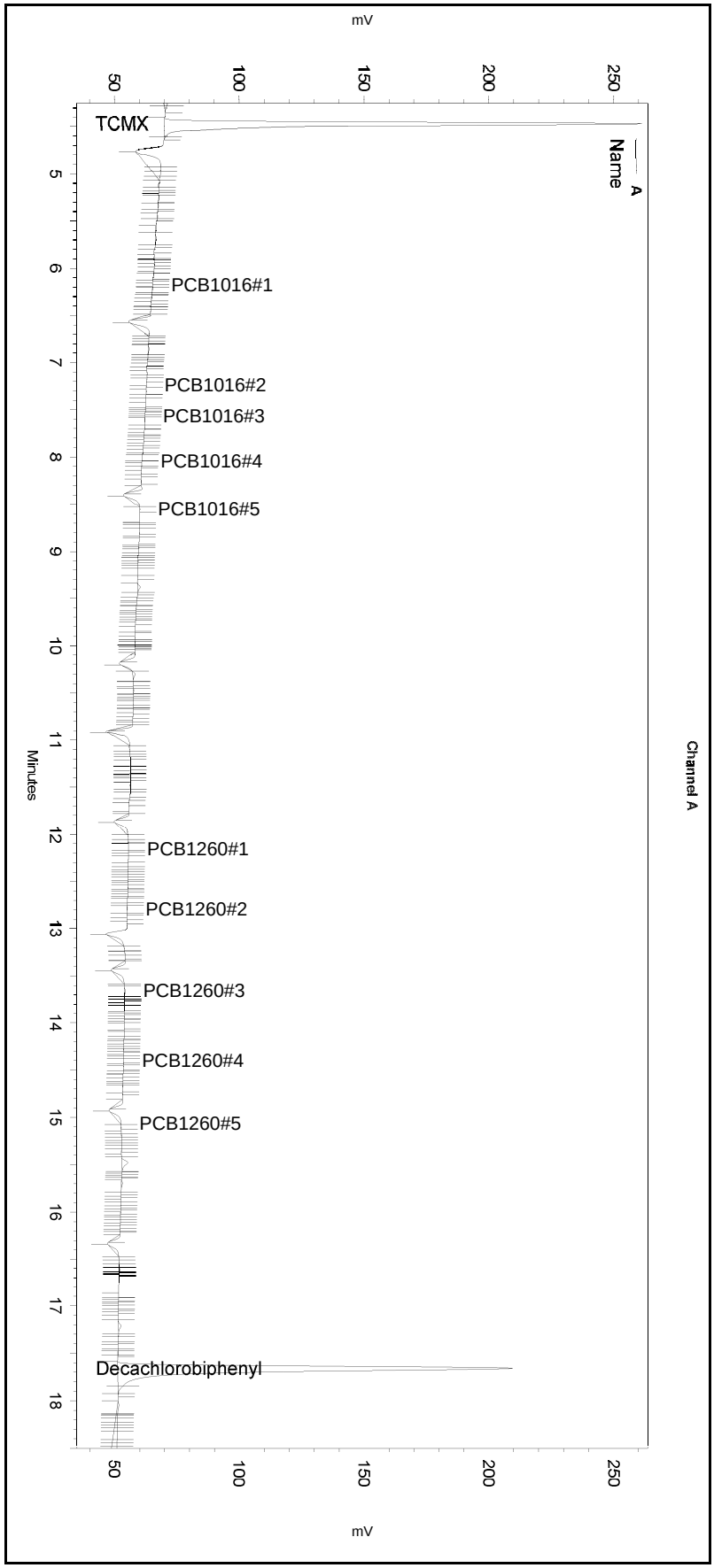
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	3.810	3.810	511451	44.728
PCB1016#1	5.377	5.383	178	0.864
PCB1016#2		6.357		0.000 BDL
PCB1016#3	6.597	6.580	21	0.067
PCB1016#4	7.127	7.143	1	0.005
PCB1016#5	7.873	7.880	25	0.079
PCB1260#1	11.180	11.150	17230	38.586
PCB1260#2		11.797		0.000 BDL
PCB1260#3		12.743		0.000 BDL
PCB1260#4	13.387	13.397	69	0.109
PCB1260#5		14.075		0.000 BDL
Decachlorobiphenyl	17.050	17.063	714362	63.028

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-019**
Sample Name: **mb,qc918767,256161**
Instrument: GC16 (Offline) Vial: 39 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 6:29:18 PM
Analysis Date: 2/5/2018 10:07:26 AM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	0	0	0

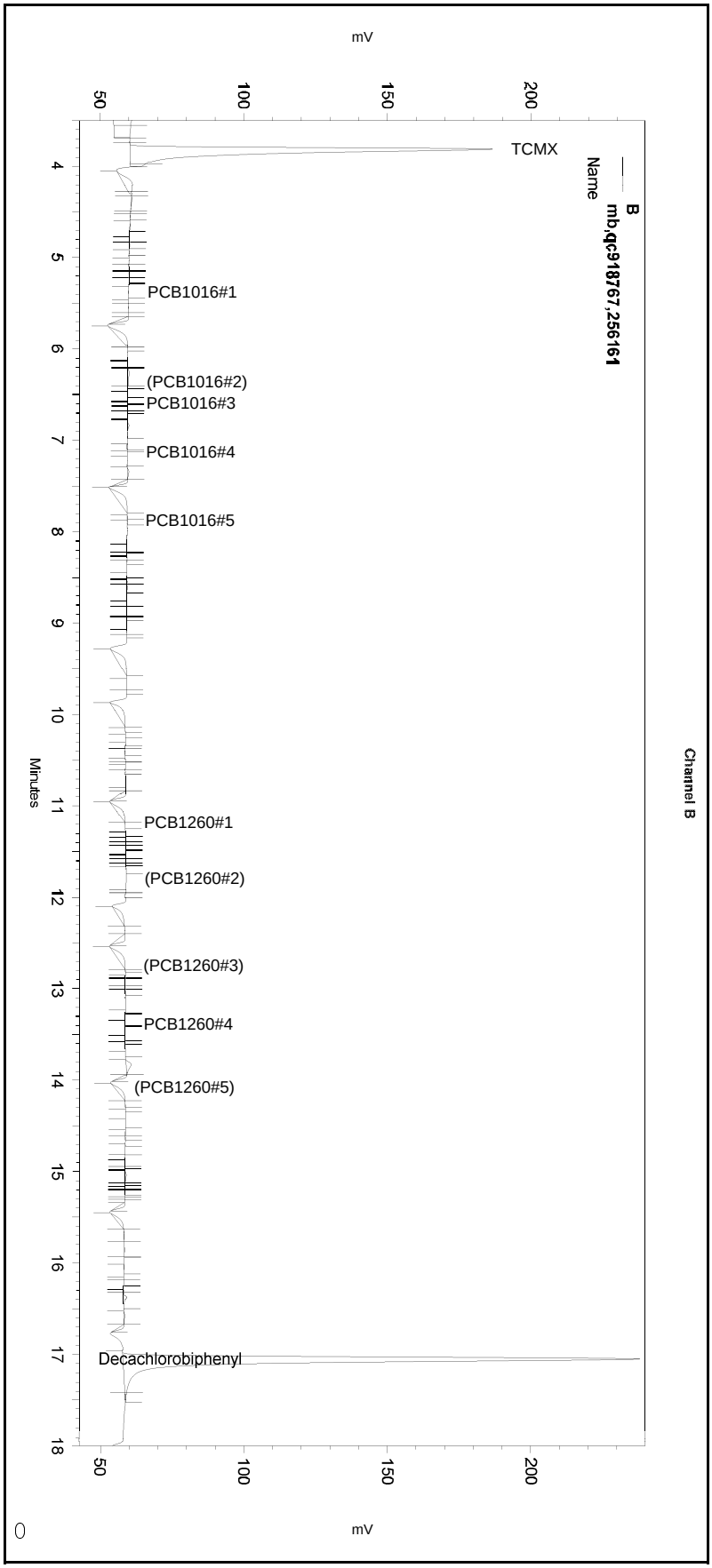
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-019

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	4.352	0	0
Yes	Reset Baseline	4.639	0	0
Yes	Valley to Valley	5.093	17.18	0
Yes	Reset Baseline	17.961	0	0

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-019**
Sample Name: **mb,qc918767,256161**
Instrument: GC16 (Offline) Vial: 39 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 6:29:18 PM
Analysis Date: 2/5/2018 10:07:26 AM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

---< B >----------

No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	1.8	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-019

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Manual Baseline	3.686	4.018	0
Yes	Valley to Valley	4.333	16.626	0
Yes	Reset Baseline	16.88	0	0
Yes	Reset Baseline	17.533	0	0

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-019**
Sample Name: **mb,qc918767,256161**
Instrument: GC16 Vial: 39 Operator: lims2k3\pest3
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 6:29:18 PM
Analysis Date: 2/2/2018 6:53:16 PM
Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	4.470	4.490	678983	59.023
PCB1016#1	6.173	6.177	10928	19.884
PCB1016#2	7.243	7.270	17009	23.800
PCB1016#3	7.570	7.580	6008	14.831
PCB1016#4	8.040	8.043	7048	27.360
PCB1016#5	8.550	8.563	3734	10.647
PCB1260#1	12.150	12.147	21446	18.870
PCB1260#2	12.790	12.800	3977	4.124
PCB1260#3	13.657	13.660	24230	46.694
PCB1260#4	14.400	14.400	229	0.189
PCB1260#5	15.060	15.057	30089	56.073
Decachlorobiphenyl	17.660	17.663	630632	53.245

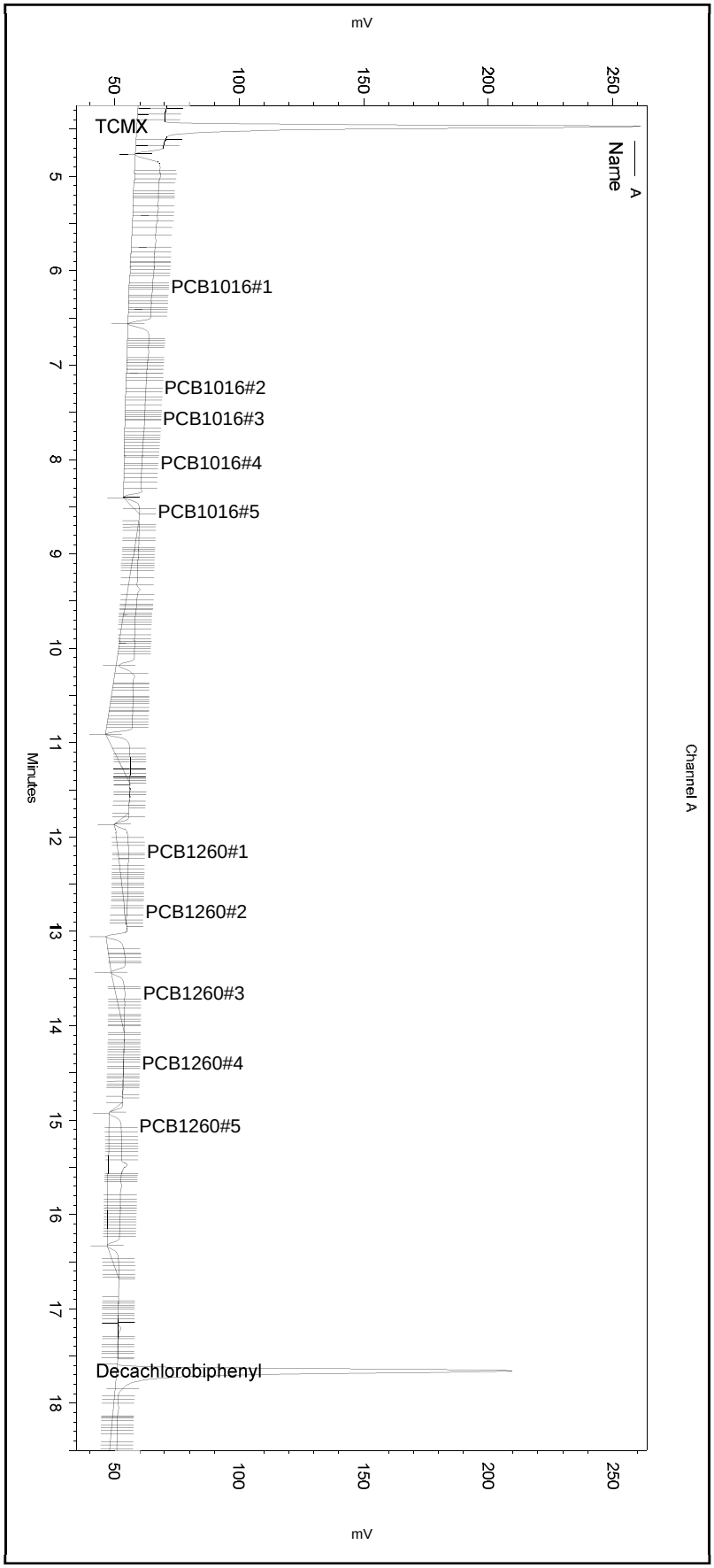
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	3.810	3.810	584195	51.090
PCB1016#1	5.377	5.383	42463	206.162
PCB1016#2		6.357		0.000 BDL
PCB1016#3	6.597	6.580	34	0.109
PCB1016#4	7.127	7.143	4656	23.687
PCB1016#5	7.873	7.880	151	0.479
PCB1260#1	11.180	11.150	25280	56.614
PCB1260#2		11.797		0.000 BDL
PCB1260#3		12.743		0.000 BDL
PCB1260#4	13.387	13.397	69	0.109
PCB1260#5		14.075		0.000 BDL
Decachlorobiphenyl	17.050	17.063	837579	73.900

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-019**
Sample Name: **mb,qc918767,256161**
Instrument: GC16 Vial: 39 Operator: lims2k3\pest3
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 6:29:18 PM
Analysis Date: 2/2/2018 6:53:16 PM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	0	0	0

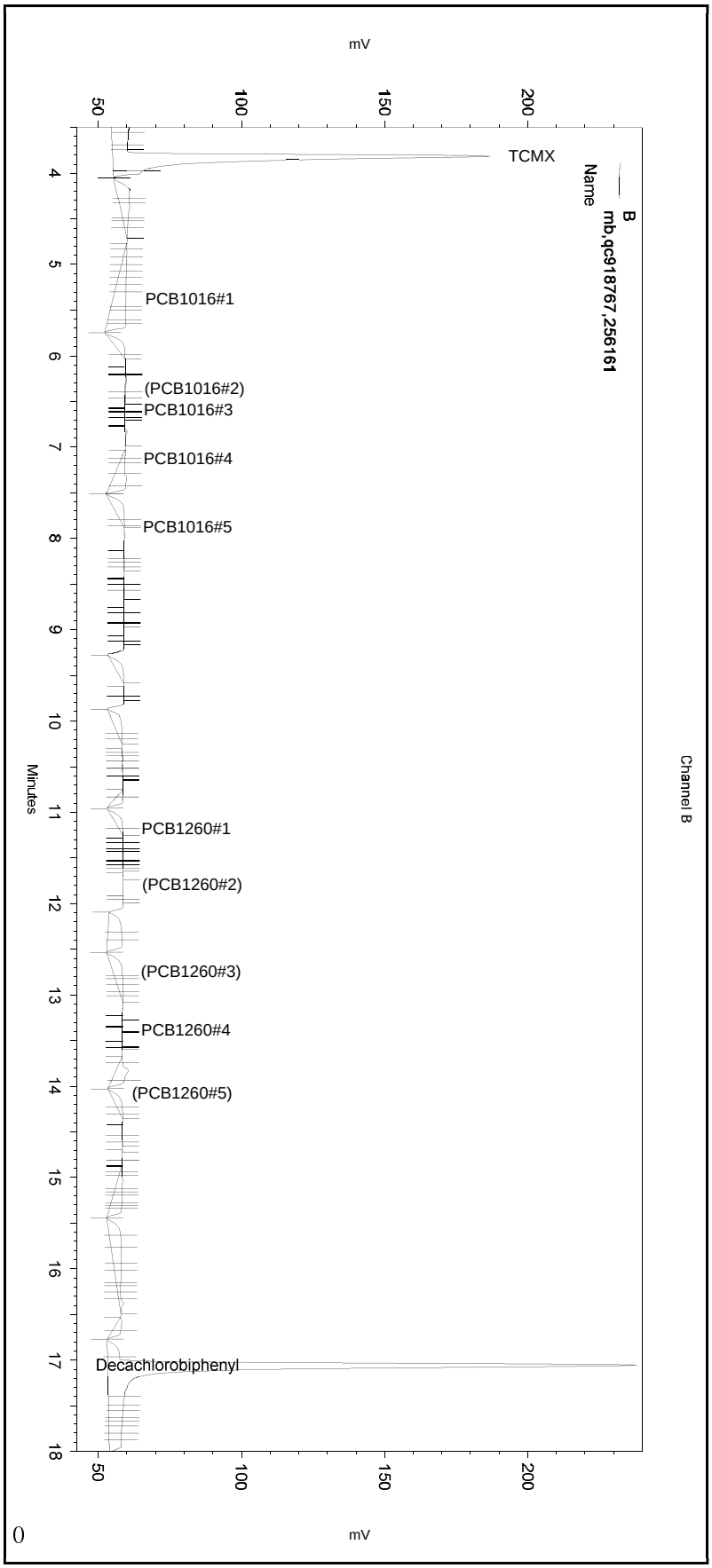
Manual Integration Fixes
==========

Data File: C:\Documents and Settings\All Users\Application Data\ChromatographySystem\Recovery Data\Instrument.10110\033-019_32CD.tmp

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-019**
Sample Name: **mb,qc918767,256161**
Instrument: GC16 Vial: 39 Operator: lims2k3\pest3
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 6:29:18 PM
Analysis Date: 2/2/2018 6:53:16 PM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

---< B >----------

No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	1.8	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========

Data File: C:\Documents and Settings\All Users\Application Data\ChromatographySystem\Recovery Data\Instrument.10110\033-019_32CD.tmp

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

ENTHALPY SPIKE USER REPORT FOR 296840 PCBS Soil
EPA 8082A

Type : LCS
Inst : GC16
Seqnum : 238048058020.2
File : 033_020
IDF : 1.0
Lab ID : QC918768
Matrix : Soil
Batch : 256161
Time : 02-FEB-2018 18:58
Cal : 238037991001
Units : ug/Kg

LCS: 29.69 g --> 10.0 ml = 0.3368 ml/g PDF

Analyte	Spiked	Raw	LCS	Ch	%Rec	Limits	Flags
Aroclor-1016	84.20	240.9	81.14	A	96	47-134	u
Aroclor-1016 Peak # 1		239.0	80.51	A			
Aroclor-1016 Peak # 2		245.2	82.57	A			
Aroclor-1016 Peak # 3		251.1	84.57	A			
Aroclor-1016 Peak # 4		229.9	77.45	A			
Aroclor-1016 Peak # 5		239.3	80.60	A			
Aroclor-1260	84.20	260.8	87.84	B	104	53-140	u
Aroclor-1260 Peak # 1		227.0	76.46	B			
Aroclor-1260 Peak # 2		216.4	72.90	B			
Aroclor-1260 Peak # 3		293.3	98.80	B			
Aroclor-1260 Peak # 4		291.9	98.31	B			
Aroclor-1260 Peak # 5		275.3	92.71	B			
TCMX	16.84	49.77	16.76	A	100	44-130	u
Decachlorobiphenyl	16.84	48.30	16.27	A	97	26-153	<c- >c- u

JC1 02/05/18 : ch. B for better ccv [general version]

JC1 02/05/18 : Corrected automatically drawn baseline. [general version]

JC1 02/05/18 [Decachlorobiphenyl A]: Recovery well within limits despite instrument bias [general version]

Analyst: JC1 Date: 02/07/18 Reviewer: EAH Date: 02/08/18

-=low bias <=opening >=closing c=CCV u=use

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-020**
Sample Name: **lcs,qc918768,256161**
Instrument: GC16 (Offline) Vial: 40 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 6:58:19 PM
Analysis Date: 2/5/2018 10:08:51 AM
Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	4.467	4.490	572548	49.770
PCB1016#1	6.160	6.177	131377	239.046
PCB1016#2	7.260	7.270	175212	245.163
PCB1016#3	7.567	7.580	101721	251.095
PCB1016#4	8.030	8.043	59234	229.943
PCB1016#5	8.550	8.563	83922	239.299
PCB1260#1	12.133	12.147	255308	224.637
PCB1260#2	12.787	12.800	193724	200.870
PCB1260#3	13.647	13.660	152044	293.008
PCB1260#4	14.390	14.400	355867	294.177
PCB1260#5	15.043	15.057	136831	254.996
Decachlorobiphenyl	17.647	17.663	572016	48.296

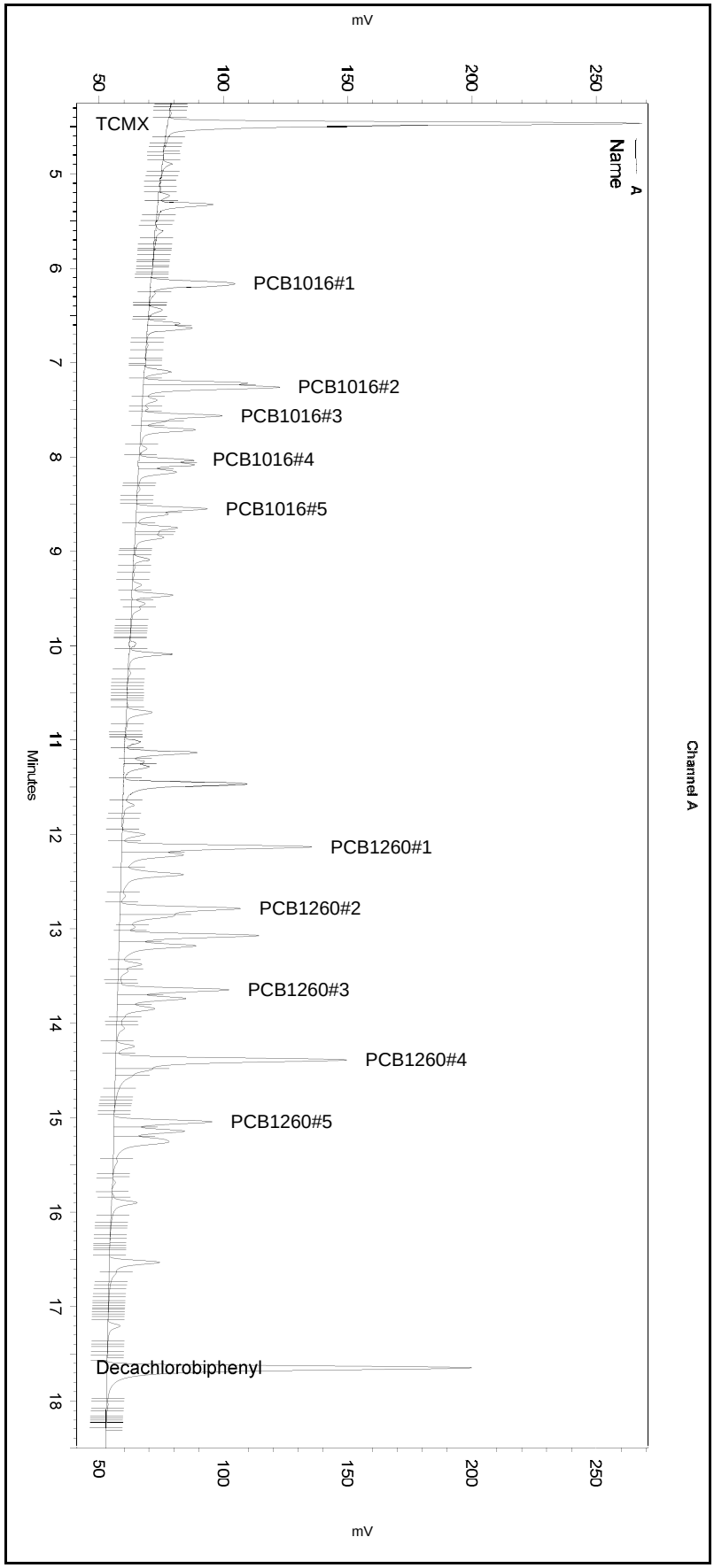
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	3.800	3.810	573092	50.119
PCB1016#1	5.387	5.383	52942	257.039
PCB1016#2	6.350	6.357	151458	272.433
PCB1016#3	6.570	6.580	87400	279.077
PCB1016#4	7.130	7.143	50107	254.912
PCB1016#5	7.867	7.880	85032	269.882
PCB1260#1	11.150	11.150	101370	227.016
PCB1260#2	11.790	11.797	122436	216.449
PCB1260#3	12.733	12.743	121041	293.337
PCB1260#4	13.387	13.397	184685	291.892
PCB1260#5	14.063	14.075	107074	275.251
Decachlorobiphenyl	17.040	17.063	541121	47.743

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-020**
Sample Name: **lcs,qc918768,256161**
Instrument: GC16 (Offline) Vial: 40 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 6:58:19 PM
Analysis Date: 2/5/2018 10:08:51 AM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	0	0	0

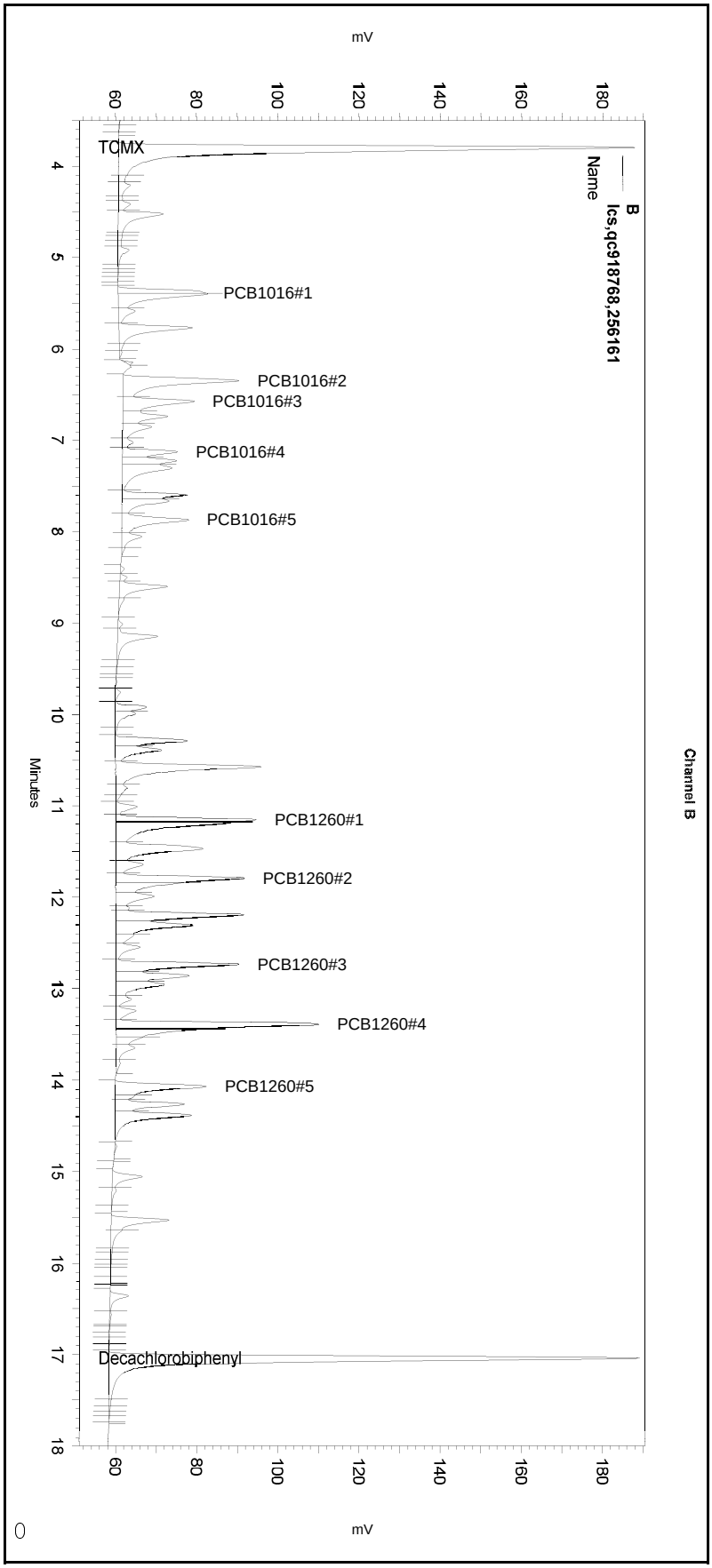
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-020

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	15.625	0	0

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-020**
Sample Name: **lcs,qc918768,256161**
Instrument: GC16 (Offline) Vial: 40 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 6:58:19 PM
Analysis Date: 2/5/2018 10:08:51 AM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

---< B >----------

No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	1.8	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-020

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Split Peak	5.391	0	0
Yes	Reset Baseline	8.274	0	0
Yes	Split Peak	11.172	0	0
Yes	Split Peak	11.838	0	0
Yes	Split Peak	13.435	0	0
Yes	Reset Baseline	13.933	0	0
Yes	Reset Baseline	14.663	0	0
Yes	Reset Baseline	17.75	0	0

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-020**
Sample Name: **lcs,qc918768,256161**
Instrument: GC16 Vial: 40 Operator: lims2k3\pest3
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 6:58:19 PM
Analysis Date: 2/2/2018 7:22:16 PM
Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	4.467	4.490	572548	49.770
PCB1016#1	6.160	6.177	131377	239.046
PCB1016#2	7.260	7.270	175212	245.163
PCB1016#3	7.567	7.580	101721	251.095
PCB1016#4	8.030	8.043	59234	229.943
PCB1016#5	8.550	8.563	83922	239.299
PCB1260#1	12.133	12.147	255758	225.033
PCB1260#2	12.787	12.800	194490	201.665
PCB1260#3	13.647	13.660	153047	294.941
PCB1260#4	14.390	14.400	357645	295.646
PCB1260#5	15.043	15.057	138722	258.520
Decachlorobiphenyl	17.647	17.663	572016	48.296

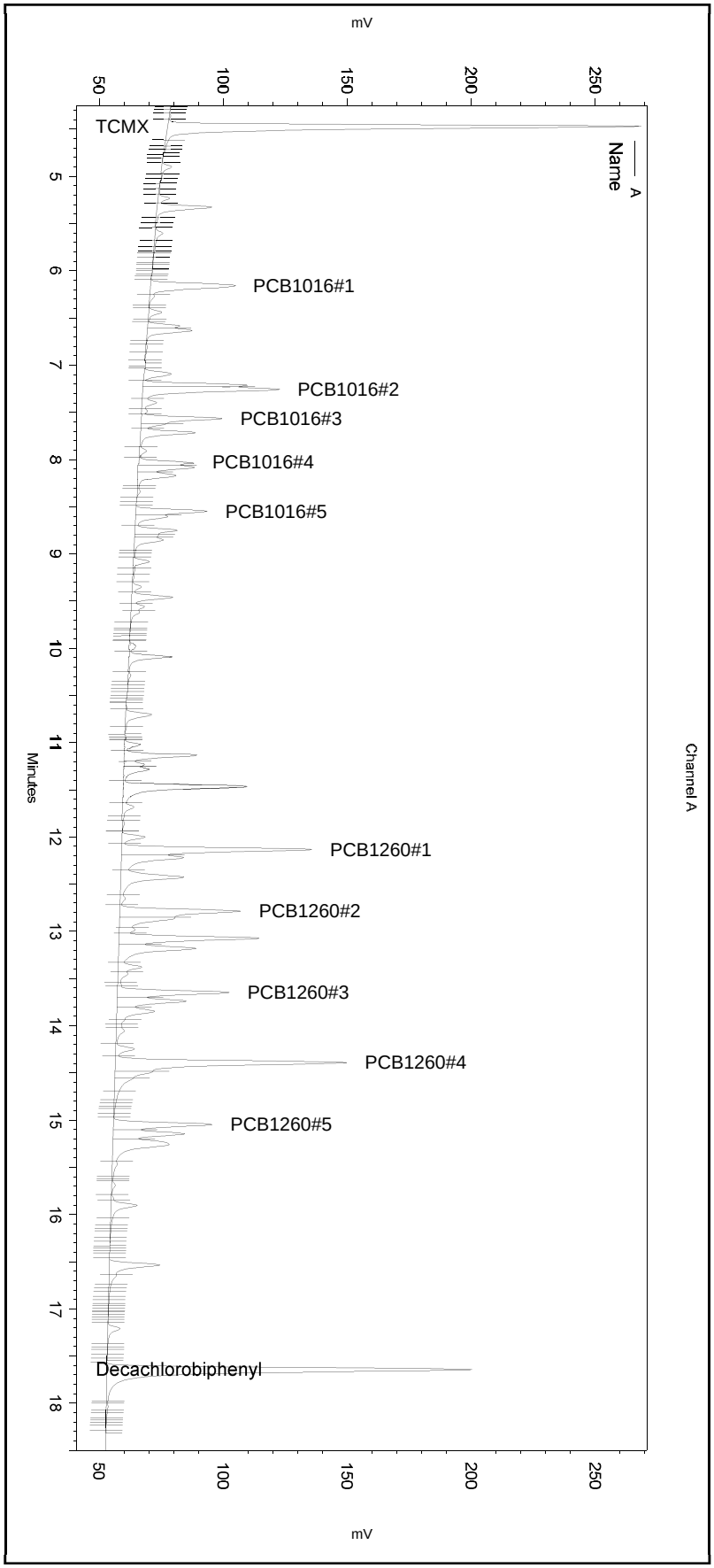
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	3.800	3.810	573092	50.119
PCB1016#1	5.397	5.383	143761	697.975
PCB1016#2	6.350	6.357	152011	273.428
PCB1016#3	6.570	6.580	88383	282.216
PCB1016#4	7.130	7.143	51803	263.540
PCB1016#5	7.867	7.880	91708	291.071
PCB1260#1	11.150	11.150	244609	547.796
PCB1260#2	11.790	11.797	186798	330.232
PCB1260#3	12.733	12.743	127231	308.338
PCB1260#4	13.387	13.397	261244	412.892
PCB1260#5	14.063	14.075	115020	295.678
Decachlorobiphenyl	17.040	17.063	545196	48.103

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-020**
Sample Name: **lcs,qc918768,256161**
Instrument: GC16 Vial: 40 Operator: lims2k3\pest3
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 6:58:19 PM
Analysis Date: 2/2/2018 7:22:16 PM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

---< A >----------

No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	0	0	0

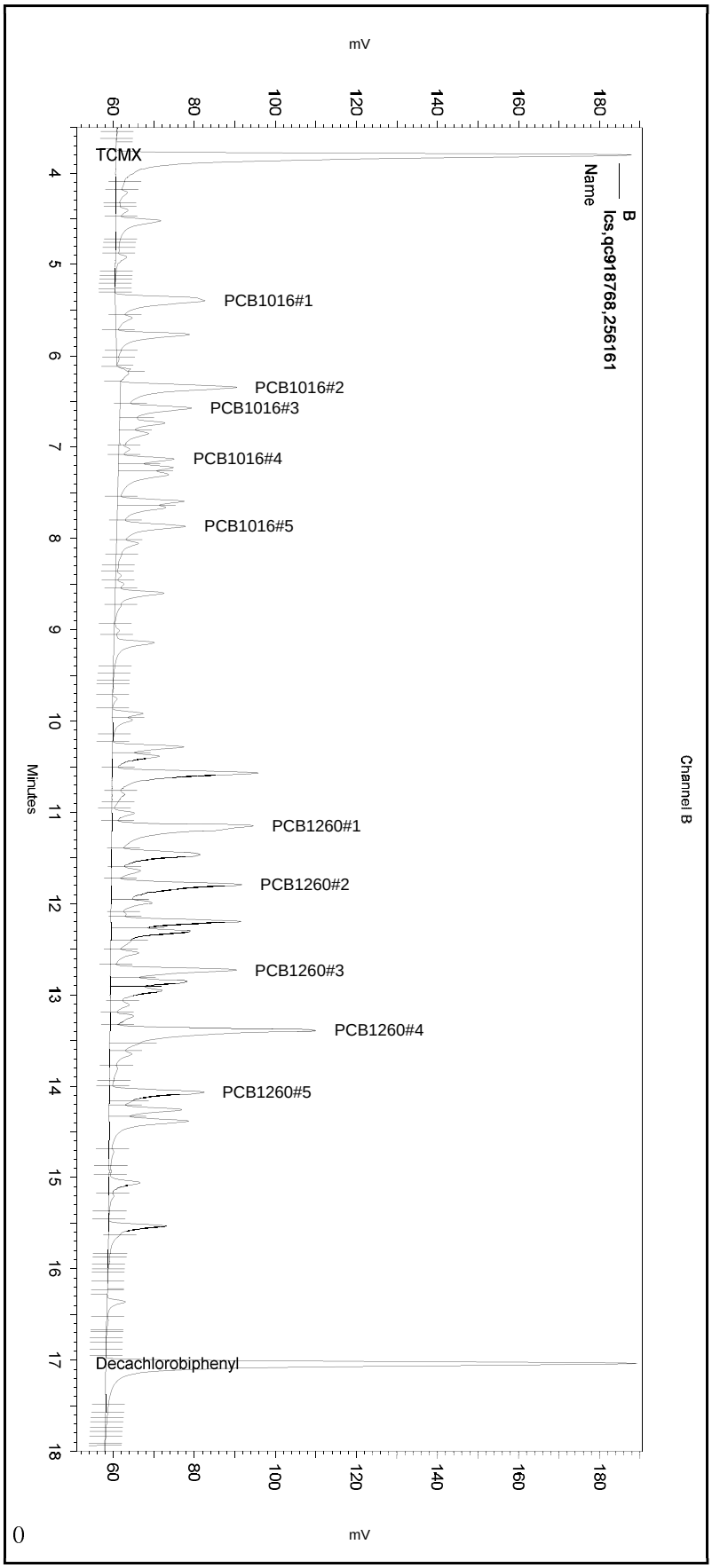
Manual Integration Fixes
==========

Data File: C:\Documents and Settings\All Users\Application Data\ChromatographySystem\Recovery Data\Instrument.10110\033-020_32CE.tmp

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-020**
Sample Name: **lcs,qc918768,256161**
Instrument: GC16 Vial: 40 Operator: lims2k3\pest3
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 6:58:19 PM
Analysis Date: 2/2/2018 7:22:16 PM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	1.8	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========

Data File: C:\Documents and Settings\All Users\Application Data\ChromatographySystem\Recovery Data\Instrument.10110\033-020_32CE.tmp

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

ENTHALPY SPIKE USER REPORT FOR 296840 PCBS Soil
EPA 8082A

Type	: MSS	Type	: MS	Type	: MSD
Inst	: GC16	Inst	: GC16	Inst	: GC16
Seqnum	: 238048058021	Seqnum	: 238048058022.2	Seqnum	: 238048058023.2
File	: 033_021	File	: 033_022	File	: 033_023
IDF	: 5.0	IDF	: 5.0	IDF	: 5.0
Lab ID	: 296840-001	Lab ID	: QC918769	Lab ID	: QC918770
Matrix	: Soil	Matrix	: Soil	Matrix	: Soil
Batch	: 256161	Batch	: 256161	Batch	: 256161
Time	: 02-FEB-2018 19:27	Time	: 02-FEB-2018 19:56	Time	: 02-FEB-2018 20:25
Cal	: 238037991001	Cal	: 238037991001	Cal	: 238037991001
Units	: ug/Kg				

MSS: 29.71 g --> 10.0 ml = 0.3366 ml/g PDF
MS: 29.66 g --> 10.0 ml = 0.3372 ml/g PDF
MSD: 29.98 g --> 10.0 ml = 0.3336 ml/g PDF

Analyte	MSS	Ch	Spiked	MS Raw	MS Result	Ch	%Rec	Spiked	MSD Raw	MSD Result	Ch	%Rec	Limits	RPD	Lim	Flags
Aroclor-1016	ND	A	84.29	51.59	86.97	A	103	83.39	49.43	82.43	A	99	47-134	4	30	u
Aroclor-1016 Peak # 1				51.77	87.27	A			45.98	76.68	A					
Aroclor-1016 Peak # 2				51.23	86.36	A			46.56	77.66	A					
Aroclor-1016 Peak # 3				49.92	84.15	A			47.84	79.79	A					
Aroclor-1016 Peak # 4				53.68	90.49	A			58.26	97.16	A					
Aroclor-1016 Peak # 5				51.35	86.57	A			48.49	80.87	A					
Aroclor-1260	101.5	B	84.29	118.5	199.7	B	117	83.39	114.1	190.3	B	107	53-140	4	30	u
Aroclor-1260 Peak # 1				150.4	253.5	B			128.4	214.2	B					
Aroclor-1260 Peak # 2				108.7	183.3	B			107.3	179.0	B					
Aroclor-1260 Peak # 3				103.9	175.1	B			99.04	165.2	B					
Aroclor-1260 Peak # 4				112.5	189.6	B			117.2	195.4	B					
Aroclor-1260 Peak # 5				116.8	197.0	B			118.7	198.0	B					
TCMX			16.86	8.597	14.49	A	86	16.68	7.720	12.87	A	77	44-130			u
Decachlorobiphenyl			16.86	9.677	16.31	A	97	16.68	10.31	17.19	A	103	26-153			<c- >c- u

JC1 02/05/18 : ch. B for better ccv [general version]

JC1 02/05/18 : Corrected automatically drawn baseline. [general version]

JC1 02/05/18 [Decachlorobiphenyl A]: Recovery well within limits despite instrument bias [general version]

Analyst: JC1 Date: 02/07/18 Reviewer: EAH Date: 02/08/18

-=low bias <=opening >=closing c=CCV u=use

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-022**
Sample Name: **ms,qc918769,256161,5x**
Instrument: GC16 (Offline) Vial: 42 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 7:56:19 PM
Analysis Date: 2/5/2018 10:20:04 AM
Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	4.467	4.490	98902	8.597
PCB1016#1	6.163	6.177	28450	51.766
PCB1016#2	7.260	7.270	36612	51.229
PCB1016#3	7.570	7.580	20222	49.917
PCB1016#4	8.033	8.043	13828	53.680
PCB1016#5	8.550	8.563	18010	51.355
PCB1260#1	12.133	12.147	120250	105.804
PCB1260#2	12.787	12.800	101689	105.440
PCB1260#3	13.643	13.660	56256	108.412
PCB1260#4	14.387	14.400	116077	95.955
PCB1260#5	15.040	15.057	58785	109.551
Decachlorobiphenyl	17.647	17.663	114616	9.677

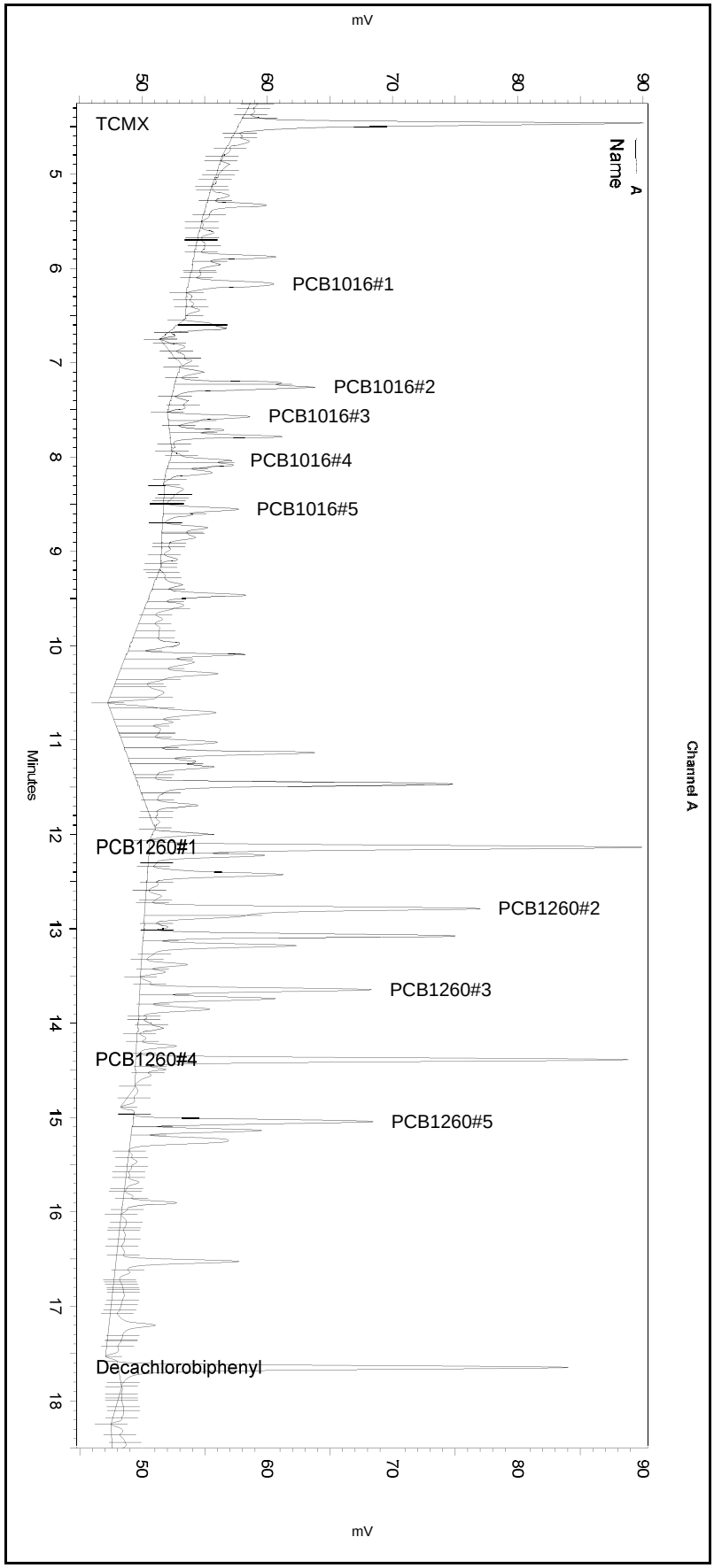
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	3.797	3.810	99032	8.661
PCB1016#1	5.377	5.383	7982	38.753
PCB1016#2	6.350	6.357	35430	63.729
PCB1016#3	6.567	6.580	14374	45.898
PCB1016#4	7.133	7.143	13877	70.597
PCB1016#5	7.870	7.880	20553	65.233
PCB1260#1	11.147	11.150	67140	150.358
PCB1260#2	11.787	11.797	61504	108.730
PCB1260#3	12.730	12.743	42863	103.876
PCB1260#4	13.383	13.397	71178	112.496
PCB1260#5	14.057	14.075	45453	116.844
Decachlorobiphenyl	17.037	17.063	100149	8.836

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-022**
Sample Name: **ms,qc918769,256161,5x**
Instrument: GC16 (Offline) Vial: 42 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 7:56:19 PM
Analysis Date: 2/5/2018 10:20:04 AM
Sample Amount: 1



---< General Method Parameters >---

No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	0	0	0

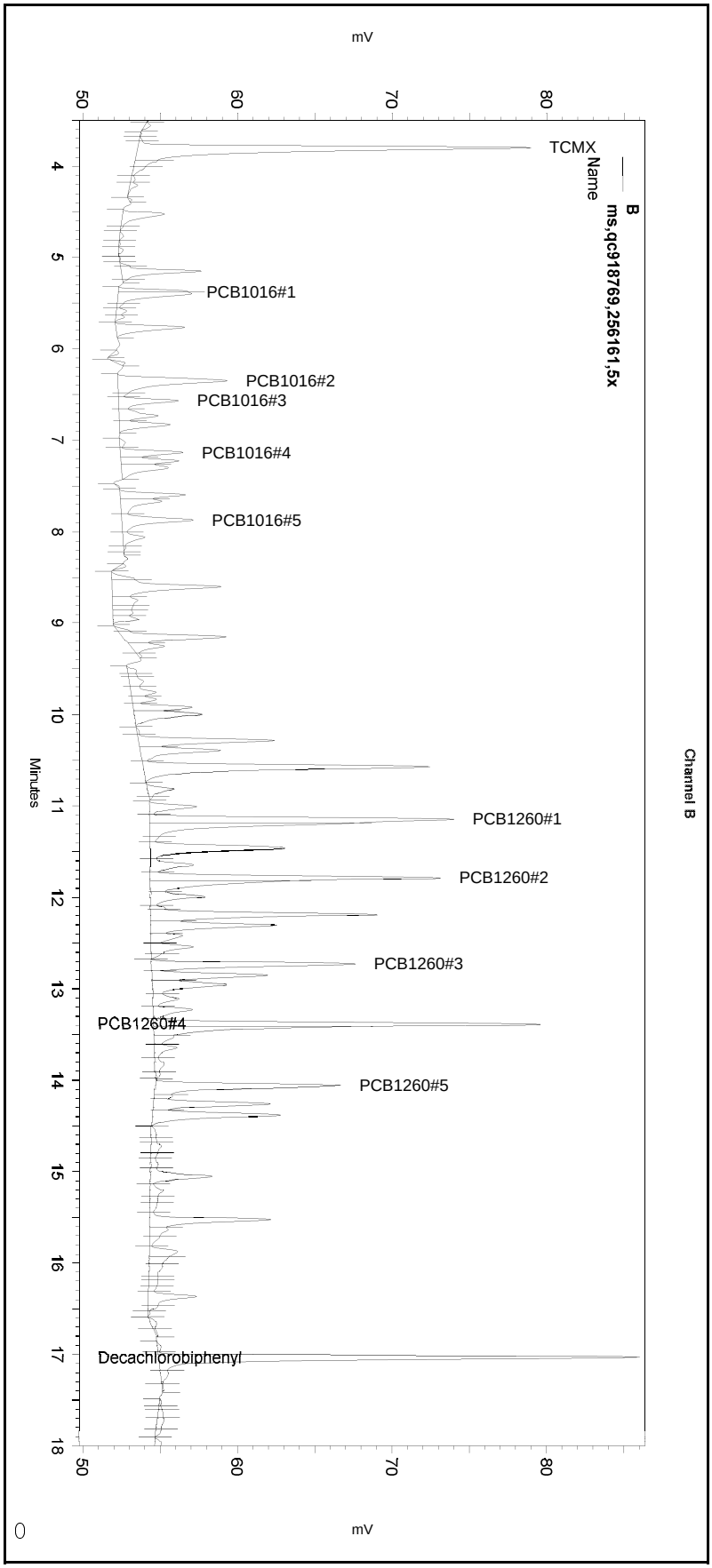
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-022

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	6.504	0	0
Yes	Reset Baseline	7.034	0	0
Yes	Reset Baseline	7.934	0	0
Yes	Reset Baseline	8.298	0	0
Yes	Reset Baseline	9.169	0	0
Yes	Reset Baseline	11.936	0	0
Yes	Reset Baseline	14.671	0	0
Yes	Reset Baseline	14.952	0	0
Yes	Reset Baseline	17.571	0	0
Yes	Reset Baseline	17.851	0	0

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-022**
Sample Name: **ms,qc918769,256161,5x**
Instrument: GC16 (Offline) Vial: 42 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 7:56:19 PM
Analysis Date: 2/5/2018 10:20:04 AM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	1.8	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-022

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Split Peak	5.381	0	0
Yes	Reset Baseline	5.941	0	0
Yes	Reset Baseline	7.428	0	0
Yes	Reset Baseline	7.524	0	0
Yes	Reset Baseline	8.281	0	0
Yes	Reset Baseline	10.938	0	0
Yes	Split Peak	11.822	0	0
Yes	Split Peak	13.412	0	0
Yes	Manual Baseline	13.985	14.508	0
Yes	Reset Baseline	17.42	0	0

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-022**
Sample Name: **ms,qc918769,256161,5x**
Instrument: GC16 Vial: 42 Operator: lims2k3\pest3
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 7:56:19 PM
Analysis Date: 2/2/2018 8:20:17 PM
Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	4.467	4.490	98902	8.597
PCB1016#1	6.163	6.177	35639	64.847
PCB1016#2	7.260	7.270	49302	68.985
PCB1016#3	7.570	7.580	28878	71.284
PCB1016#4	8.033	8.043	23403	90.849
PCB1016#5	8.550	8.563	30880	88.053
PCB1260#1	12.133	12.147	145278	127.825
PCB1260#2	12.787	12.800	126735	131.410
PCB1260#3	13.643	13.660	73721	142.070
PCB1260#4	14.387	14.400	135483	111.997
PCB1260#5	15.040	15.057	76004	141.640
Decachlorobiphenyl	17.647	17.663	128341	10.836

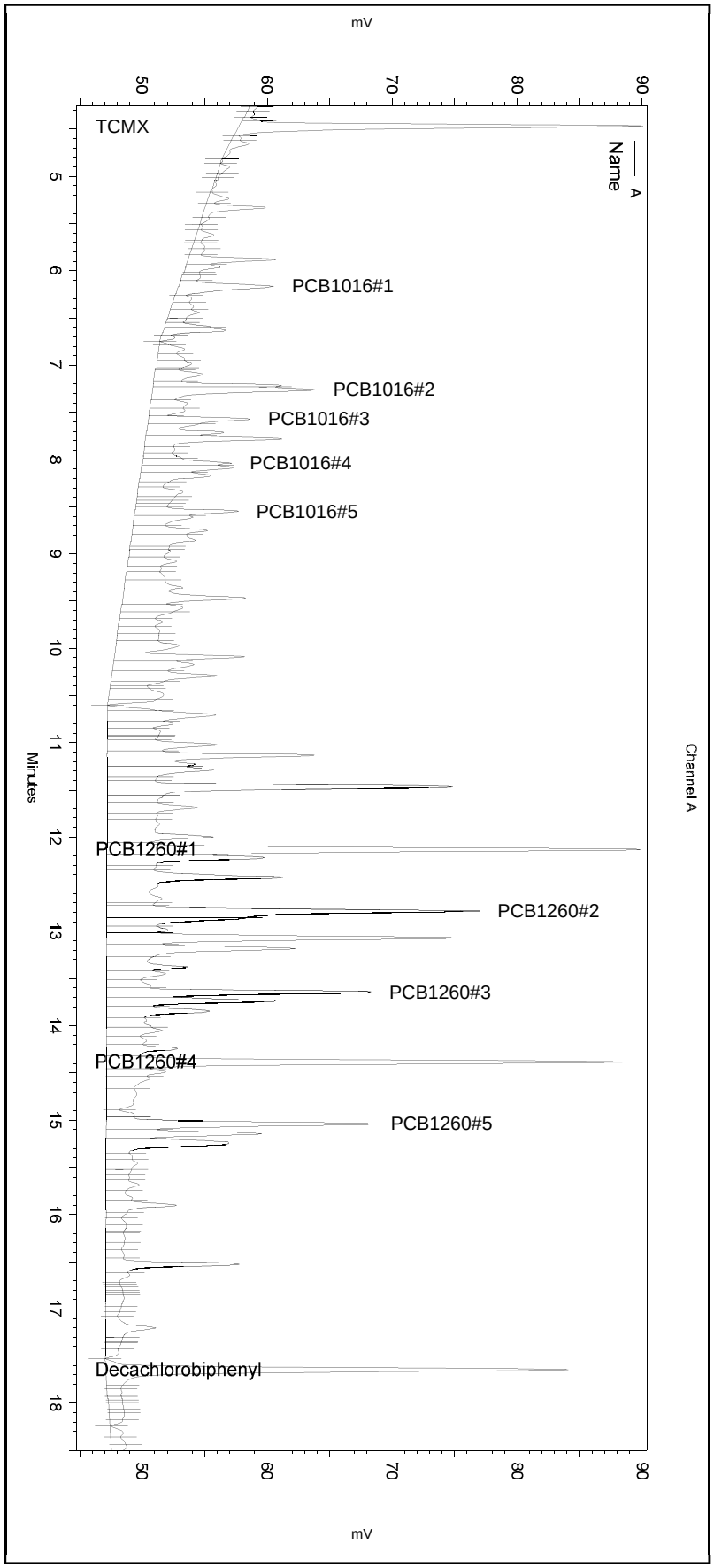
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	3.797	3.810	99032	8.661
PCB1016#1	5.400	5.383	26598	129.136
PCB1016#2	6.350	6.357	35430	63.729
PCB1016#3	6.567	6.580	14374	45.898
PCB1016#4	7.133	7.143	15049	76.559
PCB1016#5	7.870	7.880	27740	88.044
PCB1260#1	11.147	11.150	71934	161.094
PCB1260#2	11.787	11.797	93898	165.998
PCB1260#3	12.730	12.743	45004	109.065
PCB1260#4	13.383	13.397	100663	159.096
PCB1260#5	14.057	14.075	40368	103.773
Decachlorobiphenyl	17.037	17.063	102793	9.069

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-022**
Sample Name: **ms,qc918769,256161,5x**
Instrument: GC16 Vial: 42 Operator: lims2k3\pest3
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 7:56:19 PM
Analysis Date: 2/2/2018 8:20:17 PM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	0	0	0

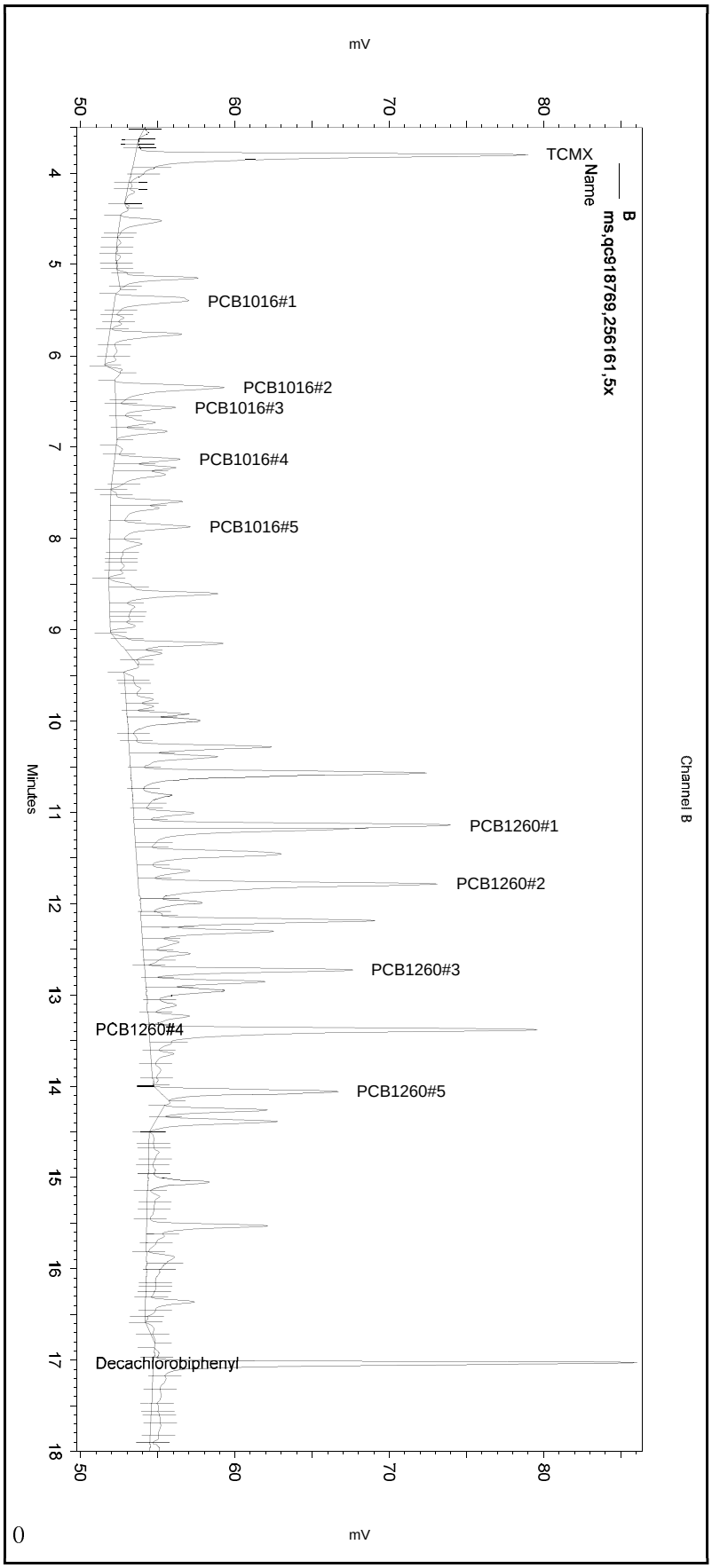
Manual Integration Fixes
==========

Data File: C:\Documents and Settings\All Users\Application Data\ChromatographySystem\Recovery Data\Instrument.10110\033-022_32D0.tmp

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-022**
Sample Name: **ms,qc918769,256161,5x**
Instrument: GC16 Vial: 42 Operator: lims2k3\pest3
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 7:56:19 PM
Analysis Date: 2/2/2018 8:20:17 PM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	1.8	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========

Data File: C:\Documents and Settings\All Users\Application Data\ChromatographySystem\Recovery Data\Instrument.10110\033-022_32D0.tmp

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-023**
Sample Name: **msd,qc918770,256161,5x**
Instrument: GC16 (Offline) Vial: 43 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 8:25:19 PM
Analysis Date: 2/5/2018 10:22:27 AM
Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	4.473	4.490	88805	7.720
PCB1016#1	6.173	6.177	25268	45.976
PCB1016#2	7.270	7.270	33278	46.564
PCB1016#3	7.580	7.580	19382	47.844
PCB1016#4	8.043	8.043	15007	58.256
PCB1016#5	8.560	8.563	17005	48.489
PCB1260#1	12.143	12.147	106876	94.037
PCB1260#2	12.793	12.800	91646	95.027
PCB1260#3	13.653	13.660	52457	101.091
PCB1260#4	14.397	14.400	106042	87.659
PCB1260#5	15.050	15.057	57423	107.012
Decachlorobiphenyl	17.657	17.663	122111	10.310

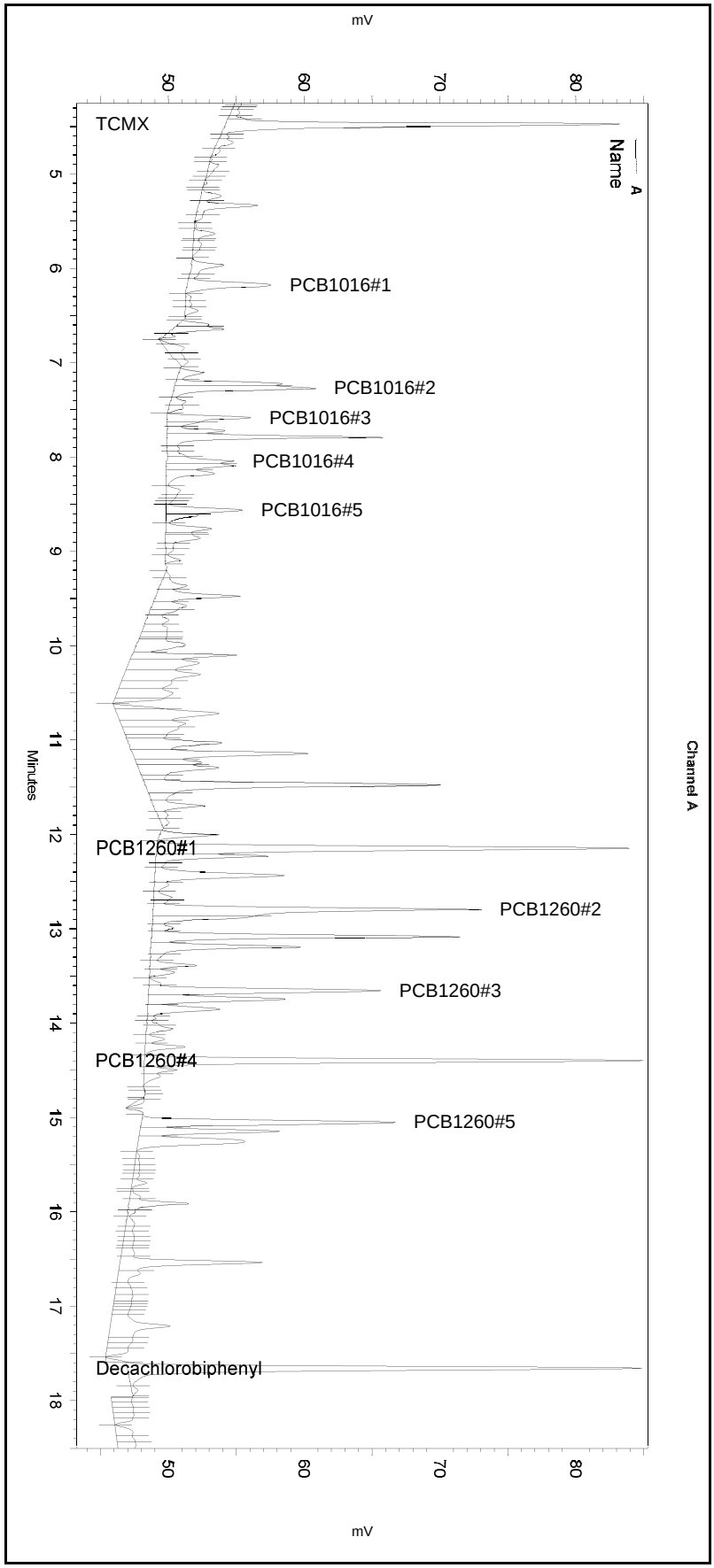
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	3.803	3.810	89197	7.801
PCB1016#1	5.393	5.383	9794	47.551
PCB1016#2	6.357	6.357	37273	67.044
PCB1016#3	6.573	6.580	14602	46.626
PCB1016#4	7.140	7.143	12067	61.389
PCB1016#5	7.877	7.880	18517	58.771
PCB1260#1	11.157	11.150	57340	128.412
PCB1260#2	11.797	11.797	60711	107.328
PCB1260#3	12.740	12.743	40869	99.044
PCB1260#4	13.393	13.397	74126	117.155
PCB1260#5	14.067	14.075	46173	118.695
Decachlorobiphenyl	17.043	17.063	101779	8.980

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-023**
Sample Name: **msd,qc918770,256161,5x**
Instrument: GC16 (Offline) Vial: 43 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 8:25:19 PM
Analysis Date: 2/5/2018 10:22:27 AM
Sample Amount: 1



---< General Method Parameters >---

No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	0	0	0

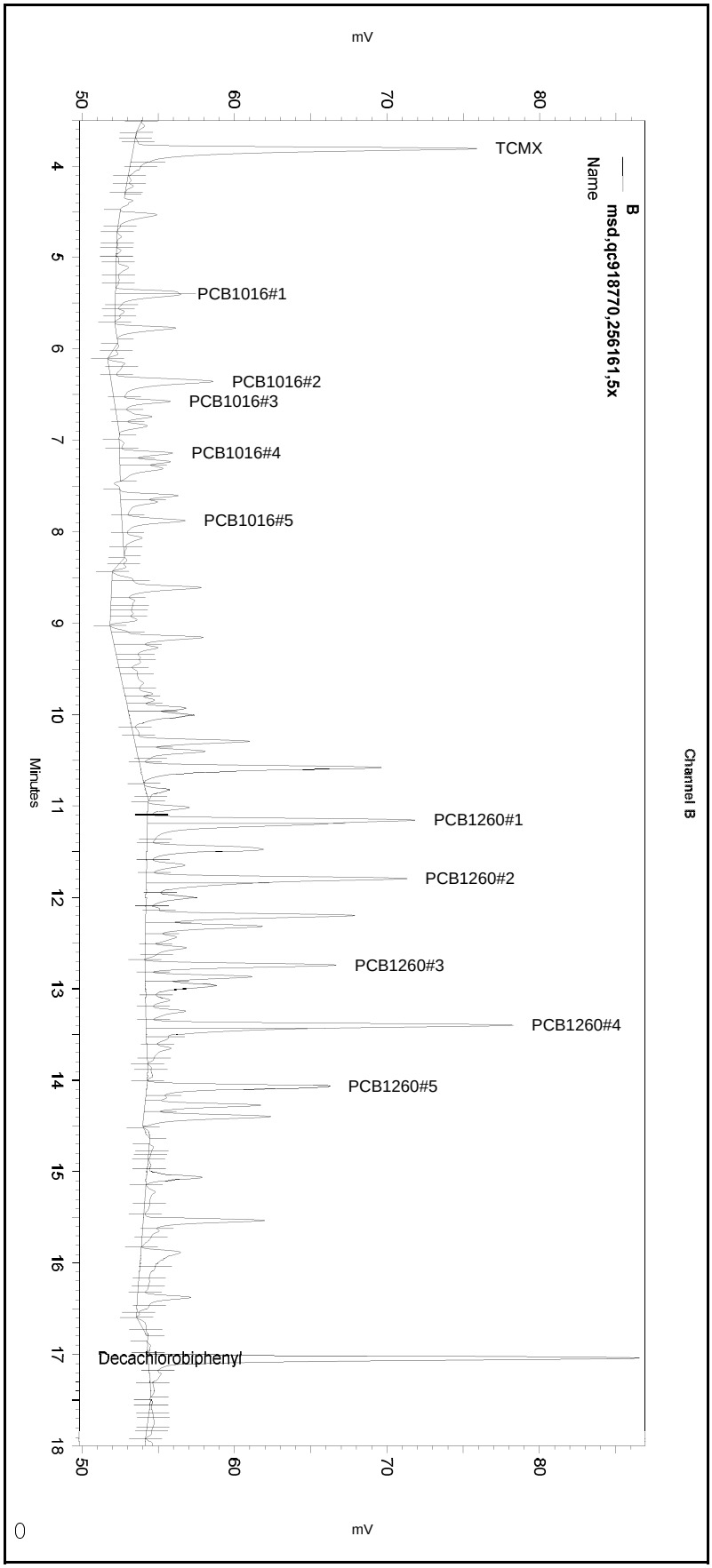
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-023

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	5.891	0	0
Yes	Reset Baseline	6.537	0	0
Yes	Reset Baseline	7.046	0	0
Yes	Reset Baseline	9.164	0	0
Yes	Reset Baseline	11.931	0	0
Yes	Reset Baseline	14.744	0	0
Yes	Reset Baseline	14.961	0	0
Yes	Manual Baseline	17.59	17.957	0

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-023**
Sample Name: **msd,qc918770,256161,5x**
Instrument: GC16 (Offline) Vial: 43 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 8:25:19 PM
Analysis Date: 2/5/2018 10:22:27 AM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

---< B >----------

No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	1.8	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-023

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Split Peak	5.398	0	0
Yes	Reset Baseline	5.925	0	0
Yes	Reset Baseline	7.445	0	0
Yes	Reset Baseline	7.524	0	0
Yes	Reset Baseline	8.275	0	0
Yes	Reset Baseline	10.945	0	0
Yes	Split Peak	11.842	0	0
Yes	Split Peak	13.431	0	0
Yes	Manual Baseline	14.006	14.507	0
Yes	Reset Baseline	17.465	0	0

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-023**
Sample Name: **msd,qc918770,256161,5x**
Instrument: GC16 Vial: 43 Operator: lims2k3\pest3
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 8:25:19 PM
Analysis Date: 2/2/2018 8:49:17 PM
Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	4.473	4.490	88805	7.720
PCB1016#1	6.173	6.177	34135	62.110
PCB1016#2	7.270	7.270	45182	63.220
PCB1016#3	7.580	7.580	27315	67.426
PCB1016#4	8.043	8.043	22586	87.678
PCB1016#5	8.560	8.563	29808	84.996
PCB1260#1	12.143	12.147	132483	116.567
PCB1260#2	12.793	12.800	116942	121.256
PCB1260#3	13.653	13.660	71554	137.894
PCB1260#4	14.397	14.400	126781	104.803
PCB1260#5	15.050	15.057	78211	145.753
Decachlorobiphenyl	17.657	17.663	145189	12.258

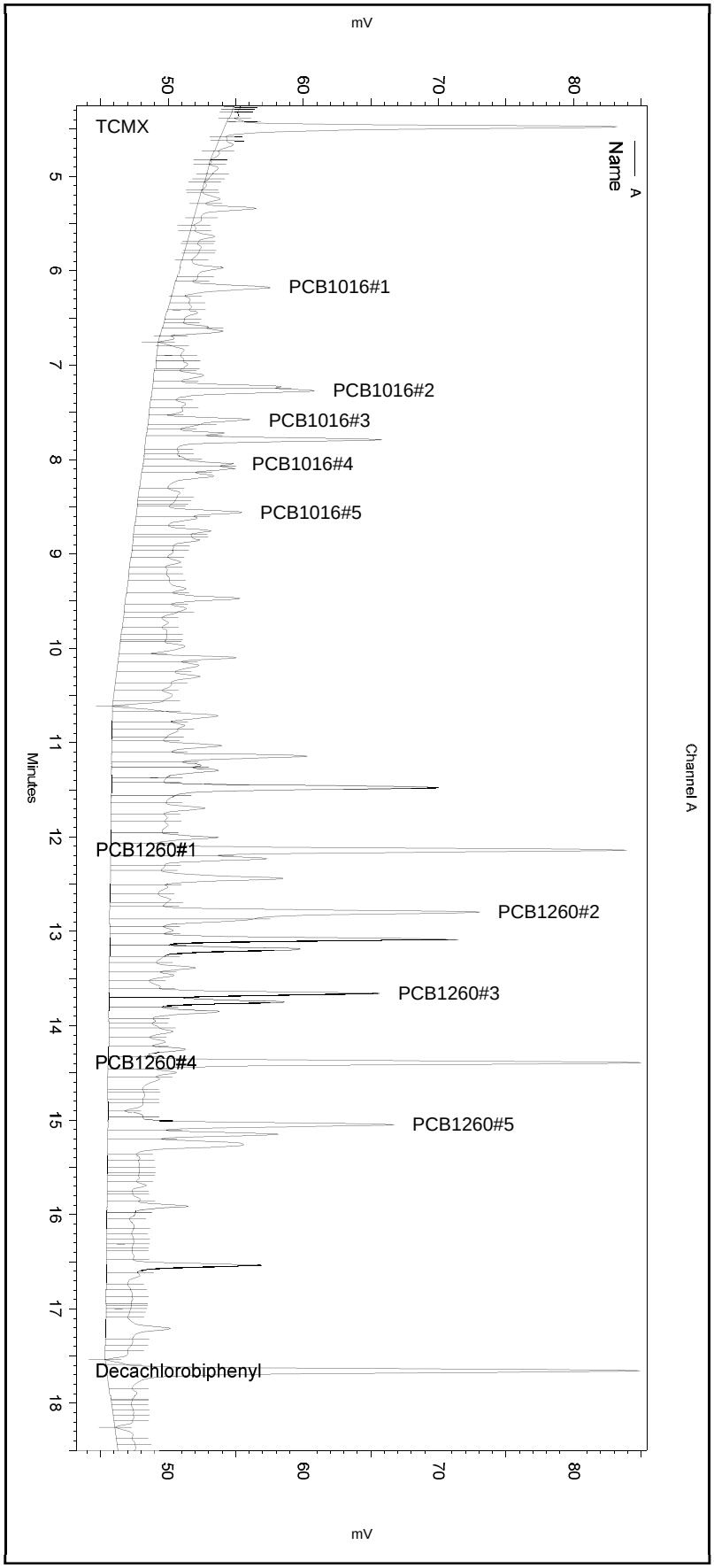
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	3.803	3.810	89197	7.801
PCB1016#1	5.407	5.383	27389	132.976
PCB1016#2	6.357	6.357	37273	67.044
PCB1016#3	6.573	6.580	14602	46.626
PCB1016#4	7.140	7.143	12876	65.505
PCB1016#5	7.877	7.880	25544	81.074
PCB1260#1	11.157	11.150	65554	146.807
PCB1260#2	11.797	11.797	92089	162.800
PCB1260#3	12.740	12.743	44527	107.909
PCB1260#4	13.393	13.397	100391	158.667
PCB1260#5	14.067	14.075	40232	103.423
Decachlorobiphenyl	17.043	17.063	103706	9.150

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-023**
Sample Name: **msd,qc918770,256161,5x**
Instrument: GC16 Vial: 43 Operator: lims2k3\pest3
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 8:25:19 PM
Analysis Date: 2/2/2018 8:49:17 PM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

---< A >----------

No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	0	0	0

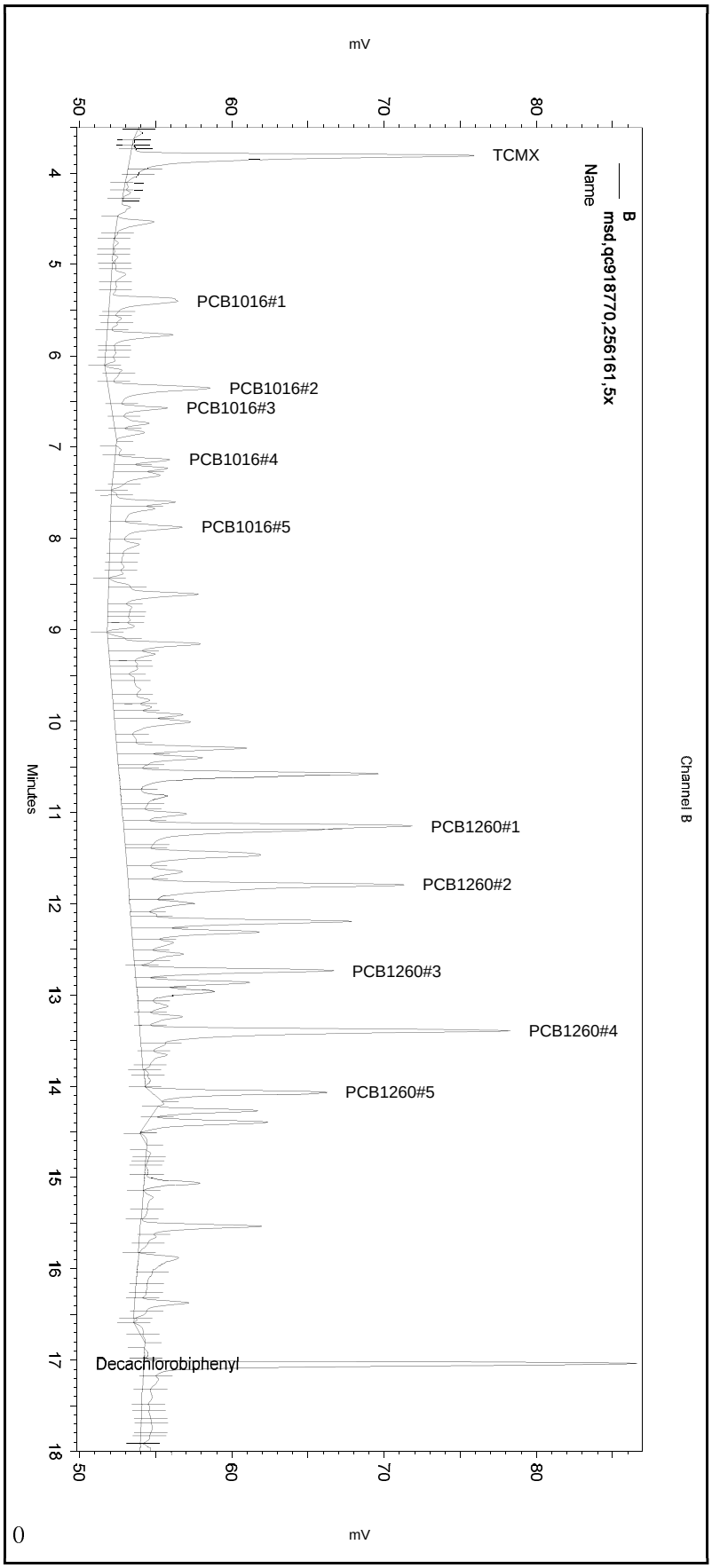
Manual Integration Fixes
==========

Data File: C:\Documents and Settings\All Users\Application Data\ChromatographySystem\Recovery Data\Instrument.10110\033-023_32D1.tmp

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-023**
Sample Name: **msd,qc918770,256161,5x**
Instrument: GC16 Vial: 43 Operator: lims2k3\pest3
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 8:25:19 PM
Analysis Date: 2/2/2018 8:49:17 PM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

---< B >----------

No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	1.8	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========

Data File: C:\Documents and Settings\All Users\Application Data\ChromatographySystem\Recovery Data\Instrument.10110\033-023_32D1.tmp

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Initial Calibration Raw Data

ENTHALPY INITIAL CALIBRATION FOR 296840 PCBS Soil: EPA 8082A

Inst : GC16
Calnum : 238004939001
Units : pg/ul

Name : ar-2154-004ical
Date : 03-JAN-2018 23:07
X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	003_020	238004939020	AR2154_10	03-JAN-2018 23:07	S34680
L2	003_021	238004939021	AR2154_100	03-JAN-2018 23:36	S34681 (2X)
L3	003_022	238004939022	AR2154_100	04-JAN-2018 00:05	S34681
L4	003_023	238004939023	AR2154_250	04-JAN-2018 00:34	S34682
L5	003_024	238004939024	AR2154_500	04-JAN-2018 01:03	S34683
L6	003_025	238004939025	AR2154_1000	04-JAN-2018 01:32	S34684

Analyte	Ch	L1	L2	L3	L4	L5	L6	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	MxRSD	Flg
Aroclor-1221 Peak # 1	A	148.60	187.38	197.10	186.64	186.72	163.34	AVRG		0.00561		178.30	10	.99	20	
Aroclor-1221 Peak # 2	A	110.70	114.50	124.19	116.22	112.49	102.36	AVRG		0.00882		113.41	6	.99	20	
Aroclor-1221 Peak # 3	A	441.30	479.32	501.04	440.72	414.26	376.71	AVRG		0.00226		442.23	10	.99	20	
Aroclor-1221 Peak # 4	A	68.300	66.840	87.020	69.432	69.590	64.551	AVRG		0.01409		70.956	11	.99	20	
Aroclor-1221 Peak # 5	A	46.800	85.600	78.950	73.932	74.358	74.336	AVRG		0.01383		72.329	18	.99	20	
Aroclor-1254 Peak # 1	A	604.50	591.98	610.40	540.07	510.67	467.23	AVRG		0.00180		554.14	10	.99	20	
Aroclor-1254 Peak # 2	A	865.60	834.00	858.26	764.65	708.92	655.82	AVRG		0.00128		781.21	11	.99	20	
Aroclor-1254 Peak # 3	A	587.00	566.62	638.33	550.20	557.74	508.17	AVRG		0.00176		568.01	8	.99	20	
Aroclor-1254 Peak # 4	A	965.70	944.10	1007.1	910.02	882.21	831.38	AVRG		0.00108		923.42	7	.99	20	
Aroclor-1254 Peak # 5	A	851.70	778.62	883.34	807.49	814.13	765.64	AVRG		0.00122		816.82	5	.99	20	
Aroclor-1221 Peak # 1	B	78.600	115.22	130.93	123.45	136.47	132.53	AVRG		0.00837		119.53	18	.99	20	
Aroclor-1221 Peak # 2	B	61.300	77.440	92.620	85.936	91.238	87.451	AVRG		0.01210		82.664	14	.99	20	
Aroclor-1221 Peak # 3	B	242.90	382.92	441.49	399.34	418.63	390.31	AVRG		0.00264		379.27	18	.99	20	
Aroclor-1221 Peak # 4	B	29.200	62.980	71.910	65.900	71.772	73.382	LINR	10.2904	0.01355		62.524	0.999	.99	20	
Aroclor-1221 Peak # 5	B	45.700	38.700	52.120	47.808	52.778	55.144	AVRG		0.02053		48.708	12	.99	20	
Aroclor-1254 Peak # 1	B	548.00	568.96	610.67	554.41	553.65	548.68	AVRG		0.00177		564.06	4	.99	20	
Aroclor-1254 Peak # 2	B	612.40	633.66	676.40	613.58	616.95	613.93	AVRG		0.00159		627.82	4	.99	20	
Aroclor-1254 Peak # 3	B	345.60	352.74	394.54	358.93	378.33	390.54	AVRG		0.00270		370.11	6	.99	20	
Aroclor-1254 Peak # 4	B	598.50	831.62	891.67	818.42	843.95	867.41	AVRG		0.00124		808.60	13	.99	20	
Aroclor-1254 Peak # 5	B	424.00	517.48	594.24	543.42	571.31	586.25	AVRG		0.00185		539.45	12	.99	20	

Spiked Amounts / Drifts	Ch	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D	L6	%D
Aroclor-1221 Peak # 1	A	10.000	-17	50.000	5	100.00	11	250.00	5	500.00	5	1000.0	-8
Aroclor-1221 Peak # 2	A	10.000	-2	50.000	1	100.00	10	250.00	2	500.00	-1	1000.0	-10
Aroclor-1221 Peak # 3	A	10.000	0	50.000	8	100.00	13	250.00	0	500.00	-6	1000.0	-15
Aroclor-1221 Peak # 4	A	10.000	-4	50.000	-6	100.00	**23**	250.00	-2	500.00	-2	1000.0	-9
Aroclor-1221 Peak # 5	A	10.000	**-35**	50.000	18	100.00	9	250.00	2	500.00	3	1000.0	3
Aroclor-1254 Peak # 1	A	10.000	9	50.000	7	100.00	10	250.00	-3	500.00	-8	1000.0	-16
Aroclor-1254 Peak # 2	A	10.000	11	50.000	7	100.00	10	250.00	-2	500.00	-9	1000.0	-16
Aroclor-1254 Peak # 3	A	10.000	3	50.000	0	100.00	12	250.00	-3	500.00	-2	1000.0	-11
Aroclor-1254 Peak # 4	A	10.000	5	50.000	2	100.00	9	250.00	-1	500.00	-4	1000.0	-10
Aroclor-1254 Peak # 5	A	10.000	4	50.000	-5	100.00	8	250.00	-1	500.00	0	1000.0	-6
Aroclor-1221 Peak # 1	B	10.000	**-34**	50.000	-4	100.00	10	250.00	3	500.00	14	1000.0	11
Aroclor-1221 Peak # 2	B	10.000	**-26**	50.000	-6	100.00	12	250.00	4	500.00	10	1000.0	6
Aroclor-1221 Peak # 3	B	10.000	**-36**	50.000	1	100.00	16	250.00	5	500.00	10	1000.0	3
Aroclor-1221 Peak # 4	B	10.000	**42**	50.000	6	100.00	8	250.00	-7	500.00	-1	1000.0	0
Aroclor-1221 Peak # 5	B	10.000	-6	50.000	**-21**	100.00	7	250.00	-2	500.00	8	1000.0	13
Aroclor-1254 Peak # 1	B	10.000	-3	50.000	1	100.00	8	250.00	-2	500.00	-2	1000.0	-3
Aroclor-1254 Peak # 2	B	10.000	-2	50.000	1	100.00	8	250.00	-2	500.00	-2	1000.0	-2
Aroclor-1254 Peak # 3	B	10.000	-7	50.000	-5	100.00	7	250.00	-3	500.00	2	1000.0	6
Aroclor-1254 Peak # 4	B	10.000	**-26**	50.000	3	100.00	10	250.00	1	500.00	4	1000.0	7
Aroclor-1254 Peak # 5	B	10.000	**-21**	50.000	-4	100.00	10	250.00	1	500.00	6	1000.0	9

JC1 01/04/18 : Corrected automatically drawn baseline in all levels.

Analyst: JC1 Date: 01/04/18 Reviewer: EAH Date: 01/04/18

Instrument amount = a0 + response * a1 + response^2 * a2; AVRG=Average response factor; LINR=Linear regression

ENTHALPY 2ND SOURCE CALIBRATION SUMMARY FOR 296840 PCBS Soil
EPA 8082A

Inst : GC16 Name : ar-2154-004ical
Calnum : 238004939001 Cal Date : 03-JAN-2018

ICV 238004939027 (003_027 04-JAN-2018) stds: S34679
ICV 238004939031 (003_031 04-JAN-2018) stds: S34678

Analyte	Ch	ICV Seqnum	Spiked	Quant	Units	%D	Max	Flags
Aroclor-1221	A	238004939031	250.0	213.2	pg/ul	-15	20	
Aroclor-1254	A	238004939027	250.0	248.8	pg/ul	0	20	
Aroclor-1221	B	238004939031	250.0	213.4	pg/ul	-15	20	
Aroclor-1254	B	238004939027	250.0	246.3	pg/ul	-1	20	

238004939027: Analyst: JC1 Date: 01/04/18 Reviewer: EAH Date: 01/04/18
238004939031: Analyst: JC1 Date: 01/04/18 Reviewer: EAH Date: 01/04/18

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq** Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-020** Sample Name: **ical,s34680,ar2154_10** Instrument: GC16 (Offline) Vial: 40 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-004.met	Software Version 3.1.7 Run Date: 1/3/2018 11:07:51 PM Analysis Date: 1/4/2018 11:50:33 AM Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
PCB1221#1	4.993	4.993	1486	10.000 CAL
PCB1221#2	5.333	5.333	1107	10.000 CAL
PCB1221#3	5.430	5.430	4413	10.000 CAL
PCB1221#4	6.270	6.273	683	10.000 CAL
PCB1221#5	7.373	7.373	468	10.000 CAL
PCB1254#1	9.583	9.573	6045	10.000 CAL
PCB1254#2	10.210	10.203	8656	10.000 CAL
PCB1254#3	10.853	10.847	5870	10.000 CAL
PCB1254#4	11.143	11.147	9657	10.000 CAL
PCB1254#5	11.807	11.800	8517	10.000 CAL

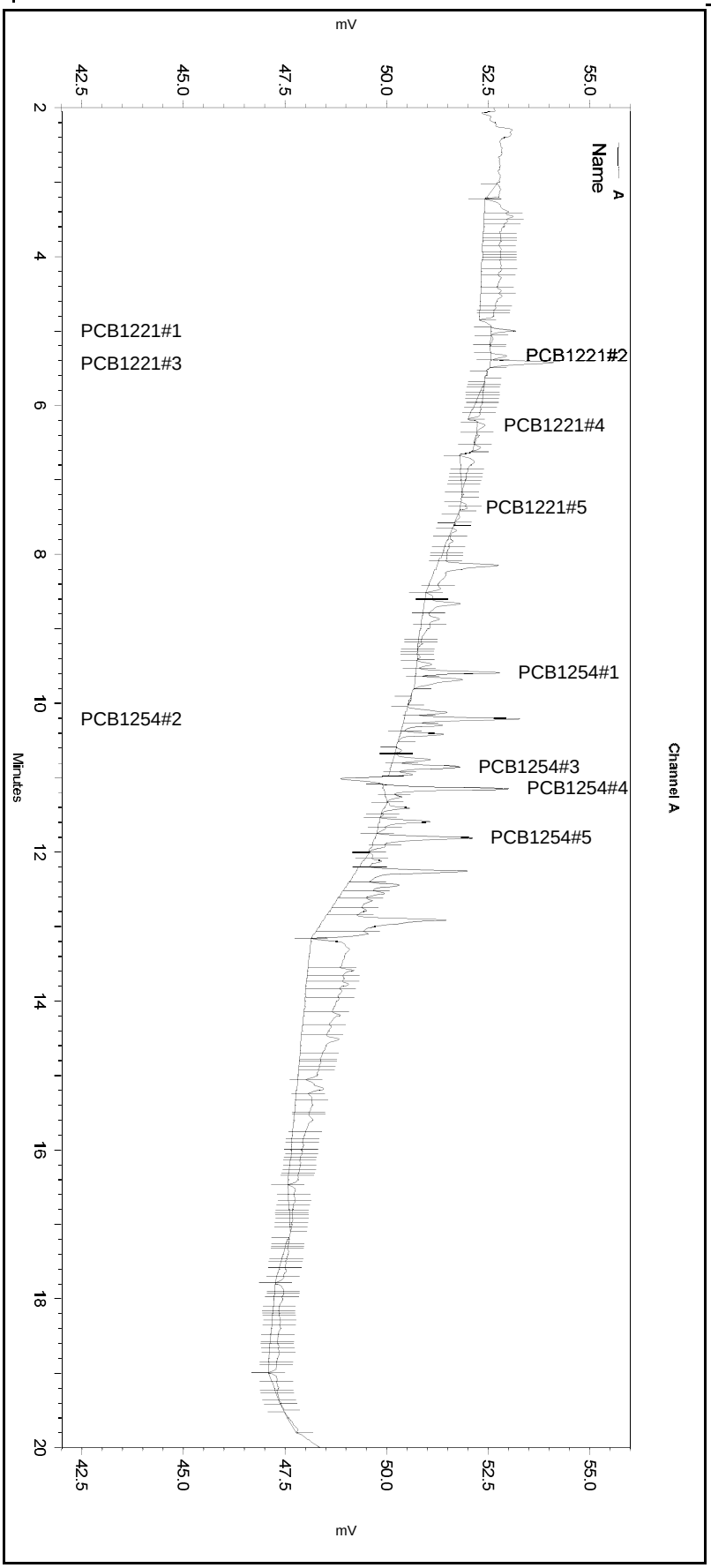
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
PCB1221#1	4.317	4.310	786	10.000 CAL
PCB1221#2	4.510	4.507	613	10.000 CAL
PCB1221#3	4.623	4.623	2429	10.000 CAL
PCB1221#4	5.517	5.510	292	10.000 CAL
PCB1221#5	6.450	6.460	457	10.000 CAL
PCB1254#1	8.717	8.710	5480	10.000 CAL
PCB1254#2	9.260	9.253	6124	10.000 CAL
PCB1254#3	9.877	9.873	3456	10.000 CAL
PCB1254#4	10.113	10.110	5985	10.000 CAL
PCB1254#5	10.723	10.717	4240	10.000 CAL

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-020**
Sample Name: **ical,s34680,ar2154_10**
Instrument: GC16 (Offline) Vial: 40 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-004.met

Software Version 3.1.7
Run Date: 1/3/2018 11:07:51 PM
Analysis Date: 1/4/2018 11:50:33 AM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

---< A >----------

No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	3	0
Yes	Shoulder Sensitivity	4.5	20	1000

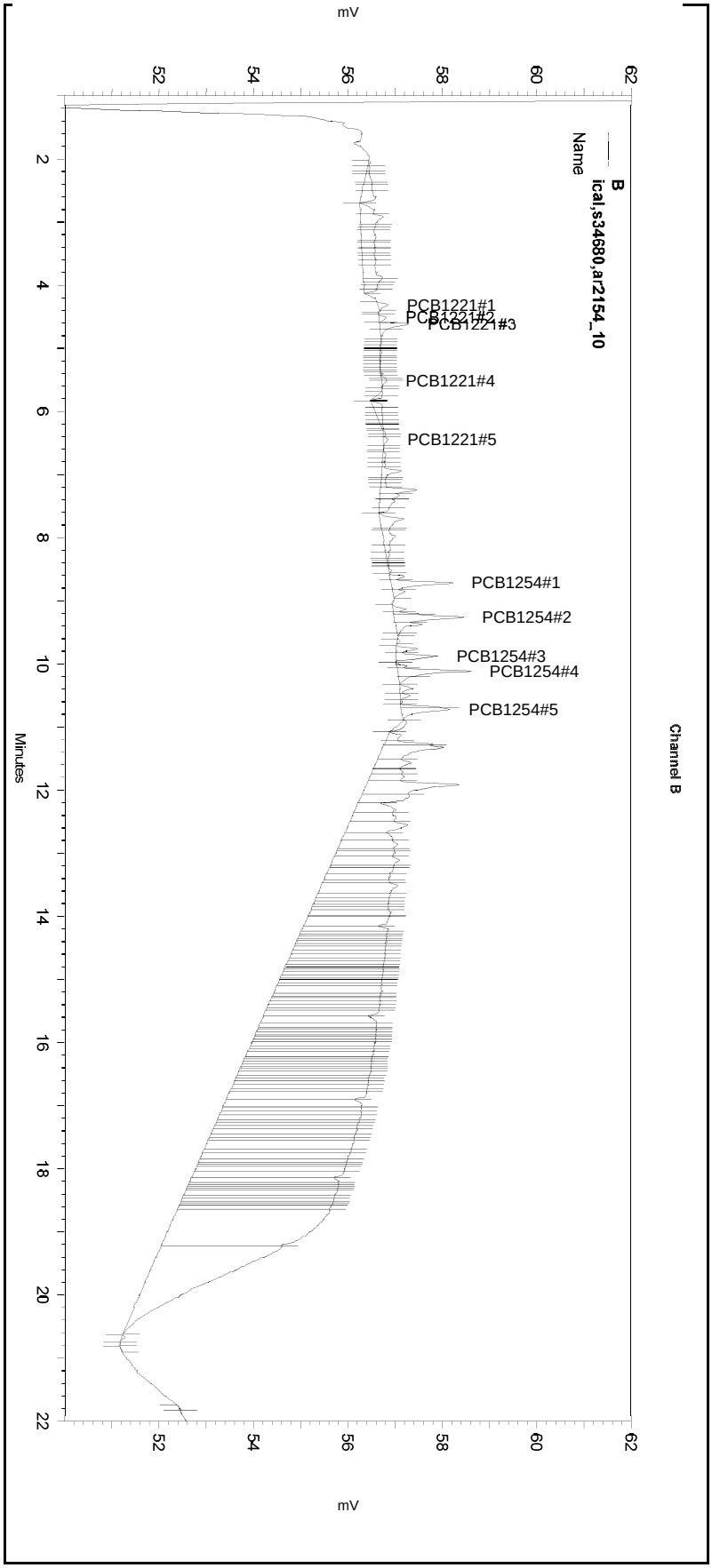
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-020

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	4.939	0	0
Yes	Reset Baseline	5.054	0	0
Yes	Reset Baseline	5.288	0	0
Yes	Reset Baseline	5.492	0	0
Yes	Reset Baseline	5.646	0	0
Yes	Reset Baseline	6.193	0	0
Yes	Reset Baseline	6.225	0	0
Yes	Reset Baseline	6.346	0	0
Yes	Reset Baseline	6.626	0	0
Yes	Reset Baseline	7.233	0	0
Yes	Reset Baseline	7.419	0	0
Yes	Reset Baseline	7.445	0	0
Yes	Reset Baseline	7.607	0	0
Yes	Reset Baseline	9.417	0	0
Yes	Reset Baseline	9.807	0	0
Yes	Reset Baseline	9.898	0	0
Yes	Reset Baseline	10.368	0	0
Yes	Reset Baseline	10.516	0	0
Yes	Reset Baseline	10.98	0	0
Yes	Reset Baseline	10.986	0	0
Yes	Reset Baseline	11.074	0	0
Yes	Reset Baseline	11.325	0	0
Yes	Reset Baseline	11.326	0	0
Yes	Reset Baseline	11.53	0	0
Yes	Reset Baseline	11.75	0	0
Yes	Reset Baseline	11.992	0	0

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-020**
Sample Name: **ical,s34680,ar2154_10**
Instrument: GC16 (Offline) Vial: 40 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-004.met

Software Version 3.1.7
Run Date: 1/3/2018 11:07:51 PM
Analysis Date: 1/4/2018 11:50:33 AM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

---< B >----------

No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2	0
Yes	Shoulder Sensitivity	4.5	20	50

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-020

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	4.258	0	0
Yes	Reset Baseline	4.398	0	0
Yes	Split Peak	4.704	0	0
Yes	Reset Baseline	4.854	0	0
Yes	Split Peak	5.477	0	0
Yes	Split Peak	5.502	0	0
Yes	Reset Baseline	5.596	0	0
Yes	Reset Baseline	5.674	0	0
Yes	Reset Baseline	6.29	0	0
Yes	Reset Baseline	6.604	0	0
Yes	Reset Baseline	8.558	0	0
Yes	Reset Baseline	8.959	0	0
Yes	Reset Baseline	9.022	0	0
Yes	Split Peak	9.217	0	0
Yes	Reset Baseline	9.562	0	0
Yes	Split Peak	10.192	0	0
Yes	Reset Baseline	10.314	0	0
Yes	Reset Baseline	10.886	0	0
Yes	Reset Baseline	10.891	0	0

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq** Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-020** Sample Name: **ical,s34680,ar2154_10** Instrument: GC16 (Offline) Vial: 40 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-004.met	Software Version 3.1.7 Run Date: 1/3/2018 11:07:51 PM Analysis Date: 1/4/2018 11:32:27 AM Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
PCB1221#1	4.993	4.993	12684	10.000 CAL
PCB1221#2	5.333	5.333	12451	10.000 CAL
PCB1221#3	5.430	5.430	14789	10.000 CAL
PCB1221#4	6.270	6.273	12897	10.000 CAL
PCB1221#5	7.373	7.373	8928	10.000 CAL
PCB1254#1	9.583	9.573	14528	10.000 CAL
PCB1254#2	10.210	10.203	15900	10.000 CAL
PCB1254#3	10.853	10.847	14072	10.000 CAL
PCB1254#4	11.143	11.147	21499	10.000 CAL
PCB1254#5	11.807	11.800	18802	10.000 CAL

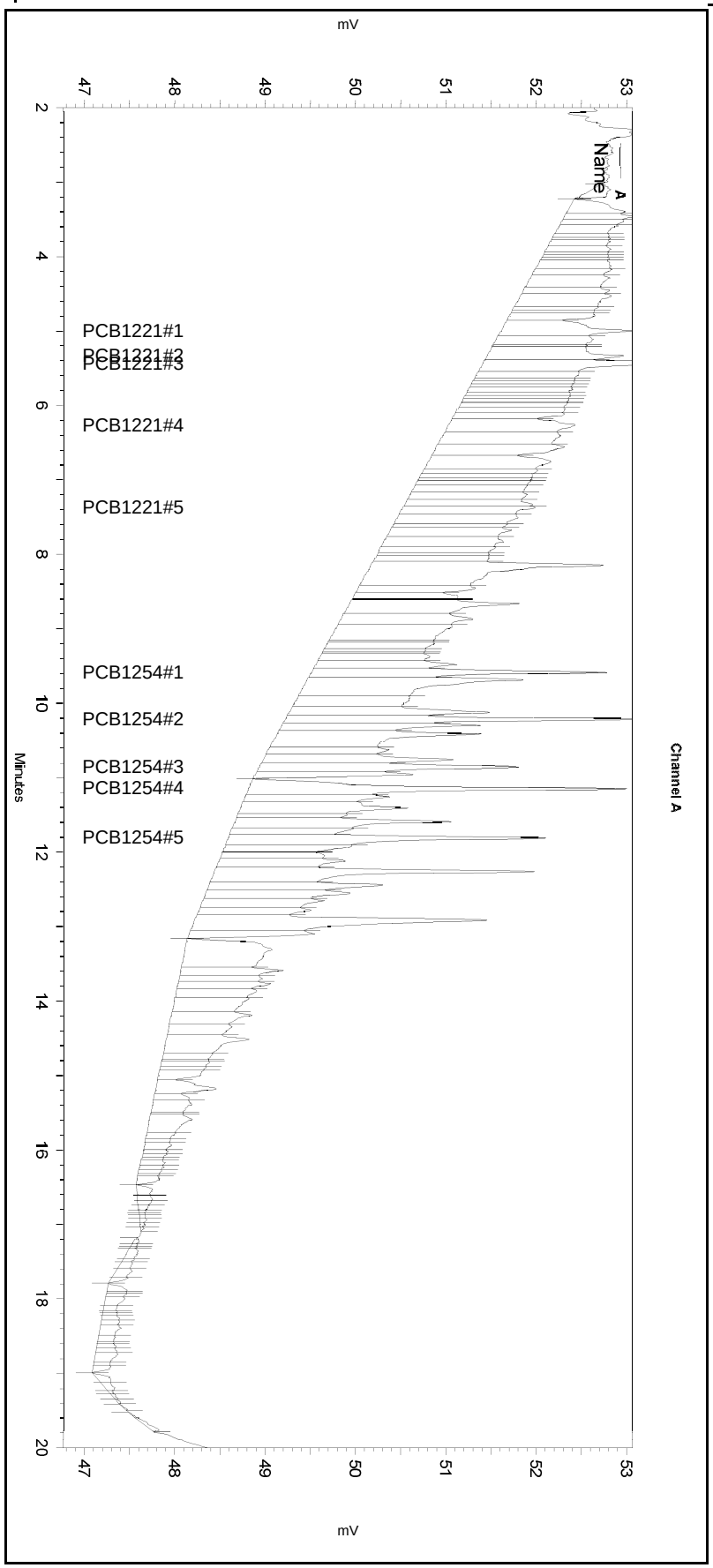
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
PCB1221#1	4.317	4.310	13125	10.000 CAL
PCB1221#2	4.510	4.507	7505	10.000 CAL
PCB1221#3	4.623	4.623	19042	10.000 CAL
PCB1221#4	5.517	5.510	13898	10.000 CAL
PCB1221#5	6.450	6.460	12943	10.000 CAL
PCB1254#1	8.717	8.710	28803	10.000 CAL
PCB1254#2	9.260	9.253	34683	10.000 CAL
PCB1254#3	9.877	9.873	30342	10.000 CAL
PCB1254#4	10.113	10.110	51629	10.000 CAL
PCB1254#5	10.723	10.717	40609	10.000 CAL

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-020**
Sample Name: **ical,s34680,ar2154_10**
Instrument: GC16 (Offline) Vial: 40 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-004.met

Software Version 3.1.7
Run Date: 1/3/2018 11:07:51 PM
Analysis Date: 1/4/2018 11:32:27 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	3	0
Yes	Shoulder Sensitivity	4.5	20	1000

Manual Integration Fixes
==========

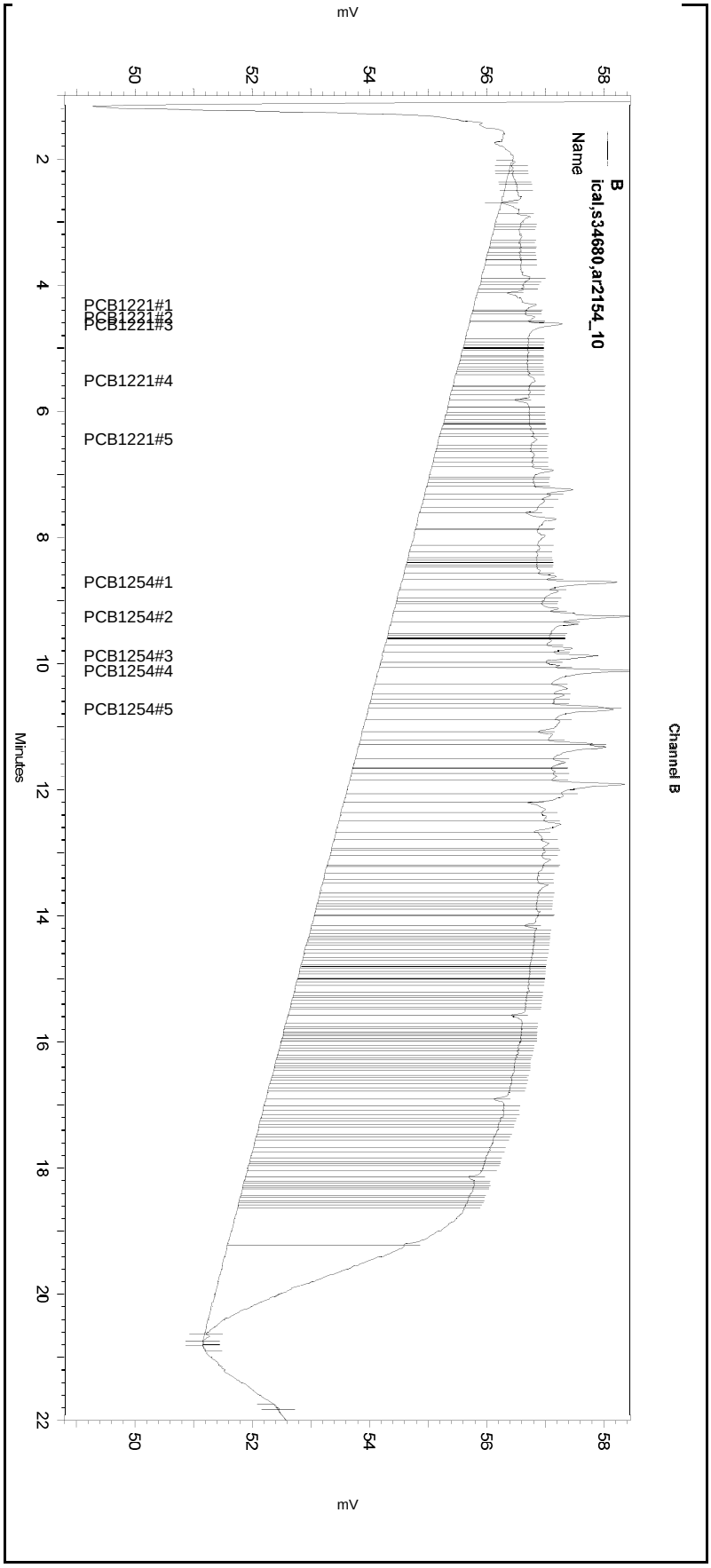
Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-020

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-020**
Sample Name: **ical,s34680,ar2154_10**
Instrument: GC16 (Offline) Vial: 40 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-004.met

Software Version 3.1.7
Run Date: 1/3/2018 11:07:51 PM
Analysis Date: 1/4/2018 11:32:27 AM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2	0
Yes	Shoulder Sensitivity	4.5	20	50

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-020

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-020**
Sample Name: **ical,s34680,ar2154_10**
Instrument: GC16 Vial: 40 Operator: lims2k3\pest3
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-003.met

Software Version 3.1.7
Run Date: 1/3/2018 11:07:51 PM
Analysis Date: 1/3/2018 11:31:48 PM
Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	4.533	4.557	1847	0.155
PCB1016#1	6.270	6.267	1422	2.467
PCB1016#2	7.373	7.370	1972	2.581
PCB1016#3	7.680	7.680	1009	2.259
PCB1016#4	8.147	8.143	4521	16.980
PCB1016#5	8.667	8.663	4318	11.272
PCB1260#1	12.257	12.250	18542	14.505
PCB1260#2	12.913	12.903	15363	14.532
PCB1260#3	13.767	13.763	4561	6.544
PCB1260#4	14.513	14.513	5221	3.231
PCB1260#5	15.177	15.163	1721	2.448
Decachlorobiphenyl		17.763		0.000 BDL

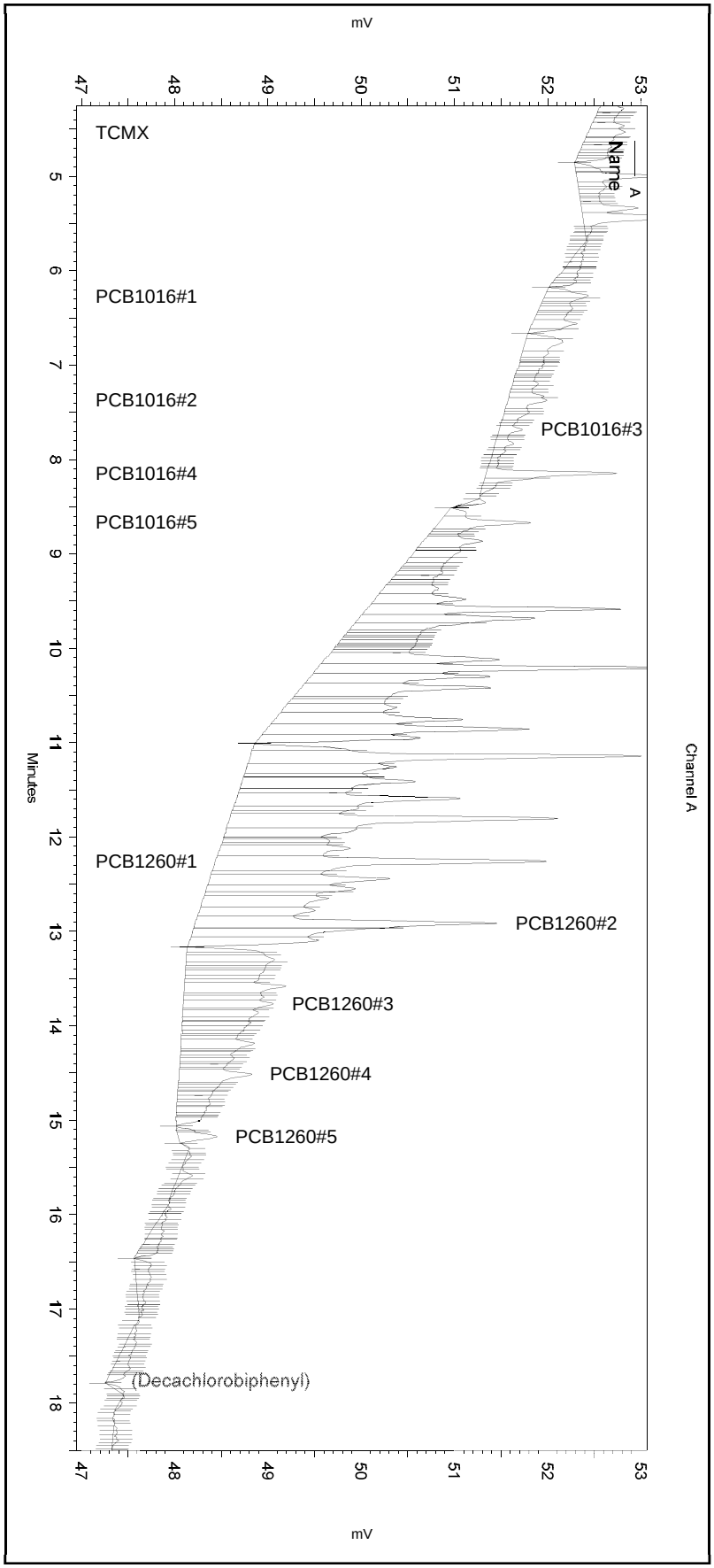
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	3.867	3.863	1450	0.121
PCB1016#1		5.463		0.000 BDL
PCB1016#2	6.450	6.437	432	0.720
PCB1016#3		6.660		0.000 BDL
PCB1016#4	7.243	7.223	2699	13.273
PCB1016#5	7.977	7.963	777	2.317
PCB1260#1	11.273	11.253	3026	5.885
PCB1260#2	11.913	11.897	11711	20.298
PCB1260#3	12.857	12.843	1801	3.389
PCB1260#4	13.510	13.497	953	1.182
PCB1260#5	14.373	14.377	23	0.076
Decachlorobiphenyl		17.160		0.000 BDL

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-020**
Sample Name: **ical,s34680,ar2154_10**
Instrument: GC16 Vial: 40 Operator: lims2k3\pest3
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-003.met

Software Version 3.1.7
Run Date: 1/3/2018 11:07:51 PM
Analysis Date: 1/3/2018 11:31:48 PM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	0	0	0

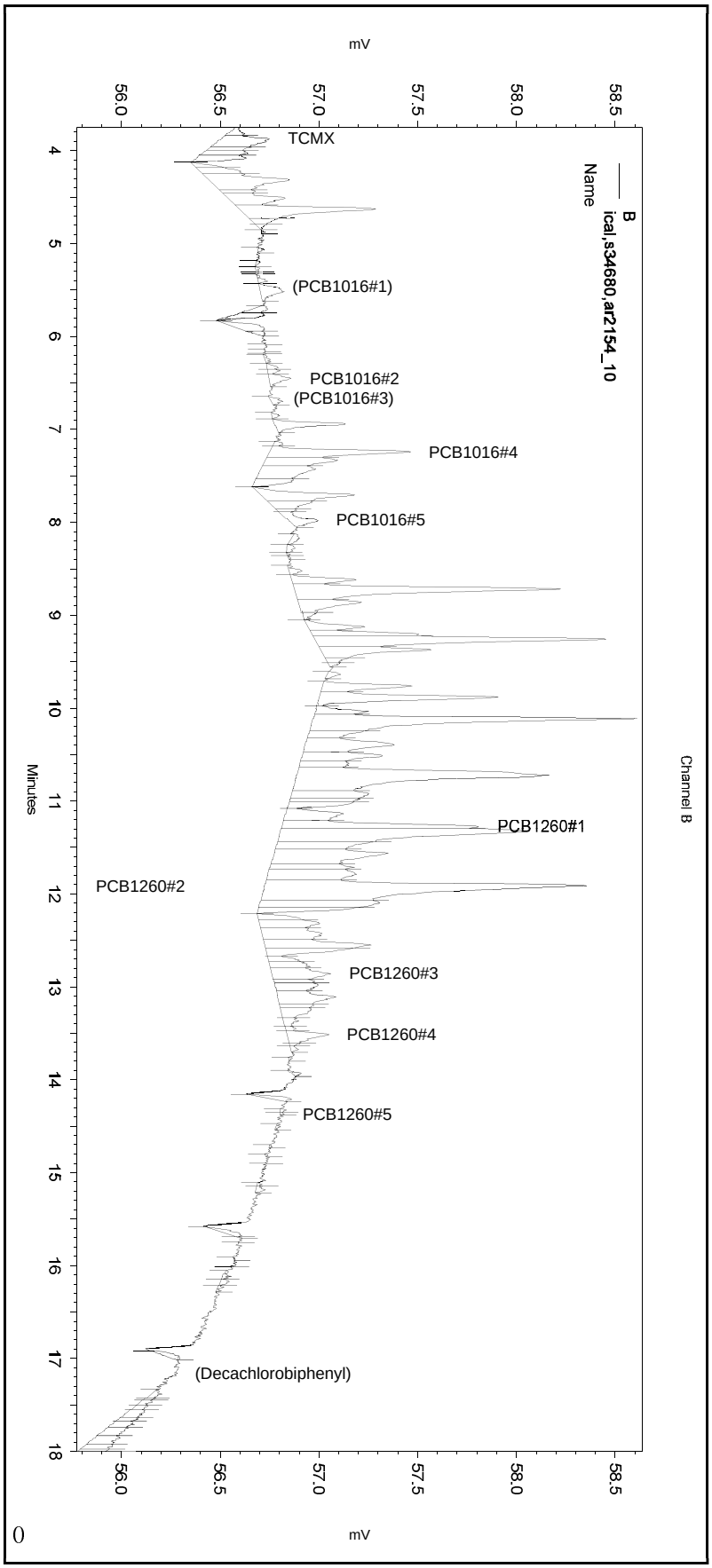
Manual Integration Fixes
==========

Data File: C:\Documents and Settings\All Users\Application Data\ChromatographySystem\Recovery Data\Instrument.10110\003-020_3030.tmp

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-020**
Sample Name: **ical,s34680,ar2154_10**
Instrument: GC16 Vial: 40 Operator: lims2k3\pest3
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-003.met

Software Version 3.1.7
Run Date: 1/3/2018 11:07:51 PM
Analysis Date: 1/3/2018 11:31:48 PM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	1.8	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========

Data File: C:\Documents and Settings\All Users\Application Data\ChromatographySystem\Recovery Data\Instrument.10110\003-020_3030.tmp

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq** Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-021** Sample Name: **ical,s34681,ar2154_100,2x** Instrument: GC16 (Offline) Vial: 41 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-004.met	Software Version 3.1.7 Run Date: 1/3/2018 11:36:51 PM Analysis Date: 1/4/2018 11:44:52 AM Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
PCB1221#1	4.983	4.993	9369	50.000 CAL
PCB1221#2	5.323	5.333	5725	50.000 CAL
PCB1221#3	5.417	5.430	23966	50.000 CAL
PCB1221#4	6.260	6.273	3342	50.000 CAL
PCB1221#5	7.360	7.373	4280	50.000 CAL
PCB1254#1	9.570	9.573	29599	50.000 CAL
PCB1254#2	10.200	10.203	41700	50.000 CAL
PCB1254#3	10.840	10.847	28331	50.000 CAL
PCB1254#4	11.130	11.147	47205	50.000 CAL
PCB1254#5	11.793	11.800	38931	50.000 CAL

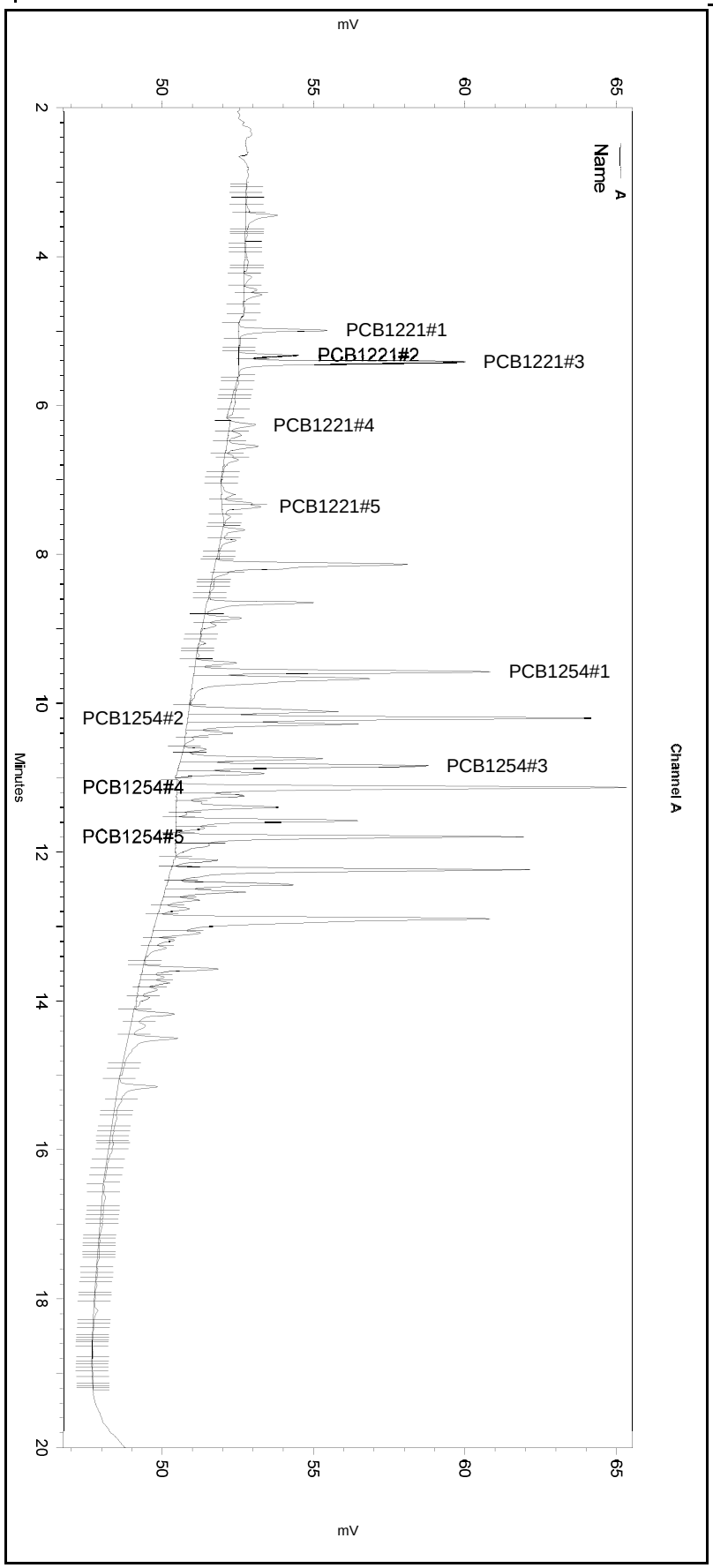
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
PCB1221#1	4.300	4.310	5761	50.000 CAL
PCB1221#2	4.497	4.507	3872	50.000 CAL
PCB1221#3	4.613	4.623	19146	50.000 CAL
PCB1221#4	5.500	5.510	3149	50.000 CAL
PCB1221#5	6.447	6.460	1935	50.000 CAL
PCB1254#1	8.707	8.710	28448	50.000 CAL
PCB1254#2	9.247	9.253	31683	50.000 CAL
PCB1254#3	9.867	9.873	17637	50.000 CAL
PCB1254#4	10.100	10.110	41581	50.000 CAL
PCB1254#5	10.707	10.717	25874	50.000 CAL

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-021**
Sample Name: **ical,s34681,ar2154_100,2x**
Instrument: GC16 (Offline) Vial: 41 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-004.met

Software Version 3.1.7
Run Date: 1/3/2018 11:36:51 PM
Analysis Date: 1/4/2018 11:44:52 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	3	0
Yes	Shoulder Sensitivity	4.5	20	1000

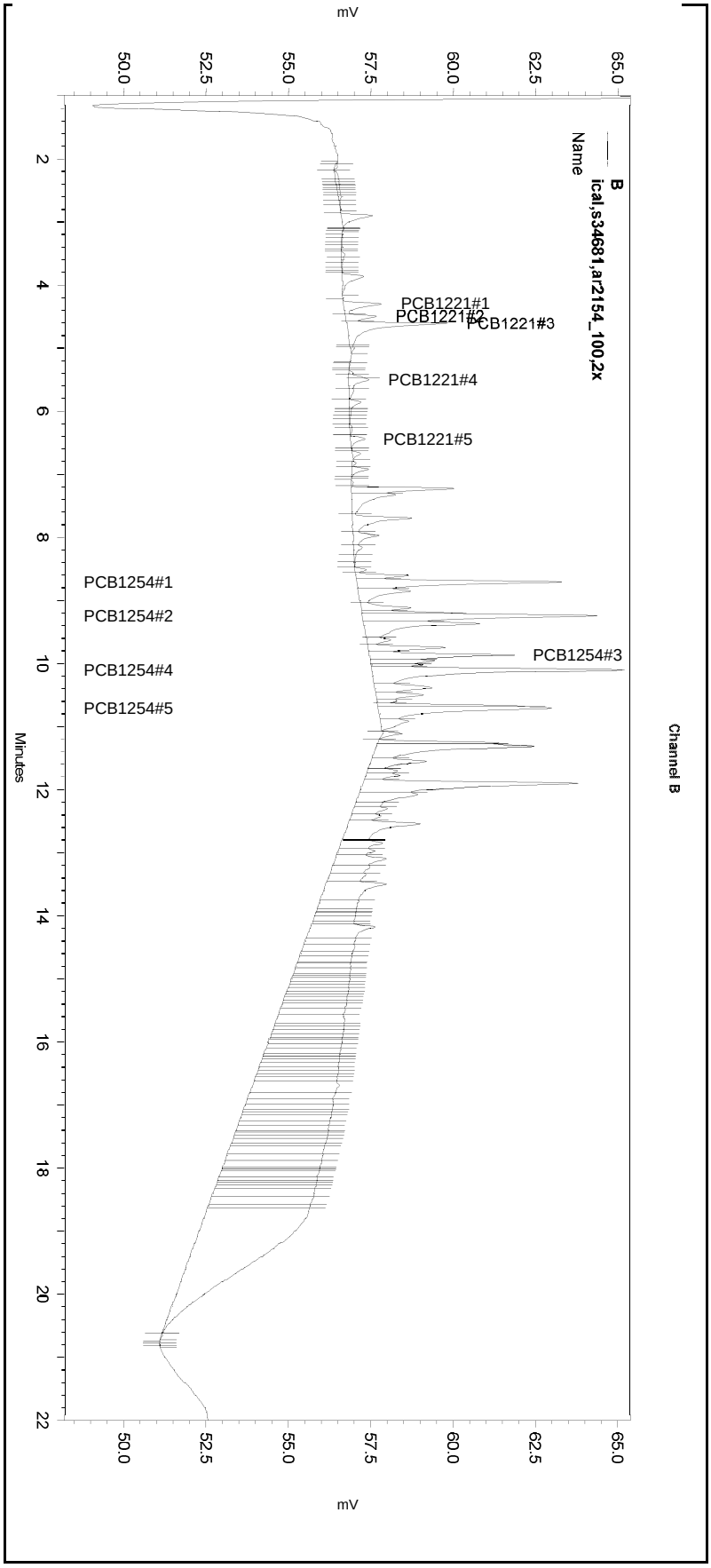
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-021

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	6.18	0	0
Yes	Reset Baseline	7.609	0	0
Yes	Reset Baseline	10.567	0	0
Yes	Reset Baseline	11.025	0	0
Yes	Reset Baseline	12.056	0	0

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-021**
Sample Name: **ical,s34681,ar2154_100,2x**
Instrument: GC16 (Offline) Vial: 41 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-004.met

Software Version 3.1.7
Run Date: 1/3/2018 11:36:51 PM
Analysis Date: 1/4/2018 11:44:52 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2	0
Yes	Shoulder Sensitivity	4.5	20	50

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-021

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	5.095	0	0
Yes	Split Peak	5.472	0	0
Yes	Reset Baseline	6.758	0	0
Yes	Reset Baseline	11.076	0	0

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq** Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-021** Sample Name: **ical,s34681,ar2154_100,2x** Instrument: GC16 (Offline) Vial: 41 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-004.met	Software Version 3.1.7 Run Date: 1/3/2018 11:36:51 PM Analysis Date: 1/4/2018 11:32:37 AM Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
PCB1221#1	4.983	4.993	9369	50.000 CAL
PCB1221#2	5.323	5.333	5725	50.000 CAL
PCB1221#3	5.417	5.430	23966	50.000 CAL
PCB1221#4	6.260	6.273	4672	50.000 CAL
PCB1221#5	7.360	7.373	6821	50.000 CAL
PCB1254#1	9.570	9.573	31551	50.000 CAL
PCB1254#2	10.200	10.203	43657	50.000 CAL
PCB1254#3	10.840	10.847	30287	50.000 CAL
PCB1254#4	11.130	11.147	51055	50.000 CAL
PCB1254#5	11.793	11.800	43932	50.000 CAL

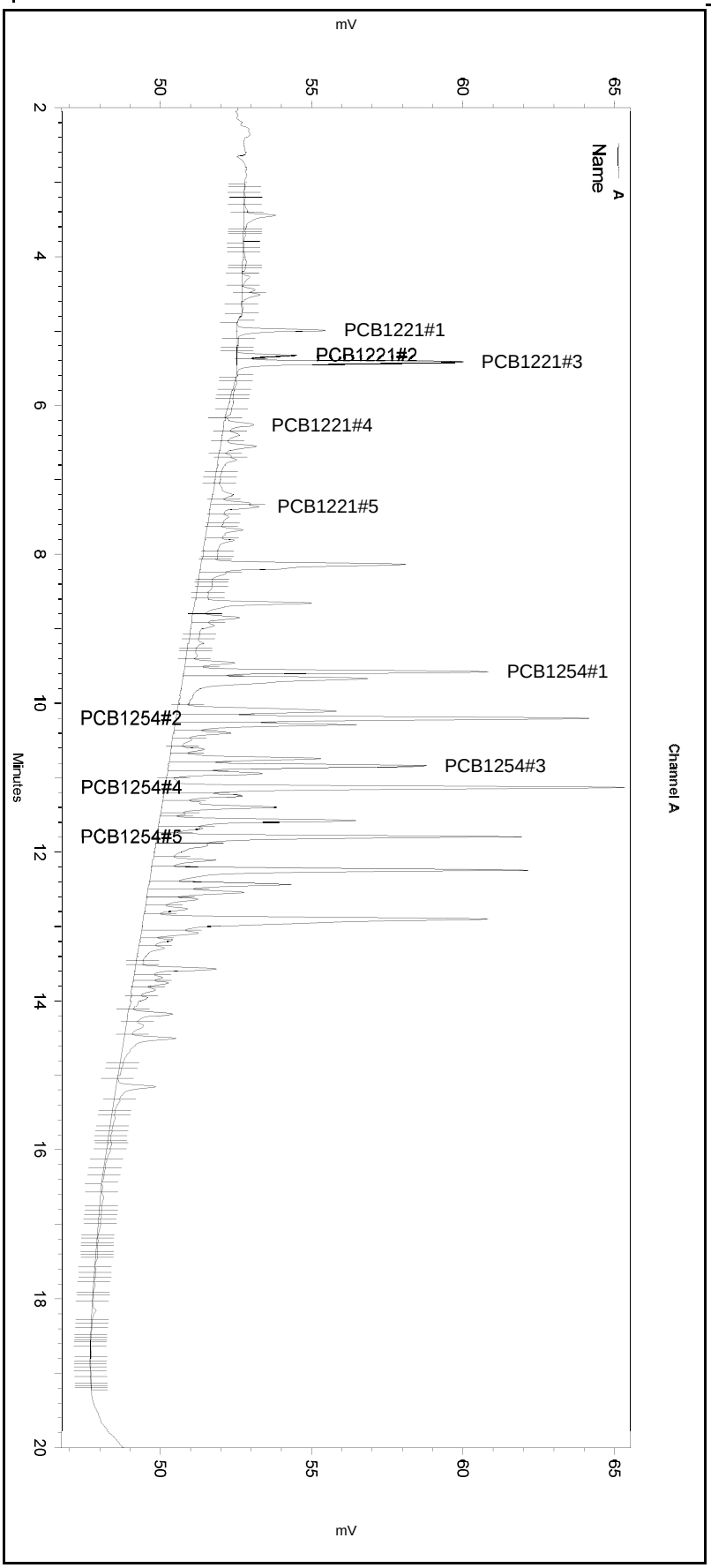
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
PCB1221#1	4.300	4.310	13018	50.000 CAL
PCB1221#2	4.497	4.507	7329	50.000 CAL
PCB1221#3	4.613	4.623	34745	50.000 CAL
PCB1221#4	5.500	5.510	16537	50.000 CAL
PCB1221#5	6.447	6.460	17676	50.000 CAL
PCB1254#1	8.707	8.710	49618	50.000 CAL
PCB1254#2	9.247	9.253	50550	50.000 CAL
PCB1254#3	9.867	9.873	38218	50.000 CAL
PCB1254#4	10.100	10.110	91187	50.000 CAL
PCB1254#5	10.707	10.717	64634	50.000 CAL

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-021**
Sample Name: **ical,s34681,ar2154_100,2x**
Instrument: GC16 (Offline) Vial: 41 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-004.met

Software Version 3.1.7
Run Date: 1/3/2018 11:36:51 PM
Analysis Date: 1/4/2018 11:32:37 AM
Sample Amount: 1



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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	3	0
Yes	Shoulder Sensitivity	4.5	20	1000

Manual Integration Fixes
==========

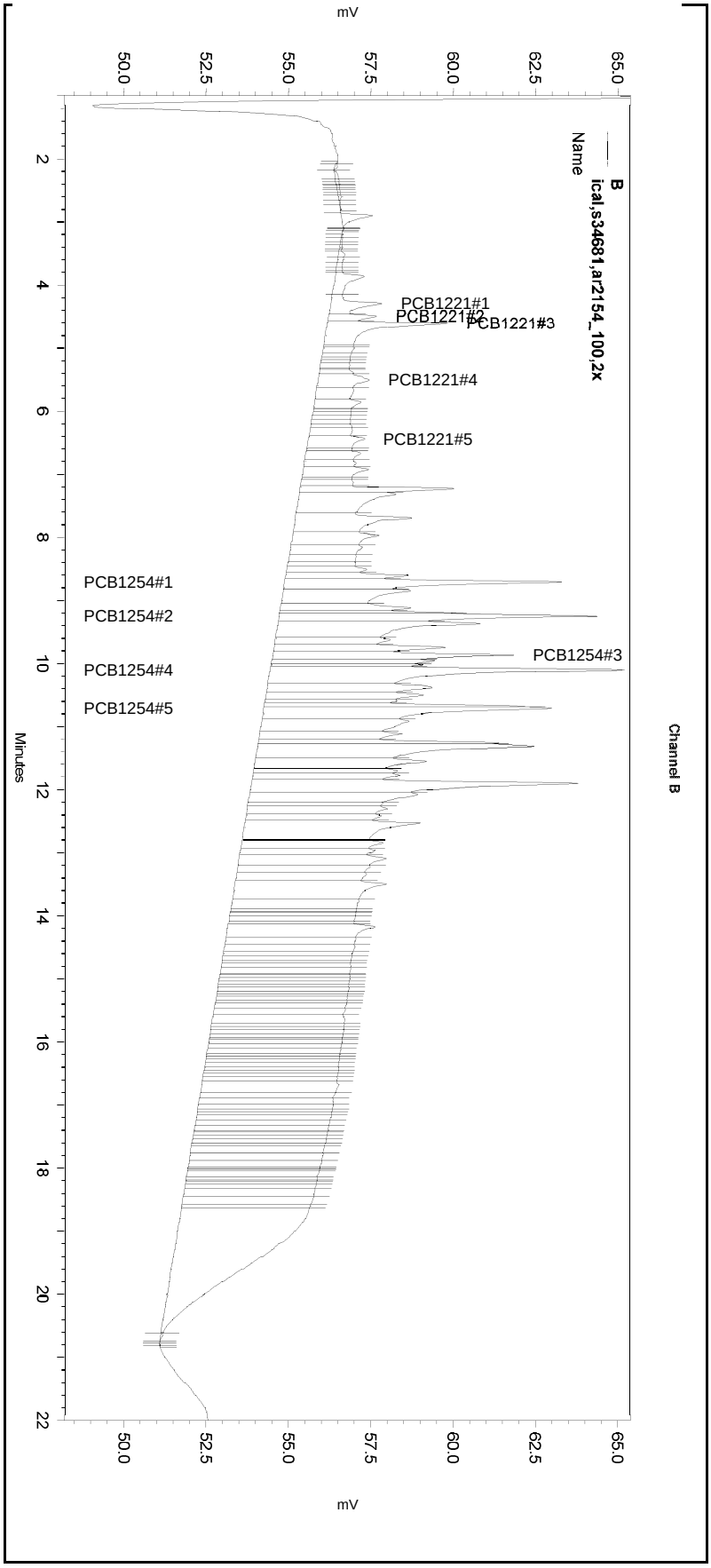
Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-021

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-021**
Sample Name: **ical,s34681,ar2154_100,2x**
Instrument: GC16 (Offline) Vial: 41 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-004.met

Software Version 3.1.7
Run Date: 1/3/2018 11:36:51 PM
Analysis Date: 1/4/2018 11:32:37 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2	0
Yes	Shoulder Sensitivity	4.5	20	50

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-021

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-021**
Sample Name: **ical,s34681,ar2154_100,2x**
Instrument: GC16 Vial: 41 Operator: lims2k3\pest3
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-003.met

Software Version 3.1.7
Run Date: 1/3/2018 11:36:51 PM
Analysis Date: 1/4/2018 12:00:49 AM
Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	4.587	4.557	308	0.026
PCB1016#1	6.260	6.267	4361	7.566
PCB1016#2	7.360	7.370	4727	6.186
PCB1016#3	7.670	7.680	2689	6.021
PCB1016#4	8.133	8.143	19807	74.391
PCB1016#5	8.653	8.663	10932	28.538
PCB1260#1	12.243	12.250	43420	33.966
PCB1260#2	12.897	12.903	41512	39.266
PCB1260#3	13.757	13.763	4495	6.450
PCB1260#4	14.500	14.513	7318	4.529
PCB1260#5	15.157	15.163	5166	7.348
Decachlorobiphenyl	17.747	17.763	6	0.000

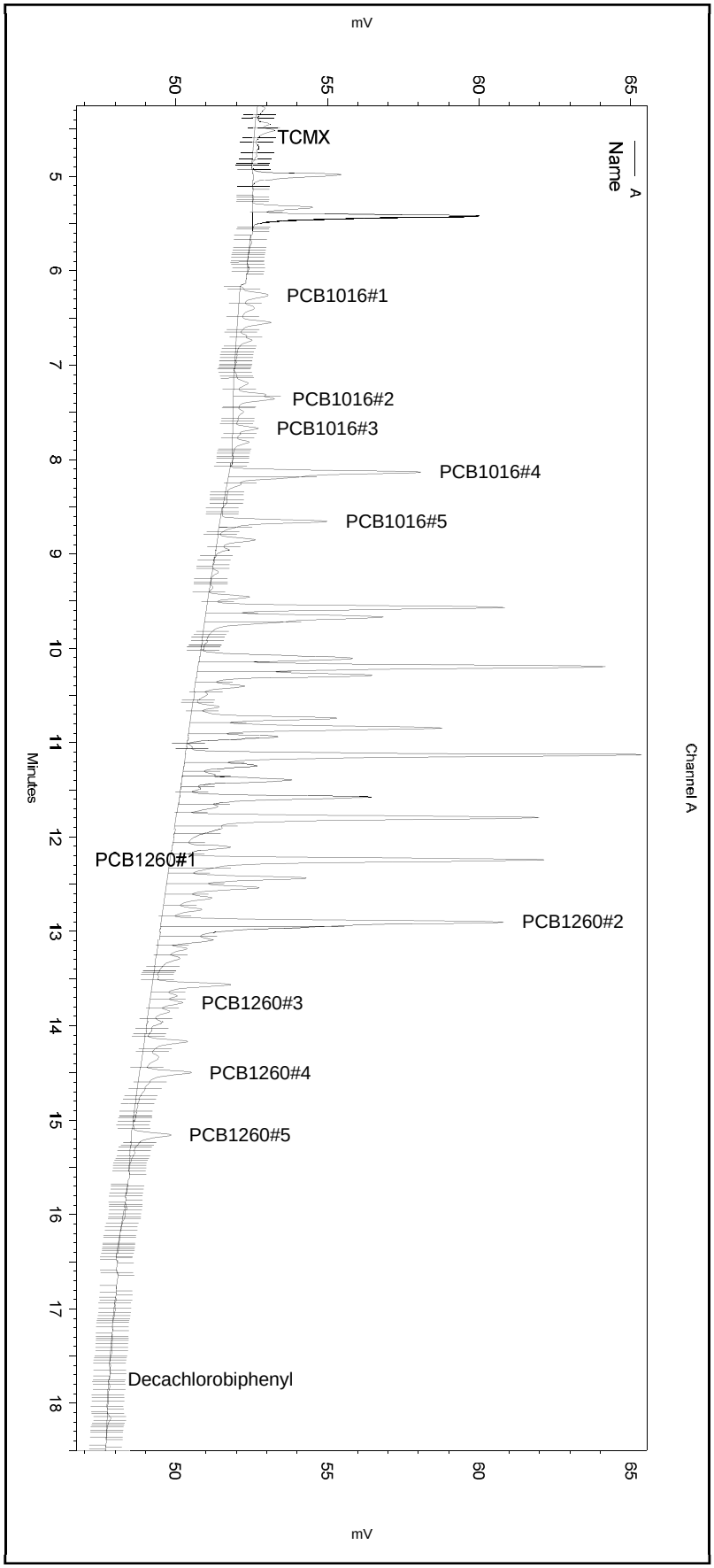
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	3.863	3.863	3684	0.307
PCB1016#1	5.473	5.463	935	4.873
PCB1016#2	6.447	6.437	2212	3.687
PCB1016#3	6.670	6.660	1322	3.792
PCB1016#4	7.230	7.223	11975	58.892
PCB1016#5	7.973	7.963	3545	10.571
PCB1260#1	11.257	11.253	8705	16.929
PCB1260#2	11.900	11.897	33167	57.488
PCB1260#3	12.843	12.843	1631	3.070
PCB1260#4	13.497	13.497	3888	4.823
PCB1260#5	14.360	14.377	408	1.343
Decachlorobiphenyl		17.160		0.000 BDL

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-021**
Sample Name: **ical,s34681,ar2154_100,2x**
Instrument: GC16 Vial: 41 Operator: lims2k3\pest3
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-003.met

Software Version 3.1.7
Run Date: 1/3/2018 11:36:51 PM
Analysis Date: 1/4/2018 12:00:49 AM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========

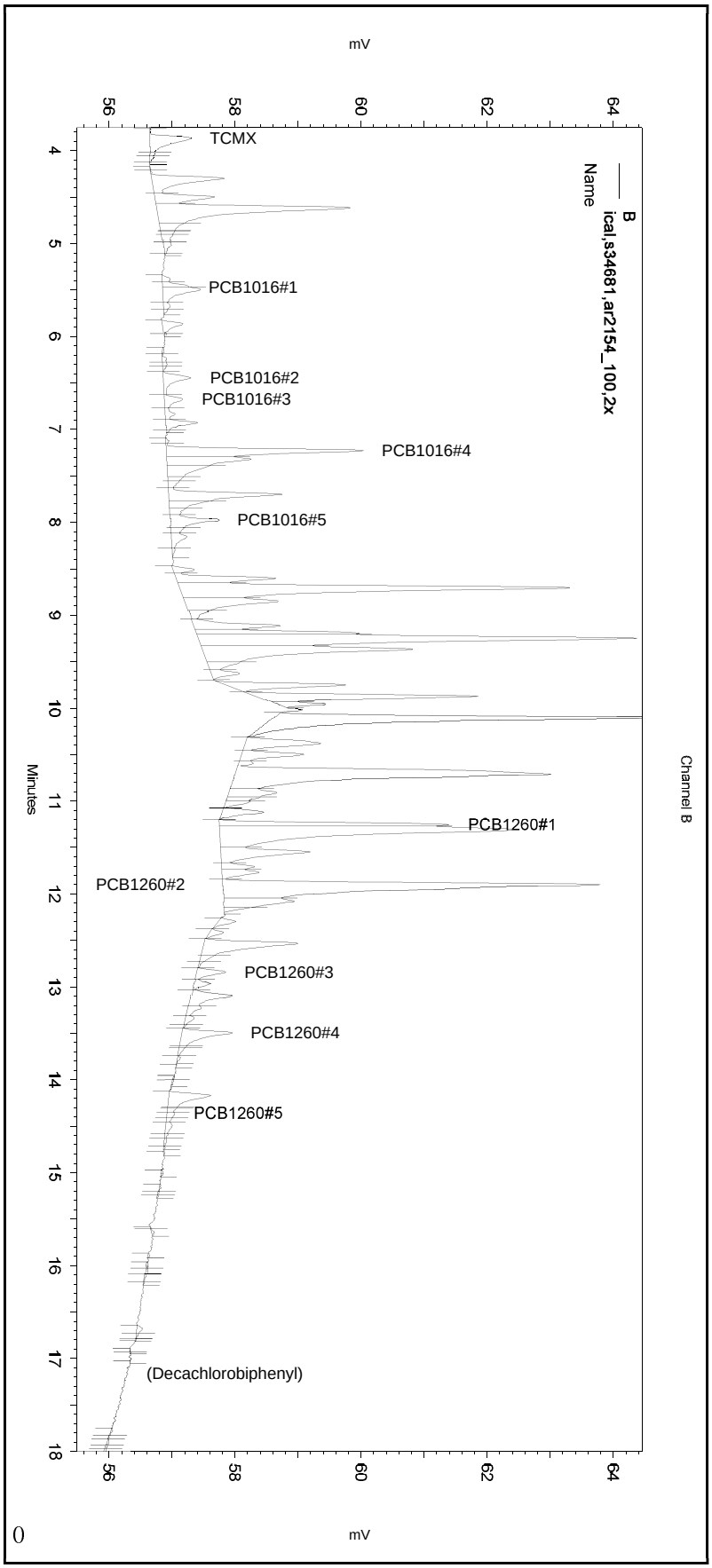
Data File: C:\Documents and Settings\All Users\Application Data\ChromatographySystem\Recovery Data\Instrument.10110\003-021_3031.tmp

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-021**
Sample Name: **ical,s34681,ar2154_100,2x**
Instrument: GC16 Vial: 41 Operator: lims2k3\pest3
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-003.met

Software Version 3.1.7
Run Date: 1/3/2018 11:36:51 PM
Analysis Date: 1/4/2018 12:00:49 AM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

---< B >----------

No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	1.8	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========

Data File: C:\Documents and Settings\All Users\Application Data\ChromatographySystem\Recovery Data\Instrument.10110\003-021_3031.tmp

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq** Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-022** Sample Name: **ical,s34681,ar2154_100** Instrument: GC16 (Offline) Vial: 42 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-004.met	Software Version 3.1.7 Run Date: 1/4/2018 12:05:50 AM Analysis Date: 1/4/2018 11:45:02 AM Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
PCB1221#1	4.987	4.993	19710	100.000 CAL
PCB1221#2	5.327	5.333	12419	100.000 CAL
PCB1221#3	5.420	5.430	50104	100.000 CAL
PCB1221#4	6.263	6.273	8702	100.000 CAL
PCB1221#5	7.363	7.373	7895	100.000 CAL
PCB1254#1	9.570	9.573	61040	100.000 CAL
PCB1254#2	10.200	10.203	85826	100.000 CAL
PCB1254#3	10.843	10.847	63833	100.000 CAL
PCB1254#4	11.133	11.147	100710	100.000 CAL
PCB1254#5	11.797	11.800	88334	100.000 CAL

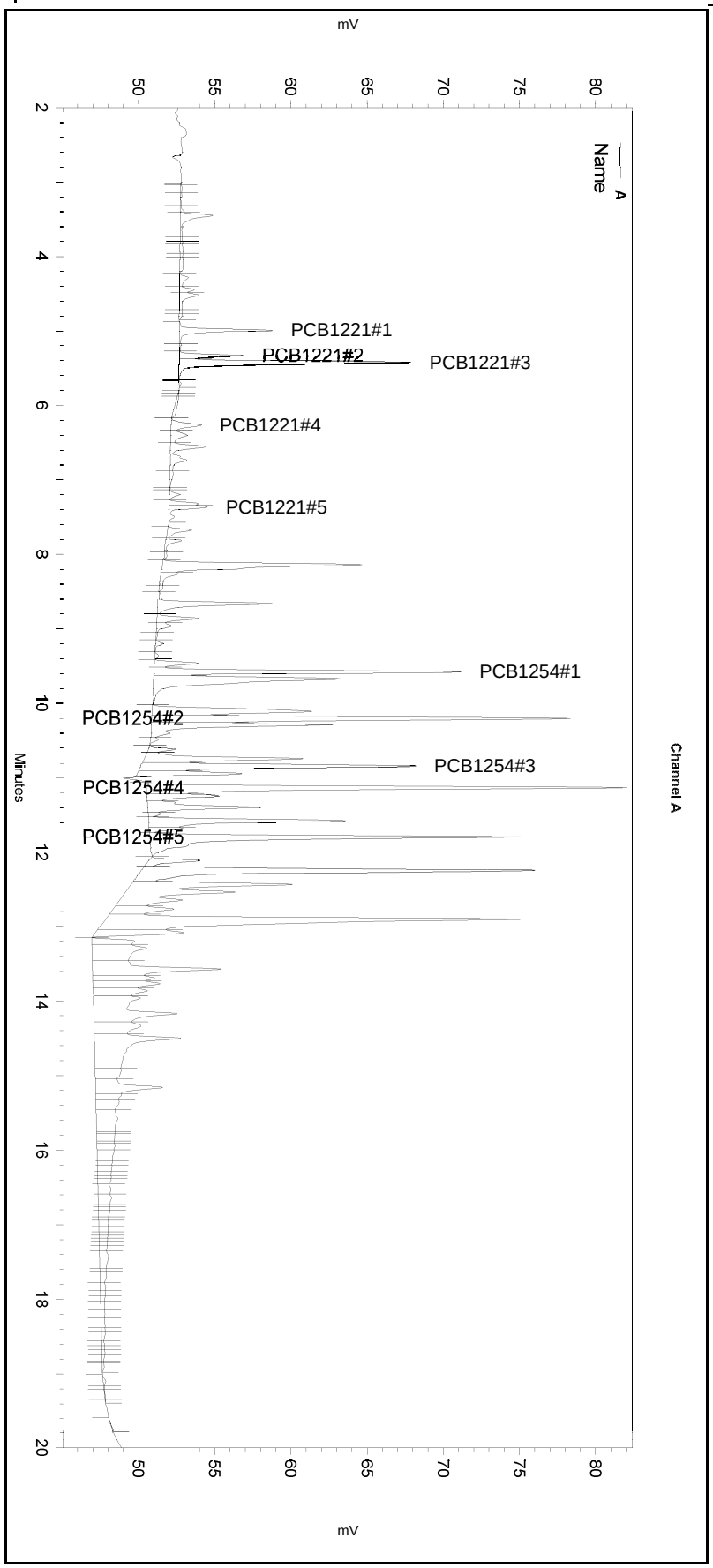
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
PCB1221#1	4.303	4.310	13093	100.000 CAL
PCB1221#2	4.500	4.507	9262	100.000 CAL
PCB1221#3	4.617	4.623	44149	100.000 CAL
PCB1221#4	5.500	5.510	7191	100.000 CAL
PCB1221#5	6.447	6.460	5212	100.000 CAL
PCB1254#1	8.707	8.710	61067	100.000 CAL
PCB1254#2	9.250	9.253	67640	100.000 CAL
PCB1254#3	9.870	9.873	39454	100.000 CAL
PCB1254#4	10.103	10.110	89167	100.000 CAL
PCB1254#5	10.710	10.717	59424	100.000 CAL

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-022**
Sample Name: **ical,s34681,ar2154_100**
Instrument: GC16 (Offline) Vial: 42 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-004.met

Software Version 3.1.7
Run Date: 1/4/2018 12:05:50 AM
Analysis Date: 1/4/2018 11:45:02 AM
Sample Amount: 1



---< General Method Parameters >---

No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	3	0
Yes	Shoulder Sensitivity	4.5	20	1000

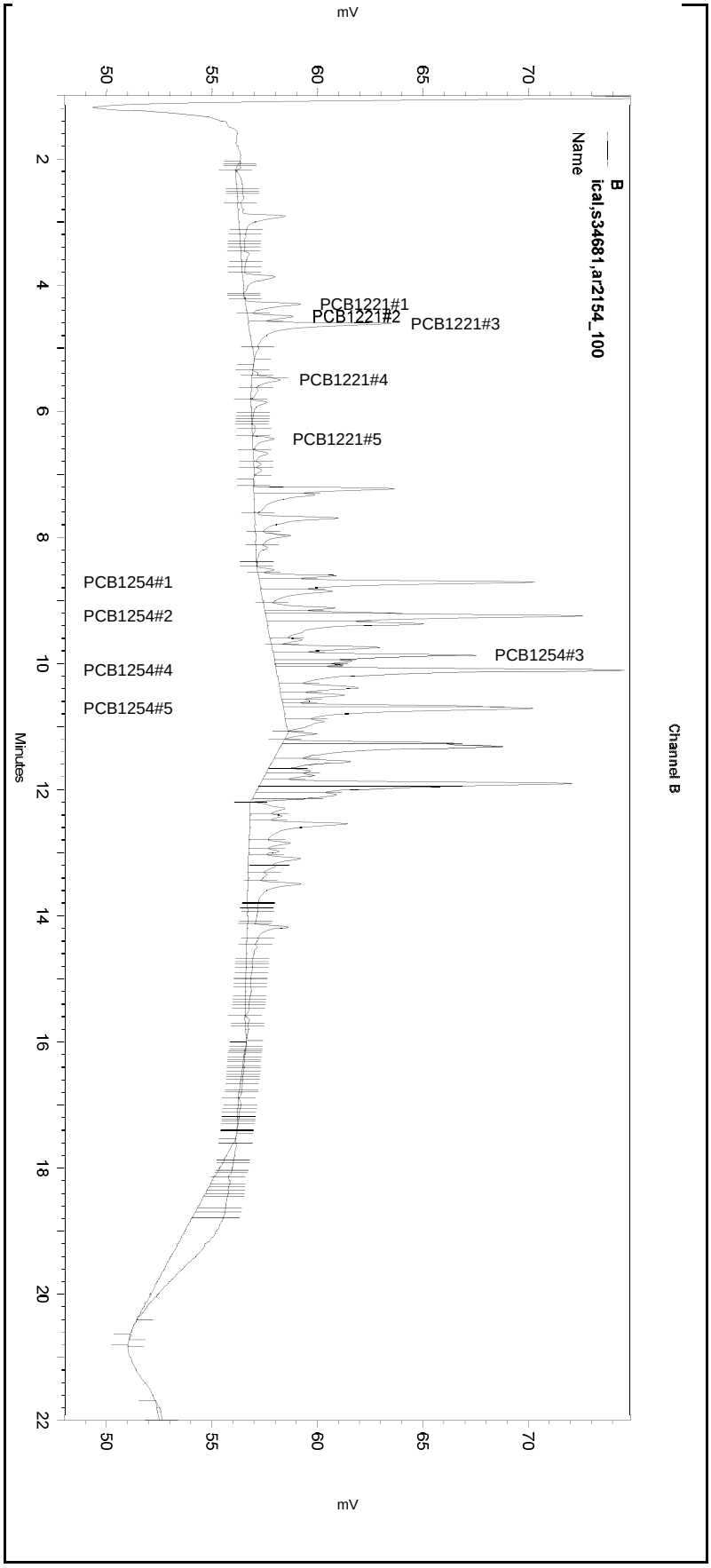
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-022

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	4.876	0	0
Yes	Reset Baseline	5.762	0	0
Yes	Reset Baseline	7.574	0	0
Yes	Reset Baseline	9.399	0	0
Yes	Reset Baseline	10.566	0	0
Yes	Manual Baseline	10.57	10.989	0
Yes	Reset Baseline	11.044	0	0
Yes	Split Peak	11.887	0	0
Yes	Reset Baseline	12.056	0	0

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-022**
Sample Name: **ical,s34681,ar2154_100**
Instrument: GC16 (Offline) Vial: 42 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-004.met

Software Version 3.1.7
Run Date: 1/4/2018 12:05:50 AM
Analysis Date: 1/4/2018 11:45:02 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2	0
Yes	Shoulder Sensitivity	4.5	20	50

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-022

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	5.163	0	0
Yes	Reset Baseline	7.023	0	0
Yes	Reset Baseline	11.069	0	0

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq** Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-022** Sample Name: **ical,s34681,ar2154_100** Instrument: GC16 (Offline) Vial: 42 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-004.met	Software Version 3.1.7 Run Date: 1/4/2018 12:05:50 AM Analysis Date: 1/4/2018 11:32:47 AM Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
PCB1221#1	4.987	4.993	39752	100.000 CAL
PCB1221#2	5.327	5.333	19837	100.000 CAL
PCB1221#3	5.420	5.430	72422	100.000 CAL
PCB1221#4	6.263	6.273	21216	100.000 CAL
PCB1221#5	7.363	7.373	20748	100.000 CAL
PCB1254#1	9.570	9.573	75326	100.000 CAL
PCB1254#2	10.200	10.203	98784	100.000 CAL
PCB1254#3	10.843	10.847	76830	100.000 CAL
PCB1254#4	11.133	11.147	127541	100.000 CAL
PCB1254#5	11.797	11.800	160054	100.000 CAL

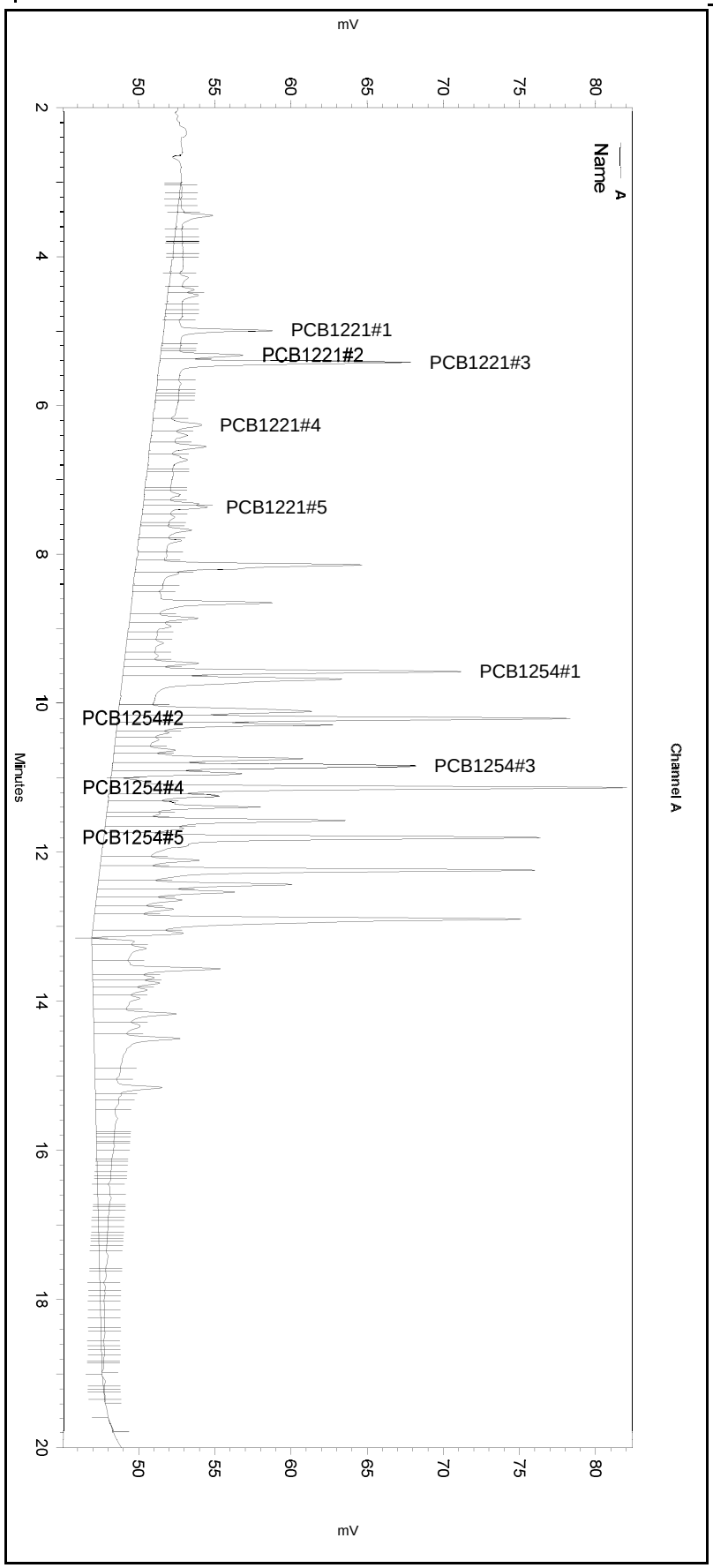
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
PCB1221#1	4.303	4.310	18862	100.000 CAL
PCB1221#2	4.500	4.507	12851	100.000 CAL
PCB1221#3	4.617	4.623	59350	100.000 CAL
PCB1221#4	5.500	5.510	13532	100.000 CAL
PCB1221#5	6.447	6.460	14700	100.000 CAL
PCB1254#1	8.707	8.710	70290	100.000 CAL
PCB1254#2	9.250	9.253	76737	100.000 CAL
PCB1254#3	9.870	9.873	50670	100.000 CAL
PCB1254#4	10.103	10.110	116052	100.000 CAL
PCB1254#5	10.710	10.717	82336	100.000 CAL

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-022**
Sample Name: **ical,s34681,ar2154_100**
Instrument: GC16 (Offline) Vial: 42 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-004.met

Software Version 3.1.7
Run Date: 1/4/2018 12:05:50 AM
Analysis Date: 1/4/2018 11:32:47 AM
Sample Amount: 1



---< General Method Parameters >---

No items selected for this section

---< A >---

No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	3	0
Yes	Shoulder Sensitivity	4.5	20	1000

Manual Integration Fixes
==========

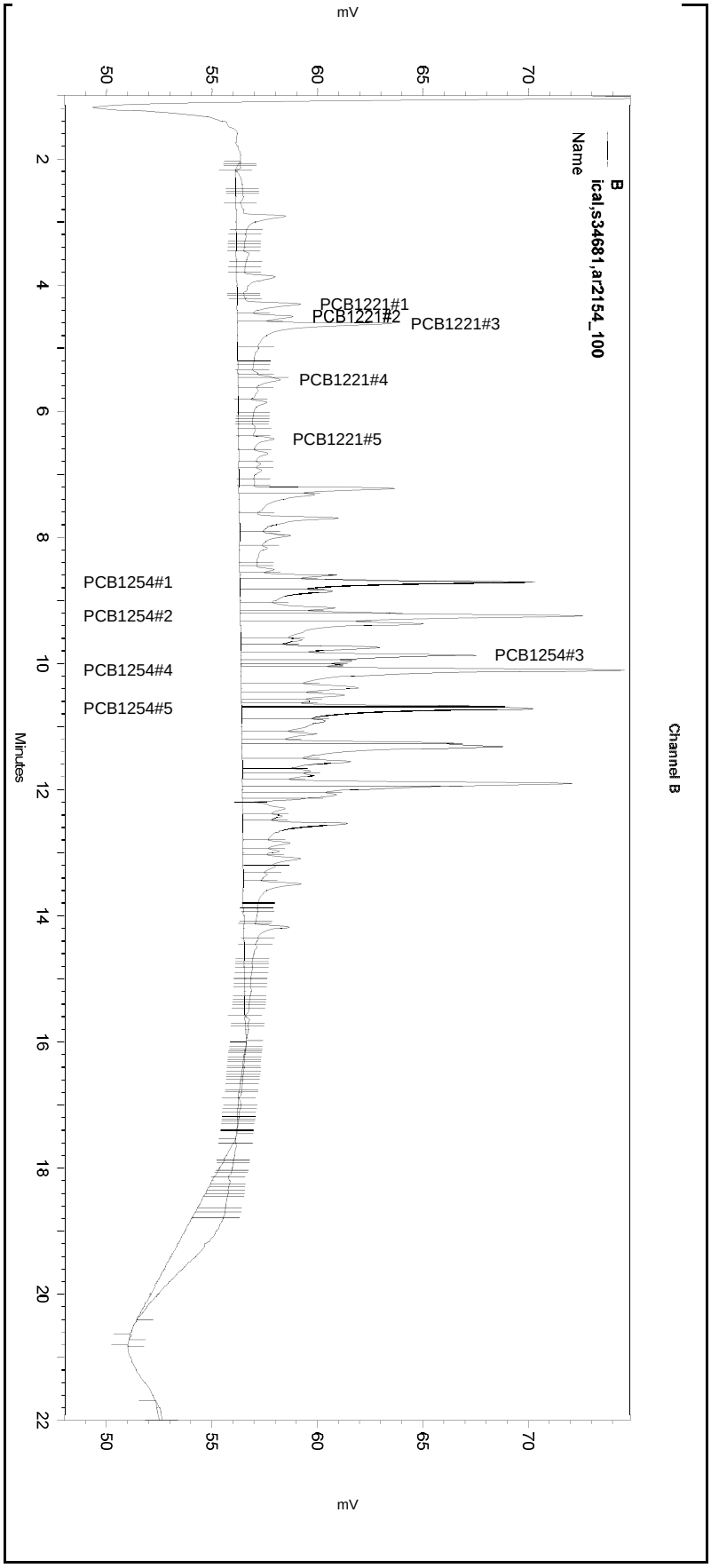
Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-022

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-022**
Sample Name: **ical,s34681,ar2154_100**
Instrument: GC16 (Offline) Vial: 42 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-004.met

Software Version 3.1.7
Run Date: 1/4/2018 12:05:50 AM
Analysis Date: 1/4/2018 11:32:47 AM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2	0
Yes	Shoulder Sensitivity	4.5	20	50

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-022

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-022**
Sample Name: **ical,s34681,ar2154_100**
Instrument: GC16 Vial: 42 Operator: lims2k3\pest3
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-003.met

Software Version 3.1.7
Run Date: 1/4/2018 12:05:50 AM
Analysis Date: 1/4/2018 12:29:48 AM
Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX		4.557		0.000 BDL
PCB1016#1	6.263	6.267	8628	14.969
PCB1016#2	7.363	7.370	8617	11.277
PCB1016#3	7.673	7.680	4963	11.112
PCB1016#4	8.137	8.143	40420	151.809
PCB1016#5	8.657	8.663	24414	63.733
PCB1260#1	12.243	12.250	123212	96.384
PCB1260#2	12.900	12.903	109749	103.812
PCB1260#3	13.760	13.763	19663	28.213
PCB1260#4	14.503	14.513	28976	17.933
PCB1260#5	15.160	15.163	18133	25.791
Decachlorobiphenyl		17.763		0.000 BDL

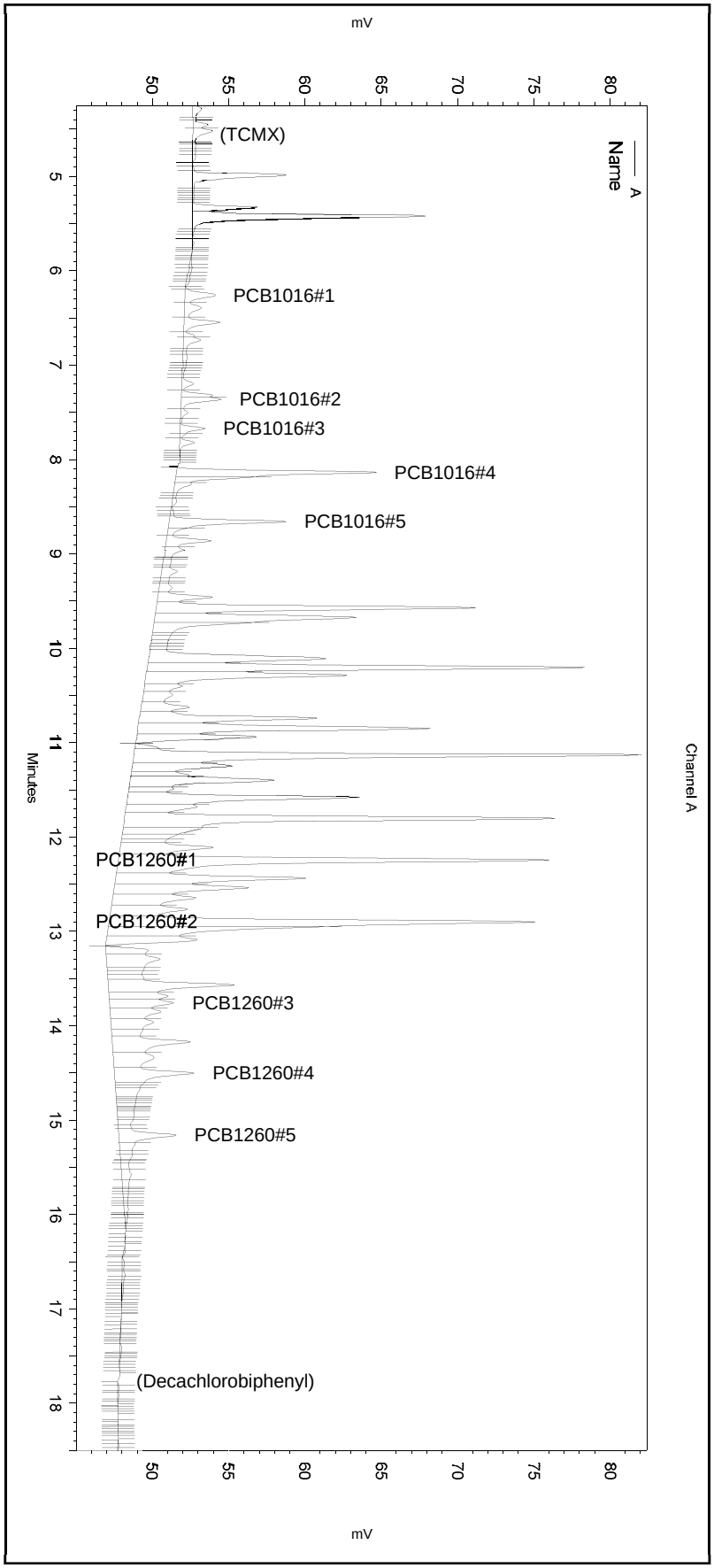
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	3.867	3.863	8128	0.678
PCB1016#1	5.480	5.463	2979	15.526
PCB1016#2	6.447	6.437	5877	9.796
PCB1016#3	6.680	6.660	4039	11.585
PCB1016#4	7.233	7.223	26924	132.410
PCB1016#5	7.977	7.963	9843	29.350
PCB1260#1	11.260	11.253	28972	56.344
PCB1260#2	11.903	11.897	95785	166.022
PCB1260#3	12.847	12.843	9651	18.163
PCB1260#4	13.500	13.497	12803	15.883
PCB1260#5	14.373	14.377	875	2.880
Decachlorobiphenyl	17.163	17.160	169	0.013

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-022**
Sample Name: **ical,s34681,ar2154_100**
Instrument: GC16 Vial: 42 Operator: lims2k3\pest3
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-003.met

Software Version 3.1.7
Run Date: 1/4/2018 12:05:50 AM
Analysis Date: 1/4/2018 12:29:48 AM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	0	0	0

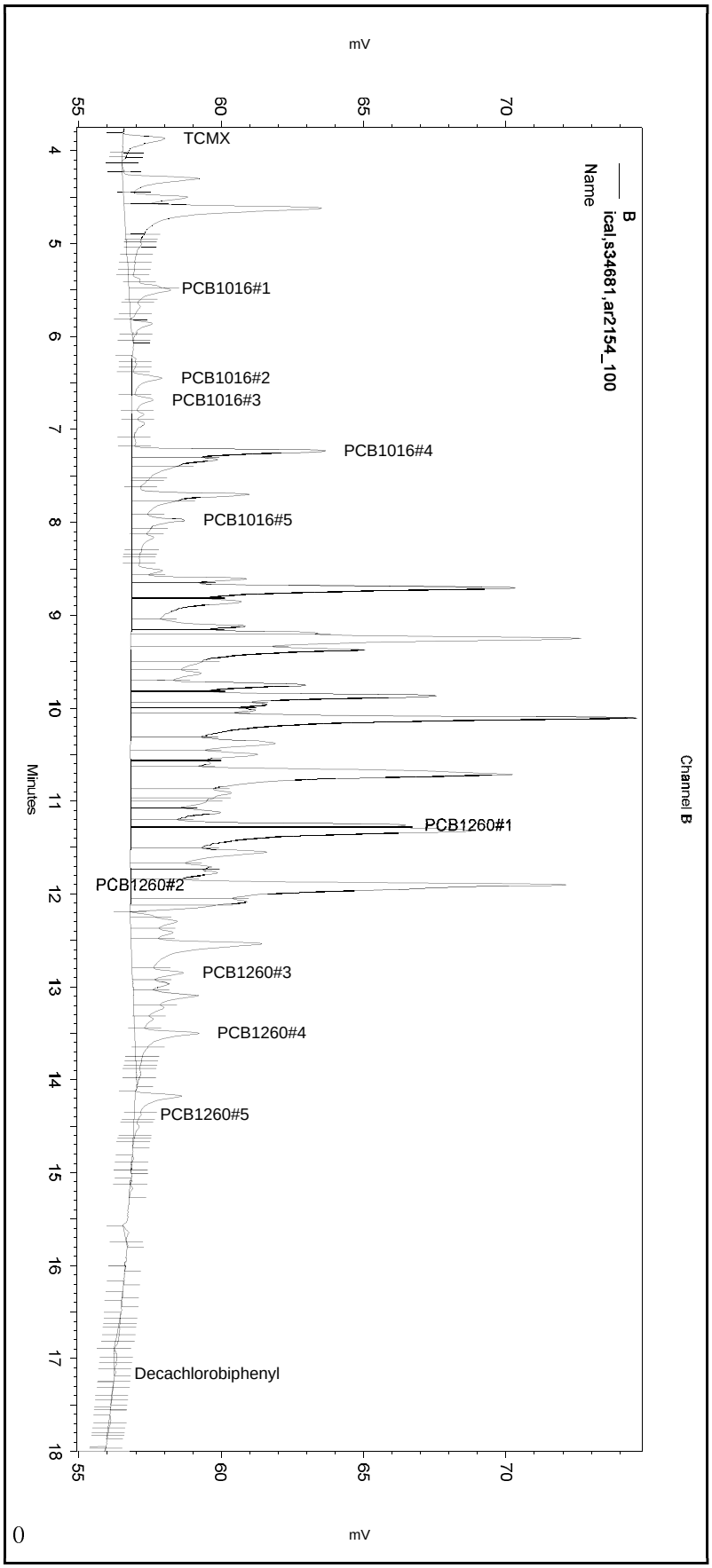
Manual Integration Fixes
==========

Data File: C:\Documents and Settings\All Users\Application Data\ChromatographySystem\Recovery Data\Instrument.10110\003-022_3032.tmp

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-022**
Sample Name: **ical,s34681,ar2154_100**
Instrument: GC16 Vial: 42 Operator: lims2k3\pest3
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-003.met

Software Version 3.1.7
Run Date: 1/4/2018 12:05:50 AM
Analysis Date: 1/4/2018 12:29:48 AM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

---< B >----------

No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	1.8	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========

Data File: C:\Documents and Settings\All Users\Application Data\ChromatographySystem\Recovery Data\Instrument.10110\003-022_3032.tmp

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq** Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-023** Sample Name: **ical,s34682,ar2154_250** Instrument: GC16 (Offline) Vial: 43 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-004.met	Software Version 3.1.7 Run Date: 1/4/2018 12:34:51 AM Analysis Date: 1/4/2018 11:45:12 AM Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
PCB1221#1	4.997	4.993	46661	250.000 CAL
PCB1221#2	5.337	5.333	29055	250.000 CAL
PCB1221#3	5.430	5.430	110180	250.000 CAL
PCB1221#4	6.273	6.273	17358	250.000 CAL
PCB1221#5	7.373	7.373	18483	250.000 CAL
PCB1254#1	9.583	9.573	135017	250.000 CAL
PCB1254#2	10.210	10.203	191163	250.000 CAL
PCB1254#3	10.853	10.847	137549	250.000 CAL
PCB1254#4	11.143	11.147	227505	250.000 CAL
PCB1254#5	11.807	11.800	201872	250.000 CAL

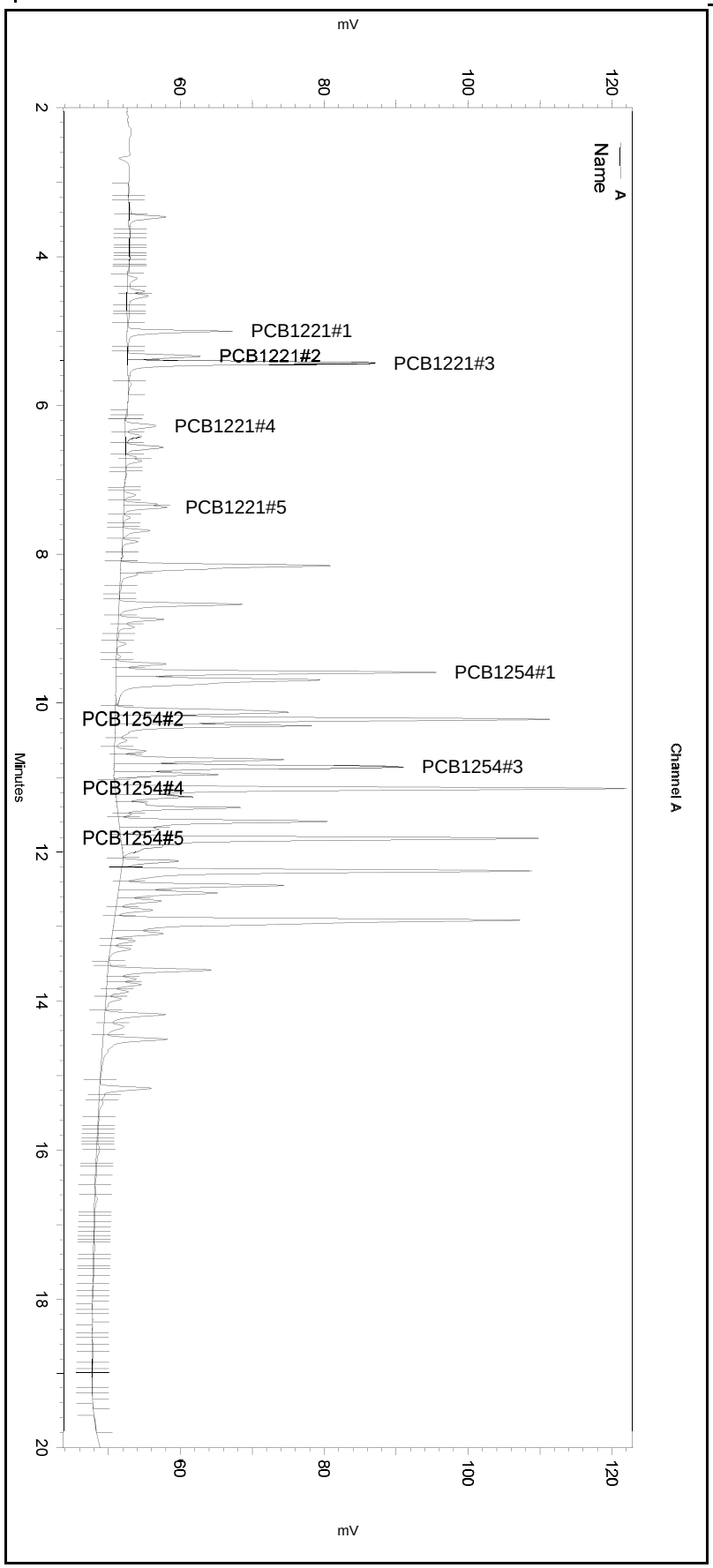
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
PCB1221#1	4.313	4.310	30863	250.000 CAL
PCB1221#2	4.510	4.507	21484	250.000 CAL
PCB1221#3	4.627	4.623	99835	250.000 CAL
PCB1221#4	5.513	5.510	16475	250.000 CAL
PCB1221#5	6.457	6.460	11952	250.000 CAL
PCB1254#1	8.717	8.710	138603	250.000 CAL
PCB1254#2	9.260	9.253	153396	250.000 CAL
PCB1254#3	9.880	9.873	89733	250.000 CAL
PCB1254#4	10.113	10.110	204606	250.000 CAL
PCB1254#5	10.723	10.717	135854	250.000 CAL

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-023**
Sample Name: **ical,s34682,ar2154_250**
Instrument: GC16 (Offline) Vial: 43 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-004.met

Software Version 3.1.7
Run Date: 1/4/2018 12:34:51 AM
Analysis Date: 1/4/2018 11:45:12 AM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	3	0
Yes	Shoulder Sensitivity	4.5	20	1000

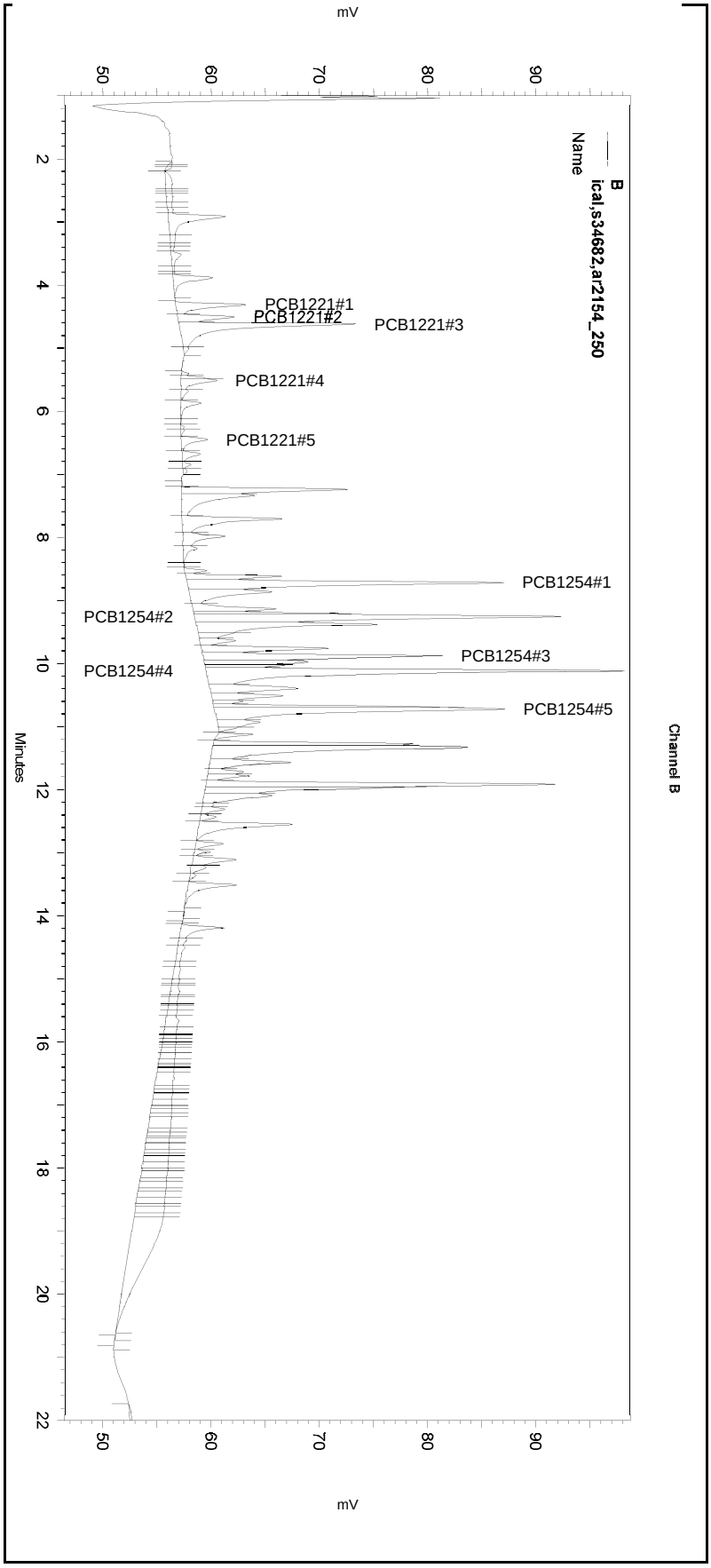
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-023

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	5.863	0	0
Yes	Reset Baseline	6.881	0	0
Yes	Reset Baseline	7.632	0	0
Yes	Reset Baseline	12.07	0	0

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-023**
Sample Name: **ical,s34682,ar2154_250**
Instrument: GC16 (Offline) Vial: 43 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-004.met

Software Version 3.1.7
Run Date: 1/4/2018 12:34:51 AM
Analysis Date: 1/4/2018 11:45:12 AM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2	0
Yes	Shoulder Sensitivity	4.5	20	50

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-023

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	5.109	0	0
Yes	Reset Baseline	7.002	0	0
Yes	Reset Baseline	11.083	0	0

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq** Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-023** Sample Name: **ical,s34682,ar2154_250** Instrument: GC16 (Offline) Vial: 43 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-004.met	Software Version 3.1.7 Run Date: 1/4/2018 12:34:51 AM Analysis Date: 1/4/2018 11:32:56 AM Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
PCB1221#1	4.997	4.993	54040	250.000 CAL
PCB1221#2	5.337	5.333	32763	250.000 CAL
PCB1221#3	5.430	5.430	120828	250.000 CAL
PCB1221#4	6.273	6.273	22784	250.000 CAL
PCB1221#5	7.373	7.373	23646	250.000 CAL
PCB1254#1	9.583	9.573	138697	250.000 CAL
PCB1254#2	10.210	10.203	194790	250.000 CAL
PCB1254#3	10.853	10.847	142200	250.000 CAL
PCB1254#4	11.143	11.147	237647	250.000 CAL
PCB1254#5	11.807	11.800	219649	250.000 CAL

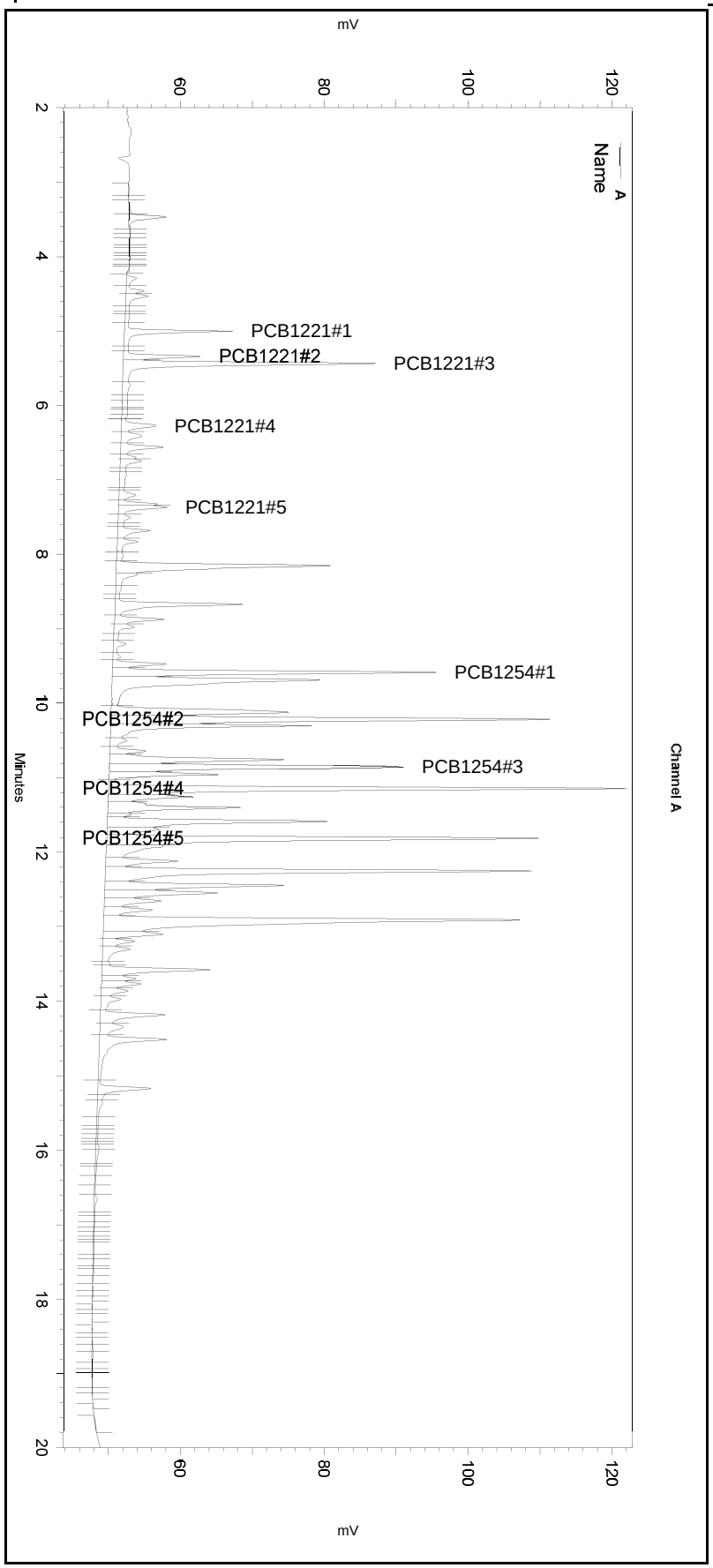
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
PCB1221#1	4.313	4.310	57481	250.000 CAL
PCB1221#2	4.510	4.507	33960	250.000 CAL
PCB1221#3	4.627	4.623	152894	250.000 CAL
PCB1221#4	5.513	5.510	41173	250.000 CAL
PCB1221#5	6.457	6.460	50256	250.000 CAL
PCB1254#1	8.717	8.710	175848	250.000 CAL
PCB1254#2	9.260	9.253	187515	250.000 CAL
PCB1254#3	9.880	9.873	128459	250.000 CAL
PCB1254#4	10.113	10.110	298216	250.000 CAL
PCB1254#5	10.723	10.717	214622	250.000 CAL

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-023**
Sample Name: **ical,s34682,ar2154_250**
Instrument: GC16 (Offline) Vial: 43 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-004.met

Software Version 3.1.7
Run Date: 1/4/2018 12:34:51 AM
Analysis Date: 1/4/2018 11:32:56 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	3	0
Yes	Shoulder Sensitivity	4.5	20	1000

Manual Integration Fixes
==========

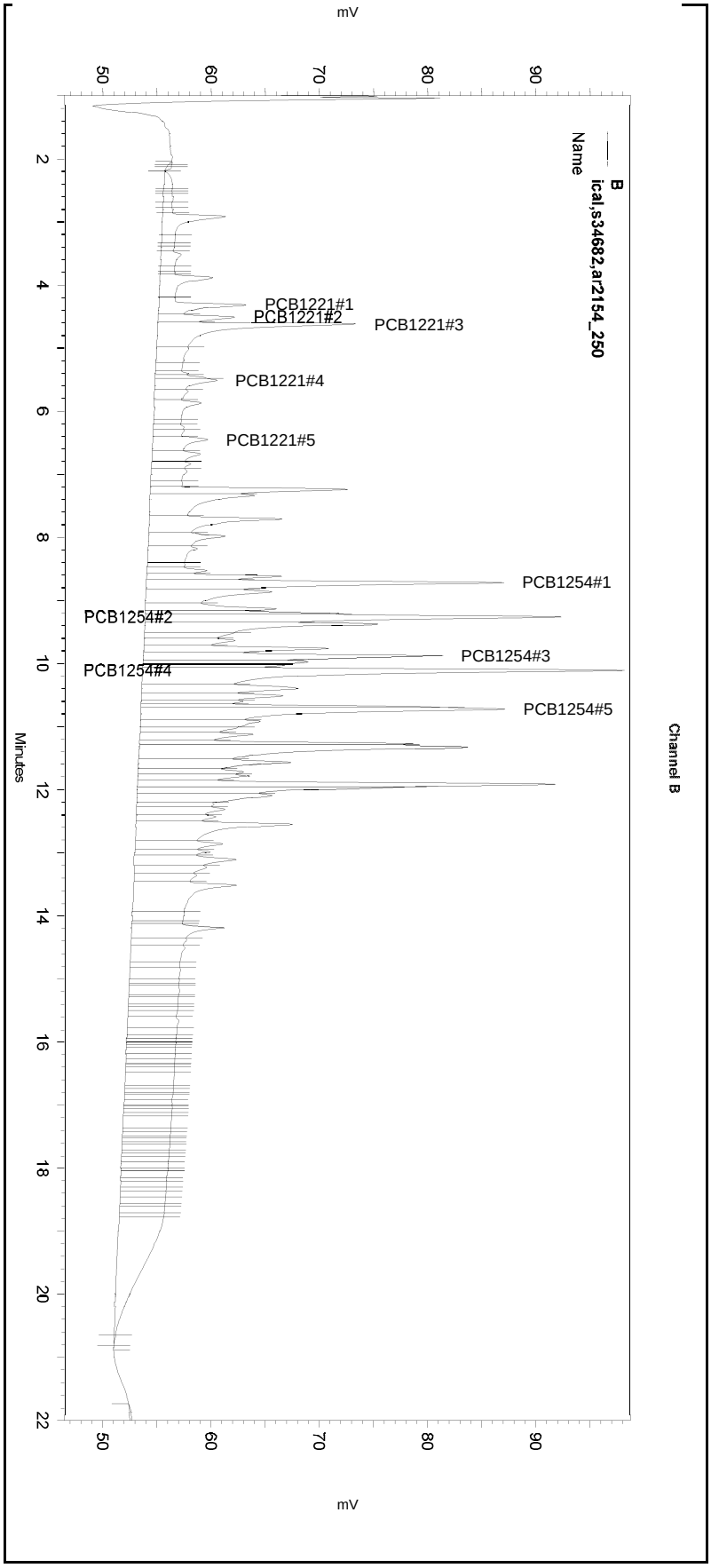
Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-023

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-023**
Sample Name: **ical,s34682,ar2154_250**
Instrument: GC16 (Offline) Vial: 43 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-004.met

Software Version 3.1.7
Run Date: 1/4/2018 12:34:51 AM
Analysis Date: 1/4/2018 11:32:56 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2	0
Yes	Shoulder Sensitivity	4.5	20	50

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-023

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-023**
Sample Name: **ical,s34682,ar2154_250**
Instrument: GC16 Vial: 43 Operator: lims2k3\pest3
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-003.met

Software Version 3.1.7
Run Date: 1/4/2018 12:34:51 AM
Analysis Date: 1/4/2018 12:58:47 AM
Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	4.530	4.557	11440	0.958
PCB1016#1	6.273	6.267	17691	30.694
PCB1016#2	7.373	7.370	20430	26.737
PCB1016#3	7.683	7.680	12627	28.271
PCB1016#4	8.147	8.143	91026	341.873
PCB1016#5	8.667	8.663	52956	138.241
PCB1260#1	12.257	12.250	208929	163.438
PCB1260#2	12.913	12.903	208837	197.539
PCB1260#3	13.770	13.763	20233	29.031
PCB1260#4	14.513	14.513	37312	23.092
PCB1260#5	15.173	15.163	26203	37.269
Decachlorobiphenyl		17.763		0.000 BDL

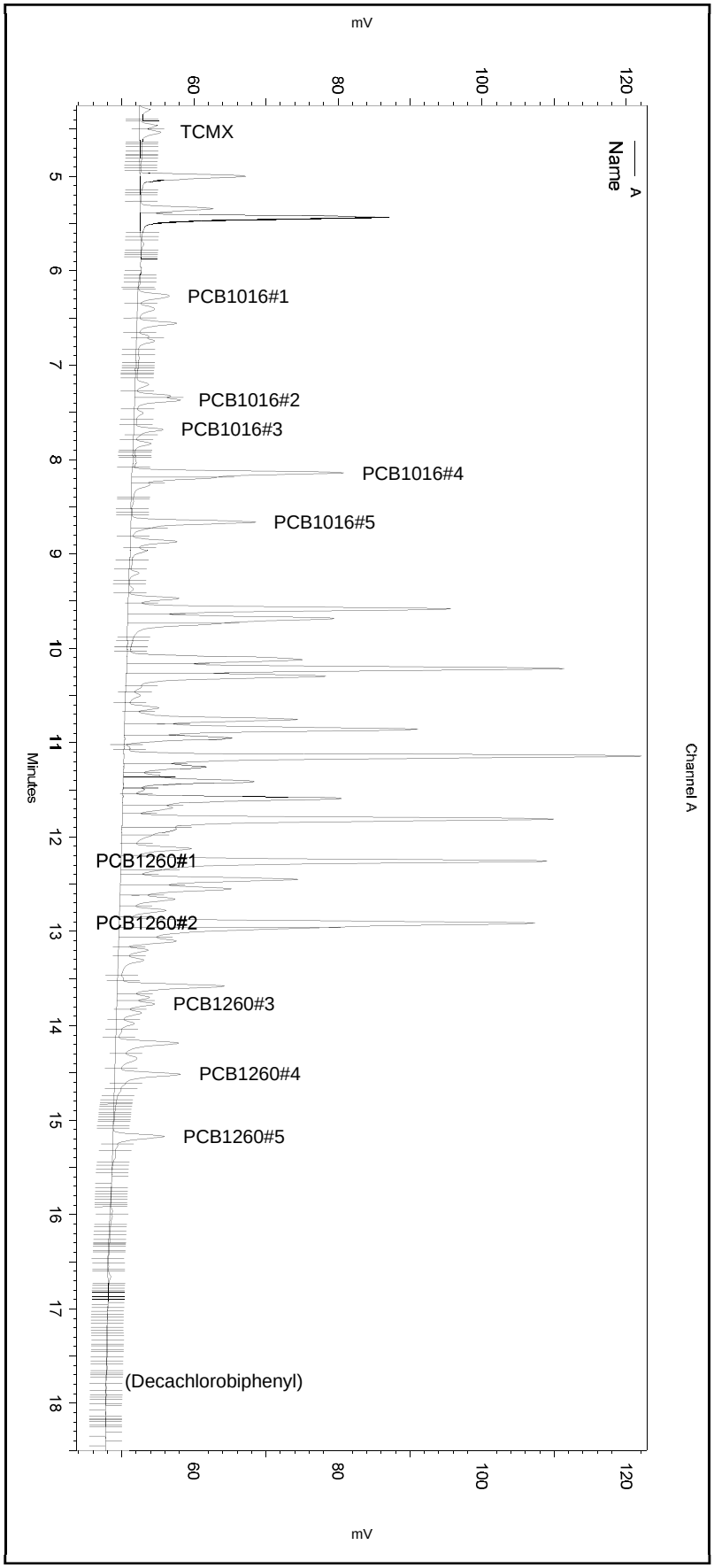
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	3.877	3.863	19192	1.600
PCB1016#1	5.487	5.463	6200	32.313
PCB1016#2	6.457	6.437	13227	22.047
PCB1016#3	6.683	6.660	8702	24.960
PCB1016#4	7.243	7.223	59324	291.751
PCB1016#5	7.987	7.963	21407	63.832
PCB1260#1	11.273	11.253	58659	114.079
PCB1260#2	11.913	11.897	215122	372.865
PCB1260#3	12.857	12.843	22790	42.891
PCB1260#4	13.513	13.497	33631	41.722
PCB1260#5	14.383	14.377	5579	18.363
Decachlorobiphenyl		17.160		0.000 BDL

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-023**
Sample Name: **ical,s34682,ar2154_250**
Instrument: GC16 Vial: 43 Operator: lims2k3\pest3
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-003.met

Software Version 3.1.7
Run Date: 1/4/2018 12:34:51 AM
Analysis Date: 1/4/2018 12:58:47 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========

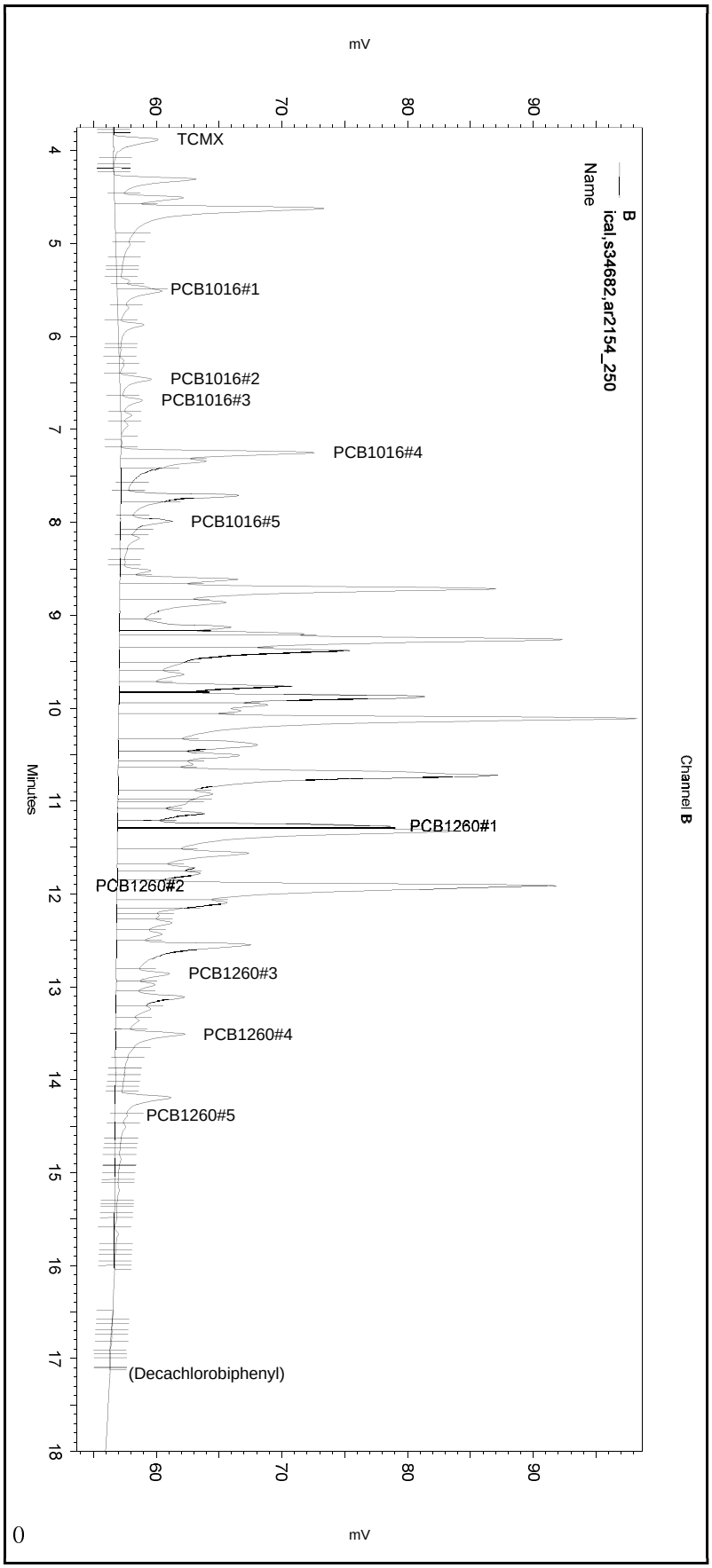
Data File: C:\Documents and Settings\All Users\Application Data\ChromatographySystem\Recovery Data\Instrument.10110\003-023_3033.tmp

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-023**
Sample Name: **ical,s34682,ar2154_250**
Instrument: GC16 Vial: 43 Operator: lims2k3\pest3
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-003.met

Software Version 3.1.7
Run Date: 1/4/2018 12:34:51 AM
Analysis Date: 1/4/2018 12:58:47 AM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	1.8	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========

Data File: C:\Documents and Settings\All Users\Application Data\ChromatographySystem\Recovery Data\Instrument.10110\003-023_3033.tmp

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq** Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-024** Sample Name: **ical,s34683,ar2154_500** Instrument: GC16 (Offline) Vial: 44 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-004.met	Software Version 3.1.7 Run Date: 1/4/2018 1:03:51 AM Analysis Date: 1/4/2018 11:45:22 AM Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
PCB1221#1	4.977	4.993	93361	500.000 CAL
PCB1221#2	5.317	5.333	56245	500.000 CAL
PCB1221#3	5.410	5.430	207130	500.000 CAL
PCB1221#4	6.253	6.273	34795	500.000 CAL
PCB1221#5	7.353	7.373	37179	500.000 CAL
PCB1254#1	9.560	9.573	255334	500.000 CAL
PCB1254#2	10.190	10.203	354459	500.000 CAL
PCB1254#3	10.833	10.847	278868	500.000 CAL
PCB1254#4	11.123	11.147	441107	500.000 CAL
PCB1254#5	11.787	11.800	407066	500.000 CAL

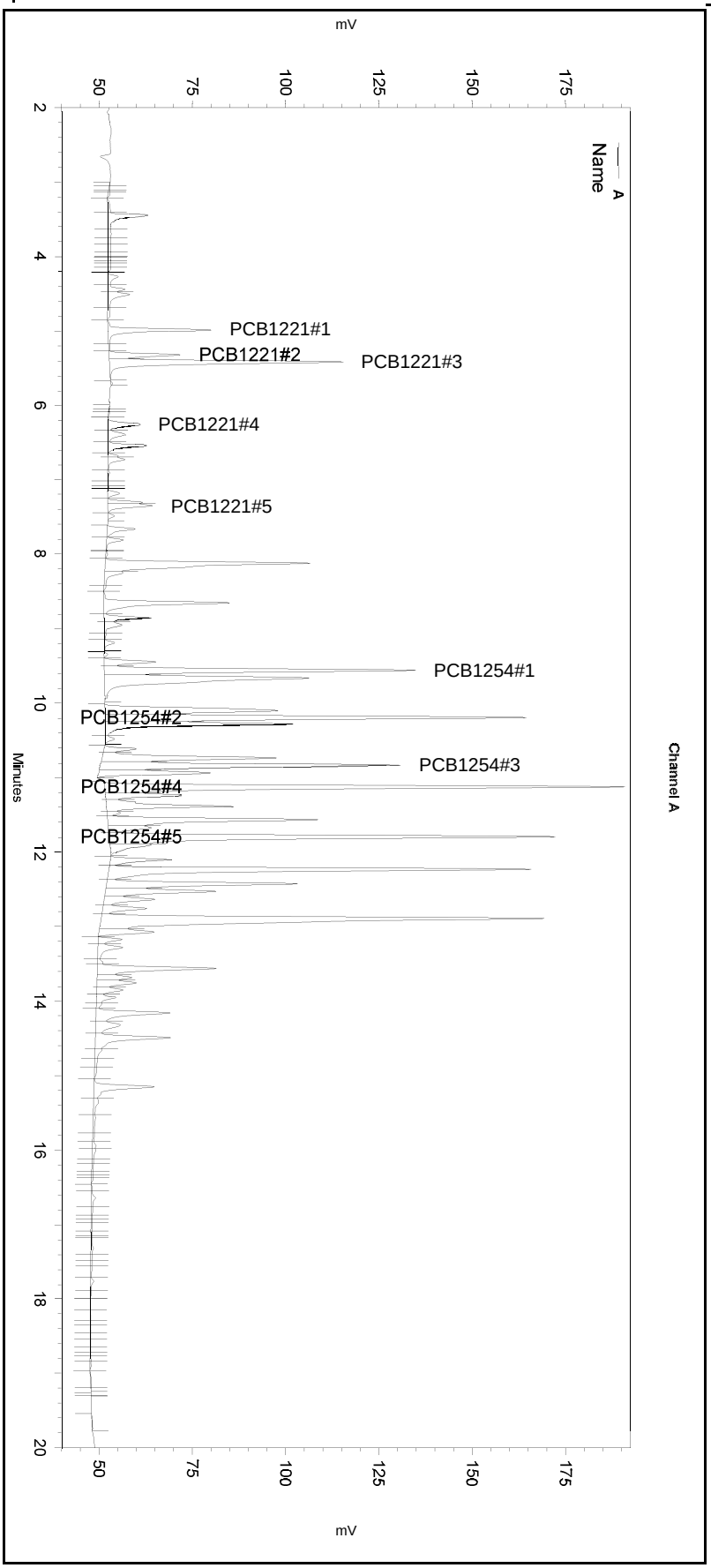
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
PCB1221#1	4.317	4.310	68237	500.000 CAL
PCB1221#2	4.517	4.507	45619	500.000 CAL
PCB1221#3	4.630	4.623	209315	500.000 CAL
PCB1221#4	5.517	5.510	35886	500.000 CAL
PCB1221#5	6.463	6.460	26389	500.000 CAL
PCB1254#1	8.720	8.710	276824	500.000 CAL
PCB1254#2	9.263	9.253	308474	500.000 CAL
PCB1254#3	9.883	9.873	189164	500.000 CAL
PCB1254#4	10.117	10.110	421975	500.000 CAL
PCB1254#5	10.727	10.717	285653	500.000 CAL

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-024**
Sample Name: **ical,s34683,ar2154_500**
Instrument: GC16 (Offline) Vial: 44 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-004.met

Software Version 3.1.7
Run Date: 1/4/2018 1:03:51 AM
Analysis Date: 1/4/2018 11:45:22 AM
Sample Amount: 1



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No items selected for this section

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Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	3	0
Yes	Shoulder Sensitivity	4.5	20	1000

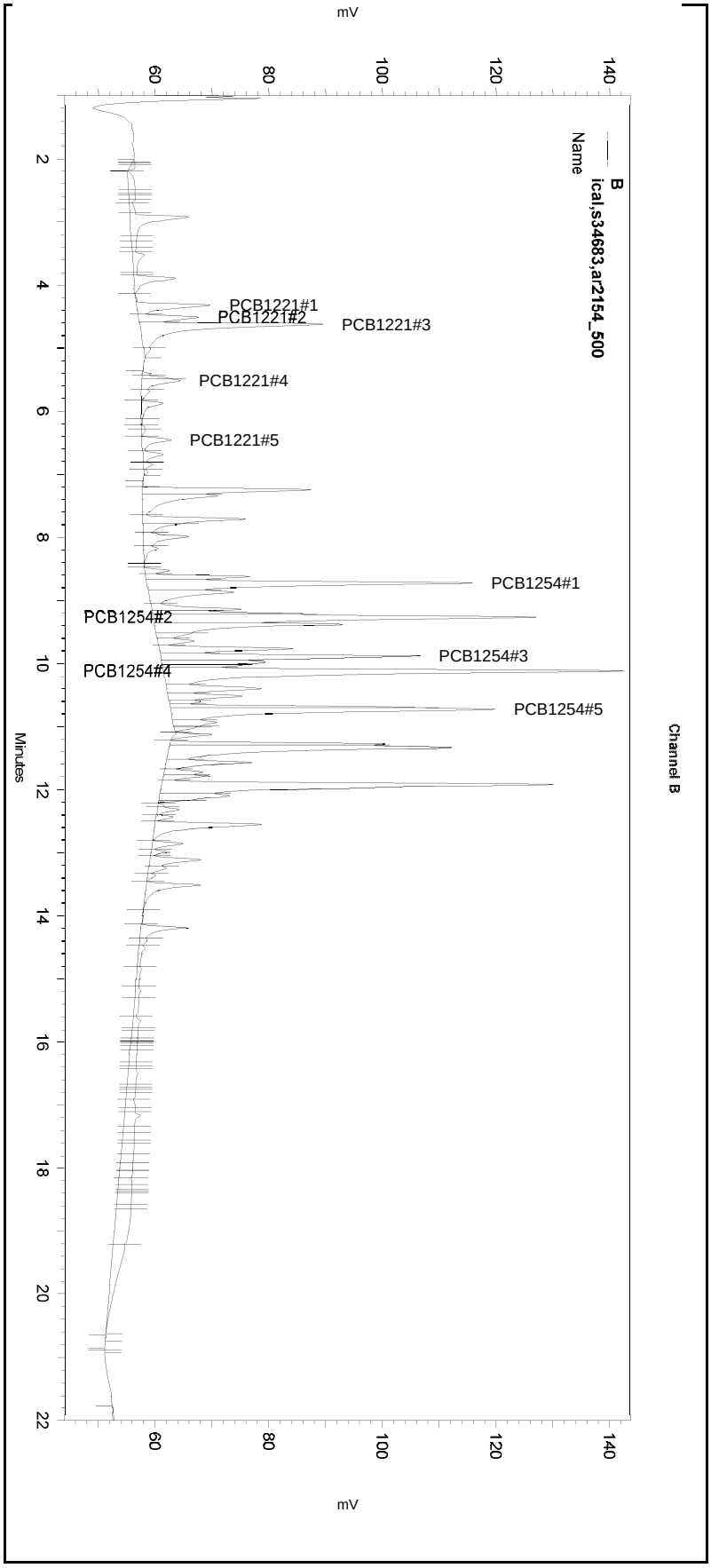
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-024

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	5.721	0	0
Yes	Reset Baseline	7.581	0	0
Yes	Reset Baseline	9.984	0	0
Yes	Reset Baseline	10.552	0	0
Yes	Reset Baseline	11.043	0	0
Yes	Reset Baseline	12.046	0	0

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-024**
Sample Name: **ical,s34683,ar2154_500**
Instrument: GC16 (Offline) Vial: 44 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-004.met

Software Version 3.1.7
Run Date: 1/4/2018 1:03:51 AM
Analysis Date: 1/4/2018 11:45:22 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2	0
Yes	Shoulder Sensitivity	4.5	20	50

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-024

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	5.143	0	0
Yes	Reset Baseline	7.023	0	0
Yes	Reset Baseline	11.089	0	0

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq** Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-024** Sample Name: **ical,s34683,ar2154_500** Instrument: GC16 (Offline) Vial: 44 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-004.met	Software Version 3.1.7 Run Date: 1/4/2018 1:03:51 AM Analysis Date: 1/4/2018 11:33:06 AM Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
PCB1221#1	4.977	4.993	108603	500.000 CAL
PCB1221#2	5.317	5.333	63857	500.000 CAL
PCB1221#3	5.410	5.430	232242	500.000 CAL
PCB1221#4	6.253	6.273	46372	500.000 CAL
PCB1221#5	7.353	7.373	48318	500.000 CAL
PCB1254#1	9.560	9.573	265228	500.000 CAL
PCB1254#2	10.190	10.203	364471	500.000 CAL
PCB1254#3	10.833	10.847	283811	500.000 CAL
PCB1254#4	11.123	11.147	461999	500.000 CAL
PCB1254#5	11.787	11.800	437267	500.000 CAL

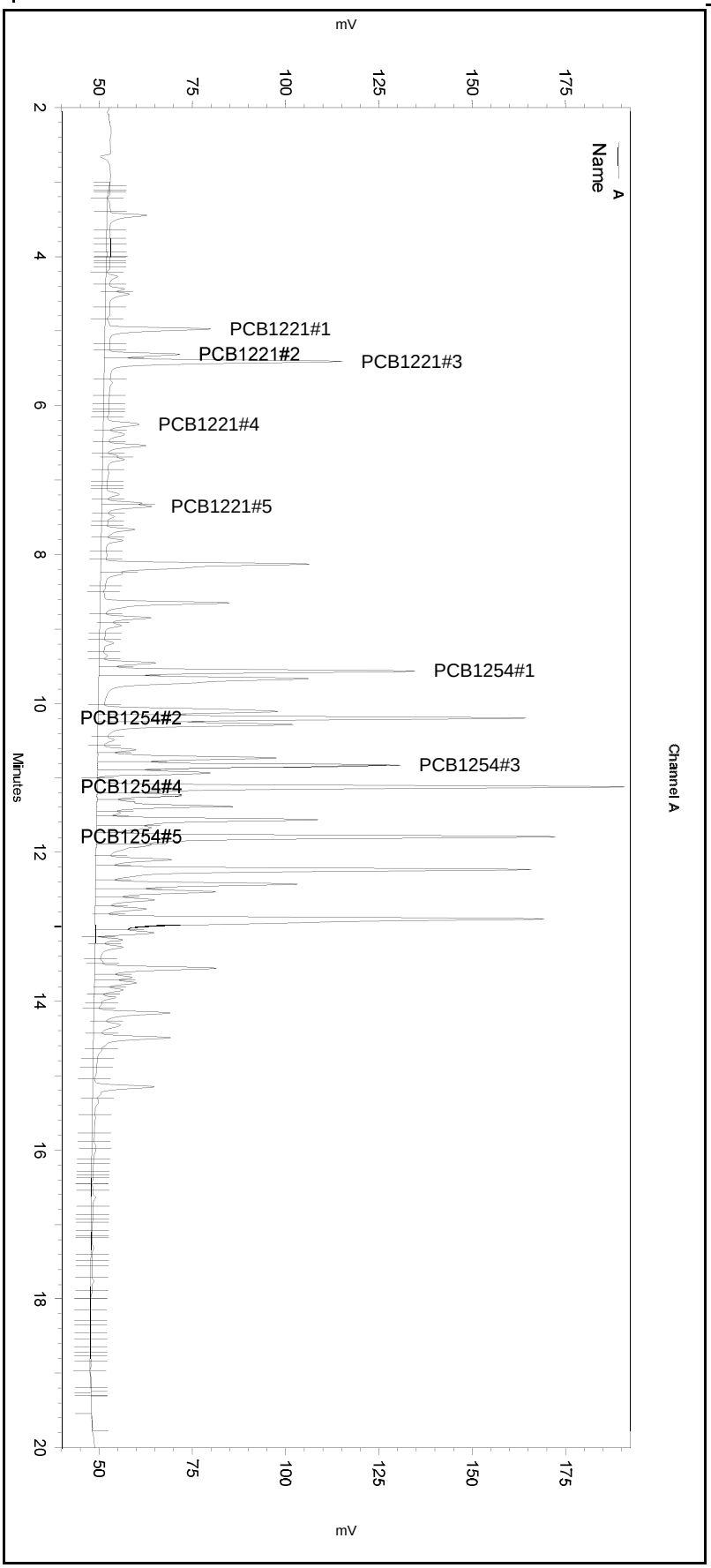
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
PCB1221#1	4.317	4.310	110877	500.000 CAL
PCB1221#2	4.517	4.507	63161	500.000 CAL
PCB1221#3	4.630	4.623	284981	500.000 CAL
PCB1221#4	5.517	5.510	70394	500.000 CAL
PCB1221#5	6.463	6.460	78039	500.000 CAL
PCB1254#1	8.720	8.710	325784	500.000 CAL
PCB1254#2	9.263	9.253	354583	500.000 CAL
PCB1254#3	9.883	9.873	244170	500.000 CAL
PCB1254#4	10.117	10.110	552233	500.000 CAL
PCB1254#5	10.727	10.717	394647	500.000 CAL

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-024**
Sample Name: **ical,s34683,ar2154_500**
Instrument: GC16 (Offline) Vial: 44 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-004.met

Software Version 3.1.7
Run Date: 1/4/2018 1:03:51 AM
Analysis Date: 1/4/2018 11:33:06 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	3	0
Yes	Shoulder Sensitivity	4.5	20	1000

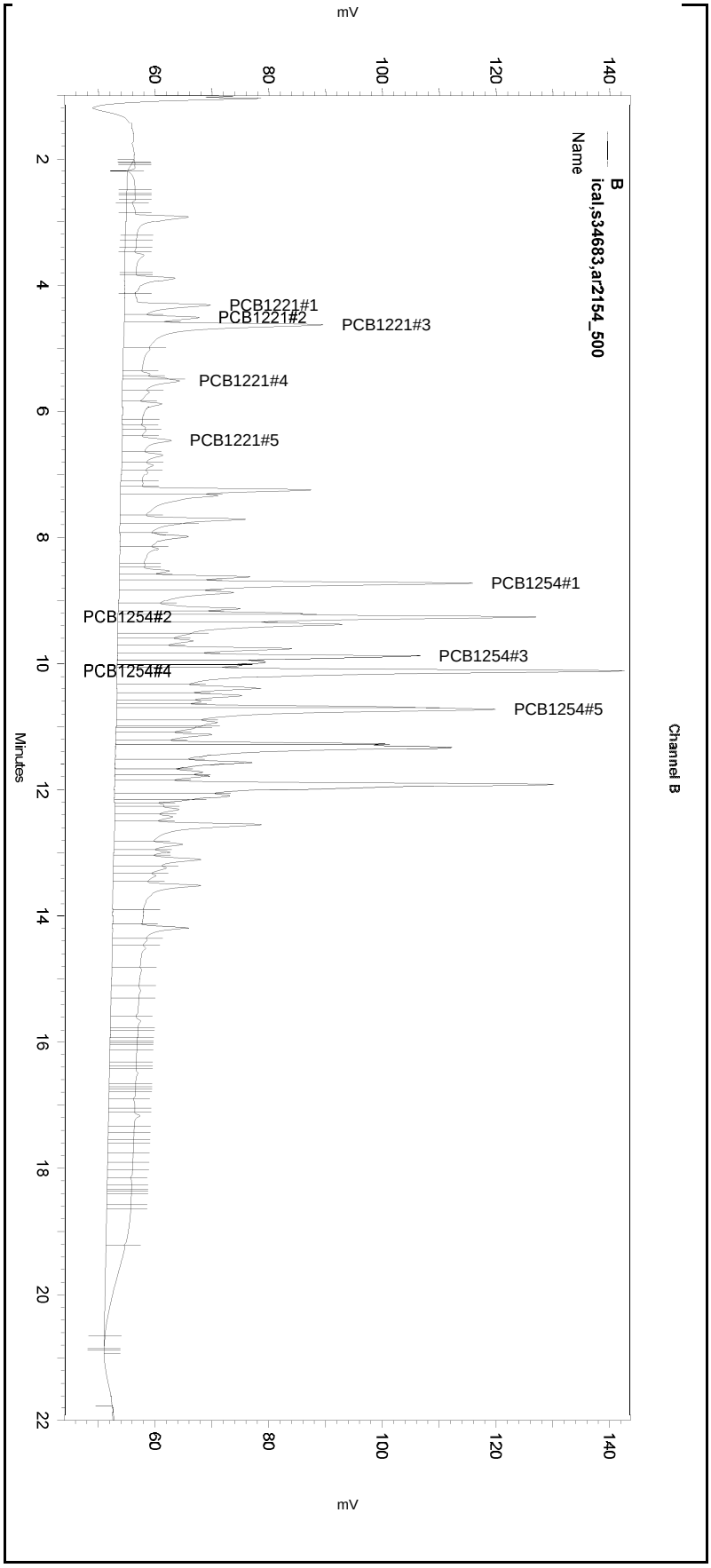
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-024

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-024**
Sample Name: **ical,s34683,ar2154_500**
Instrument: GC16 (Offline) Vial: 44 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-004.met

Software Version 3.1.7
Run Date: 1/4/2018 1:03:51 AM
Analysis Date: 1/4/2018 11:33:06 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2	0
Yes	Shoulder Sensitivity	4.5	20	50

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-024

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-024**
Sample Name: **ical,s34683,ar2154_500**
Instrument: GC16 Vial: 44 Operator: lims2k3\pest3
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-003.met

Software Version 3.1.7
Run Date: 1/4/2018 1:03:51 AM
Analysis Date: 1/4/2018 1:27:49 AM
Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX		4.557		0.000 BDL
PCB1016#1	6.253	6.267	42012	72.890
PCB1016#2	7.353	7.370	46025	60.233
PCB1016#3	7.663	7.680	30420	68.109
PCB1016#4	8.127	8.143	178331	669.772
PCB1016#5	8.647	8.663	110206	287.692
PCB1260#1	12.233	12.250	407463	318.744
PCB1260#2	12.890	12.903	424663	401.689
PCB1260#3	13.750	13.763	41048	58.897
PCB1260#4	14.493	14.513	80244	49.663
PCB1260#5	15.150	15.163	59080	84.031
Decachlorobiphenyl	17.753	17.763	2916	0.222

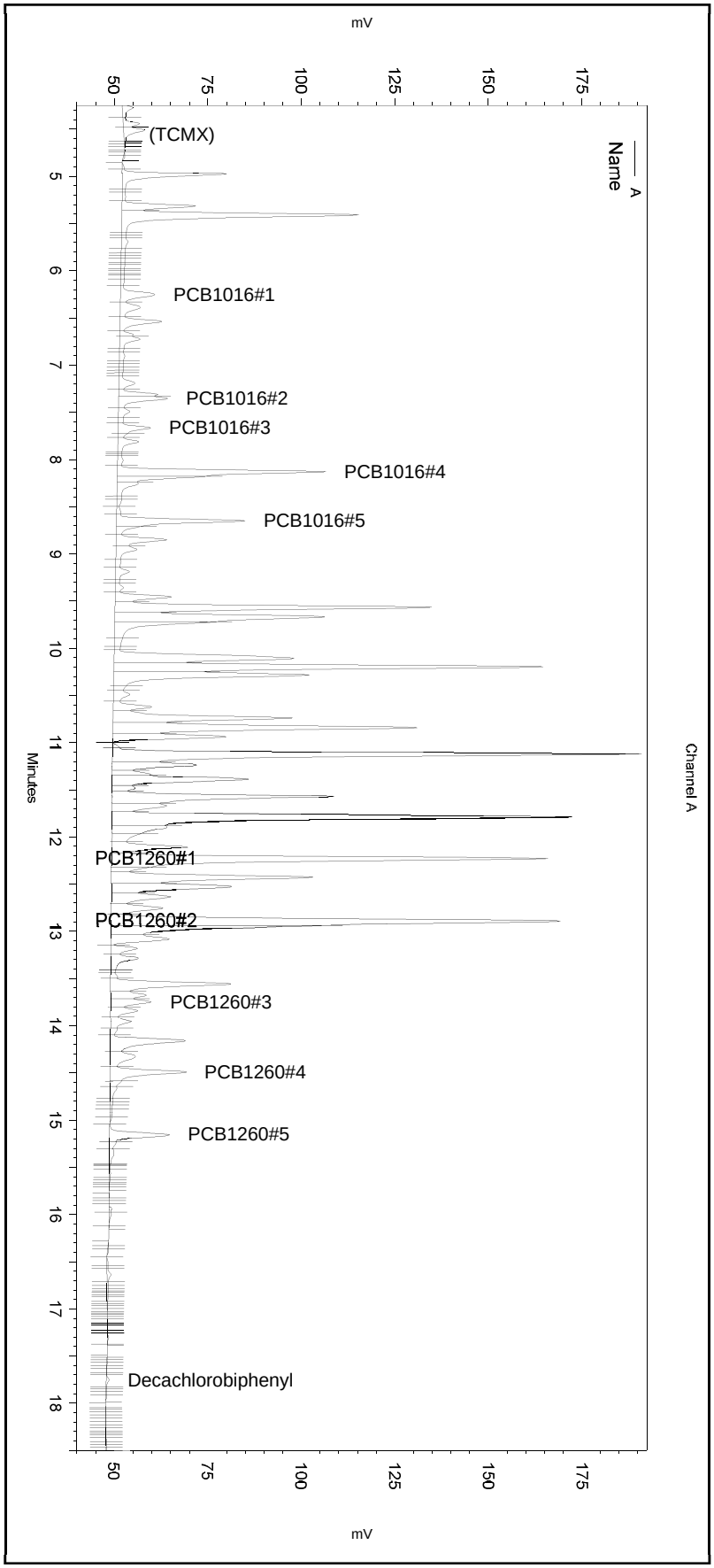
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	3.880	3.863	56490	4.709
PCB1016#1	5.487	5.463	15771	82.195
PCB1016#2	6.463	6.437	51177	85.303
PCB1016#3		6.660		0.000 BDL
PCB1016#4	7.250	7.223	130635	642.454
PCB1016#5	7.990	7.963	55354	165.056
PCB1260#1	11.273	11.253	124657	242.432
PCB1260#2	11.917	11.897	434163	752.524
PCB1260#3	12.860	12.843	36717	69.101
PCB1260#4	13.513	13.497	56579	70.190
PCB1260#5	14.387	14.377	5082	16.727
Decachlorobiphenyl	17.170	17.160	3406	0.264

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-024**
Sample Name: **ical,s34683,ar2154_500**
Instrument: GC16 Vial: 44 Operator: lims2k3\pest3
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-003.met

Software Version 3.1.7
Run Date: 1/4/2018 1:03:51 AM
Analysis Date: 1/4/2018 1:27:49 AM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

---< A >----------

No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========

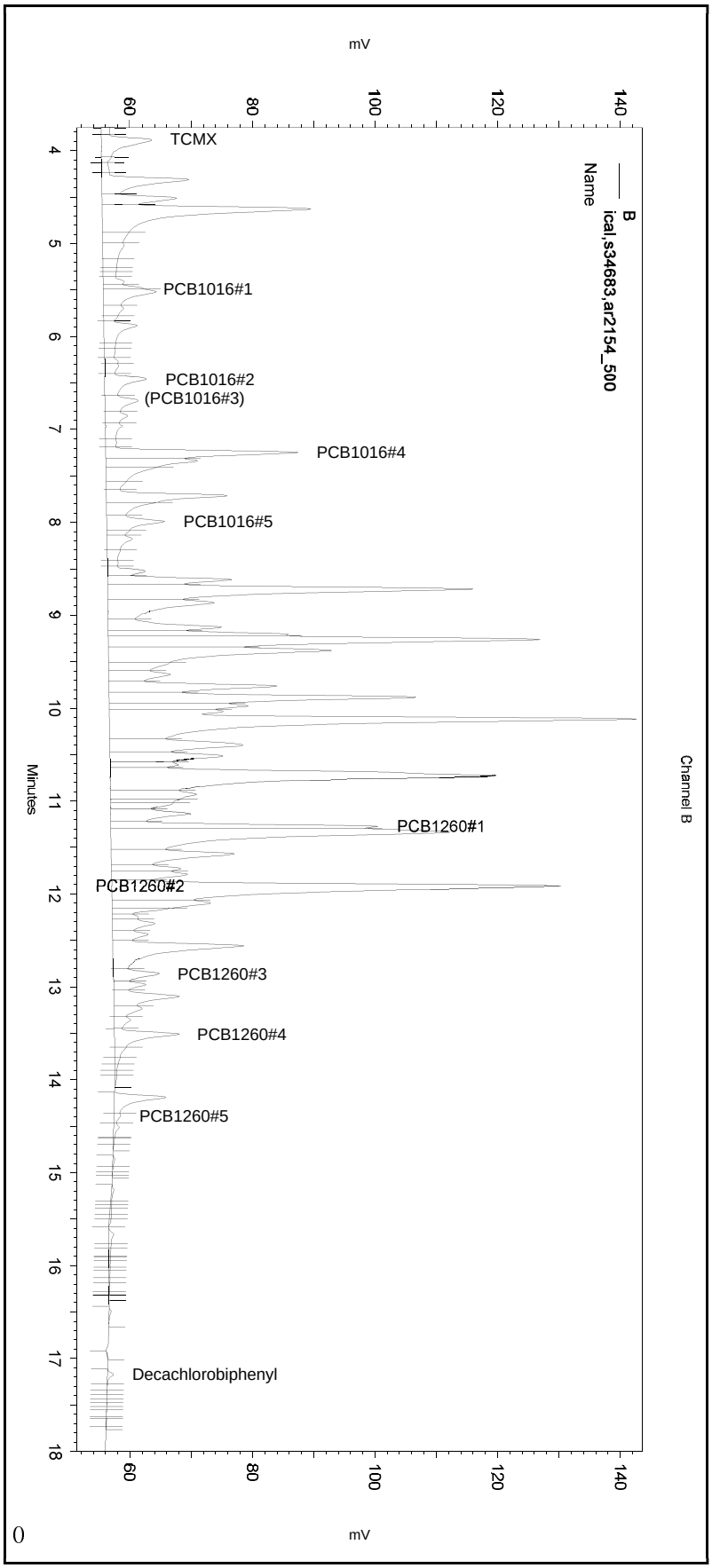
Data File: C:\Documents and Settings\All Users\Application Data\ChromatographySystem\Recovery Data\Instrument.10110\003-024_3034.tmp

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-024**
Sample Name: **ical,s34683,ar2154_500**
Instrument: GC16 Vial: 44 Operator: lims2k3\pest3
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-003.met

Software Version 3.1.7
Run Date: 1/4/2018 1:03:51 AM
Analysis Date: 1/4/2018 1:27:49 AM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	1.8	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========

Data File: C:\Documents and Settings\All Users\Application Data\ChromatographySystem\Recovery Data\Instrument.10110\003-024_3034.tmp

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq** Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-025** Sample Name: **ical,s34684,ar2154_1000** Instrument: GC16 (Offline) Vial: 45 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-004.met	Software Version 3.1.7 Run Date: 1/4/2018 1:32:52 AM Analysis Date: 1/4/2018 11:45:31 AM Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
PCB1221#1	5.000	4.993	163339	1000.000 CAL
PCB1221#2	5.340	5.333	102357	1000.000 CAL
PCB1221#3	5.433	5.430	376713	1000.000 CAL
PCB1221#4	6.277	6.273	64551	1000.000 CAL
PCB1221#5	7.377	7.373	74336	1000.000 CAL
PCB1254#1	9.587	9.573	467229	1000.000 CAL
PCB1254#2	10.213	10.203	655820	1000.000 CAL
PCB1254#3	10.857	10.847	508173	1000.000 CAL
PCB1254#4	11.147	11.147	831383	1000.000 CAL
PCB1254#5	11.810	11.800	765637	1000.000 CAL

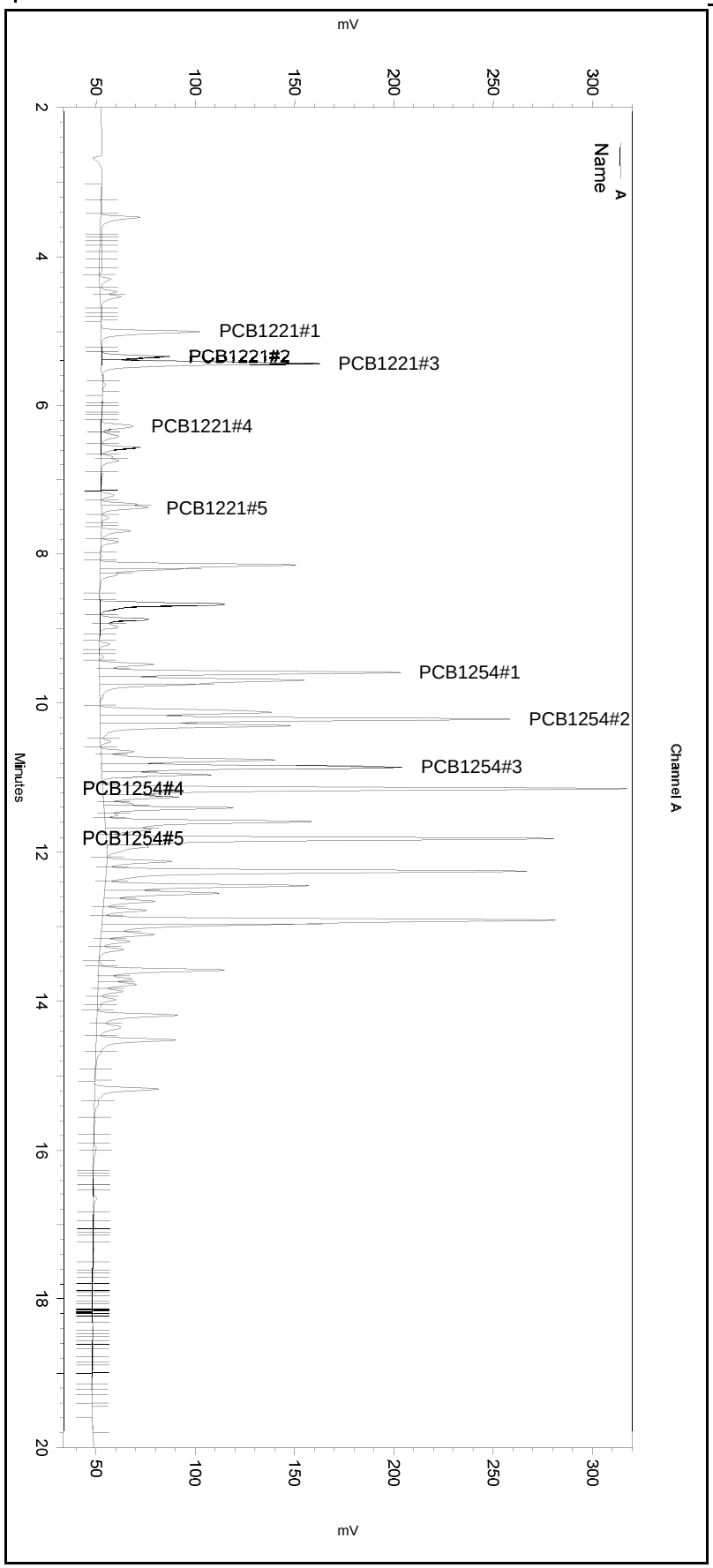
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
PCB1221#1	4.317	4.310	132526	1000.000 CAL
PCB1221#2	4.513	4.507	87451	1000.000 CAL
PCB1221#3	4.630	4.623	390314	1000.000 CAL
PCB1221#4	5.517	5.510	73382	1000.000 CAL
PCB1221#5	6.463	6.460	55144	1000.000 CAL
PCB1254#1	8.720	8.710	548676	1000.000 CAL
PCB1254#2	9.263	9.253	613934	1000.000 CAL
PCB1254#3	9.883	9.873	390540	1000.000 CAL
PCB1254#4	10.117	10.110	867410	1000.000 CAL
PCB1254#5	10.727	10.717	586245	1000.000 CAL

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-025**
Sample Name: **ical,s34684,ar2154_1000**
Instrument: GC16 (Offline) Vial: 45 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-004.met

Software Version 3.1.7
Run Date: 1/4/2018 1:32:52 AM
Analysis Date: 1/4/2018 11:45:31 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	3	0
Yes	Shoulder Sensitivity	4.5	20	1000

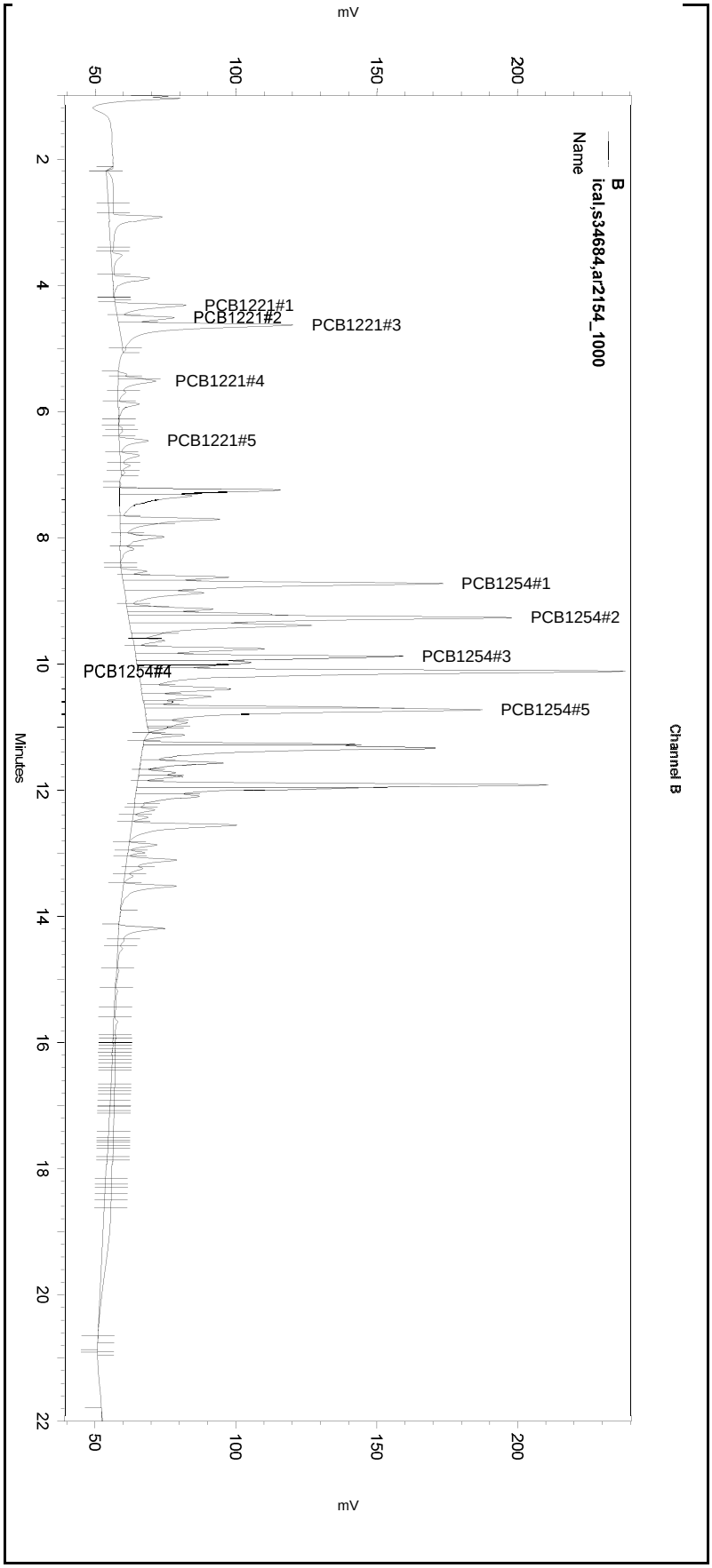
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-025

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	4.841	0	0
Yes	Reset Baseline	5.807	0	0
Yes	Reset Baseline	7.617	0	0
Yes	Reset Baseline	12.067	0	0

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-025**
Sample Name: **ical,s34684,ar2154_1000**
Instrument: GC16 (Offline) Vial: 45 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-004.met

Software Version 3.1.7
Run Date: 1/4/2018 1:32:52 AM
Analysis Date: 1/4/2018 11:45:31 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2	0
Yes	Shoulder Sensitivity	4.5	20	50

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-025

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	5.07	0	0
Yes	Reset Baseline	7.019	0	0
Yes	Reset Baseline	11.084	0	0

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq** Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-025** Sample Name: **ical,s34684,ar2154_1000** Instrument: GC16 (Offline) Vial: 45 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-004.met	Software Version 3.1.7 Run Date: 1/4/2018 1:32:52 AM Analysis Date: 1/4/2018 11:33:16 AM Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
PCB1221#1	5.000	4.993	190622	1000.000 CAL
PCB1221#2	5.340	5.333	112166	1000.000 CAL
PCB1221#3	5.433	5.430	405297	1000.000 CAL
PCB1221#4	6.277	6.273	78805	1000.000 CAL
PCB1221#5	7.377	7.373	87268	1000.000 CAL
PCB1254#1	9.587	9.573	478105	1000.000 CAL
PCB1254#2	10.213	10.203	668390	1000.000 CAL
PCB1254#3	10.857	10.847	527602	1000.000 CAL
PCB1254#4	11.147	11.147	862081	1000.000 CAL
PCB1254#5	11.810	11.800	814029	1000.000 CAL

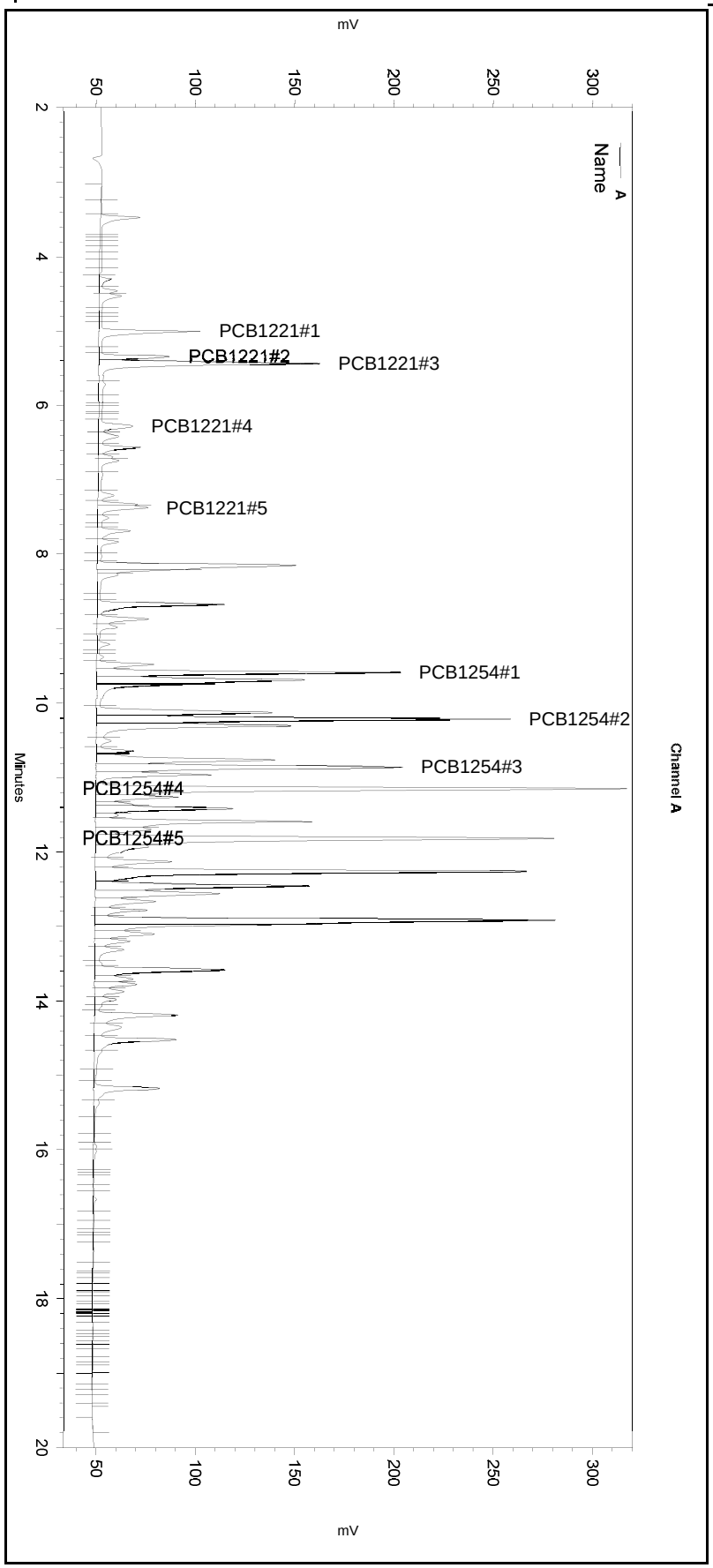
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
PCB1221#1	4.317	4.310	185354	1000.000 CAL
PCB1221#2	4.513	4.507	117584	1000.000 CAL
PCB1221#3	4.630	4.623	524448	1000.000 CAL
PCB1221#4	5.517	5.510	126232	1000.000 CAL
PCB1221#5	6.463	6.460	131657	1000.000 CAL
PCB1254#1	8.720	8.710	619174	1000.000 CAL
PCB1254#2	9.263	9.253	683065	1000.000 CAL
PCB1254#3	9.883	9.873	475445	1000.000 CAL
PCB1254#4	10.117	10.110	1070641	1000.000 CAL
PCB1254#5	10.727	10.717	759071	1000.000 CAL

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-025**
Sample Name: **ical,s34684,ar2154_1000**
Instrument: GC16 (Offline) Vial: 45 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-004.met

Software Version 3.1.7
Run Date: 1/4/2018 1:32:52 AM
Analysis Date: 1/4/2018 11:33:16 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	3	0
Yes	Shoulder Sensitivity	4.5	20	1000

Manual Integration Fixes
==========

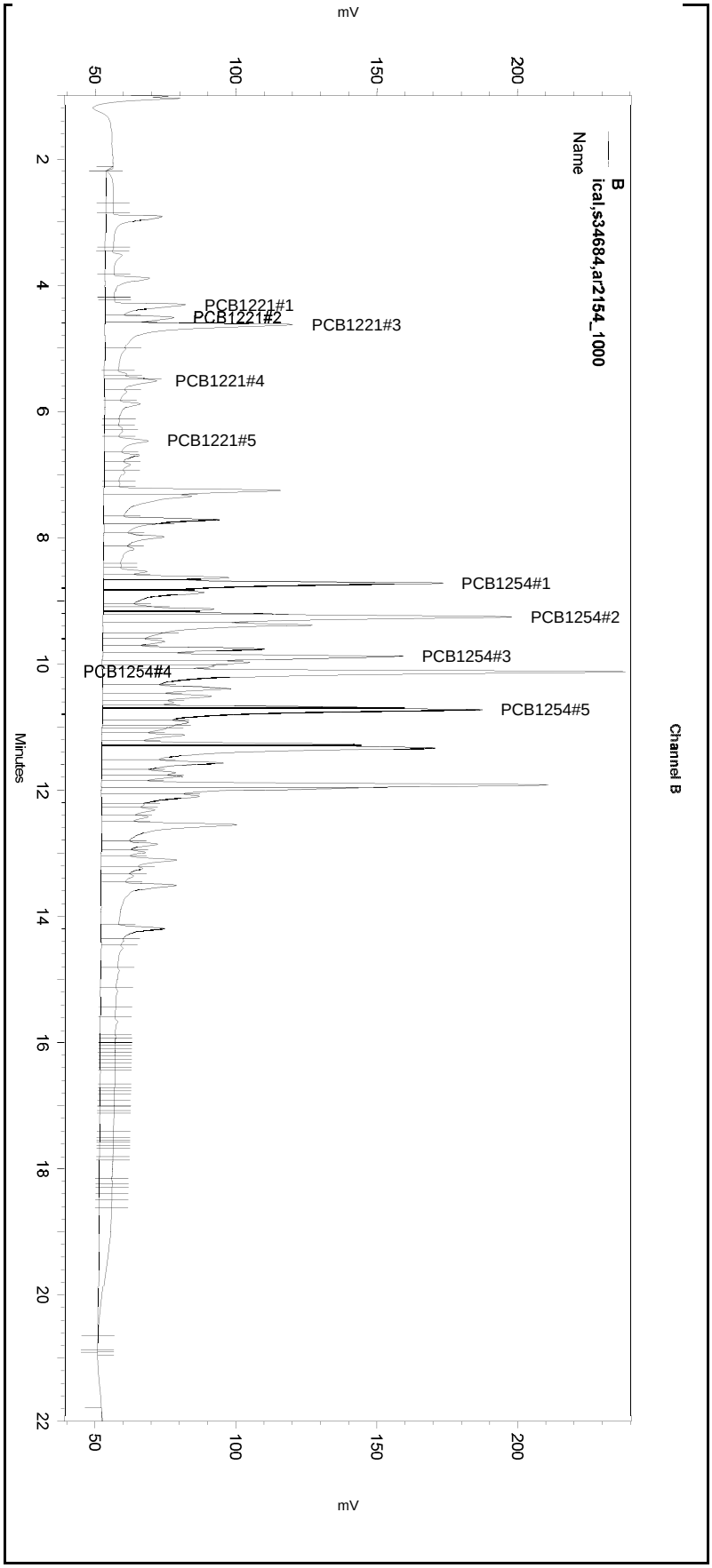
Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-025

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-025**
Sample Name: **ical,s34684,ar2154_1000**
Instrument: GC16 (Offline) Vial: 45 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-004.met

Software Version 3.1.7
Run Date: 1/4/2018 1:32:52 AM
Analysis Date: 1/4/2018 11:33:16 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2	0
Yes	Shoulder Sensitivity	4.5	20	50

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-025

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-025**
Sample Name: **ical,s34684,ar2154_1000**
Instrument: GC16 Vial: 45 Operator: lims2k3\pest3
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-003.met

Software Version 3.1.7
Run Date: 1/4/2018 1:32:52 AM
Analysis Date: 1/4/2018 1:56:49 AM
Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	4.530	4.557	47272	3.959
PCB1016#1	6.277	6.267	64723	112.294
PCB1016#2	7.377	7.370	77798	101.814
PCB1016#3	7.687	7.680	47413	106.155
PCB1016#4	8.150	8.143	312121	1172.257
PCB1016#5	8.670	8.663	194940	508.890
PCB1260#1	12.260	12.250	748246	585.327
PCB1260#2	12.913	12.903	818965	774.660
PCB1260#3	13.773	13.763	76731	110.095
PCB1260#4	14.517	14.513	156881	97.093
PCB1260#5	15.177	15.163	123925	176.262
Decachlorobiphenyl	17.750	17.763	118	0.009

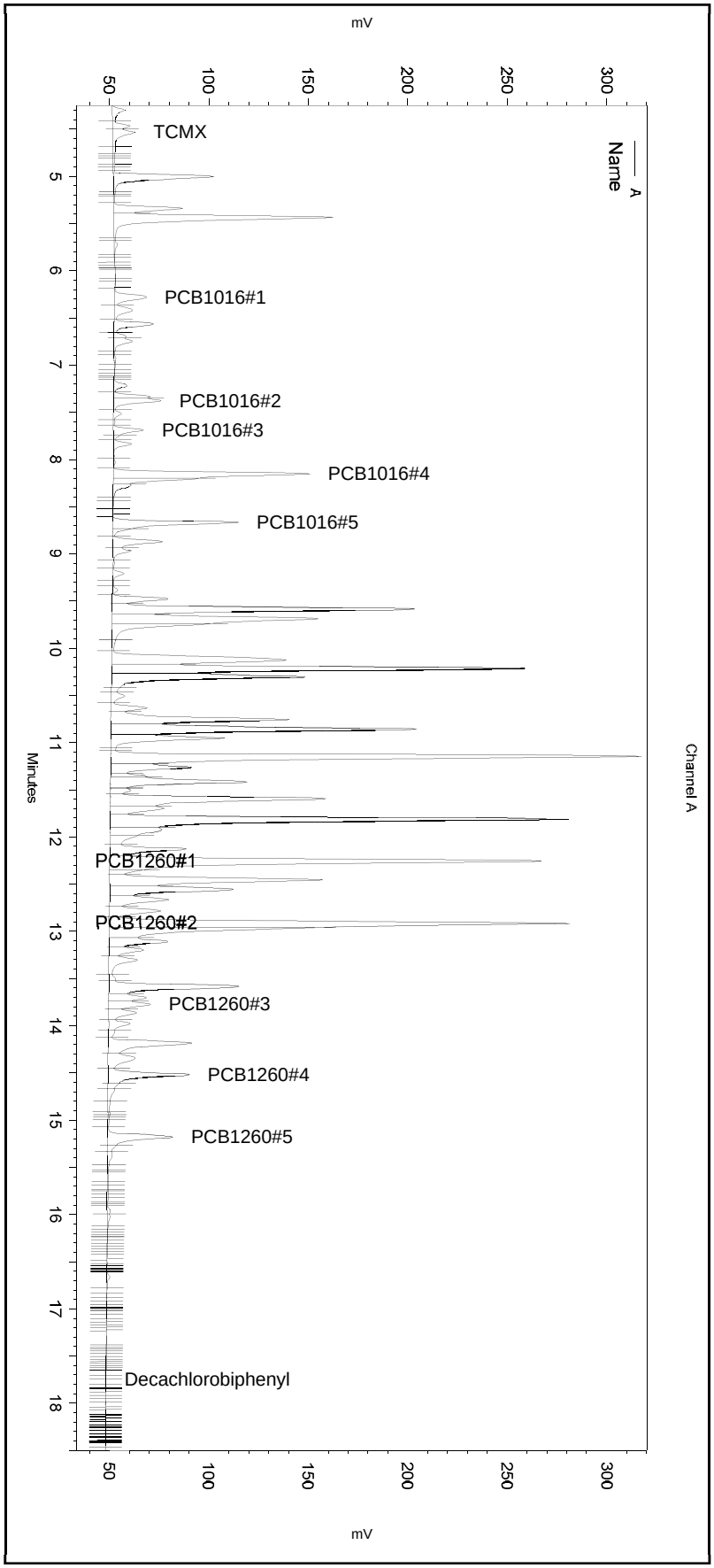
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	3.880	3.863	72085	6.009
PCB1016#1	5.487	5.463	24254	126.407
PCB1016#2	6.463	6.437	78758	131.276
PCB1016#3		6.660		0.000 BDL
PCB1016#4	7.247	7.223	243913	1199.547
PCB1016#5	7.990	7.963	95811	285.692
PCB1260#1	11.273	11.253	243190	472.953
PCB1260#2	11.917	11.897	888369	1539.787
PCB1260#3	12.860	12.843	76308	143.612
PCB1260#4	13.513	13.497	124241	154.130
PCB1260#5	14.387	14.377	16401	53.984
Decachlorobiphenyl	17.153	17.160	893	0.069

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-025**
Sample Name: **ical,s34684,ar2154_1000**
Instrument: GC16 Vial: 45 Operator: lims2k3\pest3
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-003.met

Software Version 3.1.7
Run Date: 1/4/2018 1:32:52 AM
Analysis Date: 1/4/2018 1:56:49 AM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========

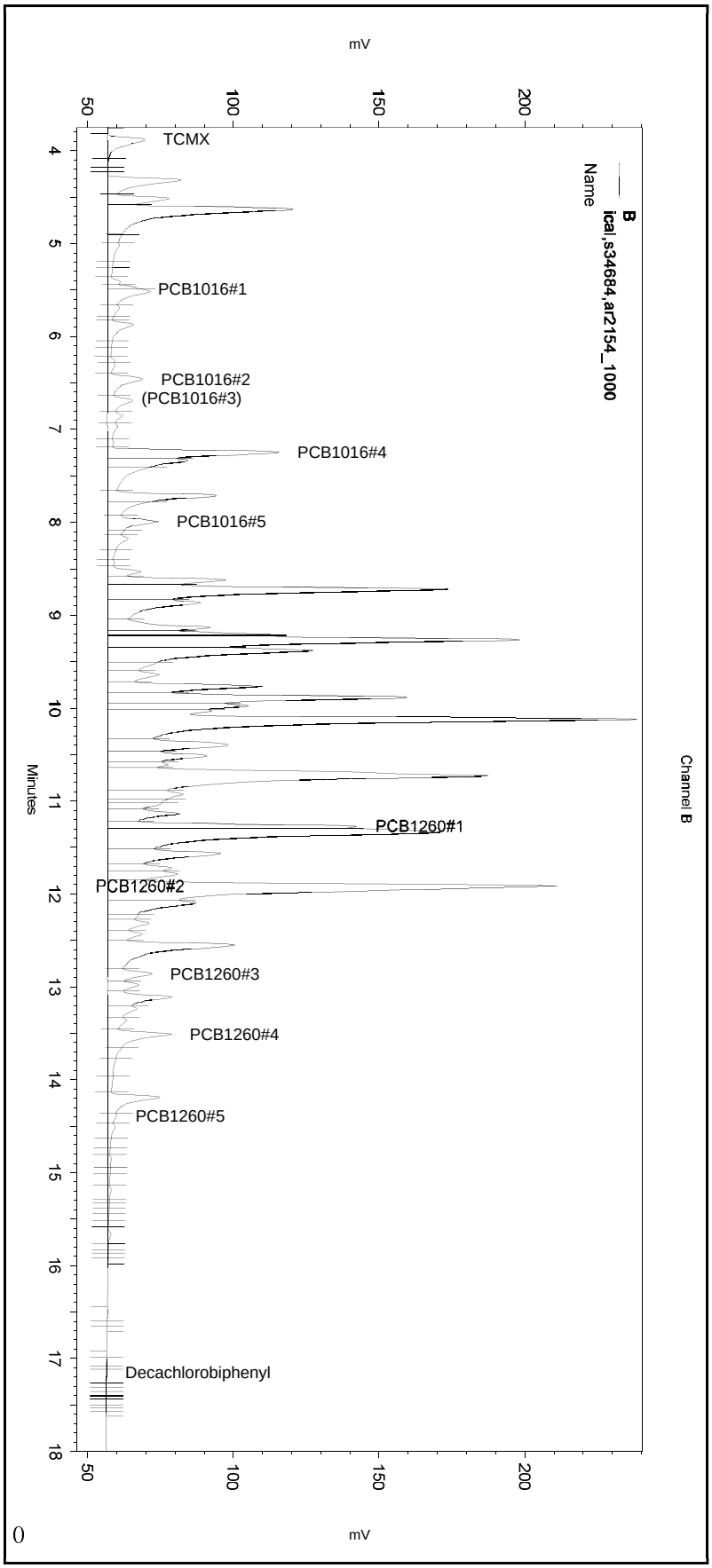
Data File: C:\Documents and Settings\All Users\Application Data\ChromatographySystem\Recovery Data\Instrument.10110\003-025_3035.tmp

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-025**
Sample Name: **ical,s34684,ar2154_1000**
Instrument: GC16 Vial: 45 Operator: lims2k3\pest3
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-003.met

Software Version 3.1.7
Run Date: 1/4/2018 1:32:52 AM
Analysis Date: 1/4/2018 1:56:49 AM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	1.8	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========

Data File: C:\Documents and Settings\All Users\Application Data\ChromatographySystem\Recovery Data\Instrument.10110\003-025_3035.tmp

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq** Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-027** Sample Name: **icv,s34679,ultra_1254** Instrument: GC16 (Offline) Vial: 47 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-004.met	Software Version 3.1.7 Run Date: 1/4/2018 2:30:52 AM Analysis Date: 1/4/2018 12:03:50 PM Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
PCB1221#1	4.967	4.993	3124	17.521
PCB1221#2	5.310	5.333	2933	25.862
PCB1221#3	5.407	5.430	7426	16.792
PCB1221#4	6.250	6.273	8223	115.890
PCB1221#5	7.353	7.373	4931	68.174
PCB1254#1	9.563	9.573	140842	254.163
PCB1254#2	10.193	10.203	194395	248.839
PCB1254#3	10.837	10.847	139258	245.169
PCB1254#4	11.127	11.147	227735	246.621
PCB1254#5	11.790	11.800	203409	249.026

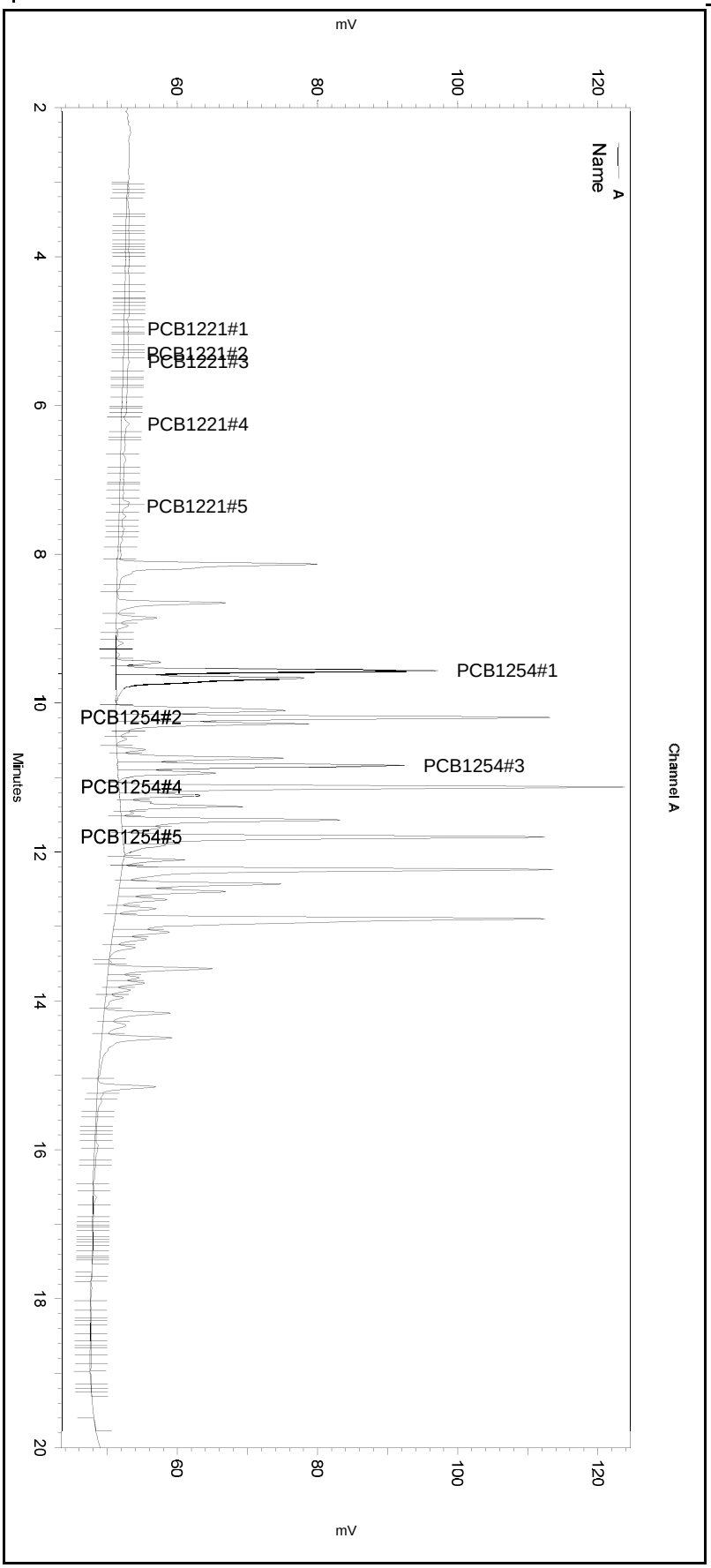
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
PCB1221#1	4.303	4.310	920	7.697
PCB1221#2	4.503	4.507	869	10.512
PCB1221#3	4.630	4.623	898	2.368
PCB1221#4	5.487	5.510	5775	88.558
PCB1221#5	6.430	6.460	3054	62.700
PCB1254#1	8.700	8.710	137346	243.495
PCB1254#2	9.243	9.253	157044	250.141
PCB1254#3	9.863	9.873	87196	235.593
PCB1254#4	10.097	10.110	199344	246.531
PCB1254#5	10.703	10.717	137855	255.548

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-027**
Sample Name: **icv,s34679,ultra_1254**
Instrument: GC16 (Offline) Vial: 47 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-004.met

Software Version 3.1.7
Run Date: 1/4/2018 2:30:52 AM
Analysis Date: 1/4/2018 12:03:50 PM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	3	0
Yes	Shoulder Sensitivity	4.5	20	1000

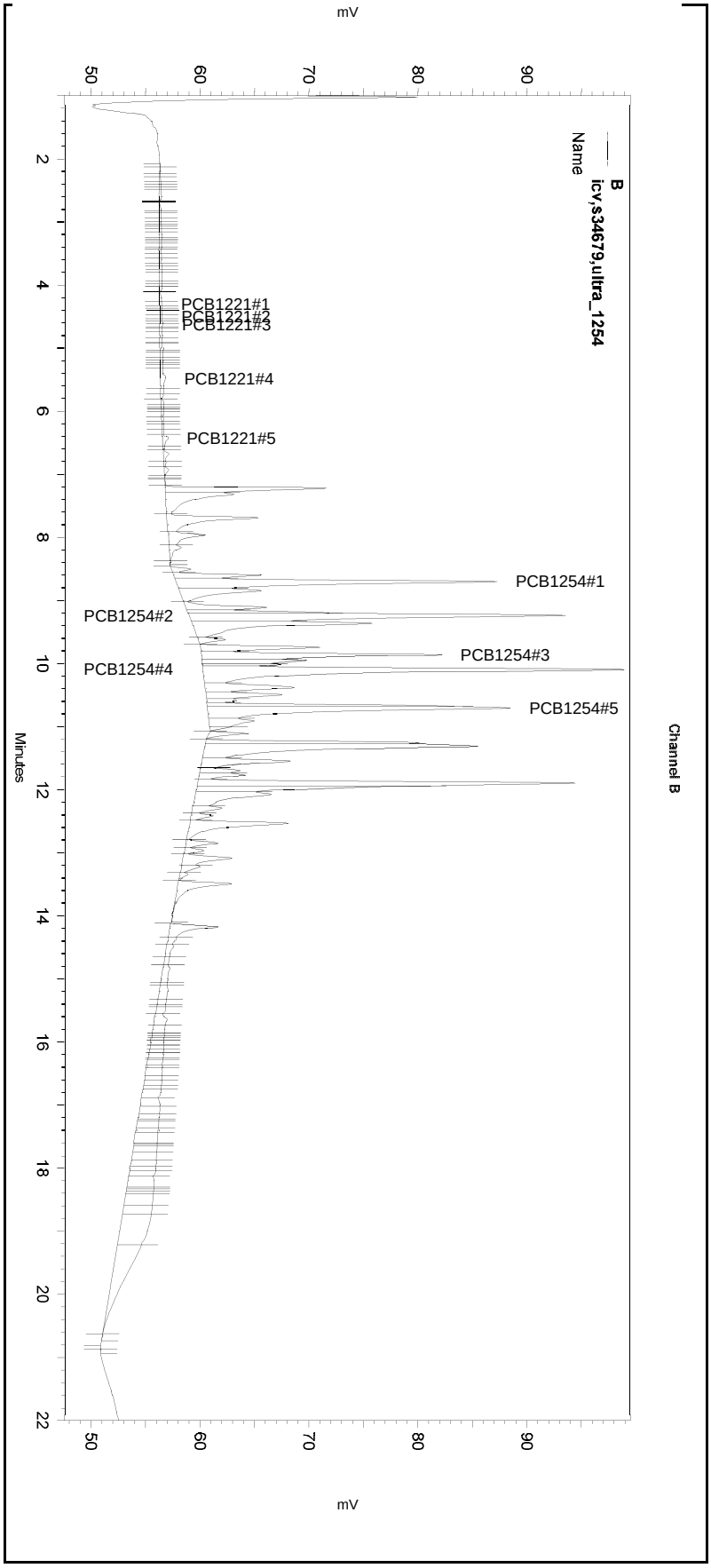
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-027

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	12.04	0	0

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-027**
Sample Name: **icv,s34679,ultra_1254**
Instrument: GC16 (Offline) Vial: 47 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-004.met

Software Version 3.1.7
Run Date: 1/4/2018 2:30:52 AM
Analysis Date: 1/4/2018 12:03:50 PM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

---< B >----------

No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2	0
Yes	Shoulder Sensitivity	4.5	20	50

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-027

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	8.435	0	0
Yes	Reset Baseline	9.686	0	0
Yes	Reset Baseline	11.06	0	0

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq** Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-027** Sample Name: **icv,s34679,ultra_1254** Instrument: GC16 (Offline) Vial: 47 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-004.met	Software Version 3.1.7 Run Date: 1/4/2018 2:30:52 AM Analysis Date: 1/4/2018 12:00:18 PM Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
PCB1221#1	4.967	4.993	3841	21.543
PCB1221#2	5.310	5.333	3685	32.493
PCB1221#3	5.407	5.430	9308	21.048
PCB1221#4	6.250	6.273	11091	156.309
PCB1221#5	7.353	7.373	6968	96.337
PCB1254#1	9.563	9.573	145791	263.094
PCB1254#2	10.193	10.203	200061	256.092
PCB1254#3	10.837	10.847	148964	262.256
PCB1254#4	11.127	11.147	242501	262.612
PCB1254#5	11.790	11.800	225716	276.335

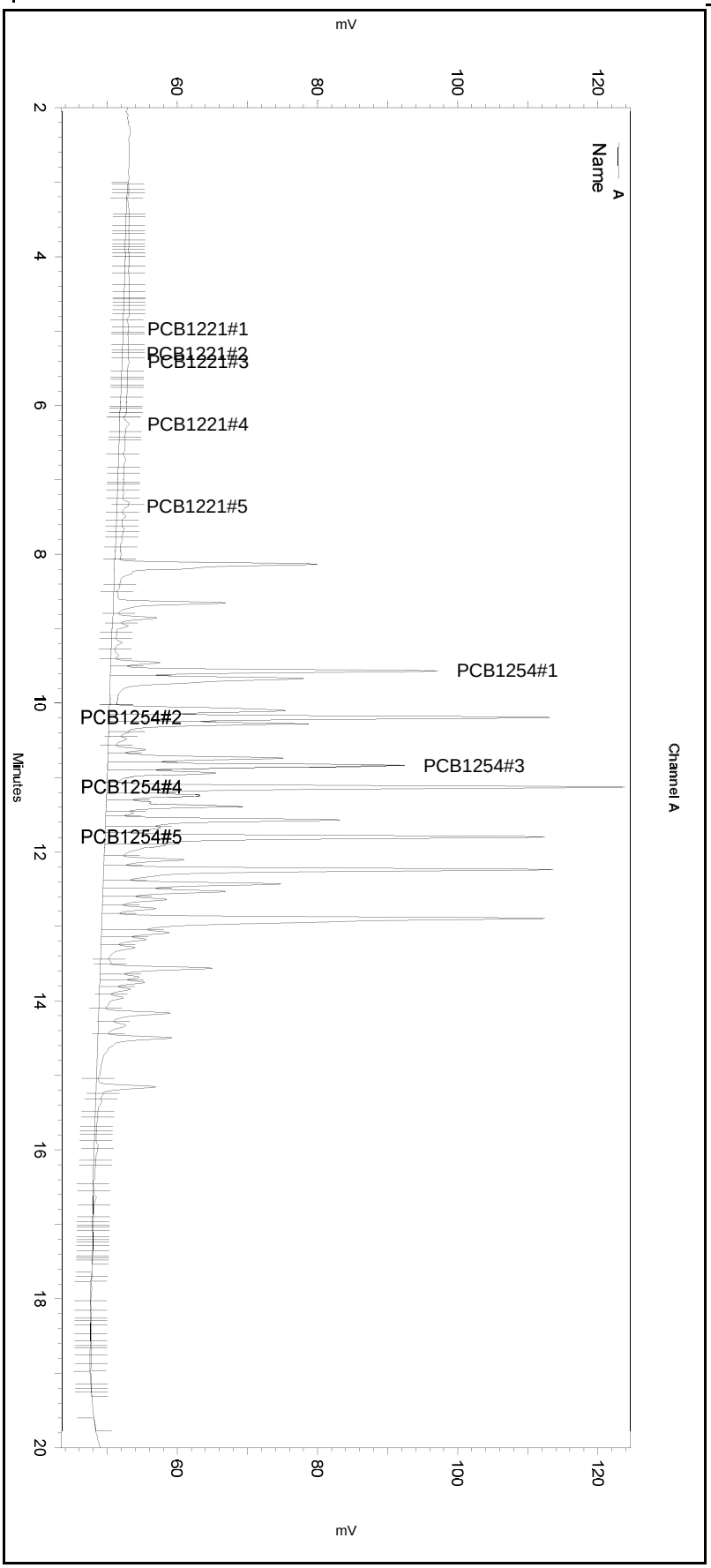
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
PCB1221#1	4.303	4.310	3420	28.611
PCB1221#2	4.503	4.507	3387	40.973
PCB1221#3	4.630	4.623	3292	8.680
PCB1221#4	5.487	5.510	25653	357.959
PCB1221#5	6.430	6.460	20856	428.181
PCB1254#1	8.700	8.710	171005	303.168
PCB1254#2	9.243	9.253	193949	308.924
PCB1254#3	9.863	9.873	129949	351.106
PCB1254#4	10.097	10.110	299396	370.267
PCB1254#5	10.703	10.717	216317	400.997

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-027**
Sample Name: **icv,s34679,ultra_1254**
Instrument: GC16 (Offline) Vial: 47 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-004.met

Software Version 3.1.7
Run Date: 1/4/2018 2:30:52 AM
Analysis Date: 1/4/2018 12:00:18 PM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	3	0
Yes	Shoulder Sensitivity	4.5	20	1000

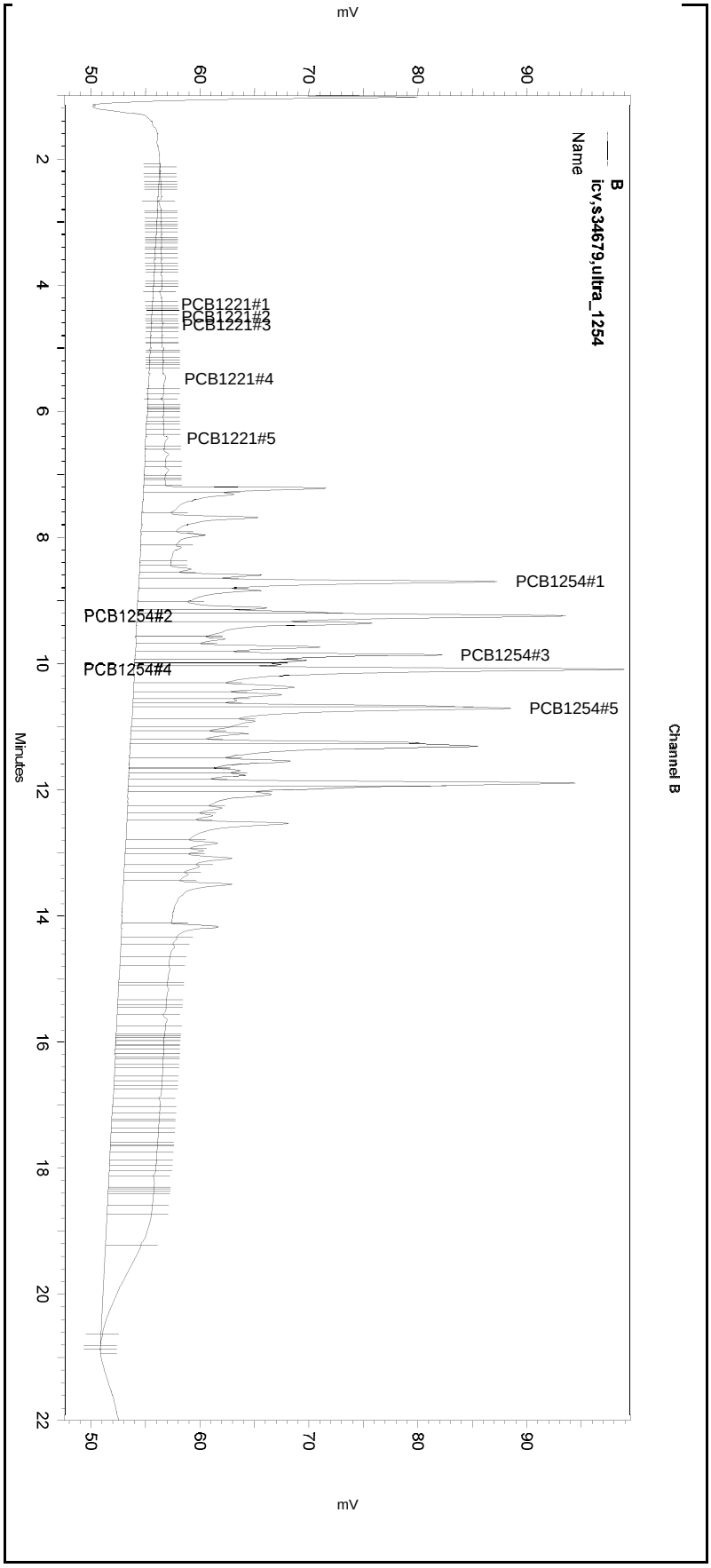
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-027

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
No	Reset Baseline	12.04	0	0

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-027**
Sample Name: **icv,s34679,ultra_1254**
Instrument: GC16 (Offline) Vial: 47 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-004.met

Software Version 3.1.7
Run Date: 1/4/2018 2:30:52 AM
Analysis Date: 1/4/2018 12:00:18 PM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2	0
Yes	Shoulder Sensitivity	4.5	20	50

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-027

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
No	Reset Baseline	11.06	0	0

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-027**
Sample Name: **icv,s34679,ultra_1254**
Instrument: GC16 Vial: 47 Operator: lims2k3\pest3
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-003.met

Software Version 3.1.7
Run Date: 1/4/2018 2:30:52 AM
Analysis Date: 1/4/2018 2:54:49 AM
Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	4.557	4.557	259	0.022
PCB1016#1	6.250	6.267	3360	5.830
PCB1016#2	7.353	7.370	3579	4.684
PCB1016#3	7.660	7.680	2285	5.116
PCB1016#4	8.130	8.143	90152	338.591
PCB1016#5	8.647	8.663	52611	137.341
PCB1260#1	12.237	12.250	227191	177.724
PCB1260#2	12.893	12.903	225663	213.455
PCB1260#3	13.753	13.763	23817	34.173
PCB1260#4	14.497	14.513	44507	27.545
PCB1260#5	15.153	15.163	31382	44.636
Decachlorobiphenyl		17.763		0.000 BDL

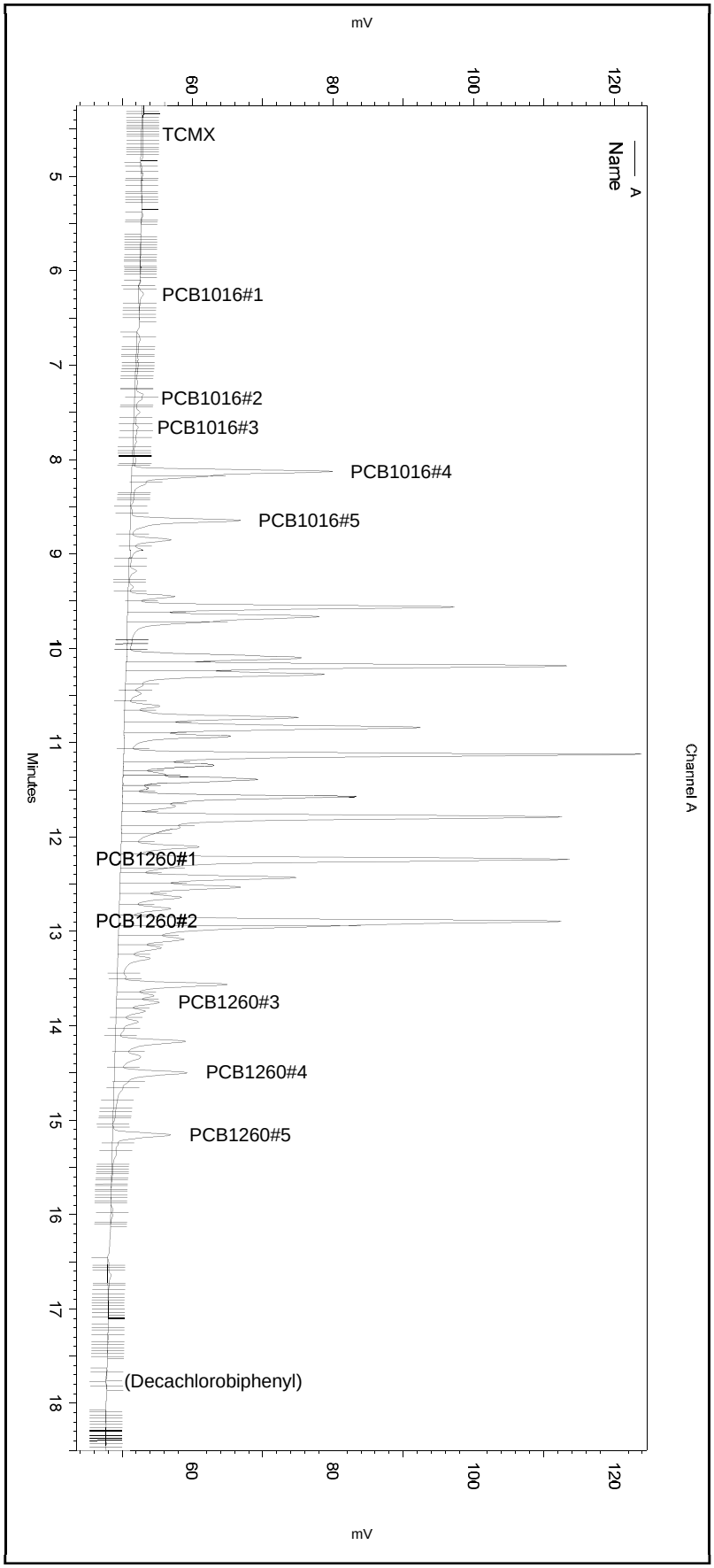
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	3.850	3.863	11	0.001
PCB1016#1	5.487	5.463	1227	6.395
PCB1016#2	6.430	6.437	1595	2.659
PCB1016#3	6.680	6.660	2087	5.986
PCB1016#4	7.227	7.223	58228	286.361
PCB1016#5	7.967	7.963	19376	57.776
PCB1260#1	11.253	11.253	63067	122.652
PCB1260#2	11.897	11.897	231205	400.742
PCB1260#3	12.840	12.843	23123	43.517
PCB1260#4	13.493	13.497	32269	40.032
PCB1260#5	14.363	14.377	3131	10.306
Decachlorobiphenyl	17.147	17.160	324	0.025

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-027**
Sample Name: **icv,s34679,ultra_1254**
Instrument: GC16 Vial: 47 Operator: lims2k3\pest3
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-003.met

Software Version 3.1.7
Run Date: 1/4/2018 2:30:52 AM
Analysis Date: 1/4/2018 2:54:49 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	0	0	0

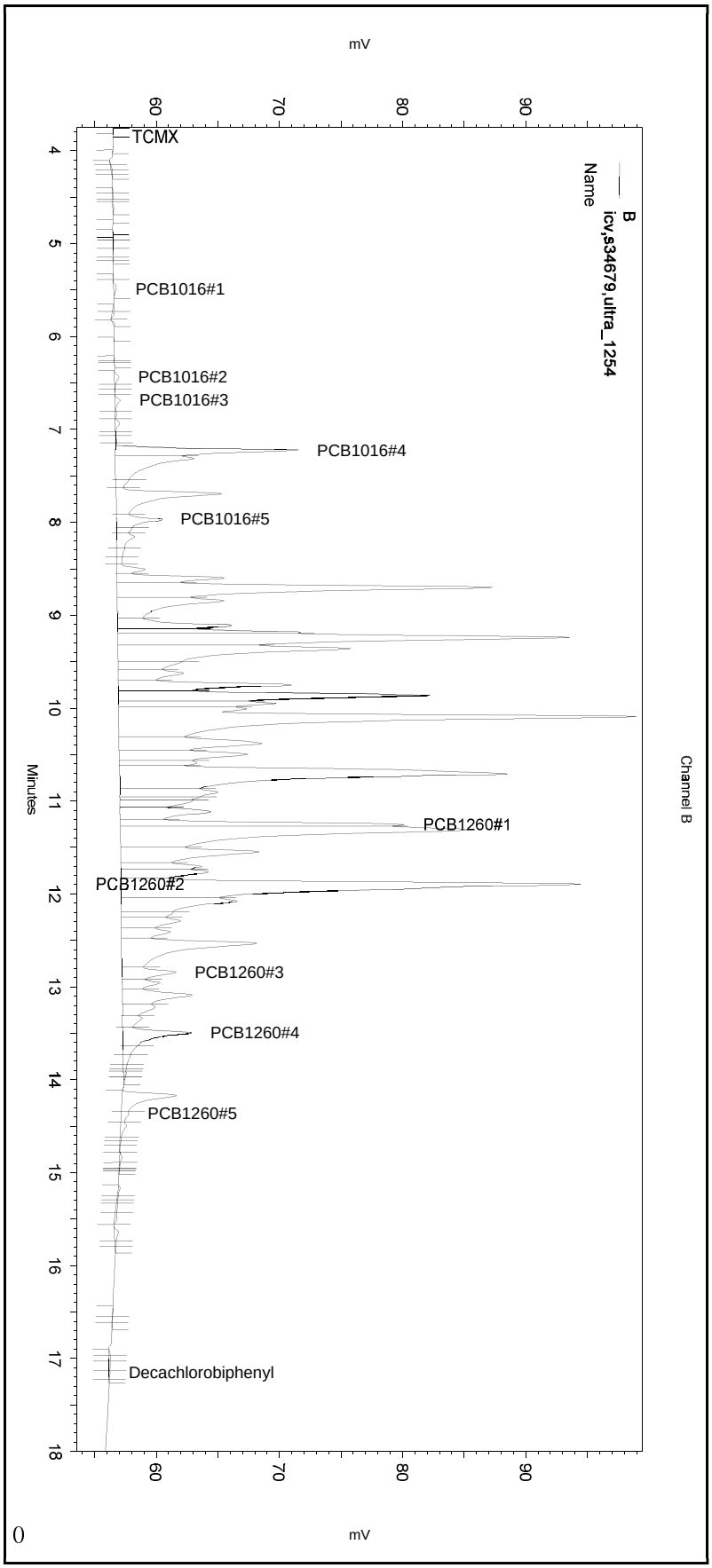
Manual Integration Fixes
==========

Data File: C:\Documents and Settings\All Users\Application Data\ChromatographySystem\Recovery Data\Instrument.10110\003-027_3037.tmp

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-027**
Sample Name: **icv,s34679,ultra_1254**
Instrument: GC16 Vial: 47 Operator: lims2k3\pest3
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-003.met

Software Version 3.1.7
Run Date: 1/4/2018 2:30:52 AM
Analysis Date: 1/4/2018 2:54:49 AM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	1.8	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========

Data File: C:\Documents and Settings\All Users\Application Data\ChromatographySystem\Recovery Data\Instrument.10110\003-027_3037.tmp

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq** Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-031** Sample Name: **icv,s34678,ultra_1221** Instrument: GC16 (Offline) Vial: 51 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-004.met	Software Version 3.1.7 Run Date: 1/4/2018 4:26:52 AM Analysis Date: 1/4/2018 12:07:24 PM Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
PCB1221#1	4.980	4.993	40435	226.784
PCB1221#2	5.320	5.333	25595	225.687
PCB1221#3	5.413	5.430	101051	228.506
PCB1221#4	6.257	6.273	11922	168.021
PCB1221#5	7.357	7.373	15710	217.201
PCB1254#1	9.563	9.573	4175	7.534
PCB1254#2	10.193	10.203	5567	7.126
PCB1254#3	10.833	10.847	2954	5.201
PCB1254#4	11.127	11.147	4491	4.863
PCB1254#5	11.790	11.800	4481	5.486

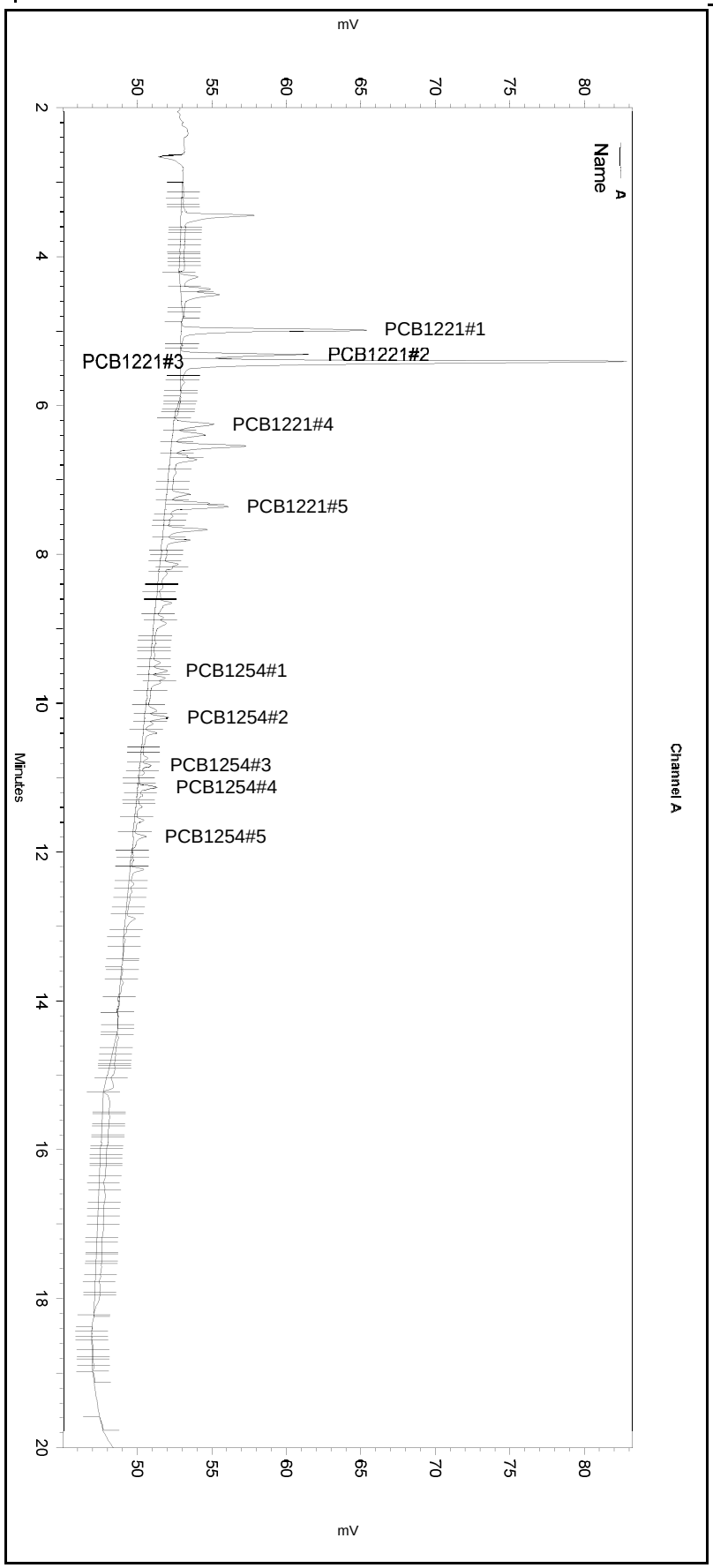
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
PCB1221#1	4.293	4.310	28244	236.285
PCB1221#2	4.493	4.507	19792	239.427
PCB1221#3	4.610	4.623	95462	251.702
PCB1221#4	5.497	5.510	12565	180.581
PCB1221#5	6.440	6.460	7744	158.987
PCB1254#1	8.697	8.710	4366	7.740
PCB1254#2	9.243	9.253	4998	7.961
PCB1254#3	9.860	9.873	2847	7.692
PCB1254#4	10.097	10.110	4692	5.803
PCB1254#5	10.700	10.717	6367	11.803

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-031**
Sample Name: **icv,s34678,ultra_1221**
Instrument: GC16 (Offline) Vial: 51 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-004.met

Software Version 3.1.7
Run Date: 1/4/2018 4:26:52 AM
Analysis Date: 1/4/2018 12:07:24 PM
Sample Amount: 1



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No items selected for this section

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Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	3	0
Yes	Shoulder Sensitivity	4.5	20	1000

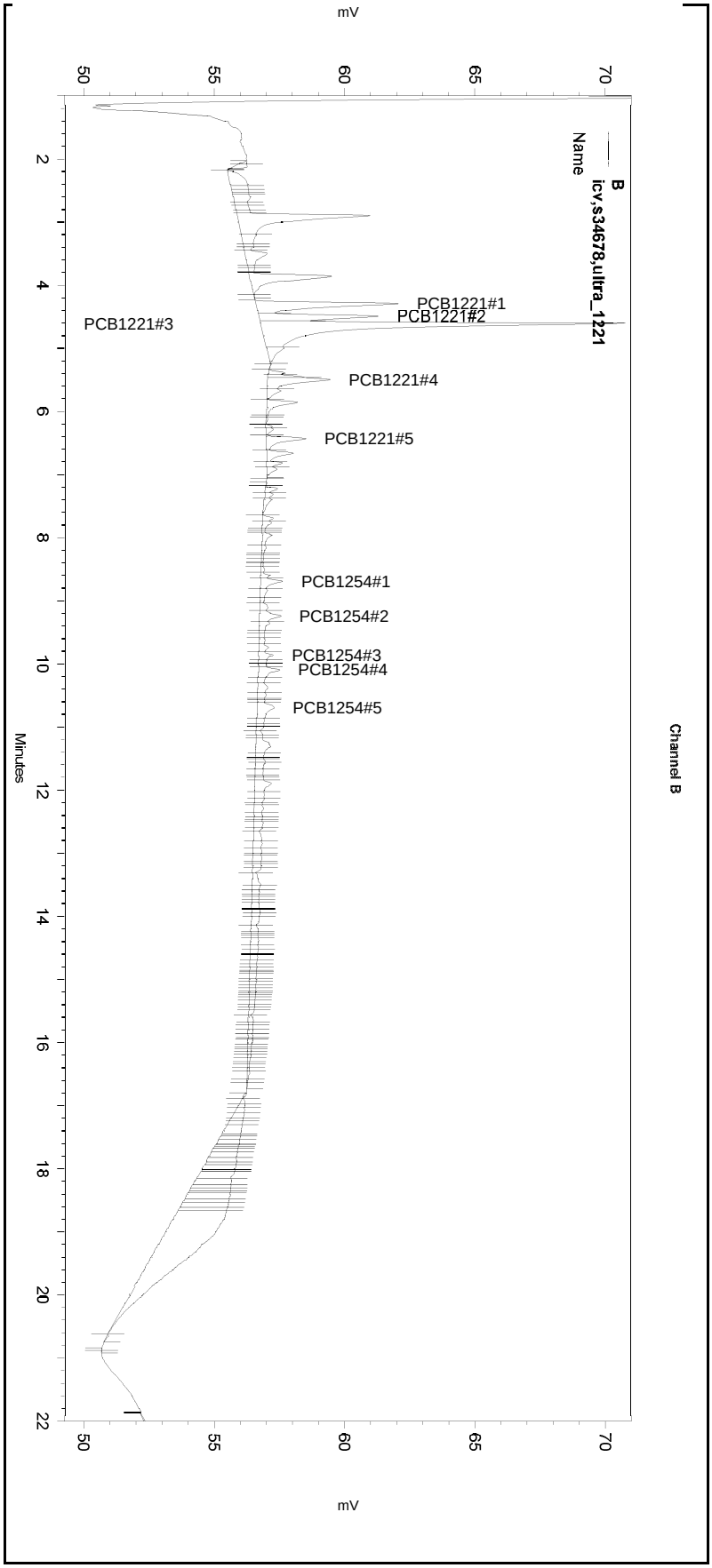
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-031

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	4.82	0	0
Yes	Reset Baseline	5.838	0	0
Yes	Split Peak	7.324	0	0

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-031**
Sample Name: **icv,s34678,ultra_1221**
Instrument: GC16 (Offline) Vial: 51 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-004.met

Software Version 3.1.7
Run Date: 1/4/2018 4:26:52 AM
Analysis Date: 1/4/2018 12:07:24 PM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2	0
Yes	Shoulder Sensitivity	4.5	20	50

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-031

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	4.203	0	0
Yes	Reset Baseline	5.234	0	0
Yes	Reset Baseline	7.062	0	0

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq** Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-031** Sample Name: **icv,s34678,ultra_1221** Instrument: GC16 (Offline) Vial: 51 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-004.met	Software Version 3.1.7 Run Date: 1/4/2018 4:26:52 AM Analysis Date: 1/4/2018 12:04:47 PM Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
PCB1221#1	4.980	4.993	53386	299.421
PCB1221#2	5.320	5.333	31756	280.012
PCB1221#3	5.413	5.430	112717	254.886
PCB1221#4	6.257	6.273	18755	264.321
PCB1221#5	7.357	7.373	28518	394.280
PCB1254#1	9.563	9.573	6265	11.306
PCB1254#2	10.193	10.203	7264	9.298
PCB1254#3	10.833	10.847	4416	7.775
PCB1254#4	11.127	11.147	6062	6.565
PCB1254#5	11.790	11.800	6236	7.634

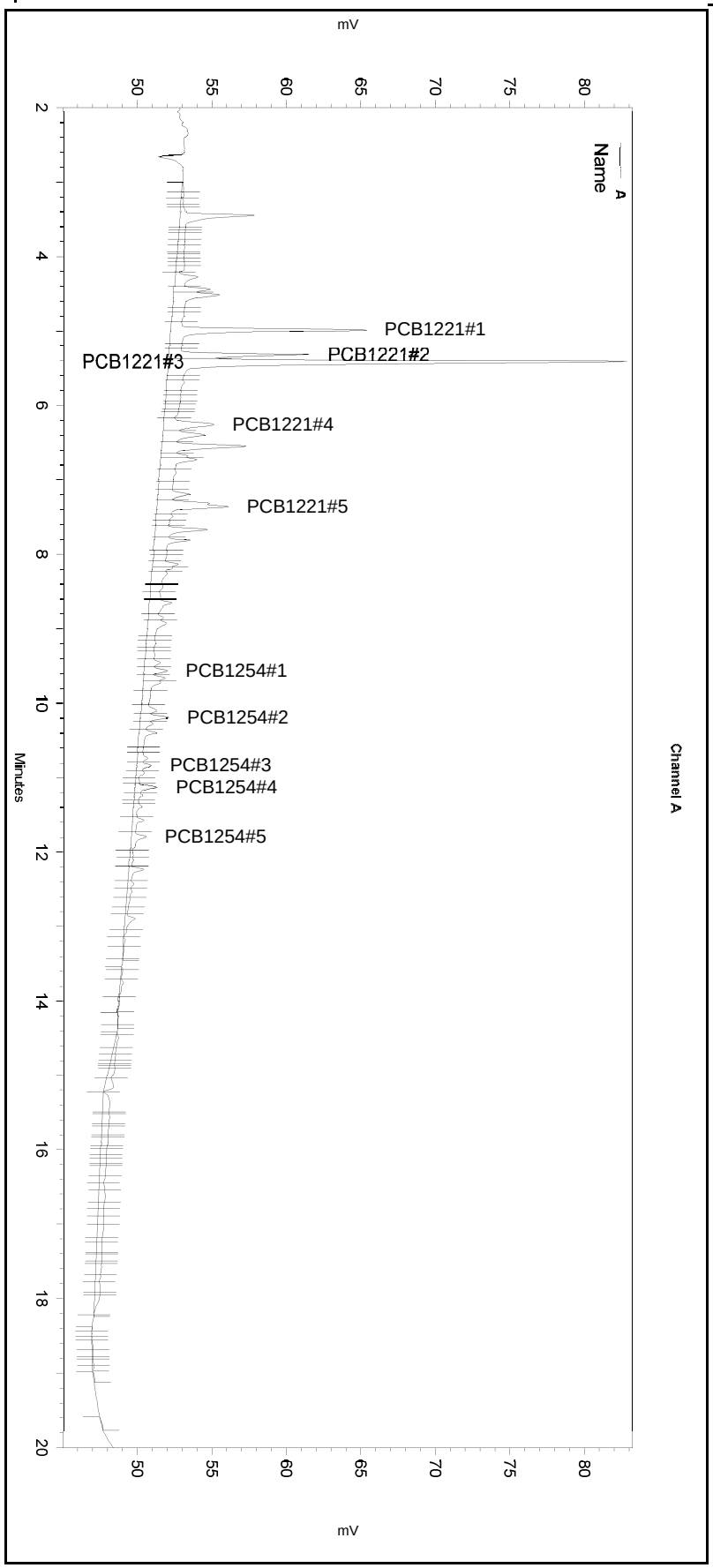
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
PCB1221#1	4.293	4.310	43308	362.308
PCB1221#2	4.493	4.507	27225	329.345
PCB1221#3	4.610	4.623	126224	332.812
PCB1221#4	5.497	5.510	26860	374.318
PCB1221#5	6.440	6.460	25495	523.422
PCB1254#1	8.697	8.710	13985	24.793
PCB1254#2	9.243	9.253	14362	22.876
PCB1254#3	9.860	9.873	9156	24.738
PCB1254#4	10.097	10.110	12468	15.419
PCB1254#5	10.700	10.717	17239	31.957

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-031**
Sample Name: **icv,s34678,ultra_1221**
Instrument: GC16 (Offline) Vial: 51 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-004.met

Software Version 3.1.7
Run Date: 1/4/2018 4:26:52 AM
Analysis Date: 1/4/2018 12:04:47 PM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	3	0
Yes	Shoulder Sensitivity	4.5	20	1000

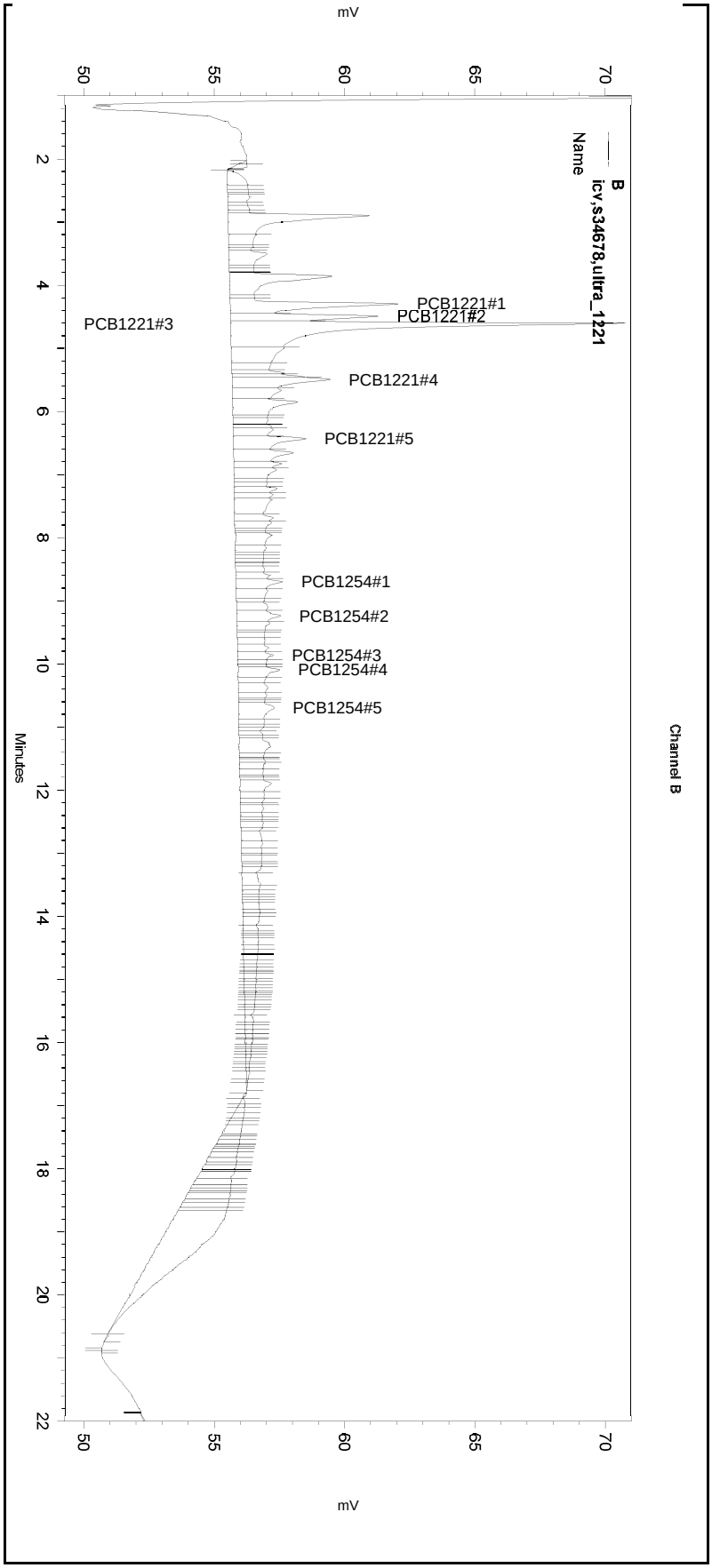
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-031

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-031**
Sample Name: **icv,s34678,ultra_1221**
Instrument: GC16 (Offline) Vial: 51 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-004.met

Software Version 3.1.7
Run Date: 1/4/2018 4:26:52 AM
Analysis Date: 1/4/2018 12:04:47 PM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2	0
Yes	Shoulder Sensitivity	4.5	20	50

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-031

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-031**
Sample Name: **icv,s34678,ultra_1221**
Instrument: GC16 Vial: 51 Operator: lims2k3\pest3
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-003.met

Software Version 3.1.7
Run Date: 1/4/2018 4:26:52 AM
Analysis Date: 1/4/2018 4:50:50 AM
Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX		4.557		0.000 BDL
PCB1016#1	6.257	6.267	11779	20.436
PCB1016#2	7.357	7.370	14727	19.273
PCB1016#3	7.667	7.680	10246	22.940
PCB1016#4	8.130	8.143	3621	13.600
PCB1016#5	8.650	8.663	3158	8.244
PCB1260#1	12.237	12.250	3376	2.641
PCB1260#2	12.893	12.903	2895	2.738
PCB1260#3	13.747	13.763	906	1.300
PCB1260#4	14.517	14.513	236	0.146
PCB1260#5	15.150	15.163	2683	3.816
Decachlorobiphenyl		17.763		0.000 BDL

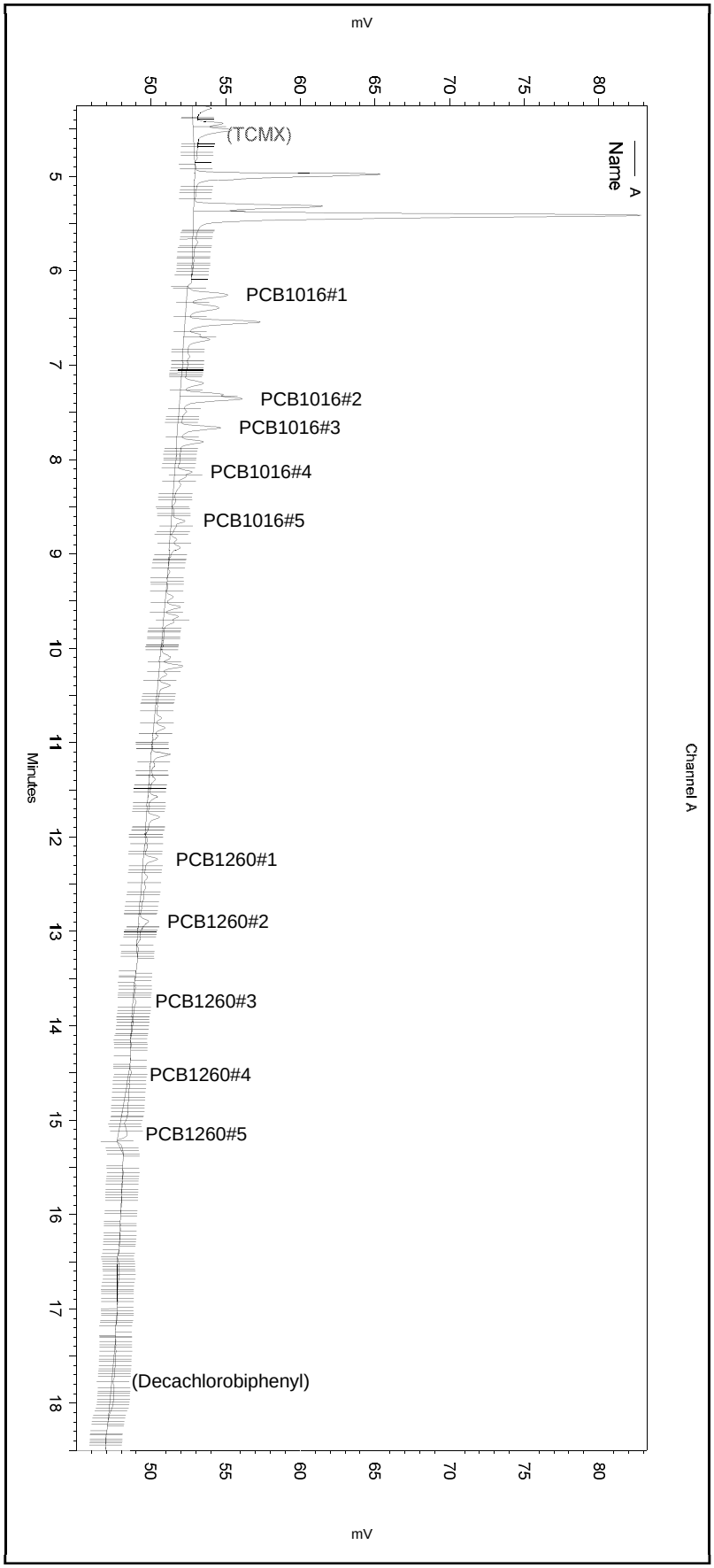
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	3.860	3.863	18785	1.566
PCB1016#1	5.460	5.463	2315	12.065
PCB1016#2	6.440	6.437	7855	13.093
PCB1016#3	6.663	6.660	5483	15.727
PCB1016#4	7.223	7.223	2103	10.342
PCB1016#5	7.967	7.963	1048	3.125
PCB1260#1	11.247	11.253	717	1.394
PCB1260#2	11.893	11.897	1185	2.054
PCB1260#3	12.850	12.843	949	1.786
PCB1260#4	13.487	13.497	74	0.092
PCB1260#5	14.380	14.377	164	0.540
Decachlorobiphenyl	17.140	17.160	484	0.038

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-031**
Sample Name: **icv,s34678,ultra_1221**
Instrument: GC16 Vial: 51 Operator: lims2k3\pest3
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-003.met

Software Version 3.1.7
Run Date: 1/4/2018 4:26:52 AM
Analysis Date: 1/4/2018 4:50:50 AM
Sample Amount: 1



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No items selected for this section

---< A >----------

No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========

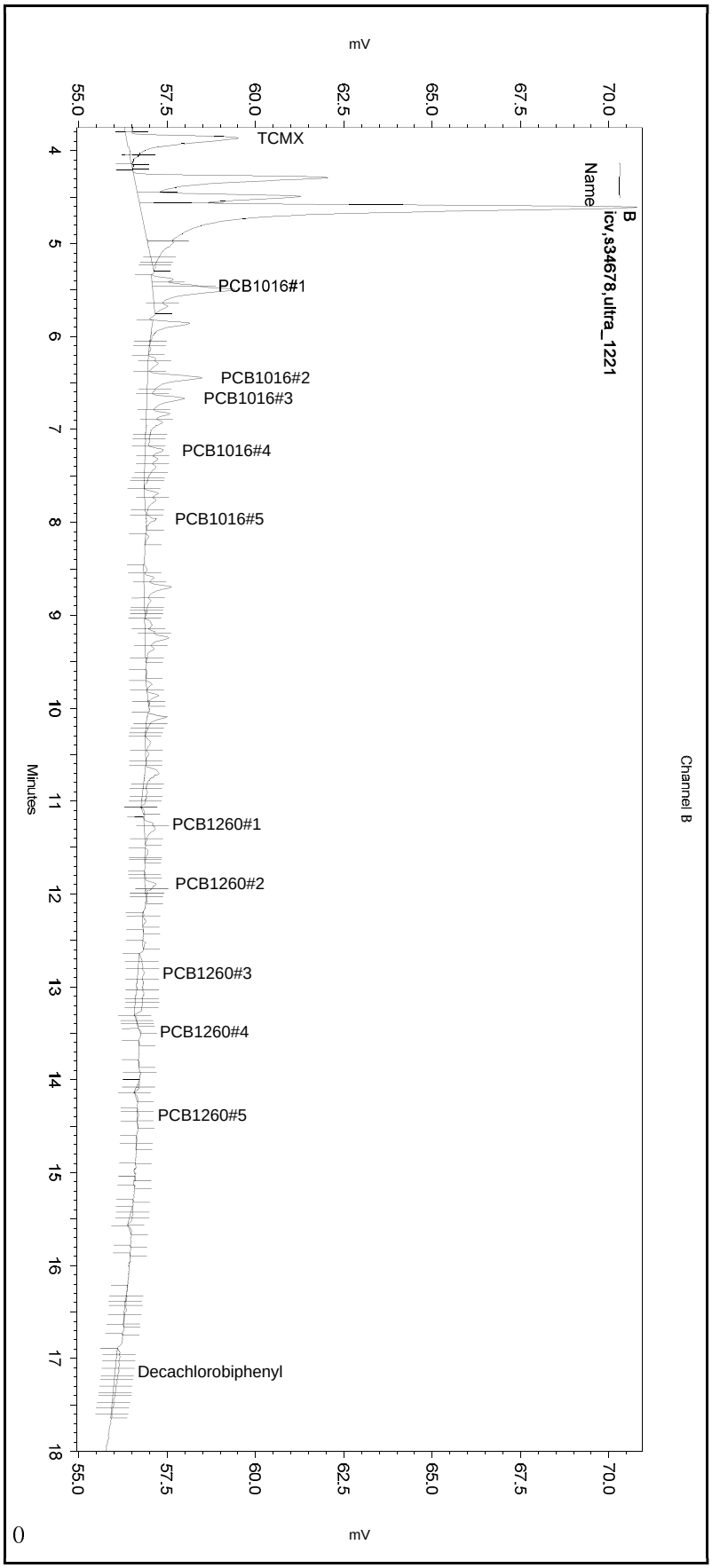
Data File: C:\Documents and Settings\All Users\Application Data\ChromatographySystem\Recovery Data\Instrument.10110\003-031_303B.tmp

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC16\Sequence\2018\003.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\003-031**
Sample Name: **icv,s34678,ultra_1221**
Instrument: GC16 Vial: 51 Operator: lims2k3\pest3
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-003.met

Software Version 3.1.7
Run Date: 1/4/2018 4:26:52 AM
Analysis Date: 1/4/2018 4:50:50 AM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

---< B >----------

No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	1.8	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========

Data File: C:\Documents and Settings\All Users\Application Data\ChromatographySystem\Recovery Data\Instrument.10110\003-031_303B.tmp

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

ENTHALPY INITIAL CALIBRATION FOR 296840 PCBS Soil: EPA 8082A

Inst : GC16
Calnum : 238037991001
Units : pg/ul

Name : ar-1660-026ical
Date : 26-JAN-2018 20:18
X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	026_009	238037991009	PCB100_20	26-JAN-2018 20:18	S35531 (10X)
L2	026_010	238037991010	PCB25_5	26-JAN-2018 20:47	S35530
L3	026_011	238037991011	PCB100_20	26-JAN-2018 21:16	S35531
L4	026_012	238037991012	PCB250_50	26-JAN-2018 21:45	S35532
L5	026_013	238037991013	PCB500_100	26-JAN-2018 22:14	S35533
L6	026_014	238037991014	PCB750_150	26-JAN-2018 22:43	S35534
L7	026_015	238037991015	PCB1000_200	26-JAN-2018 23:12	S35535

Analyte	Ch	L1	L2	L3	L4	L5	L6	L7	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	MxRSD	Flg
Aroclor-1016 Peak # 1	A	593.70	649.52	635.48	546.71	481.97	451.66	488.09	AVRG		0.00182		549.59	14	.99	20	
Aroclor-1016 Peak # 2	A	763.20	819.28	804.88	730.92	600.77	604.74	678.96	AVRG		0.00140		714.68	13	.99	20	
Aroclor-1016 Peak # 3	A	420.70	447.04	459.36	412.09	352.38	353.71	390.49	AVRG		0.00247		405.11	10	.99	20	
Aroclor-1016 Peak # 4	A	278.50	303.04	289.68	263.41	219.28	215.92	233.39	AVRG		0.00388		257.60	14	.99	20	
Aroclor-1016 Peak # 5	A	370.30	398.92	398.85	352.62	302.82	295.94	335.44	AVRG		0.00285		350.70	12	.99	20	
Aroclor-1260 Peak # 1	A	1160.5	1291.9	1321.3	1202.6	928.46	973.66	1077.3	AVRG		8.80E-4		1136.5	13	.99	20	
Aroclor-1260 Peak # 2	A	887.80	1041.4	1086.2	1019.3	804.87	895.64	1015.8	AVRG		0.00104		964.42	11	.99	20	
Aroclor-1260 Peak # 3	A	484.10	532.92	578.63	556.51	446.66	486.43	547.10	AVRG		0.00193		518.91	9	.99	20	
Aroclor-1260 Peak # 4	A	1046.8	1266.9	1336.4	1356.6	1016.7	1159.7	1284.8	AVRG		8.27E-4		1209.7	11	.99	20	
Aroclor-1260 Peak # 5	A	461.40	530.48	590.44	607.45	438.39	533.20	594.84	AVRG		0.00186		536.60	12	.99	20	
TCMX	A	11919	12854	12506	11335	10532	10068	11313	AVRG		8.69E-5		11504	9	.99	20	
Decachlorobiphenyl	A	13389	13769	13987	13255	8719.3	9675.3	10114	AVRG		8.44E-5		11844	19	.99	20	
Aroclor-1016 Peak # 1	B	204.60	213.28	221.02	207.51	183.65	188.51	223.21	AVRG		0.00486		205.97	7	.99	20	
Aroclor-1016 Peak # 2	B	452.70	530.76	597.39	575.73	513.27	550.81	670.95	AVRG		0.00180		555.95	12	.99	20	
Aroclor-1016 Peak # 3	B	268.60	286.56	352.16	335.06	295.69	306.39	347.78	AVRG		0.00319		313.18	10	.99	20	
Aroclor-1016 Peak # 4	B	178.20	205.32	228.75	210.01	184.87	184.61	184.20	AVRG		0.00509		196.57	9	.99	20	
Aroclor-1016 Peak # 5	B	263.70	323.52	340.39	336.93	296.44	302.05	342.47	AVRG		0.00317		315.07	9	.99	20	
Aroclor-1260 Peak # 1	B	428.00	502.80	512.97	462.19	372.15	390.78	456.83	AVRG		0.00224		446.53	12	.99	20	
Aroclor-1260 Peak # 2	B	435.80	555.40	591.40	597.11	527.59	573.01	679.28	AVRG		0.00177		565.66	13	.99	20	
Aroclor-1260 Peak # 3	B	398.50	451.60	451.65	437.48	339.23	378.77	431.21	AVRG		0.00242		412.63	10	.99	20	
Aroclor-1260 Peak # 4	B	549.60	655.48	674.46	679.06	532.89	629.94	707.60	AVRG		0.00158		632.72	11	.99	20	
Aroclor-1260 Peak # 5	B	283.50	421.36	436.86	445.04	322.40	374.22	439.65	AVRG		0.00257		389.00	17	.99	20	
TCMX	B	10416	10920	11708	11025	11073	11211	13690	AVRG		8.75E-5		11435	9	.99	20	
Decachlorobiphenyl	B	12716	12956	12242	11986	8314.4	10102	11022	AVRG		8.82E-5		11334	15	.99	20	

Spiked Amounts / Drifts	Ch	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D	L6	%D	L7	%D
Aroclor-1016 Peak # 1	A	10.000	8	25.000	18	100.00	16	250.00	-1	500.00	-12	750.00	-18	1000.0	-11
Aroclor-1016 Peak # 2	A	10.000	7	25.000	15	100.00	13	250.00	2	500.00	-16	750.00	-15	1000.0	-5
Aroclor-1016 Peak # 3	A	10.000	4	25.000	10	100.00	13	250.00	2	500.00	-13	750.00	-13	1000.0	-4
Aroclor-1016 Peak # 4	A	10.000	8	25.000	18	100.00	12	250.00	2	500.00	-15	750.00	-16	1000.0	-9
Aroclor-1016 Peak # 5	A	10.000	6	25.000	14	100.00	14	250.00	1	500.00	-14	750.00	-16	1000.0	-4
Aroclor-1260 Peak # 1	A	10.000	2	25.000	14	100.00	16	250.00	6	500.00	-18	750.00	-14	1000.0	-5
Aroclor-1260 Peak # 2	A	10.000	-8	25.000	8	100.00	13	250.00	6	500.00	-17	750.00	-7	1000.0	5
Aroclor-1260 Peak # 3	A	10.000	-7	25.000	3	100.00	12	250.00	7	500.00	-14	750.00	-6	1000.0	5
Aroclor-1260 Peak # 4	A	10.000	-13	25.000	5	100.00	10	250.00	12	500.00	-16	750.00	-4	1000.0	6
Aroclor-1260 Peak # 5	A	10.000	-14	25.000	-1	100.00	10	250.00	13	500.00	-18	750.00	-1	1000.0	11
TCMX	A	2.0000	4	5.0000	12	20.000	9	50.000	-1	100.00	-8	150.00	-12	200.00	-2
Decachlorobiphenyl	A	2.0000	13	5.0000	16	20.000	18	50.000	12	100.00	**-26**	150.00	-18	200.00	-15
Aroclor-1016 Peak # 1	B	10.000	-1	25.000	4	100.00	7	250.00	1	500.00	-11	750.00	-8	1000.0	8
Aroclor-1016 Peak # 2	B	10.000	-19	25.000	-5	100.00	7	250.00	4	500.00	-8	750.00	-1	1000.0	**21**
Aroclor-1016 Peak # 3	B	10.000	-14	25.000	-8	100.00	12	250.00	7	500.00	-6	750.00	-2	1000.0	11
Aroclor-1016 Peak # 4	B	10.000	-9	25.000	4	100.00	16	250.00	7	500.00	-6	750.00	-6	1000.0	-6
Aroclor-1016 Peak # 5	B	10.000	-16	25.000	3	100.00	8	250.00	7	500.00	-6	750.00	-4	1000.0	9
Aroclor-1260 Peak # 1	B	10.000	-4	25.000	13	100.00	15	250.00	4	500.00	-17	750.00	-12	1000.0	2
Aroclor-1260 Peak # 2	B	10.000	**-23**	25.000	-2	100.00	5	250.00	6	500.00	-7	750.00	1	1000.0	20
Aroclor-1260 Peak # 3	B	10.000	-3	25.000	9	100.00	9	250.00	6	500.00	-18	750.00	-8	1000.0	5
Aroclor-1260 Peak # 4	B	10.000	-13	25.000	4	100.00	7	250.00	7	500.00	-16	750.00	0	1000.0	12
Aroclor-1260 Peak # 5	B	10.000	**-27**	25.000	8	100.00	12	250.00	14	500.00	-17	750.00	-4	1000.0	13
TCMX	B	2.0000	-9	5.0000	-4	20.000	2	50.000	-4	100.00	-3	150.00	-2	200.00	20
Decachlorobiphenyl	B	2.0000	12	5.0000	14	20.000	8	50.000	6	100.00	**-27**	150.00	-11	200.00	-3

JC1 01/29/18 : Corrected automatically drawn baseline in all levels.

Analyst: JC1 Date: 01/29/18 Reviewer: EAH Date: 01/29/18

Instrument amount = a0 + response * a1 + response^2 * a2; AVRG=Average response factor

ENTHALPY 2ND SOURCE CALIBRATION SUMMARY FOR 296840 PCBS Soil
EPA 8082A

Inst : GC16 Name : ar-1660-026ical
Calnum : 238037991001 Cal Date : 26-JAN-2018

ICV 238037991017 (026_017 27-JAN-2018) stds: S35527

Analyte	Ch	Spiked	Quant	Units	%D	Max	Flags
Aroclor-1016	A	250.0	233.1	pg/ul	-7	20	
Aroclor-1260	A	250.0	221.1	pg/ul	-12	20	
Aroclor-1016	B	250.0	239.0	pg/ul	-4	20	
Aroclor-1260	B	250.0	220.6	pg/ul	-12	20	

Analyst: JC1 Date: 01/29/18 Reviewer: EAH Date: 01/29/18

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\026.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-009**
Sample Name: **ical,s35531,pcb100_20,10x**
Instrument: GC16 (Offline) Vial: 29 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-026ical.met

Software Version 3.1.7
Run Date: 1/26/2018 8:18:41 PM
Analysis Date: 1/29/2018 12:11:15 PM
Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	4.470	4.470	23838	2.000 CAL
PCB1016#1	6.167	6.167	5937	10.000 CAL
PCB1016#2	7.263	7.260	7632	10.000 CAL
PCB1016#3	7.573	7.570	4207	10.000 CAL
PCB1016#4	8.037	8.033	2785	10.000 CAL
PCB1016#5	8.553	8.553	3703	10.000 CAL
PCB1260#1	12.137	12.137	11605	10.000 CAL
PCB1260#2	12.790	12.790	8878	10.000 CAL
PCB1260#3	13.650	13.650	4841	10.000 CAL
PCB1260#4	14.390	14.390	10468	10.000 CAL
PCB1260#5	15.047	15.047	4614	10.000 CAL
Decachlorobiphenyl	17.653	17.643	26777	2.000 CAL

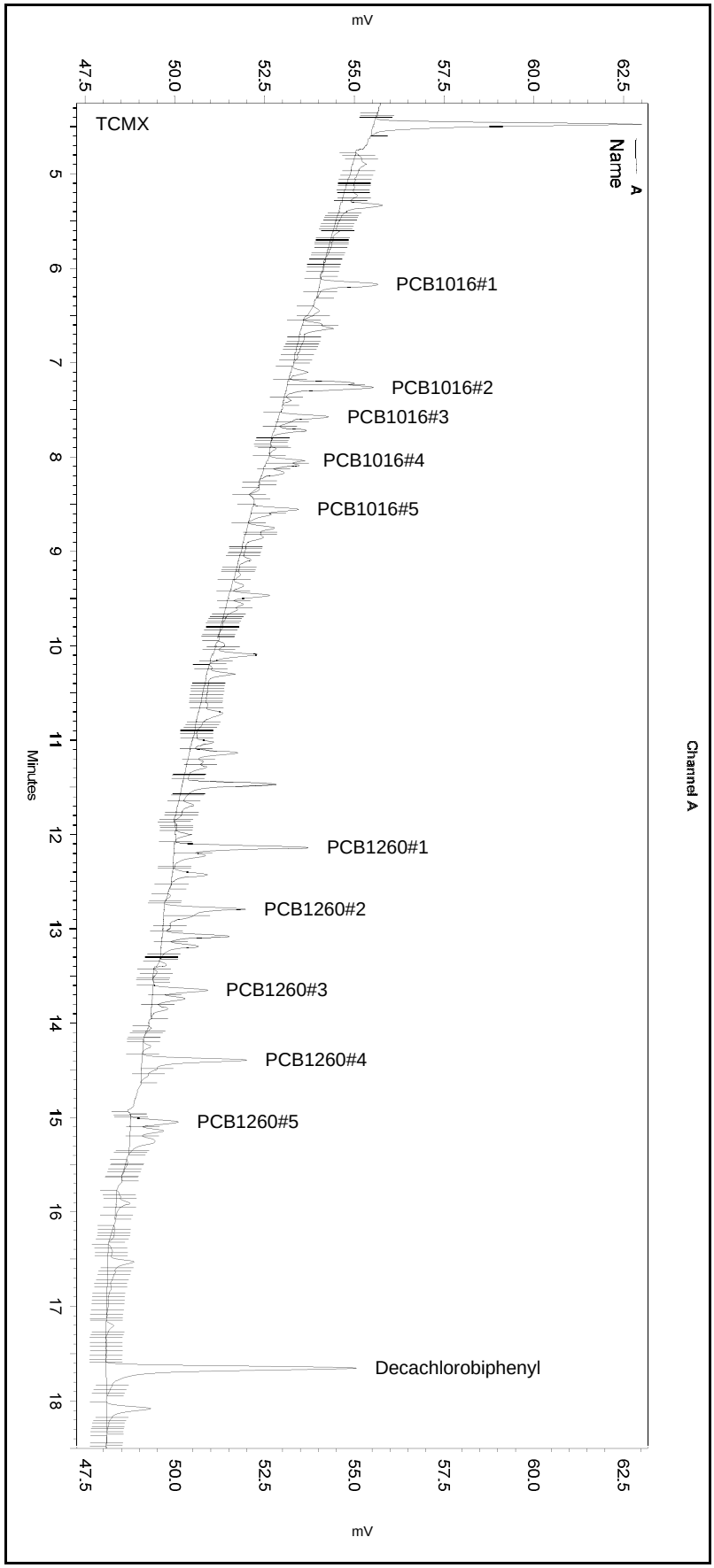
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	3.803	3.800	20831	2.000 CAL
PCB1016#1	5.390	5.373	2046	10.000 CAL
PCB1016#2	6.350	6.347	4527	10.000 CAL
PCB1016#3	6.573	6.570	2686	10.000 CAL
PCB1016#4	7.140	7.133	1782	10.000 CAL
PCB1016#5	7.873	7.870	2637	10.000 CAL
PCB1260#1	11.150	11.150	4280	10.000 CAL
PCB1260#2	11.790	11.787	4358	10.000 CAL
PCB1260#3	12.740	12.733	3985	10.000 CAL
PCB1260#4	13.390	13.387	5496	10.000 CAL
PCB1260#5	14.070	14.065	2835	10.000 CAL
Decachlorobiphenyl	17.043	17.033	25431	2.000 CAL

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\026.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-009**
Sample Name: **ical,s35531,pcb100_20,10x**
Instrument: GC16 (Offline) Vial: 29 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-026ical.met

Software Version 3.1.7
Run Date: 1/26/2018 8:18:41 PM
Analysis Date: 1/29/2018 12:11:15 PM
Sample Amount: 1



---< General Method Parameters >---

No items selected for this section

---< A >---

No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	0	0	0

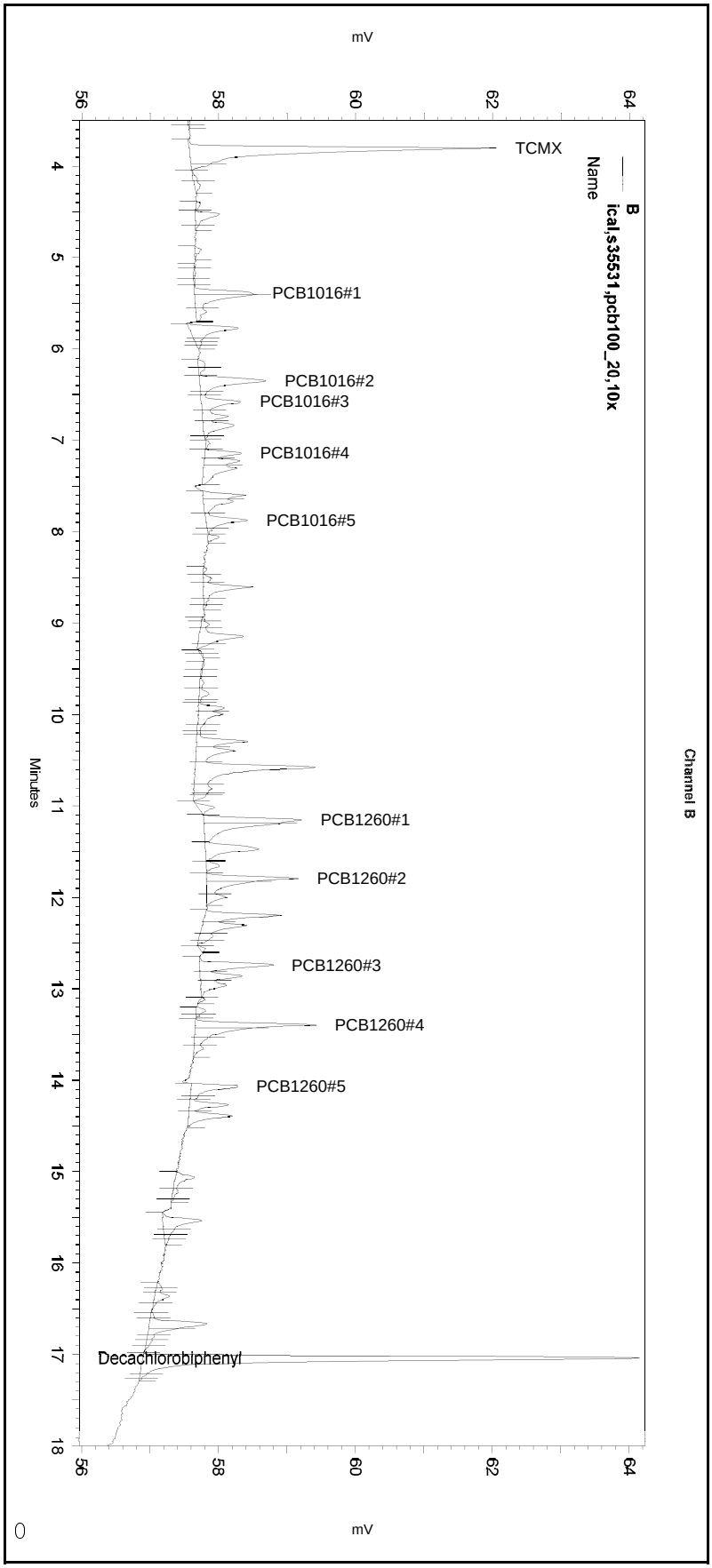
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-009

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	4.6	0	0
Yes	Reset Baseline	4.62	0	0
Yes	Reset Baseline	6.105	0	0
Yes	Reset Baseline	6.318	0	0
Yes	Reset Baseline	7.038	0	0
Yes	Reset Baseline	7.469	0	0
Yes	Reset Baseline	7.854	0	0
Yes	Reset Baseline	7.985	0	0
Yes	Reset Baseline	8.292	0	0
Yes	Reset Baseline	8.465	0	0
Yes	Reset Baseline	11.95	0	0
Yes	Reset Baseline	12.358	0	0
Yes	Reset Baseline	12.575	0	0
Yes	Reset Baseline	13.32	0	0
Yes	Reset Baseline	13.954	0	0
Yes	Reset Baseline	13.98	0	0
Yes	Reset Baseline	14.657	0	0
Yes	Reset Baseline	14.72	0	0
Yes	Reset Baseline	14.971	0	0
Yes	Reset Baseline	15.392	0	0
Yes	Reset Baseline	15.416	0	0
Yes	Reset Baseline	17.947	0	0

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\026.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-009**
Sample Name: **ical,s35531,pcb100_20,10x**
Instrument: GC16 (Offline) Vial: 29 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-026ical.met

Software Version 3.1.7
Run Date: 1/26/2018 8:18:41 PM
Analysis Date: 1/29/2018 12:11:15 PM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

---< B >----------

No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	1.8	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-009

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Split Peak	5.393	0	0
Yes	Reset Baseline	5.697	0	0
Yes	Reset Baseline	6.992	0	0
Yes	Reset Baseline	7.478	0	0
Yes	Reset Baseline	7.547	0	0
Yes	Reset Baseline	8.133	0	0
Yes	Manual Baseline	11.091	11.727	0
Yes	Reset Baseline	11.6	0	0
Yes	Split Peak	11.829	0	0
Yes	Reset Baseline	12.085	0	0
Yes	Reset Baseline	13.082	0	0
Yes	Reset Baseline	13.167	0	0
Yes	Reset Baseline	13.319	0	0
Yes	Split Peak	13.431	0	0
Yes	Reset Baseline	13.746	0	0
Yes	Reset Baseline	13.767	0	0
Yes	Reset Baseline	14.028	0	0
Yes	Reset Baseline	14.518	0	0
Yes	Reset Baseline	17.301	0	0

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\026.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-009**
Sample Name: **ical,s35531,pcb100_20,10x**
Instrument: GC16 (Offline) Vial: 29 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-026ical.met

Software Version 3.1.7
Run Date: 1/26/2018 8:18:41 PM
Analysis Date: 1/29/2018 11:28:44 AM
Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	4.470	4.470	25209	2.111
PCB1016#1	6.167	6.167	6323	10.970
PCB1016#2	7.263	7.260	8630	11.294
PCB1016#3	7.573	7.570	5112	11.446
PCB1016#4	8.037	8.033	3753	14.095
PCB1016#5	8.553	8.553	4978	12.995
PCB1260#1	12.137	12.137	12349	9.660
PCB1260#2	12.790	12.790	9296	8.793
PCB1260#3	13.650	13.650	4942	7.091
PCB1260#4	14.390	14.390	11276	6.979
PCB1260#5	15.047	15.047	5407	7.691
Decachlorobiphenyl	17.653	17.643	26921	2.053

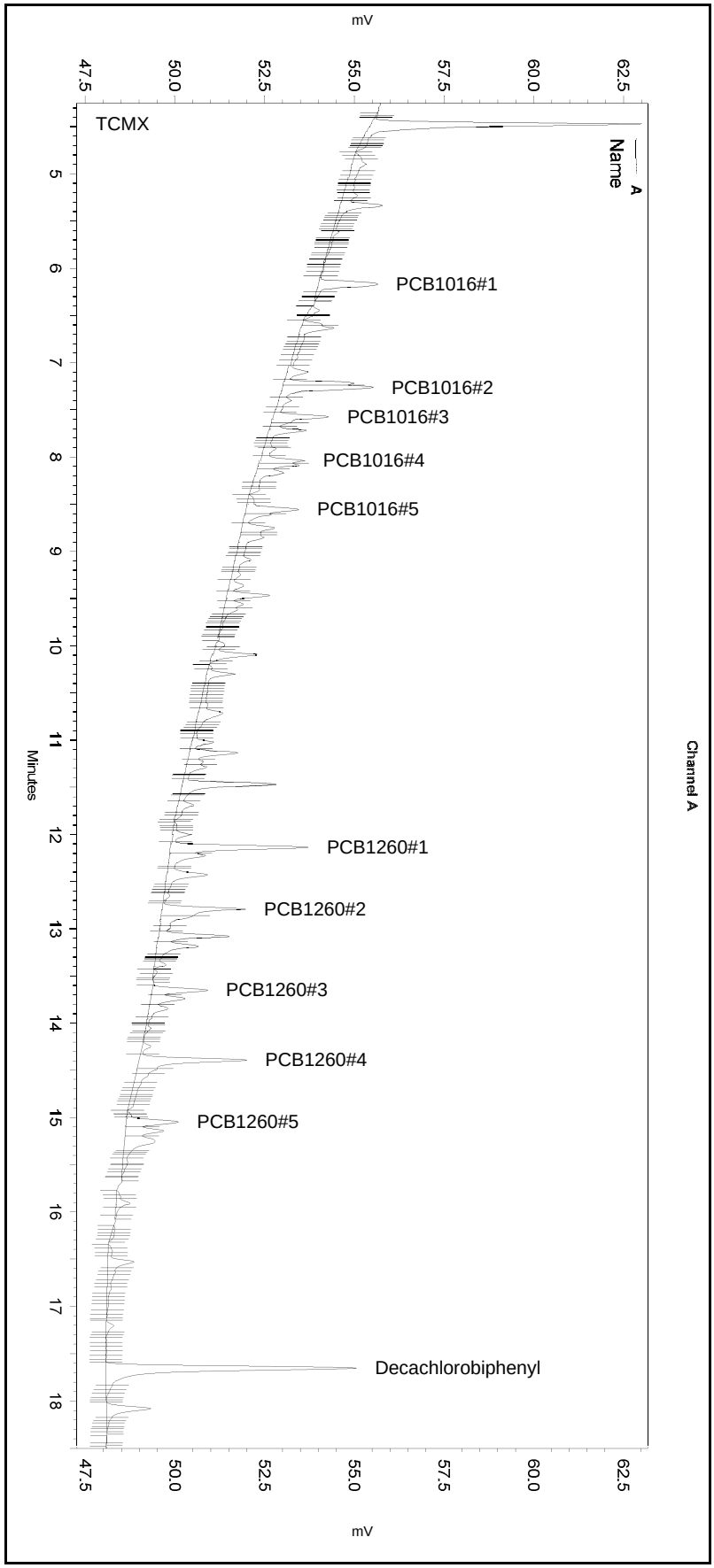
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	3.803	3.800	20831	1.736
PCB1016#1	5.400	5.373	6647	34.643
PCB1016#2	6.350	6.347	4930	8.217
PCB1016#3	6.573	6.570	3357	9.629
PCB1016#4	7.140	7.133	2571	12.644
PCB1016#5	7.873	7.870	3583	10.684
PCB1260#1	11.150	11.150	1661	3.230
PCB1260#2	11.790	11.787	6932	12.015
PCB1260#3	12.740	12.733	4130	7.773
PCB1260#4	13.390	13.387	8480	10.520
PCB1260#5	14.070	14.065	3964	13.047
Decachlorobiphenyl	17.043	17.033	27347	2.120

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\026.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-009**
Sample Name: **ical,s35531,pcb100_20,10x**
Instrument: GC16 (Offline) Vial: 29 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-026ical.met

Software Version 3.1.7
Run Date: 1/26/2018 8:18:41 PM
Analysis Date: 1/29/2018 11:28:44 AM
Sample Amount: 1



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No items selected for this section

---< A >---

No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========

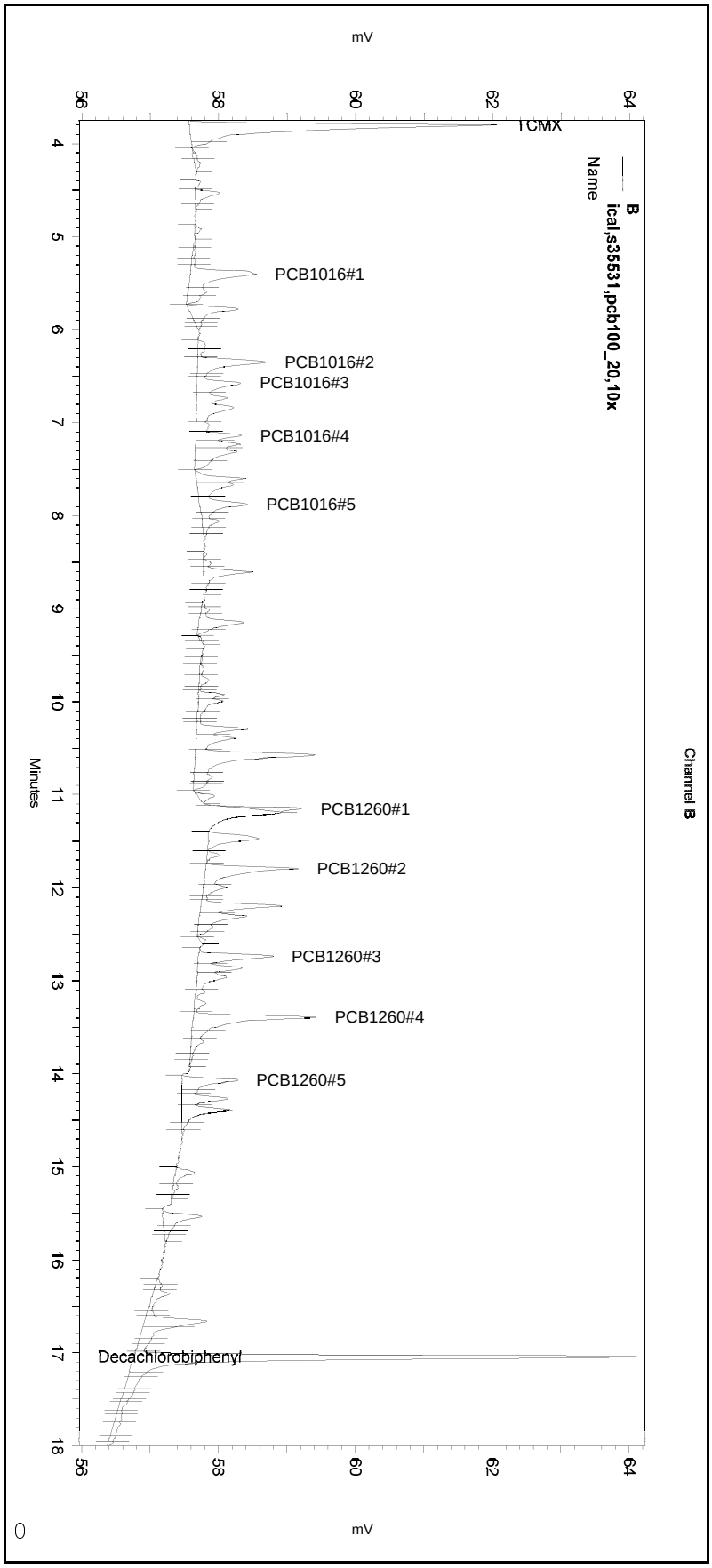
Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-009

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\026.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-009**
Sample Name: **ical,s35531,pcb100_20,10x**
Instrument: GC16 (Offline) Vial: 29 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-026ical.met

Software Version 3.1.7
Run Date: 1/26/2018 8:18:41 PM
Analysis Date: 1/29/2018 11:28:44 AM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	1.8	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-009

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\026.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-010**
Sample Name: **ical,s35530,pcb25_5**
Instrument: GC16 (Offline) Vial: 30 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-026ical.met

Software Version 3.1.7
Run Date: 1/26/2018 8:47:39 PM
Analysis Date: 1/29/2018 12:11:22 PM
Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	4.483	4.470	64270	5.000 CAL
PCB1016#1	6.180	6.167	16238	25.000 CAL
PCB1016#2	7.277	7.260	20482	25.000 CAL
PCB1016#3	7.587	7.570	11176	25.000 CAL
PCB1016#4	8.050	8.033	7576	25.000 CAL
PCB1016#5	8.570	8.553	9973	25.000 CAL
PCB1260#1	12.150	12.137	32298	25.000 CAL
PCB1260#2	12.803	12.790	26034	25.000 CAL
PCB1260#3	13.663	13.650	13323	25.000 CAL
PCB1260#4	14.403	14.390	31673	25.000 CAL
PCB1260#5	15.060	15.047	13262	25.000 CAL
Decachlorobiphenyl	17.667	17.643	68844	5.000 CAL

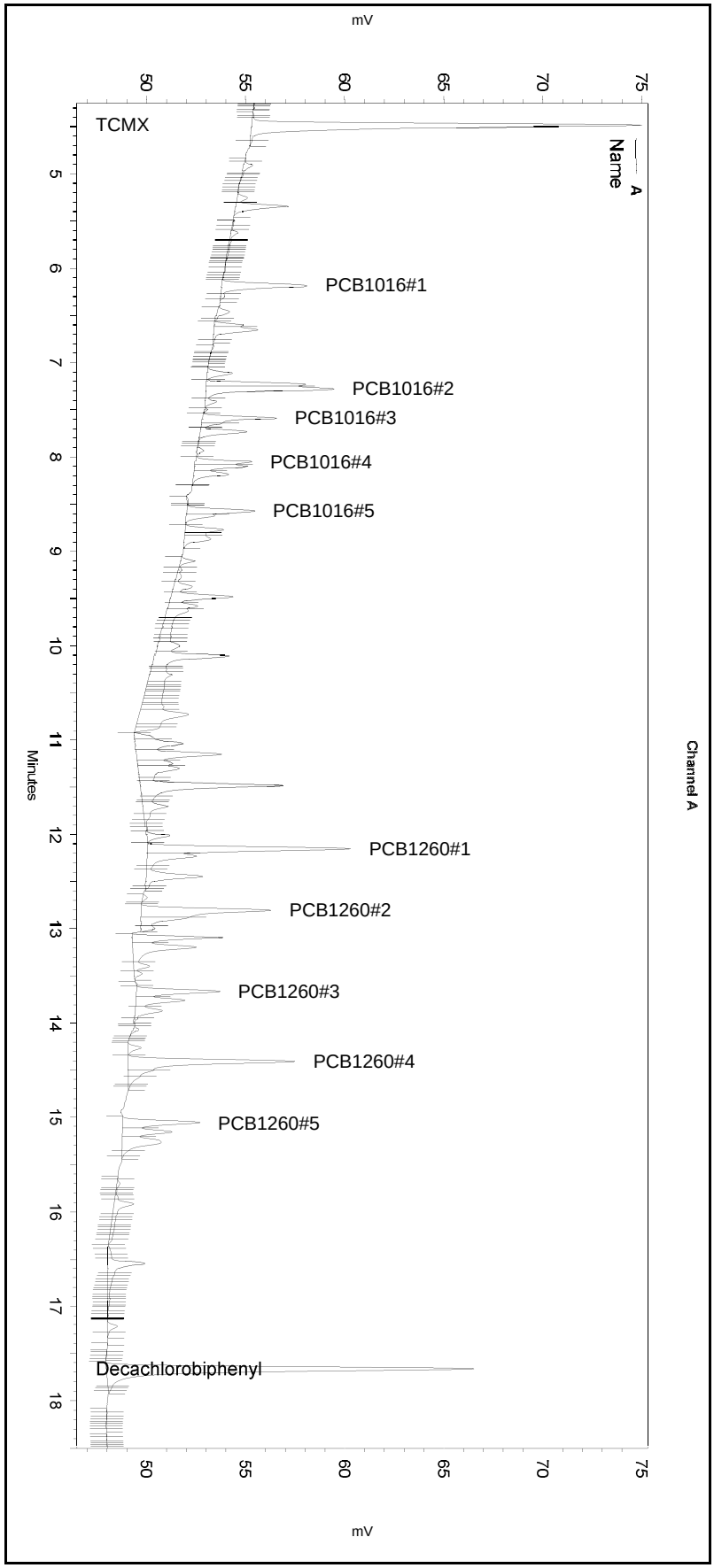
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	3.817	3.800	54601	5.000 CAL
PCB1016#1	5.403	5.373	5332	25.000 CAL
PCB1016#2	6.367	6.347	13269	25.000 CAL
PCB1016#3	6.590	6.570	7164	25.000 CAL
PCB1016#4	7.150	7.133	5133	25.000 CAL
PCB1016#5	7.890	7.870	8088	25.000 CAL
PCB1260#1	11.167	11.150	12570	25.000 CAL
PCB1260#2	11.807	11.787	13885	25.000 CAL
PCB1260#3	12.750	12.733	11290	25.000 CAL
PCB1260#4	13.403	13.387	16387	25.000 CAL
PCB1260#5	14.083	14.065	10534	25.000 CAL
Decachlorobiphenyl	17.057	17.033	64782	5.000 CAL

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\026.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-010**
Sample Name: **ical,s35530,pcb25_5**
Instrument: GC16 (Offline) Vial: 30 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-026ical.met

Software Version 3.1.7
Run Date: 1/26/2018 8:47:39 PM
Analysis Date: 1/29/2018 12:11:22 PM
Sample Amount: 1



---< General Method Parameters >---

No items selected for this section

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No items selected for this section

Integration Events

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	0	0	0

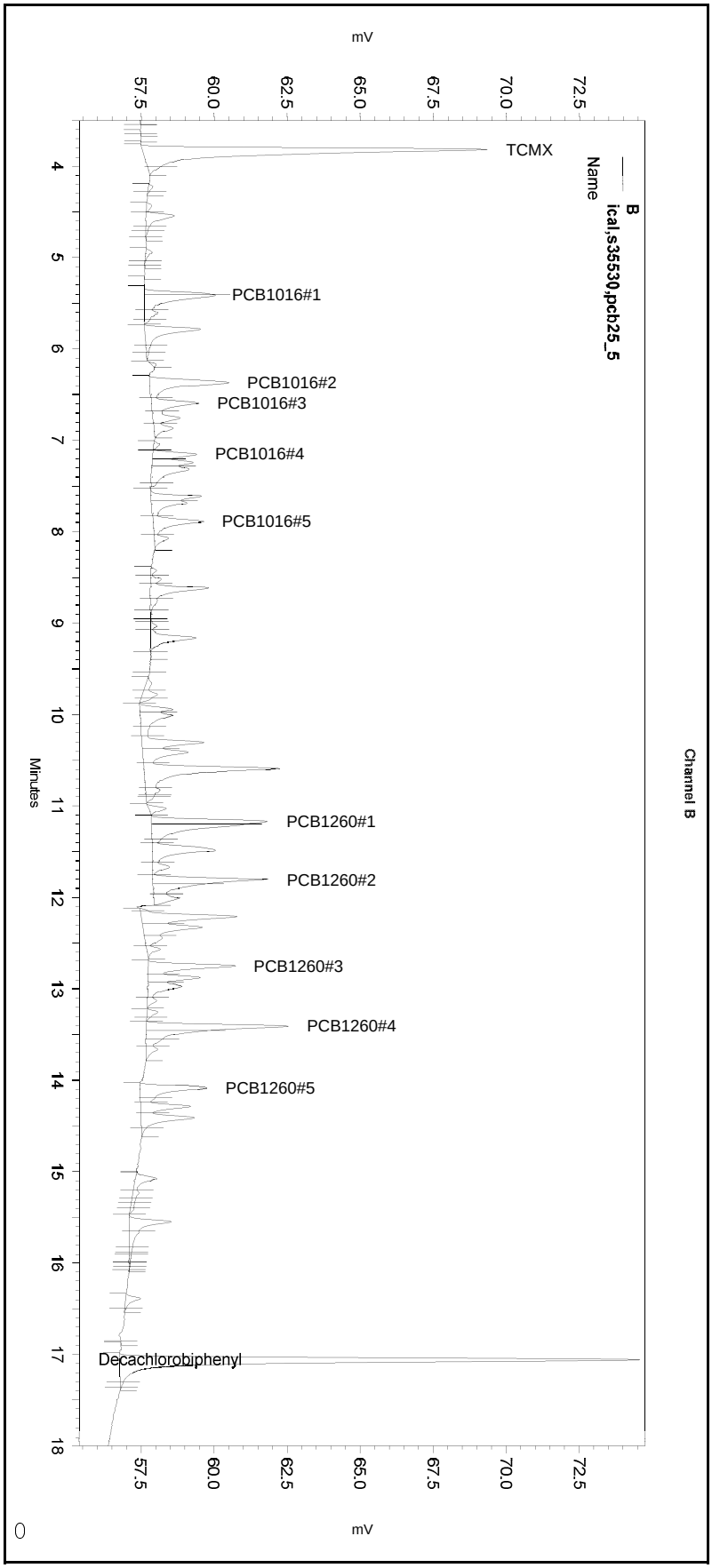
Manual Integration Fixes

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-010

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	4.716	0	0
Yes	Reset Baseline	6.357	0	0
Yes	Reset Baseline	7.469	0	0
Yes	Reset Baseline	8.307	0	0
Yes	Reset Baseline	8.506	0	0
Yes	Reset Baseline	8.972	0	0
Yes	Reset Baseline	11.957	0	0
Yes	Reset Baseline	12.593	0	0
Yes	Reset Baseline	12.735	0	0
Yes	Reset Baseline	13.032	0	0
Yes	Reset Baseline	13.04	0	0
Yes	Reset Baseline	13.556	0	0
Yes	Reset Baseline	13.6	0	0
Yes	Reset Baseline	14.716	0	0
Yes	Reset Baseline	14.986	0	0
Yes	Reset Baseline	15.451	0	0
Yes	Reset Baseline	17.927	0	0

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\026.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-010**
Sample Name: **ical,s35530,pcb25_5**
Instrument: GC16 (Offline) Vial: 30 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-026ical.met

Software Version 3.1.7
Run Date: 1/26/2018 8:47:39 PM
Analysis Date: 1/29/2018 12:11:22 PM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	1.8	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-010

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Split Peak	5.408	0	0
Yes	Reset Baseline	6.98	0	0
Yes	Reset Baseline	8.197	0	0
Yes	Reset Baseline	10.964	0	0
Yes	Reset Baseline	11.091	0	0
Yes	Split Peak	11.855	0	0
Yes	Reset Baseline	12.076	0	0
Yes	Reset Baseline	12.082	0	0
Yes	Reset Baseline	12.679	0	0
Yes	Reset Baseline	13.205	0	0
Yes	Split Peak	13.45	0	0
Yes	Reset Baseline	13.794	0	0
Yes	Reset Baseline	14.62	0	0
Yes	Reset Baseline	14.67	0	0
Yes	Reset Baseline	17.394	0	0
Yes	Reset Baseline	17.546	0	0

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\026.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-010**
Sample Name: **ical,s35530,pcb25_5**
Instrument: GC16 (Offline) Vial: 30 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-026ical.met

Software Version 3.1.7
Run Date: 1/26/2018 8:47:39 PM
Analysis Date: 1/29/2018 11:16:23 AM
Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	4.483	4.470	65719	5.503
PCB1016#1	6.180	6.167	16640	28.870
PCB1016#2	7.277	7.260	21855	28.602
PCB1016#3	7.587	7.570	12990	29.084
PCB1016#4	8.050	8.033	9364	35.169
PCB1016#5	8.570	8.553	12678	33.096
PCB1260#1	12.150	12.137	37650	29.452
PCB1260#2	12.803	12.790	29926	28.307
PCB1260#3	13.663	13.650	14294	20.509
PCB1260#4	14.403	14.390	32744	20.265
PCB1260#5	15.060	15.047	14409	20.494
Decachlorobiphenyl	17.667	17.643	69688	5.314

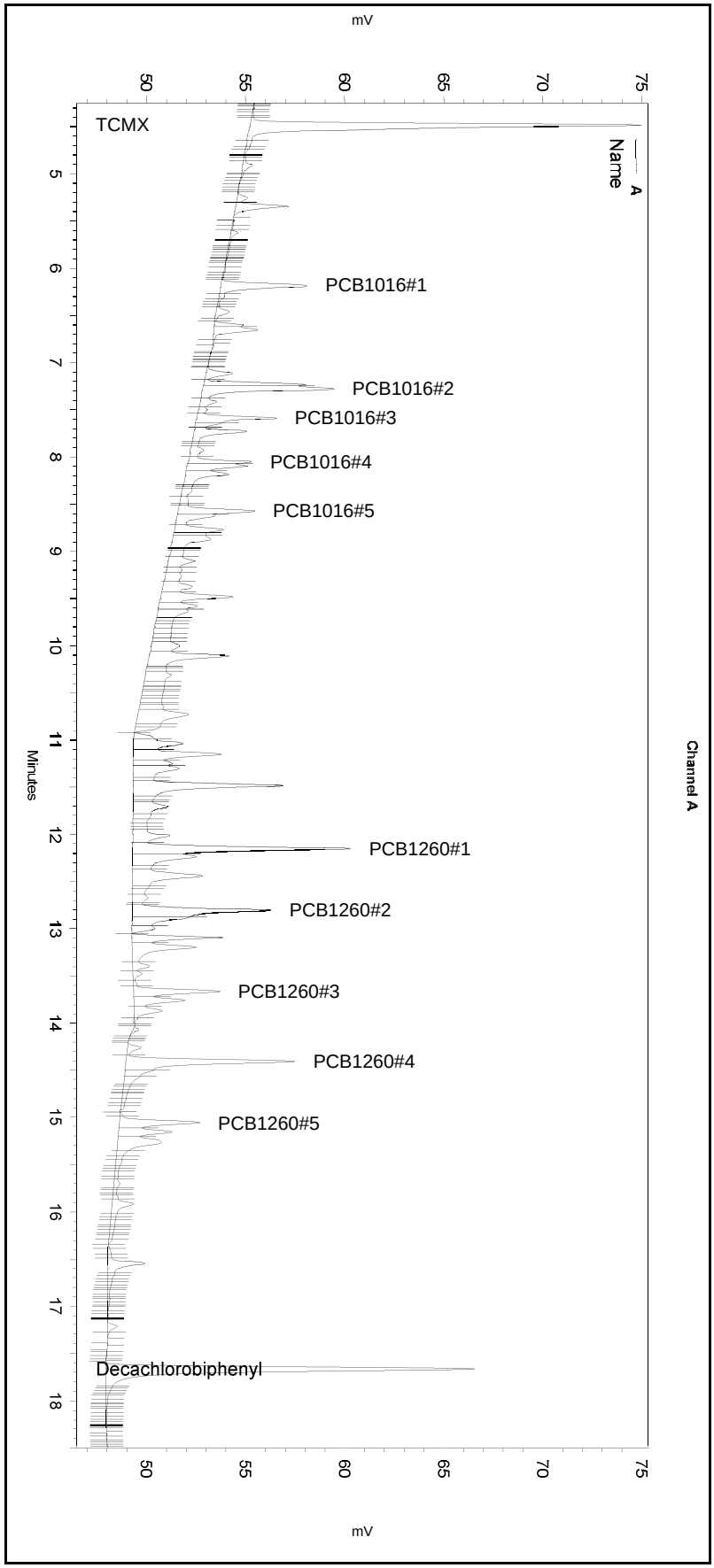
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	3.817	3.800	54601	4.551
PCB1016#1		5.373		0.000 BDL
PCB1016#2	6.367	6.347	13768	22.949
PCB1016#3	6.590	6.570	7926	22.735
PCB1016#4	7.150	7.133	5867	28.853
PCB1016#5	7.890	7.870	9575	28.551
PCB1260#1	11.167	11.150	15568	30.276
PCB1260#2	11.807	11.787	26499	45.930
PCB1260#3	12.750	12.733	13960	26.273
PCB1260#4	13.403	13.387	25216	31.282
PCB1260#5	14.083	14.065	10668	35.113
Decachlorobiphenyl	17.057	17.033	66311	5.141

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\026.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-010**
Sample Name: **ical,s35530,pcb25_5**
Instrument: GC16 (Offline) Vial: 30 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-026ical.met

Software Version 3.1.7
Run Date: 1/26/2018 8:47:39 PM
Analysis Date: 1/29/2018 11:16:23 AM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

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No items selected for this section

Integration Events
==========

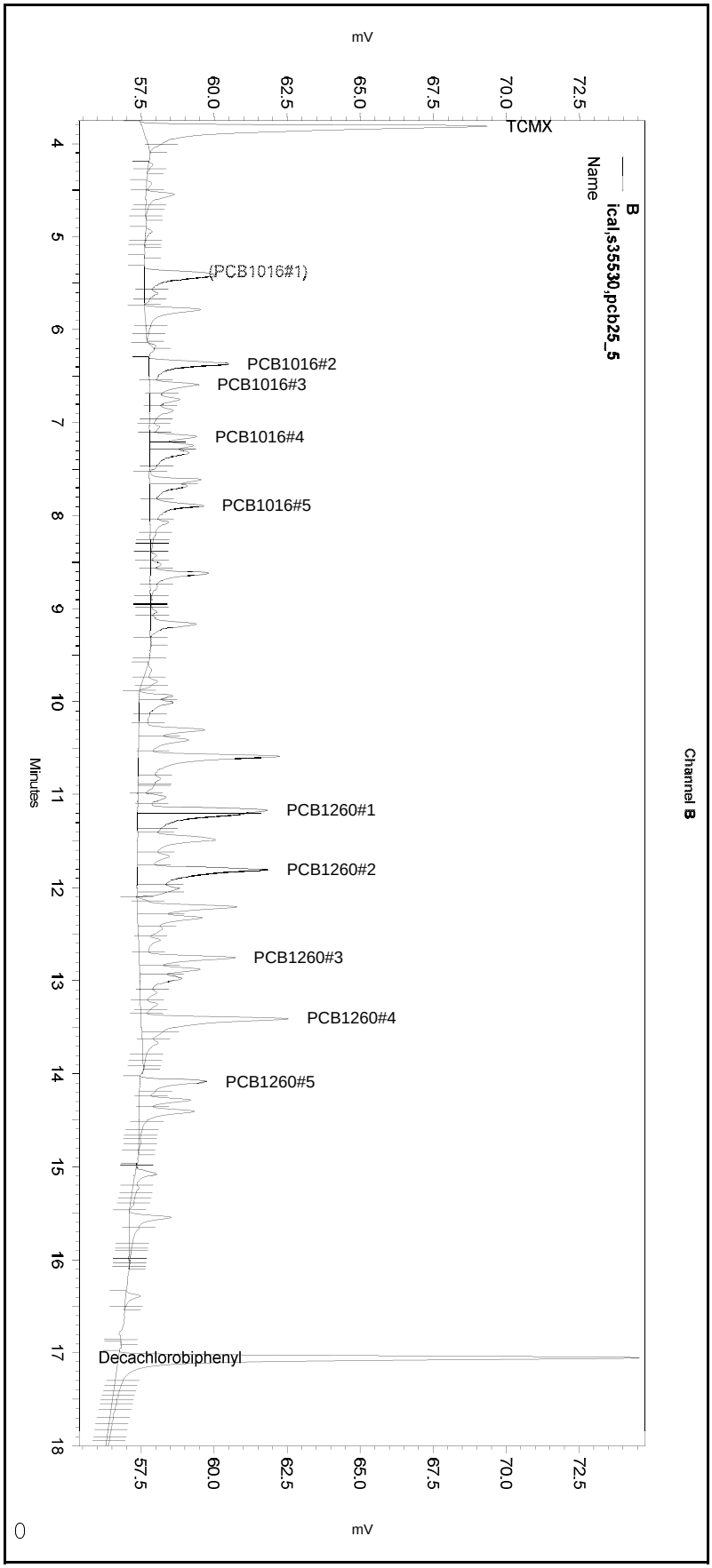
Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========
Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-010

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\026.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-010**
Sample Name: **ical,s35530,pcb25_5**
Instrument: GC16 (Offline) Vial: 30 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-026ical.met

Software Version 3.1.7
Run Date: 1/26/2018 8:47:39 PM
Analysis Date: 1/29/2018 11:16:23 AM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	1.8	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========
Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-010

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\026.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-011**
Sample Name: **ical,s35531,pcb100_20**
Instrument: GC16 (Offline) Vial: 31 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-026ical.met

Software Version 3.1.7
Run Date: 1/26/2018 9:16:40 PM
Analysis Date: 1/29/2018 12:11:29 PM
Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	4.473	4.470	250127	20.000 CAL
PCB1016#1	6.170	6.167	63548	100.000 CAL
PCB1016#2	7.267	7.260	80488	100.000 CAL
PCB1016#3	7.577	7.570	45936	100.000 CAL
PCB1016#4	8.040	8.033	28968	100.000 CAL
PCB1016#5	8.557	8.553	39885	100.000 CAL
PCB1260#1	12.137	12.137	132133	100.000 CAL
PCB1260#2	12.790	12.790	108618	100.000 CAL
PCB1260#3	13.650	13.650	57863	100.000 CAL
PCB1260#4	14.393	14.390	133640	100.000 CAL
PCB1260#5	15.047	15.047	59044	100.000 CAL
Decachlorobiphenyl	17.653	17.643	279736	20.000 CAL

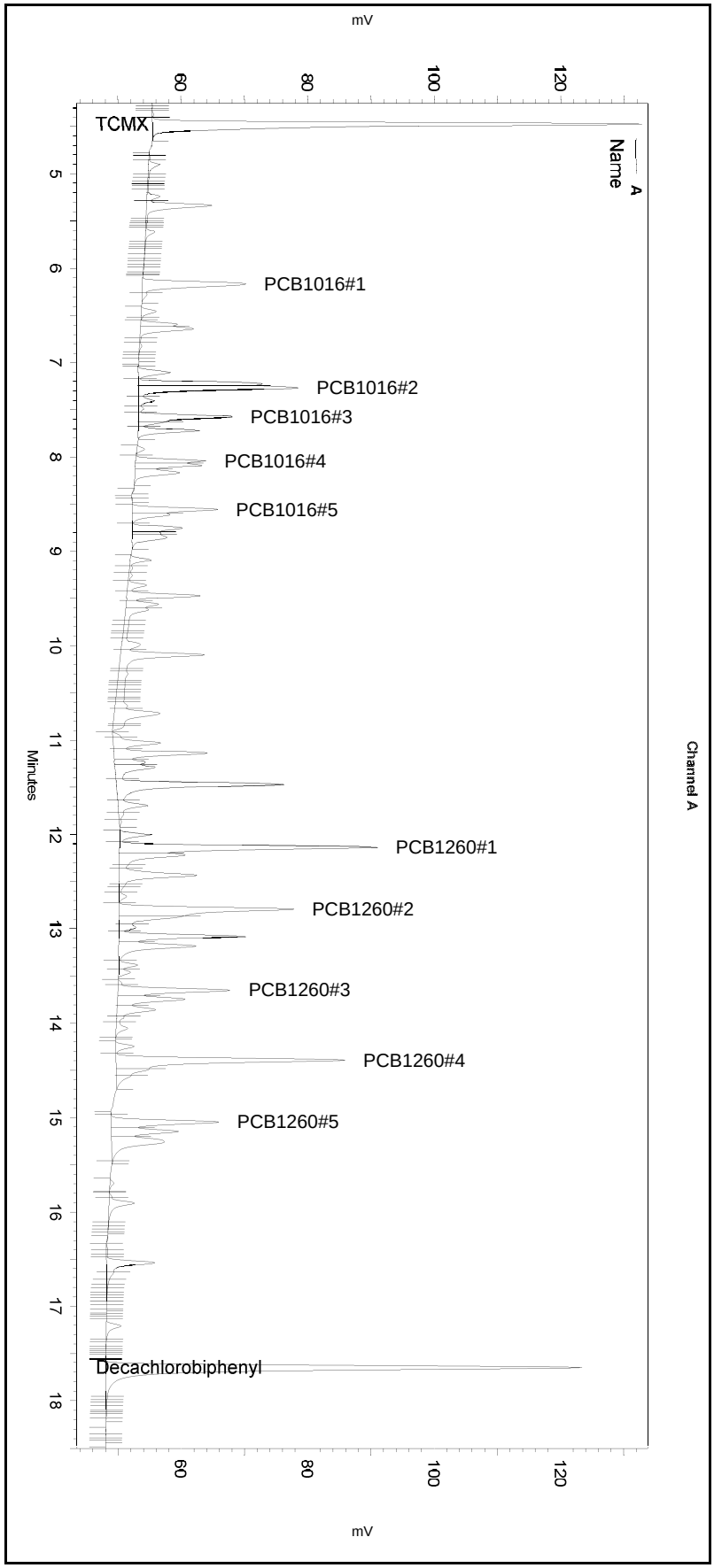
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	3.807	3.800	234154	20.000 CAL
PCB1016#1	5.393	5.373	22102	100.000 CAL
PCB1016#2	6.353	6.347	59739	100.000 CAL
PCB1016#3	6.580	6.570	35216	100.000 CAL
PCB1016#4	7.140	7.133	22875	100.000 CAL
PCB1016#5	7.877	7.870	34039	100.000 CAL
PCB1260#1	11.157	11.150	51297	100.000 CAL
PCB1260#2	11.793	11.787	59140	100.000 CAL
PCB1260#3	12.740	12.733	45165	100.000 CAL
PCB1260#4	13.393	13.387	67446	100.000 CAL
PCB1260#5	14.070	14.065	43686	100.000 CAL
Decachlorobiphenyl	17.047	17.033	244840	20.000 CAL

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\026.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-011**
Sample Name: **ical,s35531,pcb100_20**
Instrument: GC16 (Offline) Vial: 31 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-026ical.met

Software Version 3.1.7
Run Date: 1/26/2018 9:16:40 PM
Analysis Date: 1/29/2018 12:11:29 PM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	0	0	0

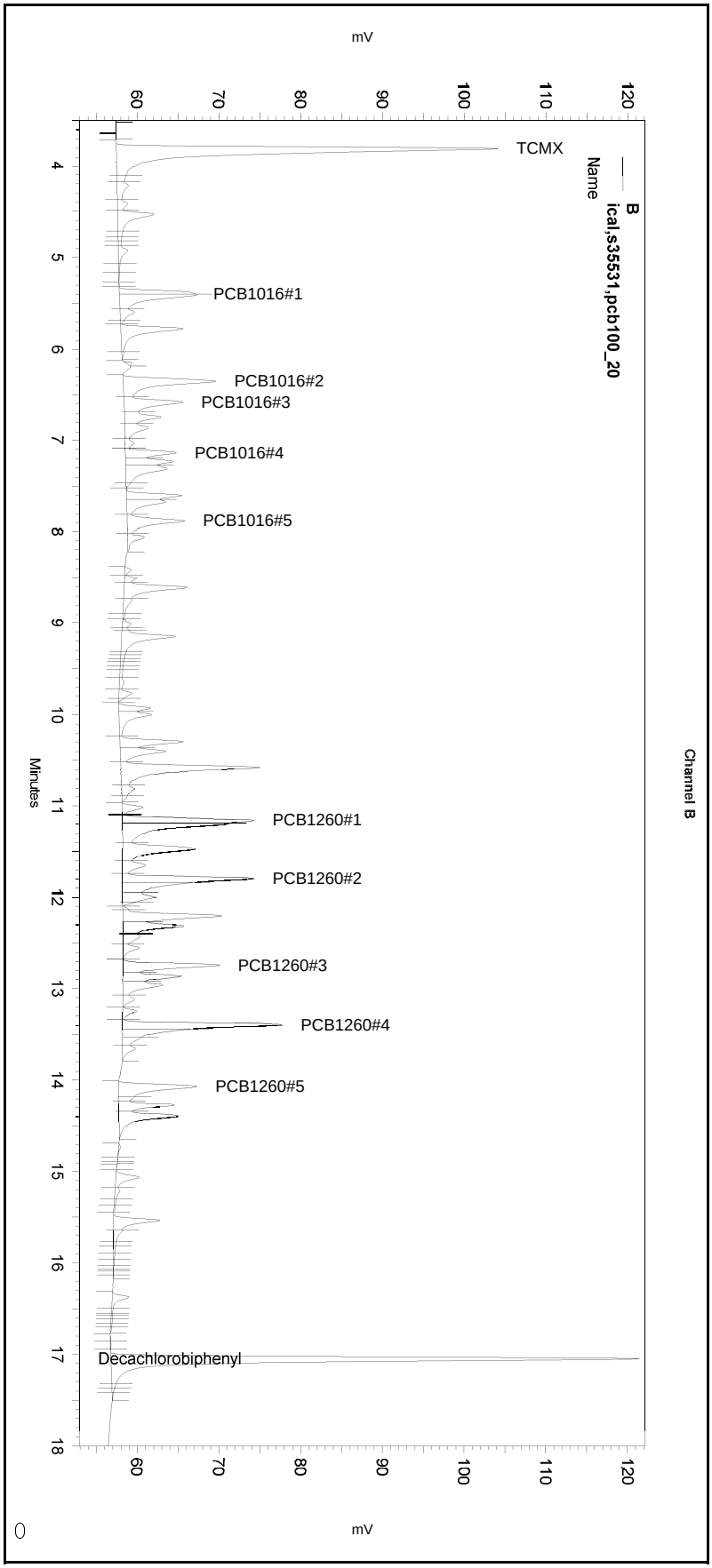
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-011

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	4.652	0	0
Yes	Reset Baseline	6.365	0	0
Yes	Reset Baseline	7.819	0	0
Yes	Reset Baseline	8.302	0	0
Yes	Reset Baseline	8.324	0	0
Yes	Reset Baseline	8.478	0	0
Yes	Reset Baseline	8.98	0	0
Yes	Reset Baseline	11.923	0	0
Yes	Reset Baseline	13.532	0	0
Yes	Reset Baseline	14.702	0	0
Yes	Reset Baseline	14.814	0	0
Yes	Reset Baseline	15.492	0	0

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\026.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-011**
Sample Name: **ical,s35531,pcb100_20**
Instrument: GC16 (Offline) Vial: 31 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-026ical.met

Software Version 3.1.7
Run Date: 1/26/2018 9:16:40 PM
Analysis Date: 1/29/2018 12:11:29 PM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

---< B >----------

No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	1.8	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-011

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Split Peak	5.397	0	0
Yes	Reset Baseline	8.218	0	0
Yes	Reset Baseline	10.958	0	0
Yes	Split Peak	11.841	0	0
Yes	Reset Baseline	12.673	0	0
Yes	Split Peak	13.441	0	0
Yes	Reset Baseline	13.796	0	0
Yes	Reset Baseline	13.881	0	0
Yes	Reset Baseline	14.648	0	0
Yes	Reset Baseline	17.502	0	0

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\026.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-011**
Sample Name: **ical,s35531,pcb100_20**
Instrument: GC16 (Offline) Vial: 31 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-026ical.met

Software Version 3.1.7
Run Date: 1/26/2018 9:16:40 PM
Analysis Date: 1/29/2018 11:16:29 AM
Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	4.473	4.470	254088	21.278
PCB1016#1	6.170	6.167	66528	115.425
PCB1016#2	7.267	7.260	85341	111.686
PCB1016#3	7.577	7.570	51662	115.669
PCB1016#4	8.040	8.033	33888	127.276
PCB1016#5	8.557	8.553	45407	118.535
PCB1260#1	12.137	12.137	142080	111.144
PCB1260#2	12.790	12.790	119881	113.396
PCB1260#3	13.650	13.650	66538	95.470
PCB1260#4	14.393	14.390	143882	89.048
PCB1260#5	15.047	15.047	61967	88.138
Decachlorobiphenyl	17.653	17.643	279736	21.332

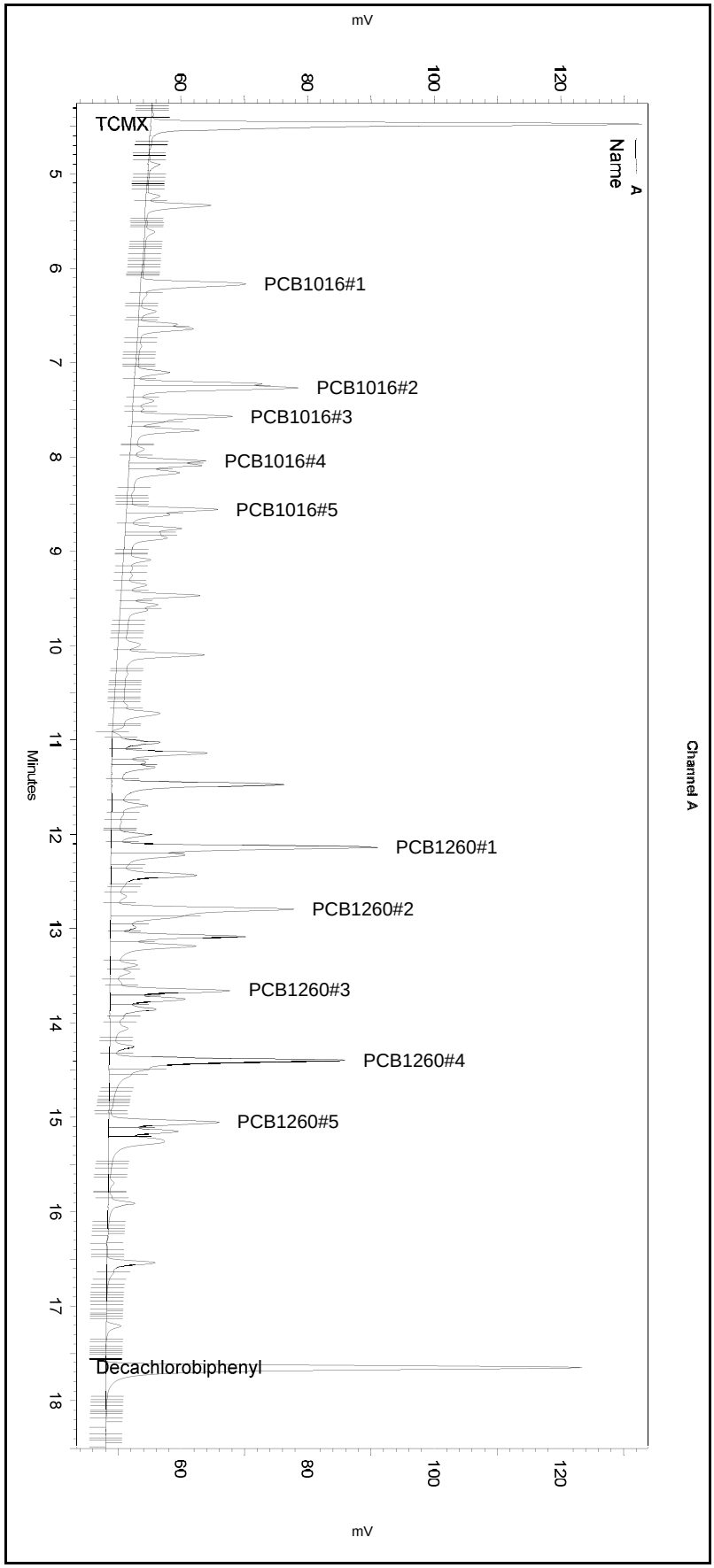
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	3.807	3.800	234154	19.518
PCB1016#1	5.403	5.373	61203	318.978
PCB1016#2	6.353	6.347	60498	100.840
PCB1016#3	6.580	6.570	36529	104.778
PCB1016#4	7.140	7.133	25281	124.330
PCB1016#5	7.877	7.870	43042	128.344
PCB1260#1	11.157	11.150	53717	104.468
PCB1260#2	11.793	11.787	93871	162.704
PCB1260#3	12.740	12.733	49264	92.715
PCB1260#4	13.393	13.387	96877	120.183
PCB1260#5	14.070	14.065	44123	145.230
Decachlorobiphenyl	17.047	17.033	261876	20.304

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\026.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-011**
Sample Name: **ical,s35531,pcb100_20**
Instrument: GC16 (Offline) Vial: 31 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-026ical.met

Software Version 3.1.7
Run Date: 1/26/2018 9:16:40 PM
Analysis Date: 1/29/2018 11:16:29 AM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

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No items selected for this section

Integration Events
==========

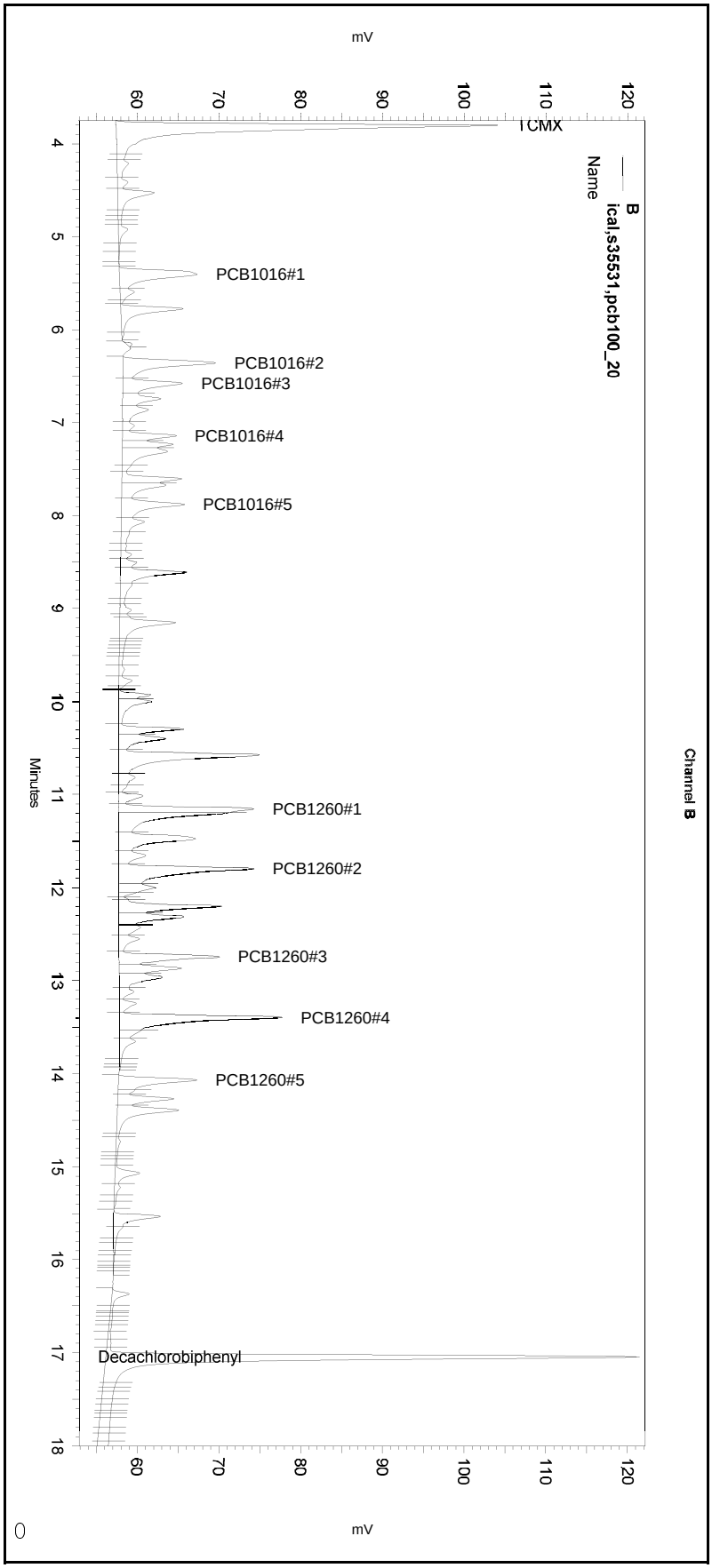
Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========
Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-011

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\026.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-011**
Sample Name: **ical,s35531,pcb100_20**
Instrument: GC16 (Offline) Vial: 31 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-026ical.met

Software Version 3.1.7
Run Date: 1/26/2018 9:16:40 PM
Analysis Date: 1/29/2018 11:16:29 AM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	1.8	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========
Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-011

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\026.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-012**
Sample Name: **ical,s35532,pcb250_50**
Instrument: GC16 (Offline) Vial: 32 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-026ical.met

Software Version 3.1.7
Run Date: 1/26/2018 9:45:40 PM
Analysis Date: 1/29/2018 12:11:36 PM
Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	4.467	4.470	566729	50.000 CAL
PCB1016#1	6.163	6.167	136678	250.000 CAL
PCB1016#2	7.260	7.260	182729	250.000 CAL
PCB1016#3	7.570	7.570	103023	250.000 CAL
PCB1016#4	8.033	8.033	65853	250.000 CAL
PCB1016#5	8.553	8.553	88155	250.000 CAL
PCB1260#1	12.133	12.137	300638	250.000 CAL
PCB1260#2	12.787	12.790	254827	250.000 CAL
PCB1260#3	13.647	13.650	139127	250.000 CAL
PCB1260#4	14.390	14.390	339151	250.000 CAL
PCB1260#5	15.047	15.047	151862	250.000 CAL
Decachlorobiphenyl	17.650	17.643	662773	50.000 CAL

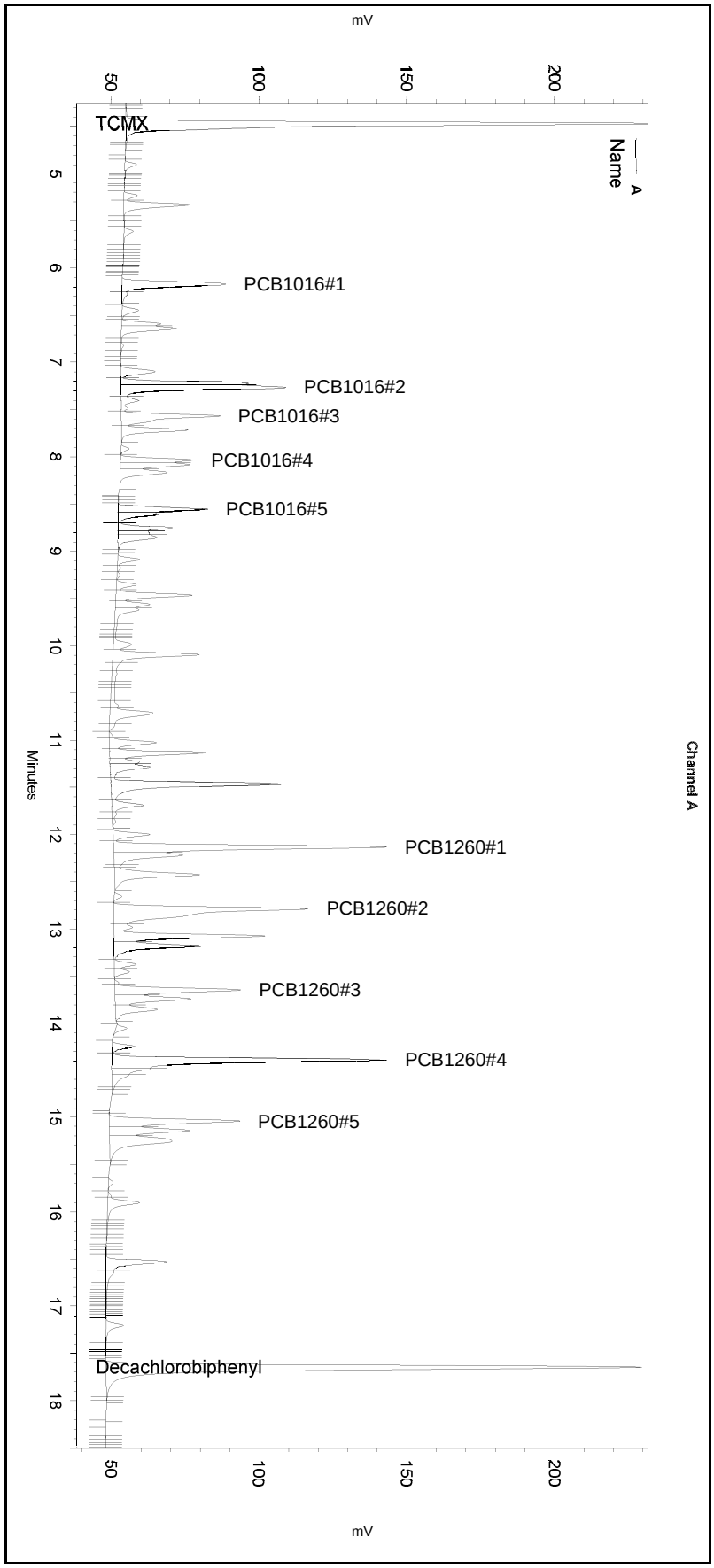
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	3.800	3.800	551251	50.000 CAL
PCB1016#1	5.390	5.373	51877	250.000 CAL
PCB1016#2	6.350	6.347	143933	250.000 CAL
PCB1016#3	6.573	6.570	83764	250.000 CAL
PCB1016#4	7.133	7.133	52502	250.000 CAL
PCB1016#5	7.873	7.870	84232	250.000 CAL
PCB1260#1	11.150	11.150	115548	250.000 CAL
PCB1260#2	11.793	11.787	149277	250.000 CAL
PCB1260#3	12.737	12.733	109371	250.000 CAL
PCB1260#4	13.390	13.387	169764	250.000 CAL
PCB1260#5	14.067	14.065	111260	250.000 CAL
Decachlorobiphenyl	17.043	17.033	599318	50.000 CAL

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\026.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-012**
Sample Name: **ical,s35532,pcb250_50**
Instrument: GC16 (Offline) Vial: 32 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-026ical.met

Software Version 3.1.7
Run Date: 1/26/2018 9:45:40 PM
Analysis Date: 1/29/2018 12:11:36 PM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	0	0	0

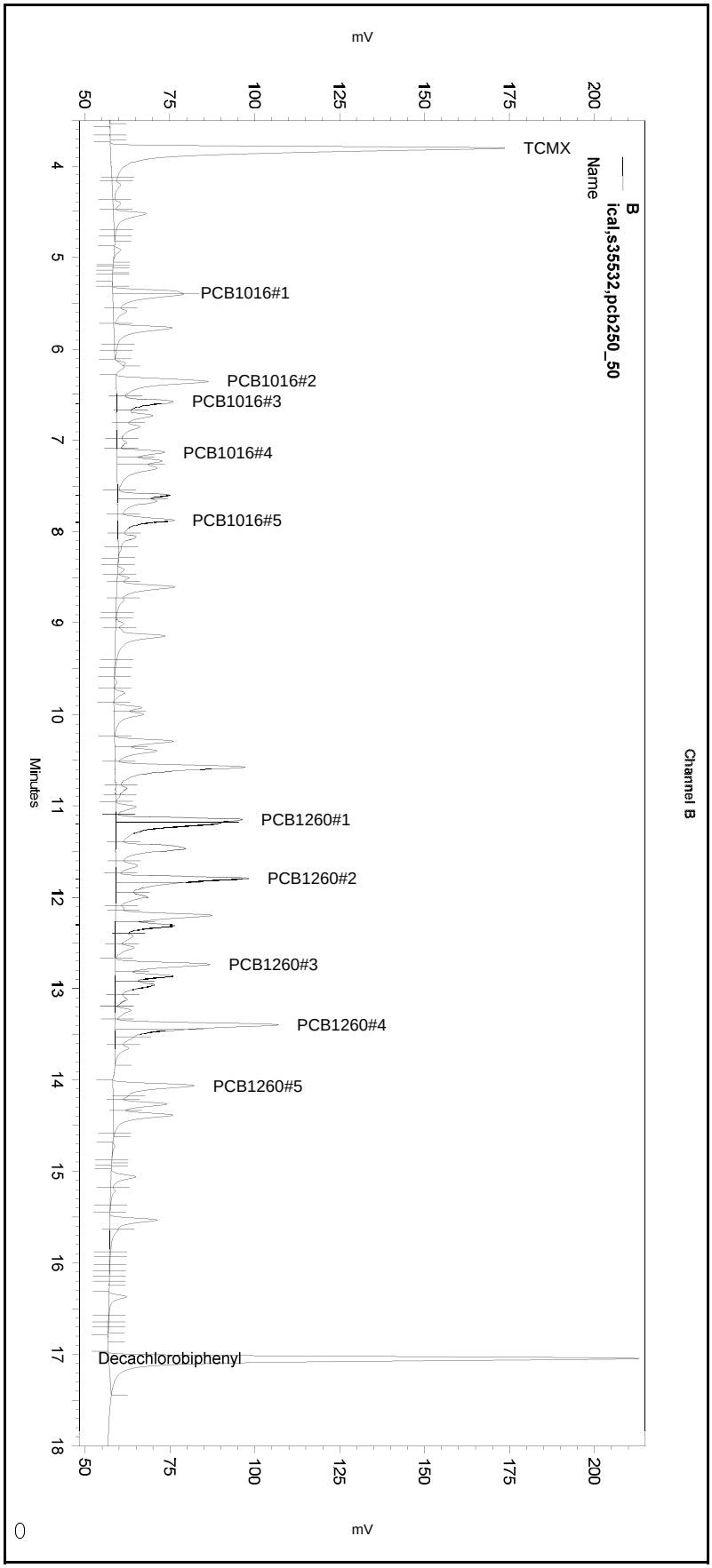
Manual Integration Fixes

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-012

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	4.75	0	0
Yes	Reset Baseline	6.379	0	0
Yes	Reset Baseline	6.953	0	0
Yes	Reset Baseline	7.846	0	0
Yes	Reset Baseline	8.34	0	0
Yes	Reset Baseline	9.014	0	0
Yes	Reset Baseline	11.93	0	0
Yes	Reset Baseline	12.591	0	0
Yes	Reset Baseline	13.997	0	0
Yes	Reset Baseline	14.758	0	0
Yes	Reset Baseline	14.829	0	0
Yes	Reset Baseline	15.507	0	0
Yes	Reset Baseline	18.027	0	0

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\026.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-012**
Sample Name: **ical,s35532,pcb250_50**
Instrument: GC16 (Offline) Vial: 32 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-026ical.met

Software Version 3.1.7
Run Date: 1/26/2018 9:45:40 PM
Analysis Date: 1/29/2018 12:11:36 PM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	1.8	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-012

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Split Peak	5.394	0	0
Yes	Reset Baseline	8.278	0	0
Yes	Reset Baseline	10.951	0	0
Yes	Split Peak	11.84	0	0
Yes	Split Peak	13.435	0	0
Yes	Reset Baseline	13.83	0	0
Yes	Reset Baseline	14.623	0	0
Yes	Reset Baseline	17.443	0	0
Yes	Reset Baseline	17.585	0	0

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\026.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-012**
Sample Name: **ical,s35532,pcb250_50**
Instrument: GC16 (Offline) Vial: 32 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-026ical.met

Software Version 3.1.7
Run Date: 1/26/2018 9:45:40 PM
Analysis Date: 1/29/2018 11:16:35 AM
Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	4.467	4.470	573370	48.015
PCB1016#1	6.163	6.167	141540	245.570
PCB1016#2	7.260	7.260	189647	248.191
PCB1016#3	7.570	7.570	110921	248.347
PCB1016#4	8.033	8.033	73125	274.641
PCB1016#5	8.553	8.553	95495	249.289
PCB1260#1	12.133	12.137	313901	245.554
PCB1260#2	12.787	12.790	270889	256.234
PCB1260#3	13.647	13.650	155928	223.729
PCB1260#4	14.390	14.390	354371	219.319
PCB1260#5	15.047	15.047	158311	225.171
Decachlorobiphenyl	17.650	17.643	665900	50.781

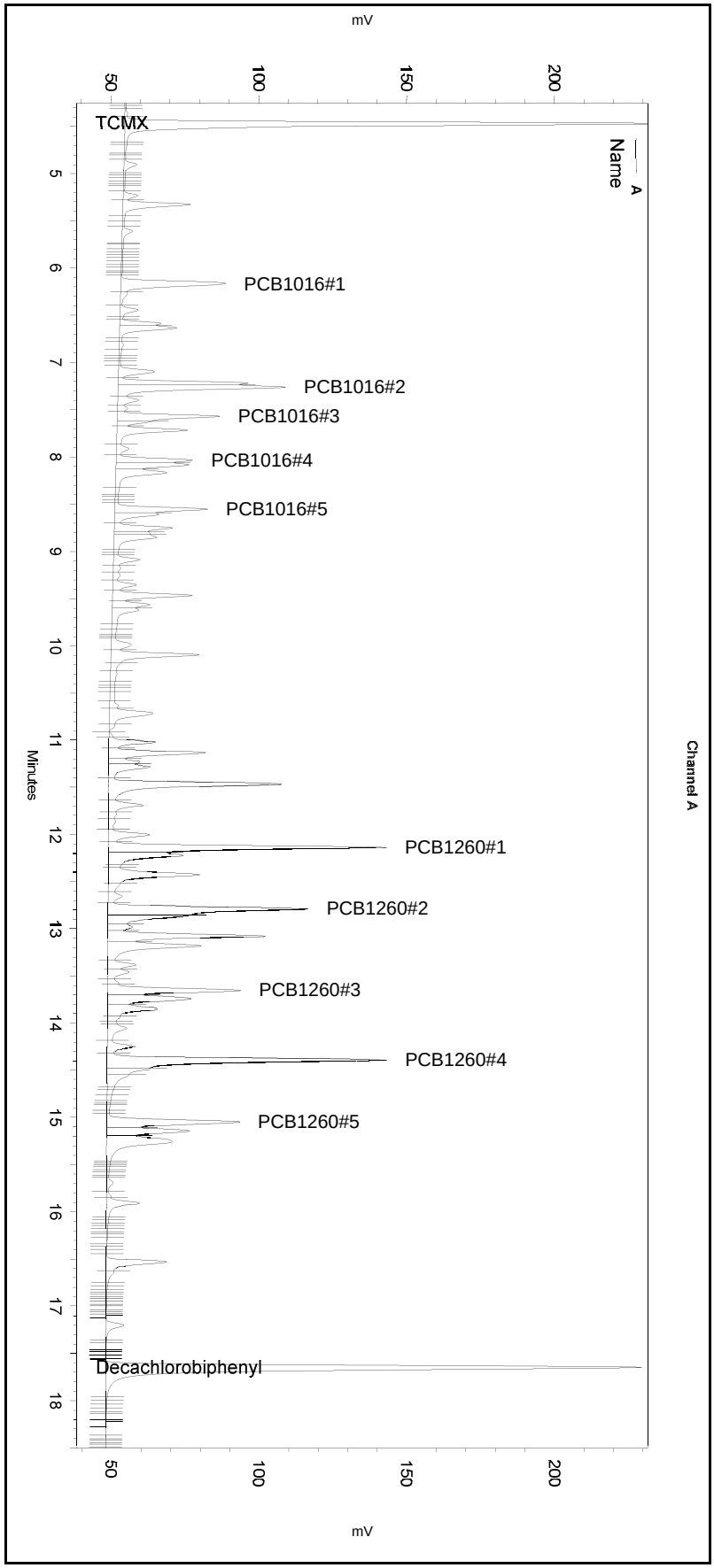
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	3.800	3.800	551251	45.951
PCB1016#1	5.400	5.373	136132	709.493
PCB1016#2	6.350	6.347	144708	241.203
PCB1016#3	6.573	6.570	85107	244.117
PCB1016#4	7.133	7.133	54891	269.950
PCB1016#5	7.873	7.870	93460	278.682
PCB1260#1	11.150	11.150	119216	231.850
PCB1260#2	11.793	11.787	220493	382.175
PCB1260#3	12.737	12.733	113802	214.175
PCB1260#4	13.390	13.387	233941	290.220
PCB1260#5	14.067	14.065	112175	369.222
Decachlorobiphenyl	17.043	17.033	622831	48.289

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\026.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-012**
Sample Name: **ical,s35532,pcb250_50**
Instrument: GC16 (Offline) Vial: 32 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-026ical.met

Software Version 3.1.7
Run Date: 1/26/2018 9:45:40 PM
Analysis Date: 1/29/2018 11:16:35 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

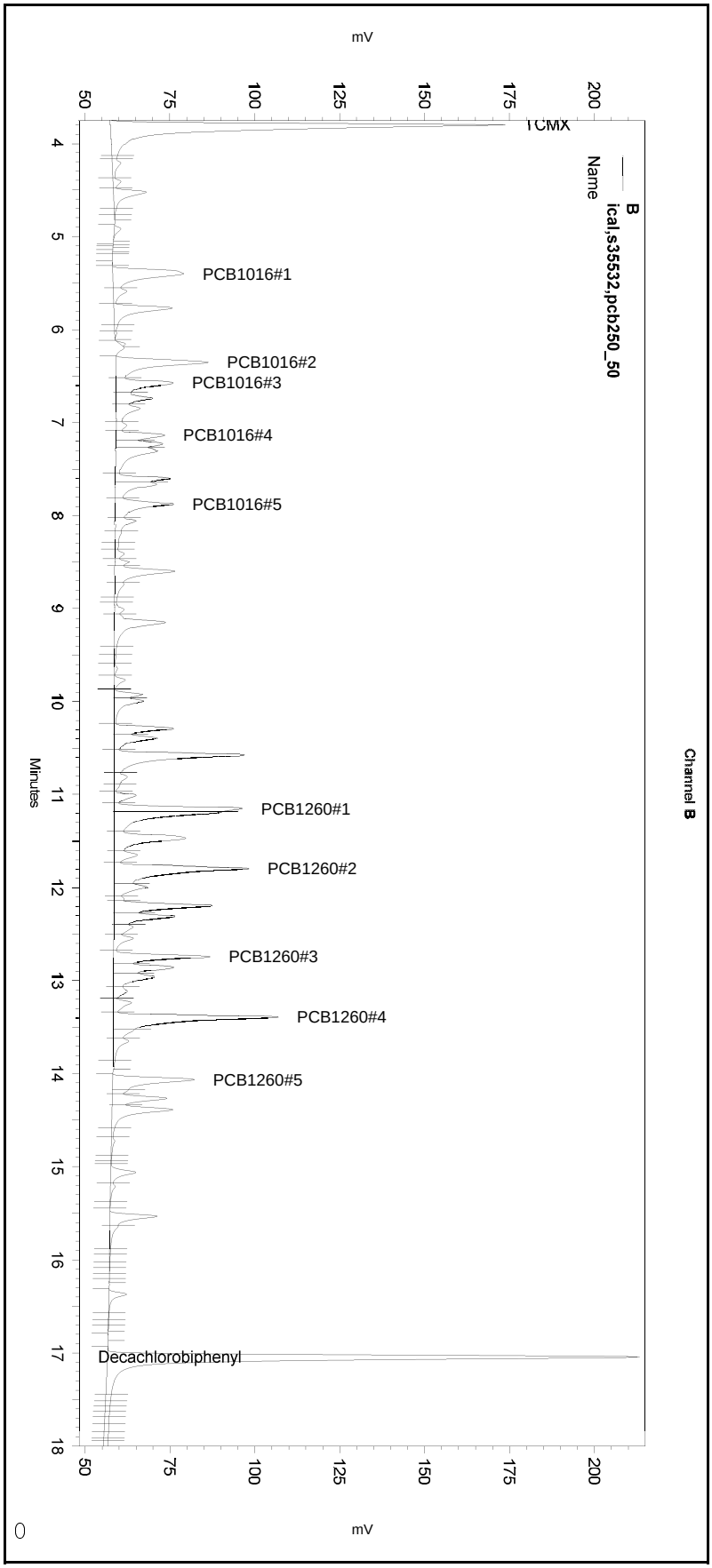
Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========
Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-012

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\026.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-012**
Sample Name: **ical,s35532,pcb250_50**
Instrument: GC16 (Offline) Vial: 32 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-026ical.met

Software Version 3.1.7
Run Date: 1/26/2018 9:45:40 PM
Analysis Date: 1/29/2018 11:16:35 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	1.8	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-012

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\026.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-013**
Sample Name: **ical,s35533,pcb500_100**
Instrument: GC16 (Offline) Vial: 33 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-026ical.met

Software Version 3.1.7
Run Date: 1/26/2018 10:14:40 PM
Analysis Date: 1/29/2018 12:11:43 PM
Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	4.467	4.470	1053173	100.000 CAL
PCB1016#1	6.163	6.167	240986	500.000 CAL
PCB1016#2	7.260	7.260	300385	500.000 CAL
PCB1016#3	7.570	7.570	176191	500.000 CAL
PCB1016#4	8.033	8.033	109638	500.000 CAL
PCB1016#5	8.550	8.553	151410	500.000 CAL
PCB1260#1	12.133	12.137	464229	500.000 CAL
PCB1260#2	12.787	12.790	402437	500.000 CAL
PCB1260#3	13.647	13.650	223331	500.000 CAL
PCB1260#4	14.387	14.390	508331	500.000 CAL
PCB1260#5	15.043	15.047	219197	500.000 CAL
Decachlorobiphenyl	17.647	17.643	871927	100.000 CAL

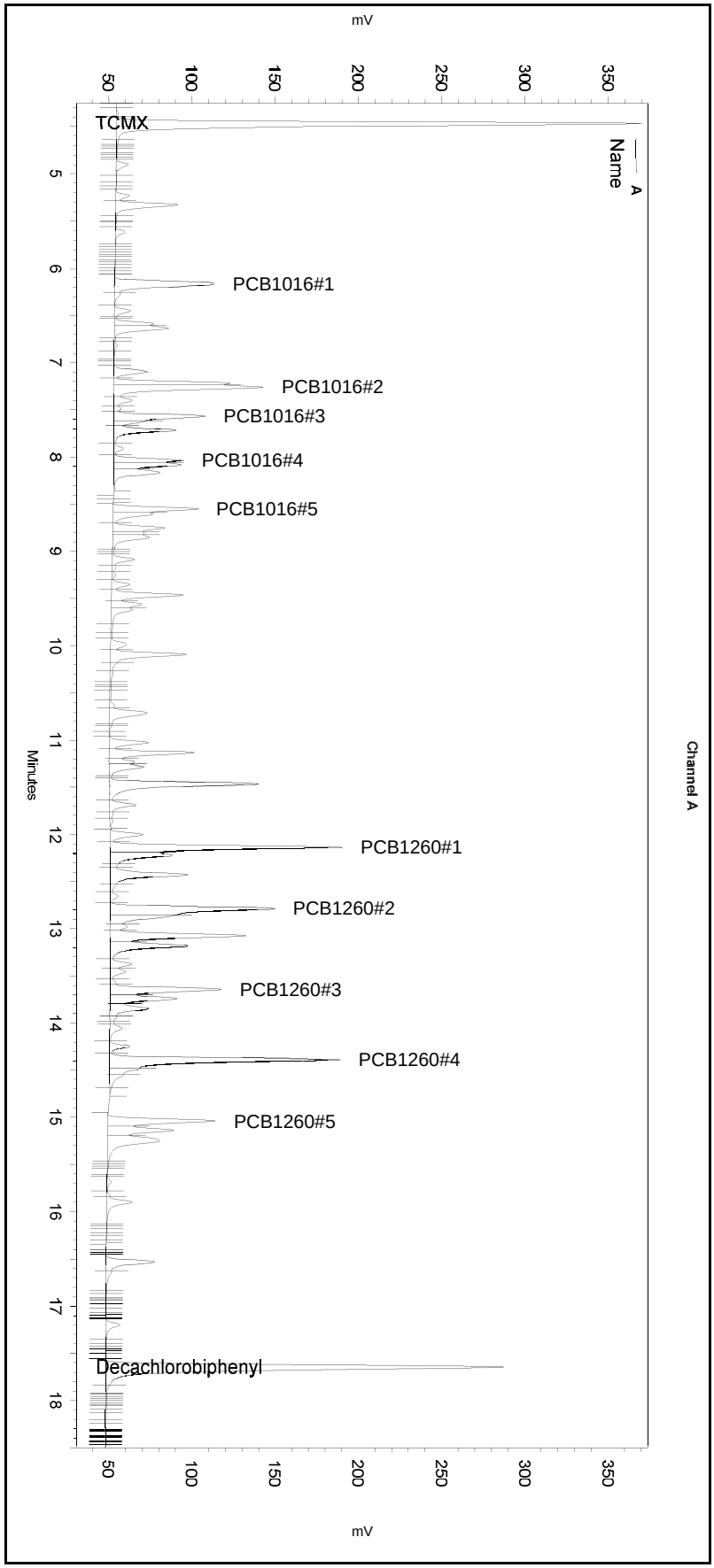
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	3.800	3.800	1107345	100.000 CAL
PCB1016#1	5.390	5.373	91827	500.000 CAL
PCB1016#2	6.350	6.347	256637	500.000 CAL
PCB1016#3	6.573	6.570	147845	500.000 CAL
PCB1016#4	7.137	7.133	92437	500.000 CAL
PCB1016#5	7.873	7.870	148219	500.000 CAL
PCB1260#1	11.153	11.150	186076	500.000 CAL
PCB1260#2	11.790	11.787	263796	500.000 CAL
PCB1260#3	12.733	12.733	169615	500.000 CAL
PCB1260#4	13.387	13.387	266445	500.000 CAL
PCB1260#5	14.063	14.065	161202	500.000 CAL
Decachlorobiphenyl	17.040	17.033	831442	100.000 CAL

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\026.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-013**
Sample Name: **ical,s35533,pcb500_100**
Instrument: GC16 (Offline) Vial: 33 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-026ical.met

Software Version 3.1.7
Run Date: 1/26/2018 10:14:40 PM
Analysis Date: 1/29/2018 12:11:43 PM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	0	0	0

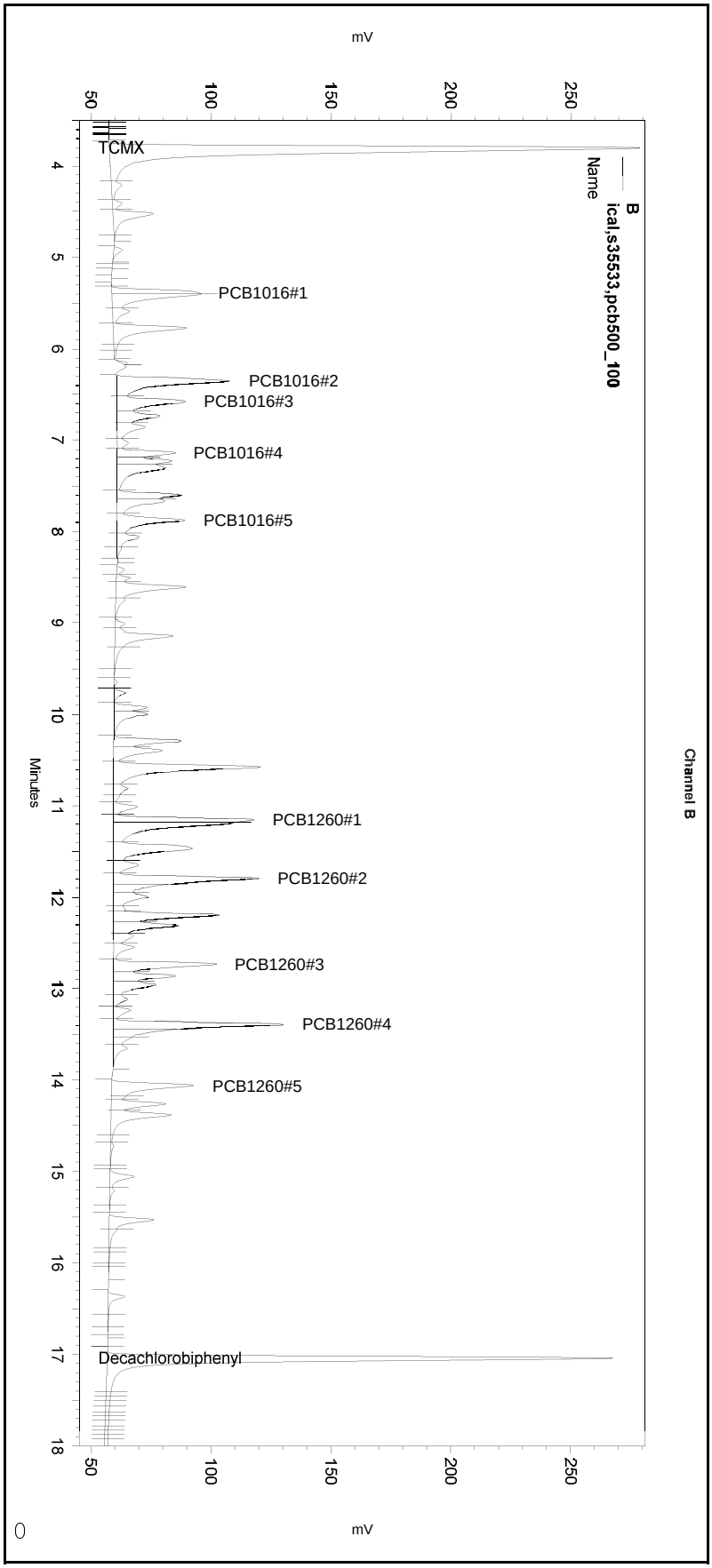
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-013

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	8.359	0	0
Yes	Reset Baseline	11.93	0	0
Yes	Reset Baseline	14.774	0	0

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\026.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-013**
Sample Name: **ical,s35533,pcb500_100**
Instrument: GC16 (Offline) Vial: 33 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-026ical.met

Software Version 3.1.7
Run Date: 1/26/2018 10:14:40 PM
Analysis Date: 1/29/2018 12:11:43 PM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	1.8	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-013

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Split Peak	5.393	0	0
Yes	Reset Baseline	8.337	0	0
Yes	Split Peak	11.856	0	0
Yes	Split Peak	13.445	0	0
Yes	Reset Baseline	13.872	0	0

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\026.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-013**
Sample Name: **ical,s35533,pcb500_100**
Instrument: GC16 (Offline) Vial: 33 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-026ical.met

Software Version 3.1.7
Run Date: 1/26/2018 10:14:40 PM
Analysis Date: 1/29/2018 11:42:27 AM
Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	4.467	4.470	1053496	100.000 CAL
PCB1016#1	6.163	6.167	242408	500.000 CAL
PCB1016#2	7.260	7.260	303319	500.000 CAL
PCB1016#3	7.570	7.570	179762	500.000 CAL
PCB1016#4	8.033	8.033	113985	500.000 CAL
PCB1016#5	8.550	8.553	156103	500.000 CAL
PCB1260#1	12.133	12.137	472785	500.000 CAL
PCB1260#2	12.787	12.790	412847	500.000 CAL
PCB1260#3	13.647	13.650	232496	500.000 CAL
PCB1260#4	14.387	14.390	522765	500.000 CAL
PCB1260#5	15.043	15.047	224736	500.000 CAL
Decachlorobiphenyl	17.647	17.643	871927	100.000 CAL

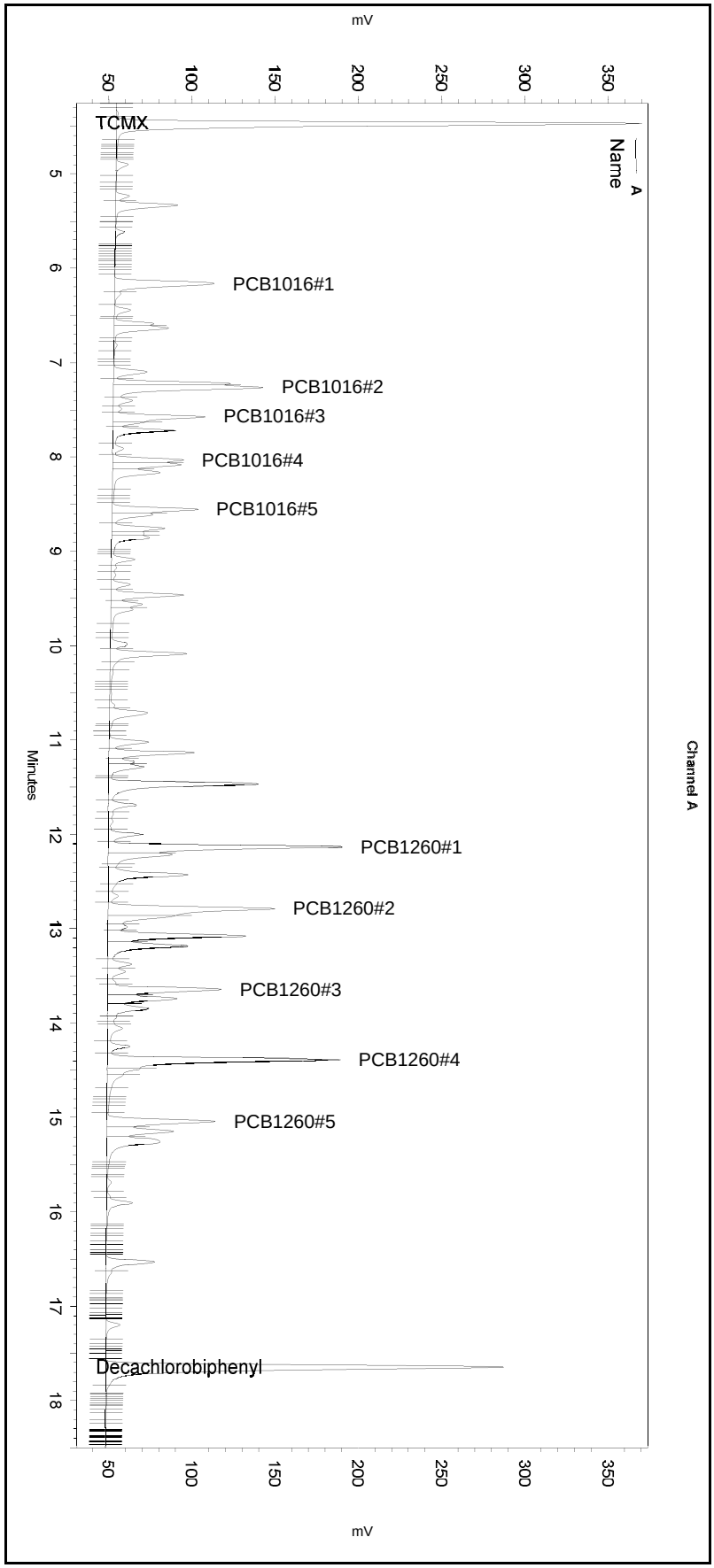
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	3.800	3.800	1107345	100.000 CAL
PCB1016#1	5.397	5.373	245463	500.000 CAL
PCB1016#2	6.350	6.347	257509	500.000 CAL
PCB1016#3	6.573	6.570	149395	500.000 CAL
PCB1016#4	7.137	7.133	95204	500.000 CAL
PCB1016#5	7.873	7.870	158747	500.000 CAL
PCB1260#1	11.153	11.150	188403	500.000 CAL
PCB1260#2	11.790	11.787	342930	500.000 CAL
PCB1260#3	12.733	12.733	177183	500.000 CAL
PCB1260#4	13.387	13.387	351946	500.000 CAL
PCB1260#5	14.063	14.065	168154	500.000 CAL
Decachlorobiphenyl	17.040	17.033	831442	100.000 CAL

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\026.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-013**
Sample Name: **ical,s35533,pcb500_100**
Instrument: GC16 (Offline) Vial: 33 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-026ical.met

Software Version 3.1.7
Run Date: 1/26/2018 10:14:40 PM
Analysis Date: 1/29/2018 11:42:27 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	0	0	0

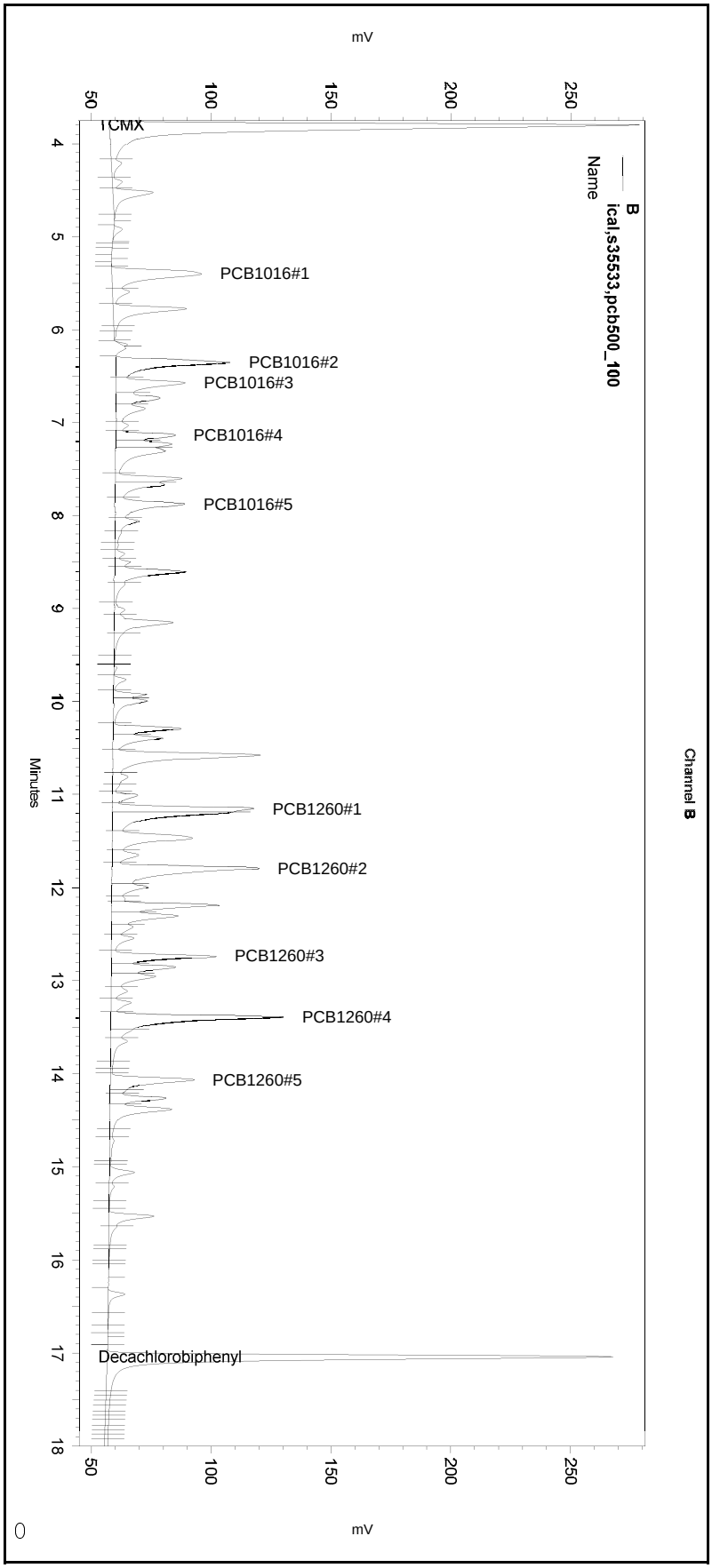
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-013

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
No	Reset Baseline	8.359	0	0
No	Reset Baseline	11.93	0	0
No	Reset Baseline	14.774	0	0

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\026.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-013**
Sample Name: **ical,s35533,pcb500_100**
Instrument: GC16 (Offline) Vial: 33 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-026ical.met

Software Version 3.1.7
Run Date: 1/26/2018 10:14:40 PM
Analysis Date: 1/29/2018 11:42:27 AM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	1.8	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-013

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
No	Split Peak	5.393	0	0
No	Reset Baseline	8.337	0	0
No	Split Peak	11.845	0	0
No	Split Peak	13.433	0	0
No	Reset Baseline	13.872	0	0
No	Reset Baseline	17.478	0	0

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\026.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-014**
Sample Name: **ical,s35534,pcb750_150**
Instrument: GC16 (Offline) Vial: 34 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-026ical.met

Software Version 3.1.7
Run Date: 1/26/2018 10:43:39 PM
Analysis Date: 1/29/2018 12:11:50 PM
Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	4.463	4.470	1510166	150.000 CAL
PCB1016#1	6.160	6.167	338742	750.000 CAL
PCB1016#2	7.257	7.260	453553	750.000 CAL
PCB1016#3	7.567	7.570	265280	750.000 CAL
PCB1016#4	8.030	8.033	161938	750.000 CAL
PCB1016#5	8.547	8.553	221954	750.000 CAL
PCB1260#1	12.127	12.137	730247	750.000 CAL
PCB1260#2	12.780	12.790	671730	750.000 CAL
PCB1260#3	13.640	13.650	364823	750.000 CAL
PCB1260#4	14.383	14.390	869798	750.000 CAL
PCB1260#5	15.040	15.047	399903	750.000 CAL
Decachlorobiphenyl	17.643	17.643	1451301	150.000 CAL

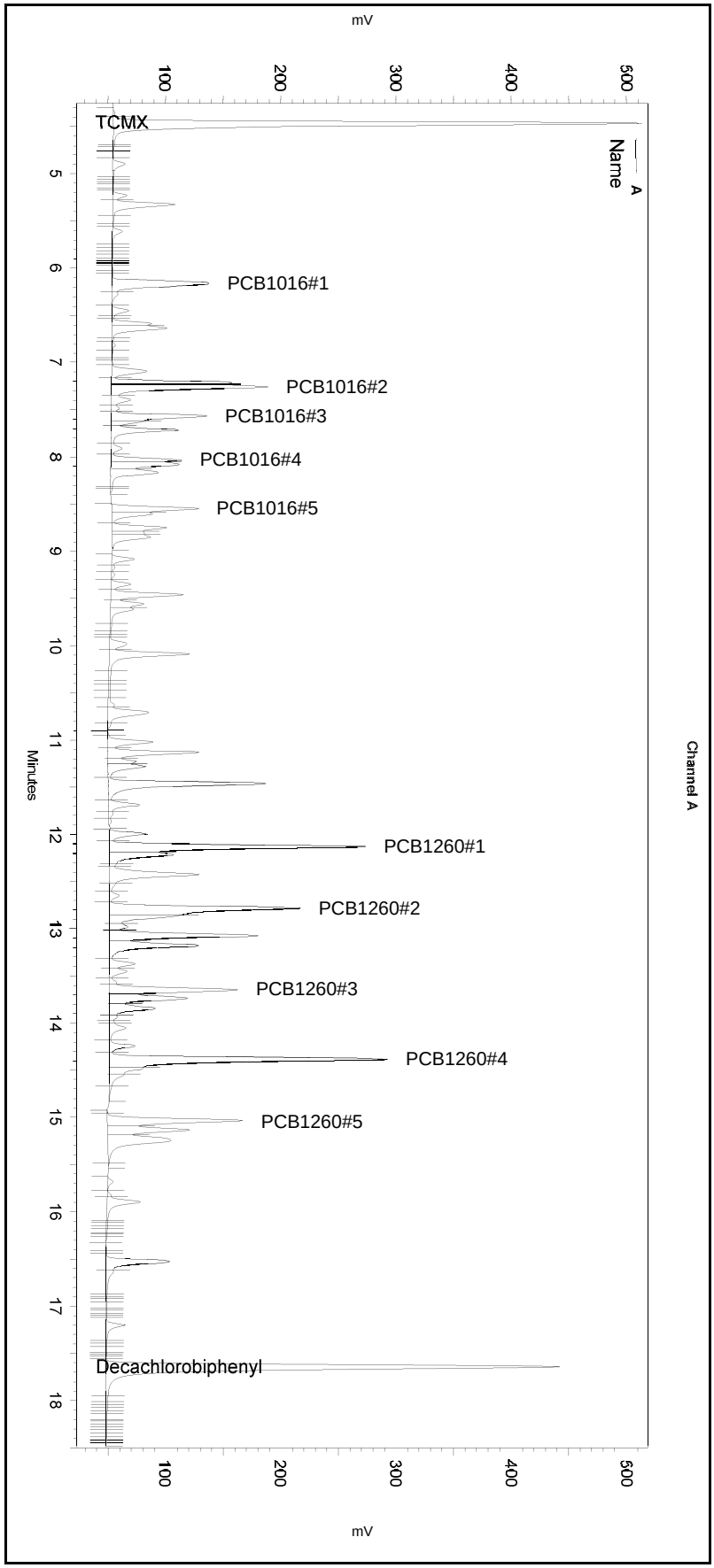
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	3.800	3.800	1681611	150.000 CAL
PCB1016#1	5.390	5.373	141379	750.000 CAL
PCB1016#2	6.350	6.347	413111	750.000 CAL
PCB1016#3	6.570	6.570	229790	750.000 CAL
PCB1016#4	7.133	7.133	138458	750.000 CAL
PCB1016#5	7.870	7.870	226540	750.000 CAL
PCB1260#1	11.147	11.150	293088	750.000 CAL
PCB1260#2	11.787	11.787	429761	750.000 CAL
PCB1260#3	12.730	12.733	284078	750.000 CAL
PCB1260#4	13.383	13.387	472453	750.000 CAL
PCB1260#5	14.060	14.065	280665	750.000 CAL
Decachlorobiphenyl	17.040	17.033	1515275	150.000 CAL

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\026.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-014**
Sample Name: **ical,s35534,pcb750_150**
Instrument: GC16 (Offline) Vial: 34 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-026ical.met

Software Version 3.1.7
Run Date: 1/26/2018 10:43:39 PM
Analysis Date: 1/29/2018 12:11:50 PM
Sample Amount: 1



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Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	0	0	0

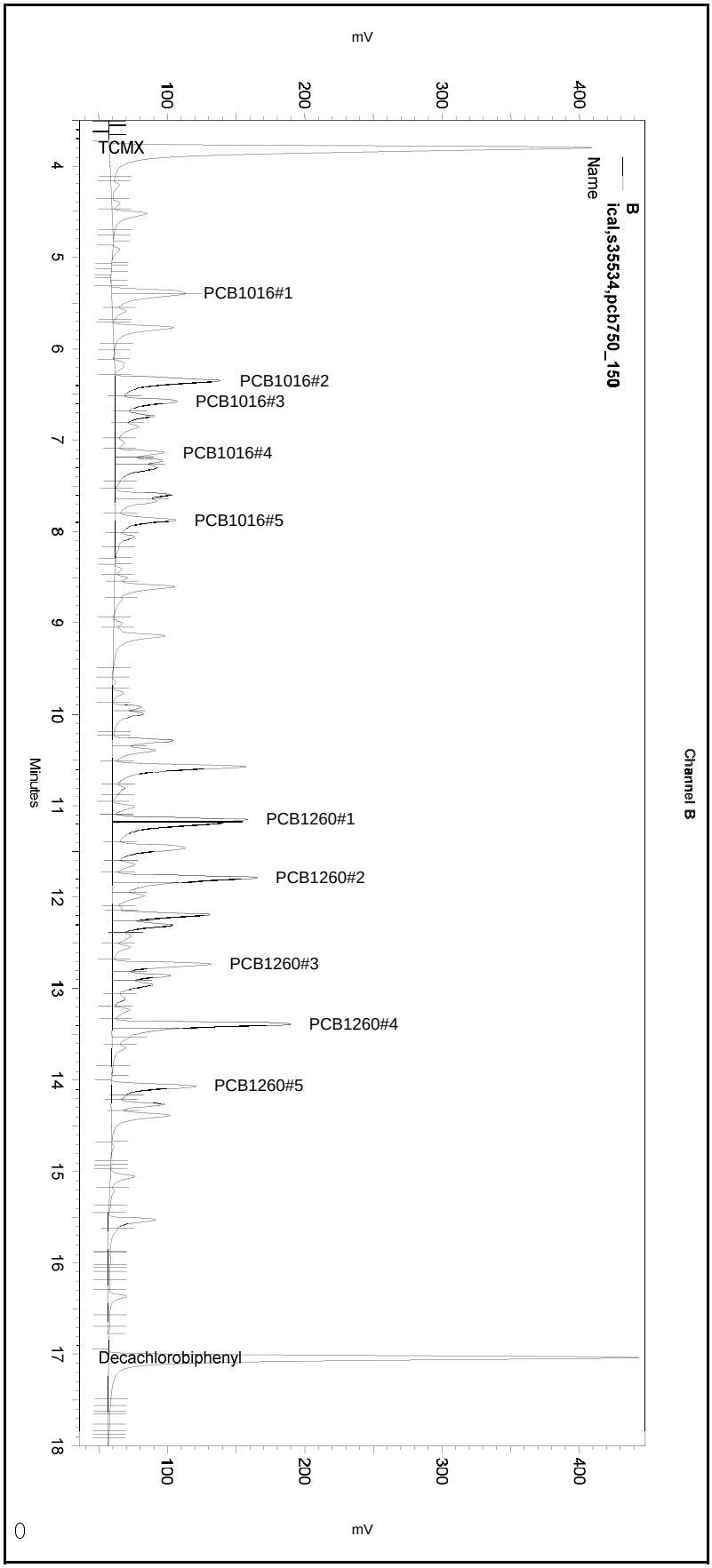
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-014

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	8.412	0	0
Yes	Reset Baseline	8.989	0	0
Yes	Reset Baseline	11.935	0	0
Yes	Reset Baseline	14.83	0	0
Yes	Reset Baseline	15.544	0	0

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\026.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-014**
Sample Name: **ical,s35534,pcb750_150**
Instrument: GC16 (Offline) Vial: 34 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-026ical.met

Software Version 3.1.7
Run Date: 1/26/2018 10:43:39 PM
Analysis Date: 1/29/2018 12:11:50 PM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	1.8	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-014

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Manual Baseline	5.22	6.276	0
Yes	Split Peak	5.394	0	0
Yes	Reset Baseline	8.286	0	0
Yes	Split Peak	11.843	0	0
Yes	Split Peak	13.438	0	0
Yes	Reset Baseline	14.667	0	0
Yes	Reset Baseline	16.895	0	0

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\026.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-014**
Sample Name: **ical,s35534,pcb750_150**
Instrument: GC16 (Offline) Vial: 34 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-026ical.met

Software Version 3.1.7
Run Date: 1/26/2018 10:43:39 PM
Analysis Date: 1/29/2018 11:16:47 AM
Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	4.463	4.470	1510166	126.464
PCB1016#1	6.160	6.167	341913	593.216
PCB1016#2	7.257	7.260	457167	598.293
PCB1016#3	7.567	7.570	268634	601.458
PCB1016#4	8.030	8.033	165073	619.978
PCB1016#5	8.547	8.553	233522	609.608
PCB1260#1	12.127	12.137	748019	585.149
PCB1260#2	12.780	12.790	692063	654.623
PCB1260#3	13.640	13.650	380963	546.614
PCB1260#4	14.383	14.390	893484	552.974
PCB1260#5	15.040	15.047	408092	580.442
Decachlorobiphenyl	17.643	17.643	1451301	110.674

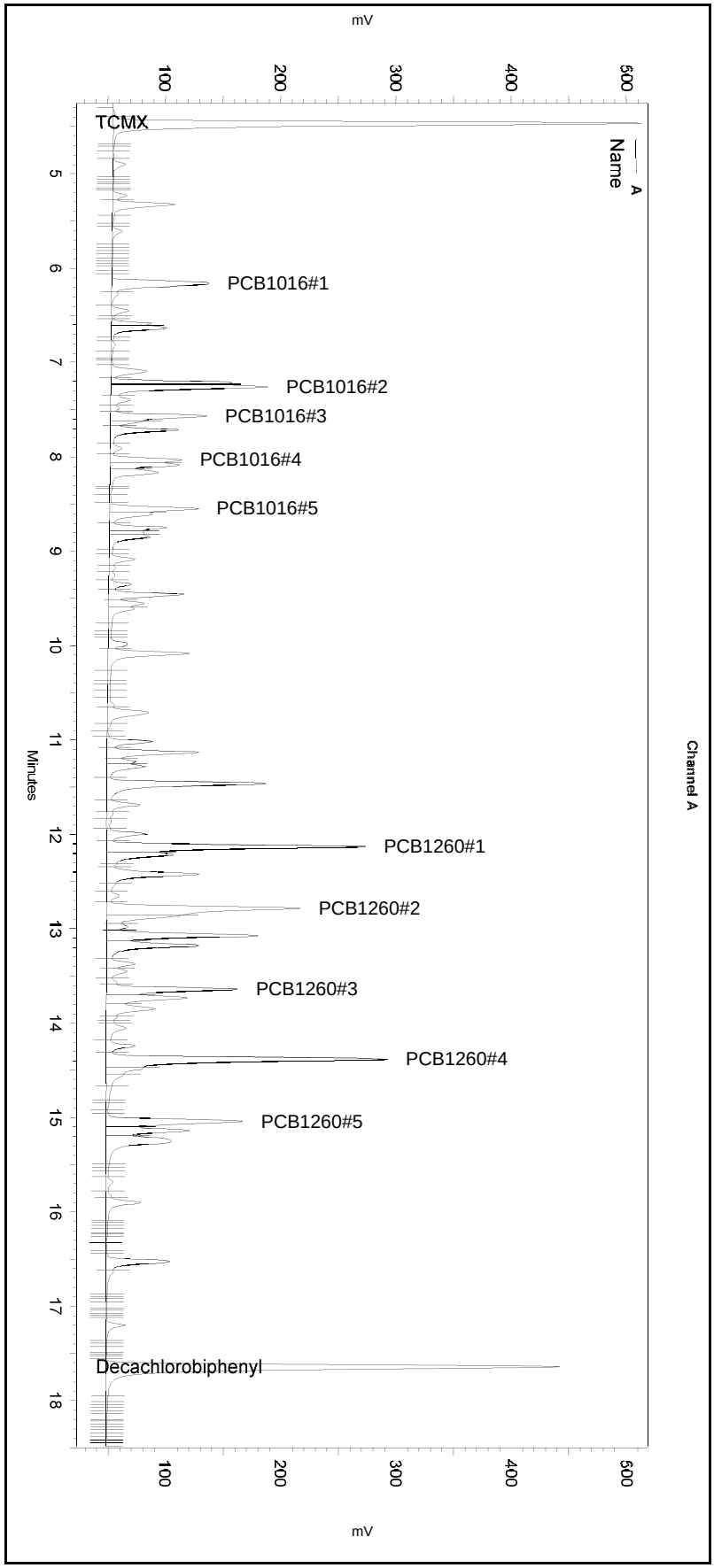
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	3.800	3.800	1681611	140.175
PCB1016#1	5.397	5.373	354858	1849.450
PCB1016#2	6.350	6.347	414223	690.437
PCB1016#3	6.570	6.570	231819	664.939
PCB1016#4	7.133	7.133	142001	698.351
PCB1016#5	7.870	7.870	239968	715.544
PCB1260#1	11.147	11.150	293088	569.994
PCB1260#2	11.787	11.787	571055	989.795
PCB1260#3	12.730	12.733	284078	534.635
PCB1260#4	13.383	13.387	608344	754.693
PCB1260#5	14.060	14.065	282502	929.849
Decachlorobiphenyl	17.040	17.033	1533291	118.878

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\026.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-014**
Sample Name: **ical,s35534,pcb750_150**
Instrument: GC16 (Offline) Vial: 34 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-026ical.met

Software Version 3.1.7
Run Date: 1/26/2018 10:43:39 PM
Analysis Date: 1/29/2018 11:16:47 AM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	0	0	0

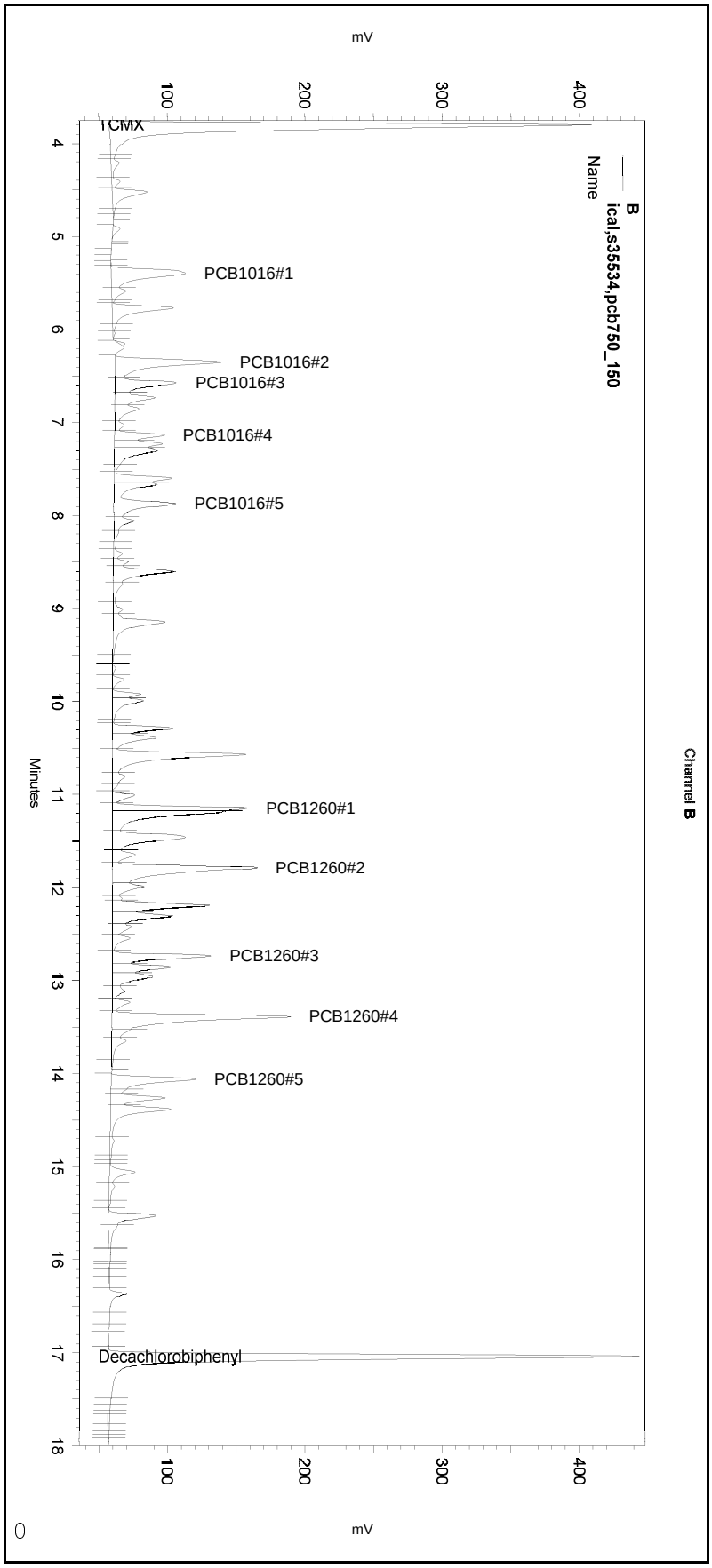
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-014

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\026.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-014**
Sample Name: **ical,s35534,pcb750_150**
Instrument: GC16 (Offline) Vial: 34 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-026ical.met

Software Version 3.1.7
Run Date: 1/26/2018 10:43:39 PM
Analysis Date: 1/29/2018 11:16:47 AM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	1.8	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========
Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-014

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\026.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-015**
Sample Name: **ical,s35535,pcb1000_200**
Instrument: GC16 (Offline) Vial: 35 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-026ical.met

Software Version 3.1.7
Run Date: 1/26/2018 11:12:39 PM
Analysis Date: 1/29/2018 12:11:57 PM
Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	4.477	4.470	2262597	200.000 CAL
PCB1016#1	6.173	6.167	488085	1000.000 CAL
PCB1016#2	7.270	7.260	678955	1000.000 CAL
PCB1016#3	7.577	7.570	390491	1000.000 CAL
PCB1016#4	8.040	8.033	233392	1000.000 CAL
PCB1016#5	8.560	8.553	335442	1000.000 CAL
PCB1260#1	12.140	12.137	1077330	1000.000 CAL
PCB1260#2	12.793	12.790	1015797	1000.000 CAL
PCB1260#3	13.653	13.650	547102	1000.000 CAL
PCB1260#4	14.397	14.390	1284821	1000.000 CAL
PCB1260#5	15.050	15.047	594841	1000.000 CAL
Decachlorobiphenyl	17.653	17.643	2022712	200.000 CAL

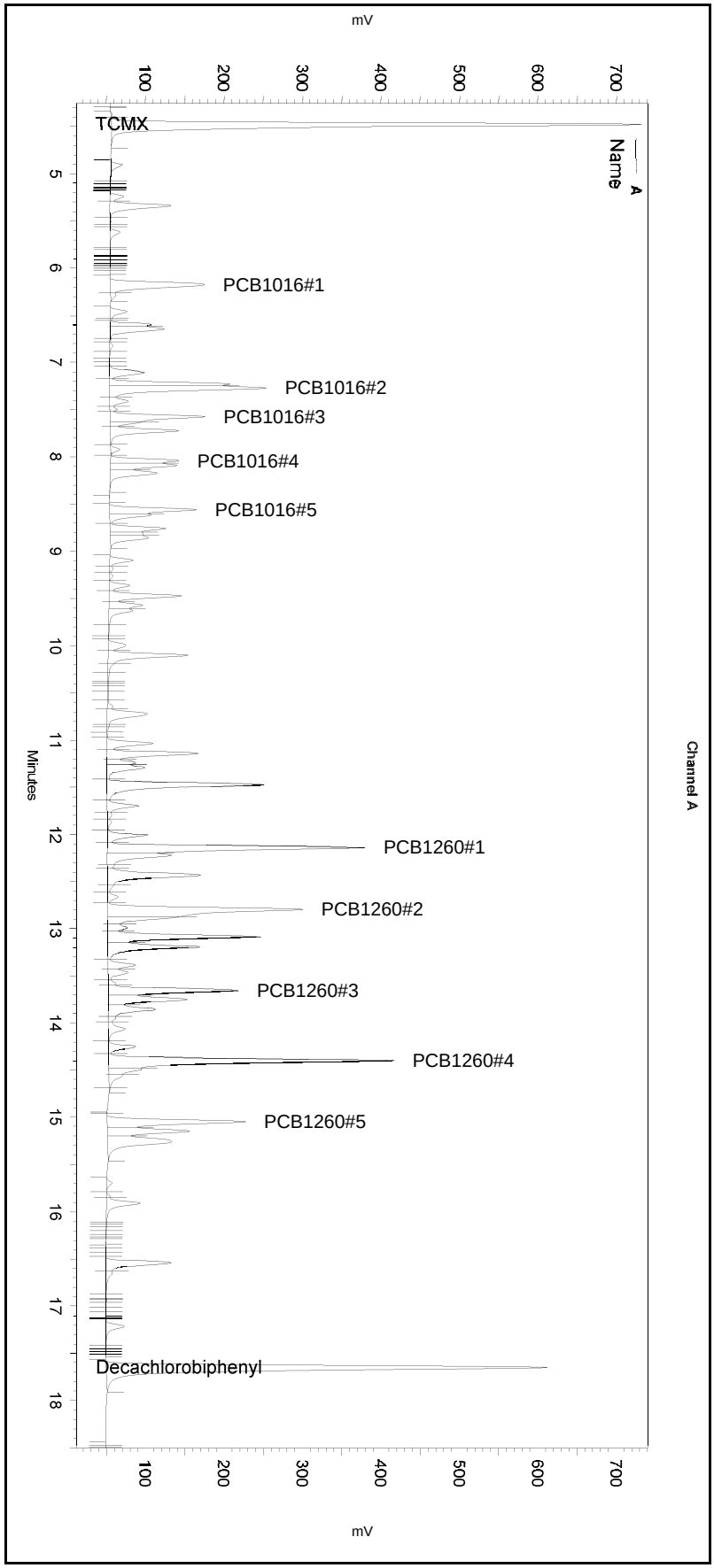
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	3.813	3.800	2737976	200.000 CAL
PCB1016#1	5.403	5.373	223214	1000.000 CAL
PCB1016#2	6.360	6.347	670945	1000.000 CAL
PCB1016#3	6.583	6.570	347776	1000.000 CAL
PCB1016#4	7.143	7.133	184200	1000.000 CAL
PCB1016#5	7.880	7.870	342469	1000.000 CAL
PCB1260#1	11.160	11.150	456833	1000.000 CAL
PCB1260#2	11.800	11.787	679283	1000.000 CAL
PCB1260#3	12.743	12.733	431209	1000.000 CAL
PCB1260#4	13.397	13.387	707596	1000.000 CAL
PCB1260#5	14.073	14.065	439648	1000.000 CAL
Decachlorobiphenyl	17.050	17.033	2204330	200.000 CAL

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\026.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-015**
Sample Name: **ical,s35535,pcb1000_200**
Instrument: GC16 (Offline) Vial: 35 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-026ical.met

Software Version 3.1.7
Run Date: 1/26/2018 11:12:39 PM
Analysis Date: 1/29/2018 12:11:57 PM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	0	0	0

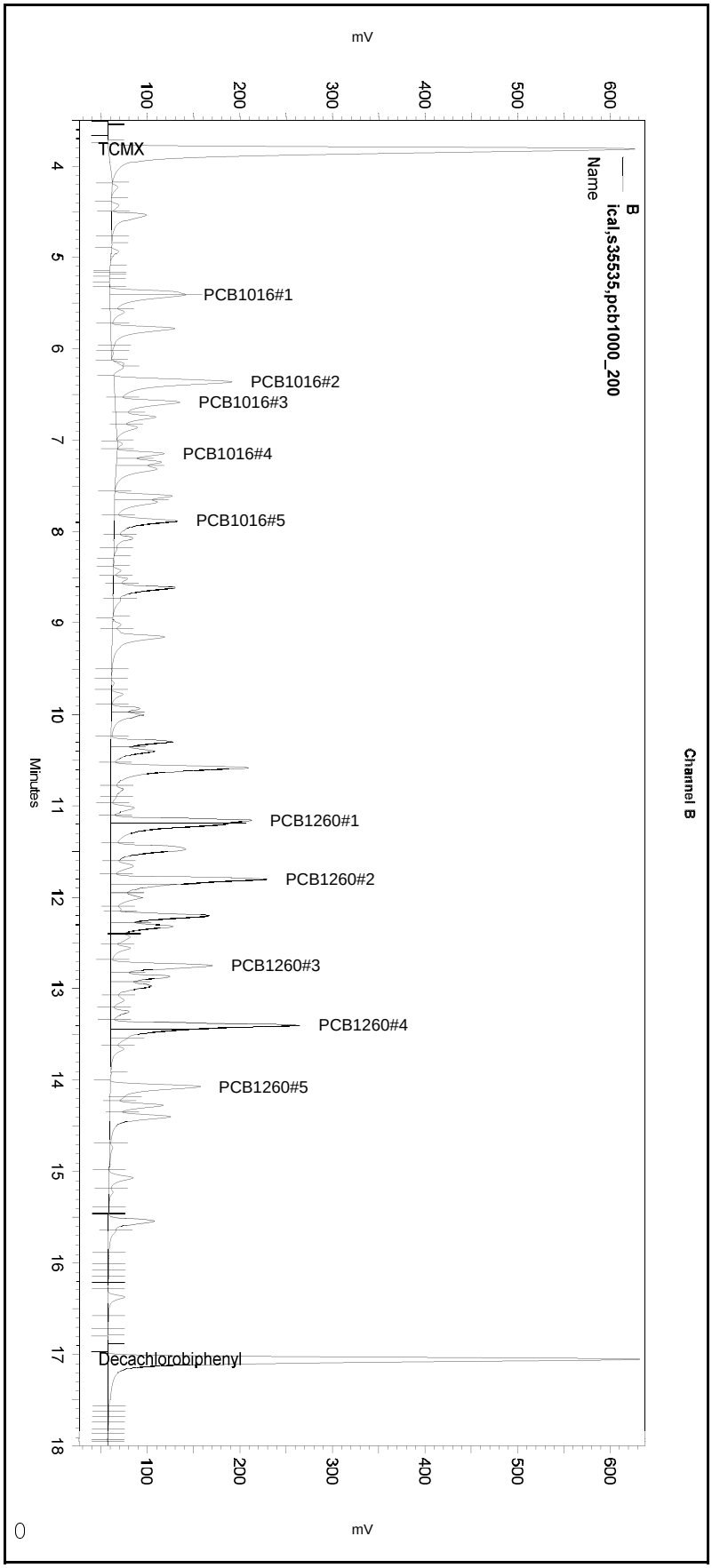
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-015

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	4.399	0	0
Yes	Reset Baseline	4.722	0	0
Yes	Reset Baseline	6.346	0	0
Yes	Reset Baseline	7.867	0	0
Yes	Reset Baseline	8.378	0	0
Yes	Reset Baseline	8.966	0	0
Yes	Reset Baseline	9.012	0	0
Yes	Reset Baseline	14.743	0	0
Yes	Reset Baseline	15.466	0	0
Yes	Reset Baseline	17.913	0	0

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\026.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-015**
Sample Name: **ical,s35535,pcb1000_200**
Instrument: GC16 (Offline) Vial: 35 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-026ical.met

Software Version 3.1.7
Run Date: 1/26/2018 11:12:39 PM
Analysis Date: 1/29/2018 12:11:57 PM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	1.8	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========
Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-015

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	4.169	0	0
Yes	Split Peak	5.407	0	0
Yes	Reset Baseline	6.998	0	0
Yes	Reset Baseline	8.265	0	0
Yes	Reset Baseline	8.91	0	0
Yes	Split Peak	11.856	0	0
Yes	Split Peak	13.444	0	0
Yes	Reset Baseline	13.908	0	0
Yes	Reset Baseline	18.04	0	0

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\026.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-015**
Sample Name: **ical,s35535,pcb1000_200**
Instrument: GC16 (Offline) Vial: 35 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-026ical.met

Software Version 3.1.7
Run Date: 1/26/2018 11:12:39 PM
Analysis Date: 1/29/2018 11:16:53 AM
Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	4.477	4.470	2292928	192.015
PCB1016#1	6.173	6.167	496762	861.877
PCB1016#2	7.270	7.260	688315	900.796
PCB1016#3	7.577	7.570	402477	901.126
PCB1016#4	8.040	8.033	246737	926.689
PCB1016#5	8.560	8.553	345952	903.106
PCB1260#1	12.140	12.137	1085189	848.905
PCB1260#2	12.793	12.790	1029827	974.115
PCB1260#3	13.653	13.650	563236	808.144
PCB1260#4	14.397	14.390	1313250	812.765
PCB1260#5	15.050	15.047	607100	863.497
Decachlorobiphenyl	17.653	17.643	2053395	156.589

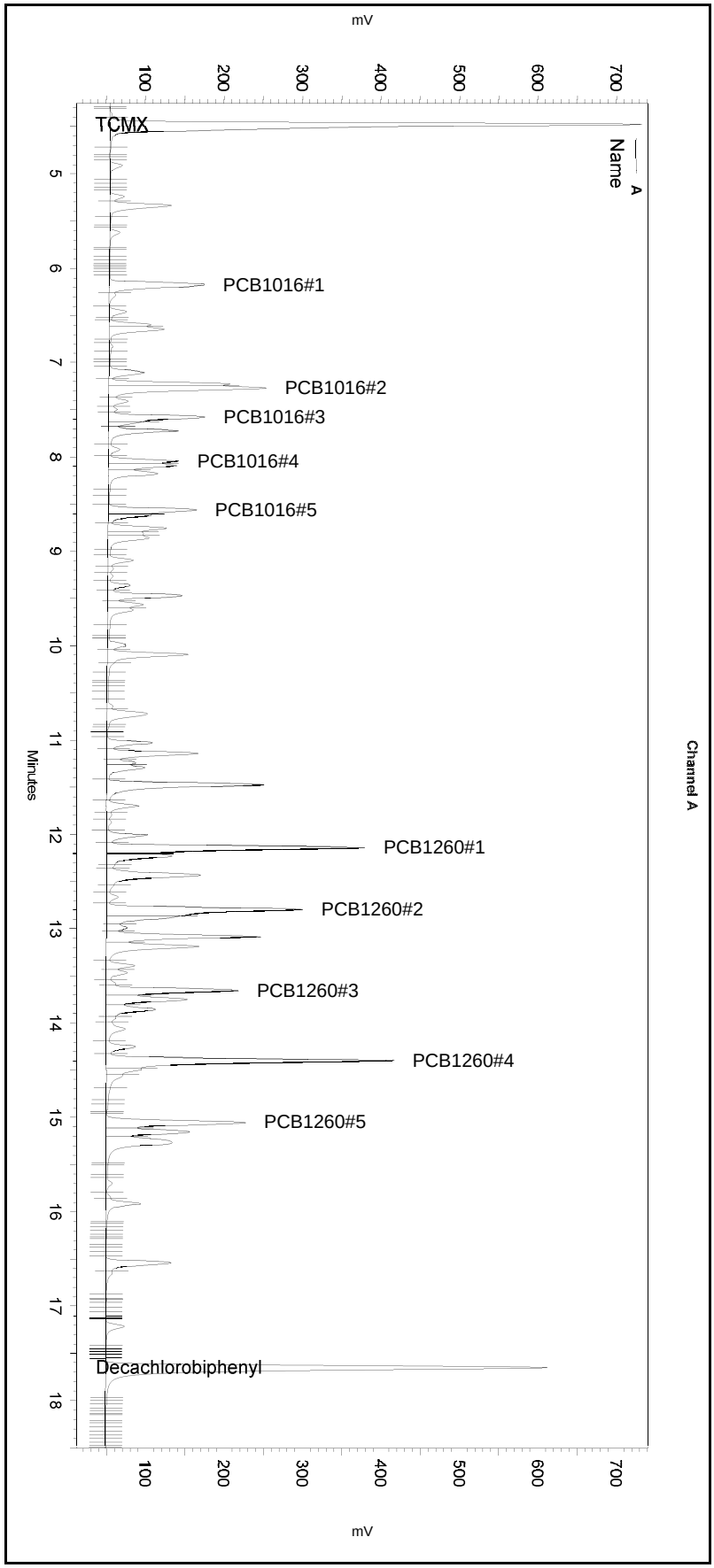
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	3.813	3.800	2781117	231.826
PCB1016#1		5.373		0.000 BDL
PCB1016#2	6.360	6.347	680924	1134.980
PCB1016#3	6.583	6.570	366449	1051.106
PCB1016#4	7.143	7.133	211614	1040.703
PCB1016#5	7.880	7.870	369058	1100.468
PCB1260#1	11.160	11.150	460497	895.569
PCB1260#2	11.800	11.787	900763	1561.269
PCB1260#3	12.743	12.733	443584	834.825
PCB1260#4	13.397	13.387	960023	1190.975
PCB1260#5	14.073	14.065	451509	1486.132
Decachlorobiphenyl	17.050	17.033	2221020	172.198

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\026.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-015**
Sample Name: **ical,s35535,pcb1000_200**
Instrument: GC16 (Offline) Vial: 35 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-026ical.met

Software Version 3.1.7
Run Date: 1/26/2018 11:12:39 PM
Analysis Date: 1/29/2018 11:16:53 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

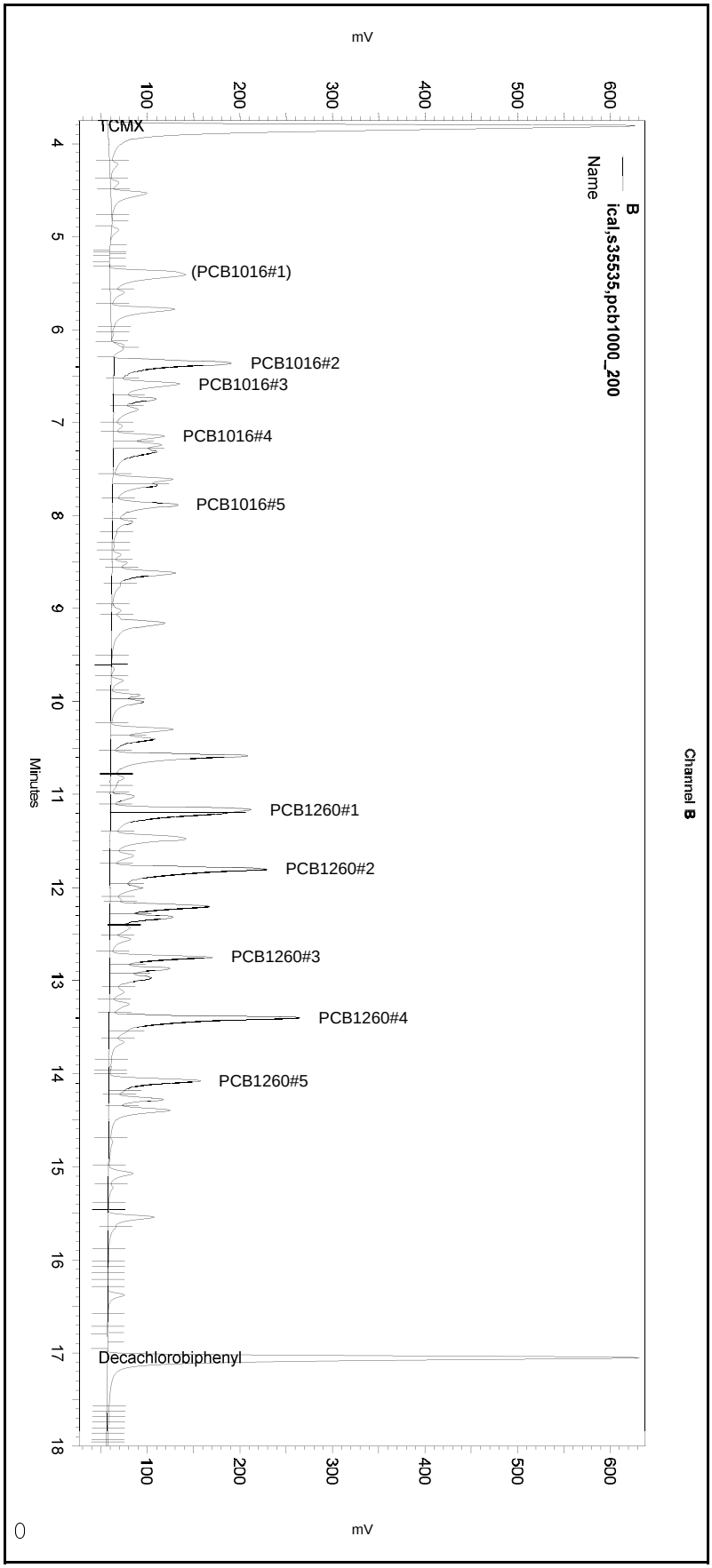
Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========
Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-015

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\026.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-015**
Sample Name: **ical,s35535,pcb1000_200**
Instrument: GC16 (Offline) Vial: 35 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-026ical.met

Software Version 3.1.7
Run Date: 1/26/2018 11:12:39 PM
Analysis Date: 1/29/2018 11:16:53 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	1.8	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========
Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-015

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\026.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-017**
Sample Name: **icv,s35527,ULTRA_1660**
Instrument: GC16 (Offline) Vial: 37 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-026ical.met

Software Version 3.1.7
Run Date: 1/27/2018 12:10:41 AM
Analysis Date: 1/29/2018 12:49:11 PM
Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	4.467	4.470	538550	46.815
PCB1016#1	6.167	6.167	130343	237.164
PCB1016#2	7.260	7.260	164202	229.757
PCB1016#3	7.570	7.570	94262	232.682
PCB1016#4	8.033	8.033	59907	232.556
PCB1016#5	8.553	8.553	81779	233.189
PCB1260#1	12.133	12.137	231630	203.803
PCB1260#2	12.787	12.790	167882	174.075
PCB1260#3	13.647	13.650	135832	261.765
PCB1260#4	14.390	14.390	300143	248.112
PCB1260#5	15.043	15.047	116939	217.925
Decachlorobiphenyl	17.650	17.643	499368	42.162

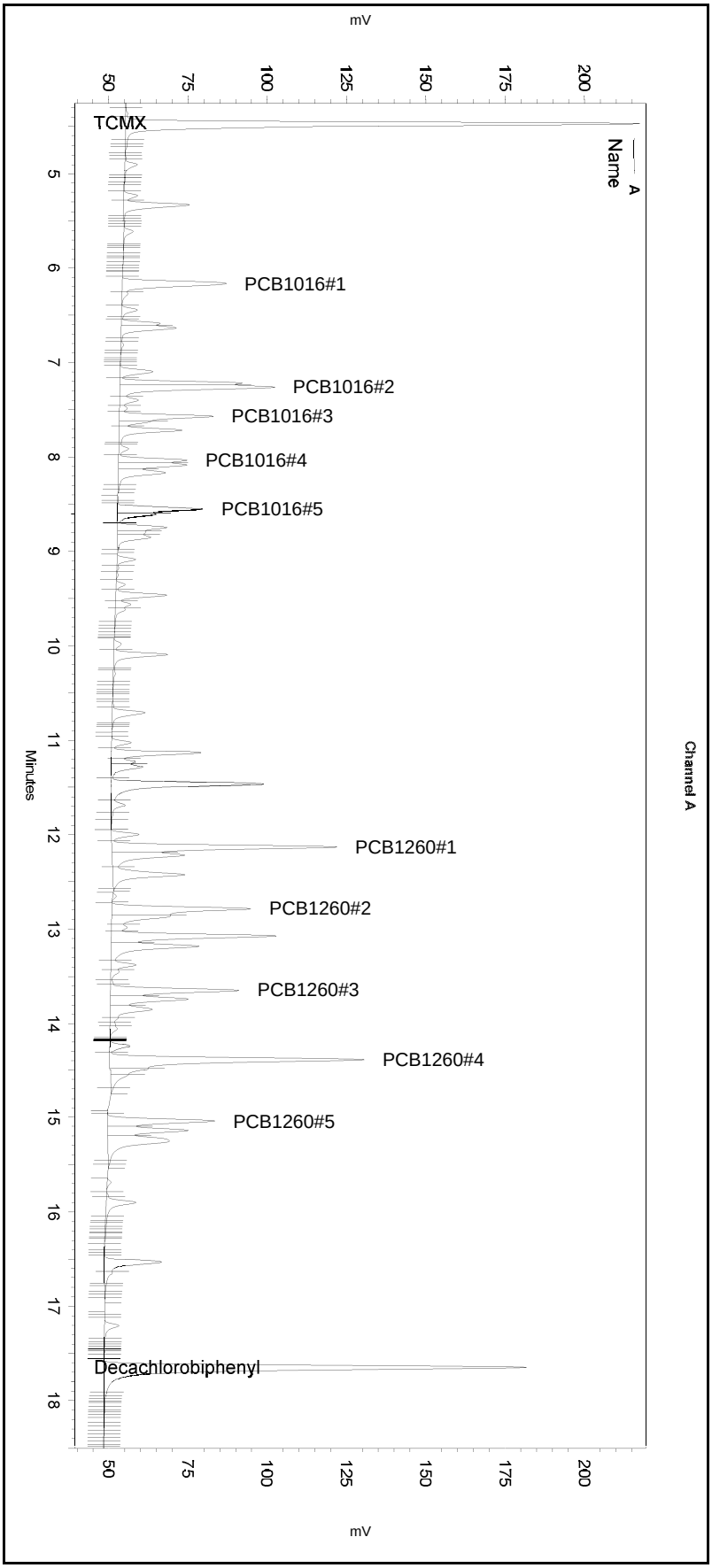
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	3.803	3.800	508029	44.429
PCB1016#1	5.397	5.373	54290	263.584
PCB1016#2	6.353	6.347	125915	226.488
PCB1016#3	6.577	6.570	74308	237.273
PCB1016#4	7.137	7.133	45668	232.329
PCB1016#5	7.873	7.870	74071	235.093
PCB1260#1	11.153	11.150	100172	224.333
PCB1260#2	11.790	11.787	98307	173.793
PCB1260#3	12.737	12.733	105255	255.080
PCB1260#4	13.390	13.387	147479	233.088
PCB1260#5	14.067	14.065	84313	216.740
Decachlorobiphenyl	17.043	17.033	444857	39.250

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\026.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-017**
Sample Name: **icv,s35527,ULTRA_1660**
Instrument: GC16 (Offline) Vial: 37 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-026ical.met

Software Version 3.1.7
Run Date: 1/27/2018 12:10:41 AM
Analysis Date: 1/29/2018 12:49:11 PM
Sample Amount: 1



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Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	0	0	0

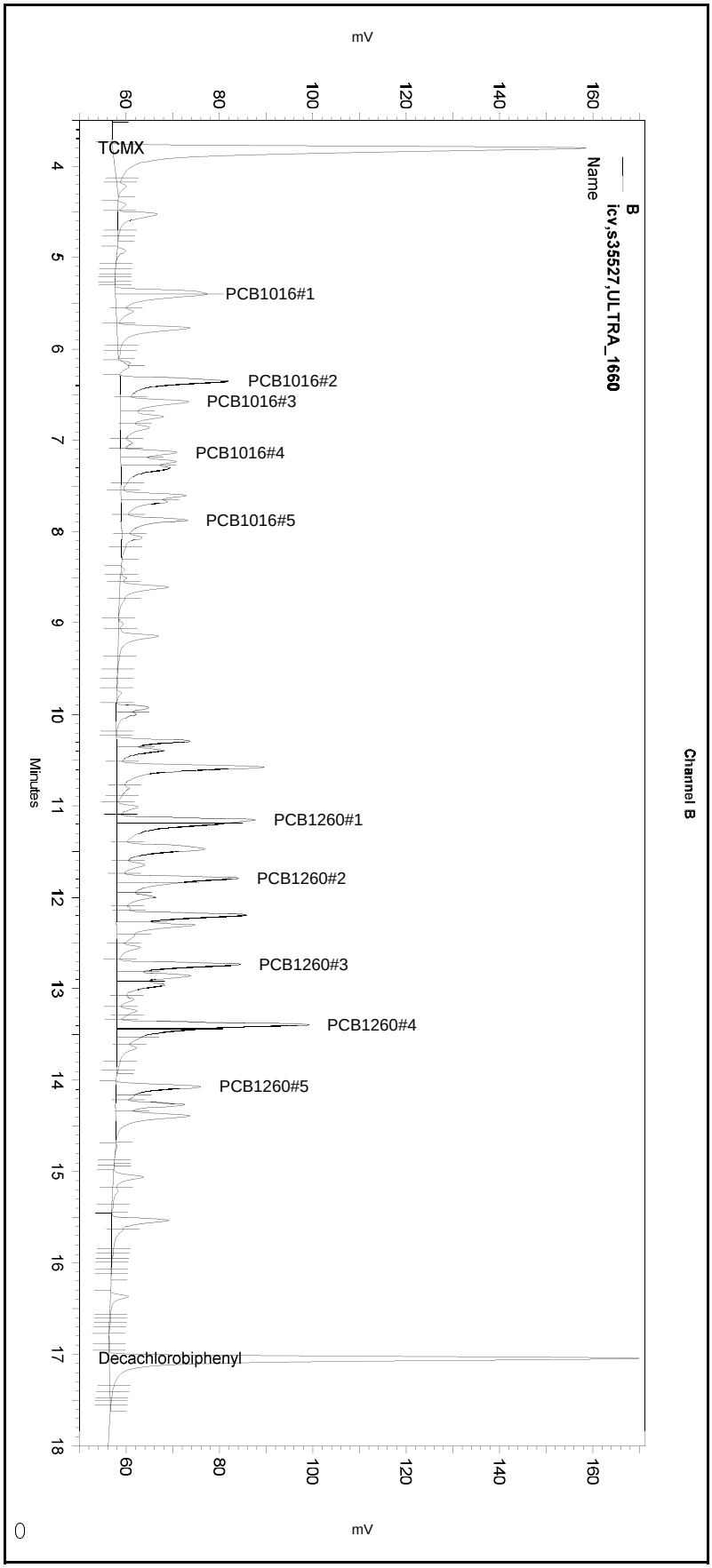
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-017

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	8.379	0	0
Yes	Reset Baseline	9.014	0	0
Yes	Reset Baseline	12.6	0	0
Yes	Reset Baseline	14.752	0	0
Yes	Reset Baseline	15.541	0	0

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\026.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-017**
Sample Name: **icv,s35527,ULTRA_1660**
Instrument: GC16 (Offline) Vial: 37 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-026ical.met

Software Version 3.1.7
Run Date: 1/27/2018 12:10:41 AM
Analysis Date: 1/29/2018 12:49:11 PM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	1.8	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-017

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Split Peak	5.4	0	0
Yes	Reset Baseline	8.313	0	0
Yes	Split Peak	11.836	0	0
Yes	Split Peak	13.435	0	0
Yes	Reset Baseline	14.676	0	0
Yes	Reset Baseline	17.615	0	0

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\026.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-017**
Sample Name: **icv,s35527,ULTRA_1660**
Instrument: GC16 (Offline) Vial: 37 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-026ical.met

Software Version 3.1.7
Run Date: 1/27/2018 12:10:41 AM
Analysis Date: 1/29/2018 12:49:02 PM
Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	4.467	4.470	538550	46.815
PCB1016#1	6.167	6.167	130343	237.164
PCB1016#2	7.260	7.260	164519	230.201
PCB1016#3	7.570	7.570	94767	233.929
PCB1016#4	8.033	8.033	60633	235.374
PCB1016#5	8.553	8.553	83340	237.640
PCB1260#1	12.133	12.137	235625	207.319
PCB1260#2	12.787	12.790	174577	181.017
PCB1260#3	13.647	13.650	141587	272.856
PCB1260#4	14.390	14.390	310058	256.309
PCB1260#5	15.043	15.047	120105	223.826
Decachlorobiphenyl	17.650	17.643	499368	42.162

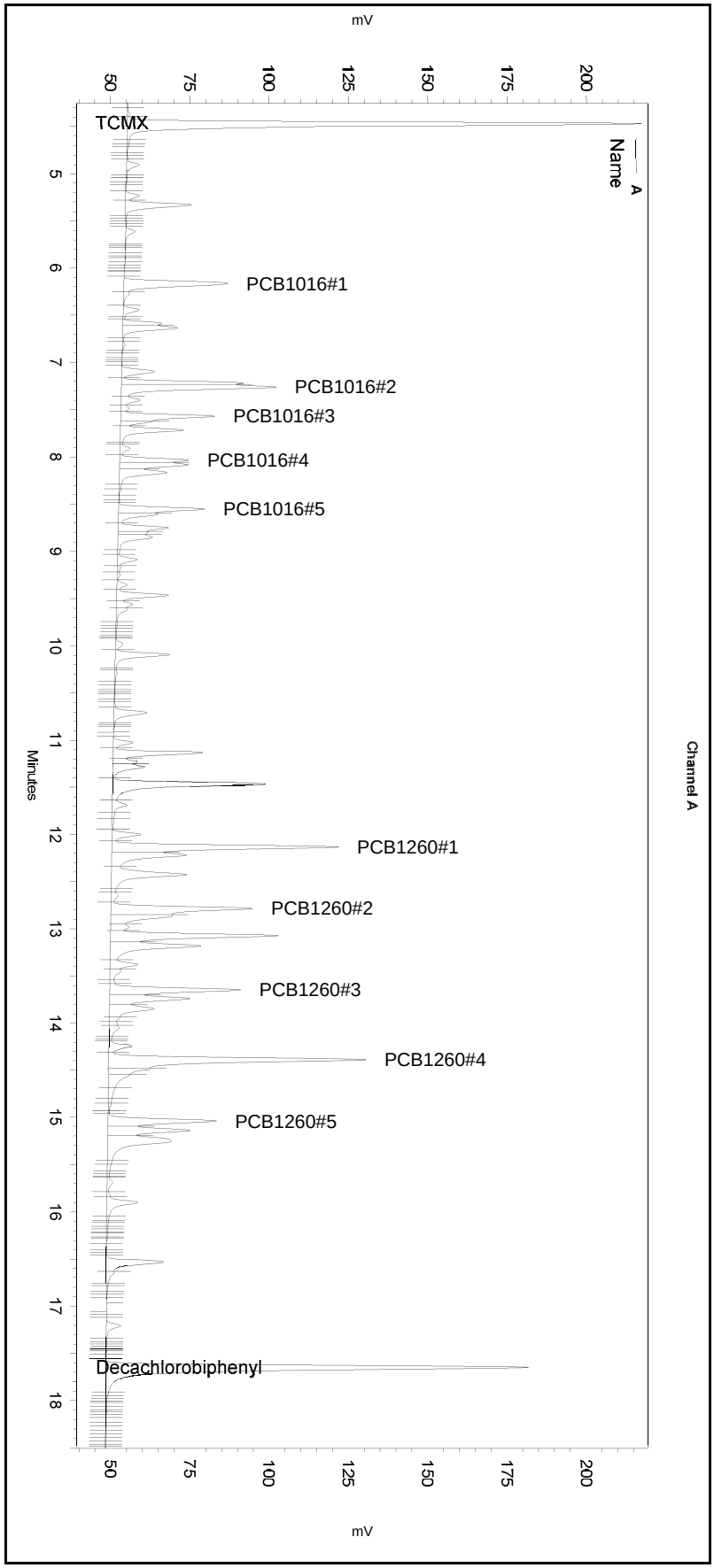
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	3.803	3.800	508029	44.429
PCB1016#1	5.400	5.373	128448	623.629
PCB1016#2	6.353	6.347	126600	227.720
PCB1016#3	6.577	6.570	75495	241.063
PCB1016#4	7.137	7.133	47771	243.028
PCB1016#5	7.873	7.870	82347	261.360
PCB1260#1	11.153	11.150	100172	224.333
PCB1260#2	11.790	11.787	147223	260.269
PCB1260#3	12.737	12.733	105255	255.080
PCB1260#4	13.390	13.387	205095	324.150
PCB1260#5	14.067	14.065	84952	218.383
Decachlorobiphenyl	17.043	17.033	447334	39.468

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\026.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-017**
Sample Name: **icv,s35527,ULTRA_1660**
Instrument: GC16 (Offline) Vial: 37 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-026ical.met

Software Version 3.1.7
Run Date: 1/27/2018 12:10:41 AM
Analysis Date: 1/29/2018 12:49:02 PM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	0	0	0

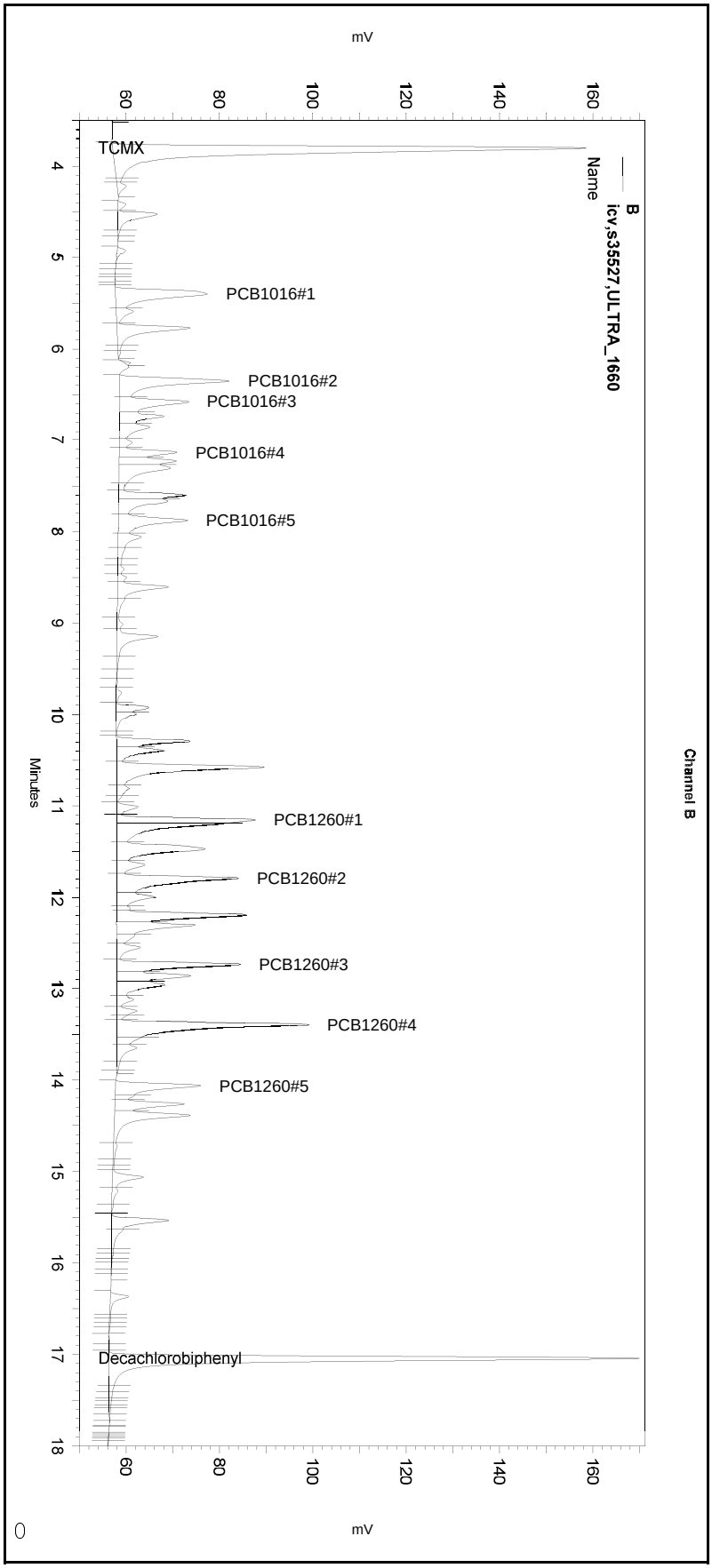
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-017

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
No	Reset Baseline	8.379	0	0
No	Reset Baseline	9.014	0	0
No	Reset Baseline	12.6	0	0
No	Reset Baseline	14.752	0	0
No	Reset Baseline	15.541	0	0

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\026.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-017**
Sample Name: **icv,s35527,ULTRA_1660**
Instrument: GC16 (Offline) Vial: 37 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-026ical.met

Software Version 3.1.7
Run Date: 1/27/2018 12:10:41 AM
Analysis Date: 1/29/2018 12:49:02 PM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	1.8	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\026-017

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
No	Split Peak	5.4	0	0
No	Reset Baseline	8.313	0	0
No	Split Peak	11.836	0	0
No	Split Peak	13.435	0	0
No	Reset Baseline	14.676	0	0
No	Reset Baseline	17.615	0	0

Continuing Calibration Verification Raw Data

ENTHALPY CONTINUING CALIBRATION FOR 296840 PCBS Soil
EPA 8082A

Inst : GC16 Run Name : PCB500_100 IDF : 1.0
Seqnum : 238048058017.1 File : 033_017 Time : 02-FEB-2018 17:16
Cal : 238037991001 Caldate : 26-JAN-2018
Standards: S35813

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Aroclor-1016	A			500.0	437.6	pg/ul	-12	20	
Aroclor-1260	A			500.0	421.6	pg/ul	-16	20	
TCMX	A	11504	10370	100.0	90.15	pg/ul	-10	20	
Decachlorobiphenyl	A	11844	8386.1	100.0	70.80	pg/ul	**-29**	20	c-
Aroclor-1016	B			500.0	493.9	pg/ul	-1	20	
Aroclor-1260	B			500.0	439.9	pg/ul	-12	20	
TCMX	B	11435	10916	100.0	95.46	pg/ul	-5	20	
Decachlorobiphenyl	B	11334	7823.7	100.0	69.03	pg/ul	**-31**	20	c-

RDG 02/05/18 : Corrected automatically drawn baseline for all channels.
[general version]

Analyst: JC1 Date: 02/06/18 Reviewer: EAH Date: 02/07/18

-=low bias c=CCV

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-017**
Sample Name: **ccv,s35813,pcb500_100**
Instrument: GC16 (Offline) Vial: 37 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 5:16:32 PM
Analysis Date: 2/5/2018 10:11:33 AM
Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	4.477	4.490	1037042	90.148
PCB1016#1	6.173	6.177	235332	428.196
PCB1016#2	7.273	7.270	314151	439.571
PCB1016#3	7.583	7.580	182121	449.559
PCB1016#4	8.047	8.043	113318	439.895
PCB1016#5	8.567	8.563	151064	430.752
PCB1260#1	12.150	12.147	463397	407.727
PCB1260#2	12.803	12.800	407029	422.044
PCB1260#3	13.663	13.660	225920	435.376
PCB1260#4	14.407	14.400	523549	432.791
PCB1260#5	15.063	15.057	220056	410.092
Decachlorobiphenyl	17.667	17.663	838607	70.805

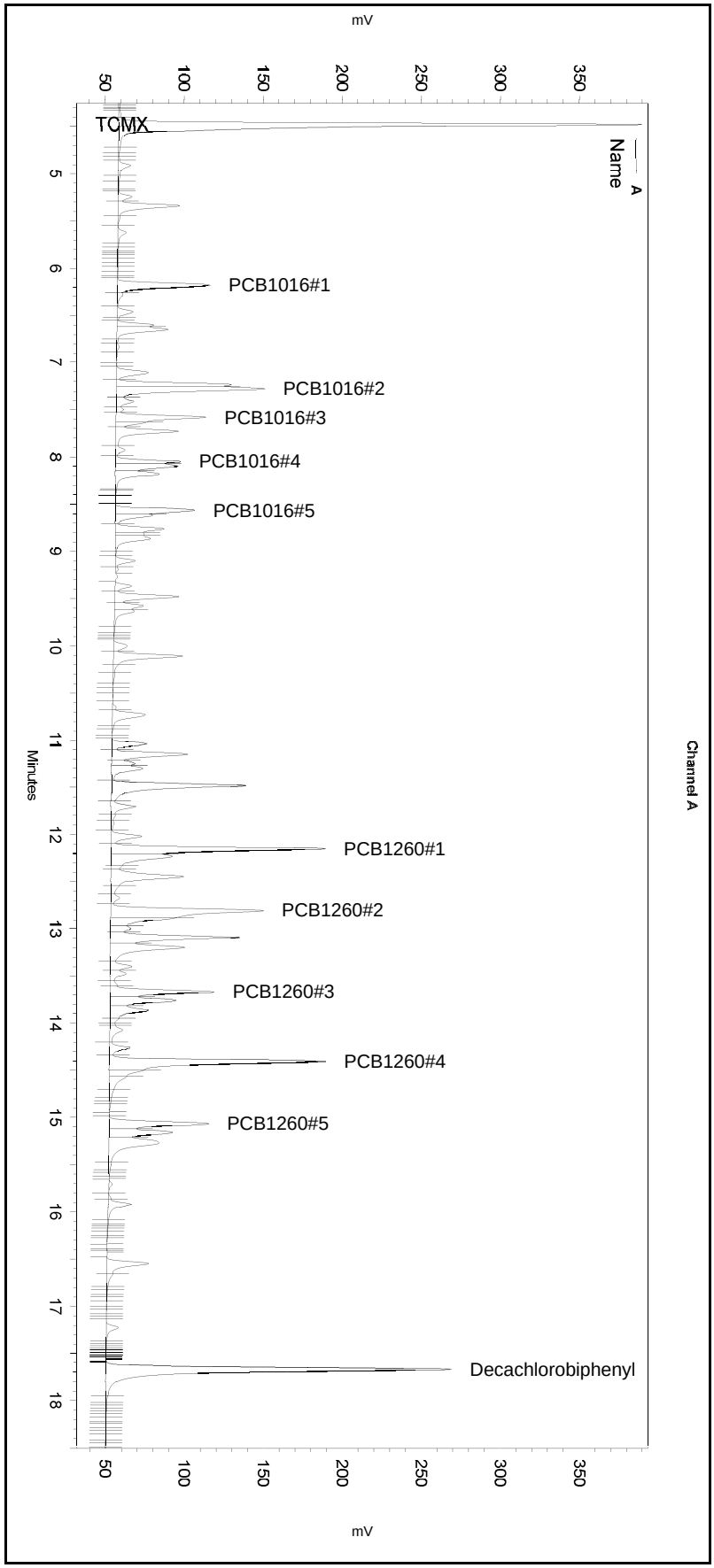
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	3.820	3.810	1091599	95.464
PCB1016#1	5.407	5.383	85440	414.820
PCB1016#2	6.373	6.357	287427	517.006
PCB1016#3	6.593	6.580	164400	524.945
PCB1016#4	7.153	7.143	95814	487.439
PCB1016#5	7.893	7.880	165496	525.265
PCB1260#1	11.170	11.150	183750	411.504
PCB1260#2	11.810	11.797	275633	487.280
PCB1260#3	12.753	12.743	177837	430.979
PCB1260#4	13.407	13.397	273393	432.094
PCB1260#5	14.083	14.075	170319	437.833
Decachlorobiphenyl	17.060	17.063	782367	69.028

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-017**
Sample Name: **ccv,s35813,pcb500_100**
Instrument: GC16 (Offline) Vial: 37 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 5:16:32 PM
Analysis Date: 2/5/2018 10:11:33 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	0	0	0

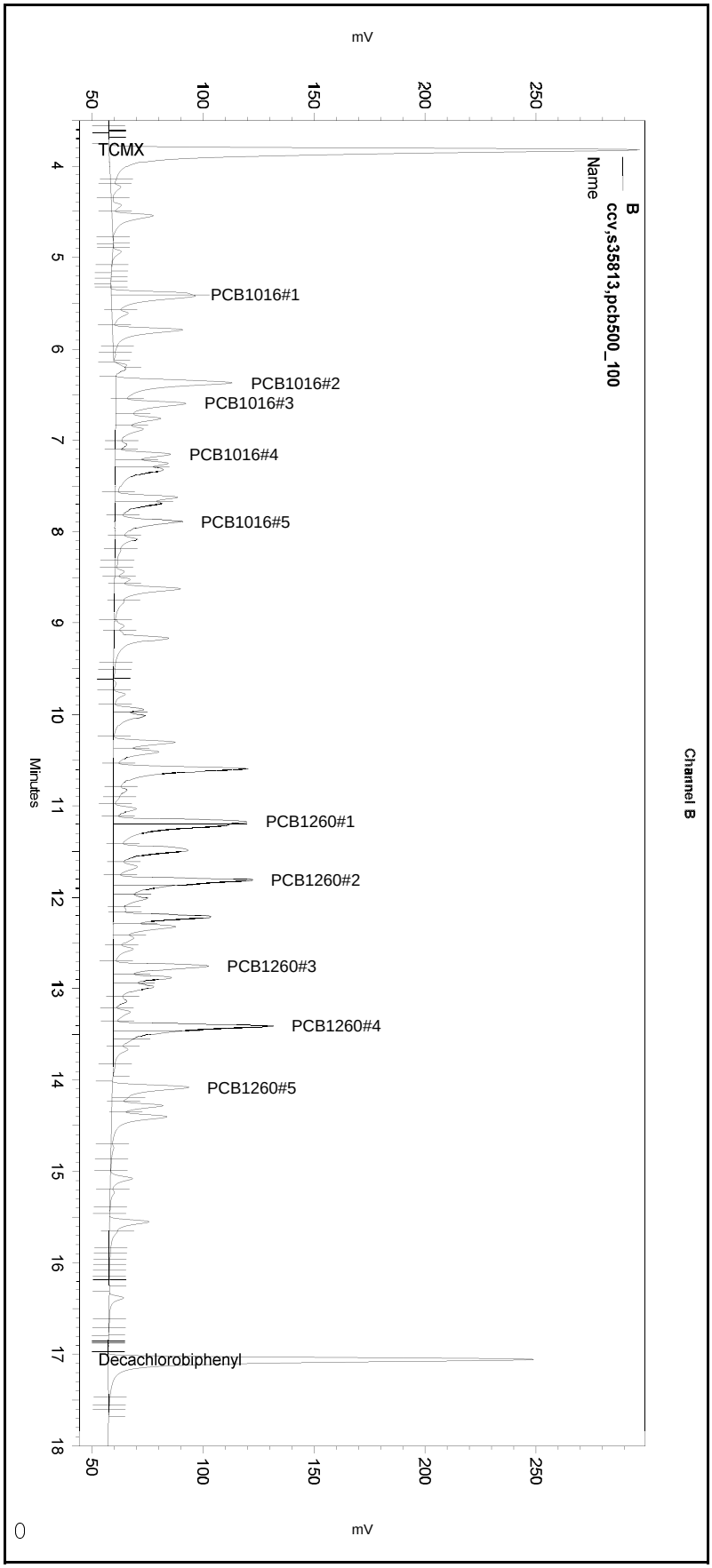
Manual Integration Fixes

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-017

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	9.264	0	0
Yes	Reset Baseline	15.647	0	0

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-017**
Sample Name: **ccv,s35813,pcb500_100**
Instrument: GC16 (Offline) Vial: 37 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 5:16:32 PM
Analysis Date: 2/5/2018 10:11:33 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	1.8	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-017

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	4.845	0	0
Yes	Split Peak	5.409	0	0
Yes	Split Peak	11.197	0	0
Yes	Split Peak	11.874	0	0
Yes	Split Peak	13.459	0	0
Yes	Reset Baseline	17.676	0	0

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-017**
Sample Name: **ccv,s35813,pcb500_100**
Instrument: GC16 Vial: 37 Operator: lims2k3\pest3
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 5:16:32 PM
Analysis Date: 2/2/2018 5:40:29 PM
Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	4.477	4.490	1037042	90.148
PCB1016#1	6.173	6.177	235952	429.324
PCB1016#2	7.273	7.270	315427	441.356
PCB1016#3	7.583	7.580	183356	452.608
PCB1016#4	8.047	8.043	114582	444.802
PCB1016#5	8.567	8.563	154154	439.563
PCB1260#1	12.150	12.147	464861	409.016
PCB1260#2	12.803	12.800	409596	424.706
PCB1260#3	13.663	13.660	228957	441.229
PCB1260#4	14.407	14.400	529144	437.416
PCB1260#5	15.063	15.057	225723	420.653
Decachlorobiphenyl	17.667	17.663	838607	70.805

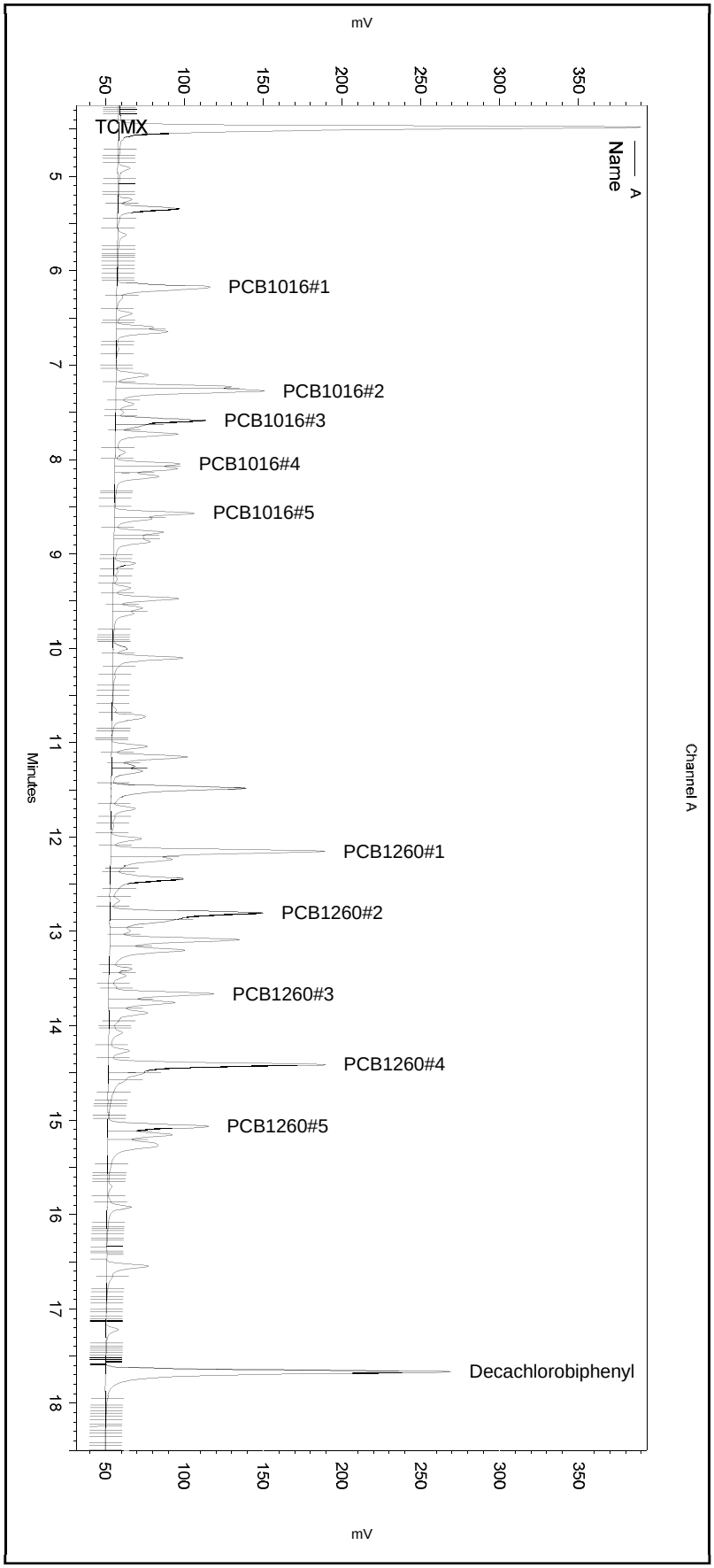
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	3.820	3.810	1097243	95.958
PCB1016#1	5.420	5.383	249760	1212.611
PCB1016#2	6.373	6.357	287427	517.006
PCB1016#3	6.593	6.580	164400	524.945
PCB1016#4	7.153	7.143	95814	487.439
PCB1016#5	7.893	7.880	165496	525.265
PCB1260#1	11.170	11.150	431993	967.438
PCB1260#2	11.810	11.797	363420	642.474
PCB1260#3	12.753	12.743	177837	430.979
PCB1260#4	13.407	13.397	366712	579.583
PCB1260#5	14.083	14.075	170319	437.833
Decachlorobiphenyl	17.060	17.063	811536	71.602

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-017**
Sample Name: **ccv,s35813,pcb500_100**
Instrument: GC16 Vial: 37 Operator: lims2k3\pest3
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 5:16:32 PM
Analysis Date: 2/2/2018 5:40:29 PM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========

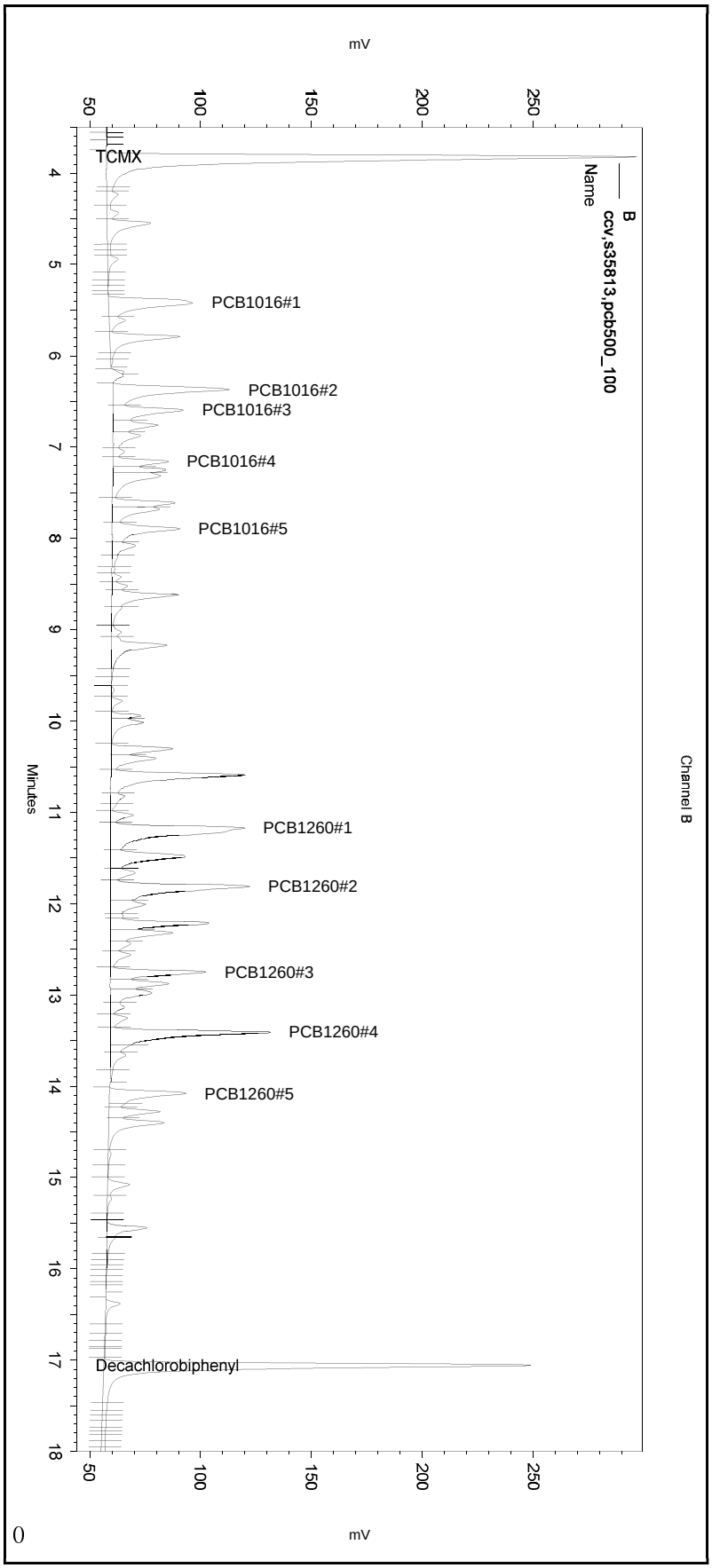
Data File: C:\Documents and Settings\All Users\Application Data\ChromatographySystem\Recovery Data\Instrument.10110\033-017_32CB.tmp

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-017**
Sample Name: **ccv,s35813,pcb500_100**
Instrument: GC16 Vial: 37 Operator: lims2k3\pest3
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 5:16:32 PM
Analysis Date: 2/2/2018 5:40:29 PM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	1.8	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========

Data File: C:\Documents and Settings\All Users\Application Data\ChromatographySystem\Recovery Data\Instrument.10110\033-017_32CB.tmp

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

ENTHALPY CONTINUING CALIBRATION FOR 296840 PCBS Soil
EPA 8082A

Inst : GC16 Run Name : AR2154_250 IDF : 1.0
Seqnum : 238048058018.1 File : 033_018 Time : 02-FEB-2018 18:01
Cal : 238004939001 Caldate : 03-JAN-2018
Standards: S35044

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Aroclor-1221	A	250.0	254.4	pg/ul	2	20	
Aroclor-1254	A	250.0	218.6	pg/ul	-13	20	
Aroclor-1221	B	250.0	266.3	pg/ul	7	20	
Aroclor-1254	B	250.0	238.2	pg/ul	-5	20	

JC1 02/05/18 : Corrected automatically drawn baseline. [general version]

Analyst: JC1 Date: 02/07/18 Reviewer: EAH Date: 02/08/18

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq** Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-018** Sample Name: **ccv,s35044,ar2154_250** Instrument: GC16 (Offline) Vial: 38 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-033.met	Software Version 3.1.7 Run Date: 2/2/2018 6:01:36 PM Analysis Date: 2/5/2018 10:53:52 AM Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
PCB1221#1	4.910	4.913	46794	262.449
PCB1221#2	5.247	5.250	29764	262.447
PCB1221#3	5.340	5.343	112010	253.287
PCB1221#4	6.180	6.183	17492	246.521
PCB1221#5	7.273	7.280	17900	247.479
PCB1254#1	9.477	9.483	128996	232.786
PCB1254#2	10.103	10.110	175014	224.030
PCB1254#3	10.743	10.753	122113	214.984
PCB1254#4	11.033	11.043	199711	216.273
PCB1254#5	11.697	11.703	167554	205.130

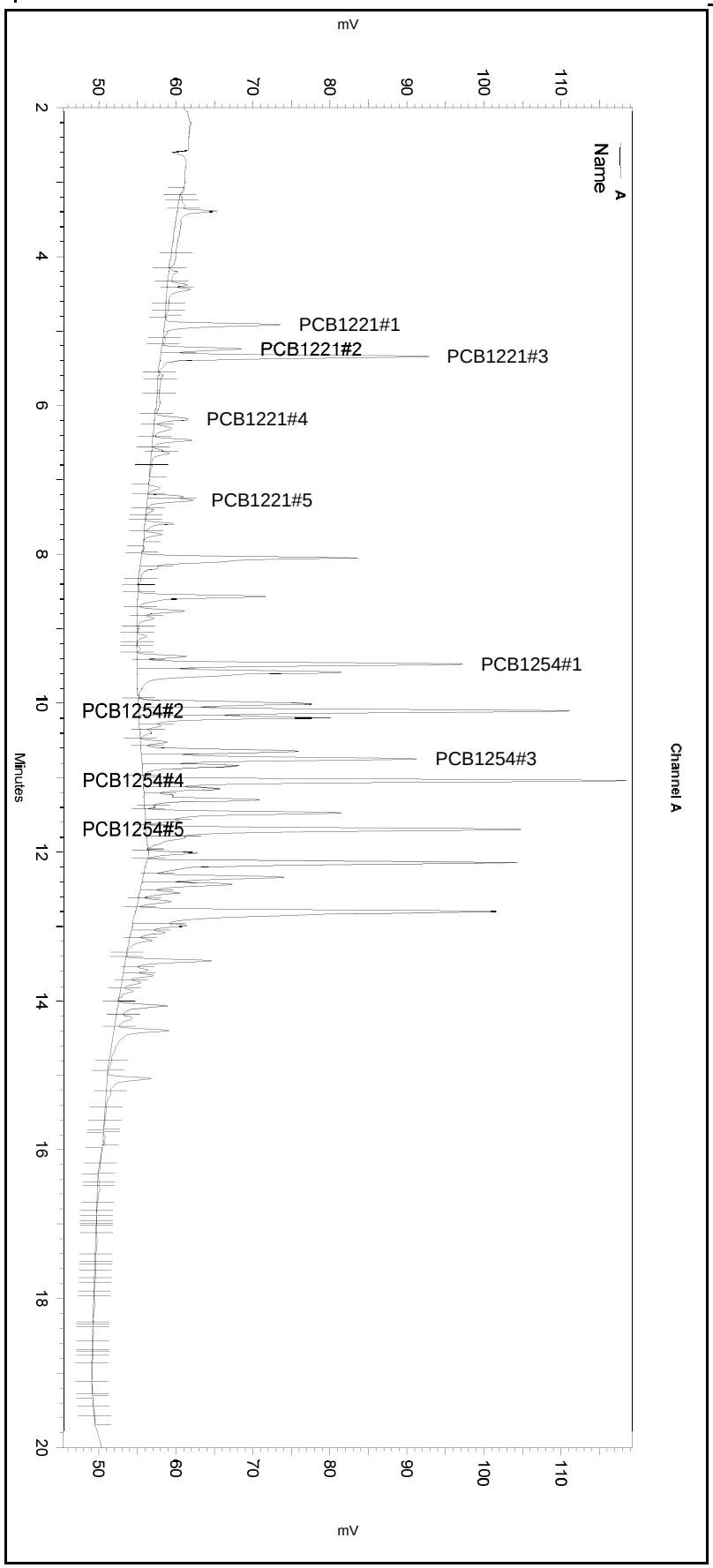
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
PCB1221#1	4.203	4.220	32252	269.815
PCB1221#2	4.400	4.420	22919	277.254
PCB1221#3	4.513	4.533	103090	271.815
PCB1221#4	5.393	5.413	16901	239.346
PCB1221#5	6.337	6.347	13307	273.198
PCB1254#1	8.590	8.607	135858	240.857
PCB1254#2	9.133	9.150	149157	237.579
PCB1254#3	9.750	9.770	87353	236.017
PCB1254#4	9.987	10.003	198787	245.842
PCB1254#5	10.593	10.610	124397	230.601

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-018**
Sample Name: **ccv,s35044,ar2154_250**
Instrument: GC16 (Offline) Vial: 38 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-033.met

Software Version 3.1.7
Run Date: 2/2/2018 6:01:36 PM
Analysis Date: 2/5/2018 10:53:52 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	3	0
Yes	Shoulder Sensitivity	4.5	20	1000

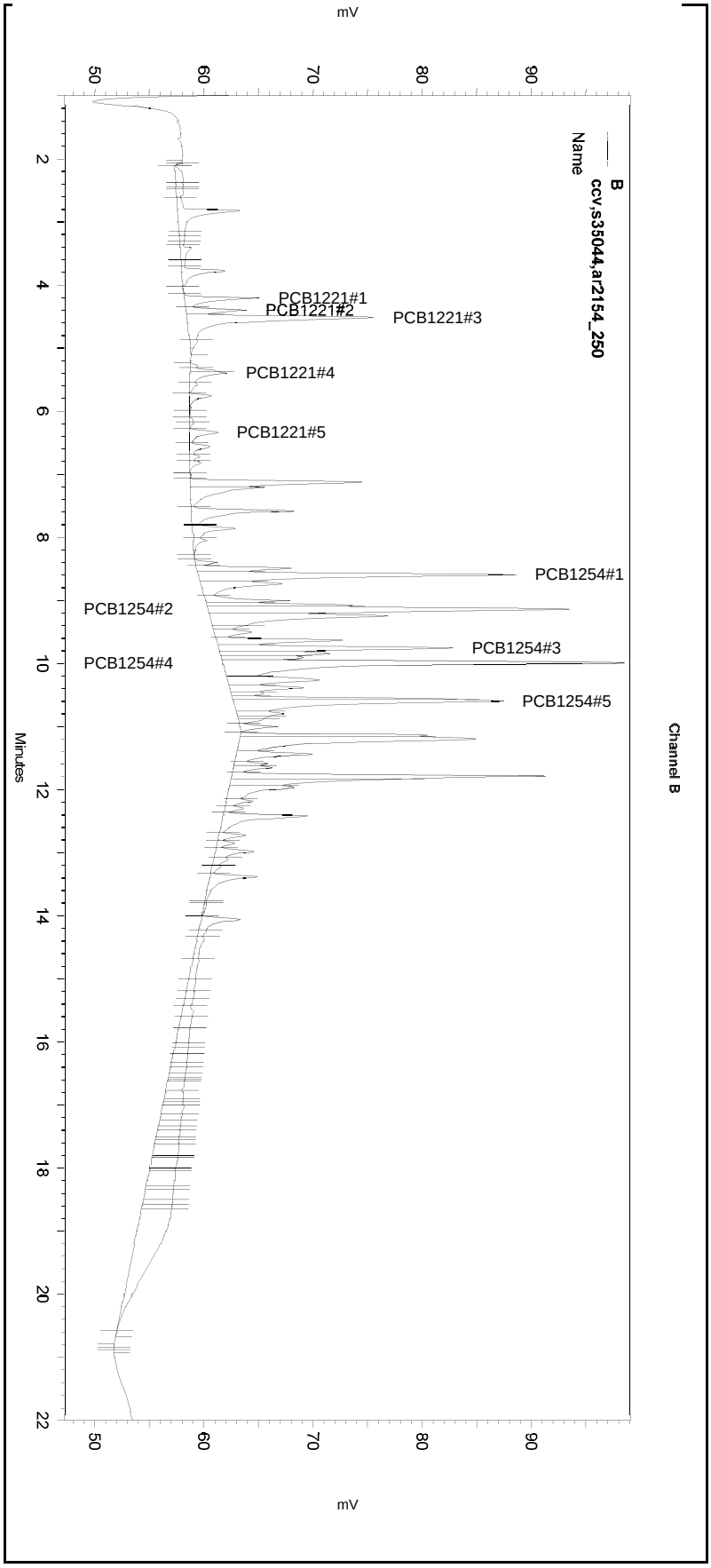
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-018

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	4.811	0	0
Yes	Reset Baseline	7.856	0	0
Yes	Reset Baseline	11.966	0	0

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-018**
Sample Name: **ccv,s35044,ar2154_250**
Instrument: GC16 (Offline) Vial: 38 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-033.met

Software Version 3.1.7
Run Date: 2/2/2018 6:01:36 PM
Analysis Date: 2/5/2018 10:53:52 AM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

---< B >----------

No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2	0
Yes	Shoulder Sensitivity	4.5	20	50

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-018

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	5.102	0	0
Yes	Reset Baseline	6.97	0	0
Yes	Reset Baseline	11.078	0	0

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-018**
Sample Name: **ccv,s35044,ar2154_250**
Instrument: GC16 Vial: 38 Operator: lims2k3\pest3
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 6:01:36 PM
Analysis Date: 2/2/2018 6:25:35 PM
Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX		4.490		0.000 BDL
PCB1016#1	6.180	6.177	18019	32.786
PCB1016#2	7.273	7.270	18862	26.392
PCB1016#3	7.583	7.580	11893	29.357
PCB1016#4	8.047	8.043	89295	346.639
PCB1016#5	8.563	8.563	51809	147.731
PCB1260#1	12.143	12.147	194124	170.803
PCB1260#2	12.797	12.800	180360	187.013
PCB1260#3	13.653	13.660	20762	40.011
PCB1260#4	14.397	14.400	33145	27.399
PCB1260#5	15.050	15.057	19957	37.192
Decachlorobiphenyl	17.660	17.663	222	0.019

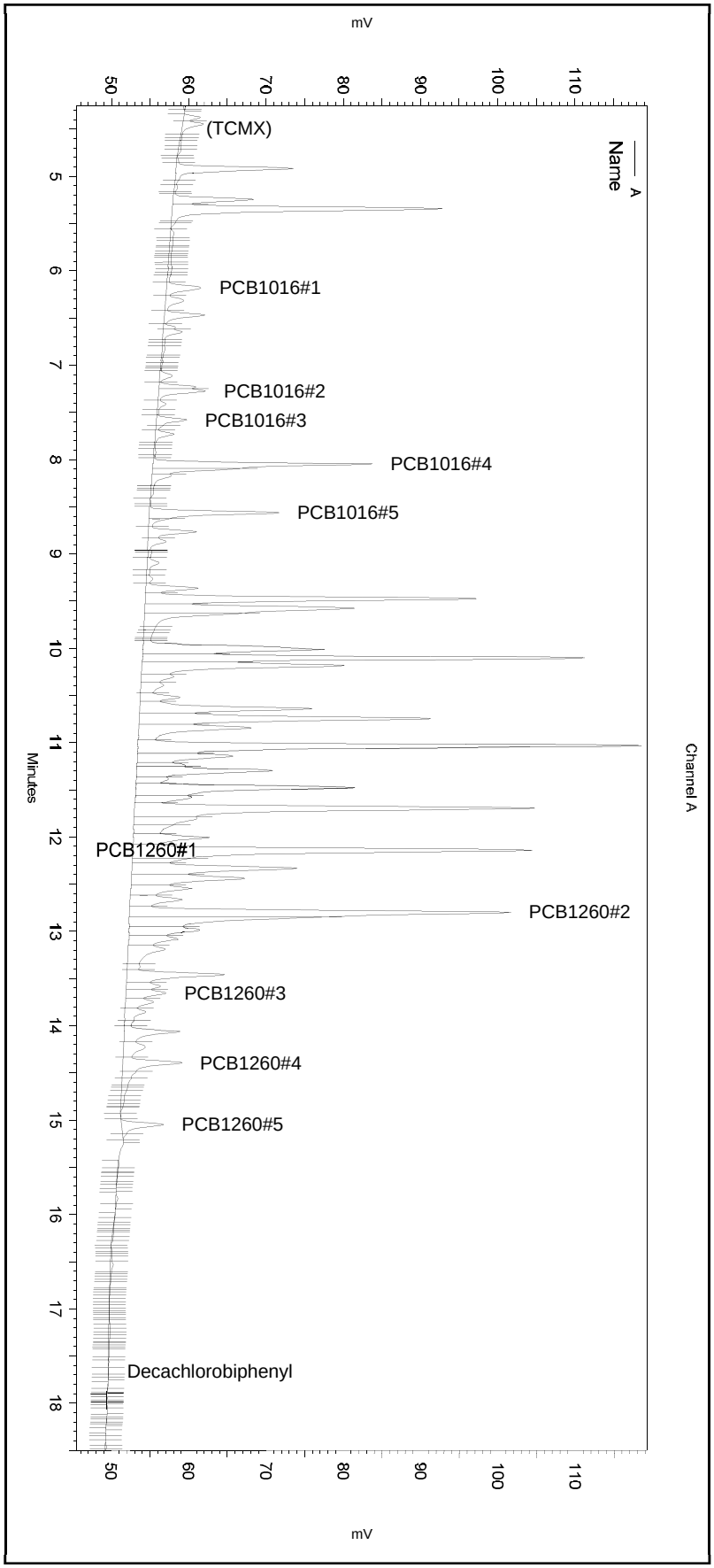
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	3.773	3.810	20744	1.814
PCB1016#1	5.373	5.383	6742	32.733
PCB1016#2	6.337	6.357	13957	25.105
PCB1016#3	6.560	6.580	10027	32.017
PCB1016#4	7.120	7.143	61354	312.129
PCB1016#5	7.860	7.880	22484	71.362
PCB1260#1	11.143	11.150	67399	150.938
PCB1260#2	11.783	11.797	220896	390.512
PCB1260#3	12.727	12.743	36046	87.356
PCB1260#4	13.380	13.397	49584	78.367
PCB1260#5	14.057	14.075	43287	111.276
Decachlorobiphenyl	17.033	17.063	4772	0.421

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-018**
Sample Name: **ccv,s35044,ar2154_250**
Instrument: GC16 Vial: 38 Operator: lims2k3\pest3
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 6:01:36 PM
Analysis Date: 2/2/2018 6:25:35 PM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	0	0	0

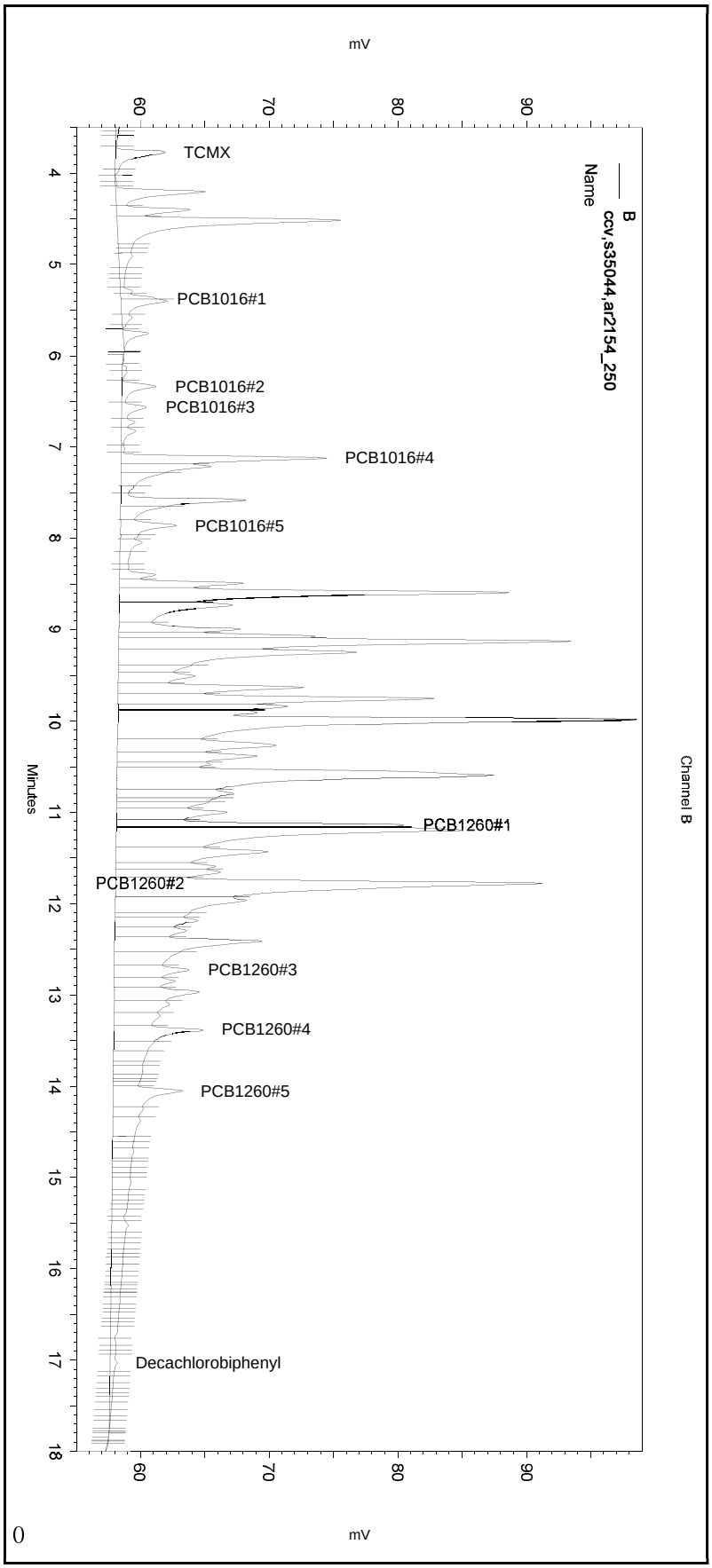
Manual Integration Fixes
==========

Data File: C:\Documents and Settings\All Users\Application Data\ChromatographySystem\Recovery Data\Instrument.10110\033-018_32CC.tmp

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-018**
Sample Name: **ccv,s35044,ar2154_250**
Instrument: GC16 Vial: 38 Operator: lims2k3\pest3
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 6:01:36 PM
Analysis Date: 2/2/2018 6:25:35 PM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	1.8	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========

Data File: C:\Documents and Settings\All Users\Application Data\ChromatographySystem\Recovery Data\Instrument.10110\033-018_32CC.tmp

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

ENTHALPY CONTINUING CALIBRATION FOR 296840 PCBS Soil
EPA 8082A

Inst : GC16 Run Name : PCB500_100 IDF : 1.0
Seqnum : 238048058029.1 File : 033_029 Time : 02-FEB-2018 23:19
Cal : 238037991001 Caldate : 26-JAN-2018
Standards: S35813

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Aroclor-1016	A			500.0	454.4	pg/ul	-9	20	
Aroclor-1260	A			500.0	434.7	pg/ul	-13	20	
TCMX	A	11504	10695	100.0	92.97	pg/ul	-7	20	
Decachlorobiphenyl	A	11844	9271.8	100.0	78.28	pg/ul	**-22**	20	c-
Aroclor-1016	B			500.0	532.7	pg/ul	7	20	
Aroclor-1260	B			500.0	470.8	pg/ul	-6	20	
TCMX	B	11435	11508	100.0	100.6	pg/ul	1	20	
Decachlorobiphenyl	B	11334	9432.1	100.0	83.22	pg/ul	-17	20	

RDG 02/05/18 : Corrected automatically drawn baseline for all channels.
[general version]

Analyst: JC1 Date: 02/07/18 Reviewer: EAH Date: 02/08/18

-=low bias c=CCV

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-029**
Sample Name: **ccv,s35813,pcb500_100**
Instrument: GC16 (Offline) Vial: 49 Operator: Pest 3. Analyst (lims2k3\pest3)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 11:19:20 PM
Analysis Date: 2/5/2018 10:15:17 AM
Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	4.470	4.490	1069533	92.972
PCB1016#1	6.167	6.177	243244	442.592
PCB1016#2	7.263	7.270	329003	460.352
PCB1016#3	7.573	7.580	188177	464.508
PCB1016#4	8.037	8.043	116821	453.493
PCB1016#5	8.557	8.563	158193	451.080
PCB1260#1	12.140	12.147	480682	422.936
PCB1260#2	12.793	12.800	407728	422.769
PCB1260#3	13.650	13.660	227371	438.172
PCB1260#4	14.393	14.400	547092	452.252
PCB1260#5	15.050	15.057	234733	437.444
Decachlorobiphenyl	17.653	17.663	927183	78.283

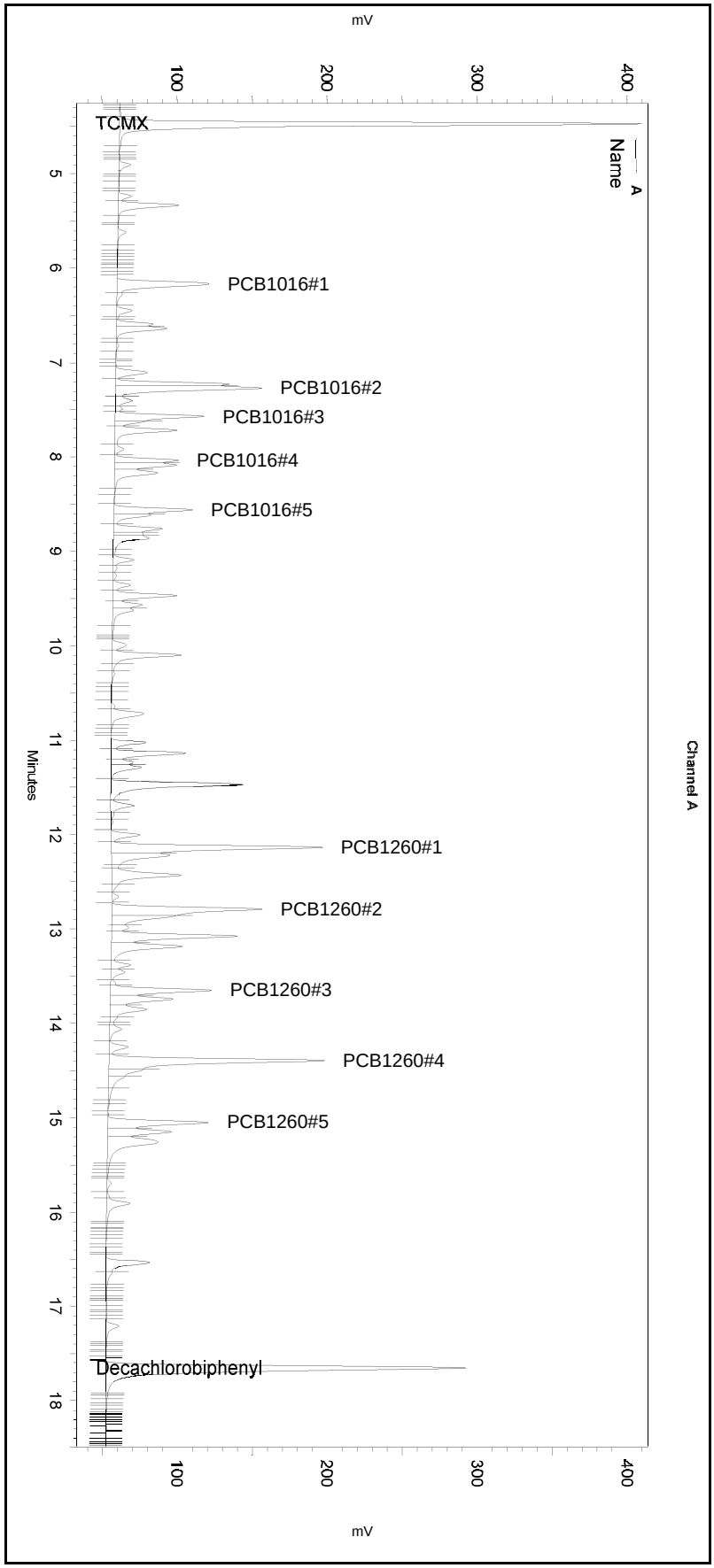
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	3.800	3.810	1150816	100.643
PCB1016#1	5.393	5.383	102216	496.269
PCB1016#2	6.353	6.357	307275	552.707
PCB1016#3	6.577	6.580	175146	559.258
PCB1016#4	7.137	7.143	100485	511.202
PCB1016#5	7.873	7.880	171425	544.083
PCB1260#1	11.153	11.150	188160	421.380
PCB1260#2	11.793	11.797	281547	497.735
PCB1260#3	12.737	12.743	186638	452.308
PCB1260#4	13.393	13.397	318247	502.985
PCB1260#5	14.070	14.075	186512	479.460
Decachlorobiphenyl	17.043	17.063	943213	83.220

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-029**
Sample Name: **ccv,s35813,pcb500_100**
Instrument: GC16 (Offline) Vial: 49 Operator: Pest 3. Analyst (lims2k3\pest3)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 11:19:20 PM
Analysis Date: 2/5/2018 10:15:17 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	0	0	0

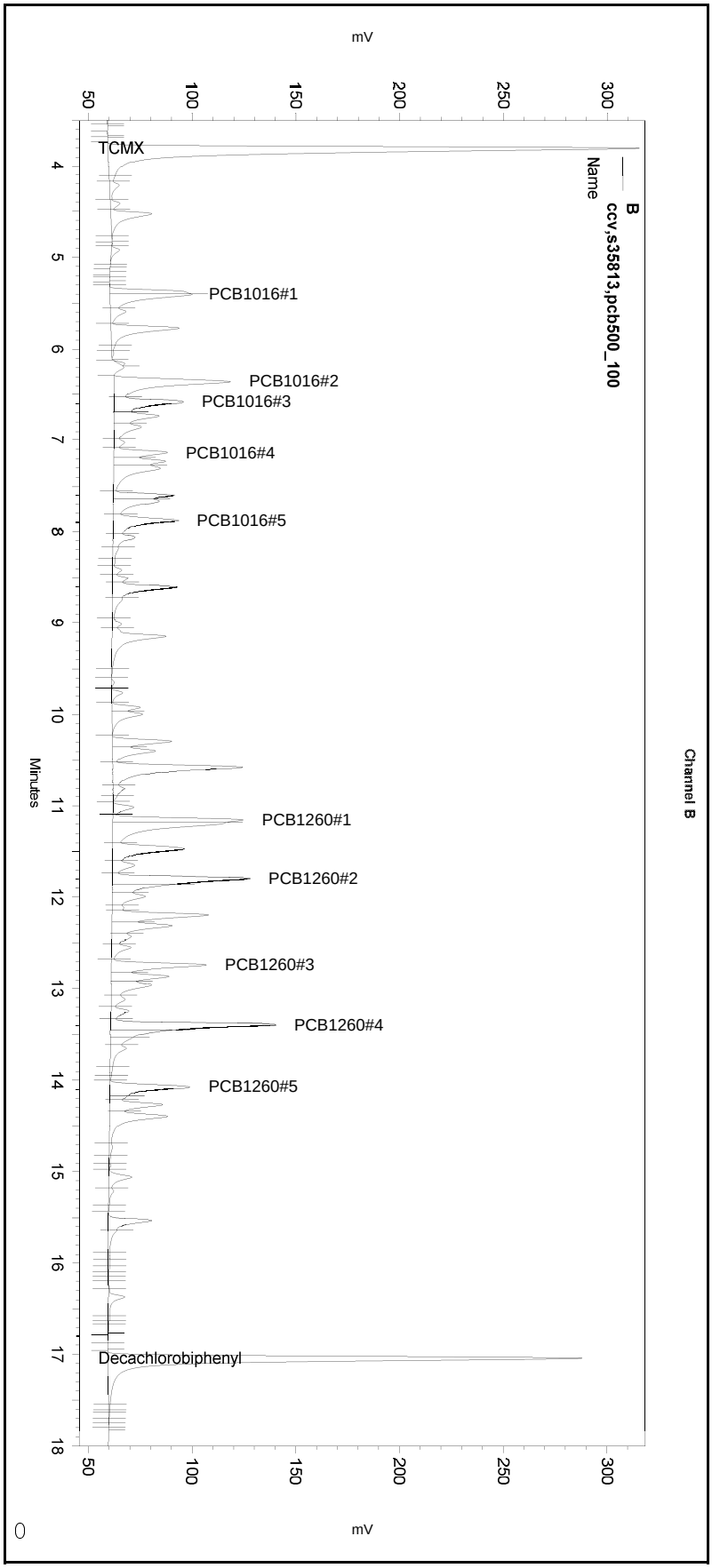
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-029

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	12.717	0	0
Yes	Reset Baseline	18.249	0	0

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-029**
Sample Name: **ccv,s35813,pcb500_100**
Instrument: GC16 (Offline) Vial: 49 Operator: Pest 3. Analyst (lims2k3\pest3)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 11:19:20 PM
Analysis Date: 2/5/2018 10:15:17 AM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

---< B >----------

No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	1.8	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-029

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	4.823	0	0
Yes	Split Peak	5.395	0	0
Yes	Reset Baseline	10.949	0	0
Yes	Split Peak	11.855	0	0
Yes	Split Peak	13.455	0	0
Yes	Reset Baseline	17.817	0	0

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-029**
Sample Name: **ccv,s35813,pcb500_100**
Instrument: GC16 Vial: 49 Operator: lims2k3\pest3
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 11:19:20 PM
Analysis Date: 2/2/2018 11:43:17 PM
Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	4.470	4.490	1069533	92.972
PCB1016#1	6.167	6.177	243244	442.592
PCB1016#2	7.263	7.270	329003	460.352
PCB1016#3	7.573	7.580	188177	464.508
PCB1016#4	8.037	8.043	116821	453.493
PCB1016#5	8.557	8.563	158193	451.080
PCB1260#1	12.140	12.147	488826	430.102
PCB1260#2	12.793	12.800	424230	439.880
PCB1260#3	13.650	13.660	236950	456.632
PCB1260#4	14.393	14.400	555673	459.346
PCB1260#5	15.050	15.057	238676	444.792
Decachlorobiphenyl	17.653	17.663	928194	78.369

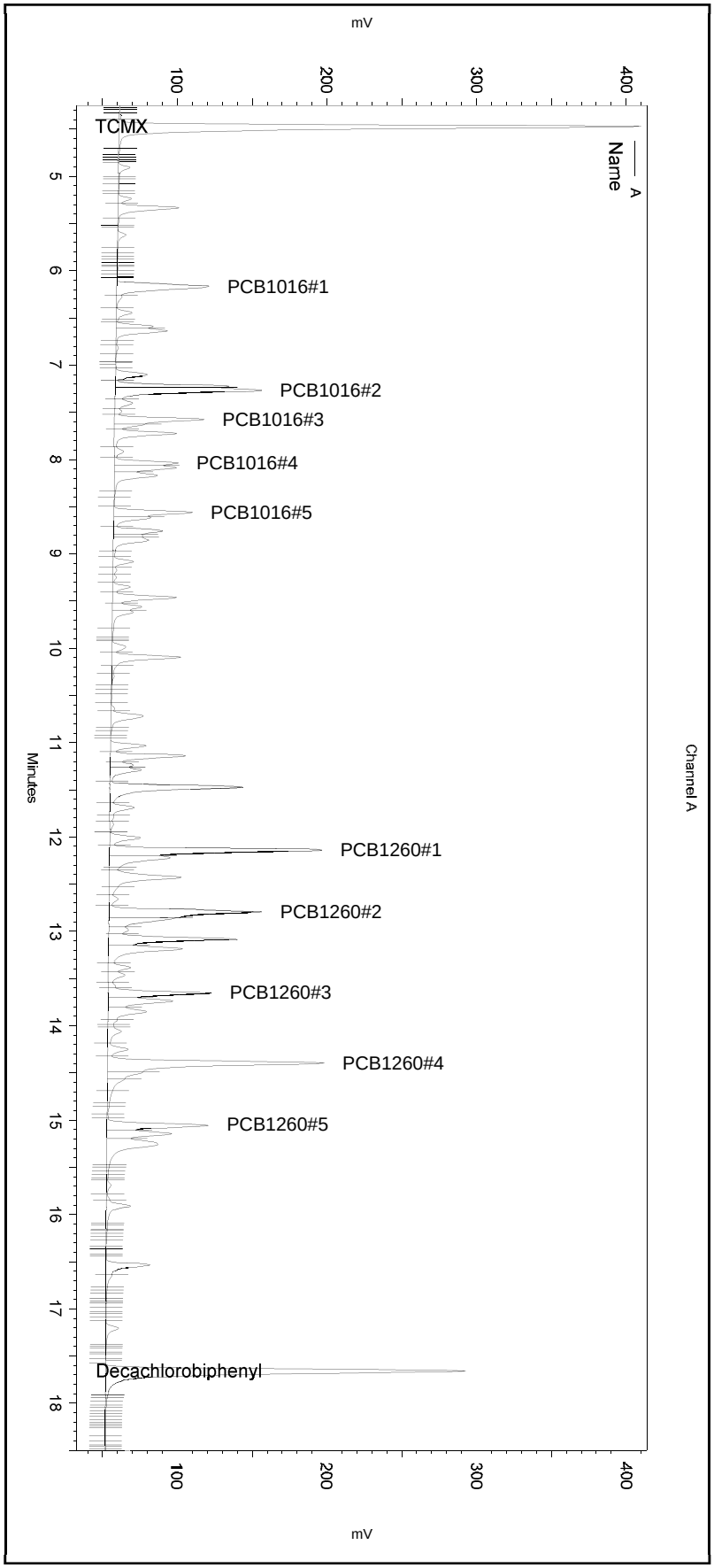
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	3.800	3.810	1156468	101.137
PCB1016#1	5.403	5.383	260667	1265.566
PCB1016#2	6.353	6.357	307275	552.707
PCB1016#3	6.577	6.580	175146	559.258
PCB1016#4	7.137	7.143	100485	511.202
PCB1016#5	7.873	7.880	171425	544.083
PCB1260#1	11.153	11.150	193865	434.156
PCB1260#2	11.793	11.797	390870	691.002
PCB1260#3	12.737	12.743	192544	466.621
PCB1260#4	13.393	13.397	408653	645.870
PCB1260#5	14.070	14.075	190095	488.670
Decachlorobiphenyl	17.043	17.063	953616	84.137

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-029**
Sample Name: **ccv,s35813,pcb500_100**
Instrument: GC16 Vial: 49 Operator: lims2k3\pest3
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 11:19:20 PM
Analysis Date: 2/2/2018 11:43:17 PM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========

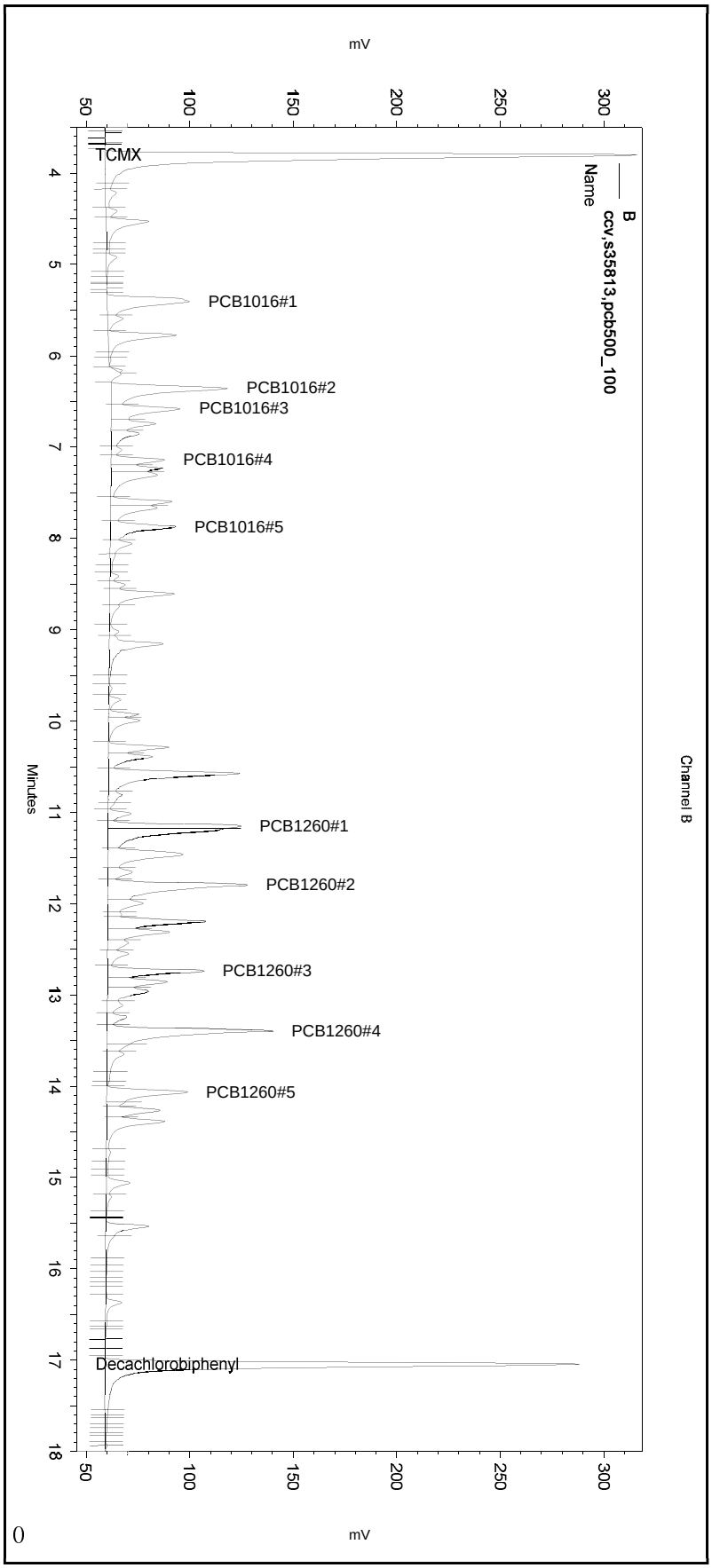
Data File: C:\Documents and Settings\All Users\Application Data\ChromatographySystem\Recovery Data\Instrument.10110\033-029_32D7.tmp

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-029**
Sample Name: **ccv,s35813,pcb500_100**
Instrument: GC16 Vial: 49 Operator: lims2k3\pest3
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 11:19:20 PM
Analysis Date: 2/2/2018 11:43:17 PM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

---< B >----------

No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	1.8	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========

Data File: C:\Documents and Settings\All Users\Application Data\ChromatographySystem\Recovery Data\Instrument.10110\033-029_32D7.tmp

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

ENTHALPY CONTINUING CALIBRATION FOR 296840 PCBS Soil
EPA 8082A

Inst : GC16 Run Name : AR2154_250 IDF : 1.0
Seqnum : 238048058030.1 File : 033_030 Time : 02-FEB-2018 23:48
Cal : 238004939001 Caldate : 03-JAN-2018
Standards: S35044

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Aroclor-1221	A	250.0	241.1	pg/ul	-4	20	
Aroclor-1254	A	250.0	208.9	pg/ul	-16	20	
Aroclor-1221	B	250.0	257.3	pg/ul	3	20	
Aroclor-1254	B	250.0	229.0	pg/ul	-8	20	

JC1 02/05/18 : Corrected automatically drawn baseline. [general version]

Analyst: JC1 Date: 02/07/18 Reviewer: EAH Date: 02/08/18

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq** Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-030** Sample Name: **ccv,s35044,ar2154_250** Instrument: GC16 (Offline) Vial: 50 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-033.met	Software Version 3.1.7 Run Date: 2/2/2018 11:48:19 PM Analysis Date: 2/5/2018 10:55:24 AM Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
PCB1221#1	4.910	4.913	43500	243.974
PCB1221#2	5.247	5.250	27965	246.584
PCB1221#3	5.340	5.343	107807	243.783
PCB1221#4	6.180	6.183	16362	230.595
PCB1221#5	7.277	7.280	17412	240.732
PCB1254#1	9.477	9.483	123919	223.624
PCB1254#2	10.107	10.110	168069	215.140
PCB1254#3	10.747	10.753	115237	202.879
PCB1254#4	11.037	11.043	186635	202.113
PCB1254#5	11.700	11.703	163907	200.665

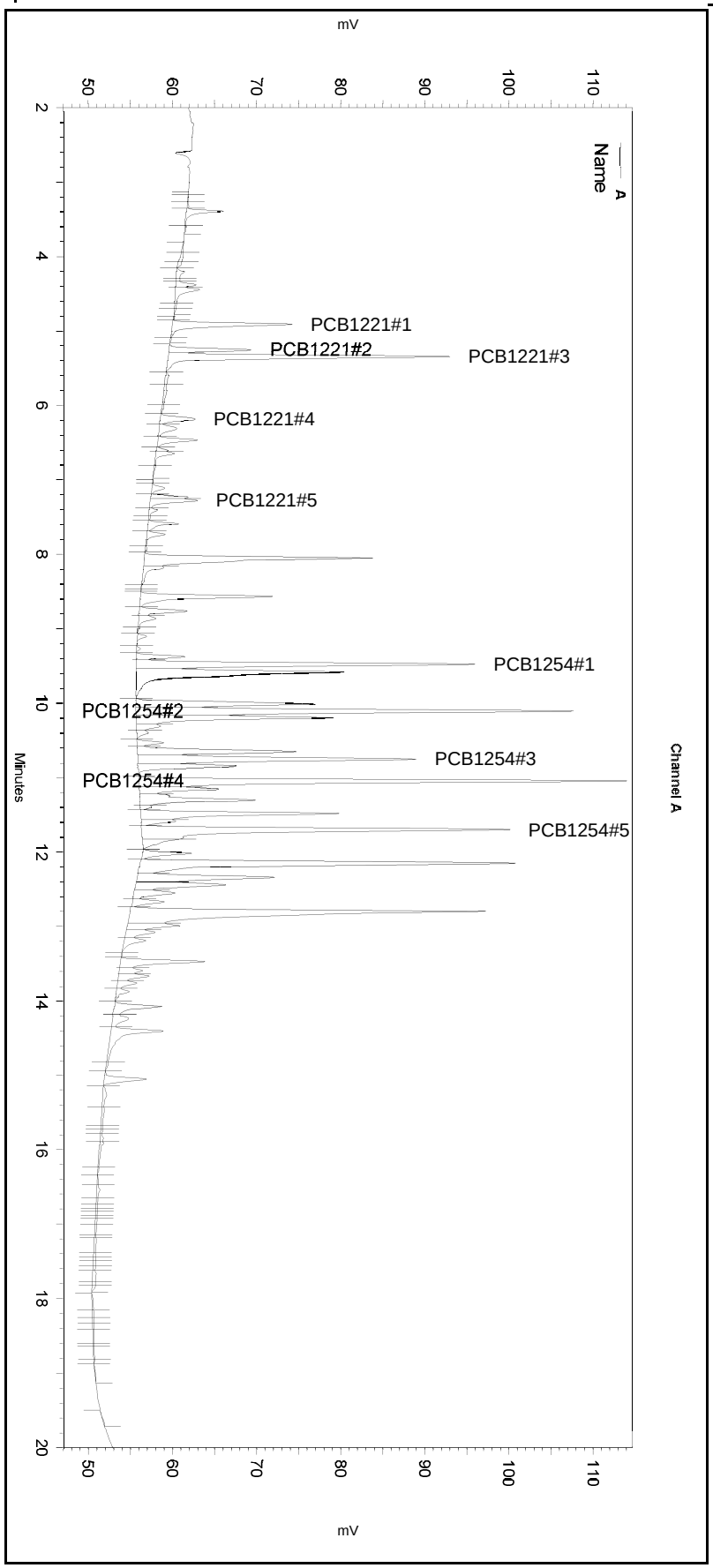
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
PCB1221#1	4.230	4.220	31087	260.069
PCB1221#2	4.427	4.420	21881	264.698
PCB1221#3	4.540	4.533	102052	269.078
PCB1221#4	5.420	5.413	16232	230.279
PCB1221#5	6.363	6.347	12781	262.399
PCB1254#1	8.613	8.607	133243	236.221
PCB1254#2	9.157	9.150	144984	230.932
PCB1254#3	9.777	9.770	82894	223.969
PCB1254#4	10.010	10.003	190575	235.686
PCB1254#5	10.617	10.610	117597	217.995

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-030**
Sample Name: **ccv,s35044,ar2154_250**
Instrument: GC16 (Offline) Vial: 50 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-033.met

Software Version 3.1.7
Run Date: 2/2/2018 11:48:19 PM
Analysis Date: 2/5/2018 10:55:24 AM
Sample Amount: 1



---< General Method Parameters >---

No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	3	0
Yes	Shoulder Sensitivity	4.5	20	1000

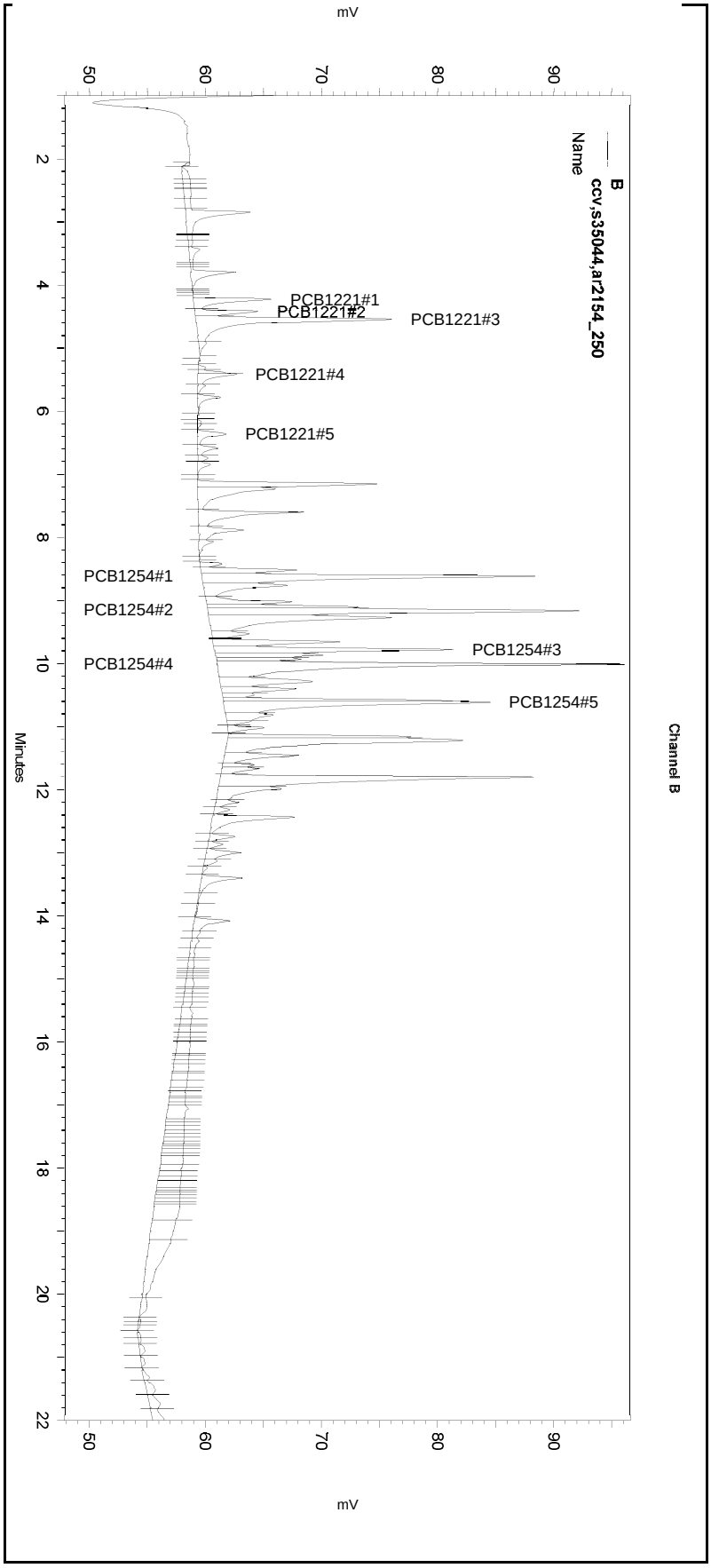
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-030

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	4.772	0	0
Yes	Reset Baseline	5.153	0	0
Yes	Split Peak	11.825	0	0
Yes	Reset Baseline	11.963	0	0

Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-030**
Sample Name: **ccv,s35044,ar2154_250**
Instrument: GC16 (Offline) Vial: 50 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1254\pcb-ar2154-033.met

Software Version 3.1.7
Run Date: 2/2/2018 11:48:19 PM
Analysis Date: 2/5/2018 10:55:24 AM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2	0
Yes	Shoulder Sensitivity	4.5	20	50

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-030

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	5.111	0	0
Yes	Reset Baseline	6.992	0	0
Yes	Reset Baseline	11.103	0	0

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-030**
Sample Name: **ccv,s35044,ar2154_250**
Instrument: GC16 Vial: 50 Operator: lims2k3\pest3
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 11:48:19 PM
Analysis Date: 2/3/2018 12:12:17 AM
Sample Amount: 1

GC16
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX		4.490		0.000 BDL
PCB1016#1	6.180	6.177	17099	31.112
PCB1016#2	7.277	7.270	17412	24.363
PCB1016#3	7.583	7.580	10683	26.371
PCB1016#4	8.047	8.043	85308	331.161
PCB1016#5	8.563	8.563	48163	137.334
PCB1260#1	12.147	12.147	177005	155.741
PCB1260#2	12.803	12.800	162167	168.149
PCB1260#3	13.660	13.660	18164	35.004
PCB1260#4	14.403	14.400	29378	24.285
PCB1260#5	15.060	15.057	18776	34.991
Decachlorobiphenyl	17.667	17.663	377	0.032

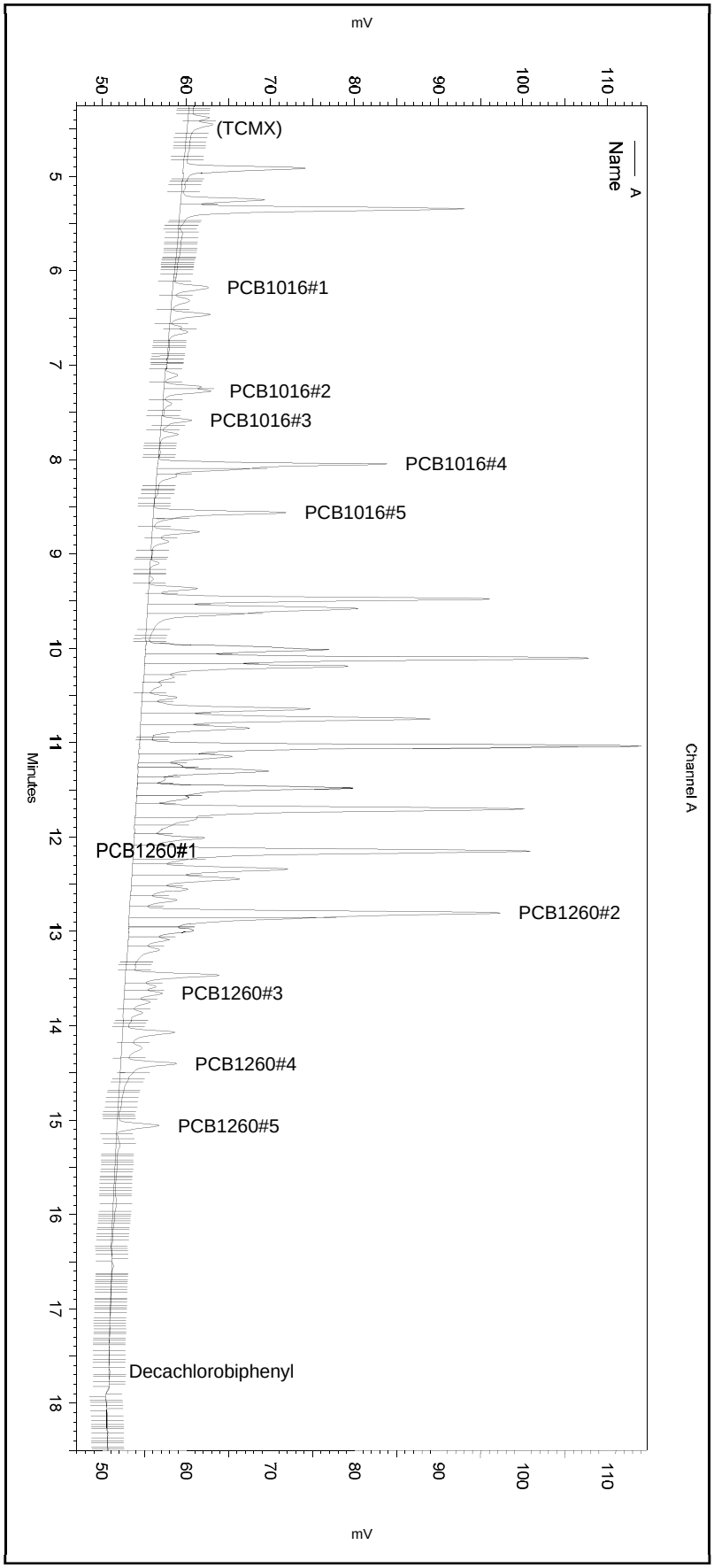
GC16
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	Exp RT	Area	Conc (ug/L)
TCMX	3.797	3.810	18636	1.630
PCB1016#1		5.383		0.000 BDL
PCB1016#2	6.363	6.357	18443	33.174
PCB1016#3	6.587	6.580	13037	41.628
PCB1016#4	7.147	7.143	62828	319.628
PCB1016#5	7.887	7.880	22957	72.863
PCB1260#1	11.167	11.150	51438	115.194
PCB1260#2	11.807	11.797	181721	321.257
PCB1260#3	12.747	12.743	19166	46.448
PCB1260#4	13.403	13.397	25402	40.147
PCB1260#5	14.077	14.075	18851	48.460
Decachlorobiphenyl	17.050	17.063	1495	0.132

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-030**
Sample Name: **ccv,s35044,ar2154_250**
Instrument: GC16 Vial: 50 Operator: lims2k3\pest3
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 11:48:19 PM
Analysis Date: 2/3/2018 12:12:17 AM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.1
Yes	Threshold	0	0	2
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	0	0	0

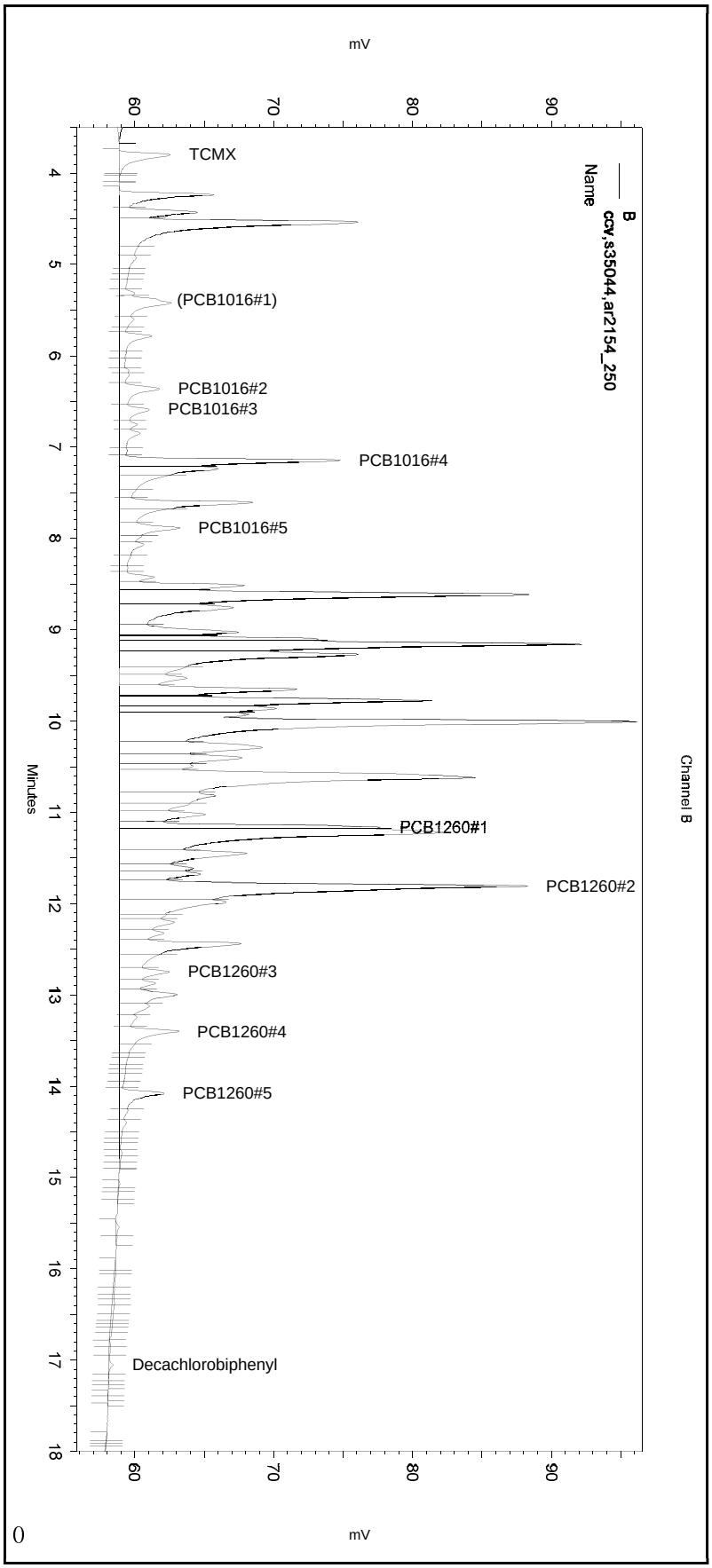
Manual Integration Fixes
==========

Data File: C:\Documents and Settings\All Users\Application Data\ChromatographySystem\Recovery Data\Instrument.10110\033-030_32D8.tmp

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC16\Sequence\2018\033.seq**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC16\Data\2018\033-030**
Sample Name: **ccv,s35044,ar2154_250**
Instrument: GC16 Vial: 50 Operator: lims2k3\pest3
Method Name: \\Lims\gdrive\ezchrom\Projects\GC16\Method\PCBs & Congeners\Ar1660\pcb-run-031B.met

Software Version 3.1.7
Run Date: 2/2/2018 11:48:19 PM
Analysis Date: 2/3/2018 12:12:17 AM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	1.8	0
Yes	Shoulder Sensitivity	0	0	0

Manual Integration Fixes
==========

Data File: C:\Documents and Settings\All Users\Application Data\ChromatographySystem\Recovery Data\Instrument.10110\033-030_32D8.tmp

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Enthalpy Analytical

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 296840
ANALYTICAL REPORT
Metals
Matrix: Water

Insight EEC, Inc. 3013 E Miraloma Ave Anaheim, CA 92806	Project : 4-14214 Location : HPNS-Parcel F Level : IV

Sample ID	Lab ID
HPP-FSS-EB01	296840-011
HPP-FSS-FB01	296840-012

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAP and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: _____ Date: 02/08/2018

Mike Dahlquist
Project Manager
mike.dahlquist@enthalpy.com
(510) 204-2225 Ext 13101

CA ELAP# 2896, NELAP# 4044-001

ENTHALPY ANALYTICAL

CASE NARRATIVE
METALS (EPA 6020A AND EPA 7470A)
WATER

Laboratory number:	**296840**
Client:	**Insight EEC, Inc.**
Project:	**4-14214**
Location:	**HPNS-Parcel F**
Request Date:	**02/01/18**
Samples Received:	**02/01/18**

This data package contains sample and QC results for two water samples, requested for the above referenced project on 02/01/18. See attached cooler receipt form for any sample receipt problems or discrepancies.

Metals (EPA 6020A and EPA 7470A) Water:

High % difference was observed for copper in the serial dilution for batch 256192; this analyte was not detected at or above the RL in the associated samples.

Copper was detected above half the RL in the method blank for batch 256192. Lead was detected between the MDL and half the RL in the method blank for batch 256192.

No other analytical problems were encountered.

Chain of Custody

Enthalpy Analytical LLC
2323 Fifth Street
Berkeley, CA 94710
(510) 486-0900 Phone
(510) 486-0532 Fax

CHAIN OF CUSTODY

Chain of Custody # : 4-14214-02

C&T LOGIN # 296840

Project No: 4-14214 Hunters Point Naval Shipyard
Project Name: Parcel F Sediment Sampling
EDD Format: _____ Rpt Level: ☐ II ☐ III ☐ IV
Turnaround Time: ☐ RUSH _____ ☐ Standard

Sampler:
Report To: Nick Weinberger & Mitra Fattahipour
Company : Insight
Telephone: # (714) 678-6730
Email: nweinberger@ieeci.com; mfattahipour@ieeci.com

Lab No.	Sample ID.	Sampling Date	Sampling Time	Matrix Water	Matrix Soil	# of Containers	Chemical Preservative HCl	H_2SO_4	HNO_3	NaOH	Methanol	NaHSO4	None	Analytical Request PCBs (EPA 8082)	Metals (Cu/Pb/Hg, EPA 6020/7471A)	Notes
	HPP-FSS-007				X								X	X	X	Composite at Lab, MS/MSD
	HPP-FSS-007A	1/31/18	0840		X	1							X			Sub-sample
	HPP-FSS-007B	1/31/18	0900		X	1							X			Sub-sample
	HPP-FSS-007C	1/31/18	0912		X	1							X			Sub-sample
	HPP-FSS-007D	1/31/18	0920		X	1							X			Sub-sample
	HPP-FSS-008				X								X	X	X	Composite at Lab
	HPP-FSS-008A	1/31/18	0935		X	1							X			Sub-sample
	HPP-FSS-008B	1/31/18	0950		X	1							X			Sub-sample
	HPP-FSS-008C	1/31/18	1100		X	1							X			Sub-sample
	HPP-FSS-008D	1/31/18	1021		X	1							X			Sub-sample
	HPP-FSS-EB01	1/31/18	0815	X		4							X	X	X	*Metals not preserved
	HPP-FSS-FB01	1/31/18	1500	X		3							X	X	X	*Metals not preserved

Notes:
Composite A, B, C, and D samples for testing as a composite sample. Retain sub-samples on hold for possible testing pending composite sample results. *Aqueous samples for metals analysis not preserved. To be preserved by lab.

SAMPLE RECEIPT
☐ Intact ☐ Cold
☐ On Ice ☐ Ambient

RELINQUISHED BY:		RECEIVED BY:	
2-1-18/1415 JMYERS	DATE/TIME	2-1 1415	DATE/TIME
2-1 1602	DATE/TIME	2/1/18 1602	DATE/TIME
	DATE/TIME		DATE/TIME

Enthalpy Analytical LLC
2323 Fifth Street
Berkeley, CA 94710
(510) 486-0900 Phone
(510) 486-0532 Fax

CHAIN OF CUSTODY

Chain of Custody # : 4-14214-02

C&T LOGIN # 296840

Project No: 4-14214 Hunters Point Naval Shipyard
Project Name: Parcel F Sediment Sampling
EDD Format: _____ Rpt Level: ☐ II ☐ III ☐ IV
Turnaround Time: ☐ RUSH _____ ☐ Standard

Sampler:
Report To: Nick Weinberger & Mitra Fattahipour
Company : Insight
Telephone: # (714) 678-6730
Email: nweinberger@ieeci.com; mfattahipour@ieeci.com

Lab No.	Sample ID.	Sampling Date	Sampling Time	Matrix Water	Matrix Soil	Matrix	Matrix	# of Containers	Chemical Preservative HCl	H_2SO_4	HNO_3	NaOH	Methanol	NaHSO4	None	Analytical Request PCBs (EPA 8082)	Metals (Cu/Pb/Hg, EPA 6020/7471A)						Notes
	HPP-FSS-009				X										X	X	X						Composite at Lab
	HPP-FSS-009A	1/31/18	1040		X			1							X								Sub-sample
	HPP-FSS-009B	1/31/18	1132		X			1							X								Sub-sample
	HPP-FSS-009C	1/31/18	1228		X			1							X								Sub-sample
	HPP-FSS-009D	1/31/18	1315		X			1							X								Sub-sample
	HPP-FSS-010				X										X	X	X						Composite at Lab
	HPP-FSS-010A	1/31/18	0936		X			1							X								Sub-sample
	HPP-FSS-010B	1/31/18	0951		X			1							X								Sub-sample
	HPP-FSS-010C	1/31/18	1101		X			1							X								Sub-sample
	HPP-FSS-010D	1/31/18	1022		X			1							X								Sub-sample

Notes:
Composite A, B, C, and D samples for testing as a composite sample. Retain sub-samples on hold for possible testing pending composite sample results.

SAMPLE RECEIPT
☐ Intact ☐ Cold
☐ On Ice ☐ Ambient

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	DATE/TIME
2-1-18 / 1415 JMYERS		2-1	1415
2-1	1805	2/1/18	1805

COOLER RECEIPT CHECKLIST

ENTHALPY Berkeley

Login # 296840 Date Received 02/01/18 Number of coolers 1
Client Insight Project 4-14214 Hunters Point Naval Shipyard

Date Opened 02/01/18 By (print) TKY (sign) TKY
Date Logged in ↓ By (print) EH (sign)
Date Labelled ↓ By (print) TKY (sign) TKY

1. Did cooler come with a shipping slip (airbill, etc) ____ YES (NO)
   Shipping info ____

2A. Were custody seals present? .... ☐ YES (circle) on cooler on samples ☒ NO
   How many ____ Name ____ Date ____
2B. Were custody seals intact upon arrival? ____ YES NO (N/A)
3. Were custody papers dry and intact when received? ____ (YES) NO
4. Were custody papers filled out properly (ink, signed, etc)? ____ (YES) NO
5. Is the project identifiable from custody papers? (If so fill out top of form) ____ (YES) NO
6. Indicate the packing in cooler: (if other, describe) ____

☒ Bubble Wrap ☐ Foam blocks ☒ Bags ☐ None
☐ Cloth material ☐ Cardboard ☐ Styrofoam ☐ Paper towels

7. Temperature documentation: * Notify PM if temperature exceeds 6°C

Type of ice used: ☒ Wet ☐ Blue/Gel ☐ None Temp(°C) 1.7

☐ Temperature blank(s) included? ☐ Thermometer# ____ ☐ IR Gun# A

☐ Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? ____ YES (NO)
   If YES, what time were they transferred to freezer? ____
9. Did all bottles arrive unbroken/unopened? ____ (YES) NO
10. Are there any missing / extra samples? ____ YES (NO)
11. Are samples in the appropriate containers for indicated tests? ____ (YES) NO
12. Are sample labels present, in good condition and complete? ____ (YES) NO
13. Do the sample labels agree with custody papers? ____ (YES) NO
14. Was sufficient amount of sample sent for tests requested? ____ (YES) NO
15. Are the samples appropriately preserved? ____ YES (NO) N/A
16. Did you check preservatives for all bottles for each sample? ____ (YES) NO N/A
17. Did you document your preservative check? (pH strip lot# 80BD4497) (YES) NO N/A
18. Did you change the hold time in LIMS for unpreserved VOAs? ____ YES NO (N/A)
19. Did you change the hold time in LIMS for preserved terracores? ____ YES NO (N/A)
20. Are bubbles > 6mm absent in VOA samples? ____ YES NO (N/A)
21. Was the client contacted concerning this sample delivery? ____ YES (NO)
   If YES, Who was called? ____ By ____ Date: ____

COMMENTS
(15) added HNO3 (20170130S3) to make pH<2 @ 1834 on 2/1/18 to samples 11 & 12

Rev 14, 8/01/17

Results & QC Summary

ENTHALPY ANALYTICAL

Metals Analytical Report

Lab #:	296840	Project#:	4-14214
Client:	Insight EEC, Inc.	Location:	HPNS-Parcel F
Matrix:	Water	Sampled:	01/31/18
Units:	ug/L	Received:	02/01/18
Diln Fac:	1.000	Prepared:	02/05/18

Field ID: HPP-FSS-EB01 Lab ID: 296840-011
Type: SAMPLE

Analyte	Result	LOQ	DL	Batch#	Analyzed	Prep	Analysis
Copper	0.63 J Q	1.0	0.17	256192	02/06/18	EPA 200.8	EPA 6020A
Lead	0.19 J	1.0	0.050	256192	02/06/18	EPA 200.8	EPA 6020A
Mercury	0.10 U	0.20	0.040	256218	02/05/18	METHOD	EPA 7470A

Field ID: HPP-FSS-FB01 Lab ID: 296840-012
Type: SAMPLE

Analyte	Result	LOQ	DL	Batch#	Analyzed	Prep	Analysis
Copper	0.26 J Q	1.0	0.17	256192	02/06/18	EPA 200.8	EPA 6020A
Lead	0.10 U	1.0	0.050	256192	02/06/18	EPA 200.8	EPA 6020A
Mercury	0.10 U	0.20	0.040	256218	02/05/18	METHOD	EPA 7470A

Type: BLANK Analyzed: 02/06/18
Lab ID: QC918868 Prep: EPA 200.8
Batch#: 256192 Analysis: EPA 6020A

Analyte	Result	LOQ	DL
Copper	11 Q	1.0	0.17
Lead	0.23 J	1.0	0.050

Type: BLANK Analyzed: 02/05/18
Lab ID: QC918974 Prep: METHOD
Batch#: 256218 Analysis: EPA 7470A

Analyte	Result	LOQ	DL
Mercury	0.10 U	0.20	0.040

J= Estimated value
Q= See narrative
U= Not Detected at or above DL
DL= Detection Limit
LOQ= Limit of Quantitation

ENTHALPY ANALYTICAL

Batch QC Report

Metals Analytical Report

Lab #:	296840	Location:	HPNS-Parcel F
Client:	Insight EEC, Inc.	Prep:	EPA 200.8
Project#:	4-14214	Analysis:	EPA 6020A
Matrix:	Water	Batch#:	256192
Units:	ug/L	Prepared:	02/05/18
Diln Fac:	1.000	Analyzed:	02/06/18

Type: BS Lab ID: QC918869

Analyte	Spiked	Result	%REC	Limits
Copper	100.0	105.7	106	61-143
Lead	100.0	95.98	96	73-128

Type: BSD Lab ID: QC918870

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Copper	100.0	106.1	106	61-143	0	31
Lead	100.0	97.01	97	73-128	1	26

RPD= Relative Percent Difference

ENTHALPY ANALYTICAL

Batch QC Report

Metals Analytical Report

Lab #:	296840	Location:	HPNS-Parcel F
Client:	Insight EEC, Inc.	Prep:	EPA 200.8
Project#:	4-14214	Analysis:	EPA 6020A
Field ID:	ZZZZZZZZZZ	Batch#:	256192
MSS Lab ID:	296659-001	Sampled:	01/18/18
Matrix:	Water	Received:	01/26/18
Units:	ug/L	Prepared:	02/05/18
Diln Fac:	1.000	Analyzed:	02/06/18

Type: MS Lab ID: QC918871

Analyte	MSS Result	Spiked	Result	%REC	Limits
Copper	34.50	100.0	116.8	82	61-143
Lead	5.958	100.0	107.3	101	73-128

Type: MSD Lab ID: QC918872

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Copper	100.0	116.8	82	61-143	0	31
Lead	100.0	106.7	101	73-128	1	26

RPD= Relative Percent Difference

ENTHALPY ANALYTICAL

Batch QC Report

Metals Analytical Report

Lab #:	296840	Location:	HPNS-Parcel F
Client:	Insight EEC, Inc.	Prep:	EPA 200.8
Project#:	4-14214	Analysis:	EPA 6020A
Field ID:	ZZZZZZZZZZ	Diln Fac:	5.000
Type:	Serial Dilution	Batch#:	256192
MSS Lab ID:	296659-001	Sampled:	01/18/18
Lab ID:	QC918873	Received:	01/26/18
Matrix:	Water	Analyzed:	02/06/18
Units:	ug/L		

Analyte	MSS Result	MSS LOQ	Result	LOQ	% Diff	Lim
Copper	34.50	1.000	38.55 Q	2.551	12 *	10
Lead	5.958	1.000	5.940	2.500	0	10

*= Value outside of QC limits; see narrative
Q= See narrative
LOQ= Limit of Quantitation

ENTHALPY ANALYTICAL

Batch QC Report

Metals Analytical Report

Lab #:	296840	Location:	HPNS-Parcel F
Client:	Insight EEC, Inc.	Prep:	EPA 200.8
Project#:	4-14214	Analysis:	EPA 6020A
Field ID:	ZZZZZZZZZZ	Diln Fac:	1.000
Type:	Post Digest Spike	Batch#:	256192
MSS Lab ID:	296659-001	Sampled:	01/18/18
Lab ID:	QC918874	Received:	01/26/18
Matrix:	Water	Analyzed:	02/06/18
Units:	ug/L		

Analyte	MSS Result	Spiked	Result	%REC	Limits
Copper	34.50	50.00	82.35 Q	96	80-120
Lead	5.958	50.00	63.17	114	80-120

Q= See narrative

ENTHALPY ANALYTICAL

Batch QC Report

Metals Analytical Report

Lab #:	296840	Location:	HPNS-Parcel F
Client:	Insight EEC, Inc.	Prep:	METHOD
Project#:	4-14214	Analysis:	EPA 7470A
Analyte:	Mercury	Batch#:	256218
Matrix:	Water	Prepared:	02/05/18
Units:	ug/L	Analyzed:	02/05/18
Diln Fac:	1.000		

Type	Lab ID	Spiked	Result	%REC	Limits	RPD	Lim
BS	QC918975	2.000	1.826	91	80-120		
BSD	QC918976	2.000	1.939	97	80-120	6	20

RPD= Relative Percent Difference

ENTHALPY ANALYTICAL

Batch QC Report

Metals Analytical Report

Lab #:	296840	Location:	HPNS-Parcel F
Client:	Insight EEC, Inc.	Prep:	METHOD
Project#:	4-14214	Analysis:	EPA 7470A
Analyte:	Mercury	Batch#:	256218
Field ID:	HPP-FSS-EB01	Sampled:	01/31/18
MSS Lab ID:	296840-011	Received:	02/01/18
Matrix:	Water	Prepared:	02/05/18
Units:	ug/L	Analyzed:	02/05/18
Diln Fac:	1.000		

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim
MS	QC918977	<0.04000	2.000	1.848	92	80-120		
MSD	QC918978		2.000	1.831	92	80-120	1	20

RPD= Relative Percent Difference

ENTHALPY ANALYTICAL

Batch QC Report

Metals Analytical Report

Lab #:	296840	Location:	HPNS-Parcel F
Client:	Insight EEC, Inc.	Prep:	METHOD
Project#:	4-14214	Analysis:	EPA 7470A
Analyte:	Mercury	Units:	ug/L
Field ID:	HPP-FSS-EB01	Diln Fac:	5.000
Type:	Serial Dilution	Batch#:	256218
MSS Lab ID:	296840-011	Sampled:	01/31/18
Lab ID:	QC918979	Received:	02/01/18
Matrix:	Water	Analyzed:	02/05/18

MSS Result	MSS LOQ	Result	LOQ	% Diff	Lim
0.5000 ND	0.2000	0.5000 U	1.000	NC	10

U= Not Detected at or above DL
NC= Not Calculated
ND= Not Detected at or above DL
LOQ= Limit of Quantitation

REPORTING SUMMARY FOR 296840 METALS Water
Enthalpy Analytical - Berkeley

Lab ID	Inst ID	Analyzed	IDF	CU	PB	HG
296840-011	MET45	02/05/18 18:12	1.0			+
296840-011	MET26	02/06/18 20:30	1.0	+	+	
296840-012	MET45	02/05/18 18:29	1.0			+
296840-012	MET26	02/06/18 20:35	1.0	+	+	
QC918868	MET26	02/06/18 14:21	1.0	+	+	
QC918868	MET26	02/06/18 15:01	1.0			
QC918869	MET26	02/06/18 14:26	1.0	+	+	
QC918870	MET26	02/06/18 14:31	1.0	+	+	
QC918871	MET26	02/06/18 14:46	1.0	+	+	
QC918872	MET26	02/06/18 14:51	1.0	+	+	
QC918873	MET26	02/06/18 21:05	5.0	+	+	
QC918874	MET26	02/06/18 21:10	1.0	+	+	
QC918974	MET45	02/05/18 18:09	1.0			+
QC918975	MET45	02/05/18 18:10	1.0			+
QC918976	MET45	02/05/18 18:11	1.0			+
QC918977	MET45	02/05/18 18:13	1.0			+
QC918978	MET45	02/05/18 18:14	1.0			+
QC918979	MET45	02/05/18 18:16	5.0			+
QC918980	MET45	02/05/18 18:33	1.0			+

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 1018054020

Instrument : MET26 Begun : 02/06/18 12:20
Method : EPA 6020A SOP Version : icpms metals_rv10

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	18b06m00001	X	RINSE			02/06/18 12:20	1.0	1	
002	18b06m00002	TUN				02/06/18 12:25	1.0	2	
003	18b06m00003	X	RINSE			02/06/18 12:29	1.0	1	
004	18b06m00004	X	RINSE			02/06/18 12:34	1.0	1	
005	18b06m00005	ICALBLK	CALBLANK			02/06/18 12:39	1.0	1	
006	18b06m00006	ICAL				02/06/18 12:44	1.0	3 1	
007	18b06m00007	ICAL				02/06/18 12:49	1.0	3 1	
008	18b06m00008	ICAL				02/06/18 12:54	1.0	3 1	
009	18b06m00009	ICAL				02/06/18 12:58	1.0	3 1	
010	18b06m00010	ICAL				02/06/18 13:03	1.0	3 1	
011	18b06m00011	ICAL				02/06/18 13:08	1.0	3 1	
012	18b06m00012	ICAL				02/06/18 13:13	1.0	3 1	
013	18b06m00013	X	RINSE			02/06/18 13:18	1.0	1	
014	18b06m00014	XICV				02/06/18 13:23	1.0	4 1	
015	18b06m00015	XCRI				02/06/18 13:28	1.0	5 1	
016	18b06m00016	ICV				02/06/18 13:36	1.0	6 1	
017	18b06m00017	CRI				02/06/18 13:41	1.0	5 1	
018	18b06m00018	ICB				02/06/18 13:46	1.0	1	
019	18b06m00019	ICSA				02/06/18 13:51	1.0	7 1	8:CA=260000
020	18b06m00020	ICSAB				02/06/18 13:56	1.0	8 1	8:CA=250000
021	18b06m00021	X	RINSE			02/06/18 14:01	1.0	1	
022	18b06m00022	X	RINSE			02/06/18 14:06	1.0	1	
023	18b06m00023	X	RINSE			02/06/18 14:11	1.0	1	
024	18b06m00024	X	RINSE			02/06/18 14:16	1.0	1	
025	18b06m00025	BLANK	QC918868	Water	256192	02/06/18 14:21	1.0	1	
026	18b06m00026	BS	QC918869	Water	256192	02/06/18 14:26	1.0	1	
027	18b06m00027	BSD	QC918870	Water	256192	02/06/18 14:31	1.0	1	
028	18b06m00028	SAMPLE	296659-002	Water	256192	02/06/18 14:36	1.0	1	3:NA=190000
029	18b06m00029	MSS	296659-001	Water	256192	02/06/18 14:41	1.0	1	3:NA=180000
030	18b06m00030	MS	QC918871	Water	256192	02/06/18 14:46	1.0	1	5:NA=200000
031	18b06m00031	MSD	QC918872	Water	256192	02/06/18 14:51	1.0	1	5:NA=200000
032	18b06m00032	X	RINSE			02/06/18 14:56	1.0	1	
033	18b06m00033	BLANK	QC918868	Water	256192	02/06/18 15:01	1.0	1	
034	18b06m00034	MS	QC918191	Water	256031	02/06/18 15:06	10.0	1	
035	18b06m00035	MSD	QC918192	Water	256031	02/06/18 15:11	10.0	1	
036	18b06m00036	CCV				02/06/18 15:16	1.0	6 1	
037	18b06m00037	X	XCCB			02/06/18 15:21	1.0	1	
038	18b06m00038	CCB				02/06/18 15:26	1.0	1	
039	18b06m00039	ICSA				02/06/18 15:30	1.0	7 1	8:CA=260000
040	18b06m00040	ICSAB				02/06/18 15:36	1.0	8 1	8:CA=250000
041	18b06m00041	X	RINSE			02/06/18 15:41	1.0	1	
042	18b06m00042	X	RINSE			02/06/18 15:46	1.0	1	
043	18b06m00043	X	RINSE			02/06/18 15:51	1.0	1	
044	18b06m00044	X	RINSE			02/06/18 15:56	1.0	1	
045	18b06m00045	BLANK	QC918981	Miscell.	256219	02/06/18 16:01	25.0	1	
046	18b06m00046	BS	QC918982	Miscell.	256219	02/06/18 16:06	25.0	1	
047	18b06m00047	BSD	QC918983	Miscell.	256219	02/06/18 16:10	25.0	1	
048	18b06m00048	MSS	296837-001	Miscell.	256219	02/06/18 16:15	25.0	1	
049	18b06m00049	MS	QC918984	Miscell.	256219	02/06/18 16:20	25.0	1	2:PB=420
050	18b06m00050	MSD	QC918985	Miscell.	256219	02/06/18 16:25	25.0	1	
051	18b06m00051	SER	QC918986	Miscell.	256219	02/06/18 16:30	125.0	1	
052	18b06m00052	PDS	QC918987	Miscell.	256219	02/06/18 16:35	25.0	1 9 10 11	

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 1018054020

Instrument : MET26 Begun : 02/06/18 12:20
Method : EPA 6020A SOP Version : icpms metals_rv10

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
053	18b06m00053	SAMPLE	296798-001	Soil	256219	02/06/18 16:40	25.0	1	
054	18b06m00054	SAMPLE	296798-006	Soil	256219	02/06/18 16:45	25.0	1	
055	18b06m00055	CCV				02/06/18 16:50	1.0	6 1	
056	18b06m00056	X	XCCB			02/06/18 16:55	1.0	1	
057	18b06m00057	CCB				02/06/18 17:00	1.0	1	
058	18b06m00058	SAMPLE	296798-011	Soil	256219	02/06/18 17:05	25.0	1	
059	18b06m00059	SAMPLE	296798-016	Soil	256219	02/06/18 17:12	25.0	1	
060	18b06m00060	SAMPLE	296798-021	Soil	256219	02/06/18 17:17	25.0	1	
061	18b06m00061	SAMPLE	296798-026	Soil	256219	02/06/18 17:22	25.0	1	
062	18b06m00062	SAMPLE	296837-002	Miscell.	256219	02/06/18 17:27	25.0	1	
063	18b06m00063	SAMPLE	296837-003	Miscell.	256219	02/06/18 17:32	25.0	1	
064	18b06m00064	SAMPLE	296837-004	Miscell.	256219	02/06/18 17:37	25.0	1	
065	18b06m00065	SAMPLE	296837-005	Miscell.	256219	02/06/18 17:42	25.0	1	
066	18b06m00066	SAMPLE	296837-006	Miscell.	256219	02/06/18 17:47	25.0	1	
067	18b06m00067	SAMPLE	296837-007	Miscell.	256219	02/06/18 17:52	25.0	1	2:CA=23000
068	18b06m00068	CCV				02/06/18 17:57	1.0	6 1	
069	18b06m00069	X	XCCB			02/06/18 18:01	1.0	1	
070	18b06m00070	CCB				02/06/18 18:06	1.0	1	
071	18b06m00071	SAMPLE	296837-008	Miscell.	256219	02/06/18 18:11	25.0	1	
072	18b06m00072	SAMPLE	296837-009	Miscell.	256219	02/06/18 18:16	25.0	1	
073	18b06m00073	SAMPLE	296837-010	Miscell.	256219	02/06/18 18:21	25.0	1	
074	18b06m00074	SAMPLE	296837-011	Miscell.	256219	02/06/18 18:26	25.0	1	
075	18b06m00075	SAMPLE	296837-012	Miscell.	256219	02/06/18 18:31	25.0	1	
076	18b06m00076	SAMPLE	296837-013	Miscell.	256219	02/06/18 18:36	25.0	1	
077	18b06m00077	SAMPLE	296837-014	Miscell.	256219	02/06/18 18:41	25.0	1	
078	18b06m00078	X	RINSE			02/06/18 18:46	1.0	1	
079	18b06m00079	BLANK	QC919024	Water	256228	02/06/18 18:51	1.0	1	
080	18b06m00080	BS	QC919025	Water	256228	02/06/18 18:56	1.0	1	
081	18b06m00081	BSD	QC919026	Water	256228	02/06/18 19:01	1.0	1	
082	18b06m00082	CCV				02/06/18 19:06	1.0	6 1	
083	18b06m00083	X	XCCB			02/06/18 19:11	1.0	1	
084	18b06m00084	CCB				02/06/18 19:16	1.0	1	
085	18b06m00085	SAMPLE	296902-001	Water	256228	02/06/18 19:20	1.0	1	3:CA=86000
086	18b06m00086	SAMPLE	296902-002	Water	256228	02/06/18 19:25	1.0	1	3:CA=140000
087	18b06m00087	SAMPLE	296902-003	Water	256228	02/06/18 19:30	1.0	1	3:CA=140000
088	18b06m00088	CCV				02/06/18 19:35	1.0	6 1	
089	18b06m00089	X	XCCB			02/06/18 19:40	1.0	1	
090	18b06m00090	CCB				02/06/18 19:45	1.0	1	
091	18b06m00091	ICSA				02/06/18 19:50	1.0	7 1	8:CA=260000
092	18b06m00092	ICSAB				02/06/18 19:55	1.0	8 1	8:CA=250000
093	18b06m00093	X	RINSE			02/06/18 20:01	1.0	1	
094	18b06m00094	X	RINSE			02/06/18 20:06	1.0	1	
095	18b06m00095	X	RINSE			02/06/18 20:11	1.0	1	
096	18b06m00096	X	RINSE			02/06/18 20:16	1.0	1	
097	18b06m00097	SAMPLE	296783-013	Water	256073	02/06/18 20:20	1.0	1	3:CA=570000
098	18b06m00098	X	RINSE			02/06/18 20:25	1.0	1	
099	18b06m00099	SAMPLE	296840-011	Water	256192	02/06/18 20:30	1.0	1	
100	18b06m00100	SAMPLE	296840-012	Water	256192	02/06/18 20:35	1.0	1	
101	18b06m00101	X	RINSE			02/06/18 20:40	1.0	1	
102	18b06m00102	SAMPLE	296895-001	Water	256192	02/06/18 20:45	1.0	1	5:NA=300000
103	18b06m00103	X	RINSE			02/06/18 20:50	1.0	1	
104	18b06m00104	SAMPLE	296896-001	Water	256192	02/06/18 20:55	1.0	1	2:NA=26000

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 1018054020

Instrument : MET26 Begun : 02/06/18 12:20
Method : EPA 6020A SOP Version : icpms metals_rv10

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
105	18b06m00105	X	RINSE			02/06/18 21:00	1.0	1	
106	18b06m00106	SER	QC918873	Water	256192	02/06/18 21:05	5.0	1	1:NA=35000
107	18b06m00107	PDS	QC918874	Water	256192	02/06/18 21:10	1.0	1 9 10 11	3:NA=190000
108	18b06m00108	X	RINSE			02/06/18 21:15	1.0	1	
109	18b06m00109	BLANK	QC918313	Filtrate	256064	02/06/18 21:20	1.0	1	
110	18b06m00110	BLANK	QC918329	Filtrate	256068	02/06/18 21:25	1.0	1	
111	18b06m00111	BLANK	QC918511	Filtrate	256106	02/06/18 21:29	1.0	1	
112	18b06m00112	CCV				02/06/18 21:34	1.0	6 1	
113	18b06m00113	X	XCCB			02/06/18 21:39	1.0	1	
114	18b06m00114	CCB				02/06/18 21:44	1.0	1	
115	18b06m00115	BS	QC918314	Filtrate	256064	02/06/18 21:49	1.0	1	
116	18b06m00116	BSD	QC918315	Filtrate	256064	02/06/18 21:54	1.0	1	
117	18b06m00117	BS	QC918330	Filtrate	256068	02/06/18 21:59	1.0	1	
118	18b06m00118	BSD	QC918331	Filtrate	256068	02/06/18 22:04	1.0	1	
119	18b06m00119	SAMPLE	296784-002	Filtrate	256194	02/06/18 22:09	100.0	1	
120	18b06m00120	SAMPLE	296784-008	Filtrate	256194	02/06/18 22:14	100.0	1	
121	18b06m00121	SAMPLE	296784-011	Filtrate	256194	02/06/18 22:19	25.0	1	1:NA=110000
122	18b06m00122	SAMPLE	296783-003	Filtrate	256146	02/06/18 22:24	10.0	1	1:NA=38000
123	18b06m00123	SAMPLE	296733-006	Filtrate	256106	02/06/18 22:29	10.0	1	3:NA=72000
124	18b06m00124	SAMPLE	296733-007	Filtrate	256106	02/06/18 22:34	10.0	1	1:NA=47000
125	18b06m00125	CCV				02/06/18 22:39	1.0	6 1	
126	18b06m00126	X	XCCB			02/06/18 22:44	1.0	1	
127	18b06m00127	CCB				02/06/18 22:49	1.0	1	
128	18b06m00128	SAMPLE	296733-011	Filtrate	256106	02/06/18 22:54	10.0	1	4:NA=170000
129	18b06m00129	MSS	296647-001	Filtrate	256064	02/06/18 22:59	1.0	1	4:NA=440000
130	18b06m00130	MS	QC918316	Filtrate	256064	02/06/18 23:04	1.0	1	4:NA=470000
131	18b06m00131	MSD	QC918317	Filtrate	256064	02/06/18 23:09	1.0	1	4:NA=450000
132	18b06m00132	SAMPLE	296647-002	Filtrate	256064	02/06/18 23:14	1.0	1	4:NA=430000
133	18b06m00133	SAMPLE	296647-003	Filtrate	256064	02/06/18 23:19	1.0	1	4:NA=420000
134	18b06m00134	X	RINSE			02/06/18 23:24	1.0	1	
135	18b06m00135	MSS	296739-001	Filtrate	256068	02/06/18 23:29	1.0	1	4:NA=550000
136	18b06m00136	MS	QC918332	Filtrate	256068	02/06/18 23:34	1.0	1	4:NA=540000
137	18b06m00137	MSD	QC918333	Filtrate	256068	02/06/18 23:39	1.0	1	4:NA=530000
138	18b06m00138	SAMPLE	296739-002	Filtrate	256068	02/06/18 23:44	1.0	1	4:NA=1100000
139	18b06m00139	CCV				02/06/18 23:49	1.0	6 1	
140	18b06m00140	X	XCCB			02/06/18 23:54	1.0	1	
141	18b06m00141	CCB				02/06/18 23:59	1.0	1	
142	18b06m00142	SAMPLE	296739-003	Filtrate	256068	02/07/18 00:04	1.0	1	4:NA=460000
143	18b06m00143	SAMPLE	296739-004	Filtrate	256068	02/07/18 00:09	1.0	1	4:NA=760000
144	18b06m00144	X	RINSE			02/07/18 00:14	1.0	1	
145	18b06m00145	TUN				02/07/18 00:19	1.0	2	
146	18b06m00146	X	RINSE			02/07/18 00:24	1.0	1	
147	18b06m00147	SAMPLE	296739-005	Filtrate	256068	02/07/18 00:29	1.0	1	4:NA=450000
148	18b06m00148	SAMPLE	296739-007	Filtrate	256068	02/07/18 00:34	1.0	1	4:NA=150000
149	18b06m00149	SAMPLE	296739-008	Filtrate	256068	02/07/18 00:39	1.0	1	4:NA=720000
150	18b06m00150	X	RINSE			02/07/18 00:44	1.0	1	
151	18b06m00151	SAMPLE	296599-001	Filtrate	256106	02/07/18 00:49	1.0	1	5:NA=320000
152	18b06m00152	X	RINSE			02/07/18 00:54	1.0	1	
153	18b06m00153	MSS	296733-001	Filtrate	256106	02/07/18 00:59	1.0	1	4:NA=230000
154	18b06m00154	MS	QC918514	Filtrate	256106	02/07/18 01:04	1.0	1	4:NA=230000
155	18b06m00155	MSD	QC918515	Filtrate	256106	02/07/18 01:09	1.0	1	4:NA=230000
156	18b06m00156	SAMPLE	296733-002	Filtrate	256106	02/07/18 01:14	1.0	1	3:NA=390000

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 1018054020

Instrument : MET26 Begun : 02/06/18 12:20
Method : EPA 6020A SOP Version : icpms metals_rv10

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
157	18b06m00157	CCV				02/07/18 01:19	1.0	6 1	
158	18b06m00158	X	XCCB			02/07/18 01:24	1.0	1	
159	18b06m00159	CCB				02/07/18 01:29	1.0	1	
160	18b06m00160	SAMPLE	296733-003	Filtrate	256106	02/07/18 01:34	1.0	1	3:NA=390000
161	18b06m00161	SAMPLE	296733-004	Filtrate	256106	02/07/18 01:39	1.0	1	1:NA=100000
162	18b06m00162	SAMPLE	296733-005	Filtrate	256106	02/07/18 01:44	1.0	1	1:NA=99000
163	18b06m00163	SAMPLE	296733-008	Filtrate	256106	02/07/18 01:49	1.0	1	6:NA=420000
164	18b06m00164	SAMPLE	296733-009	Filtrate	256106	02/07/18 01:54	1.0	1	2:NA=300000
165	18b06m00165	SAMPLE	296733-010	Filtrate	256106	02/07/18 01:59	1.0	1	4:NA=640000
166	18b06m00166	SAMPLE	296733-012	Filtrate	256106	02/07/18 02:04	1.0	1	4:NA=300000
167	18b06m00167	SAMPLE	296733-013	Filtrate	256106	02/07/18 02:09	1.0	1	2:CA=250000
168	18b06m00168	SAMPLE	296733-014	Filtrate	256106	02/07/18 02:14	1.0	1	2:CA=350000
169	18b06m00169	X	RINSE			02/07/18 02:19	1.0	1	
170	18b06m00170	SAMPLE	296734-001	Filtrate	256106	02/07/18 02:24	1.0	1	3:NA=140000
171	18b06m00171	CCV				02/07/18 02:29	1.0	6 1	
172	18b06m00172	X	XCCB			02/07/18 02:34	1.0	1	
173	18b06m00173	CCB				02/07/18 02:39	1.0	1	
174	18b06m00174	SAMPLE	296734-002	Filtrate	256106	02/07/18 02:44	1.0	1	5:NA=400000
175	18b06m00175	SAMPLE	296734-003	Filtrate	256106	02/07/18 02:49	1.0	1	4:NA=390000
176	18b06m00176	SAMPLE	296734-004	Filtrate	256106	02/07/18 02:54	1.0	1	4:NA=1200000
177	18b06m00177	SAMPLE	296734-005	Filtrate	256106	02/07/18 02:59	1.0	1	3:NA=370000
178	18b06m00178	MSS	296734-006	Filtrate	256146	02/07/18 03:04	1.0	1	4:NA=360000
179	18b06m00179	MS	QC918701	Filtrate	256146	02/07/18 03:09	1.0	1	4:NA=350000
180	18b06m00180	MSD	QC918702	Filtrate	256146	02/07/18 03:14	1.0	1	4:NA=330000
181	18b06m00181	SAMPLE	296734-007	Filtrate	256146	02/07/18 03:19	1.0	1	3:CA=620000
182	18b06m00182	SAMPLE	296734-008	Filtrate	256146	02/07/18 03:24	1.0	1	2:NA=97000
183	18b06m00183	SAMPLE	296734-009	Filtrate	256146	02/07/18 03:29	1.0	1	4:NA=440000
184	18b06m00184	CCV				02/07/18 03:34	1.0	6 1	
185	18b06m00185	X	XCCB			02/07/18 03:39	1.0	1	
186	18b06m00186	CCB				02/07/18 03:44	1.0	1	
187	18b06m00187	SAMPLE	296734-010	Filtrate	256146	02/07/18 03:49	1.0	1	3:CA=490000
188	18b06m00188	SAMPLE	296734-011	Filtrate	256146	02/07/18 03:54	1.0	1	5:NA=170000
189	18b06m00189	SAMPLE	296734-012	Filtrate	256146	02/07/18 03:59	1.0	1	4:NA=280000
190	18b06m00190	SAMPLE	296734-013	Filtrate	256146	02/07/18 04:04	1.0	1	3:NA=210000
191	18b06m00191	SAMPLE	296734-014	Filtrate	256146	02/07/18 04:09	1.0	1	4:NA=680000
192	18b06m00192	X	RINSE			02/07/18 04:14	1.0	1	
193	18b06m00193	SAMPLE	296783-001	Filtrate	256146	02/07/18 04:19	1.0	1	3:CA=46000
194	18b06m00194	SAMPLE	296783-002	Filtrate	256146	02/07/18 04:24	1.0	1	3:NA=310000
195	18b06m00195	SAMPLE	296783-004	Filtrate	256146	02/07/18 04:29	1.0	1	4:NA=330000
196	18b06m00196	SAMPLE	296783-005	Filtrate	256146	02/07/18 04:34	1.0	1	5:NA=710000
197	18b06m00197	SAMPLE	296783-006	Filtrate	256146	02/07/18 04:39	1.0	1	3:NA=460000
198	18b06m00198	CCV				02/07/18 04:44	1.0	6 1	
199	18b06m00199	X	XCCB			02/07/18 04:49	1.0	1	
200	18b06m00200	CCB				02/07/18 04:54	1.0	1	
201	18b06m00201	SAMPLE	296783-007	Filtrate	256146	02/07/18 04:59	1.0	1	4:NA=3500000
202	18b06m00202	SAMPLE	296783-008	Filtrate	256146	02/07/18 05:04	1.0	1	4:NA=200000
203	18b06m00203	SAMPLE	296783-009	Filtrate	256146	02/07/18 05:09	1.0	1	6:NA=2300000
204	18b06m00204	SAMPLE	296783-010	Filtrate	256146	02/07/18 05:14	1.0	1	5:NA=800000
205	18b06m00205	SAMPLE	296783-011	Filtrate	256146	02/07/18 05:19	1.0	1	3:NA=210000
206	18b06m00206	X	RINSE			02/07/18 05:24	1.0	1	
207	18b06m00207	BLANK	QC918875	Filtrate	256193	02/07/18 05:29	1.0	1	
208	18b06m00208	BS	QC918876	Filtrate	256193	02/07/18 05:33	1.0	1	

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 1018054020

Instrument : MET26 Begun : 02/06/18 12:20
Method : EPA 6020A SOP Version : icpms metals_rv10

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
209	18b06m00209	BSD	QC918877	Filtrate	256193	02/07/18 05:38	1.0	1	
210	18b06m00210	MSS	296501-001	Filtrate	256193	02/07/18 05:43	1.0	1	
211	18b06m00211	MS	QC918878	Filtrate	256193	02/07/18 05:48	1.0	1	
212	18b06m00212	CCV				02/07/18 05:53	1.0	6 1	
213	18b06m00213	X	XCCB			02/07/18 05:58	1.0	1	
214	18b06m00214	CCB				02/07/18 06:03	1.0	1	
215	18b06m00215	MSD	QC918879	Filtrate	256193	02/07/18 06:08	1.0	1	
216	18b06m00216	SAMPLE	296501-002	Filtrate	256193	02/07/18 06:13	1.0	1	
217	18b06m00217	X	RINSE			02/07/18 06:18	1.0	1	
218	18b06m00218	BLANK	QC918880	Filtrate	256194	02/07/18 06:23	1.0	1	
219	18b06m00219	BS	QC918881	Filtrate	256194	02/07/18 06:27	1.0	1	
220	18b06m00220	BSD	QC918882	Filtrate	256194	02/07/18 06:32	1.0	1	
221	18b06m00221	SAMPLE	296572-001	Filtrate	256194	02/07/18 06:37	1.0	1	5:NA=230000
222	18b06m00222	SAMPLE	296572-002	Filtrate	256194	02/07/18 06:42	1.0	1	5:NA=230000
223	18b06m00223	SAMPLE	296572-003	Filtrate	256194	02/07/18 06:47	1.0	1	4:NA=180000
224	18b06m00224	SAMPLE	296572-004	Filtrate	256194	02/07/18 06:52	1.0	1	4:NA=190000
225	18b06m00225	SAMPLE	296572-005	Filtrate	256194	02/07/18 06:57	1.0	1	4:NA=210000
226	18b06m00226	CCV				02/07/18 07:02	1.0	6 1	
227	18b06m00227	X	XCCB			02/07/18 07:07	1.0	1	
228	18b06m00228	CCB				02/07/18 07:12	1.0	1	
229	18b06m00229	X	RINSE			02/07/18 07:17	1.0	1	
230	18b06m00230	SAMPLE	296784-010	Filtrate	256194	02/07/18 07:22	1.0	1	3:NA=240000
231	18b06m00231	SAMPLE	296784-001	Filtrate	256194	02/07/18 07:27	1.0	1	5:NA=1300000
232	18b06m00232	SAMPLE	296784-003	Filtrate	256194	02/07/18 07:32	1.0	1	3:NA=260000
233	18b06m00233	SAMPLE	296784-004	Filtrate	256194	02/07/18 07:37	1.0	1	6:NA=800000
234	18b06m00234	ICSA				02/07/18 07:42	1.0	7 1	8:FE=190000
235	18b06m00235	ICSAB				02/07/18 07:47	1.0	8 1	8:FE=190000
236	18b06m00236	X	RINSE			02/07/18 07:53	1.0	1	
237	18b06m00237	X	RINSE			02/07/18 07:58	1.0	1	
238	18b06m00238	X	RINSE			02/07/18 08:03	1.0	1	
239	18b06m00239	X	RINSE			02/07/18 08:08	1.0	1	
240	18b06m00240	SAMPLE	296784-005	Filtrate	256194	02/07/18 08:13	1.0	1	4:NA=1100000
241	18b06m00241	SAMPLE	296784-006	Filtrate	256194	02/07/18 08:18	1.0	1	4:NA=780000
242	18b06m00242	SAMPLE	296784-007	Filtrate	256194	02/07/18 08:23	1.0	1	5:NA=710000
243	18b06m00243	SAMPLE	296784-009	Filtrate	256194	02/07/18 08:28	1.0	1	4:NA=180000
244	18b06m00244	CCV				02/07/18 08:33	1.0	6 1	
245	18b06m00245	X	XCCB			02/07/18 08:38	1.0	1	
246	18b06m00246	CCB				02/07/18 08:43	1.0	1	
247	18b06m00247	MS	QC918984	Miscell.	256219	02/07/18 08:47	25.0	1	1:PB=400
248	18b06m00248	MSD	QC918985	Miscell.	256219	02/07/18 08:52	25.0	1	
249	18b06m00249	CCV				02/07/18 08:57	1.0	6 1	
250	18b06m00250	X	XCCB			02/07/18 09:02	1.0	1	
251	18b06m00251	CCB				02/07/18 09:07	1.0	1	
252	18b06m00252	ICSA				02/07/18 09:12	1.0	7 1	8:FE=190000
253	18b06m00253	ICSAB				02/07/18 09:17	1.0	8 1	8:FE=190000
254	18b06m00254	X	RINSE			02/07/18 09:23	1.0	1	
255	18b06m00255	X	RINSE			02/07/18 09:28	1.0	1	
256	18b06m00256	X	RINSE			02/07/18 09:33	1.0	1	
257	18b06m00257	X	RINSE			02/07/18 09:38	1.0	1	

NBB 02/06/18 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 001 through 039.

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 1018054020

Instrument : MET26 Begun : 02/06/18 12:20
Method : EPA 6020A SOP Version : icpms metals_rv10

NBB 02/07/18 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 040 through 253.

Standards used: 1=S35396 2=S35482 3=S35696 4=S35884 5=S35885 6=S35929 7=S35821 8=S35822 9=S34361 10=S34362 11=S34743

CURTIS & TOMPKINS INTERNAL STANDARD SUMMARY FOR SEQUENCE 1018054020

Date : 02/06/18 Reference : 18b06m00005
Sequence : MET26 18b06m00 Analyzed : 02/06/18 12:39

#	Type	Sample ID	LI A	GE H	GE A	GE E	IN A	BI A	Y E	Y H	Y A
		IB+ICALBLK STD	1871599	78194	231040	105165	1846597	2022337	858586	1071043	1808858
		LOWER LIMIT	561480	23458	69312	31550	553979	606701	257576	321313	542657
		UPPER LIMIT	2245919	93833	277248	126198	2215916	2426804	1030303	1285252	2170630
018	ICB		1838939	73826	213256	106178	1682418	1864973	873819	1039045	1644977
019	ICSA		1137119	60080	152037	85613	1151252	1108745	648036	921760	1159871
020	ICSAB		951794	44337	130051	68434	1015548	1036101	531528	702851	995741
025	BLANK	QC918868	1077532	44063	137247	61364	1160705	1491140	512867	654052	1073302
026	BS	QC918869	1119955	49876	139521	70660	1155895	1394948	604914	734701	1117228
027	BSD	QC918870	1137638	49406	136719	70954	1134397	1379529	607213	740110	1099223
030	MS	QC918871	1238656	51040	141347	71633	1177886	1212072	665521	848808	1246332
031	MSD	QC918872	1259045	49712	143737	71998	1188696	1215530	667594	792235	1263617
033	BLANK	QC918868	1307040	54462	162671	78559	1341472	1611633	657876	782194	1283721
034	MS	QC918191	1331467	58289	163314	81258	1332464	1585640	684761	835419	1280608
035	MSD	QC918192	1345858	58175	163522	82186	1337072	1597983	692240	842979	1286435
036	CCV		1300272	58101	153786	79342	1252762	1470208	673374	864897	1228937
038	CCB		1363877	58285	162390	82493	1316061	1599529	686230	851284	1259017
039	ICSA		1111540	53524	145219	80218	1087436	1070984	612887	833649	1088720
040	ICSAB		1036732	48066	135588	68793	1045798	1047120	514428	759753	1032563
045	BLANK	QC918981	1180598	49422	143848	70798	1212901	1505137	602693	731872	1148937
046	BS	QC918982	1092919	49709	132572	70106	1092580	1370402	586090	724597	1032076
047	BSD	QC918983	1217315	53304	147196	70262	1240260	1533998	582107	796382	1172953
048	MSS	296837-001	1284447	58674	156366	76876	1281205	1526387	668357	916300	1282984
049	MS	QC918984	1307002	57597	159425	81130	1294676	1516973	708904	882818	1310636
050	MSD	QC918985	1547193	60431	192561	84691	1599549	1826766	732273	914067	1623643
051	SER	QC918986	1361373	62271	166361	89771	1311180	1582932	759975	909495	1272824
052	PDS	QC918987	1317220	58889	157468	81397	1279809	1481097	712650	897629	1296823
053	SAMPLE	296798-001	1411813	61574	168893	85823	1355850	1584388	729683	923489	1368220
054	SAMPLE	296798-006	1378333	62195	167985	87085	1329621	1539746	743476	919465	1345875
055	CCV		1336811	62353	163713	87791	1320198	1520204	744231	920964	1315742
057	CCB		1416815	64286	171451	90139	1386862	1683656	748960	923238	1329767
058	SAMPLE	296798-011	1461056	63800	178239	91527	1430135	1648622	793557	940951	1452634
059	SAMPLE	296798-016	1517266	73810	186131	98223	1467640	1672778	844504	1080090	1500654
060	SAMPLE	296798-021	1505593	69162	185578	94278	1436679	1644311	798335	1027879	1478097
061	SAMPLE	296798-026	1418319	69947	171136	94544	1334666	1543401	808244	1042224	1368376
062	SAMPLE	296837-002	1492587	66093	177811	92700	1409304	1622597	801427	977753	1445555
063	SAMPLE	296837-003	1498592	66844	179390	95833	1425583	1646953	833479	994502	1443723
064	SAMPLE	296837-004	1514177	65481	183720	95547	1448024	1649805	826211	933394	1482332
065	SAMPLE	296837-005	1509472	68848	183313	97071	1416489	1629888	836109	1023114	1445887
066	SAMPLE	296837-006	1547530	70810	186970	96857	1478414	1686052	821183	1057178	1517475
067	SAMPLE	296837-007	1429673	65618	172058	92066	1382034	1590259	802076	979415	1405847
068	CCV		1478044	67913	178429	93934	1435014	1651687	793488	992871	1423513
070	CCB		1693593	70974	210437	99416	1707651	1983615	825334	1016574	1659213
071	SAMPLE	296837-008	1556290	73475	191082	101484	1483888	1698284	864251	1091176	1519850
072	SAMPLE	296837-009	1560327	73965	188713	100812	1485697	1696482	857406	1090171	1515510
073	SAMPLE	296837-010	1555063	70748	187894	100430	1455130	1674001	867593	1056565	1485461
074	SAMPLE	296837-011	1614235	74148	196397	103160	1534884	1740368	880898	1102641	1566046
075	SAMPLE	296837-012	1597607	73789	195148	102806	1518660	1720513	872470	1092150	1556042
076	SAMPLE	296837-013	1588638	74558	193632	102066	1515080	1716725	868642	1106323	1549209
077	SAMPLE	296837-014	1445242	75159	174164	103107	1329797	1531785	883007	1113782	1368655
079	BLANK	QC919024	1327184	58430	153697	80601	1287368	1582435	700246	890680	1229913
080	BS	QC919025	1304770	56162	150154	78182	1236353	1437292	693885	891657	1230107

CURTIS & TOMPKINS INTERNAL STANDARD SUMMARY FOR SEQUENCE 1018054020

Date : 02/06/18 Reference : 18b06m00005
Sequence : MET26 18b06m00 Analyzed : 02/06/18 12:39

#	Type	Sample ID	LI A	GE H	GE A	GE E	IN A	BI A	Y E	Y H	Y A
081	BSD	QC919026	1298068	55329	150641	73529	1248430	1453264	633990	884708	1238237
082	CCV		1491803	56298	182892	95930	1461768	1668603	808108	764174	1457680
084	CCB		1571545	73390	193945	101943	1558375	1829753	843691	1056886	1504934
085	SAMPLE	296902-001	1278761	55109	149976	77121	1288829	1424641	718323	908072	1296790
086	SAMPLE	296902-002	1315560	55635	148328	76834	1247447	1341838	732446	920293	1273128
087	SAMPLE	296902-003	1330810	52482	154681	72869	1282678	1366047	666654	856243	1311253
088	CCV		1593493	70286	200760	99478	1626126	1825408	847812	1052144	1611952
090	CCB		1707000	81313	216158	111827	1696298	1957044	916209	1150215	1642319
091	ICSA		1362623	71240	181518	101516	1335022	1231367	768804	1091327	1366283
092	ICSAB		1297031	61158	174532	90015	1340339	1237149	700945	970477	1356269
097	SAMPLE	296783-013	557793 *	30797	71455	40882	561916	276826 *	426880	547901	740329
099	SAMPLE	296840-011	1907776	102651 *	255457	122037	2030774	2097518	1016807	1453543 *	2058403
100	SAMPLE	296840-012	1810428	93396	245595	119742	1960948	2040311	999253	1306707 *	1970646
106	SER	QC918873	1526461	81276	216024	104499	1716026	1758658	922009	1162444	1756516
107	PDS	QC918874	1542159	79150	202824	98202	1680642	1557121	928761	1249439	1837974
109	BLANK	QC918313	1465032	69566	216560	100203	1796341	2058173	863411	941524	1735917
110	BLANK	QC918329	1427182	74924	206588	98067	1720952	1961895	869683	1070119	1660714
111	BLANK	QC918511	1459647	75714	213063	99223	1820886	2059780	886555	1083960	1765312
112	CCV		1423760	84365	213128	100982	1757024	1898958	887411	1222591	1761309
114	CCB		1498053	83137	226205	107617	1903182	2142193	919100	1151599	1847075
115	BS	QC918314	1446106	71784	206618	96293	1757406	1857491	877908	1021677	1770767
116	BSD	QC918315	1444204	76577	206065	98685	1747480	1844273	893358	1144518	1764257
117	BS	QC918330	1471351	78805	210034	97990	1786837	1889527	886776	1158466	1801091
118	BSD	QC918331	1446363	75896	206665	97426	1740485	1853145	874310	1111647	1752422
119	SAMPLE	296784-002	1449354	79519	211886	100272	1747017	1860206	869784	1133207	1736000
120	SAMPLE	296784-008	1510495	80144	226703	104171	1889038	2034189	901807	1116745	1869708
121	SAMPLE	296784-011	1448580	77671	206413	98280	1708320	1703386	885706	1127298	1748213
122	SAMPLE	296783-003	1484183	84243	218631	99186	1846184	1905883	866172	1230177	1849506
123	SAMPLE	296733-006	1419351	75144	205269	96389	1718153	1716506	860276	1095852	1743528
124	SAMPLE	296733-007	1454901	76840	214458	97074	1778015	1859640	838435	1081700	1780916
125	CCV		1446612	77616	217633	101211	1815399	1952392	883301	1106863	1814865
127	CCB		1484986	80464	227682	106682	1899966	2117545	907268	1099629	1850920
128	SAMPLE	296733-011	1304600	73196	183166	93308	1527702	1498385	855969	1096221	1572955
129	MSS	296647-001	1321137	64995	166470	90552	1499909	1330035	927342	1072969	1578875
130	MS	QC918316	1343345	66296	178938	83141	1536679	1339947	812816	1095629	1666083
131	MSD	QC918317	1296890	66029	173036	87536	1505438	1317187	848769	1068512	1620795
132	SAMPLE	296647-002	1289367	64700	172763	82044	1527066	1359268	805998	1046010	1611480
133	SAMPLE	296647-003	1283169	66859	176244	83684	1537480	1369594	800737	1063318	1612121
135	MSS	296739-001	1320029	67899	179308	85318	1552000	1323256	833782	1089376	1669816
136	MS	QC918332	1177817	71728	165178	89760	1352343	1157664	866559	1156575	1474214
137	MSD	QC918333	1284421	69211	183618	86283	1575334	1330225	829354	1100953	1719896
138	SAMPLE	296739-002	1310030	68295	177618	86207	1432653	1123591	814093	1073312	1605619
139	CCV		1325896	83660	222894	103580	1829455	1910065	892439	1179817	1843488
141	CCB		1309933	85185	230352	104094	1910381	2063839	886464	1180541	1865257
142	SAMPLE	296739-003	1241542	72083	185326	87819	1604624	1374902	838158	1111573	1708136
143	SAMPLE	296739-004	1271170	71231	187343	88320	1540383	1258754	828739	1126045	1695068
147	SAMPLE	296739-005	1228942	72266	190054	89474	1614541	1383563	836463	1098339	1733962
148	SAMPLE	296739-007	1109609	71139	185290	88509	1559851	1469179	816255	1085158	1616839
149	SAMPLE	296739-008	1212171	71117	181545	87378	1485135	1211924	832963	1102836	1631949
151	SAMPLE	296599-001	1113970	69594	182282	86097	1502856	1320237	785269	1032742	1594852
153	MSS	296733-001	1120225	73033	191632	89562	1583632	1447141	802880	1062914	1662287
154	MS	QC918514	1084651	72105	187070	88654	1541277	1418168	803295	1081445	1636406

CURTIS & TOMPKINS INTERNAL STANDARD SUMMARY FOR SEQUENCE 1018054020

Date : 02/06/18 Reference : 18b06m00005
Sequence : MET26 18b06m00 Analyzed : 02/06/18 12:39

#	Type	Sample ID	LI A	GE H	GE A	GE E	IN A	BI A	Y E	Y H	Y A
155	MSD	QC918515	1077094	69336	184169	86064	1576052	1459421	793905	1059341	1656751
156	SAMPLE	296733-002	1099382	70651	184815	88304	1565486	1362828	836272	1074482	1671171
157	CCV		1046912	74319	199950	92203	1633252	1734037	796598	1053211	1629982
159	CCB		1162208	68944	226561	102222	1863996	1960479	869022	876297	1831629
160	SAMPLE	296733-003	1093348	74013	190692	91036	1560033	1345995	827094	1107503	1672072
161	SAMPLE	296733-004	1040946	71238	198442	88031	1648799	1624671	769738	1029435	1661553
162	SAMPLE	296733-005	1060988	74226	201279	91524	1664910	1631457	804839	1062091	1688288
163	SAMPLE	296733-008	1074980	73556	200562	93301	1562602	1361711	834641	1136409	1735259
164	SAMPLE	296733-009	1112884	76393	199327	91191	1664523	1501366	802551	1118313	1733512
165	SAMPLE	296733-010	1163922	70909	189551	88872	1547526	1230243	831248	1103260	1707624
166	SAMPLE	296733-012	1116401	69332	190460	88825	1649902	1472575	827278	1074691	1723435
167	SAMPLE	296733-013	1216124	64439	184498	86905	1389412	933416	826266	1015714	1641922
168	SAMPLE	296733-014	1116431	65656	175031	83136	1349555	906111	809986	1057529	1597762
170	SAMPLE	296734-001	1084336	77914	197141	93015	1737717	1584270	872768	1188092	1776356
171	CCV		1069439	78758	217276	97405	1849776	1911902	855622	1130995	1826651
173	CCB		1063877	81387	225513	101030	1944414	2069254	877813	1137961	1871538
174	SAMPLE	296734-002	1020942	73507	192456	90206	1642826	1404575	844136	1113153	1732613
175	SAMPLE	296734-003	1037410	74278	196004	90205	1672427	1429208	846787	1123146	1758548
176	SAMPLE	296734-004	1064264	67024	178401	85013	1410896	1045729	813679	1051704	1613632
177	SAMPLE	296734-005	939695	68776	176249	81853	1506431	1298344	761985	1068369	1590782
178	MSS	296734-006	951079	69587	188010	85354	1624274	1399390	805010	1068737	1710809
179	MS	QC918701	954068	74100	196937	90507	1713011	1443646	867839	1164623	1834899
180	MSD	QC918702	904109	72048	177437	83785	1444966	1227144	779018	1113017	1565330
181	SAMPLE	296734-007	173768 *	15337 *	50376 *	21683 *	370237 *	149791 *	248216 *	295498 *	515063 *
182	SAMPLE	296734-008	735193	67451	188865	80824	1592497	1413267	737240	993278	1647765
183	SAMPLE	296734-009	709059	63250	184209	80996	1536117	1162983	781836	987168	1676069
184	CCV		791340	76461	212868	92720	1766377	1648640	807869	1088890	1789842
186	CCB		794597	80460	216225	95665	1872684	1861602	840156	1119432	1811366
187	SAMPLE	296734-010	189486 *	17985 *	61552 *	25806 *	449595 *	248379 *	318172	378557	618732
188	SAMPLE	296734-011	531255 *	53886	170048	71728	1444406	1244212	669797	863252	1492490
189	SAMPLE	296734-012	508933 *	54493	165486	66279	1470766	1185720	656155	879740	1543912
190	SAMPLE	296734-013	498604 *	59547	171252	72645	1363681	1135801	662004	902150	1452242
191	SAMPLE	296734-014	418110 *	54308	134628	62308	1218359	971365	608977	828229	1297218
193	SAMPLE	296783-001	482176 *	50965	152951	63027	1468981	1379841	621722	792803	1419104
194	SAMPLE	296783-002	440246 *	47046	136029	58007	1302337	1138025	578490	755764	1306001
195	SAMPLE	296783-004	430701 *	48121	138147	59126	1280945	1084575	581652	775136	1303347
196	SAMPLE	296783-005	375439 *	42869	126264	53995	1133817	865797	538239	697808	1202504
197	SAMPLE	296783-006	355803 *	40618	121803	52033	1177299	974885	517787	649443	1193226
198	CCV		428855 *	50420	151057	61303	1421912	1436170	568253	763563	1340542
200	CCB		447198 *	55891	162379	67578	1533702	1573591	618763	817754	1416923
201	SAMPLE	296783-007	159175 *	22985 *	60145 *	27504 *	559245	364744 *	319568	433171	645546
202	SAMPLE	296783-008	225803 *	28850	93205	36533	968647	848318	384415	488238	941626
203	SAMPLE	296783-009	78962 *	14829 *	37453 *	16493 *	390775 *	297405 *	200445 *	290266 *	413992 *
204	SAMPLE	296783-010	80718 *	13152 *	43685 *	16396 *	474838 *	423922 *	180783 *	237925 *	461948 *
205	SAMPLE	296783-011	99422 *	16432 *	55095 *	19783 *	575683	541162 *	209241 *	264671 *	548228
207	BLANK	QC918875	117091 *	20789 *	68878 *	25129 *	706136	779221	247284 *	309300 *	632293
208	BS	QC918876	125776 *	20037 *	73055	25084 *	698467	738374	242920 *	299433 *	658945
209	BSD	QC918877	147274 *	23373 *	77883	29231 *	702230	750431	283218	347429	664601
211	MS	QC918878	187520 *	26469	89266	32617	866950	905237	319937	404054	832699
212	CCV		208593 *	28790	97082	35828	933142	990030	346631	436692	891152
214	CCB		215323 *	30371	97570	37002	954850	1048907	351881	448103	884478
215	MSD	QC918879	209436 *	28563	94553	34958	895303	947314	339528	429624	868096

CURTIS & TOMPKINS INTERNAL STANDARD SUMMARY FOR SEQUENCE 1018054020

Date : 02/06/18 Reference : 18b06m00005
Sequence : MET26 18b06m00 Analyzed : 02/06/18 12:39

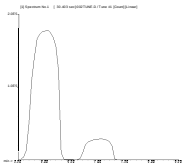
#	Type	Sample ID	LI A	GE H	GE A	GE E	IN A	BI A	Y E	Y H	Y A
218	BLANK	QC918880	212356 *	30349	94898	34827	927240	1048659	326994	436220	856122
219	BS	QC918881	202560 *	28363	92670	34371	864233	932864	331549	418663	835838
220	BSD	QC918882	208797 *	29253	96491	35765	892207	956160	341527	432332	871613
221	SAMPLE	296572-001	187368 *	24096	80058	30334 *	778431	729526	315844	390373	790093
222	SAMPLE	296572-002	181050 *	25386	78414	30631 *	770095	727207	317132	403996	777881
223	SAMPLE	296572-003	184501 *	25701	82228	31152 *	780359	753813	312485	401658	783095
224	SAMPLE	296572-004	184176 *	25097	80542	30719 *	781589	757024	315543	396751	783508
225	SAMPLE	296572-005	180346 *	23886	76679	29062 *	725106	690645	298651	382386	739003
226	CCV		211217 *	29972	97795	36641	898561	964694	351052	452535	871815
228	CCB		208619 *	30612	95163	36662	906411	1008768	342999	445101	853472
230	SAMPLE	296784-010	185514 *	24795	80172	31097 *	761578	752731	311442	374667	770046
231	SAMPLE	296784-001	128718 *	18882 *	52317 *	22042 *	523912 *	451095 *	241824 *	324402	549789
232	SAMPLE	296784-003	165300 *	22918 *	72786	27554 *	700527	689806	274013	349895	699825
233	SAMPLE	296784-004	120442 *	18590 *	56149 *	22085 *	564187	504070 *	239928 *	313937 *	580781
234	ICSA		175666 *	21418 *	116906	36536	721915	673690	266580	333262	721412
235	ICSAB		206968 *	24939	124809	40404	810308	747514	305872	387103	822644
240	SAMPLE	296784-005	214997 *	23540	75210	28666 *	742117	614260	310478	408836	788280
241	SAMPLE	296784-006	255548 *	26888	88656	34168	871188	749804	358993	454731	903665
242	SAMPLE	296784-007	264018 *	29025	92997	36382	912192	790748	375720	489734	934614
243	SAMPLE	296784-009	312794 *	35472	112485	42371	1085295	1016742	428905	569717	1072677
244	CCV		336055 *	38968	126723	47969	1198228	1257213	456347	594251	1143413
246	CCB		321316 *	39163	121394	46752	1159836	1275043	439110	578735	1079499
247	MS	QC918984	324756 *	39793	128403	48272	1174971	1242164	469957	610480	1170515
248	MSD	QC918985	327390 *	40985	128861	49473	1175879	1244543	476174	627837	1171056
249	CCV		317986 *	41570	123000	46281	1146967	1220604	438916	638846	1106457
251	CCB		308503 *	39005	118863	46156	1133972	1257391	431537	564674	1061067
252	ICSA		281321 *	32728	133656	47442	947073	876517	385175	505017	961181
253	ICSAB		263790 *	32059	128598	47001	895688	829875	383010	504597	913946

MET26 QC Tune Report

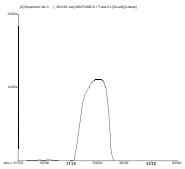
Data File: C:\ICPCHEM\1\DATA\18B06m00.B\002TUNE.D
Date Acquired: Feb 6 2018 12:25 pm
Acq. Method: TN6020K.M
Operator:
Sample Name: tun,s35482
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\TN6020K.M

RSD (%)

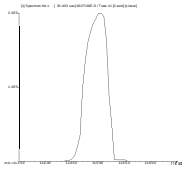
Element	Rep1	Rep2	Rep3	Rep4	Rep5	Actual	Required	Flag
7 Li	146578	149475	150197	151034	151284	1.54	5.00	
59 Co	58060	57855	57869	58289	58196	0.45	5.00	
115 In	946053	976509	957437	959759	959499	1.23	5.00	
205 Tl	74737	74568	74332	74853	74361	0.85	5.00	



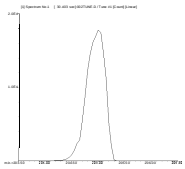
7 Li
Mass Calib.
Actual: 7.00
Required: 6.90 - 7.10
Flag:
Peak Width @ 5%
Actual: 0.60
Required: 0.75
Flag:



59 Co
Mass Calib.
Actual: 59.00
Required: 58.90 - 59.10
Flag:
Peak Width @ 5%
Actual: 0.65
Required: 0.75
Flag:



115 In
Mass Calib.
Actual: 115.00
Required: 114.90 - 115.10
Flag:
Peak Width @ 5%
Actual: 0.65
Required: 0.75
Flag:



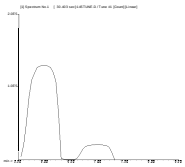
205 Tl
Mass Calib.
Actual: 204.95
Required: 204.90 - 205.10
Flag:
Peak Width @ 5%
Actual: 0.65
Required: 0.75
Flag:

MET26 QC Tune Report

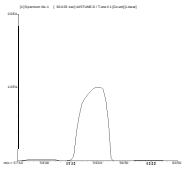
Data File: C:\ICPCHEM\1\DATA\18B06m00.B\145TUNE.D
Date Acquired: Feb 7 2018 12:19 am
Acq. Method: TN6020K.M
Operator:
Sample Name: tun,s35482
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\TN6020K.M

RSD (%)

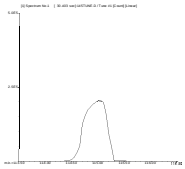
Element	Rep1	Rep2	Rep3	Rep4	Rep5	Actual	Required	Flag
7 Li	118516	116936	116228	115509	115257	1.09	5.00	
59 Co	55226	54383	54037	53811	53562	0.80	5.00	
115 In	1025924	1006527	990428	993347	992668	1.57	5.00	
205 Tl	72626	71567	71419	71597	70900	1.16	5.00	



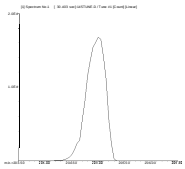
7 Li
Mass Calib.
Actual: 6.95
Required: 6.90 - 7.10
Flag:
Peak Width @ 5%
Actual: 0.65
Required: 0.75
Flag:



59 Co
Mass Calib.
Actual: 59.00
Required: 58.90 - 59.10
Flag:
Peak Width @ 5%
Actual: 0.60
Required: 0.75
Flag:



115 In
Mass Calib.
Actual: 115.00
Required: 114.90 - 115.10
Flag:
Peak Width @ 5%
Actual: 0.65
Required: 0.75
Flag:



205 Tl
Mass Calib.
Actual: 205.00
Required: 204.90 - 205.10
Flag:
Peak Width @ 5%
Actual: 0.65
Required: 0.75
Flag:

ENTHALPY INITIAL CALIBRATION FOR 296840 METALS Water: EPA 6020A

Inst : MET26
Calnum : 1018054020001
Units : ug/L

Date : 06-FEB-2018 12:39
X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	18b06m00006	1018054020006		06-FEB-2018 12:44	S35696 (400X), S35396
L2	18b06m00007	1018054020007		06-FEB-2018 12:49	S35696 (200X), S35396
L3	18b06m00008	1018054020008		06-FEB-2018 12:54	S35696 (40X), S35396
L4	18b06m00009	1018054020009		06-FEB-2018 12:58	S35696 (20X), S35396
L5	18b06m00010	1018054020010		06-FEB-2018 13:03	S35696 (4X), S35396
L6	18b06m00011	1018054020011		06-FEB-2018 13:08	S35696 (2X), S35396
L7	18b06m00012	1018054020012		06-FEB-2018 13:13	S35696, S35396

Analyte	Ch	L1	L2	L3	L4	L5	L6	L7	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	Flg
Lead	A	0.0121	0.0117	0.0115	0.0112	0.0113	0.0114	0.0116	BLNK	-0.0425	86.7513		0.0115	1.000	0.995	
Copper	E	0.0055	0.0053	0.0043	0.0041	0.0041	0.0038	0.0036	BLNK	-0.1952	273.021		0.0044	0.998	0.995	

Spiked Amounts / Drifts	Ch	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D	L6	%D	L7	%D
Lead	A	0.5000	-3	1.0000	-2	5.0000	-2	10.000	-3	50.000	-2	100.00	-1	200.00	0
Copper	E	0.5000	11	1.0000	**25**	5.0000	13	10.000	11	50.000	11	100.00	3	200.00	-2

Instrument amount = a0 + response * a1 + response^2 * a2; BLNK=Y=aX+[blank]

ENTHALPY 2ND SOURCE CALIBRATION SUMMARY FOR 296840 METALS Water
EPA 6020A

Inst : MET26
Calnum : 1018054020001 Cal Date : 06-FEB-2018

ICV 1018054020016 (18b06m00016 06-FEB-2018) stds: S35929, S35396

Analyte	Ch	Spiked	Quant	Units	%D	Max	Flags
Lead	A	50.00	47.63	ug/L	-5	10	
Copper	E	50.00	50.52	ug/L	1	10	

ENTHALPY LOW-LEVEL PERFORMANCE VERIFICATION STANDARD FOR 296840 METALS Water
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018054020017.1 File : 18b06m00017 Time : 06-FEB-2018 13:41
Cal : 1018054020001 Caldate : 06-FEB-2018
Standards: S35885, S35396

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Lead	A	1.000	0.9342	ug/L	-7	30	
Copper	E	1.000	1.155	ug/L	16	30	

ISTD (ICALBLK 18b06m00005)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	1871599	1798583	-3.90
Germanium	H	78194	68286	-12.67
Germanium	A	231040	209880	-9.16
Germanium	E	105165	99891	-5.01
Indium	A	1846597	1655745	-10.34
Bismuth	A	2022337	1849603	-8.54
Yttrium	E	858586	814904	-5.09
Yttrium	H	1071043	970417	-9.40
Yttrium	A	1808858	1617349	-10.59

ENTHALPY INSTRUMENT BLANK FOR 296840 METALS Water
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018054020018.2 File : 18b06m00018 Time : 06-FEB-2018 13:46
Cal : 1018054020001 Caldate : 06-FEB-2018

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Lead	A	ND	0.5000	0.1000	ug/L	
Copper	E	ND	0.5000	0.4000	ug/L	

ISTD (ICALBLK 18b06m00005)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	1871599	1838939	-1.75
Germanium	H	78194	73826	-5.59
Germanium	A	231040	213256	-7.70
Germanium	E	105165	106178	0.96
Indium	A	1846597	1682418	-8.89
Bismuth	A	2022337	1864973	-7.78
Yttrium	E	858586	873819	1.77
Yttrium	H	1071043	1039045	-2.99
Yttrium	A	1808858	1644977	-9.06

ENTHALPY INTERFERENCE CHECK STANDARD A FOR 296840 METALS Water
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018054020019.2 File : 18b06m00019 Time : 06-FEB-2018 13:51
Cal : 1018054020001 Caldate : 06-FEB-2018
Standards: S35821, S35396

Analyte	Ch	Quant	IQL	Units	Flags
Lead	A	[0.1071]	0.5000	ug/L	
Copper	E	0.8886	0.5000	ug/L	

Interferent	Ch	Spiked	Quant	Units	%Rec	Flags
Aluminum	A	100000	80290	ug/L	80	
Calcium	A	300000	255600	ug/L	85	
Magnesium	A	100000	80300	ug/L	80	
Molybdenum	A	2000	1912	ug/L	96	
Potassium	A	100000	83580	ug/L	84	
Sodium	E	250000	213300	ug/L	85	
Phosphorus	E	100000	78430	ug/L	78	
Iron	H	250000	244000	ug/L	98	

ISTD (ICALBLK 18b06m00005)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	1871599	1137119	-39.24
Germanium	H	78194	60080	-23.17
Germanium	A	231040	152037	-34.19
Germanium	E	105165	85613	-18.59
Indium	A	1846597	1151252	-37.66
Bismuth	A	2022337	1108745	-45.18
Yttrium	E	858586	648036	-24.52
Yttrium	H	1071043	921760	-13.94
Yttrium	A	1808858	1159871	-35.88

ENTHALPY INTERFERENCE CHECK STANDARD AB FOR 296840 METALS Water
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018054020020.2 File : 18b06m00020 Time : 06-FEB-2018 13:56
Cal : 1018054020001 Caldate : 06-FEB-2018
Standards: S35822, S35396

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Copper	E	200.0	160.9	ug/L	-20	20	

ISTD (ICALBLK 18b06m00005)	Ch	ICALBLK Abund	Abund	%Drift
Germanium	H	78194	44337	-43.30
Germanium	A	231040	130051	-43.71
Germanium	E	105165	68434	-34.93
Indium	A	1846597	1015548	-45.00
Yttrium	E	858586	531528	-38.09
Yttrium	H	1071043	702851	-34.38
Yttrium	A	1808858	995741	-44.95

ENTHALPY CONTINUING CALIBRATION FOR 296840 METALS Water
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018054020036.3 File : 18b06m00036 Time : 06-FEB-2018 15:16
Cal : 1018054020001 Caldate : 06-FEB-2018
Standards: S35929, S35396

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Lead	A	0.0115	0.0110	50.00	47.73	ug/L	-5	10	
Copper	E	0.0044	0.0037	50.00	50.56	ug/L	1	10	

ISTD (ICALBLK 18b06m00005)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	1871599	1300272	-30.53
Germanium	H	78194	58101	-25.70
Germanium	A	231040	153786	-33.44
Germanium	E	105165	79342	-24.55
Indium	A	1846597	1252762	-32.16
Bismuth	A	2022337	1470208	-27.30
Yttrium	E	858586	673374	-21.57
Yttrium	H	1071043	864897	-19.25
Yttrium	A	1808858	1228937	-32.06

ENTHALPY INSTRUMENT BLANK FOR 296840 METALS Water
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018054020038.2 File : 18b06m00038 Time : 06-FEB-2018 15:26
Cal : 1018054020001 Caldate : 06-FEB-2018

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Lead	A	ND	0.5000	0.1000	ug/L	
Copper	E	ND	0.5000	0.4000	ug/L	

ISTD (ICALBLK 18b06m00005)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	1871599	1363877	-27.13
Germanium	H	78194	58285	-25.46
Germanium	A	231040	162390	-29.71
Germanium	E	105165	82493	-21.56
Indium	A	1846597	1316061	-28.73
Bismuth	A	2022337	1599529	-20.91
Yttrium	E	858586	686230	-20.07
Yttrium	H	1071043	851284	-20.52
Yttrium	A	1808858	1259017	-30.40

ENTHALPY INTERFERENCE CHECK STANDARD A FOR 296840 METALS Water
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018054020039.2 File : 18b06m00039 Time : 06-FEB-2018 15:30
Cal : 1018054020001 Caldate : 06-FEB-2018
Standards: S35821, S35396

Analyte	Ch	Quant	IQL	Units	Flags
Lead	A	[0.1033]	0.5000	ug/L	
Copper	E	0.7938	0.5000	ug/L	

Interferent	Ch	Spiked	Quant	Units	%Rec	Flags
Aluminum	A	100000	81780	ug/L	82	
Calcium	A	300000	256000	ug/L	85	
Magnesium	A	100000	81820	ug/L	82	
Molybdenum	A	2000	1978	ug/L	99	
Potassium	A	100000	84390	ug/L	84	
Sodium	E	250000	206000	ug/L	82	
Phosphorus	E	100000	77460	ug/L	77	
Iron	H	250000	235500	ug/L	94	

ISTD (ICALBLK 18b06m00005)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	1871599	1111540	-40.61
Germanium	H	78194	53524	-31.55
Germanium	A	231040	145219	-37.15
Germanium	E	105165	80218	-23.72
Indium	A	1846597	1087436	-41.11
Bismuth	A	2022337	1070984	-47.04
Yttrium	E	858586	612887	-28.62
Yttrium	H	1071043	833649	-22.16
Yttrium	A	1808858	1088720	-39.81

ENTHALPY INTERFERENCE CHECK STANDARD AB FOR 296840 METALS Water
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018054020040.2 File : 18b06m00040 Time : 06-FEB-2018 15:36
Cal : 1018054020001 Caldate : 06-FEB-2018
Standards: S35822, S35396

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Copper	E	200.0	177.9	ug/L	-11	20	

ISTD (ICALBLK 18b06m00005)	Ch	ICALBLK Abund	Abund	%Drift
Germanium	H	78194	48066	-38.53
Germanium	A	231040	135588	-41.31
Germanium	E	105165	68793	-34.59
Indium	A	1846597	1045798	-43.37
Yttrium	E	858586	514428	-40.08
Yttrium	H	1071043	759753	-29.06
Yttrium	A	1808858	1032563	-42.92

ENTHALPY CONTINUING CALIBRATION FOR 296840 METALS Water
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018054020088.2 File : 18b06m00088 Time : 06-FEB-2018 19:35
Cal : 1018054020001 Caldate : 06-FEB-2018
Standards: S35929, S35396

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Lead	A	0.0115	0.0109	50.00	47.03	ug/L	-6	10	
Copper	E	0.0044	0.0037	50.00	50.49	ug/L	1	10	

ISTD (ICALBLK 18b06m00005)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	1871599	1593493	-14.86
Germanium	H	78194	70286	-10.11
Germanium	A	231040	200760	-13.11
Germanium	E	105165	99478	-5.41
Indium	A	1846597	1626126	-11.94
Bismuth	A	2022337	1825408	-9.74
Yttrium	E	858586	847812	-1.25
Yttrium	H	1071043	1052144	-1.76
Yttrium	A	1808858	1611952	-10.89

ENTHALPY INSTRUMENT BLANK FOR 296840 METALS Water
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018054020090.2 File : 18b06m00090 Time : 06-FEB-2018 19:45
Cal : 1018054020001 Caldate : 06-FEB-2018

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Lead	A	ND	0.5000	0.1000	ug/L	
Copper	E	ND	0.5000	0.4000	ug/L	

ISTD (ICALBLK 18b06m00005)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	1871599	1707000	-8.79
Germanium	H	78194	81313	3.99
Germanium	A	231040	216158	-6.44
Germanium	E	105165	111827	6.33
Indium	A	1846597	1696298	-8.14
Bismuth	A	2022337	1957044	-3.23
Yttrium	E	858586	916209	6.71
Yttrium	H	1071043	1150215	7.39
Yttrium	A	1808858	1642319	-9.21

ENTHALPY INTERFERENCE CHECK STANDARD A FOR 296840 METALS Water
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018054020091.1 File : 18b06m00091 Time : 06-FEB-2018 19:50
Cal : 1018054020001 Caldate : 06-FEB-2018
Standards: S35821, S35396

Analyte	Ch	Quant	IQL	Units	Flags
Lead	A	[0.1034]	0.5000	ug/L	
Copper	E	0.8123	0.5000	ug/L	

Interferent	Ch	Spiked	Quant	Units	%Rec	Flags
Aluminum	A	100000	82960	ug/L	83	
Calcium	A	300000	258700	ug/L	86	
Magnesium	A	100000	81880	ug/L	82	
Molybdenum	A	2000	2004	ug/L	100	
Potassium	A	100000	85540	ug/L	86	
Sodium	E	250000	208200	ug/L	83	
Phosphorus	E	100000	79050	ug/L	79	
Iron	H	250000	242900	ug/L	97	

ISTD (ICALBLK 18b06m00005)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	1871599	1362623	-27.19
Germanium	H	78194	71240	-8.89
Germanium	A	231040	181518	-21.43
Germanium	E	105165	101516	-3.47
Indium	A	1846597	1335022	-27.70
Bismuth	A	2022337	1231367	-39.11
Yttrium	E	858586	768804	-10.46
Yttrium	H	1071043	1091327	1.89
Yttrium	A	1808858	1366283	-24.47

ENTHALPY INTERFERENCE CHECK STANDARD AB FOR 296840 METALS Water
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018054020092.1 File : 18b06m00092 Time : 06-FEB-2018 19:55
Cal : 1018054020001 Caldate : 06-FEB-2018
Standards: S35822, S35396

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Copper	E	200.0	160.7	ug/L	-20	20	

ISTD (ICALBLK 18b06m00005)	Ch	ICALBLK Abund	Abund	%Drift
Germanium	H	78194	61158	-21.79
Germanium	A	231040	174532	-24.46
Germanium	E	105165	90015	-14.41
Indium	A	1846597	1340339	-27.42
Yttrium	E	858586	700945	-18.36
Yttrium	H	1071043	970477	-9.39
Yttrium	A	1808858	1356269	-25.02

ENTHALPY CONTINUING CALIBRATION FOR 296840 METALS Water
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018054020112.2 File : 18b06m00112 Time : 06-FEB-2018 21:34
Cal : 1018054020001 Caldate : 06-FEB-2018
Standards: S35929, S35396

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Lead	A	0.0115	0.0115	50.00	49.75	ug/L	0	10	
Copper	E	0.0044	0.0037	50.00	49.67	ug/L	-1	10	

ISTD (ICALBLK 18b06m00005)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	1871599	1423760	-23.93
Germanium	H	78194	84365	7.89
Germanium	A	231040	213128	-7.75
Germanium	E	105165	100982	-3.98
Indium	A	1846597	1757024	-4.85
Bismuth	A	2022337	1898958	-6.10
Yttrium	E	858586	887411	3.36
Yttrium	H	1071043	1222591	14.15
Yttrium	A	1808858	1761309	-2.63

ENTHALPY INSTRUMENT BLANK FOR 296840 METALS Water
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018054020114.2 File : 18b06m00114 Time : 06-FEB-2018 21:44
Cal : 1018054020001 Caldate : 06-FEB-2018

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Lead	A	ND	0.5000	0.1000	ug/L	
Copper	E	ND	0.5000	0.4000	ug/L	

ISTD (ICALBLK 18b06m00005)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	1871599	1498053	-19.96
Germanium	H	78194	83137	6.32
Germanium	A	231040	226205	-2.09
Germanium	E	105165	107617	2.33
Indium	A	1846597	1903182	3.06
Bismuth	A	2022337	2142193	5.93
Yttrium	E	858586	919100	7.05
Yttrium	H	1071043	1151599	7.52
Yttrium	A	1808858	1847075	2.11

ENTHALPY INTERFERENCE CHECK STANDARD A FOR 296840 METALS Water
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018054020234.1 File : 18b06m00234 Time : 07-FEB-2018 07:42
Cal : 1018054020001 Caldate : 06-FEB-2018
Standards: S35821, S35396

Analyte	Ch	Quant	IQL	Units	Flags
Lead	A	[0.09420]	0.5000	ug/L	
Copper	E	18.75	0.5000	ug/L	

Interferent	Ch	Spiked	Quant	Units	%Rec	Flags
Aluminum	A	100000	34700	ug/L	35	
Calcium	A	300000	139300	ug/L	46	
Magnesium	A	100000	31670	ug/L	32	
Molybdenum	A	2000	2018	ug/L	101	
Potassium	A	100000	47800	ug/L	48	
Sodium	E	250000	96250	ug/L	39	
Phosphorus	E	100000	47720	ug/L	48	
Iron	H	250000	191100	ug/L	76	i- ***

ISTD (ICALBLK 18b06m00005)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	1871599	175666	**-90.61 ***
Germanium	H	78194	21418	**-72.61 ***
Germanium	A	231040	116906	-49.40
Germanium	E	105165	36536	-65.26
Indium	A	1846597	721915	-60.91
Bismuth	A	2022337	673690	-66.69
Yttrium	E	858586	266580	-68.95
Yttrium	H	1071043	333262	-68.88
Yttrium	A	1808858	721412	-60.12

-=low bias i=ISTD failure

ENTHALPY INTERFERENCE CHECK STANDARD AB FOR 296840 METALS Water
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018054020235.1 File : 18b06m00235 Time : 07-FEB-2018 07:47
Cal : 1018054020001 Caldate : 06-FEB-2018
Standards: S35822, S35396

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Copper	E	200.0	151.2	ug/L	**-24**	20	ab- ***

ISTD (ICALBLK 18b06m00005)	Ch	ICALBLK Abund	Abund	%Drift
Germanium	H	78194	24939	-68.11
Germanium	A	231040	124809	-45.98
Germanium	E	105165	40404	-61.58
Indium	A	1846597	810308	-56.12
Yttrium	E	858586	305872	-64.37
Yttrium	H	1071043	387103	-63.86
Yttrium	A	1808858	822644	-54.52

-=low bias ab=ICSAB

SAMPLE PREPARATION SUMMARY

Batch # : 256192
Started By : VV
Method : 200.8
Spike #1 ID : S34733

Prep Date : 05-FEB-2018 05:00
Spike #2 ID : S34738

Analysis : ICPMS-200
Finished By : VV
Units : mL
Spike #3 ID : S35787

Sample	Stype	Matrix	Initial	Final	Clean DF	Prep DF	pH	Sp 1 Vol	Sp 2 Vol	Sp 3 Vol	Clean Method	Analysis	Comments
296659-001		Water	50	50	1	1.0						200.8	
296659-002		Water	50	50	1	1.0						200.8	
296840-011		Water	50	50	1	1.0						6020	
296840-012		Water	50	50	1	1.0						6020	
296895-001		Water	50	50	1	1.0						200.8	added @ 19:30
296896-001		Water	50	50	1	1.0						200.8	added @ 19:30
QC918868	BLANK	Water	50	50	1	1.0							
QC918869	BS	Water	50	50	1	1.0		.5	.5	.5			
QC918870	BSD	Water	50	50	1	1.0		.5	.5	.5			
QC918871	MS	Water	50	50	1	1.0		.5	.5	.5			
QC918872	MSD	Water	50	50	1	1.0		.5	.5	.5			
QC918873	SER	Water	50	50	1	1.0							
QC918874	PDS	Water	50	50	1	1.0							

Analyst: NBB Date: 02/07/18 Reviewer: PRW Date: 02/08/18

Water Digestion for ICP-MS

Enthalpy Analytical LLC - Berkeley

LIMS Batch #: 256192
Digested by: VV
Date Digested: 2-5-18

Digestion Method
☒ EPA 200.8 for ICP-MS
☐ EPA 3005A for ICP-MS
☐ _____

BK 4193
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Lvl.	Sample #	Container ID	Sample Volume(mL)	Final Volume (mL)	Filtered? (y/n)	ID ✓	Comments
	BK# 918868	QC	☒ 50 ☐	☒ 50 ☐	yes	✓	
	* BS 918869	↓	☒ 50 ☐	☒ 50 ☐	yes	✓	
	* BSD 918870	↓	☒ 50 ☐	☒ 50 ☐	yes	✓	
	* 296659-001 MS		☒ 50 ☐	☒ 50 ☐	yes	✓	
5	* - 001 MSD		☒ 50 ☐	☒ 50 ☐	yes	✓	
II	- 001	C	☒ 50 ☐	☒ 50 ☐	yes	✓	
↓	- 002	A	☒ 50 ☐	☒ 50 ☐	yes	✓	
IV	296840-~~001~~ 011	A	☒ 50 ☐	☒ 50 ☐	NO	✓	PH verified ≤2 2-5-18
↓	↓ VV2-5-18 ~~001~~ 012	↓	☒ 50 ☐	☒ 50 ☐	↓	✓	↓
II 10	296895-001	D	☒ 50 ☐	☒ 50 ☐	↓	✓	added @ 19:30 DES
↓	296896-001	G	☒ 50 ☐	☒ 50 ☐	↓	✓	↓ end Time 04:00 2/6/18
			☐ 50 ☐	☐ 50 ☐			
			☐ 50 ☐	☐ 50 ☐			
			☐ 50 ☐	☐ 50 ☐			
15			☐ 50 ☐	☐ 50 ☐			
			☐ 50 ☐	☐ 50 ☐			
			☐ 50 ☐	☐ 50 ☐			
			☐ 50 ☐	☐ 50 ☐			
			☐ 50 ☐	☐ 50 ☐			
20			☐ 50 ☐	☐ 50 ☐			
			☐ 50 ☐	☐ 50 ☐			
			☐ 50 ☐	☐ 50 ☐			
			☐ 50 ☐	☐ 50 ☐			
			☐ 50 ☐	☐ 50 ☐			
			☐ 50 ☐	☐ 50 ☐			

	Reagent ID or LIMS #		Initials / Date
☒ pH paper used to verify preservation, lot #	10BDH4951		VV 2-5-18
Digestion tubes/ Watch glasses, lot #	1946-5420	QD-500-081	↓
0.5 mL of spike solution (Std1) was added to all spikes	S34733 *		↓
0.5 mL of spike solution (Std2) was added to all spikes	S34738 *		↓
0.5 mL of spike solution (Std3) was added to all spikes	S35787 *		↓
Digestion Block ID/ Probe Location	JUSTICE	13	↓
Thermometer ID, Temperature (°C)	6412811	95°C	↓
digestion begun at (time)	05:00		↓
concentrated HCl lot#	187518-JTB		↓
concentrated HNO3 lot#	1117080-Fisher		↓
digestion ended at (time)	23:00		DES 2-5-18
☒ filtered thru' Whatman # 541, lot #	11401069		VV 2-6-18
Relinquished to ICP group	ICP MS		↓

Pipettes

Vol.(mL)	ID
0.5	R293550

Prep Chemist / Date

Continued from page Ø
Continued on page _____

Reviewed Online / See LIMS
Version 10.2, July 2017

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 388052920

Instrument : MET45 Begun : 02/05/18 18:00
Method : EPA 7470A SOP Version : hg_water_rv19

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	met45	ICALBLK				02/05/18 18:00	1.0		
002	met45	ICAL	ICAL1			02/05/18 18:01	1.0	1	
003	met45	ICAL	ICAL2			02/05/18 18:02	1.0	1	
004	met45	ICAL	ICAL3			02/05/18 18:03	1.0	1	
005	met45	ICAL	ICAL4			02/05/18 18:04	1.0	1	
006	met45	ICAL	ICAL5			02/05/18 18:05	1.0	1	
007	met45	ICV				02/05/18 18:06	1.0	2	
008	met45	ICB				02/05/18 18:08	1.0		
009	met45	BLANK	QC918974	Water	256218	02/05/18 18:09	1.0		
010	met45	BS	QC918975	Water	256218	02/05/18 18:10	1.0		
011	met45	BSD	QC918976	Water	256218	02/05/18 18:11	1.0		
012	met45	MSS	296840-011	Water	256218	02/05/18 18:12	1.0		
013	met45	MS	QC918977	Water	256218	02/05/18 18:13	1.0		
014	met45	MSD	QC918978	Water	256218	02/05/18 18:14	1.0		
015	met45	SER	QC918979	Water	256218	02/05/18 18:16	5.0		
016	met45	SAMPLE	296587-003	Water	256218	02/05/18 18:17	1.0		1:HG=14
017	met45	SAMPLE	296638-002	Water	256218	02/05/18 18:18	1.0		
018	met45	SAMPLE	296680-002	Water	256218	02/05/18 18:19	1.0		
019	met45	CCV				02/05/18 18:21	1.0	3	
020	met45	CCB				02/05/18 18:22	1.0		
021	met45	SAMPLE	296803-002	Water	256218	02/05/18 18:23	1.0		
022	met45	SAMPLE	296803-006	Water	256218	02/05/18 18:24	1.0		
023	met45	SAMPLE	296803-010	Water	256218	02/05/18 18:25	1.0		
024	met45	SAMPLE	296803-014	Water	256218	02/05/18 18:26	1.0		
025	met45	SAMPLE	296822-009	Water	256218	02/05/18 18:28	1.0		
026	met45	SAMPLE	296840-012	Water	256218	02/05/18 18:29	1.0		
027	met45	SAMPLE	296868-001	Water	256218	02/05/18 18:30	1.0		
028	met45	LOD	255715-041	Water	256218	02/05/18 18:31	1.0		
029	met45	SAMPLE	296868-001	Filtrate	256218	02/05/18 18:32	1.0		
030	met45	BLANK	QC918980	Filtrate	256218	02/05/18 18:33	1.0		
031	met45	CCV				02/05/18 18:34	1.0	3	
032	met45	CCB				02/05/18 18:36	1.0		
033	met45	SAMPLE	296781-002	Water	256218	02/05/18 18:37	1.0		
034	met45	SAMPLE	296797-001	Water	256218	02/05/18 18:38	1.0		
035	met45	SAMPLE	296587-003	Water	256218	02/05/18 18:39	10.0		
036	met45	CCV				02/05/18 18:40	1.0	3	
037	met45	CCB				02/05/18 18:41	1.0		

SL 02/05/18 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 37.

Standards used: 1=S35906 2=S35908 3=S35909

ENTHALPY INITIAL CALIBRATION FOR 296840 METALS Water: EPA 7470A

Inst : MET45
Calnum : 388052920001
Units : ug/L

Date : 05-FEB-2018 18:00
X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	met45	388052920002	ICAL1	05-FEB-2018 18:01	S35906 (500X)
L2	met45	388052920003	ICAL2	05-FEB-2018 18:02	S35906 (200X)
L3	met45	388052920004	ICAL3	05-FEB-2018 18:03	S35906 (50X)
L4	met45	388052920005	ICAL4	05-FEB-2018 18:04	S35906 (20X)
L5	met45	388052920006	ICAL5	05-FEB-2018 18:05	S35906 (10X)

Analyte	L1	L2	L3	L4	L5	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	Flg
Mercury	0.0800	0.0772	0.0809	0.0797	0.0821	LIN0	0.02889	12.2060		0.0800	1.000	.99	

Spiked Amounts / Drifts	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D
Mercury	0.2000	12	0.5000	0	2.0000	0	5.0000	-2	10.000	1

Instrument amount = a0 + response * a1 + response^2 * a2; LIN0=Linear regression including 0,0 point

ENTHALPY 2ND SOURCE CALIBRATION SUMMARY FOR 296840 METALS Water
EPA 7470A

Inst : MET45
Calnum : 388052920001 Cal Date : 05-FEB-2018

ICV 388052920007 (05-FEB-2018) stds: S35908

Analyte	Spiked	Quant	Units	%D	Max	Flags
Mercury	5.000	4.819	ug/L	-4	10	

ENTHALPY INSTRUMENT BLANK FOR 296840 METALS Water
EPA 7470A

Inst : MET45 IDF : 1.0
Seqnum : 388052920008.2 File : met45 Time : 05-FEB-2018 18:08
Cal : 388052920001 Caldate : 05-FEB-2018

Analyte	Quant	IQL	LOD	Units	Flags
Mercury	ND	0.2000	0.1000	ug/L	

ENTHALPY CONTINUING CALIBRATION FOR 296840 METALS Water
EPA 7470A

Inst : MET45 IDF : 1.0
Seqnum : 388052920019.2 File : met45 Time : 05-FEB-2018 18:21
Cal : 388052920001 Caldate : 05-FEB-2018
Standards: S35909

Analyte	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Mercury	0.0800	0.0801	5.000	4.917	ug/L	-2	10	

ENTHALPY INSTRUMENT BLANK FOR 296840 METALS Water
EPA 7470A

Inst : MET45 IDF : 1.0
Seqnum : 388052920020.2 File : met45 Time : 05-FEB-2018 18:22
Cal : 388052920001 Caldate : 05-FEB-2018

Analyte	Quant	IQL	LOD	Units	Flags
Mercury	ND	0.2000	0.1000	ug/L	

ENTHALPY CONTINUING CALIBRATION FOR 296840 METALS Water
EPA 7470A

Inst : MET45 IDF : 1.0
Seqnum : 388052920031.2 File : met45 Time : 05-FEB-2018 18:34
Cal : 388052920001 Caldate : 05-FEB-2018
Standards: S35909

Analyte	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Mercury	0.0800	0.0790	5.000	4.853	ug/L	-3	10	

ENTHALPY INSTRUMENT BLANK FOR 296840 METALS Water
EPA 7470A

Inst : MET45 IDF : 1.0
Seqnum : 388052920032.2 File : met45 Time : 05-FEB-2018 18:36
Cal : 388052920001 Caldate : 05-FEB-2018

Analyte	Quant	IQL	LOD	Units	Flags
Mercury	ND	0.2000	0.1000	ug/L	

SAMPLE PREPARATION SUMMARY

Batch # : 256218
Started By : SL
Method : METHOD
Spike #1 ID : S35907

Prep Date : 05-FEB-2018 15:05
Spike #2 ID : S35906

Analysis : HG-200
Finished By : SL
Units : mL

Sample	Stype	Matrix	Initial	Final	Clean DF	Prep DF	pH	Sp 1 Vol	Sp 2 Vol	Sp 3 Vol	Clean Method	Analysis	Comments
255715-041		Water	50	50	1	1.0			.05			7470-HG	
296587-003		Water	50	50	1	1.0						245.1-HG	
296638-002		Water	50	50	1	1.0						7470-HG	
296680-002		Water	50	50	1	1.0						7470-HG	
296781-002		Water	50	50	1	1.0						7470-HG	
296797-001		Water	50	50	1	1.0						7470-HG	
296803-002		Water	50	50	1	1.0						T22/HG	
296803-006		Water	50	50	1	1.0						T22/HG	
296803-010		Water	50	50	1	1.0						T22/HG	
296803-014		Water	50	50	1	1.0						T22/HG	
296822-009		Water	50	50	1	1.0						245.1-HG	
296840-011		Water	50	50	1	1.0						7470-HG	
296840-012		Water	50	50	1	1.0						7470-HG	
296868-001		Filtrate	50	50	1	1.0						T22/HG	
296868-001		Water	50	50	1	1.0						T22/HG	
QC918974	BLANK	Water	50	50	1	1.0							
QC918975	BS	Water	50	50	1	1.0		1					
QC918976	BSD	Water	50	50	1	1.0		1					
QC918977	MS	Water	50	50	1	1.0		1					
QC918978	MSD	Water	50	50	1	1.0		1					
QC918979	SER	Water	50	50	1	1.0							
QC918980	BLANK	Filtrate	50	50	1	1.0							

Analyst: SL Date: 02/05/18 Reviewer: PRW Date: 02/06/18

Water Digestion for Mercury

Enthalpy Analytical LLC - Berkeley

LIMS Batch #: 256218 Digestion Method: ☒ EPA 7470A/ EPA 245.1 BK 4180

Date Digested: 2-5-18 ☐ _____ Page 65

Sample #	container ID	Volume Sample (mL)	Final Volume (mL)	Filtered? (y/n)	Comments
BLANK		☑ 50 ☐	☑ 50 ☐	N	QC 918974
BS		☑ 50 ☐	☑ 50 ☐		5
BSD		☑ 50 ☐	☑ 50 ☐		6
MS		☑ 50 ☐	☑ 50 ☐		7
MSD		☑ 50 ☐	☑ 50 ☐		8
296587-003	A	☑ 50 ☐	☑ 50 ☐		5ml concentrate, 5ml HNO_3 brought to 500ml w/ DI H_2O
296638-002	A	☑ 50 ☐	☑ 50 ☐		
296680-002	A	☑ 50 ☐	☑ 50 ☐		
296803-002	A	☑ 50 ☐	☑ 50 ☐		verified pH <2
-006		☑ 50 ☐	☑ 50 ☐		
-010		☑ 50 ☐	☑ 50 ☐		
-014		☑ 50 ☐	☑ 50 ☐		
296822-009		☑ 50 ☐	☑ 50 ☐		
296840-011	A	☑ 50 ☐	☑ 50 ☐		MSS: verified pH <2
-012		☑ 50 ☐	☑ 50 ☐		
296868-001	A	☑ 50 ☐	☑ 50 ☐		
255715-041		☑ 50 ☐	☑ 50 ☐		
296868-001	B	☑ 50 ☐	☑ 50 ☐		FILTRATE
LAB BLK QC 918826		☑ 50 ☐	☑ 50 ☐		QC 918980
296781-002	A	☑ 50 ☐	☑ 50 ☐		added @ 1325
296787-001	A	☑ 50 ☐	☑ 50 ☐		
		☐ 50 ☐	☐ 50 ☐		
		☐ 50 ☐	☐ 50 ☐		
		☐ 50 ☐	☐ 50 ☐		
		☐ 50 ☐	☐ 50 ☐		

Standards prepared per SOP: MET 5.1, rev. 20

	Reagent ID/ LIMS# / Time	Initials / Date
☒ pH paper used to verify preservation, lot #	108DH5261	SL 2-5-18
Digestion Tube Lot #	EK17237	
1 mL of spike solution was added to all spikes	S35907	
Using pipette #	G156936	
☑ **CAL digested with this batch? ICAL Std S#**	S35906	
ICV / CCV LIMS S#	S35908 / S35909	
Digestion Temperature (°C), Block and Probe Location	97° 33	
Digestion Block ID: ARCHES Thermometer #	6412001	
Digestion Started at (time)	1505	
concentrated H_2SO_4	JTB177544	
concentrated HNO_3	FS1117062	
5% $KMnO_4$ / Granular KMnO4 Reagent ID	020518 —	
5% $K_2S_2O_8$ Reagent ID	020518	
NaCl.hydroxylamine hydrochloride Reagent ID	020218	
Stannous Chloride Reagent ID	020518	
Digestion Completed at (time)	1525	
☐ filtered thru' 0.45 um syringe filter (lot #)	—	

Pipettes

Vol.(mL)	ID
0.1	J2881530
0.2-1	G156936
1.25-2.5	3850158
6-10	4645196

02-05-18

Prep Chemist / Date

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Continued on page _____

Reviewed Online / See LIMS

Version 5.1, Jan.2017

PROJECT LAB FILTERS

Notebook No. _____

Continued From Page _____

SAMPLE ID	DATE/TIME	FILTER LOT #	BATCH #	VOL. (mL)	pH≤2?	INIT.	SHELF
BLANK QC917974	1-26-18/17:00	millipore FGAA07908	255970	250	YES	DES	141
296647-001 I							
-002 K							
-003 J							
-004 K							
-005							
-006							
-007							
-008							
-009							
BLK QC# 918014	1-28-18/05:00	LSS	255984	125 mL	YES/≤2	VV	115
296473-004 (296473-001A)		17082400 1					
BLANK QC918784	2-1-18/17:03	LSS-1001036	256168	250	YES	DES	7
296828-001 A				125			
-002							
-003							
BLANK QC918826	2-2-18/20:55	millipore FGAA07908	256178	250	YES	DES	12
296868-001 B							

Continued on Page

Read and Understood By

Signed _____ Date _____ Signed _____ Date _____

Dilutions for 296840 METALS Water
Enthalpy Analytical - Berkeley

Type	Sample ID	IDFs
SER	QC918873	5X
SER	QC918979	5X

CAS Registry Numbers for 296840 METALS Water
Enthalpy Analytical - Berkeley

Analyte	CAS RN
Copper	7440-50-8
Lead	7439-92-1
Mercury	7439-97-6

ICPMS Raw Data

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 1018054020

Instrument : MET26 Begun : 02/06/18 12:20
Method : EPA 6020A SOP Version : icpms metals_rv10

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	18b06m00001	X	RINSE			02/06/18 12:20	1.0	1	
002	18b06m00002	TUN				02/06/18 12:25	1.0	2	
003	18b06m00003	X	RINSE			02/06/18 12:29	1.0	1	
004	18b06m00004	X	RINSE			02/06/18 12:34	1.0	1	
005	18b06m00005	ICALBLK	CALBLANK			02/06/18 12:39	1.0	1	
006	18b06m00006	ICAL				02/06/18 12:44	1.0	3 1	
007	18b06m00007	ICAL				02/06/18 12:49	1.0	3 1	
008	18b06m00008	ICAL				02/06/18 12:54	1.0	3 1	
009	18b06m00009	ICAL				02/06/18 12:58	1.0	3 1	
010	18b06m00010	ICAL				02/06/18 13:03	1.0	3 1	
011	18b06m00011	ICAL				02/06/18 13:08	1.0	3 1	
012	18b06m00012	ICAL				02/06/18 13:13	1.0	3 1	
013	18b06m00013	X	RINSE			02/06/18 13:18	1.0	1	
014	18b06m00014	XICV				02/06/18 13:23	1.0	4 1	
015	18b06m00015	XCRI				02/06/18 13:28	1.0	5 1	
016	18b06m00016	ICV				02/06/18 13:36	1.0	6 1	
017	18b06m00017	CRI				02/06/18 13:41	1.0	5 1	
018	18b06m00018	ICB				02/06/18 13:46	1.0	1	
019	18b06m00019	ICSA				02/06/18 13:51	1.0	7 1	8:CA=260000
020	18b06m00020	ICSAB				02/06/18 13:56	1.0	8 1	8:CA=250000
021	18b06m00021	X	RINSE			02/06/18 14:01	1.0	1	
022	18b06m00022	X	RINSE			02/06/18 14:06	1.0	1	
023	18b06m00023	X	RINSE			02/06/18 14:11	1.0	1	
024	18b06m00024	X	RINSE			02/06/18 14:16	1.0	1	
025	18b06m00025	BLANK	QC918868	Water	256192	02/06/18 14:21	1.0	1	
026	18b06m00026	BS	QC918869	Water	256192	02/06/18 14:26	1.0	1	
027	18b06m00027	BSD	QC918870	Water	256192	02/06/18 14:31	1.0	1	
028	18b06m00028	SAMPLE	296659-002	Water	256192	02/06/18 14:36	1.0	1	3:NA=190000
029	18b06m00029	MSS	296659-001	Water	256192	02/06/18 14:41	1.0	1	3:NA=180000
030	18b06m00030	MS	QC918871	Water	256192	02/06/18 14:46	1.0	1	5:NA=200000
031	18b06m00031	MSD	QC918872	Water	256192	02/06/18 14:51	1.0	1	5:NA=200000
032	18b06m00032	X	RINSE			02/06/18 14:56	1.0	1	
033	18b06m00033	BLANK	QC918868	Water	256192	02/06/18 15:01	1.0	1	
034	18b06m00034	MS	QC918191	Water	256031	02/06/18 15:06	10.0	1	
035	18b06m00035	MSD	QC918192	Water	256031	02/06/18 15:11	10.0	1	
036	18b06m00036	CCV				02/06/18 15:16	1.0	6 1	
037	18b06m00037	X	XCCB			02/06/18 15:21	1.0	1	
038	18b06m00038	CCB				02/06/18 15:26	1.0	1	
039	18b06m00039	ICSA				02/06/18 15:30	1.0	7 1	8:CA=260000
040	18b06m00040	ICSAB				02/06/18 15:36	1.0	8 1	8:CA=250000
041	18b06m00041	X	RINSE			02/06/18 15:41	1.0	1	
042	18b06m00042	X	RINSE			02/06/18 15:46	1.0	1	
043	18b06m00043	X	RINSE			02/06/18 15:51	1.0	1	
044	18b06m00044	X	RINSE			02/06/18 15:56	1.0	1	
045	18b06m00045	BLANK	QC918981	Miscell.	256219	02/06/18 16:01	25.0	1	
046	18b06m00046	BS	QC918982	Miscell.	256219	02/06/18 16:06	25.0	1	
047	18b06m00047	BSD	QC918983	Miscell.	256219	02/06/18 16:10	25.0	1	
048	18b06m00048	MSS	296837-001	Miscell.	256219	02/06/18 16:15	25.0	1	
049	18b06m00049	MS	QC918984	Miscell.	256219	02/06/18 16:20	25.0	1	2:PB=420
050	18b06m00050	MSD	QC918985	Miscell.	256219	02/06/18 16:25	25.0	1	
051	18b06m00051	SER	QC918986	Miscell.	256219	02/06/18 16:30	125.0	1	
052	18b06m00052	PDS	QC918987	Miscell.	256219	02/06/18 16:35	25.0	1 9 10 11	

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 1018054020

Instrument : MET26 Begun : 02/06/18 12:20
Method : EPA 6020A SOP Version : icpms metals_rv10

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
053	18b06m00053	SAMPLE	296798-001	Soil	256219	02/06/18 16:40	25.0	1	
054	18b06m00054	SAMPLE	296798-006	Soil	256219	02/06/18 16:45	25.0	1	
055	18b06m00055	CCV				02/06/18 16:50	1.0	6 1	
056	18b06m00056	X	XCCB			02/06/18 16:55	1.0	1	
057	18b06m00057	CCB				02/06/18 17:00	1.0	1	
058	18b06m00058	SAMPLE	296798-011	Soil	256219	02/06/18 17:05	25.0	1	
059	18b06m00059	SAMPLE	296798-016	Soil	256219	02/06/18 17:12	25.0	1	
060	18b06m00060	SAMPLE	296798-021	Soil	256219	02/06/18 17:17	25.0	1	
061	18b06m00061	SAMPLE	296798-026	Soil	256219	02/06/18 17:22	25.0	1	
062	18b06m00062	SAMPLE	296837-002	Miscell.	256219	02/06/18 17:27	25.0	1	
063	18b06m00063	SAMPLE	296837-003	Miscell.	256219	02/06/18 17:32	25.0	1	
064	18b06m00064	SAMPLE	296837-004	Miscell.	256219	02/06/18 17:37	25.0	1	
065	18b06m00065	SAMPLE	296837-005	Miscell.	256219	02/06/18 17:42	25.0	1	
066	18b06m00066	SAMPLE	296837-006	Miscell.	256219	02/06/18 17:47	25.0	1	
067	18b06m00067	SAMPLE	296837-007	Miscell.	256219	02/06/18 17:52	25.0	1	2:CA=23000
068	18b06m00068	CCV				02/06/18 17:57	1.0	6 1	
069	18b06m00069	X	XCCB			02/06/18 18:01	1.0	1	
070	18b06m00070	CCB				02/06/18 18:06	1.0	1	
071	18b06m00071	SAMPLE	296837-008	Miscell.	256219	02/06/18 18:11	25.0	1	
072	18b06m00072	SAMPLE	296837-009	Miscell.	256219	02/06/18 18:16	25.0	1	
073	18b06m00073	SAMPLE	296837-010	Miscell.	256219	02/06/18 18:21	25.0	1	
074	18b06m00074	SAMPLE	296837-011	Miscell.	256219	02/06/18 18:26	25.0	1	
075	18b06m00075	SAMPLE	296837-012	Miscell.	256219	02/06/18 18:31	25.0	1	
076	18b06m00076	SAMPLE	296837-013	Miscell.	256219	02/06/18 18:36	25.0	1	
077	18b06m00077	SAMPLE	296837-014	Miscell.	256219	02/06/18 18:41	25.0	1	
078	18b06m00078	X	RINSE			02/06/18 18:46	1.0	1	
079	18b06m00079	BLANK	QC919024	Water	256228	02/06/18 18:51	1.0	1	
080	18b06m00080	BS	QC919025	Water	256228	02/06/18 18:56	1.0	1	
081	18b06m00081	BSD	QC919026	Water	256228	02/06/18 19:01	1.0	1	
082	18b06m00082	CCV				02/06/18 19:06	1.0	6 1	
083	18b06m00083	X	XCCB			02/06/18 19:11	1.0	1	
084	18b06m00084	CCB				02/06/18 19:16	1.0	1	
085	18b06m00085	SAMPLE	296902-001	Water	256228	02/06/18 19:20	1.0	1	3:CA=86000
086	18b06m00086	SAMPLE	296902-002	Water	256228	02/06/18 19:25	1.0	1	3:CA=140000
087	18b06m00087	SAMPLE	296902-003	Water	256228	02/06/18 19:30	1.0	1	3:CA=140000
088	18b06m00088	CCV				02/06/18 19:35	1.0	6 1	
089	18b06m00089	X	XCCB			02/06/18 19:40	1.0	1	
090	18b06m00090	CCB				02/06/18 19:45	1.0	1	
091	18b06m00091	ICSA				02/06/18 19:50	1.0	7 1	8:CA=260000
092	18b06m00092	ICSAB				02/06/18 19:55	1.0	8 1	8:CA=250000
093	18b06m00093	X	RINSE			02/06/18 20:01	1.0	1	
094	18b06m00094	X	RINSE			02/06/18 20:06	1.0	1	
095	18b06m00095	X	RINSE			02/06/18 20:11	1.0	1	
096	18b06m00096	X	RINSE			02/06/18 20:16	1.0	1	
097	18b06m00097	SAMPLE	296783-013	Water	256073	02/06/18 20:20	1.0	1	3:CA=570000
098	18b06m00098	X	RINSE			02/06/18 20:25	1.0	1	
099	18b06m00099	SAMPLE	296840-011	Water	256192	02/06/18 20:30	1.0	1	
100	18b06m00100	SAMPLE	296840-012	Water	256192	02/06/18 20:35	1.0	1	
101	18b06m00101	X	RINSE			02/06/18 20:40	1.0	1	
102	18b06m00102	SAMPLE	296895-001	Water	256192	02/06/18 20:45	1.0	1	5:NA=300000
103	18b06m00103	X	RINSE			02/06/18 20:50	1.0	1	
104	18b06m00104	SAMPLE	296896-001	Water	256192	02/06/18 20:55	1.0	1	2:NA=26000

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 1018054020

Instrument : MET26 Begun : 02/06/18 12:20
Method : EPA 6020A SOP Version : icpms metals_rv10

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
105	18b06m00105	X	RINSE			02/06/18 21:00	1.0	1	
106	18b06m00106	SER	QC918873	Water	256192	02/06/18 21:05	5.0	1	1:NA=35000
107	18b06m00107	PDS	QC918874	Water	256192	02/06/18 21:10	1.0	1 9 10 11	3:NA=190000
108	18b06m00108	X	RINSE			02/06/18 21:15	1.0	1	
109	18b06m00109	BLANK	QC918313	Filtrate	256064	02/06/18 21:20	1.0	1	
110	18b06m00110	BLANK	QC918329	Filtrate	256068	02/06/18 21:25	1.0	1	
111	18b06m00111	BLANK	QC918511	Filtrate	256106	02/06/18 21:29	1.0	1	
112	18b06m00112	CCV				02/06/18 21:34	1.0	6 1	
113	18b06m00113	X	XCCB			02/06/18 21:39	1.0	1	
114	18b06m00114	CCB				02/06/18 21:44	1.0	1	
115	18b06m00115	BS	QC918314	Filtrate	256064	02/06/18 21:49	1.0	1	
116	18b06m00116	BSD	QC918315	Filtrate	256064	02/06/18 21:54	1.0	1	
117	18b06m00117	BS	QC918330	Filtrate	256068	02/06/18 21:59	1.0	1	
118	18b06m00118	BSD	QC918331	Filtrate	256068	02/06/18 22:04	1.0	1	
119	18b06m00119	SAMPLE	296784-002	Filtrate	256194	02/06/18 22:09	100.0	1	
120	18b06m00120	SAMPLE	296784-008	Filtrate	256194	02/06/18 22:14	100.0	1	
121	18b06m00121	SAMPLE	296784-011	Filtrate	256194	02/06/18 22:19	25.0	1	1:NA=110000
122	18b06m00122	SAMPLE	296783-003	Filtrate	256146	02/06/18 22:24	10.0	1	1:NA=38000
123	18b06m00123	SAMPLE	296733-006	Filtrate	256106	02/06/18 22:29	10.0	1	3:NA=72000
124	18b06m00124	SAMPLE	296733-007	Filtrate	256106	02/06/18 22:34	10.0	1	1:NA=47000
125	18b06m00125	CCV				02/06/18 22:39	1.0	6 1	
126	18b06m00126	X	XCCB			02/06/18 22:44	1.0	1	
127	18b06m00127	CCB				02/06/18 22:49	1.0	1	
128	18b06m00128	SAMPLE	296733-011	Filtrate	256106	02/06/18 22:54	10.0	1	4:NA=170000
129	18b06m00129	MSS	296647-001	Filtrate	256064	02/06/18 22:59	1.0	1	4:NA=440000
130	18b06m00130	MS	QC918316	Filtrate	256064	02/06/18 23:04	1.0	1	4:NA=470000
131	18b06m00131	MSD	QC918317	Filtrate	256064	02/06/18 23:09	1.0	1	4:NA=450000
132	18b06m00132	SAMPLE	296647-002	Filtrate	256064	02/06/18 23:14	1.0	1	4:NA=430000
133	18b06m00133	SAMPLE	296647-003	Filtrate	256064	02/06/18 23:19	1.0	1	4:NA=420000
134	18b06m00134	X	RINSE			02/06/18 23:24	1.0	1	
135	18b06m00135	MSS	296739-001	Filtrate	256068	02/06/18 23:29	1.0	1	4:NA=550000
136	18b06m00136	MS	QC918332	Filtrate	256068	02/06/18 23:34	1.0	1	4:NA=540000
137	18b06m00137	MSD	QC918333	Filtrate	256068	02/06/18 23:39	1.0	1	4:NA=530000
138	18b06m00138	SAMPLE	296739-002	Filtrate	256068	02/06/18 23:44	1.0	1	4:NA=1100000
139	18b06m00139	CCV				02/06/18 23:49	1.0	6 1	
140	18b06m00140	X	XCCB			02/06/18 23:54	1.0	1	
141	18b06m00141	CCB				02/06/18 23:59	1.0	1	
142	18b06m00142	SAMPLE	296739-003	Filtrate	256068	02/07/18 00:04	1.0	1	4:NA=460000
143	18b06m00143	SAMPLE	296739-004	Filtrate	256068	02/07/18 00:09	1.0	1	4:NA=760000
144	18b06m00144	X	RINSE			02/07/18 00:14	1.0	1	
145	18b06m00145	TUN				02/07/18 00:19	1.0	2	
146	18b06m00146	X	RINSE			02/07/18 00:24	1.0	1	
147	18b06m00147	SAMPLE	296739-005	Filtrate	256068	02/07/18 00:29	1.0	1	4:NA=450000
148	18b06m00148	SAMPLE	296739-007	Filtrate	256068	02/07/18 00:34	1.0	1	4:NA=150000
149	18b06m00149	SAMPLE	296739-008	Filtrate	256068	02/07/18 00:39	1.0	1	4:NA=720000
150	18b06m00150	X	RINSE			02/07/18 00:44	1.0	1	
151	18b06m00151	SAMPLE	296599-001	Filtrate	256106	02/07/18 00:49	1.0	1	5:NA=320000
152	18b06m00152	X	RINSE			02/07/18 00:54	1.0	1	
153	18b06m00153	MSS	296733-001	Filtrate	256106	02/07/18 00:59	1.0	1	4:NA=230000
154	18b06m00154	MS	QC918514	Filtrate	256106	02/07/18 01:04	1.0	1	4:NA=230000
155	18b06m00155	MSD	QC918515	Filtrate	256106	02/07/18 01:09	1.0	1	4:NA=230000
156	18b06m00156	SAMPLE	296733-002	Filtrate	256106	02/07/18 01:14	1.0	1	3:NA=390000

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 1018054020

Instrument : MET26 Begun : 02/06/18 12:20
Method : EPA 6020A SOP Version : icpms metals_rv10

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
157	18b06m00157	CCV				02/07/18 01:19	1.0	6 1	
158	18b06m00158	X	XCCB			02/07/18 01:24	1.0	1	
159	18b06m00159	CCB				02/07/18 01:29	1.0	1	
160	18b06m00160	SAMPLE	296733-003	Filtrate	256106	02/07/18 01:34	1.0	1	3:NA=390000
161	18b06m00161	SAMPLE	296733-004	Filtrate	256106	02/07/18 01:39	1.0	1	1:NA=100000
162	18b06m00162	SAMPLE	296733-005	Filtrate	256106	02/07/18 01:44	1.0	1	1:NA=99000
163	18b06m00163	SAMPLE	296733-008	Filtrate	256106	02/07/18 01:49	1.0	1	6:NA=420000
164	18b06m00164	SAMPLE	296733-009	Filtrate	256106	02/07/18 01:54	1.0	1	2:NA=300000
165	18b06m00165	SAMPLE	296733-010	Filtrate	256106	02/07/18 01:59	1.0	1	4:NA=640000
166	18b06m00166	SAMPLE	296733-012	Filtrate	256106	02/07/18 02:04	1.0	1	4:NA=300000
167	18b06m00167	SAMPLE	296733-013	Filtrate	256106	02/07/18 02:09	1.0	1	2:CA=250000
168	18b06m00168	SAMPLE	296733-014	Filtrate	256106	02/07/18 02:14	1.0	1	2:CA=350000
169	18b06m00169	X	RINSE			02/07/18 02:19	1.0	1	
170	18b06m00170	SAMPLE	296734-001	Filtrate	256106	02/07/18 02:24	1.0	1	3:NA=140000
171	18b06m00171	CCV				02/07/18 02:29	1.0	6 1	
172	18b06m00172	X	XCCB			02/07/18 02:34	1.0	1	
173	18b06m00173	CCB				02/07/18 02:39	1.0	1	
174	18b06m00174	SAMPLE	296734-002	Filtrate	256106	02/07/18 02:44	1.0	1	5:NA=400000
175	18b06m00175	SAMPLE	296734-003	Filtrate	256106	02/07/18 02:49	1.0	1	4:NA=390000
176	18b06m00176	SAMPLE	296734-004	Filtrate	256106	02/07/18 02:54	1.0	1	4:NA=1200000
177	18b06m00177	SAMPLE	296734-005	Filtrate	256106	02/07/18 02:59	1.0	1	3:NA=370000
178	18b06m00178	MSS	296734-006	Filtrate	256146	02/07/18 03:04	1.0	1	4:NA=360000
179	18b06m00179	MS	QC918701	Filtrate	256146	02/07/18 03:09	1.0	1	4:NA=350000
180	18b06m00180	MSD	QC918702	Filtrate	256146	02/07/18 03:14	1.0	1	4:NA=330000
181	18b06m00181	SAMPLE	296734-007	Filtrate	256146	02/07/18 03:19	1.0	1	3:CA=620000
182	18b06m00182	SAMPLE	296734-008	Filtrate	256146	02/07/18 03:24	1.0	1	2:NA=97000
183	18b06m00183	SAMPLE	296734-009	Filtrate	256146	02/07/18 03:29	1.0	1	4:NA=440000
184	18b06m00184	CCV				02/07/18 03:34	1.0	6 1	
185	18b06m00185	X	XCCB			02/07/18 03:39	1.0	1	
186	18b06m00186	CCB				02/07/18 03:44	1.0	1	
187	18b06m00187	SAMPLE	296734-010	Filtrate	256146	02/07/18 03:49	1.0	1	3:CA=490000
188	18b06m00188	SAMPLE	296734-011	Filtrate	256146	02/07/18 03:54	1.0	1	5:NA=170000
189	18b06m00189	SAMPLE	296734-012	Filtrate	256146	02/07/18 03:59	1.0	1	4:NA=280000
190	18b06m00190	SAMPLE	296734-013	Filtrate	256146	02/07/18 04:04	1.0	1	3:NA=210000
191	18b06m00191	SAMPLE	296734-014	Filtrate	256146	02/07/18 04:09	1.0	1	4:NA=680000
192	18b06m00192	X	RINSE			02/07/18 04:14	1.0	1	
193	18b06m00193	SAMPLE	296783-001	Filtrate	256146	02/07/18 04:19	1.0	1	3:CA=46000
194	18b06m00194	SAMPLE	296783-002	Filtrate	256146	02/07/18 04:24	1.0	1	3:NA=310000
195	18b06m00195	SAMPLE	296783-004	Filtrate	256146	02/07/18 04:29	1.0	1	4:NA=330000
196	18b06m00196	SAMPLE	296783-005	Filtrate	256146	02/07/18 04:34	1.0	1	5:NA=710000
197	18b06m00197	SAMPLE	296783-006	Filtrate	256146	02/07/18 04:39	1.0	1	3:NA=460000
198	18b06m00198	CCV				02/07/18 04:44	1.0	6 1	
199	18b06m00199	X	XCCB			02/07/18 04:49	1.0	1	
200	18b06m00200	CCB				02/07/18 04:54	1.0	1	
201	18b06m00201	SAMPLE	296783-007	Filtrate	256146	02/07/18 04:59	1.0	1	4:NA=3500000
202	18b06m00202	SAMPLE	296783-008	Filtrate	256146	02/07/18 05:04	1.0	1	4:NA=200000
203	18b06m00203	SAMPLE	296783-009	Filtrate	256146	02/07/18 05:09	1.0	1	6:NA=2300000
204	18b06m00204	SAMPLE	296783-010	Filtrate	256146	02/07/18 05:14	1.0	1	5:NA=800000
205	18b06m00205	SAMPLE	296783-011	Filtrate	256146	02/07/18 05:19	1.0	1	3:NA=210000
206	18b06m00206	X	RINSE			02/07/18 05:24	1.0	1	
207	18b06m00207	BLANK	QC918875	Filtrate	256193	02/07/18 05:29	1.0	1	
208	18b06m00208	BS	QC918876	Filtrate	256193	02/07/18 05:33	1.0	1	

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 1018054020

Instrument : MET26 Begun : 02/06/18 12:20
Method : EPA 6020A SOP Version : icpms metals_rv10

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
209	18b06m00209	BSD	QC918877	Filtrate	256193	02/07/18 05:38	1.0	1	
210	18b06m00210	MSS	296501-001	Filtrate	256193	02/07/18 05:43	1.0	1	
211	18b06m00211	MS	QC918878	Filtrate	256193	02/07/18 05:48	1.0	1	
212	18b06m00212	CCV				02/07/18 05:53	1.0	6 1	
213	18b06m00213	X	XCCB			02/07/18 05:58	1.0	1	
214	18b06m00214	CCB				02/07/18 06:03	1.0	1	
215	18b06m00215	MSD	QC918879	Filtrate	256193	02/07/18 06:08	1.0	1	
216	18b06m00216	SAMPLE	296501-002	Filtrate	256193	02/07/18 06:13	1.0	1	
217	18b06m00217	X	RINSE			02/07/18 06:18	1.0	1	
218	18b06m00218	BLANK	QC918880	Filtrate	256194	02/07/18 06:23	1.0	1	
219	18b06m00219	BS	QC918881	Filtrate	256194	02/07/18 06:27	1.0	1	
220	18b06m00220	BSD	QC918882	Filtrate	256194	02/07/18 06:32	1.0	1	
221	18b06m00221	SAMPLE	296572-001	Filtrate	256194	02/07/18 06:37	1.0	1	5:NA=230000
222	18b06m00222	SAMPLE	296572-002	Filtrate	256194	02/07/18 06:42	1.0	1	5:NA=230000
223	18b06m00223	SAMPLE	296572-003	Filtrate	256194	02/07/18 06:47	1.0	1	4:NA=180000
224	18b06m00224	SAMPLE	296572-004	Filtrate	256194	02/07/18 06:52	1.0	1	4:NA=190000
225	18b06m00225	SAMPLE	296572-005	Filtrate	256194	02/07/18 06:57	1.0	1	4:NA=210000
226	18b06m00226	CCV				02/07/18 07:02	1.0	6 1	
227	18b06m00227	X	XCCB			02/07/18 07:07	1.0	1	
228	18b06m00228	CCB				02/07/18 07:12	1.0	1	
229	18b06m00229	X	RINSE			02/07/18 07:17	1.0	1	
230	18b06m00230	SAMPLE	296784-010	Filtrate	256194	02/07/18 07:22	1.0	1	3:NA=240000
231	18b06m00231	SAMPLE	296784-001	Filtrate	256194	02/07/18 07:27	1.0	1	5:NA=1300000
232	18b06m00232	SAMPLE	296784-003	Filtrate	256194	02/07/18 07:32	1.0	1	3:NA=260000
233	18b06m00233	SAMPLE	296784-004	Filtrate	256194	02/07/18 07:37	1.0	1	6:NA=800000
234	18b06m00234	ICSA				02/07/18 07:42	1.0	7 1	8:FE=190000
235	18b06m00235	ICSAB				02/07/18 07:47	1.0	8 1	8:FE=190000
236	18b06m00236	X	RINSE			02/07/18 07:53	1.0	1	
237	18b06m00237	X	RINSE			02/07/18 07:58	1.0	1	
238	18b06m00238	X	RINSE			02/07/18 08:03	1.0	1	
239	18b06m00239	X	RINSE			02/07/18 08:08	1.0	1	
240	18b06m00240	SAMPLE	296784-005	Filtrate	256194	02/07/18 08:13	1.0	1	4:NA=1100000
241	18b06m00241	SAMPLE	296784-006	Filtrate	256194	02/07/18 08:18	1.0	1	4:NA=780000
242	18b06m00242	SAMPLE	296784-007	Filtrate	256194	02/07/18 08:23	1.0	1	5:NA=710000
243	18b06m00243	SAMPLE	296784-009	Filtrate	256194	02/07/18 08:28	1.0	1	4:NA=180000
244	18b06m00244	CCV				02/07/18 08:33	1.0	6 1	
245	18b06m00245	X	XCCB			02/07/18 08:38	1.0	1	
246	18b06m00246	CCB				02/07/18 08:43	1.0	1	
247	18b06m00247	MS	QC918984	Miscell.	256219	02/07/18 08:47	25.0	1	1:PB=400
248	18b06m00248	MSD	QC918985	Miscell.	256219	02/07/18 08:52	25.0	1	
249	18b06m00249	CCV				02/07/18 08:57	1.0	6 1	
250	18b06m00250	X	XCCB			02/07/18 09:02	1.0	1	
251	18b06m00251	CCB				02/07/18 09:07	1.0	1	
252	18b06m00252	ICSA				02/07/18 09:12	1.0	7 1	8:FE=190000
253	18b06m00253	ICSAB				02/07/18 09:17	1.0	8 1	8:FE=190000
254	18b06m00254	X	RINSE			02/07/18 09:23	1.0	1	
255	18b06m00255	X	RINSE			02/07/18 09:28	1.0	1	
256	18b06m00256	X	RINSE			02/07/18 09:33	1.0	1	
257	18b06m00257	X	RINSE			02/07/18 09:38	1.0	1	

NBB 02/06/18 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 001 through 039.

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 1018054020

Instrument : MET26 Begun : 02/06/18 12:20
Method : EPA 6020A SOP Version : icpms metals_rv10

NBB 02/07/18 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 040 through 253.

Standards used: 1=S35396 2=S35482 3=S35696 4=S35884 5=S35885 6=S35929 7=S35821 8=S35822 9=S34361 10=S34362 11=S34743

ENTHALPY SAMPLE USER REPORT FOR EPA 6020A

Inst	: MET26	Lab ID	: 296840-011	Client ID	: HPP-FSS-EB01
Seqnum	: 1018054020099	Matrix	: Water	Acct	: IEECI (MJD)
File	: 18b06m00099	Batch	: 256192	Time	: 06-FEB-2018 20:30
Cal	: 1018054020001	Caldate	: 06-FEB-2018		
IDF	: 1.0			Units	: ug/L

50.00 mL --> 50.0 ml = 1.0 ml/ml PDF

Analyte	Ch	Result	RL	Blank	Flags
Copper	E	0.63 J	1.0	**11**	>ab- B u **b***
Lead	A	0.19 J	1.0	0.23	u

ISTD (ICALBLK 18b06m00005)	Ch	ICALBLK Abund	SAMPLE Abund	%Drift
Bismuth	A	2022337	2097518	3.72
Yttrium	E	858586	1016807	18.43

NBB 02/08/18 [Copper E]: Closing ICSAB is passing within client limits of +/-30%. OK per MJD to report with blank contamination (see CAR 12523).

-=low bias >=closing B=method blank contamination ab=ICSAB b=noncompliant u=use

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B06m00.B\099SMPL.D\099SMPL.D#
Date Acquired: Feb 6 2018 08:30 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: 296840-011
Misc Info: 256192
Vial Number: 2202
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 06 2018 01:17 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Fail

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	-0.0036	1.685777E-05	32.22	ppb	73.78	
23 Na	72	2	1069.0000	2.669943E+01	3257244.00	ppb	1.37	
24 Mg	72	3	167.1000	9.315551E+00	2377489.00	ppb	3.93	
27 Al	72	3	333.8000	2.178808E+01	5561222.00	ppb	3.50	
31 P	72	2	14.6400	1.458136E-02	1777.94	ppb	7.52	
39 K	72	3	102.2000	7.199393E+00	1837634.00	ppb	4.77	
44 Ca	72	3	77.8000	1.939703E-01	49496.15	ppb	7.79	
51 V	72	2	1.8720	1.963160E-01	23934.23	ppb	8.77	
52 Cr	72	2	0.3614	1.527258E-01	18618.94	ppb	33.98	
55 Mn	72	2	3.8390	1.910565E-01	23299.27	ppb	2.76	
56 Fe	72	1	285.5000	1.518097E+01	1547306.00	ppb	10.42	
59 Co	72	2	0.1122	7.671499E-03	935.59	ppb	3.36	
60 Ni	72	2	0.9425	1.312309E-02	1600.10	ppb	3.47	
63 Cu	89	2	0.6343	3.038473E-03	3087.00	ppb	3.56	
66 Zn	89	2	3.9040	3.394013E-03	3446.71	ppb	4.44	
75 As	89	2	0.0946	2.386860E-04	242.23	ppb	36.13	
78 Se	89	1	-0.0120	2.152235E-06	3.11	ppb	19.73	
98 Mo	89	3	0.1239	3.713844E-04	762.27	ppb	17.51	
107 Ag	115	3	0.2084	7.725491E-04	1566.80	ppb	6.05	
111 Cd	115	3	-0.0137	2.749406E-06	5.56	ppb	9.49	
121 Sb	115	3	-0.0228	7.510106E-05	152.23	ppb	53.49	
137 Ba	209	3	1.3450	2.045212E-03	4285.21	ppb	7.30	
205 Tl	209	3	-0.0135	5.608321E-05	117.78	ppb	3.33	
208 Pb	209	3	0.1876	2.651854E-03	5559.56	ppb	4.16	
238 U	209	3	0.0479	7.102530E-04	1489.03	ppb	6.73	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1907776	3.30	1871599	101.9	30 - 120	
72 Ge	1	102651	10.23	78194	131.3	30 - 120	IS Fail
72 Ge	2	122037	4.00	105165	116.0	30 - 120	
72 Ge	3	255457	3.64	231040	110.6	30 - 120	
89 Y	1	1453543	13.61	1071043	135.7	30 - 120	IS Fail
89 Y	2	1016807	4.65	858586	118.4	30 - 120	
89 Y	3	2058403	3.89	1808858	113.8	30 - 120	
115 In	3	2030774	3.84	1846597	110.0	30 - 120	
209 Bi	3	2097518	3.59	2022337	103.7	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B06m00.B\005CALB.D\005CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
2 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY SAMPLE USER REPORT FOR EPA 6020A

Inst	: MET26	Lab ID	: 296840-012	Client ID	: HPP-FSS-FB01
Seqnum	: 1018054020100	Matrix	: Water	Acct	: IEECI (MJD)
File	: 18b06m00100	Batch	: 256192	Time	: 06-FEB-2018 20:35
Cal	: 1018054020001	Caldate	: 06-FEB-2018		
IDF	: 1.0			Units	: ug/L

50.00 mL --> 50.0 ml = 1.0 ml/ml PDF

Analyte	Ch	Result	RL	Blank	Flags
Copper	E	0.26 J	1.0	**11**	>ab- B u **b***
Lead	A	ND	1.0	0.23	u

ISTD (ICALBLK 18b06m00005)	Ch	ICALBLK Abund	SAMPLE Abund	%Drift
Bismuth	A	2022337	2040311	0.89
Yttrium	E	858586	999253	16.38

NBB 02/08/18 [Copper E]: Closing ICSAB is passing within client limits of +/-30%. OK per MJD to report with blank contamination (see CAR 12523).

-=low bias >=closing B=method blank contamination ab=ICSAB b=noncompliant u=use

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B06m00.B\100SMPL.D\100SMPL.D#
Date Acquired: Feb 6 2018 08:35 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: 296840-012
Misc Info: 256192
Vial Number: 2203
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 06 2018 01:17 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Fail

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	-0.0075	7.363417E-06	13.33	ppb	44.24	
23 Na	72	2	325.9000	8.297766E+00	993623.88	ppb	2.26	
24 Mg	72	3	5.0660	3.148755E-01	77358.31	ppb	11.12	
27 Al	72	3	1.6150	1.663044E-01	40845.13	ppb	2.15	
31 P	72	2	7.4020	1.146095E-02	1372.33	ppb	4.35	
39 K	72	3	6.1660	2.397285E+00	588758.13	ppb	2.07	
44 Ca	72	3	-20.5600	4.665659E-02	11458.98	ppb	1.77	
51 V	72	2	1.3590	1.735297E-01	20778.65	ppb	1.35	
52 Cr	72	2	-0.5125	1.103208E-01	13210.10	ppb	1.80	
55 Mn	72	2	0.0439	4.587655E-03	549.27	ppb	14.32	
56 Fe	72	1	1.8070	1.413308E-01	13199.73	ppb	1.20	
59 Co	72	2	-0.0128	1.608938E-04	19.26	ppb	4.28	
60 Ni	72	2	-0.0167	2.845998E-04	34.07	ppb	8.95	
63 Cu	89	2	0.2569	1.655985E-03	1654.18	ppb	11.62	
66 Zn	89	2	0.7370	8.288395E-04	828.18	ppb	1.34	
75 As	89	2	0.0783	2.310177E-04	230.89	ppb	43.55	
78 Se	89	1	-0.0160	1.704725E-06	2.22	ppb	91.05	
98 Mo	89	3	0.0434	2.188245E-04	431.13	ppb	53.26	
107 Ag	115	3	-0.0178	3.400967E-05	66.67	ppb	21.15	
111 Cd	115	3	-0.0166	5.656388E-07	1.11	ppb	7.74	
121 Sb	115	3	-0.0418	3.059476E-05	60.00	ppb	5.18	
137 Ba	209	3	-0.7148	6.808740E-05	138.89	ppb	0.93	
205 Tl	209	3	-0.0155	3.920985E-05	80.00	ppb	3.20	
208 Pb	209	3	0.0034	5.289469E-04	1078.95	ppb	184.61	
238 U	209	3	0.0201	3.066228E-04	625.59	ppb	2.99	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1810428	0.25	1871599	96.7	30 - 120	
72 Ge	1	93396	0.13	78194	119.4	30 - 120	
72 Ge	2	119742	0.25	105165	113.9	30 - 120	
72 Ge	3	245595	0.53	231040	106.3	30 - 120	
89 Y	1	1306707	0.38	1071043	122.0	30 - 120	IS Fail
89 Y	2	999253	0.81	858586	116.4	30 - 120	
89 Y	3	1970646	0.18	1808858	108.9	30 - 120	
115 In	3	1960948	0.16	1846597	106.2	30 - 120	
209 Bi	3	2040311	0.31	2022337	100.9	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B06m00.B\005CALB.D\005CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY BLANK USER REPORT FOR 296840 METALS Water
EPA 6020A

Inst : MET26 Lab ID : QC918868
Seqnum : 1018054020025.2 Matrix : Water
File : 18b06m00025 Batch : 256192 Time : 06-FEB-2018 14:21
Cal : 1018054020001 Caldate : 06-FEB-2018
IDF : 1.0 Units : ug/L

50.00 mL --> 50.0 ml = 1.0 ml/ml PDF

Analyte	Ch	Result	RL	Flags
Copper	E	11	1.0	B u **b***
Lead	A	0.23 J	1.0	u

ISTD (ICALBLK 18b06m00005)	Ch	ICALBLK Abund	BLANK Abund	%Drift
Bismuth	A	2022337	1491140	-26.27
Yttrium	E	858586	512867	-40.27

PRW 02/08/18 [Copper E]: Blank hit greater than RL. [general version]

PRW 02/08/18 [Zinc E]: Blank hit greater than 1/2 RL. [general version]

NBB 02/08/18 [Copper E]: OK per MJD to report with blank contamination (see CAR 12523).

B=method blank contamination b=noncompliant u=use

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B06m00.B\025SMPL.D\025SMPL.D#
Date Acquired: Feb 6 2018 02:21 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: qc918868
Misc Info: 256192
Vial Number: 2103
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 06 2018 01:17 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	-0.0045	1.455806E-05	15.56	ppb	89.36	
23 Na	72	2	40.4500	1.225818E+00	74719.35	ppb	13.43	
24 Mg	72	3	6.8500	4.139842E-01	56810.36	ppb	1.20	
27 Al	72	3	0.9622	1.238211E-01	16989.49	ppb	4.50	
31 P	72	2	4.3440	1.014254E-02	621.14	ppb	29.21	
39 K	72	3	0.5892	2.118482E+00	290686.59	ppb	157.74	
44 Ca	72	3	37.7200	1.339412E-01	18377.89	ppb	6.97	
51 V	72	2	-0.8335	7.611755E-02	4628.51	ppb	31.43	
52 Cr	72	2	-0.9047	9.128786E-02	5568.08	ppb	20.62	
55 Mn	72	2	0.0938	7.038378E-03	427.42	ppb	27.47	
56 Fe	72	1	6.0870	3.682408E-01	16225.16	ppb	1.18	
59 Co	72	2	-0.0019	8.151115E-04	48.89	ppb	264.07	
60 Ni	72	2	0.4145	6.056171E-03	371.49	ppb	3.61	
63 Cu	89	2	11.4100	4.252291E-02	21643.99	ppb	11.83	
66 Zn	89	2	7.9050	6.635138E-03	3374.47	ppb	13.66	
75 As	89	2	-0.0960	1.490461E-04	75.56	ppb	59.16	
78 Se	89	1	0.0049	4.076365E-06	2.67	ppb	182.43	
98 Mo	89	3	0.1171	3.584769E-04	384.46	ppb	13.08	
107 Ag	115	3	-0.0065	7.080382E-05	82.23	ppb	51.35	
111 Cd	115	3	-0.0148	1.968018E-06	2.22	ppb	30.30	
121 Sb	115	3	-0.0166	8.946583E-05	103.34	ppb	80.64	
137 Ba	209	3	-0.6718	1.094232E-04	163.34	ppb	1.66	
205 Tl	209	3	-0.0136	5.541035E-05	82.23	ppb	16.54	
208 Pb	209	3	0.2327	3.172097E-03	4729.41	ppb	3.63	
238 U	209	3	-0.0002	1.194892E-05	17.78	ppb	95.24	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1077532	1.86	1871599	57.6	30 - 120	
72 Ge	1	44063	0.73	78194	56.4	30 - 120	
72 Ge	2	61364	9.10	105165	58.3	30 - 120	
72 Ge	3	137247	1.90	231040	59.4	30 - 120	
89 Y	1	654052	0.91	1071043	61.1	30 - 120	
89 Y	2	512867	9.74	858586	59.7	30 - 120	
89 Y	3	1073302	2.52	1808858	59.3	30 - 120	
115 In	3	1160705	2.41	1846597	62.9	30 - 120	
209 Bi	3	1491140	2.06	2022337	73.7	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B06m00.B\005CALB.D\005CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY SPIKE USER REPORT FOR 296840 METALS Water
EPA 6020A

Type : BS
Inst : MET26
Seqnum : 1018054020026.2
File : 18b06m00026
IDF : 1.0
Lab ID : QC918869
Matrix : Water
Batch : 256192
Time : 06-FEB-2018 14:26
Cal : 1018054020001
Units : ug/L

Type : BSD
Inst : MET26
Seqnum : 1018054020027.2
File : 18b06m00027
IDF : 1.0
Lab ID : QC918870
Matrix : Water
Batch : 256192
Time : 06-FEB-2018 14:31
Cal : 1018054020001

BS: 50.00 mL --> 50.0 ml = 1.0 ml/ml PDF
BSD: 50.00 mL --> 50.0 ml = 1.0 ml/ml PDF

Analyte	Spiked	BS	Ch	%Rec	BSD	Ch	%Rec	Limits	RPD	Lim	Flags
Copper	100.0	105.7	E	106	106.1	E	106	61-143	0	31	u
Lead	100.0	95.98	A	96	97.01	A	97	73-128	1	26	u

ISTD (ICALBLK 18b06m00005)	Ch	ICALBLK Abund	BS Abund	%Drift
Bismuth	A	2022337	1394948	-31.02
Yttrium	E	858586	604914	-29.55

ISTD (ICALBLK 18b06m00005)	Ch	ICALBLK Abund	BSD Abund	%Drift
Bismuth	A	2022337	1379529	-31.79
Yttrium	E	858586	607213	-29.28

u=use

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B06m00.B\026SMPL.D\026SMPL.D#
Date Acquired: Feb 6 2018 02:26 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: qc918869
Misc Info: 256192
Vial Number: 2104
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 06 2018 01:17 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	98.6800	2.385691E-01	267054.31	ppb	2.74	
23 Na	72	2	8751.0000	2.170010E+02	15332180.00	ppb	1.28	
24 Mg	72	3	9276.0000	5.153156E+02	71848336.00	ppb	3.26	
27 Al	72	3	9010.0000	5.865666E+02	81779120.00	ppb	3.47	
31 P	72	2	6.5760	1.110454E-02	784.49	ppb	20.06	
39 K	72	3	9212.0000	4.626176E+02	64501168.00	ppb	3.26	
44 Ca	72	3	9273.0000	1.396437E+01	1946991.00	ppb	3.30	
51 V	72	2	91.3800	4.172590E+00	294815.59	ppb	1.14	
52 Cr	72	2	92.2700	4.612611E+00	325903.50	ppb	1.26	
55 Mn	72	2	92.0500	4.524690E+00	319694.09	ppb	1.13	
56 Fe	72	1	9104.0000	4.827518E+02	23987480.00	ppb	7.76	
59 Co	72	2	95.0200	5.706411E+00	403195.31	ppb	0.83	
60 Ni	72	2	97.9100	1.310922E+00	92624.82	ppb	0.91	
63 Cu	89	2	105.7000	3.878512E-01	234591.91	ppb	1.26	
66 Zn	89	2	104.0000	8.443469E-02	51070.54	ppb	1.22	
75 As	89	2	97.3200	4.596952E-02	27804.05	ppb	1.54	
78 Se	89	1	96.5500	1.096019E-02	7993.21	ppb	10.68	
98 Mo	89	3	98.8600	1.875913E-01	209260.59	ppb	5.07	
107 Ag	115	3	99.7400	3.257303E-01	375984.69	ppb	4.80	
111 Cd	115	3	99.0900	7.548140E-02	87121.89	ppb	4.98	
121 Sb	115	3	99.9900	2.340882E-01	270238.50	ppb	4.35	
137 Ba	209	3	88.9300	8.609232E-02	119971.30	ppb	4.14	
205 Tl	209	3	46.8300	4.075217E-01	567923.19	ppb	3.80	
208 Pb	209	3	95.9800	1.106841E+00	1542480.00	ppb	3.83	
238 U	209	3	0.0017	3.912055E-05	54.45	ppb	23.89	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1119955	2.73	1871599	59.8	30 - 120	
72 Ge	1	49876	7.26	78194	63.8	30 - 120	
72 Ge	2	70660	0.92	105165	67.2	30 - 120	
72 Ge	3	139521	3.14	231040	60.4	30 - 120	
89 Y	1	734701	10.34	1071043	68.6	30 - 120	
89 Y	2	604914	1.24	858586	70.5	30 - 120	
89 Y	3	1117228	4.58	1808858	61.8	30 - 120	
115 In	3	1155895	4.39	1846597	62.6	30 - 120	
209 Bi	3	1394948	3.83	2022337	69.0	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B06m00.B\005CALB.D\005CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B06m00.B\027SMPL.D\027SMPL.D#
Date Acquired: Feb 6 2018 02:31 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: qc918870
Misc Info: 256192
Vial Number: 2105
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 06 2018 01:17 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	98.3400	2.377378E-01	270412.91	ppb	1.98	
23 Na	72	2	8918.0000	2.211491E+02	15690830.00	ppb	0.97	
24 Mg	72	3	9538.0000	5.298877E+02	72437408.00	ppb	1.37	
27 Al	72	3	9285.0000	6.044905E+02	82635072.00	ppb	1.48	
31 P	72	2	8.7140	1.202627E-02	853.39	ppb	13.38	
39 K	72	3	9410.0000	4.725180E+02	64594880.00	ppb	1.35	
44 Ca	72	3	9454.0000	1.423522E+01	1945989.00	ppb	1.45	
51 V	72	2	92.0100	4.200961E+00	298069.31	ppb	0.57	
52 Cr	72	2	92.3600	4.616976E+00	327583.09	ppb	0.84	
55 Mn	72	2	92.6800	4.555648E+00	323229.69	ppb	0.97	
56 Fe	72	1	9325.0000	4.944410E+02	24428070.00	ppb	0.21	
59 Co	72	2	95.7300	5.749581E+00	407946.19	ppb	0.65	
60 Ni	72	2	98.1400	1.314025E+00	93233.47	ppb	0.57	
63 Cu	89	2	106.1000	3.892978E-01	236384.91	ppb	0.46	
66 Zn	89	2	105.1000	8.532805E-02	51812.18	ppb	0.93	
75 As	89	2	97.1500	4.589078E-02	27865.28	ppb	0.60	
78 Se	89	1	95.6700	1.086031E-02	8037.91	ppb	0.47	
98 Mo	89	3	99.3100	1.884335E-01	207057.09	ppb	2.65	
107 Ag	115	3	100.5000	3.281537E-01	372078.81	ppb	2.93	
111 Cd	115	3	100.3000	7.637994E-02	86605.68	ppb	2.96	
121 Sb	115	3	99.9400	2.339657E-01	265276.91	ppb	3.07	
137 Ba	209	3	88.6000	8.578010E-02	118312.10	ppb	1.72	
205 Tl	209	3	47.4100	4.125818E-01	569043.69	ppb	1.79	
208 Pb	209	3	97.0100	1.118725E+00	1542899.00	ppb	2.20	
238 U	209	3	0.0021	4.515927E-05	62.22	ppb	18.60	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1137638	1.37	1871599	60.8	30 - 120	
72 Ge	1	49406	0.60	78194	63.2	30 - 120	
72 Ge	2	70954	0.67	105165	67.5	30 - 120	
72 Ge	3	136719	1.27	231040	59.2	30 - 120	
89 Y	1	740110	0.34	1071043	69.1	30 - 120	
89 Y	2	607213	0.36	858586	70.7	30 - 120	
89 Y	3	1099223	2.02	1808858	60.8	30 - 120	
115 In	3	1134397	2.46	1846597	61.4	30 - 120	
209 Bi	3	1379529	1.84	2022337	68.2	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B06m00.B\005CALB.D\005CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY SPIKE USER REPORT FOR 296840 METALS Water
EPA 6020A

Type : MSS	Type : MS	Type : MSD
Inst : MET26	Inst : MET26	Inst : MET26
Seqnum : 1018054020029	Seqnum : 1018054020030.2	Seqnum : 1018054020031.2
File : 18b06m00029	File : 18b06m00030	File : 18b06m00031
IDF : 1.0	IDF : 1.0	IDF : 1.0
Lab ID : 296659-001	Lab ID : QC918871	Lab ID : QC918872
Matrix : Water	Matrix : Water	Matrix : Water
Batch : 256192	Batch : 256192	Batch : 256192
Time : 06-FEB-2018 14:41	Time : 06-FEB-2018 14:46	Time : 06-FEB-2018 14:51
Cal : 1018054020001	Cal : 1018054020001	Cal : 1018054020001
Units : ug/L		

MSS: 50.00 mL --> 50.0 ml = 1.0 ml/ml PDF
MS: 50.00 mL --> 50.0 ml = 1.0 ml/ml PDF
MSD: 50.00 mL --> 50.0 ml = 1.0 ml/ml PDF

Analyte	MSS	Ch	Spiked	MS	Ch	%Rec	MSD	Ch	%Rec	Limits	RPD	Lim	Flags
Copper	34.50	E	100.0	116.8	E	82	116.8	E	82	61-143	0	31	u
Lead	5.958	A	100.0	107.3	A	101	106.7	A	101	73-128	1	26	u

ISTD (ICALBLK 18b06m00005)	Ch	ICALBLK Abund	MS Abund	%Drift
Bismuth	A	2022337	1212072	-40.07
Yttrium	E	858586	665521	-22.49

ISTD (ICALBLK 18b06m00005)	Ch	ICALBLK Abund	MSD Abund	%Drift
Bismuth	A	2022337	1215530	-39.89
Yttrium	E	858586	667594	-22.24

u=use

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B06m00.B\030SMPL.D\030SMPL.D#
Date Acquired: Feb 6 2018 02:46 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: qc918871
Misc Info: 256192
Vial Number: 2109
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 06 2018 01:17 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Fail
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	90.8600	2.196634E-01	272087.41	ppb	0.01	
23 Na	72	2	195200.0000	4.835323E+03	346364100.00	ppb	0.34	>LDR
24 Mg	72	3	23590.0000	1.310358E+03	185214100.00	ppb	0.10	>LDR
27 Al	72	3	10670.0000	6.946105E+02	98179928.00	ppb	0.28	
31 P	72	2	3806.0000	1.649017E+00	118122.40	ppb	0.40	
39 K	72	3	24310.0000	1.217293E+03	172058700.00	ppb	0.30	>LDR
44 Ca	72	3	35640.0000	5.345741E+01	7555929.00	ppb	0.41	>LDR
51 V	72	2	104.7000	4.764276E+00	341275.41	ppb	0.33	
52 Cr	72	2	117.2000	5.821513E+00	417005.69	ppb	0.63	
55 Mn	72	2	167.4000	8.224911E+00	589165.88	ppb	0.53	
56 Fe	72	1	11810.0000	6.259908E+02	31932240.00	ppb	3.22	
59 Co	72	2	102.9000	6.178918E+00	442607.59	ppb	0.64	
60 Ni	72	2	122.4000	1.638556E+00	117373.10	ppb	0.44	
63 Cu	89	2	116.8000	4.284360E-01	285133.41	ppb	0.03	
66 Zn	89	2	519.1000	4.207291E-01	280005.50	ppb	0.27	>LDR
75 As	89	2	89.1800	4.214173E-02	28046.49	ppb	0.66	
78 Se	89	1	82.1200	9.322264E-03	7899.17	ppb	5.01	
98 Mo	89	3	98.7400	1.873492E-01	233499.80	ppb	0.08	
107 Ag	115	3	91.1200	2.975995E-01	350532.19	ppb	0.52	
111 Cd	115	3	91.2000	6.947607E-02	81828.97	ppb	1.57	
121 Sb	115	3	94.9000	2.221754E-01	261693.59	ppb	0.34	
137 Ba	209	3	161.1000	1.553241E-01	188265.91	ppb	0.33	
205 Tl	209	3	49.6700	4.322114E-01	523862.81	ppb	0.55	
208 Pb	209	3	107.3000	1.236949E+00	1499266.00	ppb	0.17	
238 U	209	3	0.2652	3.862253E-03	4680.97	ppb	2.56	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1238656	0.13	1871599	66.2	30 - 120	
72 Ge	1	51040	2.74	78194	65.3	30 - 120	
72 Ge	2	71633	0.38	105165	68.1	30 - 120	
72 Ge	3	141347	0.46	231040	61.2	30 - 120	
89 Y	1	848808	5.21	1071043	79.3	30 - 120	
89 Y	2	665521	0.27	858586	77.5	30 - 120	
89 Y	3	1246332	0.87	1808858	68.9	30 - 120	
115 In	3	1177886	0.90	1846597	63.8	30 - 120	
209 Bi	3	1212072	0.58	2022337	59.9	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B06m00.B\005CALB.D\005CALB.D#

5 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B06m00.B\031SMPL.D\031SMPL.D#
Date Acquired: Feb 6 2018 02:51 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: qc918872
Misc Info: 256192
Vial Number: 2110
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 06 2018 01:17 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Fail
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	90.1800	2.180310E-01	274506.50	ppb	0.71	
23 Na	72	2	195700.0000	4.847319E+03	348999010.00	ppb	0.40	>LDR
24 Mg	72	3	23430.0000	1.301382E+03	187056610.00	ppb	0.17	>LDR
27 Al	72	3	10610.0000	6.909012E+02	99308304.00	ppb	0.33	
31 P	72	2	3833.0000	1.660508E+00	119553.90	ppb	0.49	
39 K	72	3	24090.0000	1.206359E+03	173398400.00	ppb	0.22	>LDR
44 Ca	72	3	35170.0000	5.274460E+01	7581357.00	ppb	0.09	>LDR
51 V	72	2	104.4000	4.752914E+00	342202.19	ppb	0.31	
52 Cr	72	2	113.9000	5.663699E+00	407777.41	ppb	0.22	
55 Mn	72	2	166.1000	8.163405E+00	587752.13	ppb	0.50	
56 Fe	72	1	12140.0000	6.437890E+02	31988480.00	ppb	2.42	
59 Co	72	2	102.9000	6.177082E+00	444740.41	ppb	0.23	
60 Ni	72	2	120.4000	1.611689E+00	116039.10	ppb	0.32	
63 Cu	89	2	116.8000	4.285878E-01	286118.59	ppb	0.42	
66 Zn	89	2	518.6000	4.203346E-01	280611.41	ppb	0.17	>LDR
75 As	89	2	89.4900	4.228903E-02	28231.28	ppb	0.75	
78 Se	89	1	86.7700	9.850784E-03	7800.67	ppb	2.55	
98 Mo	89	3	97.7000	1.853776E-01	234245.50	ppb	0.71	
107 Ag	115	3	90.5600	2.957796E-01	351592.41	ppb	0.69	
111 Cd	115	3	90.8900	6.923882E-02	82304.04	ppb	0.42	
121 Sb	115	3	95.0600	2.225380E-01	264531.19	ppb	0.31	
137 Ba	209	3	161.9000	1.560781E-01	189718.91	ppb	0.35	
205 Tl	209	3	49.4800	4.305422E-01	523339.59	ppb	0.30	
208 Pb	209	3	106.7000	1.230490E+00	1495706.00	ppb	0.36	
238 U	209	3	0.2579	3.756888E-03	4566.47	ppb	1.47	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1259045	0.56	1871599	67.3	30 - 120	
72 Ge	1	49712	3.01	78194	63.6	30 - 120	
72 Ge	2	71998	0.05	105165	68.5	30 - 120	
72 Ge	3	143737	0.37	231040	62.2	30 - 120	
89 Y	1	792235	2.74	1071043	74.0	30 - 120	
89 Y	2	667594	0.52	858586	77.8	30 - 120	
89 Y	3	1263617	0.51	1808858	69.9	30 - 120	
115 In	3	1188696	0.24	1846597	64.4	30 - 120	
209 Bi	3	1215530	0.31	2022337	60.1	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B06m00.B\005CALB.D\005CALB.D#

5 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY SERIAL DILUTION FOR 296840 METALS Water
EPA 6020A

Type	: MSS	Type	: SER
Inst	: MET26	Inst	: MET26
Seqnum	: 1018054020029	Seqnum	: 1018054020106.1
File	: 18b06m00029	File	: 18b06m00106
IDF	: 1.0	IDF	: 5.0
Lab ID	: 296659-001	Lab ID	: QC918873
Matrix	: Water	Matrix	: Water
Batch	: 256192	Batch	: 256192
Time	: 06-FEB-2018 14:41	Time	: 06-FEB-2018 21:05
Cal	: 1018054020001	Cal	: 1018054020001
Units	: ug/L		

MSS: 50.00 mL --> 50.0 ml = 1.0 ml/ml PDF
SER: 50.00 mL --> 50.0 ml = 1.0 ml/ml PDF

Analyte	MSS	Ch	RL	SER	Ch	RL	%D	Lim	Flags
Copper	34.50	E	1.000	38.55	E	2.551	**12***	10	>ab- u **b***
Lead	5.958	A	1.000	5.940	A	2.500	0	10	u

ISTD (ICALBLK 18b06m00005)	Ch	ICALBLK Abund	SER Abund	%Drift
Bismuth	A	2022337	1758658	-13.04
Yttrium	E	858586	922009	7.39

NBB 02/08/18 [Copper E]: Reporting SER with low closing ICSAB bias (MS/MSD/PDS are passing within limits).

-=low bias >=closing ab=ICSAB b=noncompliant u=use

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B06m00.B\106SMPL.D\106SMPL.D#
Date Acquired: Feb 6 2018 09:05 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: qc918873
Misc Info: 256192
Vial Number: 2111
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 06 2018 01:17 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

Data Results:
Analytes: Fail
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	-0.0033	1.743700E-05	26.67	ppb	20.44	
23 Na	72	2	34780.0000	8.618697E+02	90060352.00	ppb	0.70	>LDR
24 Mg	72	3	2527.0000	1.404063E+02	30310170.00	ppb	3.21	
27 Al	72	3	153.0000	1.002386E+01	2163806.00	ppb	3.43	
31 P	72	2	811.8000	3.582254E-01	37430.18	ppb	1.71	
39 K	72	3	2716.0000	1.378432E+02	29758170.00	ppb	3.06	
44 Ca	72	3	4788.0000	7.248030E+00	1564742.00	ppb	3.04	
51 V	72	2	1.3320	1.723078E-01	18004.86	ppb	2.95	
52 Cr	72	2	2.6920	2.657892E-01	27774.61	ppb	0.13	
55 Mn	72	2	13.0400	6.430218E-01	67192.70	ppb	0.81	
56 Fe	72	1	359.3000	1.909445E+01	1551923.00	ppb	0.36	
59 Co	72	2	0.3191	2.009132E-02	2099.05	ppb	4.72	
60 Ni	72	2	4.6100	6.220636E-02	6500.67	ppb	0.48	
63 Cu	89	2	7.7090	2.895194E-02	26694.01	ppb	0.47	
66 Zn	89	2	104.0000	8.445135E-02	77864.56	ppb	0.24	
75 As	89	2	0.1600	2.694635E-04	248.45	ppb	7.61	
78 Se	89	1	0.0549	9.747468E-06	11.33	ppb	51.04	
98 Mo	89	3	0.7215	1.504513E-03	2634.76	ppb	9.59	
107 Ag	115	3	-0.0156	4.124422E-05	71.11	ppb	10.10	
111 Cd	115	3	0.3001	2.418209E-04	413.35	ppb	11.37	
121 Sb	115	3	0.1219	4.137079E-04	708.93	ppb	5.54	
137 Ba	209	3	10.6000	1.092490E-02	19179.72	ppb	5.70	
205 Tl	209	3	-0.0159	3.518190E-05	61.11	ppb	9.51	
208 Pb	209	3	1.1880	1.418845E-02	24919.60	ppb	4.37	
238 U	209	3	0.0538	7.958874E-04	1396.79	ppb	6.63	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1526461	3.39	1871599	81.6	30 - 120	
72 Ge	1	81276	0.35	78194	103.9	30 - 120	
72 Ge	2	104499	0.95	105165	99.4	30 - 120	
72 Ge	3	216024	3.24	231040	93.5	30 - 120	
89 Y	1	1162444	0.29	1071043	108.5	30 - 120	
89 Y	2	922009	0.38	858586	107.4	30 - 120	
89 Y	3	1756516	5.80	1808858	97.1	30 - 120	
115 In	3	1716026	5.75	1846597	92.9	30 - 120	
209 Bi	3	1758658	4.92	2022337	87.0	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B06m00.B\005CALB.D\005CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY POST DIGEST SPIKE USER REPORT FOR 296840 METALS Water
EPA 6020A

Type	: MSS	Type	: PDS
Inst	: MET26	Inst	: MET26
Seqnum	: 1018054020029	Seqnum	: 1018054020107.1
File	: 18b06m00029	File	: 18b06m00107
IDF	: 1.0	IDF	: 1.0
Lab ID	: 296659-001	Lab ID	: QC918874
Matrix	: Water	Matrix	: Water
Batch	: 256192	Batch	: 256192
Time	: 06-FEB-2018 14:41	Time	: 06-FEB-2018 21:10
Cal	: 1018054020001	Cal	: 1018054020001
Units	: ug/L		

MSS: 50.00 mL --> 50.0 ml = 1.0 ml/ml PDF
PDS: 50.00 mL --> 50.0 ml = 1.0 ml/ml PDF

PDS standards: S35396, S34361 (200X), S34362 (200X), S34743 (200X)

Analyte	MSS	Ch	Spiked	PDS	Ch	%Rec	Limits	Flags
Copper	34.50	E	50.00	82.35	E	96	80-120	>ab- u **b***
Lead	5.958	A	50.00	63.17	A	114	80-120	u

ISTD (ICALBLK 18b06m00005)	Ch	ICALBLK Abund	PDS Abund	%Drift
Bismuth	A	2022337	1557121	-23.00
Yttrium	E	858586	928761	8.17

NBB 02/08/18 [Copper E]: Closing ICSAB is passing within client limits of +/-30%. Regardless, PDS is passing within limits despite low closing ICSAB bias.

-=low bias >=closing ab=ICSAB b=noncompliant u=use

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B06m00.B\107SMPL.D\107SMPL.D#
Date Acquired: Feb 6 2018 09:10 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: qc918874
Misc Info: 256192
Vial Number: 2112
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 06 2018 01:17 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Fail
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	53.7400	1.299362E-01	200379.50	ppb	0.27	
23 Na	72	2	185300.0000	4.589881E+03	450721310.00	ppb	0.77	>LDR
24 Mg	72	3	17640.0000	9.799557E+02	198751100.00	ppb	0.63	
27 Al	72	3	6169.0000	4.016451E+02	81460224.00	ppb	0.65	
31 P	72	2	9327.0000	4.028700E+00	395617.59	ppb	0.51	
39 K	72	3	19250.0000	9.645145E+02	195619700.00	ppb	0.64	
44 Ca	72	3	29890.0000	4.484611E+01	9095474.00	ppb	0.81	>LDR
51 V	72	2	60.8800	2.817833E+00	276712.19	ppb	0.40	
52 Cr	72	2	71.9600	3.626987E+00	356172.50	ppb	0.31	
55 Mn	72	2	121.8000	5.988862E+00	588108.81	ppb	0.33	
56 Fe	72	1	7114.0000	3.772479E+02	29814860.00	ppb	4.68	
59 Co	72	2	58.7800	3.530625E+00	346708.31	ppb	0.41	
60 Ni	72	2	78.2700	1.048030E+00	102916.90	ppb	0.51	
63 Cu	89	2	82.3500	3.023493E-01	280805.69	ppb	0.32	
66 Zn	89	2	461.9000	3.744024E-01	347726.50	ppb	0.22	>LDR
75 As	89	2	50.4600	2.393038E-02	22224.86	ppb	0.87	
78 Se	89	1	47.7200	5.418446E-03	6750.61	ppb	6.13	
98 Mo	89	3	49.5000	9.399667E-02	172757.20	ppb	0.96	
107 Ag	115	3	43.3700	1.416983E-01	238140.30	ppb	0.27	
111 Cd	115	3	51.4100	3.916817E-02	65822.34	ppb	1.20	
121 Sb	115	3	45.3400	1.062080E-01	178500.30	ppb	0.25	
137 Ba	209	3	124.9000	1.206533E-01	187876.09	ppb	0.61	
205 Tl	209	3	28.3800	2.470612E-01	384699.91	ppb	0.25	
208 Pb	209	3	63.1700	7.286897E-01	1134639.00	ppb	0.45	
238 U	209	3	61.1400	8.871811E-01	1381432.00	ppb	0.27	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1542159	0.87	1871599	82.4	30 - 120	
72 Ge	1	79150	4.78	78194	101.2	30 - 120	
72 Ge	2	98202	0.54	105165	93.4	30 - 120	
72 Ge	3	202824	0.96	231040	87.8	30 - 120	
89 Y	1	1249439	7.03	1071043	116.7	30 - 120	
89 Y	2	928761	0.80	858586	108.2	30 - 120	
89 Y	3	1837974	1.03	1808858	101.6	30 - 120	
115 In	3	1680642	1.14	1846597	91.0	30 - 120	
209 Bi	3	1557121	0.68	2022337	77.0	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B06m00.B\005CALB.D\005CALB.D#

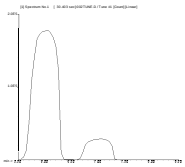
3 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

MET26 QC Tune Report

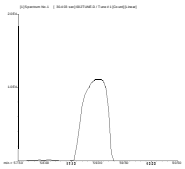
Data File: C:\ICPCHEM\1\DATA\18B06m00.B\002TUNE.D
Date Acquired: Feb 6 2018 12:25 pm
Acq. Method: TN6020K.M
Operator:
Sample Name: tun,s35482
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\TN6020K.M

RSD (%)

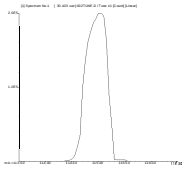
Element	Rep1	Rep2	Rep3	Rep4	Rep5	Actual	Required	Flag
7 Li	146578	149475	150197	151034	151284	1.54	5.00	
59 Co	58060	57855	57869	58289	58196	0.45	5.00	
115 In	946053	976509	957437	959759	959499	1.23	5.00	
205 Tl	74737	74568	74332	74853	74361	0.85	5.00	



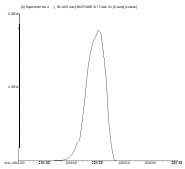
7 Li
Mass Calib.
Actual: 7.00
Required: 6.90 - 7.10
Flag:
Peak Width @ 5%
Actual: 0.60
Required: 0.75
Flag:



59 Co
Mass Calib.
Actual: 59.00
Required: 58.90 - 59.10
Flag:
Peak Width @ 5%
Actual: 0.65
Required: 0.75
Flag:



115 In
Mass Calib.
Actual: 115.00
Required: 114.90 - 115.10
Flag:
Peak Width @ 5%
Actual: 0.65
Required: 0.75
Flag:



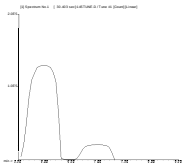
205 Tl
Mass Calib.
Actual: 204.95
Required: 204.90 - 205.10
Flag:
Peak Width @ 5%
Actual: 0.65
Required: 0.75
Flag:

MET26 QC Tune Report

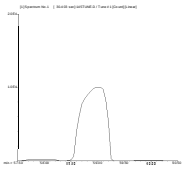
Data File: C:\ICPCHEM\1\DATA\18B06m00.B\145TUNE.D
Date Acquired: Feb 7 2018 12:19 am
Acq. Method: TN6020K.M
Operator:
Sample Name: tun,s35482
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\TN6020K.M

RSD (%)

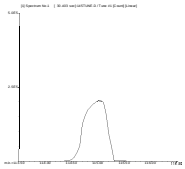
Element	Rep1	Rep2	Rep3	Rep4	Rep5	Actual	Required	Flag
7 Li	118516	116936	116228	115509	115257	1.09	5.00	
59 Co	55226	54383	54037	53811	53562	0.80	5.00	
115 In	1025924	1006527	990428	993347	992668	1.57	5.00	
205 Tl	72626	71567	71419	71597	70900	1.16	5.00	



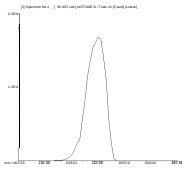
7 Li
Mass Calib.
Actual: 6.95
Required: 6.90 - 7.10
Flag:
Peak Width @ 5%
Actual: 0.65
Required: 0.75
Flag:



59 Co
Mass Calib.
Actual: 59.00
Required: 58.90 - 59.10
Flag:
Peak Width @ 5%
Actual: 0.60
Required: 0.75
Flag:



115 In
Mass Calib.
Actual: 115.00
Required: 114.90 - 115.10
Flag:
Peak Width @ 5%
Actual: 0.65
Required: 0.75
Flag:



205 Tl
Mass Calib.
Actual: 205.00
Required: 204.90 - 205.10
Flag:
Peak Width @ 5%
Actual: 0.65
Required: 0.75
Flag:

ENTHALPY INITIAL CALIBRATION FOR 296840 METALS Water: EPA 6020A

Inst : MET26
Calnum : 1018054020001
Units : ug/L

Date : 06-FEB-2018 12:39
X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	18b06m00006	1018054020006		06-FEB-2018 12:44	S35696 (400X), S35396
L2	18b06m00007	1018054020007		06-FEB-2018 12:49	S35696 (200X), S35396
L3	18b06m00008	1018054020008		06-FEB-2018 12:54	S35696 (40X), S35396
L4	18b06m00009	1018054020009		06-FEB-2018 12:58	S35696 (20X), S35396
L5	18b06m00010	1018054020010		06-FEB-2018 13:03	S35696 (4X), S35396
L6	18b06m00011	1018054020011		06-FEB-2018 13:08	S35696 (2X), S35396
L7	18b06m00012	1018054020012		06-FEB-2018 13:13	S35696, S35396

Analyte	Ch	L1	L2	L3	L4	L5	L6	L7	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	Flg
Lead	A	0.0121	0.0117	0.0115	0.0112	0.0113	0.0114	0.0116	BLNK	-0.0425	86.7513		0.0115	1.000	0.995	
Copper	E	0.0055	0.0053	0.0043	0.0041	0.0041	0.0038	0.0036	BLNK	-0.1952	273.021		0.0044	0.998	0.995	

Spiked Amounts / Drifts	Ch	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D	L6	%D	L7	%D
Lead	A	0.5000	-3	1.0000	-2	5.0000	-2	10.000	-3	50.000	-2	100.00	-1	200.00	0
Copper	E	0.5000	11	1.0000	**25**	5.0000	13	10.000	11	50.000	11	100.00	3	200.00	-2

Instrument amount = a0 + response * a1 + response^2 * a2; BLNK=Y=aX+[blank]

ENTHALPY 2ND SOURCE CALIBRATION SUMMARY FOR 296840 METALS Water
EPA 6020A

Inst : MET26
Calnum : 1018054020001 Cal Date : 06-FEB-2018

ICV 1018054020016 (18b06m00016 06-FEB-2018) stds: S35929, S35396

Analyte	Ch	Spiked	Quant	Units	%D	Max	Flags
Lead	A	50.00	47.63	ug/L	-5	10	
Copper	E	50.00	50.52	ug/L	1	10	

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B06m00.B\005CALB.D\005CALB.D#
Date Acquired: Feb 6 2018 12:39 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: calblank
Misc Info:
Vial Number: 1301
Current Method: C:\ICPCHEM\1\DATA\18B06m00.B\6020newj.M
Calibration File: C:\ICPCHEM\1\DATA\18B06m00.B\6020newj.C
Last Cal. Update: Feb 06 2018 01:17 pm
Sample Type: CalBlk
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	0.0000	2.550573E-05	47.78	ppb	1109900000.00	
23 Na	72	2	0.0000	2.237794E-01	23486.89	ppb	1184800000.00	
24 Mg	72	3	0.0000	3.347871E-02	7734.34	ppb	42364000.00	
27 Al	72	3	0.0000	6.118329E-02	14133.32	ppb	54814000.00	
31 P	72	2	0.0000	8.270034E-03	868.94	ppb	83497000.00	
39 K	72	3	0.0000	2.089028E+00	482608.69	ppb	114710000.00	
44 Ca	72	3	0.0000	7.745677E-02	17893.03	ppb	65590000.00	
51 V	72	2	0.0000	1.131485E-01	11882.35	ppb	1036600000.00	
52 Cr	72	2	0.0000	1.351897E-01	14190.97	ppb	103060000.00	
55 Mn	72	2	0.0000	2.431612E-03	255.56	ppb	288870000.00	
56 Fe	72	1	0.0000	4.552977E-02	3559.70	ppb	88343000.00	
59 Co	72	2	0.0000	9.321422E-04	97.78	ppb	5207000000.00	
60 Ni	72	2	0.0000	5.087662E-04	53.33	ppb	1079800000.00	
63 Cu	89	2	0.0000	7.150129E-04	612.61	ppb	365890000.00	
66 Zn	89	2	0.0000	2.318501E-04	198.15	ppb	344050000.00	
75 As	89	2	0.0000	1.941881E-04	166.45	ppb	796860000.00	
78 Se	89	1	0.0000	3.517768E-06	3.78	ppb	656360000.00	
98 Mo	89	3	0.0000	1.365116E-04	246.68	ppb	1330900000.00	
107 Ag	115	3	0.0000	9.218248E-05	170.01	ppb	2697900000.00	
111 Cd	115	3	0.0000	1.321920E-05	24.45	ppb	6204100000.00	
121 Sb	115	3	0.0000	1.283834E-04	236.68	ppb	499580000.00	
137 Ba	209	3	0.0000	7.541061E-04	1522.36	ppb	532300000.00	
205 Tl	209	3	0.0000	1.737019E-04	351.13	ppb	568330000.00	
208 Pb	209	3	0.0000	4.895470E-04	990.06	ppb	17330000.00	
238 U	209	3	0.0000	1.481566E-05	30.00	ppb	1139200000.00	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1871599	0.94	1871599	100.0	80 - 120	
72 Ge	1	78194	0.67	78194	100.0	80 - 120	
72 Ge	2	105165	4.69	105165	100.0	80 - 120	
72 Ge	3	231040	0.93	231040	100.0	80 - 120	
89 Y	1	1071043	1.33	1071043	100.0	80 - 120	
89 Y	2	858586	5.44	858586	100.0	80 - 120	
89 Y	3	1808858	1.20	1808858	100.0	80 - 120	
115 In	3	1846597	1.19	1846597	100.0	80 - 120	
209 Bi	3	2022337	1.22	2022337	100.0	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : ---

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B06m00.B\006CALS.D\006CALS.D#
Date Acquired: Feb 6 2018 12:44 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: s35696,400x
Misc Info:
Vial Number: 1101
Current Method: C:\ICPCHEM\1\DATA\18B06m00.B\6020newj.M
Calibration File: C:\ICPCHEM\1\DATA\18B06m00.B\6020newj.C
Last Cal. Update: Feb 06 2018 01:17 pm
Sample Type: CalStd
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	0.5233	1.290478E-03	2441.37	ppb	6.47	
23 Na	72	2	51.0800	1.489052E+00	162305.09	ppb	1.06	
24 Mg	72	3	50.3500	2.830745E+00	663114.69	ppb	0.51	
27 Al	72	3	50.1600	3.326593E+00	779273.19	ppb	0.39	
31 P	72	2	50.1200	2.987354E-02	3255.99	ppb	3.49	
39 K	72	3	52.0000	4.688665E+00	1098355.00	ppb	0.61	
44 Ca	72	3	49.3200	1.513239E-01	35448.45	ppb	2.09	
51 V	72	2	0.4695	1.340083E-01	14606.89	ppb	7.27	
52 Cr	72	2	0.5056	1.597248E-01	17409.37	ppb	10.12	
55 Mn	72	2	0.5162	2.779132E-02	3028.84	ppb	4.40	
56 Fe	72	1	52.3900	2.823113E+00	224415.91	ppb	1.17	
59 Co	72	2	0.5211	3.222361E-02	3512.28	ppb	2.03	
60 Ni	72	2	0.5597	7.999170E-03	871.89	ppb	1.43	
63 Cu	89	2	0.5571	2.755504E-03	2481.71	ppb	4.72	
66 Zn	89	2	0.7746	8.592747E-04	773.73	ppb	10.73	
75 As	89	2	0.5172	4.374780E-04	394.01	ppb	5.08	
78 Se	89	1	0.5483	6.573881E-05	71.33	ppb	9.04	
98 Mo	89	3	0.5107	1.104836E-03	2011.31	ppb	1.66	
107 Ag	115	3	0.5657	1.939214E-03	3594.99	ppb	3.76	
111 Cd	115	3	0.5550	4.359086E-04	807.83	ppb	5.22	
121 Sb	115	3	0.4798	1.251092E-03	2319.15	ppb	3.30	
137 Ba	209	3	0.2615	1.005102E-03	2034.66	ppb	40.19	
205 Tl	209	3	0.2322	2.193510E-03	4441.96	ppb	4.11	
208 Pb	209	3	0.4843	6.071759E-03	12294.86	ppb	2.88	
238 U	209	3	0.4421	6.429780E-03	13018.78	ppb	1.69	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1891755	0.45	1871599	101.1	80 - 120	
72 Ge	1	79496	0.58	78194	101.7	80 - 120	
72 Ge	2	109003	0.62	105165	103.6	80 - 120	
72 Ge	3	234257	0.30	231040	101.4	80 - 120	
89 Y	1	1084897	0.82	1071043	101.3	80 - 120	
89 Y	2	900691	1.07	858586	104.9	80 - 120	
89 Y	3	1820560	0.54	1808858	100.6	80 - 120	
115 In	3	1853606	0.73	1846597	100.4	80 - 120	
209 Bi	3	2024845	0.40	2022337	100.1	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B06m00.B\005CALB.D\005CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B06m00.B\007CALS.D\007CALS.D#
Date Acquired: Feb 6 2018 12:49 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: s35696,200x
Misc Info:
Vial Number: 1102
Current Method: C:\ICPCHEM\1\DATA\18B06m00.B\6020newj.M
Calibration File: C:\ICPCHEM\1\DATA\18B06m00.B\6020newj.C
Last Cal. Update: Feb 06 2018 01:17 pm
Sample Type: CalStd
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	1.0310	2.518796E-03	4821.98	ppb	5.68	
23 Na	72	2	107.3000	2.882391E+00	295806.81	ppb	14.92	
24 Mg	72	3	101.2000	5.654070E+00	1332087.00	ppb	3.83	
27 Al	72	3	98.8500	6.495971E+00	1530369.00	ppb	4.04	
31 P	72	2	112.3000	5.669940E-02	5822.37	ppb	15.32	
39 K	72	3	101.8000	7.178313E+00	1691308.00	ppb	4.97	
44 Ca	72	3	99.5300	2.265099E-01	53365.52	ppb	5.81	
51 V	72	2	1.1760	1.654023E-01	16985.58	ppb	41.27	
52 Cr	72	2	1.3370	2.000719E-01	20528.68	ppb	42.98	
55 Mn	72	2	1.1260	5.773261E-02	5920.80	ppb	15.19	
56 Fe	72	1	102.3000	5.471574E+00	441462.81	ppb	1.94	
59 Co	72	2	1.1260	6.852453E-02	7034.61	ppb	13.56	
60 Ni	72	2	1.1180	1.547412E-02	1589.73	ppb	13.09	
63 Cu	89	2	1.2480	5.287583E-03	4307.67	ppb	21.20	
66 Zn	89	2	1.2670	1.258150E-03	1024.12	ppb	24.48	
75 As	89	2	1.1430	7.317246E-04	596.46	ppb	24.61	
78 Se	89	1	1.0630	1.241897E-04	138.22	ppb	15.01	
98 Mo	89	3	0.9957	2.024451E-03	3636.11	ppb	11.74	
107 Ag	115	3	1.1140	3.729515E-03	6823.99	ppb	8.58	
111 Cd	115	3	1.0850	8.394195E-04	1534.58	ppb	11.44	
121 Sb	115	3	1.0210	2.516189E-03	4607.52	ppb	5.81	
137 Ba	209	3	0.5363	1.268720E-03	2554.76	ppb	5.35	
205 Tl	209	3	0.4736	4.293316E-03	8626.26	ppb	6.11	
208 Pb	209	3	0.9758	1.173772E-02	23578.72	ppb	6.76	
238 U	209	3	0.9038	1.312864E-02	26382.66	ppb	5.20	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1915843	2.87	1871599	102.4	80 - 120	
72 Ge	1	80702	1.81	78194	103.2	80 - 120	
72 Ge	2	103924	13.65	105165	98.8	80 - 120	
72 Ge	3	235808	3.52	231040	102.1	80 - 120	
89 Y	1	1114520	1.83	1071043	104.1	80 - 120	
89 Y	2	833454	18.45	858586	97.1	80 - 120	
89 Y	3	1803707	5.79	1808858	99.7	80 - 120	
115 In	3	1834640	5.38	1846597	99.4	80 - 120	
209 Bi	3	2012468	4.22	2022337	99.5	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B06m00.B\005CALB.D\005CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B06m00.B\008CALS.D\008CALS.D#
Date Acquired: Feb 6 2018 12:54 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: s35696,40x
Misc Info:
Vial Number: 1103
Current Method: C:\ICPCHEM\1\DATA\18B06m00.B\6020newj.M
Calibration File: C:\ICPCHEM\1\DATA\18B06m00.B\6020newj.C
Last Cal. Update: Feb 06 2018 01:17 pm
Sample Type: CalStd
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	5.1430	1.245866E-02	24117.37	ppb	1.78	
23 Na	72	2	490.8000	1.238139E+01	1391613.00	ppb	0.69	
24 Mg	72	3	511.0000	2.841837E+01	6668961.00	ppb	3.42	
27 Al	72	3	501.7000	3.272311E+01	7679213.00	ppb	3.40	
31 P	72	2	492.1000	2.204123E-01	24772.06	ppb	1.80	
39 K	72	3	507.2000	2.744173E+01	6439607.00	ppb	3.83	
44 Ca	72	3	501.3000	8.282238E-01	194340.80	ppb	4.28	
51 V	72	2	4.6180	3.183077E-01	35775.48	ppb	1.81	
52 Cr	72	2	4.9810	3.768839E-01	42359.94	ppb	1.51	
55 Mn	72	2	5.1340	2.546729E-01	28623.25	ppb	1.14	
56 Fe	72	1	492.8000	2.617342E+01	2151626.00	ppb	3.52	
59 Co	72	2	5.1130	3.079509E-01	34610.53	ppb	1.46	
60 Ni	72	2	5.3170	7.167267E-02	8055.85	ppb	0.37	
63 Cu	89	2	5.6360	2.135733E-02	19528.65	ppb	1.38	
66 Zn	89	2	5.6280	4.790950E-03	4380.66	ppb	1.15	
75 As	89	2	5.3100	2.691721E-03	2461.32	ppb	2.24	
78 Se	89	1	5.3150	6.066353E-04	686.91	ppb	5.41	
98 Mo	89	3	5.0550	9.720350E-03	17562.87	ppb	3.46	
107 Ag	115	3	5.5610	1.824963E-02	33463.37	ppb	2.73	
111 Cd	115	3	5.5340	4.228315E-03	7750.02	ppb	4.41	
121 Sb	115	3	5.0290	1.189417E-02	21802.01	ppb	4.18	
137 Ba	209	3	4.4840	5.057526E-03	10005.94	ppb	7.46	
205 Tl	209	3	2.4050	2.109625E-02	41756.93	ppb	4.45	
208 Pb	209	3	4.9250	5.726057E-02	113371.40	ppb	2.99	
238 U	209	3	4.5380	6.586900E-02	130392.10	ppb	3.68	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1936476	3.00	1871599	103.5	80 - 120	
72 Ge	1	82265	3.09	78194	105.2	80 - 120	
72 Ge	2	112401	0.99	105165	106.9	80 - 120	
72 Ge	3	234845	3.26	231040	101.6	80 - 120	
89 Y	1	1134272	4.80	1071043	105.9	80 - 120	
89 Y	2	914425	0.96	858586	106.5	80 - 120	
89 Y	3	1808235	3.53	1808858	100.0	80 - 120	
115 In	3	1834799	3.56	1846597	99.4	80 - 120	
209 Bi	3	1981228	3.42	2022337	98.0	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B06m00.B\005CALB.D\005CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B06m00.B\009CALS.D\009CALS.D#
Date Acquired: Feb 6 2018 12:58 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: s35696,20x
Misc Info:
Vial Number: 1104
Current Method: C:\ICPCHEM\1\DATA\18B06m00.B\6020newj.M
Calibration File: C:\ICPCHEM\1\DATA\18B06m00.B\6020newj.C
Last Cal. Update: Feb 06 2018 01:17 pm
Sample Type: CalStd
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	10.1700	2.461184E-02	49034.86	ppb	4.89	
23 Na	72	2	967.9000	2.419911E+01	2761648.00	ppb	2.38	
24 Mg	72	3	996.9000	5.541344E+01	13354160.00	ppb	4.86	
27 Al	72	3	981.5000	6.395345E+01	15412970.00	ppb	4.70	
31 P	72	2	979.6000	4.305594E-01	49139.86	ppb	1.78	
39 K	72	3	997.1000	5.193466E+01	12516990.00	ppb	4.74	
44 Ca	72	3	992.1000	1.563152E+00	376738.00	ppb	4.84	
51 V	72	2	9.2040	5.220316E-01	59574.48	ppb	3.11	
52 Cr	72	2	9.8330	6.123109E-01	69878.09	ppb	3.10	
55 Mn	72	2	10.0300	4.951587E-01	56511.33	ppb	1.93	
56 Fe	72	1	970.6000	5.150733E+01	4299351.00	ppb	0.28	
59 Co	72	2	10.1500	6.104893E-01	69668.94	ppb	2.49	
60 Ni	72	2	10.3800	1.394451E-01	15913.02	ppb	3.78	
63 Cu	89	2	11.1100	4.139196E-02	38301.07	ppb	2.53	
66 Zn	89	2	11.5800	9.610246E-03	8891.51	ppb	3.35	
75 As	89	2	10.4500	5.108027E-03	4726.75	ppb	2.63	
78 Se	89	1	10.7700	1.225665E-03	1417.19	ppb	2.59	
98 Mo	89	3	9.9590	1.902005E-02	35447.68	ppb	6.24	
107 Ag	115	3	10.7800	3.528881E-02	65978.99	ppb	7.17	
111 Cd	115	3	10.5100	8.017709E-03	15002.35	ppb	5.92	
121 Sb	115	3	9.9820	2.348418E-02	43958.85	ppb	4.53	
137 Ba	209	3	9.3660	9.742300E-03	19280.91	ppb	5.22	
205 Tl	209	3	4.6600	4.070690E-02	80544.33	ppb	5.40	
208 Pb	209	3	9.6840	1.121188E-01	221869.30	ppb	5.01	
238 U	209	3	8.7850	1.274909E-01	252258.59	ppb	5.33	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1995343	4.64	1871599	106.6	80 - 120	
72 Ge	1	83471	0.44	78194	106.7	80 - 120	
72 Ge	2	114155	1.86	105165	108.5	80 - 120	
72 Ge	3	241343	4.50	231040	104.5	80 - 120	
89 Y	1	1156423	0.91	1071043	108.0	80 - 120	
89 Y	2	925684	2.34	858586	107.8	80 - 120	
89 Y	3	1868733	6.53	1808858	103.3	80 - 120	
115 In	3	1875492	6.50	1846597	101.6	80 - 120	
209 Bi	3	1982298	5.20	2022337	98.0	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B06m00.B\005CALB.D\005CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B06m00.B\010CALS.D\010CALS.D#
Date Acquired: Feb 6 2018 01:03 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: s35696,4x
Misc Info:
Vial Number: 1105
Current Method: C:\ICPCHEM\1\DATA\18B06m00.B\6020newj.M
Calibration File: C:\ICPCHEM\1\DATA\18B06m00.B\6020newj.C
Last Cal. Update: Feb 06 2018 01:17 pm
Sample Type: CalStd
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	50.6700	1.225253E-01	229072.70	ppb	3.00	
23 Na	72	2	5055.0000	1.254469E+02	13233910.00	ppb	2.12	
24 Mg	72	3	5024.0000	2.791391E+02	62518688.00	ppb	3.51	
27 Al	72	3	4960.0000	3.229371E+02	72326592.00	ppb	3.61	
31 P	72	2	5089.0000	2.201911E+00	232286.50	ppb	2.14	
39 K	72	3	5020.0000	2.530505E+02	56674128.00	ppb	3.67	
44 Ca	72	3	5051.0000	7.641510E+00	1711493.00	ppb	3.49	
51 V	72	2	50.0600	2.337285E+00	246558.50	ppb	2.71	
52 Cr	72	2	51.4000	2.629202E+00	277359.31	ppb	2.62	
55 Mn	72	2	51.5700	2.536188E+00	267553.81	ppb	2.14	
56 Fe	72	1	4944.0000	2.622036E+02	21106370.00	ppb	0.60	
59 Co	72	2	52.0000	3.123424E+00	329501.69	ppb	2.32	
60 Ni	72	2	52.8600	7.079958E-01	74690.64	ppb	2.03	
63 Cu	89	2	55.6100	2.044118E-01	176454.70	ppb	3.54	
66 Zn	89	2	56.8000	4.623959E-02	39915.18	ppb	3.53	
75 As	89	2	53.7800	2.549295E-02	22007.23	ppb	3.20	
78 Se	89	1	53.0200	6.020039E-03	6740.17	ppb	0.86	
98 Mo	89	3	49.4500	9.390462E-02	165979.50	ppb	3.01	
107 Ag	115	3	52.4100	1.712019E-01	298745.81	ppb	3.19	
111 Cd	115	3	51.5700	3.929089E-02	68552.11	ppb	4.12	
121 Sb	115	3	49.9500	1.170011E-01	204187.09	ppb	2.51	
137 Ba	209	3	49.7900	4.853061E-02	89176.64	ppb	2.54	
205 Tl	209	3	24.1000	2.098417E-01	385553.59	ppb	2.89	
208 Pb	209	3	49.0500	5.658624E-01	1039659.00	ppb	3.08	
238 U	209	3	47.3000	6.863788E-01	1261038.00	ppb	3.29	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1870650	2.83	1871599	99.9	80 - 120	
72 Ge	1	80498	0.71	78194	102.9	80 - 120	
72 Ge	2	105519	1.79	105165	100.3	80 - 120	
72 Ge	3	224139	3.22	231040	97.0	80 - 120	
89 Y	1	1119618	0.10	1071043	104.5	80 - 120	
89 Y	2	863738	2.59	858586	100.6	80 - 120	
89 Y	3	1768379	2.40	1808858	97.8	80 - 120	
115 In	3	1745858	2.35	1846597	94.5	80 - 120	
209 Bi	3	1838237	2.49	2022337	90.9	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B06m00.B\005CALB.D\005CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B06m00.B\011CALS.D\011CALS.D#
Date Acquired: Feb 6 2018 01:08 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: s35696,2x
Misc Info:
Vial Number: 1106
Current Method: C:\ICPCHEM\1\DATA\18B06m00.B\6020newj.M
Calibration File: C:\ICPCHEM\1\DATA\18B06m00.B\6020newj.C
Last Cal. Update: Feb 06 2018 01:17 pm
Sample Type: CalStd
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	99.7900	2.412453E-01	427057.00	ppb	0.47	
23 Na	72	2	9943.0000	2.465303E+02	25032040.00	ppb	0.20	
24 Mg	72	3	10030.0000	5.572922E+02	116099000.00	ppb	0.59	
27 Al	72	3	9980.0000	6.497110E+02	135352610.00	ppb	0.46	
31 P	72	2	9955.0000	4.299462E+00	436558.59	ppb	0.29	
39 K	72	3	10010.0000	5.025525E+02	104695800.00	ppb	0.40	
44 Ca	72	3	10020.0000	1.508385E+01	3142351.00	ppb	0.65	
51 V	72	2	99.1700	4.518894E+00	458838.19	ppb	0.27	
52 Cr	72	2	100.2000	4.997784E+00	507465.00	ppb	0.20	
55 Mn	72	2	100.4000	4.933202E+00	500908.19	ppb	0.27	
56 Fe	72	1	9973.0000	5.287987E+02	39753820.00	ppb	0.03	
59 Co	72	2	100.7000	6.047770E+00	614078.19	ppb	0.25	
60 Ni	72	2	101.6000	1.360770E+00	138170.50	ppb	0.53	
63 Cu	89	2	103.2000	3.788851E-01	322069.00	ppb	0.10	
66 Zn	89	2	103.8000	8.434886E-02	71701.20	ppb	0.69	
75 As	89	2	101.9000	4.810860E-02	40894.73	ppb	0.79	
78 Se	89	1	102.9000	1.168420E-02	12442.61	ppb	0.96	
98 Mo	89	3	99.3400	1.884920E-01	311835.31	ppb	0.24	
107 Ag	115	3	102.2000	3.338245E-01	545831.63	ppb	0.10	
111 Cd	115	3	101.3000	7.718732E-02	126208.60	ppb	0.23	
121 Sb	115	3	100.1000	2.342634E-01	383043.59	ppb	0.23	
137 Ba	209	3	99.2200	9.596446E-02	166733.70	ppb	0.13	
205 Tl	209	3	48.6600	4.234285E-01	735686.31	ppb	0.14	
208 Pb	209	3	98.7800	1.139119E+00	1979142.00	ppb	0.57	
238 U	209	3	97.0800	1.408664E+00	2447482.00	ppb	0.16	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1770210	0.34	1871599	94.6	80 - 120	
72 Ge	1	75178	0.17	78194	96.1	80 - 120	
72 Ge	2	101538	0.28	105165	96.6	80 - 120	
72 Ge	3	208331	0.65	231040	90.2	80 - 120	
89 Y	1	1064899	0.18	1071043	99.4	80 - 120	
89 Y	2	850042	0.37	858586	99.0	80 - 120	
89 Y	3	1654366	0.59	1808858	91.5	80 - 120	
115 In	3	1635087	0.75	1846597	88.5	80 - 120	
209 Bi	3	1737455	0.40	2022337	85.9	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B06m00.B\005CALB.D\005CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B06m00.B\012CALS.D\012CALS.D#
Date Acquired: Feb 6 2018 01:13 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: s35696
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\DATA\18B06m00.B\6020newj.M
Calibration File: C:\ICPCHEM\1\DATA\18B06m00.B\6020newj.C
Last Cal. Update: Feb 06 2018 01:17 pm
Sample Type: CalStd
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Fail

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	199.9000	4.833093E-01	788729.13	ppb	0.26	
23 Na	72	2	20020.0000	4.960581E+02	47285800.00	ppb	0.14	
24 Mg	72	3	19980.0000	1.109835E+03	211637500.00	ppb	0.68	
27 Al	72	3	20020.0000	1.303354E+03	248538500.00	ppb	0.87	
31 P	72	2	20000.0000	8.630166E+00	822654.81	ppb	0.11	
39 K	72	3	19990.0000	1.001360E+03	190950500.00	ppb	0.91	
44 Ca	72	3	19980.0000	2.999539E+01	5719880.00	ppb	0.78	
51 V	72	2	200.4000	9.018022E+00	859618.19	ppb	0.36	
52 Cr	72	2	199.6000	9.817898E+00	935873.63	ppb	0.18	
55 Mn	72	2	199.4000	9.799337E+00	934100.50	ppb	0.16	
56 Fe	72	1	20030.0000	1.061968E+03	75543104.00	ppb	0.44	
59 Co	72	2	199.1000	1.195863E+01	1139937.00	ppb	0.17	
60 Ni	72	2	198.4000	2.656343E+00	253211.80	ppb	0.19	
63 Cu	89	2	196.9000	7.219051E-01	583001.13	ppb	0.33	
66 Zn	89	2	196.3000	1.592248E-01	128587.60	ppb	0.35	
75 As	89	2	198.1000	9.337221E-02	75406.11	ppb	0.32	
78 Se	89	1	197.7000	2.244265E-02	22907.23	ppb	0.72	
98 Mo	89	3	200.5000	3.802384E-01	580236.88	ppb	0.62	
107 Ag	115	3	198.2000	6.473154E-01	972994.81	ppb	1.07	
111 Cd	115	3	198.9000	1.515097E-01	227735.70	ppb	0.49	
121 Sb	115	3	200.0000	4.680156E-01	703482.19	ppb	0.90	
137 Ba	209	3	200.5000	1.931531E-01	310210.81	ppb	0.90	
205 Tl	209	3	100.9000	8.779504E-01	1410041.00	ppb	0.14	
208 Pb	209	3	200.9000	2.315930E+00	3719472.00	ppb	0.75	
238 U	209	3	202.2000	2.934070E+00	4712317.00	ppb	0.27	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1631945	0.39	1871599	87.2	80 - 120	
72 Ge	1	71136	0.51	78194	91.0	80 - 120	
72 Ge	2	95323	0.61	105165	90.6	80 - 120	
72 Ge	3	190696	0.49	231040	82.5	80 - 120	
89 Y	1	1020730	0.59	1071043	95.3	80 - 120	
89 Y	2	807602	0.95	858586	94.1	80 - 120	
89 Y	3	1525968	0.44	1808858	84.4	80 - 120	
115 In	3	1503105	0.18	1846597	81.4	80 - 120	
209 Bi	3	1606065	0.35	2022337	79.4	80 - 120	ISFail

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B06m00.B\005CALB.D\005CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B06m00.B\016_ICV.D\016_ICV.D#
Date Acquired: Feb 6 2018 01:36 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: icv,s35884
Misc Info:
Vial Number: 3
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 06 2018 01:17 pm
Sample Type: 6-ICV
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Fail
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	48.8000	1.180039E-01	207453.50	ppb	0.46	
23 Na	72	2	4660.0000	1.156688E+02	11953240.00	ppb	1.14	
24 Mg	72	3	4952.0000	2.751554E+02	56827600.00	ppb	0.77	
27 Al	72	3	4829.0000	3.144040E+02	64933800.00	ppb	0.71	
31 P	72	2	4715.0000	2.040774E+00	210898.50	ppb	0.99	
39 K	72	3	4843.0000	2.442065E+02	50435780.00	ppb	0.77	
44 Ca	72	3	4858.0000	7.352171E+00	1518439.00	ppb	0.82	
51 V	72	2	46.6000	2.183498E+00	225659.70	ppb	0.47	
52 Cr	72	2	47.6600	2.447586E+00	252941.80	ppb	0.93	
55 Mn	72	2	47.6900	2.345524E+00	242397.70	ppb	0.71	
56 Fe	72	1	4862.0000	2.578525E+02	19149750.00	ppb	2.59	
59 Co	72	2	48.8000	2.931508E+00	302953.59	ppb	0.86	
60 Ni	72	2	49.8800	6.680320E-01	69037.87	ppb	0.68	
63 Cu	89	2	50.5200	1.857658E-01	161561.00	ppb	1.38	
66 Zn	89	2	51.5400	4.198487E-02	36516.87	ppb	0.91	
75 As	89	2	50.0000	2.371478E-02	20623.98	ppb	1.72	
78 Se	89	1	53.3200	6.054829E-03	6362.23	ppb	5.62	
98 Mo	89	3	49.3700	9.374143E-02	151786.41	ppb	0.58	
107 Ag	115	3	50.0800	1.635954E-01	263866.19	ppb	1.03	
111 Cd	115	3	49.9500	3.805657E-02	61382.58	ppb	0.54	
121 Sb	115	3	46.6400	1.092578E-01	176221.00	ppb	0.91	
137 Ba	209	3	46.7100	4.557556E-02	79638.16	ppb	1.17	Fail
205 Tl	209	3	23.4000	2.037360E-01	355990.50	ppb	1.32	Fail
208 Pb	209	3	47.6300	5.495698E-01	960307.69	ppb	0.61	
238 U	209	3	46.2500	6.711704E-01	1172777.00	ppb	0.64	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1758056	0.64	1871599	93.9	80 - 120	
72 Ge	1	74297	2.43	78194	95.0	80 - 120	
72 Ge	2	103352	1.55	105165	98.3	80 - 120	
72 Ge	3	206538	0.83	231040	89.4	80 - 120	
89 Y	1	1052265	3.88	1071043	98.2	80 - 120	
89 Y	2	869879	2.29	858586	101.3	80 - 120	
89 Y	3	1619227	0.56	1808858	89.5	80 - 120	
115 In	3	1612947	0.68	1846597	87.3	80 - 120	
209 Bi	3	1747409	0.70	2022337	86.4	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B06m00.B\005CALB.D\005CALB.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY LOW-LEVEL PERFORMANCE VERIFICATION STANDARD FOR 296840 METALS Water
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018054020017.1 File : 18b06m00017 Time : 06-FEB-2018 13:41
Cal : 1018054020001 Caldate : 06-FEB-2018
Standards: S35885, S35396

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Lead	A	1.000	0.9342	ug/L	-7	30	
Copper	E	1.000	1.155	ug/L	16	30	

ISTD (ICALBLK 18b06m00005)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	1871599	1798583	-3.90
Germanium	H	78194	68286	-12.67
Germanium	A	231040	209880	-9.16
Germanium	E	105165	99891	-5.01
Indium	A	1846597	1655745	-10.34
Bismuth	A	2022337	1849603	-8.54
Yttrium	E	858586	814904	-5.09
Yttrium	H	1071043	970417	-9.40
Yttrium	A	1808858	1617349	-10.59

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B06m00.B\017SPKA.D\017SPKA.D#
Date Acquired: Feb 6 2018 01:41 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: cri,s35885
Misc Info:
Vial Number: 1302
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 06 2018 01:17 pm
Sample Type: 6-Spike1
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Fail
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	0.9896	2.417693E-03	4348.49	ppb	4.50	
23 Na	72	2	494.6000	1.247453E+01	1245975.00	ppb	1.36	
24 Mg	72	3	508.4000	2.827520E+01	5934110.00	ppb	1.00	
27 Al	72	3	98.1900	6.453153E+00	1354327.00	ppb	0.92	
31 P	72	2	102.1000	5.229962E-02	5223.23	ppb	5.61	
39 K	72	3	496.9000	2.692920E+01	5651731.00	ppb	0.67	
44 Ca	72	3	492.0000	8.143354E-01	170900.30	ppb	1.72	
51 V	72	2	0.4981	1.352746E-01	13511.08	ppb	10.55	Fail
52 Cr	72	2	0.7933	1.736837E-01	17348.57	ppb	3.43	Fail
55 Mn	72	2	1.0020	5.167683E-02	5162.01	ppb	0.58	
56 Fe	72	1	108.3000	5.786015E+00	394169.59	ppb	6.18	
59 Co	72	2	1.0470	6.382663E-02	6375.43	ppb	0.95	
60 Ni	72	2	1.0650	1.476355E-02	1474.53	ppb	2.63	
63 Cu	89	2	1.1550	4.946815E-03	4030.56	ppb	1.58	
66 Zn	89	2	5.7280	4.871969E-03	3969.80	ppb	0.89	
75 As	89	2	1.1040	7.135112E-04	581.13	ppb	6.06	
78 Se	89	1	1.2190	1.418372E-04	136.89	ppb	19.21	Fail
98 Mo	89	3	1.1390	2.297009E-03	3715.02	ppb	1.84	
107 Ag	115	3	1.0440	3.499885E-03	5794.62	ppb	4.46	
111 Cd	115	3	1.0570	8.181425E-04	1354.55	ppb	3.56	
121 Sb	115	3	1.3170	3.209091E-03	5313.37	ppb	1.50	Fail
137 Ba	209	3	0.1564	9.041991E-04	1672.37	ppb	32.44	Fail
205 Tl	209	3	0.4607	4.180927E-03	7733.48	ppb	1.94	Fail
208 Pb	209	3	0.9342	1.125802E-02	20823.50	ppb	1.04	
238 U	209	3	0.8947	1.299688E-02	24039.44	ppb	0.66	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1798583	0.34	1871599	96.1	80 - 120	
72 Ge	1	68286	5.77	78194	87.3	80 - 120	
72 Ge	2	99891	1.04	105165	95.0	80 - 120	
72 Ge	3	209880	0.77	231040	90.8	80 - 120	
89 Y	1	970417	6.77	1071043	90.6	80 - 120	
89 Y	2	814904	1.88	858586	94.9	80 - 120	
89 Y	3	1617349	0.13	1808858	89.4	80 - 120	
115 In	3	1655745	0.26	1846597	89.7	80 - 120	
209 Bi	3	1849603	0.45	2022337	91.5	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B06m00.B\005CALB.D\005CALB.D#

6 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY INSTRUMENT BLANK FOR 296840 METALS Water
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018054020018.2 File : 18b06m00018 Time : 06-FEB-2018 13:46
Cal : 1018054020001 Caldate : 06-FEB-2018

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Lead	A	ND	0.5000	0.1000	ug/L	
Copper	E	ND	0.5000	0.4000	ug/L	

ISTD (ICALBLK 18b06m00005)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	1871599	1838939	-1.75
Germanium	H	78194	73826	-5.59
Germanium	A	231040	213256	-7.70
Germanium	E	105165	106178	0.96
Indium	A	1846597	1682418	-8.89
Bismuth	A	2022337	1864973	-7.78
Yttrium	E	858586	873819	1.77
Yttrium	H	1071043	1039045	-2.99
Yttrium	A	1808858	1644977	-9.06

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B06m00.B\018_ICB.D\018_ICB.D#
Date Acquired: Feb 6 2018 01:46 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: icb
Misc Info:
Vial Number: 5
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 06 2018 01:17 pm
Sample Type: 6-ICB
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	0.0009	2.779211E-05	51.11	ppb	673.93	
23 Na	72	2	-2.1910	1.695011E-01	17997.34	ppb	4.33	
24 Mg	72	3	-0.0450	3.097695E-02	6606.01	ppb	4.65	
27 Al	72	3	-0.0846	5.567369E-02	11872.56	ppb	18.41	
31 P	72	2	2.3460	9.281268E-03	985.62	ppb	174.89	
39 K	72	3	4.4280	2.310365E+00	492698.00	ppb	2.18	
44 Ca	72	3	5.7680	8.609516E-02	18360.19	ppb	15.97	
51 V	72	2	-0.5072	9.061462E-02	9620.44	ppb	8.71	
52 Cr	72	2	-0.5058	1.106465E-01	11747.44	ppb	6.51	
55 Mn	72	2	-0.0100	1.942692E-03	206.30	ppb	10.81	
56 Fe	72	1	0.0978	5.071390E-02	3744.19	ppb	15.92	
59 Co	72	2	-0.0105	2.999259E-04	31.85	ppb	6.59	
60 Ni	72	2	-0.0221	2.127469E-04	22.59	ppb	3.72	
63 Cu	89	2	-0.0342	5.899107E-04	515.57	ppb	29.81	
66 Zn	89	2	-0.0717	1.737537E-04	151.85	ppb	25.46	
75 As	89	2	-0.0457	1.726698E-04	150.89	ppb	42.00	
78 Se	89	1	0.0199	5.774440E-06	6.00	ppb	28.29	
98 Mo	89	3	0.0285	1.904711E-04	313.35	ppb	56.50	
107 Ag	115	3	-0.0009	8.915823E-05	150.01	ppb	225.33	
111 Cd	115	3	-0.0061	8.585505E-06	14.44	ppb	49.35	
121 Sb	115	3	0.0840	3.249401E-04	546.70	ppb	9.84	
137 Ba	209	3	-0.7609	2.386382E-05	44.45	ppb	2.51	
205 Tl	209	3	-0.0076	1.072382E-04	200.01	ppb	13.28	
208 Pb	209	3	0.0018	5.107034E-04	952.28	ppb	219.02	
238 U	209	3	0.0051	8.938764E-05	166.67	ppb	12.76	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1838939	0.04	1871599	98.3	80 - 120	
72 Ge	1	73826	0.42	78194	94.4	80 - 120	
72 Ge	2	106178	0.86	105165	101.0	80 - 120	
72 Ge	3	213256	0.12	231040	92.3	80 - 120	
89 Y	1	1039045	0.37	1071043	97.0	80 - 120	
89 Y	2	873819	0.47	858586	101.8	80 - 120	
89 Y	3	1644977	0.15	1808858	90.9	80 - 120	
115 In	3	1682418	0.05	1846597	91.1	80 - 120	
209 Bi	3	1864973	0.29	2022337	92.2	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B06m00.B\005CALB.D\005CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY INTERFERENCE CHECK STANDARD A FOR 296840 METALS Water
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018054020019.2 File : 18b06m00019 Time : 06-FEB-2018 13:51
Cal : 1018054020001 Caldate : 06-FEB-2018
Standards: S35821, S35396

Analyte	Ch	Quant	IQL	Units	Flags
Lead	A	[0.1071]	0.5000	ug/L	
Copper	E	0.8886	0.5000	ug/L	

Interferent	Ch	Spiked	Quant	Units	%Rec	Flags
Aluminum	A	100000	80290	ug/L	80	
Calcium	A	300000	255600	ug/L	85	
Magnesium	A	100000	80300	ug/L	80	
Molybdenum	A	2000	1912	ug/L	96	
Potassium	A	100000	83580	ug/L	84	
Sodium	E	250000	213300	ug/L	85	
Phosphorus	E	100000	78430	ug/L	78	
Iron	H	250000	244000	ug/L	98	

ISTD (ICALBLK 18b06m00005)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	1871599	1137119	-39.24
Germanium	H	78194	60080	-23.17
Germanium	A	231040	152037	-34.19
Germanium	E	105165	85613	-18.59
Indium	A	1846597	1151252	-37.66
Bismuth	A	2022337	1108745	-45.18
Yttrium	E	858586	648036	-24.52
Yttrium	H	1071043	921760	-13.94
Yttrium	A	1808858	1159871	-35.88

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B06m00.B\019ICSA.D\019ICSA.D#
Date Acquired: Feb 6 2018 01:51 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: icsa,s35821
Misc Info:
Vial Number: 1203
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 06 2018 01:17 pm
Sample Type: 6-ICSA
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	0.0024	3.134261E-05	35.56	ppb	114.45	
23 Na	72	2	213300.0000	5.284216E+03	452418110.00	ppb	0.41	
24 Mg	72	3	80300.0000	4.460691E+03	678039680.00	ppb	3.23	
27 Al	72	3	80290.0000	5.226791E+03	794497280.00	ppb	3.24	
31 P	72	2	78430.0000	3.381873E+01	2895572.00	ppb	0.53	
39 K	72	3	83580.0000	4.180218E+03	635418880.00	ppb	2.90	
44 Ca	72	3	255600.0000	3.829038E+02	58202740.00	ppb	3.13	
51 V	72	2	-0.5481	8.879602E-02	7602.66	ppb	2.24	
52 Cr	72	2	0.6118	1.648777E-01	14118.66	ppb	8.08	
55 Mn	72	2	2.1910	1.100628E-01	9425.90	ppb	1.89	
56 Fe	72	1	244000.0000	1.293776E+04	777286210.00	ppb	0.42	
59 Co	72	2	1.9220	1.163297E-01	9960.67	ppb	0.79	
60 Ni	72	2	2.5700	3.489871E-02	2987.72	ppb	0.09	
63 Cu	89	2	0.8886	3.969849E-03	2572.83	ppb	3.65	
66 Zn	89	2	1.8160	1.702996E-03	1103.75	ppb	4.78	
75 As	89	2	2.2140	1.235613E-03	800.47	ppb	3.34	
78 Se	89	1	0.0454	8.668997E-06	8.00	ppb	35.93	
98 Mo	89	3	1912.0000	3.624491E+00	4196316.00	ppb	6.35	
99 (Ru)	115	3	336.3000	1.862485E-05	21.11	ppb	69.58	
107 Ag	115	3	0.0349	2.062691E-04	236.68	ppb	23.24	
111 Cd	115	3	2.4160	1.853505E-03	2131.34	ppb	5.95	
121 Sb	115	3	0.0769	3.084011E-04	354.46	ppb	20.70	
137 Ba	209	3	-0.6477	1.324757E-04	146.67	ppb	2.06	
205 Tl	209	3	-0.0075	1.082183E-04	120.00	ppb	10.31	
208 Pb	209	3	0.1071	1.724254E-03	1911.25	ppb	9.17	
238 U	209	3	0.0061	1.040305E-04	115.56	ppb	39.20	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1137119	1.76	1871599	60.8	30 - 120	
72 Ge	1	60080	1.94	78194	76.8	30 - 120	
72 Ge	2	85613	2.70	105165	81.4	30 - 120	
72 Ge	3	152037	1.81	231040	65.8	30 - 120	
89 Y	1	921760	0.83	1071043	86.1	30 - 120	
89 Y	2	648036	2.36	858586	75.5	30 - 120	
89 Y	3	1159871	4.40	1808858	64.1	30 - 120	
115 In	3	1151252	3.98	1846597	62.3	30 - 120	
209 Bi	3	1108745	3.39	2022337	54.8	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B06m00.B\005CALB.D\005CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY INTERFERENCE CHECK STANDARD AB FOR 296840 METALS Water
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018054020020.2 File : 18b06m00020 Time : 06-FEB-2018 13:56
Cal : 1018054020001 Caldate : 06-FEB-2018
Standards: S35822, S35396

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Copper	E	200.0	160.9	ug/L	-20	20	

ISTD (ICALBLK 18b06m00005)	Ch	ICALBLK Abund	Abund	%Drift
Germanium	H	78194	44337	-43.30
Germanium	A	231040	130051	-43.71
Germanium	E	105165	68434	-34.93
Indium	A	1846597	1015548	-45.00
Yttrium	E	858586	531528	-38.09
Yttrium	H	1071043	702851	-34.38
Yttrium	A	1808858	995741	-44.95

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B06m00.B\020ICSB.D\020ICSB.D#
Date Acquired: Feb 6 2018 01:56 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: icsab,s35822
Misc Info:
Vial Number: 1204
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 06 2018 01:17 pm
Sample Type: 6-ICSAB
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Fail
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
23 Na	72	2	204600.0000	5.068918E+03	346869500.00	ppb	0.62	
24 Mg	72	3	80140.0000	4.452115E+03	578979970.00	ppb	0.49	
27 Al	72	3	80150.0000	5.217560E+03	678527810.00	ppb	0.37	
31 P	72	2	75110.0000	3.238337E+01	2216040.00	ppb	0.49	
39 K	72	3	83070.0000	4.154907E+03	540327810.00	ppb	0.58	
44 Ca	72	3	254400.0000	3.810397E+02	49553192.00	ppb	0.64	
51 V	72	2	170.9000	7.707463E+00	527434.31	ppb	0.58	
52 Cr	72	2	166.6000	8.219250E+00	562455.50	ppb	0.54	
55 Mn	72	2	168.2000	8.266873E+00	565721.38	ppb	0.57	
56 Fe	72	1	237000.0000	1.256514E+04	557100220.00	ppb	0.32	
59 Co	72	2	161.5000	9.696426E+00	663555.13	ppb	0.49	
60 Ni	72	2	153.3000	2.051824E+00	140416.41	ppb	0.46	Fail
63 Cu	89	2	160.9000	5.901963E-01	313709.41	ppb	0.54	
66 Zn	89	2	74.7200	6.075787E-02	32294.31	ppb	1.14	Fail
75 As	89	2	91.4400	4.320375E-02	22963.96	ppb	1.16	
78 Se	89	1	86.7900	9.852369E-03	6924.70	ppb	0.33	
98 Mo	89	3	2005.0000	3.801865E+00	3785764.00	ppb	0.42	
107 Ag	115	3	40.1400	1.311593E-01	133194.91	ppb	0.38	Fail
111 Cd	115	3	84.2100	6.415090E-02	65151.68	ppb	0.72	Fail

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	951794	1.23	1871599	50.9	30 - 120	
72 Ge	1	44337	0.33	78194	56.7	30 - 120	
72 Ge	2	68434	1.22	105165	65.1	30 - 120	
72 Ge	3	130051	1.31	231040	56.3	30 - 120	
89 Y	1	702851	0.29	1071043	65.6	30 - 120	
89 Y	2	531528	0.82	858586	61.9	30 - 120	
89 Y	3	995741	0.93	1808858	55.0	30 - 120	
115 In	3	1015548	1.16	1846597	55.0	30 - 120	
209 Bi	3	1036101	0.60	2022337	51.2	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B06m00.B\005CALB.D\005CALB.D#

4 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY CONTINUING CALIBRATION FOR 296840 METALS Water
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018054020036.3 File : 18b06m00036 Time : 06-FEB-2018 15:16
Cal : 1018054020001 Caldate : 06-FEB-2018
Standards: S35929, S35396

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Lead	A	0.0115	0.0110	50.00	47.73	ug/L	-5	10	
Copper	E	0.0044	0.0037	50.00	50.56	ug/L	1	10	

ISTD (ICALBLK 18b06m00005)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	1871599	1300272	-30.53
Germanium	H	78194	58101	-25.70
Germanium	A	231040	153786	-33.44
Germanium	E	105165	79342	-24.55
Indium	A	1846597	1252762	-32.16
Bismuth	A	2022337	1470208	-27.30
Yttrium	E	858586	673374	-21.57
Yttrium	H	1071043	864897	-19.25
Yttrium	A	1808858	1228937	-32.06

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B06m00.B\036_CCV.D\036_CCV.D#
Date Acquired: Feb 6 2018 03:16 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: ccv,s35884
Misc Info:
Vial Number: 3
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 06 2018 01:17 pm
Sample Type: 6-CCV
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Fail
ISTD: Fail

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	49.1300	1.187974E-01	154456.70	ppb	0.83	Fail
23 Na	72	2	4566.0000	1.133326E+02	8992079.00	ppb	0.12	Fail
24 Mg	72	3	4833.0000	2.684974E+02	41269848.00	ppb	2.77	Fail
27 Al	72	3	4705.0000	3.063563E+02	47091608.00	ppb	2.47	Fail
31 P	72	2	4679.0000	2.025140E+00	160678.50	ppb	0.51	Fail
39 K	72	3	4737.0000	2.389125E+02	36724200.00	ppb	2.54	Fail
44 Ca	72	3	4709.0000	7.130037E+00	1095993.00	ppb	2.51	Fail
51 V	72	2	46.0100	2.157284E+00	171165.30	ppb	0.44	Fail
52 Cr	72	2	46.6500	2.398700E+00	190318.80	ppb	0.38	Fail
55 Mn	72	2	47.0300	2.312812E+00	183504.70	ppb	0.44	Fail
56 Fe	72	1	4626.0000	2.453057E+02	14245880.00	ppb	2.72	Fail
59 Co	72	2	48.9700	2.941341E+00	233373.30	ppb	0.04	Fail
60 Ni	72	2	50.1000	6.709686E-01	53236.23	ppb	0.20	Fail
63 Cu	89	2	50.5600	1.859190E-01	125191.00	ppb	0.61	Fail
66 Zn	89	2	51.0000	4.154031E-02	27971.86	ppb	0.31	Fail
75 As	89	2	49.7400	2.359137E-02	15885.75	ppb	0.75	Fail
78 Se	89	1	48.6700	5.526476E-03	4776.76	ppb	3.23	Fail
98 Mo	89	3	49.2800	9.357926E-02	114972.30	ppb	1.71	Fail
107 Ag	115	3	49.9600	1.632241E-01	204404.00	ppb	2.33	Fail
111 Cd	115	3	49.0600	3.737674E-02	46812.56	ppb	1.55	Fail
121 Sb	115	3	46.6400	1.092638E-01	136852.30	ppb	1.36	Fail
137 Ba	209	3	44.0200	4.299690E-02	63205.42	ppb	1.19	Fail
205 Tl	209	3	23.2900	2.027758E-01	298058.31	ppb	1.73	Fail
208 Pb	209	3	47.7300	5.507389E-01	809547.63	ppb	1.51	Fail
238 U	209	3	48.4000	7.023599E-01	1032339.00	ppb	2.44	Fail

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1300272	1.46	1871599	69.5	80 - 120	ISFail
72 Ge	1	58101	2.59	78194	74.3	80 - 120	ISFail
72 Ge	2	79342	0.23	105165	75.4	80 - 120	ISFail
72 Ge	3	153786	2.79	231040	66.6	80 - 120	ISFail
89 Y	1	864897	3.11	1071043	80.8	80 - 120	
89 Y	2	673374	0.56	858586	78.4	80 - 120	ISFail
89 Y	3	1228937	2.43	1808858	67.9	80 - 120	ISFail
115 In	3	1252762	2.43	1846597	67.8	80 - 120	ISFail
209 Bi	3	1470208	1.88	2022337	72.7	80 - 120	ISFail

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B06m00.B\005CALB.D\005CALB.D#

25 :Element Failures 0 :Max. Number of Failures Allowed
8 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY INSTRUMENT BLANK FOR 296840 METALS Water
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018054020038.2 File : 18b06m00038 Time : 06-FEB-2018 15:26
Cal : 1018054020001 Caldate : 06-FEB-2018

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Lead	A	ND	0.5000	0.1000	ug/L	
Copper	E	ND	0.5000	0.4000	ug/L	

ISTD (ICALBLK 18b06m00005)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	1871599	1363877	-27.13
Germanium	H	78194	58285	-25.46
Germanium	A	231040	162390	-29.71
Germanium	E	105165	82493	-21.56
Indium	A	1846597	1316061	-28.73
Bismuth	A	2022337	1599529	-20.91
Yttrium	E	858586	686230	-20.07
Yttrium	H	1071043	851284	-20.52
Yttrium	A	1808858	1259017	-30.40

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B06m00.B\038_CCB.D\038_CCB.D#
Date Acquired: Feb 6 2018 03:26 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: ccb
Misc Info:
Vial Number: 5
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 06 2018 01:17 pm
Sample Type: 6-CCB
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Fail

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	-0.0045	1.467602E-05	20.00	ppb	23.57	
23 Na	72	2	1.7960	2.682805E-01	22130.45	ppb	10.00	
24 Mg	72	3	0.0212	3.465788E-02	5626.73	ppb	136.08	
27 Al	72	3	-0.0951	5.499415E-02	8928.30	ppb	21.02	
31 P	72	2	0.8450	8.634278E-03	712.26	ppb	89.01	
39 K	72	3	3.0190	2.239935E+00	363645.69	ppb	36.67	
44 Ca	72	3	-10.4400	6.181484E-02	10036.87	ppb	12.37	
51 V	72	2	-0.4885	9.144518E-02	7543.36	ppb	4.19	
52 Cr	72	2	-0.8516	9.386521E-02	7743.47	ppb	2.59	
55 Mn	72	2	-0.0172	1.584999E-03	130.74	ppb	14.68	
56 Fe	72	1	-0.0927	4.061465E-02	2367.24	ppb	8.92	
59 Co	72	2	-0.0111	2.647949E-04	21.85	ppb	6.35	
60 Ni	72	2	-0.0135	3.281110E-04	27.04	ppb	78.95	
63 Cu	89	2	-0.0564	5.084554E-04	348.90	ppb	3.44	
66 Zn	89	2	-0.0862	1.620184E-04	111.11	ppb	25.42	
75 As	89	2	-0.0390	1.758664E-04	120.67	ppb	30.06	
78 Se	89	1	-0.0080	2.611692E-06	2.22	ppb	133.02	
98 Mo	89	3	0.0324	1.979516E-04	248.90	ppb	27.80	
107 Ag	115	3	-0.0088	6.352997E-05	83.34	ppb	53.58	
111 Cd	115	3	-0.0118	4.210612E-06	5.56	ppb	42.43	
121 Sb	115	3	0.0699	2.918417E-04	383.35	ppb	31.56	
137 Ba	209	3	-0.7690	1.610540E-05	25.56	ppb	1.93	
205 Tl	209	3	-0.0021	1.556969E-04	248.90	ppb	40.16	
208 Pb	209	3	0.0011	5.023037E-04	804.49	ppb	440.83	
238 U	209	3	0.0046	8.209008E-05	131.12	ppb	21.79	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1363877	1.06	1871599	72.9	80 - 120	ISFail
72 Ge	1	58285	0.09	78194	74.5	80 - 120	ISFail
72 Ge	2	82493	0.49	105165	78.4	80 - 120	ISFail
72 Ge	3	162390	1.69	231040	70.3	80 - 120	ISFail
89 Y	1	851284	0.77	1071043	79.5	80 - 120	ISFail
89 Y	2	686230	0.86	858586	79.9	80 - 120	ISFail
89 Y	3	1259017	2.33	1808858	69.6	80 - 120	ISFail
115 In	3	1316061	2.07	1846597	71.3	80 - 120	ISFail
209 Bi	3	1599529	1.86	2022337	79.1	80 - 120	ISFail

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B06m00.B\005CALB.D\005CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
9 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY INTERFERENCE CHECK STANDARD A FOR 296840 METALS Water
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018054020039.2 File : 18b06m00039 Time : 06-FEB-2018 15:30
Cal : 1018054020001 Caldate : 06-FEB-2018
Standards: S35821, S35396

Analyte	Ch	Quant	IQL	Units	Flags
Lead	A	[0.1033]	0.5000	ug/L	
Copper	E	0.7938	0.5000	ug/L	

Interferent	Ch	Spiked	Quant	Units	%Rec	Flags
Aluminum	A	100000	81780	ug/L	82	
Calcium	A	300000	256000	ug/L	85	
Magnesium	A	100000	81820	ug/L	82	
Molybdenum	A	2000	1978	ug/L	99	
Potassium	A	100000	84390	ug/L	84	
Sodium	E	250000	206000	ug/L	82	
Phosphorus	E	100000	77460	ug/L	77	
Iron	H	250000	235500	ug/L	94	

ISTD (ICALBLK 18b06m00005)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	1871599	1111540	-40.61
Germanium	H	78194	53524	-31.55
Germanium	A	231040	145219	-37.15
Germanium	E	105165	80218	-23.72
Indium	A	1846597	1087436	-41.11
Bismuth	A	2022337	1070984	-47.04
Yttrium	E	858586	612887	-28.62
Yttrium	H	1071043	833649	-22.16
Yttrium	A	1808858	1088720	-39.81

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B06m00.B\039ICSA.D\039ICSA.D#
Date Acquired: Feb 6 2018 03:30 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: icsa,s35821
Misc Info:
Vial Number: 1203
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 06 2018 01:17 pm
Sample Type: 6-ICSA
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	-0.0015	2.194938E-05	24.45	ppb	253.09	
23 Na	72	2	206000.0000	5.102535E+03	409284510.00	ppb	0.79	
24 Mg	72	3	81820.0000	4.545551E+03	660103100.00	ppb	0.63	
27 Al	72	3	81780.0000	5.323402E+03	773064000.00	ppb	0.72	
31 P	72	2	77460.0000	3.340005E+01	2679072.00	ppb	0.88	
39 K	72	3	84390.0000	4.220656E+03	612921600.00	ppb	0.68	
44 Ca	72	3	256000.0000	3.834156E+02	55678900.00	ppb	0.69	
51 V	72	2	-0.6336	8.499932E-02	6818.58	ppb	1.69	
52 Cr	72	2	0.2529	1.474615E-01	11826.03	ppb	24.91	
55 Mn	72	2	2.0790	1.045717E-01	8387.52	ppb	1.04	
56 Fe	72	1	235500.0000	1.248532E+04	668214910.00	ppb	1.41	
59 Co	72	2	1.6180	9.808025E-02	7867.24	ppb	0.79	
60 Ni	72	2	2.2390	3.047821E-02	2443.92	ppb	3.29	
63 Cu	89	2	0.7938	3.622655E-03	2217.59	ppb	7.91	
66 Zn	89	2	1.7490	1.648937E-03	1010.42	ppb	2.96	
75 As	89	2	2.1950	1.226571E-03	751.36	ppb	2.90	
78 Se	89	1	0.0441	8.524513E-06	7.11	ppb	98.26	
98 Mo	89	3	1978.0000	3.751119E+00	4083935.00	ppb	1.10	
99 (Ru)	115	3	528.3000	2.858097E-05	31.11	ppb	33.83	
107 Ag	115	3	0.0112	1.286947E-04	140.01	ppb	31.11	
111 Cd	115	3	2.5370	1.945294E-03	2115.77	ppb	6.78	
121 Sb	115	3	0.0831	3.227595E-04	351.13	ppb	15.07	
137 Ba	209	3	-0.6603	1.203935E-04	128.89	ppb	1.96	
205 Tl	209	3	-0.0021	1.556648E-04	166.67	ppb	166.23	
208 Pb	209	3	0.1033	1.680880E-03	1800.13	ppb	3.23	
238 U	209	3	0.0045	7.986527E-05	85.56	ppb	10.43	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1111540	0.93	1871599	59.4	30 - 120	
72 Ge	1	53524	0.84	78194	68.5	30 - 120	
72 Ge	2	80218	1.90	105165	76.3	30 - 120	
72 Ge	3	145219	0.80	231040	62.9	30 - 120	
89 Y	1	833649	1.93	1071043	77.8	30 - 120	
89 Y	2	612887	3.47	858586	71.4	30 - 120	
89 Y	3	1088720	0.51	1808858	60.2	30 - 120	
115 In	3	1087436	0.71	1846597	58.9	30 - 120	
209 Bi	3	1070984	0.72	2022337	53.0	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B06m00.B\005CALB.D\005CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY INTERFERENCE CHECK STANDARD AB FOR 296840 METALS Water
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018054020040.2 File : 18b06m00040 Time : 06-FEB-2018 15:36
Cal : 1018054020001 Caldate : 06-FEB-2018
Standards: S35822, S35396

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Copper	E	200.0	177.9	ug/L	-11	20	

ISTD (ICALBLK 18b06m00005)	Ch	ICALBLK Abund	Abund	%Drift
Germanium	H	78194	48066	-38.53
Germanium	A	231040	135588	-41.31
Germanium	E	105165	68793	-34.59
Indium	A	1846597	1045798	-43.37
Yttrium	E	858586	514428	-40.08
Yttrium	H	1071043	759753	-29.06
Yttrium	A	1808858	1032563	-42.92

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B06m00.B\040ICSB.D\040ICSB.D#
Date Acquired: Feb 6 2018 03:36 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: icsab,s35822
Misc Info:
Vial Number: 1204
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 06 2018 01:17 pm
Sample Type: 6-ICSAB
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Fail
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
23 Na	72	2	216800.0000	5.370342E+03	368612990.00	ppb	6.02	
24 Mg	72	3	81820.0000	4.545176E+03	616267070.00	ppb	0.15	
27 Al	72	3	81720.0000	5.319717E+03	721276420.00	ppb	0.24	
31 P	72	2	81000.0000	3.492291E+01	2397101.00	ppb	5.99	
39 K	72	3	83840.0000	4.193550E+03	568587780.00	ppb	0.16	
44 Ca	72	3	254900.0000	3.818461E+02	51772872.00	ppb	0.22	
51 V	72	2	182.5000	8.221708E+00	564351.50	ppb	5.97	
52 Cr	72	2	177.0000	8.723014E+00	598741.13	ppb	6.08	
55 Mn	72	2	177.1000	8.700625E+00	597192.69	ppb	6.09	
56 Fe	72	1	230500.0000	1.222378E+04	587542530.00	ppb	0.14	
59 Co	72	2	171.3000	1.028846E+01	706260.63	ppb	5.75	
60 Ni	72	2	163.6000	2.190337E+00	150364.00	ppb	5.68	
63 Cu	89	2	177.9000	6.521551E-01	334544.19	ppb	6.65	
66 Zn	89	2	81.4200	6.618437E-02	33955.95	ppb	6.42	
75 As	89	2	101.4000	4.787792E-02	24559.71	ppb	6.75	
78 Se	89	1	86.0000	9.762749E-03	7416.49	ppb	1.60	
98 Mo	89	3	2009.0000	3.809785E+00	3933760.00	ppb	0.27	
107 Ag	115	3	40.2000	1.313474E-01	137364.30	ppb	0.19	Fail
111 Cd	115	3	84.5700	6.442983E-02	67381.18	ppb	0.18	Fail

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1036732	1.17	1871599	55.4	30 - 120	
72 Ge	1	48066	0.63	78194	61.5	30 - 120	
72 Ge	2	68793	5.65	105165	65.4	30 - 120	
72 Ge	3	135588	1.00	231040	58.7	30 - 120	
89 Y	1	759753	1.05	1071043	70.9	30 - 120	
89 Y	2	514428	6.40	858586	59.9	30 - 120	
89 Y	3	1032563	1.34	1808858	57.1	30 - 120	
115 In	3	1045798	0.85	1846597	56.6	30 - 120	
209 Bi	3	1047120	0.82	2022337	51.8	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B06m00.B\005CALB.D\005CALB.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY CONTINUING CALIBRATION FOR 296840 METALS Water
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018054020088.2 File : 18b06m00088 Time : 06-FEB-2018 19:35
Cal : 1018054020001 Caldate : 06-FEB-2018
Standards: S35929, S35396

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Lead	A	0.0115	0.0109	50.00	47.03	ug/L	-6	10	
Copper	E	0.0044	0.0037	50.00	50.49	ug/L	1	10	

ISTD (ICALBLK 18b06m00005)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	1871599	1593493	-14.86
Germanium	H	78194	70286	-10.11
Germanium	A	231040	200760	-13.11
Germanium	E	105165	99478	-5.41
Indium	A	1846597	1626126	-11.94
Bismuth	A	2022337	1825408	-9.74
Yttrium	E	858586	847812	-1.25
Yttrium	H	1071043	1052144	-1.76
Yttrium	A	1808858	1611952	-10.89

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B06m00.B\088_CCV.D\088_CCV.D#
Date Acquired: Feb 6 2018 07:35 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: ccv,s35929
Misc Info:
Vial Number: 3
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 06 2018 01:17 pm
Sample Type: 6-CCV
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Fail
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	49.3500	1.193196E-01	190132.91	ppb	0.45	Fail
23 Na	72	2	4511.0000	1.119566E+02	11137170.00	ppb	0.49	Fail
24 Mg	72	3	4711.0000	2.617591E+02	52550712.00	ppb	0.10	Fail
27 Al	72	3	4612.0000	3.002926E+02	60286592.00	ppb	0.19	Fail
31 P	72	2	4638.0000	2.007629E+00	199714.70	ppb	0.69	Fail
39 K	72	3	4678.0000	2.359340E+02	47365940.00	ppb	0.27	Fail
44 Ca	72	3	4615.0000	6.989461E+00	1403194.00	ppb	0.58	Fail
51 V	72	2	46.2500	2.167826E+00	215651.20	ppb	0.61	Fail
52 Cr	72	2	46.6900	2.400622E+00	238809.00	ppb	0.50	Fail
55 Mn	72	2	46.5800	2.290611E+00	227865.00	ppb	0.35	Fail
56 Fe	72	1	4737.0000	2.511724E+02	17653470.00	ppb	0.43	Fail
59 Co	72	2	48.7800	2.930266E+00	291496.59	ppb	0.41	Fail
60 Ni	72	2	50.1100	6.712265E-01	66772.08	ppb	0.24	Fail
63 Cu	89	2	50.4900	1.856402E-01	157387.59	ppb	0.20	Fail
66 Zn	89	2	49.8300	4.059908E-02	34419.91	ppb	0.55	Fail
75 As	89	2	50.0000	2.371164E-02	20103.08	ppb	0.45	Fail
78 Se	89	1	49.8000	5.655388E-03	5950.07	ppb	2.68	Fail
98 Mo	89	3	48.4500	9.199634E-02	148294.09	ppb	0.30	Fail
107 Ag	115	3	49.1100	1.604457E-01	260904.41	ppb	0.19	Fail
111 Cd	115	3	49.1900	3.747685E-02	60943.03	ppb	0.87	Fail
121 Sb	115	3	46.9000	1.098568E-01	178641.00	ppb	0.37	Fail
137 Ba	209	3	45.7900	4.469590E-02	81586.33	ppb	0.61	
205 Tl	209	3	22.9700	1.999502E-01	364987.19	ppb	0.47	Fail
208 Pb	209	3	47.0300	5.426101E-01	990478.00	ppb	0.24	Fail
238 U	209	3	47.3400	6.869186E-01	1253911.00	ppb	0.10	Fail

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1593493	0.36	1871599	85.1	80 - 120	
72 Ge	1	70286	0.85	78194	89.9	80 - 120	
72 Ge	2	99478	0.21	105165	94.6	80 - 120	
72 Ge	3	200760	0.27	231040	86.9	80 - 120	
89 Y	1	1052144	0.98	1071043	98.2	80 - 120	
89 Y	2	847812	0.41	858586	98.7	80 - 120	
89 Y	3	1611952	0.54	1808858	89.1	80 - 120	
115 In	3	1626126	0.27	1846597	88.1	80 - 120	
209 Bi	3	1825408	0.65	2022337	90.3	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B06m00.B\005CALB.D\005CALB.D#

24 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY INSTRUMENT BLANK FOR 296840 METALS Water
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018054020090.2 File : 18b06m00090 Time : 06-FEB-2018 19:45
Cal : 1018054020001 Caldate : 06-FEB-2018

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Lead	A	ND	0.5000	0.1000	ug/L	
Copper	E	ND	0.5000	0.4000	ug/L	

ISTD (ICALBLK 18b06m00005)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	1871599	1707000	-8.79
Germanium	H	78194	81313	3.99
Germanium	A	231040	216158	-6.44
Germanium	E	105165	111827	6.33
Indium	A	1846597	1696298	-8.14
Bismuth	A	2022337	1957044	-3.23
Yttrium	E	858586	916209	6.71
Yttrium	H	1071043	1150215	7.39
Yttrium	A	1808858	1642319	-9.21

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B06m00.B\090_CCB.D\090_CCB.D#
Date Acquired: Feb 6 2018 07:45 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: ccb
Misc Info:
Vial Number: 5
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 06 2018 01:17 pm
Sample Type: 6-CCB
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	-0.0049	1.374147E-05	23.33	ppb	21.74	
23 Na	72	2	-2.5620	1.603028E-01	17925.07	ppb	3.58	
24 Mg	72	3	0.2388	4.674550E-02	10084.59	ppb	20.11	
27 Al	72	3	-0.0006	6.114394E-02	13103.73	ppb	37486.00	
31 P	72	2	-1.1160	7.788944E-03	871.17	ppb	51.29	
39 K	72	3	5.1880	2.348358E+00	506603.00	ppb	50.73	
44 Ca	72	3	-21.1200	4.581317E-02	9884.58	ppb	7.94	
51 V	72	2	-0.5817	8.730631E-02	9762.01	ppb	7.96	
52 Cr	72	2	-0.7481	9.888836E-02	11058.44	ppb	1.27	
55 Mn	72	2	-0.0145	1.721255E-03	192.60	ppb	35.43	
56 Fe	72	1	-0.0710	4.176360E-02	3395.22	ppb	12.52	
59 Co	72	2	-0.0108	2.814185E-04	31.48	ppb	3.19	
60 Ni	72	2	-0.0182	2.650121E-04	29.63	ppb	21.14	
63 Cu	89	2	-0.0416	5.626799E-04	515.57	ppb	7.68	
66 Zn	89	2	-0.1016	1.495061E-04	137.04	ppb	21.84	
75 As	89	2	-0.0472	1.719747E-04	157.56	ppb	42.31	
78 Se	89	1	-0.0037	3.096259E-06	3.56	ppb	208.59	
98 Mo	89	3	0.0191	1.726776E-04	284.46	ppb	62.56	
107 Ag	115	3	-0.0180	3.351859E-05	56.67	ppb	10.32	
111 Cd	115	3	-0.0140	2.586640E-06	4.44	ppb	26.60	
121 Sb	115	3	0.0152	1.639242E-04	276.68	ppb	52.63	
137 Ba	209	3	-0.7703	1.488743E-05	28.89	ppb	0.46	
205 Tl	209	3	-0.0045	1.347629E-04	261.12	ppb	80.74	
208 Pb	209	3	-0.0018	4.682422E-04	915.62	ppb	107.74	
238 U	209	3	0.0033	6.284611E-05	123.34	ppb	26.19	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1707000	4.98	1871599	91.2	80 - 120	
72 Ge	1	81313	4.14	78194	104.0	80 - 120	
72 Ge	2	111827	0.81	105165	106.3	80 - 120	
72 Ge	3	216158	5.35	231040	93.6	80 - 120	
89 Y	1	1150215	4.65	1071043	107.4	80 - 120	
89 Y	2	916209	0.55	858586	106.7	80 - 120	
89 Y	3	1642319	8.12	1808858	90.8	80 - 120	
115 In	3	1696298	7.72	1846597	91.9	80 - 120	
209 Bi	3	1957044	6.40	2022337	96.8	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B06m00.B\005CALB.D\005CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY INTERFERENCE CHECK STANDARD A FOR 296840 METALS Water
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018054020091.1 File : 18b06m00091 Time : 06-FEB-2018 19:50
Cal : 1018054020001 Caldate : 06-FEB-2018
Standards: S35821, S35396

Analyte	Ch	Quant	IQL	Units	Flags
Lead	A	[0.1034]	0.5000	ug/L	
Copper	E	0.8123	0.5000	ug/L	

Interferent	Ch	Spiked	Quant	Units	%Rec	Flags
Aluminum	A	100000	82960	ug/L	83	
Calcium	A	300000	258700	ug/L	86	
Magnesium	A	100000	81880	ug/L	82	
Molybdenum	A	2000	2004	ug/L	100	
Potassium	A	100000	85540	ug/L	86	
Sodium	E	250000	208200	ug/L	83	
Phosphorus	E	100000	79050	ug/L	79	
Iron	H	250000	242900	ug/L	97	

ISTD (ICALBLK 18b06m00005)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	1871599	1362623	-27.19
Germanium	H	78194	71240	-8.89
Germanium	A	231040	181518	-21.43
Germanium	E	105165	101516	-3.47
Indium	A	1846597	1335022	-27.70
Bismuth	A	2022337	1231367	-39.11
Yttrium	E	858586	768804	-10.46
Yttrium	H	1071043	1091327	1.89
Yttrium	A	1808858	1366283	-24.47

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B06m00.B\091ICSA.D\091ICSA.D#
Date Acquired: Feb 6 2018 07:50 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: icsa,s35821
Misc Info:
Vial Number: 1203
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 06 2018 01:17 pm
Sample Type: 6-ICSA
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	-0.0021	2.037238E-05	27.78	ppb	52.19	
23 Na	72	2	208200.0000	5.158791E+03	523460700.00	ppb	3.62	
24 Mg	72	3	81880.0000	4.548610E+03	825519490.00	ppb	2.52	
27 Al	72	3	82960.0000	5.400580E+03	980133380.00	ppb	2.69	
31 P	72	2	79050.0000	3.408261E+01	3458347.00	ppb	3.74	
39 K	72	3	85540.0000	4.278245E+03	776459010.00	ppb	2.35	
44 Ca	72	3	258700.0000	3.874556E+02	70318800.00	ppb	2.45	
51 V	72	2	-0.1981	1.043466E-01	10588.48	ppb	40.95	
52 Cr	72	2	0.4651	1.577557E-01	16008.63	ppb	20.59	
55 Mn	72	2	2.1220	1.066694E-01	10823.12	ppb	3.60	
56 Fe	72	1	242900.0000	1.288020E+04	917573120.00	ppb	0.40	
59 Co	72	2	1.7940	1.086275E-01	11024.35	ppb	2.85	
60 Ni	72	2	2.5590	3.475328E-02	3525.99	ppb	4.65	
63 Cu	89	2	0.8123	3.690381E-03	2830.66	ppb	9.21	
66 Zn	89	2	1.7980	1.688271E-03	1293.77	ppb	11.60	
75 As	89	2	2.8510	1.535165E-03	1178.50	ppb	6.16	
78 Se	89	1	0.0139	5.090088E-06	5.56	ppb	58.85	
98 Mo	89	3	2004.0000	3.799533E+00	5186481.00	ppb	4.73	
99 (Ru)	115	3	606.0000	3.260707E-05	43.33	ppb	24.39	
107 Ag	115	3	0.0156	1.430784E-04	191.12	ppb	43.47	
111 Cd	115	3	2.7790	2.129573E-03	2839.24	ppb	7.42	
121 Sb	115	3	0.0502	2.457796E-04	327.79	ppb	33.98	
137 Ba	209	3	-0.6307	1.488285E-04	183.34	ppb	2.05	
205 Tl	209	3	-0.0052	1.285838E-04	157.78	ppb	67.32	
208 Pb	209	3	0.1034	1.681921E-03	2070.15	ppb	4.18	
238 U	209	3	0.0040	7.226013E-05	88.89	ppb	24.67	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1362623	0.90	1871599	72.8	30 - 120	
72 Ge	1	71240	0.69	78194	91.1	30 - 120	
72 Ge	2	101516	2.23	105165	96.5	30 - 120	
72 Ge	3	181518	1.08	231040	78.6	30 - 120	
89 Y	1	1091327	0.46	1071043	101.9	30 - 120	
89 Y	2	768804	4.83	858586	89.5	30 - 120	
89 Y	3	1366283	2.97	1808858	75.5	30 - 120	
115 In	3	1335022	2.90	1846597	72.3	30 - 120	
209 Bi	3	1231367	2.39	2022337	60.9	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B06m00.B\005CALB.D\005CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY INTERFERENCE CHECK STANDARD AB FOR 296840 METALS Water
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018054020092.1 File : 18b06m00092 Time : 06-FEB-2018 19:55
Cal : 1018054020001 Caldate : 06-FEB-2018
Standards: S35822, S35396

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Copper	E	200.0	160.7	ug/L	-20	20	

ISTD (ICALBLK 18b06m00005)	Ch	ICALBLK Abund	Abund	%Drift
Germanium	H	78194	61158	-21.79
Germanium	A	231040	174532	-24.46
Germanium	E	105165	90015	-14.41
Indium	A	1846597	1340339	-27.42
Yttrium	E	858586	700945	-18.36
Yttrium	H	1071043	970477	-9.39
Yttrium	A	1808858	1356269	-25.02

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B06m00.B\092ICSB.D\092ICSB.D#
Date Acquired: Feb 6 2018 07:55 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: icsab,s35822
Misc Info:
Vial Number: 1204
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 06 2018 01:17 pm
Sample Type: 6-ICSAB
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Fail
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
23 Na	72	2	203300.0000	5.036924E+03	453395900.00	ppb	0.20	
24 Mg	72	3	78980.0000	4.387652E+03	765728580.00	ppb	0.70	
27 Al	72	3	79860.0000	5.198745E+03	907283200.00	ppb	0.67	
31 P	72	2	76090.0000	3.280784E+01	2953182.00	ppb	0.20	
39 K	72	3	82260.0000	4.114379E+03	718016900.00	ppb	0.91	
44 Ca	72	3	249300.0000	3.733602E+02	65157368.00	ppb	0.81	
51 V	72	2	173.1000	7.802112E+00	702307.63	ppb	0.18	
52 Cr	72	2	167.0000	8.239279E+00	741662.38	ppb	0.15	
55 Mn	72	2	166.2000	8.169257E+00	735367.31	ppb	0.25	
56 Fe	72	1	236500.0000	1.254015E+04	766931520.00	ppb	0.74	
59 Co	72	2	162.2000	9.741100E+00	876859.50	ppb	0.33	
60 Ni	72	2	154.6000	2.070236E+00	186354.80	ppb	0.47	Fail
63 Cu	89	2	160.7000	5.891388E-01	412965.50	ppb	0.69	
66 Zn	89	2	72.5500	5.900163E-02	41358.61	ppb	1.11	Fail
75 As	89	2	91.9400	4.343882E-02	30449.26	ppb	0.89	
78 Se	89	1	87.7800	9.964658E-03	9670.18	ppb	0.77	
98 Mo	89	3	1941.0000	3.679951E+00	4991125.00	ppb	0.61	
107 Ag	115	3	39.3700	1.286217E-01	172400.70	ppb	0.55	Fail
111 Cd	115	3	82.7500	6.304083E-02	84496.96	ppb	0.99	Fail

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1297031	1.01	1871599	69.3	30 - 120	
72 Ge	1	61158	0.43	78194	78.2	30 - 120	
72 Ge	2	90015	0.99	105165	85.6	30 - 120	
72 Ge	3	174532	1.71	231040	75.5	30 - 120	
89 Y	1	970477	0.67	1071043	90.6	30 - 120	
89 Y	2	700945	0.62	858586	81.6	30 - 120	
89 Y	3	1356269	0.67	1808858	75.0	30 - 120	
115 In	3	1340339	0.90	1846597	72.6	30 - 120	
209 Bi	3	1237149	0.46	2022337	61.2	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B06m00.B\005CALB.D\005CALB.D#

4 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY CONTINUING CALIBRATION FOR 296840 METALS Water
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018054020112.2 File : 18b06m00112 Time : 06-FEB-2018 21:34
Cal : 1018054020001 Caldate : 06-FEB-2018
Standards: S35929, S35396

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Lead	A	0.0115	0.0115	50.00	49.75	ug/L	0	10	
Copper	E	0.0044	0.0037	50.00	49.67	ug/L	-1	10	

ISTD (ICALBLK 18b06m00005)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	1871599	1423760	-23.93
Germanium	H	78194	84365	7.89
Germanium	A	231040	213128	-7.75
Germanium	E	105165	100982	-3.98
Indium	A	1846597	1757024	-4.85
Bismuth	A	2022337	1898958	-6.10
Yttrium	E	858586	887411	3.36
Yttrium	H	1071043	1222591	14.15
Yttrium	A	1808858	1761309	-2.63

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B06m00.B\112_CCV.D\112_CCV.D#
Date Acquired: Feb 6 2018 09:34 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: ccv,s35929
Misc Info:
Vial Number: 3
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 06 2018 01:17 pm
Sample Type: 6-CCV
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Fail
ISTD: Fail

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	54.3800	1.314848E-01	187144.50	ppb	2.34	Fail
23 Na	72	2	4524.0000	1.123031E+02	11276690.00	ppb	9.46	Fail
24 Mg	72	3	4419.0000	2.455330E+02	52313792.00	ppb	2.21	Fail
27 Al	72	3	4459.0000	2.903131E+02	61854752.00	ppb	2.21	Fail
31 P	72	2	4745.0000	2.053507E+00	206210.50	ppb	9.40	Fail
39 K	72	3	4591.0000	2.315782E+02	49342392.00	ppb	1.96	Fail
44 Ca	72	3	4540.0000	6.875884E+00	1465016.00	ppb	2.11	Fail
51 V	72	2	47.5500	2.225595E+00	223415.50	ppb	10.45	Fail
52 Cr	72	2	47.4700	2.438565E+00	244795.59	ppb	10.49	Fail
55 Mn	72	2	48.1800	2.369368E+00	237903.09	ppb	9.55	Fail
56 Fe	72	1	4347.0000	2.305055E+02	19446560.00	ppb	0.24	Fail
59 Co	72	2	49.8900	2.996927E+00	300909.31	ppb	9.57	Fail
60 Ni	72	2	51.0700	6.840807E-01	68666.26	ppb	10.06	Fail
63 Cu	89	2	49.6700	1.826474E-01	160317.59	ppb	13.30	Fail
66 Zn	89	2	49.8000	4.057358E-02	35639.67	ppb	12.39	Fail
75 As	89	2	50.2700	2.384278E-02	20928.40	ppb	13.27	Fail
78 Se	89	1	47.9600	5.445675E-03	6657.69	ppb	0.67	Fail
98 Mo	89	3	51.1100	9.705058E-02	170847.41	ppb	3.17	Fail
107 Ag	115	3	52.8300	1.725785E-01	303071.09	ppb	2.66	Fail
111 Cd	115	3	51.8800	3.953070E-02	69404.97	ppb	3.77	Fail
121 Sb	115	3	48.5200	1.136452E-01	199551.09	ppb	3.35	Fail
137 Ba	209	3	50.2200	4.894601E-02	92909.38	ppb	2.74	
205 Tl	209	3	24.3400	2.118723E-01	402207.50	ppb	2.22	Fail
208 Pb	209	3	49.7500	5.739657E-01	1089522.00	ppb	2.52	Fail
238 U	209	3	50.4100	7.314144E-01	1388306.00	ppb	2.94	Fail

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1423760	2.00	1871599	76.1	80 - 120	ISFail
72 Ge	1	84365	0.45	78194	107.9	80 - 120	
72 Ge	2	100982	8.96	105165	96.0	80 - 120	
72 Ge	3	213128	2.12	231040	92.2	80 - 120	
89 Y	1	1222591	0.50	1071043	114.1	80 - 120	
89 Y	2	887411	12.38	858586	103.4	80 - 120	
89 Y	3	1761309	2.46	1808858	97.4	80 - 120	
115 In	3	1757024	2.95	1846597	95.1	80 - 120	
209 Bi	3	1898958	2.27	2022337	93.9	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B06m00.B\005CALB.D\005CALB.D#

24 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY INSTRUMENT BLANK FOR 296840 METALS Water
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018054020114.2 File : 18b06m00114 Time : 06-FEB-2018 21:44
Cal : 1018054020001 Caldate : 06-FEB-2018

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Lead	A	ND	0.5000	0.1000	ug/L	
Copper	E	ND	0.5000	0.4000	ug/L	

ISTD (ICALBLK 18b06m00005)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	1871599	1498053	-19.96
Germanium	H	78194	83137	6.32
Germanium	A	231040	226205	-2.09
Germanium	E	105165	107617	2.33
Indium	A	1846597	1903182	3.06
Bismuth	A	2022337	2142193	5.93
Yttrium	E	858586	919100	7.05
Yttrium	H	1071043	1151599	7.52
Yttrium	A	1808858	1847075	2.11

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B06m00.B\114_CCB.D\114_CCB.D#
Date Acquired: Feb 6 2018 09:44 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: ccb
Misc Info:
Vial Number: 5
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 06 2018 01:17 pm
Sample Type: 6-CCB
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Fail
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	-0.0029	1.851978E-05	27.78	ppb	155.87	
23 Na	72	2	29.4800	9.539706E-01	102639.50	ppb	2.45	Fail
24 Mg	72	3	0.4355	5.766944E-02	13045.71	ppb	4.23	
27 Al	72	3	-0.2017	4.804869E-02	10868.43	ppb	7.97	
31 P	72	2	-0.8673	7.896135E-03	848.94	ppb	173.64	
39 K	72	3	-2.2060	1.978725E+00	447595.50	ppb	4.51	
44 Ca	72	3	-40.3800	1.698365E-02	3841.70	ppb	0.69	
51 V	72	2	-0.0241	1.120787E-01	12059.54	ppb	158.76	
52 Cr	72	2	-0.5904	1.065398E-01	11462.43	ppb	7.98	
55 Mn	72	2	-0.0126	1.812124E-03	194.82	ppb	27.41	
56 Fe	72	1	-0.0810	4.123738E-02	3428.19	ppb	25.79	
59 Co	72	2	-0.0105	2.997777E-04	32.22	ppb	5.05	
60 Ni	72	2	-0.0157	2.988448E-04	32.22	ppb	37.84	
63 Cu	89	2	0.0130	7.627540E-04	701.14	ppb	75.89	
66 Zn	89	2	-0.1031	1.483327E-04	136.30	ppb	6.12	
75 As	89	2	-0.0469	1.721271E-04	158.22	ppb	20.59	
78 Se	89	1	-0.0038	3.083945E-06	3.56	ppb	332.29	
98 Mo	89	3	0.0264	1.866222E-04	344.46	ppb	52.14	
107 Ag	115	3	-0.0161	3.970799E-05	75.56	ppb	15.15	
111 Cd	115	3	-0.0135	2.921378E-06	5.56	ppb	26.02	
121 Sb	115	3	0.0035	1.366501E-04	260.01	ppb	440.14	
137 Ba	209	3	-0.7696	1.556153E-05	33.33	ppb	0.21	
205 Tl	209	3	-0.0089	9.593863E-05	205.56	ppb	10.56	
208 Pb	209	3	-0.0096	3.787138E-04	811.16	ppb	18.10	
238 U	209	3	0.0046	8.198674E-05	175.56	ppb	17.30	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1498053	0.66	1871599	80.0	80 - 120	
72 Ge	1	83137	0.31	78194	106.3	80 - 120	
72 Ge	2	107617	1.86	105165	102.3	80 - 120	
72 Ge	3	226205	0.41	231040	97.9	80 - 120	
89 Y	1	1151599	0.54	1071043	107.5	80 - 120	
89 Y	2	919100	1.11	858586	107.0	80 - 120	
89 Y	3	1847075	0.79	1808858	102.1	80 - 120	
115 In	3	1903182	0.15	1846597	103.1	80 - 120	
209 Bi	3	2142193	0.42	2022337	105.9	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B06m00.B\005CALB.D\005CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY INTERFERENCE CHECK STANDARD A FOR 296840 METALS Water
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018054020234.1 File : 18b06m00234 Time : 07-FEB-2018 07:42
Cal : 1018054020001 Caldate : 06-FEB-2018
Standards: S35821, S35396

Analyte	Ch	Quant	IQL	Units	Flags
Lead	A	[0.09420]	0.5000	ug/L	
Copper	E	18.75	0.5000	ug/L	

Interferent	Ch	Spiked	Quant	Units	%Rec	Flags
Aluminum	A	100000	34700	ug/L	35	
Calcium	A	300000	139300	ug/L	46	
Magnesium	A	100000	31670	ug/L	32	
Molybdenum	A	2000	2018	ug/L	101	
Potassium	A	100000	47800	ug/L	48	
Sodium	E	250000	96250	ug/L	39	
Phosphorus	E	100000	47720	ug/L	48	
Iron	H	250000	191100	ug/L	76	i- ***

ISTD (ICALBLK 18b06m00005)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	1871599	175666	**-90.61 ***
Germanium	H	78194	21418	**-72.61 ***
Germanium	A	231040	116906	-49.40
Germanium	E	105165	36536	-65.26
Indium	A	1846597	721915	-60.91
Bismuth	A	2022337	673690	-66.69
Yttrium	E	858586	266580	-68.95
Yttrium	H	1071043	333262	-68.88
Yttrium	A	1808858	721412	-60.12

-=low bias i=ISTD failure

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B06m00.B\234ICSA.D\234ICSA.D#
Date Acquired: Feb 7 2018 07:42 am
Acq. Method: 6020newj.M
Operator:
Sample Name: icsa,s35821
Misc Info:
Vial Number: 1203
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 06 2018 01:17 pm
Sample Type: 6-ICSA
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Fail

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	0.0182	6.955802E-05	12.22	ppb	65.59	
23 Na	72	2	96250.0000	2.384410E+03	87116784.00	ppb	0.22	
24 Mg	72	3	31670.0000	1.759249E+03	205644300.00	ppb	1.48	
27 Al	72	3	34700.0000	2.259234E+03	264094590.00	ppb	1.20	
31 P	72	2	47720.0000	2.057988E+01	751914.69	ppb	0.49	
39 K	72	3	47800.0000	2.391821E+03	279598110.00	ppb	0.96	
44 Ca	72	3	139300.0000	2.086369E+02	24389560.00	ppb	0.74	
51 V	72	2	4.9790	3.343266E-01	12214.86	ppb	1.58	
52 Cr	72	2	-0.3553	1.179468E-01	4309.53	ppb	15.08	
55 Mn	72	2	1.6770	8.480261E-02	3098.49	ppb	1.97	
56 Fe	72	1	191100.0000	1.013294E+04	217010100.00	ppb	0.78	
59 Co	72	2	1.5100	9.162601E-02	3347.80	ppb	1.96	
60 Ni	72	2	5.0550	6.815758E-02	2490.23	ppb	0.35	
63 Cu	89	2	18.7500	6.941152E-02	18505.17	ppb	1.93	
66 Zn	89	2	2.0090	1.858885E-03	495.57	ppb	4.19	
75 As	89	2	5.7290	2.888921E-03	770.25	ppb	4.43	
78 Se	89	1	0.0453	8.661691E-06	2.89	ppb	80.81	
98 Mo	89	3	2018.0000	3.825623E+00	2759800.00	ppb	0.57	
99 (Ru)	115	3	1313.0000	6.928967E-05	50.00	ppb	27.12	
107 Ag	115	3	0.0198	1.569766E-04	113.34	ppb	4.38	
111 Cd	115	3	6.1170	4.671990E-03	3372.72	ppb	3.05	
121 Sb	115	3	0.0070	1.447548E-04	104.45	ppb	54.14	
137 Ba	209	3	-0.5658	2.110914E-04	142.23	ppb	2.51	
205 Tl	209	3	-0.0103	8.412975E-05	56.67	ppb	5.87	
208 Pb	209	3	0.0942	1.575163E-03	1061.17	ppb	3.34	
238 U	209	3	0.0025	5.115190E-05	34.45	ppb	55.35	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	175666	0.27	1871599	9.4	30 - 120	IS Fail
72 Ge	1	21418	1.44	78194	27.4	30 - 120	IS Fail
72 Ge	2	36536	0.35	105165	34.7	30 - 120	
72 Ge	3	116906	1.12	231040	50.6	30 - 120	
89 Y	1	333262	0.65	1071043	31.1	30 - 120	
89 Y	2	266580	0.61	858586	31.0	30 - 120	
89 Y	3	721412	0.76	1808858	39.9	30 - 120	
115 In	3	721915	1.31	1846597	39.1	30 - 120	
209 Bi	3	673690	0.36	2022337	33.3	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B06m00.B\005CALB.D\005CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
2 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY INTERFERENCE CHECK STANDARD AB FOR 296840 METALS Water
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018054020235.1 File : 18b06m00235 Time : 07-FEB-2018 07:47
Cal : 1018054020001 Caldate : 06-FEB-2018
Standards: S35822, S35396

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Copper	E	200.0	151.2	ug/L	**-24**	20	ab- ***

ISTD (ICALBLK 18b06m00005)	Ch	ICALBLK Abund	Abund	%Drift
Germanium	H	78194	24939	-68.11
Germanium	A	231040	124809	-45.98
Germanium	E	105165	40404	-61.58
Indium	A	1846597	810308	-56.12
Yttrium	E	858586	305872	-64.37
Yttrium	H	1071043	387103	-63.86
Yttrium	A	1808858	822644	-54.52

-=low bias ab=ICSAB

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B06m00.B\235ICSB.D\235ICSB.D#
Date Acquired: Feb 7 2018 07:47 am
Acq. Method: 6020newj.M
Operator:
Sample Name: icsab,s35822
Misc Info:
Vial Number: 1204
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 06 2018 01:17 pm
Sample Type: 6-ICSAB
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Fail
ISTD: Fail

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
23 Na	72	2	99320.0000	2.460616E+03	99418040.00	ppb	0.37	
24 Mg	72	3	33950.0000	1.886017E+03	235342900.00	ppb	1.54	
27 Al	72	3	37090.0000	2.414509E+03	301294020.00	ppb	1.44	
31 P	72	2	48680.0000	2.099159E+01	848139.63	ppb	0.32	
39 K	72	3	50340.0000	2.518816E+03	314313980.00	ppb	1.35	
44 Ca	72	3	148200.0000	2.220511E+02	27709750.00	ppb	1.17	
51 V	72	2	131.0000	5.931832E+00	239666.09	ppb	0.57	Fail
52 Cr	72	2	120.8000	5.996980E+00	242298.50	ppb	0.50	Fail
55 Mn	72	2	126.4000	6.211215E+00	250954.30	ppb	0.50	Fail
56 Fe	72	1	190600.0000	1.010812E+04	252089600.00	ppb	0.11	
59 Co	72	2	124.4000	7.468028E+00	301739.69	ppb	0.14	Fail
60 Ni	72	2	121.6000	1.628402E+00	65793.24	ppb	0.46	Fail
63 Cu	89	2	151.2000	5.544409E-01	169586.70	ppb	0.35	Fail
66 Zn	89	2	60.6100	4.932741E-02	15087.79	ppb	0.68	Fail
75 As	89	2	92.9300	4.390718E-02	13430.10	ppb	0.37	
78 Se	89	1	88.6600	1.006423E-02	3895.18	ppb	3.35	
98 Mo	89	3	2013.0000	3.816092E+00	3139347.00	ppb	0.43	
107 Ag	115	3	42.2900	1.381694E-01	111966.50	ppb	1.01	Fail
111 Cd	115	3	89.2900	6.802096E-02	55120.52	ppb	0.79	Fail

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	206968	1.12	1871599	11.1	30 - 120	IS Fail
72 Ge	1	24939	1.03	78194	31.9	30 - 120	
72 Ge	2	40404	0.80	105165	38.4	30 - 120	
72 Ge	3	124809	2.06	231040	54.0	30 - 120	
89 Y	1	387103	0.87	1071043	36.1	30 - 120	
89 Y	2	305872	0.67	858586	35.6	30 - 120	
89 Y	3	822644	0.89	1808858	45.5	30 - 120	
115 In	3	810308	0.94	1846597	43.9	30 - 120	
209 Bi	3	747514	0.14	2022337	37.0	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B06m00.B\005CALB.D\005CALB.D#

9 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Mercury Raw Data

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 388052920

Instrument : MET45 Begun : 02/05/18 18:00
Method : EPA 7470A SOP Version : hg_water_rv19

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	met45	ICALBLK				02/05/18 18:00	1.0		
002	met45	ICAL	ICAL1			02/05/18 18:01	1.0	1	
003	met45	ICAL	ICAL2			02/05/18 18:02	1.0	1	
004	met45	ICAL	ICAL3			02/05/18 18:03	1.0	1	
005	met45	ICAL	ICAL4			02/05/18 18:04	1.0	1	
006	met45	ICAL	ICAL5			02/05/18 18:05	1.0	1	
007	met45	ICV				02/05/18 18:06	1.0	2	
008	met45	ICB				02/05/18 18:08	1.0		
009	met45	BLANK	QC918974	Water	256218	02/05/18 18:09	1.0		
010	met45	BS	QC918975	Water	256218	02/05/18 18:10	1.0		
011	met45	BSD	QC918976	Water	256218	02/05/18 18:11	1.0		
012	met45	MSS	296840-011	Water	256218	02/05/18 18:12	1.0		
013	met45	MS	QC918977	Water	256218	02/05/18 18:13	1.0		
014	met45	MSD	QC918978	Water	256218	02/05/18 18:14	1.0		
015	met45	SER	QC918979	Water	256218	02/05/18 18:16	5.0		
016	met45	SAMPLE	296587-003	Water	256218	02/05/18 18:17	1.0		1:HG=14
017	met45	SAMPLE	296638-002	Water	256218	02/05/18 18:18	1.0		
018	met45	SAMPLE	296680-002	Water	256218	02/05/18 18:19	1.0		
019	met45	CCV				02/05/18 18:21	1.0	3	
020	met45	CCB				02/05/18 18:22	1.0		
021	met45	SAMPLE	296803-002	Water	256218	02/05/18 18:23	1.0		
022	met45	SAMPLE	296803-006	Water	256218	02/05/18 18:24	1.0		
023	met45	SAMPLE	296803-010	Water	256218	02/05/18 18:25	1.0		
024	met45	SAMPLE	296803-014	Water	256218	02/05/18 18:26	1.0		
025	met45	SAMPLE	296822-009	Water	256218	02/05/18 18:28	1.0		
026	met45	SAMPLE	296840-012	Water	256218	02/05/18 18:29	1.0		
027	met45	SAMPLE	296868-001	Water	256218	02/05/18 18:30	1.0		
028	met45	LOD	255715-041	Water	256218	02/05/18 18:31	1.0		
029	met45	SAMPLE	296868-001	Filtrate	256218	02/05/18 18:32	1.0		
030	met45	BLANK	QC918980	Filtrate	256218	02/05/18 18:33	1.0		
031	met45	CCV				02/05/18 18:34	1.0	3	
032	met45	CCB				02/05/18 18:36	1.0		
033	met45	SAMPLE	296781-002	Water	256218	02/05/18 18:37	1.0		
034	met45	SAMPLE	296797-001	Water	256218	02/05/18 18:38	1.0		
035	met45	SAMPLE	296587-003	Water	256218	02/05/18 18:39	10.0		
036	met45	CCV				02/05/18 18:40	1.0	3	
037	met45	CCB				02/05/18 18:41	1.0		

SL 02/05/18 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 37.

Standards used: 1=S35906 2=S35908 3=S35909

ENTHALPY SAMPLE USER REPORT FOR EPA 7470A

Inst	: MET45	Lab ID	: 296840-011	Client ID	: HPP-FSS-EB01
Seqnum	: 388052920012	Matrix	: Water	Acct	: IEECI (MJD)
File	: met45	Batch	: 256218	Time	: 05-FEB-2018 18:12
Cal	: 388052920001	Caldate	: 05-FEB-2018		
IDF	: 1.0			Units	: ug/L

50.00 mL --> 50.0 ml = 1.0 ml/ml PDF

Analyte	Result	RL	Blank	Flags
Mercury	ND	0.20		u

u=use

388052920012

==========

Method Loaded
Method Name: MET45 **Method Last Saved: 2/5/2018 5:14:12 PM**
Method Description: MET 45

==========

Sequence No.: 12 **Autosampler Location: 14**
Sample ID: 296840-011,256218,1 **Date Collected: 2/5/2018 6:12:41 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: 296840-011,256218,1 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.010	0.010	-0.0015	0.0009	0.0004	6:13:32 PM	Yes

ENTHALPY SAMPLE USER REPORT FOR EPA 7470A

Inst : MET45 Lab ID : 296840-012 Client ID : HPP-FSS-FB01
Seqnum : 388052920026 Matrix : Water Acct : IEECI (MJD)
File : met45 Batch : 256218 Time : 05-FEB-2018 18:29
Cal : 388052920001 Caldate : 05-FEB-2018
IDF : 1.0 Units : ug/L

50.00 mL --> 50.0 ml = 1.0 ml/ml PDF

Analyte	Result	RL	Blank	Flags
Mercury	ND	0.20		u

u=use

==========

Method Loaded
Method Name: MET45 **Method Last Saved: 2/5/2018 5:14:12 PM**
Method Description: MET 45

==========

Sequence No.: 26 **Autosampler Location: 26**
Sample ID: 296840-012,256218,1 **Date Collected: 2/5/2018 6:29:12 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: 296840-012,256218,1 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.020	0.020	-0.0008	0.0017	0.0005	6:30:03 PM	Yes

ENTHALPY BLANK USER REPORT FOR 296840 METALS Water
EPA 7470A

Inst : MET45 Lab ID : QC918974
Seqnum : 388052920009.8 Matrix : Water
File : met45 Batch : 256218 Time : 05-FEB-2018 18:09
Cal : 388052920001 Caldate : 05-FEB-2018
IDF : 1.0 Units : ug/L

50.00 mL --> 50.0 ml = 1.0 ml/ml PDF

Analyte	Result	RL	Flags
Mercury	ND	0.20	u

u=use

==========

Method Loaded
Method Name: MET45 **Method Last Saved: 2/5/2018 5:14:12 PM**
Method Description: MET 45

==========

Sequence No.: 9 **Autosampler Location: 11**
Sample ID: qc918974,256218,1 **Date Collected: 2/5/2018 6:09:18 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: qc918974,256218,1 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.021	0.021	-0.0007	0.0018	0.0004	6:10:08 PM	Yes

ENTHALPY SPIKE USER REPORT FOR 296840 METALS Water
EPA 7470A

Type : BS
Inst : MET45
Seqnum : 388052920010.8
File : met45
IDF : 1.0
Lab ID : QC918975
Matrix : Water
Batch : 256218
Time : 05-FEB-2018 18:10
Cal : 388052920001
Units : ug/L

Type : BSD
Inst : MET45
Seqnum : 388052920011.8
File : met45
IDF : 1.0
Lab ID : QC918976
Matrix : Water
Batch : 256218
Time : 05-FEB-2018 18:11
Cal : 388052920001

BS: 50.00 mL --> 50.0 ml = 1.0 ml/ml PDF
BSD: 50.00 mL --> 50.0 ml = 1.0 ml/ml PDF

Analyte	Spiked	BS	%Rec	BSD	%Rec	Limits	RPD	Lim	Flags
Mercury	2.000	1.826	91	1.939	97	80-120	6	20	u

u=use

==========

Method Loaded
Method Name: MET45 **Method Last Saved: 2/5/2018 5:14:12 PM**
Method Description: MET 45

==========

Sequence No.: 10 **Autosampler Location: 12**
Sample ID: qc918975,256218,1 **Date Collected: 2/5/2018 6:10:25 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: qc918975,256218,1 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	1.825	1.825	0.1472	0.1496	0.0336	6:11:16 PM	Yes

==========

Method Loaded
Method Name: MET45 **Method Last Saved: 2/5/2018 5:14:12 PM**
Method Description: MET 45

==========

Sequence No.: 11 **Autosampler Location: 13**
Sample ID: qc918976,256218,1 **Date Collected: 2/5/2018 6:11:33 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: qc918976,256218,1 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	1.939	1.939	0.1565	0.1589	0.0352	6:12:24 PM	Yes

ENTHALPY SPIKE USER REPORT FOR 296840 METALS Water
EPA 7470A

Type : MSS	Type : MS	Type : MSD
Inst : MET45	Inst : MET45	Inst : MET45
Seqnum : 388052920012	Seqnum : 388052920013.8	Seqnum : 388052920014.8
File : met45	File : met45	File : met45
IDF : 1.0	IDF : 1.0	IDF : 1.0
Lab ID : 296840-011	Lab ID : QC918977	Lab ID : QC918978
Matrix : Water	Matrix : Water	Matrix : Water
Batch : 256218	Batch : 256218	Batch : 256218
Time : 05-FEB-2018 18:12	Time : 05-FEB-2018 18:13	Time : 05-FEB-2018 18:14
Cal : 388052920001	Cal : 388052920001	Cal : 388052920001
Units : ug/L		

MSS: 50.00 mL --> 50.0 ml = 1.0 ml/ml PDF
MS: 50.00 mL --> 50.0 ml = 1.0 ml/ml PDF
MSD: 50.00 mL --> 50.0 ml = 1.0 ml/ml PDF

Analyte	MSS	Spiked	MS	%Rec	MSD	%Rec	Limits	RPD	Lim	Flags
Mercury	ND	2.000	1.848	92	1.831	92	80-120	1	20	u

u=use

==========

Method Loaded
Method Name: MET45 **Method Last Saved: 2/5/2018 5:14:12 PM**
Method Description: MET 45

==========

Sequence No.: 13 **Autosampler Location: 15**
Sample ID: qc918977,256218,1 **Date Collected: 2/5/2018 6:13:49 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: qc918977,256218,1 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	1.847	1.847	0.1490	0.1514	0.0340	6:14:40 PM	Yes

==========

Method Loaded
Method Name: MET45 **Method Last Saved: 2/5/2018 5:14:12 PM**
Method Description: MET 45

==========

Sequence No.: 14 **Autosampler Location: 16**
Sample ID: qc918978,256218,1 **Date Collected: 2/5/2018 6:14:58 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: qc918978,256218,1 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	1.830	1.830	0.1476	0.1500	0.0319	6:15:49 PM	Yes

ENTHALPY SERIAL DILUTION FOR 296840 METALS Water
EPA 7470A

Type : MSS
Inst : MET45
Seqnum : 388052920012
File : met45
IDF : 1.0
Lab ID : 296840-011
Matrix : Water
Batch : 256218
Time : 05-FEB-2018 18:12
Cal : 388052920001
Units : ug/L

Type : SER
Inst : MET45
Seqnum : 388052920015.8
File : met45
IDF : 5.0
Lab ID : QC918979
Matrix : Water
Batch : 256218
Time : 05-FEB-2018 18:16
Cal : 388052920001

MSS: 50.00 mL --> 50.0 ml = 1.0 ml/ml PDF
SER: 50.00 mL --> 50.0 ml = 1.0 ml/ml PDF

Analyte	MSS	RL	SER	RL	%D	Lim	Flags
Mercury	ND	0.2000	ND	1.000		10	u

u=use

==========

Method Loaded
Method Name: MET45 **Method Last Saved: 2/5/2018 5:14:12 PM**
Method Description: MET 45

==========

Sequence No.: 15 **Autosampler Location: 17**
Sample ID: qc918979,256218,5 **Date Collected: 2/5/2018 6:16:06 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: qc918979,256218,5 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	-0.027	-0.027	-0.0046	-0.0022	0.0001	6:16:58 PM	Yes

ENTHALPY INITIAL CALIBRATION FOR 296840 METALS Water: EPA 7470A

Inst : MET45
Calnum : 388052920001
Units : ug/L

Date : 05-FEB-2018 18:00
X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	met45	388052920002	ICAL1	05-FEB-2018 18:01	S35906 (500X)
L2	met45	388052920003	ICAL2	05-FEB-2018 18:02	S35906 (200X)
L3	met45	388052920004	ICAL3	05-FEB-2018 18:03	S35906 (50X)
L4	met45	388052920005	ICAL4	05-FEB-2018 18:04	S35906 (20X)
L5	met45	388052920006	ICAL5	05-FEB-2018 18:05	S35906 (10X)

Analyte	L1	L2	L3	L4	L5	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	Flg
Mercury	0.0800	0.0772	0.0809	0.0797	0.0821	LIN0	0.02889	12.2060		0.0800	1.000	.99	

Spiked Amounts / Drifts	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D
Mercury	0.2000	12	0.5000	0	2.0000	0	5.0000	-2	10.000	1

Instrument amount = a0 + response * a1 + response^2 * a2; LIN0=Linear regression including 0,0 point

ENTHALPY 2ND SOURCE CALIBRATION SUMMARY FOR 296840 METALS Water
EPA 7470A

Inst : MET45
Calnum : 388052920001 Cal Date : 05-FEB-2018

ICV 388052920007 (05-FEB-2018) stds: S35908

Analyte	Spiked	Quant	Units	%D	Max	Flags
Mercury	5.000	4.819	ug/L	-4	10	

==========

Analysis Begun

Logged In Analyst: mercury **Technique: AA FIMS-MHS**
Spectrometer: FIMS-100, S/N B050-9550 **Autosampler: Cetac**

Sample Information File: C:\Users\Public\PerkinElmer\AA\Data\Sample Information\Untitled.SIF
Batch ID:
Results Data Set: 020518w
Results Library: C:\Users\Public\PerkinElmer\AA\Data\Results\Results.mdb

==========

Method Loaded
Method Name: MET45 **Method Last Saved: 2/5/2018 5:14:12 PM**
Method Description: MET 45

==========

Sequence No.: 1 **Autosampler Location: 1**
Sample ID: ICALBLK **Date Collected: 2/5/2018 6:00:01 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: ICALBLK **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1		[0.00]	0.0024	0.0024	0.0006	6:00:52 PM	Yes

Auto-zero performed.

==========

Method Loaded
Method Name: MET45 **Method Last Saved: 2/5/2018 5:14:12 PM**
Method Description: MET 45

==========

Sequence No.: 2 **Autosampler Location: 2**
Sample ID: ICAL, ICAL1,S35906,500 **Date Collected: 2/5/2018 6:01:09 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: ICAL, ICAL1,S35906,500 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1		[0.2]	0.0160	0.0184	0.0039	6:02:00 PM	Yes

Standard number 1 applied. [0.2]
Correlation Coef.: 1.000000 Slope: 0.07992 Intercept: 0.00000

==========

Method Loaded
Method Name: MET45 **Method Last Saved: 2/5/2018 5:14:12 PM**
Method Description: MET 45

==========

Sequence No.: 3 **Autosampler Location: 3**
Sample ID: ICAL, ICAL2,S35906,200 **Date Collected: 2/5/2018 6:02:17 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: ICAL, ICAL2,S35906,200 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1		[0.5]	0.0386	0.0411	0.0090	6:03:08 PM	Yes

Standard number 2 applied. [0.5]
Correlation Coef.: 0.999878 Slope: 0.07714 Intercept: 0.00021

==========

Method Loaded
Method Name: MET45 **Method Last Saved: 2/5/2018 5:14:12 PM**
Method Description: MET 45

==========

Sequence No.: 4 **Autosampler Location: 4**
Sample ID: ICAL, ICAL3,S35906,50 **Date Collected: 2/5/2018 6:03:25 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: ICAL, ICAL3,S35906,50 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1		[2.0]	0.1617	0.1641	0.0355	6:04:17 PM	Yes

Standard number 3 applied. [2.0]
Correlation Coef.: 0.999932 Slope: 0.08101 Intercept: -0.00060

==========

Method Loaded
Method Name: MET45 **Method Last Saved: 2/5/2018 5:14:12 PM**
Method Description: MET 45

==========

Sequence No.: 5 **Autosampler Location: 5**
Sample ID: ICAL, ICAL4,S35906,20 **Date Collected: 2/5/2018 6:04:35 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: ICAL, ICAL4,S35906,20 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1		[5.0]	0.3983	0.4008	0.0873	6:05:26 PM	Yes

Standard number 4 applied. [5.0]
Correlation Coef.: 0.999971 Slope: 0.07980 Intercept: 0.00004

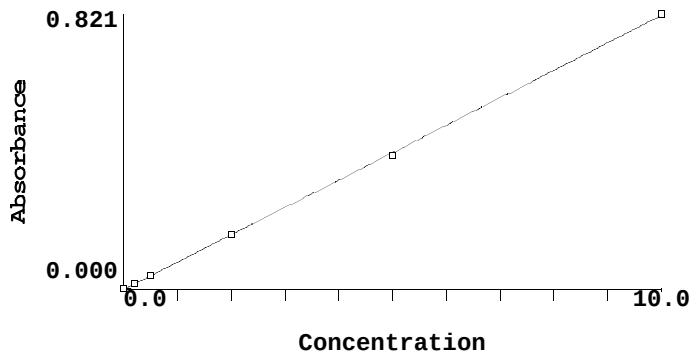
Method Loaded
Method Name: MET45 Method Last Saved: 2/5/2018 5:14:12 PM
Method Description: MET 45

Sequence No.: 6 Autosampler Location: 6
Sample ID: ICAL, ICAL5,S35906,10 Date Collected: 2/5/2018 6:05:44 PM
Analyst: Data Type: Original
Initial Sample Wt: Initial Sample Vol:
Dilution: Sample Prep Vol:

Replicate Data: ICAL, ICAL5,S35906,10 Analyte: Hg 253.7

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1		[10.0]	0.8213	0.8237	0.1781	6:06:36 PM	Yes

Standard number 5 applied. [10.0]
Correlation Coef.: 0.999895 Slope: 0.08193 Intercept: -0.00236



Calibration data for Hg 253.7 Equation: Linear, Calculated Intercept

ID	Mean Signal (Abs)	Entered Conc. ug/L	Calculated Conc. ug/L	Standard Deviation	%RSD
ICALBLK	0.0000	0	0.029	----	----
ICAL, ICAL1,S35906,500	0.0160	0.2	0.224	----	----
ICAL, ICAL2,S35906,200	0.0386	0.5	0.500	----	----
ICAL, ICAL3,S35906,50	0.1617	2.0	2.002	----	----
ICAL, ICAL4,S35906,20	0.3983	5.0	4.891	----	----
ICAL, ICAL5,S35906,10	0.8213	10.0	10.054	----	----

Correlation Coef.: 0.999895 Slope: 0.08193 Intercept: -0.00236

==========

Method Loaded
Method Name: MET45 **Method Last Saved: 2/5/2018 5:14:12 PM**
Method Description: MET 45

==========

Sequence No.: 7 **Autosampler Location: 8**
Sample ID: ICV,S35908 **Date Collected: 2/5/2018 6:06:55 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: ICV,S35908 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	4.818	4.818	0.3924	0.3948	0.0861	6:07:47 PM	Yes

QC value within limits for Hg 253.7 Recovery = 96.36%
All analyte(s) passed QC.

ENTHALPY INSTRUMENT BLANK FOR 296840 METALS Water
EPA 7470A

Inst : MET45 IDF : 1.0
Seqnum : 388052920008.2 File : met45 Time : 05-FEB-2018 18:08
Cal : 388052920001 Caldate : 05-FEB-2018

Analyte	Quant	IQL	LOD	Units	Flags
Mercury	ND	0.2000	0.1000	ug/L	

==========

Method Loaded
Method Name: MET45 **Method Last Saved: 2/5/2018 5:14:12 PM**
Method Description: MET 45

==========

Sequence No.: 8 **Autosampler Location: 9**
Sample ID: ICB **Date Collected: 2/5/2018 6:08:06 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: ICB **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	-0.033	-0.033	-0.0050	-0.0026	0.0004	6:08:59 PM	Yes

QC value within limits for Hg 253.7 Recovery = Not calculated
All analyte(s) passed QC.

ENTHALPY CONTINUING CALIBRATION FOR 296840 METALS Water
EPA 7470A

Inst : MET45 IDF : 1.0
Seqnum : 388052920019.2 File : met45 Time : 05-FEB-2018 18:21
Cal : 388052920001 Caldate : 05-FEB-2018
Standards: S35909

Analyte	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Mercury	0.0800	0.0801	5.000	4.917	ug/L	-2	10	

==========

Method Loaded
Method Name: MET45 **Method Last Saved: 2/5/2018 5:14:12 PM**
Method Description: MET 45

==========

Sequence No.: 19 **Autosampler Location: 7**
Sample ID: CCV,S35909 **Date Collected: 2/5/2018 6:21:06 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: CCV,S35909 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	4.917	4.917	0.4005	0.4029	0.0904	6:21:58 PM	Yes

QC value within limits for Hg 253.7 Recovery = 98.34%
All analyte(s) passed QC.

ENTHALPY INSTRUMENT BLANK FOR 296840 METALS Water
EPA 7470A

Inst : MET45 IDF : 1.0
Seqnum : 388052920020.2 File : met45 Time : 05-FEB-2018 18:22
Cal : 388052920001 Caldate : 05-FEB-2018

Analyte	Quant	IQL	LOD	Units	Flags
Mercury	ND	0.2000	0.1000	ug/L	

==========

Method Loaded
Method Name: MET45 **Method Last Saved: 2/5/2018 5:14:12 PM**
Method Description: MET 45

==========

Sequence No.: 20 **Autosampler Location: 10**
Sample ID: CCB **Date Collected: 2/5/2018 6:22:17 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: CCB **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.003	0.003	-0.0021	0.0003	0.0004	6:23:10 PM	Yes

QC value within limits for Hg 253.7 Recovery = Not calculated
All analyte(s) passed QC.

ENTHALPY CONTINUING CALIBRATION FOR 296840 METALS Water
EPA 7470A

Inst : MET45 IDF : 1.0
Seqnum : 388052920031.2 File : met45 Time : 05-FEB-2018 18:34
Cal : 388052920001 Caldate : 05-FEB-2018
Standards: S35909

Analyte	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Mercury	0.0800	0.0790	5.000	4.853	ug/L	-3	10	

==========

Method Loaded
Method Name: MET45 **Method Last Saved: 2/5/2018 5:14:12 PM**
Method Description: MET 45

==========

Sequence No.: 31 **Autosampler Location: 7**
Sample ID: CCV,S35909 **Date Collected: 2/5/2018 6:34:55 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: CCV,S35909 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	4.853	4.853	0.3952	0.3976	0.0904	6:35:47 PM	Yes

QC value within limits for Hg 253.7 Recovery = 97.05%
All analyte(s) passed QC.

ENTHALPY INSTRUMENT BLANK FOR 296840 METALS Water
EPA 7470A

Inst : MET45 IDF : 1.0
Seqnum : 388052920032.2 File : met45 Time : 05-FEB-2018 18:36
Cal : 388052920001 Caldate : 05-FEB-2018

Analyte	Quant	IQL	LOD	Units	Flags
Mercury	ND	0.2000	0.1000	ug/L	

==========

Method Loaded
Method Name: MET45 **Method Last Saved: 2/5/2018 5:14:12 PM**
Method Description: MET 45

==========

Sequence No.: 32 **Autosampler Location: 10**
Sample ID: CCB **Date Collected: 2/5/2018 6:36:06 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: CCB **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.012	0.012	-0.0014	0.0010	0.0005	6:36:59 PM	Yes

QC value within limits for Hg 253.7 Recovery = Not calculated
All analyte(s) passed QC.

Enthalpy Analytical

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 296840
ANALYTICAL REPORT
Metals
Matrix: Soil

Insight EEC, Inc. 3013 E Miraloma Ave Anaheim, CA 92806	Project : 4-14214 Location : HPNS-Parcel F Level : IV

Sample ID	Lab ID
HPP-FSS-007	296840-001
HPP-FSS-008	296840-006
HPP-FSS-009	296840-013
HPP-FSS-010	296840-018

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAP and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: _____ Date: 02/08/2018

Mike Dahlquist
Project Manager
mike.dahlquist@enthalpy.com
(510) 204-2225 Ext 13101

CA ELAP# 2896, NELAP# 4044-001

ENTHALPY ANALYTICAL

CASE NARRATIVE
METALS (EPA 6020A AND EPA 7471B)
SOIL

Laboratory number:	**296840**
Client:	**Insight EEC, Inc.**
Project:	**4-14214**
Location:	**HPNS-Parcel F**
Request Date:	**02/01/18**
Samples Received:	**02/01/18**

This data package contains sample and QC results for four four-point soil composites, requested for the above referenced project on 02/01/18. See attached cooler receipt form for any sample receipt problems or discrepancies.

Metals (EPA 6020A and EPA 7471B) Soil:
Lead RSD between exposures exceeds limit.

Low recovery was observed for copper in the MS of HPP-FSS-007 (lab # 296840-001); the BS/BSD were within limits, and the associated RPD was within limits.

High % differences were observed for mercury and lead in the serial dilutions of HPP-FSS-007 (lab # 296840-001).

No other analytical problems were encountered.

Chain of Custody

Enthalpy Analytical LLC
2323 Fifth Street
Berkeley, CA 94710
(510) 486-0900 Phone
(510) 486-0532 Fax

CHAIN OF CUSTODY

Chain of Custody # : 4-14214-02

C&T LOGIN # 296840

Project No: 4-14214 Hunters Point Naval Shipyard
Project Name: Parcel F Sediment Sampling
EDD Format: _____ Rpt Level: ☐ II ☐ III ☐ IV
Turnaround Time: ☐ RUSH _____ ☐ Standard

Sampler:
Report To: Nick Weinberger & Mitra Fattahipour
Company : Insight
Telephone: # (714) 678-6730
Email: nweinberger@ieeci.com; mfattahipour@ieeci.com

Lab No.	Sample ID.	Sampling Date	Sampling Time	Matrix Water	Matrix Soil	# of Containers	Chemical Preservative HCl	H_2SO_4	HNO_3	NaOH	Methanol	NaHSO4	None	Analytical Request PCBs (EPA 8082)	Metals (Cu/Pb/Hg, EPA 6020/7471A)	Notes
	HPP-FSS-007				X								X	X	X	Composite at Lab, MS/MSD
	HPP-FSS-007A	1/31/18	0840		X	1							X			Sub-sample
	HPP-FSS-007B	1/31/18	0900		X	1							X			Sub-sample
	HPP-FSS-007C	1/31/18	0912		X	1							X			Sub-sample
	HPP-FSS-007D	1/31/18	0920		X	1							X			Sub-sample
	HPP-FSS-008				X								X	X	X	Composite at Lab
	HPP-FSS-008A	1/31/18	0935		X	1							X			Sub-sample
	HPP-FSS-008B	1/31/18	0950		X	1							X			Sub-sample
	HPP-FSS-008C	1/31/18	1100		X	1							X			Sub-sample
	HPP-FSS-008D	1/31/18	1021		X	1							X			Sub-sample
	HPP-FSS-EB01	1/31/18	0815	X		4							X	X	X	*Metals not preserved
	HPP-FSS-FB01	1/31/18	1500	X		3							X	X	X	*Metals not preserved

Notes:
Composite A, B, C, and D samples for testing as a composite sample. Retain sub-samples on hold for possible testing pending composite sample results. *Aqueous samples for metals analysis not preserved. To be preserved by lab.

SAMPLE RECEIPT
☐ Intact ☐ Cold
☐ On Ice ☐ Ambient

RELINQUISHED BY:		RECEIVED BY:	
2-1-18/1415 JMYERS	DATE/TIME	2-1 1415	DATE/TIME
2-1 1602	DATE/TIME	2/1/18 1602	DATE/TIME
	DATE/TIME		DATE/TIME

Enthalpy Analytical LLC
2323 Fifth Street
Berkeley, CA 94710
(510) 486-0900 Phone
(510) 486-0532 Fax

CHAIN OF CUSTODY

Chain of Custody # : 4-14214-02

C&T LOGIN # 296840

Project No: 4-14214 Hunters Point Naval Shipyard
Project Name: Parcel F Sediment Sampling
EDD Format: _____ Rpt Level: ☐ II ☐ III ☐ IV
Turnaround Time: ☐ RUSH _____ ☐ Standard

Sampler:
Report To: Nick Weinberger & Mitra Fattahipour
Company : Insight
Telephone: # (714) 678-6730
Email: nweinberger@ieeci.com; mfattahipour@ieeci.com

Lab No.	Sample ID.	Sampling Date	Sampling Time	Matrix Water	Matrix Soil	Matrix	Matrix	# of Containers	Chemical Preservative HCl	H_2SO_4	HNO_3	NaOH	Methanol	NaHSO4	None	Analytical Request PCBs (EPA 8082)	Metals (Cu/Pb/Hg, EPA 6020/7471A)						Notes
	HPP-FSS-009				X										X	X	X						Composite at Lab
	HPP-FSS-009A	1/31/18	1040		X			1							X								Sub-sample
	HPP-FSS-009B	1/31/18	1132		X			1							X								Sub-sample
	HPP-FSS-009C	1/31/18	1228		X			1							X								Sub-sample
	HPP-FSS-009D	1/31/18	1315		X			1							X								Sub-sample
	HPP-FSS-010				X										X	X	X						Composite at Lab
	HPP-FSS-010A	1/31/18	0936		X			1							X								Sub-sample
	HPP-FSS-010B	1/31/18	0951		X			1							X								Sub-sample
	HPP-FSS-010C	1/31/18	1101		X			1							X								Sub-sample
	HPP-FSS-010D	1/31/18	1022		X			1							X								Sub-sample

Notes:
Composite A, B, C, and D samples for testing as a composite sample. Retain sub-samples on hold for possible testing pending composite sample results.

SAMPLE RECEIPT
☐ Intact ☐ Cold
☐ On Ice ☐ Ambient

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	DATE/TIME
JMYERS	2-1-18 / 1415		2-1 1415
	2-1 1805		2/1/18 1805

COOLER RECEIPT CHECKLIST

ENTHALPY Berkeley

Login # 296840 Date Received 02/01/18 Number of coolers 1
Client Insight Project 4-14214 Hunters Point Naval Shipyard

Date Opened 02/01/18 By (print) TKY (sign) TKY
Date Logged in ↓ By (print) EH (sign)
Date Labelled ↓ By (print) TKY (sign) TKY

1. Did cooler come with a shipping slip (airbill, etc) ____ YES (NO)
   Shipping info ____

2A. Were custody seals present? .... ☐ YES (circle) on cooler on samples ☒ NO
   How many ____ Name ____ Date ____
2B. Were custody seals intact upon arrival? ____ YES NO (N/A)
3. Were custody papers dry and intact when received? ____ (YES) NO
4. Were custody papers filled out properly (ink, signed, etc)? ____ (YES) NO
5. Is the project identifiable from custody papers? (If so fill out top of form) ____ (YES) NO
6. Indicate the packing in cooler: (if other, describe) ____

☒ Bubble Wrap ☐ Foam blocks ☒ Bags ☐ None
☐ Cloth material ☐ Cardboard ☐ Styrofoam ☐ Paper towels

7. Temperature documentation: * Notify PM if temperature exceeds 6°C

Type of ice used: ☒ Wet ☐ Blue/Gel ☐ None Temp(°C) 1.7

☐ Temperature blank(s) included? ☐ Thermometer# ____ ☐ IR Gun# A

☐ Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? ____ YES (NO)
   If YES, what time were they transferred to freezer? ____
9. Did all bottles arrive unbroken/unopened? ____ (YES) NO
10. Are there any missing / extra samples? ____ YES (NO)
11. Are samples in the appropriate containers for indicated tests? ____ (YES) NO
12. Are sample labels present, in good condition and complete? ____ (YES) NO
13. Do the sample labels agree with custody papers? ____ (YES) NO
14. Was sufficient amount of sample sent for tests requested? ____ (YES) NO
15. Are the samples appropriately preserved? ____ YES (NO) N/A
16. Did you check preservatives for all bottles for each sample? ____ (YES) NO N/A
17. Did you document your preservative check? (pH strip lot# 80BD4497) (YES) NO N/A
18. Did you change the hold time in LIMS for unpreserved VOAs? ____ YES NO (N/A)
19. Did you change the hold time in LIMS for preserved terracores? ____ YES NO (N/A)
20. Are bubbles > 6mm absent in VOA samples? ____ YES NO (N/A)
21. Was the client contacted concerning this sample delivery? ____ YES (NO)
   If YES, Who was called? ____ By ____ Date: ____

COMMENTS
(15) added HNO3 (20170130S3) to make pH<2 @ 1834 on 2/1/18 to samples 11 & 12

Rev 14, 8/01/17

Results & QC Summary

ENTHALPY ANALYTICAL

Copper

Lab #:	296840	Location:	HPNS-Parcel F
Client:	Insight EEC, Inc.	Prep:	EPA 3050B
Project#:	4-14214	Analysis:	EPA 6020A
Analyte:	Copper	Batch#:	256220
Matrix:	Soil	Sampled:	02/01/18
Units:	mg/Kg	Received:	02/01/18
Basis:	dry	Prepared:	02/05/18
Diln Fac:	25.00		

Field ID	Type	Lab ID	Result	LOQ	DL	Moisture	Analyzed
HPP-FSS-007	SAMPLE	296840-001	51	1.3	0.21	48%	02/07/18
HPP-FSS-008	SAMPLE	296840-006	58	1.2	0.20	48%	02/07/18
HPP-FSS-009	SAMPLE	296840-013	140	1.0	0.16	36%	02/07/18
HPP-FSS-010	SAMPLE	296840-018	40	1.2	0.19	44%	02/08/18
	BLANK	QC918988	0.21 U	0.66	0.11		02/07/18

U= Not Detected at or above DL
DL= Detection Limit
LOQ= Limit of Quantitation

ENTHALPY ANALYTICAL

Lead

Lab #:	296840	Location:	HPNS-Parcel F
Client:	Insight EEC, Inc.	Prep:	EPA 3050B
Project#:	4-14214	Analysis:	EPA 6020A
Analyte:	Lead	Batch#:	256220
Matrix:	Soil	Sampled:	02/01/18
Units:	mg/Kg	Received:	02/01/18
Basis:	dry	Prepared:	02/05/18
Diln Fac:	25.00	Analyzed:	02/07/18

Field ID	Type	Lab ID	Result	LOQ	DL	Moisture
HPP-FSS-007	SAMPLE	296840-001	23	1.3	0.14	48%
HPP-FSS-008	SAMPLE	296840-006	40	1.2	0.13	48%
HPP-FSS-009	SAMPLE	296840-013	39	1.0	0.11	36%
HPP-FSS-010	SAMPLE	296840-018	17	1.2	0.13	44%
	BLANK	QC918988	0.21 U	0.66	0.071	

U= Not Detected at or above DL
DL= Detection Limit
LOQ= Limit of Quantitation

ENTHALPY ANALYTICAL

Mercury by Cold Vapor AA

Lab #:	296840	Location:	HPNS-Parcel F
Client:	Insight EEC, Inc.	Prep:	METHOD
Project#:	4-14214	Analysis:	EPA 7471B
Analyte:	Mercury	Sampled:	02/01/18
Matrix:	Soil	Received:	02/01/18
Units:	mg/Kg	Prepared:	02/05/18
Basis:	dry	Analyzed:	02/06/18
Batch#:	256213		

Field ID	Type	Lab ID	Result	LOQ	DL	Moisture	Diln Fac
HPP-FSS-007	SAMPLE	296840-001	0.28	0.030	0.0053	48%	1.000
HPP-FSS-008	SAMPLE	296840-006	0.70	0.033	0.0057	48%	1.000
HPP-FSS-009	SAMPLE	296840-013	1.3	0.26	0.046	36%	10.00
HPP-FSS-010	SAMPLE	296840-018	0.31	0.029	0.0051	44%	1.000
	BLANK	QC918954	0.0082 U	0.016	0.0029		1.000

U= Not Detected at or above DL
DL= Detection Limit
LOQ= Limit of Quantitation

ENTHALPY ANALYTICAL

Batch QC Report

Mercury by Cold Vapor AA

Lab #:	296840	Location:	HPNS-Parcel F
Client:	Insight EEC, Inc.	Prep:	METHOD
Project#:	4-14214	Analysis:	EPA 7471B
Analyte:	Mercury	Diln Fac:	1.000
Field ID:	HPP-FSS-007	Batch#:	256213
MSS Lab ID:	296840-001	Sampled:	02/01/18
Matrix:	Soil	Received:	02/01/18
Units:	mg/Kg	Prepared:	02/05/18
Basis:	as received	Analyzed:	02/06/18

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim
BS	QC918955		0.1587	0.1645	104	80-124		
BSD	QC918956		0.1667	0.1477	89	80-124	16	20
MS	QC918957	0.1466	0.1754	0.2986	87	80-124		
MSD	QC918958		0.1754	0.2888	81	80-124	3	20

RPD= Relative Percent Difference

ENTHALPY ANALYTICAL

Batch QC Report

Mercury by Cold Vapor AA

Lab #:	296840	Location:	HPNS-Parcel F
Client:	Insight EEC, Inc.	Prep:	METHOD
Project#:	4-14214	Analysis:	EPA 7471B
Analyte:	Mercury	Basis:	as received
Field ID:	HPP-FSS-007	Diln Fac:	5.000
Type:	Serial Dilution	Batch#:	256213
MSS Lab ID:	296840-001	Sampled:	02/01/18
Lab ID:	QC918959	Received:	02/01/18
Matrix:	Soil	Analyzed:	02/06/18
Units:	mg/Kg		

MSS Result	MSS LOQ	Result	LOQ	% Diff	Lim
0.1466	0.01563	0.1292	0.07813	12 *	10

*= Value outside of QC limits; see narrative
LOQ= Limit of Quantitation

ENTHALPY ANALYTICAL

Batch QC Report

Copper

Lab #:	296840	Location:	HPNS-Parcel F
Client:	Insight EEC, Inc.	Prep:	EPA 3050B
Project#:	4-14214	Analysis:	EPA 6020A
Analyte:	Copper	Diln Fac:	25.00
Field ID:	HPP-FSS-007	Batch#:	256220
MSS Lab ID:	296840-001	Sampled:	02/01/18
Matrix:	Soil	Received:	02/01/18
Units:	mg/Kg	Prepared:	02/05/18
Basis:	dry	Analyzed:	02/07/18

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	Moisture	RPD	Lim
BS	QC918989		25.51	26.94	106	84-119			
BSD	QC918990		24.27	26.46	109	84-119		3	20
MS	QC918991	50.95	49.56	87.43	74 *	84-119	48%		
MSD	QC918992		47.60	101.1	105	84-119	48%	16	20

*= Value outside of QC limits; see narrative
RPD= Relative Percent Difference

ENTHALPY ANALYTICAL

Batch QC Report

Lead

Lab #:	296840	Location:	HPNS-Parcel F
Client:	Insight EEC, Inc.	Prep:	EPA 3050B
Project#:	4-14214	Analysis:	EPA 6020A
Analyte:	Lead	Diln Fac:	25.00
Field ID:	HPP-FSS-007	Batch#:	256220
MSS Lab ID:	296840-001	Sampled:	02/01/18
Matrix:	Soil	Received:	02/01/18
Units:	mg/Kg	Prepared:	02/05/18
Basis:	dry	Analyzed:	02/07/18

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	Moisture	RPD	Lim
BS	QC918989		25.51	24.82	97	84-118			
BSD	QC918990		24.27	24.19	100	84-118		2	20
MS	QC918991	23.26	49.56	67.23	89	84-118	48%		
MSD	QC918992		47.60	68.26	95	84-118	48%	4	20

RPD= Relative Percent Difference

ENTHALPY ANALYTICAL

Batch QC Report

Copper			
Lab #:	296840	Location:	HPNS-Parcel F
Client:	Insight EEC, Inc.	Prep:	EPA 3050B
Project#:	4-14214	Analysis:	EPA 6020A
Analyte:	Copper	Basis:	dry
Field ID:	HPP-FSS-007	Diln Fac:	125.0
Type:	Serial Dilution	Batch#:	256220
MSS Lab ID:	296840-001	Sampled:	02/01/18
Lab ID:	QC918993	Received:	02/01/18
Matrix:	Soil	Analyzed:	02/07/18
Units:	mg/Kg		

MSS Result	MSS LOQ	Result	LOQ	Moisture %	Diff	Lim
50.95	1.306	52.70	6.532	48%	3	10

LOQ= Limit of Quantitation

ENTHALPY ANALYTICAL

Batch QC Report

Lead

Lab #:	296840	Location:	HPNS-Parcel F
Client:	Insight EEC, Inc.	Prep:	EPA 3050B
Project#:	4-14214	Analysis:	EPA 6020A
Analyte:	Lead	Basis:	dry
Field ID:	HPP-FSS-007	Diln Fac:	125.0
Type:	Serial Dilution	Batch#:	256220
MSS Lab ID:	296840-001	Sampled:	02/01/18
Lab ID:	QC918993	Received:	02/01/18
Matrix:	Soil	Analyzed:	02/07/18
Units:	mg/Kg		

MSS Result	MSS LOQ	Result	LOQ	Moisture	% Diff	Lim
23.26	1.306	20.69	6.532	48%	11 *	10

*= Value outside of QC limits; see narrative
LOQ= Limit of Quantitation

ENTHALPY ANALYTICAL

Batch QC Report

Copper

Lab #:	296840	Location:	HPNS-Parcel F
Client:	Insight EEC, Inc.	Prep:	EPA 3050B
Project#:	4-14214	Analysis:	EPA 6020A
Analyte:	Copper	Basis:	dry
Field ID:	HPP-FSS-007	Diln Fac:	25.00
Type:	Post Digest Spike	Batch#:	256220
MSS Lab ID:	296840-001	Sampled:	02/01/18
Lab ID:	QC918994	Received:	02/01/18
Matrix:	Soil	Analyzed:	02/07/18
Units:	mg/Kg		

MSS Result	Spiked	Result	%REC	Limits	Moisture
50.95	130.6	204.5	118	80-120	48%

ENTHALPY ANALYTICAL

Batch QC Report

Lead

Lab #:	296840	Location:	HPNS-Parcel F
Client:	Insight EEC, Inc.	Prep:	EPA 3050B
Project#:	4-14214	Analysis:	EPA 6020A
Analyte:	Lead	Basis:	dry
Field ID:	HPP-FSS-007	Diln Fac:	25.00
Type:	Post Digest Spike	Batch#:	256220
MSS Lab ID:	296840-001	Sampled:	02/01/18
Lab ID:	QC918994	Received:	02/01/18
Matrix:	Soil	Analyzed:	02/07/18
Units:	mg/Kg		

MSS Result	Spiked	Result	%REC	Limits	Moisture
23.26	130.6	172.4	114	80-120	48%

REPORTING SUMMARY FOR 296840 METALS Soil
Enthalpy Analytical - Berkeley

Lab ID	Inst ID	Analyzed	IDF	CU	PB	HG
296840-001	MET44	02/05/18 17:23	1.0			
296840-001	MET44	02/05/18 18:14	1.0			
296840-001	MET45	02/06/18 11:28	1.0			+
296840-001	MET26	02/07/18 19:10	25.0	+	+	
296840-006	MET45	02/06/18 11:39	1.0			+
296840-006	MET26	02/07/18 19:34	25.0	+	+	
296840-013	MET45	02/06/18 11:40	1.0			
296840-013	MET45	02/06/18 12:44	10.0			+
296840-013	MET26	02/07/18 19:39	25.0	+	+	
296840-018	MET45	02/06/18 11:41	1.0			
296840-018	MET45	02/06/18 12:45	1.0			+
296840-018	MET26	02/07/18 19:59	25.0		+	
296840-018	MET26	02/08/18 15:05	25.0	+		
QC918954	MET44	02/05/18 17:19	1.0			
QC918954	MET44	02/05/18 18:10	1.0			
QC918954	MET45	02/06/18 11:25	1.0			+
QC918955	MET44	02/05/18 17:20	1.0			
QC918955	MET44	02/05/18 18:12	1.0			
QC918955	MET45	02/06/18 11:26	1.0			+
QC918956	MET44	02/05/18 17:22	1.0			
QC918956	MET44	02/05/18 18:13	1.0			
QC918956	MET45	02/06/18 11:27	1.0			+
QC918957	MET44	02/05/18 17:24	1.0			
QC918957	MET44	02/05/18 18:16	1.0			
QC918957	MET45	02/06/18 11:30	1.0			+
QC918958	MET44	02/05/18 17:26	1.0			
QC918958	MET44	02/05/18 18:17	1.0			
QC918958	MET45	02/06/18 11:31	1.0			+
QC918959	MET44	02/05/18 17:27	5.0			
QC918959	MET44	02/05/18 18:18	5.0			
QC918959	MET45	02/06/18 11:32	5.0			
QC918959	MET45	02/06/18 12:13	5.0			+
QC918988	MET26	02/07/18 18:55	25.0	+	+	
QC918988	MET26	02/08/18 15:00	25.0			
QC918989	MET26	02/07/18 19:00	25.0	+	+	
QC918990	MET26	02/07/18 19:05	25.0	+	+	
QC918991	MET26	02/07/18 19:15	25.0	+	+	
QC918991	MET26	02/08/18 15:10	25.0			
QC918992	MET26	02/07/18 19:19	25.0	+	+	

REPORTING SUMMARY FOR 296840 METALS Soil
Enthalpy Analytical - Berkeley

Lab ID	Inst ID	Analyzed	IDF	CU	PB	HG	
QC918992	MET26	02/08/18 15:15	25.0				
QC918993	MET26	02/07/18 19:24	125.0	+	+		
QC918993	MET26	02/08/18 15:20	125.0				
QC918994	MET26	02/07/18 19:29	25.0	+	+		
QC918994	MET26	02/08/18 15:24	25.0				

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 1018055668

Instrument : MET26 Begun : 02/07/18 15:48
Method : EPA 6020A SOP Version : icpms metals_rv10

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	18b07p00001	X	RINSE			02/07/18 15:48	1.0	1	
002	18b07p00002	TUN				02/07/18 15:53	1.0	2	
003	18b07p00003	X	RINSE			02/07/18 15:57	1.0	1	
004	18b07p00004	X	RINSE			02/07/18 16:02	1.0	1	
005	18b07p00005	ICALBLK	CALBLANK			02/07/18 16:07	1.0	1	
006	18b07p00006	ICAL				02/07/18 16:12	1.0	3 1	
007	18b07p00007	X	RINSE			02/07/18 16:17	1.0	1	
008	18b07p00008	ICALBLK	CALBLANK			02/07/18 16:22	1.0	1	
009	18b07p00009	ICAL				02/07/18 16:26	1.0	3 1	
010	18b07p00010	ICAL				02/07/18 16:31	1.0	3 1	
011	18b07p00011	X	RINSE			02/07/18 16:36	1.0	1	
012	18b07p00012	ICALBLK	CALBLANK			02/07/18 16:41	1.0	1	
013	18b07p00013	ICAL				02/07/18 16:46	1.0	3 1	
014	18b07p00014	ICAL				02/07/18 16:51	1.0	3 1	
015	18b07p00015	ICAL				02/07/18 16:55	1.0	3 1	
016	18b07p00016	ICAL				02/07/18 17:00	1.0	3 1	
017	18b07p00017	ICAL				02/07/18 17:05	1.0	3 1	
018	18b07p00018	ICAL				02/07/18 17:10	1.0	3 1	
019	18b07p00019	ICAL				02/07/18 17:15	1.0	3 1	
020	18b07p00020	X	RINSE			02/07/18 17:20	1.0	1	
021	18b07p00021	ICV				02/07/18 17:25	1.0	4 1	
022	18b07p00022	XCRI				02/07/18 17:30	1.0	5 1	
023	18b07p00023	XICB				02/07/18 17:35	1.0	1	
024	18b07p00024	XICSA				02/07/18 17:40	1.0	6 1	8:CA=270000
025	18b07p00025	ICSAB				02/07/18 17:45	1.0	7 1	8:CA=270000
026	18b07p00026	X	RINSE			02/07/18 17:50	1.0	1	
027	18b07p00027	X	RINSE			02/07/18 17:55	1.0	1	
028	18b07p00028	X	RINSE			02/07/18 18:00	1.0	1	
029	18b07p00029	X	RINSE			02/07/18 18:05	1.0	1	
030	18b07p00030	X	RINSE			02/07/18 18:15	1.0	1	
031	18b07p00031	CRI				02/07/18 18:20	1.0	5 1	
032	18b07p00032	ICB				02/07/18 18:25	1.0	1	
033	18b07p00033	ICSA				02/07/18 18:30	1.0	6 1	8:CA=270000
034	18b07p00034	X	RINSE			02/07/18 18:35	1.0	1	
035	18b07p00035	X	RINSE			02/07/18 18:40	1.0	1	
036	18b07p00036	X	RINSE			02/07/18 18:45	1.0	1	
037	18b07p00037	X	RINSE			02/07/18 18:50	1.0	1	
038	18b07p00038	BLANK	QC918988	Soil	256220	02/07/18 18:55	25.0	1	
039	18b07p00039	BS	QC918989	Soil	256220	02/07/18 19:00	25.0	1	
040	18b07p00040	BSD	QC918990	Soil	256220	02/07/18 19:05	25.0	1	
041	18b07p00041	MSS	296840-001	Soil	256220	02/07/18 19:10	25.0	1	
042	18b07p00042	MS	QC918991	Soil	256220	02/07/18 19:15	25.0	1	
043	18b07p00043	MSD	QC918992	Soil	256220	02/07/18 19:19	25.0	1	
044	18b07p00044	SER	QC918993	Soil	256220	02/07/18 19:24	125.0	1	
045	18b07p00045	PDS	QC918994	Soil	256220	02/07/18 19:29	25.0	1 8 9 10	
046	18b07p00046	SAMPLE	296840-006	Soil	256220	02/07/18 19:34	25.0	1	1:ZN=210
047	18b07p00047	SAMPLE	296840-013	Soil	256220	02/07/18 19:39	25.0	1	3:MG=28000
048	18b07p00048	CCV				02/07/18 19:44	1.0	4 1	
049	18b07p00049	X	XCCB			02/07/18 19:49	1.0	1	
050	18b07p00050	CCB				02/07/18 19:54	1.0	1	
051	18b07p00051	SAMPLE	296840-018	Soil	256220	02/07/18 19:59	25.0	1	
052	18b07p00052	SAMPLE	296825-001	Soil	256220	02/07/18 20:04	25.0	1	1:MN=360

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 1018055668

Instrument : MET26 Begun : 02/07/18 15:48
Method : EPA 6020A SOP Version : icpms metals_rv10

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
053	18b07p00053	SAMPLE	296825-002	Soil	256220	02/07/18 20:09	25.0	1	1:MN=200
054	18b07p00054	SAMPLE	296825-003	Soil	256220	02/07/18 20:14	25.0	1	
055	18b07p00055	SAMPLE	296825-004	Soil	256220	02/07/18 20:19	25.0	1	1:MN=290
056	18b07p00056	SAMPLE	296825-005	Soil	256220	02/07/18 20:23	25.0	1	1:MN=400
057	18b07p00057	CCV				02/07/18 20:28	1.0	4 1	
058	18b07p00058	X	XCCB			02/07/18 20:33	1.0	1	
059	18b07p00059	CCB				02/07/18 20:38	1.0	1	
060	18b07p00060	ICSA				02/07/18 20:43	1.0	6 1	8:CA=270000
061	18b07p00061	ICSAB				02/07/18 20:48	1.0	7 1	8:CA=270000
062	18b07p00062	X	RINSE			02/07/18 20:54	1.0	1	
063	18b07p00063	X	RINSE			02/07/18 20:58	1.0	1	
064	18b07p00064	X	RINSE			02/07/18 21:03	1.0	1	
065	18b07p00065	X	RINSE			02/07/18 21:08	1.0	1	

NBB 02/08/18 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 001 through 061.

Standards used: 1=S35939 2=S35938 3=S35940 4=S35929 5=S35885 6=S35821 7=S35822 8=S34361 9=S34362 10=S34743

CURTIS & TOMPKINS INTERNAL STANDARD SUMMARY FOR SEQUENCE 1018055668

Date : 02/07/18 Reference : 18b07p00012
Sequence : MET26 18b07p00 Analyzed : 02/07/18 16:41

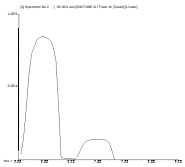
#	Type	Sample ID	GE H	GE A	GE E	IN A	Y E	Y H	Y A	LI A	BI A
		IB+ICALBLK STD	63325	187412	90193	1357566	716208	916259	1390537	929517	1338042
		LOWER LIMIT	18998	56224	27058	407270	214862	274878	417161	278855	401413
		UPPER LIMIT	75990	224894	108232	1629079	859450	1099511	1668644	1115420	1605650
025	ICSAB		70094	188341	95510	1296470	714654	1032705	1393355	872043	1109058
032	ICB		69074	180515	87223	1274330	674561	1021382	1317925	936807	1232971
033	ICSA		76909 *	191321	100827	1288658	737159	1095734	1396164	870898	1069749
038	BLANK	QC918988	67034	191714	90765	1369426	707824	939144	1416240	952983	1300149
039	BS	QC918989	68030	193104	93013	1370784	725223	952308	1424660	971813	1296683
040	BSD	QC918990	68613	204996	92959	1479052	725649	959023	1539577	1040451	1390280
041	MSS	296840-001	74719	205710	99644	1442832	802589	1096890	1580032	1058773	1324035
042	MS	QC918991	73848	203315	100465	1415578	801102	1073499	1533209	1027623	1303685
043	MSD	QC918992	71261	216926	104118	1494388	828651	1001401	1647174	1115813 *	1345096
044	SER	QC918993	75747	224060	101847	1564528	788906	1054927	1662255	1153821 *	1422410
045	PDS	QC918994	78683 *	219798	106518	1513145	843824	1145323 *	1674923 *	1150191 *	1337644
046	SAMPLE	296840-006	81842 *	220755	105032	1521715	835792	1186008 *	1687386 *	1160703 *	1354542
047	SAMPLE	296840-013	72631	215836	107333	1498988	857214	1030767	1640903	1108800	1337943
048	CCV		82932 *	219413	107005	1517641	836577	1181117 *	1633301	1137172 *	1339584
050	CCB		73583	201485	98152	1399882	754359	1025176	1455611	1037672	1282789
051	SAMPLE	296840-018	86408 *	226956 *	111505 *	1542418	882335 *	1238579 *	1715443 *	1218305 *	1359400
052	SAMPLE	296825-001	81119 *	224577	109350 *	1541427	918306 *	1264123 *	1807989 *	1191427 *	1388597
053	SAMPLE	296825-002	86393 *	229519 *	111242 *	1612044	920459 *	1307535 *	1811603 *	1193292 *	1456663
054	SAMPLE	296825-003	85390 *	227169 *	116787 *	1557998	967709 *	1307568 *	1804020 *	1199619 *	1384861
055	SAMPLE	296825-004	86838 *	229199 *	118038 *	1543109	937491 *	1263961 *	1711474 *	1218441 *	1372278
056	SAMPLE	296825-005	86344 *	227580 *	115646 *	1570323	961853 *	1335751 *	1826694 *	1205389 *	1404755
057	CCV		84645 *	218466	106133	1493752	805796	1185624 *	1602045	1182964 *	1334684
059	CCB		75206	201714	101857	1405213	779400	1035635	1471133	1073475	1286829
060	ICSA		86479 *	207562	112251 *	1369471	811080	1231919 *	1495369	997010	1091349
061	ICSAB		75820	191758	99138	1315338	735440	1119182 *	1408163	919915	1087442

MET26 QC Tune Report

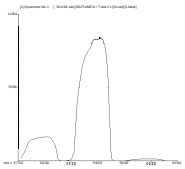
Data File: C:\ICPCHEM\1\DATA\18B07p00.B\002TUNE.D
Date Acquired: Feb 7 2018 03:53 pm
Acq. Method: TN6020K.M
Operator:
Sample Name: tun,s35938
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\TN6020K.M

RSD (%)

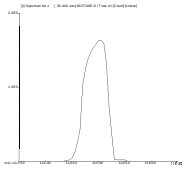
Element	Rep1	Rep2	Rep3	Rep4	Rep5	Actual	Required	Flag
7 Li	80191	80387	80045	78788	79028	0.23	5.00	
59 Co	46156	45533	45790	45719	45747	1.26	5.00	
115 In	840441	845148	827625	796828	786250	3.17	5.00	
205 Tl	53070	52586	52351	52970	52759	0.87	5.00	



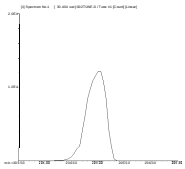
7 Li
Mass Calib.
Actual: 7.00
Required: 6.90 - 7.10
Flag:
Peak Width @ 5%
Actual: 0.65
Required: 0.75
Flag:



59 Co
Mass Calib.
Actual: 59.00
Required: 58.90 - 59.10
Flag:
Peak Width @ 5%
Actual: 0.60
Required: 0.75
Flag:



115 In
Mass Calib.
Actual: 115.00
Required: 114.90 - 115.10
Flag:
Peak Width @ 5%
Actual: 0.65
Required: 0.75
Flag:



205 Tl
Mass Calib.
Actual: 205.00
Required: 204.90 - 205.10
Flag:
Peak Width @ 5%
Actual: 0.65
Required: 0.75
Flag:

ENTHALPY INITIAL CALIBRATION FOR 296840 METALS Soil: EPA 6020A

Inst : MET26
Calnum : 1018055668001
Units : ug/L

Date : 07-FEB-2018 16:41
X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	18b07p00013	1018055668013		07-FEB-2018 16:46	S35940 (400X), S35939
L2	18b07p00014	1018055668014		07-FEB-2018 16:51	S35940 (200X), S35939
L3	18b07p00015	1018055668015		07-FEB-2018 16:55	S35940 (40X), S35939
L4	18b07p00016	1018055668016		07-FEB-2018 17:00	S35940 (20X), S35939
L5	18b07p00017	1018055668017		07-FEB-2018 17:05	S35940 (4X), S35939
L6	18b07p00018	1018055668018		07-FEB-2018 17:10	S35940 (2X), S35939
L7	18b07p00019	1018055668019		07-FEB-2018 17:15	S35940, S35939

Analyte	Ch	L1	L2	L3	L4	L5	L6	L7	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	Flg
Lead	A	0.0112	0.0107	0.0106	0.0106	0.0106	0.0106	0.0109	BLNK	-0.0784	92.7321		0.0107	1.000	0.995	
Copper	E	0.0058	0.0047	0.0041	0.0040	0.0039	0.0038	0.0037	BLNK	-0.2838	268.213		0.0043	1.000	0.995	

Spiked Amounts / Drifts	Ch	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D	L6	%D	L7	%D
Lead	A	0.5000	-12	1.0000	-9	5.0000	-4	10.000	-3	50.000	-2	100.00	-2	200.00	1
Copper	E	0.5000	0	1.0000	-2	5.0000	3	10.000	6	50.000	3	100.00	1	200.00	0

Instrument amount = a0 + response * a1 + response^2 * a2; BLNK=Y=aX+[blank]

ENTHALPY 2ND SOURCE CALIBRATION SUMMARY FOR 296840 METALS Soil
EPA 6020A

Inst : MET26
Calnum : 1018055668001 Cal Date : 07-FEB-2018

ICV 1018055668021 (18b07p00021 07-FEB-2018) stds: S35929, S35939

Analyte	Ch	Spiked	Quant	Units	%D	Max	Flags
Lead	A	50.00	49.31	ug/L	-1	10	
Copper	E	50.00	51.88	ug/L	4	10	

ENTHALPY INTERFERENCE CHECK STANDARD AB FOR 296840 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018055668025.1 File : 18b07p00025 Time : 07-FEB-2018 17:45
Cal : 1018055668001 Caldate : 07-FEB-2018
Standards: S35822, S35939

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Copper	E	200.0	177.4	ug/L	-11	20	

ISTD (ICALBLK 18b07p00012)	Ch	ICALBLK Abund	Abund	%Drift
Germanium	H	63325	70094	10.69
Germanium	A	187412	188341	0.50
Germanium	E	90193	95510	5.90
Indium	A	1357566	1296470	-4.50
Yttrium	E	716208	714654	-0.22
Yttrium	H	916259	1032705	12.71
Yttrium	A	1390537	1393355	0.20

ENTHALPY LOW-LEVEL PERFORMANCE VERIFICATION STANDARD FOR 296840 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018055668031.1 File : 18b07p00031 Time : 07-FEB-2018 18:20
Cal : 1018055668001 Caldate : 07-FEB-2018
Standards: S35885, S35939

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Lead	A	1.000	0.9542	ug/L	-5	30	
Copper	E	1.000	1.049	ug/L	5	30	

ISTD (ICALBLK 18b07p00012)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	929517	967655	4.10
Germanium	H	63325	66350	4.78
Germanium	A	187412	186738	-0.36
Germanium	E	90193	90886	0.77
Indium	A	1357566	1323162	-2.53
Bismuth	A	1338042	1277289	-4.54
Yttrium	E	716208	705560	-1.49
Yttrium	H	916259	926061	1.07
Yttrium	A	1390537	1365707	-1.79

ENTHALPY INSTRUMENT BLANK FOR 296840 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018055668032.1 File : 18b07p00032 Time : 07-FEB-2018 18:25
Cal : 1018055668001 Caldate : 07-FEB-2018

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Lead	A	ND	0.5000	0.1000	ug/L	
Copper	E	ND	0.5000	0.4000	ug/L	

ISTD (ICALBLK 18b07p00012)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	929517	936807	0.78
Germanium	H	63325	69074	9.08
Germanium	A	187412	180515	-3.68
Germanium	E	90193	87223	-3.29
Indium	A	1357566	1274330	-6.13
Bismuth	A	1338042	1232971	-7.85
Yttrium	E	716208	674561	-5.81
Yttrium	H	916259	1021382	11.47
Yttrium	A	1390537	1317925	-5.22

ENTHALPY INTERFERENCE CHECK STANDARD A FOR 296840 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018055668033.1 File : 18b07p00033 Time : 07-FEB-2018 18:30
Cal : 1018055668001 Caldate : 07-FEB-2018
Standards: S35821, S35939

Analyte	Ch	Quant	IQL	Units	Flags
Lead	A	[0.06880]	0.5000	ug/L	
Copper	E	0.7108	0.5000	ug/L	

Interferent	Ch	Spiked	Quant	Units	%Rec	Flags
Aluminum	A	100000	85440	ug/L	85	
Calcium	A	300000	266100	ug/L	89	
Magnesium	A	100000	84970	ug/L	85	
Molybdenum	A	2000	2016	ug/L	101	
Potassium	A	100000	87600	ug/L	88	
Sodium	E	250000	231700	ug/L	93	
Phosphorus	E	100000	91520	ug/L	92	
Iron	H	250000	239400	ug/L	96	i+ ***

ISTD (ICALBLK 18b07p00012)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	929517	870898	-6.31
Germanium	H	63325	76909	**21.45 ***
Germanium	A	187412	191321	2.09
Germanium	E	90193	100827	11.79
Indium	A	1357566	1288658	-5.08
Bismuth	A	1338042	1069749	-20.05
Yttrium	E	716208	737159	2.93
Yttrium	H	916259	1095734	19.59
Yttrium	A	1390537	1396164	0.40

+=high bias i=ISTD failure

ENTHALPY CONTINUING CALIBRATION FOR 296840 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018055668048.1 File : 18b07p00048 Time : 07-FEB-2018 19:44
Cal : 1018055668001 Caldate : 07-FEB-2018
Standards: S35929, S35939

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Lead	A	0.0107	0.0109	50.00	50.24	ug/L	0	10	
Copper	E	0.0043	0.0040	50.00	52.86	ug/L	6	10	

ISTD (ICALBLK 18b07p00012)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	929517	1137172	**22.34 ***
Germanium	H	63325	82932	**30.96 ***
Germanium	A	187412	219413	17.08
Germanium	E	90193	107005	18.64
Indium	A	1357566	1517641	11.79
Bismuth	A	1338042	1339584	0.12
Yttrium	E	716208	836577	16.81
Yttrium	H	916259	1181117	**28.91 ***
Yttrium	A	1390537	1633301	17.46

ENTHALPY INSTRUMENT BLANK FOR 296840 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018055668050.1 File : 18b07p00050 Time : 07-FEB-2018 19:54
Cal : 1018055668001 Caldate : 07-FEB-2018

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Lead	A	ND	0.5000	0.1000	ug/L	
Copper	E	ND	0.5000	0.4000	ug/L	

ISTD (ICALBLK 18b07p00012)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	929517	1037672	11.64
Germanium	H	63325	73583	16.20
Germanium	A	187412	201485	7.51
Germanium	E	90193	98152	8.82
Indium	A	1357566	1399882	3.12
Bismuth	A	1338042	1282789	-4.13
Yttrium	E	716208	754359	5.33
Yttrium	H	916259	1025176	11.89
Yttrium	A	1390537	1455611	4.68

ENTHALPY CONTINUING CALIBRATION FOR 296840 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018055668057.1 File : 18b07p00057 Time : 07-FEB-2018 20:28
Cal : 1018055668001 Caldate : 07-FEB-2018
Standards: S35929, S35939

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Lead	A	0.0107	0.0110	50.00	51.15	ug/L	2	10	
Copper	E	0.0043	0.0043	50.00	57.68	ug/L	**15**	10	c+ ***

ISTD (ICALBLK 18b07p00012)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	929517	1182964	**27.27 ***
Germanium	H	63325	84645	**33.67 ***
Germanium	A	187412	218466	16.57
Germanium	E	90193	106133	17.67
Indium	A	1357566	1493752	10.03
Bismuth	A	1338042	1334684	-0.25
Yttrium	E	716208	805796	12.51
Yttrium	H	916259	1185624	**29.40 ***
Yttrium	A	1390537	1602045	15.21

+=high bias c=CCV

ENTHALPY INSTRUMENT BLANK FOR 296840 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018055668059.1 File : 18b07p00059 Time : 07-FEB-2018 20:38
Cal : 1018055668001 Caldate : 07-FEB-2018

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Lead	A	ND	0.5000	0.1000	ug/L	
Copper	E	ND	0.5000	0.4000	ug/L	

ISTD (ICALBLK 18b07p00012)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	929517	1073475	15.49
Germanium	H	63325	75206	18.76
Germanium	A	187412	201714	7.63
Germanium	E	90193	101857	12.93
Indium	A	1357566	1405213	3.51
Bismuth	A	1338042	1286829	-3.83
Yttrium	E	716208	779400	8.82
Yttrium	H	916259	1035635	13.03
Yttrium	A	1390537	1471133	5.80

ENTHALPY INTERFERENCE CHECK STANDARD A FOR 296840 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018055668060.1 File : 18b07p00060 Time : 07-FEB-2018 20:43
Cal : 1018055668001 Caldate : 07-FEB-2018
Standards: S35821, S35939

Analyte	Ch	Quant	IQL	Units	Flags
Lead	A	[0.07250]	0.5000	ug/L	
Copper	E	0.7142	0.5000	ug/L	

Interferent	Ch	Spiked	Quant	Units	%Rec	Flags
Aluminum	A	100000	88000	ug/L	88	
Calcium	A	300000	269900	ug/L	90	
Magnesium	A	100000	87590	ug/L	88	
Molybdenum	A	2000	2042	ug/L	102	
Potassium	A	100000	88860	ug/L	89	
Sodium	E	250000	233500	ug/L	93	i+ ***
Phosphorus	E	100000	92010	ug/L	92	i+ ***
Iron	H	250000	242300	ug/L	97	i+ ***

ISTD (ICALBLK 18b07p00012)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	929517	997010	7.26
Germanium	H	63325	86479	**36.56** *
Germanium	A	187412	207562	10.75
Germanium	E	90193	112251	**24.46** *
Indium	A	1357566	1369471	0.88
Bismuth	A	1338042	1091349	-18.44
Yttrium	E	716208	811080	13.25
Yttrium	H	916259	1231919	**34.45** *
Yttrium	A	1390537	1495369	7.54

+=high bias i=ISTD failure

ENTHALPY INTERFERENCE CHECK STANDARD AB FOR 296840 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018055668061.1 File : 18b07p00061 Time : 07-FEB-2018 20:48
Cal : 1018055668001 Caldate : 07-FEB-2018
Standards: S35822, S35939

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Copper	E	200.0	178.9	ug/L	-11	20	

ISTD (ICALBLK 18b07p00012)	Ch	ICALBLK Abund	Abund	%Drift
Germanium	H	63325	75820	19.73
Germanium	A	187412	191758	2.32
Germanium	E	90193	99138	9.92
Indium	A	1357566	1315338	-3.11
Yttrium	E	716208	735440	2.69
Yttrium	H	916259	1119182	**22.15 ***
Yttrium	A	1390537	1408163	1.27

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 1018056933

Instrument : MET26 Begun : 02/08/18 12:48
Method : EPA 6020A SOP Version : icpms metals_rv10

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	18b08m00001	X	RINSE			02/08/18 12:48	1.0	1	
002	18b08m00002	TUN				02/08/18 12:53	1.0	2	
003	18b08m00003	X	RINSE			02/08/18 12:58	1.0	1	
004	18b08m00004	X	RINSE			02/08/18 13:03	1.0	1	
005	18b08m00005	XICALBLK	CALBLANK			02/08/18 13:07	1.0	1	
006	18b08m00006	ICALBLK	CALBLANK			02/08/18 13:13	1.0	1	
007	18b08m00007	ICAL				02/08/18 13:18	1.0	3 1	
008	18b08m00008	ICAL				02/08/18 13:23	1.0	3 1	
009	18b08m00009	ICAL				02/08/18 13:28	1.0	3 1	
010	18b08m00010	ICAL				02/08/18 13:32	1.0	3 1	
011	18b08m00011	ICAL				02/08/18 13:37	1.0	3 1	
012	18b08m00012	ICAL				02/08/18 13:42	1.0	3 1	
013	18b08m00013	ICAL				02/08/18 13:48	1.0	3 1	
014	18b08m00014	X	RINSE			02/08/18 13:53	1.0	1	
015	18b08m00015	XICV				02/08/18 13:58	1.0	4 1	
016	18b08m00016	CRI				02/08/18 14:03	1.0	5 1	
017	18b08m00017	ICB				02/08/18 14:07	1.0	1	
018	18b08m00018	ICV				02/08/18 14:13	1.0	4 1	
019	18b08m00019	X	RINSE			02/08/18 14:18	1.0	1	
020	18b08m00020	ICSA				02/08/18 14:25	1.0	6 1	8:CA=270000
021	18b08m00021	ICSAB				02/08/18 14:30	1.0	7 1	8:CA=270000
022	18b08m00022	X	RINSE			02/08/18 14:35	1.0	1	
023	18b08m00023	X	RINSE			02/08/18 14:45	1.0	1	
024	18b08m00024	X	RINSE			02/08/18 14:50	1.0	1	
025	18b08m00025	X	RINSE			02/08/18 14:55	1.0	1	
026	18b08m00026	BLANK	QC918988	Soil	256220	02/08/18 15:00	25.0	1	
027	18b08m00027	SAMPLE	296840-018	Soil	256220	02/08/18 15:05	25.0	1	
028	18b08m00028	MS	QC918991	Soil	256220	02/08/18 15:10	25.0	1	
029	18b08m00029	MSD	QC918992	Soil	256220	02/08/18 15:15	25.0	1	
030	18b08m00030	SER	QC918993	Soil	256220	02/08/18 15:20	125.0	1	
031	18b08m00031	PDS	QC918994	Soil	256220	02/08/18 15:24	25.0	1 8 9 10	
032	18b08m00032	CCV				02/08/18 15:30	1.0	4 1	
033	18b08m00033	X	XCCB			02/08/18 15:35	1.0	1	
034	18b08m00034	CCB				02/08/18 15:40	1.0	1	
035	18b08m00035	ICSA				02/08/18 15:45	1.0	6 1	8:CA=270000
036	18b08m00036	ICSAB				02/08/18 15:50	1.0	7 1	8:CA=260000
037	18b08m00037	X	RINSE			02/08/18 15:55	1.0	1	
038	18b08m00038	X	RINSE			02/08/18 16:00	1.0	1	
039	18b08m00039	X	RINSE			02/08/18 16:05	1.0	1	
040	18b08m00040	X	RINSE			02/08/18 16:10	1.0	1	
041	18b08m00041	BLANK	QC918880	Filtrate	256194	02/08/18 16:15	1.0	1	
042	18b08m00042	BLANK	QC918511	Filtrate	256106	02/08/18 16:20	1.0	1	

NBB 02/08/18 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 001 through 036.

Standards used: 1=S35939 2=S35938 3=S35940 4=S35929 5=S35885 6=S35821 7=S35822 8=S34361 9=S34362 10=S34743

CURTIS & TOMPKINS INTERNAL STANDARD SUMMARY FOR SEQUENCE 1018056933

Date : 02/08/18 Reference : 18b08m00006
Sequence : MET26 18b08m00 Analyzed : 02/08/18 13:13

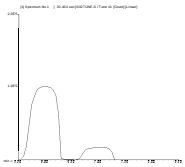
#	Type	Sample ID	LI A	GE H	GE A	GE E	IN A	BI A	Y E	Y H	Y A
		IB+ICALBLK STD	1028970	55767	185573	59606	1642730	1914193	508877	885834	1493127
		LOWER LIMIT	308691	16730	55672	17882	492819	574258	152663	265750	447938
		UPPER LIMIT	1234764	66920	222688	71527	1971276	2297032	610652	1063001	1791752
017	ICB		1057335	63295	183984	63274	1628516	1878002	541665	953073	1492106
020	ICSA		944649	70559 *	175860	66879	1496384	1335665	564606	1118608 *	1438310
021	ICSAB		842659	53006	158223	53709	1417577	1325955	462602	890434	1324484
026	BLANK	QC918988	858415	46662	138440	46860	1347206	1799319	415565	729096	1163158
027	SAMPLE	296840-018	937491	51415	149034	52166	1417582	1775495	483191	857034	1308063
028	MS	QC918991	913617	51027	153223	51802	1463152	1830603	478604	844525	1337967
029	MSD	QC918992	927964	56552	154681	55989	1439287	1771479	515595	905740	1337995
030	SER	QC918993	949176	52341	156820	54838	1488469	1886564	484738	803748	1328376
031	PDS	QC918994	1004993	56578	164296	55942	1546245	1833682	520996	907710	1457577
032	CCV		1011038	58577	165965	57134	1581200	1906072	518091	922662	1430718
034	CCB		879276	51524	150370	51218	1429574	1818635	443708	803128	1246235
035	ICSA		870487	58249	168567	59002	1464113	1345792	502997	933009	1392495
036	ICSAB		788781	49576	146761	49875	1311569	1257451	430173	824861	1222424
041	BLANK	QC918880	787783	47791	133125	44570	1318812	1781618	391685	759897	1118485
042	BLANK	QC918511	801151	45272	136544	45679	1361540	1824051	413954	720183	1152828

MET26 QC Tune Report

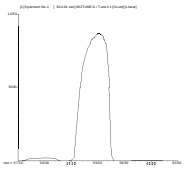
Data File: C:\ICPCHEM\1\DATA\18B08m00.B\002TUNE.D
Date Acquired: Feb 8 2018 12:53 pm
Acq. Method: TN6020K.M
Operator:
Sample Name: tun,s35938
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\TN6020K.M

RSD (%)

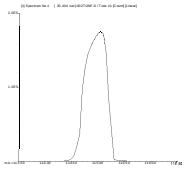
Element	Rep1	Rep2	Rep3	Rep4	Rep5	Actual	Required	Flag
7 Li	93064	91936	92955	91160	90203	1.26	5.00	
59 Co	47202	46556	46769	46076	45612	1.64	5.00	
115 In	879621	858949	862811	845861	840238	1.99	5.00	
205 Tl	72498	71994	72356	70922	70508	1.37	5.00	



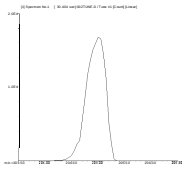
7 Li
Mass Calib.
Actual: 7.00
Required: 6.90 - 7.10
Flag:
Peak Width @ 5%
Actual: 0.60
Required: 0.75
Flag:



59 Co
Mass Calib.
Actual: 59.00
Required: 58.90 - 59.10
Flag:
Peak Width @ 5%
Actual: 0.60
Required: 0.75
Flag:



115 In
Mass Calib.
Actual: 115.00
Required: 114.90 - 115.10
Flag:
Peak Width @ 5%
Actual: 0.65
Required: 0.75
Flag:



205 Tl
Mass Calib.
Actual: 205.00
Required: 204.90 - 205.10
Flag:
Peak Width @ 5%
Actual: 0.65
Required: 0.75
Flag:

ENTHALPY INITIAL CALIBRATION FOR 296840 METALS Soil: EPA 6020A

Inst : MET26
Calnum : 1018056933001
Units : ug/L

Date : 08-FEB-2018 13:13
X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	18b08m00007	1018056933007		08-FEB-2018 13:18	S35940 (400X), S35939
L2	18b08m00008	1018056933008		08-FEB-2018 13:23	S35940 (200X), S35939
L3	18b08m00009	1018056933009		08-FEB-2018 13:28	S35940 (40X), S35939
L4	18b08m00010	1018056933010		08-FEB-2018 13:32	S35940 (20X), S35939
L5	18b08m00011	1018056933011		08-FEB-2018 13:37	S35940 (4X), S35939
L6	18b08m00012	1018056933012		08-FEB-2018 13:42	S35940 (2X), S35939
L7	18b08m00013	1018056933013		08-FEB-2018 13:48	S35940, S35939

Analyte	Ch	L1	L2	L3	L4	L5	L6	L7	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	Flg
Lead	A	0.0120	0.0115	0.0111	0.0112	0.0112	0.0115	0.0115	BLNK	-0.0375	87.2485		0.0114	1.000	0.995	
Copper	E	0.0076	0.0058	0.0047	0.0044	0.0043	0.0043	0.0040	BLNK	-0.3265	243.784		0.0050	0.999	0.995	

Spiked Amounts / Drifts	Ch	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D	L6	%D	L7	%D
Lead	A	0.5000	-3	1.0000	-3	5.0000	-4	10.000	-3	50.000	-2	100.00	1	200.00	0
Copper	E	0.5000	20	1.0000	8	5.0000	9	10.000	4	50.000	3	100.00	5	200.00	-2

Instrument amount = a0 + response * a1 + response^2 * a2; BLNK=Y=aX+[blank]

ENTHALPY 2ND SOURCE CALIBRATION SUMMARY FOR 296840 METALS Soil
EPA 6020A

Inst : MET26
Calnum : 1018056933001 Cal Date : 08-FEB-2018

ICV 1018056933018 (18b08m00018 08-FEB-2018) stds: S35929, S35939

Analyte	Ch	Spiked	Quant	Units	%D	Max	Flags
Lead	A	50.00	48.59	ug/L	-3	10	
Copper	E	50.00	50.75	ug/L	2	10	

ENTHALPY LOW-LEVEL PERFORMANCE VERIFICATION STANDARD FOR 296840 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018056933016.1 File : 18b08m00016 Time : 08-FEB-2018 14:03
Cal : 1018056933001 Caldate : 08-FEB-2018
Standards: S35885, S35939

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Lead	A	1.000	0.9596	ug/L	-4	30	
Copper	E	1.000	1.121	ug/L	12	30	

ISTD (ICALBLK 18b08m00006)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	1028970	1120309	8.88
Germanium	H	55767	66704	19.61
Germanium	A	185573	192092	3.51
Germanium	E	59606	66153	10.98
Indium	A	1642730	1716574	4.50
Bismuth	A	1914193	1953184	2.04
Yttrium	E	508877	571716	12.35
Yttrium	H	885834	1010716	14.10
Yttrium	A	1493127	1577240	5.63

ENTHALPY INSTRUMENT BLANK FOR 296840 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018056933017.1 File : 18b08m00017 Time : 08-FEB-2018 14:07
Cal : 1018056933001 Caldate : 08-FEB-2018

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Lead	A	ND	0.5000	0.1000	ug/L	
Copper	E	ND	0.5000	0.4000	ug/L	

ISTD (ICALBLK 18b08m00006)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	1028970	1057335	2.76
Germanium	H	55767	63295	13.50
Germanium	A	185573	183984	-0.86
Germanium	E	59606	63274	6.15
Indium	A	1642730	1628516	-0.87
Bismuth	A	1914193	1878002	-1.89
Yttrium	E	508877	541665	6.44
Yttrium	H	885834	953073	7.59
Yttrium	A	1493127	1492106	-0.07

ENTHALPY INTERFERENCE CHECK STANDARD A FOR 296840 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018056933020.1 File : 18b08m00020 Time : 08-FEB-2018 14:25
Cal : 1018056933001 Caldate : 08-FEB-2018
Standards: S35821, S35939

Analyte	Ch	Quant	IQL	Units	Flags
Lead	A	[0.1227]	0.5000	ug/L	
Copper	E	0.6632	0.5000	ug/L	

Interferent	Ch	Spiked	Quant	Units	%Rec	Flags
Aluminum	A	100000	84370	ug/L	84	
Calcium	A	300000	272500	ug/L	91	
Magnesium	A	100000	83940	ug/L	84	
Molybdenum	A	2000	2045	ug/L	102	
Potassium	A	100000	88100	ug/L	88	
Sodium	E	250000	236800	ug/L	95	
Phosphorus	E	100000	89850	ug/L	90	
Iron	H	250000	245200	ug/L	98	i+ ***

ISTD (ICALBLK 18b08m00006)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	1028970	944649	-8.19
Germanium	H	55767	70559	**26.52 ***
Germanium	A	185573	175860	-5.23
Germanium	E	59606	66879	12.20
Indium	A	1642730	1496384	-8.91
Bismuth	A	1914193	1335665	-30.22
Yttrium	E	508877	564606	10.95
Yttrium	H	885834	1118608	**26.28 ***
Yttrium	A	1493127	1438310	-3.67

+=high bias i=ISTD failure

ENTHALPY INTERFERENCE CHECK STANDARD AB FOR 296840 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018056933021.1 File : 18b08m00021 Time : 08-FEB-2018 14:30
Cal : 1018056933001 Caldate : 08-FEB-2018
Standards: S35822, S35939

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Copper	E	200.0	164.0	ug/L	-18	20	

ISTD (ICALBLK 18b08m00006)	Ch	ICALBLK Abund	Abund	%Drift
Germanium	H	55767	53006	-4.95
Germanium	A	185573	158223	-14.74
Germanium	E	59606	53709	-9.89
Indium	A	1642730	1417577	-13.71
Yttrium	E	508877	462602	-9.09
Yttrium	H	885834	890434	0.52
Yttrium	A	1493127	1324484	-11.29

ENTHALPY CONTINUING CALIBRATION FOR 296840 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018056933032.1 File : 18b08m00032 Time : 08-FEB-2018 15:30
Cal : 1018056933001 Caldate : 08-FEB-2018
Standards: S35929, S35939

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Lead	A	0.0114	0.0112	50.00	48.74	ug/L	-3	10	
Copper	E	0.0050	0.0041	50.00	49.47	ug/L	-1	10	

ISTD (ICALBLK 18b08m00006)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	1028970	1011038	-1.74
Germanium	H	55767	58577	5.04
Germanium	A	185573	165965	-10.57
Germanium	E	59606	57134	-4.15
Indium	A	1642730	1581200	-3.75
Bismuth	A	1914193	1906072	-0.42
Yttrium	E	508877	518091	1.81
Yttrium	H	885834	922662	4.16
Yttrium	A	1493127	1430718	-4.18

ENTHALPY INSTRUMENT BLANK FOR 296840 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018056933034.1 File : 18b08m00034 Time : 08-FEB-2018 15:40
Cal : 1018056933001 Caldate : 08-FEB-2018

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Lead	A	ND	0.5000	0.1000	ug/L	
Copper	E	ND	0.5000	0.4000	ug/L	

ISTD (ICALBLK 18b08m00006)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	1028970	879276	-14.55
Germanium	H	55767	51524	-7.61
Germanium	A	185573	150370	-18.97
Germanium	E	59606	51218	-14.07
Indium	A	1642730	1429574	-12.98
Bismuth	A	1914193	1818635	-4.99
Yttrium	E	508877	443708	-12.81
Yttrium	H	885834	803128	-9.34
Yttrium	A	1493127	1246235	-16.54

ENTHALPY INTERFERENCE CHECK STANDARD A FOR 296840 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018056933035.1 File : 18b08m00035 Time : 08-FEB-2018 15:45
Cal : 1018056933001 Caldate : 08-FEB-2018
Standards: S35821, S35939

Analyte	Ch	Quant	IQL	Units	Flags
Lead	A	[0.1195]	0.5000	ug/L	
Copper	E	0.5378	0.5000	ug/L	

Interferent	Ch	Spiked	Quant	Units	%Rec	Flags
Aluminum	A	100000	82220	ug/L	82	
Calcium	A	300000	265200	ug/L	88	
Magnesium	A	100000	81540	ug/L	82	
Molybdenum	A	2000	2045	ug/L	102	
Potassium	A	100000	85980	ug/L	86	
Sodium	E	250000	221300	ug/L	89	
Phosphorus	E	100000	84650	ug/L	85	
Iron	H	250000	241300	ug/L	97	

ISTD (ICALBLK 18b08m00006)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	1028970	870487	-15.40
Germanium	H	55767	58249	4.45
Germanium	A	185573	168567	-9.16
Germanium	E	59606	59002	-1.01
Indium	A	1642730	1464113	-10.87
Bismuth	A	1914193	1345792	-29.69
Yttrium	E	508877	502997	-1.16
Yttrium	H	885834	933009	5.33
Yttrium	A	1493127	1392495	-6.74

ENTHALPY INTERFERENCE CHECK STANDARD AB FOR 296840 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018056933036.1 File : 18b08m00036 Time : 08-FEB-2018 15:50
Cal : 1018056933001 Caldate : 08-FEB-2018
Standards: S35822, S35939

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Copper	E	200.0	162.1	ug/L	-19	20	

ISTD (ICALBLK 18b08m00006)	Ch	ICALBLK Abund	Abund	%Drift
Germanium	H	55767	49576	-11.10
Germanium	A	185573	146761	-20.91
Germanium	E	59606	49875	-16.33
Indium	A	1642730	1311569	-20.16
Yttrium	E	508877	430173	-15.47
Yttrium	H	885834	824861	-6.88
Yttrium	A	1493127	1222424	-18.13

SAMPLE PREPARATION SUMMARY

Batch # : 256220
Started By : DES
Method : 3050B
Spike #1 ID : S34206

Prep Date : 05-FEB-2018 14:50
Spike #2 ID : S34207

Analysis : ICPMS
Finished By : DES
Units : g
Spike #3 ID : S35881

Sample	Stype	Matrix	Initial	Final	Clean DF	Prep DF	pH	Sp 1 Vol	Sp 2 Vol	Sp 3 Vol	Clean Method	Analysis	Comments
296825-001		Soil	.98	50	1	51.02						6020	added @ 15:28
296825-002		Soil	.95	50	1	52.63						6020	added @ 15:28
296825-003		Soil	.98	50	1	51.02						6020	added @ 15:28
296825-004		Soil	.95	50	1	52.63						6020	added @ 15:28
296825-005		Soil	1.1	50	1	45.45						6020	added @ 15:28
296840-001		Soil	.92	50	1	54.35						6020	
296840-006		Soil	.97	50	1	51.55						6020	
296840-013		Soil	.97	50	1	51.55						6020	
296840-018		Soil	.93	50	1	53.76						6020	
QC918988	BLANK	Soil	.94	50	1	53.19							
QC918989	BS	Soil	.98	50	1	51.02		.25	.25	.25			
QC918990	BSD	Soil	1.03	50	1	48.54		.25	.25	.25			
QC918991	MS	Soil	.97	50	1	51.55		.25	.25	.25			
QC918992	MSD	Soil	1.01	50	1	49.50		.25	.25	.25			
QC918993	SER	Soil	.92	50	1	54.35							
QC918994	PDS	Soil	.92	50	1	54.35							

Analyst: NBB Date: 02/08/18 Reviewer: PRW Date: 02/08/18

Soil Digestion for ICP & ICP-MS Enthalpy Analytical LLC - Berkeley Version 11.2, July.2017

LIMS Batch #: 256220 Digestion Method: Time ON: 14:50 BK 4198

Date Digested: 2-5-18 ☑ EPA 3050b Time OFF: 18:07 Page 95

Digested by: Danielle ☐ _____

Sample #	Container ID	Weight of Sample (g)	Final Volume (mL)	Filtered? (y/n)	ID ✓	Comments
BLANK		0.94	☑ 50 ☐	Y	✓	QC918988
BS		0.98	☑ 50 ☐		✓	89
BSD		1.03	☑ 50 ☐		✓	90
MS		0.97	☑ 50 ☐		✓	91
MSD		1.01	☑ 50 ☐		✓	92
296840-001		0.92	☑ 50 ☐		✓	MSS, comp 296840 (2-5) @ 30g ea.
-006		0.97	☑ 50 ☐		✓	comp 296840-~~(2-5)~~ (7-10) @20g ea
-013		0.97	☑ 50 ☐		✓	~~(2-5)~~ (14-17)
-018		0.93	☑ 50 ☐		✓	~~(2-5)~~ (19-22)
296825-001	A	0.98	☑ 50 ☐		✓	~~(2-5)~~ added @ 15:28
-002		0.95	☑ 50 ☐		✓	added @ 15:28
-003		0.98	☑ 50 ☐		✓	
-004		0.95	☑ 50 ☐		✓	
-005		1.10	☑ 50 ☐		✓	
			☐ 50 ☐			
			☐ 50 ☐			
			☐ 50 ☐			
			☐ 50 ☐			
			☐ 50 ☐			
			☐ 50 ☐			
			☐ 50 ☐			
			☐ 50 ☐			
			☐ 50 ☐			
			☐ 50 ☐			
			☐ 50 ☐			

alance ID: B-10 calibration has been checked? ☑ Yes ☐ No

	Reagent ID or LIMS #		Initials / Date
SCP Digestion tubes / ESS Watch glass, lot#	286444-5420	1703076-7192-MK	DES 2-5-18
Blank 'matrix' lot#	chemwave	23101423	
0.25 mL of spike solution (Std1) was added to all spikes	S34209		
0.25 mL of spike solution (Std2) was added to all spikes	S34207		
0.25 mL of spike solution (Std3) was added to all spikes	S35881		
Digestion Block ID, Probe Location	TETON	13	
Temperature (°C), Thermometer ID	95°C, 1641267D		
1:1 HNO3 Reagent ID	FS1117080		
concentrated HNO3 lot#	FS1117080		
3mL 30% hydrogen peroxide lot#	EMD5705473G		
concentrated HCl lot#	JTB187518		
☑ filtered thru' Whatman 541, lot#	1140 1069		
Relinquished to ICP group	ICPMS		

pettes ol.(mL)	ID
.25	R293550
5	2924335
.5	
.5	

Danielle Sisson 2-5-18

Digestion Chemist / Date

Continued from page ∅

Continued on page _____

Reviewed Online/ See LIMS

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 388053956

Instrument : MET45 Begun : 02/06/18 11:16
Method : EPA 7471B SOP Version : hg_water_rv19

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	met45	ICALBLK				02/06/18 11:16	1.0		
002	met45	ICAL	ICAL1			02/06/18 11:17	1.0	1	
003	met45	ICAL	ICAL2			02/06/18 11:18	1.0	1	
004	met45	ICAL	ICAL3			02/06/18 11:19	1.0	1	
005	met45	ICAL	ICAL4			02/06/18 11:20	1.0	1	
006	met45	ICAL	ICAL5			02/06/18 11:21	1.0	1	
007	met45	ICV				02/06/18 11:23	1.0	2	
008	met45	ICB				02/06/18 11:24	1.0		
009	met45	BLANK	QC918954	Soil	256213	02/06/18 11:25	1.0		
010	met45	BS	QC918955	Soil	256213	02/06/18 11:26	1.0		
011	met45	BSD	QC918956	Soil	256213	02/06/18 11:27	1.0		
012	met45	MSS	296840-001	Soil	256213	02/06/18 11:28	1.0		
013	met45	MS	QC918957	Soil	256213	02/06/18 11:30	1.0		
014	met45	MSD	QC918958	Soil	256213	02/06/18 11:31	1.0		
015	met45	SER	QC918959	Soil	256213	02/06/18 11:32	5.0		
016	met45	SAMPLE	296834-002	Soil	256213	02/06/18 11:33	1.0		
017	met45	SAMPLE	296834-004	Soil	256213	02/06/18 11:34	1.0		
018	met45	SAMPLE	296834-006	Soil	256213	02/06/18 11:35	1.0		
019	met45	CCV				02/06/18 11:36	1.0	3	
020	met45	CCB				02/06/18 11:38	1.0		
021	met45	SAMPLE	296840-006	Soil	256213	02/06/18 11:39	1.0		
022	met45	SAMPLE	296840-013	Soil	256213	02/06/18 11:40	1.0		1:HG=10
023	met45	SAMPLE	296840-018	Soil	256213	02/06/18 11:41	1.0		
024	met45	X	RINSE			02/06/18 11:43	1.0		
025	met45	BLANK	QC918960	Soil	256214	02/06/18 11:44	1.0		
026	met45	BS	QC918961	Soil	256214	02/06/18 11:45	1.0		spk
027	met45	BSD	QC918962	Soil	256214	02/06/18 11:46	1.0		spk
028	met45	MSS	296798-001	Soil	256214	02/06/18 11:47	1.0		
029	met45	MS	QC918963	Soil	256214	02/06/18 11:48	1.0		
030	met45	MSD	QC918964	Soil	256214	02/06/18 11:49	1.0		
031	met45	CCV				02/06/18 11:51	1.0	3	
032	met45	CCB				02/06/18 11:52	1.0		
033	met45	SER	QC918965	Soil	256214	02/06/18 11:53	5.0		
034	met45	BLANK	QC918960	Soil	256214	02/06/18 11:57	1.0		
035	met45	BS	QC918961	Soil	256214	02/06/18 11:58	1.0		
036	met45	BSD	QC918962	Soil	256214	02/06/18 11:59	1.0		
037	met45	MSS	296798-001	Soil	256214	02/06/18 12:00	1.0		
038	met45	MS	QC918963	Soil	256214	02/06/18 12:01	1.0		
039	met45	MSD	QC918964	Soil	256214	02/06/18 12:02	1.0		
040	met45	SER	QC918965	Soil	256214	02/06/18 12:03	5.0		
041	met45	SAMPLE	296798-006	Soil	256214	02/06/18 12:04	1.0		
042	met45	SAMPLE	296798-011	Soil	256214	02/06/18 12:06	1.0		
043	met45	SAMPLE	296798-016	Soil	256214	02/06/18 12:07	1.0		
044	met45	CCV				02/06/18 12:08	1.0	3	
045	met45	CCB				02/06/18 12:09	1.0		
046	met45	SAMPLE	296798-021	Soil	256214	02/06/18 12:10	1.0		
047	met45	SAMPLE	296798-026	Soil	256214	02/06/18 12:12	1.0		
048	met45	SER	QC918959	Soil	256213	02/06/18 12:13	5.0		
049	met45	SAMPLE	296831-001	Soil	256213	02/06/18 12:14	1.0		
050	met45	SAMPLE	296856-005	Soil	256213	02/06/18 12:15	1.0		
051	met45	CCV				02/06/18 12:16	1.0	3	
052	met45	CCB				02/06/18 12:17	1.0		

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 388053956

Instrument : MET45 Begun : 02/06/18 11:16
Method : EPA 7471B SOP Version : hg_water_rv19

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used
053	met45	SAMPLE	296840-013	Soil	256213	02/06/18 12:44	10.0	
054	met45	SAMPLE	296840-018	Soil	256213	02/06/18 12:45	1.0	
055	met45	CCV				02/06/18 12:46	1.0	3
056	met45	CCB				02/06/18 12:48	1.0	

SL 02/06/18 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 52.

Standards used: 1=S35906 2=S35908 3=S35909

Flags used: spk=5% spike rule

ENTHALPY INITIAL CALIBRATION FOR 296840 METALS Soil: EPA 7471B

Inst : MET45
Calnum : 388053956001
Units : ug/L

Date : 06-FEB-2018 11:16
X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	met45	388053956002	ICAL1	06-FEB-2018 11:17	S35906 (500X)
L2	met45	388053956003	ICAL2	06-FEB-2018 11:18	S35906 (200X)
L3	met45	388053956004	ICAL3	06-FEB-2018 11:19	S35906 (50X)
L4	met45	388053956005	ICAL4	06-FEB-2018 11:20	S35906 (20X)
L5	met45	388053956006	ICAL5	06-FEB-2018 11:21	S35906 (10X)

Analyte	L1	L2	L3	L4	L5	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	Flg
Mercury	0.0790	0.0764	0.0819	0.0820	0.0797	LIN0	-0.0182	12.5064		0.0798	1.000	.99	

Spiked Amounts / Drifts	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D
Mercury	0.2000	-10	0.5000	-8	2.0000	1	5.0000	2	10.000	-1

Instrument amount = a0 + response * a1 + response^2 * a2; LIN0=Linear regression including 0,0 point

ENTHALPY 2ND SOURCE CALIBRATION SUMMARY FOR 296840 METALS Soil
EPA 7471B

Inst : MET45
Calnum : 388053956001 Cal Date : 06-FEB-2018

ICV 388053956007 (06-FEB-2018) stds: S35908

Analyte	Spiked	Quant	Units	%D	Max	Flags
Mercury	5.000	4.982	ug/L	0	10	

ENTHALPY INSTRUMENT BLANK FOR 296840 METALS Soil
EPA 7471B

Inst : MET45 IDF : 1.0
Seqnum : 388053956008.1 File : met45 Time : 06-FEB-2018 11:24
Cal : 388053956001 Caldate : 06-FEB-2018

Analyte	Quant	IQL	LOD	Units	Flags
Mercury	ND	0.2000	0.1000	ug/L	

ENTHALPY CONTINUING CALIBRATION FOR 296840 METALS Soil
EPA 7471B

Inst : MET45 IDF : 1.0
Seqnum : 388053956019.1 File : met45 Time : 06-FEB-2018 11:36
Cal : 388053956001 Caldate : 06-FEB-2018
Standards: S35909

Analyte	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Mercury	0.0798	0.0840	5.000	5.237	ug/L	5	10	

ENTHALPY INSTRUMENT BLANK FOR 296840 METALS Soil
EPA 7471B

Inst : MET45 IDF : 1.0
Seqnum : 388053956020.1 File : met45 Time : 06-FEB-2018 11:38
Cal : 388053956001 Caldate : 06-FEB-2018

Analyte	Quant	IQL	LOD	Units	Flags
Mercury	ND	0.2000	0.1000	ug/L	

ENTHALPY CONTINUING CALIBRATION FOR 296840 METALS Soil
EPA 7471B

Inst : MET45 IDF : 1.0
Seqnum : 388053956031.1 File : met45 Time : 06-FEB-2018 11:51
Cal : 388053956001 Caldate : 06-FEB-2018
Standards: S35909

Analyte	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Mercury	0.0798	0.0846	5.000	5.271	ug/L	5	10	

ENTHALPY INSTRUMENT BLANK FOR 296840 METALS Soil
EPA 7471B

Inst : MET45 IDF : 1.0
Seqnum : 388053956032.1 File : met45 Time : 06-FEB-2018 11:52
Cal : 388053956001 Caldate : 06-FEB-2018

Analyte	Quant	IQL	LOD	Units	Flags
Mercury	ND	0.2000	0.1000	ug/L	

ENTHALPY CONTINUING CALIBRATION FOR 296840 METALS Soil
EPA 7471B

Inst : MET45 IDF : 1.0
Seqnum : 388053956044.1 File : met45 Time : 06-FEB-2018 12:08
Cal : 388053956001 Caldate : 06-FEB-2018
Standards: S35909

Analyte	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Mercury	0.0798	0.0724	5.000	4.508	ug/L	-10	10	

ENTHALPY INSTRUMENT BLANK FOR 296840 METALS Soil
EPA 7471B

Inst : MET45 IDF : 1.0
Seqnum : 388053956045.1 File : met45 Time : 06-FEB-2018 12:09
Cal : 388053956001 Caldate : 06-FEB-2018

Analyte	Quant	IQL	LOD	Units	Flags
Mercury	ND	0.2000	0.1000	ug/L	

ENTHALPY CONTINUING CALIBRATION FOR 296840 METALS Soil
EPA 7471B

Inst : MET45 IDF : 1.0
Seqnum : 388053956051.1 File : met45 Time : 06-FEB-2018 12:16
Cal : 388053956001 Caldate : 06-FEB-2018
Standards: S35909

Analyte	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Mercury	0.0798	0.0724	5.000	4.508	ug/L	-10	10	

ENTHALPY INSTRUMENT BLANK FOR 296840 METALS Soil
EPA 7471B

Inst : MET45 IDF : 1.0
Seqnum : 388053956052.1 File : met45 Time : 06-FEB-2018 12:17
Cal : 388053956001 Caldate : 06-FEB-2018

Analyte	Quant	IQL	LOD	Units	Flags
Mercury	ND	0.2000	0.1000	ug/L	

ENTHALPY CONTINUING CALIBRATION FOR 296840 METALS Soil
EPA 7471B

Inst : MET45 IDF : 1.0
Seqnum : 388053956055.1 File : met45 Time : 06-FEB-2018 12:46
Cal : 388053956001 Caldate : 06-FEB-2018
Standards: S35909

Analyte	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Mercury	0.0798	0.0742	5.000	4.620	ug/L	-8	10	

ENTHALPY INSTRUMENT BLANK FOR 296840 METALS Soil
EPA 7471B

Inst : MET45 IDF : 1.0
Seqnum : 388053956056.1 File : met45 Time : 06-FEB-2018 12:48
Cal : 388053956001 Caldate : 06-FEB-2018

Analyte	Quant	IQL	LOD	Units	Flags
Mercury	ND	0.2000	0.1000	ug/L	

SAMPLE PREPARATION SUMMARY

Batch # : 256213
Started By : SL
Method : METHOD
Spike #1 ID : S35907

Prep Date : 05-FEB-2018 13:35
Spike #2 ID : S35906

Analysis : HG
Finished By : SL
Units : g

Sample	Stype	Matrix	Initial	Final	Clean DF	Prep DF	pH	Sp 1 Vol	Sp 2 Vol	Sp 3 Vol	Clean Method	Analysis	Comments
255716-041		Soil	.6	50	1	83.33			.05			(rebatched)	
296794-005		Soil	.62	50	1	80.65						T22/HG	
296811-001		Soil	.59	50	1	84.75						T22/HG	
296811-002		Soil	.59	50	1	84.75						T22/HG	
296811-003		Soil	.56	50	1	89.29						T22/HG	
296811-004		Soil	.61	50	1	81.97						T22/HG	
296814-001		Miscell.	.6	50	1	83.33						T22/HG	
296821-001		Miscell.	.55	50	1	90.91						7471-HG	
296831-001		Soil	.61	50	1	81.97						T22/HG	
296834-002		Soil	.62	50	1	80.65						TAL/HG	
296834-004		Soil	.57	50	1	87.72						TAL/HG	
296834-006		Soil	.59	50	1	84.75						TAL/HG	
296840-001		Soil	.64	50	1	78.13						7471-HG	
296840-006		Soil	.59	50	1	84.75						7471-HG	
296840-013		Soil	.6	50	1	83.33						7471-HG	
296840-018		Soil	.62	50	1	80.65						7471-HG	
296856-005		Soil	.61	50	1	81.97						T22/HG	
QC918954	BLANK	Soil	.61	50	1	81.97							
QC918955	BS	Soil	.63	50	1	79.37		1					
QC918956	BSD	Soil	.6	50	1	83.33		1					
QC918957	MS	Soil	.57	50	1	87.72		1					
QC918958	MSD	Soil	.57	50	1	87.72		1					
QC918959	SER	Soil	.64	50	1	78.13							

Analyst: SL Date: 02/06/18 Reviewer: PRW Date: 02/06/18

Soil Digestion for Mercury Enthalpy Analytical LLC - Berkeley

LIMS Batch #: 256213 Digestion Method: ☒ EPA 7471A/ 7471B BK 4220

Date Digested: 2-5-18 ☐ _____ Page 18

Sample #	container ID	Sample Weight (g)	Final Volume (mL)	Filtered? (y/n)	Comments
BLANK		0.61	☑ 50 ☐	Y	QC 918954
BS		0.63	☑ 50 ☐		5
BSD		0.60	☑ 50 ☐		6
MS		0.57	☑ 50 ☐		7
MSD		0.57	☑ 50 ☐		8
296794 - 005		0.62	☑ 50 ☐		comp 296794(1-4) @ 50 g ea.
296811 - 001	A	0.59	☑ 50 ☐		
- 002		0.59	☑ 50 ☐		
- 003		0.56	☑ 50 ☐		
- 004		0.61	☑ 50 ☐		
296814 - 001	B	0.60	☑ 50 ☐		
296821 - 001	A	0.55	☑ 50 ☐		
296831 - 001	B	0.61	☑ 50 ☐		
296834 - 002	A	0.62 2-5-18	☑ 50 ☐		
- 004		~~0.51~~ 0.57	☑ 50 ☐		
- 006		0.59	☑ 50 ☐		
296840 - 001		0.64	☑ 50 ☐		comp 296840(2-5) @ 30 g ea. MSS
- 006		0.59	☑ 50 ☐		(7-10) @ 30 g ea.
- 013		0.60	☑ 50 ☐		(14-17)
- 018		0.62	☑ 50 ☐		(19-22)
296856 - 005		0.61	☑ 50 ☐		comp 296856 (1-4) @ 50 g ea.
255716 - 041		0.60	☑ 50 ☐		
			☐ 50 ☐		
			☐ 50 ☐		
			☐ 50 ☐		

Balance ID: B-9 calibration has been checked? ☒ Yes ☐ No

Standards prepared per SOP: MET 5.2, rev. 20

1 mL of spike standard was added to all spikes

☑ **CAL digested with this batch? ICAL Std S#**

	Reagent ID/ LIMS# / Time		Initials / Date
Digestion Tubes, Lot #	EK 17237		SL 2-5-18
Blank/LCS 'matrix' ID	R263-5K013		
	S35907		
	S35906		
ICV / CCV LIMS S#	S35908 / S35909		
Digestion Temperature (°C), and Probe Location	96°	33	
Digestion block ID	DENALI		
Thermometer #	6412091		
Digestion Started at (time)	1345		
Aqua Regia (HNO3+ HCl) Reagent ID	020518		
5% $KMnO_4$ / Granular KMnO4 reagent ID	020518	—	
NaCl.hydroxylamine hydrochloride Reagent ID	020218		
Stannous Chloride Reagent ID	020518		
Digestion Completd at (time)	1415		
☐ filtered thru' 0.45 um syringe filter (lot #)	SS 71618103		

Pipettes

Vol.(mL)	ID
.1	J258157D
.2-1	G15693E
2.5-5	3850158
6-10	4645196

2-5-18

Prep Chemist / Date

Continued from page Ø

Continued on page _____

Reviewed Online / See LIMS

Version 7.2, July.2017

Dilutions for 296840 METALS Soil
Enthalpy Analytical - Berkeley

Type	Sample ID	IDFs
SAMPLE	296840-001	1X, 25X
SAMPLE	296840-006	1X, 25X
SAMPLE	296840-013	10X, 25X
SAMPLE	296840-018	1X, 25X
SER	QC918959	5X
BLANK	QC918988	25X
BS	QC918989	25X
BSD	QC918990	25X
MS	QC918991	25X
MSD	QC918992	25X
SER	QC918993	125X
PDS	QC918994	25X

CAS Registry Numbers for 296840 METALS Soil
Enthalpy Analytical - Berkeley

Analyte	CAS RN
Copper	7440-50-8
Lead	7439-92-1
Mercury	7439-97-6

ICPMS Raw Data

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 1018055668

Instrument : MET26 Begun : 02/07/18 15:48
Method : EPA 6020A SOP Version : icpms metals_rv10

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	18b07p00001	X	RINSE			02/07/18 15:48	1.0	1	
002	18b07p00002	TUN				02/07/18 15:53	1.0	2	
003	18b07p00003	X	RINSE			02/07/18 15:57	1.0	1	
004	18b07p00004	X	RINSE			02/07/18 16:02	1.0	1	
005	18b07p00005	ICALBLK	CALBLANK			02/07/18 16:07	1.0	1	
006	18b07p00006	ICAL				02/07/18 16:12	1.0	3 1	
007	18b07p00007	X	RINSE			02/07/18 16:17	1.0	1	
008	18b07p00008	ICALBLK	CALBLANK			02/07/18 16:22	1.0	1	
009	18b07p00009	ICAL				02/07/18 16:26	1.0	3 1	
010	18b07p00010	ICAL				02/07/18 16:31	1.0	3 1	
011	18b07p00011	X	RINSE			02/07/18 16:36	1.0	1	
012	18b07p00012	ICALBLK	CALBLANK			02/07/18 16:41	1.0	1	
013	18b07p00013	ICAL				02/07/18 16:46	1.0	3 1	
014	18b07p00014	ICAL				02/07/18 16:51	1.0	3 1	
015	18b07p00015	ICAL				02/07/18 16:55	1.0	3 1	
016	18b07p00016	ICAL				02/07/18 17:00	1.0	3 1	
017	18b07p00017	ICAL				02/07/18 17:05	1.0	3 1	
018	18b07p00018	ICAL				02/07/18 17:10	1.0	3 1	
019	18b07p00019	ICAL				02/07/18 17:15	1.0	3 1	
020	18b07p00020	X	RINSE			02/07/18 17:20	1.0	1	
021	18b07p00021	ICV				02/07/18 17:25	1.0	4 1	
022	18b07p00022	XCRI				02/07/18 17:30	1.0	5 1	
023	18b07p00023	XICB				02/07/18 17:35	1.0	1	
024	18b07p00024	XICSA				02/07/18 17:40	1.0	6 1	8:CA=270000
025	18b07p00025	ICSAB				02/07/18 17:45	1.0	7 1	8:CA=270000
026	18b07p00026	X	RINSE			02/07/18 17:50	1.0	1	
027	18b07p00027	X	RINSE			02/07/18 17:55	1.0	1	
028	18b07p00028	X	RINSE			02/07/18 18:00	1.0	1	
029	18b07p00029	X	RINSE			02/07/18 18:05	1.0	1	
030	18b07p00030	X	RINSE			02/07/18 18:15	1.0	1	
031	18b07p00031	CRI				02/07/18 18:20	1.0	5 1	
032	18b07p00032	ICB				02/07/18 18:25	1.0	1	
033	18b07p00033	ICSA				02/07/18 18:30	1.0	6 1	8:CA=270000
034	18b07p00034	X	RINSE			02/07/18 18:35	1.0	1	
035	18b07p00035	X	RINSE			02/07/18 18:40	1.0	1	
036	18b07p00036	X	RINSE			02/07/18 18:45	1.0	1	
037	18b07p00037	X	RINSE			02/07/18 18:50	1.0	1	
038	18b07p00038	BLANK	QC918988	Soil	256220	02/07/18 18:55	25.0	1	
039	18b07p00039	BS	QC918989	Soil	256220	02/07/18 19:00	25.0	1	
040	18b07p00040	BSD	QC918990	Soil	256220	02/07/18 19:05	25.0	1	
041	18b07p00041	MSS	296840-001	Soil	256220	02/07/18 19:10	25.0	1	
042	18b07p00042	MS	QC918991	Soil	256220	02/07/18 19:15	25.0	1	
043	18b07p00043	MSD	QC918992	Soil	256220	02/07/18 19:19	25.0	1	
044	18b07p00044	SER	QC918993	Soil	256220	02/07/18 19:24	125.0	1	
045	18b07p00045	PDS	QC918994	Soil	256220	02/07/18 19:29	25.0	1 8 9 10	
046	18b07p00046	SAMPLE	296840-006	Soil	256220	02/07/18 19:34	25.0	1	1:ZN=210
047	18b07p00047	SAMPLE	296840-013	Soil	256220	02/07/18 19:39	25.0	1	3:MG=28000
048	18b07p00048	CCV				02/07/18 19:44	1.0	4 1	
049	18b07p00049	X	XCCB			02/07/18 19:49	1.0	1	
050	18b07p00050	CCB				02/07/18 19:54	1.0	1	
051	18b07p00051	SAMPLE	296840-018	Soil	256220	02/07/18 19:59	25.0	1	
052	18b07p00052	SAMPLE	296825-001	Soil	256220	02/07/18 20:04	25.0	1	1:MN=360

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 1018055668

Instrument : MET26 Begun : 02/07/18 15:48
Method : EPA 6020A SOP Version : icpms metals_rv10

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
053	18b07p00053	SAMPLE	296825-002	Soil	256220	02/07/18 20:09	25.0	1	1:MN=200
054	18b07p00054	SAMPLE	296825-003	Soil	256220	02/07/18 20:14	25.0	1	
055	18b07p00055	SAMPLE	296825-004	Soil	256220	02/07/18 20:19	25.0	1	1:MN=290
056	18b07p00056	SAMPLE	296825-005	Soil	256220	02/07/18 20:23	25.0	1	1:MN=400
057	18b07p00057	CCV				02/07/18 20:28	1.0	4 1	
058	18b07p00058	X	XCCB			02/07/18 20:33	1.0	1	
059	18b07p00059	CCB				02/07/18 20:38	1.0	1	
060	18b07p00060	ICSA				02/07/18 20:43	1.0	6 1	8:CA=270000
061	18b07p00061	ICSAB				02/07/18 20:48	1.0	7 1	8:CA=270000
062	18b07p00062	X	RINSE			02/07/18 20:54	1.0	1	
063	18b07p00063	X	RINSE			02/07/18 20:58	1.0	1	
064	18b07p00064	X	RINSE			02/07/18 21:03	1.0	1	
065	18b07p00065	X	RINSE			02/07/18 21:08	1.0	1	

NBB 02/08/18 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 001 through 061.

Standards used: 1=S35939 2=S35938 3=S35940 4=S35929 5=S35885 6=S35821 7=S35822 8=S34361 9=S34362 10=S34743

ENTHALPY SAMPLE USER REPORT FOR EPA 6020A

Inst	: MET26	Lab ID	: 296840-001	Client ID	: HPP-FSS-007
Seqnum	: 1018055668041	Matrix	: Soil	Acct	: IEECI (MJD)
File	: 18b07p00041	Batch	: 256220	Time	: 07-FEB-2018 19:10
Cal	: 1018055668001	Caldate	: 07-FEB-2018		
IDF	: 25.0			Units	: mg/Kg

0.92 g --> 50.0 ml = 54.35 ml/g PDF

Analyte	Ch	Result	RL	Blank	Flags
Copper	E	26	0.68		u
Lead	A	12	0.68		u

ISTD (ICALBLK 18b07p00012)	Ch	ICALBLK Abund	MSS Abund	%Drift
Lithium	A	929517	1058773	13.91
Germanium	H	63325	74719	17.99
Germanium	A	187412	205710	9.76
Germanium	E	90193	99644	10.48
Indium	A	1357566	1442832	6.28
Bismuth	A	1338042	1324035	-1.05
Yttrium	E	716208	802589	12.06
Yttrium	H	916259	1096890	19.71
Yttrium	A	1390537	1580032	13.63

u=use

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B07p00.B\041SMPL.D\041SMPL.D#
Date Acquired: Feb 7 2018 07:10 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: 296840-001
Misc Info: 256220
Vial Number: 2104
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 07 2018 05:19 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	0.1813	5.532894E-04	586.69	ppb	9.69	
23 Na	72	2	3908.0000	7.223769E+01	7197838.00	ppb	0.86	
24 Mg	72	3	5269.0000	2.269804E+02	46668472.00	ppb	3.00	
27 Al	72	3	8102.0000	4.170317E+02	85740656.00	ppb	3.22	
31 P	72	2	257.5000	1.061670E-01	10579.37	ppb	1.64	
39 K	72	3	1249.0000	6.282783E+01	12918050.00	ppb	3.10	
44 Ca	72	3	2438.0000	3.485901E+00	716739.31	ppb	3.01	
51 V	72	2	22.6000	9.878299E-01	98428.80	ppb	1.04	
52 Cr	72	2	33.3200	1.539742E+00	153423.09	ppb	0.98	
55 Mn	72	2	135.1000	5.546868E+00	552698.19	ppb	0.76	
56 Fe	72	1	12030.0000	5.432391E+02	40568800.00	ppb	3.15	
59 Co	72	2	5.7770	3.012549E-01	30016.63	ppb	1.51	
60 Ni	72	2	37.1500	4.466461E-01	44503.55	ppb	1.26	
63 Cu	89	2	19.5000	7.377342E-02	59205.92	ppb	1.27	
66 Zn	89	2	37.6800	3.285730E-02	26367.23	ppb	2.83	
75 As	89	2	3.0500	1.879506E-03	1508.53	ppb	2.31	
78 Se	89	1	0.1278	1.766530E-05	19.33	ppb	21.46	
98 Mo	89	3	0.3945	9.140922E-04	1443.45	ppb	8.32	
107 Ag	115	3	0.1169	4.477121E-04	646.70	ppb	8.48	
111 Cd	115	3	0.0429	6.507261E-05	94.45	ppb	56.75	
121 Sb	115	3	0.1863	6.330889E-04	912.28	ppb	9.70	
137 Ba	209	3	28.8300	3.530651E-02	46721.39	ppb	3.21	
205 Tl	209	3	0.0317	5.626087E-04	744.49	ppb	7.66	
208 Pb	209	3	8.9020	9.684602E-02	128137.80	ppb	3.90	
238 U	209	3	0.3616	4.510875E-03	5968.15	ppb	4.79	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1058773	2.50	929517	113.9	30 - 120	
72 Ge	1	74719	2.56	63325	118.0	30 - 120	
72 Ge	2	99644	0.61	90193	110.5	30 - 120	
72 Ge	3	205710	2.54	187412	109.8	30 - 120	
89 Y	1	1096890	2.64	916259	119.7	30 - 120	
89 Y	2	802589	0.77	716208	112.1	30 - 120	
89 Y	3	1580032	3.64	1390537	113.6	30 - 120	
115 In	3	1442832	3.11	1357566	106.3	30 - 120	
209 Bi	3	1324035	2.73	1338042	99.0	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B07p00.B\012CALB.D\012CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY SAMPLE USER REPORT FOR EPA 6020A

Inst	: MET26	Lab ID	: 296840-006	Client ID	: HPP-FSS-008
Seqnum	: 1018055668046	Matrix	: Soil	Acct	: IEECI (MJD)
File	: 18b07p00046	Batch	: 256220	Time	: 07-FEB-2018 19:34
Cal	: 1018055668001	Caldate	: 07-FEB-2018		
IDF	: 25.0			Units	: mg/Kg

0.97 g --> 50.0 ml = 51.55 ml/g PDF

Analyte	Ch	Result	RL	Blank	Flags
Copper	E	30	0.64		u
Lead	A	21	0.64		u

ISTD (ICALBLK 18b07p00012)	Ch	ICALBLK Abund	SAMPLE Abund	%Drift
Bismuth	A	1338042	1354542	1.23
Yttrium	E	716208	835792	16.70

u=use

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B07p00.B\046SMPL.D\046SMPL.D#
Date Acquired: Feb 7 2018 07:34 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: 296840-006
Misc Info: 256220
Vial Number: 2109
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 07 2018 05:19 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

Data Results:
Analytes: Fail
ISTD: Fail

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	0.2148	6.539389E-04	758.93	ppb	9.52	
23 Na	72	2	4620.0000	8.530825E+01	8795858.00	ppb	15.54	
24 Mg	72	3	9841.0000	4.238845E+02	93558704.00	ppb	1.92	
27 Al	72	3	8707.0000	4.481499E+02	98915112.00	ppb	1.85	
31 P	72	2	279.4000	1.143002E-01	11788.07	ppb	16.85	
39 K	72	3	1364.0000	6.821388E+01	15056200.00	ppb	1.89	
44 Ca	72	3	3962.0000	5.545377E+00	1224001.00	ppb	1.60	
51 V	72	2	27.3400	1.175902E+00	121220.50	ppb	16.69	
52 Cr	72	2	56.4400	2.528590E+00	260614.50	ppb	16.46	
55 Mn	72	2	172.8000	7.091930E+00	731096.19	ppb	15.55	
56 Fe	72	1	14530.0000	6.560081E+02	53688980.00	ppb	0.48	
59 Co	72	2	7.3400	3.822929E-01	39401.73	ppb	15.67	
60 Ni	72	2	74.1300	8.904650E-01	91810.09	ppb	15.24	
63 Cu	89	2	23.5300	8.877189E-02	72326.79	ppb	18.81	
66 Zn	89	2	208.3000	1.801843E-01	146679.00	ppb	19.20	>LDR
75 As	89	2	4.3100	2.581319E-03	2106.82	ppb	18.90	
78 Se	89	1	0.2063	2.643371E-05	31.33	ppb	27.59	
98 Mo	89	3	0.5290	1.170855E-03	1974.65	ppb	6.48	
107 Ag	115	3	0.0884	3.523334E-04	535.58	ppb	12.79	
111 Cd	115	3	0.0475	6.865242E-05	104.45	ppb	33.14	
121 Sb	115	3	0.4621	1.368167E-03	2082.44	ppb	2.63	
137 Ba	209	3	23.6100	2.892062E-02	39176.03	ppb	1.48	
205 Tl	209	3	0.0378	6.120763E-04	828.94	ppb	13.73	
208 Pb	209	3	16.0600	1.740647E-01	235778.20	ppb	0.89	
238 U	209	3	0.3979	4.962888E-03	6721.85	ppb	2.74	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1160703	0.55	929517	124.9	30 - 120	IS Fail
72 Ge	1	81842	0.16	63325	129.2	30 - 120	IS Fail
72 Ge	2	105032	18.57	90193	116.5	30 - 120	
72 Ge	3	220755	1.33	187412	117.8	30 - 120	
89 Y	1	1186008	0.57	916259	129.4	30 - 120	IS Fail
89 Y	2	835792	20.91	716208	116.7	30 - 120	
89 Y	3	1687386	1.66	1390537	121.3	30 - 120	IS Fail
115 In	3	1521715	1.49	1357566	112.1	30 - 120	
209 Bi	3	1354542	0.48	1338042	101.2	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B07p00.B\012CALB.D\012CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
4 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY SAMPLE USER REPORT FOR EPA 6020A

Inst	: MET26	Lab ID	: 296840-013	Client ID	: HPP-FSS-009
Seqnum	: 1018055668047	Matrix	: Soil	Acct	: IEECI (MJD)
File	: 18b07p00047	Batch	: 256220	Time	: 07-FEB-2018 19:39
Cal	: 1018055668001	Caldate	: 07-FEB-2018		
IDF	: 25.0			Units	: mg/Kg

0.97 g --> 50.0 ml = 51.55 ml/g PDF

Analyte	Ch	Result	RL	Blank	Flags
Copper	E	90	0.64		u
Lead	A	25	0.64		u

ISTD (ICALBLK 18b07p00012)	Ch	ICALBLK Abund	SAMPLE Abund	%Drift
Bismuth	A	1338042	1337943	-0.01
Yttrium	E	716208	857214	19.69

u=use

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B07p00.B\047SMPL.D\047SMPL.D#
Date Acquired: Feb 7 2018 07:39 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: 296840-013
Misc Info: 256220
Vial Number: 2110
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 07 2018 05:19 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

Data Results:
Analytes: Fail
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	0.1322	4.057995E-04	450.02	ppb	8.64	
23 Na	72	2	2803.0000	5.193555E+01	5574396.00	ppb	0.40	
24 Mg	72	3	27840.0000	1.199263E+03	258843500.00	ppb	0.53	>LDR
27 Al	72	3	5651.0000	2.908668E+02	62779408.00	ppb	0.40	
31 P	72	2	206.4000	8.716357E-02	9355.27	ppb	1.75	
39 K	72	3	809.0000	4.220424E+01	9109172.00	ppb	0.65	
44 Ca	72	3	23100.0000	3.141218E+01	6779862.00	ppb	0.62	>LDR
51 V	72	2	15.3500	7.003576E-01	75171.37	ppb	0.59	
52 Cr	72	2	70.9600	3.149951E+00	338092.09	ppb	0.33	
55 Mn	72	2	207.8000	8.528968E+00	915443.38	ppb	0.29	>LDR
56 Fe	72	1	17040.0000	7.696075E+02	55551072.00	ppb	9.62	
59 Co	72	2	7.0550	3.675011E-01	39444.88	ppb	0.35	
60 Ni	72	2	75.6100	9.081676E-01	97477.81	ppb	0.80	
63 Cu	89	2	70.0500	2.622449E-01	224793.09	ppb	0.75	
66 Zn	89	2	63.7500	5.536868E-02	47462.17	ppb	1.07	
75 As	89	2	4.8240	2.867232E-03	2457.77	ppb	0.50	
78 Se	89	1	0.1242	1.727073E-05	17.78	ppb	12.38	
98 Mo	89	3	0.4876	1.091694E-03	1791.28	ppb	4.00	
107 Ag	115	3	0.0722	2.980364E-04	446.69	ppb	7.39	
111 Cd	115	3	0.1180	1.231027E-04	184.45	ppb	36.78	
121 Sb	115	3	0.2642	8.406664E-04	1260.10	ppb	5.05	
137 Ba	209	3	20.0900	2.462245E-02	32942.00	ppb	1.36	
205 Tl	209	3	0.0138	4.176597E-04	558.92	ppb	25.00	
208 Pb	209	3	19.3200	2.091828E-01	279870.69	ppb	0.51	
238 U	209	3	0.3091	3.857531E-03	5161.16	ppb	0.45	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1108800	0.38	929517	119.3	30 - 120	
72 Ge	1	72631	9.67	63325	114.7	30 - 120	
72 Ge	2	107333	0.41	90193	119.0	30 - 120	
72 Ge	3	215836	0.04	187412	115.2	30 - 120	
89 Y	1	1030767	11.33	916259	112.5	30 - 120	
89 Y	2	857214	1.13	716208	119.7	30 - 120	
89 Y	3	1640903	0.38	1390537	118.0	30 - 120	
115 In	3	1498988	0.61	1357566	110.4	30 - 120	
209 Bi	3	1337943	0.49	1338042	100.0	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B07p00.B\012CALB.D\012CALB.D#

3 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY SAMPLE USER REPORT FOR EPA 6020A

Inst	: MET26	Lab ID	: 296840-018	Client ID	: HPP-FSS-010
Seqnum	: 1018055668051	Matrix	: Soil	Acct	: IEECI (MJD)
File	: 18b07p00051	Batch	: 256220	Time	: 07-FEB-2018 19:59
Cal	: 1018055668001	Caldate	: 07-FEB-2018		
IDF	: 25.0			Units	: mg/Kg

0.93 g --> 50.0 ml = 53.76 ml/g PDF

Analyte	Ch	Result	RL	Blank	Flags
Copper	E	25	0.67		>c+ i+ **b***
Lead	A	9.7	0.67		u

ISTD (ICALBLK 18b07p00012)	Ch	ICALBLK Abund	SAMPLE Abund	%Drift
Bismuth	A	1338042	1359400	1.60
Yttrium	E	716208	882335	**23.20 ***

+=high bias >=closing b=noncompliant c=CCV i=ISTD failure u=use

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B07p00.B\051SMPL.D\051SMPL.D#
Date Acquired: Feb 7 2018 07:59 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: 296840-018
Misc Info: 256220
Vial Number: 2111
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 07 2018 05:19 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

Data Results:
Analytes: Pass
ISTD: Fail

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	0.1741	5.316975E-04	647.81	ppb	3.36	
23 Na	72	2	4332.0000	8.001421E+01	8921806.00	ppb	0.53	
24 Mg	72	3	11030.0000	4.751319E+02	107829100.00	ppb	1.04	
27 Al	72	3	8487.0000	4.368646E+02	99145368.00	ppb	0.82	
31 P	72	2	231.7000	9.658333E-02	10768.41	ppb	3.06	
39 K	72	3	1338.0000	6.697030E+01	15198890.00	ppb	0.77	
44 Ca	72	3	2050.0000	2.960276E+00	671829.88	ppb	0.86	
51 V	72	2	23.4300	1.020894E+00	113832.10	ppb	0.81	
52 Cr	72	2	48.3000	2.180376E+00	243120.00	ppb	0.96	
55 Mn	72	2	137.7000	5.652579E+00	630283.88	ppb	0.44	
56 Fe	72	1	13390.0000	6.044534E+02	52229020.00	ppb	0.69	
59 Co	72	2	6.7680	3.526493E-01	39322.37	ppb	0.93	
60 Ni	72	2	108.3000	1.300559E+00	145018.00	ppb	0.46	
63 Cu	89	2	18.4200	6.972377E-02	61517.70	ppb	0.60	
66 Zn	89	2	36.2900	3.165434E-02	27926.98	ppb	1.15	
75 As	89	2	3.4440	2.098918E-03	1852.12	ppb	2.33	
78 Se	89	1	0.1319	1.811993E-05	22.44	ppb	10.96	
98 Mo	89	3	0.2660	6.688808E-04	1147.86	ppb	7.85	
107 Ag	115	3	0.0783	3.184966E-04	491.14	ppb	6.83	
111 Cd	115	3	0.0453	6.695509E-05	103.34	ppb	42.03	
121 Sb	115	3	0.1142	4.409685E-04	680.04	ppb	6.95	
137 Ba	209	3	22.3300	2.736234E-02	37196.43	ppb	0.48	
205 Tl	209	3	0.0229	4.911772E-04	667.82	ppb	13.27	
208 Pb	209	3	7.2500	7.902265E-02	107420.50	ppb	1.03	
238 U	209	3	0.3493	4.357954E-03	5923.70	ppb	2.66	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1218305	0.44	929517	131.1	30 - 120	IS Fail
72 Ge	1	86408	0.37	63325	136.5	30 - 120	IS Fail
72 Ge	2	111505	0.68	90193	123.6	30 - 120	IS Fail
72 Ge	3	226956	0.65	187412	121.1	30 - 120	IS Fail
89 Y	1	1238579	0.56	916259	135.2	30 - 120	IS Fail
89 Y	2	882335	1.44	716208	123.2	30 - 120	IS Fail
89 Y	3	1715443	0.96	1390537	123.4	30 - 120	IS Fail
115 In	3	1542418	0.68	1357566	113.6	30 - 120	
209 Bi	3	1359400	0.50	1338042	101.6	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B07p00.B\012CALB.D\012CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
7 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY BLANK USER REPORT FOR 296840 METALS Soil
EPA 6020A

Inst : MET26 Lab ID : QC918988
Seqnum : 1018055668038.2 Matrix : Soil
File : 18b07p00038 Batch : 256220 Time : 07-FEB-2018 18:55
Cal : 1018055668001 Caldate : 07-FEB-2018
IDF : 25.0 Units : mg/Kg

0.94 g --> 50.0 ml = 53.19 ml/g PDF

Analyte	Ch	Result	RL	Flags
Copper	E	ND	0.66	u
Lead	A	ND	0.66	u

ISTD (ICALBLK 18b07p00012)	Ch	ICALBLK Abund	BLANK Abund	%Drift
Bismuth	A	1338042	1300149	-2.83
Yttrium	E	716208	707824	-1.17

PRW 02/08/18 [Chromium E]: Blank hit greater than RL. [general version]

u=use

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B07p00.B\038SMPL.D\038SMPL.D#
Date Acquired: Feb 7 2018 06:55 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: qc918988
Misc Info: 256220
Vial Number: 2101
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 07 2018 05:19 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	-0.0008	5.820887E-06	5.56	ppb	285.44	
23 Na	72	2	-9.6800	3.030028E-01	27503.17	ppb	1.25	
24 Mg	72	3	0.1199	8.314768E-02	15940.59	ppb	24.30	
27 Al	72	3	0.0213	5.368699E-02	10292.51	ppb	94.54	
31 P	72	2	1.6760	1.102107E-02	1000.06	ppb	91.11	
39 K	72	3	4.1690	4.507127E+00	864058.81	ppb	18.06	
44 Ca	72	3	-29.7300	1.498984E-01	28735.82	ppb	7.76	
51 V	72	2	-0.2453	8.206460E-02	7448.13	ppb	9.47	
52 Cr	72	2	0.7460	1.464420E-01	13290.91	ppb	5.52	
55 Mn	72	2	-0.0121	2.441112E-03	221.49	ppb	40.26	
56 Fe	72	1	0.5659	1.283140E-01	8600.57	ppb	9.18	
59 Co	72	2	-0.0319	3.102678E-04	28.15	ppb	4.85	
60 Ni	72	2	-0.0096	7.631914E-04	69.26	ppb	25.59	
63 Cu	89	2	-0.0312	9.417229E-04	666.69	ppb	53.80	
66 Zn	89	2	-0.0963	2.343799E-04	165.93	ppb	19.97	
75 As	89	2	0.0264	1.959145E-04	138.67	ppb	52.23	
78 Se	89	1	-0.0048	2.854673E-06	2.67	ppb	274.33	
98 Mo	89	3	0.0445	2.463190E-04	348.91	ppb	60.51	
107 Ag	115	3	-0.0089	2.679219E-05	36.67	ppb	22.09	
111 Cd	115	3	-0.0371	3.241108E-06	4.44	ppb	12.92	
121 Sb	115	3	-0.0068	1.184838E-04	162.23	ppb	55.69	
137 Ba	209	3	-0.0219	2.474825E-05	32.22	ppb	52.38	
205 Tl	209	3	-0.0322	4.616368E-05	60.00	ppb	3.46	
208 Pb	209	3	-0.0337	4.820063E-04	626.70	ppb	5.98	
238 U	209	3	-0.0001	5.135766E-06	6.67	ppb	650.62	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	952983	0.59	929517	102.5	30 - 120	
72 Ge	1	67034	1.04	63325	105.9	30 - 120	
72 Ge	2	90765	0.85	90193	100.6	30 - 120	
72 Ge	3	191714	0.47	187412	102.3	30 - 120	
89 Y	1	939144	1.86	916259	102.5	30 - 120	
89 Y	2	707824	0.39	716208	98.8	30 - 120	
89 Y	3	1416240	0.65	1390537	101.8	30 - 120	
115 In	3	1369426	0.37	1357566	100.9	30 - 120	
209 Bi	3	1300149	0.48	1338042	97.2	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B07p00.B\012CALB.D\012CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY SPIKE USER REPORT FOR 296840 METALS Soil
EPA 6020A

Type : BS
Inst : MET26
Seqnum : 1018055668039.2
File : 18b07p00039
IDF : 25.0
Lab ID : QC918989
Matrix : Soil
Batch : 256220
Time : 07-FEB-2018 19:00
Cal : 1018055668001
Units : mg/Kg

Type : BSD
Inst : MET26
Seqnum : 1018055668040.2
File : 18b07p00040
IDF : 25.0
Lab ID : QC918990
Matrix : Soil
Batch : 256220
Time : 07-FEB-2018 19:05
Cal : 1018055668001

BS: 0.98 g --> 50.0 ml = 51.02 ml/g PDF
BSD: 1.03 g --> 50.0 ml = 48.54 ml/g PDF

Analyte	Spiked	BS	Ch	%Rec	Spiked	BSD	Ch	%Rec	Limits	RPD	Lim	Flags
Copper	25.51	26.94	E	106	24.27	26.46	E	109	84-119	3	20	u
Lead	25.51	24.82	A	97	24.27	24.19	A	100	84-118	2	20	r u

ISTD (ICALBLK 18b07p00012)	Ch	ICALBLK Abund	BS Abund	%Drift
Bismuth	A	1338042	1296683	-3.09
Yttrium	E	716208	725223	1.26

ISTD (ICALBLK 18b07p00012)	Ch	ICALBLK Abund	BSD Abund	%Drift
Bismuth	A	1338042	1390280	3.90
Yttrium	E	716208	725649	1.32

r=RSD out u=use

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B07p00.B\039SMPL.D\039SMPL.D#
Date Acquired: Feb 7 2018 07:00 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: qc918989
Misc Info: 256220
Vial Number: 2102
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 07 2018 05:19 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	9.8900	2.973847E-02	28899.78	ppb	0.61	
23 Na	72	2	170.5000	3.610666E+00	335827.09	ppb	0.80	
24 Mg	72	3	193.7000	8.422005E+00	1626324.00	ppb	0.21	
27 Al	72	3	19.0800	1.034594E+00	199783.41	ppb	0.68	
31 P	72	2	194.0000	8.255597E-02	7677.65	ppb	4.11	
39 K	72	3	198.2000	1.359727E+01	2625685.00	ppb	0.11	
44 Ca	72	3	209.8000	4.736881E-01	91471.25	ppb	0.81	
51 V	72	2	18.8900	8.409301E-01	78215.27	ppb	0.48	
52 Cr	72	2	20.5200	9.922485E-01	92288.43	ppb	0.79	
55 Mn	72	2	19.9100	8.198432E-01	76252.60	ppb	0.93	
56 Fe	72	1	202.8000	9.258035E+00	629828.00	ppb	0.29	
59 Co	72	2	20.1200	1.044571E+00	97152.95	ppb	1.02	
60 Ni	72	2	20.7300	2.496192E-01	23217.35	ppb	0.75	
63 Cu	89	2	21.1200	7.982181E-02	57884.35	ppb	1.45	
66 Zn	89	2	20.7700	1.825097E-02	13235.37	ppb	0.81	
75 As	89	2	20.7100	1.171412E-02	8494.37	ppb	1.83	
78 Se	89	1	21.1400	2.364718E-03	2251.96	ppb	0.43	
98 Mo	89	3	19.8900	3.811216E-02	54296.69	ppb	1.01	
107 Ag	115	3	2.0390	6.883174E-03	9435.46	ppb	2.28	
111 Cd	115	3	20.4200	1.581195E-02	21675.02	ppb	0.81	
121 Sb	115	3	20.0700	5.361974E-02	73501.11	ppb	0.05	
137 Ba	209	3	18.6500	2.286498E-02	29648.13	ppb	1.10	
205 Tl	209	3	19.1100	1.546876E-01	200579.91	ppb	0.73	
208 Pb	209	3	19.4600	2.107130E-01	273225.31	ppb	0.63	
238 U	209	3	18.5900	2.316311E-01	300351.19	ppb	0.27	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	971813	0.38	929517	104.6	30 - 120	
72 Ge	1	68030	0.30	63325	107.4	30 - 120	
72 Ge	2	93013	0.79	90193	103.1	30 - 120	
72 Ge	3	193104	0.08	187412	103.0	30 - 120	
89 Y	1	952308	0.55	916259	103.9	30 - 120	
89 Y	2	725223	0.96	716208	101.3	30 - 120	
89 Y	3	1424660	0.08	1390537	102.5	30 - 120	
115 In	3	1370784	0.34	1357566	101.0	30 - 120	
209 Bi	3	1296683	0.24	1338042	96.9	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B07p00.B\012CALB.D\012CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B07p00.B\040SMPL.D\040SMPL.D#
Date Acquired: Feb 7 2018 07:05 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: qc918990
Misc Info: 256220
Vial Number: 2103
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 07 2018 05:19 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	9.9850	3.002553E-02	30556.51	ppb	19.03	
23 Na	72	2	175.7000	3.706825E+00	344566.59	ppb	0.87	
24 Mg	72	3	199.9000	8.685556E+00	1737623.00	ppb	19.65	
27 Al	72	3	19.9000	1.076761E+00	215236.91	ppb	21.22	
31 P	72	2	211.1000	8.891672E-02	8265.75	ppb	2.30	
39 K	72	3	199.4000	1.364969E+01	2729696.00	ppb	28.38	
44 Ca	72	3	203.9000	4.656992E-01	93153.00	ppb	32.38	
51 V	72	2	19.5000	8.647675E-01	80383.58	ppb	1.00	
52 Cr	72	2	21.3200	1.026556E+00	95427.63	ppb	0.21	
55 Mn	72	2	20.5700	8.469283E-01	78729.20	ppb	0.36	
56 Fe	72	1	209.3000	9.549769E+00	655240.13	ppb	0.35	
59 Co	72	2	20.8800	1.083720E+00	100738.80	ppb	0.59	
60 Ni	72	2	21.3700	2.573177E-01	23919.13	ppb	0.63	
63 Cu	89	2	21.8000	8.233197E-02	59745.36	ppb	0.62	
66 Zn	89	2	21.7400	1.909142E-02	13853.67	ppb	0.88	
75 As	89	2	21.2600	1.201744E-02	8720.27	ppb	0.81	
78 Se	89	1	22.2100	2.484428E-03	2382.64	ppb	0.59	
98 Mo	89	3	20.4700	3.922149E-02	57867.75	ppb	25.70	
107 Ag	115	3	2.0650	6.970346E-03	9965.86	ppb	21.04	
111 Cd	115	3	20.9200	1.620179E-02	22998.45	ppb	25.34	
121 Sb	115	3	20.6400	5.514873E-02	78157.82	ppb	25.97	
137 Ba	209	3	19.2700	2.361719E-02	31894.39	ppb	21.28	
205 Tl	209	3	19.5300	1.581218E-01	213604.50	ppb	20.93	
208 Pb	209	3	19.9300	2.157391E-01	291440.41	ppb	21.12	
238 U	209	3	19.0000	2.367162E-01	319337.41	ppb	22.01	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1040451	17.84	929517	111.9	30 - 120	
72 Ge	1	68613	0.36	63325	108.4	30 - 120	
72 Ge	2	92959	0.97	90193	103.1	30 - 120	
72 Ge	3	204996	19.01	187412	109.4	30 - 120	
89 Y	1	959023	0.40	916259	104.7	30 - 120	
89 Y	2	725649	0.53	716208	101.3	30 - 120	
89 Y	3	1539577	24.54	1390537	110.7	30 - 120	
115 In	3	1479052	24.29	1357566	108.9	30 - 120	
209 Bi	3	1390280	20.80	1338042	103.9	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B07p00.B\012CALB.D\012CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY SPIKE USER REPORT FOR 296840 METALS Soil
EPA 6020A

Type : MSS	Type : MS	Type : MSD
Inst : MET26	Inst : MET26	Inst : MET26
Seqnum : 1018055668041	Seqnum : 1018055668042.2	Seqnum : 1018055668043.2
File : 18b07p00041	File : 18b07p00042	File : 18b07p00043
IDF : 25.0	IDF : 25.0	IDF : 25.0
Lab ID : 296840-001	Lab ID : QC918991	Lab ID : QC918992
Matrix : Soil	Matrix : Soil	Matrix : Soil
Batch : 256220	Batch : 256220	Batch : 256220
Time : 07-FEB-2018 19:10	Time : 07-FEB-2018 19:15	Time : 07-FEB-2018 19:19
Cal : 1018055668001	Cal : 1018055668001	Cal : 1018055668001
Units : mg/Kg		

MSS: 0.92 g --> 50.0 ml = 54.35 ml/g PDF
MS: 0.97 g --> 50.0 ml = 51.55 ml/g PDF
MSD: 1.01 g --> 50.0 ml = 49.50 ml/g PDF

Analyte	MSS	Ch	Spiked	MS	Ch	%Rec	Spiked	MSD	Ch	%Rec	Limits	RPD	Lim	Flags
Copper	26.49	E	25.77	45.46	E	**74***	24.75	52.55	E	105	84-119	16	20	u
Lead	12.10	A	25.77	34.96	A	89	24.75	35.50	A	95	84-118	4	20	u

ISTD (ICALBLK 18b07p00012)	Ch	ICALBLK Abund	MS Abund	%Drift
Bismuth	A	1338042	1303685	-2.57
Yttrium	E	716208	801102	11.85

ISTD (ICALBLK 18b07p00012)	Ch	ICALBLK Abund	MSD Abund	%Drift
Bismuth	A	1338042	1345096	0.53
Yttrium	E	716208	828651	15.70

u=use

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B07p00.B\042SMPL.D\042SMPL.D#
Date Acquired: Feb 7 2018 07:15 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: qc918991
Misc Info: 256220
Vial Number: 2105
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 07 2018 05:19 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	9.7610	2.935050E-02	30156.53	ppb	1.99	
23 Na	72	2	4144.0000	7.656845E+01	7692367.00	ppb	0.56	
24 Mg	72	3	5078.0000	2.187897E+02	44476920.00	ppb	1.67	
27 Al	72	3	8260.0000	4.251474E+02	86426712.00	ppb	1.65	
31 P	72	2	431.1000	1.707348E-01	17153.07	ppb	1.52	
39 K	72	3	1403.0000	7.004166E+01	14238400.00	ppb	1.86	
44 Ca	72	3	8893.0000	1.221024E+01	2482170.00	ppb	1.70	
51 V	72	2	39.8500	1.671860E+00	167962.30	ppb	0.40	
52 Cr	72	2	50.7700	2.286055E+00	229666.30	ppb	1.12	
55 Mn	72	2	142.9000	5.865537E+00	589275.69	ppb	0.76	
56 Fe	72	1	11420.0000	5.158124E+02	38091680.00	ppb	0.11	
59 Co	72	2	24.3600	1.264140E+00	126999.80	ppb	0.81	
60 Ni	72	2	53.6000	6.441133E-01	64709.52	ppb	1.03	
63 Cu	89	2	35.2800	1.326088E-01	106229.70	ppb	1.00	
66 Zn	89	2	52.3700	4.553981E-02	36481.27	ppb	0.62	
75 As	89	2	21.2700	1.202412E-02	9632.15	ppb	1.44	
78 Se	89	1	18.9100	2.115845E-03	2271.52	ppb	1.06	
98 Mo	89	3	17.7500	3.402845E-02	52132.60	ppb	3.71	
107 Ag	115	3	2.1070	7.109540E-03	10058.12	ppb	3.62	
111 Cd	115	3	19.7800	1.531756E-02	21671.82	ppb	2.89	
121 Sb	115	3	5.1940	1.397805E-02	19780.33	ppb	2.08	
137 Ba	209	3	47.1000	5.764532E-02	75132.49	ppb	2.04	
205 Tl	209	3	18.9100	1.531364E-01	199593.50	ppb	1.95	
208 Pb	209	3	27.1300	2.934629E-01	382462.00	ppb	2.60	
238 U	209	3	18.7300	2.333748E-01	304193.09	ppb	1.44	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1027623	1.31	929517	110.6	30 - 120	
72 Ge	1	73848	0.49	63325	116.6	30 - 120	
72 Ge	2	100465	0.27	90193	111.4	30 - 120	
72 Ge	3	203315	1.31	187412	108.5	30 - 120	
89 Y	1	1073499	1.21	916259	117.2	30 - 120	
89 Y	2	801102	0.51	716208	111.9	30 - 120	
89 Y	3	1533209	3.16	1390537	110.3	30 - 120	
115 In	3	1415578	2.78	1357566	104.3	30 - 120	
209 Bi	3	1303685	1.87	1338042	97.4	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B07p00.B\012CALB.D\012CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B07p00.B\043SMPL.D\043SMPL.D#
Date Acquired: Feb 7 2018 07:19 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: qc918992
Misc Info: 256220
Vial Number: 2106
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 07 2018 05:19 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

Data Results:
Analytes: Pass
ISTD: Fail

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	10.0600	3.023607E-02	33735.77	ppb	1.33	
23 Na	72	2	4524.0000	8.353239E+01	8694332.00	ppb	2.12	
24 Mg	72	3	5663.0000	2.439758E+02	52922980.00	ppb	0.62	
27 Al	72	3	9192.0000	4.731492E+02	102636600.00	ppb	0.37	
31 P	72	2	474.0000	1.867065E-01	19432.40	ppb	2.45	
39 K	72	3	1521.0000	7.553301E+01	16384570.00	ppb	0.63	
44 Ca	72	3	2773.0000	3.938383E+00	854310.81	ppb	0.63	
51 V	72	2	44.8000	1.868079E+00	194446.70	ppb	1.87	
52 Cr	72	2	56.2300	2.519899E+00	262282.31	ppb	2.15	
55 Mn	72	2	161.9000	6.644902E+00	691626.31	ppb	2.09	
56 Fe	72	1	14660.0000	6.620103E+02	46337568.00	ppb	17.06	
59 Co	72	2	26.0400	1.351117E+00	140631.59	ppb	2.09	
60 Ni	72	2	59.8500	7.190742E-01	74847.01	ppb	1.88	
63 Cu	89	2	42.4600	1.593619E-01	132010.30	ppb	2.25	
66 Zn	89	2	57.8900	5.030773E-02	41674.92	ppb	1.95	
75 As	89	2	22.9200	1.294199E-02	10719.98	ppb	2.61	
78 Se	89	1	22.4400	2.510364E-03	2469.77	ppb	15.99	
98 Mo	89	3	17.8300	3.418928E-02	56310.79	ppb	1.12	
107 Ag	115	3	2.3340	7.870635E-03	11760.52	ppb	1.88	
111 Cd	115	3	20.0700	1.553865E-02	23220.71	ppb	0.23	
121 Sb	115	3	5.1700	1.391449E-02	20791.71	ppb	2.22	
137 Ba	209	3	51.6200	6.317317E-02	84964.43	ppb	1.70	
205 Tl	209	3	19.0500	1.542076E-01	207407.80	ppb	1.12	
208 Pb	209	3	28.6800	3.100698E-01	417029.50	ppb	1.49	
238 U	209	3	18.9400	2.359542E-01	317361.41	ppb	0.90	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1115813	1.00	929517	120.0	30 - 120	IS Fail
72 Ge	1	71261	15.65	63325	112.5	30 - 120	
72 Ge	2	104118	2.36	90193	115.4	30 - 120	
72 Ge	3	216926	0.81	187412	115.7	30 - 120	
89 Y	1	1001401	16.50	916259	109.3	30 - 120	
89 Y	2	828651	2.40	716208	115.7	30 - 120	
89 Y	3	1647174	1.24	1390537	118.5	30 - 120	
115 In	3	1494388	0.88	1357566	110.1	30 - 120	
209 Bi	3	1345096	1.08	1338042	100.5	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B07p00.B\012CALB.D\012CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY SERIAL DILUTION FOR 296840 METALS Soil
EPA 6020A

Type : MSS
Inst : MET26
Seqnum : 1018055668041
File : 18b07p00041
IDF : 25.0
Lab ID : 296840-001
Matrix : Soil
Batch : 256220
Time : 07-FEB-2018 19:10
Cal : 1018055668001
Units : mg/Kg

Type : SER
Inst : MET26
Seqnum : 1018055668044.3
File : 18b07p00044
IDF : 125.0
Lab ID : QC918993
Matrix : Soil
Batch : 256220
Time : 07-FEB-2018 19:24
Cal : 1018055668001

MSS: 0.92 g --> 50.0 ml = 54.35 ml/g PDF
SER: 0.92 g --> 50.0 ml = 54.35 ml/g PDF

Analyte	MSS	Ch	RL	SER	Ch	RL	%D	Lim	Flags
Copper	26.49	E	0.6793	27.40	E	3.397	3	10	u
Lead	12.10	A	0.6793	10.76	A	3.397	**11***	10	u

ISTD (ICALBLK 18b07p00012)	Ch	ICALBLK Abund	SER Abund	%Drift
Bismuth	A	1338042	1422410	6.31
Yttrium	E	716208	788906	10.15

u=use

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B07p00.B\044SMPL.D\044SMPL.D#
Date Acquired: Feb 7 2018 07:24 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: qc918993
Misc Info: 256220
Vial Number: 2107
Current Method: C:\ICPCHEM\1\DATA\18B07p00.B\6020newj.M
Calibration File: C:\ICPCHEM\1\DATA\18B07p00.B\6020newj.C
Last Cal. Update: Feb 07 2018 05:19 pm
Sample Type: Sample
Dilution Factor: 125.00
Autodil Factor: Undiluted
Final Dil Factor: 125.00

Data Results:
Analytes: Pass
ISTD: Fail

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	0.0380	1.226765E-04	141.12	ppb	24.50	
23 Na	72	2	772.6000	1.466494E+01	1493524.00	ppb	0.75	
24 Mg	72	3	972.6000	4.196675E+01	9354092.00	ppb	8.86	
27 Al	72	3	1492.0000	7.687094E+01	17135710.00	ppb	8.67	
31 P	72	2	52.5400	2.993863E-02	3049.28	ppb	0.98	
39 K	72	3	226.4000	1.491629E+01	3324852.00	ppb	12.34	
44 Ca	72	3	398.4000	7.286321E-01	162408.70	ppb	11.92	
51 V	72	2	4.5560	2.724211E-01	27745.31	ppb	0.42	
52 Cr	72	2	7.0170	4.146958E-01	42235.12	ppb	1.04	
55 Mn	72	2	26.9100	1.106984E+00	112741.10	ppb	0.38	
56 Fe	72	1	2427.0000	1.096717E+02	8306869.00	ppb	0.67	
59 Co	72	2	1.1400	6.100966E-02	6213.14	ppb	1.57	
60 Ni	72	2	7.4700	9.051957E-02	9219.09	ppb	1.02	
63 Cu	89	2	4.0340	1.609667E-02	12698.60	ppb	0.58	
66 Zn	89	2	7.6420	6.917118E-03	5456.94	ppb	1.92	
75 As	89	2	0.6222	5.276846E-04	416.23	ppb	7.90	
78 Se	89	1	0.0297	6.710569E-06	7.11	ppb	151.94	
98 Mo	89	3	0.1432	4.346373E-04	721.15	ppb	5.93	
107 Ag	115	3	0.0178	1.161399E-04	180.01	ppb	33.46	
111 Cd	115	3	-0.0211	1.566150E-05	24.45	ppb	34.34	
121 Sb	115	3	0.0457	2.583727E-04	404.46	ppb	36.23	
137 Ba	209	3	5.2540	6.476763E-03	9174.25	ppb	7.92	
205 Tl	209	3	-0.0059	2.584017E-04	367.80	ppb	54.43	
208 Pb	209	3	1.5840	1.792506E-02	25384.39	ppb	8.74	
238 U	209	3	0.0675	8.466308E-04	1197.88	ppb	10.06	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1153821	8.28	929517	124.1	30 - 120	IS Fail
72 Ge	1	75747	1.05	63325	119.6	30 - 120	
72 Ge	2	101847	0.87	90193	112.9	30 - 120	
72 Ge	3	224060	8.85	187412	119.6	30 - 120	
89 Y	1	1054927	1.91	916259	115.1	30 - 120	
89 Y	2	788906	0.84	716208	110.2	30 - 120	
89 Y	3	1662255	7.99	1390537	119.5	30 - 120	
115 In	3	1564528	8.15	1357566	115.2	30 - 120	
209 Bi	3	1422410	7.97	1338042	106.3	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B07p00.B\012CALB.D\012CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY POST DIGEST SPIKE USER REPORT FOR 296840 METALS Soil
EPA 6020A

Type	: MSS	Type	: PDS
Inst	: MET26	Inst	: MET26
Seqnum	: 1018055668041	Seqnum	: 1018055668045.2
File	: 18b07p00041	File	: 18b07p00045
IDF	: 25.0	IDF	: 25.0
Lab ID	: 296840-001	Lab ID	: QC918994
Matrix	: Soil	Matrix	: Soil
Batch	: 256220	Batch	: 256220
Time	: 07-FEB-2018 19:10	Time	: 07-FEB-2018 19:29
Cal	: 1018055668001	Cal	: 1018055668001
Units	: ug/L		

MSS: 0.92 g --> 50.0 ml = 54.35 ml/g PDF
PDS: 0.92 g --> 50.0 ml = 54.35 ml/g PDF

PDS standards: S35939, S34361 (200X), S34362 (200X), S34743 (200X)

Analyte	MSS	Ch	Spiked	PDS	Ch	%Rec	Limits	Flags
Copper	19.50	E	50.00	78.27	E	118	80-120	u
Lead	8.902	A	50.00	65.99	A	114	80-120	u

ISTD (ICALBLK 18b07p00012)	Ch	ICALBLK Abund	PDS Abund	%Drift
Bismuth	A	1338042	1337644	-0.03
Yttrium	E	716208	843824	17.82

u=use

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B07p00.B\045SMPL.D\045SMPL.D#
Date Acquired: Feb 7 2018 07:29 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: qc918994
Misc Info: 256220
Vial Number: 2108
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 07 2018 05:19 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

Data Results:
Analytes: Pass
ISTD: Fail

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	57.4200	1.726066E-01	198528.59	ppb	0.42	
23 Na	72	2	9559.0000	1.759844E+02	18744270.00	ppb	0.98	
24 Mg	72	3	10870.0000	4.684417E+02	102961700.00	ppb	0.55	
27 Al	72	3	13760.0000	7.082819E+02	155678210.00	ppb	0.40	
31 P	72	2	5924.0000	2.213564E+00	235769.80	ppb	1.03	
39 K	72	3	6933.0000	3.290593E+02	72325984.00	ppb	0.48	
44 Ca	72	3	8121.0000	1.116698E+01	2454458.00	ppb	0.52	
51 V	72	2	81.0400	3.304927E+00	352015.41	ppb	0.89	
52 Cr	72	2	91.3400	4.021447E+00	428318.19	ppb	1.38	
55 Mn	72	2	192.7000	7.911234E+00	842623.81	ppb	1.21	
56 Fe	72	1	18180.0000	8.207329E+02	64519620.00	ppb	3.69	
59 Co	72	2	64.4600	3.341688E+00	355930.41	ppb	0.86	
60 Ni	72	2	95.7000	1.149285E+00	122410.50	ppb	1.14	
63 Cu	89	2	78.2700	2.928898E-01	247128.80	ppb	1.17	
66 Zn	89	2	96.0400	8.325177E-02	70242.04	ppb	1.50	
75 As	89	2	60.2200	3.371528E-02	28446.80	ppb	1.54	
78 Se	89	1	58.6400	6.552590E-03	7495.19	ppb	3.77	
98 Mo	89	3	48.0000	9.175087E-02	153665.50	ppb	1.07	
107 Ag	115	3	46.4800	1.556785E-01	235542.00	ppb	1.16	
111 Cd	115	3	58.1600	4.497630E-02	68051.18	ppb	0.88	
121 Sb	115	3	48.5200	1.294498E-01	195865.09	ppb	0.73	
137 Ba	209	3	87.4400	1.069831E-01	143096.30	ppb	1.10	
205 Tl	209	3	28.5000	2.305893E-01	308425.00	ppb	1.13	
208 Pb	209	3	65.9900	7.125256E-01	953075.81	ppb	0.51	
238 U	209	3	56.2500	7.008581E-01	937441.19	ppb	1.00	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1150191	0.57	929517	123.7	30 - 120	IS Fail
72 Ge	1	78683	3.69	63325	124.3	30 - 120	IS Fail
72 Ge	2	106518	1.05	90193	118.1	30 - 120	
72 Ge	3	219798	0.30	187412	117.3	30 - 120	
89 Y	1	1145323	5.12	916259	125.0	30 - 120	IS Fail
89 Y	2	843824	1.20	716208	117.8	30 - 120	
89 Y	3	1674923	0.94	1390537	120.5	30 - 120	IS Fail
115 In	3	1513145	1.22	1357566	111.5	30 - 120	
209 Bi	3	1337644	0.94	1338042	100.0	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B07p00.B\012CALB.D\012CALB.D#

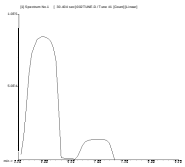
0 :Element Failures 0 :Max. Number of Failures Allowed
4 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

MET26 QC Tune Report

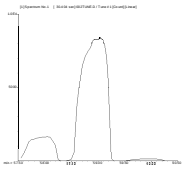
Data File: C:\ICPCHEM\1\DATA\18B07p00.B\002TUNE.D
Date Acquired: Feb 7 2018 03:53 pm
Acq. Method: TN6020K.M
Operator:
Sample Name: tun,s35938
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\TN6020K.M

RSD (%)

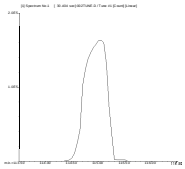
Element	Rep1	Rep2	Rep3	Rep4	Rep5	Actual	Required	Flag
7 Li	80191	80387	80045	78788	79028	0.23	5.00	
59 Co	46156	45533	45790	45719	45747	1.26	5.00	
115 In	840441	845148	827625	796828	786250	3.17	5.00	
205 Tl	53070	52586	52351	52970	52759	0.87	5.00	



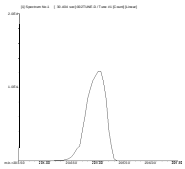
7 Li
Mass Calib.
Actual: 7.00
Required: 6.90 - 7.10
Flag:
Peak Width @ 5%
Actual: 0.65
Required: 0.75
Flag:



59 Co
Mass Calib.
Actual: 59.00
Required: 58.90 - 59.10
Flag:
Peak Width @ 5%
Actual: 0.60
Required: 0.75
Flag:



115 In
Mass Calib.
Actual: 115.00
Required: 114.90 - 115.10
Flag:
Peak Width @ 5%
Actual: 0.65
Required: 0.75
Flag:



205 Tl
Mass Calib.
Actual: 205.00
Required: 204.90 - 205.10
Flag:
Peak Width @ 5%
Actual: 0.65
Required: 0.75
Flag:

ENTHALPY INITIAL CALIBRATION FOR 296840 METALS Soil: EPA 6020A

Inst : MET26
Calnum : 1018055668001
Units : ug/L

Date : 07-FEB-2018 16:41
X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	18b07p00013	1018055668013		07-FEB-2018 16:46	S35940 (400X), S35939
L2	18b07p00014	1018055668014		07-FEB-2018 16:51	S35940 (200X), S35939
L3	18b07p00015	1018055668015		07-FEB-2018 16:55	S35940 (40X), S35939
L4	18b07p00016	1018055668016		07-FEB-2018 17:00	S35940 (20X), S35939
L5	18b07p00017	1018055668017		07-FEB-2018 17:05	S35940 (4X), S35939
L6	18b07p00018	1018055668018		07-FEB-2018 17:10	S35940 (2X), S35939
L7	18b07p00019	1018055668019		07-FEB-2018 17:15	S35940, S35939

Analyte	Ch	L1	L2	L3	L4	L5	L6	L7	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	Flg
Lead	A	0.0112	0.0107	0.0106	0.0106	0.0106	0.0106	0.0109	BLNK	-0.0784	92.7321		0.0107	1.000	0.995	
Copper	E	0.0058	0.0047	0.0041	0.0040	0.0039	0.0038	0.0037	BLNK	-0.2838	268.213		0.0043	1.000	0.995	

Spiked Amounts / Drifts	Ch	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D	L6	%D	L7	%D
Lead	A	0.5000	-12	1.0000	-9	5.0000	-4	10.000	-3	50.000	-2	100.00	-2	200.00	1
Copper	E	0.5000	0	1.0000	-2	5.0000	3	10.000	6	50.000	3	100.00	1	200.00	0

Instrument amount = a0 + response * a1 + response^2 * a2; BLNK=Y=aX+[blank]

ENTHALPY 2ND SOURCE CALIBRATION SUMMARY FOR 296840 METALS Soil
EPA 6020A

Inst : MET26
Calnum : 1018055668001 Cal Date : 07-FEB-2018

ICV 1018055668021 (18b07p00021 07-FEB-2018) stds: S35929, S35939

Analyte	Ch	Spiked	Quant	Units	%D	Max	Flags
Lead	A	50.00	49.31	ug/L	-1	10	
Copper	E	50.00	51.88	ug/L	4	10	

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B07p00.B\012CALB.D\012CALB.D#
Date Acquired: Feb 7 2018 04:41 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: calblank
Misc Info:
Vial Number: 1301
Current Method: C:\ICPCHEM\1\DATA\18B07p00.B\6020newj.M
Calibration File: C:\ICPCHEM\1\DATA\18B07p00.B\6020newj.C
Last Cal. Update: Feb 07 2018 12:54 pm
Sample Type: CalBlk
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	-0.0281	8.371643E-06	7.78	ppb	9.00	
23 Na	72	2	-128.4000	4.807323E-01	43357.44	ppb	0.84	
24 Mg	72	3	-102.0000	7.798389E-02	14614.87	ppb	0.06	
27 Al	72	3	0.1970	5.259323E-02	9856.66	ppb	20.72	
31 P	72	2	5.2850	1.039767E-02	937.84	ppb	43.48	
39 K	72	3	22.2600	4.311845E+00	808107.88	ppb	7.96	
44 Ca	72	3	165.1000	1.900949E-01	35624.48	ppb	3.03	
51 V	72	2	-38.8800	9.179196E-02	8278.92	ppb	0.31	
52 Cr	72	2	-0.2825	1.145327E-01	10330.14	ppb	15.42	
55 Mn	72	2	-0.0799	2.936166E-03	264.82	ppb	3.49	
56 Fe	72	1	-0.7810	1.027686E-01	6507.71	ppb	2.34	
59 Co	72	2	-0.0023	1.962804E-03	177.04	ppb	179.64	
60 Ni	72	2	-0.1847	8.787333E-04	79.26	ppb	2.06	
63 Cu	89	2	8.4600	1.058101E-03	757.80	ppb	0.19	
66 Zn	89	2	-0.5608	3.175246E-04	227.41	ppb	1.58	
75 As	89	2	-0.1066	1.812010E-04	129.78	ppb	19.69	
78 Se	89	1	0.0044	3.391786E-06	3.11	ppb	230.03	
98 Mo	89	3	-0.0026	1.614388E-04	224.45	ppb	257.27	
107 Ag	115	3	-0.0265	5.643980E-05	76.67	ppb	18.41	
111 Cd	115	3	0.0076	3.193077E-05	43.33	ppb	76.28	
121 Sb	115	3	0.0024	1.367268E-04	185.56	ppb	421.24	
137 Ba	209	3	-0.0119	5.149074E-05	68.89	ppb	34.53	
205 Tl	209	3	0.0000	3.063566E-04	410.02	ppb	1199.80	
208 Pb	209	3	0.0064	8.453988E-04	1131.18	ppb	8.88	
238 U	209	3	-0.0001	5.821530E-06	7.78	ppb	186.48	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	929517	0.61	929517	100.0	80 - 120	
72 Ge	1	63325	0.52	63325	100.0	80 - 120	
72 Ge	2	90193	0.31	90193	100.0	80 - 120	
72 Ge	3	187412	0.27	187412	100.0	80 - 120	
89 Y	1	916259	0.51	916259	100.0	80 - 120	
89 Y	2	716208	0.21	716208	100.0	80 - 120	
89 Y	3	1390537	0.29	1390537	100.0	80 - 120	
115 In	3	1357566	0.36	1357566	100.0	80 - 120	
209 Bi	3	1338042	0.75	1338042	100.0	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : ---

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B07p00.B\013CALS.D\013CALS.D#
Date Acquired: Feb 7 2018 04:46 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: s35940,400x
Misc Info:
Vial Number: 1101
Current Method: C:\ICPCHEM\1\DATA\18B07p00.B\6020newj.M
Calibration File: C:\ICPCHEM\1\DATA\18B07p00.B\6020newj.C
Last Cal. Update: Feb 07 2018 12:54 pm
Sample Type: CalStd
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	0.4794	1.506498E-03	1404.55	ppb	4.90	
23 Na	72	2	-36.8500	1.313367E+00	116984.80	ppb	3.76	
24 Mg	72	3	-36.1000	2.079989E+00	392943.50	ppb	5.45	
27 Al	72	3	62.4000	2.482279E+00	468858.09	ppb	3.85	
31 P	72	2	75.3900	2.820062E-02	2511.39	ppb	8.03	
39 K	72	3	81.8700	6.568725E+00	1240874.00	ppb	6.72	
44 Ca	72	3	227.8000	2.581931E-01	48760.73	ppb	4.71	
51 V	72	2	-27.8400	1.112940E-01	9912.83	ppb	3.34	
52 Cr	72	2	0.9585	1.364308E-01	12151.82	ppb	9.58	
55 Mn	72	2	0.5103	2.264977E-02	2017.19	ppb	3.48	
56 Fe	72	1	56.3600	2.369295E+00	149118.91	ppb	2.16	
59 Co	72	2	0.5693	2.669792E-02	2377.99	ppb	0.95	
60 Ni	72	2	0.5194	7.056872E-03	628.54	ppb	4.42	
63 Cu	89	2	7.4030	2.916278E-03	2035.71	ppb	0.27	
66 Zn	89	2	0.3744	8.150094E-04	568.91	ppb	7.21	
75 As	89	2	0.5801	4.375109E-04	305.34	ppb	9.50	
78 Se	89	1	0.5719	6.491879E-05	57.78	ppb	6.29	
98 Mo	89	3	0.4301	9.599597E-04	1345.66	ppb	4.34	
107 Ag	115	3	0.4415	1.684079E-03	2284.70	ppb	8.61	
111 Cd	115	3	0.4553	3.684695E-04	500.03	ppb	12.90	
121 Sb	115	3	0.5524	1.376392E-03	1867.96	ppb	6.17	
137 Ba	209	3	0.5386	5.663033E-04	755.60	ppb	13.87	
205 Tl	209	3	0.0258	1.996494E-03	2667.01	ppb	5.67	
208 Pb	209	3	0.4938	5.592846E-03	7473.30	ppb	3.43	
238 U	209	3	0.4750	5.672409E-03	7580.11	ppb	3.31	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	932811	2.19	929517	100.4	80 - 120	
72 Ge	1	62951	1.55	63325	99.4	80 - 120	
72 Ge	2	89074	0.94	90193	98.8	80 - 120	
72 Ge	3	189025	3.01	187412	100.9	80 - 120	
89 Y	1	890079	0.30	916259	97.1	80 - 120	
89 Y	2	698094	0.90	716208	97.5	80 - 120	
89 Y	3	1402688	2.86	1390537	100.9	80 - 120	
115 In	3	1358550	2.81	1357566	100.1	80 - 120	
209 Bi	3	1336783	2.28	1338042	99.9	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B07p00.B\012CALB.D\012CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B07p00.B\014CALS.D\014CALS.D#
Date Acquired: Feb 7 2018 04:51 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: s35940,200x
Misc Info:
Vial Number: 1102
Current Method: C:\ICPCHEM\1\DATA\18B07p00.B\6020newj.M
Calibration File: C:\ICPCHEM\1\DATA\18B07p00.B\6020newj.C
Last Cal. Update: Feb 07 2018 12:54 pm
Sample Type: CalStd
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	0.9913	3.017515E-03	2829.22	ppb	4.35	
23 Na	72	2	50.3300	2.105933E+00	187574.70	ppb	1.45	
24 Mg	72	3	29.1700	4.063355E+00	762830.38	ppb	14.82	
27 Al	72	3	122.6000	4.835336E+00	907727.19	ppb	3.33	
31 P	72	2	142.8000	4.532516E-02	4037.31	ppb	1.73	
39 K	72	3	136.9000	8.652270E+00	1624408.00	ppb	4.79	
44 Ca	72	3	281.5000	3.165465E-01	59437.05	ppb	2.36	
51 V	72	2	-13.9500	1.358244E-01	12097.71	ppb	7.61	
52 Cr	72	2	2.1260	1.570276E-01	13986.31	ppb	3.09	
55 Mn	72	2	1.0990	4.233202E-02	3770.49	ppb	1.03	
56 Fe	72	1	112.7000	4.602540E+00	291077.31	ppb	0.84	
59 Co	72	2	1.1580	5.217982E-02	4647.77	ppb	1.43	
60 Ni	72	2	1.1650	1.271716E-02	1132.65	ppb	2.36	
63 Cu	89	2	6.3850	4.706854E-03	3298.53	ppb	1.04	
66 Zn	89	2	0.7554	1.017722E-03	713.36	ppb	2.53	
75 As	89	2	1.3740	7.338825E-04	514.46	ppb	3.82	
78 Se	89	1	1.0900	1.210691E-04	108.45	ppb	4.01	
98 Mo	89	3	0.9642	1.945656E-03	2691.44	ppb	4.73	
107 Ag	115	3	0.9332	3.393880E-03	4560.84	ppb	4.14	
111 Cd	115	3	0.9964	7.752376E-04	1041.19	ppb	7.04	
121 Sb	115	3	1.0700	2.542790E-03	3418.28	ppb	0.97	
137 Ba	209	3	1.1690	1.155731E-03	1537.92	ppb	6.03	
205 Tl	209	3	0.0522	3.720221E-03	4947.71	ppb	4.38	
208 Pb	209	3	1.0140	1.066316E-02	14182.26	ppb	3.48	
238 U	209	3	0.9559	1.140804E-02	15176.62	ppb	1.81	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	937780	2.82	929517	100.9	80 - 120	
72 Ge	1	63245	0.63	63325	99.9	80 - 120	
72 Ge	2	89071	0.59	90193	98.8	80 - 120	
72 Ge	3	187845	2.84	187412	100.2	80 - 120	
89 Y	1	895770	0.16	916259	97.8	80 - 120	
89 Y	2	700899	0.91	716208	97.9	80 - 120	
89 Y	3	1384390	2.71	1390537	99.6	80 - 120	
115 In	3	1344493	2.38	1357566	99.0	80 - 120	
209 Bi	3	1330764	2.67	1338042	99.5	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B07p00.B\012CALB.D\012CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B07p00.B\015CALS.D\015CALS.D#
Date Acquired: Feb 7 2018 04:55 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: s35940,40x
Misc Info:
Vial Number: 1103
Current Method: C:\ICPCHEM\1\DATA\18B07p00.B\6020newj.M
Calibration File: C:\ICPCHEM\1\DATA\18B07p00.B\6020newj.C
Last Cal. Update: Feb 07 2018 12:54 pm
Sample Type: CalStd
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	5.1850	1.539794E-02	14923.94	ppb	0.27	
23 Na	72	2	812.6000	9.034918E+00	852261.38	ppb	0.99	
24 Mg	72	3	574.7000	2.063537E+01	4032538.00	ppb	0.21	
27 Al	72	3	625.3000	2.446893E+01	4781683.00	ppb	0.24	
31 P	72	2	707.1000	1.886389E-01	17793.75	ppb	2.20	
39 K	72	3	610.0000	2.656455E+01	5191222.00	ppb	0.07	
44 Ca	72	3	751.1000	8.266640E-01	161545.91	ppb	0.80	
51 V	72	2	80.8600	3.032705E-01	28606.81	ppb	3.02	
52 Cr	72	2	11.2800	3.184795E-01	30042.83	ppb	0.57	
55 Mn	72	2	5.9770	2.052430E-01	19360.59	ppb	0.56	
56 Fe	72	1	550.3000	2.195923E+01	1436808.00	ppb	0.52	
59 Co	72	2	6.0230	2.627334E-01	24783.80	ppb	0.37	
60 Ni	72	2	6.8680	6.276138E-02	5920.43	ppb	0.59	
63 Cu	89	2	-2.4530	2.025163E-02	15169.70	ppb	1.04	
66 Zn	89	2	8.0400	4.892831E-03	3664.91	ppb	3.14	
75 As	89	2	7.3260	2.955130E-03	2213.73	ppb	1.33	
78 Se	89	1	5.6300	6.133185E-04	568.46	ppb	0.56	
98 Mo	89	3	5.0390	9.466616E-03	13660.97	ppb	1.11	
107 Ag	115	3	4.9720	1.743993E-02	24397.10	ppb	0.63	
111 Cd	115	3	5.3240	4.028400E-03	5635.71	ppb	3.20	
121 Sb	115	3	5.8060	1.321861E-02	18491.95	ppb	1.18	
137 Ba	209	3	5.7930	5.479653E-03	7469.92	ppb	0.46	
205 Tl	209	3	0.2935	1.952022E-02	26609.10	ppb	1.62	
208 Pb	209	3	5.3400	5.279926E-02	71978.80	ppb	0.58	
238 U	209	3	4.9300	5.880600E-02	80164.11	ppb	0.57	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	969219	0.37	929517	104.3	80 - 120	
72 Ge	1	65431	0.59	63325	103.3	80 - 120	
72 Ge	2	94332	0.44	90193	104.6	80 - 120	
72 Ge	3	195419	0.32	187412	104.3	80 - 120	
89 Y	1	926872	0.67	916259	101.2	80 - 120	
89 Y	2	749060	0.88	716208	104.6	80 - 120	
89 Y	3	1443098	0.30	1390537	103.8	80 - 120	
115 In	3	1398924	0.27	1357566	103.0	80 - 120	
209 Bi	3	1363226	0.58	1338042	101.9	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B07p00.B\012CALB.D\012CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B07p00.B\016CALS.D\016CALS.D#
Date Acquired: Feb 7 2018 05:00 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: s35940,20x
Misc Info:
Vial Number: 1104
Current Method: C:\ICPCHEM\1\DATA\18B07p00.B\6020newj.M
Calibration File: C:\ICPCHEM\1\DATA\18B07p00.B\6020newj.C
Last Cal. Update: Feb 07 2018 12:54 pm
Sample Type: CalStd
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	10.2700	3.039908E-02	31477.94	ppb	1.99	
23 Na	72	2	1801.0000	1.801701E+01	1760772.00	ppb	2.38	
24 Mg	72	3	1259.0000	4.141538E+01	8634726.00	ppb	1.42	
27 Al	72	3	1258.0000	4.919244E+01	10256220.00	ppb	1.27	
31 P	72	2	1431.0000	3.724226E-01	36402.41	ppb	1.09	
39 K	72	3	1214.0000	4.943548E+01	10307010.00	ppb	1.24	
44 Ca	72	3	1350.0000	1.477456E+00	308027.19	ppb	1.59	
51 V	72	2	193.3000	5.019262E-01	49050.30	ppb	3.57	
52 Cr	72	2	23.9800	5.426333E-01	53031.23	ppb	2.62	
55 Mn	72	2	12.3600	4.185554E-01	40907.34	ppb	1.92	
56 Fe	72	1	1186.0000	4.718610E+01	3010953.00	ppb	3.61	
59 Co	72	2	12.4000	5.388654E-01	52658.67	ppb	2.64	
60 Ni	72	2	14.2900	1.278405E-01	12493.98	ppb	2.10	
63 Cu	89	2	-13.9100	4.040807E-02	31269.18	ppb	4.95	
66 Zn	89	2	17.3500	9.844959E-03	7618.23	ppb	3.69	
75 As	89	2	15.0600	5.840718E-03	4519.57	ppb	3.54	
78 Se	89	1	11.9600	1.299000E-03	1166.27	ppb	6.01	
98 Mo	89	3	10.1500	1.889077E-02	29086.30	ppb	3.75	
107 Ag	115	3	9.9200	3.464477E-02	51439.48	ppb	1.43	
111 Cd	115	3	10.7200	8.086461E-03	12006.25	ppb	2.09	
121 Sb	115	3	11.7800	2.668408E-02	39614.49	ppb	2.39	
137 Ba	209	3	12.0600	1.134436E-02	16216.06	ppb	1.07	
205 Tl	209	3	0.5894	3.889137E-02	55586.86	ppb	1.53	
208 Pb	209	3	10.8000	1.059583E-01	151444.09	ppb	1.47	
238 U	209	3	9.8720	1.177406E-01	168282.80	ppb	1.49	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1035585	1.25	929517	111.4	80 - 120	
72 Ge	1	63861	3.32	63325	100.8	80 - 120	
72 Ge	2	97756	2.11	90193	108.4	80 - 120	
72 Ge	3	208520	1.61	187412	111.3	80 - 120	
89 Y	1	899079	3.54	916259	98.1	80 - 120	
89 Y	2	774233	2.57	716208	108.1	80 - 120	
89 Y	3	1540639	2.46	1390537	110.8	80 - 120	
115 In	3	1485062	2.10	1357566	109.4	80 - 120	
209 Bi	3	1429514	1.73	1338042	106.8	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B07p00.B\012CALB.D\012CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B07p00.B\017CALS.D\017CALS.D#
Date Acquired: Feb 7 2018 05:05 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: s35940,4x
Misc Info:
Vial Number: 1105
Current Method: C:\ICPCHEM\1\DATA\18B07p00.B\6020newj.M
Calibration File: C:\ICPCHEM\1\DATA\18B07p00.B\6020newj.C
Last Cal. Update: Feb 07 2018 12:54 pm
Sample Type: CalStd
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	51.6600	1.525841E-01	160877.50	ppb	0.36	
23 Na	72	2	9633.0000	8.921213E+01	9107240.00	ppb	2.72	
24 Mg	72	3	6764.0000	2.086747E+02	43346900.00	ppb	0.55	
27 Al	72	3	6374.0000	2.490259E+02	51729080.00	ppb	0.45	
31 P	72	2	7156.0000	1.826379E+00	186446.20	ppb	2.69	
39 K	72	3	6073.0000	2.333914E+02	48480860.00	ppb	0.68	
44 Ca	72	3	6324.0000	6.880966E+00	1429334.00	ppb	0.73	
51 V	72	2	1073.0000	2.055400E+00	209830.09	ppb	2.77	
52 Cr	72	2	121.0000	2.255100E+00	230217.91	ppb	2.65	
55 Mn	72	2	61.7000	2.066565E+00	210966.41	ppb	2.77	
56 Fe	72	1	5516.0000	2.189070E+02	16106330.00	ppb	3.27	
59 Co	72	2	61.3600	2.657471E+00	271294.50	ppb	2.53	
60 Ni	72	2	69.9400	6.161320E-01	62901.41	ppb	2.39	
63 Cu	89	2	-100.4000	1.925508E-01	155638.70	ppb	3.38	
66 Zn	89	2	83.0600	4.480013E-02	36210.26	ppb	3.34	
75 As	89	2	75.0400	2.822859E-02	22815.28	ppb	3.52	
78 Se	89	1	51.9200	5.632173E-03	6044.77	ppb	4.07	
98 Mo	89	3	51.4700	9.515248E-02	147157.70	ppb	1.14	
107 Ag	115	3	49.1000	1.708854E-01	251153.70	ppb	0.44	
111 Cd	115	3	52.6900	3.962933E-02	58243.44	ppb	0.57	
121 Sb	115	3	58.5900	1.321851E-01	194272.80	ppb	0.89	
137 Ba	209	3	60.9500	5.706116E-02	79168.99	ppb	1.31	
205 Tl	209	3	3.0340	1.989286E-01	276012.59	ppb	0.29	
208 Pb	209	3	54.4800	5.315453E-01	737519.13	ppb	0.27	
238 U	209	3	50.0900	5.973580E-01	828838.81	ppb	0.41	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1054359	0.25	929517	113.4	80 - 120	
72 Ge	1	73631	3.40	63325	116.3	80 - 120	
72 Ge	2	102121	2.02	90193	113.2	80 - 120	
72 Ge	3	207730	0.72	187412	110.8	80 - 120	
89 Y	1	1074259	3.71	916259	117.2	80 - 120	
89 Y	2	808734	2.68	716208	112.9	80 - 120	
89 Y	3	1546660	0.98	1390537	111.2	80 - 120	
115 In	3	1469740	0.61	1357566	108.3	80 - 120	
209 Bi	3	1387506	0.57	1338042	103.7	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B07p00.B\012CALB.D\012CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B07p00.B\018CALS.D\018CALS.D#
Date Acquired: Feb 7 2018 05:10 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: s35940,2x
Misc Info:
Vial Number: 1106
Current Method: C:\ICPCHEM\1\DATA\18B07p00.B\6020newj.M
Calibration File: C:\ICPCHEM\1\DATA\18B07p00.B\6020newj.C
Last Cal. Update: Feb 07 2018 12:54 pm
Sample Type: CalStd
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	101.0000	2.983643E-01	324055.81	ppb	1.59	
23 Na	72	2	19630.0000	1.801037E+02	18421220.00	ppb	1.18	
24 Mg	72	3	13650.0000	4.177828E+02	87766888.00	ppb	1.65	
27 Al	72	3	12770.0000	4.989157E+02	104812200.00	ppb	1.52	
31 P	72	2	14440.0000	3.675078E+00	375898.69	ppb	0.85	
39 K	72	3	12140.0000	4.629317E+02	97252464.00	ppb	1.55	
44 Ca	72	3	12330.0000	1.340993E+01	2817160.00	ppb	1.52	
51 V	72	2	2189.0000	4.026696E+00	411853.41	ppb	1.29	
52 Cr	72	2	241.9000	4.387483E+00	448765.69	ppb	0.88	
55 Mn	72	2	122.9000	4.112302E+00	420617.81	ppb	0.94	
56 Fe	72	1	11030.0000	4.378271E+02	32315270.00	ppb	0.26	
59 Co	72	2	121.1000	5.241461E+00	536102.69	ppb	1.19	
60 Ni	72	2	138.4000	1.217144E+00	124492.30	ppb	1.04	
63 Cu	89	2	-205.4000	3.772959E-01	304159.00	ppb	0.99	
66 Zn	89	2	166.1000	8.896058E-02	71716.77	ppb	0.62	
75 As	89	2	149.5000	5.603046E-02	45169.16	ppb	0.96	
78 Se	89	1	103.7000	1.124296E-02	11904.63	ppb	0.42	
98 Mo	89	3	102.4000	1.890984E-01	296821.41	ppb	1.66	
107 Ag	115	3	95.5000	3.322382E-01	488173.09	ppb	1.79	
111 Cd	115	3	101.9000	7.663314E-02	112604.10	ppb	1.89	
121 Sb	115	3	115.7000	2.610011E-01	383512.09	ppb	1.59	
137 Ba	209	3	125.1000	1.170539E-01	157528.91	ppb	1.73	
205 Tl	209	3	6.0170	3.941798E-01	530527.13	ppb	1.29	
208 Pb	209	3	108.3000	1.055999E+00	1421119.00	ppb	1.92	
238 U	209	3	101.5000	1.209934E+00	1628359.00	ppb	1.46	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1086288	1.57	929517	116.9	80 - 120	
72 Ge	1	73808	0.69	63325	116.6	80 - 120	
72 Ge	2	102289	0.92	90193	113.4	80 - 120	
72 Ge	3	210110	1.42	187412	112.1	80 - 120	
89 Y	1	1058852	0.51	916259	115.6	80 - 120	
89 Y	2	806173	0.38	716208	112.6	80 - 120	
89 Y	3	1570093	2.47	1390537	112.9	80 - 120	
115 In	3	1469736	2.23	1357566	108.3	80 - 120	
209 Bi	3	1346070	1.89	1338042	100.6	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B07p00.B\012CALB.D\012CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B07p00.B\019CALS.D\019CALS.D#
Date Acquired: Feb 7 2018 05:15 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: s35940
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\DATA\18B07p00.B\6020newj.M
Calibration File: C:\ICPCHEM\1\DATA\18B07p00.B\6020newj.C
Last Cal. Update: Feb 07 2018 12:54 pm
Sample Type: CalStd
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Fail

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	203.8000	6.017569E-01	684967.81	ppb	0.37	
23 Na	72	2	40580.0000	3.704795E+02	39174260.00	ppb	1.81	
24 Mg	72	3	28520.0000	8.697054E+02	183897410.00	ppb	0.87	
27 Al	72	3	26610.0000	1.039530E+03	219806590.00	ppb	0.82	
31 P	72	2	29450.0000	7.487729E+00	791727.38	ppb	2.04	
39 K	72	3	24930.0000	9.473990E+02	200324900.00	ppb	0.85	
44 Ca	72	3	25210.0000	2.739150E+01	5791817.00	ppb	0.99	
51 V	72	2	4462.0000	8.040020E+00	850099.31	ppb	2.39	
52 Cr	72	2	484.7000	8.671352E+00	916905.63	ppb	1.81	
55 Mn	72	2	245.4000	8.203320E+00	867386.31	ppb	2.09	
56 Fe	72	1	22980.0000	9.114619E+02	67850704.00	ppb	2.75	
59 Co	72	2	238.4000	1.031801E+01	1091006.00	ppb	1.92	
60 Ni	72	2	272.0000	2.388562E+00	252552.80	ppb	2.22	
63 Cu	89	2	-413.7000	7.436498E-01	612789.13	ppb	3.60	
66 Zn	89	2	321.2000	1.715084E-01	141327.70	ppb	3.53	
75 As	89	2	297.9000	1.114118E-01	91812.91	ppb	3.24	
78 Se	89	1	205.5000	2.228571E-02	23571.78	ppb	3.17	
98 Mo	89	3	207.3000	3.828079E-01	600829.88	ppb	0.57	
107 Ag	115	3	192.6000	6.700919E-01	967070.69	ppb	0.74	
111 Cd	115	3	205.7000	1.546524E-01	223195.20	ppb	0.45	
121 Sb	115	3	237.8000	5.362369E-01	773899.81	ppb	0.48	
137 Ba	209	3	265.5000	2.483800E-01	317777.59	ppb	1.15	
205 Tl	209	3	12.4400	8.144128E-01	1041985.00	ppb	0.59	
208 Pb	209	3	222.8000	2.171520E+00	2778323.00	ppb	0.47	
238 U	209	3	211.0000	2.516542E+00	3219755.00	ppb	0.55	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1138283	0.45	929517	122.5	80 - 120	ISFail
72 Ge	1	74480	2.84	63325	117.6	80 - 120	
72 Ge	2	105762	1.77	90193	117.3	80 - 120	
72 Ge	3	211456	0.75	187412	112.8	80 - 120	
89 Y	1	1058426	3.27	916259	115.5	80 - 120	
89 Y	2	824669	3.32	716208	115.1	80 - 120	
89 Y	3	1569561	0.49	1390537	112.9	80 - 120	
115 In	3	1443235	0.67	1357566	106.3	80 - 120	
209 Bi	3	1279469	0.80	1338042	95.6	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B07p00.B\012CALB.D\012CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B07p00.B\021_ICV.D\021_ICV.D#
Date Acquired: Feb 7 2018 05:25 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: icv,s35929
Misc Info:
Vial Number: 3
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 07 2018 05:19 pm
Sample Type: 6-ICV
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Fail
ISTD: Fail

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	49.4700	1.487134E-01	173548.09	ppb	0.48	
23 Na	72	2	4983.0000	9.196210E+01	9625855.00	ppb	0.28	
24 Mg	72	3	5081.0000	2.189164E+02	47570180.00	ppb	0.41	
27 Al	72	3	5004.0000	2.576150E+02	55979952.00	ppb	0.23	
31 P	72	2	5057.0000	1.891122E+00	197948.50	ppb	0.29	
39 K	72	3	4981.0000	2.376472E+02	51640500.00	ppb	0.38	
44 Ca	72	3	4988.0000	6.931490E+00	1506195.00	ppb	0.54	
51 V	72	2	50.4700	2.092850E+00	219061.50	ppb	0.42	
52 Cr	72	2	50.7500	2.285470E+00	239222.20	ppb	0.68	
55 Mn	72	2	50.5000	2.074953E+00	217188.91	ppb	0.22	
56 Fe	72	1	5066.0000	2.287742E+02	16502820.00	ppb	1.17	
59 Co	72	2	51.7400	2.682946E+00	280829.50	ppb	0.25	
60 Ni	72	2	52.1800	6.270995E-01	65639.20	ppb	0.41	
63 Cu	89	2	51.8800	1.944780E-01	160470.30	ppb	1.62	
66 Zn	89	2	52.1800	4.537385E-02	37439.06	ppb	1.59	
75 As	89	2	51.3200	2.875997E-02	23731.09	ppb	1.31	
78 Se	89	1	53.8700	6.020005E-03	6218.40	ppb	3.04	
98 Mo	89	3	49.9100	9.538387E-02	154369.41	ppb	0.94	
107 Ag	115	3	50.4100	1.688453E-01	254618.59	ppb	0.08	
111 Cd	115	3	50.9000	3.936273E-02	59358.85	ppb	0.43	
121 Sb	115	3	48.8000	1.301891E-01	196327.00	ppb	0.63	
137 Ba	209	3	47.9600	5.869990E-02	81061.16	ppb	0.79	Fail
205 Tl	209	3	24.3700	1.972705E-01	272426.00	ppb	0.35	Fail
208 Pb	209	3	49.3100	5.325862E-01	735487.13	ppb	0.46	
238 U	209	3	47.5800	5.927933E-01	818603.38	ppb	1.04	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1167002	0.58	929517	125.5	80 - 120	ISFail
72 Ge	1	72143	1.46	63325	113.9	80 - 120	
72 Ge	2	104672	0.44	90193	116.1	80 - 120	
72 Ge	3	217302	0.82	187412	115.9	80 - 120	
89 Y	1	1033276	1.63	916259	112.8	80 - 120	
89 Y	2	825224	1.15	716208	115.2	80 - 120	
89 Y	3	1618469	0.75	1390537	116.4	80 - 120	
115 In	3	1508000	0.37	1357566	111.1	80 - 120	
209 Bi	3	1381001	0.81	1338042	103.2	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B07p00.B\012CALB.D\012CALB.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY INTERFERENCE CHECK STANDARD AB FOR 296840 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018055668025.1 File : 18b07p00025 Time : 07-FEB-2018 17:45
Cal : 1018055668001 Caldate : 07-FEB-2018
Standards: S35822, S35939

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Copper	E	200.0	177.4	ug/L	-11	20	

ISTD (ICALBLK 18b07p00012)	Ch	ICALBLK Abund	Abund	%Drift
Germanium	H	63325	70094	10.69
Germanium	A	187412	188341	0.50
Germanium	E	90193	95510	5.90
Indium	A	1357566	1296470	-4.50
Yttrium	E	716208	714654	-0.22
Yttrium	H	916259	1032705	12.71
Yttrium	A	1390537	1393355	0.20

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B07p00.B\025ICSB.D\025ICSB.D#
Date Acquired: Feb 7 2018 05:45 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: icsab,s35822
Misc Info:
Vial Number: 1204
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 07 2018 05:19 pm
Sample Type: 6-ICSAB
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Fail
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
23 Na	72	2	231700.0000	4.255023E+03	406396610.00	ppb	0.44	
24 Mg	72	3	86600.0000	3.729855E+03	682885890.00	ppb	19.69	
27 Al	72	3	87100.0000	4.482609E+03	820915970.00	ppb	19.48	
31 P	72	2	91780.0000	3.414562E+01	3261288.00	ppb	0.21	
39 K	72	3	88790.0000	4.163190E+03	763109700.00	ppb	18.92	
44 Ca	72	3	269600.0000	3.646015E+02	66797408.00	ppb	19.27	
51 V	72	2	189.7000	7.614169E+00	727241.69	ppb	0.32	
52 Cr	72	2	184.7000	8.013324E+00	765366.81	ppb	0.40	
55 Mn	72	2	184.5000	7.571562E+00	723162.38	ppb	0.52	
56 Fe	72	1	241800.0000	1.091765E+04	765246780.00	ppb	0.76	
59 Co	72	2	181.5000	9.408797E+00	898646.81	ppb	0.27	
60 Ni	72	2	175.2000	2.103677E+00	200926.91	ppb	0.66	
63 Cu	89	2	177.4000	6.624493E-01	473418.91	ppb	0.09	
66 Zn	89	2	82.2900	7.138350E-02	51012.63	ppb	0.39	
75 As	89	2	98.8800	5.524339E-02	39478.16	ppb	0.56	
78 Se	89	1	94.1700	1.052130E-02	10865.20	ppb	0.69	
98 Mo	89	3	2067.0000	3.943192E+00	5223230.00	ppb	26.38	
107 Ag	115	3	44.7200	1.497785E-01	185380.30	ppb	25.40	Fail
111 Cd	115	3	93.1000	7.197657E-02	89117.77	ppb	25.12	Fail

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	872043	20.71	929517	93.8	30 - 120	
72 Ge	1	70094	0.42	63325	110.7	30 - 120	
72 Ge	2	95510	1.21	90193	105.9	30 - 120	
72 Ge	3	188341	21.51	187412	100.5	30 - 120	
89 Y	1	1032705	0.40	916259	112.7	30 - 120	
89 Y	2	714654	1.57	716208	99.8	30 - 120	
89 Y	3	1393355	28.53	1390537	100.2	30 - 120	
115 In	3	1296470	27.31	1357566	95.5	30 - 120	
209 Bi	3	1109058	23.62	1338042	82.9	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B07p00.B\012CALB.D\012CALB.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY LOW-LEVEL PERFORMANCE VERIFICATION STANDARD FOR 296840 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018055668031.1 File : 18b07p00031 Time : 07-FEB-2018 18:20
Cal : 1018055668001 Caldate : 07-FEB-2018
Standards: S35885, S35939

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Lead	A	1.000	0.9542	ug/L	-5	30	
Copper	E	1.000	1.049	ug/L	5	30	

ISTD (ICALBLK 18b07p00012)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	929517	967655	4.10
Germanium	H	63325	66350	4.78
Germanium	A	187412	186738	-0.36
Germanium	E	90193	90886	0.77
Indium	A	1357566	1323162	-2.53
Bismuth	A	1338042	1277289	-4.54
Yttrium	E	716208	705560	-1.49
Yttrium	H	916259	926061	1.07
Yttrium	A	1390537	1365707	-1.79

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B07p00.B\031SPKA.D\031SPKA.D#
Date Acquired: Feb 7 2018 06:20 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: cri,s35885
Misc Info:
Vial Number: 1302
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 07 2018 05:19 pm
Sample Type: 6-Spike1
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Fail
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	1.0440	3.146884E-03	3044.83	ppb	3.58	
23 Na	72	2	471.8000	9.143743E+00	831039.50	ppb	0.06	
24 Mg	72	3	494.5000	2.137404E+01	3991249.00	ppb	0.77	
27 Al	72	3	97.2200	5.056064E+00	944141.81	ppb	0.56	
31 P	72	2	99.1300	4.726628E-02	4296.28	ppb	4.87	
39 K	72	3	488.2000	2.717698E+01	5074876.00	ppb	0.71	
44 Ca	72	3	468.1000	8.228605E-01	153657.09	ppb	0.57	
51 V	72	2	0.5079	1.119306E-01	10172.64	ppb	8.80	Fail
52 Cr	72	2	1.4550	1.767526E-01	16064.24	ppb	0.68	Fail
55 Mn	72	2	0.9650	4.253198E-02	3865.70	ppb	1.69	
56 Fe	72	1	99.6800	4.602694E+00	305359.69	ppb	1.09	
59 Co	72	2	0.9939	5.345832E-02	4858.58	ppb	0.58	
60 Ni	72	2	1.0470	1.344676E-02	1222.28	ppb	6.43	
63 Cu	89	2	1.0490	4.968020E-03	3504.87	ppb	3.41	
66 Zn	89	2	5.1700	4.781897E-03	3373.73	ppb	2.04	
75 As	89	2	0.9984	7.371609E-04	520.01	ppb	6.62	
78 Se	89	1	1.1140	1.278670E-04	118.45	ppb	5.90	
98 Mo	89	3	1.0280	2.122986E-03	2899.27	ppb	2.33	
107 Ag	115	3	0.9962	3.391995E-03	4487.48	ppb	4.66	
111 Cd	115	3	0.9334	7.532255E-04	996.73	ppb	3.37	
121 Sb	115	3	1.0600	2.962466E-03	3919.54	ppb	2.15	
137 Ba	209	3	0.8755	1.122154E-03	1433.46	ppb	3.55	Fail
205 Tl	209	3	0.4552	3.984755E-03	5089.99	ppb	2.24	Fail
208 Pb	209	3	0.9542	1.113530E-02	14223.36	ppb	1.44	
238 U	209	3	0.9665	1.204725E-02	15387.93	ppb	0.69	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	967655	0.42	929517	104.1	80 - 120	
72 Ge	1	66350	1.48	63325	104.8	80 - 120	
72 Ge	2	90886	0.42	90193	100.8	80 - 120	
72 Ge	3	186738	0.43	187412	99.6	80 - 120	
89 Y	1	926061	0.73	916259	101.1	80 - 120	
89 Y	2	705560	0.58	716208	98.5	80 - 120	
89 Y	3	1365707	0.30	1390537	98.2	80 - 120	
115 In	3	1323162	0.54	1357566	97.5	80 - 120	
209 Bi	3	1277289	0.46	1338042	95.5	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B07p00.B\012CALB.D\012CALB.D#

4 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY INSTRUMENT BLANK FOR 296840 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018055668032.1 File : 18b07p00032 Time : 07-FEB-2018 18:25
Cal : 1018055668001 Caldate : 07-FEB-2018

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Lead	A	ND	0.5000	0.1000	ug/L	
Copper	E	ND	0.5000	0.4000	ug/L	

ISTD (ICALBLK 18b07p00012)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	929517	936807	0.78
Germanium	H	63325	69074	9.08
Germanium	A	187412	180515	-3.68
Germanium	E	90193	87223	-3.29
Indium	A	1357566	1274330	-6.13
Bismuth	A	1338042	1232971	-7.85
Yttrium	E	716208	674561	-5.81
Yttrium	H	916259	1021382	11.47
Yttrium	A	1390537	1317925	-5.22

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B07p00.B\032_ICB.D\032_ICB.D#
Date Acquired: Feb 7 2018 06:25 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: icb
Misc Info:
Vial Number: 5
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 07 2018 05:19 pm
Sample Type: 6-ICB
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Fail
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	0.0016	1.304271E-05	12.22	ppb	157.98	
23 Na	72	2	-11.0000	2.786098E-01	24300.31	ppb	1.77	
24 Mg	72	3	-0.9136	3.863335E-02	6973.99	ppb	2.09	
27 Al	72	3	-0.5302	2.530180E-02	4567.46	ppb	0.85	
31 P	72	2	-1.4110	9.872659E-03	861.16	ppb	67.82	
39 K	72	3	7.1830	4.648318E+00	839075.88	ppb	13.52	
44 Ca	72	3	-14.5900	1.703684E-01	30754.13	ppb	1.35	
51 V	72	2	-0.4361	7.450003E-02	6497.71	ppb	10.08	
52 Cr	72	2	0.4913	1.355486E-01	11823.06	ppb	5.54	Fail
55 Mn	72	2	-0.0384	1.358786E-03	118.52	ppb	8.98	
56 Fe	72	1	-1.1960	4.874372E-02	3258.16	ppb	16.85	
59 Co	72	2	-0.0357	1.144953E-04	10.00	ppb	3.13	
60 Ni	72	2	-0.0499	2.803044E-04	24.44	ppb	5.73	
63 Cu	89	2	-0.0707	7.945115E-04	535.94	ppb	3.08	
66 Zn	89	2	-0.3066	5.268727E-05	35.56	ppb	0.74	
75 As	89	2	-0.0253	1.670914E-04	112.67	ppb	55.39	
78 Se	89	1	0.0025	3.669871E-06	3.56	ppb	414.46	
98 Mo	89	3	-0.0033	1.551415E-04	204.45	ppb	472.12	
107 Ag	115	3	-0.0075	3.134311E-05	40.00	ppb	40.92	
111 Cd	115	3	-0.0402	8.799723E-07	1.11	ppb	4.91	
121 Sb	115	3	0.0079	1.577413E-04	201.12	ppb	88.56	
137 Ba	209	3	-0.0347	9.017815E-06	11.11	ppb	16.05	
205 Tl	209	3	-0.0342	2.973913E-05	36.67	ppb	0.97	
208 Pb	209	3	-0.0400	4.145865E-04	511.14	ppb	7.69	
238 U	209	3	0.0016	2.613928E-05	32.22	ppb	40.74	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	936807	0.45	929517	100.8	80 - 120	
72 Ge	1	69074	27.78	63325			
72 Ge	2	87223	0.41	90193			
72 Ge	3	180515	0.38	187412			
89 Y	1	1021382	35.80	916259			
89 Y	2	674561	1.80	716208			
89 Y	3	1317925	0.30	1390537			
115 In	3	1274330	0.79	1357566			
209 Bi	3	1232971	0.14	1338042			

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B07p00.B\012CALB.D\012CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY INTERFERENCE CHECK STANDARD A FOR 296840 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018055668033.1 File : 18b07p00033 Time : 07-FEB-2018 18:30
Cal : 1018055668001 Caldate : 07-FEB-2018
Standards: S35821, S35939

Analyte	Ch	Quant	IQL	Units	Flags
Lead	A	[0.06880]	0.5000	ug/L	
Copper	E	0.7108	0.5000	ug/L	

Interferent	Ch	Spiked	Quant	Units	%Rec	Flags
Aluminum	A	100000	85440	ug/L	85	
Calcium	A	300000	266100	ug/L	89	
Magnesium	A	100000	84970	ug/L	85	
Molybdenum	A	2000	2016	ug/L	101	
Potassium	A	100000	87600	ug/L	88	
Sodium	E	250000	231700	ug/L	93	
Phosphorus	E	100000	91520	ug/L	92	
Iron	H	250000	239400	ug/L	96	i+ ***

ISTD (ICALBLK 18b07p00012)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	929517	870898	-6.31
Germanium	H	63325	76909	**21.45 ***
Germanium	A	187412	191321	2.09
Germanium	E	90193	100827	11.79
Indium	A	1357566	1288658	-5.08
Bismuth	A	1338042	1069749	-20.05
Yttrium	E	716208	737159	2.93
Yttrium	H	916259	1095734	19.59
Yttrium	A	1390537	1396164	0.40

+=high bias i=ISTD failure

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B07p00.B\033ICSA.D\033ICSA.D#
Date Acquired: Feb 7 2018 06:30 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: icsa,s35821
Misc Info:
Vial Number: 1203
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 07 2018 05:19 pm
Sample Type: 6-ICSA
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Fail

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	0.0027	1.658817E-05	14.44	ppb	148.99	
23 Na	72	2	231700.0000	4.255114E+03	429057310.00	ppb	0.83	
24 Mg	72	3	84970.0000	3.659693E+03	700105220.00	ppb	1.06	
27 Al	72	3	85440.0000	4.397466E+03	841244030.00	ppb	1.16	
31 P	72	2	91520.0000	3.405004E+01	3433304.00	ppb	0.65	
39 K	72	3	87600.0000	4.107387E+03	785748610.00	ppb	1.10	
44 Ca	72	3	266100.0000	3.599121E+02	68854312.00	ppb	0.74	
51 V	72	2	-0.3596	7.753214E-02	7817.20	ppb	3.95	
52 Cr	72	2	1.9480	1.978388E-01	19946.08	ppb	2.26	
55 Mn	72	2	2.4120	1.018878E-01	10273.08	ppb	1.29	
56 Fe	72	1	239400.0000	1.080920E+04	831023810.00	ppb	2.39	
59 Co	72	2	2.1580	1.137744E-01	11470.96	ppb	0.69	
60 Ni	72	2	2.4860	3.071063E-02	3096.64	ppb	1.29	
63 Cu	89	2	0.7108	3.708287E-03	2733.23	ppb	2.68	
66 Zn	89	2	1.3000	1.440386E-03	1061.90	ppb	6.70	
75 As	89	2	1.4820	1.006569E-03	742.02	ppb	3.16	
78 Se	89	1	0.0210	5.740830E-06	6.22	ppb	94.34	
98 Mo	89	3	2016.0000	3.847032E+00	5370330.00	ppb	1.24	
99 (Ru)	115	3	557.1000	4.042023E-05	52.22	ppb	25.35	
107 Ag	115	3	0.0298	1.560947E-04	201.12	ppb	8.12	
111 Cd	115	3	1.7260	1.365322E-03	1759.05	ppb	5.46	
121 Sb	115	3	0.1461	5.259951E-04	677.82	ppb	8.93	
137 Ba	209	3	0.1023	1.766204E-04	188.90	ppb	11.63	
205 Tl	209	3	-0.0325	4.362926E-05	46.67	ppb	0.19	
208 Pb	209	3	0.0688	1.586778E-03	1697.89	ppb	8.60	
238 U	209	3	0.0028	4.043280E-05	43.33	ppb	30.09	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	870898	1.87	929517	93.7	30 - 120	
72 Ge	1	76909	2.28	63325	121.5	30 - 120	IS Fail
72 Ge	2	100827	1.17	90193	111.8	30 - 120	
72 Ge	3	191321	1.42	187412	102.1	30 - 120	
89 Y	1	1095734	5.14	916259	119.6	30 - 120	
89 Y	2	737159	1.12	716208	102.9	30 - 120	
89 Y	3	1396164	1.80	1390537	100.4	30 - 120	
115 In	3	1288658	1.86	1357566	94.9	30 - 120	
209 Bi	3	1069749	1.12	1338042	79.9	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B07p00.B\012CALB.D\012CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY CONTINUING CALIBRATION FOR 296840 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018055668048.1 File : 18b07p00048 Time : 07-FEB-2018 19:44
Cal : 1018055668001 Caldate : 07-FEB-2018
Standards: S35929, S35939

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Lead	A	0.0107	0.0109	50.00	50.24	ug/L	0	10	
Copper	E	0.0043	0.0040	50.00	52.86	ug/L	6	10	

ISTD (ICALBLK 18b07p00012)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	929517	1137172	**22.34 ***
Germanium	H	63325	82932	**30.96 ***
Germanium	A	187412	219413	17.08
Germanium	E	90193	107005	18.64
Indium	A	1357566	1517641	11.79
Bismuth	A	1338042	1339584	0.12
Yttrium	E	716208	836577	16.81
Yttrium	H	916259	1181117	**28.91 ***
Yttrium	A	1390537	1633301	17.46

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B07p00.B\048_CCV.D\048_CCV.D#
Date Acquired: Feb 7 2018 07:44 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: ccv,s35929
Misc Info:
Vial Number: 3
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 07 2018 05:19 pm
Sample Type: 6-CCV
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Fail
ISTD: Fail

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	50.1200	1.506729E-01	171340.30	ppb	0.13	Fail
23 Na	72	2	4813.0000	8.883817E+01	9503536.00	ppb	1.89	Fail
24 Mg	72	3	5002.0000	2.154805E+02	47277620.00	ppb	0.69	Fail
27 Al	72	3	4944.0000	2.545204E+02	55843520.00	ppb	0.60	Fail
31 P	72	2	5040.0000	1.884895E+00	201628.59	ppb	2.24	Fail
39 K	72	3	4971.0000	2.371615E+02	52035000.00	ppb	0.55	Fail
44 Ca	72	3	4930.0000	6.853509E+00	1503675.00	ppb	1.01	Fail
51 V	72	2	50.6000	2.098094E+00	224452.30	ppb	1.72	Fail
52 Cr	72	2	51.3800	2.312367E+00	247378.70	ppb	1.63	Fail
55 Mn	72	2	50.6600	2.081774E+00	222705.00	ppb	1.84	Fail
56 Fe	72	1	4840.0000	2.186143E+02	18128540.00	ppb	0.94	Fail
59 Co	72	2	52.1400	2.703284E+00	289191.69	ppb	1.73	Fail
60 Ni	72	2	52.6900	6.331926E-01	67738.53	ppb	1.67	Fail
63 Cu	89	2	52.8600	1.981390E-01	165695.59	ppb	2.03	Fail
66 Zn	89	2	52.7200	4.584674E-02	38334.60	ppb	2.76	Fail
75 As	89	2	52.5500	2.944236E-02	24621.58	ppb	2.00	Fail
78 Se	89	1	51.2300	5.726068E-03	6761.96	ppb	1.20	Fail
98 Mo	89	3	51.1300	9.771237E-02	159583.00	ppb	1.15	Fail
107 Ag	115	3	51.3600	1.720155E-01	261038.80	ppb	1.42	Fail
111 Cd	115	3	51.3500	3.970896E-02	60260.33	ppb	1.15	Fail
121 Sb	115	3	49.7100	1.326023E-01	201227.91	ppb	1.51	Fail
137 Ba	209	3	50.9900	6.240499E-02	83589.80	ppb	1.50	
205 Tl	209	3	24.9000	2.015038E-01	269908.59	ppb	1.47	Fail
208 Pb	209	3	50.2400	5.426659E-01	726903.13	ppb	0.99	Fail
238 U	209	3	48.3100	6.019341E-01	806307.38	ppb	0.72	Fail

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1137172	0.71	929517	122.3	80 - 120	ISFail
72 Ge	1	82932	1.45	63325	131.0	80 - 120	ISFail
72 Ge	2	107005	2.16	90193	118.6	80 - 120	
72 Ge	3	219413	0.79	187412	117.1	80 - 120	
89 Y	1	1181117	2.25	916259	128.9	80 - 120	ISFail
89 Y	2	836577	2.83	716208	116.8	80 - 120	
89 Y	3	1633301	0.88	1390537	117.5	80 - 120	
115 In	3	1517641	0.79	1357566	111.8	80 - 120	
209 Bi	3	1339584	0.95	1338042	100.1	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B07p00.B\012CALB.D\012CALB.D#

24 :Element Failures 0 :Max. Number of Failures Allowed
3 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY INSTRUMENT BLANK FOR 296840 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018055668050.1 File : 18b07p00050 Time : 07-FEB-2018 19:54
Cal : 1018055668001 Caldate : 07-FEB-2018

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Lead	A	ND	0.5000	0.1000	ug/L	
Copper	E	ND	0.5000	0.4000	ug/L	

ISTD (ICALBLK 18b07p00012)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	929517	1037672	11.64
Germanium	H	63325	73583	16.20
Germanium	A	187412	201485	7.51
Germanium	E	90193	98152	8.82
Indium	A	1357566	1399882	3.12
Bismuth	A	1338042	1282789	-4.13
Yttrium	E	716208	754359	5.33
Yttrium	H	916259	1025176	11.89
Yttrium	A	1390537	1455611	4.68

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B07p00.B\050_CCB.D\050_CCB.D#
Date Acquired: Feb 7 2018 07:54 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: ccb
Misc Info:
Vial Number: 5
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 07 2018 05:19 pm
Sample Type: 6-CCB
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Fail
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	0.0043	2.143014E-05	22.22	ppb	79.28	
23 Na	72	2	-16.5900	1.759960E-01	17270.91	ppb	1.80	
24 Mg	72	3	-0.8078	4.319010E-02	8701.53	ppb	4.47	
27 Al	72	3	-0.4982	2.695164E-02	5429.98	ppb	3.56	
31 P	72	2	-1.6810	9.772246E-03	958.95	ppb	58.93	
39 K	72	3	5.7580	4.581545E+00	923102.38	ppb	8.66	
44 Ca	72	3	-46.9500	1.266360E-01	25514.63	ppb	3.38	
51 V	72	2	-0.1651	8.524411E-02	8366.37	ppb	14.28	
52 Cr	72	2	0.5515	1.381230E-01	13555.57	ppb	9.70	Fail
55 Mn	72	2	-0.0363	1.445208E-03	141.85	ppb	8.90	
56 Fe	72	1	-1.0560	5.509069E-02	4053.53	ppb	0.43	
59 Co	72	2	-0.0363	8.321240E-05	8.15	ppb	1.77	
60 Ni	72	2	-0.0566	1.998039E-04	19.63	ppb	5.13	
63 Cu	89	2	-0.0985	6.907273E-04	521.13	ppb	3.83	
66 Zn	89	2	-0.2976	6.051772E-05	45.56	ppb	7.15	
75 As	89	2	0.0026	1.826610E-04	137.78	ppb	387.87	
78 Se	89	1	0.0184	5.447332E-06	5.56	ppb	107.34	
98 Mo	89	3	0.0198	1.992464E-04	290.01	ppb	32.42	
107 Ag	115	3	-0.0067	3.412821E-05	47.78	ppb	53.49	
111 Cd	115	3	-0.0393	1.589343E-06	2.22	ppb	4.54	
121 Sb	115	3	0.0330	2.246396E-04	314.46	ppb	42.77	
137 Ba	209	3	-0.0272	1.817947E-05	23.33	ppb	20.42	
205 Tl	209	3	-0.0302	6.240886E-05	80.00	ppb	6.56	
208 Pb	209	3	-0.0321	4.997133E-04	641.15	ppb	8.90	
238 U	209	3	0.0028	4.071358E-05	52.22	ppb	33.41	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1037672	0.32	929517	111.6	80 - 120	
72 Ge	1	73583	2.32	63325	116.2	80 - 120	
72 Ge	2	98152	0.95	90193	108.8	80 - 120	
72 Ge	3	201485	0.34	187412	107.5	80 - 120	
89 Y	1	1025176	2.35	916259	111.9	80 - 120	
89 Y	2	754359	1.22	716208	105.3	80 - 120	
89 Y	3	1455611	0.50	1390537	104.7	80 - 120	
115 In	3	1399882	0.60	1357566	103.1	80 - 120	
209 Bi	3	1282789	0.99	1338042	95.9	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B07p00.B\012CALB.D\012CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY CONTINUING CALIBRATION FOR 296840 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018055668057.1 File : 18b07p00057 Time : 07-FEB-2018 20:28
Cal : 1018055668001 Caldate : 07-FEB-2018
Standards: S35929, S35939

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Lead	A	0.0107	0.0110	50.00	51.15	ug/L	2	10	
Copper	E	0.0043	0.0043	50.00	57.68	ug/L	**15**	10	c+ ***

ISTD (ICALBLK 18b07p00012)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	929517	1182964	**27.27 ***
Germanium	H	63325	84645	**33.67 ***
Germanium	A	187412	218466	16.57
Germanium	E	90193	106133	17.67
Indium	A	1357566	1493752	10.03
Bismuth	A	1338042	1334684	-0.25
Yttrium	E	716208	805796	12.51
Yttrium	H	916259	1185624	**29.40 ***
Yttrium	A	1390537	1602045	15.21

+=high bias c=CCV

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B07p00.B\057_CCV.D\057_CCV.D#
Date Acquired: Feb 7 2018 08:28 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: ccv,s35929
Misc Info:
Vial Number: 3
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 07 2018 05:19 pm
Sample Type: 6-CCV
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Fail
ISTD: Fail

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	50.7300	1.525186E-01	180306.09	ppb	3.42	Fail
23 Na	72	2	5148.0000	9.499447E+01	10017960.00	ppb	10.54	Fail
24 Mg	72	3	5221.0000	2.249323E+02	49122088.00	ppb	2.47	Fail
27 Al	72	3	5148.0000	2.649987E+02	57873180.00	ppb	2.34	Fail
31 P	72	2	5332.0000	1.993640E+00	210219.91	ppb	10.74	Fail
39 K	72	3	5111.0000	2.436985E+02	53223392.00	ppb	2.12	Fail
44 Ca	72	3	5051.0000	7.016569E+00	1532385.00	ppb	2.25	Fail
51 V	72	2	53.5500	2.215116E+00	233500.91	ppb	11.68	Fail
52 Cr	72	2	54.2600	2.435615E+00	256715.70	ppb	11.94	Fail
55 Mn	72	2	53.1900	2.185303E+00	230355.50	ppb	11.23	Fail
56 Fe	72	1	4993.0000	2.254899E+02	19085320.00	ppb	1.01	Fail
59 Co	72	2	54.8500	2.844026E+00	299789.50	ppb	11.24	Fail
60 Ni	72	2	55.0300	6.612519E-01	69709.12	ppb	11.10	Fail
63 Cu	89	2	57.6800	2.161043E-01	171674.20	ppb	16.06	Fail
66 Zn	89	2	57.4000	4.988577E-02	39679.00	ppb	14.70	Fail
75 As	89	2	56.8700	3.184956E-02	25308.70	ppb	15.77	Fail
78 Se	89	1	53.8500	6.018602E-03	7134.13	ppb	1.66	Fail
98 Mo	89	3	52.5000	1.003263E-01	160593.59	ppb	3.77	Fail
107 Ag	115	3	52.6900	1.764714E-01	263395.59	ppb	3.97	Fail
111 Cd	115	3	52.7000	4.075395E-02	60834.72	ppb	3.42	Fail
121 Sb	115	3	51.1200	1.363615E-01	203526.70	ppb	4.01	Fail
137 Ba	209	3	51.4100	6.292684E-02	83919.29	ppb	3.74	
205 Tl	209	3	25.2500	2.043168E-01	272480.19	ppb	3.70	Fail
208 Pb	209	3	51.1500	5.524106E-01	736743.19	ppb	3.42	Fail
238 U	209	3	49.2000	6.129173E-01	817469.38	ppb	3.25	Fail

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1182964	2.87	929517	127.3	80 - 120	ISFail
72 Ge	1	84645	1.18	63325	133.7	80 - 120	ISFail
72 Ge	2	106133	9.09	90193	117.7	80 - 120	
72 Ge	3	218466	2.22	187412	116.6	80 - 120	
89 Y	1	1185624	2.22	916259	129.4	80 - 120	ISFail
89 Y	2	805796	13.28	716208	112.5	80 - 120	
89 Y	3	1602045	3.33	1390537	115.2	80 - 120	
115 In	3	1493752	3.01	1357566	110.0	80 - 120	
209 Bi	3	1334684	3.30	1338042	99.7	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B07p00.B\012CALB.D\012CALB.D#

24 :Element Failures 0 :Max. Number of Failures Allowed
3 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY INSTRUMENT BLANK FOR 296840 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018055668059.1 File : 18b07p00059 Time : 07-FEB-2018 20:38
Cal : 1018055668001 Caldate : 07-FEB-2018

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Lead	A	ND	0.5000	0.1000	ug/L	
Copper	E	ND	0.5000	0.4000	ug/L	

ISTD (ICALBLK 18b07p00012)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	929517	1073475	15.49
Germanium	H	63325	75206	18.76
Germanium	A	187412	201714	7.63
Germanium	E	90193	101857	12.93
Indium	A	1357566	1405213	3.51
Bismuth	A	1338042	1286829	-3.83
Yttrium	E	716208	779400	8.82
Yttrium	H	916259	1035635	13.03
Yttrium	A	1390537	1471133	5.80

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B07p00.B\059_CCB.D\059_CCB.D#
Date Acquired: Feb 7 2018 08:38 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: ccb
Misc Info:
Vial Number: 5
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 07 2018 05:19 pm
Sample Type: 6-CCB
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Fail
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	0.0034	1.862939E-05	20.00	ppb	30.07	
23 Na	72	2	-18.9200	1.331941E-01	13567.25	ppb	0.50	
24 Mg	72	3	-0.9962	3.507881E-02	7076.23	ppb	1.40	
27 Al	72	3	-0.6072	2.134105E-02	4305.18	ppb	3.45	
31 P	72	2	-4.7560	8.628446E-03	878.94	ppb	14.60	
39 K	72	3	5.4420	4.566771E+00	921148.69	ppb	19.35	
44 Ca	72	3	-64.4500	1.029743E-01	20770.96	ppb	0.54	
51 V	72	2	0.7958	1.233457E-01	12563.26	ppb	3.35	Fail
52 Cr	72	2	0.4803	1.350761E-01	13757.98	ppb	7.91	Fail
55 Mn	72	2	-0.0270	1.829006E-03	186.30	ppb	4.87	
56 Fe	72	1	-1.1020	5.298995E-02	3984.25	ppb	2.11	
59 Co	72	2	-0.0362	8.740941E-05	8.89	ppb	2.68	
60 Ni	72	2	-0.0553	2.146597E-04	21.85	ppb	7.88	
63 Cu	89	2	-0.1207	6.078068E-04	473.72	ppb	5.34	
66 Zn	89	2	-0.3060	5.320479E-05	41.48	ppb	2.14	
75 As	89	2	0.0411	2.040900E-04	159.11	ppb	57.43	
78 Se	89	1	-0.0015	3.220369E-06	3.33	ppb	53.43	
98 Mo	89	3	-0.0023	1.571024E-04	231.12	ppb	550.62	
107 Ag	115	3	-0.0091	2.608381E-05	36.67	ppb	13.17	
111 Cd	115	3	-0.0393	1.585047E-06	2.22	ppb	4.52	
121 Sb	115	3	0.0083	1.589467E-04	223.34	ppb	13.50	
137 Ba	209	3	-0.0308	1.379810E-05	17.78	ppb	14.17	
205 Tl	209	3	-0.0317	5.009532E-05	64.45	ppb	1.64	
208 Pb	209	3	-0.0282	5.415081E-04	696.71	ppb	8.56	
238 U	209	3	0.0024	3.538885E-05	45.56	ppb	40.21	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1073475	0.12	929517	115.5	80 - 120	
72 Ge	1	75206	1.79	63325	118.8	80 - 120	
72 Ge	2	101857	0.46	90193	112.9	80 - 120	
72 Ge	3	201714	0.71	187412	107.6	80 - 120	
89 Y	1	1035635	2.80	916259	113.0	80 - 120	
89 Y	2	779400	0.72	716208	108.8	80 - 120	
89 Y	3	1471133	0.77	1390537	105.8	80 - 120	
115 In	3	1405213	0.41	1357566	103.5	80 - 120	
209 Bi	3	1286829	0.54	1338042	96.2	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B07p00.B\012CALB.D\012CALB.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY INTERFERENCE CHECK STANDARD A FOR 296840 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018055668060.1 File : 18b07p00060 Time : 07-FEB-2018 20:43
Cal : 1018055668001 Caldate : 07-FEB-2018
Standards: S35821, S35939

Analyte	Ch	Quant	IQL	Units	Flags
Lead	A	[0.07250]	0.5000	ug/L	
Copper	E	0.7142	0.5000	ug/L	

Interferent	Ch	Spiked	Quant	Units	%Rec	Flags
Aluminum	A	100000	88000	ug/L	88	
Calcium	A	300000	269900	ug/L	90	
Magnesium	A	100000	87590	ug/L	88	
Molybdenum	A	2000	2042	ug/L	102	
Potassium	A	100000	88860	ug/L	89	
Sodium	E	250000	233500	ug/L	93	i+ ***
Phosphorus	E	100000	92010	ug/L	92	i+ ***
Iron	H	250000	242300	ug/L	97	i+ ***

ISTD (ICALBLK 18b07p00012)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	929517	997010	7.26
Germanium	H	63325	86479	**36.56** *
Germanium	A	187412	207562	10.75
Germanium	E	90193	112251	**24.46** *
Indium	A	1357566	1369471	0.88
Bismuth	A	1338042	1091349	-18.44
Yttrium	E	716208	811080	13.25
Yttrium	H	916259	1231919	**34.45** *
Yttrium	A	1390537	1495369	7.54

+=high bias i=ISTD failure

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B07p00.B\060ICSA.D\060ICSA.D#
Date Acquired: Feb 7 2018 08:43 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: icsa,s35821
Misc Info:
Vial Number: 1203
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 07 2018 05:19 pm
Sample Type: 6-ICSA
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Fail

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	0.0024	1.567800E-05	15.56	ppb	73.95	
23 Na	72	2	233500.0000	4.287922E+03	481345790.00	ppb	0.53	
24 Mg	72	3	87590.0000	3.772410E+03	782844220.00	ppb	1.50	
27 Al	72	3	88000.0000	4.529398E+03	939944510.00	ppb	1.48	
31 P	72	2	92010.0000	3.423036E+01	3842389.00	ppb	0.24	
39 K	72	3	88860.0000	4.166493E+03	864616580.00	ppb	1.62	
44 Ca	72	3	269900.0000	3.649869E+02	75744712.00	ppb	1.27	
51 V	72	2	-0.2844	8.051294E-02	9037.86	ppb	3.15	
52 Cr	72	2	1.9130	1.963578E-01	22042.98	ppb	1.63	
55 Mn	72	2	2.4210	1.022808E-01	11479.49	ppb	2.12	
56 Fe	72	1	242300.0000	1.093971E+04	945925310.00	ppb	1.57	
59 Co	72	2	2.1630	1.140348E-01	12799.78	ppb	0.67	
60 Ni	72	2	2.4900	3.075955E-02	3453.01	ppb	1.27	
63 Cu	89	2	0.7142	3.720946E-03	3017.73	ppb	1.36	
66 Zn	89	2	1.3640	1.495558E-03	1213.39	ppb	5.37	
75 As	89	2	1.5000	1.016753E-03	824.69	ppb	3.94	
78 Se	89	1	0.0584	9.913996E-06	12.22	ppb	41.38	
98 Mo	89	3	2042.0000	3.896905E+00	5825559.00	ppb	1.60	
99 (Ru)	115	3	476.7000	3.458923E-05	47.78	ppb	42.61	
107 Ag	115	3	0.0248	1.394030E-04	190.01	ppb	38.81	
111 Cd	115	3	1.7860	1.411867E-03	1933.53	ppb	1.46	
121 Sb	115	3	0.1479	5.307827E-04	727.82	ppb	15.57	
137 Ba	209	3	0.1166	1.940474E-04	212.23	ppb	33.59	
205 Tl	209	3	-0.0292	7.027941E-05	76.67	ppb	6.94	
208 Pb	209	3	0.0725	1.627508E-03	1775.68	ppb	18.52	
238 U	209	3	0.0035	4.994454E-05	54.45	ppb	15.61	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	997010	2.09	929517	107.3	30 - 120	
72 Ge	1	86479	1.35	63325	136.6	30 - 120	IS Fail
72 Ge	2	112251	1.67	90193	124.5	30 - 120	IS Fail
72 Ge	3	207562	2.11	187412	110.8	30 - 120	
89 Y	1	1231919	2.10	916259	134.5	30 - 120	IS Fail
89 Y	2	811080	1.33	716208	113.2	30 - 120	
89 Y	3	1495369	2.83	1390537	107.5	30 - 120	
115 In	3	1369471	3.07	1357566	100.9	30 - 120	
209 Bi	3	1091349	1.47	1338042	81.6	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B07p00.B\012CALB.D\012CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
3 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY INTERFERENCE CHECK STANDARD AB FOR 296840 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018055668061.1 File : 18b07p00061 Time : 07-FEB-2018 20:48
Cal : 1018055668001 Caldate : 07-FEB-2018
Standards: S35822, S35939

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Copper	E	200.0	178.9	ug/L	-11	20	

ISTD (ICALBLK 18b07p00012)	Ch	ICALBLK Abund	Abund	%Drift
Germanium	H	63325	75820	19.73
Germanium	A	187412	191758	2.32
Germanium	E	90193	99138	9.92
Indium	A	1357566	1315338	-3.11
Yttrium	E	716208	735440	2.69
Yttrium	H	916259	1119182	**22.15** *
Yttrium	A	1390537	1408163	1.27

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B07p00.B\061ICSB.D\061ICSB.D#
Date Acquired: Feb 7 2018 08:48 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: icsab,s35822
Misc Info:
Vial Number: 1204
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 07 2018 05:19 pm
Sample Type: 6-ICSAB
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Fail
ISTD: Fail

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
23 Na	72	2	227000.0000	4.168042E+03	413145410.00	ppb	1.21	
24 Mg	72	3	86740.0000	3.735804E+03	716290500.00	ppb	1.36	
27 Al	72	3	87410.0000	4.498942E+03	862633280.00	ppb	1.06	
31 P	72	2	89340.0000	3.323730E+01	3294652.00	ppb	0.95	
39 K	72	3	87550.0000	4.104998E+03	787090690.00	ppb	1.23	
44 Ca	72	3	265500.0000	3.590888E+02	68850968.00	ppb	1.29	
51 V	72	2	189.8000	7.618449E+00	755158.69	ppb	1.14	
52 Cr	72	2	185.6000	8.054625E+00	798433.00	ppb	0.82	
55 Mn	72	2	184.9000	7.590187E+00	752362.31	ppb	1.10	
56 Fe	72	1	237400.0000	1.071855E+04	812607490.00	ppb	1.19	
59 Co	72	2	181.0000	9.380140E+00	929785.88	ppb	1.11	
60 Ni	72	2	175.2000	2.103714E+00	208532.20	ppb	0.98	
63 Cu	89	2	178.9000	6.679429E-01	491143.00	ppb	1.14	
66 Zn	89	2	83.1400	7.211262E-02	53022.51	ppb	1.43	
75 As	89	2	100.5000	5.615589E-02	41289.98	ppb	1.43	
78 Se	89	1	92.8500	1.037432E-02	11609.07	ppb	1.42	
98 Mo	89	3	2049.0000	3.909977E+00	5505163.00	ppb	1.20	
107 Ag	115	3	44.5200	1.491324E-01	196148.91	ppb	0.56	Fail
111 Cd	115	3	91.5300	7.076095E-02	93066.41	ppb	1.09	Fail

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	919915	1.43	929517	99.0	30 - 120	
72 Ge	1	75820	1.12	63325	119.7	30 - 120	
72 Ge	2	99138	2.20	90193	109.9	30 - 120	
72 Ge	3	191758	1.27	187412	102.3	30 - 120	
89 Y	1	1119182	1.59	916259	122.1	30 - 120	IS Fail
89 Y	2	735440	2.37	716208	102.7	30 - 120	
89 Y	3	1408163	1.70	1390537	101.3	30 - 120	
115 In	3	1315338	1.51	1357566	96.9	30 - 120	
209 Bi	3	1087442	0.98	1338042	81.3	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B07p00.B\012CALB.D\012CALB.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 1018056933

Instrument : MET26 Begun : 02/08/18 12:48
Method : EPA 6020A SOP Version : icpms metals_rv10

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	18b08m00001	X	RINSE			02/08/18 12:48	1.0	1	
002	18b08m00002	TUN				02/08/18 12:53	1.0	2	
003	18b08m00003	X	RINSE			02/08/18 12:58	1.0	1	
004	18b08m00004	X	RINSE			02/08/18 13:03	1.0	1	
005	18b08m00005	XICALBLK	CALBLANK			02/08/18 13:07	1.0	1	
006	18b08m00006	ICALBLK	CALBLANK			02/08/18 13:13	1.0	1	
007	18b08m00007	ICAL				02/08/18 13:18	1.0	3 1	
008	18b08m00008	ICAL				02/08/18 13:23	1.0	3 1	
009	18b08m00009	ICAL				02/08/18 13:28	1.0	3 1	
010	18b08m00010	ICAL				02/08/18 13:32	1.0	3 1	
011	18b08m00011	ICAL				02/08/18 13:37	1.0	3 1	
012	18b08m00012	ICAL				02/08/18 13:42	1.0	3 1	
013	18b08m00013	ICAL				02/08/18 13:48	1.0	3 1	
014	18b08m00014	X	RINSE			02/08/18 13:53	1.0	1	
015	18b08m00015	XICV				02/08/18 13:58	1.0	4 1	
016	18b08m00016	CRI				02/08/18 14:03	1.0	5 1	
017	18b08m00017	ICB				02/08/18 14:07	1.0	1	
018	18b08m00018	ICV				02/08/18 14:13	1.0	4 1	
019	18b08m00019	X	RINSE			02/08/18 14:18	1.0	1	
020	18b08m00020	ICSA				02/08/18 14:25	1.0	6 1	8:CA=270000
021	18b08m00021	ICSAB				02/08/18 14:30	1.0	7 1	8:CA=270000
022	18b08m00022	X	RINSE			02/08/18 14:35	1.0	1	
023	18b08m00023	X	RINSE			02/08/18 14:45	1.0	1	
024	18b08m00024	X	RINSE			02/08/18 14:50	1.0	1	
025	18b08m00025	X	RINSE			02/08/18 14:55	1.0	1	
026	18b08m00026	BLANK	QC918988	Soil	256220	02/08/18 15:00	25.0	1	
027	18b08m00027	SAMPLE	296840-018	Soil	256220	02/08/18 15:05	25.0	1	
028	18b08m00028	MS	QC918991	Soil	256220	02/08/18 15:10	25.0	1	
029	18b08m00029	MSD	QC918992	Soil	256220	02/08/18 15:15	25.0	1	
030	18b08m00030	SER	QC918993	Soil	256220	02/08/18 15:20	125.0	1	
031	18b08m00031	PDS	QC918994	Soil	256220	02/08/18 15:24	25.0	1 8 9 10	
032	18b08m00032	CCV				02/08/18 15:30	1.0	4 1	
033	18b08m00033	X	XCCB			02/08/18 15:35	1.0	1	
034	18b08m00034	CCB				02/08/18 15:40	1.0	1	
035	18b08m00035	ICSA				02/08/18 15:45	1.0	6 1	8:CA=270000
036	18b08m00036	ICSAB				02/08/18 15:50	1.0	7 1	8:CA=260000
037	18b08m00037	X	RINSE			02/08/18 15:55	1.0	1	
038	18b08m00038	X	RINSE			02/08/18 16:00	1.0	1	
039	18b08m00039	X	RINSE			02/08/18 16:05	1.0	1	
040	18b08m00040	X	RINSE			02/08/18 16:10	1.0	1	
041	18b08m00041	BLANK	QC918880	Filtrate	256194	02/08/18 16:15	1.0	1	
042	18b08m00042	BLANK	QC918511	Filtrate	256106	02/08/18 16:20	1.0	1	

NBB 02/08/18 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 001 through 036.

Standards used: 1=S35939 2=S35938 3=S35940 4=S35929 5=S35885 6=S35821 7=S35822 8=S34361 9=S34362 10=S34743

ENTHALPY SAMPLE USER REPORT FOR EPA 6020A

Inst	: MET26	Lab ID	: 296840-018	Client ID	: HPP-FSS-010
Seqnum	: 1018056933027	Matrix	: Soil	Acct	: IEECI (MJD)
File	: 18b08m00027	Batch	: 256220	Time	: 08-FEB-2018 15:05
Cal	: 1018056933001	Caldate	: 08-FEB-2018		
IDF	: 25.0			Units	: mg/Kg

0.93 g --> 50.0 ml = 53.76 ml/g PDF

Analyte	Ch	Result	RL	Blank	Flags
Copper	E	23	0.67		u
Lead	A	10	0.67		

ISTD (ICALBLK 18b08m00006)	Ch	ICALBLK Abund	SAMPLE Abund	%Drift
Bismuth	A	1914193	1775495	-7.25
Yttrium	E	508877	483191	-5.05

u=use

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B08m00.B\027SMPL.D\027SMPL.D#
Date Acquired: Feb 8 2018 03:05 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: 296840-018
Misc Info: 256220
Vial Number: 2111
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 08 2018 01:51 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	0.1763	4.719100E-04	441.13	ppb	15.26	
23 Na	72	2	4182.0000	7.621062E+01	3975245.00	ppb	1.28	
24 Mg	72	3	11870.0000	5.676381E+02	84474800.00	ppb	6.91	
27 Al	72	3	9032.0000	5.401091E+02	80383536.00	ppb	7.06	
31 P	72	2	212.5000	6.274479E-02	3272.67	ppb	2.18	
39 K	72	3	1385.0000	7.392132E+01	11001190.00	ppb	6.67	
44 Ca	72	3	2226.0000	3.257939E+00	484898.50	ppb	6.76	
51 V	72	2	21.5600	9.715773E-01	50677.60	ppb	1.58	
52 Cr	72	2	44.5300	2.242869E+00	116991.50	ppb	1.14	
55 Mn	72	2	131.0000	5.597189E+00	291949.59	ppb	1.47	
56 Fe	72	1	13080.0000	6.524002E+02	33543320.00	ppb	0.10	
59 Co	72	2	6.3440	4.062185E-01	21189.99	ppb	0.46	
60 Ni	72	2	101.9000	1.521288E+00	79352.26	ppb	1.16	
63 Cu	89	2	16.7800	7.016090E-02	33899.82	ppb	0.66	
66 Zn	89	2	34.7200	2.960344E-02	14303.72	ppb	0.58	
75 As	89	2	3.1600	1.633146E-03	788.91	ppb	5.10	
78 Se	89	1	0.1553	1.970128E-05	16.89	ppb	8.49	
98 Mo	89	3	0.3573	7.431517E-04	970.07	ppb	16.10	
107 Ag	115	3	0.0880	3.317735E-04	468.91	ppb	11.17	
111 Cd	115	3	0.0574	4.512549E-05	64.45	ppb	25.03	
121 Sb	115	3	0.1254	3.675750E-04	515.58	ppb	20.02	
137 Ba	209	3	20.1500	2.196673E-02	38897.89	ppb	7.38	
205 Tl	209	3	0.0466	5.862814E-04	1037.85	ppb	8.88	
208 Pb	209	3	7.7030	8.872397E-02	157045.20	ppb	7.82	
238 U	209	3	0.3829	5.651120E-03	9995.12	ppb	8.84	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	937491	9.20	1028970	91.1	30 - 120	
72 Ge	1	51415	0.86	55767	92.2	30 - 120	
72 Ge	2	52166	1.10	59606	87.5	30 - 120	
72 Ge	3	149034	7.18	185573	80.3	30 - 120	
89 Y	1	857034	0.78	885834	96.7	30 - 120	
89 Y	2	483191	0.95	508877	95.0	30 - 120	
89 Y	3	1308063	9.85	1493127	87.6	30 - 120	
115 In	3	1417582	9.96	1642730	86.3	30 - 120	
209 Bi	3	1775495	8.96	1914193	92.8	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B08m00.B\006CALB.D\006CALB.D#

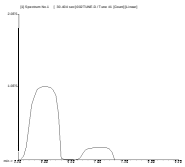
0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

MET26 QC Tune Report

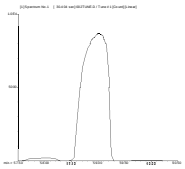
Data File: C:\ICPCHEM\1\DATA\18B08m00.B\002TUNE.D
Date Acquired: Feb 8 2018 12:53 pm
Acq. Method: TN6020K.M
Operator:
Sample Name: tun,s35938
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\TN6020K.M

RSD (%)

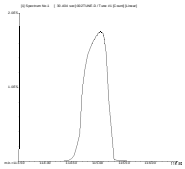
Element	Rep1	Rep2	Rep3	Rep4	Rep5	Actual	Required	Flag
7 Li	93064	91936	92955	91160	90203	1.26	5.00	
59 Co	47202	46556	46769	46076	45612	1.64	5.00	
115 In	879621	858949	862811	845861	840238	1.99	5.00	
205 Tl	72498	71994	72356	70922	70508	1.37	5.00	



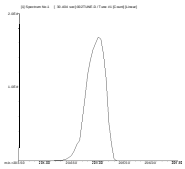
7 Li
Mass Calib.
Actual: 7.00
Required: 6.90 - 7.10
Flag:
Peak Width @ 5%
Actual: 0.60
Required: 0.75
Flag:



59 Co
Mass Calib.
Actual: 59.00
Required: 58.90 - 59.10
Flag:
Peak Width @ 5%
Actual: 0.60
Required: 0.75
Flag:



115 In
Mass Calib.
Actual: 115.00
Required: 114.90 - 115.10
Flag:
Peak Width @ 5%
Actual: 0.65
Required: 0.75
Flag:



205 Tl
Mass Calib.
Actual: 205.00
Required: 204.90 - 205.10
Flag:
Peak Width @ 5%
Actual: 0.65
Required: 0.75
Flag:

ENTHALPY INITIAL CALIBRATION FOR 296840 METALS Soil: EPA 6020A

Inst : MET26
Calnum : 1018056933001
Units : ug/L

Date : 08-FEB-2018 13:13
X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	18b08m00007	1018056933007		08-FEB-2018 13:18	S35940 (400X), S35939
L2	18b08m00008	1018056933008		08-FEB-2018 13:23	S35940 (200X), S35939
L3	18b08m00009	1018056933009		08-FEB-2018 13:28	S35940 (40X), S35939
L4	18b08m00010	1018056933010		08-FEB-2018 13:32	S35940 (20X), S35939
L5	18b08m00011	1018056933011		08-FEB-2018 13:37	S35940 (4X), S35939
L6	18b08m00012	1018056933012		08-FEB-2018 13:42	S35940 (2X), S35939
L7	18b08m00013	1018056933013		08-FEB-2018 13:48	S35940, S35939

Analyte	Ch	L1	L2	L3	L4	L5	L6	L7	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	Flg
Lead	A	0.0120	0.0115	0.0111	0.0112	0.0112	0.0115	0.0115	BLNK	-0.0375	87.2485		0.0114	1.000	0.995	
Copper	E	0.0076	0.0058	0.0047	0.0044	0.0043	0.0043	0.0040	BLNK	-0.3265	243.784		0.0050	0.999	0.995	

Spiked Amounts / Drifts	Ch	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D	L6	%D	L7	%D
Lead	A	0.5000	-3	1.0000	-3	5.0000	-4	10.000	-3	50.000	-2	100.00	1	200.00	0
Copper	E	0.5000	20	1.0000	8	5.0000	9	10.000	4	50.000	3	100.00	5	200.00	-2

Instrument amount = a0 + response * a1 + response^2 * a2; BLNK=Y=aX+[blank]

ENTHALPY 2ND SOURCE CALIBRATION SUMMARY FOR 296840 METALS Soil
EPA 6020A

Inst : MET26
Calnum : 1018056933001 Cal Date : 08-FEB-2018

ICV 1018056933018 (18b08m00018 08-FEB-2018) stds: S35929, S35939

Analyte	Ch	Spiked	Quant	Units	%D	Max	Flags
Lead	A	50.00	48.59	ug/L	-3	10	
Copper	E	50.00	50.75	ug/L	2	10	

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B08m00.B\006CALB.D\006CALB.D#
Date Acquired: Feb 8 2018 01:13 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: calblank
Misc Info:
Vial Number: 1301
Current Method: C:\ICPCHEM\1\DATA\18B08m00.B\6020newj.M
Calibration File: C:\ICPCHEM\1\DATA\18B08m00.B\6020newj.C
Last Cal. Update: Feb 08 2018 01:21 pm
Sample Type: CalBlk
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	0.0000	6.457485E-06	6.67	ppb	4158300000.00	
23 Na	72	2	0.0000	6.876275E-02	4098.43	ppb	125310000.00	
24 Mg	72	3	0.0000	2.418138E-02	4486.32	ppb	106440000.00	
27 Al	72	3	0.0000	5.808422E-02	10781.75	ppb	62500000.00	
31 P	72	2	0.0000	6.619352E-03	394.46	ppb	287970000.00	
39 K	72	3	0.0000	2.755450E+00	510878.81	ppb	308900000.00	
44 Ca	72	3	0.0000	2.096722E-02	3880.61	ppb	992880000.00	
51 V	72	2	0.0000	5.624003E-02	3352.25	ppb	18368000.00	
52 Cr	72	2	0.0000	6.073390E-02	3620.09	ppb	6684900.00	
55 Mn	72	2	0.0000	1.137145E-03	67.78	ppb	257480000.00	
56 Fe	72	1	0.0000	3.442507E-02	1919.77	ppb	30821000.00	
59 Co	72	2	0.0000	4.225395E-04	25.19	ppb	1094200000.00	
60 Ni	72	2	0.0000	1.815616E-03	108.15	ppb	699410000.00	
63 Cu	89	2	0.0000	1.339344E-03	681.50	ppb	469240000.00	
66 Zn	89	2	0.0000	3.770813E-04	191.86	ppb	78497000.00	
75 As	89	2	0.0000	1.025778E-04	52.22	ppb	382710000.00	
78 Se	89	1	0.0000	1.756599E-06	1.56	ppb	720840000.00	
98 Mo	89	3	0.0000	4.962780E-05	74.45	ppb	1439900000.00	
107 Ag	115	3	0.0000	4.676877E-05	76.67	ppb	890090000.00	
111 Cd	115	3	0.0000	2.032108E-06	3.33	ppb	80737000.00	
121 Sb	115	3	0.0000	6.742438E-05	111.12	ppb	150590000.00	
137 Ba	209	3	0.0000	3.728685E-05	71.11	ppb	436270000.00	
205 Tl	209	3	0.0000	1.830434E-04	350.02	ppb	793930000.00	
208 Pb	209	3	0.0000	4.303556E-04	822.28	ppb	3286500000.00	
238 U	209	3	0.0000	6.986384E-06	13.33	ppb	1701700000.00	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1028970	5.23	1028970	100.0	80 - 120	
72 Ge	1	55767	0.66	55767	100.0	80 - 120	
72 Ge	2	59606	0.55	59606	100.0	80 - 120	
72 Ge	3	185573	3.37	185573	100.0	80 - 120	
89 Y	1	885834	0.32	885834	100.0	80 - 120	
89 Y	2	508877	0.80	508877	100.0	80 - 120	
89 Y	3	1493127	4.53	1493127	100.0	80 - 120	
115 In	3	1642730	4.63	1642730	100.0	80 - 120	
209 Bi	3	1914193	4.54	1914193	100.0	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : ---

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B08m00.B\007CALS.D\007CALS.D#
Date Acquired: Feb 8 2018 01:18 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: s35940,400x
Misc Info:
Vial Number: 1101
Current Method: C:\ICPCHEM\1\DATA\18B08m00.B\6020newj.M
Calibration File: C:\ICPCHEM\1\DATA\18B08m00.B\6020newj.C
Last Cal. Update: Feb 08 2018 01:21 pm
Sample Type: CalStd
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	0.5000	1.451608E-03	1459.00	ppb	6.23	
23 Na	72	2	50.0000	9.356514E-01	56934.34	ppb	5.96	
24 Mg	72	3	50.0000	2.312078E+00	421241.00	ppb	0.59	
27 Al	72	3	50.0000	2.871349E+00	523103.19	ppb	1.09	
31 P	72	2	50.0000	2.073301E-02	1260.09	ppb	14.82	
39 K	72	3	50.0000	5.414514E+00	986384.50	ppb	2.89	
44 Ca	72	3	50.0000	9.283909E-02	16910.65	ppb	3.71	
51 V	72	2	0.5000	7.806487E-02	4750.02	ppb	20.92	
52 Cr	72	2	0.5000	8.724947E-02	5306.50	ppb	22.92	
55 Mn	72	2	0.5000	2.365683E-02	1440.08	ppb	4.68	
56 Fe	72	1	50.0000	2.595331E+00	159025.80	ppb	1.16	
59 Co	72	2	0.5000	3.372881E-02	2052.75	ppb	5.56	
60 Ni	72	2	0.5000	1.044752E-02	636.32	ppb	4.34	
63 Cu	89	2	0.5000	3.804444E-03	1976.81	ppb	12.78	
66 Zn	89	2	0.5000	1.215080E-03	632.98	ppb	3.00	
75 As	89	2	0.5000	3.770582E-04	196.00	ppb	13.10	
78 Se	89	1	0.5000	6.484513E-05	60.89	ppb	4.23	
98 Mo	89	3	0.5000	9.722789E-04	1437.89	ppb	2.35	
107 Ag	115	3	0.5000	1.750270E-03	2835.92	ppb	2.40	
111 Cd	115	3	0.5000	4.141433E-04	671.15	ppb	1.40	
121 Sb	115	3	0.5000	1.298789E-03	2106.90	ppb	7.96	
137 Ba	209	3	0.5000	5.165431E-04	972.29	ppb	6.74	
205 Tl	209	3	0.0250	2.200857E-03	4144.09	ppb	2.37	
208 Pb	209	3	0.5000	5.980981E-03	11263.35	ppb	0.32	
238 U	209	3	0.5000	6.567032E-03	12365.92	ppb	2.61	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1005603	1.43	1028970	97.7	80 - 120	
72 Ge	1	61275	0.51	55767	109.9	80 - 120	
72 Ge	2	60970	5.34	59606	102.3	80 - 120	
72 Ge	3	182199	1.46	185573	98.2	80 - 120	
89 Y	1	939006	0.71	885834	106.0	80 - 120	
89 Y	2	521348	6.13	508877	102.5	80 - 120	
89 Y	3	1478610	1.35	1493127	99.0	80 - 120	
115 In	3	1620739	1.86	1642730	98.7	80 - 120	
209 Bi	3	1883164	1.27	1914193	98.4	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B08m00.B\006CALB.D\006CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B08m00.B\008CALS.D\008CALS.D#
Date Acquired: Feb 8 2018 01:23 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: s35940,200x
Misc Info:
Vial Number: 1102
Current Method: C:\ICPCHEM\1\DATA\18B08m00.B\6020newj.M
Calibration File: C:\ICPCHEM\1\DATA\18B08m00.B\6020newj.C
Last Cal. Update: Feb 08 2018 01:21 pm
Sample Type: CalStd
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	0.9319	2.700090E-03	2783.66	ppb	5.80	
23 Na	72	2	94.7700	1.711961E+00	110480.70	ppb	0.57	
24 Mg	72	3	100.9000	4.639476E+00	863884.00	ppb	0.66	
27 Al	72	3	101.0000	5.739286E+00	1068724.00	ppb	1.27	
31 P	72	2	89.8000	3.196693E-02	2063.54	ppb	1.48	
39 K	72	3	94.1400	7.761972E+00	1445246.00	ppb	0.84	
44 Ca	72	3	97.2000	1.606838E-01	29921.29	ppb	1.58	
51 V	72	2	1.0320	1.012967E-01	6534.02	ppb	3.53	
52 Cr	72	2	0.9057	1.087662E-01	7018.31	ppb	5.66	
55 Mn	72	2	0.9109	4.216315E-02	2722.48	ppb	2.38	
56 Fe	72	1	98.3500	5.071971E+00	313625.19	ppb	0.90	
59 Co	72	2	0.9753	6.539064E-02	4218.76	ppb	1.33	
60 Ni	72	2	0.8917	1.720987E-02	1110.79	ppb	2.55	
63 Cu	89	2	0.8985	5.768900E-03	3215.18	ppb	1.19	
66 Zn	89	2	0.5290	1.263742E-03	703.73	ppb	9.71	
75 As	89	2	0.9298	6.129804E-04	341.12	ppb	8.33	
78 Se	89	1	1.0880	1.390716E-04	130.89	ppb	5.09	
98 Mo	89	3	1.0360	1.961672E-03	2968.16	ppb	5.31	
107 Ag	115	3	1.0130	3.497461E-03	5813.53	ppb	4.76	
111 Cd	115	3	0.9527	7.872656E-04	1308.99	ppb	2.75	
121 Sb	115	3	1.0040	2.539975E-03	4224.07	ppb	1.60	
137 Ba	209	3	1.0750	1.067966E-03	2060.22	ppb	6.09	
205 Tl	209	3	0.0501	4.228460E-03	8160.42	ppb	4.56	
208 Pb	209	3	0.9966	1.149358E-02	22172.21	ppb	0.29	
238 U	209	3	1.0040	1.318295E-02	25435.27	ppb	1.43	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1031952	2.57	1028970	100.3	80 - 120	
72 Ge	1	61836	0.75	55767	110.9	80 - 120	
72 Ge	2	64531	4.31	59606	108.3	80 - 120	
72 Ge	3	186194	1.53	185573	100.3	80 - 120	
89 Y	1	940880	1.25	885834	106.2	80 - 120	
89 Y	2	557260	5.03	508877	109.5	80 - 120	
89 Y	3	1513822	1.56	1493127	101.4	80 - 120	
115 In	3	1662909	1.61	1642730	101.2	80 - 120	
209 Bi	3	1929035	2.05	1914193	100.8	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B08m00.B\006CALB.D\006CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B08m00.B\009CALS.D\009CALS.D#
Date Acquired: Feb 8 2018 01:28 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: s35940,40x
Misc Info:
Vial Number: 1103
Current Method: C:\ICPCHEM\1\DATA\18B08m00.B\6020newj.M
Calibration File: C:\ICPCHEM\1\DATA\18B08m00.B\6020newj.C
Last Cal. Update: Feb 08 2018 01:21 pm
Sample Type: CalStd
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	4.9450	1.429814E-02	15030.71	ppb	1.27	
23 Na	72	2	472.4000	8.259684E+00	547949.38	ppb	0.17	
24 Mg	72	3	497.5000	2.278769E+01	4374195.00	ppb	1.20	
27 Al	72	3	499.3000	2.815127E+01	5403780.00	ppb	1.18	
31 P	72	2	453.8000	1.347229E-01	8934.98	ppb	2.18	
39 K	72	3	461.0000	2.727026E+01	5234386.00	ppb	1.65	
44 Ca	72	3	489.4000	7.244624E-01	139050.91	ppb	1.92	
51 V	72	2	4.7610	2.640675E-01	17521.34	ppb	1.54	
52 Cr	72	2	4.5350	3.012393E-01	19984.68	ppb	0.76	
55 Mn	72	2	4.6850	2.121415E-01	14075.68	ppb	0.97	
56 Fe	72	1	484.8000	2.486775E+01	1601120.00	ppb	1.05	
59 Co	72	2	4.8810	3.255443E-01	21597.99	ppb	0.90	
60 Ni	72	2	4.5240	7.991041E-02	5301.69	ppb	1.29	
63 Cu	89	2	4.5220	2.363509E-02	13579.34	ppb	1.09	
66 Zn	89	2	2.9790	5.369595E-03	3084.78	ppb	1.88	
75 As	89	2	4.6500	2.655176E-03	1525.42	ppb	2.35	
78 Se	89	1	5.1120	6.467549E-04	639.57	ppb	2.57	
98 Mo	89	3	5.2790	9.790582E-03	15281.42	ppb	0.73	
107 Ag	115	3	5.0470	1.724335E-02	29441.67	ppb	1.58	
111 Cd	115	3	4.7980	3.957058E-03	6757.29	ppb	2.71	
121 Sb	115	3	4.8270	1.195600E-02	20411.10	ppb	2.28	
137 Ba	209	3	5.1170	4.941999E-03	9641.23	ppb	2.69	
205 Tl	209	3	0.2494	2.031568E-02	39653.14	ppb	0.95	
208 Pb	209	3	4.9550	5.543857E-02	108193.00	ppb	0.26	
238 U	209	3	5.0970	6.687838E-02	130500.70	ppb	1.02	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1051181	2.01	1028970	102.2	80 - 120	
72 Ge	1	64385	1.56	55767	115.5	80 - 120	
72 Ge	2	66341	2.22	59606	111.3	80 - 120	
72 Ge	3	191988	2.29	185573	103.5	80 - 120	
89 Y	1	988612	2.23	885834	111.6	80 - 120	
89 Y	2	574612	2.00	508877	112.9	80 - 120	
89 Y	3	1561016	2.71	1493127	104.5	80 - 120	
115 In	3	1707902	3.23	1642730	104.0	80 - 120	
209 Bi	3	1951599	2.16	1914193	102.0	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B08m00.B\006CALB.D\006CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B08m00.B\010CALS.D\010CALS.D#
Date Acquired: Feb 8 2018 01:32 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: s35940,20x
Misc Info:
Vial Number: 1104
Current Method: C:\ICPCHEM\1\DATA\18B08m00.B\6020newj.M
Calibration File: C:\ICPCHEM\1\DATA\18B08m00.B\6020newj.C
Last Cal. Update: Feb 08 2018 01:21 pm
Sample Type: CalStd
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Fail

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	9.7950	2.831617E-02	32328.64	ppb	1.50	
23 Na	72	2	968.5000	1.686011E+01	1188642.00	ppb	0.94	
24 Mg	72	3	1022.0000	4.680899E+01	9479204.00	ppb	1.59	
27 Al	72	3	1028.0000	5.791533E+01	11728910.00	ppb	1.88	
31 P	72	2	875.0000	2.536035E-01	17869.45	ppb	2.31	
39 K	72	3	944.5000	5.298594E+01	10728830.00	ppb	1.30	
44 Ca	72	3	1000.0000	1.458372E+00	295306.69	ppb	1.41	
51 V	72	2	9.0760	4.524172E-01	31891.72	ppb	1.70	
52 Cr	72	2	8.8400	5.295133E-01	37325.11	ppb	1.51	
55 Mn	72	2	9.0860	4.103853E-01	28936.86	ppb	0.98	
56 Fe	72	1	962.6000	4.933775E+01	3258534.00	ppb	0.52	
59 Co	72	2	9.5270	6.350371E-01	44776.01	ppb	0.65	
60 Ni	72	2	8.8270	1.542095E-01	10868.69	ppb	1.75	
63 Cu	89	2	8.6720	4.409424E-02	27429.06	ppb	3.99	
66 Zn	89	2	5.6790	9.895516E-03	6162.39	ppb	1.94	
75 As	89	2	8.7940	4.930336E-03	3063.66	ppb	5.88	
78 Se	89	1	10.1300	1.280205E-03	1299.18	ppb	1.68	
98 Mo	89	3	10.5200	1.945680E-02	32577.90	ppb	1.26	
107 Ag	115	3	10.1400	3.460578E-02	63033.55	ppb	0.43	
111 Cd	115	3	9.6290	7.938461E-03	14456.26	ppb	1.91	
121 Sb	115	3	9.8420	2.430694E-02	44251.90	ppb	1.23	
137 Ba	209	3	10.2000	9.812066E-03	20308.92	ppb	0.06	
205 Tl	209	3	0.5106	4.139779E-02	85694.74	ppb	1.08	
208 Pb	209	3	10.0300	1.117946E-01	231387.00	ppb	0.74	
238 U	209	3	10.3200	1.354656E-01	280453.59	ppb	0.86	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1141545	5.14	1028970	110.9	80 - 120	
72 Ge	1	66046	0.62	55767	118.4	80 - 120	
72 Ge	2	70527	6.39	59606	118.3	80 - 120	
72 Ge	3	202427	3.83	185573	109.1	80 - 120	
89 Y	1	1014733	0.85	885834	114.6	80 - 120	
89 Y	2	623383	8.34	508877	122.5	80 - 120	ISFail
89 Y	3	1674944	4.09	1493127	112.2	80 - 120	
115 In	3	1821229	4.68	1642730	110.9	80 - 120	
209 Bi	3	2069811	4.41	1914193	108.1	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B08m00.B\006CALB.D\006CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B08m00.B\011CALS.D\011CALS.D#
Date Acquired: Feb 8 2018 01:37 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: s35940,4x
Misc Info:
Vial Number: 1105
Current Method: C:\ICPCHEM\1\DATA\18B08m00.B\6020newj.M
Calibration File: C:\ICPCHEM\1\DATA\18B08m00.B\6020newj.C
Last Cal. Update: Feb 08 2018 01:21 pm
Sample Type: CalStd
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Fail

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	47.2400	1.365457E-01	157621.91	ppb	0.25	
23 Na	72	2	5003.0000	8.680603E+01	6081230.00	ppb	1.87	
24 Mg	72	3	5121.0000	2.343329E+02	46530752.00	ppb	0.26	
27 Al	72	3	5175.0000	2.912240E+02	57827848.00	ppb	0.13	
31 P	72	2	4532.0000	1.285906E+00	90076.67	ppb	1.18	
39 K	72	3	4741.0000	2.548668E+02	50605740.00	ppb	0.49	
44 Ca	72	3	5008.0000	7.220007E+00	1433602.00	ppb	0.59	
51 V	72	2	46.9000	2.103508E+00	147337.00	ppb	0.51	
52 Cr	72	2	45.1600	2.455672E+00	172007.50	ppb	0.67	
55 Mn	72	2	46.6500	2.102361E+00	147265.70	ppb	1.09	
56 Fe	72	1	4748.0000	2.432222E+02	16650090.00	ppb	0.31	
59 Co	72	2	48.2000	3.211030E+00	224919.00	ppb	0.86	
60 Ni	72	2	44.0800	7.627550E-01	53426.99	ppb	0.87	
63 Cu	89	2	43.0500	2.136030E-01	131551.41	ppb	0.49	
66 Zn	89	2	26.4400	4.469054E-02	27519.98	ppb	1.33	
75 As	89	2	44.6800	2.463102E-02	15168.81	ppb	0.81	
78 Se	89	1	48.8300	6.163229E-03	6479.39	ppb	0.29	
98 Mo	89	3	52.1200	9.622476E-02	159325.30	ppb	0.98	
107 Ag	115	3	49.1200	1.674055E-01	296007.91	ppb	0.62	
111 Cd	115	3	46.8200	3.859066E-02	68239.74	ppb	1.07	
121 Sb	115	3	48.4600	1.194042E-01	211138.80	ppb	0.16	
137 Ba	209	3	53.0300	5.086599E-02	98656.59	ppb	0.25	
205 Tl	209	3	2.5860	2.089081E-01	405187.81	ppb	0.44	
208 Pb	209	3	50.6100	5.622506E-01	1090509.00	ppb	0.27	
238 U	209	3	53.8300	7.063308E-01	1369902.00	ppb	0.51	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1154399	2.51	1028970	112.2	80 - 120	
72 Ge	1	68456	0.41	55767	122.8	80 - 120	ISFail
72 Ge	2	70039	1.83	59606	117.5	80 - 120	
72 Ge	3	198570	1.93	185573	107.0	80 - 120	
89 Y	1	1051287	0.59	885834	118.7	80 - 120	
89 Y	2	615919	2.66	508877	121.0	80 - 120	ISFail
89 Y	3	1655755	2.41	1493127	110.9	80 - 120	
115 In	3	1768320	2.79	1642730	107.6	80 - 120	
209 Bi	3	1939611	2.27	1914193	101.3	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B08m00.B\006CALB.D\006CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
2 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B08m00.B\012CALS.D\012CALS.D#
Date Acquired: Feb 8 2018 01:42 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: s35940,2x
Misc Info:
Vial Number: 1106
Current Method: C:\ICPCHEM\1\DATA\18B08m00.B\6020newj.M
Calibration File: C:\ICPCHEM\1\DATA\18B08m00.B\6020newj.C
Last Cal. Update: Feb 08 2018 01:21 pm
Sample Type: CalStd
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Fail

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	94.2500	2.724181E-01	318238.09	ppb	1.85	
23 Na	72	2	10480.0000	1.817244E+02	12228140.00	ppb	0.16	
24 Mg	72	3	10510.0000	4.809968E+02	94887888.00	ppb	0.96	
27 Al	72	3	10640.0000	5.989569E+02	118157500.00	ppb	1.08	
31 P	72	2	9461.0000	2.677131E+00	180150.91	ppb	0.81	
39 K	72	3	9679.0000	5.174916E+02	102087400.00	ppb	0.92	
44 Ca	72	3	10160.0000	1.463027E+01	2886150.00	ppb	0.99	
51 V	72	2	97.3800	4.306737E+00	289808.19	ppb	0.53	
52 Cr	72	2	93.3900	5.013134E+00	337340.41	ppb	0.31	
55 Mn	72	2	95.9200	4.321495E+00	290804.19	ppb	0.60	
56 Fe	72	1	9795.0000	5.017033E+02	34175900.00	ppb	0.83	
59 Co	72	2	98.1200	6.536120E+00	439835.59	ppb	0.75	
60 Ni	72	2	89.2900	1.543362E+00	103855.00	ppb	0.57	
63 Cu	89	2	87.4900	4.326900E-01	254161.30	ppb	0.10	
66 Zn	89	2	53.9200	9.074732E-02	53304.64	ppb	0.21	
75 As	89	2	91.3900	5.027386E-02	29529.03	ppb	0.79	
78 Se	89	1	96.3900	1.216411E-02	12841.17	ppb	1.22	
98 Mo	89	3	107.1000	1.976086E-01	323996.19	ppb	2.52	
107 Ag	115	3	99.4900	3.390219E-01	580793.69	ppb	2.79	
111 Cd	115	3	94.7600	7.810984E-02	133804.41	ppb	3.36	
121 Sb	115	3	99.4700	2.450480E-01	419804.81	ppb	2.76	
137 Ba	209	3	111.6000	1.069978E-01	196251.91	ppb	2.69	
205 Tl	209	3	5.3160	4.292658E-01	787422.31	ppb	1.63	
208 Pb	209	3	103.8000	1.152959E+00	2114858.00	ppb	2.00	
238 U	209	3	112.2000	1.471716E+00	2699561.00	ppb	1.96	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1168304	0.77	1028970	113.5	80 - 120	
72 Ge	1	68120	0.76	55767	122.2	80 - 120	ISFail
72 Ge	2	67290	0.90	59606	112.9	80 - 120	
72 Ge	3	197285	0.98	185573	106.3	80 - 120	
89 Y	1	1055589	1.77	885834	119.2	80 - 120	
89 Y	2	587401	1.40	508877	115.4	80 - 120	
89 Y	3	1640091	1.85	1493127	109.8	80 - 120	
115 In	3	1713717	1.79	1642730	104.3	80 - 120	
209 Bi	3	1834625	1.40	1914193	95.8	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B08m00.B\006CALB.D\006CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
1 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B08m00.B\013CALS.D\013CALS.D#
Date Acquired: Feb 8 2018 01:48 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: s35940
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\DATA\18B08m00.B\6020newj.M
Calibration File: C:\ICPCHEM\1\DATA\18B08m00.B\6020newj.C
Last Cal. Update: Feb 08 2018 01:21 pm
Sample Type: CalStd
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Fail

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	180.8000	5.224535E-01	648114.69	ppb	0.29	
23 Na	72	2	21080.0000	3.655363E+02	25735340.00	ppb	0.91	
24 Mg	72	3	20910.0000	9.567466E+02	195732100.00	ppb	0.47	
27 Al	72	3	21280.0000	1.197490E+03	244971600.00	ppb	0.94	
31 P	72	2	18700.0000	5.285274E+00	372112.59	ppb	0.59	
39 K	72	3	19350.0000	1.031586E+03	211030000.00	ppb	1.05	
44 Ca	72	3	20230.0000	2.909667E+01	5952451.00	ppb	0.82	
51 V	72	2	194.9000	8.565244E+00	603047.50	ppb	0.39	
52 Cr	72	2	184.6000	9.850630E+00	693556.63	ppb	0.19	
55 Mn	72	2	189.4000	8.530644E+00	600614.69	ppb	0.29	
56 Fe	72	1	19470.0000	9.972707E+02	72122248.00	ppb	0.19	
59 Co	72	2	191.0000	1.272124E+01	895669.69	ppb	0.13	
60 Ni	72	2	171.0000	2.953295E+00	207931.20	ppb	0.35	
63 Cu	89	2	163.9000	8.092355E-01	504341.50	ppb	0.28	
66 Zn	89	2	98.2100	1.649777E-01	102818.90	ppb	0.40	
75 As	89	2	174.7000	9.601324E-02	59840.07	ppb	0.34	
78 Se	89	1	179.9000	2.269486E-02	25594.77	ppb	0.44	
98 Mo	89	3	209.5000	3.866747E-01	670973.19	ppb	0.26	
107 Ag	115	3	187.3000	6.383319E-01	1127974.00	ppb	0.41	
111 Cd	115	3	179.9000	1.483046E-01	262066.20	ppb	0.48	
121 Sb	115	3	193.3000	4.762213E-01	841492.81	ppb	0.63	
137 Ba	209	3	229.1000	2.196135E-01	396244.81	ppb	0.64	
205 Tl	209	3	10.7600	8.685288E-01	1566972.00	ppb	0.22	
208 Pb	209	3	206.5000	2.292581E+00	4136207.00	ppb	0.17	
238 U	209	3	225.5000	2.958098E+00	5336736.00	ppb	0.48	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1240555	1.44	1028970	120.6	80 - 120	ISFail
72 Ge	1	72320	0.51	55767	129.7	80 - 120	ISFail
72 Ge	2	70408	0.86	59606	118.1	80 - 120	
72 Ge	3	204591	1.57	185573	110.2	80 - 120	
89 Y	1	1127777	0.24	885834	127.3	80 - 120	ISFail
89 Y	2	623239	0.63	508877	122.5	80 - 120	ISFail
89 Y	3	1735281	1.86	1493127	116.2	80 - 120	
115 In	3	1767177	2.36	1642730	107.6	80 - 120	
209 Bi	3	1804191	1.46	1914193	94.3	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B08m00.B\006CALB.D\006CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
4 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B08m00.B\018_ICV.D\018_ICV.D#
Date Acquired: Feb 8 2018 02:13 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: icv,s35929
Misc Info:
Vial Number: 3
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 08 2018 01:51 pm
Sample Type: 6-ICV
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Fail
ISTD: Fail

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	51.6100	1.362349E-01	164007.00	ppb	0.32	
23 Na	72	2	4713.0000	8.587547E+01	6197588.00	ppb	0.79	
24 Mg	72	3	4936.0000	2.361386E+02	48792312.00	ppb	0.34	
27 Al	72	3	4833.0000	2.890074E+02	59715752.00	ppb	0.45	
31 P	72	2	4887.0000	1.297429E+00	93634.44	ppb	0.58	
39 K	72	3	4844.0000	2.517243E+02	52011740.00	ppb	0.44	
44 Ca	72	3	4851.0000	7.076402E+00	1462164.00	ppb	0.29	
51 V	72	2	47.8500	2.087534E+00	150656.09	ppb	0.56	
52 Cr	72	2	48.6700	2.445880E+00	176524.59	ppb	0.69	
55 Mn	72	2	48.7500	2.083977E+00	150408.59	ppb	0.87	
56 Fe	72	1	4826.0000	2.406576E+02	17888220.00	ppb	0.66	
59 Co	72	2	49.4600	3.163939E+00	228349.00	ppb	0.64	
60 Ni	72	2	50.2100	7.502895E-01	54150.82	ppb	0.44	
63 Cu	89	2	50.7500	2.095232E-01	133109.80	ppb	0.41	
66 Zn	89	2	52.8700	4.487254E-02	28507.66	ppb	0.48	
75 As	89	2	51.7800	2.518050E-02	15996.97	ppb	0.46	
78 Se	89	1	53.7800	6.214250E-03	7032.30	ppb	2.02	
98 Mo	89	3	49.8300	9.675408E-02	166865.91	ppb	0.71	
107 Ag	115	3	51.6000	1.670705E-01	300750.69	ppb	0.41	
111 Cd	115	3	51.6100	3.873823E-02	69736.48	ppb	0.84	
121 Sb	115	3	49.2200	1.179038E-01	212243.59	ppb	0.47	
137 Ba	209	3	47.2800	5.149789E-02	99696.15	ppb	1.47	Fail
205 Tl	209	3	23.9200	2.070333E-01	400805.19	ppb	0.86	Fail
208 Pb	209	3	48.5900	5.573470E-01	1078982.00	ppb	0.45	
238 U	209	3	47.1900	6.957442E-01	1346887.00	ppb	0.16	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1203852	1.45	1028970	117.0	80 - 120	
72 Ge	1	74332	0.52	55767	133.3	80 - 120	ISFail
72 Ge	2	72172	0.82	59606	121.1	80 - 120	ISFail
72 Ge	3	206627	0.90	185573	111.3	80 - 120	
89 Y	1	1131739	0.69	885834	127.8	80 - 120	ISFail
89 Y	2	635300	1.32	508877	124.8	80 - 120	ISFail
89 Y	3	1724562	1.01	1493127	115.5	80 - 120	
115 In	3	1800091	1.09	1642730	109.6	80 - 120	
209 Bi	3	1935902	0.69	1914193	101.1	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B08m00.B\006CALB.D\006CALB.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
4 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY LOW-LEVEL PERFORMANCE VERIFICATION STANDARD FOR 296840 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018056933016.1 File : 18b08m00016 Time : 08-FEB-2018 14:03
Cal : 1018056933001 Caldate : 08-FEB-2018
Standards: S35885, S35939

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Lead	A	1.000	0.9596	ug/L	-4	30	
Copper	E	1.000	1.121	ug/L	12	30	

ISTD (ICALBLK 18b08m00006)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	1028970	1120309	8.88
Germanium	H	55767	66704	19.61
Germanium	A	185573	192092	3.51
Germanium	E	59606	66153	10.98
Indium	A	1642730	1716574	4.50
Bismuth	A	1914193	1953184	2.04
Yttrium	E	508877	571716	12.35
Yttrium	H	885834	1010716	14.10
Yttrium	A	1493127	1577240	5.63

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B08m00.B\016SPKA.D\016SPKA.D#
Date Acquired: Feb 8 2018 02:03 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: cri,s35885
Misc Info:
Vial Number: 1302
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 08 2018 01:51 pm
Sample Type: 6-Spike1
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Fail
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	1.0890	2.881695E-03	3228.20	ppb	1.02	
23 Na	72	2	468.6000	8.599935E+00	568882.81	ppb	0.87	
24 Mg	72	3	502.7000	2.407289E+01	4623857.00	ppb	0.78	
27 Al	72	3	97.4800	5.886311E+00	1130622.00	ppb	0.77	
31 P	72	2	99.3700	3.286435E-02	2173.55	ppb	4.57	
39 K	72	3	486.2000	2.774524E+01	5329117.00	ppb	1.04	
44 Ca	72	3	483.3000	7.239050E-01	139047.20	ppb	0.82	
51 V	72	2	1.3570	1.138337E-01	7530.02	ppb	1.98	Fail
52 Cr	72	2	1.1510	1.171544E-01	7749.76	ppb	1.50	
55 Mn	72	2	0.9705	4.259833E-02	2817.32	ppb	3.95	
56 Fe	72	1	103.0000	5.169983E+00	344853.91	ppb	0.50	
59 Co	72	2	1.0200	6.563752E-02	4341.75	ppb	1.29	
60 Ni	72	2	1.0840	1.797950E-02	1189.69	ppb	4.17	
63 Cu	89	2	1.1210	5.938522E-03	3394.85	ppb	2.79	
66 Zn	89	2	5.8770	5.323576E-03	3043.29	ppb	1.80	
75 As	89	2	1.0620	6.167286E-04	352.67	ppb	6.63	
78 Se	89	1	1.2450	1.455576E-04	147.11	ppb	3.92	Fail
98 Mo	89	3	1.3020	2.576617E-03	4064.01	ppb	0.61	Fail
107 Ag	115	3	1.0220	3.355527E-03	5760.17	ppb	1.23	
111 Cd	115	3	1.0330	7.771681E-04	1333.44	ppb	5.19	
121 Sb	115	3	1.0160	2.499322E-03	4287.42	ppb	7.21	
137 Ba	209	3	0.8615	9.749597E-04	1903.52	ppb	6.95	Fail
205 Tl	209	3	0.4765	4.303214E-03	8404.97	ppb	3.27	Fail
208 Pb	209	3	0.9596	1.142868E-02	22322.32	ppb	0.22	
238 U	209	3	0.9187	1.355096E-02	26470.49	ppb	1.71	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1120309	1.62	1028970	108.9	80 - 120	
72 Ge	1	66704	0.37	55767	119.6	80 - 120	
72 Ge	2	66153	1.12	59606	111.0	80 - 120	
72 Ge	3	192092	1.63	185573	103.5	80 - 120	
89 Y	1	1010716	0.66	885834	114.1	80 - 120	
89 Y	2	571716	1.22	508877	112.3	80 - 120	
89 Y	3	1577240	1.59	1493127	105.6	80 - 120	
115 In	3	1716574	1.72	1642730	104.5	80 - 120	
209 Bi	3	1953184	1.00	1914193	102.0	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B08m00.B\006CALB.D\006CALB.D#

5 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY INSTRUMENT BLANK FOR 296840 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018056933017.1 File : 18b08m00017 Time : 08-FEB-2018 14:07
Cal : 1018056933001 Caldate : 08-FEB-2018

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Lead	A	ND	0.5000	0.1000	ug/L	
Copper	E	ND	0.5000	0.4000	ug/L	

ISTD (ICALBLK 18b08m00006)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	1028970	1057335	2.76
Germanium	H	55767	63295	13.50
Germanium	A	185573	183984	-0.86
Germanium	E	59606	63274	6.15
Indium	A	1642730	1628516	-0.87
Bismuth	A	1914193	1878002	-1.89
Yttrium	E	508877	541665	6.44
Yttrium	H	885834	953073	7.59
Yttrium	A	1493127	1492106	-0.07

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B08m00.B\017_ICB.D\017_ICB.D#
Date Acquired: Feb 8 2018 02:07 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: icb
Misc Info:
Vial Number: 5
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 08 2018 01:51 pm
Sample Type: 6-ICB
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Fail
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	0.0067	2.414863E-05	25.56	ppb	44.55	
23 Na	72	2	-0.0164	6.846337E-02	4331.85	ppb	544.77	
24 Mg	72	3	-0.0638	2.113134E-02	3887.26	ppb	12.11	
27 Al	72	3	-0.2984	4.023846E-02	7401.96	ppb	4.77	
31 P	72	2	-0.2617	6.550212E-03	414.46	ppb	641.96	
39 K	72	3	0.7533	2.794166E+00	514049.59	ppb	52.56	
44 Ca	72	3	-2.5110	1.731430E-02	3185.99	ppb	12.45	
51 V	72	2	0.2586	6.721854E-02	4253.21	ppb	6.91	Fail
52 Cr	72	2	0.0912	6.520368E-02	4125.76	ppb	11.64	
55 Mn	72	2	-0.0029	1.012641E-03	64.07	ppb	119.46	
56 Fe	72	1	0.2637	4.757143E-02	3011.06	ppb	1.31	
59 Co	72	2	0.0008	4.744281E-04	30.00	ppb	183.68	
60 Ni	72	2	-0.0390	1.234587E-03	78.15	ppb	44.64	
63 Cu	89	2	-0.0679	1.060777E-03	574.46	ppb	12.24	
66 Zn	89	2	0.0088	3.845090E-04	208.15	ppb	508.33	
75 As	89	2	0.0236	1.140132E-04	61.78	ppb	108.43	
78 Se	89	1	0.0372	6.053813E-06	5.78	ppb	51.75	
98 Mo	89	3	0.1254	2.930616E-04	436.69	ppb	20.40	Fail
107 Ag	115	3	-0.0048	3.136655E-05	51.11	ppb	64.92	
111 Cd	115	3	-0.0018	6.944833E-07	1.11	ppb	89.96	
121 Sb	115	3	0.0146	1.022918E-04	166.67	ppb	36.53	
137 Ba	209	3	-0.0141	2.190185E-05	41.11	ppb	74.59	
205 Tl	209	3	-0.0007	1.768766E-04	332.24	ppb	76.96	
208 Pb	209	3	0.0099	5.439489E-04	1021.18	ppb	21.60	
238 U	209	3	0.0062	9.822843E-05	184.45	ppb	10.85	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1057335	1.15	1028970	102.8	80 - 120	
72 Ge	1	63295	0.18	55767	113.5	80 - 120	
72 Ge	2	63274	0.46	59606	106.2	80 - 120	
72 Ge	3	183984	1.26	185573	99.1	80 - 120	
89 Y	1	953073	0.79	885834	107.6	80 - 120	
89 Y	2	541665	1.21	508877	106.4	80 - 120	
89 Y	3	1492106	1.91	1493127	99.9	80 - 120	
115 In	3	1628516	1.65	1642730	99.1	80 - 120	
209 Bi	3	1878002	1.18	1914193	98.1	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B08m00.B\006CALB.D\006CALB.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY INTERFERENCE CHECK STANDARD A FOR 296840 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018056933020.1 File : 18b08m00020 Time : 08-FEB-2018 14:25
Cal : 1018056933001 Caldate : 08-FEB-2018
Standards: S35821, S35939

Analyte	Ch	Quant	IQL	Units	Flags
Lead	A	[0.1227]	0.5000	ug/L	
Copper	E	0.6632	0.5000	ug/L	

Interferent	Ch	Spiked	Quant	Units	%Rec	Flags
Aluminum	A	100000	84370	ug/L	84	
Calcium	A	300000	272500	ug/L	91	
Magnesium	A	100000	83940	ug/L	84	
Molybdenum	A	2000	2045	ug/L	102	
Potassium	A	100000	88100	ug/L	88	
Sodium	E	250000	236800	ug/L	95	
Phosphorus	E	100000	89850	ug/L	90	
Iron	H	250000	245200	ug/L	98	i+ ***

ISTD (ICALBLK 18b08m00006)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	1028970	944649	-8.19
Germanium	H	55767	70559	**26.52 ***
Germanium	A	185573	175860	-5.23
Germanium	E	59606	66879	12.20
Indium	A	1642730	1496384	-8.91
Bismuth	A	1914193	1335665	-30.22
Yttrium	E	508877	564606	10.95
Yttrium	H	885834	1118608	**26.28 ***
Yttrium	A	1493127	1438310	-3.67

+=high bias i=ISTD failure

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B08m00.B\020ICSA.D\020ICSA.D#
Date Acquired: Feb 8 2018 02:25 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: icsa,s35821
Misc Info:
Vial Number: 1203
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 08 2018 01:51 pm
Sample Type: 6-ICSA
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Fail

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	0.0065	2.356241E-05	22.22	ppb	14.73	
23 Na	72	2	236800.0000	4.311635E+03	288352510.00	ppb	0.11	
24 Mg	72	3	83940.0000	4.015625E+03	706186880.00	ppb	0.03	
27 Al	72	3	84370.0000	5.044931E+03	887178820.00	ppb	0.17	
31 P	72	2	89850.0000	2.373616E+01	1587326.00	ppb	0.45	
39 K	72	3	88100.0000	4.530872E+03	796789500.00	ppb	0.09	
44 Ca	72	3	272500.0000	3.964353E+02	69716808.00	ppb	0.04	
51 V	72	2	0.1025	6.059081E-02	4052.41	ppb	18.99	
52 Cr	72	2	1.0960	1.144370E-01	7651.57	ppb	5.10	
55 Mn	72	2	2.1780	9.420234E-02	6297.62	ppb	1.98	
56 Fe	72	1	245200.0000	1.222402E+04	862505730.00	ppb	0.12	
59 Co	72	2	1.3370	8.594379E-02	5747.78	ppb	0.54	
60 Ni	72	2	1.7860	2.844176E-02	1902.36	ppb	1.86	
63 Cu	89	2	0.6632	4.059578E-03	2290.93	ppb	3.40	
66 Zn	89	2	1.7020	1.809883E-03	1021.53	ppb	2.31	
75 As	89	2	1.0170	5.951155E-04	335.78	ppb	3.83	
78 Se	89	1	0.0622	8.939693E-06	10.00	ppb	8.10	
98 Mo	89	3	2045.0000	3.968774E+00	5708758.00	ppb	0.61	
99 (Ru)	115	3	447.2000	2.897281E-05	43.33	ppb	2.60	
107 Ag	115	3	0.0371	1.668344E-04	250.01	ppb	16.96	
111 Cd	115	3	1.8890	1.419903E-03	2125.77	ppb	3.95	
121 Sb	115	3	0.1007	3.085927E-04	462.25	ppb	9.27	
137 Ba	209	3	0.1507	2.013530E-04	268.90	ppb	5.83	
205 Tl	209	3	0.0029	2.079573E-04	277.79	ppb	27.90	
208 Pb	209	3	0.1227	1.837221E-03	2453.53	ppb	7.03	
238 U	209	3	0.0074	1.164232E-04	155.56	ppb	21.66	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	944649	2.45	1028970	91.8	30 - 120	
72 Ge	1	70559	0.96	55767	126.5	30 - 120	IS Fail
72 Ge	2	66879	3.12	59606	112.2	30 - 120	
72 Ge	3	175860	2.38	185573	94.8	30 - 120	
89 Y	1	1118608	1.16	885834	126.3	30 - 120	IS Fail
89 Y	2	564606	3.25	508877	111.0	30 - 120	
89 Y	3	1438310	2.54	1493127	96.3	30 - 120	
115 In	3	1496384	2.61	1642730	91.1	30 - 120	
209 Bi	3	1335665	0.72	1914193	69.8	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B08m00.B\006CALB.D\006CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
2 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY INTERFERENCE CHECK STANDARD AB FOR 296840 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018056933021.1 File : 18b08m00021 Time : 08-FEB-2018 14:30
Cal : 1018056933001 Caldate : 08-FEB-2018
Standards: S35822, S35939

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Copper	E	200.0	164.0	ug/L	-18	20	

ISTD (ICALBLK 18b08m00006)	Ch	ICALBLK Abund	Abund	%Drift
Germanium	H	55767	53006	-4.95
Germanium	A	185573	158223	-14.74
Germanium	E	59606	53709	-9.89
Indium	A	1642730	1417577	-13.71
Yttrium	E	508877	462602	-9.09
Yttrium	H	885834	890434	0.52
Yttrium	A	1493127	1324484	-11.29

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B08m00.B\021ICSB.D\021ICSB.D#
Date Acquired: Feb 8 2018 02:30 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: icsab,s35822
Misc Info:
Vial Number: 1204
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 08 2018 01:51 pm
Sample Type: 6-ICSAB
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Fail
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
23 Na	72	2	230900.0000	4.203953E+03	225788300.00	ppb	0.45	
24 Mg	72	3	82880.0000	3.964617E+03	627292610.00	ppb	0.06	
27 Al	72	3	83660.0000	5.002089E+03	791457410.00	ppb	0.12	
31 P	72	2	86640.0000	2.288853E+01	1229329.00	ppb	0.59	
39 K	72	3	86220.0000	4.434189E+03	701587580.00	ppb	0.12	
44 Ca	72	3	267200.0000	3.886823E+02	61498200.00	ppb	0.22	
51 V	72	2	193.3000	8.262229E+00	443758.19	ppb	0.51	
52 Cr	72	2	187.7000	9.257850E+00	497235.41	ppb	0.62	
55 Mn	72	2	190.4000	8.133894E+00	436862.31	ppb	0.46	
56 Fe	72	1	248600.0000	1.239630E+04	657066110.00	ppb	0.48	
59 Co	72	2	178.7000	1.143319E+01	614070.88	ppb	0.70	
60 Ni	72	2	167.9000	2.504605E+00	134522.00	ppb	0.83	
63 Cu	89	2	164.0000	6.742168E-01	311897.81	ppb	0.16	
66 Zn	89	2	76.5100	6.477652E-02	29964.05	ppb	0.70	Fail
75 As	89	2	91.3100	4.432605E-02	20503.83	ppb	1.00	
78 Se	89	1	86.4100	9.983502E-03	8889.71	ppb	0.78	
98 Mo	89	3	2042.0000	3.963845E+00	5250280.00	ppb	0.44	
107 Ag	115	3	40.7200	1.318597E-01	186930.70	ppb	0.57	Fail
111 Cd	115	3	84.5600	6.346892E-02	89977.68	ppb	0.82	Fail

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	842659	2.20	1028970	81.9	30 - 120	
72 Ge	1	53006	0.57	55767	95.0	30 - 120	
72 Ge	2	53709	0.98	59606	90.1	30 - 120	
72 Ge	3	158223	1.50	185573	85.3	30 - 120	
89 Y	1	890434	0.23	885834	100.5	30 - 120	
89 Y	2	462602	1.25	508877	90.9	30 - 120	
89 Y	3	1324484	1.75	1493127	88.7	30 - 120	
115 In	3	1417577	1.34	1642730	86.3	30 - 120	
209 Bi	3	1325955	0.61	1914193	69.3	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B08m00.B\006CALB.D\006CALB.D#

3 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY CONTINUING CALIBRATION FOR 296840 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018056933032.1 File : 18b08m00032 Time : 08-FEB-2018 15:30
Cal : 1018056933001 Caldate : 08-FEB-2018
Standards: S35929, S35939

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Lead	A	0.0114	0.0112	50.00	48.74	ug/L	-3	10	
Copper	E	0.0050	0.0041	50.00	49.47	ug/L	-1	10	

ISTD (ICALBLK 18b08m00006)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	1028970	1011038	-1.74
Germanium	H	55767	58577	5.04
Germanium	A	185573	165965	-10.57
Germanium	E	59606	57134	-4.15
Indium	A	1642730	1581200	-3.75
Bismuth	A	1914193	1906072	-0.42
Yttrium	E	508877	518091	1.81
Yttrium	H	885834	922662	4.16
Yttrium	A	1493127	1430718	-4.18

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B08m00.B\032_CCV.D\032_CCV.D#
Date Acquired: Feb 8 2018 03:30 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: ccv,s35929
Misc Info:
Vial Number: 3
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 08 2018 01:51 pm
Sample Type: 6-CCV
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Fail
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	50.0500	1.321109E-01	133559.59	ppb	0.78	Fail
23 Na	72	2	4742.0000	8.639622E+01	4935902.00	ppb	0.67	Fail
24 Mg	72	3	5010.0000	2.397000E+02	39776192.00	ppb	1.14	Fail
27 Al	72	3	4889.0000	2.923906E+02	48519420.00	ppb	1.19	Fail
31 P	72	2	4824.0000	1.280674E+00	73169.45	ppb	0.55	Fail
39 K	72	3	4777.0000	2.482587E+02	41195968.00	ppb	1.24	Fail
44 Ca	72	3	4781.0000	6.974962E+00	1157414.00	ppb	1.31	Fail
51 V	72	2	47.7100	2.081783E+00	118934.80	ppb	0.67	Fail
52 Cr	72	2	48.4600	2.435444E+00	139140.50	ppb	0.58	Fail
55 Mn	72	2	48.6200	2.077997E+00	118722.50	ppb	0.33	Fail
56 Fe	72	1	4818.0000	2.402579E+02	14072700.00	ppb	0.93	Fail
59 Co	72	2	49.6000	3.172877E+00	181273.50	ppb	0.48	Fail
60 Ni	72	2	50.4100	7.532252E-01	43030.57	ppb	1.33	Fail
63 Cu	89	2	49.4700	2.042727E-01	105825.50	ppb	0.56	Fail
66 Zn	89	2	51.4800	4.370960E-02	22641.40	ppb	1.62	Fail
75 As	89	2	49.8900	2.426612E-02	12570.26	ppb	1.70	Fail
78 Se	89	1	52.2500	6.037022E-03	5570.15	ppb	2.21	Fail
98 Mo	89	3	50.4900	9.803677E-02	140251.59	ppb	0.68	Fail
107 Ag	115	3	50.1100	1.622515E-01	256532.30	ppb	1.07	Fail
111 Cd	115	3	50.9600	3.825607E-02	60485.73	ppb	0.63	Fail
121 Sb	115	3	49.0200	1.174405E-01	185697.80	ppb	0.12	Fail
137 Ba	209	3	43.9700	4.789017E-02	91275.83	ppb	0.59	Fail
205 Tl	209	3	23.9800	2.075084E-01	395514.00	ppb	0.32	Fail
208 Pb	209	3	48.7400	5.590915E-01	1065611.00	ppb	0.49	Fail
238 U	209	3	49.0300	7.228755E-01	1377747.00	ppb	0.66	Fail

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1011038	1.60	1028970	98.3	80 - 120	
72 Ge	1	58577	1.08	55767	105.0	80 - 120	
72 Ge	2	57134	1.25	59606	95.9	80 - 120	
72 Ge	3	165965	1.89	185573	89.4	80 - 120	
89 Y	1	922662	0.35	885834	104.2	80 - 120	
89 Y	2	518091	1.72	508877	101.8	80 - 120	
89 Y	3	1430718	2.02	1493127	95.8	80 - 120	
115 In	3	1581200	2.10	1642730	96.3	80 - 120	
209 Bi	3	1906072	1.76	1914193	99.6	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B08m00.B\006CALB.D\006CALB.D#

25 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY INSTRUMENT BLANK FOR 296840 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018056933034.1 File : 18b08m00034 Time : 08-FEB-2018 15:40
Cal : 1018056933001 Caldate : 08-FEB-2018

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Lead	A	ND	0.5000	0.1000	ug/L	
Copper	E	ND	0.5000	0.4000	ug/L	

ISTD (ICALBLK 18b08m00006)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	1028970	879276	-14.55
Germanium	H	55767	51524	-7.61
Germanium	A	185573	150370	-18.97
Germanium	E	59606	51218	-14.07
Indium	A	1642730	1429574	-12.98
Bismuth	A	1914193	1818635	-4.99
Yttrium	E	508877	443708	-12.81
Yttrium	H	885834	803128	-9.34
Yttrium	A	1493127	1246235	-16.54

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B08m00.B\034_CCB.D\034_CCB.D#
Date Acquired: Feb 8 2018 03:40 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: ccb
Misc Info:
Vial Number: 5
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 08 2018 01:51 pm
Sample Type: 6-CCB
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	0.0038	1.650411E-05	14.44	ppb	28.11	
23 Na	72	2	0.9958	8.689107E-02	4449.66	ppb	16.64	
24 Mg	72	3	0.0386	2.602532E-02	3907.28	ppb	66.69	
27 Al	72	3	-0.4685	3.007072E-02	4516.36	ppb	4.46	
31 P	72	2	-5.2530	5.231920E-03	267.79	ppb	53.09	
39 K	72	3	-2.3950	2.632355E+00	394956.41	ppb	121.59	
44 Ca	72	3	-5.6920	1.268842E-02	1905.73	ppb	4.81	
51 V	72	2	0.0340	5.768497E-02	2954.38	ppb	39.05	
52 Cr	72	2	-0.0187	5.981610E-02	3063.29	ppb	166.13	
55 Mn	72	2	-0.0080	7.955735E-04	40.74	ppb	35.36	
56 Fe	72	1	0.2654	4.765902E-02	2455.40	ppb	13.92	
59 Co	72	2	-0.0004	3.982775E-04	20.37	ppb	503.43	
60 Ni	72	2	-0.0559	9.830075E-04	50.37	ppb	18.37	
63 Cu	89	2	-0.1421	7.561930E-04	335.19	ppb	13.67	
66 Zn	89	2	-0.1860	2.205131E-04	97.78	ppb	9.34	
75 As	89	2	-0.0059	9.972179E-05	44.22	ppb	422.08	
78 Se	89	1	0.0399	6.359330E-06	5.11	ppb	80.93	
98 Mo	89	3	0.0773	1.996480E-04	246.68	ppb	21.94	
107 Ag	115	3	-0.0066	2.539055E-05	36.67	ppb	43.11	
111 Cd	115	3	-0.0018	7.179199E-07	1.11	ppb	94.69	
121 Sb	115	3	0.0376	1.574773E-04	222.23	ppb	48.63	
137 Ba	209	3	-0.0224	1.295720E-05	23.33	ppb	22.26	
205 Tl	209	3	-0.0049	1.409059E-04	255.57	ppb	24.05	
208 Pb	209	3	0.0037	4.724622E-04	855.61	ppb	119.11	
238 U	209	3	0.0031	5.265692E-05	95.56	ppb	6.04	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	879276	5.21	1028970	85.5	80 - 120	
72 Ge	1	51524	0.41	55767	92.4	80 - 120	
72 Ge	2	51218	0.72	59606	85.9	80 - 120	
72 Ge	3	150370	5.81	185573	81.0	80 - 120	
89 Y	1	803128	0.38	885834	90.7	80 - 120	
89 Y	2	443708	1.53	508877	87.2	80 - 120	
89 Y	3	1246235	8.04	1493127	83.5	80 - 120	
115 In	3	1429574	7.25	1642730	87.0	80 - 120	
209 Bi	3	1818635	6.41	1914193	95.0	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B08m00.B\006CALB.D\006CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY INTERFERENCE CHECK STANDARD A FOR 296840 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018056933035.1 File : 18b08m00035 Time : 08-FEB-2018 15:45
Cal : 1018056933001 Caldate : 08-FEB-2018
Standards: S35821, S35939

Analyte	Ch	Quant	IQL	Units	Flags
Lead	A	[0.1195]	0.5000	ug/L	
Copper	E	0.5378	0.5000	ug/L	

Interferent	Ch	Spiked	Quant	Units	%Rec	Flags
Aluminum	A	100000	82220	ug/L	82	
Calcium	A	300000	265200	ug/L	88	
Magnesium	A	100000	81540	ug/L	82	
Molybdenum	A	2000	2045	ug/L	102	
Potassium	A	100000	85980	ug/L	86	
Sodium	E	250000	221300	ug/L	89	
Phosphorus	E	100000	84650	ug/L	85	
Iron	H	250000	241300	ug/L	97	

ISTD (ICALBLK 18b08m00006)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	1028970	870487	-15.40
Germanium	H	55767	58249	4.45
Germanium	A	185573	168567	-9.16
Germanium	E	59606	59002	-1.01
Indium	A	1642730	1464113	-10.87
Bismuth	A	1914193	1345792	-29.69
Yttrium	E	508877	502997	-1.16
Yttrium	H	885834	933009	5.33
Yttrium	A	1493127	1392495	-6.74

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B08m00.B\035ICSA.D\035ICSA.D#
Date Acquired: Feb 8 2018 03:45 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: icsa,s35821
Misc Info:
Vial Number: 1203
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 08 2018 01:51 pm
Sample Type: 6-ICSA
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	0.0030	1.431966E-05	12.22	ppb	159.47	
23 Na	72	2	221300.0000	4.029223E+03	237714590.00	ppb	0.57	
24 Mg	72	3	81540.0000	3.900649E+03	656952190.00	ppb	2.73	
27 Al	72	3	82220.0000	4.916151E+03	827968320.00	ppb	3.06	
31 P	72	2	84650.0000	2.236228E+01	1319313.00	ppb	0.74	
39 K	72	3	85980.0000	4.421642E+03	744842110.00	ppb	2.26	
44 Ca	72	3	265200.0000	3.857838E+02	64983180.00	ppb	2.51	
51 V	72	2	0.0712	5.926182E-02	3495.98	ppb	60.42	
52 Cr	72	2	0.9336	1.064859E-01	6282.81	ppb	1.71	
55 Mn	72	2	2.0600	8.915456E-02	5258.71	ppb	2.05	
56 Fe	72	1	241300.0000	1.202970E+04	700688770.00	ppb	0.67	
59 Co	72	2	1.2100	7.780294E-02	4587.75	ppb	4.61	
60 Ni	72	2	1.6260	2.605021E-02	1537.13	ppb	1.67	
63 Cu	89	2	0.5378	3.545559E-03	1782.71	ppb	3.93	
66 Zn	89	2	1.5960	1.720598E-03	865.96	ppb	4.72	
75 As	89	2	0.9679	5.713526E-04	287.56	ppb	5.30	
78 Se	89	1	0.0693	9.756985E-06	9.11	ppb	45.65	
98 Mo	89	3	2045.0000	3.968054E+00	5515750.00	ppb	3.88	
99 (Ru)	115	3	645.6000	4.183148E-05	61.11	ppb	4.83	
107 Ag	115	3	0.0268	1.335992E-04	196.67	ppb	19.26	
111 Cd	115	3	2.0420	1.534747E-03	2248.03	ppb	7.79	
121 Sb	115	3	0.1560	4.410311E-04	643.37	ppb	10.22	
137 Ba	209	3	0.1526	2.033449E-04	273.35	ppb	11.14	
205 Tl	209	3	-0.0026	1.608780E-04	215.56	ppb	97.23	
208 Pb	209	3	0.1195	1.799638E-03	2423.53	ppb	4.49	
238 U	209	3	0.0053	8.489945E-05	114.45	ppb	7.45	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	870487	5.17	1028970	84.6	30 - 120	
72 Ge	1	58249	1.14	55767	104.5	30 - 120	
72 Ge	2	59002	2.30	59606	99.0	30 - 120	
72 Ge	3	168567	5.44	185573	90.8	30 - 120	
89 Y	1	933009	1.03	885834	105.3	30 - 120	
89 Y	2	502997	2.49	508877	98.8	30 - 120	
89 Y	3	1392495	7.13	1493127	93.3	30 - 120	
115 In	3	1464113	7.19	1642730	89.1	30 - 120	
209 Bi	3	1345792	5.39	1914193	70.3	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B08m00.B\006CALB.D\006CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY INTERFERENCE CHECK STANDARD AB FOR 296840 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018056933036.1 File : 18b08m00036 Time : 08-FEB-2018 15:50
Cal : 1018056933001 Caldate : 08-FEB-2018
Standards: S35822, S35939

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Copper	E	200.0	162.1	ug/L	-19	20	

ISTD (ICALBLK 18b08m00006)	Ch	ICALBLK Abund	Abund	%Drift
Germanium	H	55767	49576	-11.10
Germanium	A	185573	146761	-20.91
Germanium	E	59606	49875	-16.33
Indium	A	1642730	1311569	-20.16
Yttrium	E	508877	430173	-15.47
Yttrium	H	885834	824861	-6.88
Yttrium	A	1493127	1222424	-18.13

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B08m00.B\036ICSB.D\036ICSB.D#
Date Acquired: Feb 8 2018 03:50 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: icsab,s35822
Misc Info:
Vial Number: 1204
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 08 2018 01:51 pm
Sample Type: 6-ICSAB
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Fail
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
23 Na	72	2	224300.0000	4.083220E+03	203650100.00	ppb	0.15	
24 Mg	72	3	83220.0000	3.980782E+03	584181180.00	ppb	0.95	
27 Al	72	3	83580.0000	4.997289E+03	733327230.00	ppb	0.93	
31 P	72	2	84900.0000	2.242977E+01	1118683.00	ppb	0.35	
39 K	72	3	85950.0000	4.420243E+03	648663300.00	ppb	0.85	
44 Ca	72	3	264800.0000	3.851347E+02	56519472.00	ppb	0.57	
51 V	72	2	191.0000	8.164704E+00	407216.59	ppb	0.36	
52 Cr	72	2	184.6000	9.106376E+00	454184.69	ppb	0.32	
55 Mn	72	2	187.6000	8.016726E+00	399829.09	ppb	0.39	
56 Fe	72	1	241900.0000	1.205980E+04	597882300.00	ppb	0.48	
59 Co	72	2	175.7000	1.124029E+01	560616.13	ppb	0.50	
60 Ni	72	2	165.3000	2.465769E+00	122978.50	ppb	0.71	
63 Cu	89	2	162.1000	6.661583E-01	286573.50	ppb	0.96	
66 Zn	89	2	75.1900	6.366466E-02	27387.86	ppb	1.42	Fail
75 As	89	2	90.9900	4.417093E-02	19001.93	ppb	1.18	
78 Se	89	1	85.4700	9.875308E-03	8145.74	ppb	0.21	
98 Mo	89	3	2055.0000	3.988532E+00	4875789.00	ppb	0.23	
107 Ag	115	3	41.2700	1.336281E-01	175266.00	ppb	0.32	Fail
111 Cd	115	3	84.6900	6.356659E-02	83370.95	ppb	0.98	Fail

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	788781	2.42	1028970	76.7	30 - 120	
72 Ge	1	49576	0.40	55767	88.9	30 - 120	
72 Ge	2	49875	0.81	59606	83.7	30 - 120	
72 Ge	3	146761	1.87	185573	79.1	30 - 120	
89 Y	1	824861	0.36	885834	93.1	30 - 120	
89 Y	2	430173	0.59	508877	84.5	30 - 120	
89 Y	3	1222424	2.17	1493127	81.9	30 - 120	
115 In	3	1311569	2.35	1642730	79.8	30 - 120	
209 Bi	3	1257451	1.51	1914193	65.7	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B08m00.B\006CALB.D\006CALB.D#

3 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Mercury Raw Data

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 388053956

Instrument : MET45 Begun : 02/06/18 11:16
Method : EPA 7471B SOP Version : hg_water_rv19

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	met45	ICALBLK				02/06/18 11:16	1.0		
002	met45	ICAL	ICAL1			02/06/18 11:17	1.0	1	
003	met45	ICAL	ICAL2			02/06/18 11:18	1.0	1	
004	met45	ICAL	ICAL3			02/06/18 11:19	1.0	1	
005	met45	ICAL	ICAL4			02/06/18 11:20	1.0	1	
006	met45	ICAL	ICAL5			02/06/18 11:21	1.0	1	
007	met45	ICV				02/06/18 11:23	1.0	2	
008	met45	ICB				02/06/18 11:24	1.0		
009	met45	BLANK	QC918954	Soil	256213	02/06/18 11:25	1.0		
010	met45	BS	QC918955	Soil	256213	02/06/18 11:26	1.0		
011	met45	BSD	QC918956	Soil	256213	02/06/18 11:27	1.0		
012	met45	MSS	296840-001	Soil	256213	02/06/18 11:28	1.0		
013	met45	MS	QC918957	Soil	256213	02/06/18 11:30	1.0		
014	met45	MSD	QC918958	Soil	256213	02/06/18 11:31	1.0		
015	met45	SER	QC918959	Soil	256213	02/06/18 11:32	5.0		
016	met45	SAMPLE	296834-002	Soil	256213	02/06/18 11:33	1.0		
017	met45	SAMPLE	296834-004	Soil	256213	02/06/18 11:34	1.0		
018	met45	SAMPLE	296834-006	Soil	256213	02/06/18 11:35	1.0		
019	met45	CCV				02/06/18 11:36	1.0	3	
020	met45	CCB				02/06/18 11:38	1.0		
021	met45	SAMPLE	296840-006	Soil	256213	02/06/18 11:39	1.0		
022	met45	SAMPLE	296840-013	Soil	256213	02/06/18 11:40	1.0		1:HG=10
023	met45	SAMPLE	296840-018	Soil	256213	02/06/18 11:41	1.0		
024	met45	X	RINSE			02/06/18 11:43	1.0		
025	met45	BLANK	QC918960	Soil	256214	02/06/18 11:44	1.0		
026	met45	BS	QC918961	Soil	256214	02/06/18 11:45	1.0		spk
027	met45	BSD	QC918962	Soil	256214	02/06/18 11:46	1.0		spk
028	met45	MSS	296798-001	Soil	256214	02/06/18 11:47	1.0		
029	met45	MS	QC918963	Soil	256214	02/06/18 11:48	1.0		
030	met45	MSD	QC918964	Soil	256214	02/06/18 11:49	1.0		
031	met45	CCV				02/06/18 11:51	1.0	3	
032	met45	CCB				02/06/18 11:52	1.0		
033	met45	SER	QC918965	Soil	256214	02/06/18 11:53	5.0		
034	met45	BLANK	QC918960	Soil	256214	02/06/18 11:57	1.0		
035	met45	BS	QC918961	Soil	256214	02/06/18 11:58	1.0		
036	met45	BSD	QC918962	Soil	256214	02/06/18 11:59	1.0		
037	met45	MSS	296798-001	Soil	256214	02/06/18 12:00	1.0		
038	met45	MS	QC918963	Soil	256214	02/06/18 12:01	1.0		
039	met45	MSD	QC918964	Soil	256214	02/06/18 12:02	1.0		
040	met45	SER	QC918965	Soil	256214	02/06/18 12:03	5.0		
041	met45	SAMPLE	296798-006	Soil	256214	02/06/18 12:04	1.0		
042	met45	SAMPLE	296798-011	Soil	256214	02/06/18 12:06	1.0		
043	met45	SAMPLE	296798-016	Soil	256214	02/06/18 12:07	1.0		
044	met45	CCV				02/06/18 12:08	1.0	3	
045	met45	CCB				02/06/18 12:09	1.0		
046	met45	SAMPLE	296798-021	Soil	256214	02/06/18 12:10	1.0		
047	met45	SAMPLE	296798-026	Soil	256214	02/06/18 12:12	1.0		
048	met45	SER	QC918959	Soil	256213	02/06/18 12:13	5.0		
049	met45	SAMPLE	296831-001	Soil	256213	02/06/18 12:14	1.0		
050	met45	SAMPLE	296856-005	Soil	256213	02/06/18 12:15	1.0		
051	met45	CCV				02/06/18 12:16	1.0	3	
052	met45	CCB				02/06/18 12:17	1.0		

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 388053956

Instrument : MET45 Begun : 02/06/18 11:16
Method : EPA 7471B SOP Version : hg_water_rv19

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used
053	met45	SAMPLE	296840-013	Soil	256213	02/06/18 12:44	10.0	
054	met45	SAMPLE	296840-018	Soil	256213	02/06/18 12:45	1.0	
055	met45	CCV				02/06/18 12:46	1.0	3
056	met45	CCB				02/06/18 12:48	1.0	

SL 02/06/18 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 52.

Standards used: 1=S35906 2=S35908 3=S35909

Flags used: spk=5% spike rule

ENTHALPY SAMPLE USER REPORT FOR EPA 7471B

Inst	: MET45	Lab ID	: 296840-001	Client ID	: HPP-FSS-007
Seqnum	: 388053956012	Matrix	: Soil	Acct	: IEECI (MJD)
File	: met45	Batch	: 256213	Time	: 06-FEB-2018 11:28
Cal	: 388053956001	Caldate	: 06-FEB-2018		
IDF	: 1.0			Units	: mg/Kg

0.64 g --> 50.0 ml = 78.13 ml/g PDF

Analyte	Result	RL	Blank	Flags
Mercury	0.15	0.016		u

u=use

388053956012

==========

Method Loaded
Method Name: MET45 **Method Last Saved: 2/6/2018 11:10:04 AM**
Method Description: MET 45

==========

Sequence No.: 12 **Autosampler Location: 14**
Sample ID: 296840-001,256213,1 **Date Collected: 2/6/2018 11:28:56 AM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: 296840-001,256213,1 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	1.877	1.877	0.1515	0.1547	0.0331	11:29:47 AM	Yes

ENTHALPY SAMPLE USER REPORT FOR EPA 7471B

Inst	: MET45	Lab ID	: 296840-006	Client ID	: HPP-FSS-008
Seqnum	: 388053956021	Matrix	: Soil	Acct	: IEECI (MJD)
File	: met45	Batch	: 256213	Time	: 06-FEB-2018 11:39
Cal	: 388053956001	Caldate	: 06-FEB-2018		
IDF	: 1.0			Units	: mg/Kg

0.59 g --> 50.0 ml = 84.75 ml/g PDF

Analyte	Result	RL	Blank	Flags
Mercury	0.36	0.017		u

u=use

388053956021

==========

Method Loaded
Method Name: MET45 **Method Last Saved: 2/6/2018 11:10:04 AM**
Method Description: MET 45

==========

Sequence No.: 21 **Autosampler Location: 29**
Sample ID: 296840-006,256213,1 **Date Collected: 2/6/2018 11:39:19 AM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: 296840-006,256213,1 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	4.283	4.283	0.3439	0.3471	0.0733	11:40:10 AM	Yes

ENTHALPY SAMPLE USER REPORT FOR EPA 7471B

Inst	: MET45	Lab ID	: 296840-013	Client ID	: HPP-FSS-009
Seqnum	: 388053956053	Matrix	: Soil	Acct	: IEECI (MJD)
File	: met45	Batch	: 256213	Time	: 06-FEB-2018 12:44
Cal	: 388053956001	Caldate	: 06-FEB-2018		
IDF	: 10.0			Units	: mg/Kg

0.60 g --> 50.0 ml = 83.33 ml/g PDF

Analyte	Result	RL	Blank	Flags
Mercury	0.83	0.17		u

u=use

388053956053

==========

Reprocessing Begun
Logged In Analyst: mercury **Technique: AA FIMS-MHS**

Results Data Set (original): 020618s
Results Library (original): C:\Users\Public\PerkinElmer\AA\Data\Results\Results.mdb
Results Data Set (reprocessed):
Results Library (reprocessed):

==========

Sequence No.: 1 **Autosampler Location: 34**
Sample ID: 296840-013,256213,10 **Date Collected: 2/6/2018 12:44:35 PM**
Analyst: **Data Type: Reprocessed on 2/6/2018 12:51:13 PM**
Logged In Analyst (Original) : mercury
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: 296840-013,256213,10 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	1.000	1.000	0.0814	0.0846	0.0187	12:45:27 PM	No

ENTHALPY SAMPLE USER REPORT FOR EPA 7471B

Inst	: MET45	Lab ID	: 296840-018	Client ID	: HPP-FSS-010
Seqnum	: 388053956054	Matrix	: Soil	Acct	: IEECI (MJD)
File	: met45	Batch	: 256213	Time	: 06-FEB-2018 12:45
Cal	: 388053956001	Caldate	: 06-FEB-2018		
IDF	: 1.0			Units	: mg/Kg

0.62 g --> 50.0 ml = 80.65 ml/g PDF

Analyte	Result	RL	Blank	Flags
Mercury	0.17	0.016		u

u=use

388053956054

==========

Method Loaded
Method Name: MET45 **Method Last Saved: 1/15/2018 2:10:19 PM**
Method Description: MET 45

==========

Sequence No.: 2 **Autosampler Location: 31**
Sample ID: 296840-014,256213,1 **Date Collected: 2/6/2018 12:45:45 PM**
Analyst: **Data Type: Reprocessed on 2/6/2018 12:51:13 PM**
Logged In Analyst (Original) : mercury
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: 296840-014,256213,1 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	2.129	2.129	0.1717	0.1749	0.0375	12:46:37 PM	No

ENTHALPY BLANK USER REPORT FOR 296840 METALS Soil
EPA 7471B

Inst : MET45 Lab ID : QC918954
Seqnum : 388053956009.8 Matrix : Soil
File : met45 Batch : 256213 Time : 06-FEB-2018 11:25
Cal : 388053956001 Caldate : 06-FEB-2018
IDF : 1.0 Units : mg/Kg

0.61 g --> 50.0 ml = 81.97 ml/g PDF

Analyte	Result	RL	Flags
Mercury	ND	0.016	u

u=use

==========

Method Loaded
Method Name: MET45 **Method Last Saved: 2/6/2018 11:10:04 AM**
Method Description: MET 45

==========

Sequence No.: 9 **Autosampler Location: 11**
Sample ID: qc918954,256213,1 **Date Collected: 2/6/2018 11:25:33 AM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: qc918954,256213,1 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	-0.026	-0.026	-0.0007	0.0025	0.0007	11:26:24 AM	Yes

ENTHALPY SPIKE USER REPORT FOR 296840 METALS Soil
EPA 7471B

Type : BS
Inst : MET45
Seqnum : 388053956010.8
File : met45
IDF : 1.0
Lab ID : QC918955
Matrix : Soil
Batch : 256213
Time : 06-FEB-2018 11:26
Cal : 388053956001
Units : mg/Kg

Type : BSD
Inst : MET45
Seqnum : 388053956011.8
File : met45
IDF : 1.0
Lab ID : QC918956
Matrix : Soil
Batch : 256213
Time : 06-FEB-2018 11:27
Cal : 388053956001

BS: 0.63 g --> 50.0 ml = 79.37 ml/g PDF
BSD: 0.60 g --> 50.0 ml = 83.33 ml/g PDF

Analyte	Spiked	BS	%Rec	Spiked	BSD	%Rec	Limits	RPD	Lim	Flags
Mercury	0.1587	0.1645	104	0.1667	0.1477	89	80-124	16	20	u

u=use

==========

Method Loaded
Method Name: MET45 **Method Last Saved: 2/6/2018 11:10:04 AM**
Method Description: MET 45

==========

Sequence No.: 10 **Autosampler Location: 12**
Sample ID: qc918955,256213,1 **Date Collected: 2/6/2018 11:26:41 AM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: qc918955,256213,1 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	2.073	2.073	0.1672	0.1704	0.0356	11:27:31 AM	Yes

==========

Method Loaded
Method Name: MET45 **Method Last Saved: 2/6/2018 11:10:04 AM**
Method Description: MET 45

==========

Sequence No.: 11 **Autosampler Location: 13**
Sample ID: qc918956,256213,1 **Date Collected: 2/6/2018 11:27:48 AM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: qc918956,256213,1 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	1.772	1.772	0.1432	0.1464	0.0298	11:28:39 AM	Yes

ENTHALPY SPIKE USER REPORT FOR 296840 METALS Soil
EPA 7471B

Type : MSS	Type : MS	Type : MSD
Inst : MET45	Inst : MET45	Inst : MET45
Seqnum : 388053956012	Seqnum : 388053956013.8	Seqnum : 388053956014.8
File : met45	File : met45	File : met45
IDF : 1.0	IDF : 1.0	IDF : 1.0
Lab ID : 296840-001	Lab ID : QC918957	Lab ID : QC918958
Matrix : Soil	Matrix : Soil	Matrix : Soil
Batch : 256213	Batch : 256213	Batch : 256213
Time : 06-FEB-2018 11:28	Time : 06-FEB-2018 11:30	Time : 06-FEB-2018 11:31
Cal : 388053956001	Cal : 388053956001	Cal : 388053956001
Units : mg/Kg		

MSS: 0.64 g --> 50.0 ml = 78.13 ml/g PDF
MS: 0.57 g --> 50.0 ml = 87.72 ml/g PDF
MSD: 0.57 g --> 50.0 ml = 87.72 ml/g PDF

Analyte	MSS	Spiked	MS	%Rec	MSD	%Rec	Limits	RPD	Lim	Flags
Mercury	0.1466	0.1754	0.2986	87	0.2888	81	80-124	3	20	u

u=use

==========

Method Loaded
Method Name: MET45 **Method Last Saved: 2/6/2018 11:10:04 AM**
Method Description: MET 45

==========

Sequence No.: 13 **Autosampler Location: 15**
Sample ID: qc918957,256213,1 **Date Collected: 2/6/2018 11:30:04 AM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: qc918957,256213,1 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	3.404	3.404	0.2736	0.2768	0.0579	11:30:55 AM	Yes

==========

Method Loaded
Method Name: MET45 **Method Last Saved: 2/6/2018 11:10:04 AM**
Method Description: MET 45

==========

Sequence No.: 14 **Autosampler Location: 16**
Sample ID: qc918958,256213,1 **Date Collected: 2/6/2018 11:31:13 AM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: qc918958,256213,1 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	3.293	3.293	0.2647	0.2679	0.0555	11:32:04 AM	Yes

ENTHALPY SERIAL DILUTION FOR 296840 METALS Soil
EPA 7471B

Type : MSS
Inst : MET45
Seqnum : 388053956012
File : met45
IDF : 1.0
Lab ID : 296840-001
Matrix : Soil
Batch : 256213
Time : 06-FEB-2018 11:28
Cal : 388053956001
Units : mg/Kg

Type : SER
Inst : MET45
Seqnum : 388053956048.3
File : met45
IDF : 5.0
Lab ID : QC918959
Matrix : Soil
Batch : 256213
Time : 06-FEB-2018 12:13
Cal : 388053956001

MSS: 0.64 g --> 50.0 ml = 78.13 ml/g PDF
SER: 0.64 g --> 50.0 ml = 78.13 ml/g PDF

Analyte	MSS	RL	SER	RL	%D	Lim	Flags
Mercury	0.1466	0.01563	0.1292	0.07813	**12***	10	u

u=use

==========

Method Loaded
Method Name: MET45 **Method Last Saved: 1/15/2018 2:10:19 PM**
Method Description: MET 45

==========

Sequence No.: 15 **Autosampler Location: 17**
Sample ID: qc918959,256213,5 **Date Collected: 2/6/2018 12:13:10 PM**
Analyst: **Data Type: Reprocessed on 2/6/2018 12:22:22 PM**
Logged In Analyst (Original) : mercury
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: qc918959,256213,5 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.330	0.330	0.0279	0.0311	0.0076	12:14:02 PM	No

ENTHALPY INITIAL CALIBRATION FOR 296840 METALS Soil: EPA 7471B

Inst : MET45
Calnum : 388053956001
Units : ug/L

Date : 06-FEB-2018 11:16
X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	met45	388053956002	ICAL1	06-FEB-2018 11:17	S35906 (500X)
L2	met45	388053956003	ICAL2	06-FEB-2018 11:18	S35906 (200X)
L3	met45	388053956004	ICAL3	06-FEB-2018 11:19	S35906 (50X)
L4	met45	388053956005	ICAL4	06-FEB-2018 11:20	S35906 (20X)
L5	met45	388053956006	ICAL5	06-FEB-2018 11:21	S35906 (10X)

Analyte	L1	L2	L3	L4	L5	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	Flg
Mercury	0.0790	0.0764	0.0819	0.0820	0.0797	LIN0	-0.0182	12.5064		0.0798	1.000	.99	

Spiked Amounts / Drifts	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D
Mercury	0.2000	-10	0.5000	-8	2.0000	1	5.0000	2	10.000	-1

Instrument amount = a0 + response * a1 + response^2 * a2; LIN0=Linear regression including 0,0 point

ENTHALPY 2ND SOURCE CALIBRATION SUMMARY FOR 296840 METALS Soil
EPA 7471B

Inst : MET45
Calnum : 388053956001 Cal Date : 06-FEB-2018

ICV 388053956007 (06-FEB-2018) stds: S35908

Analyte	Spiked	Quant	Units	%D	Max	Flags
Mercury	5.000	4.982	ug/L	0	10	

==========

Analysis Begun

Logged In Analyst: mercury **Technique: AA FIMS-MHS**
Spectrometer: FIMS-100, S/N B050-9550 **Autosampler: Cetac**

Sample Information File: C:\Users\Public\PerkinElmer\AA\Data\Sample Information\Untitled.SIF
Batch ID:
Results Data Set: 020618s
Results Library: C:\Users\Public\PerkinElmer\AA\Data\Results\Results.mdb

==========

Method Loaded
Method Name: MET45 **Method Last Saved: 2/6/2018 11:10:04 AM**
Method Description: MET 45

==========

Sequence No.: 1 **Autosampler Location: 1**
Sample ID: ICALBLK **Date Collected: 2/6/2018 11:16:17 AM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: ICALBLK **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1		[0.00]	0.0032	0.0032	0.0007	11:17:07 AM	Yes

Auto-zero performed.

==========

Method Loaded
Method Name: MET45 **Method Last Saved: 2/6/2018 11:10:04 AM**
Method Description: MET 45

==========

Sequence No.: 2 **Autosampler Location: 2**
Sample ID: ICAL, ICAL1,S35906,500 **Date Collected: 2/6/2018 11:17:24 AM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: ICAL, ICAL1,S35906,500 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1		[0.2]	0.0158	0.0190	0.0041	11:18:15 AM	Yes

Standard number 1 applied. [0.2]
Correlation Coef.: 1.000000 Slope: 0.07895 Intercept: 0.00000

==========

Method Loaded
Method Name: MET45 **Method Last Saved: 2/6/2018 11:10:04 AM**
Method Description: MET 45

==========

Sequence No.: 3 **Autosampler Location: 3**
Sample ID: ICAL, ICAL2,S35906,200 **Date Collected: 2/6/2018 11:18:32 AM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: ICAL, ICAL2,S35906,200 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1		[0.5]	0.0382	0.0414	0.0089	11:19:23 AM	Yes

Standard number 2 applied. [0.5]
Correlation Coef.: 0.999892 Slope: 0.07636 Intercept: 0.00019

==========

Method Loaded
Method Name: MET45 **Method Last Saved: 2/6/2018 11:10:04 AM**
Method Description: MET 45

==========

Sequence No.: 4 **Autosampler Location: 4**
Sample ID: ICAL, ICAL3,S35906,50 **Date Collected: 2/6/2018 11:19:41 AM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: ICAL, ICAL3,S35906,50 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1		[2.0]	0.1637	0.1669	0.0347	11:20:32 AM	Yes

Standard number 3 applied. [2.0]
Correlation Coef.: 0.999861 Slope: 0.08215 Intercept: -0.00102

==========

Method Loaded
Method Name: MET45 **Method Last Saved: 2/6/2018 11:10:04 AM**
Method Description: MET 45

==========

Sequence No.: 5 **Autosampler Location: 5**
Sample ID: ICAL, ICAL4,S35906,20 **Date Collected: 2/6/2018 11:20:50 AM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: ICAL, ICAL4,S35906,20 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1		[5.0]	0.4098	0.4130	0.0858	11:21:42 AM	Yes

Standard number 4 applied. [5.0]
Correlation Coef.: 0.999980 Slope: 0.08216 Intercept: -0.00103

==========

Method Loaded
Method Name: MET45 **Method Last Saved: 2/6/2018 11:10:04 AM**
Method Description: MET 45

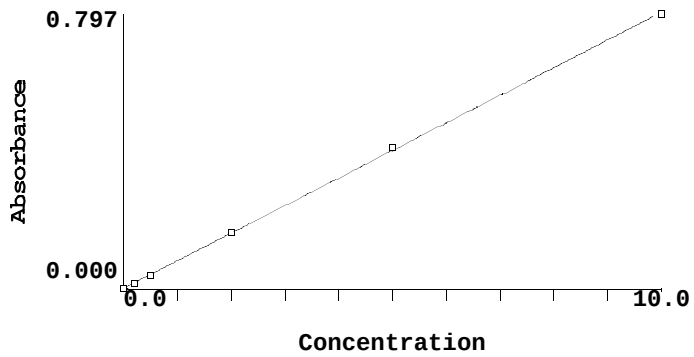
==========

Sequence No.: 6 **Autosampler Location: 6**
Sample ID: ICAL, ICAL5,S35906,10 **Date Collected: 2/6/2018 11:21:59 AM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: ICAL, ICAL5,S35906,10 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1		[10.0]	0.7965	0.7997	0.1637	11:22:52 AM	Yes

Standard number 5 applied. [10.0]
Correlation Coef.: 0.999885 Slope: 0.07996 Intercept: 0.00146



Calibration data for Hg 253.7 **Equation: Linear, Calculated Intercept**

ID	Mean Signal (Abs)	Entered Conc. ug/L	Calculated Conc. ug/L	Standard Deviation	%RSD
ICALBLK	0.0000	0	-0.018	----	----
ICAL, ICAL1,S35906,500	0.0158	0.2	0.179	----	----
ICAL, ICAL2,S35906,200	0.0382	0.5	0.460	----	----
ICAL, ICAL3,S35906,50	0.1637	2.0	2.029	----	----
ICAL, ICAL4,S35906,20	0.4098	5.0	5.107	----	----
ICAL, ICAL5,S35906,10	0.7965	10.0	9.943	----	----

Correlation Coef.: 0.999885 Slope: 0.07996 Intercept: 0.00146

==========

Method Loaded
Method Name: MET45 **Method Last Saved: 2/6/2018 11:10:04 AM**
Method Description: MET 45

==========

Sequence No.: 7 **Autosampler Location: 8**
Sample ID: ICV,S35908 **Date Collected: 2/6/2018 11:23:10 AM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: ICV,S35908 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	4.982	4.982	0.3998	0.4030	0.0837	11:24:02 AM	Yes

QC value within limits for Hg 253.7 Recovery = 99.64%
All analyte(s) passed QC.

ENTHALPY INSTRUMENT BLANK FOR 296840 METALS Soil
EPA 7471B

Inst : MET45 IDF : 1.0
Seqnum : 388053956008.1 File : met45 Time : 06-FEB-2018 11:24
Cal : 388053956001 Caldate : 06-FEB-2018

Analyte	Quant	IQL	LOD	Units	Flags
Mercury	ND	0.2000	0.1000	ug/L	

==========

Method Loaded
Method Name: MET45 **Method Last Saved: 2/6/2018 11:10:04 AM**
Method Description: MET 45

==========

Sequence No.: 8 **Autosampler Location: 9**
Sample ID: ICB **Date Collected: 2/6/2018 11:24:21 AM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: ICB **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.035	0.035	0.0043	0.0075	0.0017	11:25:14 AM	Yes

QC value within limits for Hg 253.7 Recovery = Not calculated
All analyte(s) passed QC.

ENTHALPY CONTINUING CALIBRATION FOR 296840 METALS Soil
EPA 7471B

Inst : MET45 IDF : 1.0
Seqnum : 388053956019.1 File : met45 Time : 06-FEB-2018 11:36
Cal : 388053956001 Caldate : 06-FEB-2018
Standards: S35909

Analyte	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Mercury	0.0798	0.0840	5.000	5.237	ug/L	5	10	

==========

Method Loaded
Method Name: MET45 **Method Last Saved: 2/6/2018 11:10:04 AM**
Method Description: MET 45

==========

Sequence No.: 19 **Autosampler Location: 7**
Sample ID: CCV,S35909 **Date Collected: 2/6/2018 11:36:56 AM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: CCV,S35909 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	5.237	5.237	0.4202	0.4234	0.0887	11:37:48 AM	Yes

QC value within limits for Hg 253.7 Recovery = 104.73%
All analyte(s) passed QC.

ENTHALPY INSTRUMENT BLANK FOR 296840 METALS Soil
EPA 7471B

Inst : MET45 IDF : 1.0
Seqnum : 388053956020.1 File : met45 Time : 06-FEB-2018 11:38
Cal : 388053956001 Caldate : 06-FEB-2018

Analyte	Quant	IQL	LOD	Units	Flags
Mercury	ND	0.2000	0.1000	ug/L	

==========

Method Loaded
Method Name: MET45 **Method Last Saved: 2/6/2018 11:10:04 AM**
Method Description: MET 45

==========

Sequence No.: 20 **Autosampler Location: 10**
Sample ID: CCB **Date Collected: 2/6/2018 11:38:07 AM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: CCB **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.038	0.038	0.0045	0.0077	0.0019	11:39:00 AM	Yes

QC value within limits for Hg 253.7 Recovery = Not calculated
All analyte(s) passed QC.

ENTHALPY CONTINUING CALIBRATION FOR 296840 METALS Soil
EPA 7471B

Inst : MET45 IDF : 1.0
Seqnum : 388053956031.1 File : met45 Time : 06-FEB-2018 11:51
Cal : 388053956001 Caldate : 06-FEB-2018
Standards: S35909

Analyte	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Mercury	0.0798	0.0846	5.000	5.271	ug/L	5	10	

==========

Method Loaded
Method Name: MET45 **Method Last Saved: 2/6/2018 11:10:04 AM**
Method Description: MET 45

==========

Sequence No.: 31 **Autosampler Location: 7**
Sample ID: CCV,S35909 **Date Collected: 2/6/2018 11:51:03 AM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: CCV,S35909 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	5.270	5.270	0.4229	0.4261	0.0898	11:51:56 AM	Yes

QC value within limits for Hg 253.7 Recovery = 105.40%
All analyte(s) passed QC.

ENTHALPY INSTRUMENT BLANK FOR 296840 METALS Soil
EPA 7471B

Inst : MET45 IDF : 1.0
Seqnum : 388053956032.1 File : met45 Time : 06-FEB-2018 11:52
Cal : 388053956001 Caldate : 06-FEB-2018

Analyte	Quant	IQL	LOD	Units	Flags
Mercury	ND	0.2000	0.1000	ug/L	

==========

Method Loaded
Method Name: MET45 **Method Last Saved: 2/6/2018 11:10:04 AM**
Method Description: MET 45

==========

Sequence No.: 32 **Autosampler Location: 10**
Sample ID: CCB **Date Collected: 2/6/2018 11:52:14 AM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: CCB **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.031	0.031	0.0040	0.0072	0.0019	11:53:07 AM	Yes

QC value within limits for Hg 253.7 Recovery = Not calculated
All analyte(s) passed QC.

ENTHALPY CONTINUING CALIBRATION FOR 296840 METALS Soil
EPA 7471B

Inst : MET45 IDF : 1.0
Seqnum : 388053956044.1 File : met45 Time : 06-FEB-2018 12:08
Cal : 388053956001 Caldate : 06-FEB-2018
Standards: S35909

Analyte	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Mercury	0.0798	0.0724	5.000	4.508	ug/L	-10	10	

==========

Method Loaded
Method Name: MET45 **Method Last Saved: 1/15/2018 2:10:19 PM**
Method Description: MET 45

==========

Sequence No.: 11 **Autosampler Location: 7**
Sample ID: CCV,S35909 **Date Collected: 2/6/2018 12:08:27 PM**
Analyst: **Data Type: Reprocessed on 2/6/2018 12:22:22 PM**
Logged In Analyst (Original) : mercury
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: CCV,S35909 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	4.508	4.508	0.3619	0.3651	0.0839	12:09:19 PM	No

QC value within limits for Hg 253.7 Recovery = 90.16%
All analyte(s) passed QC.

ENTHALPY INSTRUMENT BLANK FOR 296840 METALS Soil
EPA 7471B

Inst : MET45 IDF : 1.0
Seqnum : 388053956045.1 File : met45 Time : 06-FEB-2018 12:09
Cal : 388053956001 Caldate : 06-FEB-2018

Analyte	Quant	IQL	LOD	Units	Flags
Mercury	ND	0.2000	0.1000	ug/L	

==========

Method Loaded
Method Name: MET45 **Method Last Saved: 1/15/2018 2:10:19 PM**
Method Description: MET 45

==========

Sequence No.: 12 **Autosampler Location: 10**
Sample ID: CCB **Date Collected: 2/6/2018 12:09:38 PM**
Analyst: **Data Type: Reprocessed on 2/6/2018 12:22:22 PM**
Logged In Analyst (Original) : mercury
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: CCB **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.028	0.028	0.0037	0.0069	0.0019	12:10:31 PM	No

QC value within limits for Hg 253.7 Recovery = Not calculated
All analyte(s) passed QC.

ENTHALPY CONTINUING CALIBRATION FOR 296840 METALS Soil
EPA 7471B

Inst : MET45 IDF : 1.0
Seqnum : 388053956051.1 File : met45 Time : 06-FEB-2018 12:16
Cal : 388053956001 Caldate : 06-FEB-2018
Standards: S35909

Analyte	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Mercury	0.0798	0.0724	5.000	4.508	ug/L	-10	10	

==========

Method Loaded
Method Name: MET45 **Method Last Saved: 1/15/2018 2:10:19 PM**
Method Description: MET 45

==========

Sequence No.: 18 **Autosampler Location: 7**
Sample ID: CCV,S35909 **Date Collected: 2/6/2018 12:16:37 PM**
Analyst: **Data Type: Reprocessed on 2/6/2018 12:22:23 PM**
Logged In Analyst (Original) : mercury
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: CCV,S35909 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	4.507	4.507	0.3619	0.3651	0.0840	12:17:29 PM	No

QC value within limits for Hg 253.7 Recovery = 90.15%
All analyte(s) passed QC.

ENTHALPY INSTRUMENT BLANK FOR 296840 METALS Soil
EPA 7471B

Inst : MET45 IDF : 1.0
Seqnum : 388053956052.1 File : met45 Time : 06-FEB-2018 12:17
Cal : 388053956001 Caldate : 06-FEB-2018

Analyte	Quant	IQL	LOD	Units	Flags
Mercury	ND	0.2000	0.1000	ug/L	

==========

Method Loaded
Method Name: MET45 **Method Last Saved: 1/15/2018 2:10:19 PM**
Method Description: MET 45

==========

Sequence No.: 19 **Autosampler Location: 10**
Sample ID: CCB **Date Collected: 2/6/2018 12:17:47 PM**
Analyst: **Data Type: Reprocessed on 2/6/2018 12:22:23 PM**
Logged In Analyst (Original) : mercury
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: CCB **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.036	0.036	0.0044	0.0076	0.0019	12:18:41 PM	No

QC value within limits for Hg 253.7 Recovery = Not calculated
All analyte(s) passed QC.

ENTHALPY CONTINUING CALIBRATION FOR 296840 METALS Soil
EPA 7471B

Inst : MET45 IDF : 1.0
Seqnum : 388053956055.1 File : met45 Time : 06-FEB-2018 12:46
Cal : 388053956001 Caldate : 06-FEB-2018
Standards: S35909

Analyte	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Mercury	0.0798	0.0742	5.000	4.620	ug/L	-8	10	

==========

Method Loaded
Method Name: MET45 **Method Last Saved: 1/15/2018 2:10:19 PM**
Method Description: MET 45

==========

Sequence No.: 3 **Autosampler Location: 7**
Sample ID: CCV,S35909 **Date Collected: 2/6/2018 12:46:54 PM**
Analyst: **Data Type: Reprocessed on 2/6/2018 12:51:13 PM**
Logged In Analyst (Original) : mercury
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: CCV,S35909 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	4.620	4.620	0.3709	0.3741	0.0808	12:47:47 PM	No

QC value within limits for Hg 253.7 Recovery = 92.41%
All analyte(s) passed QC.

ENTHALPY INSTRUMENT BLANK FOR 296840 METALS Soil
EPA 7471B

Inst : MET45 IDF : 1.0
Seqnum : 388053956056.1 File : met45 Time : 06-FEB-2018 12:48
Cal : 388053956001 Caldate : 06-FEB-2018

Analyte	Quant	IQL	LOD	Units	Flags
Mercury	ND	0.2000	0.1000	ug/L	

==========

Method Loaded
Method Name: MET45 **Method Last Saved: 1/15/2018 2:10:19 PM**
Method Description: MET 45

==========

Sequence No.: 4 **Autosampler Location: 10**
Sample ID: CCB **Date Collected: 2/6/2018 12:48:05 PM**
Analyst: **Data Type: Reprocessed on 2/6/2018 12:51:14 PM**
Logged In Analyst (Original) : mercury
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: CCB **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.038	0.038	0.0045	0.0077	0.0019	12:48:59 PM	No

QC value within limits for Hg 253.7 Recovery = Not calculated
All analyte(s) passed QC.

Enthalpy Analytical

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 296840
ANALYTICAL REPORT
Wet Chemistry

Insight EEC, Inc. 3013 E Miraloma Ave Anaheim, CA 92806	Project : 4-14214 Location : HPNS-Parcel F Level : IV

Sample ID	Lab ID
HPP-FSS-007	296840-001
HPP-FSS-008	296840-006
HPP-FSS-009	296840-013
HPP-FSS-010	296840-018

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAP and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: _____ Date: 02/08/2018

Mike Dahlquist
Project Manager
mike.dahlquist@enthalpy.com
(510) 204-2225 Ext 13101

CA ELAP# 2896, NELAP# 4044-001

ENTHALPY ANALYTICAL

CASE NARRATIVE
WET CHEMISTRY (ASTM D2216-98/CLP)

Laboratory number:	**296840**
Client:	**Insight EEC, Inc.**
Project:	**4-14214**
Location:	**HPNS-Parcel F**
Request Date:	**02/01/18**
Samples Received:	**02/01/18**

This data package contains sample and QC results for four four-point soil composites, requested for the above referenced project on 02/01/18. See attached cooler receipt form for any sample receipt problems or discrepancies.

Moisture (ASTM D2216-98/CLP):
No analytical problems were encountered.

Chain of Custody

Enthalpy Analytical LLC
2323 Fifth Street
Berkeley, CA 94710
(510) 486-0900 Phone
(510) 486-0532 Fax

CHAIN OF CUSTODY

Chain of Custody # : 4-14214-02

C&T LOGIN # 296840

Project No: 4-14214 Hunters Point Naval Shipyard
Project Name: Parcel F Sediment Sampling
EDD Format: _____ Rpt Level: ☐ II ☐ III ☐ IV
Turnaround Time: ☐ RUSH _____ ☐ Standard

Sampler:
Report To: Nick Weinberger & Mitra Fattahipour
Company : Insight
Telephone: # (714) 678-6730
Email: nweinberger@ieeci.com; mfattahipour@ieeci.com

Lab No.	Sample ID.	Sampling Date	Sampling Time	Matrix Water	Matrix Soil			# of Containers	Chemical Preservative HCl	H_2SO_4	HNO_3	NaOH	Methanol	NaHSO4	None	Analytical Request PCBs (EPA 8082)	Metals (Cu/Pb/Hg, EPA 6020/7471A)						Notes
	HPP-FSS-007				X										X	X	X						Composite at Lab, MS/MSD
	HPP-FSS-007A	1/31/18	0840		X			1							X								Sub-sample
	HPP-FSS-007B	1/31/18	0900		X			1							X								Sub-sample
	HPP-FSS-007C	1/31/18	0912		X			1							X								Sub-sample
	HPP-FSS-007D	1/31/18	0920		X			1							X								Sub-sample
	HPP-FSS-008				X										X	X	X						Composite at Lab
	HPP-FSS-008A	1/31/18	0935		X			1							X								Sub-sample
	HPP-FSS-008B	1/31/18	0950		X			1							X								Sub-sample
	HPP-FSS-008C	1/31/18	1100		X			1							X								Sub-sample
	HPP-FSS-008D	1/31/18	1021		X			1							X								Sub-sample
	HPP-FSS-EB01	1/31/18	0815	X				4							X	X	X						*Metals not preserved
	HPP-FSS-FB01	1/31/18	1500	X				3							X	X	X						*Metals not preserved

Notes:
Composite A, B, C, and D samples for testing as a composite sample. Retain sub-samples on hold for possible testing pending composite sample results. *Aqueous samples for metals analysis not preserved. To be preserved by lab.

SAMPLE RECEIPT
☐ Intact ☐ Cold
☐ On Ice ☐ Ambient

RELINQUISHED BY:		RECEIVED BY:	
2-1-18/1415 JMYERS	DATE/TIME	2-1 1415	DATE/TIME
2-1 1602	DATE/TIME	2/1/18 1602	DATE/TIME
	DATE/TIME		DATE/TIME

Enthalpy Analytical LLC
2323 Fifth Street
Berkeley, CA 94710
(510) 486-0900 Phone
(510) 486-0532 Fax

CHAIN OF CUSTODY

Chain of Custody # : 4-14214-02

C&T LOGIN # 296840

Project No: 4-14214 Hunters Point Naval Shipyard
Project Name: Parcel F Sediment Sampling
EDD Format: _____ Rpt Level: ☐ II ☐ III ☐ IV
Turnaround Time: ☐ RUSH _____ ☐ Standard

Sampler:
Report To: Nick Weinberger & Mitra Fattahipour
Company : Insight
Telephone: # (714) 678-6730
Email: nweinberger@ieeci.com; mfattahipour@ieeci.com

Lab No.	Sample ID.	Sampling Date	Sampling Time	Matrix Water	Matrix Soil	Matrix	Matrix	# of Containers	Chemical Preservative HCl	H_2SO_4	HNO_3	NaOH	Methanol	NaHSO4	None	Analytical Request PCBs (EPA 8082)	Metals (Cu/Pb/Hg, EPA 6020/7471A)						Notes
	HPP-FSS-009				X										X	X	X						Composite at Lab
	HPP-FSS-009A	1/31/18	1040		X			1							X								Sub-sample
	HPP-FSS-009B	1/31/18	1132		X			1							X								Sub-sample
	HPP-FSS-009C	1/31/18	1228		X			1							X								Sub-sample
	HPP-FSS-009D	1/31/18	1315		X			1							X								Sub-sample
	HPP-FSS-010				X										X	X	X						Composite at Lab
	HPP-FSS-010A	1/31/18	0936		X			1							X								Sub-sample
	HPP-FSS-010B	1/31/18	0951		X			1							X								Sub-sample
	HPP-FSS-010C	1/31/18	1101		X			1							X								Sub-sample
	HPP-FSS-010D	1/31/18	1022		X			1							X								Sub-sample

Notes:
Composite A, B, C, and D samples for testing as a composite sample. Retain sub-samples on hold for possible testing pending composite sample results.

SAMPLE RECEIPT
☐ Intact ☐ Cold
☐ On Ice ☐ Ambient

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	DATE/TIME
JMYERS	2-1-18 / 1415		2-1 1415
	2-1 1805		2/1/18 1805

COOLER RECEIPT CHECKLIST

ENTHALPY Berkeley

Login # 296840 Date Received 02/01/18 Number of coolers 1
Client Insight Project 4-14214 Hunters Point Naval Shipyard

Date Opened 02/01/18 By (print) TKY (sign) TKY
Date Logged in ↓ By (print) EH (sign)
Date Labelled ↓ By (print) TKY (sign) TKY

1. Did cooler come with a shipping slip (airbill, etc) ____ YES (NO)
   Shipping info ____

2A. Were custody seals present? .... ☐ YES (circle) on cooler on samples ☒ NO
   How many ____ Name ____ Date ____
2B. Were custody seals intact upon arrival? ____ YES NO (N/A)
3. Were custody papers dry and intact when received? ____ (YES) NO
4. Were custody papers filled out properly (ink, signed, etc)? ____ (YES) NO
5. Is the project identifiable from custody papers? (If so fill out top of form) ____ (YES) NO
6. Indicate the packing in cooler: (if other, describe) ____

☒ Bubble Wrap ☐ Foam blocks ☒ Bags ☐ None
☐ Cloth material ☐ Cardboard ☐ Styrofoam ☐ Paper towels

7. Temperature documentation: * Notify PM if temperature exceeds 6°C

Type of ice used: ☒ Wet ☐ Blue/Gel ☐ None Temp(°C) 1.7

☐ Temperature blank(s) included? ☐ Thermometer# ____ ☐ IR Gun# A

☐ Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? ____ YES (NO)
   If YES, what time were they transferred to freezer? ____
9. Did all bottles arrive unbroken/unopened? ____ (YES) NO
10. Are there any missing / extra samples? ____ YES (NO)
11. Are samples in the appropriate containers for indicated tests? ____ (YES) NO
12. Are sample labels present, in good condition and complete? ____ (YES) NO
13. Do the sample labels agree with custody papers? ____ (YES) NO
14. Was sufficient amount of sample sent for tests requested? ____ (YES) NO
15. Are the samples appropriately preserved? ____ YES (NO) N/A
16. Did you check preservatives for all bottles for each sample? ____ (YES) NO N/A
17. Did you document your preservative check? (pH strip lot# 80BD4497) (YES) NO N/A
18. Did you change the hold time in LIMS for unpreserved VOAs? ____ YES NO (N/A)
19. Did you change the hold time in LIMS for preserved terracores? ____ YES NO (N/A)
20. Are bubbles > 6mm absent in VOA samples? ____ YES NO (N/A)
21. Was the client contacted concerning this sample delivery? ____ YES (NO)
   If YES, Who was called? ____ By ____ Date: ____

COMMENTS
(15) added HNO3 (20170130S3) to make pH<2 @ 1834 on 2/1/18 to samples 11 & 12

Rev 14, 8/01/17

Results & QC Summary

Percent Moisture Summary Report

Batch: 256230
Date: 02/05/18
Method: CLP SOW 390
Analyst: MFV

Sample	Tare (g)	Wet (g)	Dry (g)	Percent Solids	Percent Moisture
296834-002	10.97	17.25	16.92	95	5
296834-004	11.05	17.31	17.01	95	5
296834-006	11.03	19.50	19.05	95	5
296840-001	11.31	16.37	13.94	52	48
296840-006	10.89	16.43	13.78	52	48
296840-013	11.02	17.98	15.49	64	36
296840-018	10.88	16.42	13.97	56	44
296844-001	11.30	17.57	15.69	70	30
296848-013	11.62	17.02	16.56	91	9
296848-014	11.37	17.03	16.14	84	16
296848-015	11.37	17.14	16.42	88	12
296848-016	11.13	17.33	17.01	95	5
296848-017	10.89	17.18	16.43	88	12
296848-018	11.12	17.37	17.01	94	6
296848-019	11.25	17.02	16.42	90	10
296848-020	11.05	17.17	16.93	96	4
296848-021	11.35	17.25	16.99	96	4
296848-022	10.84	16.89	16.19	88	12
296848-023	11.36	17.16	16.55	89	11
296848-024	11.33	17.37	16.72	89	11
QC919032	11.37	16.55	16.25	94	6
of 296834-002			RPD:	0.6%	9.7%
QC919033	11.25	16.68	14.07	52	48
of 296840-001			RPD:	0.1%	0.1%

Moisture LOG | Enthalpy Analytical LLC - Berkeley | rev.3.2, July 2017

LIMS Batch #: 256230
Date: 2-5-18

Page: **94**
Benchbook#: **BK 4173**

Balance ID: B-13
calibration has been checked? ☑ Yes ☐ No

Sample # / Letter	Dish #	Dish Weight (g)	Sample + Dish Wt (g)	Final Weight (g)	*Comments
BLK	83	11.22	Ø	11.22	
296834-002 A	7	10.97	17.25	16.92	
SDUP -002	16	11.37	16.55	16.25	QC919032
-004	10	11.05	17.31	17.01	
-006	49	11.03	19.50	19.05	
296840-001	54	11.31	16.37	13.94	296840-2→5 (20 sec.)
-006	21	10.89	16.43	13.78	-7→10
-013	73	11.02	17.98	15.49	-14→17
-018	33	10.88	16.42	13.97	-19→22
296844-001 G	36	11.30	17.57	15.69	
296848-013 B	15	11.62	17.02	16.56	296848-001
-014	45	11.37	17.03	16.14	-002
-015	86	11.37	17.14	16.42	-003
-016	13	11.13	17.33	17.01	-004
-017	72	10.89	17.18	16.43	-005
-018	78	11.12	17.37	17.01	-006
-019	4	11.25	17.02	16.42	-007
-020	62	11.05	17.17	16.93	-008
-021	92	11.35	17.25	16.99	-009
-022	90	10.84	16.89	16.19	-010
-023	74	11.36	17.16	16.55	-011
-024	5	11.33	17.37	16.72	-012
296840-001 A	51	11.25	16.68	14.07	296840-2→5 20 sec. (SDUP QC919033)

	In	Out	In-2	Out-2
Date:	2-5-18	2-6-18		
Time:	2324	2018		
Min/Max Range (°C)	104	104		
Thermometer ID:	P49096	P49096		
Weighed by:	NAV	NAV		

NAV 2-6-18

NAV 2-5-18
Analyst Initials / Date

Reviewed Online / See LIMS

PROJECT (B-13) OHAUS SP602 BALANCE CAL.

Notebook No. BK 3384

Continued From Page

DATE	0.2g	SET#	500g	SET#	INITIALS
2-5-18	0.20	40417	499.93	28659	MW
2-6-18	0.20	40417	499.94	28659	MW

Continued on Page

Read and Understood By

Signed | Date | Signed | Date

ea

ENTHALPY

ANALYTICAL

Enthalpy Analytical

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 297025
ANALYTICAL REPORT
PCBs

Insight EEC, Inc. 3013 E Miraloma Ave Anaheim, CA 92806	Project : 4-14214 Location : HPNS-Parcel F Level : IV

Sample ID	Lab ID
HPP-FSS-009A	297025-001
HPP-FSS-009B	297025-002
HPP-FSS-009C	297025-003
HPP-FSS-009D	297025-004

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAP and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: _____ Date: 02/20/2018

Mike Dahlquist
Project Manager
mike.dahlquist@enthalpy.com
(510) 204-2225 Ext 13101

CA ELAP# 2896, NELAP# 4044-001

ENTHALPY ANALYTICAL

CASE NARRATIVE
PCBS (EPA 8082A)

Laboratory number:	**297025**
Client:	**Insight EEC, Inc.**
Project:	**4-14214**
Location:	**HPNS-Parcel F**
Request Date:	**02/09/18**
Samples Received:	**02/01/18**

This data package contains sample and QC results for four soil samples, requested for the above referenced project on 02/09/18. See attached cooler receipt form for any sample receipt problems or discrepancies.

PCBs (EPA 8082A):

All samples underwent sulfuric acid cleanup using EPA Method 3665A.

All samples underwent sulfur cleanup using the copper option in EPA Method 3660B.

HPP-FSS-009A (lab # 297025-001), HPP-FSS-009B (lab # 297025-002), and HPP-FSS-009C (lab # 297025-003) were diluted due to client history of high non-target or organic acid interference.

No other analytical problems were encountered.

Chain of Custody

297025

MONTROSE

Mike Dahlquist <mdahlquist@montrose-env.com>

RE: 4-14214 - Enthalpy (Berkeley) Data (296840)

Nick Weinberger <NWeinberger@ieeci.com> Fri, Feb 9, 2018 at 1:17 PM
To: "mike.dahlquist@enthalpy.com" <mike.dahlquist@enthalpy.com>
Cc: Mitra Fattahipour <MFattahipour@ieeci.com>, Aaron Heidt <AHeidt@ieeci.com>, Scott Donovan <SDonovan@ieeci.com>, Dave Marks <DMarks@ieeci.com>, Mehdi Siavoshani <MSiavoshani@ieeci.com>

Mike,

Based on the results, we need to analyze all the sub-samples for sample HPP-FSS-009 (-009A, -009B, -009C, and -009D) for PCBs, copper, lead, and mercury.

regards,

-Nick

T:714.678.6700x311 C:714.272.1634

From: Mike Dahlquist [mailto:mike.dahlquist@enthalpy.com]
Sent: Thursday, February 08, 2018 4:43 PM
To: Nick Weinberger <NWeinberger@ieeci.com>
Subject: 4-14214 - Enthalpy (Berkeley) Data (296840)

Hi Nick,

Please find attached the following file:
• PDF Level IV Deliverable

You may also access this data at https://labline-berkeley.enthalpy.com/

Results & QC Summary

ENTHALPY ANALYTICAL

Polychlorinated Biphenyls (PCBs)

Lab #:	297025	Location:	HPNS-Parcel F
Client:	Insight EEC, Inc.	Prep:	EPA 3550C
Project#:	4-14214	Analysis:	EPA 8082A
Matrix:	Soil	Sampled:	01/31/18
Units:	ug/Kg	Received:	02/01/18
Basis:	dry	Prepared:	02/12/18
Batch#:	256407		

Field ID:	HPP-FSS-009A	Moisture:	56%
Type:	SAMPLE	Diln Fac:	5.000
Lab ID:	297025-001	Analyzed:	02/12/18

Analyte	Result	LOQ	DL
Aroclor-1016	27 U	38	13
Aroclor-1221	72 U	75	36
Aroclor-1232	36 U	38	18
Aroclor-1242	36 U	38	16
Aroclor-1248	36 U	38	17
Aroclor-1254	27 U	38	14
Aroclor-1260	120	38	8.8

Surrogate	%REC	Limits
TCMX	68	44-130
Decachlorobiphenyl	89	26-153

Field ID:	HPP-FSS-009B	Moisture:	28%
Type:	SAMPLE	Diln Fac:	5.000
Lab ID:	297025-002	Analyzed:	02/12/18

Analyte	Result	LOQ	DL
Aroclor-1016	17 U	23	8.3
Aroclor-1221	45 U	47	22
Aroclor-1232	22 U	23	11
Aroclor-1242	22 U	23	10
Aroclor-1248	22 U	23	11
Aroclor-1254	17 U	23	8.6
Aroclor-1260	1,400	23	5.4

Surrogate	%REC	Limits
TCMX	82	44-130
Decachlorobiphenyl	121	26-153

U= Not Detected at or above DL
DL= Detection Limit
DO= Diluted Out
LOQ= Limit of Quantitation

ENTHALPY ANALYTICAL

Polychlorinated Biphenyls (PCBs)

Lab #:	297025	Location:	HPNS-Parcel F
Client:	Insight EEC, Inc.	Prep:	EPA 3550C
Project#:	4-14214	Analysis:	EPA 8082A
Matrix:	Soil	Sampled:	01/31/18
Units:	ug/Kg	Received:	02/01/18
Basis:	dry	Prepared:	02/12/18
Batch#:	256407		

Field ID:	HPP-FSS-009C	Moisture:	43%
Type:	SAMPLE	Diln Fac:	5.000
Lab ID:	297025-003	Analyzed:	02/12/18

Analyte	Result	LOQ	DL
Aroclor-1016	21 U	29	10
Aroclor-1221	56 U	59	28
Aroclor-1232	28 U	29	14
Aroclor-1242	28 U	29	13
Aroclor-1248	28 U	29	13
Aroclor-1254	21 U	29	11
Aroclor-1260	58	29	6.8

Surrogate	%REC	Limits
TCMX	76	44-130
Decachlorobiphenyl	120	26-153

Field ID:	HPP-FSS-009D	Moisture:	36%
Type:	SAMPLE	Diln Fac:	50.00
Lab ID:	297025-004	Analyzed:	02/13/18

Analyte	Result	LOQ	DL
Aroclor-1016	190 U	260	92
Aroclor-1221	500 U	520	250
Aroclor-1232	250 U	260	120
Aroclor-1242	250 U	260	110
Aroclor-1248	250 U	260	120
Aroclor-1254	190 U	260	95
Aroclor-1260	7,600	260	60

Surrogate	%REC	Limits
TCMX	DO	44-130
Decachlorobiphenyl	DO	26-153

U= Not Detected at or above DL
DL= Detection Limit
DO= Diluted Out
LOQ= Limit of Quantitation

ENTHALPY ANALYTICAL

Polychlorinated Biphenyls (PCBs)

Lab #:	297025	Location:	HPNS-Parcel F
Client:	Insight EEC, Inc.	Prep:	EPA 3550C
Project#:	4-14214	Analysis:	EPA 8082A
Matrix:	Soil	Sampled:	01/31/18
Units:	ug/Kg	Received:	02/01/18
Basis:	dry	Prepared:	02/12/18
Batch#:	256407		

Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC919736	Analyzed:	02/12/18

Analyte	Result	LOQ	DL
Aroclor-1016	2.4 U	4.8	1.2
Aroclor-1221	6.4 U	9.7	3.2
Aroclor-1232	3.2 U	4.8	1.6
Aroclor-1242	3.2 U	4.8	1.4
Aroclor-1248	3.2 U	4.8	1.5
Aroclor-1254	2.4 U	4.8	1.2
Aroclor-1260	2.4 U	4.8	0.78

Surrogate	%REC	Limits
TCMX	87	44-130
Decachlorobiphenyl	102	26-153

U= Not Detected at or above DL
DL= Detection Limit
DO= Diluted Out
LOQ= Limit of Quantitation

ENTHALPY ANALYTICAL

Batch QC Report

Polychlorinated Biphenyls (PCBs)

Lab #:	297025	Location:	HPNS-Parcel F
Client:	Insight EEC, Inc.	Prep:	EPA 3550C
Project#:	4-14214	Analysis:	EPA 8082A
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC919737	Batch#:	256407
Matrix:	Soil	Prepared:	02/12/18
Units:	ug/Kg	Analyzed:	02/12/18

Analyte	Spiked	Result	%REC	Limits
Aroclor-1016	83.28	96.84	116	47-134
Aroclor-1260	83.28	110.5	133	53-140

Surrogate	%REC	Limits
TCMX	99	44-130
Decachlorobiphenyl	117	26-153

ENTHALPY ANALYTICAL

Batch QC Report

Polychlorinated Biphenyls (PCBs)

Lab #:	297025	Location:	HPNS-Parcel F
Client:	Insight EEC, Inc.	Prep:	EPA 3550C
Project#:	4-14214	Analysis:	EPA 8082A
Field ID:	ZZZZZZZZZZ	Batch#:	256407
MSS Lab ID:	297059-001	Sampled:	02/09/18
Matrix:	Soil	Received:	02/12/18
Units:	ug/Kg	Prepared:	02/12/18
Basis:	dry	Analyzed:	02/12/18
Diln Fac:	1.000		

Type: MS Moisture: 3%
Lab ID: QC919738

Analyte	MSS Result	Spiked	Result	%REC	Limits
Aroclor-1016	<1.213	86.92	112.5	129	47-134
Aroclor-1260	<0.7933	86.92	122.0	140	53-140

Surrogate	%REC	Limits
TCMX	98	44-130
Decachlorobiphenyl	120	26-153

Type: MSD Moisture: 3%
Lab ID: QC919739

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Aroclor-1016	86.23	106.9	124	47-134	4	30
Aroclor-1260	86.23	118.1	137	53-140	2	30

Surrogate	%REC	Limits
TCMX	98	44-130
Decachlorobiphenyl	95	26-153

RPD= Relative Percent Difference

Confirmation Report for 297025 PCBS Soil
Enthalpy Analytical - Berkeley

Units: ug/Kg

Lab ID	Client ID	Analyte	Result	Confirmation	RPD	%D
297025-001	HPP-FSS-009A	Aroclor-1260	53.77 *	46.85	14	-13
297025-002	HPP-FSS-009B	Aroclor-1260	1021 *	932.8	9	-9
297025-003	HPP-FSS-009C	Aroclor-1260	33.16 *	15.24	74	-54
297025-004	HPP-FSS-009D	Aroclor-1260	4838 *	4723	2	-2

* = Missing moisture data

ENTHALPY INITIAL CALIBRATION FOR 297025 PCBS Soil: EPA 8082A

Inst : GC06
Calnum : 208052389001
Units : pg/uL

Name : ar-1660-036ical
Date : 05-FEB-2018 17:04

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	036_010	208052389010	PCB100_20	05-FEB-2018 17:04	S35531 (10X)
L2	036_011	208052389011	PCB25_5	05-FEB-2018 17:32	S35530
L3	036_012	208052389012	PCB100_20	05-FEB-2018 18:00	S35531
L4	036_013	208052389013	PCB250_50	05-FEB-2018 18:28	S35532
L5	036_014	208052389014	PCB500_100	05-FEB-2018 18:56	S35533
L6	036_015	208052389015	PCB750_150	05-FEB-2018 19:24	S35534
L7	036_016	208052389016	PCB1000_200	05-FEB-2018 19:52	S35535

Analyte	Ch	L1	L2	L3	L4	L5	L6	L7	Type	X	a0	a1	a2	Avg	r^2 %RSD	MnR^2	MxRSD	Flg
Aroclor-1016 Peak # 1	A	282.90	291.08	289.43	265.67	243.03	229.75	251.58	AVRG	R		0.00378		264.78	9	.99	20	
Aroclor-1016 Peak # 2	A	210.20	251.00	254.55	269.98	263.84	267.94	318.73	AVRG	R		0.00381		262.32	12	.99	20	
Aroclor-1016 Peak # 3	A	113.80	159.36	153.85	182.74	183.92	150.30	167.32	AVRG	R		0.00630		158.76	15	.99	20	
Aroclor-1016 Peak # 4	A	84.400	92.960	90.850	87.316	83.868	81.732	94.195	AVRG	R		0.01138		87.903	6	.99	20	
Aroclor-1016 Peak # 5	A	101.60	113.44	120.12	122.02	119.84	116.58	134.68	AVRG	R		0.00845		118.33	8	.99	20	
Aroclor-1260 Peak # 1	A	399.30	429.04	443.94	404.82	393.37	372.70	423.47	AVRG	R		0.00244		409.52	6	.99	20	
Aroclor-1260 Peak # 2	A	356.50	392.56	435.74	380.26	404.48	395.41	434.26	AVRG	R		0.00250		399.89	7	.99	20	
Aroclor-1260 Peak # 3	A	214.90	259.24	266.34	229.84	240.17	220.97	250.42	AVRG	R		0.00416		240.27	8	.99	20	
Aroclor-1260 Peak # 4	A	491.70	534.48	542.12	510.65	487.88	480.28	537.55	AVRG	R		0.00195		512.10	5	.99	20	
Aroclor-1260 Peak # 5	A	238.90	267.20	273.19	266.00	263.18	261.05	295.54	AVRG	R		0.00375		266.44	6	.99	20	
TCMX	A	6751.5	6601.6	6370.6	5876.6	5538.6	5283.4	6083.7	AVRG	R		1.65E-4		6072.3	9	.99	20	
Decachlorobiphenyl	A	10557	10577	9093.1	7760.6	6861.5	6362.9	6838.2	LINR	R	-4.5323	1.53E-4		8292.8	0.996	.99	20	
Aroclor-1016 Peak # 1	B	285.30	311.44	314.11	302.82	290.80	280.69	318.60	AVRG	R		0.00333		300.54	5	.99	20	
Aroclor-1016 Peak # 2	B	66.500	116.36	275.59	314.24	355.51	377.74	429.59	QUAD	A	-1949.5	274.789	0.153745	276.50	0.999	.99	20	
Aroclor-1016 Peak # 3	B	105.70	170.88	203.32	231.67	228.89	224.18	238.34	LINR	R	10.1612	0.00424		200.43	0.999	.99	20	
Aroclor-1016 Peak # 4	B	115.90	108.12	119.12	116.10	101.30	101.51	110.35	AVRG	R		0.00906		110.34	6	.99	20	
Aroclor-1016 Peak # 5	B	128.30	205.64	187.52	191.65	176.76	180.78	207.09	AVRG	R		0.00548		182.53	15	.99	20	
Aroclor-1260 Peak # 1	B	238.90	336.24	369.81	343.21	336.33	328.14	324.08	AVRG	R		0.00307		325.24	13	.99	20	
Aroclor-1260 Peak # 2	B	212.60	273.44	388.92	351.97	391.43	400.69	414.36	LINR	R	15.0715	0.00242		347.63	0.999	.99	20	
Aroclor-1260 Peak # 3	B	245.00	264.60	287.09	246.66	265.76	258.26	289.20	AVRG	R		0.00377		265.22	7	.99	20	
Aroclor-1260 Peak # 4	B	388.10	447.56	484.31	387.15	480.64	478.11	516.62	AVRG	R		0.00220		454.64	11	.99	20	
Aroclor-1260 Peak # 5	B	227.10	268.56	289.09	287.70	291.76	299.93	353.79	AVRG	R		0.00347		288.27	13	.99	20	
TCMX	B	5615.5	5707.4	6013.8	6212.4	6378.4	6273.2	7339.9	AVRG	R		1.61E-4		6220.1	9	.99	20	
Decachlorobiphenyl	B	9744.5	10065	9051.9	8006.1	7473.2	7071.8	7661.3	AVRG	R		1.18E-4		8439.1	14	.99	20	

Spiked Amounts / Drifts	Ch	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D	L6	%D	L7	%D
Aroclor-1016 Peak # 1	A	10.000	7	25.000	10	100.00	9	250.00	0	500.00	-8	750.00	-13	1000.0	-5
Aroclor-1016 Peak # 2	A	10.000	-20	25.000	-4	100.00	-3	250.00	3	500.00	1	750.00	2	1000.0	**22**
Aroclor-1016 Peak # 3	A	10.000	**-28**	25.000	0	100.00	-3	250.00	15	500.00	16	750.00	-5	1000.0	5
Aroclor-1016 Peak # 4	A	10.000	-4	25.000	6	100.00	3	250.00	-1	500.00	-5	750.00	-7	1000.0	7
Aroclor-1016 Peak # 5	A	10.000	-14	25.000	-4	100.00	2	250.00	3	500.00	1	750.00	-1	1000.0	14
Aroclor-1260 Peak # 1	A	10.000	-2	25.000	5	100.00	8	250.00	-1	500.00	-4	750.00	-9	1000.0	3
Aroclor-1260 Peak # 2	A	10.000	-11	25.000	-2	100.00	9	250.00	-5	500.00	1	750.00	-1	1000.0	9
Aroclor-1260 Peak # 3	A	10.000	-11	25.000	8	100.00	11	250.00	-4	500.00	0	750.00	-8	1000.0	4
Aroclor-1260 Peak # 4	A	10.000	-4	25.000	4	100.00	6	250.00	0	500.00	-5	750.00	-6	1000.0	5
Aroclor-1260 Peak # 5	A	10.000	-10	25.000	0	100.00	3	250.00	0	500.00	-1	750.00	-2	1000.0	11
TCMX	A	2.0000	11	5.0000	9	20.000	5	50.000	-3	100.00	-9	150.00	-13	200.00	0
Decachlorobiphenyl	A	2.0000	**-165**	5.0000	**-29**	20.000	16	50.000	10	100.00	0	150.00	-6	200.00	2
Aroclor-1016 Peak # 1	B	10.000	-5	25.000	4	100.00	5	250.00	1	500.00	-3	750.00	-7	1000.0	6
Aroclor-1016 Peak # 2	B	10.000	-5	25.000	**-30**	100.00	2	250.00	3	500.00	2	750.00	-2	1000.0	1
Aroclor-1016 Peak # 3	B	10.000	**46**	25.000	13	100.00	-4	250.00	2	500.00	-1	750.00	-4	1000.0	2
Aroclor-1016 Peak # 4	B	10.000	5	25.000	-2	100.00	8	250.00	5	500.00	-8	750.00	-8	1000.0	0
Aroclor-1016 Peak # 5	B	10.000	**-30**	25.000	13	100.00	3	250.00	5	500.00	-3	750.00	-1	1000.0	13
Aroclor-1260 Peak # 1	B	10.000	**-27**	25.000	3	100.00	14	250.00	6	500.00	3	750.00	1	1000.0	0
Aroclor-1260 Peak # 2	B	10.000	**102**	25.000	**26**	100.00	9	250.00	-9	500.00	-2	750.00	-1	1000.0	2
Aroclor-1260 Peak # 3	B	10.000	-8	25.000	0	100.00	8	250.00	-7	500.00	0	750.00	-3	1000.0	9
Aroclor-1260 Peak # 4	B	10.000	-15	25.000	-2	100.00	7	250.00	-15	500.00	6	750.00	5	1000.0	14
Aroclor-1260 Peak # 5	B	10.000	**-21**	25.000	-7	100.00	0	250.00	0	500.00	1	750.00	4	1000.0	**23**
TCMX	B	2.0000	-10	5.0000	-8	20.000	-3	50.000	0	100.00	3	150.00	1	200.00	18
Decachlorobiphenyl	B	2.0000	15	5.0000	19	20.000	7	50.000	-5	100.00	-11	150.00	-16	200.00	-9

JC1 02/06/18 : Corrected automatically drawn baseline in all levels.

Analyst: JC1 Date: 02/06/18 Reviewer: EAH Date: 02/06/18

X=A: Instrument response = a0 + amount * a1 + amount^2 * a2 (invert equation before quantitating); X=R: Instrument amount = a0 + response * a1 + response^2 * a2; AVRG=Average response factor; LINR=Linear regression; QUAD=Quadratic regression

ENTHALPY 2ND SOURCE CALIBRATION SUMMARY FOR 297025 PCBS Soil
EPA 8082A

Inst : GC06 Name : ar-1660-036ical
Calnum : 208052389001 Cal Date : 05-FEB-2018

ICV 208052389018 (036_018 05-FEB-2018) stds: S35527

Analyte	Ch	Spiked	Quant	Units	%D	Max	Flags
Aroclor-1016	A	250.0	250.6	pg/uL	0	20	
Aroclor-1260	A	250.0	256.5	pg/uL	3	20	
Aroclor-1016	B	250.0	268.0	pg/uL	7	20	
Aroclor-1260	B	250.0	258.9	pg/uL	4	20	

Analyst: JC1 Date: 02/06/18 Reviewer: EAH Date: 02/06/18

ENTHALPY CONTINUING CALIBRATION FOR 297025 PCBS Soil
EPA 8082A

Inst : GC06 Run Name : PCB500_100 IDF : 1.0
Seqnum : 208062470010.2 File : 043_010 Time : 12-FEB-2018 15:17
Cal : 208052389001 Caldate : 05-FEB-2018
Standards: S35813

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Aroclor-1016	A			500.0	564.7	pg/uL	13	20	
Aroclor-1260	A			500.0	573.5	pg/uL	15	20	
TCMX	A	6072.3	5735.9	100.0	94.46	pg/uL	-6	20	
Decachlorobiphenyl	A	8292.8	6477.5	100.0	94.57	pg/uL	-5	20	
Aroclor-1016	B			500.0	557.1	pg/uL	11	20	
Aroclor-1260	B			500.0	523.0	pg/uL	5	20	
TCMX	B	6220.1	6640.7	100.0	106.8	pg/uL	7	20	
Decachlorobiphenyl	B	8439.1	6344.5	100.0	75.18	pg/uL	**-25**	20	c-

RDG 02/12/18 : Corrected automatically drawn baseline for all channels.
[general version]

Analyst: RDG Date: 02/14/18 Reviewer: EAH Date: 02/15/18

-=low bias c=CCV

ENTHALPY CONTINUING CALIBRATION FOR 297025 PCBS Soil
EPA 8082A

Inst : GC06 Run Name : PCB500_100 IDF : 1.0
Seqnum : 208062470023.1 File : 043_023 Time : 12-FEB-2018 22:42
Cal : 208052389001 Caldate : 05-FEB-2018
Standards: S35813

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Aroclor-1016	A			500.0	512.3	pg/uL	2	20	
Aroclor-1260	A			500.0	531.7	pg/uL	6	20	
TCMX	A	6072.3	5278.2	100.0	86.92	pg/uL	-13	20	
Decachlorobiphenyl	A	8292.8	6420.8	100.0	93.70	pg/uL	-6	20	
Aroclor-1016	B			500.0	508.6	pg/uL	2	20	
Aroclor-1260	B			500.0	512.9	pg/uL	3	20	
TCMX	B	6220.1	5985.7	100.0	96.23	pg/uL	-4	20	
Decachlorobiphenyl	B	8439.1	7168.3	100.0	84.94	pg/uL	-15	20	

JC1 02/13/18 : Corrected automatically drawn baseline. [general version]

Analyst: RDG Date: 02/14/18 Reviewer: EAH Date: 02/15/18

ENTHALPY CONTINUING CALIBRATION FOR 297025 PCBS Soil
EPA 8082A

Inst : GC06 Run Name : PCB500_100 IDF : 1.0
Seqnum : 208063912009.1 File : 044_009 Time : 13-FEB-2018 17:08
Cal : 208052389001 Caldate : 05-FEB-2018
Standards: S35813

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Aroclor-1016	A			500.0	512.1	pg/uL	2	20	
Aroclor-1260	A			500.0	516.7	pg/uL	3	20	
TCMX	A	6072.3	5452.0	100.0	89.79	pg/uL	-10	20	
Decachlorobiphenyl	A	8292.8	6587.1	100.0	96.24	pg/uL	-4	20	
Aroclor-1016	B			500.0	518.7	pg/uL	4	20	
Aroclor-1260	B			500.0	512.8	pg/uL	3	20	
TCMX	B	6220.1	6153.0	100.0	98.92	pg/uL	-1	20	
Decachlorobiphenyl	B	8439.1	7253.1	100.0	85.95	pg/uL	-14	20	

RDG 02/14/18 : Corrected automatically drawn baseline for all channels.
[general version]

Analyst: RDG Date: 02/14/18 Reviewer: EAH Date: 02/15/18

ENTHALPY CONTINUING CALIBRATION FOR 297025 PCBS Soil
EPA 8082A

Inst : GC06 Run Name : PCB500_100 IDF : 1.0
Seqnum : 208063912019.1 File : 044_019 Time : 13-FEB-2018 22:34
Cal : 208052389001 Caldate : 05-FEB-2018
Standards: S35813

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Aroclor-1016	A			500.0	501.1	pg/uL	0	20	
Aroclor-1260	A			500.0	503.5	pg/uL	1	20	
TCMX	A	6072.3	5375.6	100.0	88.53	pg/uL	-11	20	
Decachlorobiphenyl	A	8292.8	6544.7	100.0	95.59	pg/uL	-4	20	
Aroclor-1016	B			500.0	502.3	pg/uL	0	20	
Aroclor-1260	B			500.0	495.8	pg/uL	-1	20	
TCMX	B	6220.1	6091.8	100.0	97.94	pg/uL	-2	20	
Decachlorobiphenyl	B	8439.1	7337.4	100.0	86.95	pg/uL	-13	20	

RDG 02/14/18 : Corrected automatically drawn baseline for all channels.
[general version]

Analyst: RDG Date: 02/14/18 Reviewer: EAH Date: 02/15/18

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 208052389

Instrument : GC06 Begun : 02/05/18 09:09
Method : EPA 8082A SOP Version : pcb_rv11

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	036_001	X	HEX			02/05/18 09:09	1.0		
002	036_002	X	HEX			02/05/18 09:37	1.0		
003	036_003	CCV	PCB500_100			02/05/18 10:05	1.0	1	
004	036_004	CCV	AR2154_250			02/05/18 10:33	1.0	2	
005	036_005	X	PRIMER			02/05/18 14:44	1.0		
006	036_006	X	HEX			02/05/18 15:12	1.0		
007	036_007	X	HEX			02/05/18 15:40	1.0		
008	036_008	X	HEX			02/05/18 16:08	1.0		
009	036_009	IB	CALIB			02/05/18 16:36	1.0		
010	036_010	ICAL	PCB100_20			02/05/18 17:04	1.0	3	
011	036_011	ICAL	PCB25_5			02/05/18 17:32	1.0	4	
012	036_012	ICAL	PCB100_20			02/05/18 18:00	1.0	3	
013	036_013	ICAL	PCB250_50			02/05/18 18:28	1.0	5	
014	036_014	ICAL	PCB500_100			02/05/18 18:56	1.0	6	
015	036_015	ICAL	PCB750_150			02/05/18 19:24	1.0	7	
016	036_016	ICAL	PCB1000_200			02/05/18 19:52	1.0	8	
017	036_017	X	HEX			02/05/18 20:20	1.0		
018	036_018	ICV	ULTRA_1660			02/05/18 20:48	1.0	9	
019	036_019	X	HEX			02/05/18 21:16	1.0		

JC1 02/06/18 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 19.

Standards used: 1=S35813 2=S35044 3=S35531 4=S35530 5=S35532 6=S35533 7=S35534 8=S35535 9=S35527

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 208062470

Instrument : GC06 Begun : 02/12/18 09:10
Method : EPA 8082A SOP Version : pcb_rv11

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	043_001	X	HEX			02/12/18 09:10	1.0		
002	043_002	X	HEX			02/12/18 09:38	1.0		
003	043_003	CCV	PCB500_100			02/12/18 10:06	1.0	1	
004	043_004	CCV	AR2154_250			02/12/18 10:34	1.0	2	
005	043_005	BLANK	QC919430	Water	256328	02/12/18 11:05	1.0		
006	043_006	BS	QC919431	Water	256328	02/12/18 11:33	1.0		
007	043_007	BSD	QC919432	Water	256328	02/12/18 12:01	1.0		
008	043_008	SAMPLE	296982-001	Water	256328	02/12/18 12:29	1.0		
009	043_009	SAMPLE	296989-001	Water	256328	02/12/18 12:57	1.0		
010	043_010	CCV	PCB500_100			02/12/18 15:17	1.0	1	
011	043_011	CCV	AR2154_250			02/12/18 15:45	1.0	2	
012	043_012	BLANK	QC919736	Soil	256407	02/12/18 17:36	1.0		
014	043_014	X	HEX			02/12/18 18:30	1.0		
015	043_015	LCS	QC919737	Soil	256407	02/12/18 18:58	1.0		
016	043_016	MSS	297059-001	Soil	256407	02/12/18 19:26	1.0		
017	043_017	MS	QC919738	Soil	256407	02/12/18 19:54	1.0		
018	043_018	MSD	QC919739	Soil	256407	02/12/18 20:22	1.0		
019	043_019	SAMPLE	297025-001	Soil	256407	02/12/18 20:50	5.0		diluted (client history)
020	043_020	SAMPLE	297025-002	Soil	256407	02/12/18 21:18	5.0		diluted (client history)
021	043_021	SAMPLE	297025-003	Soil	256407	02/12/18 21:46	5.0		diluted (client history)
022	043_022	SAMPLE	297025-004	Soil	256407	02/12/18 22:14	5.0		diluted (client history), 6:PCB1260#1=3500
023	043_023	CCV	PCB500_100			02/12/18 22:42	1.0	1	
024	043_024	CCV	AR2154_250			02/12/18 23:10	1.0	2	

RDG 02/12/18 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 11.

JC1 02/13/18 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 12 through 24.

JC1 02/13/18 : run013 is missing because of miss inject

Standards used: 1=S35813 2=S35044

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 208063912

Instrument : GC06 Begun : 02/13/18 09:12
Method : EPA 8082A SOP Version : pcb_rv11

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	044_001	X	HEX			02/13/18 09:12	1.0		
002	044_002	CCV	PCB500_100			02/13/18 09:40	1.0	1	
003	044_003	CCV	AR2154_250			02/13/18 10:08	1.0	2	
004	044_004	BLANK	QC919699	Soil	256398	02/13/18 14:48	1.0		
005	044_005	LCS	QC919700	Soil	256398	02/13/18 15:16	1.0		
006	044_006	MS	QC919701	Soil	256398	02/13/18 15:44	10.0		
007	044_007	MSD	QC919702	Soil	256398	02/13/18 16:12	10.0		diluted (client history)
008	044_008	BLANK	QC919699	Soil	256398	02/13/18 16:40	1.0		
009	044_009	CCV	PCB500_100			02/13/18 17:08	1.0	1	
010	044_010	BLANK	QC919740	Soil	256408	02/13/18 18:22	1.0		
011	044_011	LCS	QC919741	Soil	256408	02/13/18 18:50	1.0		
012	044_012	MS	QC919742	Soil	256408	02/13/18 19:18	10.0		
013	044_013	MSD	QC919743	Soil	256408	02/13/18 19:46	1.0		
014	044_014	BLANK	QC919852	Soil	256438	02/13/18 20:14	1.0		
015	044_015	LCS	QC919853	Soil	256438	02/13/18 20:42	1.0		
016	044_016	MS	QC919854	Soil	256438	02/13/18 21:10	1.0		
017	044_017	MSD	QC919855	Soil	256438	02/13/18 21:38	1.0		
018	044_018	SAMPLE	297025-004	Soil	256407	02/13/18 22:06	50.0		
019	044_019	CCV	PCB500_100			02/13/18 22:34	1.0	1	
020	044_020	ICAL	AR2154_250			02/13/18 23:02	1.0	3	
021	044_021	MSS	297078-001	Soil	256438	02/13/18 23:30	1.0		
022	044_022	SAMPLE	297078-002	Soil	256438	02/13/18 23:58	1.0		
023	044_023	SAMPLE	297078-003	Soil	256438	02/14/18 00:26	1.0		
024	044_024	SAMPLE	297078-004	Soil	256438	02/14/18 00:54	1.0		
025	044_025	SAMPLE	297068-001	Soil	256438	02/14/18 01:22	1.0		
026	044_026	SAMPLE	297068-002	Soil	256438	02/14/18 01:50	1.0		
027	044_027	SAMPLE	297088-011	Soil	256438	02/14/18 02:18	1.0		
028	044_028	SAMPLE	297088-018	Soil	256438	02/14/18 02:46	5.0		
029	044_029	SAMPLE	297088-019	Soil	256438	02/14/18 03:14	5.0		
030	044_030	SAMPLE	297090-001	Soil	256438	02/14/18 03:42	2.0		
031	044_031	CCV	PCB500_100			02/14/18 04:10	1.0	1	
032	044_032	CCV	AR2154_250			02/14/18 04:38	1.0	3	

RDG 02/14/18 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 32.

Standards used: 1=S35813 2=S35044 3=S35874

SAMPLE PREPARATION SUMMARY

Batch # : 256407
Started By : ECI
Method : 3550C
Spike #1 ID : S35128

Prep Date : 12-FEB-2018 13:20
SOP Version : PCB_3550_rv13
Spike #2 ID : S35523

Analysis : PCB
Finished By : ECI
Units : g

Sample	Stype	Matrix	Initial	Final	Clean DF	Prep DF	pH	Sp 1 Vol	Sp 2 Vol	Sp 3 Vol	Clean Method	Analysis	Comments
297025-001		Soil	30.13	10	1	0.3319		.5				PCB	alias:296840-014
297025-002		Soil	29.68	10	1	0.3369		.5				PCB	alias:296840-015
297025-003		Soil	29.85	10	1	0.335		.5				PCB	alias:296840-016
297025-004		Soil	30.03	10	1	0.333		.5				PCB	alias:296840-017
297059-001		Soil	30.16	10	1	0.3316		.5				PCB	
QC919736	BLANK	Soil	29.83	10	1	0.3352		.5				PCB	
QC919737	LCS	Soil	30.02	10	1	0.3331		.5	.5			PCB	
QC919738	MS	Soil	29.65	10	1	0.3373		.5	.5			PCB	
QC919739	MSD	Soil	29.89	10	1	0.3346		.5	.5			PCB	See comment 1 below

Comment 1: sample darker in color than MSS, not homogenous

Analyst: JC1 Date: 02/13/18 Reviewer: EAH Date: 02/13/18

PCB (8082) Soil Prep Log

version 201711

Enthalpy Analytical LLC - Berkeley

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BK 4218

LIMS Batch No: 256407

LIMS Analysis PCB

Date Extracted: 2/12/18

☒ EPA 3550b Sonication

☐ Other C

Sample #	Container ID	Sample Wt (g)	Final Vol (mL)	Comments
297025-001	A	30.13	☐ 25.0 ☒ 10	alias: 296840-014
2	A	29.68	☐ 25.0 ☒ 10	15
3	A	29.85	☐ 25.0 ☒ 10	16
4	A	30.03	☐ 25.0 ☒ 10	17
297059-001	B	30.16	☐ 25.0 ☒ 10	MSS
MB QC919736	NA	29.83	☐ 25.0 ☒ 10	
LCS 7		30.02	☐ 25.0 ☒ 10	
MS 8	B	29.65	☐ 25.0 ☒ 10	
MSD 9	B	29.89	☐ 25.0 ☒ 10	sample darker than MS
			☐ 25.0 ☐	
			☐ 25.0 ☐	
			☐ 25.0 ☐	
			☐ 25.0 ☐	
			☐ 25.0 ☐	
			☐ 25.0 ☐	
			☐ 25.0 ☐	
			☐ 25.0 ☐	
			☐ 25.0 ☐	
			☐ 25.0 ☐	
			☐ 25.0 ☐	
			☐ 25.0 ☐	
			☐ 25.0 ☐	
			☐ 25.0 ☐	
			☐ 25.0 ☐	RD 12/12/2018

☐ MS/MSD not included due to: ☐ insufficent volume, or ☐ other (reason) _____

☒ Balance ID: P-15 Has been calibrated? ☒ Yes ☐ No

	Mfg & Lot # / LIMS # / Time	Initials / Date
Solvent-rinsed granular Na_2SO_4 weighed out for QC samples	EM16I285202 1/24/18	PCF 2/12/18
dried with CH_2Cl_2-rinsed ☒ granular Na_2SO_4 ☐ powder	EM16I245202	
0.5 mL of surrogate solution was added to all samples	S35128D	
0.5 mL of matrix spiking solution was added to all spikes	S35523C	
1:1 CH_2Cl_2 (lot# EM57251):Acetone(lot# FC176176) was added to all	✓	
Solvent added at (time)	1320	
☒ sonicated 3 times w/ ≥100mL ☐ soxhlet extractors on at:	✓	
Soxhlets off at:	—	
Extracts filtered through baked, CH_2Cl_2-rinsed granular ~~powdered~~ Na_2SO_4	EM16I285202	
Solvent exchanged with Hexane, Lot#	FC172635	
Concentrated to final volume in boiling H2O bath	✓	
EPA 3665A Clean-up: vortexed w/ H_2SO_4 Lot#	FC176161	
Centrifuged for 1 min; 5mL transferred to labelled vial	✓	
Relinquished to PCB group	✓	

2/12/18

Extraction Chemist / Date

Continued from page ___

Continued on page ___

2/12/2018

Reviewed by / Date

REPORTING SUMMARY FOR 297025 PCBS Soil

Sample ID	Analyte	Inst ID	Ch	Date & Time
297025-001	Aroclor-1016	GC06	A	02/12/18 20:50
297025-001	Aroclor-1221	GC06	A	02/12/18 20:50
297025-001	Aroclor-1232	GC06	A	02/12/18 20:50
297025-001	Aroclor-1242	GC06	A	02/12/18 20:50
297025-001	Aroclor-1248	GC06	A	02/12/18 20:50
297025-001	Aroclor-1254	GC06	A	02/12/18 20:50
297025-001	Aroclor-1260	GC06	A	02/12/18 20:50
297025-001	TCMX	GC06	A	02/12/18 20:50
297025-001	Decachlorobiphenyl	GC06	A	02/12/18 20:50
297025-002	Aroclor-1016	GC06	A	02/12/18 21:18
297025-002	Aroclor-1221	GC06	A	02/12/18 21:18
297025-002	Aroclor-1232	GC06	A	02/12/18 21:18
297025-002	Aroclor-1242	GC06	A	02/12/18 21:18
297025-002	Aroclor-1248	GC06	A	02/12/18 21:18
297025-002	Aroclor-1254	GC06	A	02/12/18 21:18
297025-002	Aroclor-1260	GC06	A	02/12/18 21:18
297025-002	TCMX	GC06	A	02/12/18 21:18
297025-002	Decachlorobiphenyl	GC06	A	02/12/18 21:18
297025-003	Aroclor-1016	GC06	A	02/12/18 21:46
297025-003	Aroclor-1221	GC06	A	02/12/18 21:46
297025-003	Aroclor-1232	GC06	A	02/12/18 21:46
297025-003	Aroclor-1242	GC06	A	02/12/18 21:46
297025-003	Aroclor-1248	GC06	A	02/12/18 21:46
297025-003	Aroclor-1254	GC06	A	02/12/18 21:46
297025-003	Aroclor-1260	GC06	A	02/12/18 21:46
297025-003	TCMX	GC06	A	02/12/18 21:46
297025-003	Decachlorobiphenyl	GC06	A	02/12/18 21:46
297025-004	Aroclor-1016	GC06	A	02/13/18 22:06
297025-004	Aroclor-1221	GC06	A	02/13/18 22:06
297025-004	Aroclor-1232	GC06	A	02/13/18 22:06
297025-004	Aroclor-1242	GC06	A	02/13/18 22:06
297025-004	Aroclor-1248	GC06	A	02/13/18 22:06
297025-004	Aroclor-1254	GC06	A	02/13/18 22:06
297025-004	Aroclor-1260	GC06	B	02/13/18 22:06
297025-004	TCMX	GC06	A	02/13/18 22:06
297025-004	Decachlorobiphenyl	GC06	A	02/13/18 22:06
QC919736	Aroclor-1016	GC06	A	02/12/18 17:36
QC919736	Aroclor-1221	GC06	A	02/12/18 17:36
QC919736	Aroclor-1232	GC06	A	02/12/18 17:36
QC919736	Aroclor-1242	GC06	A	02/12/18 17:36
QC919736	Aroclor-1248	GC06	A	02/12/18 17:36
QC919736	Aroclor-1254	GC06	A	02/12/18 17:36
QC919736	Aroclor-1260	GC06	A	02/12/18 17:36
QC919736	TCMX	GC06	A	02/12/18 17:36
QC919736	Decachlorobiphenyl	GC06	A	02/12/18 17:36
QC919737	Aroclor-1016	GC06	A	02/12/18 18:58
QC919737	Aroclor-1260	GC06	A	02/12/18 18:58
QC919737	TCMX	GC06	A	02/12/18 18:58
QC919737	Decachlorobiphenyl	GC06	A	02/12/18 18:58

REPORTING SUMMARY FOR 297025 PCBS Soil

Sample ID	Analyte	Inst ID	Ch	Date & Time
QC919738	Aroclor-1016	GC06	A	02/12/18 19:54
QC919738	Aroclor-1260	GC06	A	02/12/18 19:54
QC919738	TCMX	GC06	A	02/12/18 19:54
QC919738	Decachlorobiphenyl	GC06	A	02/12/18 19:54
QC919739	Aroclor-1016	GC06	A	02/12/18 20:22
QC919739	Aroclor-1260	GC06	A	02/12/18 20:22
QC919739	TCMX	GC06	A	02/12/18 20:22
QC919739	Decachlorobiphenyl	GC06	A	02/12/18 20:22

Dilutions for 297025 PCBS Soil
Enthalpy Analytical - Berkeley

Type	Sample ID	IDFs
SAMPLE	297025-001	5X
SAMPLE	297025-002	5X
SAMPLE	297025-003	5X
SAMPLE	297025-004	50X

Case Narrative Addendum: Manual Integrations for 297025 PCBS (Soil)

For SAMPLE 297025-001 (GC06_043_019):
Corrected automatically drawn baseline for all channels.

For SAMPLE 297025-002 (GC06_043_020):
Corrected automatically drawn baseline for all channels.

For SAMPLE 297025-003 (GC06_043_021):
Corrected automatically drawn baseline for all channels.

For SAMPLE 297025-004 (GC06_044_018):
Corrected automatically drawn baseline for all channels.

For CCV PCB500_100 (GC06_043_023):
Corrected automatically drawn baseline.

For CCV PCB500_100 (GC06_044_019):
Corrected automatically drawn baseline for all channels.

For CCV PCB500_100 (GC06_044_009):
Corrected automatically drawn baseline for all channels.

For CCV PCB500_100 (GC06_043_010):
Corrected automatically drawn baseline for all channels.

For BLANK QC919736 (GC06_043_012):
Corrected automatically drawn baseline.

For LCS QC919737 (GC06_043_015):
Corrected automatically drawn baseline.

For MSD QC919739 (GC06_043_018):
Corrected automatically drawn baseline.

For Calibration GC06 (208052389001):
Corrected automatically drawn baseline in all levels.

For ICV ULTRA_1660 (GC06_036_018):
Corrected automatically drawn baseline.

CAS Registry Numbers for 297025 PCBS Soil
Enthalpy Analytical - Berkeley

Analyte	CAS RN
Aroclor-1016	12674-11-2
Aroclor-1221	11104-28-2
Aroclor-1232	11141-16-5
Aroclor-1242	53469-21-9
Aroclor-1248	12672-29-6
Aroclor-1254	11097-69-1
Aroclor-1260	11096-82-5
Decachlorobiphenyl	2051-24-3
TCMX	877-09-8

Sample Raw Data

ENTHALPY SAMPLE USER REPORT FOR EPA 8082A

Inst	: GC06	Lab ID	: 297025-001	Client ID	: HPP-FSS-009A
Seqnum	: 208062470019	Matrix	: Soil	Acct	: IEECI (MJD)
File	: 043_019	Batch	: 256407	Time	: 12-FEB-2018 20:50
Cal	: 208052389001	Caldate	: 05-FEB-2018		
IDF	: 5.0	Raw Units	: pg/uL	Units	: ug/Kg

30.13 g --> 10.0 ml = 0.3319 ml/g PDF

Analyte	Ch	Raw	Result	Conf	RPD	RL	Blank	Flags
Aroclor-1016	A	1.616	ND	ND	3%	17		u
Aroclor-1016 Peak # 1	A	2.047	3.40	ND				
Aroclor-1016 Peak # 2	A	2.802	4.65	17.50 [omit]	116%			
Aroclor-1016 Peak # 3	A	0	ND	32.74 [omit]				
Aroclor-1016 Peak # 4	A	12.33	20.46 [omit]	5.49	115%			
Aroclor-1016 Peak # 5	A	6.668	11.07 [omit]	2.35	130%			
Aroclor-1221	A		ND			33		u
Aroclor-1232	A		ND			17		u
Aroclor-1242	A		ND			17		u
Aroclor-1248	A		ND			17		u
Aroclor-1254	A		ND			17		u
Aroclor-1260	A	32.40	54	47	14%	17		u
Aroclor-1260 Peak # 1	A	28.07	46.58	30.03	43%			
Aroclor-1260 Peak # 2	A	25.95	43.06	59.60	32%			
Aroclor-1260 Peak # 3	A	43.18	71.65	50.92	34%			
Aroclor-1260 Peak # 4	A	60.20	99.90 [omit]	126.45 [omit]	23%			
Aroclor-1260 Peak # 5	A	73.03	121.20 [omit]	91.79 [omit]	28%			

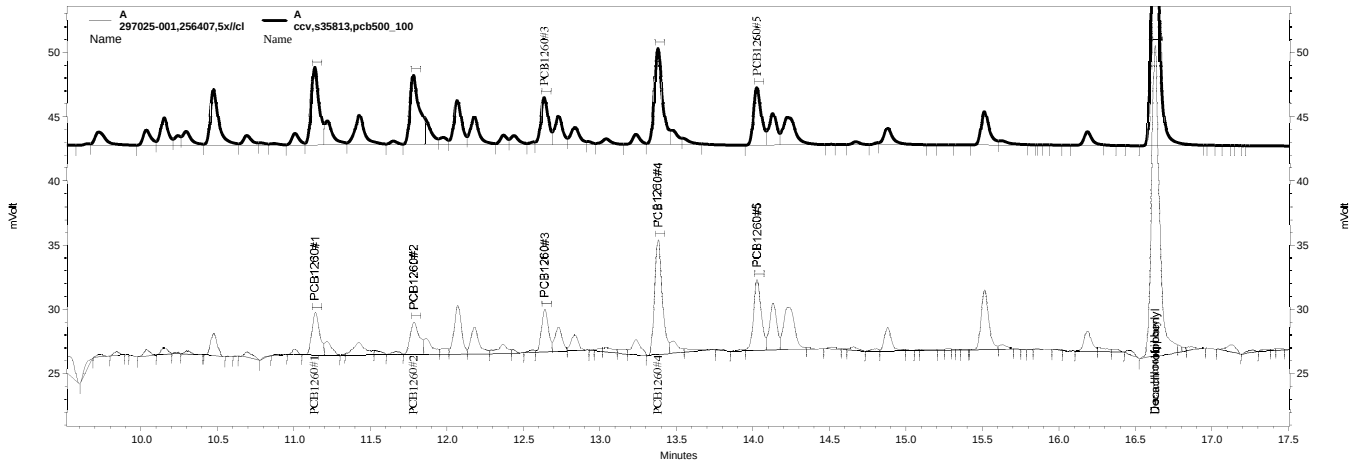
Surrogate	Ch	Raw	Spiked	Result	%Rec	Limits	Flags
TCMX	A	6.808	16.59	11.30	68	44-130	u
Decachlorobiphenyl	A	8.919	16.59	14.80	89	26-153	u

02/12/18 : Was diluted due to client history of high non-target or organic acid interference.

RDG 02/13/18 : Corrected automatically drawn baseline for all channels.

Analyst: RDG Date: 02/13/18 Reviewer: EAH Date: 02/15/18

u=use



\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-019, A

\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\040-014, A

Sample Name: **297025-001,256407,5x//cl** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-019** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\043.seq** Instrument: GC06 (Offline) Vial: 19 Operator: Pest 3. Analyst (lims2k3\pest3) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met	Software Version 3.1.7 Run Date: 2/12/2018 8:50:43 PM Analysis Date: 2/13/2018 3:19:18 PM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.770	3.776	41338	6.808
PCB1016#1	5.367	5.347	542	2.047
PCB1016#2	6.380	6.387	735	2.802
PCB1016#3		6.680		0.000 BDL
PCB1016#4	7.117	7.130	1084	12.332
PCB1016#5	7.607	7.630	789	6.668
PCB1260#1	11.137	11.150	11496	28.072
PCB1260#2	11.783	11.797	10377	25.950
PCB1260#3	12.637	12.650	10374	43.176
PCB1260#4	13.377	13.390	30827	60.198
PCB1260#5	14.023	14.040	19459	73.034
Decachlorobiphenyl	16.627	16.640	87922	8.919

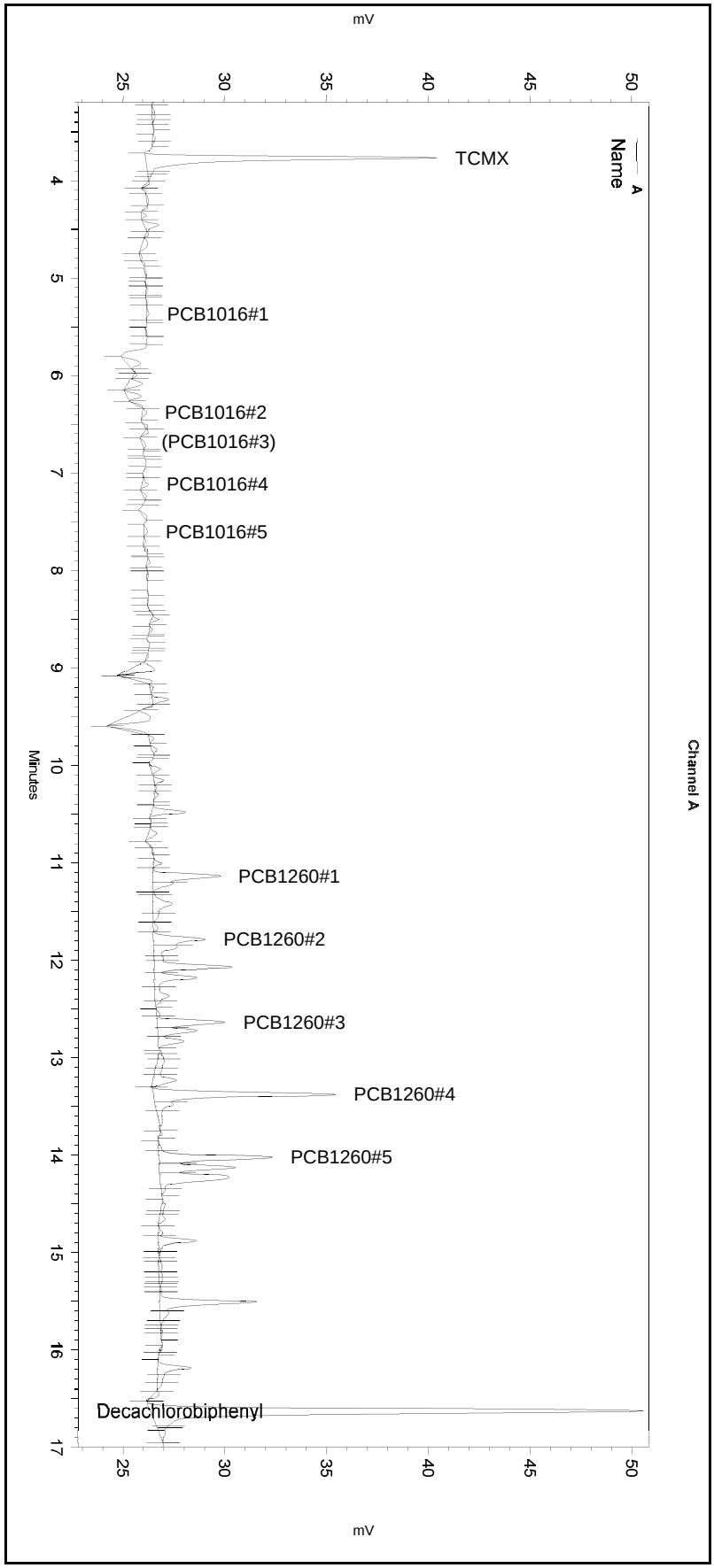
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.940	2.930	39406	6.335
PCB1016#1		4.330		0.000 BDL
PCB1016#2	5.213	5.217	965	10.544
PCB1016#3	5.440	5.417	2256	19.730
PCB1016#4	5.940	5.940	365	3.308
PCB1016#5	6.640	6.637	258	1.413
PCB1260#1	9.827	9.830	5885	18.094
PCB1260#2	10.447	10.450	8623	35.915
PCB1260#3	11.373	11.377	8138	30.684
PCB1260#4	12.030	12.033	34643	76.199
PCB1260#5	12.693	12.703	15945	55.312
Decachlorobiphenyl	15.647	15.653	66104	7.833

Sample Name: **297025-001,256407,5x//cl**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-019**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\043.seq**
Instrument: GC06 (Offline) Vial: 19 Operator: Pest 3. Analyst (lims2k3\pest3)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met

Software Version 3.1.7
Run Date: 2/12/2018 8:50:43 PM
Analysis Date: 2/13/2018 3:19:18 PM
Sample Amount: 1



---< General Method Parameters >---

No items selected for this section

---< A >---

No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0
Yes	Reset Baseline	10.946	0	0
Yes	Valley to Valley	16.523	17.187	0

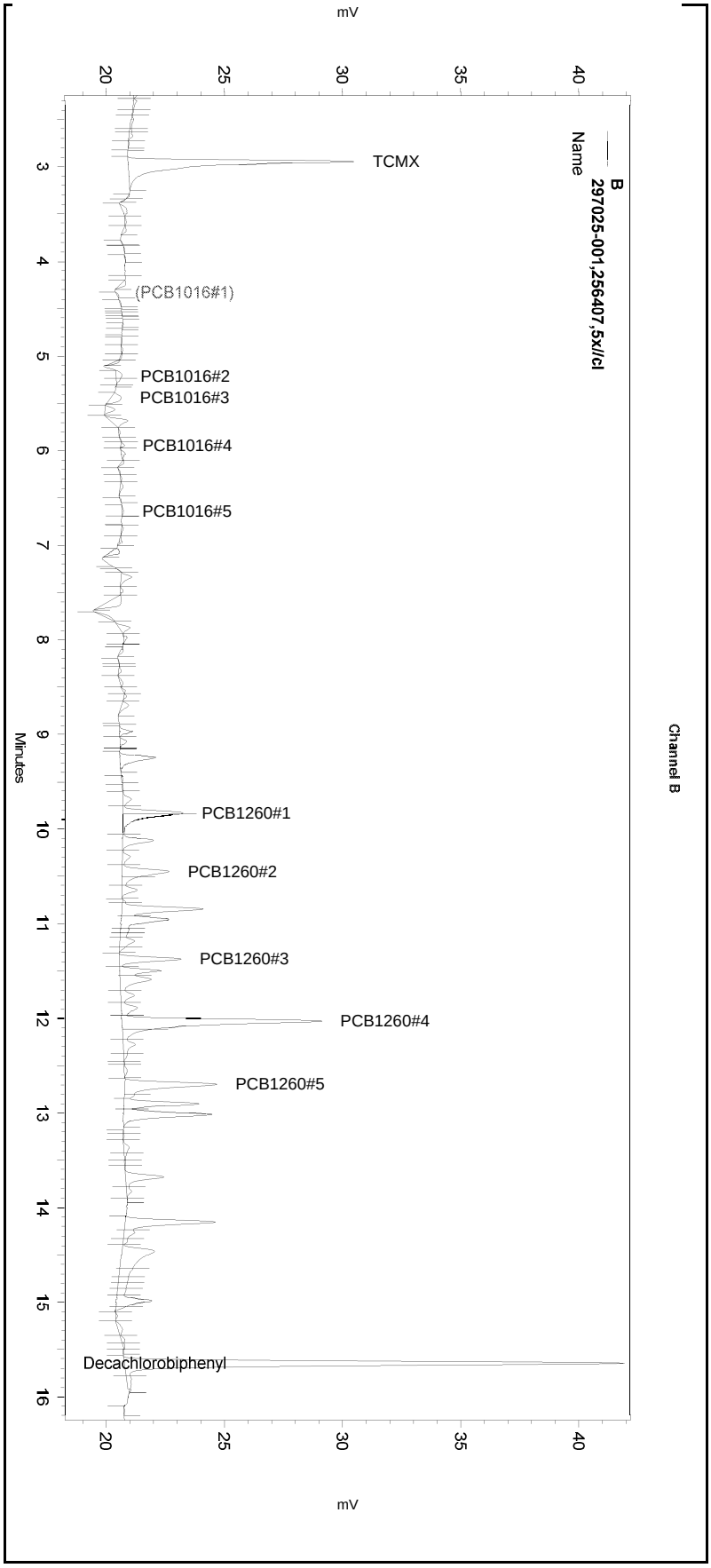
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-019

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Valley to Valley	3.713	10.783	0
Yes	Manual Baseline	3.723	4.003	0
Yes	Reset Baseline	12.482	0	0
Yes	Reset Baseline	12.902	0	0
Yes	Manual Baseline	13.302	13.736	0
Yes	Reset Baseline	14.433	0	0
Yes	Manual Baseline	16.525	16.946	0

Sample Name: **297025-001,256407,5x//cl**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-019**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\043.seq**
Instrument: GC06 (Offline) Vial: 19 Operator: Pest 3. Analyst (lims2k3\pest3)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met

Software Version 3.1.7
Run Date: 2/12/2018 8:50:43 PM
Analysis Date: 2/13/2018 3:19:18 PM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

---< B >----------

No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-019

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Valley to Valley	2.8	9.574	0
Yes	Manual Peak	2.885	3.253	0
Yes	Manual Baseline	5.154	5.3	0
Yes	Split Peak	9.838	0	0
Yes	Split Peak	10.513	0	0
Yes	Reset Baseline	10.729	0	0
Yes	Split Peak	12.119	0	0
Yes	Manual Baseline	12.633	13.151	0
Yes	Manual Baseline	15.571	15.958	0

Sample Name: **297025-001,256407,5x//cl** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-019** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\043.seq** Instrument: GC06 (Offline) Vial: 19 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met	Software Version 3.1.7 Run Date: 2/12/2018 8:50:43 PM Analysis Date: 2/13/2018 10:38:45 AM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.770	3.776	42479	6.996
PCB1016#1	5.367	5.347	945	3.569
PCB1016#2	6.380	6.387	4642	17.696
PCB1016#3		6.680		0.000 BDL
PCB1016#4	7.117	7.130	1382	15.722
PCB1016#5	7.607	7.630	823	6.955
PCB1260#1	11.137	11.150	11496	28.072
PCB1260#2	11.783	11.797	10955	27.395
PCB1260#3	12.637	12.650	12167	50.639
PCB1260#4	13.377	13.390	30794	60.133
PCB1260#5	14.023	14.040	19913	74.738
Decachlorobiphenyl	16.627	16.640	87863	8.910

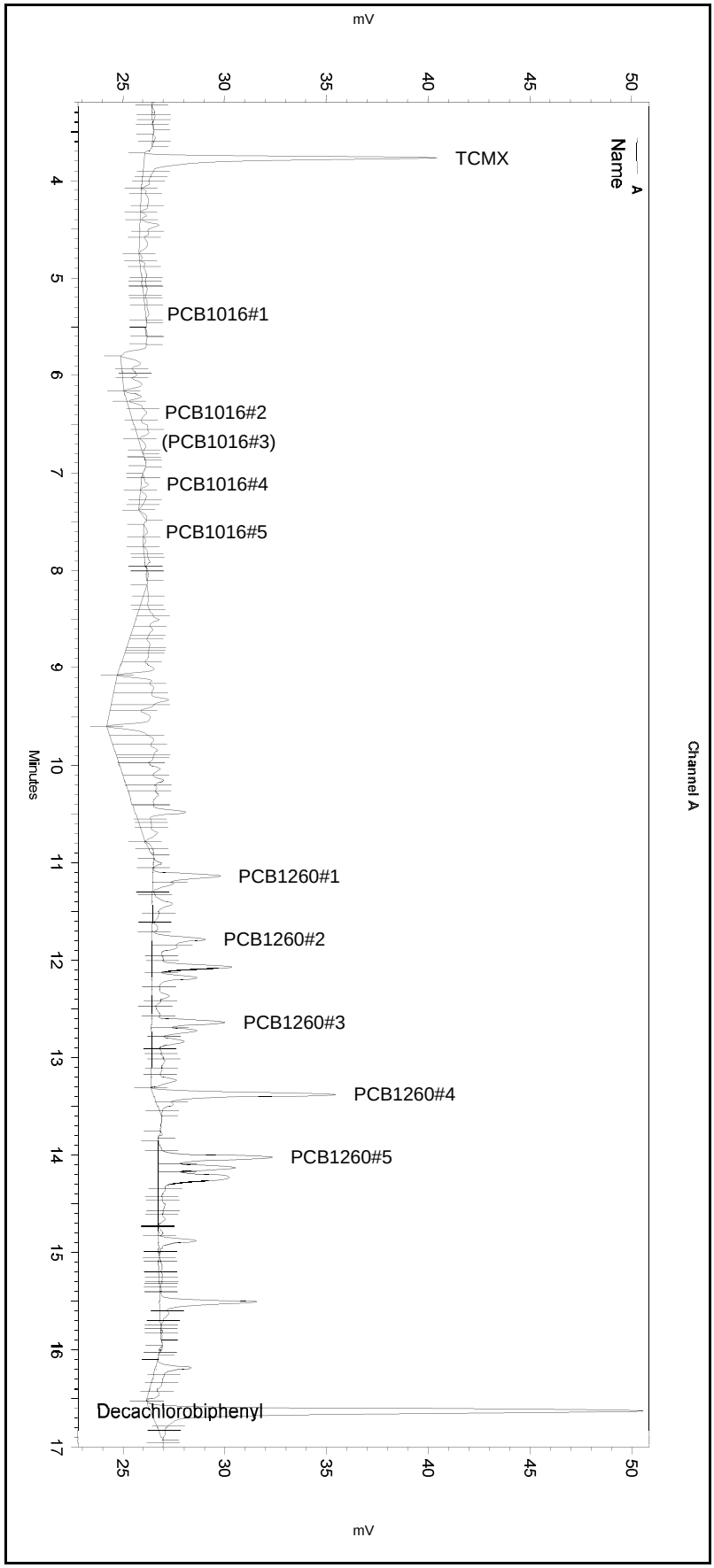
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.940	2.930	34749	5.587
PCB1016#1		4.330		0.000 BDL
PCB1016#2	5.213	5.217	3091	18.159
PCB1016#3	5.440	5.417	2256	19.730
PCB1016#4	5.940	5.940	3815	34.574
PCB1016#5	6.640	6.637	8003	43.844
PCB1260#1	9.827	9.830	24757	76.118
PCB1260#2	10.447	10.450	16538	55.048
PCB1260#3	11.373	11.377	9004	33.949
PCB1260#4	12.030	12.033	38367	84.390
PCB1260#5	12.693	12.703	13973	48.471
Decachlorobiphenyl	15.647	15.653	65365	7.746

Sample Name: **297025-001,256407,5x//cl**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-019**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\043.seq**
Instrument: GC06 (Offline) Vial: 19 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met

Software Version 3.1.7
Run Date: 2/12/2018 8:50:43 PM
Analysis Date: 2/13/2018 10:38:45 AM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

---< A >----------

No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0
Yes	Reset Baseline	10.946	0	0

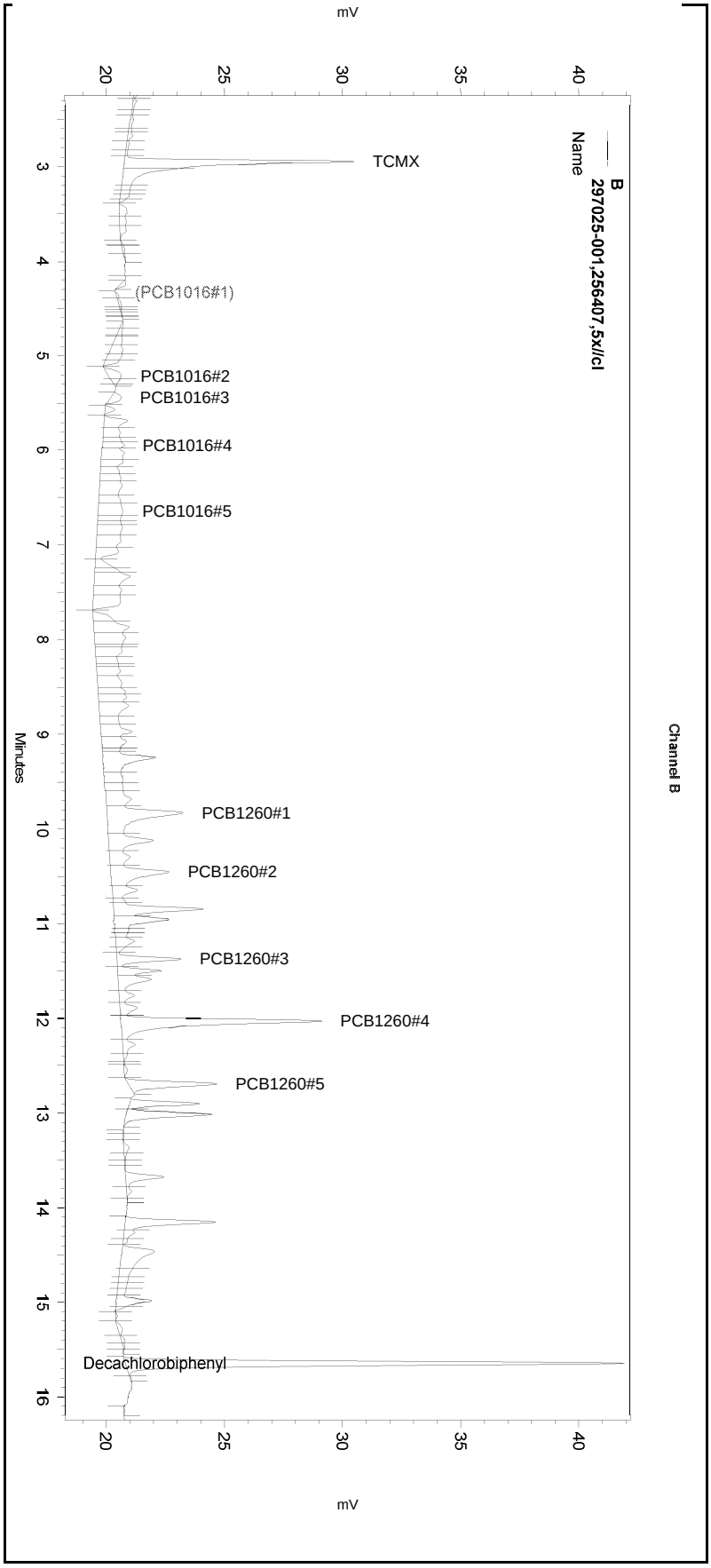
Manual Integration Fixes
==========
Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-019

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sample Name: **297025-001,256407,5x//cl**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-019**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\043.seq**
Instrument: GC06 (Offline) Vial: 19 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met

Software Version 3.1.7
Run Date: 2/12/2018 8:50:43 PM
Analysis Date: 2/13/2018 10:38:45 AM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-019

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

ENTHALPY SAMPLE USER REPORT FOR EPA 8082A

Inst	: GC06	Lab ID	: 297025-002	Client ID	: HPP-FSS-009B
Seqnum	: 208062470020	Matrix	: Soil	Acct	: IEECI (MJD)
File	: 043_020	Batch	: 256407	Time	: 12-FEB-2018 21:18
Cal	: 208052389001	Caldate	: 05-FEB-2018		
IDF	: 5.0	Raw Units	: pg/uL	Units	: ug/Kg

29.68 g --> 10.0 ml = 0.3369 ml/g PDF

Analyte	Ch	Raw	Result	Conf	RPD	RL	Blank	Flags
Aroclor-1016	A	2.065	ND	7.8 J	77%	17		u
Aroclor-1016 Peak # 1	A	1.057	1.78	2.68	40%			
Aroclor-1016 Peak # 2	A	6.648	11.20 [omit]	18.45 [omit]	49%			
Aroclor-1016 Peak # 3	A	0	ND	25.52 [omit]				
Aroclor-1016 Peak # 4	A	25.26	42.55 [omit]	9.82	125%			
Aroclor-1016 Peak # 5	A	5.138	8.66	10.92	23%			
Aroclor-1221	A		ND			34		u
Aroclor-1232	A		ND			17		u
Aroclor-1242	A		ND			17		u
Aroclor-1248	A		ND			17		u
Aroclor-1254	A		ND			17		u
Aroclor-1260	A	605.8	1000	930	9%	17		u
Aroclor-1260 Peak # 1	A	550.1	926.76	795.55	15%			
Aroclor-1260 Peak # 2	A	569.1	958.66	918.65	4%			
Aroclor-1260 Peak # 3	A	708.0	1192.77 [omit]	1084.29	10%			
Aroclor-1260 Peak # 4	A	698.3	1176.30	1636.73 [omit]	33%			
Aroclor-1260 Peak # 5	A	898.0	1512.88 [omit]	1488.15 [omit]	2%			

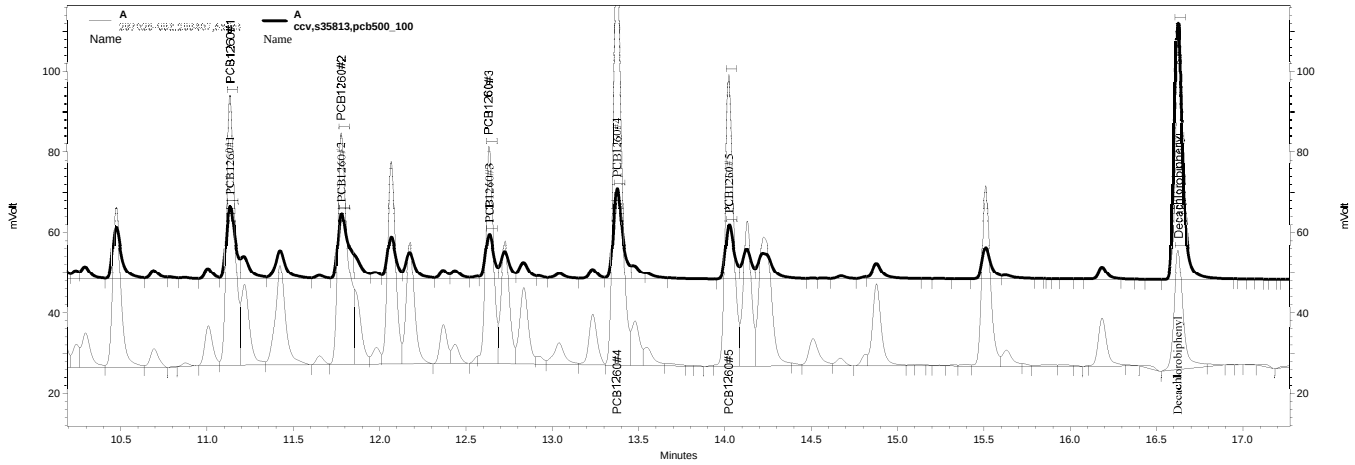
Surrogate	Ch	Raw	Spiked	Result	%Rec	Limits	Flags
TCMX	A	8.189	16.85	13.79	82	44-130	u
Decachlorobiphenyl	A	12.15	16.85	20.46	121	26-153	u

02/12/18 : Was diluted due to client history of high non-target or organic acid interference.

RDG 02/13/18 : Corrected automatically drawn baseline for all channels.

Analyst: RDG Date: 02/14/18 Reviewer: EAH Date: 02/15/18

u=use



\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-020, A

\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\040-014, A

Sample Name: **297025-002,256407,5x//cl** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-020** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\043.seq** Instrument: GC06 (Offline) Vial: 20 Operator: Pest 3. Analyst (lims2k3\pest3) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met	Software Version 3.1.7 Run Date: 2/12/2018 9:18:43 PM Analysis Date: 2/13/2018 3:25:52 PM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.770	3.776	49723	8.189
PCB1016#1	5.360	5.347	280	1.057
PCB1016#2	6.367	6.387	1744	6.648
PCB1016#3		6.680		0.000 BDL
PCB1016#4	7.117	7.130	2220	25.255
PCB1016#5	7.613	7.630	608	5.138
PCB1260#1	11.137	11.150	225286	550.123
PCB1260#2	11.780	11.797	227560	569.061
PCB1260#3	12.633	12.650	170118	708.028
PCB1260#4	13.377	13.390	357571	698.251
PCB1260#5	14.023	14.040	239273	898.047
Decachlorobiphenyl	16.627	16.640	109021	12.146

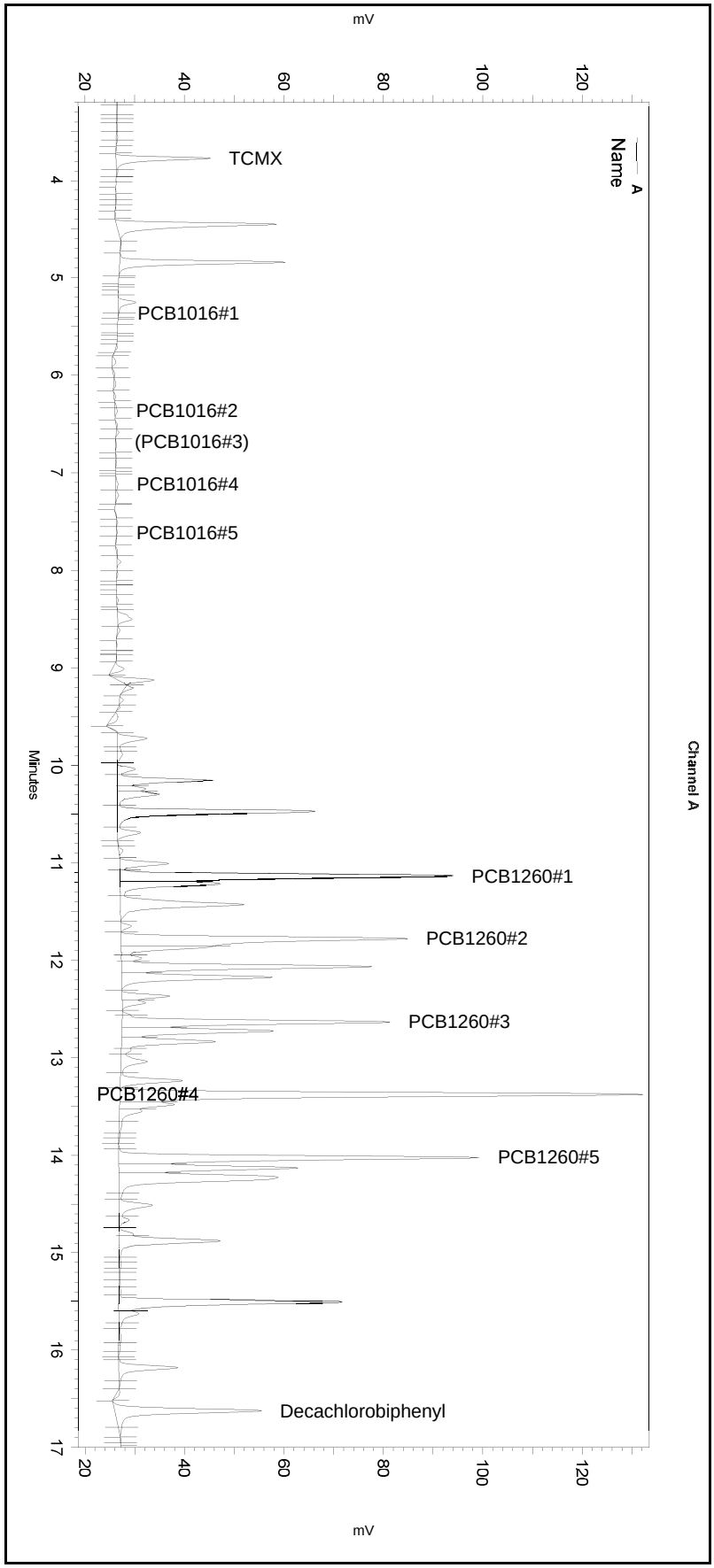
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.940	2.930	38381	6.171
PCB1016#1	4.343	4.330	478	1.590
PCB1016#2	5.207	5.217	1079	10.954
PCB1016#3	5.430	5.417	1176	15.149
PCB1016#4	5.940	5.940	643	5.827
PCB1016#5	6.617	6.637	1183	6.481
PCB1260#1	9.837	9.830	153592	472.236
PCB1260#2	10.443	10.450	219357	545.313
PCB1260#3	11.370	11.377	170707	643.635
PCB1260#4	12.027	12.033	441713	971.566
PCB1260#5	12.690	12.703	254652	883.366
Decachlorobiphenyl	15.647	15.653	79048	9.367

Sample Name: **297025-002,256407,5x//cl**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-020**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\043.seq**
Instrument: GC06 (Offline) Vial: 20 Operator: Pest 3. Analyst (lims2k3\pest3)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met

Software Version 3.1.7
Run Date: 2/12/2018 9:18:43 PM
Analysis Date: 2/13/2018 3:25:52 PM
Sample Amount: 1



---< General Method Parameters >---

No items selected for this section

---< A >---

No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0
Yes	Reset Baseline	10.946	0	0
Yes	Valley to Valley	16.523	17.187	0

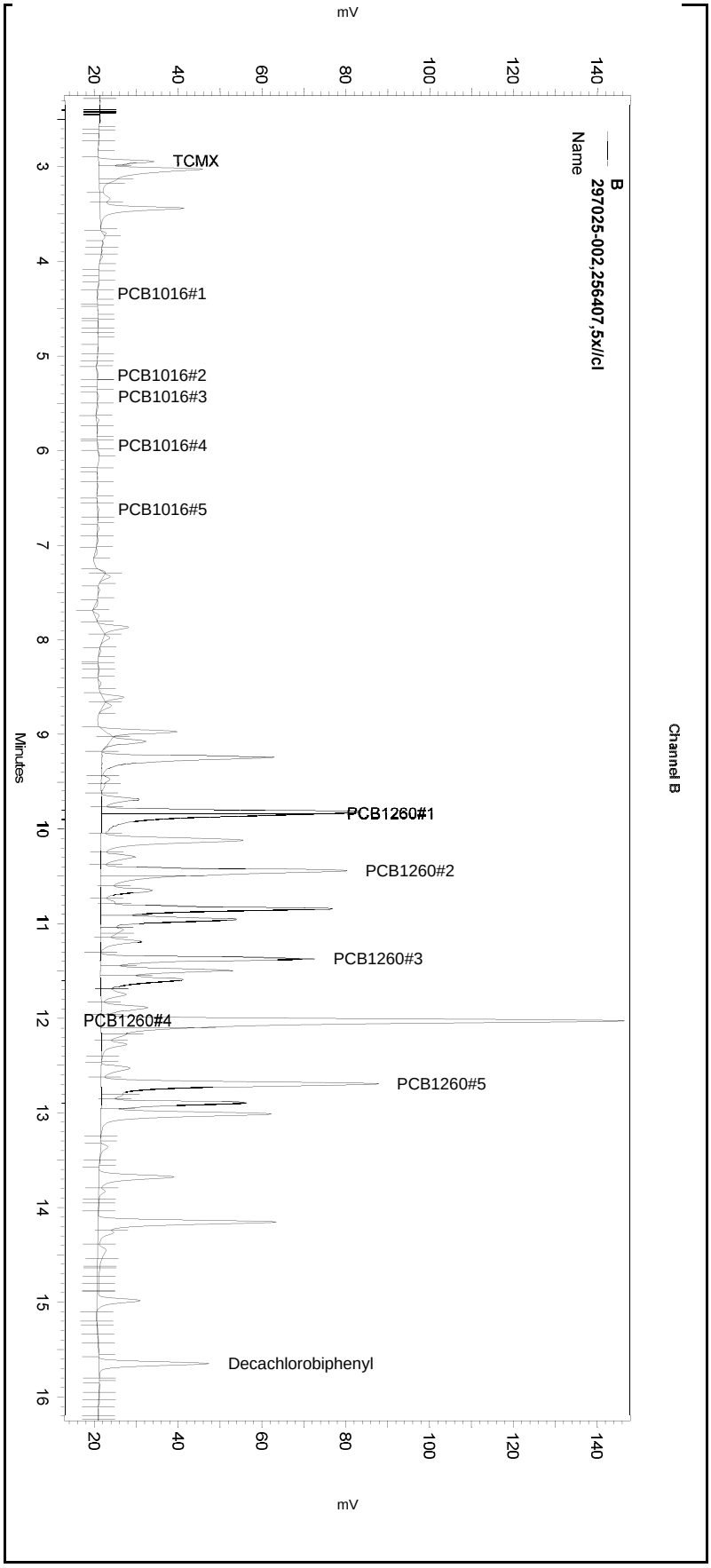
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-020

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Valley to Valley	3.67	9.594	0
Yes	Manual Baseline	3.719	3.952	0
Yes	Manual Baseline	5.178	5.407	0
Yes	Manual Baseline	6.278	6.441	0
Yes	Manual Baseline	7.033	7.316	0
Yes	Reset Baseline	12.512	0	0
Yes	Reset Baseline	14.736	0	0
Yes	Manual Baseline	16.53	16.892	0

Sample Name: **297025-002,256407,5x//cl**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-020**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\043.seq**
Instrument: GC06 (Offline) Vial: 20 Operator: Pest 3. Analyst (lims2k3\pest3)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met

Software Version 3.1.7
Run Date: 2/12/2018 9:18:43 PM
Analysis Date: 2/13/2018 3:25:52 PM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

---< B >----------

No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-020

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Valley to Valley	2.881	8.876	0
Yes	Manual Baseline	2.892	3.657	0
Yes	Split Peak	9.837	0	0
Yes	Split Peak	10.499	0	0
Yes	Split Peak	12.092	0	0
Yes	Reset Baseline	12.46	0	0
Yes	Reset Baseline	13.311	0	0
Yes	Reset Baseline	15.55	0	0
Yes	Reset Baseline	15.845	0	0

Sample Name: **297025-002,256407,5x//cl** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-020** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\043.seq** Instrument: GC06 (Offline) Vial: 20 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met	Software Version 3.1.7 Run Date: 2/12/2018 9:18:43 PM Analysis Date: 2/13/2018 10:38:54 AM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.770	3.776	50569	8.328
PCB1016#1	5.360	5.347	1897	7.165
PCB1016#2	6.367	6.387	6996	26.670
PCB1016#3		6.680		0.000 BDL
PCB1016#4	7.117	7.130	13159	149.699
PCB1016#5	7.613	7.630	8889	75.123
PCB1260#1	11.137	11.150	225933	551.703
PCB1260#2	11.780	11.797	231373	578.596
PCB1260#3	12.633	12.650	176720	735.505
PCB1260#4	13.377	13.390	363574	709.974
PCB1260#5	14.023	14.040	244759	918.637
Decachlorobiphenyl	16.627	16.640	116774	13.333

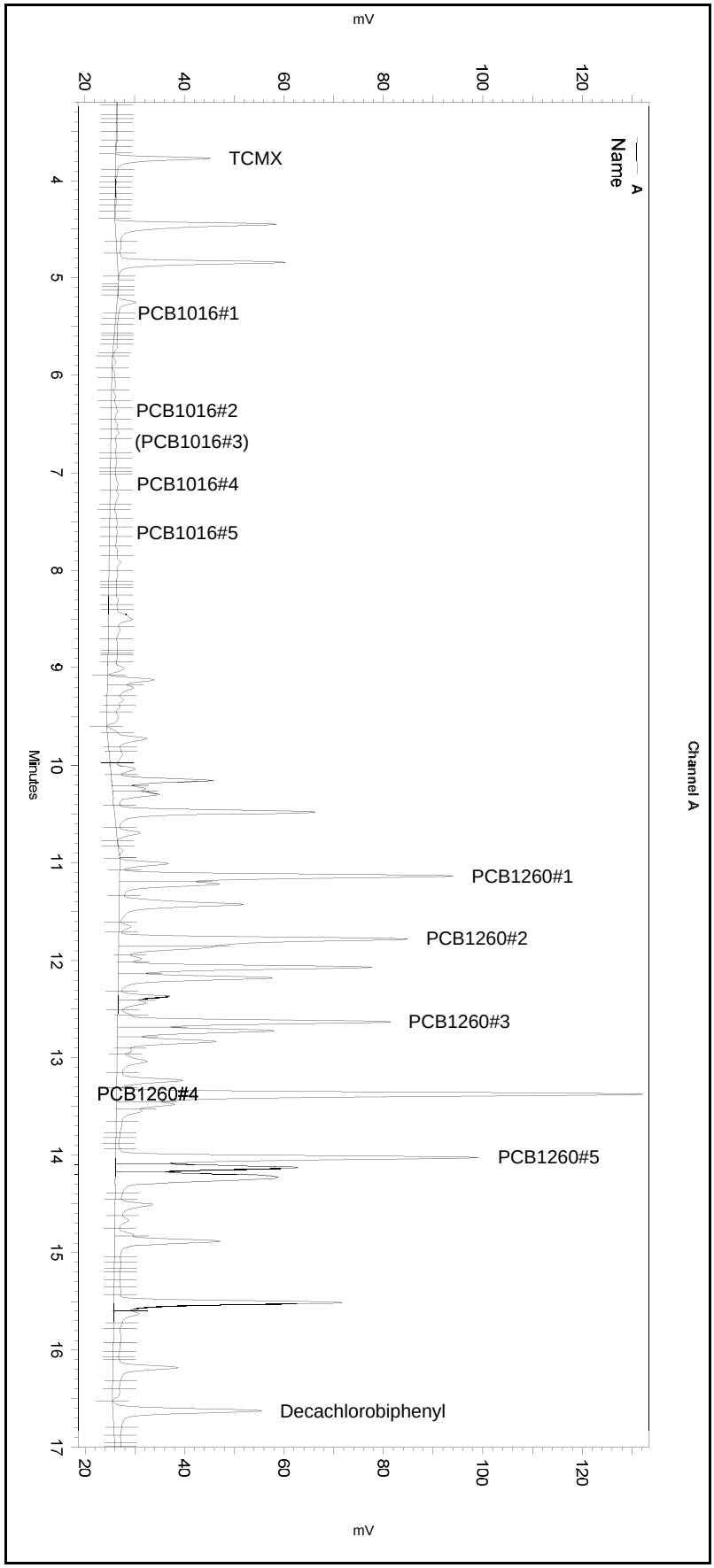
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.940	2.930	38588	6.204
PCB1016#1	4.343	4.330	478	1.590
PCB1016#2	5.207	5.217	1923	13.983
PCB1016#3	5.430	5.417	1912	18.271
PCB1016#4	5.940	5.940	736	6.670
PCB1016#5	6.617	6.637	5273	28.888
PCB1260#1	9.820	9.830	330452	1016.012
PCB1260#2	10.443	10.450	288567	712.611
PCB1260#3	11.370	11.377	182052	686.410
PCB1260#4	12.027	12.033	507641	1116.577
PCB1260#5	12.690	12.703	268866	932.674
Decachlorobiphenyl	15.647	15.653	87171	10.329

Sample Name: **297025-002,256407,5x//cl**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-020**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\043.seq**
Instrument: GC06 (Offline) Vial: 20 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met

Software Version 3.1.7
Run Date: 2/12/2018 9:18:43 PM
Analysis Date: 2/13/2018 10:38:54 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0
Yes	Reset Baseline	10.946	0	0

Manual Integration Fixes
==========

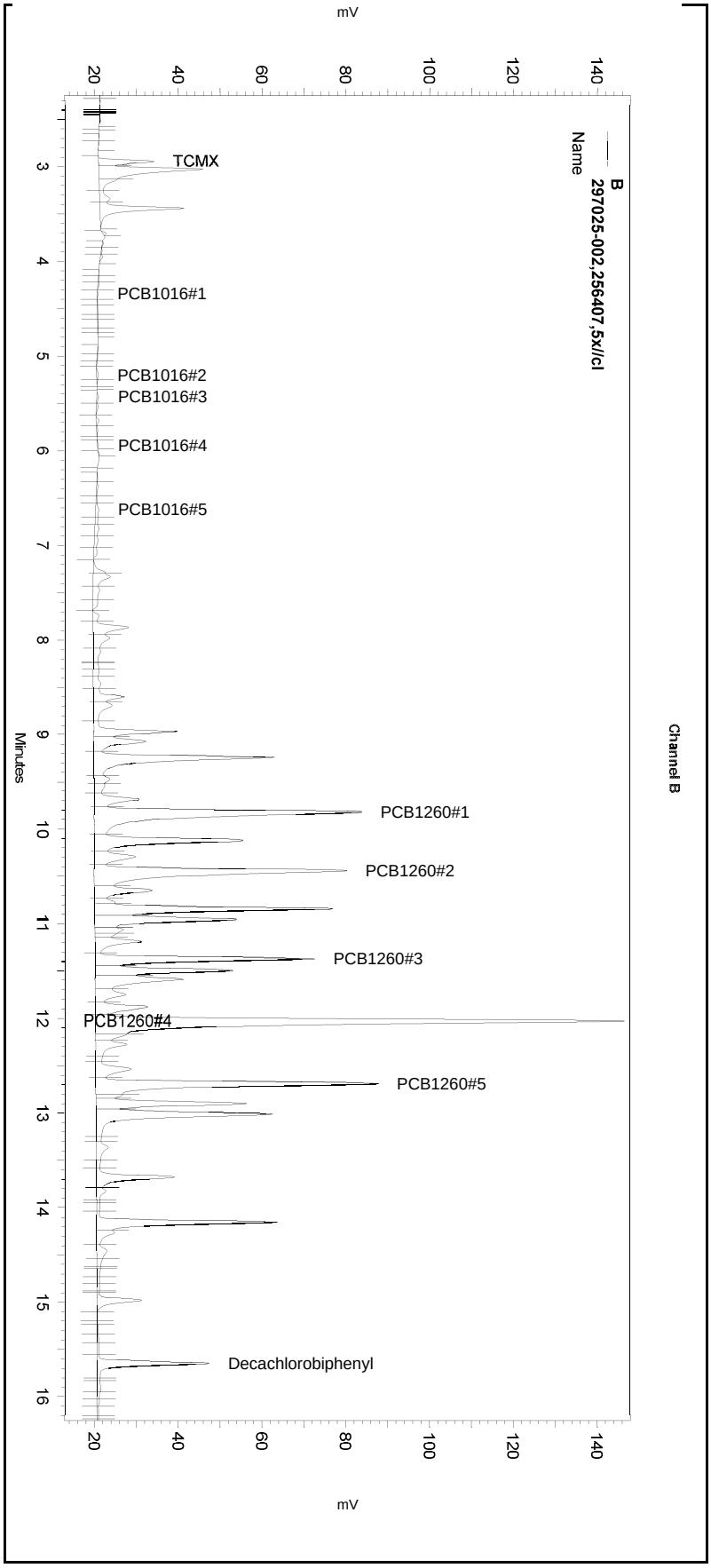
Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-020

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sample Name: **297025-002,256407,5x//cl**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-020**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\043.seq**
Instrument: GC06 (Offline) Vial: 20 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met

Software Version 3.1.7
Run Date: 2/12/2018 9:18:43 PM
Analysis Date: 2/13/2018 10:38:54 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-020

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

ENTHALPY SAMPLE USER REPORT FOR EPA 8082A

Inst	: GC06	Lab ID	: 297025-003	Client ID	: HPP-FSS-009C
Seqnum	: 208062470021	Matrix	: Soil	Acct	: IEECI (MJD)
File	: 043_021	Batch	: 256407	Time	: 12-FEB-2018 21:46
Cal	: 208052389001	Caldate	: 05-FEB-2018		
IDF	: 5.0	Raw Units	: pg/uL	Units	: ug/Kg

29.85 g --> 10.0 ml = 0.335 ml/g PDF

Analyte	Ch	Raw	Result	Conf	RPD	RL	Blank	Flags
Aroclor-1016	A	3.937	6.6 J	10 J	44%	17		u x
Aroclor-1016 Peak # 1	A	3.879	6.50	ND				
Aroclor-1016 Peak # 2	A	8.173	13.69	20.35	39%			
Aroclor-1016 Peak # 3	A	0	ND	17.63				
Aroclor-1016 Peak # 4	A	0	ND	3.43				
Aroclor-1016 Peak # 5	A	7.631	12.78	9.94	25%			
Aroclor-1221	A		ND			34		u
Aroclor-1232	A		ND			17		u
Aroclor-1242	A		ND			17		u
Aroclor-1248	A		ND			17		u
Aroclor-1254	A		ND			17		u
Aroclor-1260	A	19.80	33	15 J	74%	17		u
Aroclor-1260 Peak # 1	A	22.88	38.32	40.04 [omit]	4%			
Aroclor-1260 Peak # 2	A	21.01	35.19	65.36 [omit]	60%			
Aroclor-1260 Peak # 3	A	15.51	25.98	11.63	76%			
Aroclor-1260 Peak # 4	A	1.931	3.23 [omit]	21.33	147%			
Aroclor-1260 Peak # 5	A	11.01	18.45 [omit]	12.75	36%			

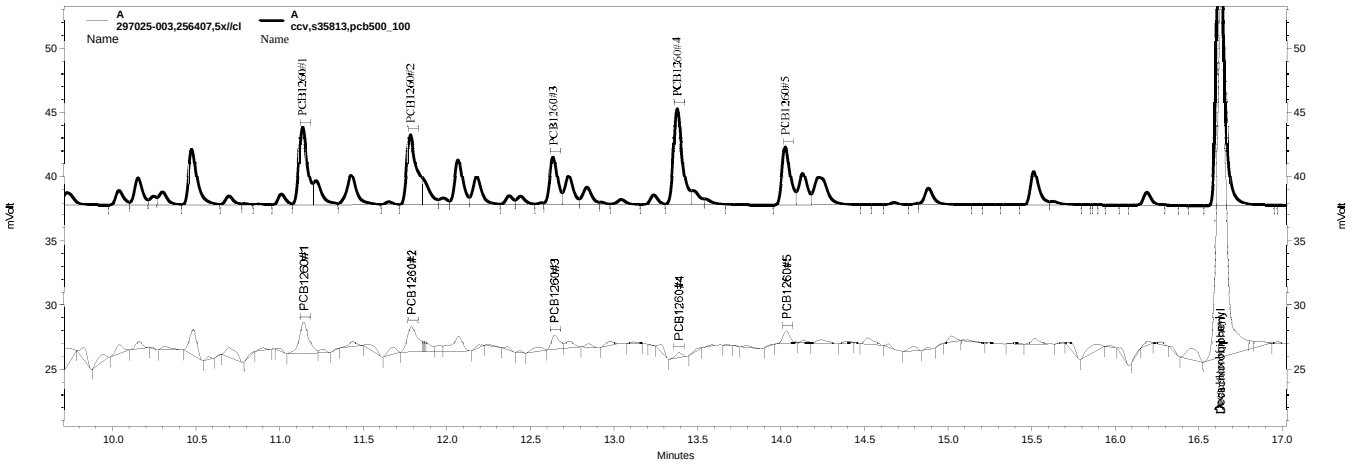
Surrogate	Ch	Raw	Spiked	Result	%Rec	Limits	Flags
TCMX	A	7.597	16.75	12.72	76	44-130	u
Decachlorobiphenyl	A	11.98	16.75	20.07	120	26-153	u

02/12/18 : Was diluted due to client history of high non-target or organic acid interference.

RDG 02/13/18 : Corrected automatically drawn baseline for all channels.

Analyst: RDG Date: 02/13/18 Reviewer: EAH Date: 02/15/18

u=use x=false positive



\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-021, A

\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\040-014, A

Sample Name: **297025-003,256407,5x//cl** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-021** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\043.seq** Instrument: GC06 (Offline) Vial: 21 Operator: Pest 3. Analyst (lims2k3\pest3) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met	Software Version 3.1.7 Run Date: 2/12/2018 9:46:42 PM Analysis Date: 2/13/2018 3:41:19 PM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.773	3.776	46130	7.597
PCB1016#1	5.367	5.347	1027	3.879
PCB1016#2	6.367	6.387	2144	8.173
PCB1016#3		6.680		0.000 BDL
PCB1016#4		7.130		0.000 BDL
PCB1016#5	7.610	7.630	903	7.631
PCB1260#1	11.143	11.150	9369	22.878
PCB1260#2	11.790	11.797	8401	21.008
PCB1260#3	12.643	12.650	3726	15.508
PCB1260#4	13.390	13.390	989	1.931
PCB1260#5	14.033	14.040	2934	11.012
Decachlorobiphenyl	16.630	16.640	107932	11.980

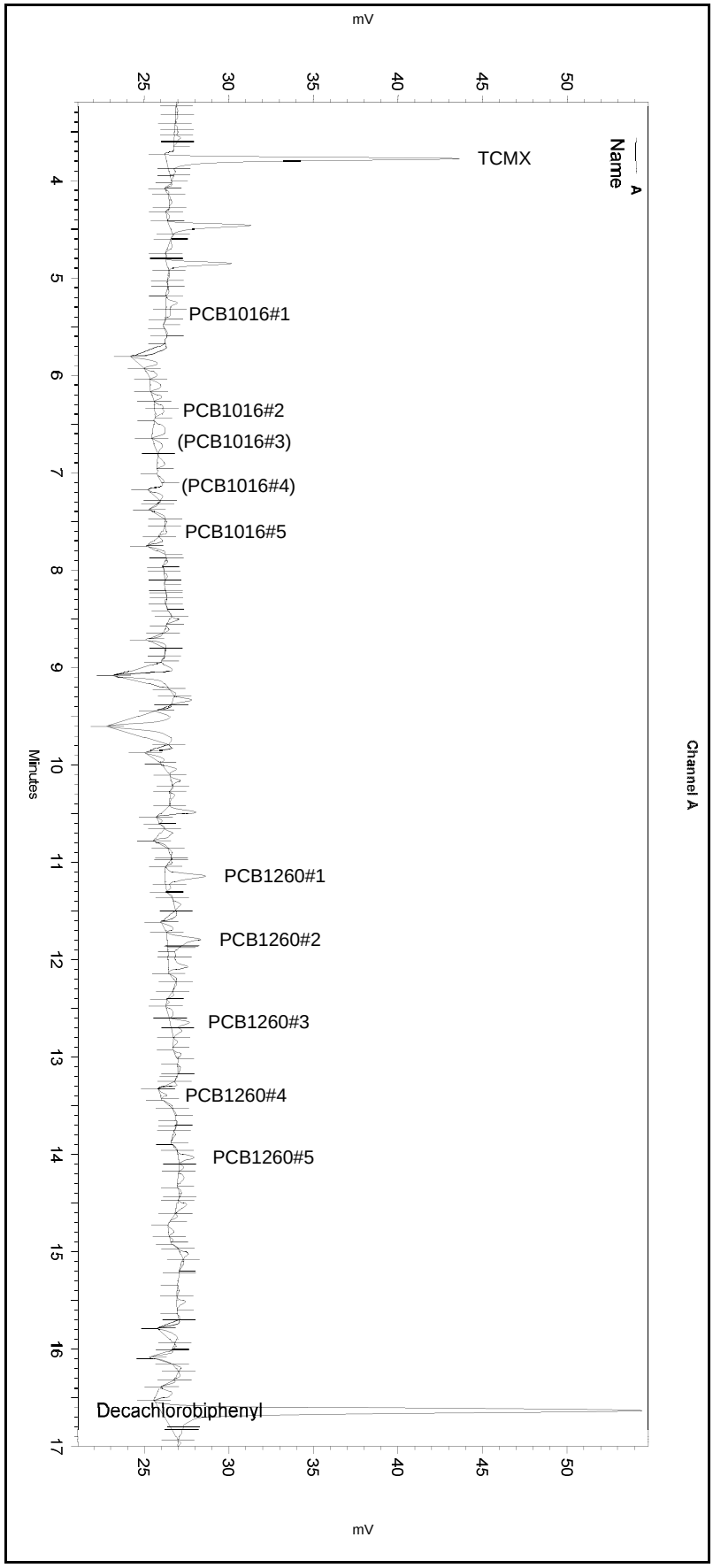
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.947	2.930	36513	5.870
PCB1016#1		4.330		0.000 BDL
PCB1016#2	5.193	5.217	1412	12.151
PCB1016#3	5.433	5.417	86	10.526
PCB1016#4	5.933	5.940	226	2.048
PCB1016#5	6.667	6.637	1083	5.933
PCB1260#1	9.833	9.830	7775	23.905
PCB1260#2	10.453	10.450	9907	39.019
PCB1260#3	11.367	11.377	1842	6.945
PCB1260#4	12.037	12.033	5789	12.733
PCB1260#5	12.697	12.703	2195	7.614
Decachlorobiphenyl	15.653	15.653	75985	9.004

Sample Name: **297025-003,256407,5x//cl**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-021**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\043.seq**
Instrument: GC06 (Offline) Vial: 21 Operator: Pest 3. Analyst (lims2k3\pest3)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met

Software Version 3.1.7
Run Date: 2/12/2018 9:46:42 PM
Analysis Date: 2/13/2018 3:41:19 PM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0
Yes	Reset Baseline	10.946	0	0
Yes	Valley to Valley	16.523	17.187	0

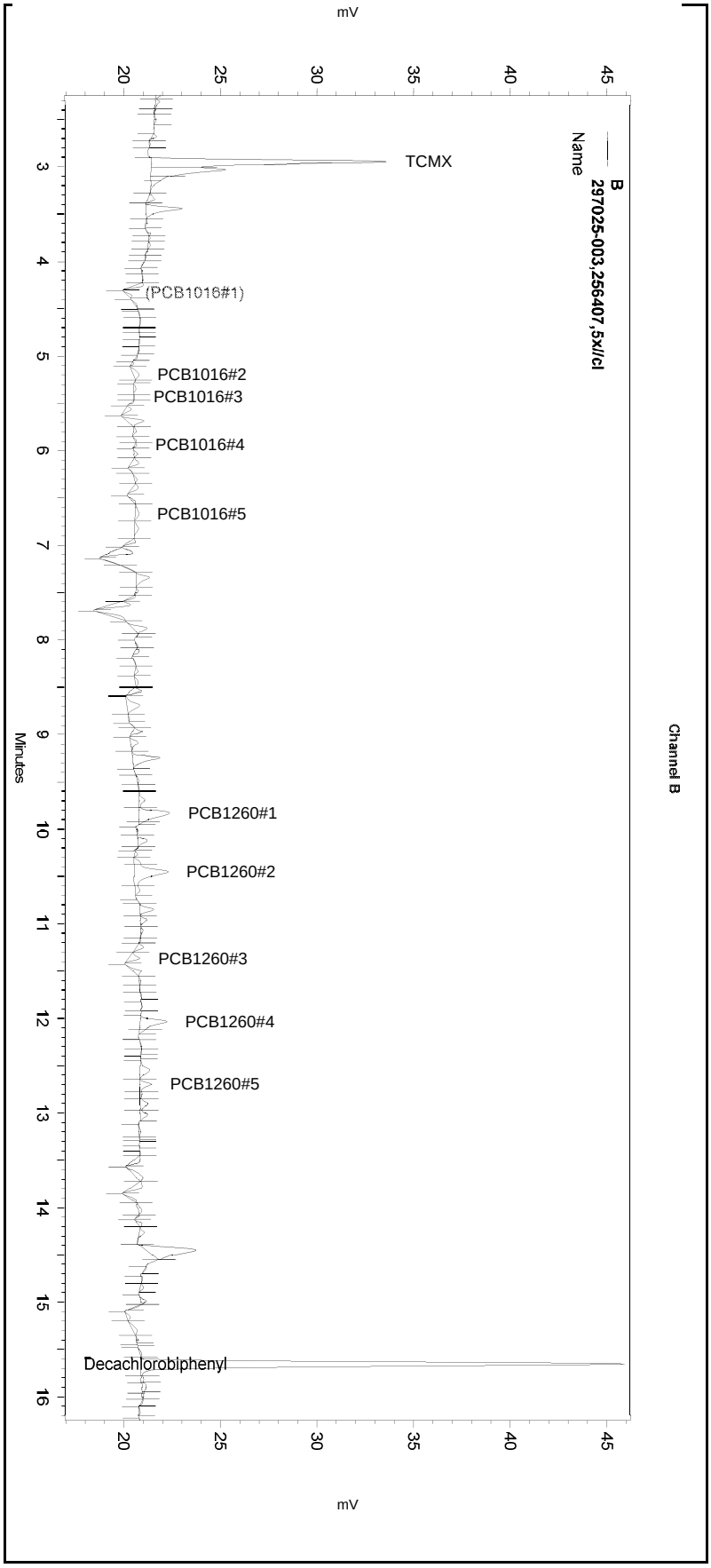
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-021

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Valley to Valley	3.713	11.045	0
Yes	Manual Baseline	3.731	4.007	0
Yes	Manual Baseline	5.19	5.421	0
Yes	Manual Baseline	6.271	6.438	0
Yes	Valley to Valley	11.031	17.191	0
Yes	Manual Baseline	11.044	11.302	0
Yes	Manual Baseline	11.723	12.142	0
Yes	Manual Baseline	12.598	12.804	0
Yes	Manual Baseline	16.525	16.935	0

Sample Name: **297025-003,256407,5x//cl**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-021**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\043.seq**
Instrument: GC06 (Offline) Vial: 21 Operator: Pest 3. Analyst (lims2k3\pest3)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met

Software Version 3.1.7
Run Date: 2/12/2018 9:46:42 PM
Analysis Date: 2/13/2018 3:41:19 PM
Sample Amount: 1



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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-021

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Valley to Valley	2.788	16.206	0
Yes	Manual Baseline	2.908	3.279	0
Yes	Manual Baseline	9.6	9.951	0
Yes	Manual Baseline	10.302	10.702	0
Yes	Manual Baseline	11.971	12.17	0
Yes	Manual Baseline	12.639	13.088	0
Yes	Manual Baseline	15.576	16.022	0

Sample Name: **297025-003,256407,5x//cl** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-021** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\043.seq** Instrument: GC06 (Offline) Vial: 21 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met	Software Version 3.1.7 Run Date: 2/12/2018 9:46:42 PM Analysis Date: 2/13/2018 10:39:04 AM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.773	3.776	48026	7.909
PCB1016#1	5.367	5.347	11112	41.968
PCB1016#2	6.367	6.387	7428	28.316
PCB1016#3		6.680		0.000 BDL
PCB1016#4		7.130		0.000 BDL
PCB1016#5	7.610	7.630	9083	76.763
PCB1260#1	11.143	11.150	10142	24.766
PCB1260#2	11.790	11.797	11520	28.808
PCB1260#3	12.643	12.650	7912	32.930
PCB1260#4	13.390	13.390	989	1.931
PCB1260#5	14.033	14.040	6704	25.162
Decachlorobiphenyl	16.630	16.640	114894	13.045

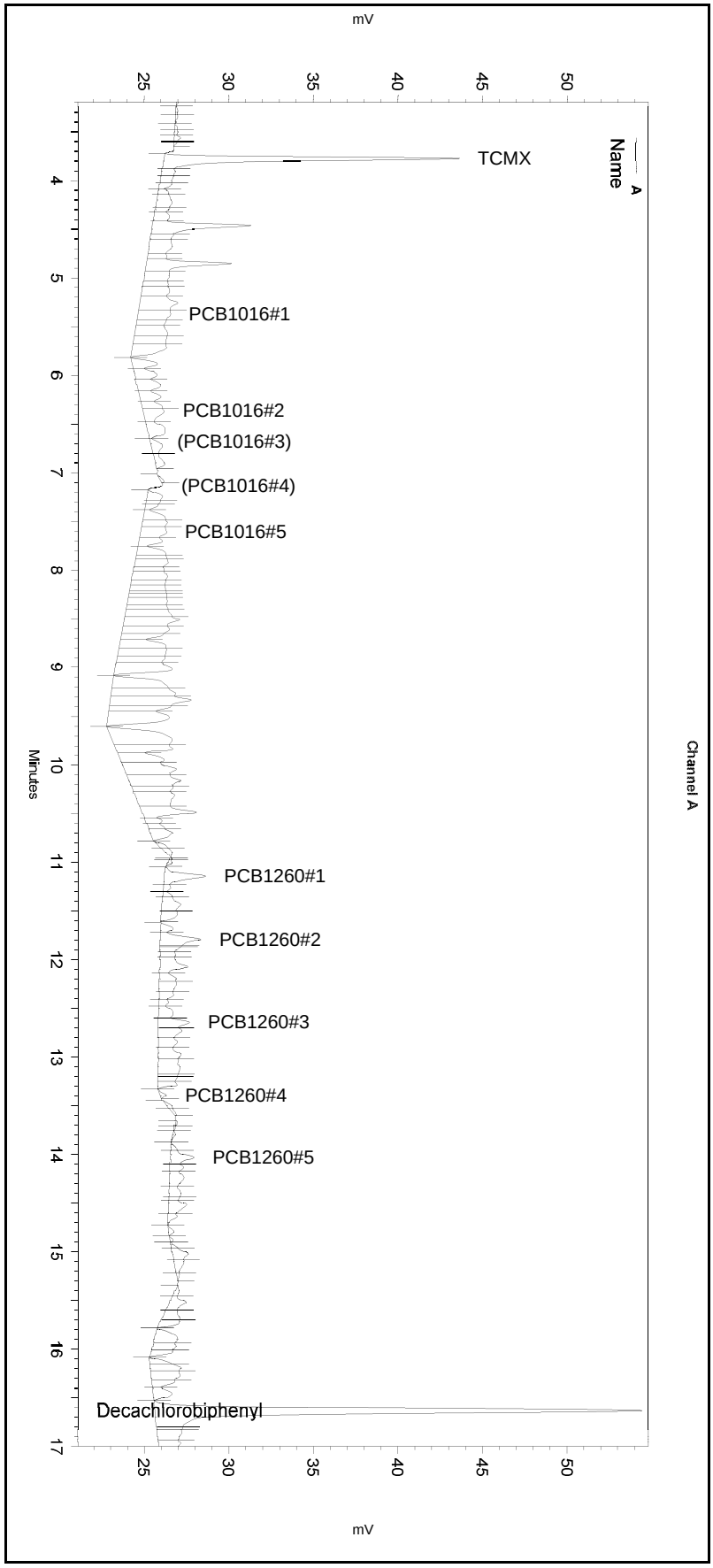
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.947	2.930	38829	6.243
PCB1016#1		4.330		0.000 BDL
PCB1016#2	5.193	5.217	9248	39.861
PCB1016#3	5.433	5.417	4054	27.356
PCB1016#4	5.933	5.940	5598	50.733
PCB1016#5	6.667	6.637	19704	107.947
PCB1260#1	9.833	9.830	21169	65.086
PCB1260#2	10.453	10.450	22136	68.580
PCB1260#3	11.367	11.377	3477	13.110
PCB1260#4	12.037	12.033	6106	13.430
PCB1260#5	12.697	12.703	2303	7.989
Decachlorobiphenyl	15.653	15.653	83698	9.918

Sample Name: **297025-003,256407,5x//cl**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-021**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\043.seq**
Instrument: GC06 (Offline) Vial: 21 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met

Software Version 3.1.7
Run Date: 2/12/2018 9:46:42 PM
Analysis Date: 2/13/2018 10:39:04 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0
Yes	Reset Baseline	10.946	0	0

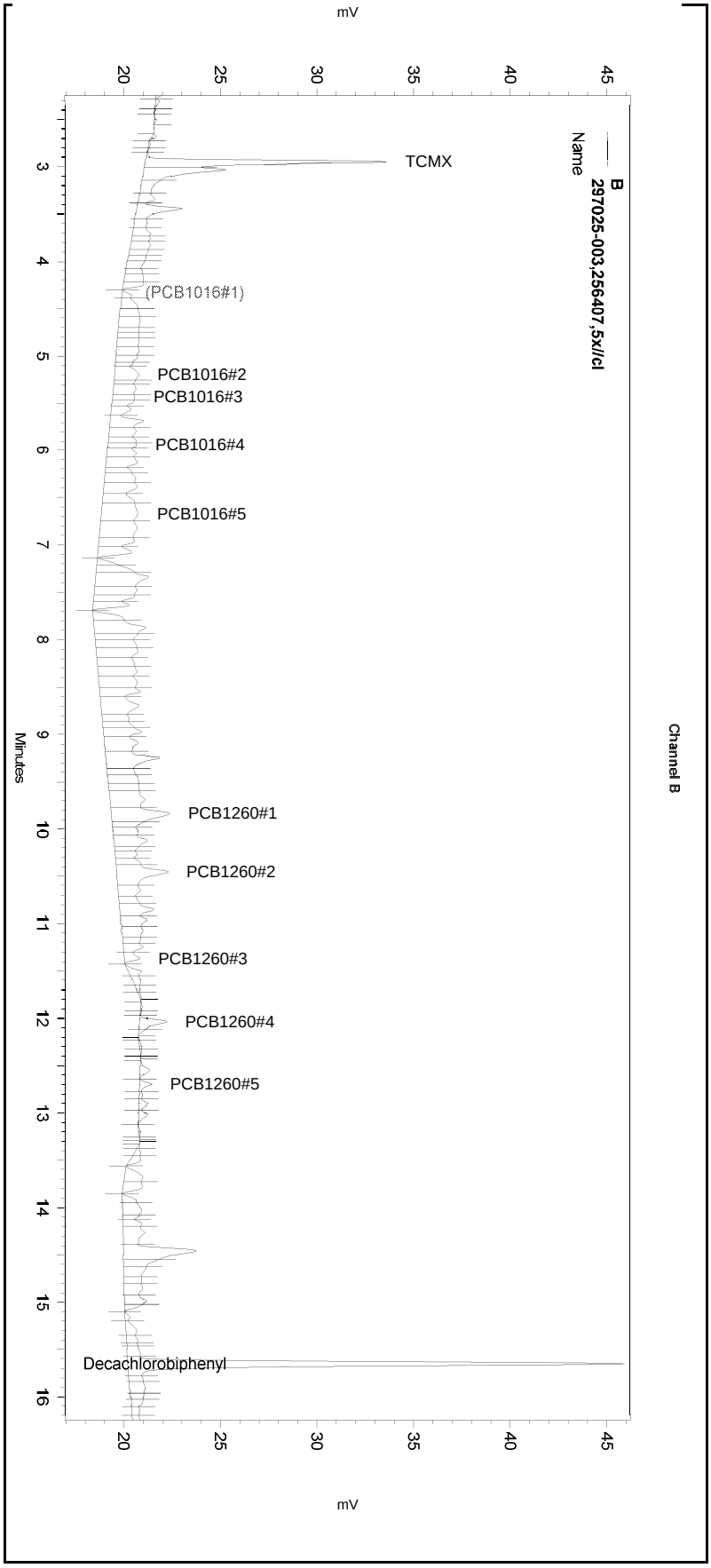
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-021

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Sample Name: **297025-003,256407,5x//cl**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-021**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\043.seq**
Instrument: GC06 (Offline) Vial: 21 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met

Software Version 3.1.7
Run Date: 2/12/2018 9:46:42 PM
Analysis Date: 2/13/2018 10:39:04 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-021

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

ENTHALPY SAMPLE USER REPORT FOR EPA 8082A

Inst	: GC06	Lab ID	: 297025-004	Client ID	: HPP-FSS-009D
Seqnum	: 208063912018	Matrix	: Soil	Acct	: IEECI (MJD)
File	: 044_018	Batch	: 256407	Time	: 13-FEB-2018 22:06
Cal	: 208052389001	Caldate	: 05-FEB-2018		
IDF	: 50.0	Raw Units	: pg/uL	Units	: ug/Kg

30.03 g --> 10.0 ml = 0.333 ml/g PDF

Analyte	Ch	Raw	Result	Conf	RPD	RL	Blank	Flags
Aroclor-1016	A	2.426	ND	160 J	121%	170		u
Aroclor-1016 Peak # 1	A	2.583	43.01	14.24 [omit]	101%			
Aroclor-1016 Peak # 2	A	3.648	60.74	144.57	82%			
Aroclor-1016 Peak # 3	A	1.046	17.41	235.71	172%			
Aroclor-1016 Peak # 4	A	31.48	524.11 [omit]	468.82 [omit]	11%			
Aroclor-1016 Peak # 5	A	18.26	304.08 [omit]	110.28	94%			
Aroclor-1221	A		ND			330		u
Aroclor-1232	A		ND			170		u
Aroclor-1242	A		ND			170		u
Aroclor-1248	A		ND			170		u
Aroclor-1254	A		ND			170		u
Aroclor-1260	B	290.6	4800	4700	2%	170		u
Aroclor-1260 Peak # 1	B	444.8	7406.61 [omit]	4404.42	51%			
Aroclor-1260 Peak # 2	B	316.3	5267.04	4280.10	21%			
Aroclor-1260 Peak # 3	B	261.1	4347.52	4617.75	6%			
Aroclor-1260 Peak # 4	B	374.1	6229.10 [omit]	4938.84	23%			
Aroclor-1260 Peak # 5	B	294.3	4900.49	5375.57	9%			

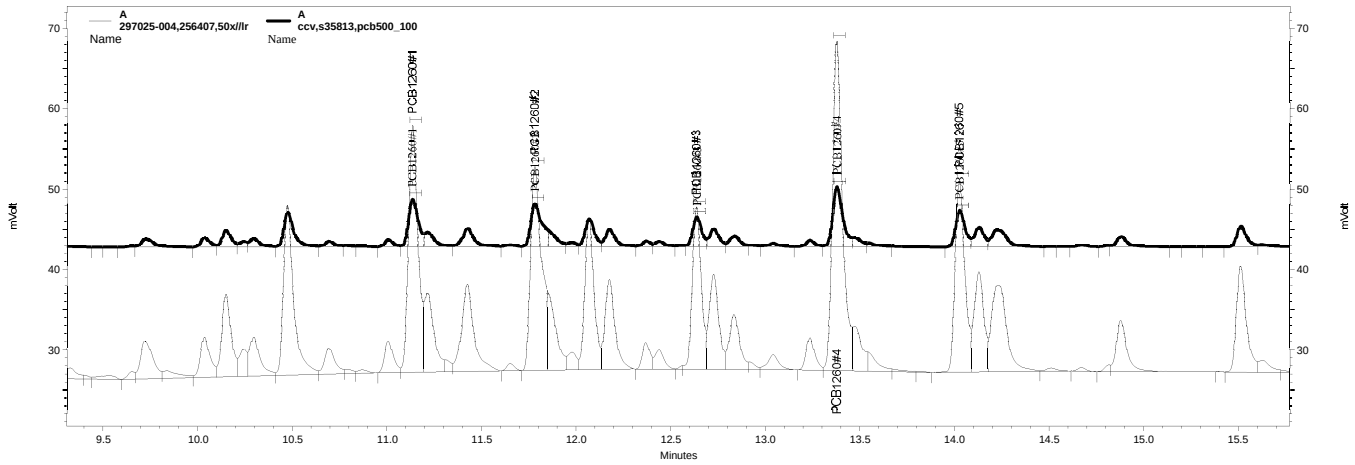
Surrogate	Ch	Raw	Spiked	Result	%Rec	Limits	Flags
TCMX	A	0.9672	16.65	16.10	DO	44-130	u
Decachlorobiphenyl	A	-2.587	16.65	-43.08	DO	26-153	u

02/13/18 : lr

RDG 02/14/18 : Corrected automatically drawn baseline for all channels.

Analyst: RDG Date: 02/14/18 Reviewer: EAH Date: 02/15/18

u=use



\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\044-018, A

\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\040-014, A

Sample Name: **297025-004,256407,50x//Ir** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\044-018** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\044.seq** Instrument: GC06 (Offline) Vial: 18 Operator: Pest 3. Analyst (lims2k3\pest3) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met	Software Version 3.1.7 Run Date: 2/13/2018 10:06:15 PM Analysis Date: 2/14/2018 10:54:21 AM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.767	3.776	5873	0.967
PCB1016#1	5.340	5.347	684	2.583
PCB1016#2	6.367	6.387	957	3.648
PCB1016#3	6.667	6.680	166	1.046
PCB1016#4	7.113	7.130	2767	31.478
PCB1016#5	7.613	7.630	2161	18.263
PCB1260#1	11.133	11.150	108330	264.530
PCB1260#2	11.780	11.797	102796	257.063
PCB1260#3	12.633	12.650	66637	277.342
PCB1260#4	13.377	13.390	151901	296.627
PCB1260#5	14.023	14.040	86021	322.857
Decachlorobiphenyl	16.623	16.640	12714	0.000

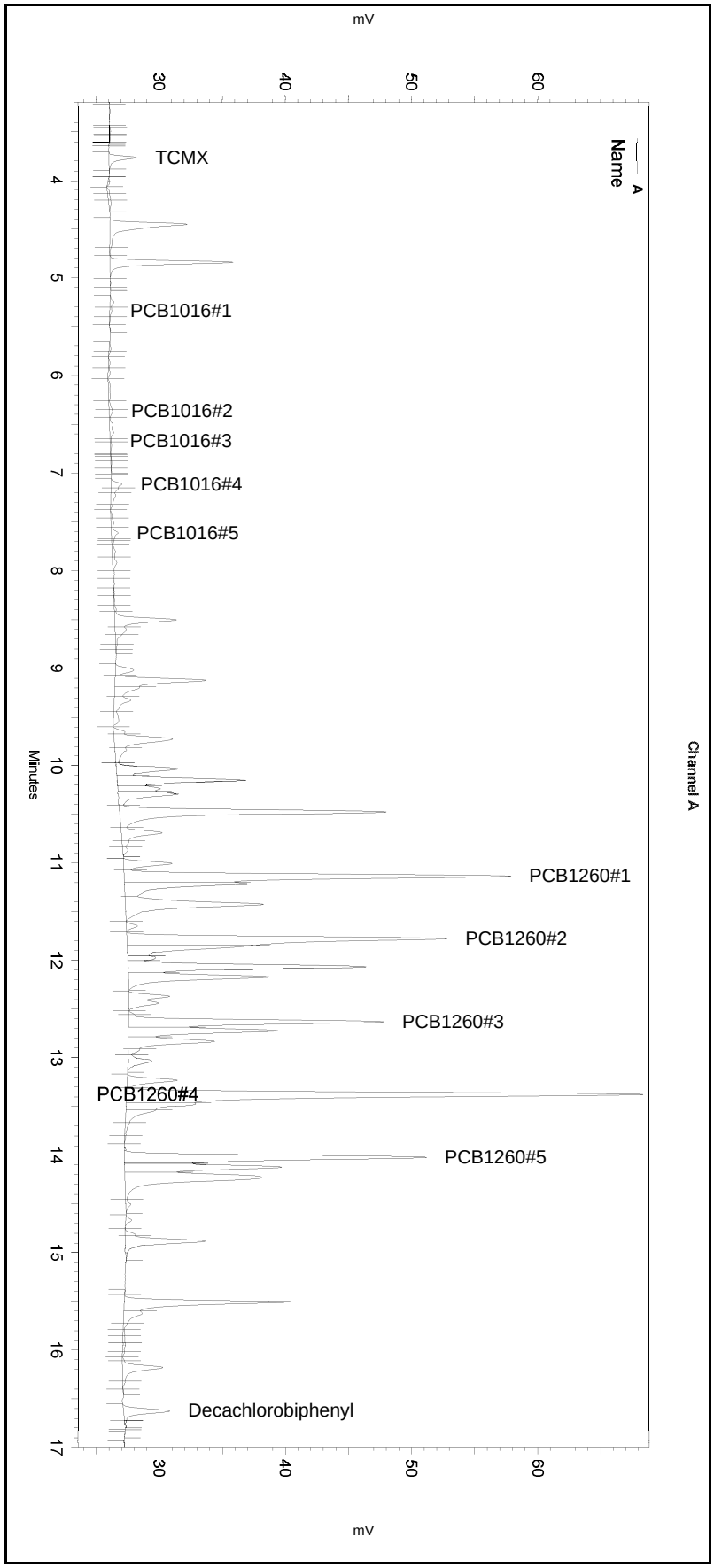
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.940	2.930	3721	0.598
PCB1016#1	4.317	4.330	257	0.855
PCB1016#2	5.213	5.217	448	8.683
PCB1016#3	5.433	5.417	942	14.157
PCB1016#4	5.940	5.940	3107	28.158
PCB1016#5	6.640	6.637	1209	6.623
PCB1260#1	9.827	9.830	144682	444.841
PCB1260#2	10.447	10.450	124632	316.338
PCB1260#3	11.373	11.377	69253	261.112
PCB1260#4	12.030	12.033	170090	374.120
PCB1260#5	12.693	12.703	84846	294.324
Decachlorobiphenyl	15.647	15.653	9299	1.102

Sample Name: **297025-004,256407,50x//Ir**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\044-018**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\044.seq**
Instrument: GC06 (Offline) Vial: 18 Operator: Pest 3. Analyst (lims2k3\pest3)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met

Software Version 3.1.7
Run Date: 2/13/2018 10:06:15 PM
Analysis Date: 2/14/2018 10:54:21 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0
Yes	Reset Baseline	10.946	0	0
Yes	Valley to Valley	16.523	17.187	0

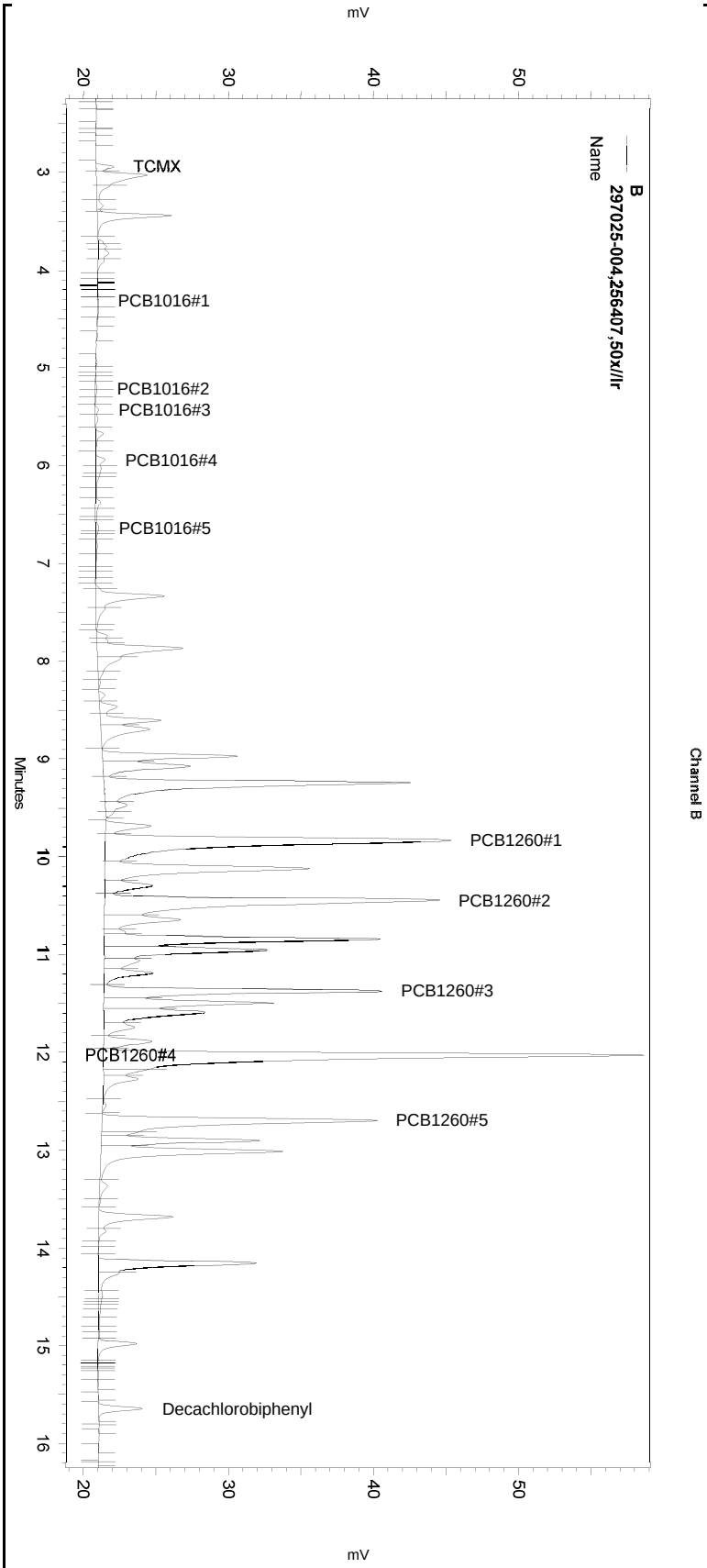
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\044-018

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Valley to Valley	3.611	4.06	0
Yes	Manual Baseline	3.711	3.951	0
Yes	Reset Baseline	4.374	0	0
Yes	Manual Baseline	10.95	11.599	0
Yes	Reset Baseline	12.308	0	0
Yes	Reset Baseline	13.159	0	0
Yes	Reset Baseline	14.605	0	0
Yes	Manual Baseline	16.549	16.808	0

Sample Name: **297025-004,256407,50x//Ir**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\044-018**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\044.seq**
Instrument: GC06 (Offline) Vial: 18 Operator: Pest 3. Analyst (lims2k3\pest3)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met

Software Version 3.1.7
Run Date: 2/13/2018 10:06:15 PM
Analysis Date: 2/14/2018 10:54:21 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1
Yes	Reset Baseline	3.394	0	0

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\044-018

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Manual Baseline	2.875	3.652	0
Yes	Reset Baseline	8.272	0	0
Yes	Reset Baseline	9.614	0	0
Yes	Reset Baseline	12.61	0	0
Yes	Manual Baseline	15.573	15.778	0

Sample Name: **297025-004,256407,50x//Ir**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\044-018**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\044.seq**
Instrument: GC06 Vial: 18 Operator: lims2k3\pest3
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met

Software Version 3.1.7
Run Date: 2/13/2018 10:06:15 PM
Analysis Date: 2/13/2018 10:30:12 PM
Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.767	3.776	7323	1.206
PCB1016#1	5.340	5.347	684	2.583
PCB1016#2	6.367	6.387	957	3.648
PCB1016#3	6.667	6.680	166	1.046
PCB1016#4	7.113	7.130	2767	31.478
PCB1016#5	7.613	7.630	2161	18.263
PCB1260#1	11.133	11.150	102732	250.860
PCB1260#2	11.780	11.797	103408	258.593
PCB1260#3	12.633	12.650	68676	285.828
PCB1260#4	13.377	13.390	153535	299.817
PCB1260#5	14.023	14.040	86197	323.517
Decachlorobiphenyl	16.623	16.640	13842	0.000

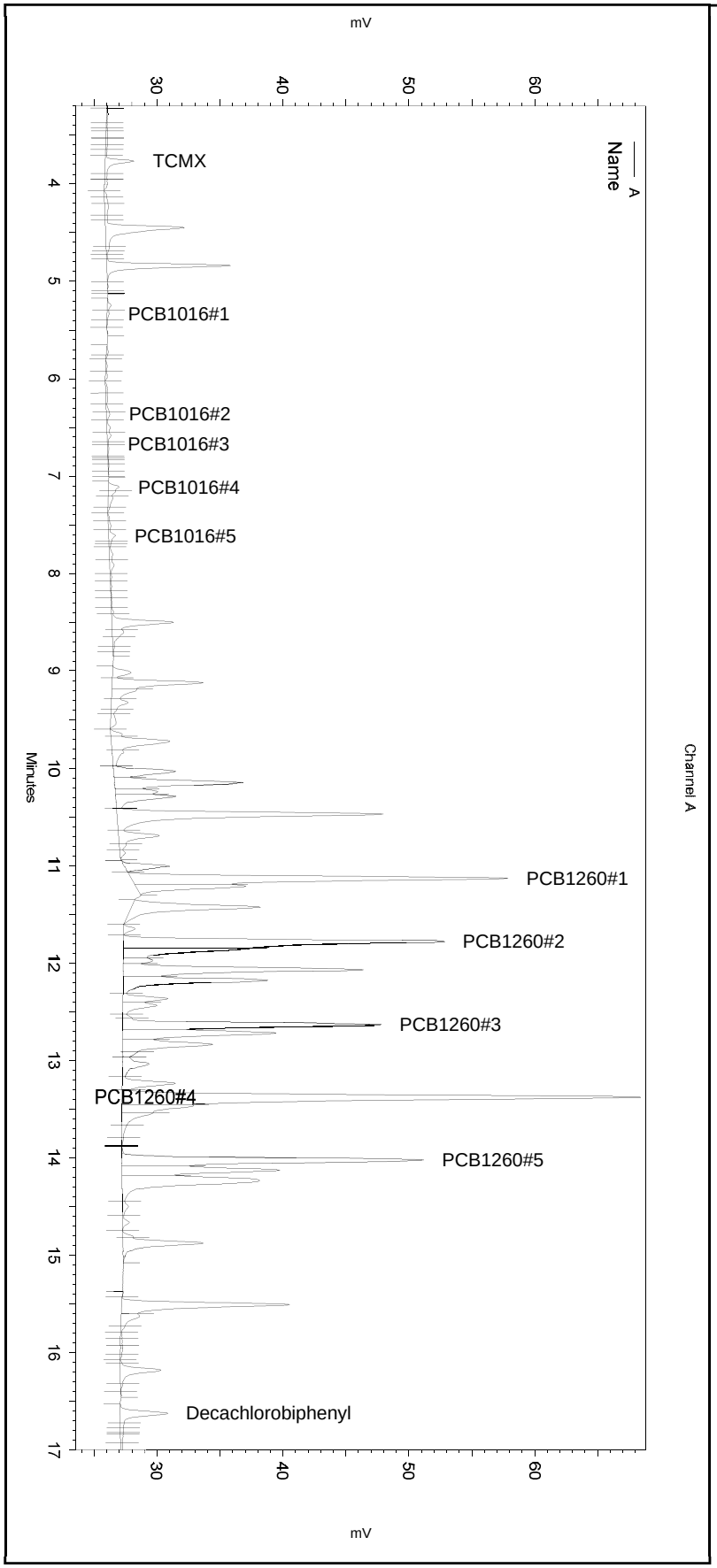
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.940	2.930	3796	0.610
PCB1016#1	4.317	4.330	358	1.191
PCB1016#2	5.213	5.217	448	8.683
PCB1016#3	5.433	5.417	943	14.161
PCB1016#4	5.940	5.940	3127	28.339
PCB1016#5	6.640	6.637	1243	6.810
PCB1260#1	9.827	9.830	155123	476.943
PCB1260#2	10.447	10.450	132084	334.352
PCB1260#3	11.373	11.377	73361	276.601
PCB1260#4	12.030	12.033	175595	386.228
PCB1260#5	12.693	12.703	88814	308.088
Decachlorobiphenyl	15.647	15.653	9385	1.112

Sample Name: **297025-004,256407,50x//Ir**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\044-018**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\044.seq**
Instrument: GC06 Vial: 18 Operator: lims2k3\pest3
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met

Software Version 3.1.7
Run Date: 2/13/2018 10:06:15 PM
Analysis Date: 2/13/2018 10:30:12 PM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

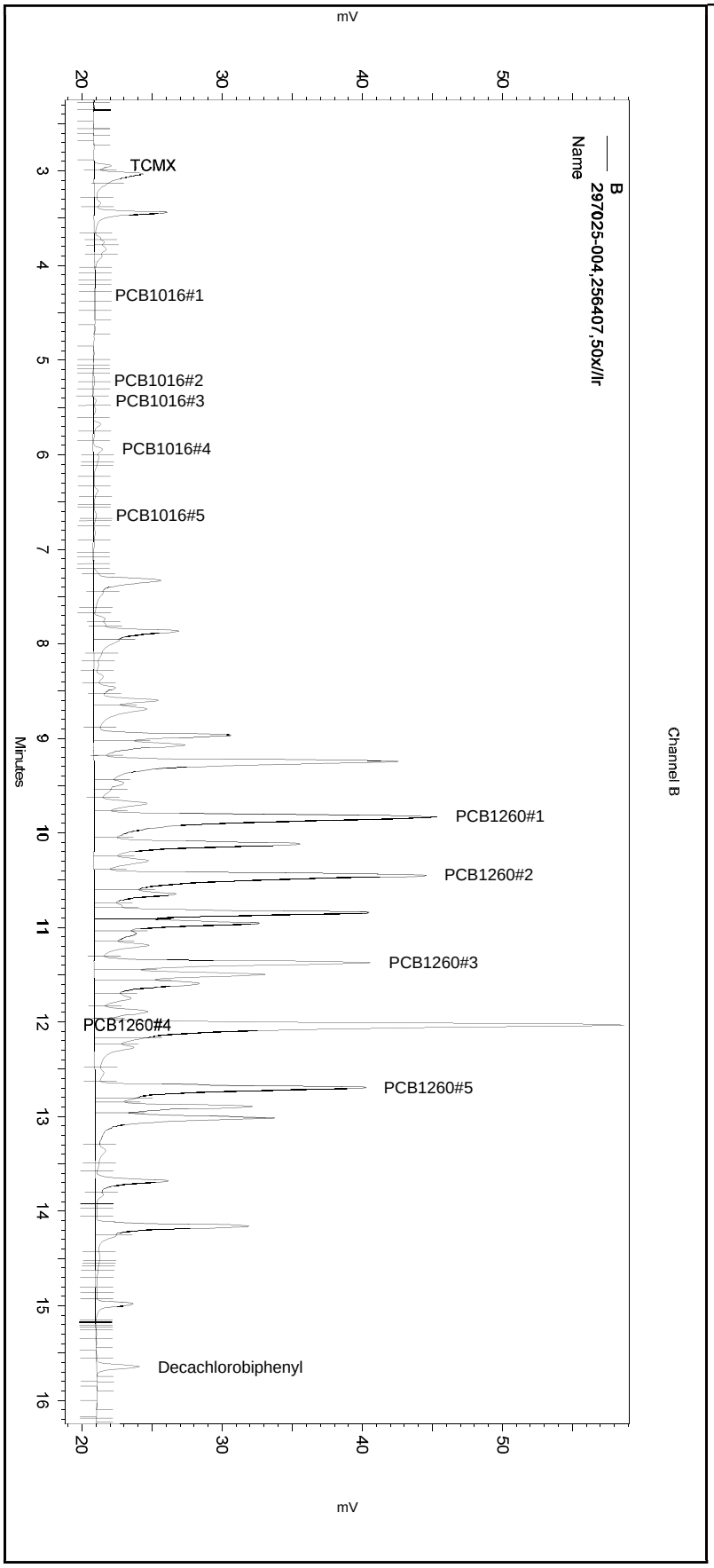
Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0
Yes	Reset Baseline	10.946	0	0

Manual Integration Fixes
==========
Data File: C:\Documents and Settings\All Users\Application Data\ChromatographySystem\Recovery Data\Instrument.10112\044-018_FBF5.tmp

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Sample Name: **297025-004,256407,50x//Ir**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\044-018**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\044.seq**
Instrument: GC06 Vial: 18 Operator: lims2k3\pest3
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met

Software Version 3.1.7
Run Date: 2/13/2018 10:06:15 PM
Analysis Date: 2/13/2018 10:30:12 PM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: C:\Documents and Settings\All Users\Application Data\ChromatographySystem\Recovery Data\Instrument.10112\044-018_FBF5.tmp

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

QC Raw Data

ENTHALPY BLANK USER REPORT FOR 297025 PCBS Soil
EPA 8082A

Inst : GC06 Lab ID : QC919736
Seqnum : 208062470012.2 Matrix : Soil
File : 043_012 Batch : 256407 Time : 12-FEB-2018 17:36
Cal : 208052389001 Caldate : 05-FEB-2018
IDF : 1.0 Raw Units : pg/uL Units : ug/Kg

29.83 g --> 10.0 ml = 0.3352 ml/g PDF

Analyte	Ch	Raw	Result	Conf	RPD	RL	Flags
Aroclor-1016	A	0.2911	ND	ND	39%	4.8	u
Aroclor-1016 Peak # 1	A	0.1284	0.04	ND			
Aroclor-1016 Peak # 2	A	0.4689	0.16	ND			
Aroclor-1016 Peak # 3	A	0	ND	ND			
Aroclor-1016 Peak # 4	A	0.8077	0.27	0.16	51%		
Aroclor-1016 Peak # 5	A	0.05071	0.02	0.17	163%		
Aroclor-1221	A		ND			9.7	u
Aroclor-1232	A		ND			4.8	u
Aroclor-1242	A		ND			4.8	u
Aroclor-1248	A		ND			4.8	u
Aroclor-1254	A		ND			4.8	u
Aroclor-1260	A	0.05582	ND	1.0 J	193%	4.8	u
Aroclor-1260 Peak # 1	A	0.2393	0.08	ND			
Aroclor-1260 Peak # 2	A	0	ND	5.06			
Aroclor-1260 Peak # 3	A	0	ND	0.01			
Aroclor-1260 Peak # 4	A	0.009764	0.00	ND			
Aroclor-1260 Peak # 5	A	0.03003	0.01	0.12	170%		

Surrogate	Ch	Raw	Spiked	Result	%Rec	Limits	Flags
TCMX	A	43.68	16.76	14.64	87	44-130	u
Decachlorobiphenyl	A	50.94	16.76	17.08	102	26-153	u

JC1 02/13/18 : Corrected automatically drawn baseline. [general version]

Analyst: RDG Date: 02/14/18 Reviewer: EAH Date: 02/15/18

u=use

Sample Name: **mb,qc919736,256407** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-012** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\043.seq** Instrument: GC06 (Offline) Vial: 14 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met	Software Version 3.1.7 Run Date: 2/12/2018 5:36:14 PM Analysis Date: 2/13/2018 10:41:24 AM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.807	0.000	265261	43.684
PCB1016#1	5.367	5.347	34	0.128
PCB1016#2	6.417	6.387	123	0.469
PCB1016#3		6.680		0.000 BDL
PCB1016#4	7.140	7.130	71	0.808
PCB1016#5	7.633	7.630	6	0.051
PCB1260#1	11.167	11.150	98	0.239
PCB1260#2	11.813	11.797	0	0.000
PCB1260#3		12.650		0.000 BDL
PCB1260#4	13.413	13.390	5	0.010
PCB1260#5	14.040	14.040	8	0.030
Decachlorobiphenyl	16.663	16.640	362620	50.944

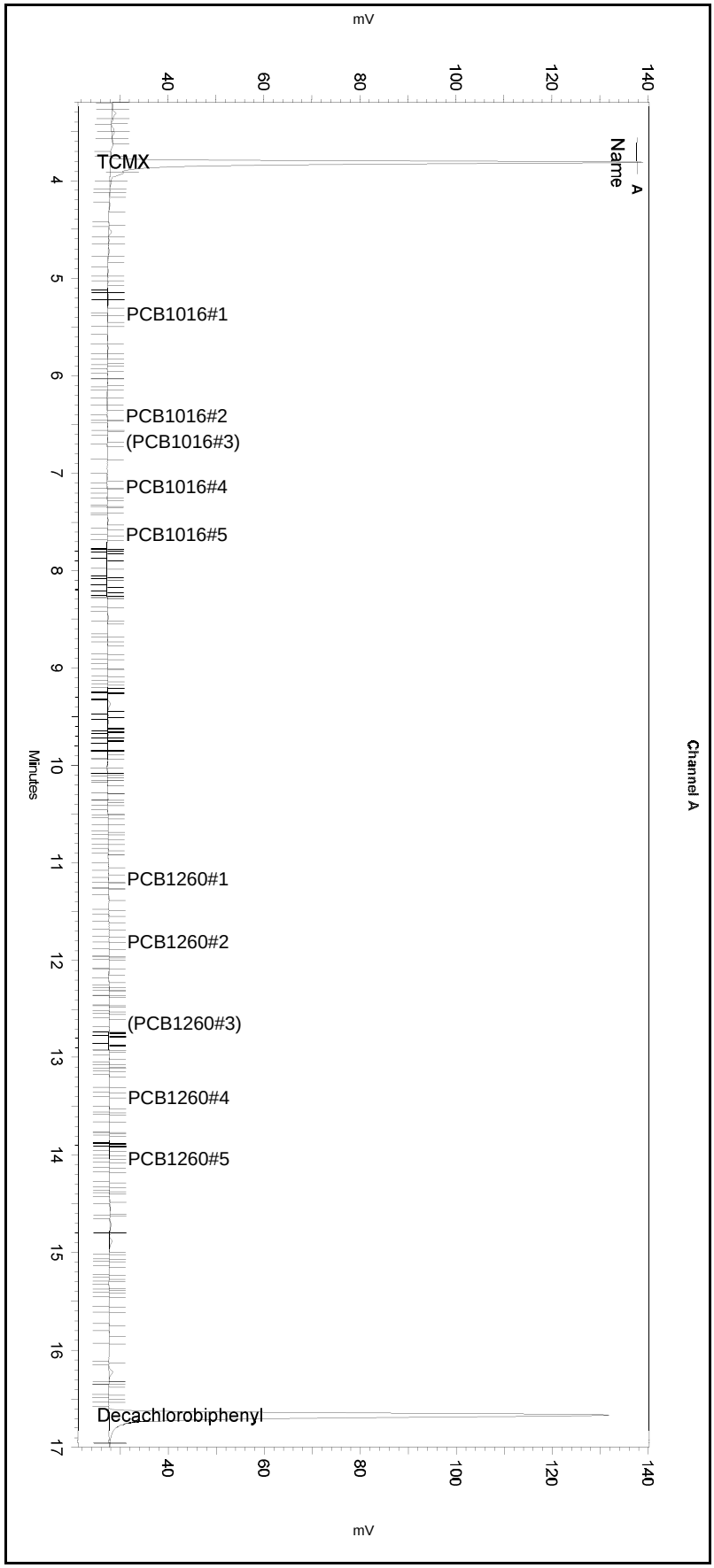
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.953	2.930	292227	46.981
PCB1016#1		4.330		0.000 BDL
PCB1016#2	5.247	5.217	0	7.067
PCB1016#3		5.417		0.000 BDL
PCB1016#4	5.967	5.940	53	0.480
PCB1016#5	6.640	6.637	91	0.499
PCB1260#1	9.813	9.830	0	0.000
PCB1260#2	10.467	10.450	7	15.088
PCB1260#3	11.367	11.377	8	0.030
PCB1260#4		12.033		0.000 BDL
PCB1260#5	12.690	12.703	105	0.364
Decachlorobiphenyl	15.670	15.653	378277	44.824

Sample Name: **mb,qc919736,256407**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-012**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\043.seq**
Instrument: GC06 (Offline) Vial: 14 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met

Software Version 3.1.7
Run Date: 2/12/2018 5:36:14 PM
Analysis Date: 2/13/2018 10:41:24 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0
Yes	Reset Baseline	10.946	0	0

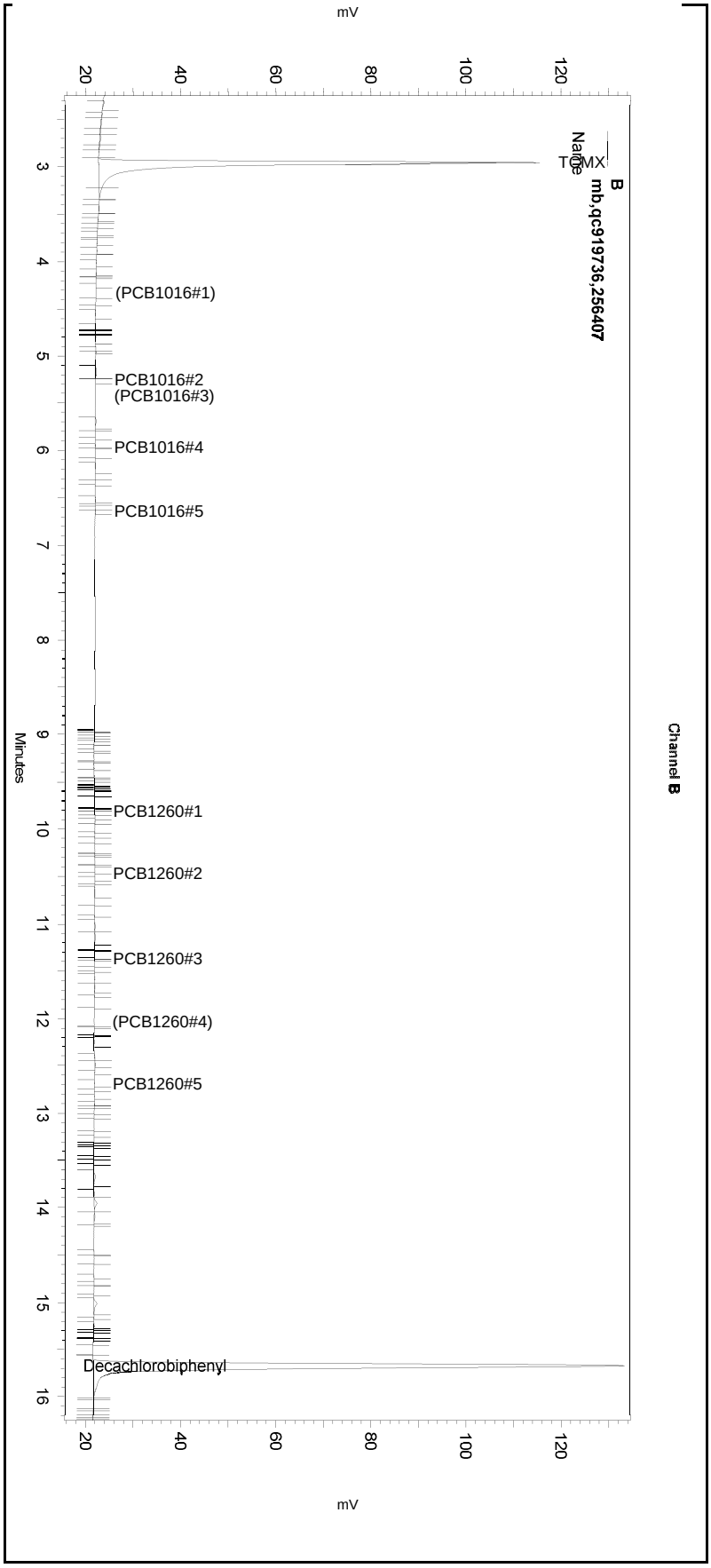
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-012

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reassign Peak	3.755	3.815	0
Yes	Valley to Valley	4.244	16.361	0

Sample Name: **mb,qc919736,256407**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-012**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\043.seq**
Instrument: GC06 (Offline) Vial: 14 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met

Software Version 3.1.7
Run Date: 2/12/2018 5:36:14 PM
Analysis Date: 2/13/2018 10:41:24 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-012

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Valley to Valley	3.383	15.322	0

Sample Name: **mb,qc919736,256407** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-012** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\043.seq** Instrument: GC06 (Offline) Vial: 14 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met	Software Version 3.1.7 Run Date: 2/12/2018 5:36:14 PM Analysis Date: 2/13/2018 10:37:38 AM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX		3.776		0.000 BDL
PCB1016#1	5.367	5.347	53	0.200
PCB1016#2	6.417	6.387	123	0.469
PCB1016#3		6.680		0.000 BDL
PCB1016#4	7.140	7.130	71	0.808
PCB1016#5	7.633	7.630	6	0.051
PCB1260#1	11.167	11.150	86	0.210
PCB1260#2	11.813	11.797	29	0.073
PCB1260#3		12.650		0.000 BDL
PCB1260#4	13.413	13.390	23	0.045
PCB1260#5	14.040	14.040	8	0.030
Decachlorobiphenyl	16.663	16.640	362620	50.944

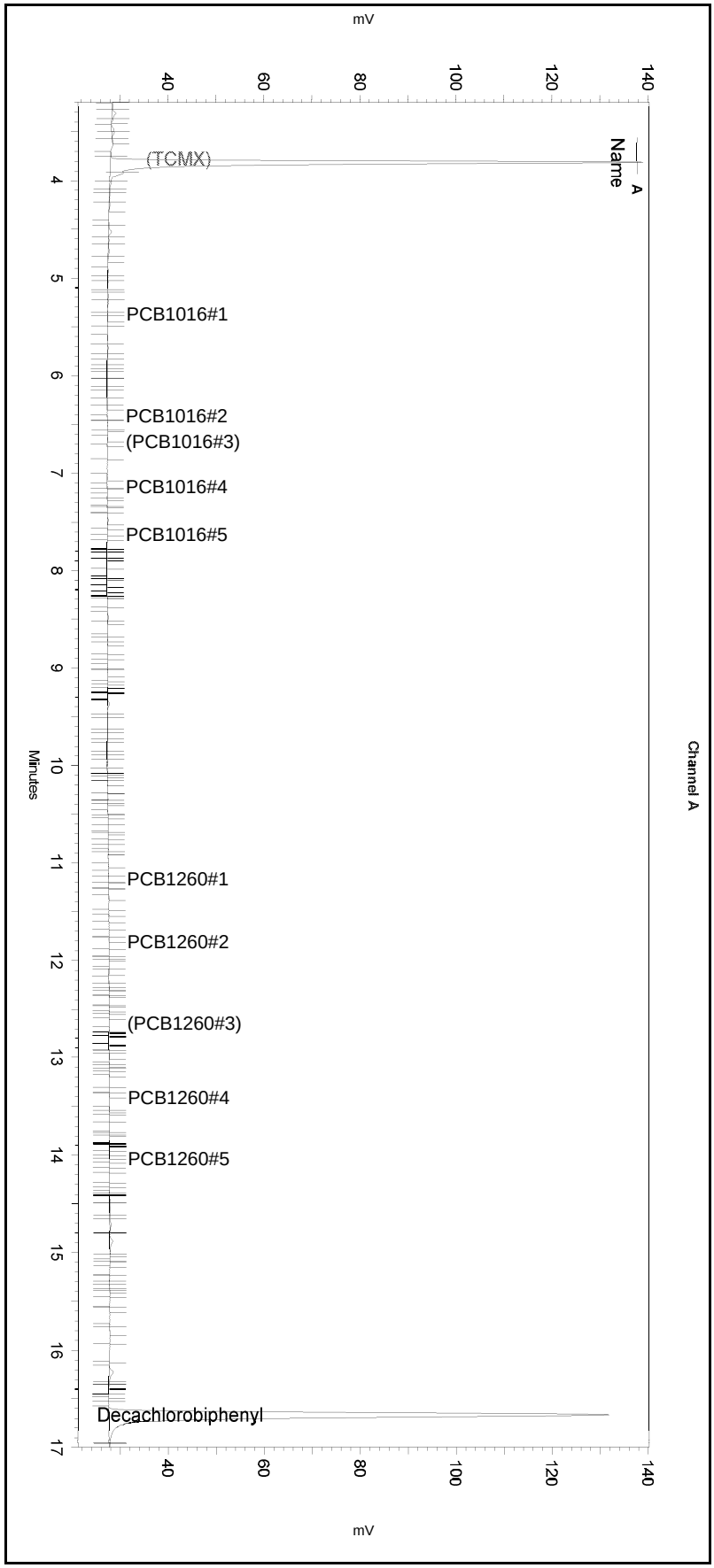
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.953	2.930	294775	47.391
PCB1016#1		4.330		0.000 BDL
PCB1016#2	5.247	5.217	6	7.088
PCB1016#3		5.417		0.000 BDL
PCB1016#4	5.967	5.940	53	0.480
PCB1016#5	6.640	6.637	322	1.764
PCB1260#1	9.813	9.830	0	0.000
PCB1260#2	10.467	10.450	7	15.088
PCB1260#3	11.367	11.377	8	0.030
PCB1260#4		12.033		0.000 BDL
PCB1260#5	12.690	12.703	341	1.183
Decachlorobiphenyl	15.670	15.653	378277	44.824

Sample Name: **mb,qc919736,256407**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-012**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\043.seq**
Instrument: GC06 (Offline) Vial: 14 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met

Software Version 3.1.7
Run Date: 2/12/2018 5:36:14 PM
Analysis Date: 2/13/2018 10:37:38 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0
Yes	Reset Baseline	10.946	0	0

Manual Integration Fixes
==========

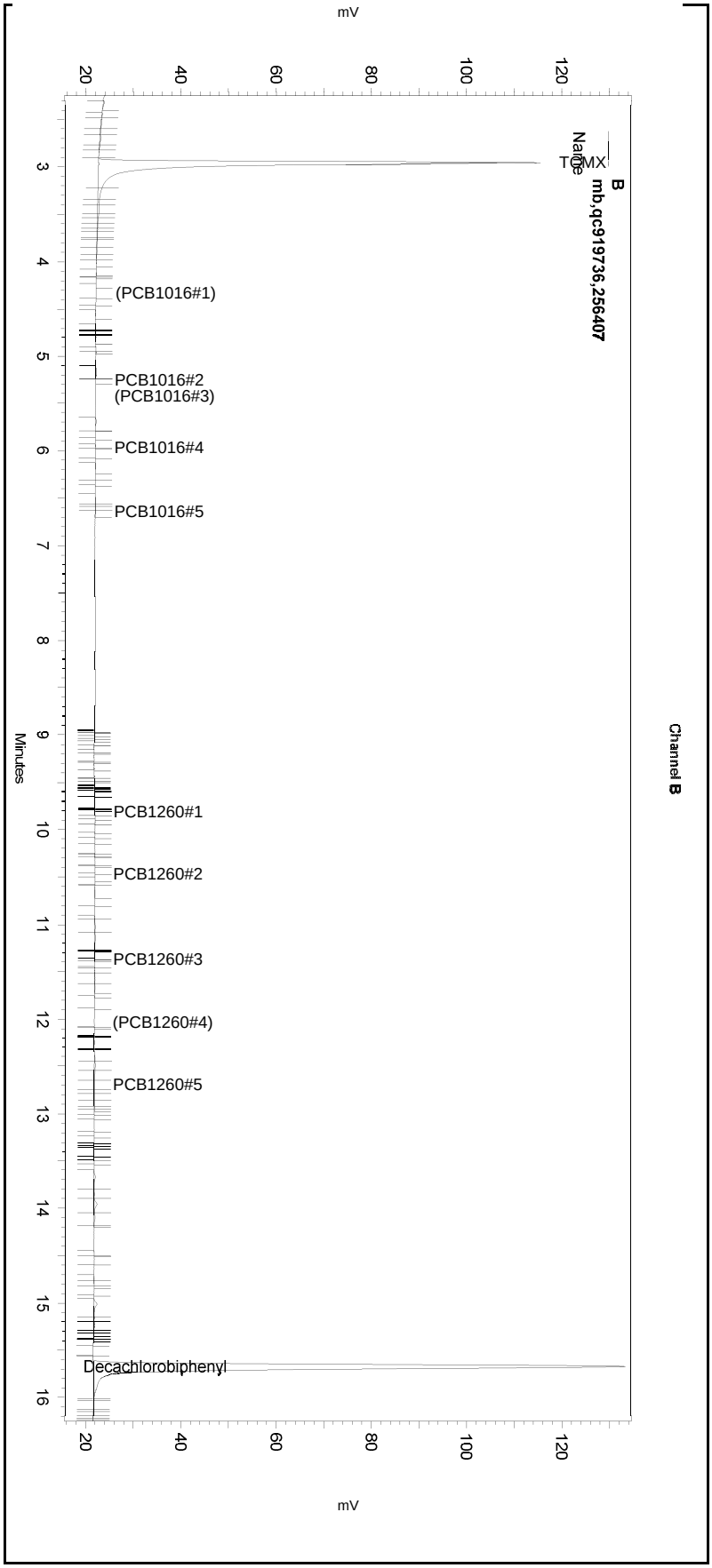
Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-012

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sample Name: **mb,qc919736,256407**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-012**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\043.seq**
Instrument: GC06 (Offline) Vial: 14 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met

Software Version 3.1.7
Run Date: 2/12/2018 5:36:14 PM
Analysis Date: 2/13/2018 10:37:38 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-012

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

ENTHALPY SPIKE USER REPORT FOR 297025 PCBS Soil
EPA 8082A

Type : LCS
Inst : GC06
Seqnum : 208062470015.2
File : 043_015
IDF : 1.0
Lab ID : QC919737
Matrix : Soil
Batch : 256407
Time : 12-FEB-2018 18:58
Cal : 208052389001
Units : ug/Kg

LCS: 30.02 g --> 10.0 ml = 0.3331 ml/g PDF

Analyte	Spiked	Raw	LCS	Ch	%Rec	Limits	Flags
Aroclor-1016	83.28	290.7	96.84	A	116	47-134	u
Aroclor-1016 Peak # 1		268.9	89.56	A			
Aroclor-1016 Peak # 2		313.5	104.4	A			
Aroclor-1016 Peak # 3		281.9	93.91	A			
Aroclor-1016 Peak # 4		258.3	86.05	A			
Aroclor-1016 Peak # 5		331.0	110.3	A			
Aroclor-1260	83.28	331.7	110.5	A	133	53-140	u
Aroclor-1260 Peak # 1		292.8	97.54	A			
Aroclor-1260 Peak # 2		285.8	95.19	A			
Aroclor-1260 Peak # 3		340.2	113.3	A			
Aroclor-1260 Peak # 4		373.3	124.3	A			
Aroclor-1260 Peak # 5		366.3	122.0	A			
TCMX	16.66	49.37	16.45	A	99	44-130	u
Decachlorobiphenyl	16.66	58.36	19.44	A	117	26-153	u

JC1 02/13/18 : Corrected automatically drawn baseline. [general version]

Analyst: RDG Date: 02/14/18 Reviewer: EAH Date: 02/15/18

u=use

Sample Name: **lcs,qc919737,256407** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-015** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\043.seq** Instrument: GC06 (Offline) Vial: 16 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met	Software Version 3.1.7 Run Date: 2/12/2018 6:58:43 PM Analysis Date: 2/13/2018 10:43:55 AM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.773	3.776	299795	49.371
PCB1016#1	5.340	5.347	71187	268.858
PCB1016#2	6.380	6.387	82249	313.544
PCB1016#3	6.673	6.680	44754	281.906
PCB1016#4	7.123	7.130	22708	258.330
PCB1016#5	7.623	7.630	39164	330.986
PCB1260#1	11.147	11.150	119919	292.829
PCB1260#2	11.793	11.797	114274	285.766
PCB1260#3	12.647	12.650	81729	340.155
PCB1260#4	13.387	13.390	191141	373.253
PCB1260#5	14.037	14.040	97587	366.267
Decachlorobiphenyl	16.637	16.640	411081	58.358

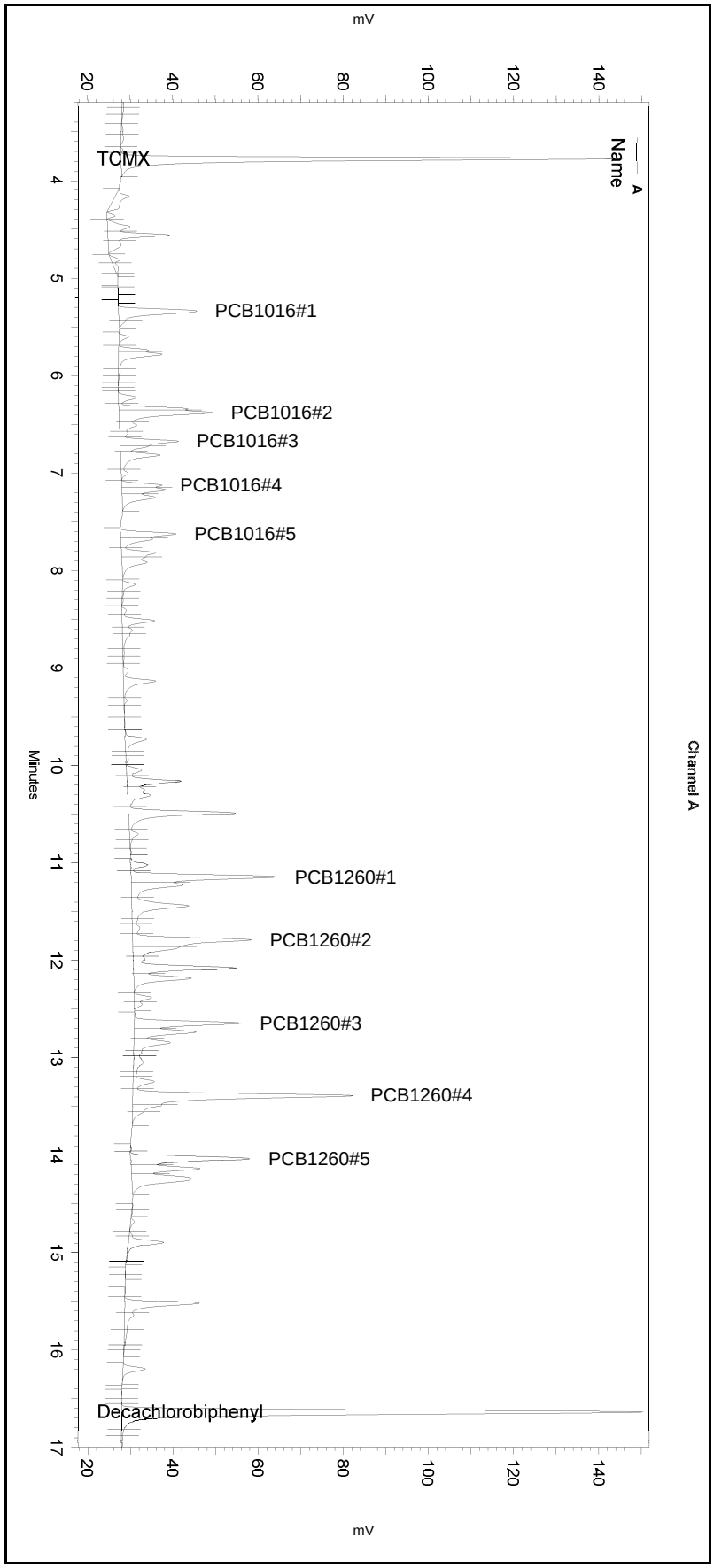
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.940	2.930	323825	52.061
PCB1016#1	4.323	4.330	86731	288.587
PCB1016#2	5.223	5.217	107509	335.397
PCB1016#3	5.427	5.417	67034	294.473
PCB1016#4	5.947	5.940	32028	290.257
PCB1016#5	6.640	6.637	52889	289.748
PCB1260#1	9.833	9.830	99507	305.946
PCB1260#2	10.457	10.450	93840	241.906
PCB1260#3	11.383	11.377	92057	347.092
PCB1260#4	12.037	12.033	160988	354.100
PCB1260#5	12.703	12.703	99688	345.809
Decachlorobiphenyl	15.657	15.653	446177	52.870

Sample Name: **lcs,qc919737,256407**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-015**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\043.seq**
Instrument: GC06 (Offline) Vial: 16 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met

Software Version 3.1.7
Run Date: 2/12/2018 6:58:43 PM
Analysis Date: 2/13/2018 10:43:55 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0
Yes	Reset Baseline	10.946	0	0

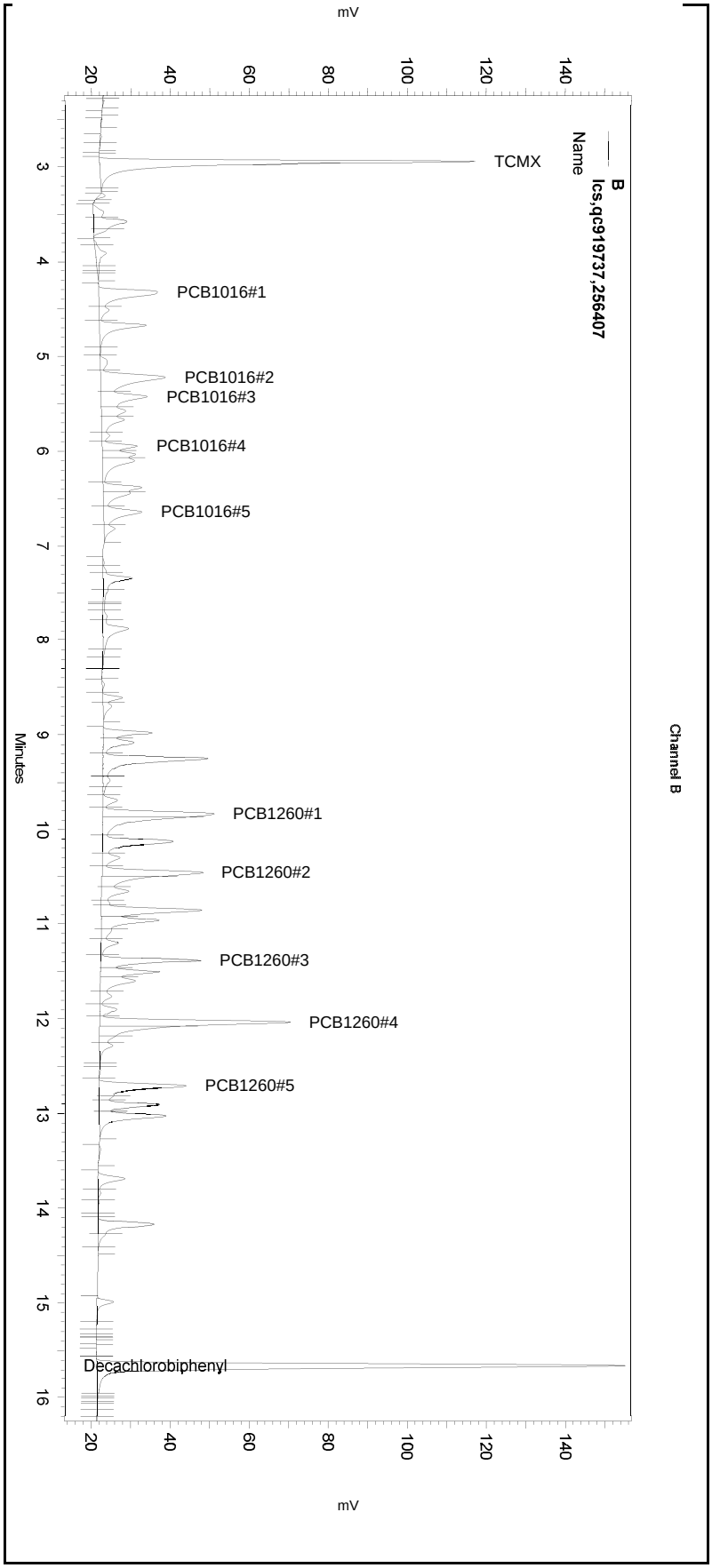
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-015

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	3.96	0	0
Yes	Reset Baseline	5.521	0	0
Yes	Reset Baseline	7.39	0	0
Yes	Reset Baseline	8.086	0	0
Yes	Reset Baseline	12.52	0	0
Yes	Reset Baseline	13.704	0	0
Yes	Reset Baseline	14.42	0	0

Sample Name: **lcs,qc919737,256407**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-015**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\043.seq**
Instrument: GC06 (Offline) Vial: 16 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met

Software Version 3.1.7
Run Date: 2/12/2018 6:58:43 PM
Analysis Date: 2/13/2018 10:43:55 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-015

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	3.265	0	0
Yes	Reset Baseline	4.206	0	0
Yes	Reset Baseline	6.958	0	0
Yes	Split Peak	9.868	0	0
Yes	Split Peak	10.497	0	0
Yes	Split Peak	12.079	0	0
Yes	Reset Baseline	13.262	0	0

Sample Name: **lcs,qc919737,256407** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-015** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\043.seq** Instrument: GC06 (Offline) Vial: 16 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met	Software Version 3.1.7 Run Date: 2/12/2018 6:58:43 PM Analysis Date: 2/13/2018 10:38:09 AM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.773	3.776	336736	55.455
PCB1016#1	5.340	5.347	72303	273.073
PCB1016#2	6.380	6.387	83328	317.657
PCB1016#3	6.673	6.680	46294	291.606
PCB1016#4	7.123	7.130	24871	282.937
PCB1016#5	7.623	7.630	39373	332.752
PCB1260#1	11.147	11.150	121131	295.788
PCB1260#2	11.793	11.797	120119	300.382
PCB1260#3	12.647	12.650	91936	382.636
PCB1260#4	13.387	13.390	202703	395.831
PCB1260#5	14.037	14.040	105294	395.193
Decachlorobiphenyl	16.637	16.640	411081	58.358

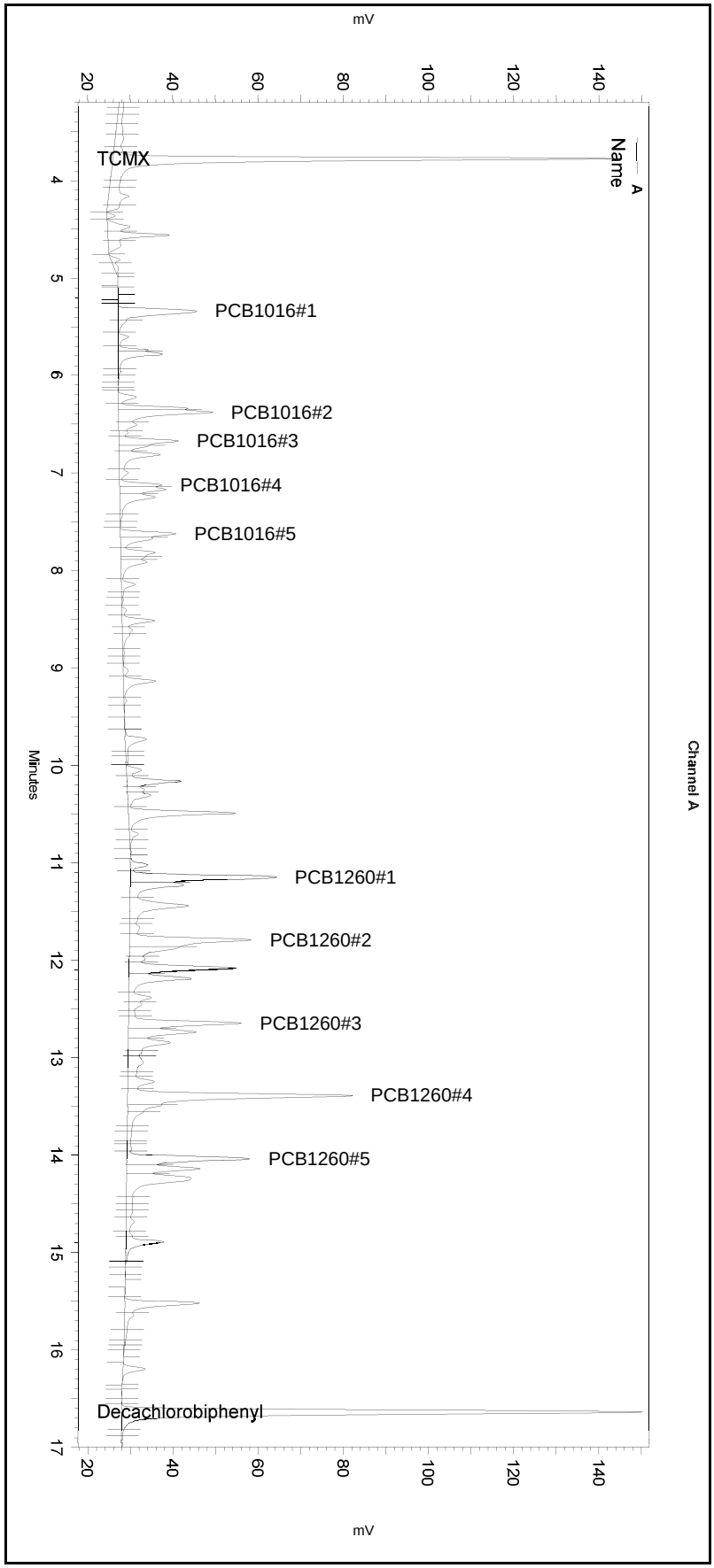
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.940	2.930	342916	55.131
PCB1016#1	4.323	4.330	104154	346.560
PCB1016#2	5.223	5.217	123833	377.858
PCB1016#3	5.427	5.417	79091	345.611
PCB1016#4	5.947	5.940	39594	358.825
PCB1016#5	6.640	6.637	68568	375.644
PCB1260#1	9.833	9.830	165209	507.954
PCB1260#2	10.457	10.450	139941	353.344
PCB1260#3	11.383	11.377	92126	347.352
PCB1260#4	12.037	12.033	217493	478.385
PCB1260#5	12.703	12.703	100229	347.686
Decachlorobiphenyl	15.657	15.653	446177	52.870

Sample Name: **lcs,qc919737,256407**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-015**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\043.seq**
Instrument: GC06 (Offline) Vial: 16 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met

Software Version 3.1.7
Run Date: 2/12/2018 6:58:43 PM
Analysis Date: 2/13/2018 10:38:09 AM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0
Yes	Reset Baseline	10.946	0	0

Manual Integration Fixes
==========

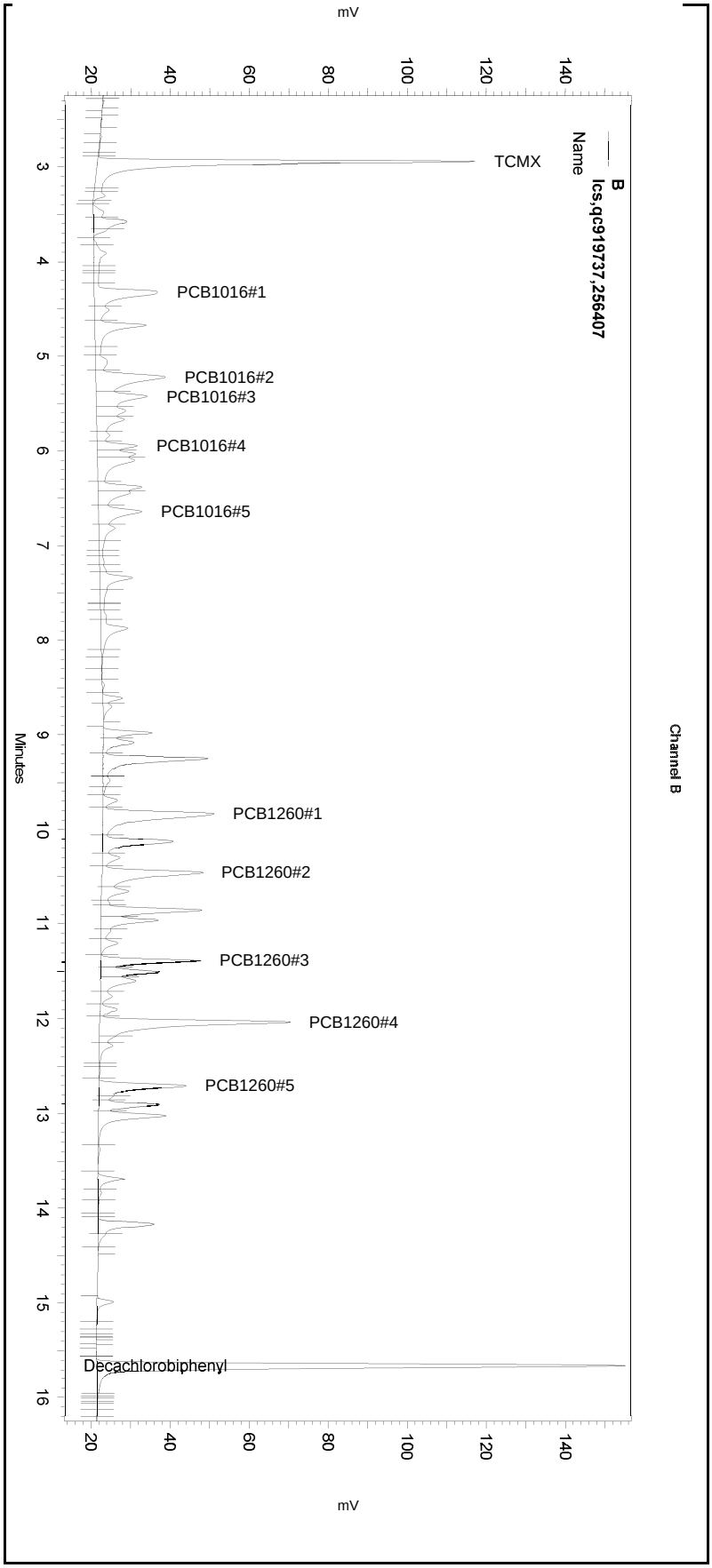
Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-015

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sample Name: **lcs,qc919737,256407**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-015**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\043.seq**
Instrument: GC06 (Offline) Vial: 16 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met

Software Version 3.1.7
Run Date: 2/12/2018 6:58:43 PM
Analysis Date: 2/13/2018 10:38:09 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-015

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

ENTHALPY SPIKE USER REPORT FOR 297025 PCBS Soil
EPA 8082A

Type : MSS	Type : MS	Type : MSD
Inst : GC06	Inst : GC06	Inst : GC06
Seqnum : 208062470016	Seqnum : 208062470017.2	Seqnum : 208062470018.2
File : 043_016	File : 043_017	File : 043_018
IDF : 1.0	IDF : 1.0	IDF : 1.0
Lab ID : 297059-001	Lab ID : QC919738	Lab ID : QC919739
Matrix : Soil	Matrix : Soil	Matrix : Soil
Batch : 256407	Batch : 256407	Batch : 256407
Time : 12-FEB-2018 19:26	Time : 12-FEB-2018 19:54	Time : 12-FEB-2018 20:22
Cal : 208052389001	Cal : 208052389001	Cal : 208052389001
Units : ug/Kg		

MSS: 30.16 g --> 10.0 ml = 0.3316 ml/g PDF
MS: 29.65 g --> 10.0 ml = 0.3373 ml/g PDF
MSD: 29.89 g --> 10.0 ml = 0.3346 ml/g PDF

Analyte	MSS	Ch	Spiked	MS Raw	MS Result	Ch	%Rec	Spiked	MSD Raw	MSD Result	Ch	%Rec	Limits	RPD	Lim	Flags
Aroclor-1016	ND	A	84.32	323.7	109.2	A	129	83.64	310.1	103.7	A	124	47-134	4	30	u
Aroclor-1016 Peak # 1				285.3	96.22	A			274.8	91.94	A					
Aroclor-1016 Peak # 2				330.4	111.4	A			315.9	105.7	A					
Aroclor-1016 Peak # 3				352.4	118.8	A			296.7	99.25	A					
Aroclor-1016 Peak # 4				272.9	92.05	A			292.2	97.76	A					
Aroclor-1016 Peak # 5				377.4	127.3	A			370.8	124.1	A					
Aroclor-1260	ND	A	84.32	350.9	118.3	A	140	83.64	342.4	114.5	A	137	53-140	2	30	u
Aroclor-1260 Peak # 1				314.2	106.0	A			312.0	104.4	A					
Aroclor-1260 Peak # 2				311.5	105.0	A			316.2	105.8	A					
Aroclor-1260 Peak # 3				334.2	112.7	A			357.1	119.5	A					
Aroclor-1260 Peak # 4				393.3	132.6	A			353.2	118.2	A					
Aroclor-1260 Peak # 5				401.1	135.3	A			373.3	124.9	A					
TCMX			16.86	48.84	16.47	A	98	16.73	48.93	16.37	A	98	44-130			u
Decachlorobiphenyl			16.86	60.20	20.30	A	120	16.73	47.53	15.90	A	95	26-153			u

JC1 02/13/18 : Corrected automatically drawn baseline. [general version]

Analyst: RDG Date: 02/14/18 Reviewer: EAH Date: 02/15/18

u=use

Sample Name: **ms,qc919738,256407** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-017** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\043.seq** Instrument: GC06 (Offline) Vial: 17 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met	Software Version 3.1.7 Run Date: 2/12/2018 7:54:43 PM Analysis Date: 2/13/2018 10:45:57 AM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.783	3.776	296566	48.839
PCB1016#1	5.350	5.347	75542	285.306
PCB1016#2	6.390	6.387	86665	330.378
PCB1016#3	6.687	6.680	55941	352.373
PCB1016#4	7.133	7.130	23991	272.926
PCB1016#5	7.633	7.630	44661	377.442
PCB1260#1	11.157	11.150	128686	314.237
PCB1260#2	11.800	11.797	124547	311.456
PCB1260#3	12.657	12.650	80299	334.203
PCB1260#4	13.397	13.390	201400	393.286
PCB1260#5	14.043	14.040	106871	401.112
Decachlorobiphenyl	16.643	16.640	423108	60.198

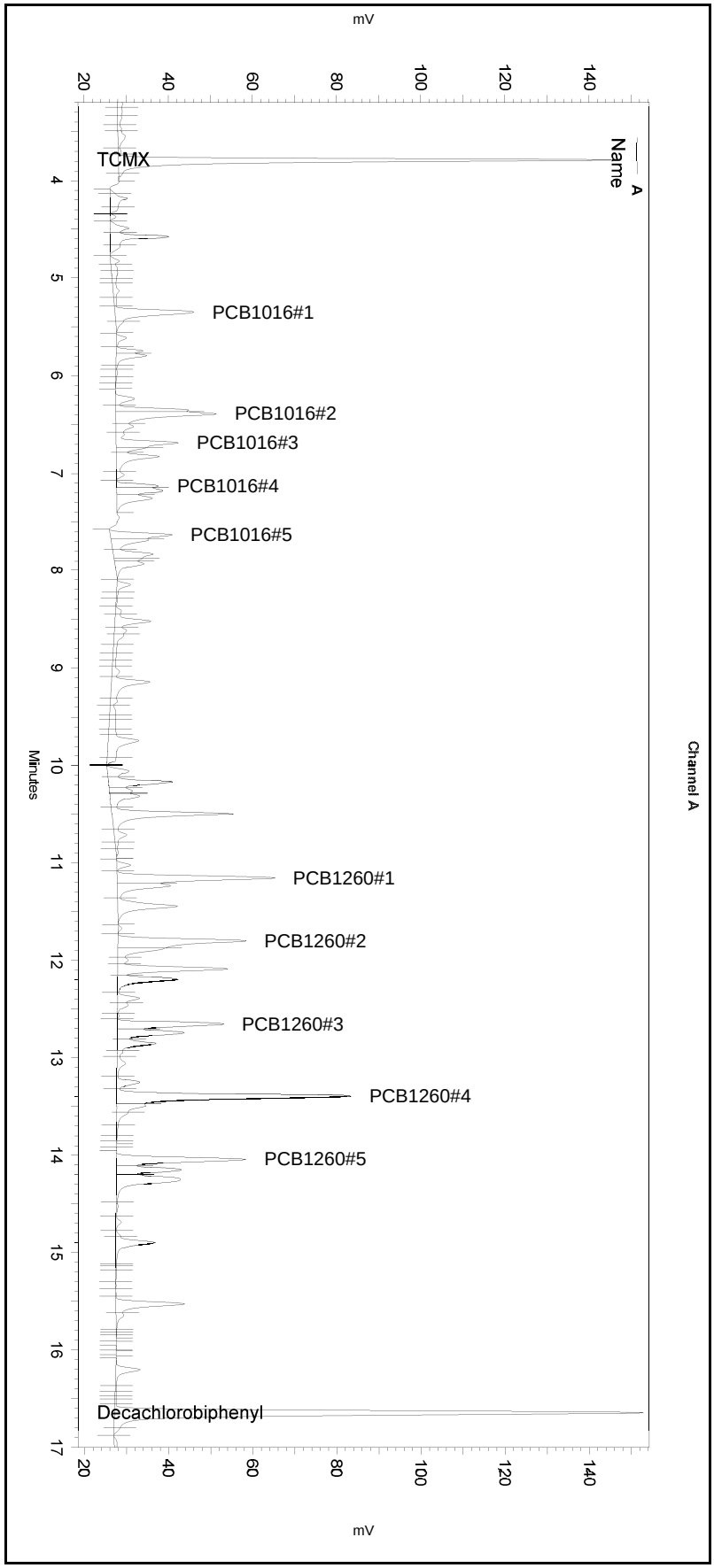
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.957	2.930	320731	51.564
PCB1016#1	4.340	4.330	86881	289.086
PCB1016#2	5.237	5.217	121921	372.958
PCB1016#3	5.437	5.417	71568	313.703
PCB1016#4	5.960	5.940	32863	297.825
PCB1016#5	6.653	6.637	54969	301.143
PCB1260#1	9.843	9.830	87824	270.025
PCB1260#2	10.467	10.450	109159	278.936
PCB1260#3	11.393	11.377	91846	346.297
PCB1260#4	12.050	12.033	161435	355.083
PCB1260#5	12.713	12.703	107380	372.492
Decachlorobiphenyl	15.663	15.653	427795	50.692

Sample Name: **ms,qc919738,256407**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-017**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\043.seq**
Instrument: GC06 (Offline) Vial: 17 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met

Software Version 3.1.7
Run Date: 2/12/2018 7:54:43 PM
Analysis Date: 2/13/2018 10:45:57 AM
Sample Amount: 1



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No items selected for this section

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Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0
Yes	Reset Baseline	10.946	0	0

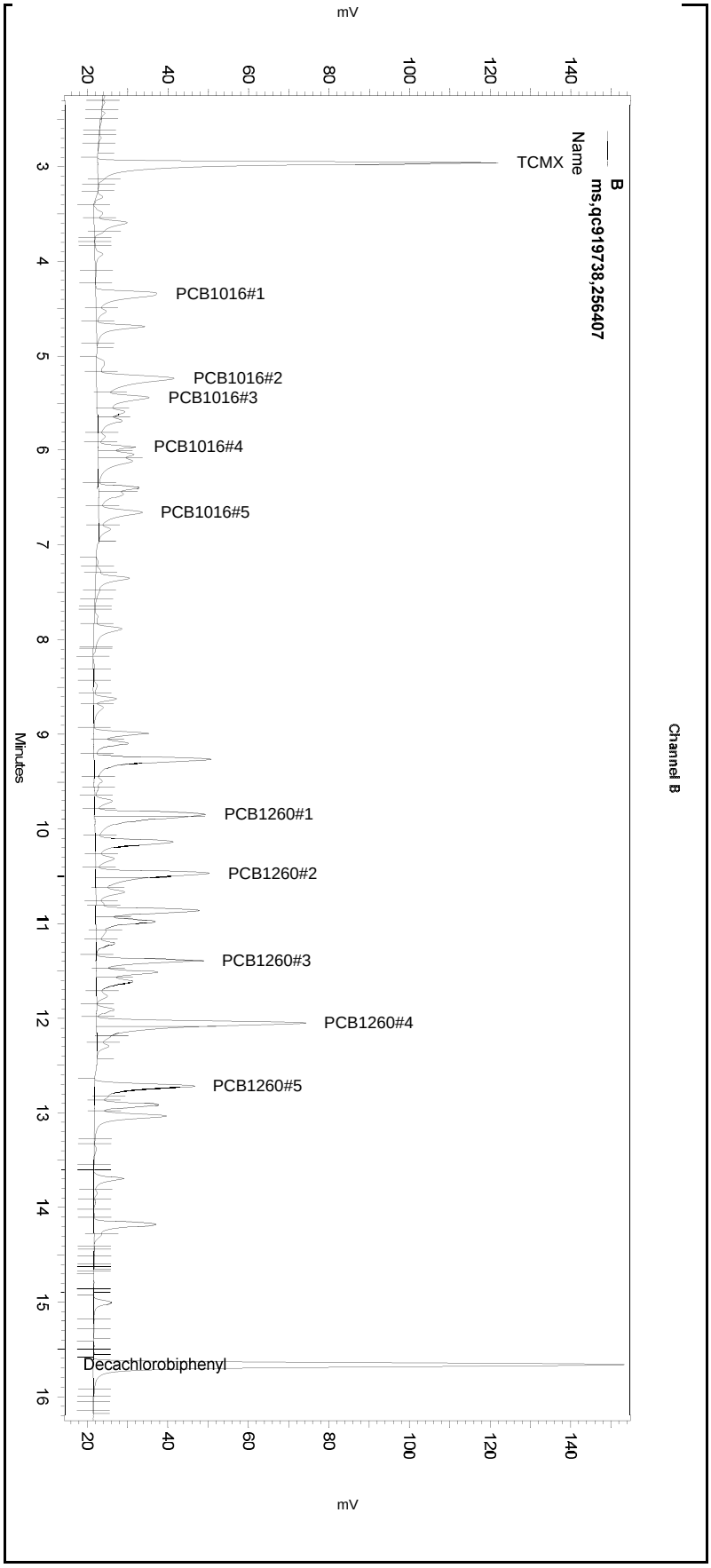
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-017

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	3.999	0	0
Yes	Reset Baseline	5.558	0	0
Yes	Reset Baseline	7.442	0	0
Yes	Reset Baseline	8.094	0	0
Yes	Reset Baseline	11.63	0	0

Sample Name: **ms,qc919738,256407**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-017**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\043.seq**
Instrument: GC06 (Offline) Vial: 17 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met

Software Version 3.1.7
Run Date: 2/12/2018 7:54:43 PM
Analysis Date: 2/13/2018 10:45:57 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-017

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	3.25	0	0
Yes	Reset Baseline	4.937	0	0
Yes	Reset Baseline	6.96	0	0
Yes	Split Peak	9.871	0	0
Yes	Split Peak	10.517	0	0
Yes	Split Peak	12.083	0	0
Yes	Reset Baseline	12.422	0	0

Sample Name: **ms,qc919738,256407** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-017** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\043.seq** Instrument: GC06 (Offline) Vial: 17 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met	Software Version 3.1.7 Run Date: 2/12/2018 7:54:43 PM Analysis Date: 2/13/2018 10:38:27 AM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.783	3.776	317554	52.296
PCB1016#1	5.350	5.347	88656	334.835
PCB1016#2	6.390	6.387	98701	376.261
PCB1016#3	6.687	6.680	72539	456.924
PCB1016#4	7.133	7.130	32985	375.243
PCB1016#5	7.633	7.630	47186	398.782
PCB1260#1	11.157	11.150	129410	316.005
PCB1260#2	11.800	11.797	127066	317.755
PCB1260#3	12.657	12.650	81233	338.090
PCB1260#4	13.397	13.390	201923	394.308
PCB1260#5	14.043	14.040	106871	401.112
Decachlorobiphenyl	16.643	16.640	423108	60.198

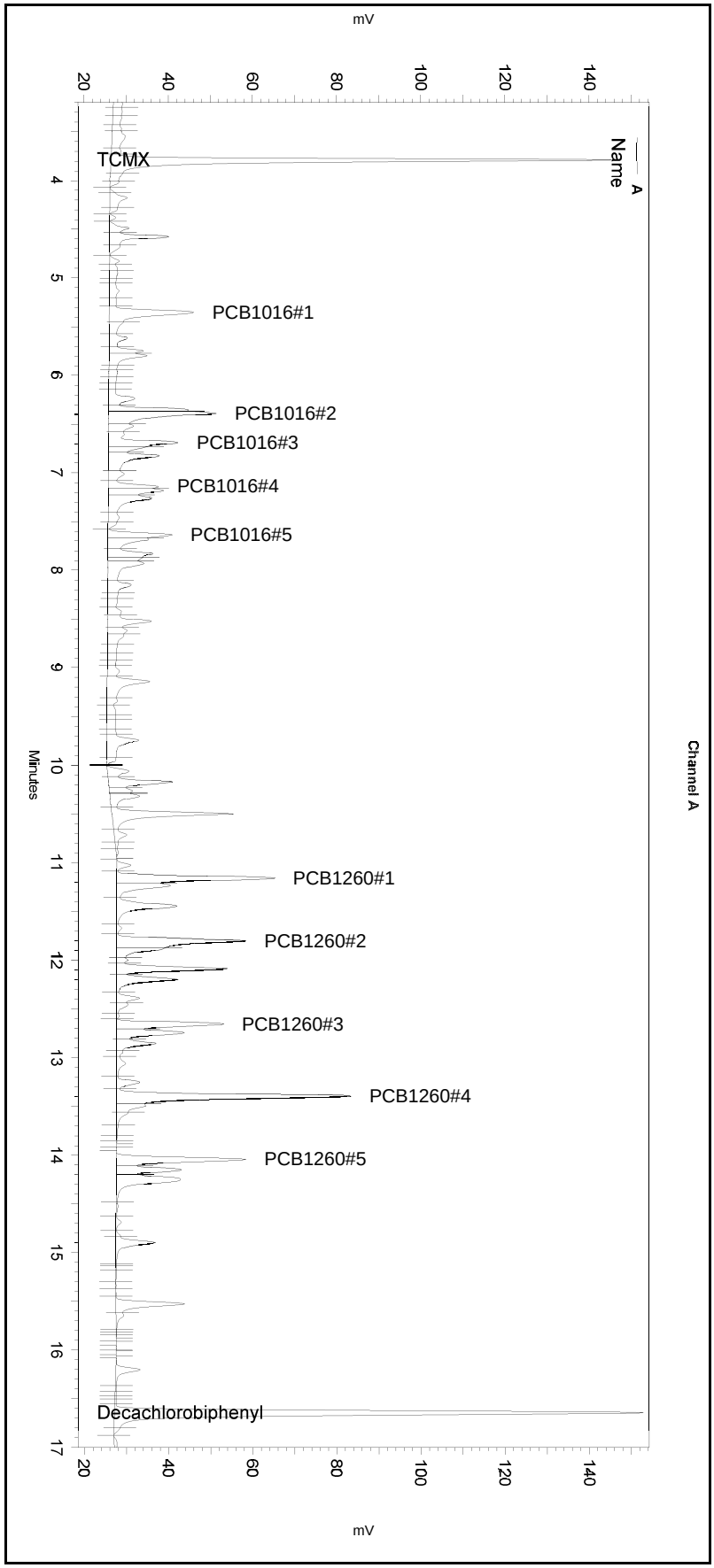
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.957	2.930	325120	52.270
PCB1016#1	4.340	4.330	95769	318.660
PCB1016#2	5.237	5.217	132652	400.218
PCB1016#3	5.437	5.417	79963	349.309
PCB1016#4	5.960	5.940	39049	353.886
PCB1016#5	6.653	6.637	69462	380.541
PCB1260#1	9.843	9.830	171089	526.033
PCB1260#2	10.467	10.450	154137	387.659
PCB1260#3	11.393	11.377	96828	365.081
PCB1260#4	12.050	12.033	232551	511.505
PCB1260#5	12.713	12.703	110743	384.158
Decachlorobiphenyl	15.663	15.653	427795	50.692

Sample Name: **ms,qc919738,256407**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-017**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\043.seq**
Instrument: GC06 (Offline) Vial: 17 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met

Software Version 3.1.7
Run Date: 2/12/2018 7:54:43 PM
Analysis Date: 2/13/2018 10:38:27 AM
Sample Amount: 1



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Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0
Yes	Reset Baseline	10.946	0	0

Manual Integration Fixes
==========

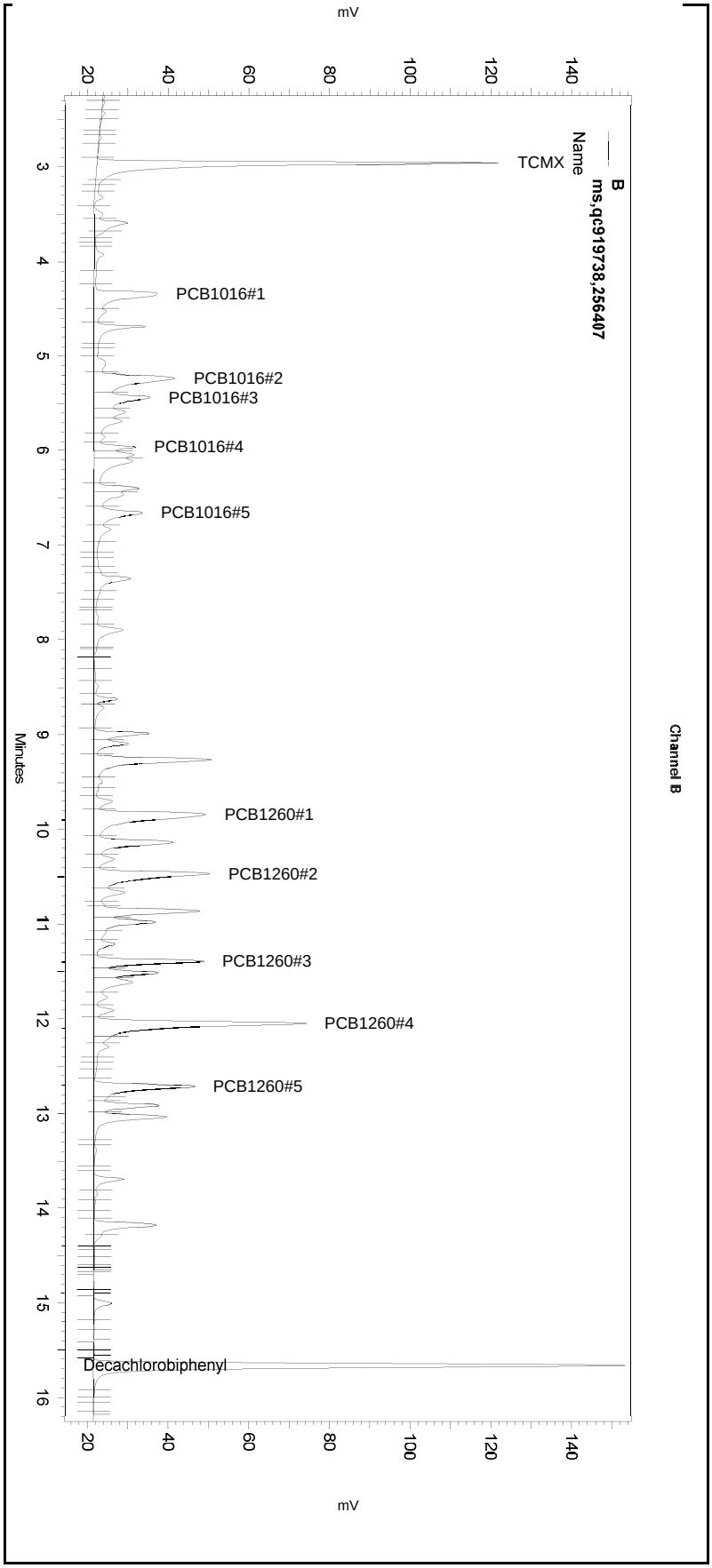
Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-017

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sample Name: **ms,qc919738,256407**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-017**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\043.seq**
Instrument: GC06 (Offline) Vial: 17 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met

Software Version 3.1.7
Run Date: 2/12/2018 7:54:43 PM
Analysis Date: 2/13/2018 10:38:27 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-017

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sample Name: **msd,qc919739,256407** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-018** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\043.seq** Instrument: GC06 (Offline) Vial: 18 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met	Software Version 3.1.7 Run Date: 2/12/2018 8:22:44 PM Analysis Date: 2/13/2018 10:47:04 AM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.770	3.776	297132	48.933
PCB1016#1	5.337	5.347	72762	274.806
PCB1016#2	6.377	6.387	82872	315.919
PCB1016#3	6.673	6.680	47095	296.652
PCB1016#4	7.120	7.130	25686	292.208
PCB1016#5	7.620	7.630	43876	370.808
PCB1260#1	11.143	11.150	127772	312.005
PCB1260#2	11.787	11.797	126437	316.182
PCB1260#3	12.643	12.650	85798	357.090
PCB1260#4	13.383	13.390	180890	353.235
PCB1260#5	14.030	14.040	99449	373.255
Decachlorobiphenyl	16.630	16.640	340300	47.529

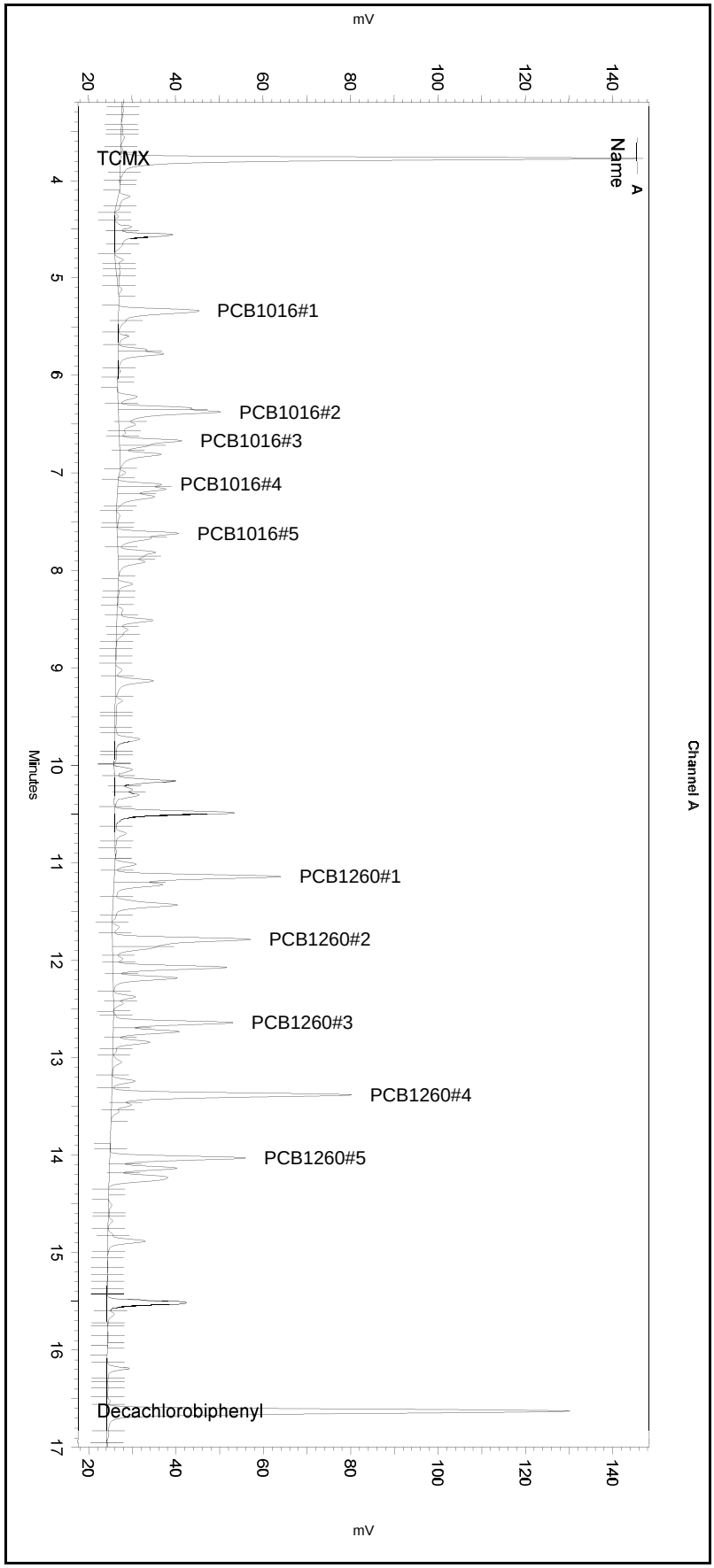
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.940	2.930	325265	52.293
PCB1016#1	4.320	4.330	87003	289.492
PCB1016#2	5.220	5.217	119090	365.668
PCB1016#3	5.423	5.417	70748	310.225
PCB1016#4	5.947	5.940	33262	301.441
PCB1016#5	6.640	6.637	55607	304.638
PCB1260#1	9.830	9.830	110961	341.162
PCB1260#2	10.450	10.450	105598	270.328
PCB1260#3	11.380	11.377	89976	339.246
PCB1260#4	12.033	12.033	152490	335.408
PCB1260#5	12.697	12.703	95723	332.055
Decachlorobiphenyl	15.650	15.653	344223	40.789

Sample Name: **msd,qc919739,256407**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-018**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\043.seq**
Instrument: GC06 (Offline) Vial: 18 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met

Software Version 3.1.7
Run Date: 2/12/2018 8:22:44 PM
Analysis Date: 2/13/2018 10:47:04 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0
Yes	Reset Baseline	10.946	0	0

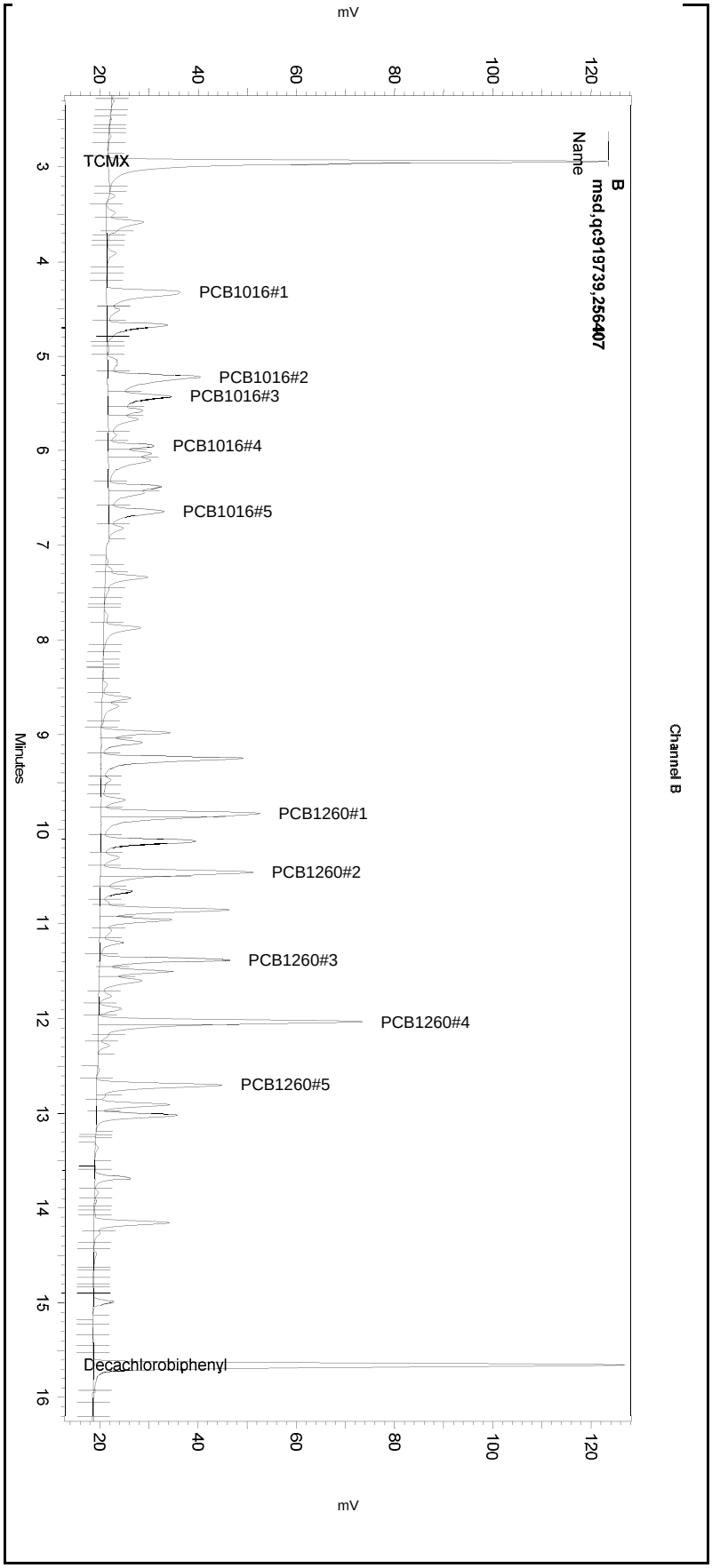
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-018

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	6.955	0	0
Yes	Reset Baseline	8.058	0	0
Yes	Reset Baseline	12.52	0	0
Yes	Reset Baseline	13.649	0	0

Sample Name: **msd,qc919739,256407**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-018**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\043.seq**
Instrument: GC06 (Offline) Vial: 18 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met

Software Version 3.1.7
Run Date: 2/12/2018 8:22:44 PM
Analysis Date: 2/13/2018 10:47:04 AM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-018

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	3.262	0	0
Yes	Reset Baseline	6.929	0	0
Yes	Split Peak	9.862	0	0
Yes	Split Peak	10.49	0	0
Yes	Split Peak	12.064	0	0
Yes	Reset Baseline	12.375	0	0
Yes	Manual Baseline	12.625	13.182	0

Sample Name: **msd,qc919739,256407** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-018** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\043.seq** Instrument: GC06 (Offline) Vial: 18 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met	Software Version 3.1.7 Run Date: 2/12/2018 8:22:44 PM Analysis Date: 2/13/2018 10:38:36 AM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.770	3.776	297132	48.933
PCB1016#1	5.337	5.347	72762	274.806
PCB1016#2	6.377	6.387	84973	323.928
PCB1016#3	6.673	6.680	50312	316.916
PCB1016#4	7.120	7.130	27263	310.149
PCB1016#5	7.620	7.630	45223	382.192
PCB1260#1	11.143	11.150	127772	312.005
PCB1260#2	11.787	11.797	127517	318.883
PCB1260#3	12.643	12.650	90404	376.260
PCB1260#4	13.383	13.390	184804	360.878
PCB1260#5	14.030	14.040	101075	379.358
Decachlorobiphenyl	16.630	16.640	340300	47.529

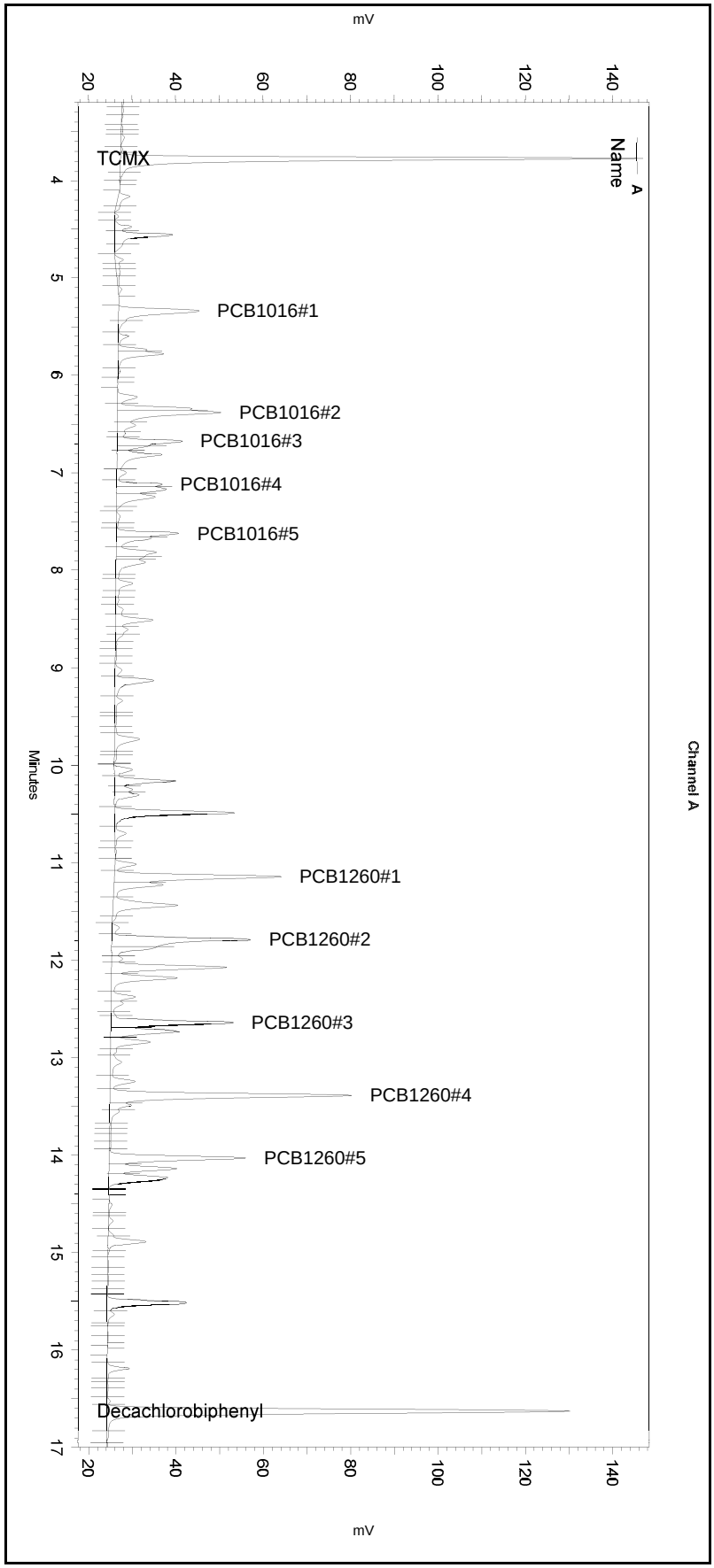
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.940	2.930	330892	53.198
PCB1016#1	4.320	4.330	90123	299.873
PCB1016#2	5.220	5.217	124507	379.581
PCB1016#3	5.423	5.417	75214	329.167
PCB1016#4	5.947	5.940	37024	335.534
PCB1016#5	6.640	6.637	65405	358.315
PCB1260#1	9.830	9.830	169171	520.135
PCB1260#2	10.450	10.450	145627	367.089
PCB1260#3	11.380	11.377	91371	344.506
PCB1260#4	12.033	12.033	204739	450.332
PCB1260#5	12.697	12.703	86468	299.950
Decachlorobiphenyl	15.650	15.653	344223	40.789

Sample Name: **msd,qc919739,256407**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-018**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\043.seq**
Instrument: GC06 (Offline) Vial: 18 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met

Software Version 3.1.7
Run Date: 2/12/2018 8:22:44 PM
Analysis Date: 2/13/2018 10:38:36 AM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

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No items selected for this section

Integration Events
==========

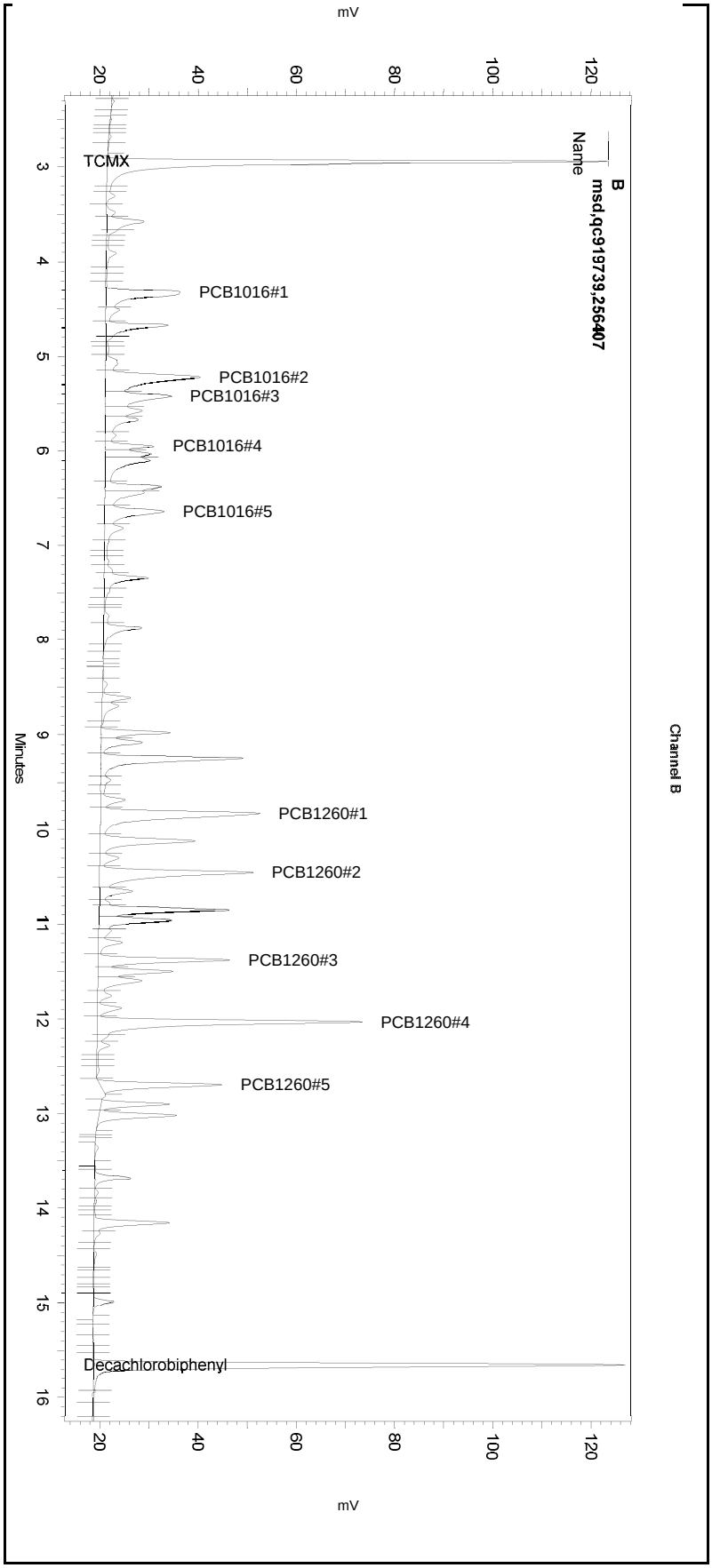
Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0
Yes	Reset Baseline	10.946	0	0

Manual Integration Fixes
==========
Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-018

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Sample Name: **msd,qc919739,256407**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-018**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\043.seq**
Instrument: GC06 (Offline) Vial: 18 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met

Software Version 3.1.7
Run Date: 2/12/2018 8:22:44 PM
Analysis Date: 2/13/2018 10:38:36 AM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-018

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Initial Calibration Raw Data

ENTHALPY INITIAL CALIBRATION FOR 297025 PCBS Soil: EPA 8082A

Inst : GC06
Calnum : 208052389001
Units : pg/uL

Name : ar-1660-036ical
Date : 05-FEB-2018 17:04

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	036_010	208052389010	PCB100_20	05-FEB-2018 17:04	S35531 (10X)
L2	036_011	208052389011	PCB25_5	05-FEB-2018 17:32	S35530
L3	036_012	208052389012	PCB100_20	05-FEB-2018 18:00	S35531
L4	036_013	208052389013	PCB250_50	05-FEB-2018 18:28	S35532
L5	036_014	208052389014	PCB500_100	05-FEB-2018 18:56	S35533
L6	036_015	208052389015	PCB750_150	05-FEB-2018 19:24	S35534
L7	036_016	208052389016	PCB1000_200	05-FEB-2018 19:52	S35535

Analyte	Ch	L1	L2	L3	L4	L5	L6	L7	Type	X	a0	a1	a2	Avg	r^2 %RSD	MnR^2	MxRSD	Flg
Aroclor-1016 Peak # 1	A	282.90	291.08	289.43	265.67	243.03	229.75	251.58	AVRG	R		0.00378		264.78	9	.99	20	
Aroclor-1016 Peak # 2	A	210.20	251.00	254.55	269.98	263.84	267.94	318.73	AVRG	R		0.00381		262.32	12	.99	20	
Aroclor-1016 Peak # 3	A	113.80	159.36	153.85	182.74	183.92	150.30	167.32	AVRG	R		0.00630		158.76	15	.99	20	
Aroclor-1016 Peak # 4	A	84.400	92.960	90.850	87.316	83.868	81.732	94.195	AVRG	R		0.01138		87.903	6	.99	20	
Aroclor-1016 Peak # 5	A	101.60	113.44	120.12	122.02	119.84	116.58	134.68	AVRG	R		0.00845		118.33	8	.99	20	
Aroclor-1260 Peak # 1	A	399.30	429.04	443.94	404.82	393.37	372.70	423.47	AVRG	R		0.00244		409.52	6	.99	20	
Aroclor-1260 Peak # 2	A	356.50	392.56	435.74	380.26	404.48	395.41	434.26	AVRG	R		0.00250		399.89	7	.99	20	
Aroclor-1260 Peak # 3	A	214.90	259.24	266.34	229.84	240.17	220.97	250.42	AVRG	R		0.00416		240.27	8	.99	20	
Aroclor-1260 Peak # 4	A	491.70	534.48	542.12	510.65	487.88	480.28	537.55	AVRG	R		0.00195		512.10	5	.99	20	
Aroclor-1260 Peak # 5	A	238.90	267.20	273.19	266.00	263.18	261.05	295.54	AVRG	R		0.00375		266.44	6	.99	20	
TCMX	A	6751.5	6601.6	6370.6	5876.6	5538.6	5283.4	6083.7	AVRG	R		1.65E-4		6072.3	9	.99	20	
Decachlorobiphenyl	A	10557	10577	9093.1	7760.6	6861.5	6362.9	6838.2	LINR	R	-4.5323	1.53E-4		8292.8	0.996	.99	20	
Aroclor-1016 Peak # 1	B	285.30	311.44	314.11	302.82	290.80	280.69	318.60	AVRG	R		0.00333		300.54	5	.99	20	
Aroclor-1016 Peak # 2	B	66.500	116.36	275.59	314.24	355.51	377.74	429.59	QUAD	A	-1949.5	274.789	0.153745	276.50	0.999	.99	20	
Aroclor-1016 Peak # 3	B	105.70	170.88	203.32	231.67	228.89	224.18	238.34	LINR	R	10.1612	0.00424		200.43	0.999	.99	20	
Aroclor-1016 Peak # 4	B	115.90	108.12	119.12	116.10	101.30	101.51	110.35	AVRG	R		0.00906		110.34	6	.99	20	
Aroclor-1016 Peak # 5	B	128.30	205.64	187.52	191.65	176.76	180.78	207.09	AVRG	R		0.00548		182.53	15	.99	20	
Aroclor-1260 Peak # 1	B	238.90	336.24	369.81	343.21	336.33	328.14	324.08	AVRG	R		0.00307		325.24	13	.99	20	
Aroclor-1260 Peak # 2	B	212.60	273.44	388.92	351.97	391.43	400.69	414.36	LINR	R	15.0715	0.00242		347.63	0.999	.99	20	
Aroclor-1260 Peak # 3	B	245.00	264.60	287.09	246.66	265.76	258.26	289.20	AVRG	R		0.00377		265.22	7	.99	20	
Aroclor-1260 Peak # 4	B	388.10	447.56	484.31	387.15	480.64	478.11	516.62	AVRG	R		0.00220		454.64	11	.99	20	
Aroclor-1260 Peak # 5	B	227.10	268.56	289.09	287.70	291.76	299.93	353.79	AVRG	R		0.00347		288.27	13	.99	20	
TCMX	B	5615.5	5707.4	6013.8	6212.4	6378.4	6273.2	7339.9	AVRG	R		1.61E-4		6220.1	9	.99	20	
Decachlorobiphenyl	B	9744.5	10065	9051.9	8006.1	7473.2	7071.8	7661.3	AVRG	R		1.18E-4		8439.1	14	.99	20	

Spiked Amounts / Drifts	Ch	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D	L6	%D	L7	%D
Aroclor-1016 Peak # 1	A	10.000	7	25.000	10	100.00	9	250.00	0	500.00	-8	750.00	-13	1000.0	-5
Aroclor-1016 Peak # 2	A	10.000	-20	25.000	-4	100.00	-3	250.00	3	500.00	1	750.00	2	1000.0	**22**
Aroclor-1016 Peak # 3	A	10.000	**-28**	25.000	0	100.00	-3	250.00	15	500.00	16	750.00	-5	1000.0	5
Aroclor-1016 Peak # 4	A	10.000	-4	25.000	6	100.00	3	250.00	-1	500.00	-5	750.00	-7	1000.0	7
Aroclor-1016 Peak # 5	A	10.000	-14	25.000	-4	100.00	2	250.00	3	500.00	1	750.00	-1	1000.0	14
Aroclor-1260 Peak # 1	A	10.000	-2	25.000	5	100.00	8	250.00	-1	500.00	-4	750.00	-9	1000.0	3
Aroclor-1260 Peak # 2	A	10.000	-11	25.000	-2	100.00	9	250.00	-5	500.00	1	750.00	-1	1000.0	9
Aroclor-1260 Peak # 3	A	10.000	-11	25.000	8	100.00	11	250.00	-4	500.00	0	750.00	-8	1000.0	4
Aroclor-1260 Peak # 4	A	10.000	-4	25.000	4	100.00	6	250.00	0	500.00	-5	750.00	-6	1000.0	5
Aroclor-1260 Peak # 5	A	10.000	-10	25.000	0	100.00	3	250.00	0	500.00	-1	750.00	-2	1000.0	11
TCMX	A	2.0000	11	5.0000	9	20.000	5	50.000	-3	100.00	-9	150.00	-13	200.00	0
Decachlorobiphenyl	A	2.0000	**-165**	5.0000	**-29**	20.000	16	50.000	10	100.00	0	150.00	-6	200.00	2
Aroclor-1016 Peak # 1	B	10.000	-5	25.000	4	100.00	5	250.00	1	500.00	-3	750.00	-7	1000.0	6
Aroclor-1016 Peak # 2	B	10.000	-5	25.000	**-30**	100.00	2	250.00	3	500.00	2	750.00	-2	1000.0	1
Aroclor-1016 Peak # 3	B	10.000	**46**	25.000	13	100.00	-4	250.00	2	500.00	-1	750.00	-4	1000.0	2
Aroclor-1016 Peak # 4	B	10.000	5	25.000	-2	100.00	8	250.00	5	500.00	-8	750.00	-8	1000.0	0
Aroclor-1016 Peak # 5	B	10.000	**-30**	25.000	13	100.00	3	250.00	5	500.00	-3	750.00	-1	1000.0	13
Aroclor-1260 Peak # 1	B	10.000	**-27**	25.000	3	100.00	14	250.00	6	500.00	3	750.00	1	1000.0	0
Aroclor-1260 Peak # 2	B	10.000	**102**	25.000	**26**	100.00	9	250.00	-9	500.00	-2	750.00	-1	1000.0	2
Aroclor-1260 Peak # 3	B	10.000	-8	25.000	0	100.00	8	250.00	-7	500.00	0	750.00	-3	1000.0	9
Aroclor-1260 Peak # 4	B	10.000	-15	25.000	-2	100.00	7	250.00	-15	500.00	6	750.00	5	1000.0	14
Aroclor-1260 Peak # 5	B	10.000	**-21**	25.000	-7	100.00	0	250.00	0	500.00	1	750.00	4	1000.0	**23**
TCMX	B	2.0000	-10	5.0000	-8	20.000	-3	50.000	0	100.00	3	150.00	1	200.00	18
Decachlorobiphenyl	B	2.0000	15	5.0000	19	20.000	7	50.000	-5	100.00	-11	150.00	-16	200.00	-9

JC1 02/06/18 : Corrected automatically drawn baseline in all levels.

Analyst: JC1 Date: 02/06/18 Reviewer: EAH Date: 02/06/18

X=A: Instrument response = a0 + amount * a1 + amount^2 * a2 (invert equation before quantitating); X=R: Instrument amount = a0 + response * a1 + response^2 * a2; AVRG=Average response factor; LINR=Linear regression; QUAD=Quadratic regression

ENTHALPY 2ND SOURCE CALIBRATION SUMMARY FOR 297025 PCBS Soil
EPA 8082A

Inst : GC06 Name : ar-1660-036ical
Calnum : 208052389001 Cal Date : 05-FEB-2018

ICV 208052389018 (036_018 05-FEB-2018) stds: S35527

Analyte	Ch	Spiked	Quant	Units	%D	Max	Flags
Aroclor-1016	A	250.0	250.6	pg/uL	0	20	
Aroclor-1260	A	250.0	256.5	pg/uL	3	20	
Aroclor-1016	B	250.0	268.0	pg/uL	7	20	
Aroclor-1260	B	250.0	258.9	pg/uL	4	20	

Analyst: JC1 Date: 02/06/18 Reviewer: EAH Date: 02/06/18

Sample Name: **ical,s35531,pcb100_20,10x** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-010** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq** Instrument: GC06 (Offline) Vial: 12 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met	Software Version 3.1.7 Run Date: 2/5/2018 5:04:16 PM Analysis Date: 2/6/2018 9:14:54 AM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.773	3.776	13503	2.000 CAL
PCB1016#1	5.340	5.347	2829	10.000 CAL
PCB1016#2	6.380	6.387	2102	10.000 CAL
PCB1016#3	6.670	6.680	1138	10.000 CAL
PCB1016#4	7.120	7.130	844	10.000 CAL
PCB1016#5	7.623	7.630	1016	10.000 CAL
PCB1260#1	11.150	11.150	3993	10.000 CAL
PCB1260#2	11.797	11.797	3565	10.000 CAL
PCB1260#3	12.650	12.650	2149	10.000 CAL
PCB1260#4	13.393	13.390	4917	10.000 CAL
PCB1260#5	14.040	14.040	2389	10.000 CAL
Decachlorobiphenyl	16.647	16.640	21113	2.000 CAL

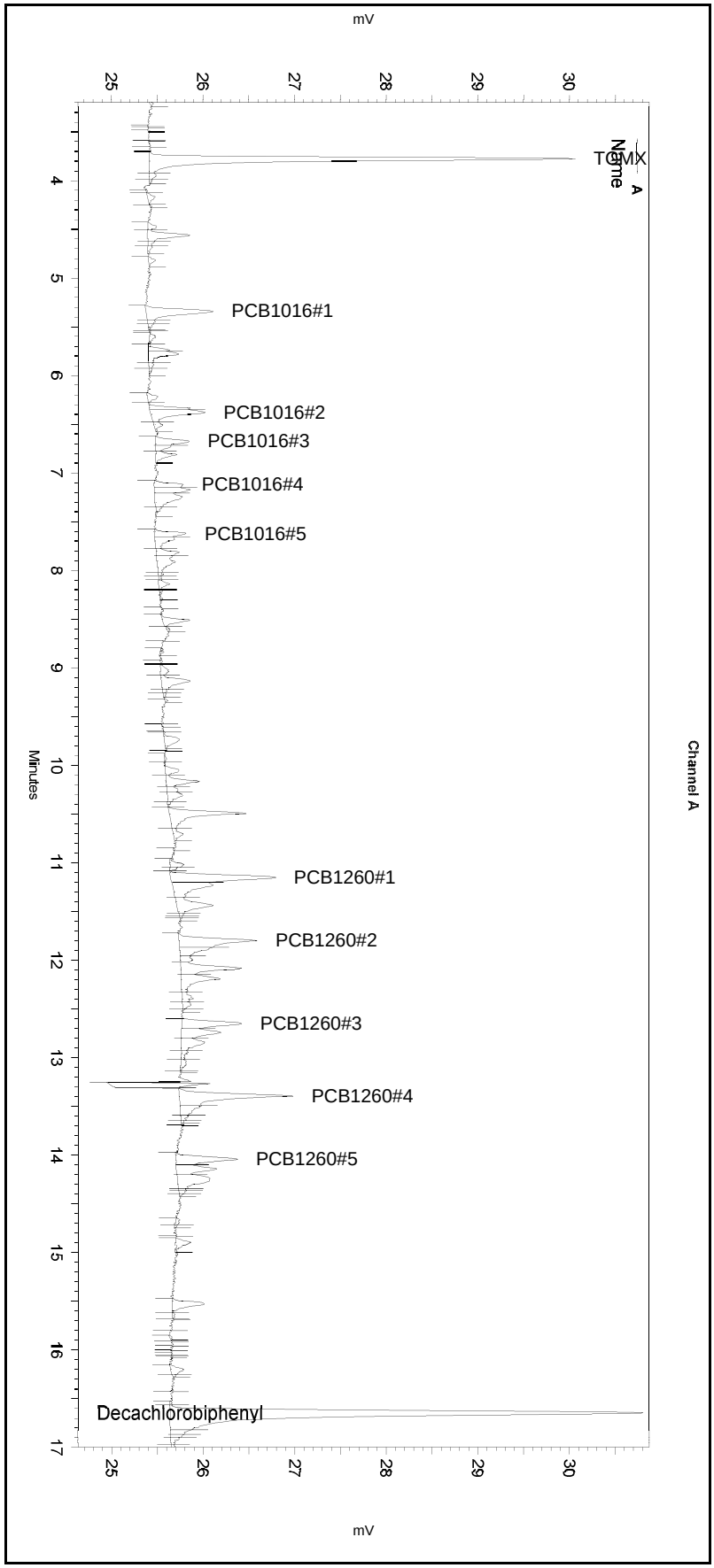
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.950	2.950	11231	2.000 CAL
PCB1016#1	4.343	4.350	2853	10.000 CAL
PCB1016#2	5.240	5.237	665	10.000 CAL
PCB1016#3	5.440	5.437	1057	10.000 CAL
PCB1016#4	5.967	5.960	1159	10.000 CAL
PCB1016#5	6.657	6.657	1283	10.000 CAL
PCB1260#1	9.867	9.850	2389	10.000 CAL
PCB1260#2	10.483	10.470	2126	10.000 CAL
PCB1260#3	11.397	11.397	2450	10.000 CAL
PCB1260#4	12.057	12.053	3881	10.000 CAL
PCB1260#5	12.720	12.723	2271	10.000 CAL
Decachlorobiphenyl	15.673	15.673	19489	2.000 CAL

Sample Name: **ical,s35531,pcb100_20,10x**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-010**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: 12 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 5:04:16 PM
Analysis Date: 2/6/2018 9:14:54 AM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

---< A >----------

No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0

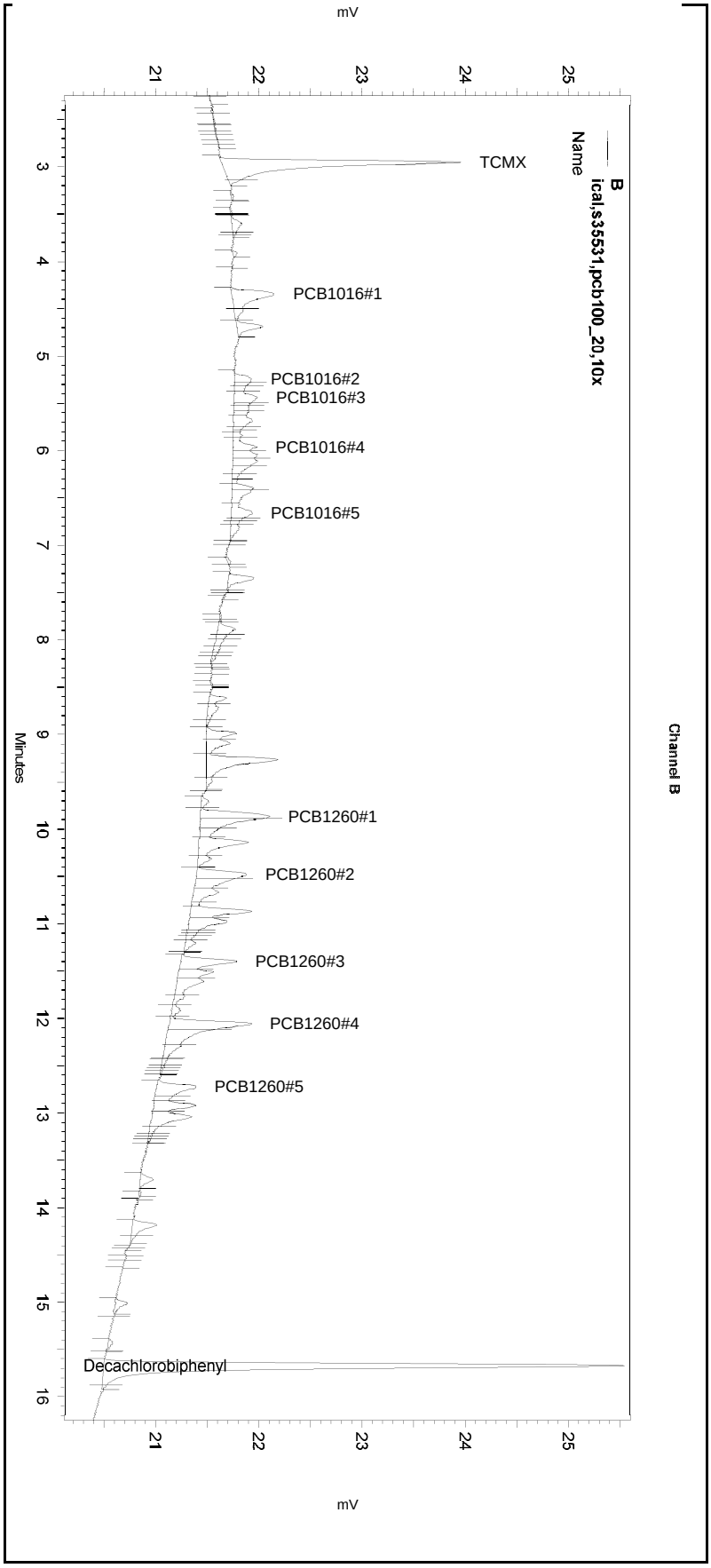
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-010

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	4.037	0	0
Yes	Manual Baseline	11.72	12.537	0
Yes	Manual Baseline	13.322	13.701	0

Sample Name: **ical,s35531,pcb100_20,10x**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-010**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: 12 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 5:04:16 PM
Analysis Date: 2/6/2018 9:14:54 AM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

---< B >----------

No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-010

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Manual Baseline	5.144	6.964	0
Yes	Split Peak	5.275	0	0
Yes	Split Peak	5.482	0	0
Yes	Split Peak	9.883	0	0
Yes	Manual Baseline	10.405	11.3	0
Yes	Split Peak	12.119	0	0
Yes	Reset Baseline	15.932	0	0

Sample Name: **ical,s35531,pcb100_20,10x** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-010** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq** Instrument: GC06 (Offline) Vial: 12 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met	Software Version 3.1.7 Run Date: 2/5/2018 5:04:16 PM Analysis Date: 2/6/2018 8:29:36 AM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.773	3.776	13746	0.000
PCB1016#1	5.340	5.347	2829	9.036
PCB1016#2	6.380	6.387	2102	6.304
PCB1016#3	6.670	6.680	1138	5.810
PCB1016#4	7.120	7.130	844	7.419
PCB1016#5	7.623	7.630	1016	5.605
PCB1260#1	11.150	11.150	3993	4.381
PCB1260#2	11.797	11.797	3360	6.106
PCB1260#3	12.650	12.650	2149	7.065
PCB1260#4	13.393	13.390	10636	15.636
PCB1260#5	14.040	14.040	2389	6.807
Decachlorobiphenyl	16.647	16.640	21113	0.000

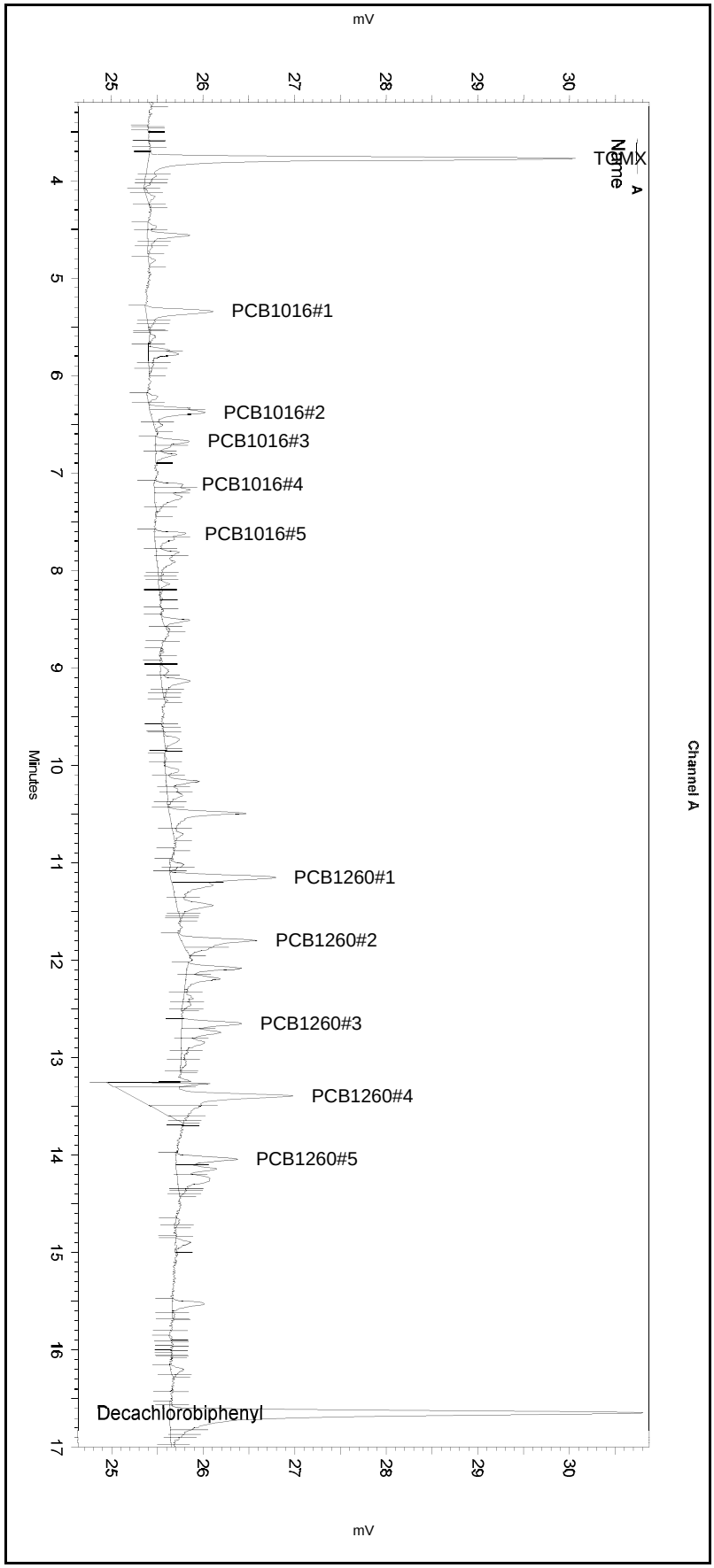
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.950	2.950	11231	1.550
PCB1016#1	4.343	4.350	2853	8.218
PCB1016#2	5.240	5.237	883	20.556
PCB1016#3	5.440	5.437	656	2.572
PCB1016#4	5.967	5.960	731	5.156
PCB1016#5	6.657	6.657	794	3.805
PCB1260#1	9.867	9.850	4694	11.283
PCB1260#2	10.483	10.470	2043	26.787
PCB1260#3	11.397	11.397	2450	8.096
PCB1260#4	12.057	12.053	6129	12.058
PCB1260#5	12.720	12.723	2271	6.499
Decachlorobiphenyl	15.673	15.673	19635	0.657

Sample Name: **ical,s35531,pcb100_20,10x**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-010**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: 12 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 5:04:16 PM
Analysis Date: 2/6/2018 8:29:36 AM
Sample Amount: 1



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No items selected for this section

Integration Events
==========

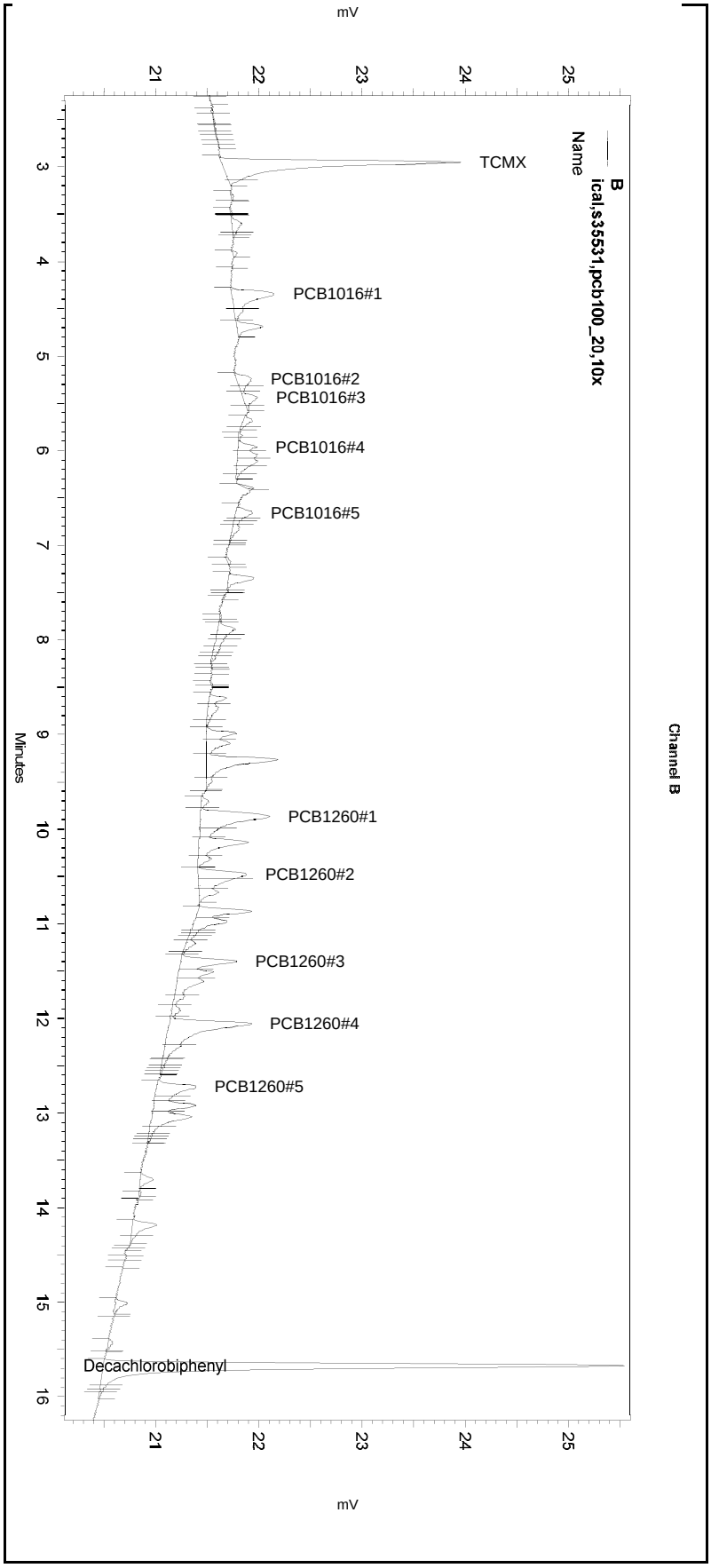
Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0

Manual Integration Fixes
==========
Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-010

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Sample Name: **ical,s35531,pcb100_20,10x**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-010**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: 12 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 5:04:16 PM
Analysis Date: 2/6/2018 8:29:36 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-010

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sample Name: **ical,s35530,pcb25_5** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-011** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq** Instrument: GC06 (Offline) Vial: 13 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met	Software Version 3.1.7 Run Date: 2/5/2018 5:32:16 PM Analysis Date: 2/6/2018 9:15:03 AM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.773	3.776	33008	5.000 CAL
PCB1016#1	5.340	5.347	7277	25.000 CAL
PCB1016#2	6.380	6.387	6275	25.000 CAL
PCB1016#3	6.673	6.680	3984	25.000 CAL
PCB1016#4	7.123	7.130	2324	25.000 CAL
PCB1016#5	7.623	7.630	2836	25.000 CAL
PCB1260#1	11.147	11.150	10726	25.000 CAL
PCB1260#2	11.793	11.797	9814	25.000 CAL
PCB1260#3	12.650	12.650	6481	25.000 CAL
PCB1260#4	13.390	13.390	13362	25.000 CAL
PCB1260#5	14.040	14.040	6680	25.000 CAL
Decachlorobiphenyl	16.643	16.640	52883	5.000 CAL

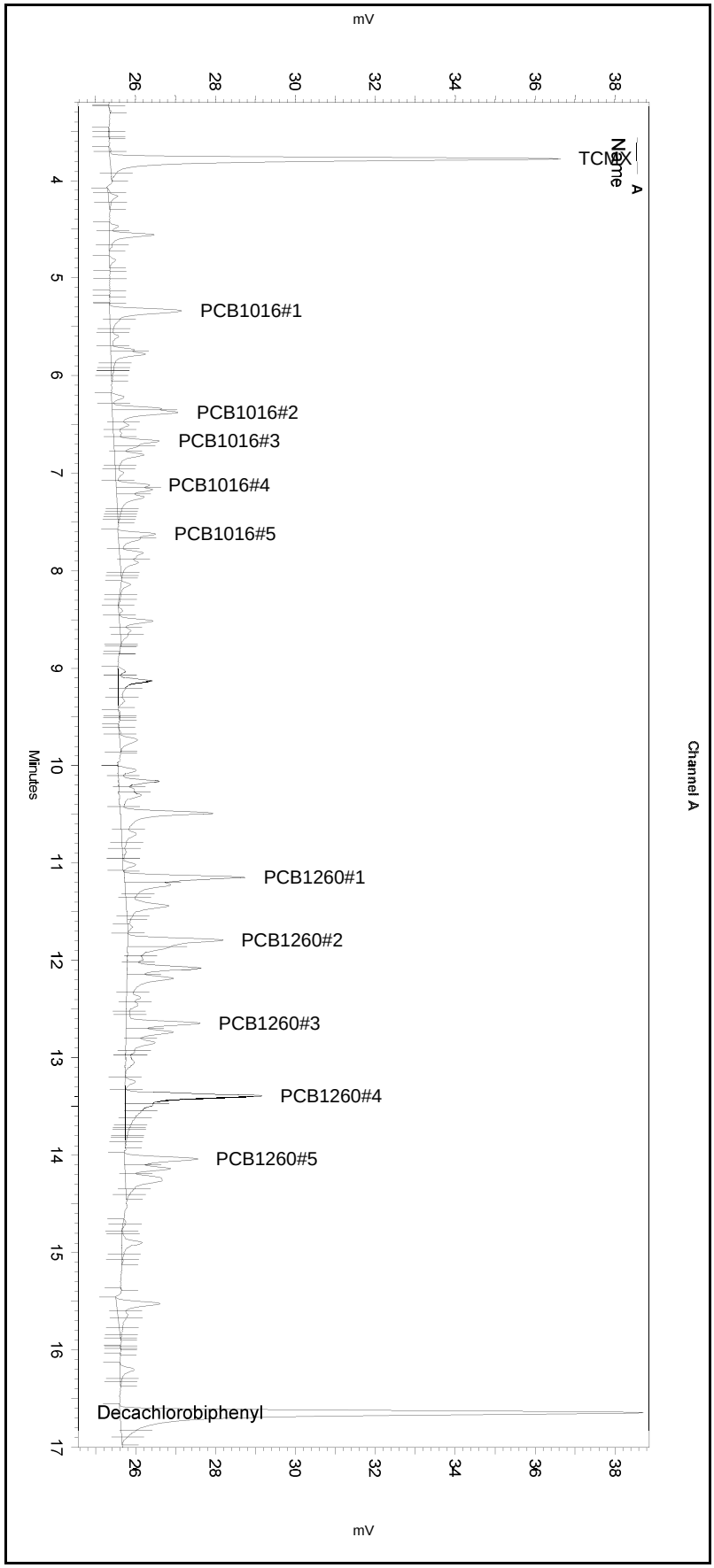
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.950	2.950	28537	5.000 CAL
PCB1016#1	4.347	4.350	7786	25.000 CAL
PCB1016#2	5.240	5.237	2909	25.000 CAL
PCB1016#3	5.440	5.437	4272	25.000 CAL
PCB1016#4	5.957	5.960	2703	25.000 CAL
PCB1016#5	6.657	6.657	5141	25.000 CAL
PCB1260#1	9.867	9.850	8406	25.000 CAL
PCB1260#2	10.473	10.470	6836	25.000 CAL
PCB1260#3	11.393	11.397	6615	25.000 CAL
PCB1260#4	12.057	12.053	11189	25.000 CAL
PCB1260#5	12.720	12.723	6714	25.000 CAL
Decachlorobiphenyl	15.670	15.673	50324	5.000 CAL

Sample Name: **ical,s35530,pcb25_5**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-011**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: 13 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 5:32:16 PM
Analysis Date: 2/6/2018 9:15:03 AM
Sample Amount: 1



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No items selected for this section

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Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0

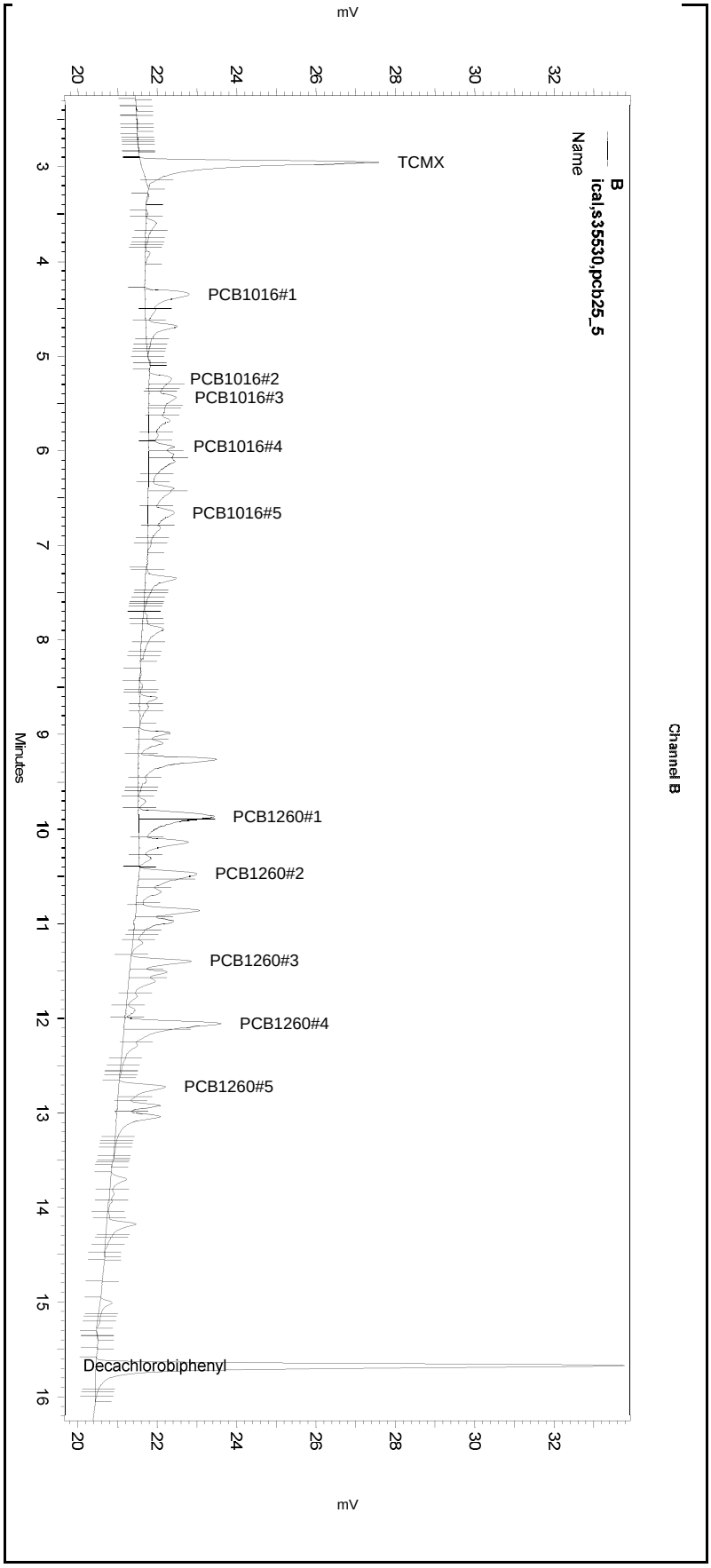
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-011

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	4.013	0	0
Yes	Reset Baseline	8.071	0	0
Yes	Manual Baseline	11.075	11.72	0

Sample Name: **ical,s35530,pcb25_5**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-011**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: 13 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 5:32:16 PM
Analysis Date: 2/6/2018 9:15:03 AM
Sample Amount: 1



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Integration Events
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Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-011

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Manual Baseline	5.132	7.076	0
Yes	Reset Baseline	5.888	0	0
Yes	Reset Baseline	7.04	0	0
Yes	Split Peak	9.895	0	0
Yes	Manual Baseline	10.394	11.319	0
Yes	Split Peak	10.527	0	0
Yes	Split Peak	12.117	0	0
Yes	Reset Baseline	16.082	0	0

Sample Name: **ical,s35530,pcb25_5** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-011** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq** Instrument: GC06 (Offline) Vial: 13 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met	Software Version 3.1.7 Run Date: 2/5/2018 5:32:16 PM Analysis Date: 2/6/2018 8:29:45 AM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.773	3.776	33775	2.959
PCB1016#1	5.340	5.347	7277	23.244
PCB1016#2	6.380	6.387	6275	18.820
PCB1016#3	6.673	6.680	3984	20.339
PCB1016#4	7.123	7.130	2324	20.427
PCB1016#5	7.623	7.630	2875	15.862
PCB1260#1	11.147	11.150	10814	18.372
PCB1260#2	11.793	11.797	9814	17.836
PCB1260#3	12.650	12.650	6481	21.308
PCB1260#4	13.390	13.390	13362	19.643
PCB1260#5	14.040	14.040	6680	19.034
Decachlorobiphenyl	16.643	16.640	52883	3.258

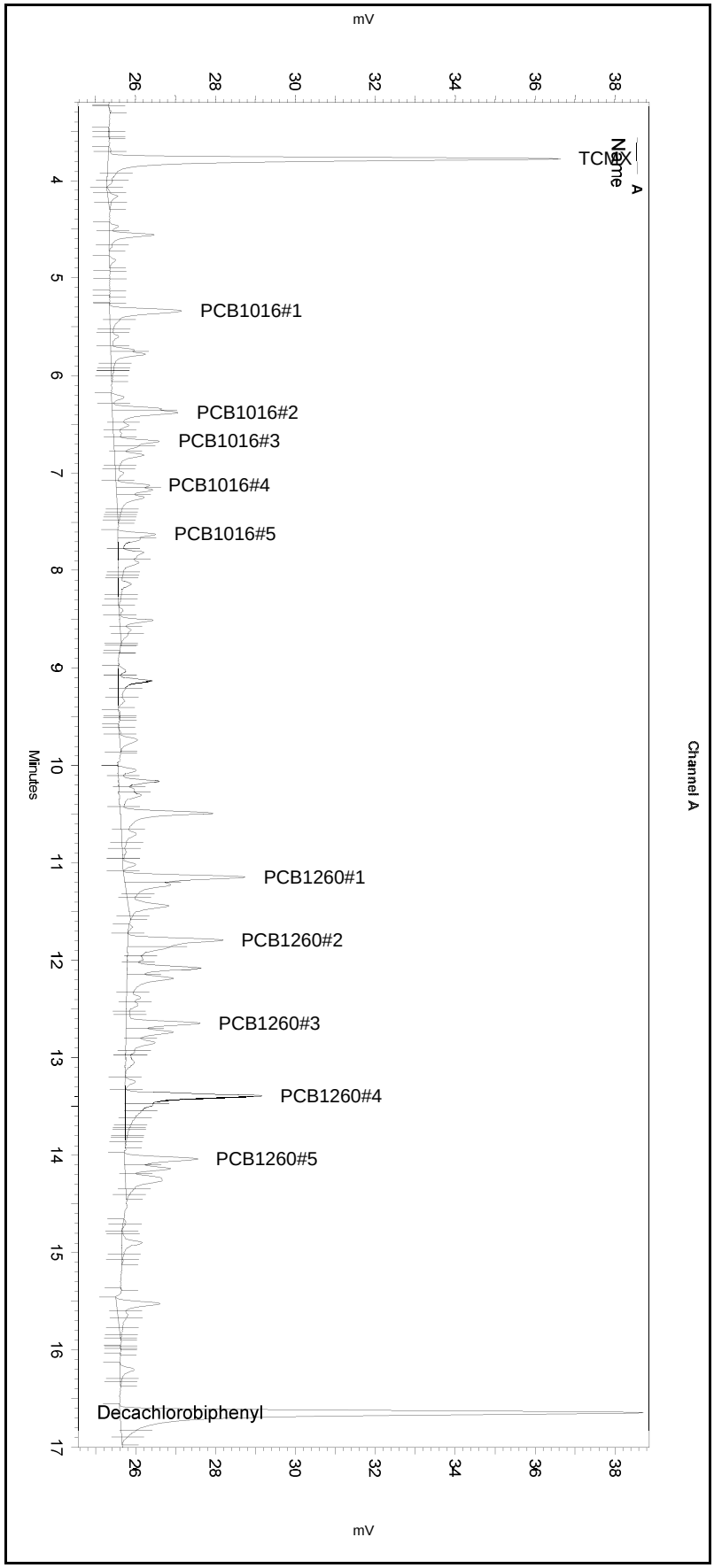
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.950	2.950	28537	3.939
PCB1016#1	4.347	4.350	7786	22.427
PCB1016#2	5.240	5.237	3104	25.411
PCB1016#3	5.440	5.437	4463	17.497
PCB1016#4	5.957	5.960	2842	20.047
PCB1016#5	6.657	6.657	5445	26.093
PCB1260#1	9.867	9.850	14730	35.406
PCB1260#2	10.473	10.470	10083	43.819
PCB1260#3	11.393	11.397	6615	21.860
PCB1260#4	12.057	12.053	16719	32.893
PCB1260#5	12.720	12.723	6714	19.213
Decachlorobiphenyl	15.670	15.673	50535	4.397

Sample Name: **ical,s35530,pcb25_5**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-011**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: 13 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 5:32:16 PM
Analysis Date: 2/6/2018 8:29:45 AM
Sample Amount: 1



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Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0

Manual Integration Fixes
==========

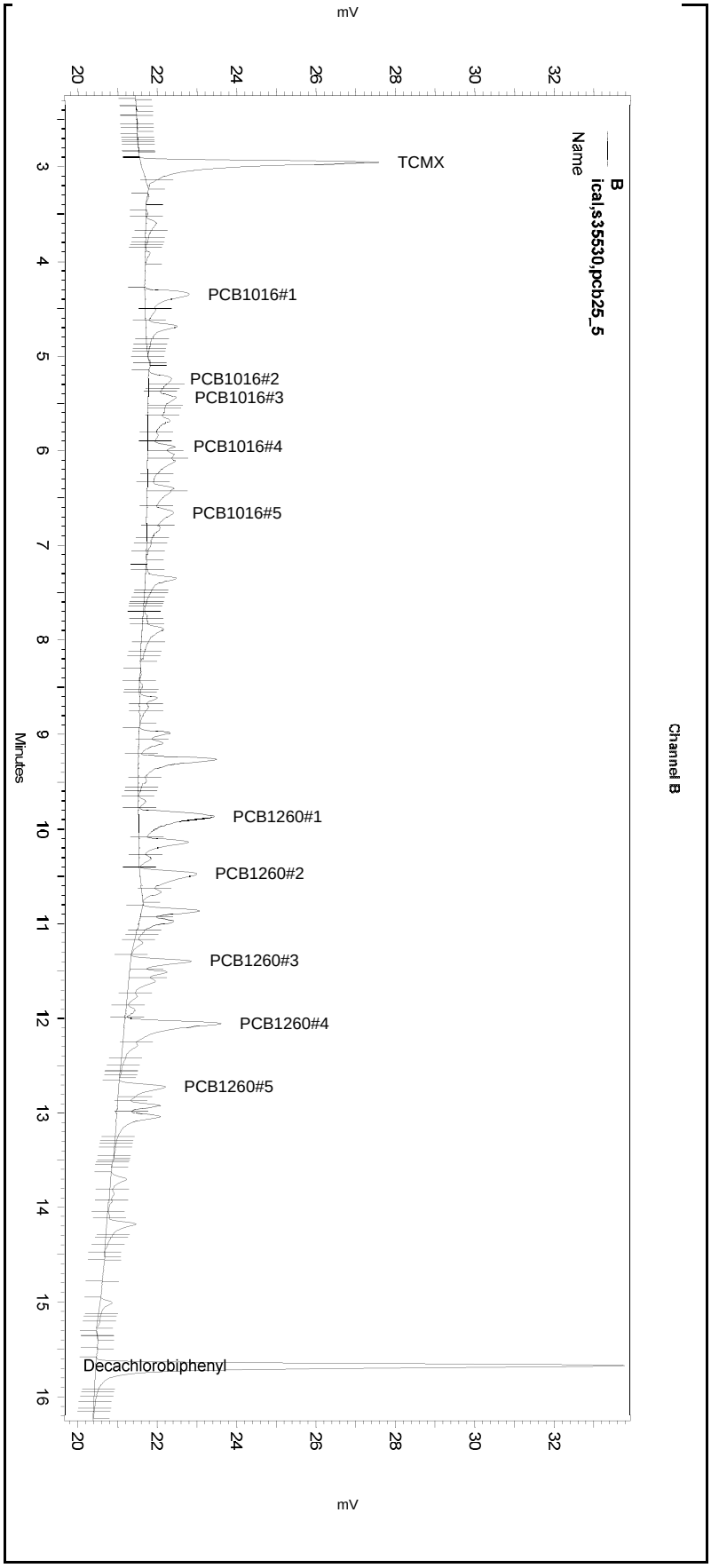
Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-011

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sample Name: **ical,s35530,pcb25_5**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-011**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: 13 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 5:32:16 PM
Analysis Date: 2/6/2018 8:29:45 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-011

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Sample Name: **ical,s35531,pcb100_20** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-012** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq** Instrument: GC06 (Offline) Vial: 14 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met	Software Version 3.1.7 Run Date: 2/5/2018 6:00:15 PM Analysis Date: 2/6/2018 9:15:13 AM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.790	3.776	127412	20.000 CAL
PCB1016#1	5.357	5.347	28943	100.000 CAL
PCB1016#2	6.397	6.387	25455	100.000 CAL
PCB1016#3	6.690	6.680	15385	100.000 CAL
PCB1016#4	7.140	7.130	9085	100.000 CAL
PCB1016#5	7.640	7.630	12012	100.000 CAL
PCB1260#1	11.163	11.150	44394	100.000 CAL
PCB1260#2	11.810	11.797	43574	100.000 CAL
PCB1260#3	12.663	12.650	26634	100.000 CAL
PCB1260#4	13.407	13.390	54212	100.000 CAL
PCB1260#5	14.057	14.040	27319	100.000 CAL
Decachlorobiphenyl	16.660	16.640	181862	20.000 CAL

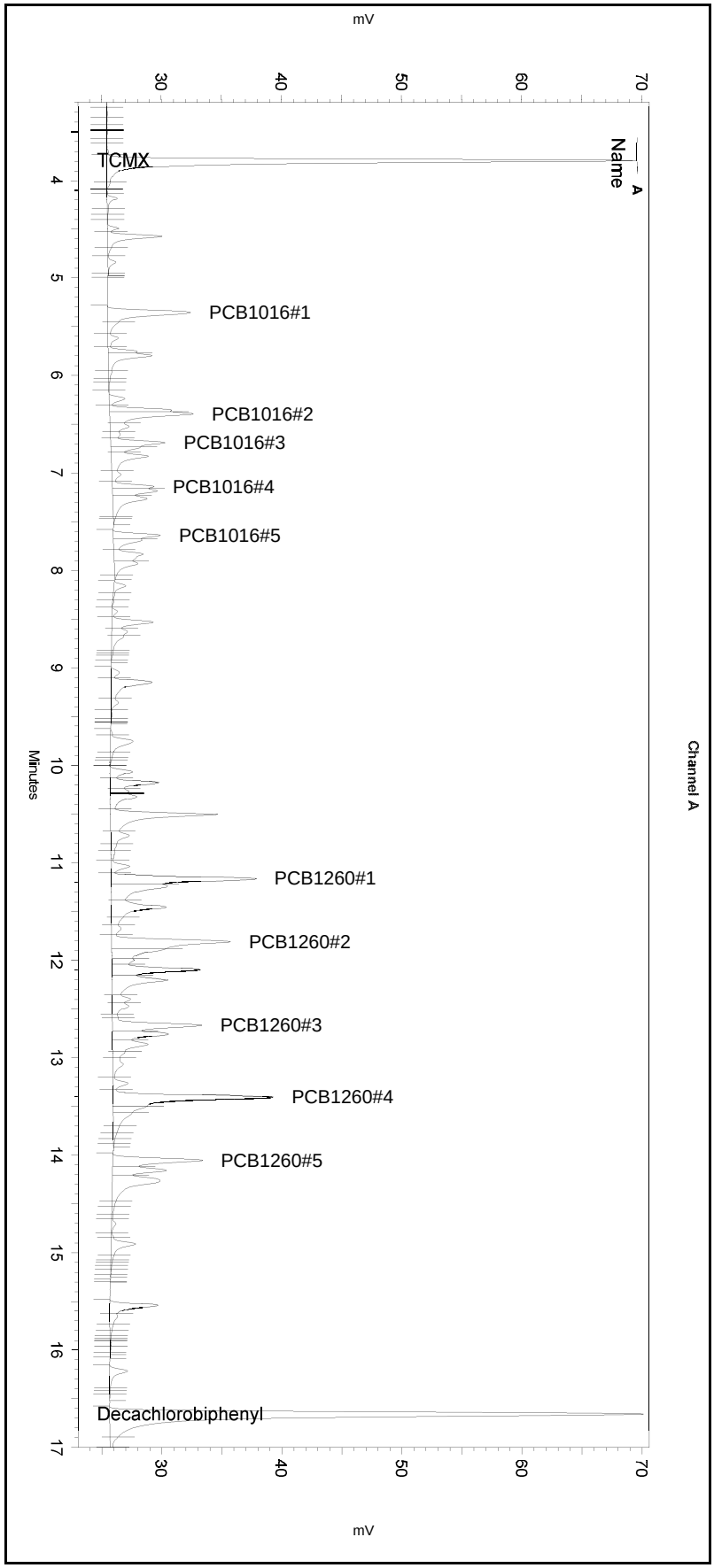
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.967	2.950	120275	20.000 CAL
PCB1016#1	4.363	4.350	31411	100.000 CAL
PCB1016#2	5.257	5.237	27559	100.000 CAL
PCB1016#3	5.457	5.437	20332	100.000 CAL
PCB1016#4	5.973	5.960	11912	100.000 CAL
PCB1016#5	6.667	6.657	18752	100.000 CAL
PCB1260#1	9.880	9.850	36981	100.000 CAL
PCB1260#2	10.490	10.470	38892	100.000 CAL
PCB1260#3	11.413	11.397	28709	100.000 CAL
PCB1260#4	12.070	12.053	48431	100.000 CAL
PCB1260#5	12.737	12.723	28909	100.000 CAL
Decachlorobiphenyl	15.683	15.673	181037	20.000 CAL

Sample Name: **ical,s35531,pcb100_20**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-012**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: 14 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 6:00:15 PM
Analysis Date: 2/6/2018 9:15:13 AM
Sample Amount: 1



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Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0

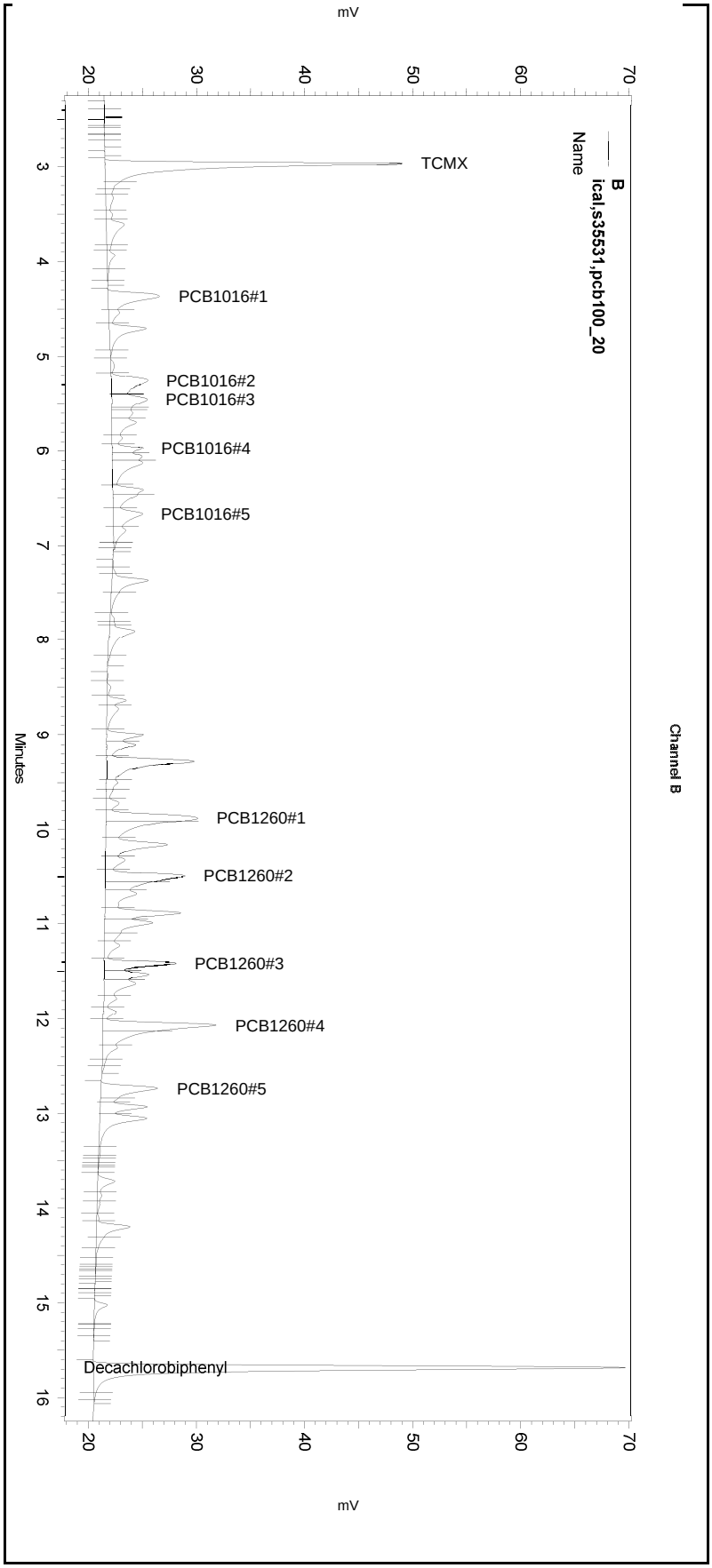
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-012

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	8.092	0	0
Yes	Reset Baseline	13.92	0	0

Sample Name: **ical,s35531,pcb100_20**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-012**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: 14 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 6:00:15 PM
Analysis Date: 2/6/2018 9:15:13 AM
Sample Amount: 1



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Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-012

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Manual Baseline	5.013	7.062	0
Yes	Reset Baseline	5.165	0	0
Yes	Split Peak	5.538	0	0
Yes	Reset Baseline	6.349	0	0
Yes	Reset Baseline	7.107	0	0
Yes	Split Peak	9.908	0	0
Yes	Split Peak	10.553	0	0
Yes	Split Peak	12.132	0	0
Yes	Reset Baseline	12.582	0	0
Yes	Reset Baseline	16.064	0	0

Sample Name: **ical,s35531,pcb100_20** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-012** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq** Instrument: GC06 (Offline) Vial: 14 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met	Software Version 3.1.7 Run Date: 2/5/2018 6:00:15 PM Analysis Date: 2/6/2018 8:29:54 AM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.790	3.776	127412	19.522
PCB1016#1	5.357	5.347	28943	92.448
PCB1016#2	6.397	6.387	25455	76.346
PCB1016#3	6.690	6.680	15385	78.544
PCB1016#4	7.140	7.130	9085	79.855
PCB1016#5	7.640	7.630	12137	66.961
PCB1260#1	11.163	11.150	44974	88.440
PCB1260#2	11.810	11.797	44653	81.152
PCB1260#3	12.663	12.650	28070	92.289
PCB1260#4	13.407	13.390	56578	83.173
PCB1260#5	14.057	14.040	28868	82.258
Decachlorobiphenyl	16.660	16.640	181862	21.720

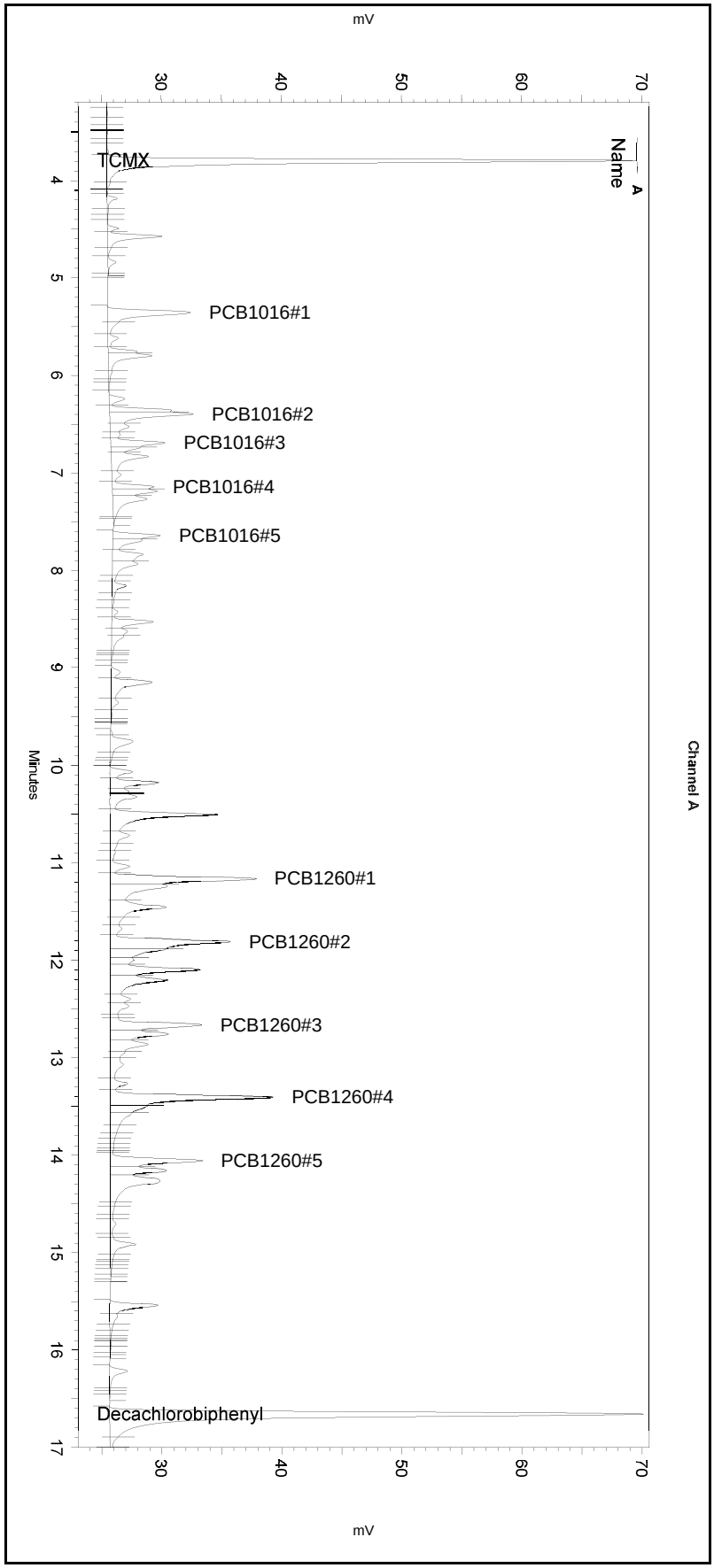
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.967	2.950	120275	16.600
PCB1016#1	4.363	4.350	31995	92.160
PCB1016#2	5.257	5.237	31697	87.909
PCB1016#3	5.457	5.437	26532	104.020
PCB1016#4	5.973	5.960	14294	100.829
PCB1016#5	6.667	6.657	24331	116.597
PCB1260#1	9.880	9.850	69659	167.435
PCB1260#2	10.490	10.470	56565	142.287
PCB1260#3	11.413	11.397	30250	99.963
PCB1260#4	12.070	12.053	73382	144.371
PCB1260#5	12.737	12.723	30818	88.188
Decachlorobiphenyl	15.683	15.673	181979	20.307

Sample Name: **ical,s35531,pcb100_20**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-012**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: 14 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 6:00:15 PM
Analysis Date: 2/6/2018 8:29:54 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0

Manual Integration Fixes
==========

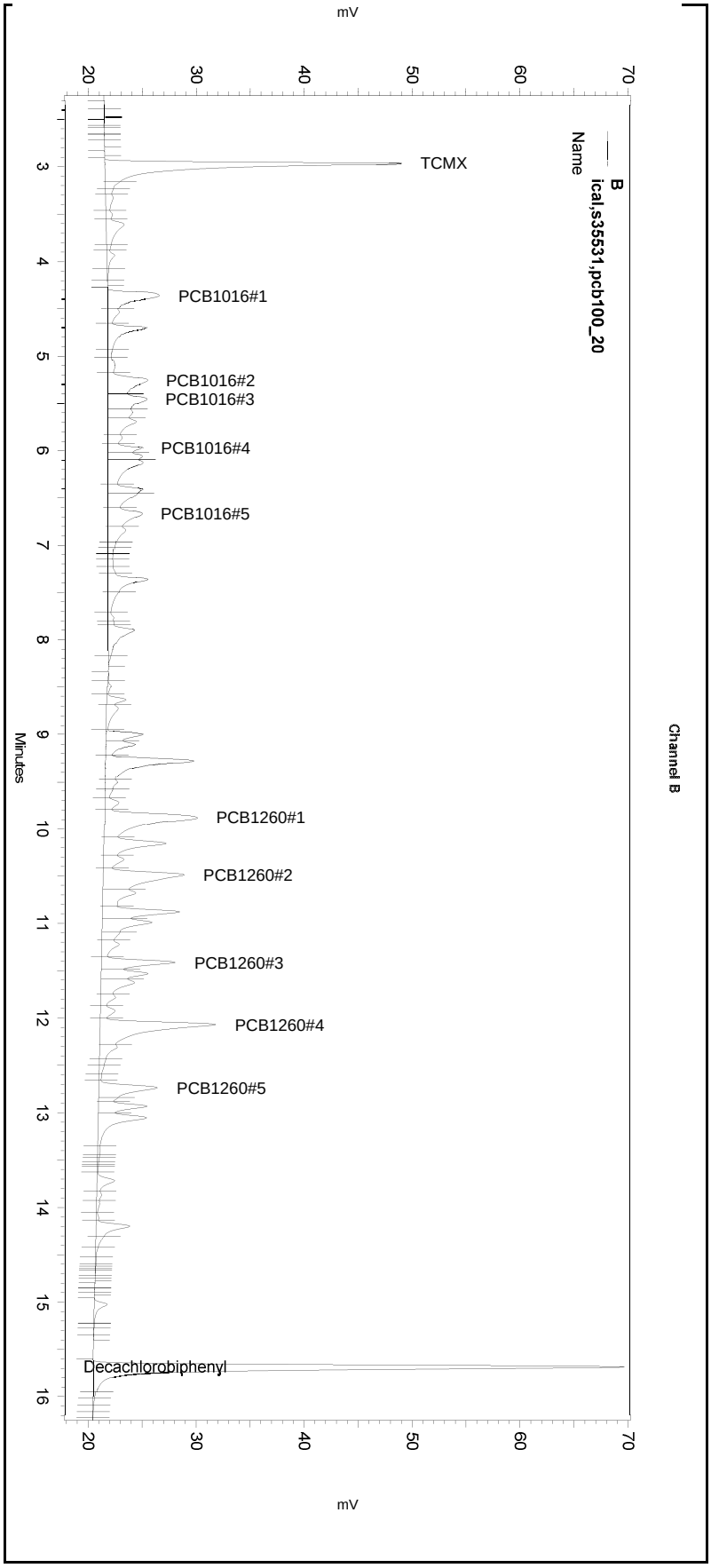
Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-012

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sample Name: **ical,s35531,pcb100_20**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-012**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: 14 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 6:00:15 PM
Analysis Date: 2/6/2018 8:29:54 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-012

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sample Name: **ical,s35532,pcb250_50** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-013** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq** Instrument: GC06 (Offline) Vial: N/A Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met	Software Version 3.1.7 Run Date: 2/5/2018 6:28:15 PM Analysis Date: 2/6/2018 9:15:24 AM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.780	3.776	293828	50.000 CAL
PCB1016#1	5.347	5.347	66418	250.000 CAL
PCB1016#2	6.387	6.387	67494	250.000 CAL
PCB1016#3	6.680	6.680	45686	250.000 CAL
PCB1016#4	7.130	7.130	21829	250.000 CAL
PCB1016#5	7.630	7.630	30505	250.000 CAL
PCB1260#1	11.153	11.150	101206	250.000 CAL
PCB1260#2	11.800	11.797	95065	250.000 CAL
PCB1260#3	12.657	12.650	57461	250.000 CAL
PCB1260#4	13.397	13.390	127663	250.000 CAL
PCB1260#5	14.047	14.040	66501	250.000 CAL
Decachlorobiphenyl	16.647	16.640	388028	50.000 CAL

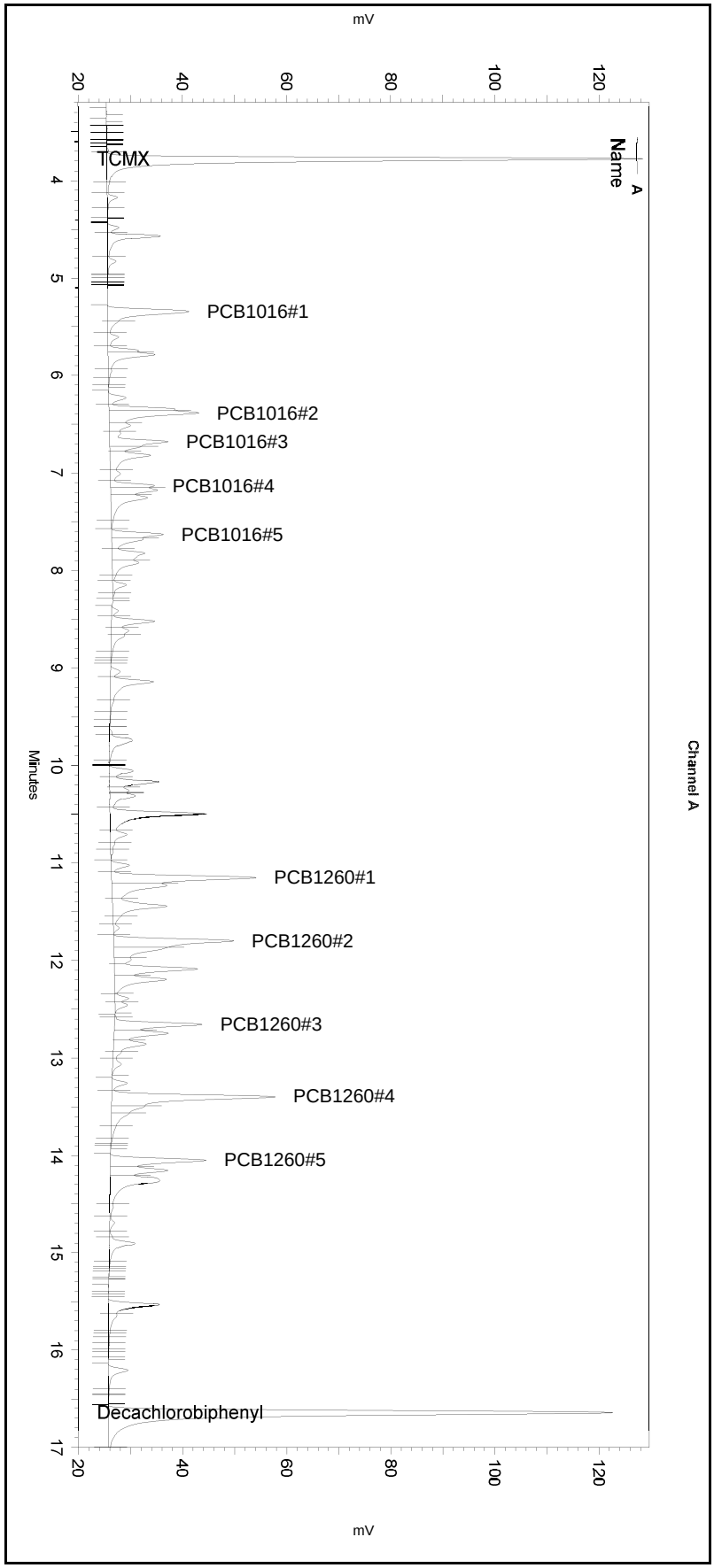
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.953	2.950	310618	50.000 CAL
PCB1016#1	4.350	4.350	75705	250.000 CAL
PCB1016#2	5.243	5.237	78561	250.000 CAL
PCB1016#3	5.443	5.437	57917	250.000 CAL
PCB1016#4	5.963	5.960	29024	250.000 CAL
PCB1016#5	6.657	6.657	47913	250.000 CAL
PCB1260#1	9.863	9.850	85802	250.000 CAL
PCB1260#2	10.477	10.470	87993	250.000 CAL
PCB1260#3	11.400	11.397	61664	250.000 CAL
PCB1260#4	12.057	12.053	96787	250.000 CAL
PCB1260#5	12.727	12.723	71924	250.000 CAL
Decachlorobiphenyl	15.673	15.673	400306	50.000 CAL

Sample Name: **ical,s35532,pcb250_50**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-013**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: N/A Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 6:28:15 PM
Analysis Date: 2/6/2018 9:15:24 AM
Sample Amount: 1



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No items selected for this section

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Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0

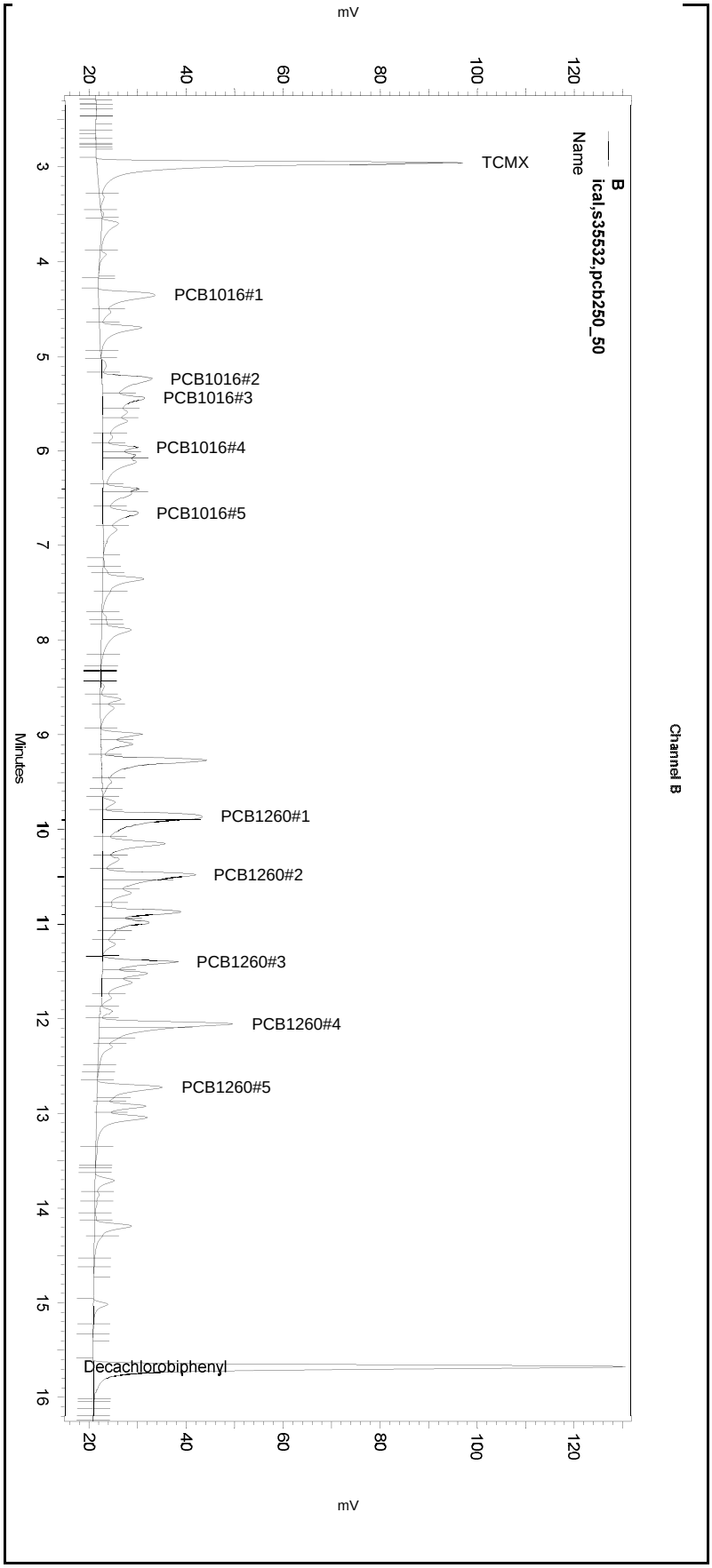
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-013

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	8.311	0	0
Yes	Manual Baseline	11.737	12.537	0

Sample Name: **ical,s35532,pcb250_50**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-013**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: N/A Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 6:28:15 PM
Analysis Date: 2/6/2018 9:15:24 AM
Sample Amount: 1



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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-013

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	3.532	0	0
Yes	Reset Baseline	5.009	0	0
Yes	Reset Baseline	7.107	0	0
Yes	Manual Baseline	9.652	11.856	0
Yes	Split Peak	9.893	0	0
Yes	Split Peak	10.532	0	0
Yes	Split Peak	12.096	0	0

Sample Name: **ical,s35532,pcb250_50** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-013** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq** Instrument: GC06 (Offline) Vial: N/A Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met	Software Version 3.1.7 Run Date: 2/5/2018 6:28:15 PM Analysis Date: 2/6/2018 8:30:03 AM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.780	3.776	293828	48.960
PCB1016#1	5.347	5.347	66566	212.620
PCB1016#2	6.387	6.387	69186	207.505
PCB1016#3	6.680	6.680	48409	247.139
PCB1016#4	7.130	7.130	23732	208.598
PCB1016#5	7.630	7.630	33879	186.915
PCB1260#1	11.153	11.150	101206	203.780
PCB1260#2	11.800	11.797	88364	160.593
PCB1260#3	12.657	12.650	57461	188.921
PCB1260#4	13.397	13.390	127663	187.672
PCB1260#5	14.047	14.040	66501	189.492
Decachlorobiphenyl	16.647	16.640	388028	51.229

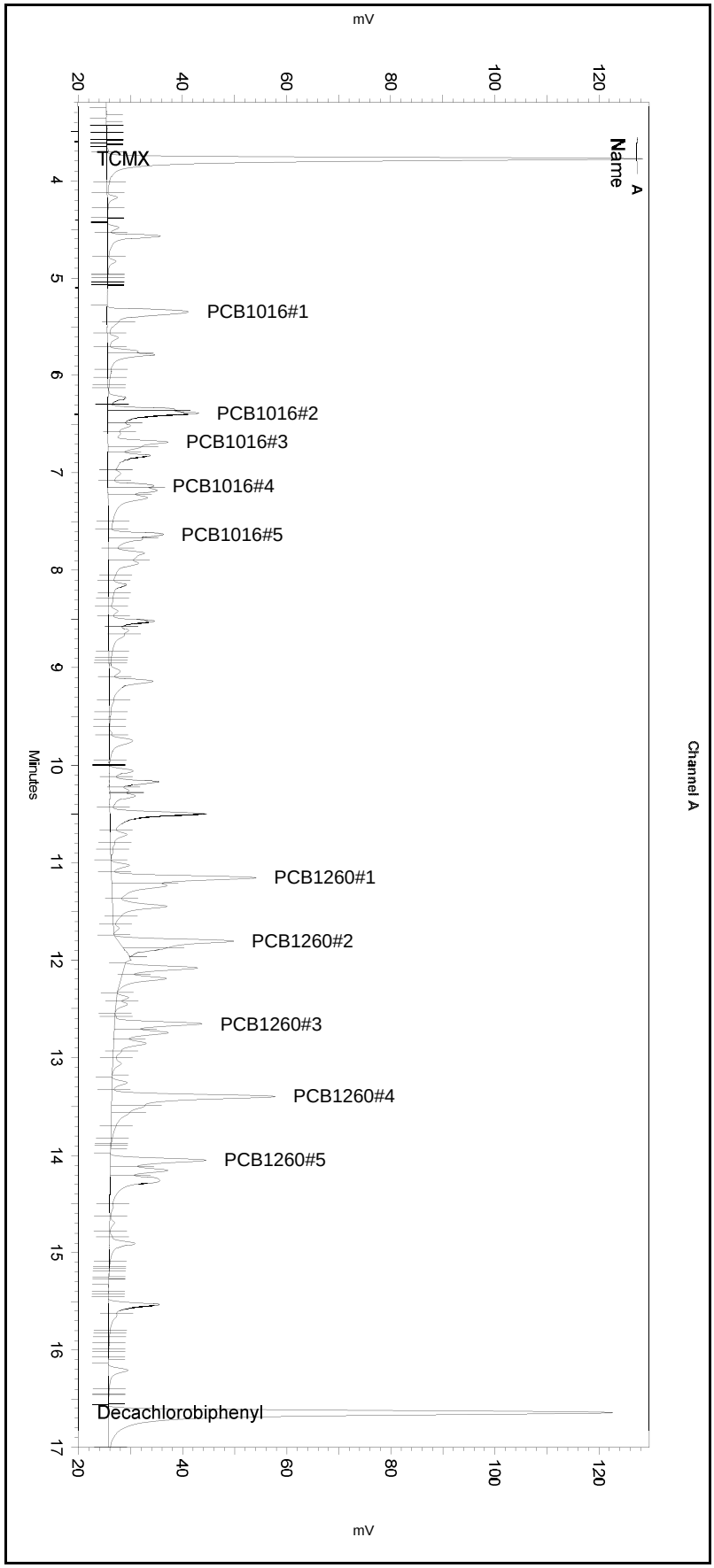
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.953	2.950	317570	43.830
PCB1016#1	4.350	4.350	79915	230.191
PCB1016#2	5.243	5.237	89713	214.721
PCB1016#3	5.443	5.437	65907	258.392
PCB1016#4	5.963	5.960	34007	239.884
PCB1016#5	6.657	6.657	57346	274.809
PCB1260#1	9.863	9.850	145085	348.732
PCB1260#2	10.477	10.470	110645	256.852
PCB1260#3	11.400	11.397	62237	205.667
PCB1260#4	12.057	12.053	150916	296.910
PCB1260#5	12.727	12.723	71924	205.817
Decachlorobiphenyl	15.673	15.673	400306	46.733

Sample Name: **ical,s35532,pcb250_50**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-013**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: N/A Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 6:28:15 PM
Analysis Date: 2/6/2018 8:30:03 AM
Sample Amount: 1



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Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0

Manual Integration Fixes
==========

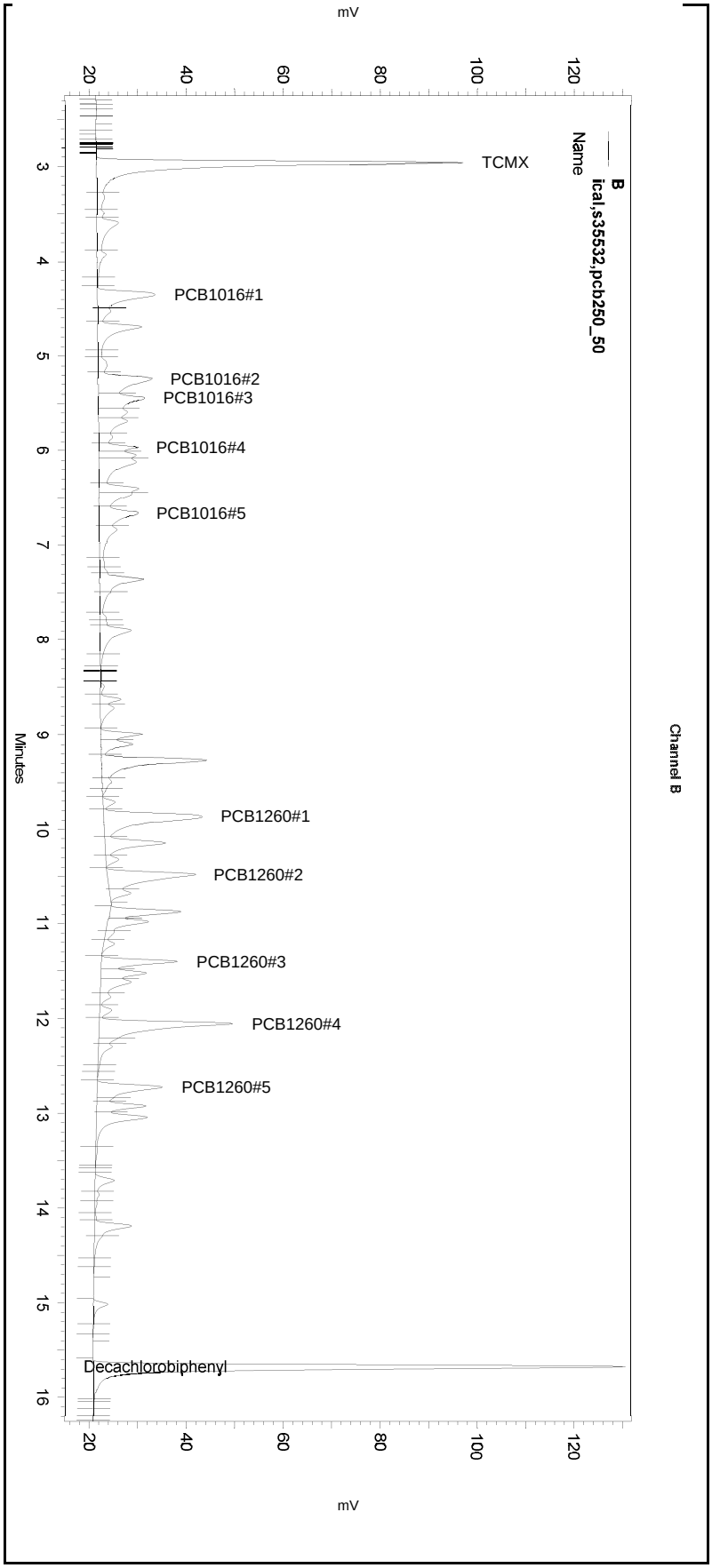
Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-013

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sample Name: **ical,s35532,pcb250_50**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-013**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: N/A Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 6:28:15 PM
Analysis Date: 2/6/2018 8:30:03 AM
Sample Amount: 1



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No items selected for this section

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Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-013

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sample Name: **ical,s35533,pcb500_100** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-014** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq** Instrument: GC06 (Offline) Vial: 15 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met	Software Version 3.1.7 Run Date: 2/5/2018 6:56:15 PM Analysis Date: 2/6/2018 9:15:33 AM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.777	3.776	553863	100.000 CAL
PCB1016#1	5.343	5.347	121513	500.000 CAL
PCB1016#2	6.383	6.387	131922	500.000 CAL
PCB1016#3	6.677	6.680	91959	500.000 CAL
PCB1016#4	7.127	7.130	41934	500.000 CAL
PCB1016#5	7.627	7.630	59921	500.000 CAL
PCB1260#1	11.147	11.150	196683	500.000 CAL
PCB1260#2	11.793	11.797	202242	500.000 CAL
PCB1260#3	12.650	12.650	120087	500.000 CAL
PCB1260#4	13.390	13.390	243942	500.000 CAL
PCB1260#5	14.040	14.040	131588	500.000 CAL
Decachlorobiphenyl	16.640	16.640	686153	100.000 CAL

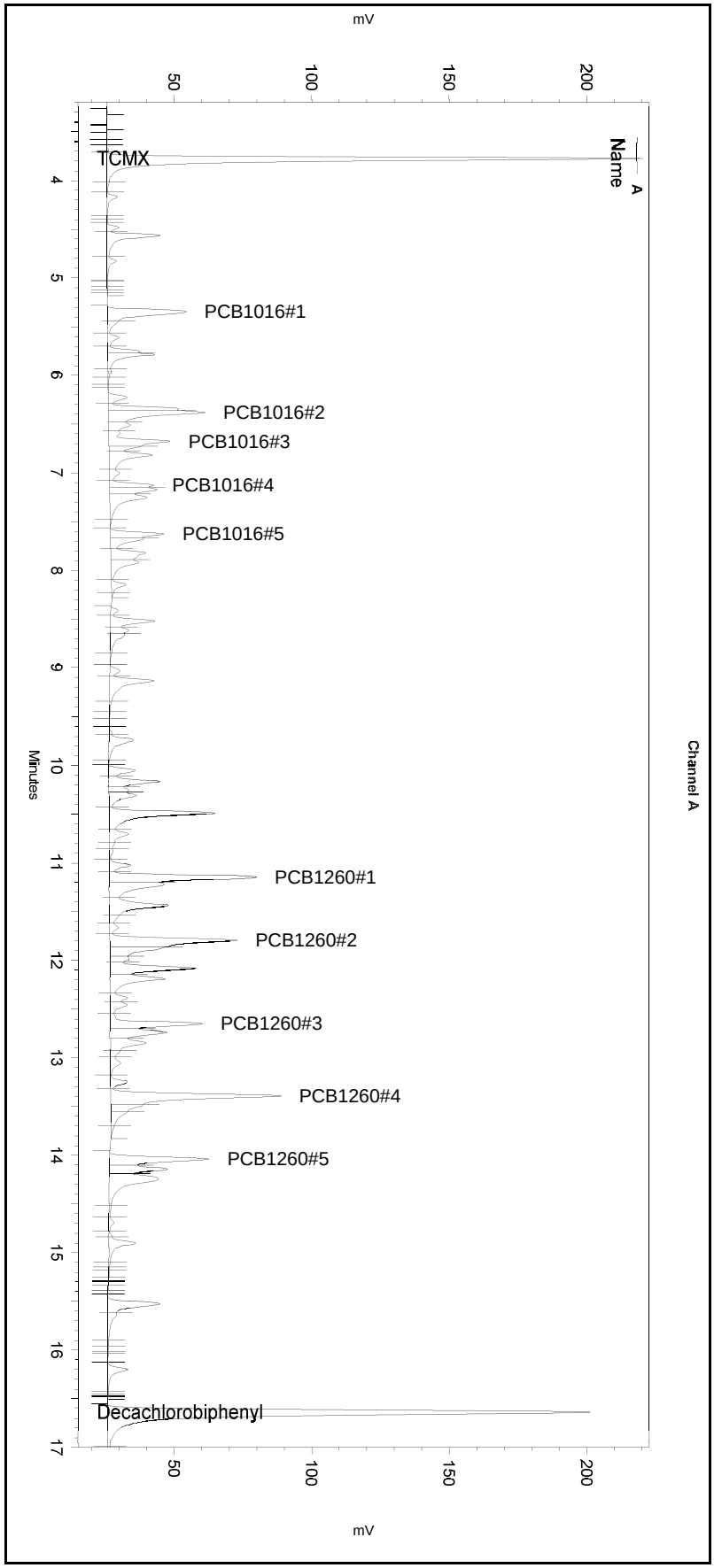
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.950	2.950	637838	100.000 CAL
PCB1016#1	4.347	4.350	145398	500.000 CAL
PCB1016#2	5.233	5.237	177754	500.000 CAL
PCB1016#3	5.437	5.437	114443	500.000 CAL
PCB1016#4	5.957	5.960	50652	500.000 CAL
PCB1016#5	6.653	6.657	88379	500.000 CAL
PCB1260#1	9.850	9.850	168167	500.000 CAL
PCB1260#2	10.470	10.470	195715	500.000 CAL
PCB1260#3	11.393	11.397	132879	500.000 CAL
PCB1260#4	12.050	12.053	240319	500.000 CAL
PCB1260#5	12.720	12.723	145879	500.000 CAL
Decachlorobiphenyl	15.667	15.673	747321	100.000 CAL

Sample Name: **ical,s35533,pcb500_100**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-014**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: 15 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 6:56:15 PM
Analysis Date: 2/6/2018 9:15:33 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0

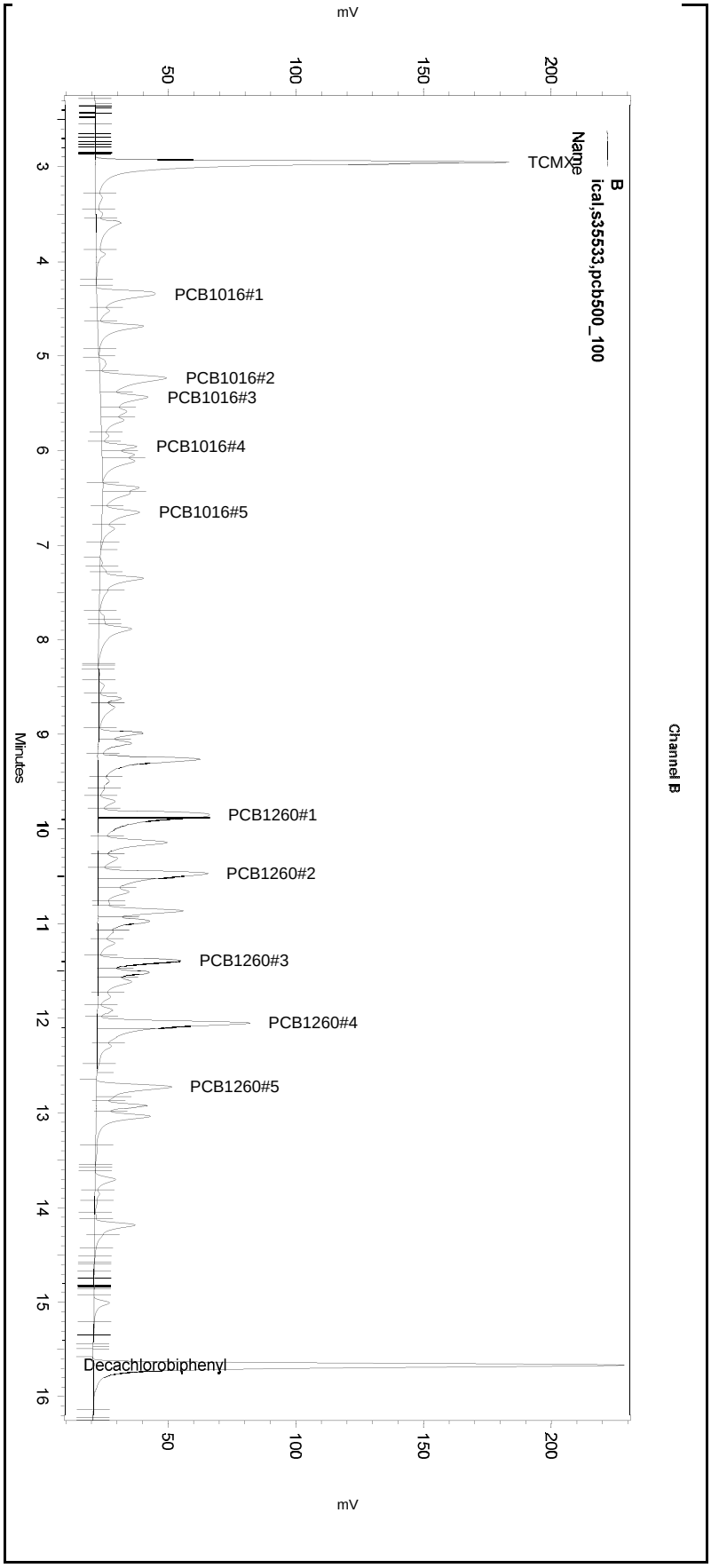
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-014

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	8.281	0	0
Yes	Reset Baseline	13.823	0	0

Sample Name: **ical,s35533,pcb500_100**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-014**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: 15 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 6:56:15 PM
Analysis Date: 2/6/2018 9:15:33 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-014

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	5.004	0	0
Yes	Reset Baseline	6.33	0	0
Yes	Reset Baseline	7.042	0	0
Yes	Split Peak	9.879	0	0
Yes	Split Peak	10.528	0	0
Yes	Split Peak	12.111	0	0
Yes	Reset Baseline	12.569	0	0

Sample Name: **ical,s35533,pcb500_100** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-014** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq** Instrument: GC06 (Offline) Vial: 15 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met	Software Version 3.1.7 Run Date: 2/5/2018 6:56:15 PM Analysis Date: 2/6/2018 8:30:11 AM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.777	3.776	553863	94.958
PCB1016#1	5.343	5.347	121809	389.074
PCB1016#2	6.383	6.387	135050	405.047
PCB1016#3	6.677	6.680	97163	496.040
PCB1016#4	7.127	7.130	45431	399.326
PCB1016#5	7.627	7.630	66341	366.012
PCB1260#1	11.147	11.150	201573	409.647
PCB1260#2	11.793	11.797	208929	379.707
PCB1260#3	12.650	12.650	128972	424.035
PCB1260#4	13.390	13.390	254356	373.919
PCB1260#5	14.040	14.040	136613	389.273
Decachlorobiphenyl	16.640	16.640	686153	93.900

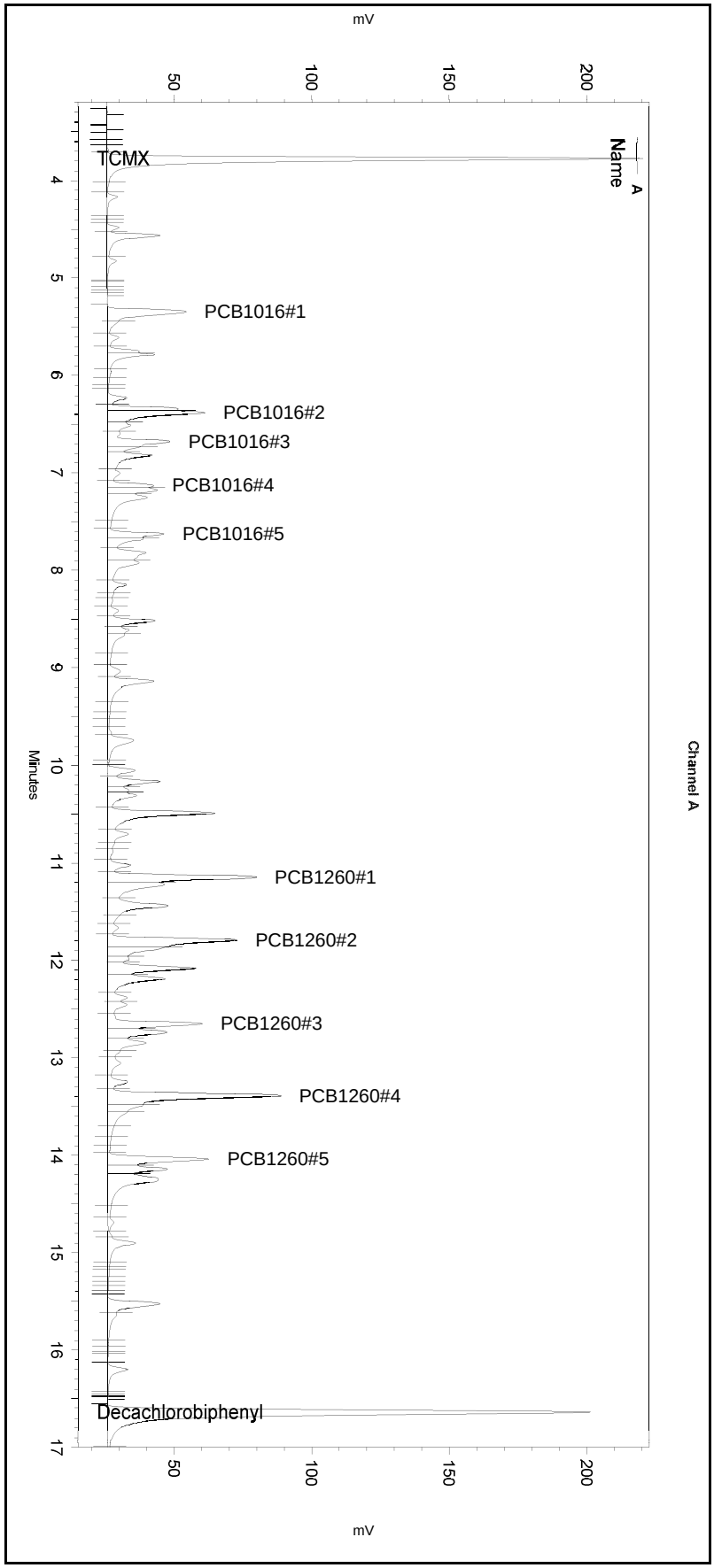
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.950	2.950	643318	88.789
PCB1016#1	4.347	4.350	158506	456.569
PCB1016#2	5.233	5.237	208271	473.864
PCB1016#3	5.437	5.437	138783	544.105
PCB1016#4	5.957	5.960	68702	484.621
PCB1016#5	6.653	6.657	126126	604.412
PCB1260#1	9.850	9.850	337779	811.898
PCB1260#2	10.470	10.470	293928	645.122
PCB1260#3	11.393	11.397	145302	480.162
PCB1260#4	12.050	12.053	354720	697.870
PCB1260#5	12.720	12.723	158284	452.943
Decachlorobiphenyl	15.667	15.673	747321	88.736

Sample Name: **ical,s35533,pcb500_100**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-014**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: 15 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 6:56:15 PM
Analysis Date: 2/6/2018 8:30:11 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0

Manual Integration Fixes
==========

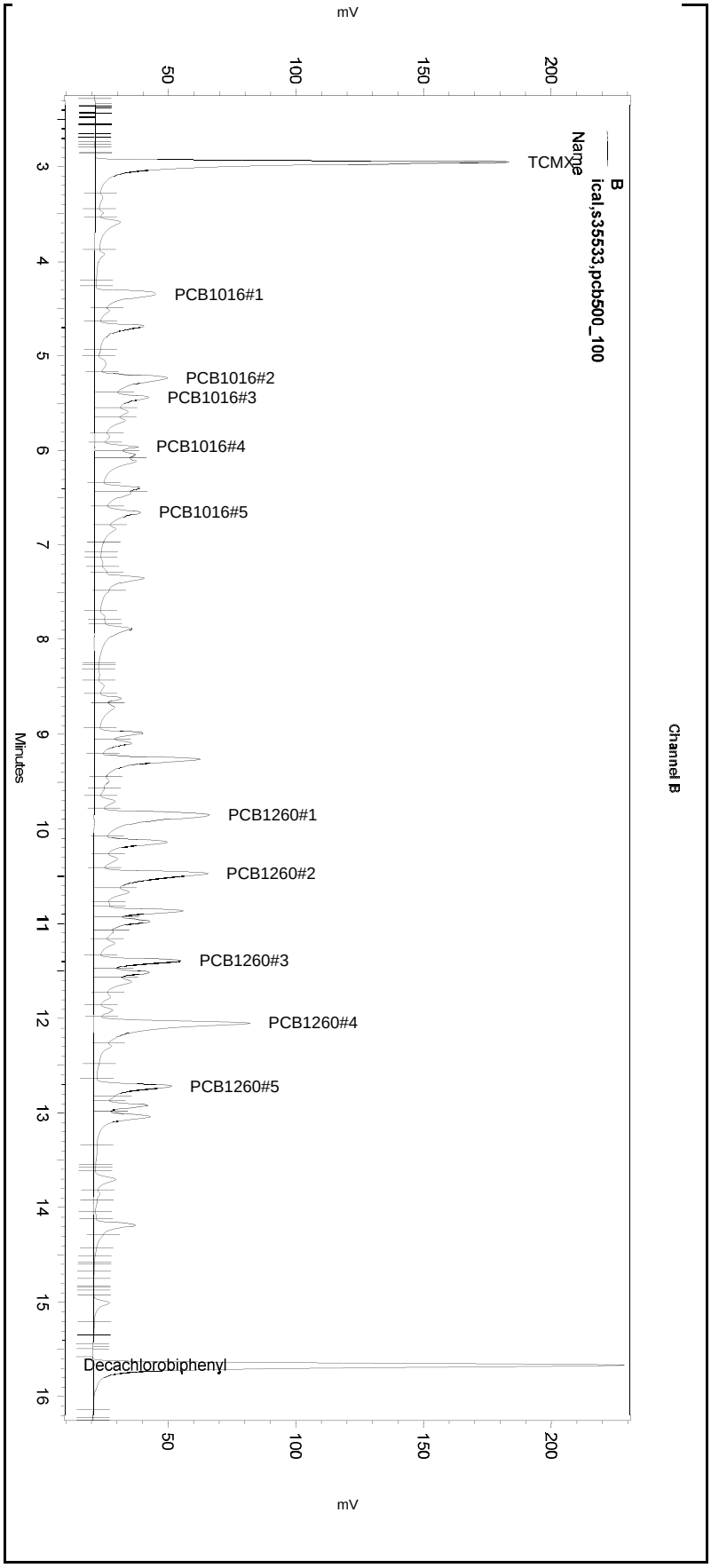
Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-014

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sample Name: **ical,s35533,pcb500_100**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-014**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: 15 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 6:56:15 PM
Analysis Date: 2/6/2018 8:30:11 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-014

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sample Name: **ical,s35534,pcb750_150** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-015** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq** Instrument: GC06 (Offline) Vial: 16 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met	Software Version 3.1.7 Run Date: 2/5/2018 7:24:15 PM Analysis Date: 2/6/2018 9:15:43 AM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.787	3.776	792513	150.000 CAL
PCB1016#1	5.353	5.347	172309	750.000 CAL
PCB1016#2	6.393	6.387	200958	750.000 CAL
PCB1016#3	6.687	6.680	112723	750.000 CAL
PCB1016#4	7.137	7.130	61299	750.000 CAL
PCB1016#5	7.637	7.630	87434	750.000 CAL
PCB1260#1	11.157	11.150	279525	750.000 CAL
PCB1260#2	11.803	11.797	296557	750.000 CAL
PCB1260#3	12.657	12.650	165730	750.000 CAL
PCB1260#4	13.397	13.390	360209	750.000 CAL
PCB1260#5	14.047	14.040	195788	750.000 CAL
Decachlorobiphenyl	16.650	16.640	954432	150.000 CAL

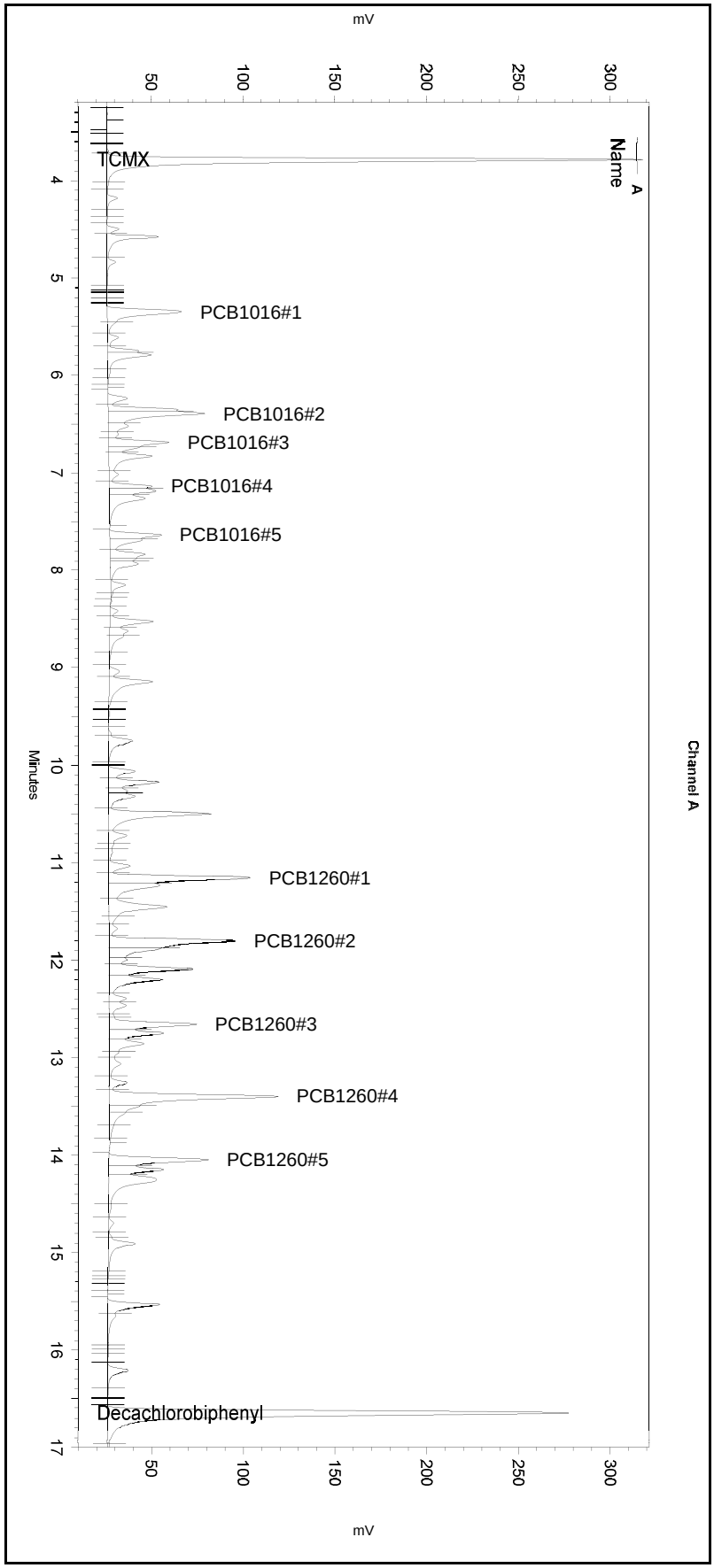
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.960	2.950	940979	150.000 CAL
PCB1016#1	4.343	4.350	210521	750.000 CAL
PCB1016#2	5.243	5.237	283302	750.000 CAL
PCB1016#3	5.443	5.437	168136	750.000 CAL
PCB1016#4	5.967	5.960	76134	750.000 CAL
PCB1016#5	6.660	6.657	135585	750.000 CAL
PCB1260#1	9.853	9.850	246105	750.000 CAL
PCB1260#2	10.477	10.470	300517	750.000 CAL
PCB1260#3	11.403	11.397	193698	750.000 CAL
PCB1260#4	12.057	12.053	358580	750.000 CAL
PCB1260#5	12.727	12.723	224944	750.000 CAL
Decachlorobiphenyl	15.677	15.673	1060764	150.000 CAL

Sample Name: **ical,s35534,pcb750_150**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-015**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: 16 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 7:24:15 PM
Analysis Date: 2/6/2018 9:15:43 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0

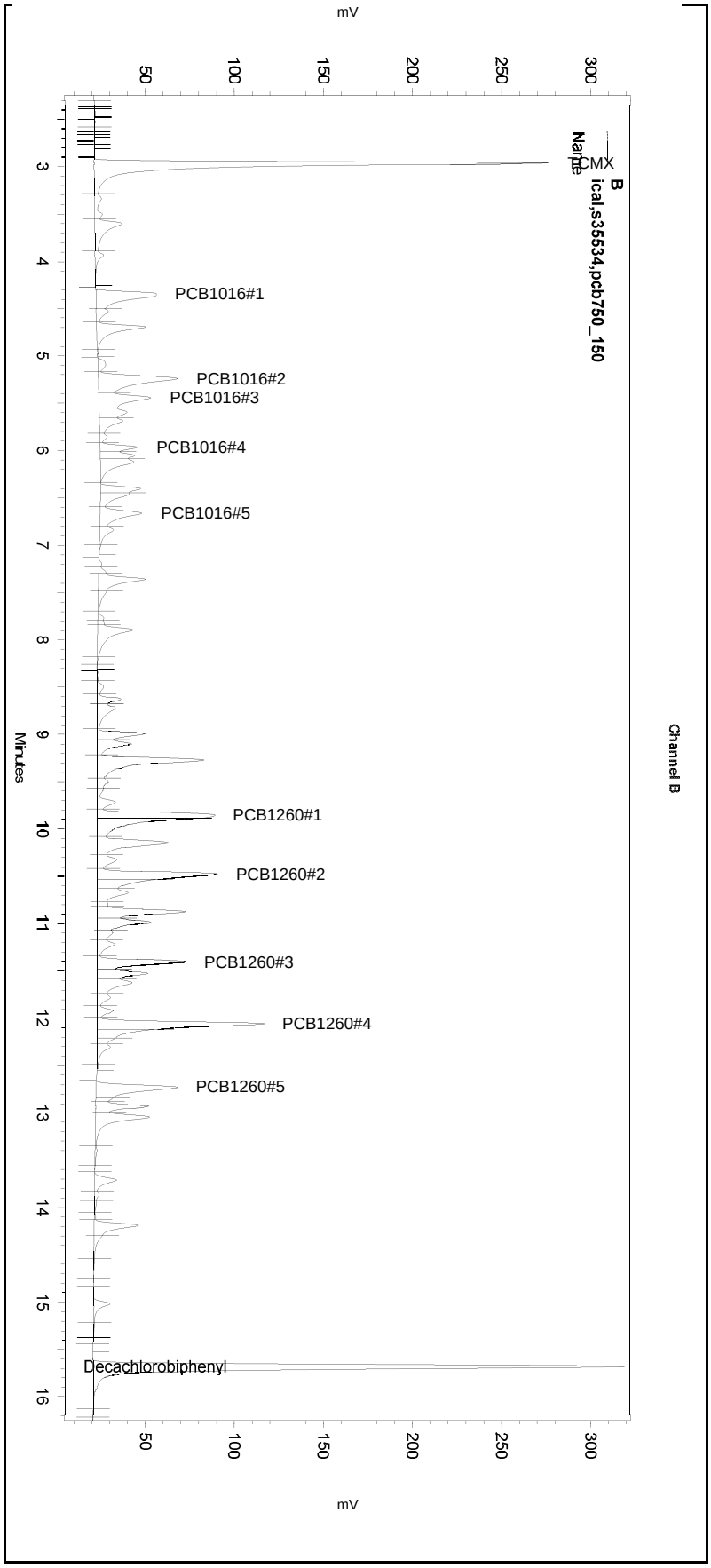
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-015

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	8.279	0	0
Yes	Reset Baseline	13.864	0	0

Sample Name: **ical,s35534,pcb750_150**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-015**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: 16 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 7:24:15 PM
Analysis Date: 2/6/2018 9:15:43 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-015

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	5.01	0	0
Yes	Reset Baseline	6.332	0	0
Yes	Reset Baseline	7.093	0	0
Yes	Split Peak	9.887	0	0
Yes	Split Peak	10.536	0	0
Yes	Split Peak	12.117	0	0
Yes	Reset Baseline	12.56	0	0

Sample Name: **ical,s35534,pcb750_150** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-015** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq** Instrument: GC06 (Offline) Vial: 16 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met	Software Version 3.1.7 Run Date: 2/5/2018 7:24:15 PM Analysis Date: 2/6/2018 8:30:20 AM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.787	3.776	792513	137.172
PCB1016#1	5.353	5.347	172309	550.377
PCB1016#2	6.393	6.387	200958	602.721
PCB1016#3	6.687	6.680	112723	575.477
PCB1016#4	7.137	7.130	61299	538.802
PCB1016#5	7.637	7.630	87889	484.895
PCB1260#1	11.157	11.150	281577	573.747
PCB1260#2	11.803	11.797	300210	545.602
PCB1260#3	12.657	12.650	170564	560.782
PCB1260#4	13.397	13.390	368274	541.385
PCB1260#5	14.047	14.040	200006	569.909
Decachlorobiphenyl	16.650	16.640	954432	132.300

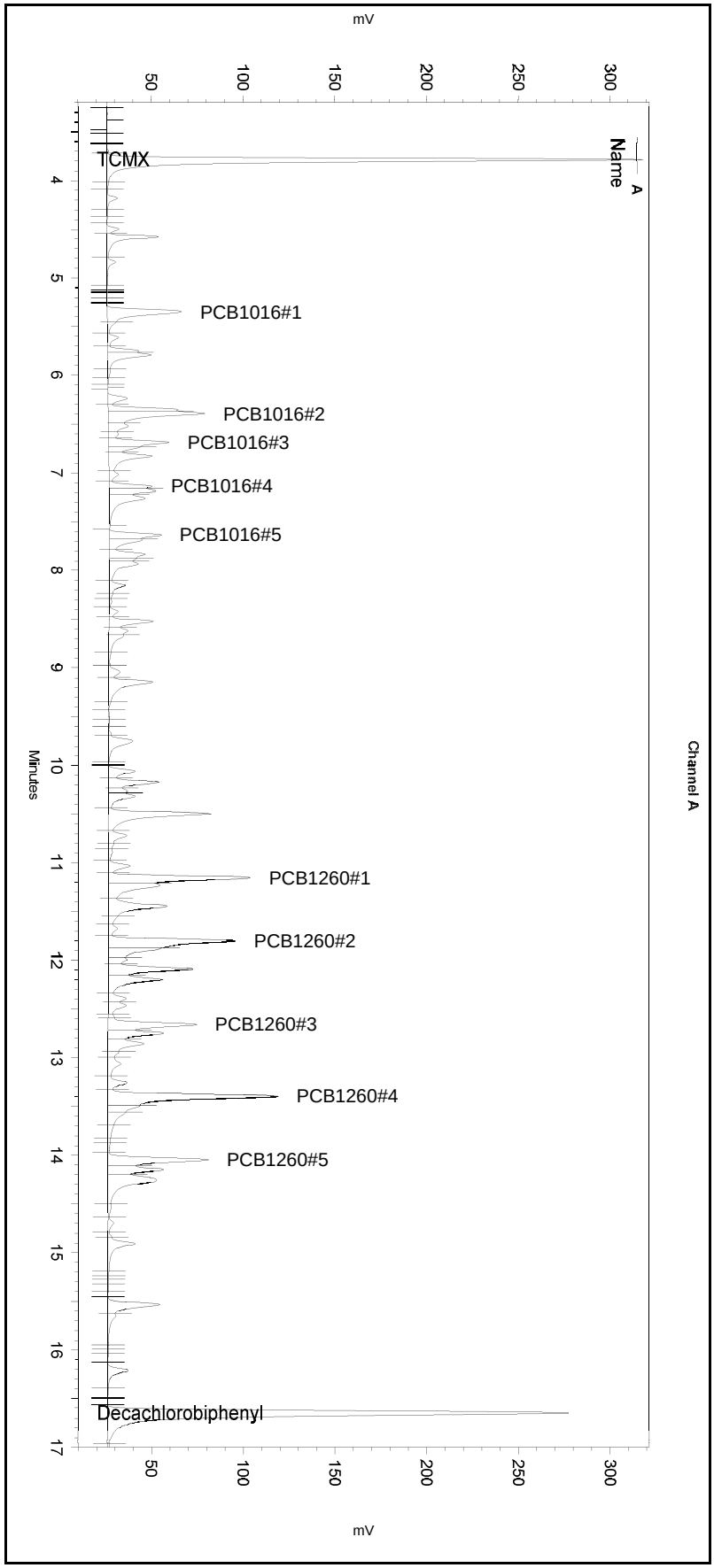
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.960	2.950	944011	130.289
PCB1016#1	4.343	4.350	224910	647.842
PCB1016#2	5.243	5.237	319044	715.992
PCB1016#3	5.443	5.437	196203	769.223
PCB1016#4	5.967	5.960	97633	688.698
PCB1016#5	6.660	6.657	179184	858.673
PCB1260#1	9.853	9.850	474827	1141.312
PCB1260#2	10.477	10.470	430957	935.407
PCB1260#3	11.403	11.397	211640	699.381
PCB1260#4	12.057	12.053	484451	953.101
PCB1260#5	12.727	12.723	241864	692.114
Decachlorobiphenyl	15.677	15.673	1060764	126.675

Sample Name: **ical,s35534,pcb750_150**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-015**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: 16 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 7:24:15 PM
Analysis Date: 2/6/2018 8:30:20 AM
Sample Amount: 1



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No items selected for this section

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Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0

Manual Integration Fixes
==========

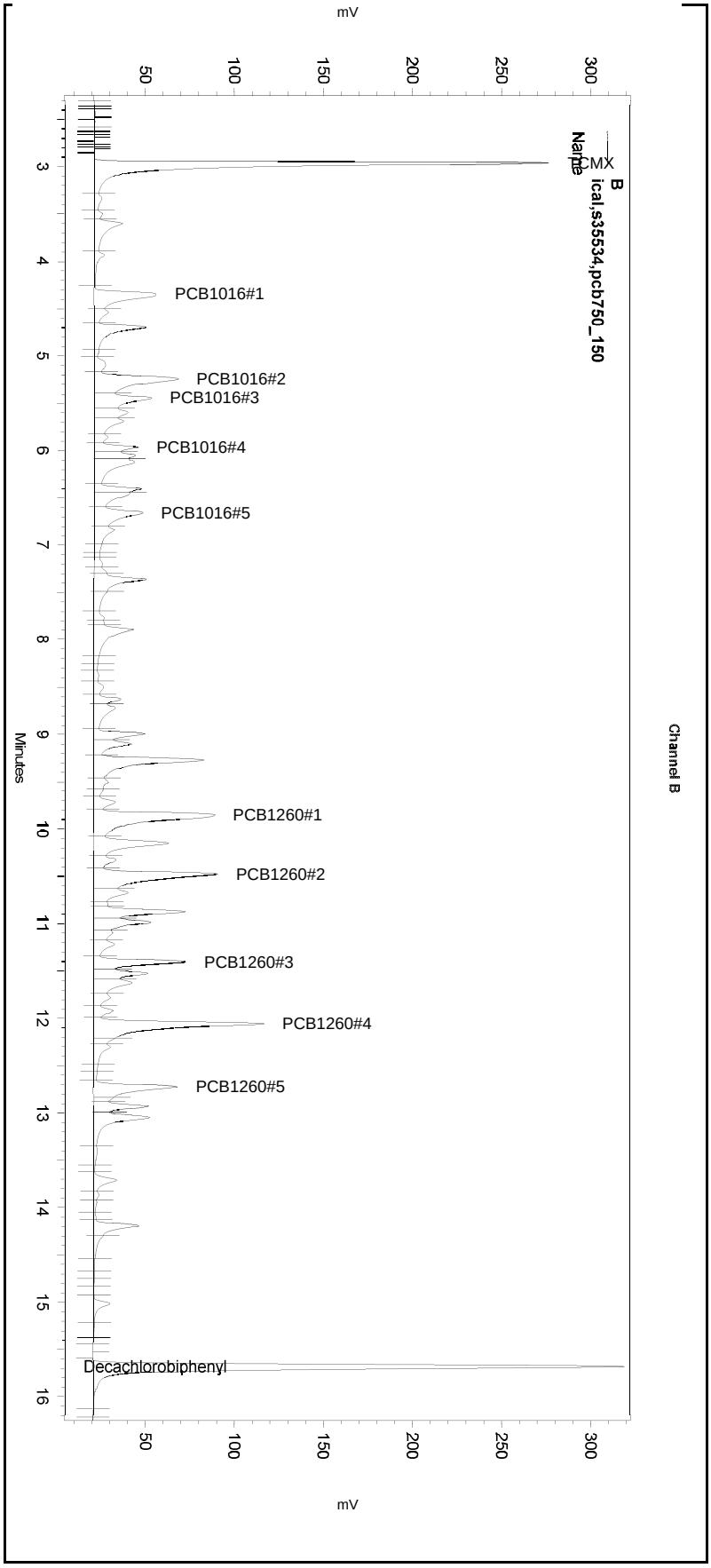
Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-015

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sample Name: **ical,s35534,pcb750_150**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-015**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: 16 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 7:24:15 PM
Analysis Date: 2/6/2018 8:30:20 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-015

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sample Name: **ical,s35535,pcb1000_200** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-016** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq** Instrument: GC06 (Offline) Vial: N/A Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met	Software Version 3.1.7 Run Date: 2/5/2018 7:52:17 PM Analysis Date: 2/6/2018 9:15:52 AM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.760	3.776	1216734	200.000 CAL
PCB1016#1	5.330	5.347	251575	1000.000 CAL
PCB1016#2	6.367	6.387	318730	1000.000 CAL
PCB1016#3	6.663	6.680	167317	1000.000 CAL
PCB1016#4	7.110	7.130	94195	1000.000 CAL
PCB1016#5	7.610	7.630	134677	1000.000 CAL
PCB1260#1	11.133	11.150	423466	1000.000 CAL
PCB1260#2	11.777	11.797	434255	1000.000 CAL
PCB1260#3	12.633	12.650	250420	1000.000 CAL
PCB1260#4	13.373	13.390	537551	1000.000 CAL
PCB1260#5	14.023	14.040	295539	1000.000 CAL
Decachlorobiphenyl	16.627	16.640	1367649	200.000 CAL

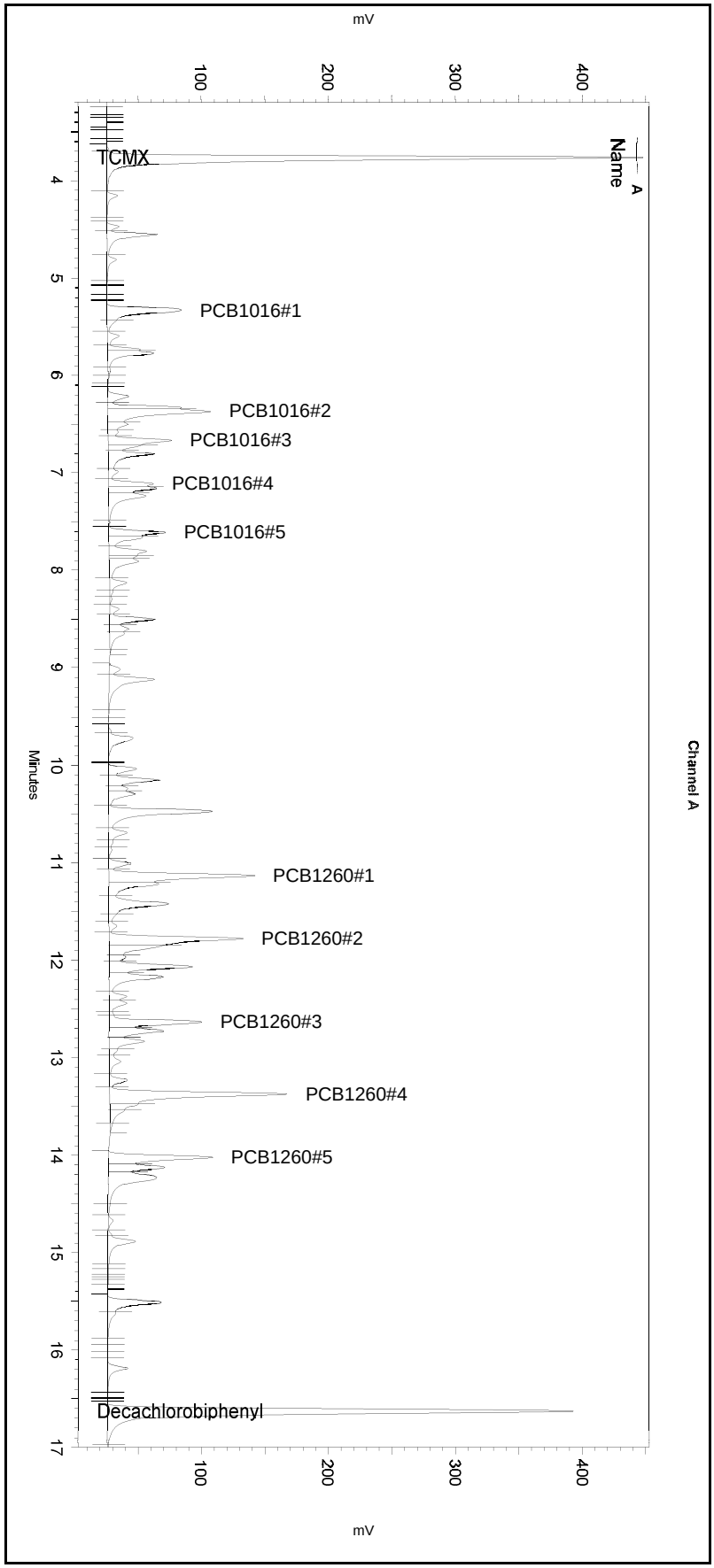
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.933	2.950	1467975	200.000 CAL
PCB1016#1	4.330	4.350	318597	1000.000 CAL
PCB1016#2	5.213	5.237	429594	1000.000 CAL
PCB1016#3	5.417	5.437	238343	1000.000 CAL
PCB1016#4	5.940	5.960	110352	1000.000 CAL
PCB1016#5	6.637	6.657	207093	1000.000 CAL
PCB1260#1	9.827	9.850	324077	1000.000 CAL
PCB1260#2	10.450	10.470	414357	1000.000 CAL
PCB1260#3	11.377	11.397	289196	1000.000 CAL
PCB1260#4	12.030	12.053	516620	1000.000 CAL
PCB1260#5	12.700	12.723	353792	1000.000 CAL
Decachlorobiphenyl	15.650	15.673	1532268	200.000 CAL

Sample Name: **ical,s35535,pcb1000_200**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-016**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: N/A Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 7:52:17 PM
Analysis Date: 2/6/2018 9:15:52 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0

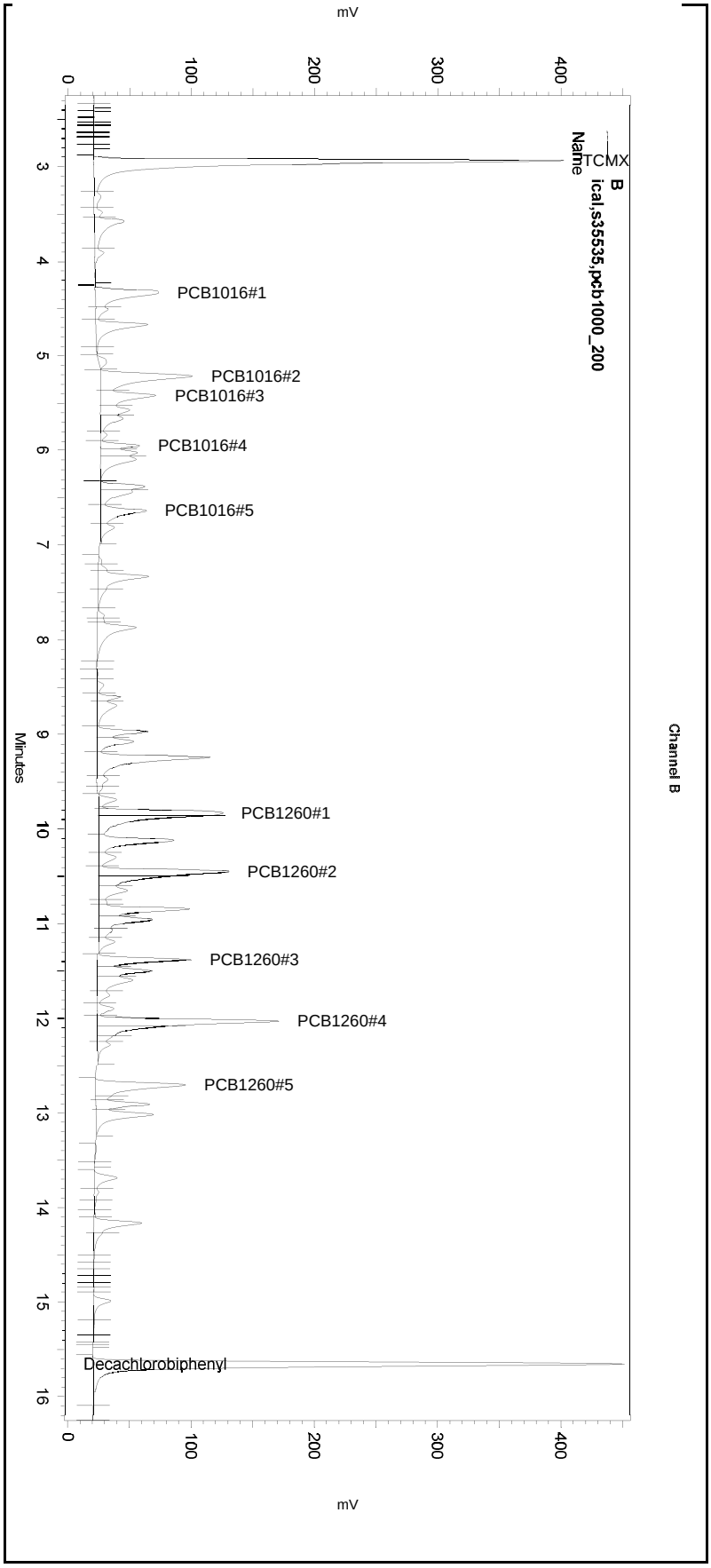
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-016

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	8.866	0	0
Yes	Reset Baseline	13.767	0	0

Sample Name: **ical,s35535,pcb1000_200**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-016**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: N/A Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 7:52:17 PM
Analysis Date: 2/6/2018 9:15:52 AM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-016

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	5.138	0	0
Yes	Reset Baseline	6.986	0	0
Yes	Reset Baseline	7.032	0	0
Yes	Manual Baseline	9.631	11.31	0
Yes	Manual Peak	9.765	9.854	0
Yes	Split Peak	10.498	0	0
Yes	Split Peak	12.08	0	0
Yes	Reset Baseline	12.488	0	0
Yes	Reset Baseline	12.561	0	0
Yes	Reset Baseline	13.247	0	0

Sample Name: **ical,s35535,pcb1000_200** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-016** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq** Instrument: GC06 (Offline) Vial: N/A Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met	Software Version 3.1.7 Run Date: 2/5/2018 7:52:17 PM Analysis Date: 2/6/2018 8:30:28 AM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.760	3.776	1217271	212.308
PCB1016#1	5.330	5.347	254029	811.401
PCB1016#2	6.367	6.387	324567	973.454
PCB1016#3	6.663	6.680	172452	880.407
PCB1016#4	7.110	7.130	99576	875.246
PCB1016#5	7.610	7.630	143442	791.388
PCB1260#1	11.133	11.150	432274	882.849
PCB1260#2	11.777	11.797	445827	810.246
PCB1260#3	12.633	12.650	263340	865.811
PCB1260#4	13.373	13.390	556760	818.471
PCB1260#5	14.023	14.040	302189	861.075
Decachlorobiphenyl	16.627	16.640	1367649	191.445

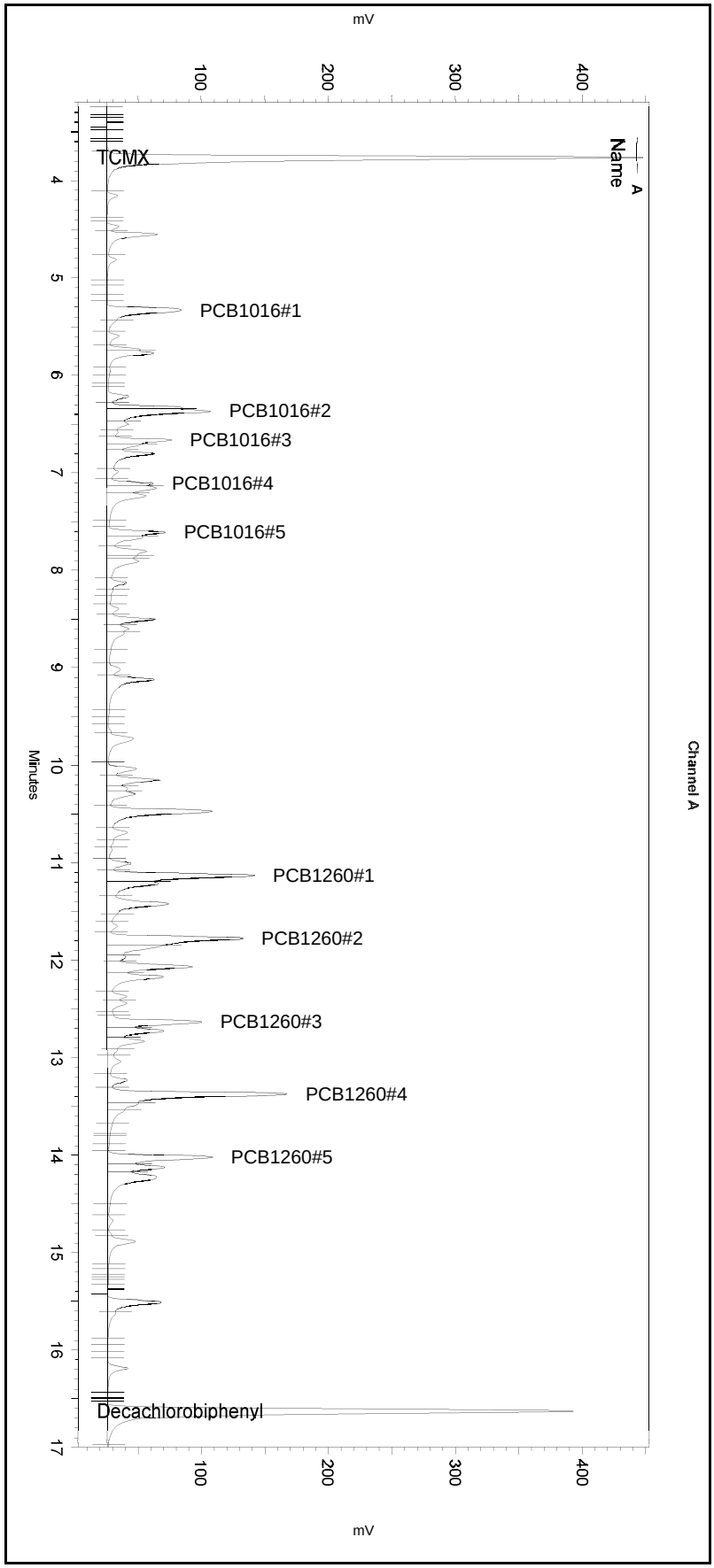
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.933	2.950	1471407	203.079
PCB1016#1	4.330	4.350	337101	971.003
PCB1016#2	5.213	5.237	510792	1135.114
PCB1016#3	5.417	5.437	295103	1156.965
PCB1016#4	5.940	5.960	143488	1012.157
PCB1016#5	6.637	6.657	269785	1292.844
PCB1260#1	9.827	9.850	708817	1703.739
PCB1260#2	10.450	10.470	654713	1409.416
PCB1260#3	11.377	11.397	314144	1038.113
PCB1260#4	12.030	12.053	728675	1433.584
PCB1260#5	12.700	12.723	376385	1077.057
Decachlorobiphenyl	15.650	15.673	1532268	183.746

Sample Name: **ical,s35535,pcb1000_200**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-016**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: N/A Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 7:52:17 PM
Analysis Date: 2/6/2018 8:30:28 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0

Manual Integration Fixes
==========

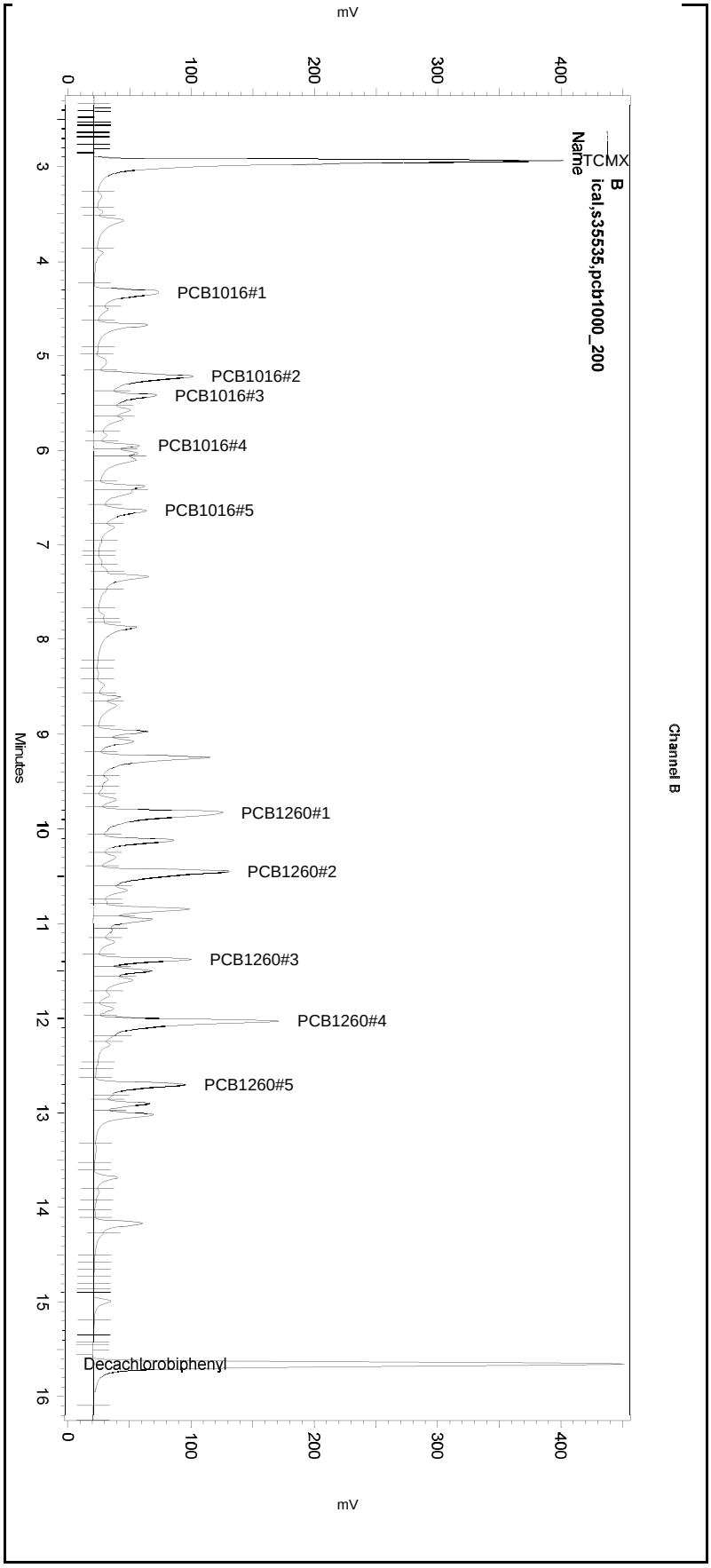
Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-016

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sample Name: **ical,s35535,pcb1000_200**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-016**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: N/A Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 7:52:17 PM
Analysis Date: 2/6/2018 8:30:28 AM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-016

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sample Name: **icv,s35527,ULTRA_1660** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-018** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq** Instrument: GC06 (Offline) Vial: 18 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met	Software Version 3.1.7 Run Date: 2/5/2018 8:48:17 PM Analysis Date: 2/6/2018 2:08:19 PM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.780	3.776	293629	48.356
PCB1016#1	5.347	5.347	66859	252.512
PCB1016#2	6.383	6.387	65396	249.298
PCB1016#3	6.677	6.680	40148	252.893
PCB1016#4	7.127	7.130	21119	240.253
PCB1016#5	7.627	7.630	30534	258.051
PCB1260#1	11.150	11.150	94163	229.935
PCB1260#2	11.797	11.797	84354	210.945
PCB1260#3	12.650	12.650	69589	289.628
PCB1260#4	13.390	13.390	146856	286.775
PCB1260#5	14.040	14.040	70604	264.993
Decachlorobiphenyl	16.643	16.640	396259	56.090

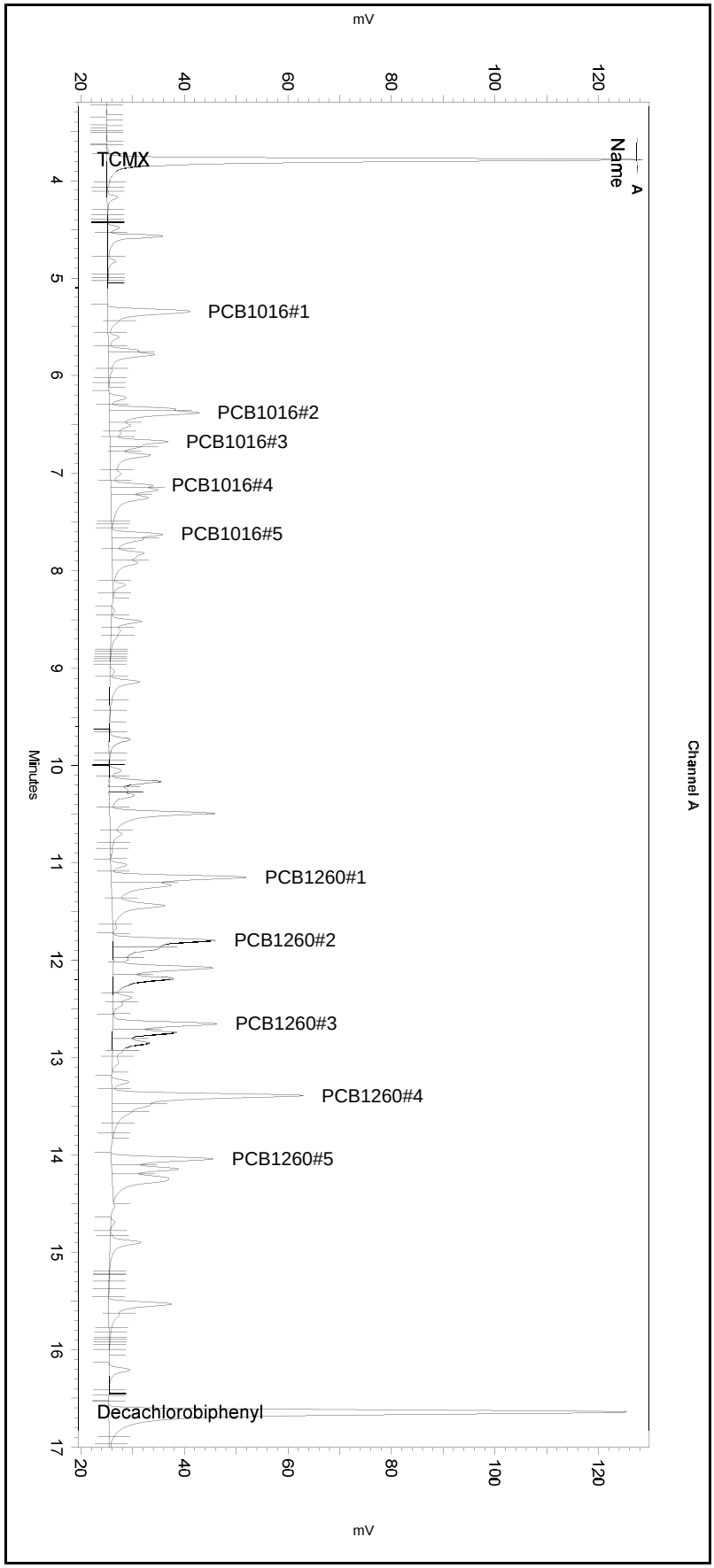
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.957	2.950	313228	50.358
PCB1016#1	4.353	4.350	78175	260.118
PCB1016#2	5.240	5.237	83950	271.392
PCB1016#3	5.443	5.437	62696	276.074
PCB1016#4	5.960	5.960	29535	267.664
PCB1016#5	6.657	6.657	48362	264.947
PCB1260#1	9.857	9.850	84124	258.649
PCB1260#2	10.473	10.470	75866	198.459
PCB1260#3	11.397	11.397	79318	299.061
PCB1260#4	12.053	12.053	124406	273.636
PCB1260#5	12.723	12.723	76343	264.827
Decachlorobiphenyl	15.670	15.673	415451	49.229

Sample Name: **icv,s35527,ULTRA_1660**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-018**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: 18 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 8:48:17 PM
Analysis Date: 2/6/2018 2:08:19 PM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0

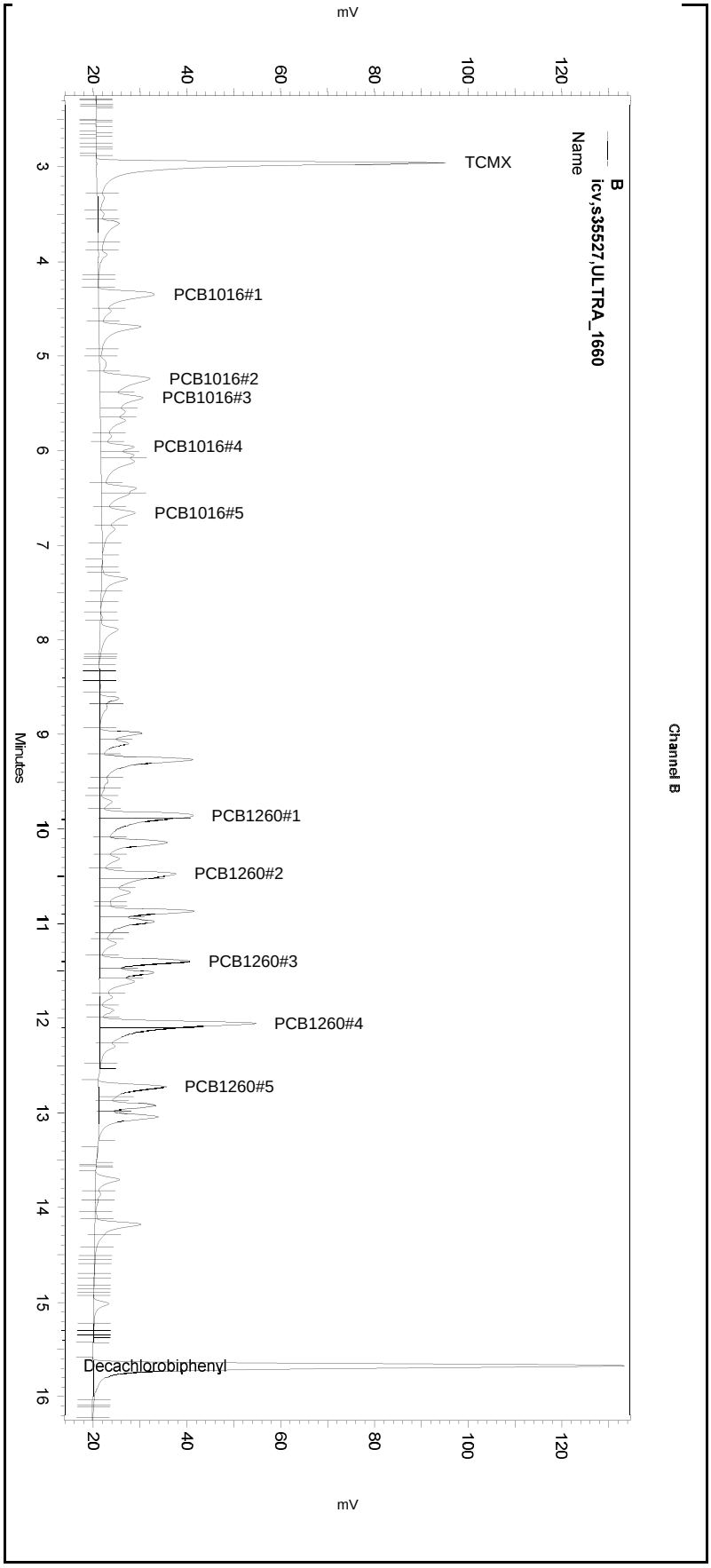
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-018

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	8.279	0	0
Yes	Manual Baseline	11.717	13.151	0
Yes	Reset Baseline	13.832	0	0
Yes	Reset Baseline	14.53	0	0

Sample Name: **icv,s35527,ULTRA_1660**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-018**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: 18 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 8:48:17 PM
Analysis Date: 2/6/2018 2:08:19 PM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-018

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	7.101	0	0
Yes	Split Peak	9.889	0	0
Yes	Split Peak	10.527	0	0
Yes	Split Peak	12.099	0	0
Yes	Reset Baseline	12.531	0	0
Yes	Reset Baseline	13.286	0	0

Sample Name: **icv,s35527,ULTRA_1660** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-018** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq** Instrument: GC06 (Offline) Vial: 18 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met	Software Version 3.1.7 Run Date: 2/5/2018 8:48:17 PM Analysis Date: 2/6/2018 9:20:16 AM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.780	3.776	293629	48.356
PCB1016#1	5.347	5.347	67007	253.071
PCB1016#2	6.383	6.387	67051	255.607
PCB1016#3	6.677	6.680	41944	264.206
PCB1016#4	7.127	7.130	22871	260.185
PCB1016#5	7.627	7.630	33958	286.988
PCB1260#1	11.150	11.150	94163	229.935
PCB1260#2	11.797	11.797	78175	195.493
PCB1260#3	12.650	12.650	67950	282.807
PCB1260#4	13.390	13.390	147972	288.954
PCB1260#5	14.040	14.040	71702	269.114
Decachlorobiphenyl	16.643	16.640	396259	56.090

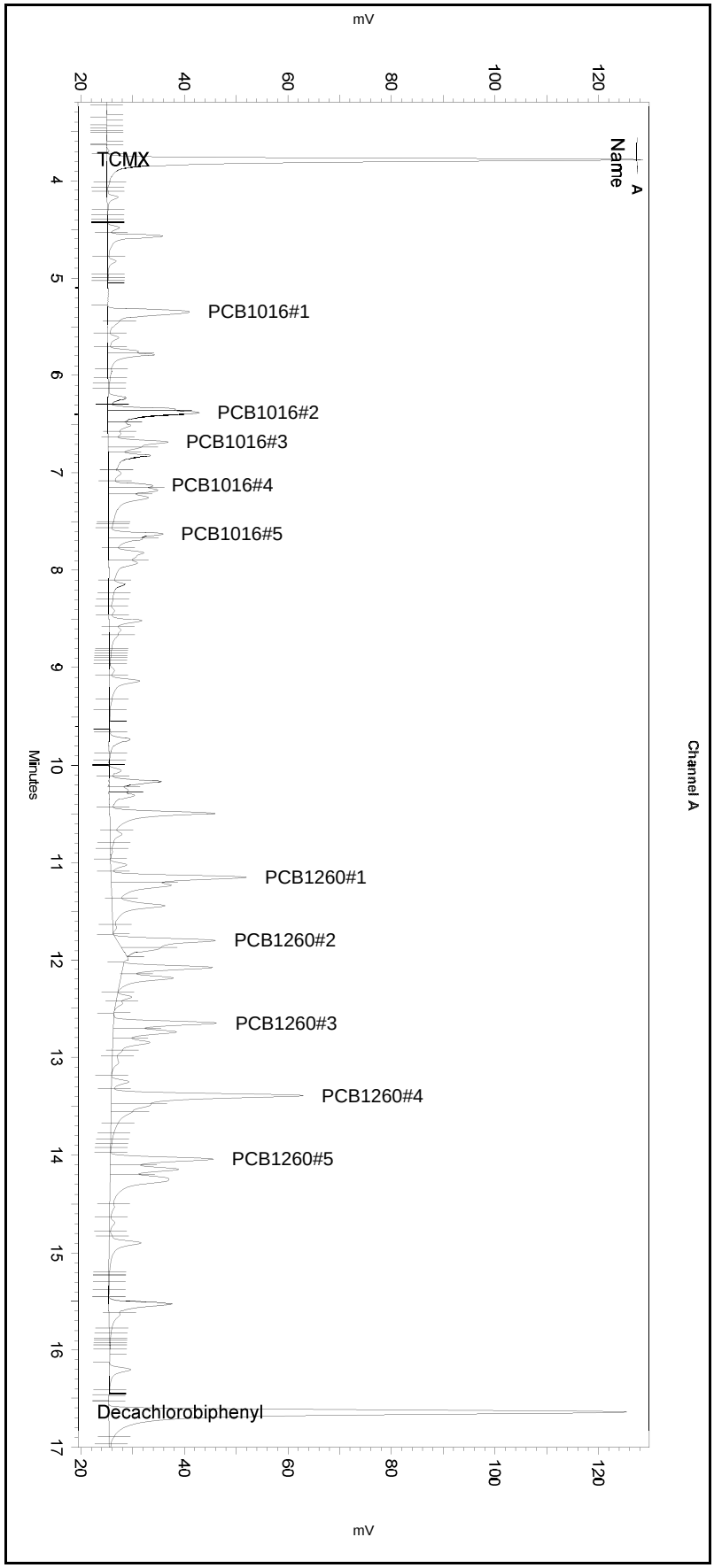
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.957	2.950	315163	50.669
PCB1016#1	4.353	4.350	85662	285.030
PCB1016#2	5.240	5.237	95779	303.957
PCB1016#3	5.443	5.437	72236	316.536
PCB1016#4	5.960	5.960	36556	341.487
PCB1016#5	6.657	6.657	65160	356.973
PCB1260#1	9.857	9.850	167022	513.528
PCB1260#2	10.473	10.470	125647	318.792
PCB1260#3	11.397	11.397	88434	333.432
PCB1260#4	12.053	12.053	209211	460.168
PCB1260#5	12.723	12.723	86205	299.038
Decachlorobiphenyl	15.670	15.673	415451	49.229

Sample Name: **icv,s35527,ULTRA_1660**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-018**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: 18 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 8:48:17 PM
Analysis Date: 2/6/2018 9:20:16 AM
Sample Amount: 1



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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0

Manual Integration Fixes
==========

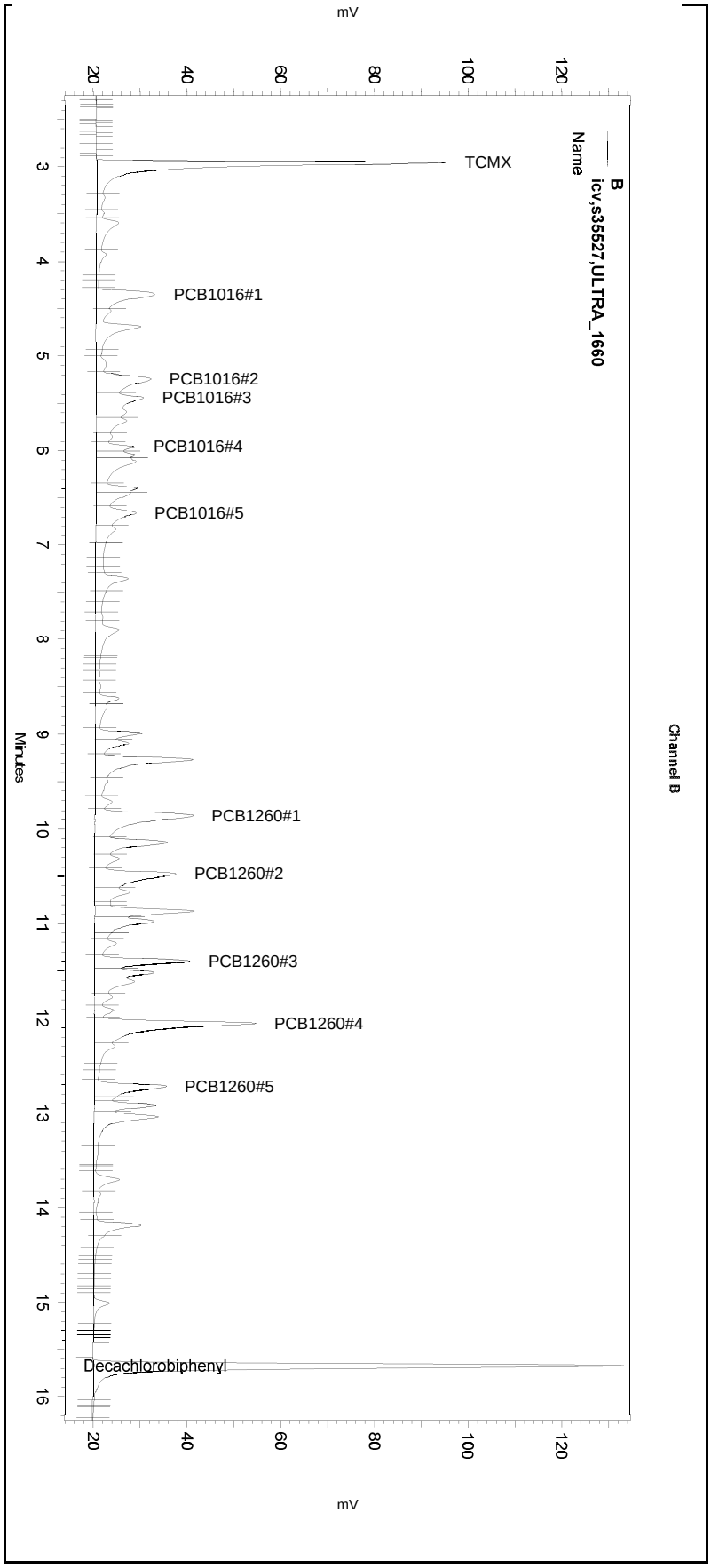
Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-018

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sample Name: **icv,s35527,ULTRA_1660**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-018**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\036.seq**
Instrument: GC06 (Offline) Vial: 18 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-036ical.met

Software Version 3.1.7
Run Date: 2/5/2018 8:48:17 PM
Analysis Date: 2/6/2018 9:20:16 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\036-018

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Continuing Calibration Verification Raw Data

ENTHALPY CONTINUING CALIBRATION FOR 297025 PCBS Soil
EPA 8082A

Inst : GC06 Run Name : PCB500_100 IDF : 1.0
Seqnum : 208062470010.2 File : 043_010 Time : 12-FEB-2018 15:17
Cal : 208052389001 Caldate : 05-FEB-2018
Standards: S35813

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Aroclor-1016	A			500.0	564.7	pg/uL	13	20	
Aroclor-1260	A			500.0	573.5	pg/uL	15	20	
TCMX	A	6072.3	5735.9	100.0	94.46	pg/uL	-6	20	
Decachlorobiphenyl	A	8292.8	6477.5	100.0	94.57	pg/uL	-5	20	
Aroclor-1016	B			500.0	557.1	pg/uL	11	20	
Aroclor-1260	B			500.0	523.0	pg/uL	5	20	
TCMX	B	6220.1	6640.7	100.0	106.8	pg/uL	7	20	
Decachlorobiphenyl	B	8439.1	6344.5	100.0	75.18	pg/uL	**-25**	20	c-

RDG 02/12/18 : Corrected automatically drawn baseline for all channels.
[general version]

Analyst: RDG Date: 02/14/18 Reviewer: EAH Date: 02/15/18

-=low bias c=CCV

Sample Name: **ccv,s35813,pcb500_100** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-010** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\043.seq** Instrument: GC06 (Offline) Vial: 12 Operator: Pest 3. Analyst (lims2k3\pest3) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met	Software Version 3.1.7 Run Date: 2/12/2018 3:17:29 PM Analysis Date: 2/12/2018 4:59:27 PM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.793	3.776	573593	94.461
PCB1016#1	5.363	5.347	127833	482.798
PCB1016#2	6.407	6.387	158577	604.516
PCB1016#3	6.700	6.680	87860	553.431
PCB1016#4	7.150	7.130	49648	564.804
PCB1016#5	7.650	7.630	73106	617.839
PCB1260#1	11.170	11.150	225413	550.433
PCB1260#2	11.813	11.797	236834	592.252
PCB1260#3	12.667	12.650	131252	546.268
PCB1260#4	13.407	13.390	290108	566.512
PCB1260#5	14.057	14.040	163009	611.810
Decachlorobiphenyl	16.653	16.640	647753	94.565

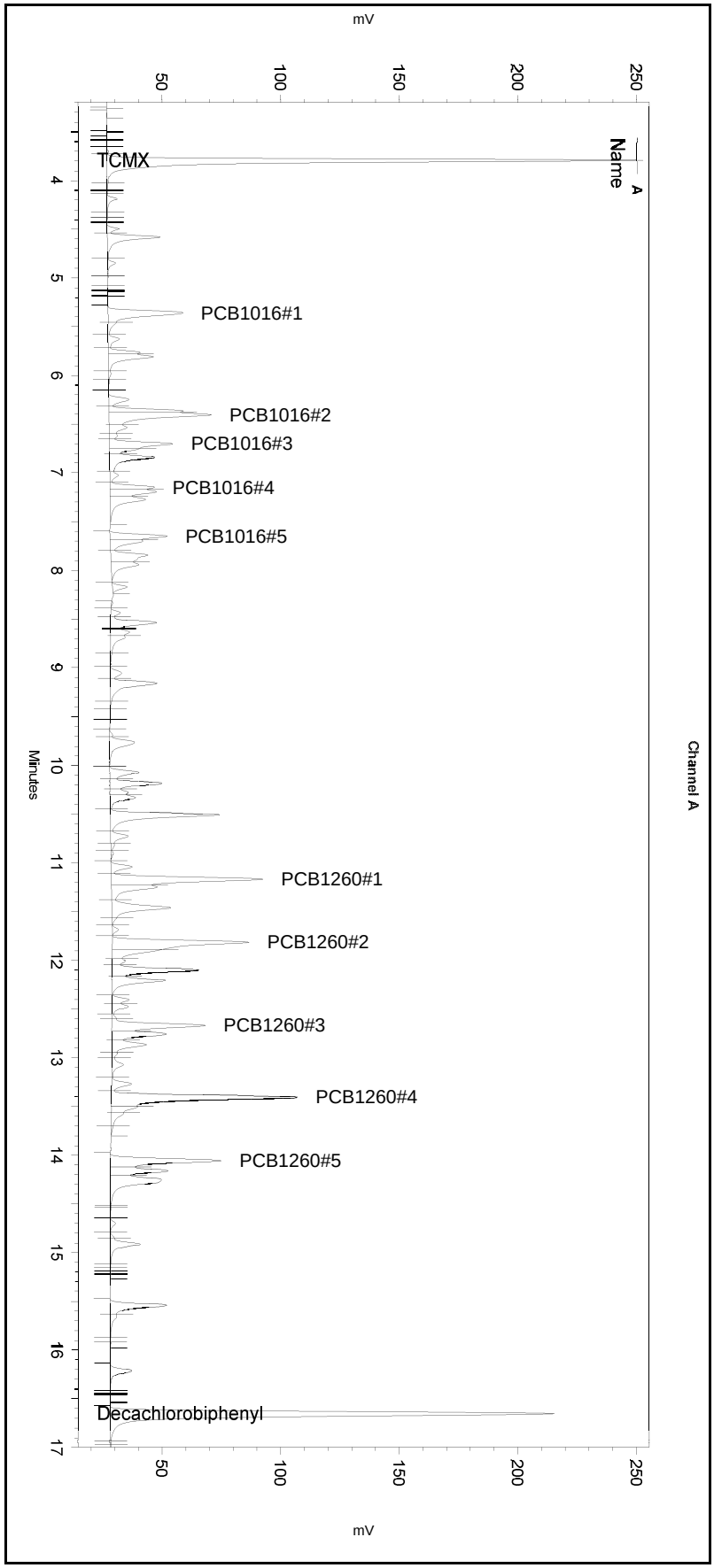
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.940	2.930	664072	106.763
PCB1016#1	4.320	4.330	155778	518.333
PCB1016#2	5.220	5.217	223656	611.676
PCB1016#3	5.423	5.417	128737	556.175
PCB1016#4	5.947	5.940	61155	554.224
PCB1016#5	6.640	6.637	99478	544.981
PCB1260#1	9.837	9.830	144246	443.501
PCB1260#2	10.457	10.450	195423	487.458
PCB1260#3	11.387	11.377	136811	515.833
PCB1260#4	12.040	12.033	264263	581.257
PCB1260#5	12.707	12.703	169221	587.013
Decachlorobiphenyl	15.660	15.653	634453	75.180

Sample Name: **ccv,s35813,pcb500_100**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-010**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\043.seq**
Instrument: GC06 (Offline) Vial: 12 Operator: Pest 3. Analyst (lims2k3\pest3)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met

Software Version 3.1.7
Run Date: 2/12/2018 3:17:29 PM
Analysis Date: 2/12/2018 4:59:27 PM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0

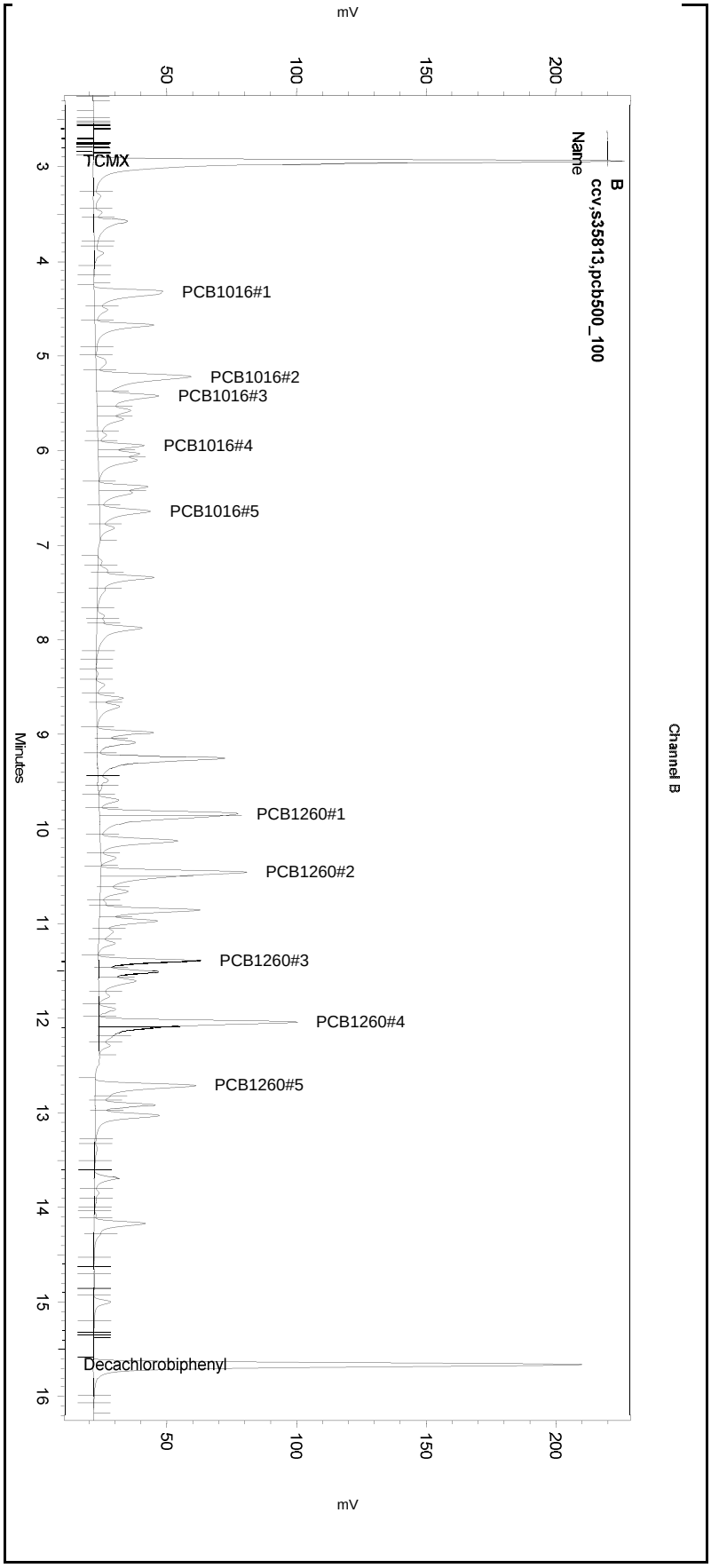
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-010

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	8.229	0	0
Yes	Reset Baseline	11.74	0	0
Yes	Reset Baseline	13.798	0	0

Sample Name: **ccv,s35813,pcb500_100**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-010**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\043.seq**
Instrument: GC06 (Offline) Vial: 12 Operator: Pest 3. Analyst (lims2k3\pest3)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met

Software Version 3.1.7
Run Date: 2/12/2018 3:17:29 PM
Analysis Date: 2/12/2018 4:59:27 PM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-010

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	6.944	0	0
Yes	Split Peak	9.855	0	0
Yes	Reset Baseline	10.386	0	0
Yes	Split Peak	10.501	0	0
Yes	Split Peak	12.093	0	0
Yes	Reset Baseline	12.39	0	0
Yes	Reset Baseline	16.179	0	0

Sample Name: **ccv,s35813,pcb500_100** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-010** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\043.seq** Instrument: GC06 (Offline) Vial: 12 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met	Software Version 3.1.7 Run Date: 2/12/2018 3:17:29 PM Analysis Date: 2/12/2018 4:35:57 PM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.793	3.776	573593	94.461
PCB1016#1	5.363	5.347	127833	482.798
PCB1016#2	6.407	6.387	158577	604.516
PCB1016#3	6.700	6.680	87860	553.431
PCB1016#4	7.150	7.130	49648	564.804
PCB1016#5	7.650	7.630	73612	622.115
PCB1260#1	11.170	11.150	230030	561.707
PCB1260#2	11.813	11.797	245843	614.781
PCB1260#3	12.667	12.650	137077	570.512
PCB1260#4	13.407	13.390	295498	577.037
PCB1260#5	14.057	14.040	163795	614.760
Decachlorobiphenyl	16.653	16.640	647753	94.565

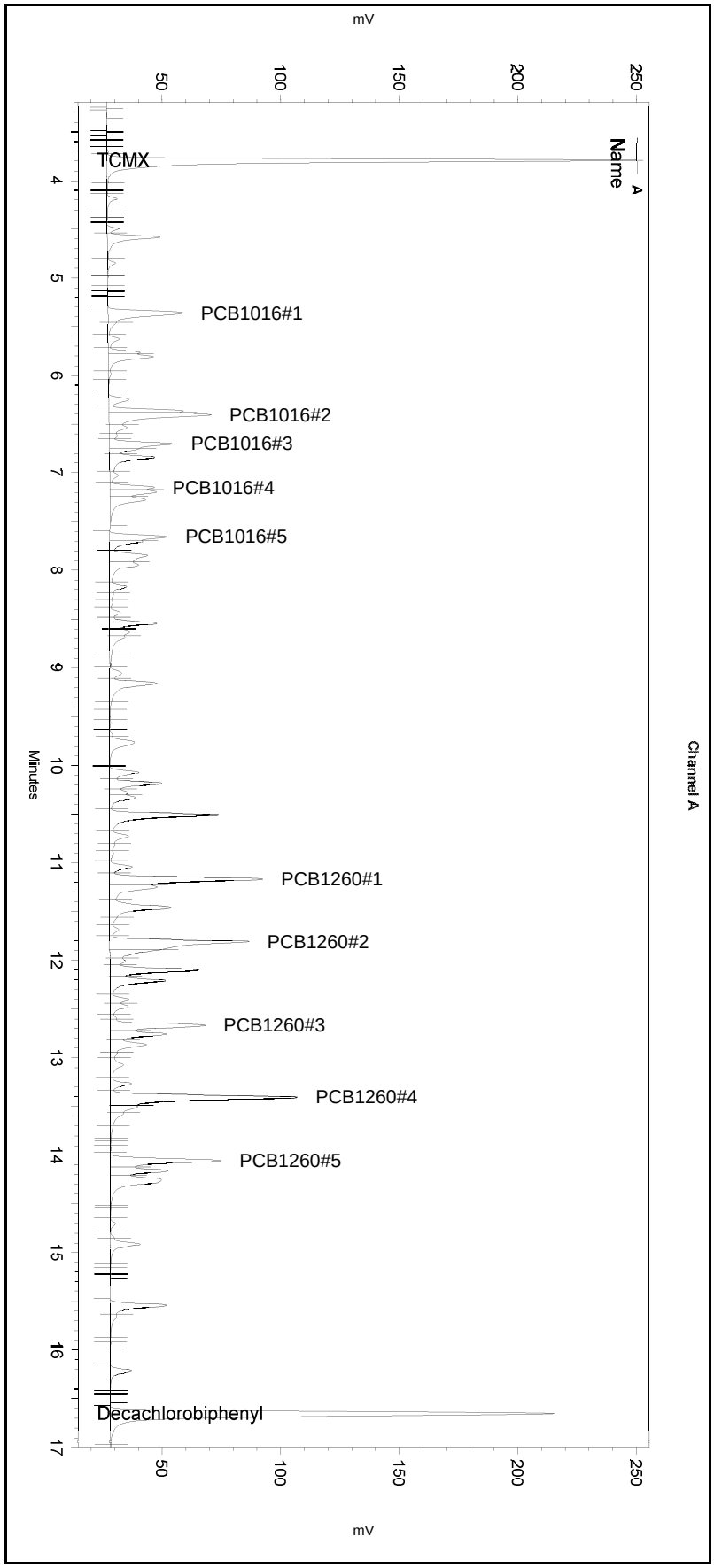
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.940	2.930	665112	106.930
PCB1016#1	4.320	4.330	163020	542.429
PCB1016#2	5.220	5.217	241143	648.993
PCB1016#3	5.423	5.417	142936	616.397
PCB1016#4	5.947	5.940	72717	659.006
PCB1016#5	6.640	6.637	130557	715.245
PCB1260#1	9.837	9.830	345758	1063.072
PCB1260#2	10.457	10.450	318545	785.075
PCB1260#3	11.387	11.377	152641	575.519
PCB1260#4	12.040	12.033	351121	772.305
PCB1260#5	12.707	12.703	177995	617.450
Decachlorobiphenyl	15.660	15.653	636127	75.379

Sample Name: **ccv,s35813,pcb500_100**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-010**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\043.seq**
Instrument: GC06 (Offline) Vial: 12 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met

Software Version 3.1.7
Run Date: 2/12/2018 3:17:29 PM
Analysis Date: 2/12/2018 4:35:57 PM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0

Manual Integration Fixes
==========

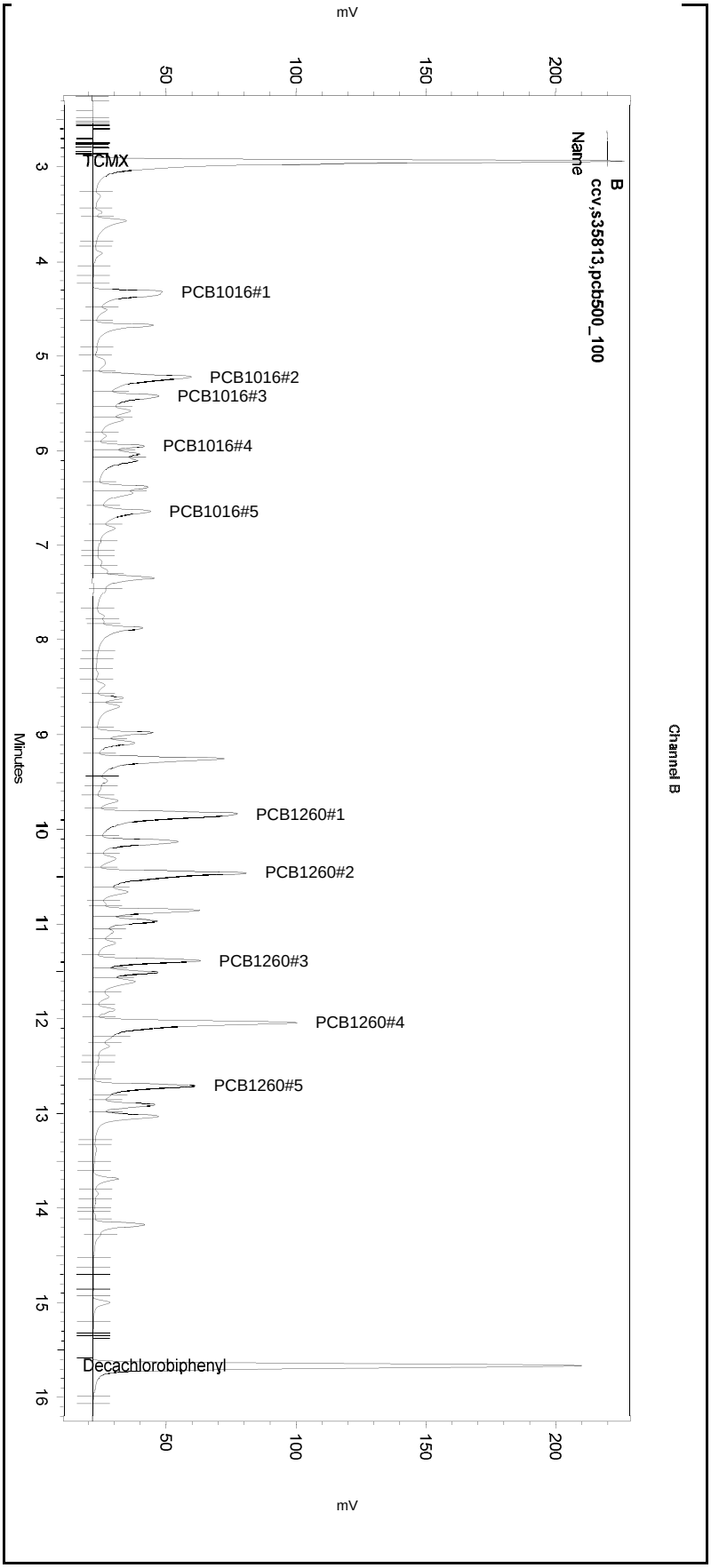
Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-010

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sample Name: **ccv,s35813,pcb500_100**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-010**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\043.seq**
Instrument: GC06 (Offline) Vial: 12 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met

Software Version 3.1.7
Run Date: 2/12/2018 3:17:29 PM
Analysis Date: 2/12/2018 4:35:57 PM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

---< B >----------

No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-010

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

ENTHALPY CONTINUING CALIBRATION FOR 297025 PCBS Soil
EPA 8082A

Inst : GC06 Run Name : PCB500_100 IDF : 1.0
Seqnum : 208062470023.1 File : 043_023 Time : 12-FEB-2018 22:42
Cal : 208052389001 Caldate : 05-FEB-2018
Standards: S35813

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Aroclor-1016	A			500.0	512.3	pg/uL	2	20	
Aroclor-1260	A			500.0	531.7	pg/uL	6	20	
TCMX	A	6072.3	5278.2	100.0	86.92	pg/uL	-13	20	
Decachlorobiphenyl	A	8292.8	6420.8	100.0	93.70	pg/uL	-6	20	
Aroclor-1016	B			500.0	508.6	pg/uL	2	20	
Aroclor-1260	B			500.0	512.9	pg/uL	3	20	
TCMX	B	6220.1	5985.7	100.0	96.23	pg/uL	-4	20	
Decachlorobiphenyl	B	8439.1	7168.3	100.0	84.94	pg/uL	-15	20	

JC1 02/13/18 : Corrected automatically drawn baseline. [general version]

Analyst: RDG Date: 02/14/18 Reviewer: EAH Date: 02/15/18

Sample Name: **ccv,s35813,pcb500_100** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-023** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\043.seq** Instrument: GC06 (Offline) Vial: 23 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met	Software Version 3.1.7 Run Date: 2/12/2018 10:42:43 PM Analysis Date: 2/13/2018 10:42:26 AM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.783	3.776	527818	86.922
PCB1016#1	5.350	5.347	118906	449.082
PCB1016#2	6.390	6.387	141658	540.019
PCB1016#3	6.687	6.680	80835	509.180
PCB1016#4	7.133	7.130	45308	515.432
PCB1016#5	7.633	7.630	64825	547.854
PCB1260#1	11.157	11.150	211131	515.558
PCB1260#2	11.803	11.797	216481	541.356
PCB1260#3	12.657	12.650	121809	506.967
PCB1260#4	13.400	13.390	268938	525.172
PCB1260#5	14.047	14.040	151699	569.361
Decachlorobiphenyl	16.647	16.640	642079	93.697

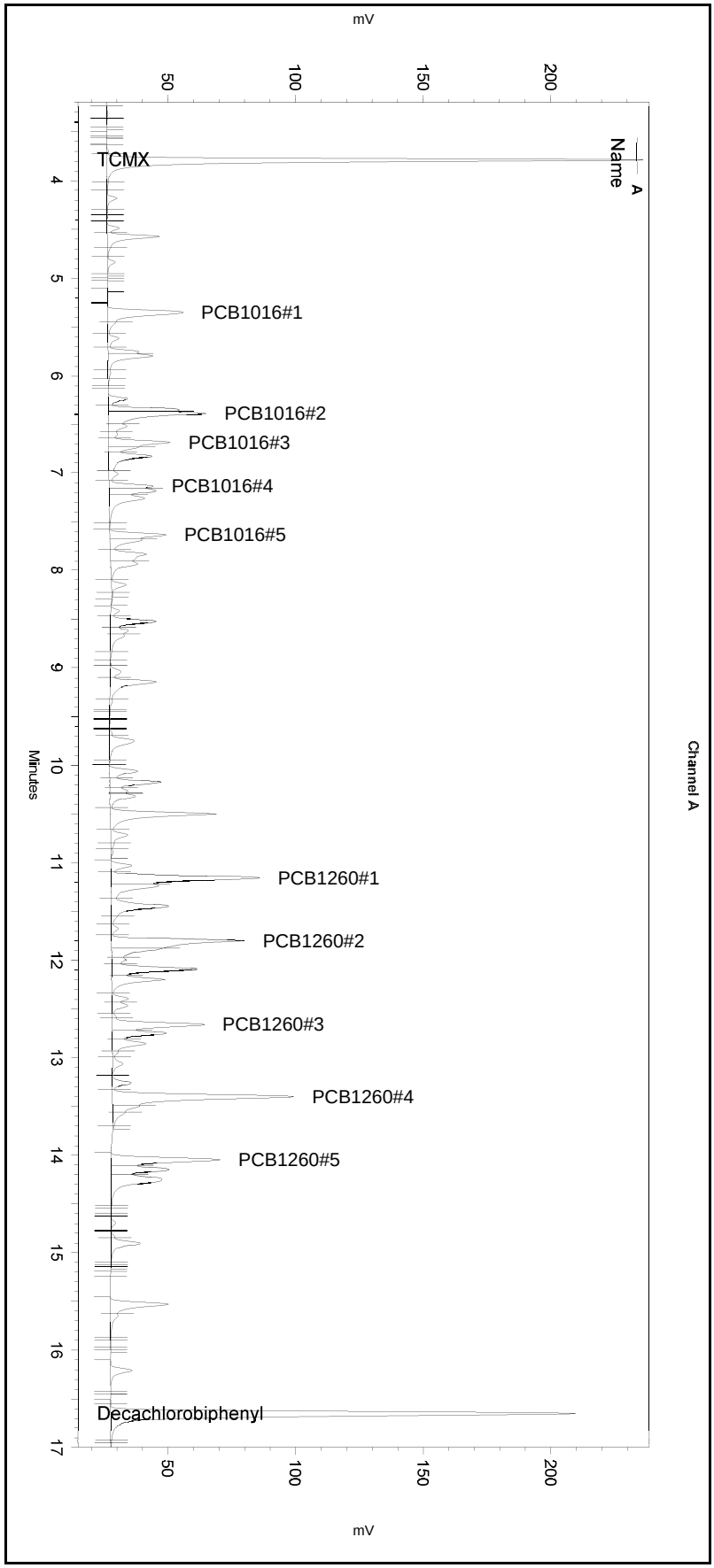
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.957	2.930	598569	96.232
PCB1016#1	4.337	4.330	143069	476.045
PCB1016#2	5.237	5.217	195440	549.431
PCB1016#3	5.440	5.417	116593	504.668
PCB1016#4	5.960	5.940	56771	514.494
PCB1016#5	6.657	6.637	90947	498.245
PCB1260#1	9.847	9.830	147473	453.422
PCB1260#2	10.470	10.450	209197	520.753
PCB1260#3	11.397	11.377	134842	508.409
PCB1260#4	12.053	12.033	236702	520.636
PCB1260#5	12.720	12.703	161788	561.229
Decachlorobiphenyl	15.670	15.653	716830	84.942

Sample Name: **ccv,s35813,pcb500_100**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-023**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\043.seq**
Instrument: GC06 (Offline) Vial: 23 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met

Software Version 3.1.7
Run Date: 2/12/2018 10:42:43 PM
Analysis Date: 2/13/2018 10:42:26 AM
Sample Amount: 1



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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0
Yes	Reset Baseline	10.946	0	0

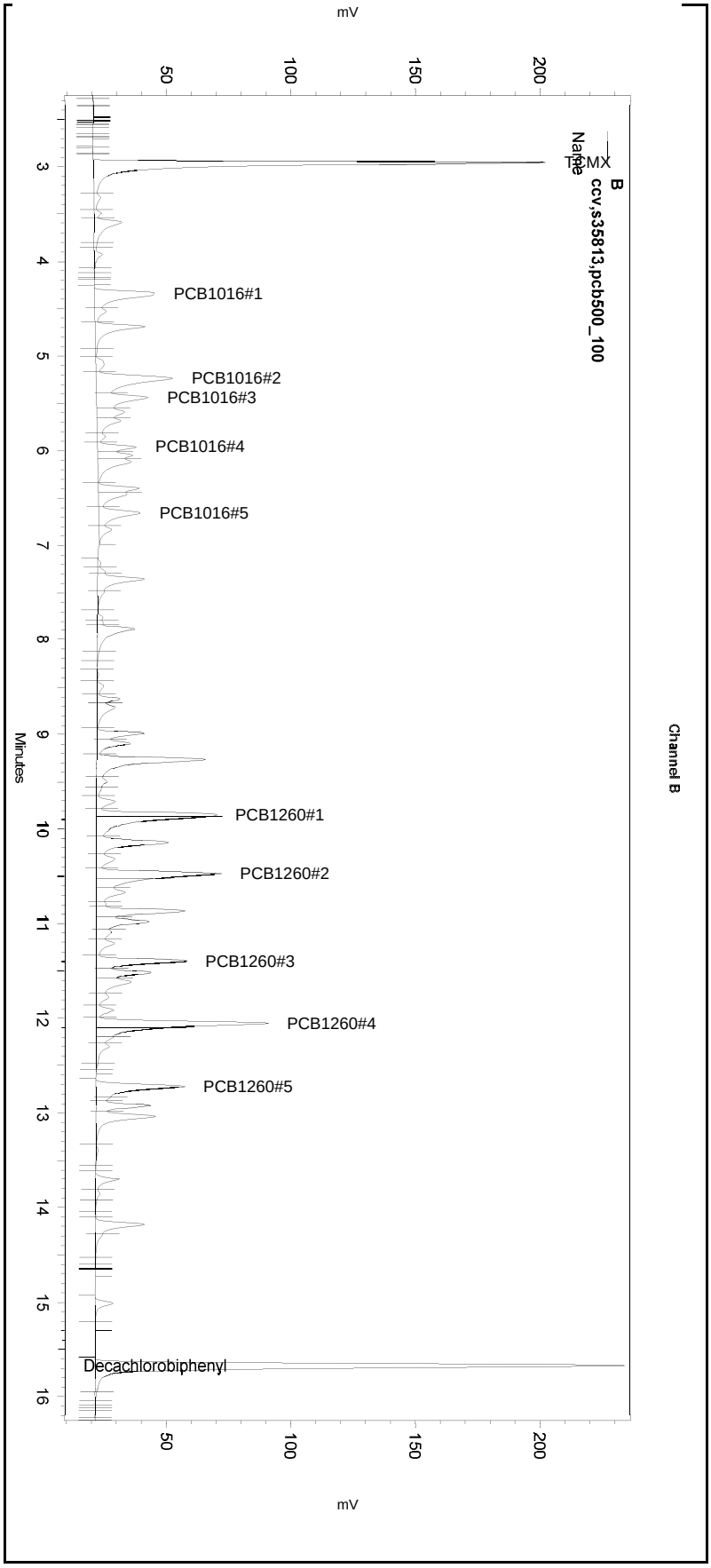
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-023

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	8.271	0	0
Yes	Reset Baseline	13.735	0	0

Sample Name: **ccv,s35813,pcb500_100**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-023**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\043.seq**
Instrument: GC06 (Offline) Vial: 23 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met

Software Version 3.1.7
Run Date: 2/12/2018 10:42:43 PM
Analysis Date: 2/13/2018 10:42:26 AM
Sample Amount: 1



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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-023

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	6.988	0	0
Yes	Split Peak	9.871	0	0
Yes	Split Peak	10.527	0	0
Yes	Split Peak	12.096	0	0
Yes	Reset Baseline	12.59	0	0

Sample Name: **ccv,s35813,pcb500_100** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-023** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\043.seq** Instrument: GC06 (Offline) Vial: 23 Operator: pest 1. Analyst (lims2k3\pest1) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met	Software Version 3.1.7 Run Date: 2/12/2018 10:42:43 PM Analysis Date: 2/13/2018 10:39:22 AM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.783	3.776	527818	86.922
PCB1016#1	5.350	5.347	119040	449.588
PCB1016#2	6.390	6.387	142829	544.483
PCB1016#3	6.687	6.680	82017	516.626
PCB1016#4	7.133	7.130	46600	530.130
PCB1016#5	7.633	7.630	67203	567.951
PCB1260#1	11.157	11.150	211516	516.498
PCB1260#2	11.803	11.797	218445	546.267
PCB1260#3	12.657	12.650	125294	521.471
PCB1260#4	13.400	13.390	275501	537.988
PCB1260#5	14.047	14.040	152235	571.373
Decachlorobiphenyl	16.647	16.640	642079	93.697

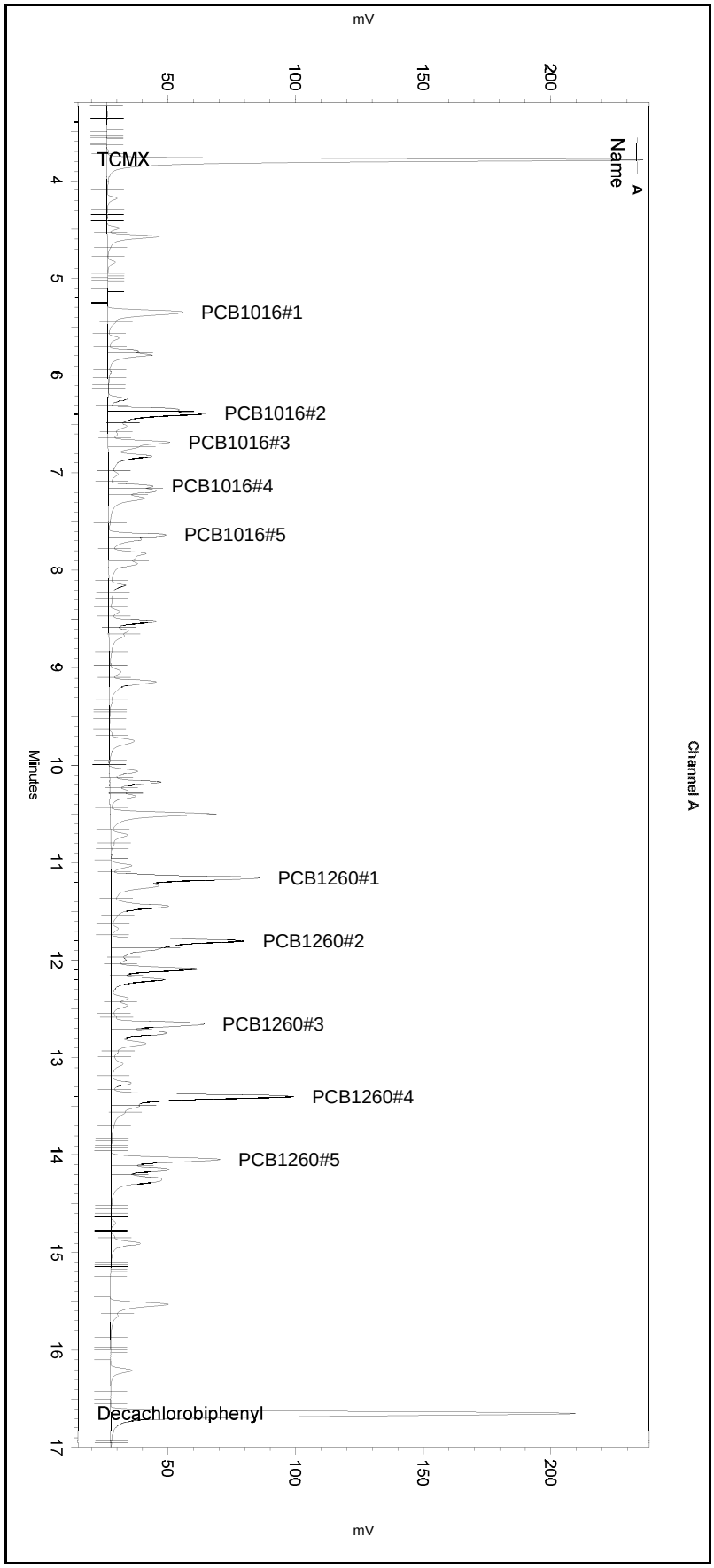
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.957	2.930	598569	96.232
PCB1016#1	4.337	4.330	143460	477.346
PCB1016#2	5.237	5.217	198541	556.403
PCB1016#3	5.440	5.417	119232	515.861
PCB1016#4	5.960	5.940	59165	536.190
PCB1016#5	6.657	6.637	97561	534.479
PCB1260#1	9.847	9.830	306132	941.238
PCB1260#2	10.470	10.450	281797	696.246
PCB1260#3	11.397	11.377	136870	516.055
PCB1260#4	12.053	12.033	321391	706.913
PCB1260#5	12.720	12.703	164130	569.353
Decachlorobiphenyl	15.670	15.653	716830	84.942

Sample Name: **ccv,s35813,pcb500_100**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-023**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\043.seq**
Instrument: GC06 (Offline) Vial: 23 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met

Software Version 3.1.7
Run Date: 2/12/2018 10:42:43 PM
Analysis Date: 2/13/2018 10:39:22 AM
Sample Amount: 1



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No items selected for this section

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Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0
Yes	Reset Baseline	10.946	0	0

Manual Integration Fixes
==========

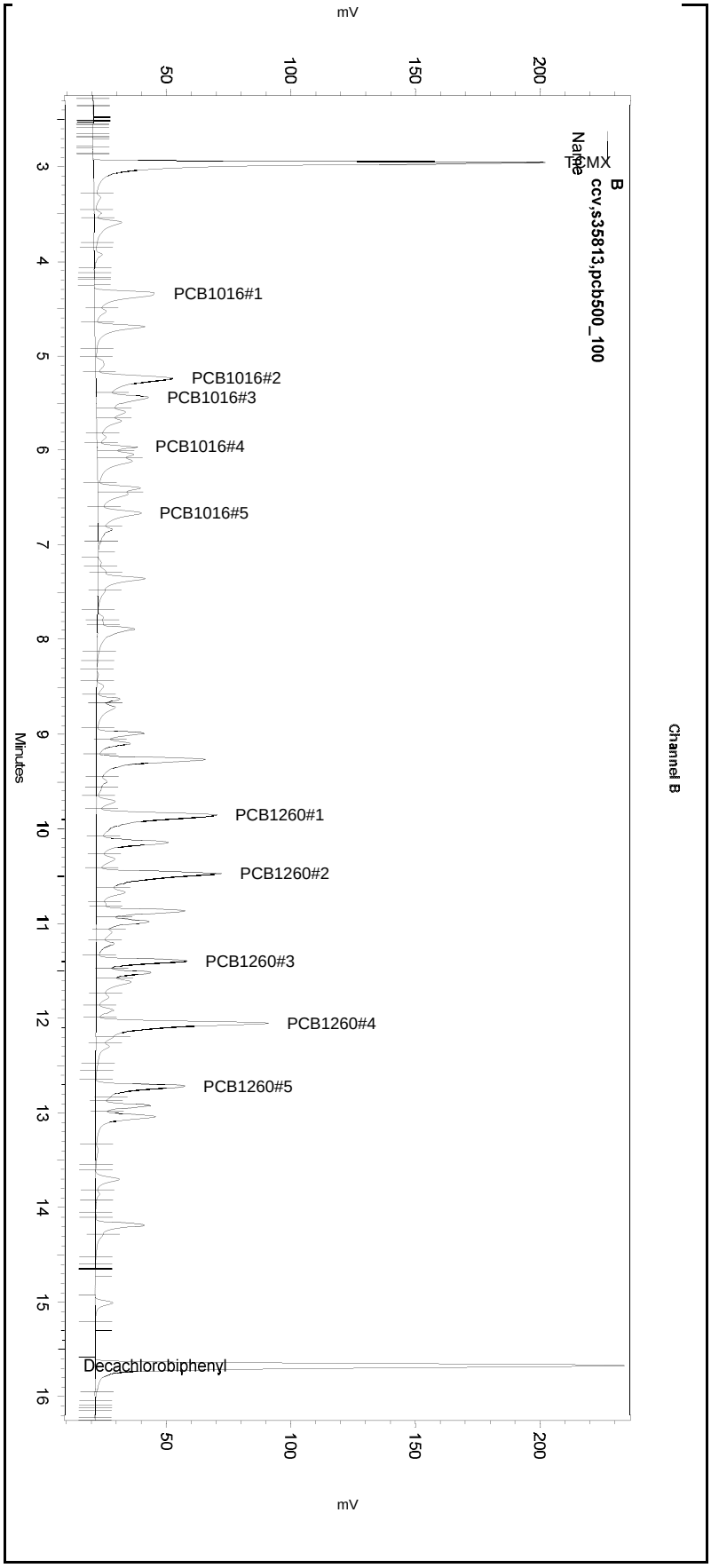
Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-023

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sample Name: **ccv,s35813,pcb500_100**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-023**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\043.seq**
Instrument: GC06 (Offline) Vial: 23 Operator: pest 1. Analyst (lims2k3\pest1)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met

Software Version 3.1.7
Run Date: 2/12/2018 10:42:43 PM
Analysis Date: 2/13/2018 10:39:22 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\043-023

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

ENTHALPY CONTINUING CALIBRATION FOR 297025 PCBS Soil
EPA 8082A

Inst : GC06 Run Name : PCB500_100 IDF : 1.0
Seqnum : 208063912009.1 File : 044_009 Time : 13-FEB-2018 17:08
Cal : 208052389001 Caldate : 05-FEB-2018
Standards: S35813

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Aroclor-1016	A			500.0	512.1	pg/uL	2	20	
Aroclor-1260	A			500.0	516.7	pg/uL	3	20	
TCMX	A	6072.3	5452.0	100.0	89.79	pg/uL	-10	20	
Decachlorobiphenyl	A	8292.8	6587.1	100.0	96.24	pg/uL	-4	20	
Aroclor-1016	B			500.0	518.7	pg/uL	4	20	
Aroclor-1260	B			500.0	512.8	pg/uL	3	20	
TCMX	B	6220.1	6153.0	100.0	98.92	pg/uL	-1	20	
Decachlorobiphenyl	B	8439.1	7253.1	100.0	85.95	pg/uL	-14	20	

RDG 02/14/18 : Corrected automatically drawn baseline for all channels.
[general version]

Analyst: RDG Date: 02/14/18 Reviewer: EAH Date: 02/15/18

Sample Name: **ccv,s35813,pcb500_100** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\044-009** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\044.seq** Instrument: GC06 (Offline) Vial: 11 Operator: Pest 3. Analyst (lims2k3\pest3) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met	Software Version 3.1.7 Run Date: 2/13/2018 5:08:55 PM Analysis Date: 2/14/2018 9:24:49 AM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.760	3.776	545200	89.785
PCB1016#1	5.327	5.347	121687	459.586
PCB1016#2	6.367	6.387	144311	550.132
PCB1016#3	6.660	6.680	78856	496.714
PCB1016#4	7.110	7.130	43476	494.591
PCB1016#5	7.610	7.630	66198	559.457
PCB1260#1	11.130	11.150	208255	508.535
PCB1260#2	11.777	11.797	206236	515.736
PCB1260#3	12.630	12.650	112600	468.639
PCB1260#4	13.370	13.390	272178	531.499
PCB1260#5	14.020	14.040	149017	559.295
Decachlorobiphenyl	16.620	16.640	658713	96.242

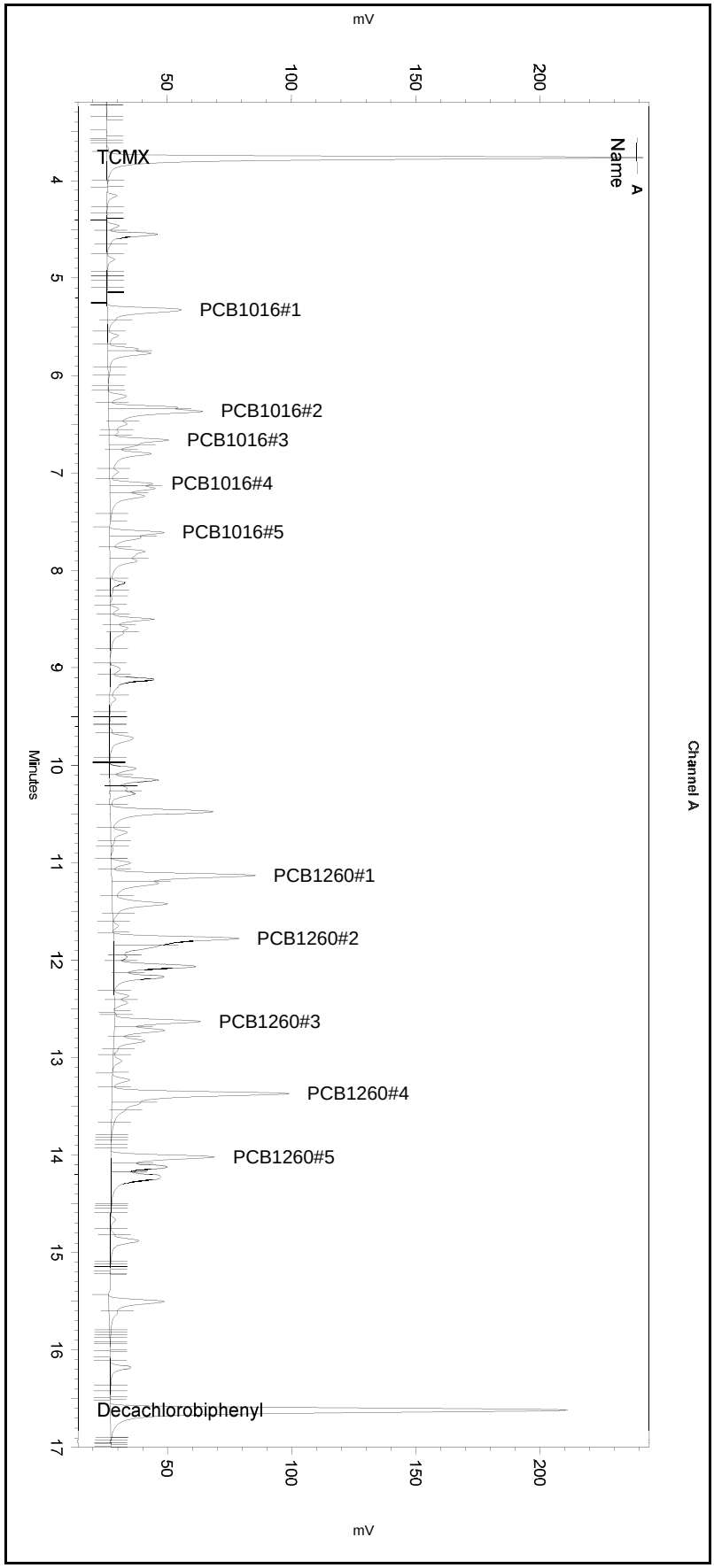
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.933	2.930	615296	98.921
PCB1016#1	4.317	4.330	144742	481.612
PCB1016#2	5.213	5.217	189633	536.285
PCB1016#3	5.417	5.417	117161	507.077
PCB1016#4	5.937	5.940	57634	522.315
PCB1016#5	6.630	6.637	99668	546.022
PCB1260#1	9.823	9.830	117654	361.741
PCB1260#2	10.447	10.450	220187	547.319
PCB1260#3	11.370	11.377	125577	473.476
PCB1260#4	12.027	12.033	286985	631.235
PCB1260#5	12.693	12.703	158641	550.312
Decachlorobiphenyl	15.640	15.653	725310	85.947

Sample Name: **ccv,s35813,pcb500_100**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\044-009**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\044.seq**
Instrument: GC06 (Offline) Vial: 11 Operator: Pest 3. Analyst (lims2k3\pest3)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met

Software Version 3.1.7
Run Date: 2/13/2018 5:08:55 PM
Analysis Date: 2/14/2018 9:24:49 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0
Yes	Reset Baseline	10.946	0	0
Yes	Valley to Valley	16.523	17.187	0

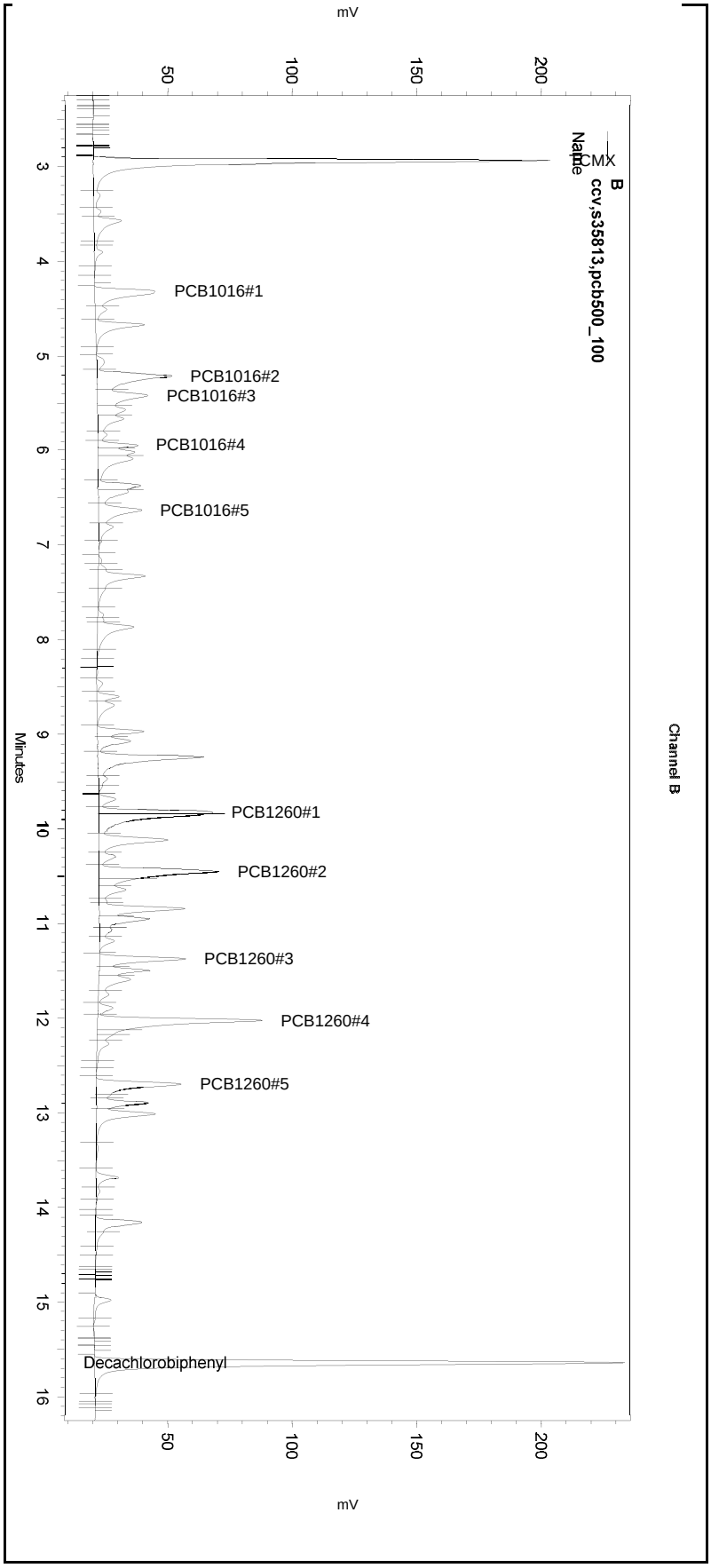
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\044-009

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	4.062	0	0
Yes	Reset Baseline	8.347	0	0
Yes	Reset Baseline	11.712	0	0
Yes	Reset Baseline	12.529	0	0
Yes	Manual Baseline	16.521	16.975	0

Sample Name: **ccv,s35813,pcb500_100**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\044-009**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\044.seq**
Instrument: GC06 (Offline) Vial: 11 Operator: Pest 3. Analyst (lims2k3\pest3)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met

Software Version 3.1.7
Run Date: 2/13/2018 5:08:55 PM
Analysis Date: 2/14/2018 9:24:49 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\044-009

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	4.234	0	0
Yes	Reset Baseline	4.969	0	0
Yes	Reset Baseline	7.087	0	0
Yes	Reset Baseline	8.281	0	0
Yes	Reset Baseline	9.62	0	0
Yes	Split Peak	9.836	0	0
Yes	Split Peak	10.52	0	0
Yes	Reset Baseline	11.303	0	0
Yes	Split Peak	12.123	0	0
Yes	Reset Baseline	16.146	0	0

Sample Name: **ccv,s35813,pcb500_100**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\044-009**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\044.seq**
Instrument: GC06 Vial: 11 Operator: lims2k3\pest3
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met

Software Version 3.1.7
Run Date: 2/13/2018 5:08:55 PM
Analysis Date: 2/13/2018 5:32:52 PM
Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.760	3.776	547008	90.083
PCB1016#1	5.327	5.347	121687	459.586
PCB1016#2	6.367	6.387	144311	550.132
PCB1016#3	6.660	6.680	78856	496.714
PCB1016#4	7.110	7.130	43476	494.591
PCB1016#5	7.610	7.630	66307	560.379
PCB1260#1	11.130	11.150	209519	511.622
PCB1260#2	11.777	11.797	215702	539.408
PCB1260#3	12.630	12.650	124409	517.788
PCB1260#4	13.370	13.390	277141	541.190
PCB1260#5	14.020	14.040	150118	563.428
Decachlorobiphenyl	16.620	16.640	662196	96.775

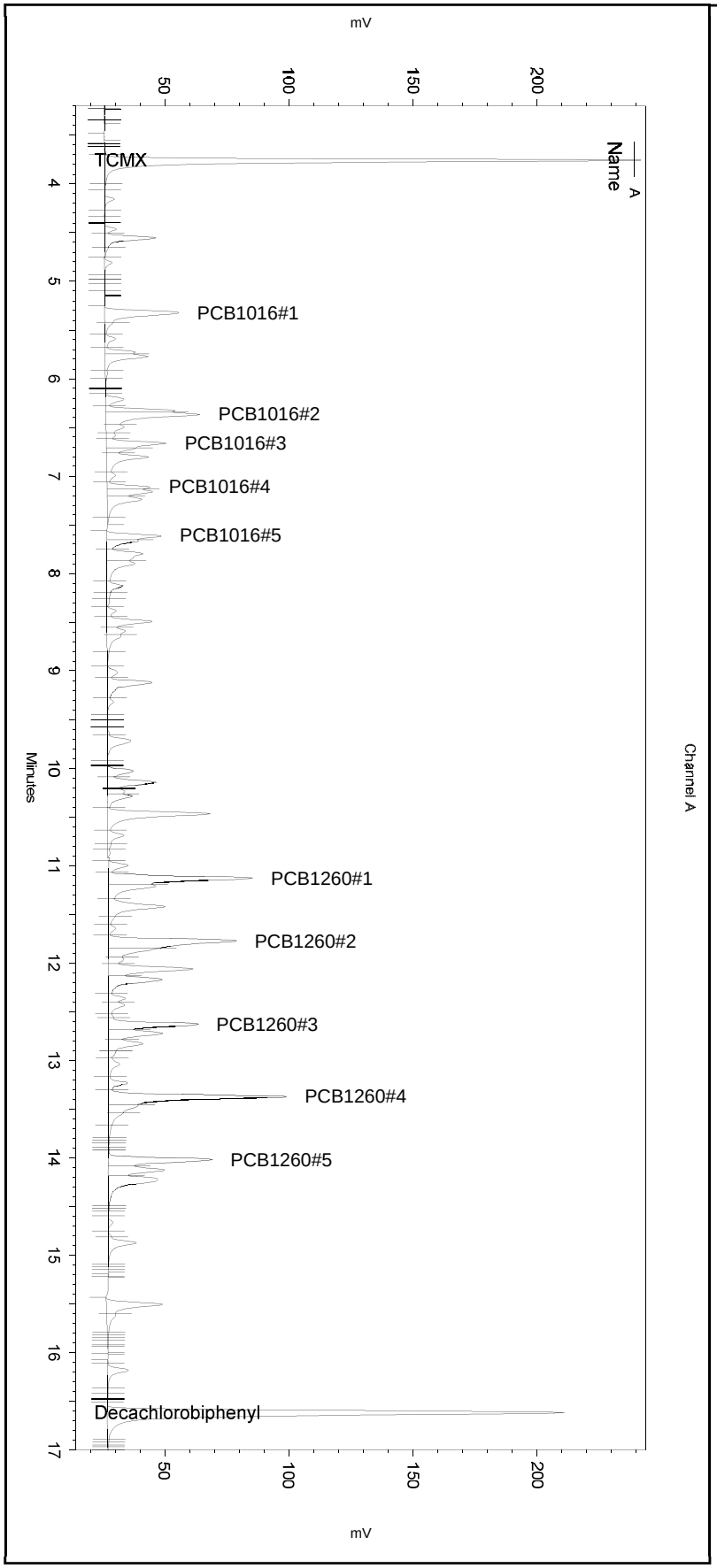
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.933	2.930	616833	99.168
PCB1016#1	4.317	4.330	153427	510.510
PCB1016#2	5.213	5.217	207011	575.276
PCB1016#3	5.417	5.417	130494	563.627
PCB1016#4	5.937	5.940	66768	605.093
PCB1016#5	6.630	6.637	121167	663.803
PCB1260#1	9.823	9.830	319748	983.101
PCB1260#2	10.447	10.450	290007	716.092
PCB1260#3	11.370	11.377	141606	533.912
PCB1260#4	12.027	12.033	326915	719.063
PCB1260#5	12.693	12.703	165646	574.612
Decachlorobiphenyl	15.640	15.653	728095	86.277

Sample Name: **ccv,s35813,pcb500_100**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\044-009**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\044.seq**
Instrument: GC06 Vial: 11 Operator: lims2k3\pest3
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met

Software Version 3.1.7
Run Date: 2/13/2018 5:08:55 PM
Analysis Date: 2/13/2018 5:32:52 PM
Sample Amount: 1



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Integration Events
==========

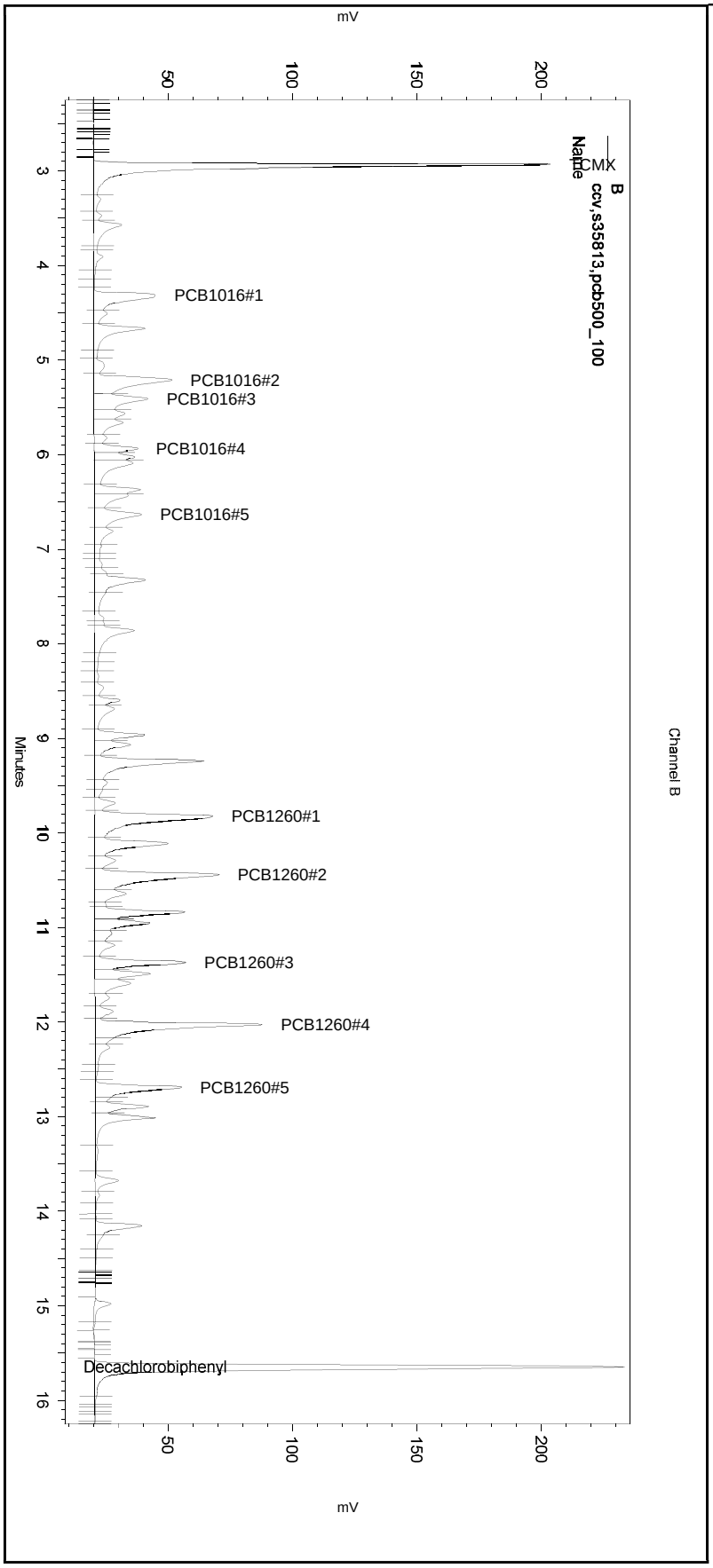
Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0
Yes	Reset Baseline	10.946	0	0

Manual Integration Fixes
==========
Data File: C:\Documents and Settings\All Users\Application Data\ChromatographySystem\Recovery Data\Instrument.10112\044-009_FBEC.tmp

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Sample Name: **ccv,s35813,pcb500_100**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\044-009**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\044.seq**
Instrument: GC06 Vial: 11 Operator: lims2k3\pest3
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met

Software Version 3.1.7
Run Date: 2/13/2018 5:08:55 PM
Analysis Date: 2/13/2018 5:32:52 PM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: C:\Documents and Settings\All Users\Application Data\ChromatographySystem\Recovery Data\Instrument.10112\044-009_FBEC.tmp

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

ENTHALPY CONTINUING CALIBRATION FOR 297025 PCBS Soil
EPA 8082A

Inst : GC06 Run Name : PCB500_100 IDF : 1.0
Seqnum : 208063912019.1 File : 044_019 Time : 13-FEB-2018 22:34
Cal : 208052389001 Caldate : 05-FEB-2018
Standards: S35813

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Aroclor-1016	A			500.0	501.1	pg/uL	0	20	
Aroclor-1260	A			500.0	503.5	pg/uL	1	20	
TCMX	A	6072.3	5375.6	100.0	88.53	pg/uL	-11	20	
Decachlorobiphenyl	A	8292.8	6544.7	100.0	95.59	pg/uL	-4	20	
Aroclor-1016	B			500.0	502.3	pg/uL	0	20	
Aroclor-1260	B			500.0	495.8	pg/uL	-1	20	
TCMX	B	6220.1	6091.8	100.0	97.94	pg/uL	-2	20	
Decachlorobiphenyl	B	8439.1	7337.4	100.0	86.95	pg/uL	-13	20	

RDG 02/14/18 : Corrected automatically drawn baseline for all channels.
[general version]

Analyst: RDG Date: 02/14/18 Reviewer: EAH Date: 02/15/18

Sample Name: **ccv,s35813,pcb500_100** Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\044-019** Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\044.seq** Instrument: GC06 (Offline) Vial: 19 Operator: Pest 3. Analyst (lims2k3\pest3) Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met	Software Version 3.1.7 Run Date: 2/13/2018 10:34:14 PM Analysis Date: 2/14/2018 9:32:23 AM Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.770	3.776	537563	88.527
PCB1016#1	5.333	5.347	120616	455.541
PCB1016#2	6.373	6.387	141224	538.364
PCB1016#3	6.670	6.680	75868	477.893
PCB1016#4	7.117	7.130	44225	503.111
PCB1016#5	7.617	7.630	62767	530.461
PCB1260#1	11.137	11.150	201700	492.529
PCB1260#2	11.783	11.797	201218	503.187
PCB1260#3	12.640	12.650	116046	482.981
PCB1260#4	13.380	13.390	258669	505.119
PCB1260#5	14.027	14.040	142190	533.672
Decachlorobiphenyl	16.627	16.640	654466	95.592

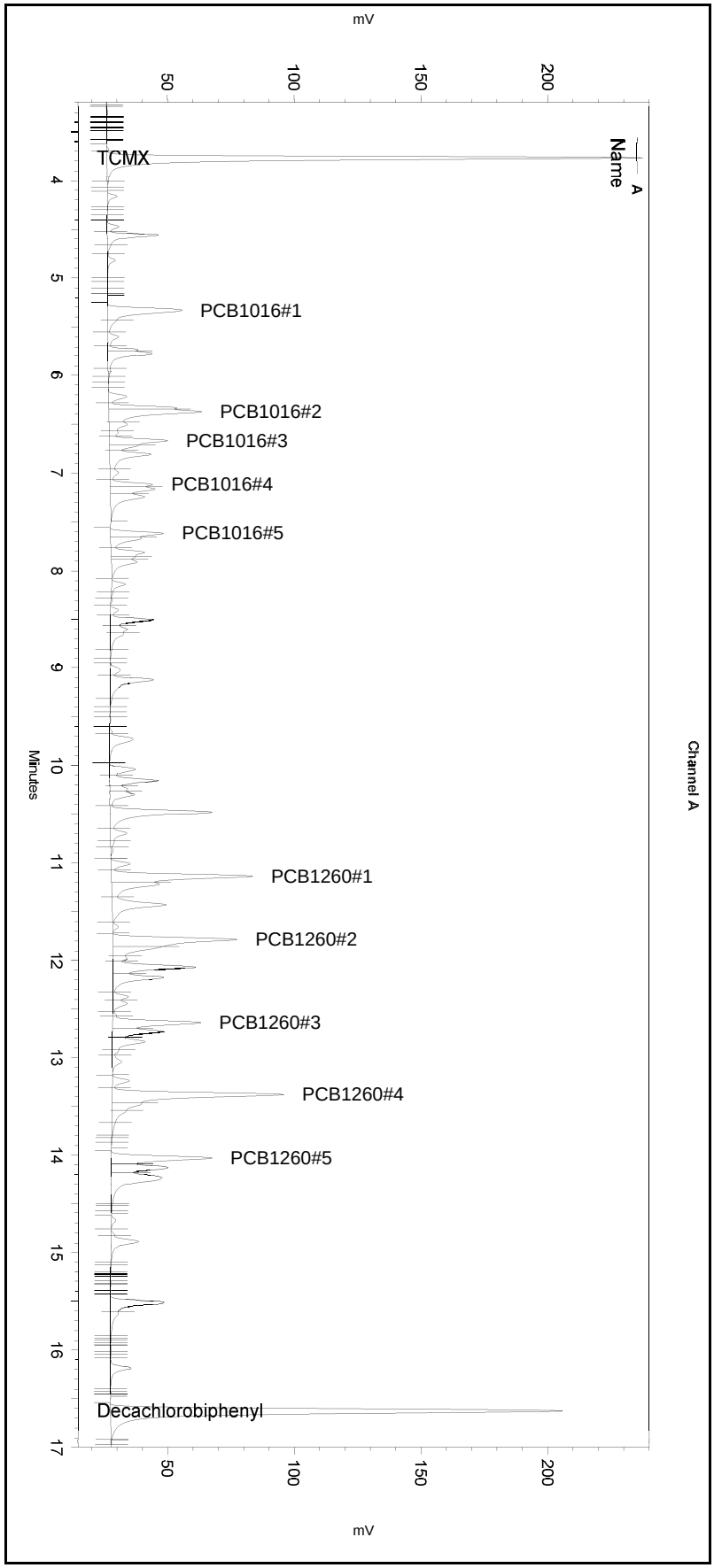
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.940	2.930	609181	97.938
PCB1016#1	4.323	4.330	141189	469.789
PCB1016#2	5.220	5.217	179443	512.918
PCB1016#3	5.423	5.417	113881	493.166
PCB1016#4	5.947	5.940	56574	512.708
PCB1016#5	6.640	6.637	95495	523.161
PCB1260#1	9.833	9.830	126256	388.188
PCB1260#2	10.453	10.450	201622	502.443
PCB1260#3	11.380	11.377	122970	463.647
PCB1260#4	12.033	12.033	272644	599.692
PCB1260#5	12.703	12.703	151346	525.007
Decachlorobiphenyl	15.650	15.653	733738	86.945

Sample Name: **ccv,s35813,pcb500_100**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\044-019**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\044.seq**
Instrument: GC06 (Offline) Vial: 19 Operator: Pest 3. Analyst (lims2k3\pest3)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met

Software Version 3.1.7
Run Date: 2/13/2018 10:34:14 PM
Analysis Date: 2/14/2018 9:32:23 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0
Yes	Reset Baseline	10.946	0	0
Yes	Valley to Valley	16.523	17.187	0

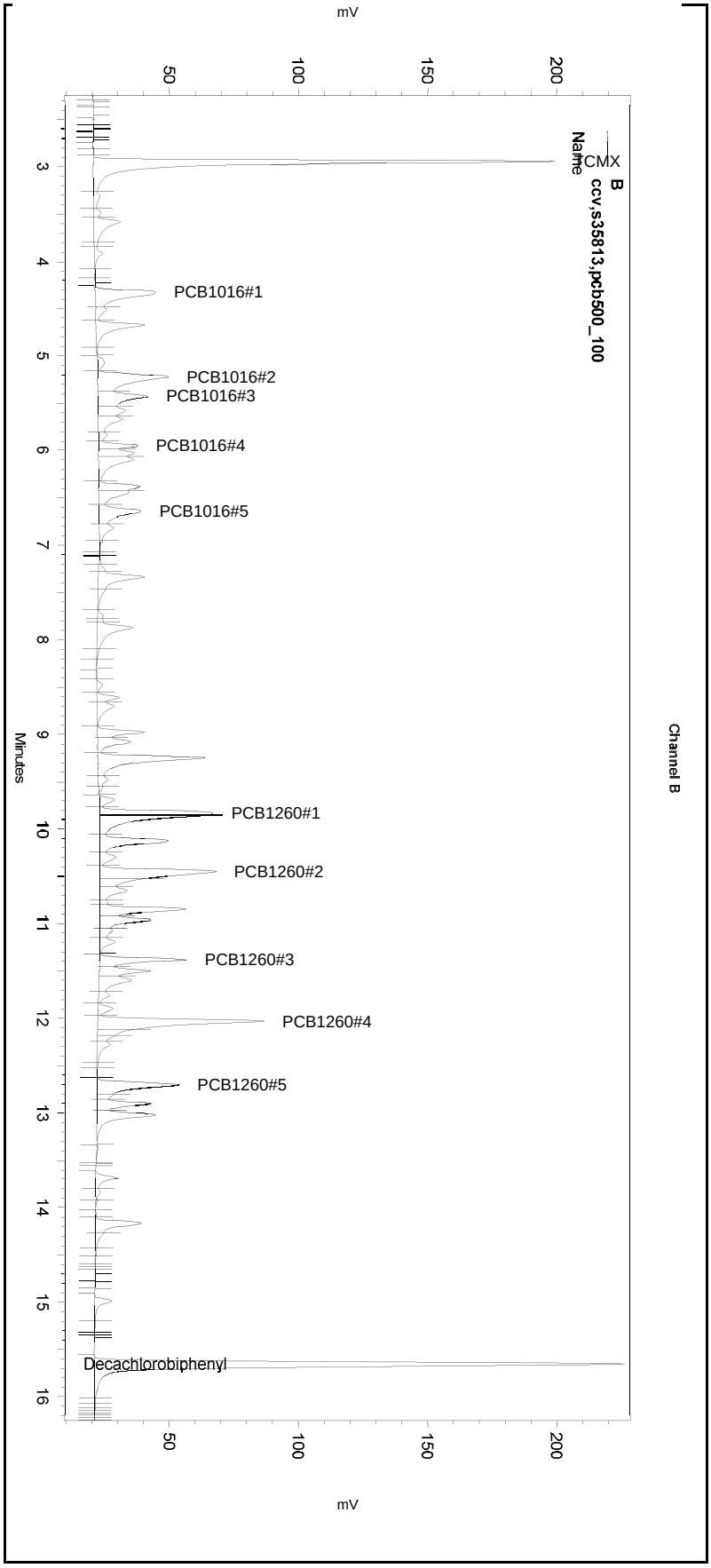
Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\044-019

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	4.103	0	0
Yes	Reset Baseline	8.071	0	0
Yes	Reset Baseline	11.711	0	0
Yes	Reset Baseline	13.172	0	0
Yes	Reset Baseline	14.615	0	0
Yes	Manual Baseline	16.545	16.977	0

Sample Name: **ccv,s35813,pcb500_100**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\044-019**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\044.seq**
Instrument: GC06 (Offline) Vial: 19 Operator: Pest 3. Analyst (lims2k3\pest3)
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met

Software Version 3.1.7
Run Date: 2/13/2018 10:34:14 PM
Analysis Date: 2/14/2018 9:32:23 AM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========

Data File: \\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\044-019

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Reset Baseline	4.23	0	0
Yes	Reset Baseline	4.991	0	0
Yes	Reset Baseline	7.106	0	0
Yes	Reset Baseline	8.307	0	0
Yes	Reset Baseline	9.64	0	0
Yes	Split Peak	9.851	0	0
Yes	Split Peak	10.519	0	0
Yes	Reset Baseline	11.311	0	0
Yes	Split Peak	12.12	0	0
Yes	Reset Baseline	13.322	0	0

Sample Name: **ccv,s35813,pcb500_100**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\044-019**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\044.seq**
Instrument: GC06 Vial: 19 Operator: lims2k3\pest3
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met

Software Version 3.1.7
Run Date: 2/13/2018 10:34:14 PM
Analysis Date: 2/13/2018 10:58:11 PM
Sample Amount: 1

GC06
PCB - ECD Instrument Results
Channel A: Stx-CLPesticides

A Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	3.770	3.776	539496	88.846
PCB1016#1	5.333	5.347	120616	455.541
PCB1016#2	6.373	6.387	141224	538.364
PCB1016#3	6.670	6.680	75868	477.893
PCB1016#4	7.117	7.130	44225	503.111
PCB1016#5	7.617	7.630	63272	534.729
PCB1260#1	11.137	11.150	203108	495.967
PCB1260#2	11.783	11.797	207727	519.464
PCB1260#3	12.640	12.650	120144	500.037
PCB1260#4	13.380	13.390	262287	512.184
PCB1260#5	14.027	14.040	142395	534.441
Decachlorobiphenyl	16.627	16.640	659670	96.388

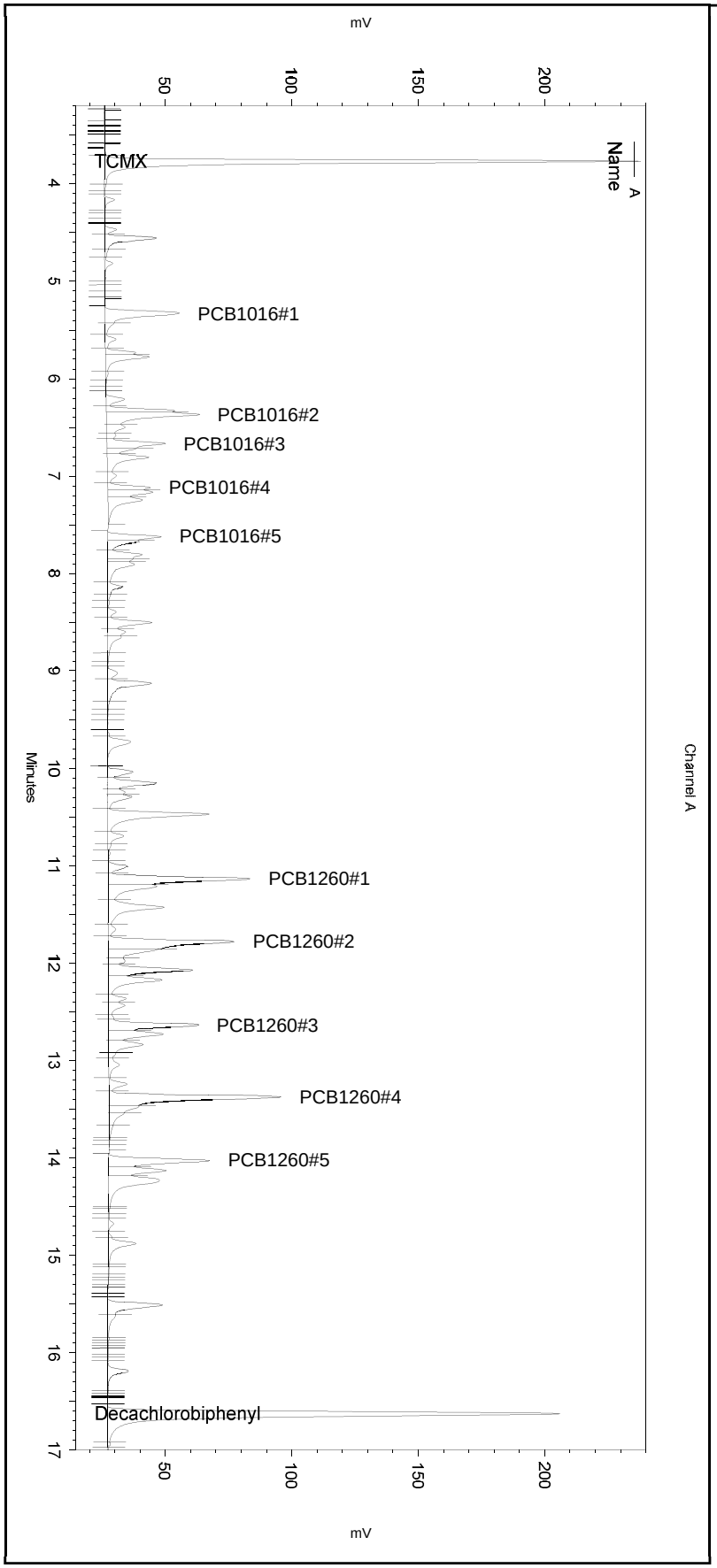
GC06
PCB - ECD Instrument Results
Channel B: Rtx-5

B Results

Name	RT	ExpRT	Area	Conc (ug/L)
TCMX	2.940	2.930	611512	98.313
PCB1016#1	4.323	4.330	151368	503.659
PCB1016#2	5.220	5.217	201098	562.126
PCB1016#3	5.423	5.417	130150	562.168
PCB1016#4	5.947	5.940	67559	612.261
PCB1016#5	6.640	6.637	119139	652.692
PCB1260#1	9.833	9.830	316032	971.676
PCB1260#2	10.453	10.450	281489	695.501
PCB1260#3	11.380	11.377	138887	523.660
PCB1260#4	12.033	12.033	322062	708.388
PCB1260#5	12.703	12.703	159131	552.012
Decachlorobiphenyl	15.650	15.653	733738	86.945

Sample Name: **ccv,s35813,pcb500_100**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\044-019**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\044.seq**
Instrument: GC06 Vial: 19 Operator: lims2k3\pest3
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met

Software Version 3.1.7
Run Date: 2/13/2018 10:34:14 PM
Analysis Date: 2/13/2018 10:58:11 PM
Sample Amount: 1



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No items selected for this section

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No items selected for this section

Integration Events
==========

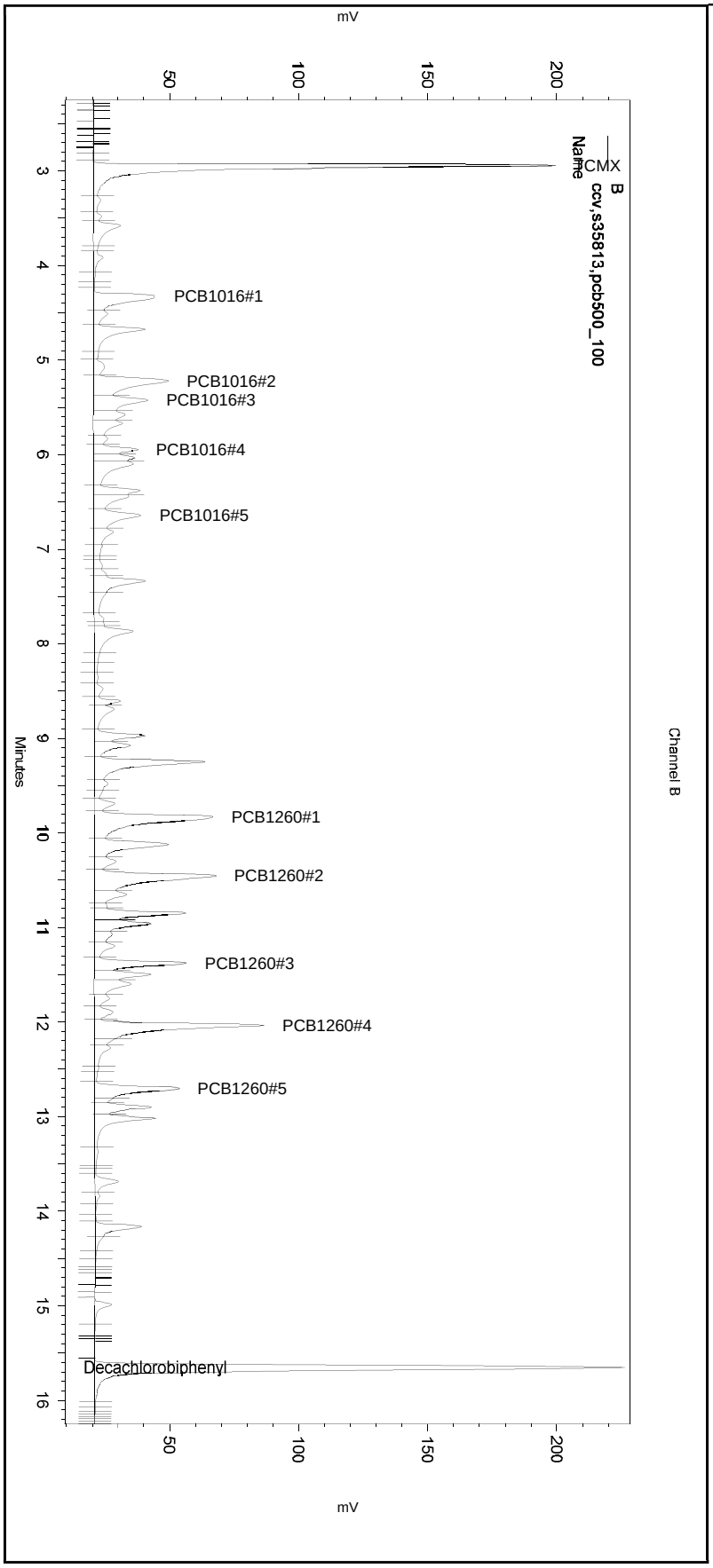
Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	0
Yes	Reset Baseline	10.946	0	0

Manual Integration Fixes
==========
Data File: C:\Documents and Settings\All Users\Application Data\ChromatographySystem\Recovery Data\Instrument.10112\044-019_FBF6.tmp

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Sample Name: **ccv,s35813,pcb500_100**
Data File: **\\kraken\gdrive\ezchrom\Projects\GC06\Data\2018\044-019**
Sequence File: **\\kraken\gdrive\ezchrom\Projects\GC06\Sequence\2018\044.seq**
Instrument: GC06 Vial: 19 Operator: lims2k3\pest3
Method Name: \\kraken\gdrive\ezchrom\Projects\GC06\Method\Ar1660\pcb-run-043.met

Software Version 3.1.7
Run Date: 2/13/2018 10:34:14 PM
Analysis Date: 2/13/2018 10:58:11 PM
Sample Amount: 1



---< General Method Parameters >----------

No items selected for this section

---< B >----------

No items selected for this section

Integration Events
==========

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50
Yes	Integration Off	0	2.1	0
Yes	Shoulder Sensitivity	3	18	1

Manual Integration Fixes
==========
Data File: C:\Documents and Settings\All Users\Application Data\ChromatographySystem\Recovery Data\Instrument.10112\044-019_FBF6.tmp

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Enthalpy Analytical

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 297025
ANALYTICAL REPORT
Metals

Insight EEC, Inc. 3013 E Miraloma Ave Anaheim, CA 92806	Project : 4-14214 Location : HPNS-Parcel F Level : IV

Sample ID	Lab ID
HPP-FSS-009A	297025-001
HPP-FSS-009B	297025-002
HPP-FSS-009C	297025-003
HPP-FSS-009D	297025-004

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAP and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: _____ Date: 02/20/2018

Mike Dahlquist
Project Manager
mike.dahlquist@enthalpy.com
(510) 204-2225 Ext 13101

CA ELAP# 2896, NELAP# 4044-001

ENTHALPY ANALYTICAL

CASE NARRATIVE
METALS (EPA 6020A AND EPA 7471B)

Laboratory number:	**297025**
Client:	**Insight EEC, Inc.**
Project:	**4-14214**
Location:	**HPNS-Parcel F**
Request Date:	**02/09/18**
Samples Received:	**02/01/18**

This data package contains sample and QC results for four soil samples, requested for the above referenced project on 02/09/18. See attached cooler receipt form for any sample receipt problems or discrepancies.

Metals (EPA 6020A and EPA 7471B):

High response was observed for copper in the CCV analyzed 02/13/18 00:33; affected data was qualified with "Q".

High response was observed for copper in the CCV analyzed 02/13/18 01:46; affected data was qualified with "Q".

High recovery was observed for copper in the MSD for batch 256366; the parent sample was not a project sample, and the BS/BSD were within limits. High RPD was also observed for copper in the MS/MSD for batch 256366; the RPD was acceptable in the BS/BSD.

Low recoveries were observed for mercury in the MS/MSD of HPP-FSS-009A (lab # 297025-001); the BS/BSD were within limits, and the associated RPD was within limits.

No other analytical problems were encountered.

Chain of Custody

297025

MONTROSE

Mike Dahlquist <mdahlquist@montrose-env.com>

RE: 4-14214 - Enthalpy (Berkeley) Data (296840)

Nick Weinberger <NWeinberger@ieeci.com> Fri, Feb 9, 2018 at 1:17 PM
To: "mike.dahlquist@enthalpy.com" <mike.dahlquist@enthalpy.com>
Cc: Mitra Fattahipour <MFattahipour@ieeci.com>, Aaron Heidt <AHeidt@ieeci.com>, Scott Donovan <SDonovan@ieeci.com>, Dave Marks <DMarks@ieeci.com>, Mehdi Siavoshani <MSiavoshani@ieeci.com>

Mike,

Based on the results, we need to analyze all the sub-samples for sample HPP-FSS-009 (-009A, -009B, -009C, and -009D) for PCBs, copper, lead, and mercury.

regards,

-Nick

T:714.678.6700x311 C:714.272.1634

From: Mike Dahlquist [mailto:mike.dahlquist@enthalpy.com]
Sent: Thursday, February 08, 2018 4:43 PM
To: Nick Weinberger <NWeinberger@ieeci.com>
Subject: 4-14214 - Enthalpy (Berkeley) Data (296840)

Hi Nick,

Please find attached the following file:
• PDF Level IV Deliverable

You may also access this data at https://labline-berkeley.enthalpy.com/

Results & QC Summary

ENTHALPY ANALYTICAL

Copper

Lab #:	297025	Location:	HPNS-Parcel F
Client:	Insight EEC, Inc.	Prep:	EPA 3050B
Project#:	4-14214	Analysis:	EPA 6020A
Analyte:	Copper	Sampled:	01/31/18
Matrix:	Soil	Received:	02/01/18
Units:	mg/Kg	Prepared:	02/09/18
Basis:	dry	Analyzed:	02/13/18
Batch#:	256366		

Field ID	Type	Lab ID	Result	LOQ	DL	Moisture	Diln Fac
HPP-FSS-009A	SAMPLE	297025-001	110	1.4	0.23	56%	25.00
HPP-FSS-009B	SAMPLE	297025-002	220	0.92	0.15	28%	25.00
HPP-FSS-009C	SAMPLE	297025-003	83	1.2	0.19	43%	25.00
HPP-FSS-009D	SAMPLE	297025-004	660	3.7	0.60	36%	100.0
	BLANK	QC919563	0.21 U	0.65	0.10		25.00

U= Not Detected at or above DL
DL= Detection Limit
LOQ= Limit of Quantitation

ENTHALPY ANALYTICAL

Lead

Lab #:	297025	Location:	HPNS-Parcel F
Client:	Insight EEC, Inc.	Prep:	EPA 3050B
Project#:	4-14214	Analysis:	EPA 6020A
Analyte:	Lead	Batch#:	256366
Matrix:	Soil	Sampled:	01/31/18
Units:	mg/Kg	Received:	02/01/18
Basis:	dry	Prepared:	02/09/18
Diln Fac:	25.00	Analyzed:	02/13/18

Field ID	Type	Lab ID	Result	LOQ	DL	Moisture
HPP-FSS-009A	SAMPLE	297025-001	19	1.4	0.15	56%
HPP-FSS-009B	SAMPLE	297025-002	21	0.92	0.099	28%
HPP-FSS-009C	SAMPLE	297025-003	47	1.2	0.13	43%
HPP-FSS-009D	SAMPLE	297025-004	130	0.93	0.099	36%
	BLANK	QC919563	0.21 U	0.65	0.070	

U= Not Detected at or above DL
DL= Detection Limit
LOQ= Limit of Quantitation

ENTHALPY ANALYTICAL

Mercury by Cold Vapor AA

Lab #:	297025	Location:	HPNS-Parcel F
Client:	Insight EEC, Inc.	Prep:	METHOD
Project#:	4-14214	Analysis:	EPA 7471B
Analyte:	Mercury	Sampled:	01/31/18
Matrix:	Soil	Received:	02/01/18
Units:	mg/Kg	Prepared:	02/15/18
Basis:	dry	Analyzed:	02/15/18
Batch#:	256534		

Field ID	Type	Lab ID	Result	LOQ	DL	Moisture	Diln Fac
HPP-FSS-009A	SAMPLE	297025-001	0.64	0.036	0.011	56%	1.000
HPP-FSS-009B	SAMPLE	297025-002	3.3	0.23	0.069	28%	10.00
HPP-FSS-009C	SAMPLE	297025-003	3.7	0.31	0.092	43%	10.00
HPP-FSS-009D	SAMPLE	297025-004	2.2	0.26	0.078	36%	10.00
	BLANK	QC920233	0.0078 U	0.016	0.0047		1.000

U= Not Detected at or above DL
DL= Detection Limit
LOQ= Limit of Quantitation

ENTHALPY ANALYTICAL

Batch QC Report

Copper

Lab #:	297025	Location:	HPNS-Parcel F
Client:	Insight EEC, Inc.	Prep:	EPA 3050B
Project#:	4-14214	Analysis:	EPA 6020A
Analyte:	Copper	Diln Fac:	25.00
Field ID:	ZZZZZZZZZZ	Batch#:	256366
MSS Lab ID:	296942-001	Sampled:	02/07/18
Matrix:	Soil	Received:	02/07/18
Units:	mg/Kg	Prepared:	02/09/18
Basis:	as received	Analyzed:	02/13/18

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim
BS	QC919564		51.55	58.29 Q	113	84-119		
BSD	QC919565		54.95	60.96 Q	111	84-119	2	20
MS	QC919566	60.74	46.73	100.3	85	84-119		
MSD	QC919567		49.50	127.0	134 *	84-119	21 *	20

*= Value outside of QC limits; see narrative
Q= See narrative
RPD= Relative Percent Difference

ENTHALPY ANALYTICAL

Batch QC Report

Lead

Lab #:	297025	Location:	HPNS-Parcel F
Client:	Insight EEC, Inc.	Prep:	EPA 3050B
Project#:	4-14214	Analysis:	EPA 6020A
Analyte:	Lead	Diln Fac:	25.00
Field ID:	ZZZZZZZZZZ	Batch#:	256366
MSS Lab ID:	296942-001	Sampled:	02/07/18
Matrix:	Soil	Received:	02/07/18
Units:	mg/Kg	Prepared:	02/09/18
Basis:	as received	Analyzed:	02/13/18

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim
BS	QC919564		51.55	50.03	97	84-118		
BSD	QC919565		54.95	52.79	96	84-118	1	20
MS	QC919566	3.107	46.73	47.89	96	84-118		
MSD	QC919567		49.50	50.71	96	84-118	0	20

RPD= Relative Percent Difference

ENTHALPY ANALYTICAL

Batch QC Report

Copper			
Lab #:	297025	Location:	HPNS-Parcel F
Client:	Insight EEC, Inc.	Prep:	EPA 3050B
Project#:	4-14214	Analysis:	EPA 6020A
Analyte:	Copper	Basis:	as received
Field ID:	ZZZZZZZZZZ	Diln Fac:	125.0
Type:	Serial Dilution	Batch#:	256366
MSS Lab ID:	296942-001	Sampled:	02/07/18
Lab ID:	QC919921	Received:	02/07/18
Matrix:	Soil	Analyzed:	02/13/18
Units:	mg/Kg		

MSS Result	MSS LOQ	Result	LOQ	% Diff	Lim
60.74	0.6068	61.41	3.034	1	10

LOQ= Limit of Quantitation

ENTHALPY ANALYTICAL

Batch QC Report

Lead

Lab #:	297025	Location:	HPNS-Parcel F
Client:	Insight EEC, Inc.	Prep:	EPA 3050B
Project#:	4-14214	Analysis:	EPA 6020A
Analyte:	Lead	Basis:	as received
Field ID:	ZZZZZZZZZZ	Diln Fac:	125.0
Type:	Serial Dilution	Batch#:	256366
MSS Lab ID:	296942-001	Sampled:	02/07/18
Lab ID:	QC919921	Received:	02/07/18
Matrix:	Soil	Analyzed:	02/13/18
Units:	mg/Kg		

MSS Result	MSS LOQ	Result	LOQ	% Diff	Lim
3.107	0.6068	3.001 J	3.034	NC	10

J= Estimated value
NC= Not Calculated
LOQ= Limit of Quantitation

ENTHALPY ANALYTICAL

Batch QC Report

Copper			
Lab #:	297025	Location:	HPNS-Parcel F
Client:	Insight EEC, Inc.	Prep:	EPA 3050B
Project#:	4-14214	Analysis:	EPA 6020A
Analyte:	Copper	Basis:	as received
Field ID:	ZZZZZZZZZZ	Diln Fac:	25.00
Type:	Post Digest Spike	Batch#:	256366
MSS Lab ID:	296942-001	Sampled:	02/07/18
Lab ID:	QC919922	Received:	02/07/18
Matrix:	Soil	Analyzed:	02/13/18
Units:	mg/Kg		

MSS Result	Spiked	Result	%REC	Limits
60.74	60.68	115.2	90	80-120

ENTHALPY ANALYTICAL

Batch QC Report

Lead

Lab #:	297025	Location:	HPNS-Parcel F
Client:	Insight EEC, Inc.	Prep:	EPA 3050B
Project#:	4-14214	Analysis:	EPA 6020A
Analyte:	Lead	Basis:	as received
Field ID:	ZZZZZZZZZZ	Diln Fac:	25.00
Type:	Post Digest Spike	Batch#:	256366
MSS Lab ID:	296942-001	Sampled:	02/07/18
Lab ID:	QC919922	Received:	02/07/18
Matrix:	Soil	Analyzed:	02/13/18
Units:	mg/Kg		

MSS Result	Spiked	Result	%REC	Limits
3.107	60.68	62.12	97	80-120

ENTHALPY ANALYTICAL

Batch QC Report

Mercury by Cold Vapor AA

Lab #:	297025	Location:	HPNS-Parcel F
Client:	Insight EEC, Inc.	Prep:	METHOD
Project#:	4-14214	Analysis:	EPA 7471B
Analyte:	Mercury	Diln Fac:	1.000
Field ID:	HPP-FSS-009A	Batch#:	256534
MSS Lab ID:	297025-001	Sampled:	01/31/18
Matrix:	Soil	Received:	02/01/18
Units:	mg/Kg	Prepared:	02/15/18
Basis:	dry	Analyzed:	02/15/18

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	Moisture	RPD	Lim
BS	QC920234		0.1639	0.1596	97	80-124			
BSD	QC920235		0.1587	0.1418	89	80-124		9	20
MS	QC920236	0.6441	0.3788	0.7304	23 *	80-124	56%		
MSD	QC920237		0.3852	0.6643	5 *	80-124	56%	10	20

*= Value outside of QC limits; see narrative
RPD= Relative Percent Difference

ENTHALPY ANALYTICAL

Batch QC Report

Mercury by Cold Vapor AA

Lab #:	297025	Location:	HPNS-Parcel F
Client:	Insight EEC, Inc.	Prep:	METHOD
Project#:	4-14214	Analysis:	EPA 7471B
Analyte:	Mercury	Basis:	dry
Field ID:	HPP-FSS-009A	Diln Fac:	5.000
Type:	Serial Dilution	Batch#:	256534
MSS Lab ID:	297025-001	Sampled:	01/31/18
Lab ID:	QC920238	Received:	02/01/18
Matrix:	Soil	Analyzed:	02/15/18
Units:	mg/Kg		

MSS Result	MSS LOQ	Result	LOQ	Moisture	% Diff	Lim
0.6441	0.03551	0.7110	0.1776	56%	10	10

LOQ= Limit of Quantitation

REPORTING SUMMARY FOR 297025 METALS Soil
Enthalpy Analytical - Berkeley

Lab ID	Inst ID	Analyzed	IDF	CU	PB	HG
297025-001	MET26	02/13/18 03:14	25.0	+	+	
297025-001	MET44	02/14/18 14:01	1.0			
297025-001	MET45	02/15/18 12:12	1.0			
297025-001	MET45	02/15/18 12:36	1.0			
297025-001	MET45	02/15/18 12:50	1.0			
297025-001	MET44	02/15/18 14:08	1.0			
297025-001	MET44	02/15/18 16:37	1.0			+
297025-002	MET26	02/13/18 03:19	25.0	+	+	
297025-002	MET44	02/14/18 14:06	1.0			
297025-002	MET44	02/15/18 16:42	1.0			
297025-002	MET44	02/15/18 16:54	100.0			
297025-002	MET44	02/15/18 17:26	10.0			
297025-002	MET44	02/15/18 18:15	10.0			+
297025-003	MET26	02/13/18 03:24	25.0	+	+	
297025-003	MET44	02/14/18 14:10	1.0			
297025-003	MET44	02/14/18 14:34	10.0			
297025-003	MET44	02/14/18 16:20	100.0			
297025-003	MET44	02/15/18 08:26	100.0			
297025-003	MET44	02/15/18 16:44	1.0			
297025-003	MET44	02/15/18 16:56	100.0			
297025-003	MET44	02/15/18 17:28	10.0			
297025-003	MET44	02/15/18 18:16	10.0			+
297025-004	MET26	02/13/18 03:29	25.0		+	
297025-004	MET26	02/13/18 16:23	100.0	+		
297025-004	MET44	02/14/18 14:12	1.0			
297025-004	MET44	02/14/18 14:35	1.0			
297025-004	MET44	02/14/18 14:37	10.0			
297025-004	MET44	02/14/18 16:22	100.0			
297025-004	MET44	02/15/18 08:28	100.0			
297025-004	MET44	02/15/18 16:46	1.0			
297025-004	MET44	02/15/18 16:57	100.0			
297025-004	MET44	02/15/18 17:29	10.0			
297025-004	MET44	02/15/18 18:17	10.0			+
QC919563	MET26	02/13/18 01:36	25.0		+	
QC919563	MET26	02/13/18 16:14	25.0	+		
QC919564	MET26	02/13/18 01:41	25.0	+	+	
QC919565	MET26	02/13/18 02:01	25.0	+	+	
QC919566	MET26	02/13/18 02:11	25.0		+	
QC919566	MET26	02/13/18 16:35	25.0	+		
QC919567	MET26	02/13/18 02:15	25.0		+	
QC919567	MET26	02/13/18 16:39	25.0	+		
QC919921	MET26	02/13/18 16:44	125.0	+	+	
QC919922	MET26	02/13/18 16:49	25.0	+	+	

REPORTING SUMMARY FOR 297025 METALS Soil
Enthalpy Analytical - Berkeley

Lab ID	Inst ID	Analyzed	IDF	CU	PB	HG
QC920011	MET44	02/14/18 13:57	1.0			+
QC920012	MET44	02/14/18 13:58	1.0			+
QC920013	MET44	02/14/18 13:59	1.0			+
QC920014	MET44	02/14/18 14:02	1.0			+
QC920014	MET44	02/14/18 14:31	1.0			
QC920014	MET44	02/14/18 16:18	1.0			
QC920015	MET44	02/14/18 14:03	1.0			+
QC920015	MET44	02/14/18 14:33	1.0			
QC920015	MET44	02/14/18 16:19	1.0			
QC920016	MET44	02/14/18 14:05	5.0			+
QC920155	MET45	02/15/18 12:09	1.0			
QC920155	MET45	02/15/18 12:32	1.0			
QC920155	MET44	02/15/18 14:04	1.0			
QC920156	MET45	02/15/18 12:10	1.0			
QC920156	MET45	02/15/18 12:33	1.0			
QC920156	MET45	02/15/18 12:48	1.0			
QC920156	MET44	02/15/18 14:05	1.0			
QC920156	MET44	02/15/18 14:21	1.0			
QC920157	MET45	02/15/18 12:11	1.0			
QC920157	MET45	02/15/18 12:35	1.0			
QC920157	MET45	02/15/18 12:49	1.0			
QC920157	MET44	02/15/18 14:07	1.0			
QC920157	MET44	02/15/18 14:22	1.0			
QC920158	MET45	02/15/18 12:14	1.0			
QC920158	MET45	02/15/18 12:37	1.0			
QC920158	MET45	02/15/18 12:51	1.0			
QC920158	MET44	02/15/18 14:10	1.0			
QC920159	MET45	02/15/18 12:15	1.0			
QC920159	MET45	02/15/18 12:38	1.0			
QC920159	MET45	02/15/18 12:53	1.0			
QC920159	MET44	02/15/18 14:11	1.0			
QC920160	MET45	02/15/18 12:16	5.0			
QC920160	MET45	02/15/18 12:40	5.0			
QC920160	MET45	02/15/18 12:54	5.0			
QC920160	MET44	02/15/18 14:13	5.0			
QC920233	MET44	02/15/18 16:33	1.0			+
QC920234	MET44	02/15/18 16:34	1.0			+
QC920235	MET44	02/15/18 16:35	1.0			+

REPORTING SUMMARY FOR 297025 METALS Soil
Enthalpy Analytical - Berkeley

Lab ID	Inst ID	Analyzed	IDF	CU	PB	HG	
QC920236	MET44	02/15/18 16:38	1.0			+	
QC920237	MET44	02/15/18 16:39	1.0			+	
QC920238	MET44	02/15/18 16:41	5.0			+	

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 1018062954

Instrument : MET26 Begun : 02/12/18 17:14
Method : EPA 6020A SOP Version : icpms metals_rv10

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	18b12r00001	X	RINSE			02/12/18 17:14	1.0	1	
002	18b12r00002	X	RINSE			02/12/18 17:19	1.0	1	
003	18b12r00003	X	RINSE			02/12/18 17:24	1.0	1	
004	18b12r00004	X	RINSE			02/12/18 17:29	1.0	1	
005	18b12r00005	X	RINSE			02/12/18 17:34	1.0	1	
006	18b12r00006	TUN				02/12/18 17:39	1.0	2	
007	18b12r00007	X	RINSE			02/12/18 17:44	1.0	1	
008	18b12r00008	X	RINSE			02/12/18 17:49	1.0	1	
009	18b12r00009	ICALBLK	CALBLANK			02/12/18 17:53	1.0	1	
010	18b12r00010	ICAL				02/12/18 17:58	1.0	3 1	
011	18b12r00011	ICAL				02/12/18 18:03	1.0	3 1	
012	18b12r00012	ICAL				02/12/18 18:08	1.0	3 1	
013	18b12r00013	ICAL				02/12/18 18:13	1.0	3 1	
014	18b12r00014	ICAL				02/12/18 18:18	1.0	3 1	
015	18b12r00015	ICAL				02/12/18 18:22	1.0	3 1	
016	18b12r00016	ICAL				02/12/18 18:27	1.0	3 1	
017	18b12r00017	X	RINSE			02/12/18 18:32	1.0	1	
018	18b12r00018	ICV				02/12/18 18:37	1.0	4 1	
019	18b12r00019	CRI				02/12/18 18:42	1.0	5 1	
020	18b12r00020	ICB				02/12/18 18:47	1.0	1	
021	18b12r00021	XICSA				02/12/18 18:52	1.0	6 1	8:CA=290000
022	18b12r00022	XICSAB				02/12/18 18:57	1.0	7 1	9:CA=290000
023	18b12r00023	X	RINSE			02/12/18 19:02	1.0	1	
024	18b12r00024	X	RINSE			02/12/18 19:07	1.0	1	
025	18b12r00025	X	RINSE			02/12/18 19:12	1.0	1	
026	18b12r00026	X	RINSE			02/12/18 19:17	1.0	1	
027	18b12r00027	ICSA				02/12/18 19:22	1.0	6 1	8:CA=270000
028	18b12r00028	ICSAB				02/12/18 19:27	1.0	7 1	8:CA=280000
029	18b12r00029	X	RINSE			02/12/18 19:33	1.0	1	
030	18b12r00030	X	RINSE			02/12/18 19:38	1.0	1	
031	18b12r00031	X	RINSE			02/12/18 19:43	1.0	1	
032	18b12r00032	X	RINSE			02/12/18 19:48	1.0	1	
033	18b12r00033	SAMPLE	297006-002	Water	256367	02/12/18 19:53	1.0	1	5:NA=4700000
034	18b12r00034	X	RINSE			02/12/18 19:58	1.0	1	
035	18b12r00035	SAMPLE	296783-012	Water	256367	02/12/18 20:03	1.0	1	3:NA=640000
036	18b12r00036	SAMPLE	296783-013	Water	256367	02/12/18 20:08	1.0	1	5:NA=14000000
037	18b12r00037	SAMPLE	296783-014	Water	256367	02/12/18 20:12	1.0	1	
038	18b12r00038	X	RINSE			02/12/18 20:17	1.0	1	
039	18b12r00039	SAMPLE	296970-001	Water	256367	02/12/18 20:22	1.0	1	4:NA=38000
040	18b12r00040	X	RINSE			02/12/18 20:27	1.0	1	
041	18b12r00041	BLANK	QC919596	Filtrate	256373	02/12/18 20:32	1.0	1	
042	18b12r00042	BLANK	QC919604	Filtrate	256374	02/12/18 20:37	1.0	1	
043	18b12r00043	BLANK	QC919603	Filtrate	256374	02/12/18 20:42	1.0	1	
044	18b12r00044	BLANK	QC919605	Filtrate	256374	02/12/18 20:47	1.0	1	
045	18b12r00045	BS	QC919597	Filtrate	256373	02/12/18 20:52	1.0	1	
046	18b12r00046	CCV				02/12/18 20:56	1.0	4 1	
047	18b12r00047	X	XCCB			02/12/18 21:01	1.0	1	
048	18b12r00048	CCB				02/12/18 21:06	1.0	1	
049	18b12r00049	BSD	QC919598	Filtrate	256373	02/12/18 21:11	1.0	1	
050	18b12r00050	BS	QC919606	Filtrate	256374	02/12/18 21:16	1.0	1	
051	18b12r00051	BSD	QC919607	Filtrate	256374	02/12/18 21:21	1.0	1	
052	18b12r00052	SAMPLE	296174-003	Filtrate	256374	02/12/18 21:26	1.0	1	3:NA=590000

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 1018062954

Instrument : MET26 Begun : 02/12/18 17:14
Method : EPA 6020A SOP Version : icpms metals_rv10

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
053	18b12r00053	X	RINSE			02/12/18 21:31	1.0	1	
054	18b12r00054	MSS	296647-002	Filtrate	256374	02/12/18 21:35	1.0	1	4:NA=530000
055	18b12r00055	MS	QC919608	Filtrate	256374	02/12/18 21:40	1.0	1	5:NA=520000
056	18b12r00056	MSD	QC919609	Filtrate	256374	02/12/18 21:45	1.0	1	5:NA=540000
057	18b12r00057	SER	QC919610	Filtrate	256374	02/12/18 21:50	5.0	1	4:NA=110000
058	18b12r00058	PDS	QC919611	Filtrate	256374	02/12/18 21:55	1.0	8 9 10 1	5:NA=540000
059	18b12r00059	X	RINSE			02/12/18 22:00	1.0	1	
060	18b12r00060	MSS	296739-001	Filtrate	256373	02/12/18 22:05	1.0	1	4:NA=680000
061	18b12r00061	CCV				02/12/18 22:10	1.0	4 1	
062	18b12r00062	X	XCCB			02/12/18 22:15	1.0	1	
063	18b12r00063	CCB				02/12/18 22:20	1.0	1	
064	18b12r00064	MS	QC919599	Filtrate	256373	02/12/18 22:25	1.0	1	4:NA=660000
065	18b12r00065	MSD	QC919600	Filtrate	256373	02/12/18 22:30	1.0	1	4:NA=680000
066	18b12r00066	SER	QC919601	Filtrate	256373	02/12/18 22:35	5.0	1	4:NA=130000
067	18b12r00067	PDS	QC919602	Filtrate	256373	02/12/18 22:39	1.0	8 9 10 1	4:NA=690000
068	18b12r00068	SAMPLE	296739-002	Filtrate	256373	02/12/18 22:44	1.0	1	4:NA=1400000
069	18b12r00069	SAMPLE	296739-003	Filtrate	256373	02/12/18 22:49	1.0	1	4:NA=610000
070	18b12r00070	SAMPLE	296739-004	Filtrate	256373	02/12/18 22:54	1.0	1	4:NA=1000000
071	18b12r00071	SAMPLE	296739-005	Filtrate	256373	02/12/18 22:59	1.0	1	4:NA=620000
072	18b12r00072	SAMPLE	296739-007	Filtrate	256373	02/12/18 23:04	1.0	1	4:NA=220000
073	18b12r00073	SAMPLE	296739-008	Filtrate	256373	02/12/18 23:09	1.0	1	4:NA=1100000
074	18b12r00074	CCV				02/12/18 23:14	1.0	4 1	
075	18b12r00075	X	XCCB			02/12/18 23:19	1.0	1	
076	18b12r00076	CCB				02/12/18 23:24	1.0	1	
077	18b12r00077	X	RINSE			02/12/18 23:29	1.0	1	
078	18b12r00078	SAMPLE	296572-001	Filtrate	256373	02/12/18 23:34	1.0	1	5:NA=260000
079	18b12r00079	SAMPLE	296572-002	Filtrate	256373	02/12/18 23:39	1.0	1	4:NA=760000
080	18b12r00080	SAMPLE	296572-003	Filtrate	256373	02/12/18 23:44	1.0	1	4:NA=400000
081	18b12r00081	SAMPLE	296572-004	Filtrate	256373	02/12/18 23:48	1.0	1	4:NA=410000
082	18b12r00082	SAMPLE	296572-005	Filtrate	256373	02/12/18 23:53	1.0	1	4:NA=470000
083	18b12r00083	X	RINSE			02/12/18 23:58	1.0	1	
084	18b12r00084	SAMPLE	296784-010	Filtrate	256373	02/13/18 00:03	1.0	1	3:NA=540000
085	18b12r00085	X	RINSE			02/13/18 00:08	1.0	1	
086	18b12r00086	SAMPLE	296647-001	Filtrate	256374	02/13/18 00:13	1.0	1	4:NA=550000
087	18b12r00087	SAMPLE	296647-003	Filtrate	256374	02/13/18 00:18	1.0	1	4:NA=520000
088	18b12r00088	SAMPLE	296647-004	Filtrate	256374	02/13/18 00:23	1.0	1	4:NA=520000
089	18b12r00089	SAMPLE	296647-005	Filtrate	256374	02/13/18 00:28	1.0	1	4:NA=550000
090	18b12r00090	CCV				02/13/18 00:33	1.0	4 1	
091	18b12r00091	X	XCCB			02/13/18 00:38	1.0	1	
092	18b12r00092	CCB				02/13/18 00:43	1.0	1	
093	18b12r00093	SAMPLE	296647-006	Filtrate	256374	02/13/18 00:47	1.0	1	4:NA=570000
094	18b12r00094	SAMPLE	296647-007	Filtrate	256374	02/13/18 00:52	1.0	1	4:NA=750000
095	18b12r00095	SAMPLE	296647-008	Filtrate	256374	02/13/18 00:57	1.0	1	4:NA=600000
096	18b12r00096	SAMPLE	296647-009	Filtrate	256374	02/13/18 01:02	1.0	1	4:NA=780000
097	18b12r00097	X	RINSE			02/13/18 01:07	1.0	1	
098	18b12r00098	SAMPLE	295771-001	Filtrate	256373	02/13/18 01:12	1.0	1	3:MG=130000
099	18b12r00099	SAMPLE	295771-002	Filtrate	256373	02/13/18 01:17	1.0	1	3:MG=120000
100	18b12r00100	SAMPLE	295771-003	Filtrate	256373	02/13/18 01:22	1.0	1	
101	18b12r00101	SAMPLE	295771-004	Filtrate	256373	02/13/18 01:27	1.0	1	
102	18b12r00102	X	RINSE			02/13/18 01:32	1.0	1	
103	18b12r00103	BLANK	QC919563	Soil	256366	02/13/18 01:36	25.0	1	
104	18b12r00104	BS	QC919564	Soil	256366	02/13/18 01:41	25.0	1	

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 1018062954

Instrument : MET26 Begun : 02/12/18 17:14
Method : EPA 6020A SOP Version : icpms metals_rv10

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
105	18b12r00105	CCV				02/13/18 01:46	1.0	4 1	
106	18b12r00106	X	XCCB			02/13/18 01:51	1.0	1	
107	18b12r00107	CCB				02/13/18 01:56	1.0	1	
108	18b12r00108	BSD	QC919565	Soil	256366	02/13/18 02:01	25.0	1	
109	18b12r00109	MSS	296942-001	Soil	256366	02/13/18 02:06	25.0	1	2:FE=28000
110	18b12r00110	MS	QC919566	Soil	256366	02/13/18 02:11	25.0	1	2:FE=29000
111	18b12r00111	MSD	QC919567	Soil	256366	02/13/18 02:15	25.0	1	2:FE=29000
112	18b12r00112	SAMPLE	296942-002	Soil	256366	02/13/18 02:20	25.0	1	2:FE=30000
113	18b12r00113	SAMPLE	296942-004	Soil	256366	02/13/18 02:25	25.0	1	1:MN=360
114	18b12r00114	SAMPLE	296942-005	Soil	256366	02/13/18 02:30	25.0	1	1:MN=340
115	18b12r00115	SAMPLE	297013-001	Soil	256366	02/13/18 02:35	25.0	1	2:FE=26000
116	18b12r00116	SAMPLE	297013-002	Soil	256366	02/13/18 02:40	25.0	1	3:FE=26000
117	18b12r00117	SAMPLE	297013-003	Soil	256366	02/13/18 02:45	25.0	1	3:FE=23000
118	18b12r00118	CCV				02/13/18 02:49	1.0	4 1	
119	18b12r00119	X	XCCB			02/13/18 02:54	1.0	1	
120	18b12r00120	CCB				02/13/18 02:59	1.0	1	
121	18b12r00121	SAMPLE	297013-004	Soil	256366	02/13/18 03:04	25.0	1	3:FE=21000
122	18b12r00122	SAMPLE	297013-005	Soil	256366	02/13/18 03:09	25.0	1	3:FE=26000
123	18b12r00123	SAMPLE	297025-001	Soil	256366	02/13/18 03:14	25.0	1	
124	18b12r00124	SAMPLE	297025-002	Soil	256366	02/13/18 03:19	25.0	1	1:MN=230
125	18b12r00125	SAMPLE	297025-003	Soil	256366	02/13/18 03:24	25.0	1	
126	18b12r00126	SAMPLE	297025-004	Soil	256366	02/13/18 03:29	25.0	1	1:CU=330
127	18b12r00127	CCV				02/13/18 03:33	1.0	4 1	
128	18b12r00128	X	XCCB			02/13/18 03:38	1.0	1	
129	18b12r00129	CCB				02/13/18 03:43	1.0	1	
130	18b12r00130	ICSA				02/13/18 03:48	1.0	11 1	8:CA=240000
131	18b12r00131	ICSAB				02/13/18 03:53	1.0	12 1	8:CA=240000
132	18b12r00132	X	RINSE			02/13/18 03:58	1.0	1	
133	18b12r00133	X	RINSE			02/13/18 04:03	1.0	1	
134	18b12r00134	X	RINSE			02/13/18 04:08	1.0	1	
135	18b12r00135	X	RINSE			02/13/18 04:13	1.0	1	
136	18b12r00136	ICSA				02/13/18 04:18	1.0	11 1	8:CA=230000
137	18b12r00137	ICSAB				02/13/18 04:23	1.0	12 1	8:CA=230000
138	18b12r00138	X	RINSE			02/13/18 04:28	1.0	1	
139	18b12r00139	X	RINSE			02/13/18 04:33	1.0	1	
140	18b12r00140	X	RINSE			02/13/18 04:38	1.0	1	
141	18b12r00141	X	RINSE			02/13/18 04:43	1.0	1	

NBB 02/13/18 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 001 through 137.

Standards used: 1=S35939 2=S35938 3=S35940 4=S35983 5=S35885 6=S35821 7=S35822 8=S34361 9=S34362 10=S34743 11=S35984 12=S35985

CURTIS & TOMPKINS INTERNAL STANDARD SUMMARY FOR SEQUENCE 1018062954

Date : 02/12/18 Reference : 18b12r00009
Sequence : MET26 18b12r00 Analyzed : 02/12/18 17:53

#	Type	Sample ID	LI A	GE H	GE A	GE E	IN A	BI A	Y E	Y H	Y A
		IB+ICALBLK STD	54773	12557	38413	10168	377350	416919	96013	161998	342628
		LOWER LIMIT	16432	3767	11524	3050	113205	125076	28804	48599	102788
		UPPER LIMIT	65728	15068	46096	12202	452820	500303	115216	194398	411154
020	ICB		52414	12611	37227	10068	371125	411592	95279	164812	332661
027	ICSA		52747	12235	43817	11182	349445	325485	100063	162419	346636
028	ICSAB		48697	12363	40749	10690	335832	312514	95448	164389	330794
035	SAMPLE	296783-012	98400 *	18575 *	59961 *	16043 *	488990 *	392213	149754 *	248112 *	525252 *
036	SAMPLE	296783-013	176937 *	20691 *	67933 *	17847 *	383906	204412	161196 *	278338 *	509047 *
037	SAMPLE	296783-014	152242 *	27627 *	75288 *	21707 *	558394 *	434290	182736 *	337902 *	606780 *
041	BLANK	QC919596	130320 *	23130 *	64437 *	18414 *	481046 *	392444	156474 *	281859 *	515255 *
042	BLANK	QC919604	123909 *	22291 *	61815 *	17921 *	470394 *	397801	151046 *	269074 *	495007 *
043	BLANK	QC919603	111645 *	20335 *	58854 *	16377 *	456171 *	385718	144300 *	251040 *	477761 *
044	BLANK	QC919605	110338 *	20722 *	59358 *	16903 *	453097 *	384935	145804 *	254068 *	475988 *
045	BS	QC919597	99135 *	20493 *	55596 *	15458 *	425844	359273	134805 *	255356 *	455368 *
046	CCV		98189 *	18932 *	54622 *	14998 *	428560	367812	134235 *	238295 *	452629 *
048	CCB		91631 *	17287 *	51676 *	14142 *	407639	358400	121094 *	214268 *	419204 *
049	BSD	QC919598	89696 *	17583 *	51021 *	14107 *	410236	353186	124514 *	221172 *	427814 *
050	BS	QC919606	85062 *	16771 *	49061 *	13349 *	391750	348456	115371 *	210351 *	409209
051	BSD	QC919607	83299 *	16422 *	49378 *	13292 *	396154	353246	118545 *	208728 *	412602 *
054	MSS	296647-002	91072 *	16684 *	50581 *	13952 *	378405	297390	122040 *	210708 *	416371 *
055	MS	QC919608	96125 *	17679 *	53866 *	14859 *	384866	293090	129712 *	224977 *	434575 *
056	MSD	QC919609	98438 *	18051 *	53210 *	14694 *	388085	296417	130106 *	230164 *	439280 *
057	SER	QC919610	91136 *	17682 *	50808 *	14175 *	394680	332353	123574 *	220804 *	418179 *
058	PDS	QC919611	95675 *	17196 *	53739 *	14528 *	385872	293391	128179 *	219248 *	437598 *
060	MSS	296739-001	92576 *	18008 *	52717 *	15101 *	369668	281630	133985 *	229337 *	417928 *
061	CCV		90944 *	19180 *	55517 *	15091 *	429803	360876	134287 *	242235 *	461778 *
063	CCB		80300 *	17074 *	50042 *	13667 *	399696	352853	118626 *	211414 *	408498
064	MS	QC919599	94621 *	17957 *	54149 *	14986 *	377659	279794	132259 *	230087 *	436590 *
065	MSD	QC919600	97909 *	17887 *	55009 *	15022 *	381880	280882	131200 *	225184 *	445245 *
066	SER	QC919601	91546 *	18137 *	53489 *	15113 *	395338	318098	131435 *	224672 *	431812 *
067	PDS	QC919602	90898 *	17311 *	50894 *	14783 *	337744	246737	125525 *	215659 *	394344
068	SAMPLE	296739-002	103276 *	18467 *	54357 *	14580 *	354593	249650	125305 *	223490 *	420636 *
069	SAMPLE	296739-003	97545 *	18101 *	54367 *	14609 *	374142	180686	125623 *	225574 *	432689 *
070	SAMPLE	296739-004	111433 *	18725 *	57726 *	15710 *	360194	276061	131903 *	231866 *	434628 *
071	SAMPLE	296739-005	105921 *	19357 *	55036 *	15729 *	354078	260042	129299 *	232941 *	421260 *
072	SAMPLE	296739-007	95404 *	16572 *	49221 *	13625 *	322588	245091	111536	201467 *	376828
073	SAMPLE	296739-008	132774 *	20180 *	65549 *	16922 *	373494	245966	132964 *	244877 *	464981 *
074	CCV		120892 *	22587 *	63437 *	18042 *	395663	295583	145435 *	267268 *	468948 *
076	CCB		112488 *	19936 *	58823 *	16176 *	368061	278240	129421 *	231931 *	423307 *
078	SAMPLE	296572-001	109325 *	20547 *	59639 *	16731 *	357300	255327	131987 *	236410 *	426680 *
079	SAMPLE	296572-002	128078 *	21451 *	65960 *	18478 *	371868	254332	144064 *	248606 *	462388 *
080	SAMPLE	296572-003	98048 *	17486 *	54760 *	15171 *	334202	243137	120354 *	203147 *	397863
081	SAMPLE	296572-004	90589 *	15581 *	49182 *	13362 *	310694	227872	107555	187142	366768
082	SAMPLE	296572-005	101274 *	16230 *	52138 *	13734 *	307641	214359	110905	193911	374733
084	SAMPLE	296784-010	111103 *	19518 *	57463 *	16200 *	336772	243238	126300 *	224623 *	411828 *
086	SAMPLE	296647-001	103521 *	17917 *	57889 *	15250 *	360418	253488	128800 *	221082 *	435115 *
087	SAMPLE	296647-003	93506 *	20415 *	55488 *	16474 *	355830	258464	132197 *	239427 *	421158 *
088	SAMPLE	296647-004	88244 *	18738 *	55994 *	14903 *	372834	275823	126745 *	228417 *	434333 *
089	SAMPLE	296647-005	90711 *	18596 *	55117 *	15118 *	354864	256599	126350 *	225803 *	419973 *
090	CCV		84269 *	18690 *	53247 *	14798 *	365270	288620	124752 *	227260 *	412442 *
092	CCB		76077 *	16354 *	49092 *	13380 *	347396	284219	112244	198081 *	377644

CURTIS & TOMPKINS INTERNAL STANDARD SUMMARY FOR SEQUENCE 1018062954

Date : 02/12/18 Reference : 18b12r00009
Sequence : MET26 18b12r00 Analyzed : 02/12/18 17:53

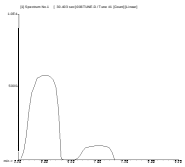
#	Type	Sample ID	LI A	GE H	GE A	GE E	IN A	BI A	Y E	Y H	Y A
093	SAMPLE	296647-006	82478 *	17296 *	53111 *	14250 *	356831	262050	122848 *	212247 *	414881 *
094	SAMPLE	296647-007	82694 *	18006 *	53365 *	14171 *	353630	256207	121643 *	224656 *	414294 *
095	SAMPLE	296647-008	69948 *	16235 *	49417 *	13322 *	343958	262776	114851	204812 *	390474
096	SAMPLE	296647-009	76937 *	16545 *	50788 *	13525 *	346001	253807	118176 *	206093 *	404679
098	SAMPLE	295771-001	57729	14074	41830	11170	311988	258801	97285	175922	342464
099	SAMPLE	295771-002	51181	14649	41552	11286	331845	292542	101486	184533	350566
100	SAMPLE	295771-003	50612	13704	40782	10719	343979	321985	95470	172031	342326
101	SAMPLE	295771-004	44352	12941	37556	9830	321462	304972	86278	161880	317345
103	BLANK	QC919563	42208	12207	36803	9383	320287	310341	85622	151828	312244
104	BS	QC919564	41071	12330	36464	9517	318889	307572	86490	155912	310096
105	CCV		40808	12235	37048	9286	317915	298773	82150	158179	318382
107	CCB		37947	11695	34948	9071	306968	296563	82463	147824	296475
108	BSD	QC919565	37564	11766	34480	9059	303203	293790	82108	147278	292496
109	MSS	296942-001	37649	11437	35799	9140	310312	298561	88429	154990	322675
110	MS	QC919566	36888	11894	35377	9183	312218	301652	88733	164371	324737
111	MSD	QC919567	35634	11370	34008	8844	301036	290160	84106	156809	312388
112	SAMPLE	296942-002	33487	10637	33061	8558	294334	290103	83267	147458	303313
113	SAMPLE	296942-004	32801	10451	32923	8547	299468	295147	82574	144005	300456
114	SAMPLE	296942-005	31740	10619	32053	8259	292496	286873	80214	143643	292090
115	SAMPLE	297013-001	30939	9983	30668	7898	284224	287508	81716	142977	295870
116	SAMPLE	297013-002	30027	9971	30018	7718	285707	288189	82623	147094	298321
117	SAMPLE	297013-003	28897	9876	28892	7654	277997	280055	78763	142112	286072
118	CCV		27983	9423	28367	7320	272583	273785	70346	126520	258242
120	CCB		26227	9076	26838	7013	259423	264063	65632	117943	238248
121	SAMPLE	297013-004	27247	9217	27571	7121	267065	272658	73817	130134	268771
122	SAMPLE	297013-005	26859	9055	27408	7044	268219	274571	74847	133545	275232
123	SAMPLE	297025-001	26395	9242	27049	7058	262219	267560	69300	124248	249226
124	SAMPLE	297025-002	25977	8913	26294	6944	258650	265245	67215	120075	245928
125	SAMPLE	297025-003	22913	7689	22900	6055	229228	237249	59163	103565	217219
126	SAMPLE	297025-004	25198	8007	26101	6975	253708	263943	68925	109977	240636
127	CCV		25531	8959	26073	6790	258821	262085	65793	119080	242487
129	CCB		20751	7077	20989	5480	209200	219529	52306	90784	189779
130	ICSA		24446	8452	28900	7190	247811	225569	65462	112089	240612
131	ICSAB		24417	8480	28278	7169	249717	229587	65826	114681	242649
136	ICSA		21734	7241	25377	6381	222550	207110	58536	98858	214766
137	ICSAB		21362	7453	24989	6237	222272	208251	58646	100907	213661

MET26 QC Tune Report

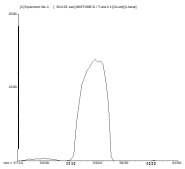
Data File: C:\ICPCHEM\1\DATA\18B12r00.B\006TUNE.D
Date Acquired: Feb 12 2018 05:39 pm
Acq. Method: TN6020K.M
Operator:
Sample Name: tun,s35938
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\TN6020K.M

RSD (%)

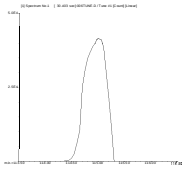
Element	Rep1	Rep2	Rep3	Rep4	Rep5	Actual	Required	Flag
7 Li	5270	5425	5335	5359	5270	1.92	5.00	
59 Co	7503	7494	7370	7295	7162	1.71	5.00	
115 In	206705	207156	205387	203455	203679	0.85	5.00	
205 Tl	15531	15578	15429	15482	15537	1.30	5.00	



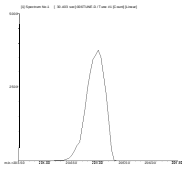
7 Li
Mass Calib.
Actual: 7.00
Required: 6.90 - 7.10
Flag:
Peak Width @ 5%
Actual: 0.65
Required: 0.75
Flag:



59 Co
Mass Calib.
Actual: 59.00
Required: 58.90 - 59.10
Flag:
Peak Width @ 5%
Actual: 0.60
Required: 0.75
Flag:



115 In
Mass Calib.
Actual: 115.00
Required: 114.90 - 115.10
Flag:
Peak Width @ 5%
Actual: 0.65
Required: 0.75
Flag:



205 Tl
Mass Calib.
Actual: 204.95
Required: 204.90 - 205.10
Flag:
Peak Width @ 5%
Actual: 0.65
Required: 0.75
Flag:

ENTHALPY INITIAL CALIBRATION FOR 297025 METALS Soil: EPA 6020A

Inst : MET26
Calnum : 1018062954001
Units : ug/L

Date : 12-FEB-2018 17:53
X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	18b12r00010	1018062954010		12-FEB-2018 17:58	S35940 (400X), S35939
L2	18b12r00011	1018062954011		12-FEB-2018 18:03	S35940 (200X), S35939
L3	18b12r00012	1018062954012		12-FEB-2018 18:08	S35940 (40X), S35939
L4	18b12r00013	1018062954013		12-FEB-2018 18:13	S35940 (20X), S35939
L5	18b12r00014	1018062954014		12-FEB-2018 18:18	S35940 (4X), S35939
L6	18b12r00015	1018062954015		12-FEB-2018 18:22	S35940 (2X), S35939
L7	18b12r00016	1018062954016		12-FEB-2018 18:27	S35940, S35939

Analyte	Ch	L1	L2	L3	L4	L5	L6	L7	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	Flg
Lead	A	0.0116	0.0113	0.0109	0.0107	0.0108	0.0108	0.0109	BLNK	-0.0530	91.6365		0.0110	1.000	0.995	
Copper	E	0.0046	0.0036	0.0031	0.0031	0.0029	0.0028	0.0028	BLNK	-0.1347	361.967		0.0033	1.000	0.995	

Spiked Amounts / Drifts	Ch	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D	L6	%D	L7	%D
Lead	A	0.5000	-4	1.0000	-1	5.0000	-2	10.000	-2	50.000	-1	100.00	-1	200.00	0
Copper	E	0.5000	**39**	1.0000	16	5.0000	10	10.000	10	50.000	4	100.00	0	200.00	0

Instrument amount = a0 + response * a1 + response^2 * a2; BLNK=Y=aX+[blank]

ENTHALPY 2ND SOURCE CALIBRATION SUMMARY FOR 297025 METALS Soil
EPA 6020A

Inst : MET26
Calnum : 1018062954001 Cal Date : 12-FEB-2018

ICV 1018062954018 (18b12r00018 12-FEB-2018) stds: S35983, S35939

Analyte	Ch	Spiked	Quant	Units	%D	Max	Flags
Lead	A	50.00	49.12	ug/L	-2	10	
Copper	E	50.00	50.53	ug/L	1	10	

ENTHALPY LOW-LEVEL PERFORMANCE VERIFICATION STANDARD FOR 297025 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018062954019.1 File : 18b12r00019 Time : 12-FEB-2018 18:42
Cal : 1018062954001 Caldate : 12-FEB-2018
Standards: S35885, S35939

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Lead	A	1.000	0.9582	ug/L	-4	30	
Copper	E	1.000	1.229	ug/L	**23**	30	!cri+

ISTD (ICALBLK 18b12r00009)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	54773	54537	-0.43
Germanium	H	12557	12670	0.90
Germanium	A	38413	38141	-0.71
Germanium	E	10168	10252	0.83
Indium	A	377350	384903	2.00
Bismuth	A	416919	422421	1.32
Yttrium	E	96013	98341	2.42
Yttrium	H	161998	167125	3.16
Yttrium	A	342628	346727	1.20

!=warning +=high bias

ENTHALPY INSTRUMENT BLANK FOR 297025 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018062954020.2 File : 18b12r00020 Time : 12-FEB-2018 18:47
Cal : 1018062954001 Caldate : 12-FEB-2018

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Lead	A	ND	0.5000	0.1000	ug/L	
Copper	E	ND	0.5000	0.4000	ug/L	

ISTD (ICALBLK 18b12r00009)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	54773	52414	-4.31
Germanium	H	12557	12611	0.43
Germanium	A	38413	37227	-3.09
Germanium	E	10168	10068	-0.98
Indium	A	377350	371125	-1.65
Bismuth	A	416919	411592	-1.28
Yttrium	E	96013	95279	-0.76
Yttrium	H	161998	164812	1.74
Yttrium	A	342628	332661	-2.91

ENTHALPY INTERFERENCE CHECK STANDARD A FOR 297025 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018062954027.2 File : 18b12r00027 Time : 12-FEB-2018 19:22
Cal : 1018062954001 Caldate : 12-FEB-2018
Standards: S35821, S35939

Analyte	Ch	Quant	IQL	Units	Flags
Lead	A	[0.1116]	0.5000	ug/L	
Copper	E	0.7549	0.5000	ug/L	

Interferent	Ch	Spiked	Quant	Units	%Rec	Flags
Aluminum	A	100000	89080	ug/L	89	
Calcium	A	300000	272400	ug/L	91	
Magnesium	A	100000	88510	ug/L	89	
Molybdenum	A	2000	2015	ug/L	101	
Potassium	A	100000	92260	ug/L	92	
Sodium	E	250000	236600	ug/L	95	
Phosphorus	E	100000	93490	ug/L	93	
Iron	H	250000	244300	ug/L	98	

ISTD (ICALBLK 18b12r00009)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	54773	52747	-3.70
Germanium	H	12557	12235	-2.56
Germanium	A	38413	43817	14.07
Germanium	E	10168	11182	9.97
Indium	A	377350	349445	-7.39
Bismuth	A	416919	325485	-21.93
Yttrium	E	96013	100063	4.22
Yttrium	H	161998	162419	0.26
Yttrium	A	342628	346636	1.17

ENTHALPY INTERFERENCE CHECK STANDARD AB FOR 297025 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018062954028.2 File : 18b12r00028 Time : 12-FEB-2018 19:27
Cal : 1018062954001 Caldate : 12-FEB-2018
Standards: S35822, S35939

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Copper	E	200.0	193.2	ug/L	-3	20	

ISTD (ICALBLK 18b12r00009)	Ch	ICALBLK Abund	Abund	%Drift
Germanium	H	12557	12363	-1.54
Germanium	A	38413	40749	6.08
Germanium	E	10168	10690	5.13
Indium	A	377350	335832	-11.00
Yttrium	E	96013	95448	-0.59
Yttrium	H	161998	164389	1.48
Yttrium	A	342628	330794	-3.45

ENTHALPY CONTINUING CALIBRATION FOR 297025 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018062954090.1 File : 18b12r00090 Time : 13-FEB-2018 00:33
Cal : 1018062954001 Caldate : 12-FEB-2018
Standards: S35983, S35939

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Lead	A	0.0110	0.0106	50.00	48.67	ug/L	-3	10	
Copper	E	0.0033	0.0035	50.00	63.01	ug/L	**26**	10	c+ i+ ***

ISTD (ICALBLK 18b12r00009)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	54773	84269	**53.85 ***
Germanium	H	12557	18690	**48.84 ***
Germanium	A	38413	53247	**38.62 ***
Germanium	E	10168	14798	**45.54 ***
Indium	A	377350	365270	-3.20
Bismuth	A	416919	288620	-30.77
Yttrium	E	96013	124752	**29.93 ***
Yttrium	H	161998	227260	**40.29 ***
Yttrium	A	342628	412442	**20.38 ***

+=high bias c=CCV i=ISTD failure

ENTHALPY INSTRUMENT BLANK FOR 297025 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018062954092.1 File : 18b12r00092 Time : 13-FEB-2018 00:43
Cal : 1018062954001 Caldate : 12-FEB-2018

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Lead	A	ND	0.5000	0.1000	ug/L	
Copper	E	ND	0.5000	0.4000	ug/L	

ISTD (ICALBLK 18b12r00009)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	54773	76077	**38.90 ***
Germanium	H	12557	16354	**30.24 ***
Germanium	A	38413	49092	**27.80 ***
Germanium	E	10168	13380	**31.59 ***
Indium	A	377350	347396	-7.94
Bismuth	A	416919	284219	-31.83
Yttrium	E	96013	112244	16.91
Yttrium	H	161998	198081	**22.27 ***
Yttrium	A	342628	377644	10.22

ENTHALPY CONTINUING CALIBRATION FOR 297025 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018062954105.1 File : 18b12r00105 Time : 13-FEB-2018 01:46
Cal : 1018062954001 Caldate : 12-FEB-2018
Standards: S35983, S35939

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Lead	A	0.0110	0.0108	50.00	49.31	ug/L	-1	10	
Copper	E	0.0033	0.0033	50.00	59.21	ug/L	**18**	10	c+ ***

ISTD (ICALBLK 18b12r00009)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	54773	40808	-25.50
Germanium	H	12557	12235	-2.56
Germanium	A	38413	37048	-3.55
Germanium	E	10168	9286	-8.67
Indium	A	377350	317915	-15.75
Bismuth	A	416919	298773	-28.34
Yttrium	E	96013	82150	-14.44
Yttrium	H	161998	158179	-2.36
Yttrium	A	342628	318382	-7.08

+=high bias c=CCV

ENTHALPY INSTRUMENT BLANK FOR 297025 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018062954107.1 File : 18b12r00107 Time : 13-FEB-2018 01:56
Cal : 1018062954001 Caldate : 12-FEB-2018

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Lead	A	ND	0.5000	0.1000	ug/L	
Copper	E	ND	0.5000	0.4000	ug/L	

ISTD (ICALBLK 18b12r00009)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	54773	37947	-30.72
Germanium	H	12557	11695	-6.86
Germanium	A	38413	34948	-9.02
Germanium	E	10168	9071	-10.79
Indium	A	377350	306968	-18.65
Bismuth	A	416919	296563	-28.87
Yttrium	E	96013	82463	-14.11
Yttrium	H	161998	147824	-8.75
Yttrium	A	342628	296475	-13.47

ENTHALPY CONTINUING CALIBRATION FOR 297025 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018062954118.1 File : 18b12r00118 Time : 13-FEB-2018 02:49
Cal : 1018062954001 Caldate : 12-FEB-2018
Standards: S35983, S35939

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Lead	A	0.0110	0.0108	50.00	49.63	ug/L	-1	10	
Copper	E	0.0033	0.0028	50.00	50.62	ug/L	1	10	

ISTD (ICALBLK 18b12r00009)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	54773	27983	-48.91
Germanium	H	12557	9423	-24.96
Germanium	A	38413	28367	-26.15
Germanium	E	10168	7320	-28.01
Indium	A	377350	272583	-27.76
Bismuth	A	416919	273785	-34.33
Yttrium	E	96013	70346	-26.73
Yttrium	H	161998	126520	-21.90
Yttrium	A	342628	258242	-24.63

ENTHALPY INSTRUMENT BLANK FOR 297025 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018062954120.1 File : 18b12r00120 Time : 13-FEB-2018 02:59
Cal : 1018062954001 Caldate : 12-FEB-2018

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Lead	A	ND	0.5000	0.1000	ug/L	
Copper	E	ND	0.5000	0.4000	ug/L	

ISTD (ICALBLK 18b12r00009)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	54773	26227	-52.12
Germanium	H	12557	9076	-27.72
Germanium	A	38413	26838	-30.13
Germanium	E	10168	7013	-31.03
Indium	A	377350	259423	-31.25
Bismuth	A	416919	264063	-36.66
Yttrium	E	96013	65632	-31.64
Yttrium	H	161998	117943	-27.19
Yttrium	A	342628	238248	-30.46

ENTHALPY CONTINUING CALIBRATION FOR 297025 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018062954127.1 File : 18b12r00127 Time : 13-FEB-2018 03:33
Cal : 1018062954001 Caldate : 12-FEB-2018
Standards: S35983, S35939

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Lead	A	0.0110	0.0105	50.00	48.06	ug/L	-4	10	
Copper	E	0.0033	0.0027	50.00	49.28	ug/L	-1	10	

ISTD (ICALBLK 18b12r00009)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	54773	25531	-53.39
Germanium	H	12557	8959	-28.65
Germanium	A	38413	26073	-32.12
Germanium	E	10168	6790	-33.22
Indium	A	377350	258821	-31.41
Bismuth	A	416919	262085	-37.14
Yttrium	E	96013	65793	-31.47
Yttrium	H	161998	119080	-26.49
Yttrium	A	342628	242487	-29.23

ENTHALPY INSTRUMENT BLANK FOR 297025 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018062954129.1 File : 18b12r00129 Time : 13-FEB-2018 03:43
Cal : 1018062954001 Caldate : 12-FEB-2018

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Lead	A	ND	0.5000	0.1000	ug/L	
Copper	E	ND	0.5000	0.4000	ug/L	

ISTD (ICALBLK 18b12r00009)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	54773	20751	-62.11
Germanium	H	12557	7077	-43.64
Germanium	A	38413	20989	-45.36
Germanium	E	10168	5480	-46.11
Indium	A	377350	209200	-44.56
Bismuth	A	416919	219529	-47.34
Yttrium	E	96013	52306	-45.52
Yttrium	H	161998	90784	-43.96
Yttrium	A	342628	189779	-44.61

ENTHALPY INTERFERENCE CHECK STANDARD A FOR 297025 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018062954130.2 File : 18b12r00130 Time : 13-FEB-2018 03:48
Cal : 1018062954001 Caldate : 12-FEB-2018
Standards: S35984, S35939

Analyte	Ch	Quant	IQL	Units	Flags
Lead	A	[0.1025]	0.5000	ug/L	
Copper	E	0.6063	0.5000	ug/L	

Interferent	Ch	Spiked	Quant	Units	%Rec	Flags
Aluminum	A	100000	69860	ug/L	70	
Calcium	A	300000	235800	ug/L	79	
Magnesium	A	100000	68630	ug/L	69	
Molybdenum	A	2000	2055	ug/L	103	
Potassium	A	100000	76710	ug/L	77	
Sodium	E	250000	171500	ug/L	69	
Phosphorus	E	100000	75730	ug/L	76	
Iron	H	250000	222000	ug/L	89	

ISTD (ICALBLK 18b12r00009)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	54773	24446	-55.37
Germanium	H	12557	8452	-32.69
Germanium	A	38413	28900	-24.77
Germanium	E	10168	7190	-29.29
Indium	A	377350	247811	-34.33
Bismuth	A	416919	225569	-45.90
Yttrium	E	96013	65462	-31.82
Yttrium	H	161998	112089	-30.81
Yttrium	A	342628	240612	-29.77

ENTHALPY INTERFERENCE CHECK STANDARD AB FOR 297025 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018062954131.2 File : 18b12r00131 Time : 13-FEB-2018 03:53
Cal : 1018062954001 Caldate : 12-FEB-2018
Standards: S35985, S35939

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Copper	E	200.0	181.3	ug/L	-9	20	

ISTD (ICALBLK 18b12r00009)	Ch	ICALBLK Abund	Abund	%Drift
Germanium	H	12557	8480	-32.47
Germanium	A	38413	28278	-26.38
Germanium	E	10168	7169	-29.49
Indium	A	377350	249717	-33.82
Yttrium	E	96013	65826	-31.44
Yttrium	H	161998	114681	-29.21
Yttrium	A	342628	242649	-29.18

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 1018063987

Instrument : MET26 Begun : 02/13/18 10:27
Method : EPA 6020A SOP Version : icpms metals_rv10

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	18b13k00001	X	RINSE			02/13/18 10:27	1.0	1	
002	18b13k00002	TUN				02/13/18 10:32	1.0	2	
003	18b13k00003	X	RINSE			02/13/18 10:37	1.0	1	
004	18b13k00004	X	RINSE			02/13/18 10:42	1.0	1	
005	18b13k00005	ICALBLK	CALBLANK			02/13/18 10:46	1.0	1	
006	18b13k00006	ICAL				02/13/18 10:51	1.0	3 1	
007	18b13k00007	ICAL				02/13/18 10:56	1.0	3 1	
008	18b13k00008	ICAL				02/13/18 11:01	1.0	3 1	
009	18b13k00009	ICAL				02/13/18 11:06	1.0	3 1	
010	18b13k00010	ICAL				02/13/18 11:11	1.0	3 1	
011	18b13k00011	ICAL				02/13/18 11:15	1.0	3 1	
012	18b13k00012	ICAL				02/13/18 11:20	1.0	3 1	
013	18b13k00013	X	RINSE			02/13/18 11:25	1.0	1	
014	18b13k00014	ICV				02/13/18 11:30	1.0	4 1	
015	18b13k00015	CRI				02/13/18 11:35	1.0	5 1	
016	18b13k00016	ICB				02/13/18 11:40	1.0	1	
017	18b13k00017	ICSA				02/13/18 11:45	1.0	6 1	8:CA=300000
018	18b13k00018	ICSAB				02/13/18 11:50	1.0	7 1	10:CA=300000
019	18b13k00019	X	RINSE			02/13/18 11:55	1.0	1	
020	18b13k00020	X	RINSE			02/13/18 12:00	1.0	1	
021	18b13k00021	X	RINSE			02/13/18 12:05	1.0	1	
022	18b13k00022	X	RINSE			02/13/18 12:10	1.0	1	
023	18b13k00023	BLANK	QC918341	Soil	256072	02/13/18 12:15	25.0	1	
024	18b13k00024	SAMPLE	296654-004	Soil	256072	02/13/18 12:20	25.0	1	2:MN=260
025	18b13k00025	X	RINSE			02/13/18 12:25	1.0	1	
026	18b13k00026	MSS	296942-001	Soil	256366	02/13/18 12:30	25.0	1	2:FE=29000
027	18b13k00027	SAMPLE	296942-002	Soil	256366	02/13/18 12:35	25.0	1	2:FE=31000
028	18b13k00028	SAMPLE	296942-004	Soil	256366	02/13/18 12:40	25.0	1	1:MN=390
029	18b13k00029	SAMPLE	296942-005	Soil	256366	02/13/18 12:44	25.0	1	2:CA=22000
030	18b13k00030	CCV				02/13/18 12:49	1.0	4 1	
031	18b13k00031	X	XCCB			02/13/18 12:54	1.0	1	
032	18b13k00032	CCB				02/13/18 12:59	1.0	1	
033	18b13k00033	ICSA				02/13/18 13:04	1.0	6 1	8:CA=310000
034	18b13k00034	ICSAB				02/13/18 13:09	1.0	7 1	11:CA=300000
035	18b13k00035	X	RINSE			02/13/18 13:15	1.0	1	
036	18b13k00036	X	RINSE			02/13/18 13:19	1.0	1	
037	18b13k00037	X	RINSE			02/13/18 13:24	1.0	1	
038	18b13k00038	X	RINSE			02/13/18 13:29	1.0	1	
039	18b13k00039	BLANK	QC919604	Filtrate	256374	02/13/18 13:34	1.0	1	
040	18b13k00040	BLANK	QC919603	Filtrate	256374	02/13/18 13:39	1.0	1	
041	18b13k00041	BLANK	QC919605	Filtrate	256374	02/13/18 13:44	1.0	1	
042	18b13k00042	BS	QC919606	Filtrate	256374	02/13/18 13:49	1.0	1	
043	18b13k00043	BSD	QC919607	Filtrate	256374	02/13/18 13:54	1.0	1	
044	18b13k00044	SAMPLE	296174-003	Filtrate	256374	02/13/18 13:58	1.0	1	3:NA=520000
045	18b13k00045	X	RINSE			02/13/18 14:04	1.0	1	
046	18b13k00046	MSS	296647-002	Filtrate	256374	02/13/18 14:08	1.0	1	4:NA=450000
047	18b13k00047	MS	QC919608	Filtrate	256374	02/13/18 14:13	1.0	1	4:NA=490000
048	18b13k00048	MSD	QC919609	Filtrate	256374	02/13/18 14:18	1.0	1	4:NA=460000
049	18b13k00049	SER	QC919610	Filtrate	256374	02/13/18 14:23	5.0	1	3:NA=86000
050	18b13k00050	CCV				02/13/18 14:28	1.0	4 1	
051	18b13k00051	X	XCCB			02/13/18 14:33	1.0	1	
052	18b13k00052	CCB				02/13/18 14:38	1.0	1	

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 1018063987

Instrument : MET26 Begun : 02/13/18 10:27
Method : EPA 6020A SOP Version : icpms metals_rv10

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
053	18b13k00053	PDS	QC919611	Filtrate	256374	02/13/18 14:43	1.0	8 9 10 1	4:NA=430000
054	18b13k00054	X	RINSE			02/13/18 14:48	1.0	1	
055	18b13k00055	BLANK	QC919596	Filtrate	256373	02/13/18 14:53	1.0	1	
056	18b13k00056	BS	QC919597	Filtrate	256373	02/13/18 14:58	1.0	1	
057	18b13k00057	BSD	QC919598	Filtrate	256373	02/13/18 15:03	1.0	1	
058	18b13k00058	SAMPLE	295771-001	Filtrate	256373	02/13/18 15:08	1.0	1	3:MG=120000
059	18b13k00059	SAMPLE	295771-002	Filtrate	256373	02/13/18 15:13	1.0	1	3:MG=120000
060	18b13k00060	SAMPLE	295771-003	Filtrate	256373	02/13/18 15:18	1.0	1	
061	18b13k00061	SAMPLE	295771-004	Filtrate	256373	02/13/18 15:22	1.0	1	
062	18b13k00062	CCV				02/13/18 15:27	1.0	4 1	
063	18b13k00063	X	XCCB			02/13/18 15:32	1.0	1	
064	18b13k00064	CCB				02/13/18 15:37	1.0	1	
065	18b13k00065	ICSA				02/13/18 15:42	1.0	6 1	8:CA=300000
066	18b13k00066	ICSAB				02/13/18 15:47	1.0	7 1	8:CA=290000
067	18b13k00067	X	RINSE			02/13/18 15:52	1.0	1	
068	18b13k00068	X	RINSE			02/13/18 15:57	1.0	1	
069	18b13k00069	X	RINSE			02/13/18 16:02	1.0	1	
070	18b13k00070	X	RINSE			02/13/18 16:09	1.0	1	
071	18b13k00071	BLANK	QC919563	Soil	256366	02/13/18 16:14	25.0	1	
072	18b13k00072	SAMPLE	297013-004	Soil	256366	02/13/18 16:18	250.0	1	
073	18b13k00073	SAMPLE	297025-004	Soil	256366	02/13/18 16:23	100.0	1	
074	18b13k00074	SAMPLE	296825-002	Soil	256220	02/13/18 16:28	100.0	1	
075	18b13k00075	MS	QC919566	Soil	256366	02/13/18 16:35	25.0	1	2:FE=30000
076	18b13k00076	MSD	QC919567	Soil	256366	02/13/18 16:39	25.0	1	2:FE=28000
077	18b13k00077	SER	QC919921	Soil	256366	02/13/18 16:44	125.0	1	
078	18b13k00078	PDS	QC919922	Soil	256366	02/13/18 16:49	25.0	1 8 9 10	3:FE=29000
079	18b13k00079	SAMPLE	297013-001	Soil	256366	02/13/18 16:54	25.0	1	3:FE=25000
080	18b13k00080	SAMPLE	297013-002	Soil	256366	02/13/18 16:59	25.0	1	3:AL=27000
081	18b13k00081	CCV				02/13/18 17:04	1.0	4 1	
082	18b13k00082	X	XCCB			02/13/18 17:09	1.0	1	
083	18b13k00083	CCB				02/13/18 17:14	1.0	1	
084	18b13k00084	SAMPLE	297013-003	Soil	256366	02/13/18 17:19	25.0	1	3:AL=24000
085	18b13k00085	SAMPLE	297013-005	Soil	256366	02/13/18 17:24	25.0	1	3:AL=28000
086	18b13k00086	SAMPLE	296825-001	Soil	256220	02/13/18 17:29	25.0	1	1:MN=350
087	18b13k00087	SAMPLE	296825-003	Soil	256220	02/13/18 17:34	25.0	1	
088	18b13k00088	SAMPLE	296825-004	Soil	256220	02/13/18 17:39	25.0	1	1:MN=290
089	18b13k00089	SAMPLE	296825-005	Soil	256220	02/13/18 17:44	25.0	1	1:MN=390
090	18b13k00090	SAMPLE	297013-004	Soil	256366	02/13/18 17:49	25.0	1	4:FE=21000
091	18b13k00091	SAMPLE	296825-002	Soil	256220	02/13/18 17:54	25.0	1	2:ZN=220
092	18b13k00092	PDS	QC919301	Soil	256296	02/13/18 17:58	25.0	1 8 9 10	4:CA=90000
093	18b13k00093	X	RINSE			02/13/18 18:04	1.0	1	
094	18b13k00094	MSS	296501-001	Filtrate	256193	02/13/18 18:08	1.0	1	
095	18b13k00095	CCV				02/13/18 18:13	1.0	4 1	
096	18b13k00096	X	XCCB			02/13/18 18:18	1.0	1	
097	18b13k00097	CCB				02/13/18 18:23	1.0	1	
098	18b13k00098	MS	QC918878	Filtrate	256193	02/13/18 18:28	1.0	1	1:CA=28000
099	18b13k00099	MSD	QC918879	Filtrate	256193	02/13/18 18:33	1.0	1	1:CA=27000
100	18b13k00100	SAMPLE	296501-002	Filtrate	256193	02/13/18 18:38	1.0	1	
101	18b13k00101	X	RINSE			02/13/18 18:43	1.0	1	
102	18b13k00102	BLANK	QC919596	Filtrate	256373	02/13/18 18:48	1.0	1	
103	18b13k00103	BS	QC919597	Filtrate	256373	02/13/18 18:53	1.0	1	
104	18b13k00104	BSD	QC919598	Filtrate	256373	02/13/18 18:58	1.0	1	

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 1018063987

Instrument : MET26 Begun : 02/13/18 10:27
Method : EPA 6020A SOP Version : icpms metals_rv10

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
105	18b13k00105	SAMPLE	295771-001	Filtrate	256373	02/13/18 19:02	1.0	1	3:MG=120000
106	18b13k00106	SAMPLE	295771-002	Filtrate	256373	02/13/18 19:07	1.0	1	3:MG=120000
107	18b13k00107	SAMPLE	295771-003	Filtrate	256373	02/13/18 19:12	1.0	1	
108	18b13k00108	SAMPLE	295771-004	Filtrate	256373	02/13/18 19:17	1.0	1	
109	18b13k00109	CCV				02/13/18 19:22	1.0	4 1	
110	18b13k00110	X	XCCB			02/13/18 19:27	1.0	1	
111	18b13k00111	CCB				02/13/18 19:32	1.0	1	
112	18b13k00112	X	RINSE			02/13/18 19:37	1.0	1	
113	18b13k00113	MSS	296739-001	Filtrate	256373	02/13/18 19:42	1.0	1	4:NA=520000
114	18b13k00114	MS	QC919599	Filtrate	256373	02/13/18 19:47	1.0	1	4:NA=510000
115	18b13k00115	MSD	QC919600	Filtrate	256373	02/13/18 19:52	1.0	1	4:NA=490000
116	18b13k00116	SER	QC919601	Filtrate	256373	02/13/18 19:57	5.0	1	3:NA=91000
117	18b13k00117	PDS	QC919602	Filtrate	256373	02/13/18 20:02	1.0	8 9 10 1	4:NA=490000
118	18b13k00118	CCV				02/13/18 20:07	1.0	4 1	
119	18b13k00119	X	XCCB			02/13/18 20:12	1.0	1	
120	18b13k00120	CCB				02/13/18 20:17	1.0	1	
121	18b13k00121	ICSA				02/13/18 20:22	1.0	6 1	8:CA=260000
122	18b13k00122	ICSAB				02/13/18 20:27	1.0	7 1	8:CA=260000
123	18b13k00123	X	RINSE			02/13/18 20:32	1.0	1	
124	18b13k00124	X	RINSE			02/13/18 20:37	1.0	1	
125	18b13k00125	X	RINSE			02/13/18 20:42	1.0	1	
126	18b13k00126	X	RINSE			02/13/18 20:47	1.0	1	

NBB 02/13/18 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 001 through 034.

NBB 02/13/18 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 035 through 066.

NBB 02/14/18 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 067 through 122.

Standards used: 1=S35939 2=S35938 3=S35940 4=S35983 5=S35885 6=S35984 7=S35985 8=S34361 9=S34362 10=S34743

CURTIS & TOMPKINS INTERNAL STANDARD SUMMARY FOR SEQUENCE 1018063987

Date : 02/13/18 Reference : 18b13k00005
Sequence : MET26 18b13k00 Analyzed : 02/13/18 10:46

#	Type	Sample ID	LI A	GE H	GE A	GE E	IN A	BI A	Y E	Y H	Y A
		IB+ICALBLK STD	729652	39206	125097	46788	994323	1156720	375524	613557	961514
		LOWER LIMIT	218896	11762	37529	14036	298297	347016	112657	184067	288454
		UPPER LIMIT	875582	47047	150116	56146	1193188	1388064	450629	736268	1153817
016	ICB		700412	37897	118713	49357	948281	1169616	396904	593575	912886
017	ICSA		615793	38620	99142	41524	822811	850544	336290	640478	790307
018	ICSAB		533743	28881	89007	34710	750574	796403	282898	466446	716384
023	BLANK	QC918341	553964	30326	103182	36312	835880	1089570	294210	485610	803869
026	MSS	296942-001	690256	36732	118774	43285	958031	1173239	375373	628717	985035
027	SAMPLE	296942-002	725015	39662	124001	45212	987477	1199867	393815	675252	1030419
028	SAMPLE	296942-004	724524	40318	122053	46182	985291	1204033	391895	674875	1007032
029	SAMPLE	296942-005	719457	39763	121452	45490	975723	1191204	386108	663043	991239
030	CCV		731331	40640	122124	45719	970733	1193969	373343	651421	961435
032	CCB		693299	36565	113935	43927	883770	1105284	347355	566232	859897
033	ICSA		628908	37488	98787	40997	800520	820233	336032	620863	780695
034	ICSAB		588445	32534	95891	35088	786736	810813	286227	542934	763433
039	BLANK	QC919604	566845	32143	104794	37994	798394	1030013	303000	500686	784475
040	BLANK	QC919603	586957	34128	105399	39213	812096	1019973	316770	543350	803497
041	BLANK	QC919605	537534	34972	95949	39467	685501	902774	311274	545053	669079
042	BS	QC919606	657479	36637	108466	40589	839050	1005568	337686	597692	852867
043	BSD	QC919607	674452	35657	110694	40929	857958	1018798	344002	577611	876207
046	MSS	296647-002	680976	35596	97566	37992	774872	756475	339482	614962	832624
047	MS	QC919608	720184	35714	101707	36113	813917	774708	315139	618786	885380
048	MSD	QC919609	739517	37692	102040	39793	813459	763845	362475	660577	883519
049	SER	QC919610	762084	40914	117850	43430	895409	947399	362246	656875	927876
050	CCV		712313	40143	114352	42738	874047	1009771	349734	626232	889399
052	CCB		672771	38059	111565	40599	833141	1000651	322059	577325	832519
053	PDS	QC919611	699826	37791	103596	40033	816669	766407	359366	657953	893118
055	BLANK	QC919596	662371	37966	109554	40455	829907	969381	325257	580972	836965
056	BS	QC919597	690545	39044	115380	44498	878615	988135	376123	622169	904659
057	BSD	QC919598	777993	45082	128990	48230	996871	1096655	409116	738607 *	1026980
058	SAMPLE	295771-001	697986	38935	109154	41621	862614	906889	364551	649965	915074
059	SAMPLE	295771-002	672727	38870	107359	40042	845219	897309	351220	658033	897447
060	SAMPLE	295771-003	679225	37196	109739	40456	839845	991208	330805	580738	840932
061	SAMPLE	295771-004	692562	37299	110970	40485	851875	1001412	327165	582572	855790
062	CCV		843718	50389 *	135839	51690	1043224	1175544	430578	827046 *	1069763
064	CCB		704077	40303	115114	41887	862653	1027219	332328	609960	862802
065	ICSA		613334	38965	103143	39896	798828	772209	323679	628792	816991
066	ICSAB		550801	35710	96534	36798	755789	736714	304472	582875	767225
071	BLANK	QC919563	584827	35774	104963	38541	805726	975852	311733	557261	804896
072	SAMPLE	297013-004	686230	40661	120065	44112	890071	1033975	350730	623008	911118
073	SAMPLE	297025-004	707477	43709	123851	47113	915727	1038221	377463	656154	927009
074	SAMPLE	296825-002	718877	44191	126914	45585	934115	1057608	367382	676176	952093
075	MS	QC919566	806290	50956 *	135952	51924	1007929	1112595	450280	829415 *	1103563
076	MSD	QC919567	717374	43153	120310	44742	886973	1001272	377090	691275	959356
077	SER	QC919921	725408	43606	124427	45585	916715	1036570	365074	662944	937803
078	PDS	QC919922	770041	48042 *	129461	45585	956111	1049085	384413	788787 *	1043895
079	SAMPLE	297013-001	729577	45272	125090	46836	924565	1033886	410969	754993 *	1032526
080	SAMPLE	297013-002	748588	47457 *	129569	48911	951554	1044547	429998	796955 *	1085791
081	CCV		749504	46901	131694	48823	950433	1044613	386236	707226	978771
083	CCB		708328	44302	121637	47472	870848	981120	369424	648043	881756
084	SAMPLE	297013-003	811599	47841 *	138060	50751	1008544	1080792	438472	793464 *	1135615

CURTIS & TOMPKINS INTERNAL STANDARD SUMMARY FOR SEQUENCE 1018063987

Date : 02/13/18 Reference : 18b13k00005
Sequence : MET26 18b13k00 Analyzed : 02/13/18 10:46

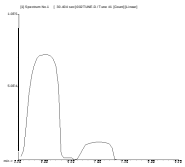
#	Type	Sample ID	LI A	GE H	GE A	GE E	IN A	BI A	Y E	Y H	Y A
085	SAMPLE	297013-005	781346	49507 *	132488	50558	969518	1045361	445434	827551 *	1104126
086	SAMPLE	296825-001	787947	47881 *	135207	50027	983396	1072668	431610	789706 *	1104834
087	SAMPLE	296825-003	877298 *	54376 *	148757	58050 *	1077057	1187769	498551 *	881395 *	1206163 *
088	SAMPLE	296825-004	790506	49072 *	135352	55401	968281	1058568	455333 *	758264 *	1025346
089	SAMPLE	296825-005	765744	50654 *	128249	52494	908281	995553	452950 *	823346 *	1017114
090	SAMPLE	297013-004	804138	50680 *	135268	52493	985840	1057980	446081	824266 *	1095182
091	SAMPLE	296825-002	894059 *	56238 *	150782 *	58350 *	1091518	1191721	492308 *	908450 *	1190125 *
092	PDS	QC919301	815158	53645 *	135596	52178	983304	1025717	460031 *	906444 *	1135978
095	CCV		805733	51526 *	134553	55572	944774	1018687	446979	780848 *	982474
097	CCB		884658 *	55370 *	148139	57621 *	1068171	1168701	449809	824150 *	1084088
098	MS	QC918878	910976 *	58354 *	149924	60752 *	1071875	1123026	491470 *	906157 *	1130774
099	MSD	QC918879	867975	53862 *	144421	56898 *	1040226	1092684	454285 *	824075 *	1096736
102	BLANK	QC919596	845386	51735 *	140907	55879	1021059	1124600	443680	786024 *	1042559
103	BS	QC919597	850196	52713 *	142373	55832	1037202	1092149	451517 *	819043 *	1080352
104	BSD	QC919598	852453	54805 *	142577	57305 *	1040378	1101508	466748 *	854611 *	1083310
105	SAMPLE	295771-001	814362	52623 *	134249	54679	999887	1018474	467188 *	854600 *	1077806
106	SAMPLE	295771-002	749718	49437 *	125803	50469	943533	973094	427277	795952 *	1009686
107	SAMPLE	295771-003	771395	45944	126776	48885	939918	1039954	392155	703269	952010
108	SAMPLE	295771-004	775393	47321 *	128407	50554	947854	1032517	404233	726644	953225
109	CCV		835016	52046 *	139318	54740	1002124	1086127	443912	795920 *	1051665
111	CCB		801462	49671 *	132711	52610	958928	1049114	411384	740857 *	964504
113	MSS	296739-001	705347	47261 *	114426	47262	860531	789218	409808	780091 *	936950
114	MS	QC919599	664916	46027	112592	45542	824447	743604	395173	765197 *	918745
115	MSD	QC919600	648412	45850	111936	44930	820573	738584	381276	745609 *	916341
116	SER	QC919601	658138	46349	120361	48110	863832	873355	396616	706137	915313
117	PDS	QC919602	626067	43787	112046	43531	811787	724237	372550	704551	912364
118	CCV		654587	48292 *	127222	48539	909585	967602	390025	730151	952468
120	CCB		617594	45204	119532	46305	851874	933694	361298	663078	872866
121	ICSA		539216	46458	117100	45901	828566	765061	358600	698152	875043
122	ICSAB		503815	44710	114239	44005	824355	766211	347467	692637	863985

MET26 QC Tune Report

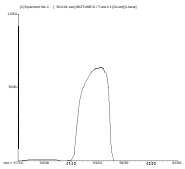
Data File: C:\ICPCHEM\1\DATA\18B13k00.B\002TUNE.D
Date Acquired: Feb 13 2018 10:32 am
Acq. Method: TN6020K.M
Operator:
Sample Name: tun,s35938
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\TN6020K.M

RSD (%)

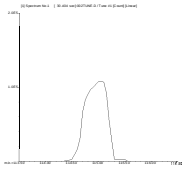
Element	Rep1	Rep2	Rep3	Rep4	Rep5	Actual	Required	Flag
7 Li	67544	68505	68763	68705	69062	0.64	5.00	
59 Co	35411	35824	35489	35713	35724	0.85	5.00	
115 In	549010	555745	555740	554611	557622	0.48	5.00	
205 Tl	47527	47322	47281	47663	47575	0.91	5.00	



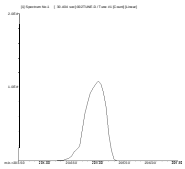
7 Li
Mass Calib.
Actual: 7.00
Required: 6.90 - 7.10
Flag:
Peak Width @ 5%
Actual: 0.65
Required: 0.75
Flag:



59 Co
Mass Calib.
Actual: 59.00
Required: 58.90 - 59.10
Flag:
Peak Width @ 5%
Actual: 0.65
Required: 0.75
Flag:



115 In
Mass Calib.
Actual: 115.00
Required: 114.90 - 115.10
Flag:
Peak Width @ 5%
Actual: 0.65
Required: 0.75
Flag:



205 Tl
Mass Calib.
Actual: 205.00
Required: 204.90 - 205.10
Flag:
Peak Width @ 5%
Actual: 0.70
Required: 0.75
Flag:

ENTHALPY INITIAL CALIBRATION FOR 297025 METALS Soil: EPA 6020A

Inst : MET26
Calnum : 1018063987001
Units : ug/L

Date : 13-FEB-2018 10:46
X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	18b13k00006	1018063987006		13-FEB-2018 10:51	S35940 (400X), S35939
L2	18b13k00007	1018063987007		13-FEB-2018 10:56	S35940 (200X), S35939
L3	18b13k00008	1018063987008		13-FEB-2018 11:01	S35940 (40X), S35939
L4	18b13k00009	1018063987009		13-FEB-2018 11:06	S35940 (20X), S35939
L5	18b13k00010	1018063987010		13-FEB-2018 11:11	S35940 (4X), S35939
L6	18b13k00011	1018063987011		13-FEB-2018 11:15	S35940 (2X), S35939
L7	18b13k00012	1018063987012		13-FEB-2018 11:20	S35940, S35939

Analyte	Ch	L1	L2	L3	L4	L5	L6	L7	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	Flg
Lead	A	0.0128	0.0119	0.0114	0.0112	0.0115	0.0113	0.0115	BLNK	-0.0748	87.1101		0.0117	1.000	0.995	
Copper	E	0.0118	0.0123	0.0060	0.0058	0.0050	0.0050	0.0049	BLNK	-0.5977	203.416		0.0072	1.000	0.995	

Spiked Amounts / Drifts	Ch	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D	L6	%D	L7	%D
Lead	A	0.5000	-4	1.0000	-4	5.0000	-2	10.000	-3	50.000	0	100.00	-1	200.00	0
Copper	E	0.5000	20	1.0000	**91**	5.0000	10	10.000	11	50.000	0	100.00	1	200.00	0

Instrument amount = a0 + response * a1 + response^2 * a2; BLNK=Y=aX+[blank]

ENTHALPY 2ND SOURCE CALIBRATION SUMMARY FOR 297025 METALS Soil
EPA 6020A

Inst : MET26
Calnum : 1018063987001 Cal Date : 13-FEB-2018

ICV 1018063987014 (18b13k00014 13-FEB-2018) stds: S35983, S35939

Analyte	Ch	Spiked	Quant	Units	%D	Max	Flags
Lead	A	50.00	50.89	ug/L	2	10	
Copper	E	50.00	49.99	ug/L	0	10	

ENTHALPY LOW-LEVEL PERFORMANCE VERIFICATION STANDARD FOR 297025 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018063987015.2 File : 18b13k00015 Time : 13-FEB-2018 11:35
Cal : 1018063987001 Caldate : 13-FEB-2018
Standards: S35885, S35939

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Lead	A	1.000	0.9655	ug/L	-3	30	
Copper	E	1.000	1.027	ug/L	3	30	

ISTD (ICALBLK 18b13k00005)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	729652	720129	-1.31
Germanium	H	39206	38190	-2.59
Germanium	A	125097	120573	-3.62
Germanium	E	46788	44757	-4.34
Indium	A	994323	969503	-2.50
Bismuth	A	1156720	1190388	2.91
Yttrium	E	375524	354867	-5.50
Yttrium	H	613557	600527	-2.12
Yttrium	A	961514	928512	-3.43

ENTHALPY INSTRUMENT BLANK FOR 297025 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018063987016.3 File : 18b13k00016 Time : 13-FEB-2018 11:40
Cal : 1018063987001 Caldate : 13-FEB-2018

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Lead	A	ND	0.5000	0.1000	ug/L	
Copper	E	ND	0.5000	0.4000	ug/L	

ISTD (ICALBLK 18b13k00005)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	729652	700412	-4.01
Germanium	H	39206	37897	-3.34
Germanium	A	125097	118713	-5.10
Germanium	E	46788	49357	5.49
Indium	A	994323	948281	-4.63
Bismuth	A	1156720	1169616	1.11
Yttrium	E	375524	396904	5.69
Yttrium	H	613557	593575	-3.26
Yttrium	A	961514	912886	-5.06

ENTHALPY CONTINUING CALIBRATION FOR 297025 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018063987062.2 File : 18b13k00062 Time : 13-FEB-2018 15:27
Cal : 1018063987001 Caldate : 13-FEB-2018
Standards: S35983, S35939

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Lead	A	0.0117	0.0113	50.00	48.97	ug/L	-2	10	
Copper	E	0.0072	0.0048	50.00	48.16	ug/L	-4	10	

ISTD (ICALBLK 18b13k00005)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	729652	843718	15.63
Germanium	H	39206	50389	**28.52 ***
Germanium	A	125097	135839	8.59
Germanium	E	46788	51690	10.48
Indium	A	994323	1043224	4.92
Bismuth	A	1156720	1175544	1.63
Yttrium	E	375524	430578	14.66
Yttrium	H	613557	827046	**34.80 ***
Yttrium	A	961514	1069763	11.26

ENTHALPY INSTRUMENT BLANK FOR 297025 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018063987064.2 File : 18b13k00064 Time : 13-FEB-2018 15:37
Cal : 1018063987001 Caldate : 13-FEB-2018

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Lead	A	ND	0.5000	0.1000	ug/L	
Copper	E	ND	0.5000	0.4000	ug/L	

ISTD (ICALBLK 18b13k00005)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	729652	704077	-3.51
Germanium	H	39206	40303	2.80
Germanium	A	125097	115114	-7.98
Germanium	E	46788	41887	-10.47
Indium	A	994323	862653	-13.24
Bismuth	A	1156720	1027219	-11.20
Yttrium	E	375524	332328	-11.50
Yttrium	H	613557	609960	-0.59
Yttrium	A	961514	862802	-10.27

ENTHALPY INTERFERENCE CHECK STANDARD A FOR 297025 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018063987065.2 File : 18b13k00065 Time : 13-FEB-2018 15:42
Cal : 1018063987001 Caldate : 13-FEB-2018
Standards: S35984, S35939

Analyte	Ch	Quant	IQL	Units	Flags
Lead	A	[0.08660]	0.5000	ug/L	
Copper	E	[0.1490]	0.5000	ug/L	

Interferent	Ch	Spiked	Quant	Units	%Rec	Flags
Aluminum	A	100000	88560	ug/L	89	
Calcium	A	300000	297300	ug/L	99	
Magnesium	A	100000	88650	ug/L	89	
Molybdenum	A	2000	2083	ug/L	104	
Potassium	A	100000	95860	ug/L	96	
Sodium	E	250000	229800	ug/L	92	
Phosphorus	E	100000	88180	ug/L	88	
Iron	H	250000	244400	ug/L	98	

ISTD (ICALBLK 18b13k00005)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	729652	613334	-15.94
Germanium	H	39206	38965	-0.61
Germanium	A	125097	103143	-17.55
Germanium	E	46788	39896	-14.73
Indium	A	994323	798828	-19.66
Bismuth	A	1156720	772209	-33.24
Yttrium	E	375524	323679	-13.81
Yttrium	H	613557	628792	2.48
Yttrium	A	961514	816991	-15.03

ENTHALPY INTERFERENCE CHECK STANDARD AB FOR 297025 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018063987066.2 File : 18b13k00066 Time : 13-FEB-2018 15:47
Cal : 1018063987001 Caldate : 13-FEB-2018
Standards: S35985, S35939

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Copper	E	200.0	169.3	ug/L	-15	20	

ISTD (ICALBLK 18b13k00005)	Ch	ICALBLK Abund	Abund	%Drift
Germanium	H	39206	35710	-8.92
Germanium	A	125097	96534	-22.83
Germanium	E	46788	36798	-21.35
Indium	A	994323	755789	-23.99
Yttrium	E	375524	304472	-18.92
Yttrium	H	613557	582875	-5.00
Yttrium	A	961514	767225	-20.21

ENTHALPY CONTINUING CALIBRATION FOR 297025 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018063987081.1 File : 18b13k00081 Time : 13-FEB-2018 17:04
Cal : 1018063987001 Caldate : 13-FEB-2018
Standards: S35983, S35939

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Lead	A	0.0117	0.0108	50.00	46.87	ug/L	-6	10	
Copper	E	0.0072	0.0049	50.00	49.74	ug/L	-1	10	

ISTD (ICALBLK 18b13k00005)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	729652	749504	2.72
Germanium	H	39206	46901	19.63
Germanium	A	125097	131694	5.27
Germanium	E	46788	48823	4.35
Indium	A	994323	950433	-4.41
Bismuth	A	1156720	1044613	-9.69
Yttrium	E	375524	386236	2.85
Yttrium	H	613557	707226	15.27
Yttrium	A	961514	978771	1.79

ENTHALPY INSTRUMENT BLANK FOR 297025 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018063987083.1 File : 18b13k00083 Time : 13-FEB-2018 17:14
Cal : 1018063987001 Caldate : 13-FEB-2018

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Lead	A	ND	0.5000	0.1000	ug/L	
Copper	E	ND	0.5000	0.4000	ug/L	

ISTD (ICALBLK 18b13k00005)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	729652	708328	-2.92
Germanium	H	39206	44302	13.00
Germanium	A	125097	121637	-2.77
Germanium	E	46788	47472	1.46
Indium	A	994323	870848	-12.42
Bismuth	A	1156720	981120	-15.18
Yttrium	E	375524	369424	-1.62
Yttrium	H	613557	648043	5.62
Yttrium	A	961514	881756	-8.30

ENTHALPY INTERFERENCE CHECK STANDARD A FOR 297025 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018063987121.1 File : 18b13k00121 Time : 13-FEB-2018 20:22
Cal : 1018063987001 Caldate : 13-FEB-2018
Standards: S35984, S35939

Analyte	Ch	Quant	IQL	Units	Flags
Lead	A	[0.08270]	0.5000	ug/L	
Copper	E	[0.1217]	0.5000	ug/L	

Interferent	Ch	Spiked	Quant	Units	%Rec	Flags
Aluminum	A	100000	74270	ug/L	74	
Calcium	A	300000	257500	ug/L	86	
Magnesium	A	100000	74180	ug/L	74	
Molybdenum	A	2000	2044	ug/L	102	
Potassium	A	100000	83990	ug/L	84	
Sodium	E	250000	182500	ug/L	73	
Phosphorus	E	100000	78770	ug/L	79	
Iron	H	250000	214700	ug/L	86	

ISTD (ICALBLK 18b13k00005)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	729652	539216	-26.10
Germanium	H	39206	46458	18.50
Germanium	A	125097	117100	-6.39
Germanium	E	46788	45901	-1.90
Indium	A	994323	828566	-16.67
Bismuth	A	1156720	765061	-33.86
Yttrium	E	375524	358600	-4.51
Yttrium	H	613557	698152	13.79
Yttrium	A	961514	875043	-8.99

ENTHALPY INTERFERENCE CHECK STANDARD AB FOR 297025 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018063987122.1 File : 18b13k00122 Time : 13-FEB-2018 20:27
Cal : 1018063987001 Caldate : 13-FEB-2018
Standards: S35985, S35939

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Copper	E	200.0	171.0	ug/L	-14	20	

ISTD (ICALBLK 18b13k00005)	Ch	ICALBLK Abund	Abund	%Drift
Germanium	H	39206	44710	14.04
Germanium	A	125097	114239	-8.68
Germanium	E	46788	44005	-5.95
Indium	A	994323	824355	-17.09
Yttrium	E	375524	347467	-7.47
Yttrium	H	613557	692637	12.89
Yttrium	A	961514	863985	-10.14

SAMPLE PREPARATION SUMMARY

Batch # : 256366
Started By : DES
Method : 3050B
Spike #1 ID : S34206

Prep Date : 09-FEB-2018 15:20
Spike #2 ID : S34207

Analysis : ICPMS
Finished By : DES
Units : g
Spike #3 ID : S35949

Sample	Stype	Matrix	Initial	Final	Clean DF	Prep DF	pH	Sp 1 Vol	Sp 2 Vol	Sp 3 Vol	Clean Method	Analysis	Comments
296942-001		Soil	1.03	50	1	48.54						6020	
296942-002		Soil	1.09	50	1	45.87						6020	
296942-004		Soil	1.1	50	1	45.45						6020	
296942-005		Soil	1.01	50	1	49.50						6020	
297013-001		Soil	1.06	50	1	47.17						6020	added @ 18:40
297013-002		Soil	.97	.97	50	50.0						6020	added @ 18:40
297013-003		Soil	1	50	1	50.0						6020	added @ 18:40
297013-004		Soil	.96	50	1	52.08						6020	added @ 18:40
297013-005		Soil	1.05	50	1	47.62						6020	added @ 18:40
297025-001		Soil	1	50	1	50.0						6020	added @ 18:40
297025-002		Soil	.94	50	1	53.19						6020	added @ 18:40
297025-003		Soil	.93	50	1	53.76						6020	added @ 18:40
297025-004		Soil	1.05	50	1	47.62						6020	added @ 18:40
QC919563	BLANK	Soil	.96	50	1	52.08							
QC919564	BS	Soil	.97	50	1	51.55		.5	.5	.5			
QC919565	BSD	Soil	.91	50	1	54.95		.5	.5	.5			
QC919566	MS	Soil	1.07	50	1	46.73		.5	.5	.5			
QC919567	MSD	Soil	1.01	50	1	49.50		.5	.5	.5			
QC919921	SER	Soil	1.03	50	1	48.54							
QC919922	PDS	Soil	1.03	50	1	48.54							

Analyst: NBB Date: 02/13/18 Reviewer: PRW Date: 02/13/18

Soil Digestion for ICP & ICP-MS Enthalpy Analytical LLC - Berkeley Version 11.2, July.2017

LIMS Batch #: 256366 Digestion Method: ☑ EPA 3050b ☐ _____ Time ON: 15:20 Time OFF: 17:55 BK ~~XXXX~~ 4231 Page 4

Date Digested: 2-9-18

Digested by: Danielle

Sample #	Container ID	Weight of Sample (g)	Final Volume (mL)	Filtered? (y/n)	ID ✓	Comments
BLK	QC	0.96	☑50 ☐	Y	✓	QC919563
BS	↓	0.97	☑50 ☐	↓	✓	4
BSD	↓	0.91	☑50 ☐	↓	✓	5
296942-001 MS		1.07	☑50 ☐	↓	✓	6
-001 MSD		1.01	☑50 ☐	↓	✓	7
-001	B	1.03	☑50 ☐	↓	✓	
-004	↓	1.10	☑50 ☐	↓	✓	
-005	↓	1.01	☑50 ☐	↓	✓	
-002	↓	1.09	☑50 ☐	↓	✓	-002
297013-001	A	1.06	☑50 ☐	↓	✓	added @ 18:40
-002	A	0.97	☑50 ☐	↓	✓	↓
-003	A	1.00	☑50 ☐	↓	✓	↓
-004	A	0.96	☑50 ☐	↓	✓	↓
-005	A	1.05	☑50 ☐	↓	✓	↓
297025-001	A	1.00	☑50 ☐	↓	✓	alias 296840-014 added @ 18:40
-002	A	0.94	☑50 ☐	↓	✓	-015 ↓
-003	A	0.93	☑50 ☐	↓	✓	-016 ↓
-004	A	1.05	☑50 ☐	↓	✓	-017 ↓
			☐ 50 ☐			
			☐ 50 ☐			
			☐ 50 ☐			
			☐ 50 ☐			
			☐ 50 ☐			
			☐ 50 ☐			
			☐ 50 ☐			

Balance ID: B-10 calibration has been checked? ☑ Yes ☐ No

	Reagent ID or LIMS #		Initials / Date
SCP Digestion tubes / ESS Watch glass, lot#	28644-5420	1703076-7192-MK	DES 2/9/18
Blank 'matrix' lot#	Chemware 23101423		↓
0.5 mL of spike solution (Std1) was added to all spikes	S34206		↓
0.5 mL of spike solution (Std2) was added to all spikes	S34207	DES 2/9/18	↓
0.5 mL of spike solution (Std3) was added to all spikes	~~S358~~	S35949	↓
Digestion Block ID, Probe Location	Ranier	17	↓
Temperature (°C), Thermometer ID	95°C	6412089	↓
1:1 HNO3 Reagent ID	JTB190537	2/9/18 2/8/18	↓
concentrated HNO3 lot#	JTB190537		↓
3mL 30% hydrogen peroxide lot#	EMD5632171 2		↓
concentrated HCl lot#	JTB187518		↓
☑ filtered thru' Whatman 541, lot#	11401069		↓
Relinquished to ICP group	ICPMS		↓

Pipettes

Vol.(mL)	ID
0.5	R243550
5	2924335
2.5	↓
1.5	↓

Danielle Jason 2/9/18

Digestion Chemist / Date

Continued from page Ø

Continued on page _____

Reviewed Online/ See LIMS

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 1068067221

Instrument : MET44 Begun : 02/15/18 16:21
Method : EPA 7471B SOP Version : hg_water_rv19

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	met44	ICALBLK				02/15/18 16:21	1.0		
002	met44	ICAL	ICAL1			02/15/18 16:23	1.0	1	
003	met44	ICAL	ICAL2			02/15/18 16:24	1.0	1	
004	met44	ICAL	ICAL3			02/15/18 16:26	1.0	1	
005	met44	ICAL	ICAL4			02/15/18 16:27	1.0	1	
006	met44	ICAL	ICAL5			02/15/18 16:28	1.0	1	
007	met44	ICV				02/15/18 16:30	1.0	2	
008	met44	ICB				02/15/18 16:31	1.0		
009	met44	BLANK	QC920233	Soil	256534	02/15/18 16:33	1.0		
010	met44	BS	QC920234	Soil	256534	02/15/18 16:34	1.0		
011	met44	BSD	QC920235	Soil	256534	02/15/18 16:35	1.0		
012	met44	MSS	297025-001	Soil	256534	02/15/18 16:37	1.0		
013	met44	MS	QC920236	Soil	256534	02/15/18 16:38	1.0		
014	met44	MSD	QC920237	Soil	256534	02/15/18 16:39	1.0		
015	met44	SER	QC920238	Soil	256534	02/15/18 16:41	5.0		
016	met44	SAMPLE	297025-002	Soil	256534	02/15/18 16:42	1.0		1:HG=23
017	met44	SAMPLE	297025-003	Soil	256534	02/15/18 16:44	1.0		1:HG=19
018	met44	SAMPLE	297025-004	Soil	256534	02/15/18 16:46	1.0		1:HG=15
019	met44	CCV				02/15/18 16:47	1.0	3	
020	met44	CCB				02/15/18 16:49	1.0		
021	met44	SAMPLE	297124-001	Soil	256534	02/15/18 16:50	1.0		
022	met44	SAMPLE	297130-006	Soil	256534	02/15/18 16:52	1.0		
023	met44	SAMPLE	297139-001	Soil	256534	02/15/18 16:53	1.0		
024	met44	SAMPLE	297025-002	Soil	256534	02/15/18 16:54	100.0		
025	met44	SAMPLE	297025-003	Soil	256534	02/15/18 16:56	100.0		
026	met44	SAMPLE	297025-004	Soil	256534	02/15/18 16:57	100.0		
027	met44	CCV				02/15/18 16:59	1.0	3	
028	met44	CCB				02/15/18 17:00	1.0		
029	met44	SAMPLE	297025-002	Soil	256534	02/15/18 17:26	10.0		
030	met44	SAMPLE	297025-003	Soil	256534	02/15/18 17:28	10.0		
031	met44	SAMPLE	297025-004	Soil	256534	02/15/18 17:29	10.0		
032	met44	CCV				02/15/18 17:30	1.0	3	
033	met44	CCB				02/15/18 17:32	1.0		

SL 02/15/18 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 33.

Standards used: 1=S36038 2=S36040 3=S36043

ENTHALPY INITIAL CALIBRATION FOR 297025 METALS Soil: EPA 7471B

Inst : MET44
Calnum : 1068067221001
Units : ug/L

Date : 15-FEB-2018 16:21
X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	met44	1068067221002	ICAL1	15-FEB-2018 16:23	S36038 (500X)
L2	met44	1068067221003	ICAL2	15-FEB-2018 16:24	S36038 (200X)
L3	met44	1068067221004	ICAL3	15-FEB-2018 16:26	S36038 (50X)
L4	met44	1068067221005	ICAL4	15-FEB-2018 16:27	S36038 (20X)
L5	met44	1068067221006	ICAL5	15-FEB-2018 16:28	S36038 (10X)

Analyte	L1	L2	L3	L4	L5	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	Flg
Mercury	0.1030	0.1036	0.1044	0.1022	0.1002	LIN0	-0.0319	9.97332		0.1027	1.000	.99	

Spiked Amounts / Drifts	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D
Mercury	0.2000	-13	0.5000	-3	2.0000	3	5.0000	1	10.000	0

Instrument amount = a0 + response * a1 + response^2 * a2; LIN0=Linear regression including 0,0 point

ENTHALPY 2ND SOURCE CALIBRATION SUMMARY FOR 297025 METALS Soil
EPA 7471B

Inst : MET44
Calnum : 1068067221001 Cal Date : 15-FEB-2018

ICV 1068067221007 (15-FEB-2018) stds: S36040

Analyte	Spiked	Quant	Units	%D	Max	Flags
Mercury	5.000	5.134	ug/L	3	10	

ENTHALPY INSTRUMENT BLANK FOR 297025 METALS Soil
EPA 7471B

Inst : MET44 IDF : 1.0
Seqnum : 1068067221008.1 File : met44 Time : 15-FEB-2018 16:31
Cal : 1068067221001 Caldate : 15-FEB-2018

Analyte	Quant	IQL	LOD	Units	Flags
Mercury	ND	0.2000	0.1000	ug/L	

ENTHALPY CONTINUING CALIBRATION FOR 297025 METALS Soil
EPA 7471B

Inst : MET44 IDF : 1.0
Seqnum : 1068067221019.1 File : met44 Time : 15-FEB-2018 16:47
Cal : 1068067221001 Caldate : 15-FEB-2018
Standards: S36043

Analyte	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Mercury	0.1027	0.0937	5.000	4.641	ug/L	-7	10	

ENTHALPY INSTRUMENT BLANK FOR 297025 METALS Soil
EPA 7471B

Inst : MET44 IDF : 1.0
Seqnum : 1068067221020.1 File : met44 Time : 15-FEB-2018 16:49
Cal : 1068067221001 Caldate : 15-FEB-2018

Analyte	Quant	IQL	LOD	Units	Flags
Mercury	ND	0.2000	0.1000	ug/L	

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 1068067324

Instrument : MET44 Begun : 02/15/18 18:04
Method : EPA 7471B SOP Version : hg_water_rv19

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	met44	ICALBLK				02/15/18 18:04	1.0		
002	met44	ICAL	ICAL1			02/15/18 18:05	1.0	1	
003	met44	ICAL	ICAL2			02/15/18 18:06	1.0	1	
004	met44	ICAL	ICAL3			02/15/18 18:08	1.0	1	
005	met44	ICAL	ICAL4			02/15/18 18:09	1.0	1	
006	met44	ICAL	ICAL5			02/15/18 18:10	1.0	1	
007	met44	ICV				02/15/18 18:12	1.0	2	
008	met44	ICB				02/15/18 18:13	1.0		
009	met44	SAMPLE	297025-002	Soil	256534	02/15/18 18:15	10.0		
010	met44	SAMPLE	297025-003	Soil	256534	02/15/18 18:16	10.0		
011	met44	SAMPLE	297025-004	Soil	256534	02/15/18 18:17	10.0		
012	met44	CCV				02/15/18 18:19	1.0	3	
013	met44	CCB				02/15/18 18:20	1.0		

SL 02/15/18 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 13.

Standards used: 1=S36038 2=S36040 3=S36043

ENTHALPY INITIAL CALIBRATION FOR 297025 METALS Soil: EPA 7471B

Inst : MET44
Calnum : 1068067324001
Units : ug/L

Date : 15-FEB-2018 18:04
X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	met44	1068067324002	ICAL1	15-FEB-2018 18:05	S36038 (500X)
L2	met44	1068067324003	ICAL2	15-FEB-2018 18:06	S36038 (200X)
L3	met44	1068067324004	ICAL3	15-FEB-2018 18:08	S36038 (50X)
L4	met44	1068067324005	ICAL4	15-FEB-2018 18:09	S36038 (20X)
L5	met44	1068067324006	ICAL5	15-FEB-2018 18:10	S36038 (10X)

Analyte	L1	L2	L3	L4	L5	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	Flg
Mercury	0.0960	0.0924	0.1072	0.1048	0.1025	LIN0	-0.0122	9.71958		0.1006	1.000	.99	

Spiked Amounts / Drifts	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D
Mercury	0.2000	-13	0.5000	-13	2.0000	4	5.0000	2	10.000	-1

Instrument amount = a0 + response * a1 + response^2 * a2; LIN0=Linear regression including 0,0 point

ENTHALPY 2ND SOURCE CALIBRATION SUMMARY FOR 297025 METALS Soil
EPA 7471B

Inst : MET44
Calnum : 1068067324001 Cal Date : 15-FEB-2018

ICV 1068067324007 (15-FEB-2018) stds: S36040

Analyte	Spiked	Quant	Units	%D	Max	Flags
Mercury	5.000	5.116	ug/L	2	10	

ENTHALPY INSTRUMENT BLANK FOR 297025 METALS Soil
EPA 7471B

Inst : MET44 IDF : 1.0
Seqnum : 1068067324008.1 File : met44 Time : 15-FEB-2018 18:13
Cal : 1068067324001 Caldate : 15-FEB-2018

Analyte	Quant	IQL	LOD	Units	Flags
Mercury	ND	0.2000	0.1000	ug/L	

ENTHALPY CONTINUING CALIBRATION FOR 297025 METALS Soil
EPA 7471B

Inst : MET44 IDF : 1.0
Seqnum : 1068067324012.1 File : met44 Time : 15-FEB-2018 18:19
Cal : 1068067324001 Caldate : 15-FEB-2018
Standards: S36043

Analyte	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Mercury	0.1006	0.1092	5.000	5.297	ug/L	6	10	

ENTHALPY INSTRUMENT BLANK FOR 297025 METALS Soil
EPA 7471B

Inst : MET44 IDF : 1.0
Seqnum : 1068067324013.1 File : met44 Time : 15-FEB-2018 18:20
Cal : 1068067324001 Caldate : 15-FEB-2018

Analyte	Quant	IQL	LOD	Units	Flags
Mercury	ND	0.2000	0.1000	ug/L	

SAMPLE PREPARATION SUMMARY

Batch # : 256534
Started By : SL
Method : METHOD
Spike #1 ID : S36039

Prep Date : 15-FEB-2018 15:35

Analysis : HG
Finished By : SL
Units : g

Sample	Stype	Matrix	Initial	Final	Clean DF	Prep DF	pH	Sp 1 Vol	Sp 2 Vol	Sp 3 Vol	Clean Method	Analysis	Comments
297025-001		Soil	.64	50	1	78.13						7471-HG	
297025-002		Soil	.6	50	1	83.33						7471-HG	
297025-003		Soil	.57	50	1	87.72						7471-HG	
297025-004		Soil	.6	50	1	83.33						7471-HG	
297124-001		Soil	.6	50	1	83.33						T22/HG	
297130-006		Soil	.56	50	1	89.29						T22/HG	
297139-001		Soil	.64	50	1	78.13						T22/HG	
QC920233	BLANK	Soil	.64	50	1	78.13							
QC920234	BS	Soil	.61	50	1	81.97		1					
QC920235	BSD	Soil	.63	50	1	79.37		1					
QC920236	MS	Soil	.6	50	1	83.33		1					
QC920237	MSD	Soil	.59	50	1	84.75		1					
QC920238	SER	Soil	.64	50	1	78.13							

Analyst: SL Date: 02/15/18 Reviewer: AMP Date: 02/16/18

Soil Digestion for Mercury Enthalpy Analytical LLC - Berkeley

LIMS Batch #: 256534 Digestion Method: ☒ EPA 7471A/ 7471B BK 4220

Date Digested: 2-15-18 ☐ _____ Page 30

Sample #	container ID	Sample Weight (g)	Final Volume (mL)	Filtered? (y/n)	Comments
BLANK		0.64	☒ 50 ☐	y	QC 920233
BS		0.61	☒ 50 ☐		4
BSD		0.63	☒ 50 ☐		5
MS		0.60	☒ 50 ☐		6
MSD		0.59	☒ 50 ☐		7
297025 -001		0.64	☒ 50 ☐		MSS; alias 296840 -014
-002		0.60	☒ 50 ☐		-015
-003		0.57	☒ 50 ☐		-016
-004		0.60	☒ 50 ☐		-017
297124 -001	B	0.60	☒ 50 ☐		
297130 - 006		0.56	☒ 50 ☐		comp 297130 (1-4) @ 5g ea
297134 -001	B	0.64	☒ 50 ☐		
~~2971~~ 62 2-15-18			☐ 50 ☐		
			☐ 50 ☐		
			☐ 50 ☐		
			☐ 50 ☐		
			☐ 50 ☐		
			☐ 50 ☐		
			☐ 50 ☐		
			☐ 50 ☐		
			☐ 50 ☐		
			☐ 50 ☐		
			☐ 50 ☐		
			☐ 50 ☐		

Balance ID: B-9 calibration has been checked? ☒ Yes ☐ No

Standards prepared per SOP: MET 5.2, rev. 20

(mL of spike standard was added to all spikes

☐ **CAL digested with this batch? ICAL Std S#**

	Reagent ID/ LIMS# / Time		Initials / Date
Digestion Tubes, Lot #	EK17237		2-15-18
Blank/LCS 'matrix' ID	R263-5K013		
	S36039		
	S36038		
ICV / CCV LIMS S#	S36040 / S36043		
Digestion Temperature (°C), and Probe Location	92°	42	
Digestion block ID	DENALI		
Thermometer #	6412091		
Digestion Started at (time)	1535		
Aqua Regia (HNO3+ HCl) Reagent ID	021518		
5% $KMnO_4$ / Granular KMnO4 reagent ID	021518	—	
NaCl.hydroxylamine hydrochloride Reagent ID	021518		
Stannous Chloride Reagent ID	021518		
Digestion Completd at (time)	SS71618103		
☐ filtered thru' 0.45 um syringe filter (lot #)	SS71618103		

Pipettes

Vol.(mL)	ID
.1	J2881530
.2-1	G15693E
2.5-5	3850158
6-10	4645196

2-15-18

Prep Chemist / Date

Continued from page Ø

Continued on page _____

Reviewed Online / See LIMS

Version 7.2, July.2017

Dilutions for 297025 METALS Soil
Enthalpy Analytical - Berkeley

Type	Sample ID	IDFs
SAMPLE	297025-001	1X, 25X
SAMPLE	297025-002	10X, 25X
SAMPLE	297025-003	10X, 25X
SAMPLE	297025-004	10X, 25X, 100X
BLANK	QC919563	25X
BS	QC919564	25X
BSD	QC919565	25X
MS	QC919566	25X
MSD	QC919567	25X
SER	QC919921	125X
PDS	QC919922	25X
SER	QC920238	5X

CAS Registry Numbers for 297025 METALS Soil
Enthalpy Analytical - Berkeley

Analyte	CAS RN
Copper	7440-50-8
Lead	7439-92-1
Mercury	7439-97-6

ICPMS Raw Data

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 1018062954

Instrument : MET26 Begun : 02/12/18 17:14
Method : EPA 6020A SOP Version : icpms metals_rv10

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	18b12r00001	X	RINSE			02/12/18 17:14	1.0	1	
002	18b12r00002	X	RINSE			02/12/18 17:19	1.0	1	
003	18b12r00003	X	RINSE			02/12/18 17:24	1.0	1	
004	18b12r00004	X	RINSE			02/12/18 17:29	1.0	1	
005	18b12r00005	X	RINSE			02/12/18 17:34	1.0	1	
006	18b12r00006	TUN				02/12/18 17:39	1.0	2	
007	18b12r00007	X	RINSE			02/12/18 17:44	1.0	1	
008	18b12r00008	X	RINSE			02/12/18 17:49	1.0	1	
009	18b12r00009	ICALBLK	CALBLANK			02/12/18 17:53	1.0	1	
010	18b12r00010	ICAL				02/12/18 17:58	1.0	3 1	
011	18b12r00011	ICAL				02/12/18 18:03	1.0	3 1	
012	18b12r00012	ICAL				02/12/18 18:08	1.0	3 1	
013	18b12r00013	ICAL				02/12/18 18:13	1.0	3 1	
014	18b12r00014	ICAL				02/12/18 18:18	1.0	3 1	
015	18b12r00015	ICAL				02/12/18 18:22	1.0	3 1	
016	18b12r00016	ICAL				02/12/18 18:27	1.0	3 1	
017	18b12r00017	X	RINSE			02/12/18 18:32	1.0	1	
018	18b12r00018	ICV				02/12/18 18:37	1.0	4 1	
019	18b12r00019	CRI				02/12/18 18:42	1.0	5 1	
020	18b12r00020	ICB				02/12/18 18:47	1.0	1	
021	18b12r00021	XICSA				02/12/18 18:52	1.0	6 1	8:CA=290000
022	18b12r00022	XICSAB				02/12/18 18:57	1.0	7 1	9:CA=290000
023	18b12r00023	X	RINSE			02/12/18 19:02	1.0	1	
024	18b12r00024	X	RINSE			02/12/18 19:07	1.0	1	
025	18b12r00025	X	RINSE			02/12/18 19:12	1.0	1	
026	18b12r00026	X	RINSE			02/12/18 19:17	1.0	1	
027	18b12r00027	ICSA				02/12/18 19:22	1.0	6 1	8:CA=270000
028	18b12r00028	ICSAB				02/12/18 19:27	1.0	7 1	8:CA=280000
029	18b12r00029	X	RINSE			02/12/18 19:33	1.0	1	
030	18b12r00030	X	RINSE			02/12/18 19:38	1.0	1	
031	18b12r00031	X	RINSE			02/12/18 19:43	1.0	1	
032	18b12r00032	X	RINSE			02/12/18 19:48	1.0	1	
033	18b12r00033	SAMPLE	297006-002	Water	256367	02/12/18 19:53	1.0	1	5:NA=4700000
034	18b12r00034	X	RINSE			02/12/18 19:58	1.0	1	
035	18b12r00035	SAMPLE	296783-012	Water	256367	02/12/18 20:03	1.0	1	3:NA=640000
036	18b12r00036	SAMPLE	296783-013	Water	256367	02/12/18 20:08	1.0	1	5:NA=14000000
037	18b12r00037	SAMPLE	296783-014	Water	256367	02/12/18 20:12	1.0	1	
038	18b12r00038	X	RINSE			02/12/18 20:17	1.0	1	
039	18b12r00039	SAMPLE	296970-001	Water	256367	02/12/18 20:22	1.0	1	4:NA=38000
040	18b12r00040	X	RINSE			02/12/18 20:27	1.0	1	
041	18b12r00041	BLANK	QC919596	Filtrate	256373	02/12/18 20:32	1.0	1	
042	18b12r00042	BLANK	QC919604	Filtrate	256374	02/12/18 20:37	1.0	1	
043	18b12r00043	BLANK	QC919603	Filtrate	256374	02/12/18 20:42	1.0	1	
044	18b12r00044	BLANK	QC919605	Filtrate	256374	02/12/18 20:47	1.0	1	
045	18b12r00045	BS	QC919597	Filtrate	256373	02/12/18 20:52	1.0	1	
046	18b12r00046	CCV				02/12/18 20:56	1.0	4 1	
047	18b12r00047	X	XCCB			02/12/18 21:01	1.0	1	
048	18b12r00048	CCB				02/12/18 21:06	1.0	1	
049	18b12r00049	BSD	QC919598	Filtrate	256373	02/12/18 21:11	1.0	1	
050	18b12r00050	BS	QC919606	Filtrate	256374	02/12/18 21:16	1.0	1	
051	18b12r00051	BSD	QC919607	Filtrate	256374	02/12/18 21:21	1.0	1	
052	18b12r00052	SAMPLE	296174-003	Filtrate	256374	02/12/18 21:26	1.0	1	3:NA=590000

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 1018062954

Instrument : MET26 Begun : 02/12/18 17:14
Method : EPA 6020A SOP Version : icpms metals_rv10

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
053	18b12r00053	X	RINSE			02/12/18 21:31	1.0	1	
054	18b12r00054	MSS	296647-002	Filtrate	256374	02/12/18 21:35	1.0	1	4:NA=530000
055	18b12r00055	MS	QC919608	Filtrate	256374	02/12/18 21:40	1.0	1	5:NA=520000
056	18b12r00056	MSD	QC919609	Filtrate	256374	02/12/18 21:45	1.0	1	5:NA=540000
057	18b12r00057	SER	QC919610	Filtrate	256374	02/12/18 21:50	5.0	1	4:NA=110000
058	18b12r00058	PDS	QC919611	Filtrate	256374	02/12/18 21:55	1.0	8 9 10 1	5:NA=540000
059	18b12r00059	X	RINSE			02/12/18 22:00	1.0	1	
060	18b12r00060	MSS	296739-001	Filtrate	256373	02/12/18 22:05	1.0	1	4:NA=680000
061	18b12r00061	CCV				02/12/18 22:10	1.0	4 1	
062	18b12r00062	X	XCCB			02/12/18 22:15	1.0	1	
063	18b12r00063	CCB				02/12/18 22:20	1.0	1	
064	18b12r00064	MS	QC919599	Filtrate	256373	02/12/18 22:25	1.0	1	4:NA=660000
065	18b12r00065	MSD	QC919600	Filtrate	256373	02/12/18 22:30	1.0	1	4:NA=680000
066	18b12r00066	SER	QC919601	Filtrate	256373	02/12/18 22:35	5.0	1	4:NA=130000
067	18b12r00067	PDS	QC919602	Filtrate	256373	02/12/18 22:39	1.0	8 9 10 1	4:NA=690000
068	18b12r00068	SAMPLE	296739-002	Filtrate	256373	02/12/18 22:44	1.0	1	4:NA=1400000
069	18b12r00069	SAMPLE	296739-003	Filtrate	256373	02/12/18 22:49	1.0	1	4:NA=610000
070	18b12r00070	SAMPLE	296739-004	Filtrate	256373	02/12/18 22:54	1.0	1	4:NA=1000000
071	18b12r00071	SAMPLE	296739-005	Filtrate	256373	02/12/18 22:59	1.0	1	4:NA=620000
072	18b12r00072	SAMPLE	296739-007	Filtrate	256373	02/12/18 23:04	1.0	1	4:NA=220000
073	18b12r00073	SAMPLE	296739-008	Filtrate	256373	02/12/18 23:09	1.0	1	4:NA=1100000
074	18b12r00074	CCV				02/12/18 23:14	1.0	4 1	
075	18b12r00075	X	XCCB			02/12/18 23:19	1.0	1	
076	18b12r00076	CCB				02/12/18 23:24	1.0	1	
077	18b12r00077	X	RINSE			02/12/18 23:29	1.0	1	
078	18b12r00078	SAMPLE	296572-001	Filtrate	256373	02/12/18 23:34	1.0	1	5:NA=260000
079	18b12r00079	SAMPLE	296572-002	Filtrate	256373	02/12/18 23:39	1.0	1	4:NA=760000
080	18b12r00080	SAMPLE	296572-003	Filtrate	256373	02/12/18 23:44	1.0	1	4:NA=400000
081	18b12r00081	SAMPLE	296572-004	Filtrate	256373	02/12/18 23:48	1.0	1	4:NA=410000
082	18b12r00082	SAMPLE	296572-005	Filtrate	256373	02/12/18 23:53	1.0	1	4:NA=470000
083	18b12r00083	X	RINSE			02/12/18 23:58	1.0	1	
084	18b12r00084	SAMPLE	296784-010	Filtrate	256373	02/13/18 00:03	1.0	1	3:NA=540000
085	18b12r00085	X	RINSE			02/13/18 00:08	1.0	1	
086	18b12r00086	SAMPLE	296647-001	Filtrate	256374	02/13/18 00:13	1.0	1	4:NA=550000
087	18b12r00087	SAMPLE	296647-003	Filtrate	256374	02/13/18 00:18	1.0	1	4:NA=520000
088	18b12r00088	SAMPLE	296647-004	Filtrate	256374	02/13/18 00:23	1.0	1	4:NA=520000
089	18b12r00089	SAMPLE	296647-005	Filtrate	256374	02/13/18 00:28	1.0	1	4:NA=550000
090	18b12r00090	CCV				02/13/18 00:33	1.0	4 1	
091	18b12r00091	X	XCCB			02/13/18 00:38	1.0	1	
092	18b12r00092	CCB				02/13/18 00:43	1.0	1	
093	18b12r00093	SAMPLE	296647-006	Filtrate	256374	02/13/18 00:47	1.0	1	4:NA=570000
094	18b12r00094	SAMPLE	296647-007	Filtrate	256374	02/13/18 00:52	1.0	1	4:NA=750000
095	18b12r00095	SAMPLE	296647-008	Filtrate	256374	02/13/18 00:57	1.0	1	4:NA=600000
096	18b12r00096	SAMPLE	296647-009	Filtrate	256374	02/13/18 01:02	1.0	1	4:NA=780000
097	18b12r00097	X	RINSE			02/13/18 01:07	1.0	1	
098	18b12r00098	SAMPLE	295771-001	Filtrate	256373	02/13/18 01:12	1.0	1	3:MG=130000
099	18b12r00099	SAMPLE	295771-002	Filtrate	256373	02/13/18 01:17	1.0	1	3:MG=120000
100	18b12r00100	SAMPLE	295771-003	Filtrate	256373	02/13/18 01:22	1.0	1	
101	18b12r00101	SAMPLE	295771-004	Filtrate	256373	02/13/18 01:27	1.0	1	
102	18b12r00102	X	RINSE			02/13/18 01:32	1.0	1	
103	18b12r00103	BLANK	QC919563	Soil	256366	02/13/18 01:36	25.0	1	
104	18b12r00104	BS	QC919564	Soil	256366	02/13/18 01:41	25.0	1	

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 1018062954

Instrument : MET26 Begun : 02/12/18 17:14
Method : EPA 6020A SOP Version : icpms metals_rv10

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
105	18b12r00105	CCV				02/13/18 01:46	1.0	4 1	
106	18b12r00106	X	XCCB			02/13/18 01:51	1.0	1	
107	18b12r00107	CCB				02/13/18 01:56	1.0	1	
108	18b12r00108	BSD	QC919565	Soil	256366	02/13/18 02:01	25.0	1	
109	18b12r00109	MSS	296942-001	Soil	256366	02/13/18 02:06	25.0	1	2:FE=28000
110	18b12r00110	MS	QC919566	Soil	256366	02/13/18 02:11	25.0	1	2:FE=29000
111	18b12r00111	MSD	QC919567	Soil	256366	02/13/18 02:15	25.0	1	2:FE=29000
112	18b12r00112	SAMPLE	296942-002	Soil	256366	02/13/18 02:20	25.0	1	2:FE=30000
113	18b12r00113	SAMPLE	296942-004	Soil	256366	02/13/18 02:25	25.0	1	1:MN=360
114	18b12r00114	SAMPLE	296942-005	Soil	256366	02/13/18 02:30	25.0	1	1:MN=340
115	18b12r00115	SAMPLE	297013-001	Soil	256366	02/13/18 02:35	25.0	1	2:FE=26000
116	18b12r00116	SAMPLE	297013-002	Soil	256366	02/13/18 02:40	25.0	1	3:FE=26000
117	18b12r00117	SAMPLE	297013-003	Soil	256366	02/13/18 02:45	25.0	1	3:FE=23000
118	18b12r00118	CCV				02/13/18 02:49	1.0	4 1	
119	18b12r00119	X	XCCB			02/13/18 02:54	1.0	1	
120	18b12r00120	CCB				02/13/18 02:59	1.0	1	
121	18b12r00121	SAMPLE	297013-004	Soil	256366	02/13/18 03:04	25.0	1	3:FE=21000
122	18b12r00122	SAMPLE	297013-005	Soil	256366	02/13/18 03:09	25.0	1	3:FE=26000
123	18b12r00123	SAMPLE	297025-001	Soil	256366	02/13/18 03:14	25.0	1	
124	18b12r00124	SAMPLE	297025-002	Soil	256366	02/13/18 03:19	25.0	1	1:MN=230
125	18b12r00125	SAMPLE	297025-003	Soil	256366	02/13/18 03:24	25.0	1	
126	18b12r00126	SAMPLE	297025-004	Soil	256366	02/13/18 03:29	25.0	1	1:CU=330
127	18b12r00127	CCV				02/13/18 03:33	1.0	4 1	
128	18b12r00128	X	XCCB			02/13/18 03:38	1.0	1	
129	18b12r00129	CCB				02/13/18 03:43	1.0	1	
130	18b12r00130	ICSA				02/13/18 03:48	1.0	11 1	8:CA=240000
131	18b12r00131	ICSAB				02/13/18 03:53	1.0	12 1	8:CA=240000
132	18b12r00132	X	RINSE			02/13/18 03:58	1.0	1	
133	18b12r00133	X	RINSE			02/13/18 04:03	1.0	1	
134	18b12r00134	X	RINSE			02/13/18 04:08	1.0	1	
135	18b12r00135	X	RINSE			02/13/18 04:13	1.0	1	
136	18b12r00136	ICSA				02/13/18 04:18	1.0	11 1	8:CA=230000
137	18b12r00137	ICSAB				02/13/18 04:23	1.0	12 1	8:CA=230000
138	18b12r00138	X	RINSE			02/13/18 04:28	1.0	1	
139	18b12r00139	X	RINSE			02/13/18 04:33	1.0	1	
140	18b12r00140	X	RINSE			02/13/18 04:38	1.0	1	
141	18b12r00141	X	RINSE			02/13/18 04:43	1.0	1	

NBB 02/13/18 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 001 through 137.

Standards used: 1=S35939 2=S35938 3=S35940 4=S35983 5=S35885 6=S35821 7=S35822 8=S34361 9=S34362 10=S34743 11=S35984 12=S35985

ENTHALPY SAMPLE USER REPORT FOR EPA 6020A

Inst	: MET26	Lab ID	: 297025-001	Client ID	: HPP-FSS-009A
Seqnum	: 1018062954123	Matrix	: Soil	Acct	: IEECI (MJD)
File	: 18b12r00123	Batch	: 256366	Time	: 13-FEB-2018 03:14
Cal	: 1018062954001	Caldate	: 12-FEB-2018		
IDF	: 25.0			Units	: mg/Kg

1.00 g --> 50.0 ml = 50.0 ml/g PDF

Analyte	Ch	Result	RL	Blank	Flags
Copper	E	50	0.63		!<cri+ u
Lead	A	8.3	0.63		u

ISTD (ICALBLK 18b12r00009)	Ch	ICALBLK Abund	SAMPLE Abund	%Drift
Bismuth	A	416919	267560	-35.82
Yttrium	E	96013	69300	-27.82

!=warning +=high bias <=opening u=use

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B12r00.B\123SMPL.D\123SMPL.D#
Date Acquired: Feb 13 2018 03:14 am
Acq. Method: 6020newj.M
Operator:
Sample Name: 297025-001
Misc Info: 256366
Vial Number: 4503
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 12 2018 06:31 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	0.2162	8.018323E-04	21.11	ppb	51.99	
23 Na	72	2	3647.0000	2.481453E+01	175097.09	ppb	1.78	
24 Mg	72	3	3313.0000	5.367682E+01	1451882.00	ppb	0.23	
27 Al	72	3	5059.0000	1.089311E+02	2946426.00	ppb	0.38	
31 P	72	2	176.0000	3.096226E-02	218.90	ppb	18.78	
39 K	72	3	918.8000	2.707940E+01	732458.63	ppb	0.61	
44 Ca	72	3	4567.0000	3.644556E+00	98578.20	ppb	1.07	
51 V	72	2	16.4200	5.287115E-01	3730.48	ppb	2.47	
52 Cr	72	2	37.0900	1.277691E+00	9015.64	ppb	2.20	
55 Mn	72	2	120.3000	3.740874E+00	26396.73	ppb	1.71	
56 Fe	72	1	10210.0000	3.212690E+02	2969013.00	ppb	0.58	
59 Co	72	2	4.2520	1.895636E-01	1337.48	ppb	4.49	
60 Ni	72	2	27.8200	2.925516E-01	2064.23	ppb	2.21	
63 Cu	89	2	40.0100	1.108992E-01	7684.55	ppb	2.04	
66 Zn	89	2	33.4200	2.269975E-02	1573.06	ppb	0.38	
75 As	89	2	3.4810	1.818443E-03	126.00	ppb	9.07	
78 Se	89	1	0.0774	1.250201E-05	1.56	ppb	96.82	
98 Mo	89	3	0.2318	5.745480E-04	143.34	ppb	16.11	
107 Ag	115	3	0.0939	3.392809E-04	88.89	ppb	21.60	
111 Cd	115	3	0.0980	7.620887E-05	20.00	ppb	32.80	
121 Sb	115	3	0.0568	1.991637E-04	52.22	ppb	38.87	
137 Ba	209	3	16.0900	1.946266E-02	5207.75	ppb	2.05	
205 Tl	209	3	0.0382	3.490015E-04	93.34	ppb	27.89	
208 Pb	209	3	6.6510	7.316358E-02	19574.91	ppb	1.22	
238 U	209	3	0.2605	3.214636E-03	860.06	ppb	5.64	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	26395	2.33	54773	48.2	30 - 120	
72 Ge	1	9242	0.64	12557	73.6	30 - 120	
72 Ge	2	7058	1.71	10168	69.4	30 - 120	
72 Ge	3	27049	0.33	38413	70.4	30 - 120	
89 Y	1	124248	0.76	161998	76.7	30 - 120	
89 Y	2	69300	0.70	96013	72.2	30 - 120	
89 Y	3	249226	1.14	342628	72.7	30 - 120	
115 In	3	262219	0.96	377350	69.5	30 - 120	
209 Bi	3	267560	0.52	416919	64.2	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B12r00.B\009CALB.D\009CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY SAMPLE USER REPORT FOR EPA 6020A

Inst	: MET26	Lab ID	: 297025-002	Client ID	: HPP-FSS-009B
Seqnum	: 1018062954124	Matrix	: Soil	Acct	: IEECI (MJD)
File	: 18b12r00124	Batch	: 256366	Time	: 13-FEB-2018 03:19
Cal	: 1018062954001	Caldate	: 12-FEB-2018		
IDF	: 25.0			Units	: mg/Kg

0.94 g --> 50.0 ml = 53.19 ml/g PDF

Analyte	Ch	Result	RL	Blank	Flags
Copper	E	150	0.66		!<cri+ u
Lead	A	15	0.66		u

ISTD (ICALBLK 18b12r00009)	Ch	ICALBLK Abund	SAMPLE Abund	%Drift
Bismuth	A	416919	265245	-36.38
Yttrium	E	96013	67215	-29.99

!=warning +=high bias <=opening u=use

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B12r00.B\124SMPL.D\124SMPL.D#
Date Acquired: Feb 13 2018 03:19 am
Acq. Method: 6020newj.M
Operator:
Sample Name: 297025-002
Misc Info: 256366
Vial Number: 4504
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 12 2018 06:31 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

Data Results:
Analytes: Fail
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	0.0856	3.422906E-04	8.89	ppb	49.35	
23 Na	72	2	2025.0000	1.398239E+01	97083.17	ppb	1.57	
24 Mg	72	3	7184.0000	1.163470E+02	3058791.00	ppb	1.50	
27 Al	72	3	3128.0000	6.735759E+01	1770860.00	ppb	1.42	
31 P	72	2	154.3000	2.768488E-02	192.23	ppb	1.73	
39 K	72	3	540.1000	1.726866E+01	454005.91	ppb	1.62	
44 Ca	72	3	15500.0000	1.235404E+01	324796.41	ppb	1.32	
51 V	72	2	11.7100	3.902722E-01	2709.15	ppb	4.44	
52 Cr	72	2	83.4700	2.805155E+00	19477.34	ppb	1.29	
55 Mn	72	2	231.2000	7.185871E+00	49890.25	ppb	2.16	>LDR
56 Fe	72	1	17900.0000	5.633333E+02	5020477.00	ppb	1.21	
59 Co	72	2	6.5550	2.921518E-01	2028.30	ppb	2.75	
60 Ni	72	2	69.6600	7.321388E-01	5082.73	ppb	3.38	
63 Cu	89	2	116.5000	3.223334E-01	21664.77	ppb	0.99	
66 Zn	89	2	49.8200	3.372615E-02	2266.86	ppb	1.34	
75 As	89	2	9.4030	4.777692E-03	321.12	ppb	1.43	
78 Se	89	1	0.0816	1.295801E-05	1.56	ppb	36.46	
98 Mo	89	3	0.5587	1.251416E-03	307.79	ppb	3.11	
107 Ag	115	3	0.1186	4.209982E-04	108.89	ppb	3.72	
111 Cd	115	3	0.1216	9.460838E-05	24.45	ppb	61.79	
121 Sb	115	3	0.1350	4.209627E-04	108.89	ppb	25.15	
137 Ba	209	3	33.4900	4.048991E-02	10739.82	ppb	1.48	
205 Tl	209	3	0.0300	2.806937E-04	74.45	ppb	27.88	
208 Pb	209	3	11.2100	1.229204E-01	32603.78	ppb	1.31	
238 U	209	3	0.3162	3.900494E-03	1034.52	ppb	6.55	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	25977	0.14	54773	47.4	30 - 120	
72 Ge	1	8913	1.30	12557	71.0	30 - 120	
72 Ge	2	6944	1.39	10168	68.3	30 - 120	
72 Ge	3	26294	1.47	38413	68.5	30 - 120	
89 Y	1	120075	0.81	161998	74.1	30 - 120	
89 Y	2	67215	0.91	96013	70.0	30 - 120	
89 Y	3	245928	0.76	342628	71.8	30 - 120	
115 In	3	258650	0.33	377350	68.5	30 - 120	
209 Bi	3	265245	0.16	416919	63.6	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B12r00.B\009CALB.D\009CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY SAMPLE USER REPORT FOR EPA 6020A

Inst	: MET26	Lab ID	: 297025-003	Client ID	: HPP-FSS-009C
Seqnum	: 1018062954125	Matrix	: Soil	Acct	: IEECI (MJD)
File	: 18b12r00125	Batch	: 256366	Time	: 13-FEB-2018 03:24
Cal	: 1018062954001	Caldate	: 12-FEB-2018		
IDF	: 25.0			Units	: mg/Kg

0.93 g --> 50.0 ml = 53.76 ml/g PDF

Analyte	Ch	Result	RL	Blank	Flags
Copper	E	47	0.67		!<cri+ u
Lead	A	27	0.67		u

ISTD (ICALBLK 18b12r00009)	Ch	ICALBLK Abund	SAMPLE Abund	%Drift
Bismuth	A	416919	237249	-43.09
Yttrium	E	96013	59163	-38.38

!=warning +=high bias <=opening u=use

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B12r00.B\125SMPL.D\125SMPL.D#
Date Acquired: Feb 13 2018 03:24 am
Acq. Method: 6020newj.M
Operator:
Sample Name: 297025-003
Misc Info: 256366
Vial Number: 4505
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 12 2018 06:31 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	0.2637	9.688047E-04	22.22	ppb	35.82	
23 Na	72	2	3163.0000	2.158419E+01	130698.80	ppb	0.81	
24 Mg	72	3	3976.0000	6.442003E+01	1474663.00	ppb	2.58	
27 Al	72	3	4497.0000	9.683344E+01	2216727.00	ppb	2.34	
31 P	72	2	184.8000	3.228986E-02	195.56	ppb	11.21	
39 K	72	3	842.3000	2.509779E+01	574566.63	ppb	2.36	
44 Ca	72	3	6125.0000	4.885948E+00	111846.80	ppb	2.54	
51 V	72	2	14.5900	4.750263E-01	2876.22	ppb	1.98	
52 Cr	72	2	34.8100	1.202855E+00	7283.60	ppb	2.36	
55 Mn	72	2	121.1000	3.765869E+00	22803.34	ppb	0.19	
56 Fe	72	1	10040.0000	3.158663E+02	2428679.00	ppb	0.29	
59 Co	72	2	4.4510	1.984301E-01	1201.54	ppb	2.93	
60 Ni	72	2	32.9000	3.459082E-01	2094.61	ppb	1.22	
63 Cu	89	2	35.2400	9.772195E-02	5781.50	ppb	0.99	
66 Zn	89	2	94.3700	6.369665E-02	3768.64	ppb	2.20	
75 As	89	2	3.4120	1.784216E-03	105.56	ppb	1.76	
78 Se	89	1	0.1401	1.930746E-05	2.00	ppb	42.38	
98 Mo	89	3	0.1746	4.560825E-04	98.89	ppb	25.92	
107 Ag	115	3	0.0940	3.396999E-04	77.78	ppb	15.36	
111 Cd	115	3	0.1003	7.800446E-05	17.78	ppb	45.42	
121 Sb	115	3	1.6410	4.691770E-03	1075.63	ppb	2.75	
137 Ba	209	3	45.0300	5.443619E-02	12911.58	ppb	3.16	
205 Tl	209	3	0.0452	4.073244E-04	96.67	ppb	10.46	
208 Pb	209	3	20.1000	2.199703E-01	52182.86	ppb	0.91	
238 U	209	3	0.2342	2.891163E-03	685.60	ppb	5.36	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	22913	0.56	54773	41.8	30 - 120	
72 Ge	1	7689	0.44	12557	61.2	30 - 120	
72 Ge	2	6055	0.65	10168	59.6	30 - 120	
72 Ge	3	22900	2.14	38413	59.6	30 - 120	
89 Y	1	103565	0.53	161998	63.9	30 - 120	
89 Y	2	59163	0.34	96013	61.6	30 - 120	
89 Y	3	217219	2.21	342628	63.4	30 - 120	
115 In	3	229228	2.00	377350	60.7	30 - 120	
209 Bi	3	237249	1.57	416919	56.9	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B12r00.B\009CALB.D\009CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY SAMPLE USER REPORT FOR EPA 6020A

Inst	: MET26	Lab ID	: 297025-004	Client ID	: HPP-FSS-009D
Seqnum	: 1018062954126	Matrix	: Soil	Acct	: IEECI (MJD)
File	: 18b12r00126	Batch	: 256366	Time	: 13-FEB-2018 03:29
Cal	: 1018062954001	Caldate	: 12-FEB-2018		
IDF	: 25.0			Units	: mg/Kg

1.05 g --> 50.0 ml = 47.62 ml/g PDF

Analyte	Ch	Result	RL	Blank	Flags
Copper	E	**400 >LR**	0.60		!<cri+ >LR **b***
Lead	A	82	0.60		u

ISTD (ICALBLK 18b12r00009)	Ch	ICALBLK Abund	SAMPLE Abund	%Drift
Bismuth	A	416919	263943	-36.69
Yttrium	E	96013	68925	-28.21

!=warning +=high bias <=opening >LR=overrange b=noncompliant u=use

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B12r00.B\126SMPL.D\126SMPL.D#
Date Acquired: Feb 13 2018 03:29 am
Acq. Method: 6020newj.M
Operator:
Sample Name: 297025-004
Misc Info: 256366
Vial Number: 4506
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 12 2018 06:31 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

Data Results:
Analytes: Fail
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	0.1669	6.282805E-04	15.56	ppb	73.76	
23 Na	72	2	2281.0000	1.569368E+01	109443.00	ppb	2.07	
24 Mg	72	3	6687.0000	1.083081E+02	2825586.00	ppb	2.81	
27 Al	72	3	3620.0000	7.794780E+01	2033522.00	ppb	2.85	
31 P	72	2	180.9000	3.170472E-02	221.12	ppb	2.26	
39 K	72	3	658.0000	2.032256E+01	530216.31	ppb	2.91	
44 Ca	72	3	11910.0000	9.493951E+00	247656.59	ppb	3.44	
51 V	72	2	13.4900	4.425491E-01	3084.78	ppb	6.43	
52 Cr	72	2	108.8000	3.639010E+00	25377.24	ppb	1.96	
55 Mn	72	2	199.5000	6.202019E+00	43252.45	ppb	1.61	
56 Fe	72	1	19380.0000	6.099799E+02	4879543.00	ppb	2.43	
59 Co	72	2	6.5080	2.900668E-01	2022.37	ppb	4.28	
60 Ni	72	2	63.6300	6.687887E-01	4663.71	ppb	2.31	
63 Cu	89	2	332.9000	9.202259E-01	63425.66	ppb	0.54	>LDR
66 Zn	89	2	120.1000	8.101772E-02	5584.02	ppb	1.14	
75 As	89	2	9.5580	4.855415E-03	334.67	ppb	3.01	
78 Se	89	1	0.2397	3.010377E-05	3.33	ppb	40.92	
98 Mo	89	3	1.0880	2.347529E-03	562.25	ppb	18.54	
107 Ag	115	3	0.2106	7.246099E-04	183.34	ppb	13.47	
111 Cd	115	3	0.2596	2.019203E-04	51.11	ppb	27.85	
121 Sb	115	3	0.9578	2.753794E-03	697.82	ppb	3.90	
137 Ba	209	3	35.2000	4.255781E-02	11217.97	ppb	5.46	
205 Tl	209	3	0.0507	4.525514E-04	118.89	ppb	17.82	
208 Pb	209	3	69.1500	7.551684E-01	199085.09	ppb	4.16	
238 U	209	3	0.3282	4.048780E-03	1065.64	ppb	9.89	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	25198	3.80	54773	46.0	30 - 120	
72 Ge	1	8007	8.49	12557	63.8	30 - 120	
72 Ge	2	6975	1.88	10168	68.6	30 - 120	
72 Ge	3	26101	2.48	38413	67.9	30 - 120	
89 Y	1	109977	8.72	161998	67.9	30 - 120	
89 Y	2	68925	0.35	96013	71.8	30 - 120	
89 Y	3	240636	5.44	342628	70.2	30 - 120	
115 In	3	253708	4.81	377350	67.2	30 - 120	
209 Bi	3	263943	4.31	416919	63.3	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B12r00.B\009CALB.D\009CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY BLANK USER REPORT FOR 297025 METALS Soil
EPA 6020A

Inst : MET26 Lab ID : QC919563
Seqnum : 1018062954103.2 Matrix : Soil
File : 18b12r00103 Batch : 256366 Time : 13-FEB-2018 01:36
Cal : 1018062954001 Caldate : 12-FEB-2018
IDF : 25.0 Units : mg/Kg

0.96 g --> 50.0 ml = 52.08 ml/g PDF

Analyte	Ch	Result	RL	Flags
Copper	E	0.17 J	0.65	!<cri+ <c+ >c+ **b***
Lead	A	ND	0.65	u

ISTD (ICALBLK 18b12r00009)	Ch	ICALBLK Abund	BLANK Abund	%Drift
Bismuth	A	416919	310341	-25.56
Yttrium	E	96013	85622	-10.82

PRW 02/13/18 [Chromium E]: Blank hit greater than 1/2 RL. [general version]

!=warning +=high bias <=opening >=closing b=noncompliant c=CCV u=use

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B12r00.B\103SMPL.D\103SMPL.D#
Date Acquired: Feb 13 2018 01:36 am
Acq. Method: 6020newj.M
Operator:
Sample Name: qc919563
Misc Info: 256366
Vial Number: 4401
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 12 2018 06:31 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	-0.0117	0.000000E-01	0.00	ppb	0.00	
23 Na	72	2	27.2000	6.385405E-01	5991.31	ppb	8.56	
24 Mg	72	3	9.2410	1.945457E-01	7159.62	ppb	1.39	
27 Al	72	3	0.3568	1.373608E-02	505.58	ppb	10.62	
31 P	72	2	-0.5516	4.262331E-03	40.00	ppb	402.65	
39 K	72	3	11.7300	3.576865E+00	131628.41	ppb	14.28	
44 Ca	72	3	6.2340	9.685473E-03	356.68	ppb	19.03	
51 V	72	2	-0.1881	4.017898E-02	377.05	ppb	8.01	
52 Cr	72	2	0.3802	6.897236E-02	647.06	ppb	19.52	
55 Mn	72	2	0.0597	3.236183E-03	30.37	ppb	8.65	
56 Fe	72	1	0.9354	6.795821E-02	829.66	ppb	14.55	
59 Co	72	2	0.0030	2.778578E-04	2.59	ppb	139.35	
60 Ni	72	2	0.0351	5.895464E-04	5.56	ppb	83.37	
63 Cu	89	2	0.1268	7.222083E-04	61.85	ppb	22.77	
66 Zn	89	2	0.0799	2.681688E-04	22.96	ppb	35.98	
75 As	89	2	0.1222	1.401365E-04	12.00	ppb	33.45	
78 Se	89	1	0.0159	5.844685E-06	0.89	ppb	144.17	
98 Mo	89	3	-0.0027	8.895169E-05	27.78	ppb	877.73	
107 Ag	115	3	0.0037	4.170743E-05	13.33	ppb	171.02	
111 Cd	115	3	0.0000	0.000000E-01	0.00	ppb	0.00	
121 Sb	115	3	-0.0024	3.129956E-05	10.00	ppb	309.70	
137 Ba	209	3	0.0002	1.076499E-05	3.33	ppb	4429.90	
205 Tl	209	3	-0.0004	2.861104E-05	8.89	ppb	167.86	
208 Pb	209	3	-0.0014	5.625752E-04	174.45	ppb	559.29	
238 U	209	3	0.0004	1.074225E-05	3.33	ppb	2.37	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	42208	1.12	54773	77.1	30 - 120	
72 Ge	1	12207	0.30	12557	97.2	30 - 120	
72 Ge	2	9383	1.27	10168	92.3	30 - 120	
72 Ge	3	36803	1.16	38413	95.8	30 - 120	
89 Y	1	151828	0.81	161998	93.7	30 - 120	
89 Y	2	85622	0.37	96013	89.2	30 - 120	
89 Y	3	312244	0.82	342628	91.1	30 - 120	
115 In	3	320287	0.55	377350	84.9	30 - 120	
209 Bi	3	310341	1.19	416919	74.4	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B12r00.B\009CALB.D\009CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY SPIKE USER REPORT FOR 297025 METALS Soil
EPA 6020A

Type : BS
Inst : MET26
Seqnum : 1018062954104.2
File : 18b12r00104
IDF : 25.0
Lab ID : QC919564
Matrix : Soil
Batch : 256366
Time : 13-FEB-2018 01:41
Cal : 1018062954001
Units : mg/Kg

Type : BSD
Inst : MET26
Seqnum : 1018062954108.2
File : 18b12r00108
IDF : 25.0
Lab ID : QC919565
Matrix : Soil
Batch : 256366
Time : 13-FEB-2018 02:01
Cal : 1018062954001

BS: 0.97 g --> 50.0 ml = 51.55 ml/g PDF
BSD: 0.91 g --> 50.0 ml = 54.95 ml/g PDF

Analyte	Spiked	BS	Ch	%Rec	Spiked	BSD	Ch	%Rec	Limits	RPD	Lim	Flags
Copper	51.55	58.29	E	113	54.95	60.96	E	111	84-119	2	20	!<cri+ <c+ >c+ u **b***
Lead	51.55	50.03	A	97	54.95	52.79	A	96	84-118	1	20	u

ISTD (ICALBLK 18b12r00009)	Ch	ICALBLK Abund	BS Abund	%Drift
Bismuth	A	416919	307572	-26.23
Yttrium	E	96013	86490	-9.92

ISTD (ICALBLK 18b12r00009)	Ch	ICALBLK Abund	BSD Abund	%Drift
Bismuth	A	416919	293790	-29.53
Yttrium	E	96013	82108	-14.48

NBB 02/14/18 [Copper E]: BS/BSD are passing within limits despite high CCV bias.

!=warning +=high bias <=opening >=closing b=noncompliant c=CCV u=use

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B12r00.B\104SMPL.D\104SMPL.D#
Date Acquired: Feb 13 2018 01:41 am
Acq. Method: 6020newj.M
Operator:
Sample Name: qc919564
Misc Info: 256366
Vial Number: 4402
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 12 2018 06:31 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	22.0300	7.751777E-02	3183.74	ppb	2.34	
23 Na	72	2	372.1000	2.942107E+00	27995.13	ppb	3.13	
24 Mg	72	3	367.5000	5.995117E+00	218588.00	ppb	0.98	
27 Al	72	3	36.5800	7.935425E-01	28932.45	ppb	1.56	
31 P	72	2	351.2000	5.745480E-02	546.69	ppb	7.68	
39 K	72	3	390.7000	1.339710E+01	488483.50	ppb	0.89	
44 Ca	72	3	459.7000	3.710562E-01	13528.40	ppb	2.08	
51 V	72	2	38.6800	1.183697E+00	11265.60	ppb	0.65	
52 Cr	72	2	40.3700	1.385786E+00	13187.11	ppb	1.78	
55 Mn	72	2	39.9600	1.243255E+00	11831.59	ppb	0.75	
56 Fe	72	1	410.5000	1.295667E+01	159735.41	ppb	1.47	
59 Co	72	2	40.9100	1.822530E+00	17344.17	ppb	1.20	
60 Ni	72	2	42.2400	4.440671E-01	4225.80	ppb	1.46	
63 Cu	89	2	45.2300	1.253351E-01	10840.15	ppb	0.20	
66 Zn	89	2	46.6200	3.157404E-02	2731.01	ppb	1.11	
75 As	89	2	46.5000	2.331539E-02	2016.37	ppb	1.96	
78 Se	89	1	43.7300	4.744809E-03	739.80	ppb	2.67	
98 Mo	89	3	39.0400	8.094783E-02	25101.31	ppb	0.61	
107 Ag	115	3	4.1590	1.375860E-02	4387.46	ppb	3.12	
111 Cd	115	3	40.1400	3.122741E-02	9958.07	ppb	0.51	
121 Sb	115	3	41.8900	1.188109E-01	37887.65	ppb	0.88	
137 Ba	209	3	42.1100	5.091349E-02	15658.73	ppb	1.80	
205 Tl	209	3	38.3200	3.179037E-01	97777.82	ppb	0.60	
208 Pb	209	3	38.8200	4.242355E-01	130481.10	ppb	0.51	
238 U	209	3	35.3400	4.353556E-01	133899.20	ppb	0.89	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	41071	0.60	54773	75.0	30 - 120	
72 Ge	1	12330	1.17	12557	98.2	30 - 120	
72 Ge	2	9517	1.05	10168	93.6	30 - 120	
72 Ge	3	36464	1.14	38413	94.9	30 - 120	
89 Y	1	155912	1.38	161998	96.2	30 - 120	
89 Y	2	86490	0.85	96013	90.1	30 - 120	
89 Y	3	310096	0.45	342628	90.5	30 - 120	
115 In	3	318889	0.07	377350	84.5	30 - 120	
209 Bi	3	307572	0.50	416919	73.8	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B12r00.B\009CALB.D\009CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B12r00.B\108SMPL.D\108SMPL.D#
Date Acquired: Feb 13 2018 02:01 am
Acq. Method: 6020newj.M
Operator:
Sample Name: qc919565
Misc Info: 256366
Vial Number: 4403
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 12 2018 06:31 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	20.8700	7.344916E-02	2759.21	ppb	1.15	
23 Na	72	2	351.4000	2.803524E+00	25395.16	ppb	1.66	
24 Mg	72	3	349.0000	5.695171E+00	196338.91	ppb	1.66	
27 Al	72	3	34.6600	7.523875E-01	25938.31	ppb	1.90	
31 P	72	2	332.9000	5.469352E-02	495.58	ppb	9.50	
39 K	72	3	370.5000	1.287323E+01	443809.41	ppb	1.92	
44 Ca	72	3	438.1000	3.538266E-01	12201.74	ppb	1.49	
51 V	72	2	37.2100	1.140650E+00	10332.75	ppb	0.63	
52 Cr	72	2	39.5800	1.359635E+00	12316.04	ppb	2.25	
55 Mn	72	2	38.5200	1.198327E+00	10854.95	ppb	0.77	
56 Fe	72	1	399.9000	1.262333E+01	148499.41	ppb	1.55	
59 Co	72	2	39.8100	1.773649E+00	16066.89	ppb	0.35	
60 Ni	72	2	41.6400	4.377405E-01	3964.99	ppb	2.44	
63 Cu	89	2	44.3800	1.229760E-01	10096.69	ppb	1.55	
66 Zn	89	2	44.8500	3.038424E-02	2494.67	ppb	1.16	
75 As	89	2	45.7800	2.295457E-02	1884.57	ppb	2.96	
78 Se	89	1	42.2000	4.579521E-03	674.46	ppb	1.18	
98 Mo	89	3	38.5700	7.998156E-02	23394.20	ppb	0.66	
107 Ag	115	3	4.2770	1.414578E-02	4289.65	ppb	4.38	
111 Cd	115	3	40.0400	3.114349E-02	9442.17	ppb	2.00	
121 Sb	115	3	42.0400	1.192403E-01	36154.45	ppb	0.56	
137 Ba	209	3	41.9300	5.069190E-02	14892.40	ppb	2.23	
205 Tl	209	3	37.8300	3.138600E-01	92208.63	ppb	0.70	
208 Pb	209	3	38.4300	4.199221E-01	123367.10	ppb	0.76	
238 U	209	3	35.2800	4.346812E-01	127703.70	ppb	0.46	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	37564	1.74	54773	68.6	30 - 120	
72 Ge	1	11766	1.84	12557	93.7	30 - 120	
72 Ge	2	9059	0.58	10168	89.1	30 - 120	
72 Ge	3	34480	1.49	38413	89.8	30 - 120	
89 Y	1	147278	0.27	161998	90.9	30 - 120	
89 Y	2	82108	1.18	96013	85.5	30 - 120	
89 Y	3	292496	0.58	342628	85.4	30 - 120	
115 In	3	303203	0.50	377350	80.4	30 - 120	
209 Bi	3	293790	0.32	416919	70.5	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B12r00.B\009CALB.D\009CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY SPIKE USER REPORT FOR 297025 METALS Soil
EPA 6020A

Type : MS
Inst : MET26
Seqnum : 1018062954110.2
File : 18b12r00110
IDF : 25.0
Lab ID : QC919566
Matrix : Soil
Batch : 256366
Time : 13-FEB-2018 02:11
Cal : 1018062954001
MSS : 296942-001

Type : MSD
Inst : MET26
Seqnum : 1018062954111.2
File : 18b12r00111
IDF : 25.0
Lab ID : QC919567
Matrix : Soil
Batch : 256366
Time : 13-FEB-2018 02:15
Cal : 1018062954001
Units : mg/Kg

MS: 1.07 g --> 50.0 ml = 46.73 ml/g PDF
MSD: 1.01 g --> 50.0 ml = 49.50 ml/g PDF

Analyte	MSS Seqnum	Result	Ch	Spiked	MS	Ch	%Rec	Spiked	MSD	Ch	%Rec	Limits	RPD	Lim	Flags
Copper	1018063987026	60.74	E	46.73	108.5	E	102	49.50	139.5	E	**159***	84-119	**22***	20	!<cri+ <c+ **b***
Lead	1018062954109	3.107	A	46.73	47.89	A	96	49.50	50.71	A	96	84-118	0	20	u

ISTD (ICALBLK 18b12r00009)	Ch	ICALBLK Abund	MS Abund	%Drift
Bismuth	A	416919	301652	-27.65
Yttrium	E	96013	88733	-7.58

ISTD (ICALBLK 18b12r00009)	Ch	ICALBLK Abund	MSD Abund	%Drift
Bismuth	A	416919	290160	-30.40
Yttrium	E	96013	84106	-12.40

!=warning +=high bias <=opening b=noncompliant c=CCV u=use

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B12r00.B\110SMPL.D\110SMPL.D#
Date Acquired: Feb 13 2018 02:11 am
Acq. Method: 6020newj.M
Operator:
Sample Name: qc919566
Misc Info: 256366
Vial Number: 4405
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 12 2018 06:31 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

Data Results:
Analytes: Fail
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	21.3100	7.498176E-02	2765.88	ppb	4.67	
23 Na	72	2	863.0000	6.220458E+00	57111.65	ppb	2.01	
24 Mg	72	3	12420.0000	2.010942E+02	7113476.00	ppb	0.95	
27 Al	72	3	15400.0000	3.316420E+02	11731490.00	ppb	0.90	
31 P	72	2	553.2000	8.800633E-02	807.82	ppb	6.03	
39 K	72	3	656.1000	2.027328E+01	717120.19	ppb	1.60	
44 Ca	72	3	11380.0000	9.075010E+00	321019.69	ppb	0.90	
51 V	72	2	108.0000	3.224170E+00	29603.83	ppb	1.17	
52 Cr	72	2	63.6600	2.152767E+00	19766.24	ppb	1.30	
55 Mn	72	2	710.0000	2.206281E+01	202571.50	ppb	1.46	>LDR
56 Fe	72	1	29410.0000	9.256216E+02	11009150.00	ppb	0.39	>LDR
59 Co	72	2	54.0400	2.407390E+00	22102.75	ppb	1.90	
60 Ni	72	2	71.9200	7.558117E-01	6939.37	ppb	1.84	
63 Cu	89	2	92.9100	2.570656E-01	22795.27	ppb	3.69	
66 Zn	89	2	87.8700	5.932604E-02	5258.72	ppb	5.95	
75 As	89	2	47.7700	2.394754E-02	2123.49	ppb	4.09	
78 Se	89	1	36.6000	3.972011E-03	652.91	ppb	3.16	
98 Mo	89	3	36.0400	7.473573E-02	24261.09	ppb	3.44	
107 Ag	115	3	4.1000	1.356227E-02	4232.95	ppb	3.82	
111 Cd	115	3	38.8000	3.017826E-02	9422.13	ppb	2.03	
121 Sb	115	3	14.5100	4.118610E-02	12859.25	ppb	2.49	
137 Ba	209	3	155.0000	1.874242E-01	56532.12	ppb	1.47	
205 Tl	209	3	37.2900	3.093637E-01	93308.55	ppb	1.65	
208 Pb	209	3	40.9900	4.479430E-01	135114.50	ppb	0.78	
238 U	209	3	35.7900	4.408944E-01	132986.20	ppb	1.57	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	36888	1.21	54773	67.3	30 - 120	
72 Ge	1	11894	0.47	12557	94.7	30 - 120	
72 Ge	2	9183	1.37	10168	90.3	30 - 120	
72 Ge	3	35377	1.28	38413	92.1	30 - 120	
89 Y	1	164371	0.17	161998	101.5	30 - 120	
89 Y	2	88733	2.70	96013	92.4	30 - 120	
89 Y	3	324737	1.51	342628	94.8	30 - 120	
115 In	3	312218	1.33	377350	82.7	30 - 120	
209 Bi	3	301652	1.17	416919	72.4	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B12r00.B\009CALB.D\009CALB.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B12r00.B\111SMPL.D\111SMPL.D#
Date Acquired: Feb 13 2018 02:15 am
Acq. Method: 6020newj.M
Operator:
Sample Name: qc919567
Misc Info: 256366
Vial Number: 4406
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 12 2018 06:31 pm
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

Data Results:
Analytes: Fail
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	21.5900	7.598487E-02	2705.87	ppb	5.94	
23 Na	72	2	1429.0000	1.000218E+01	88454.57	ppb	1.16	
24 Mg	72	3	12830.0000	2.078338E+02	7067759.00	ppb	0.81	
27 Al	72	3	16960.0000	3.651434E+02	12417310.00	ppb	0.96	
31 P	72	2	509.2000	8.135711E-02	718.93	ppb	10.34	
39 K	72	3	682.1000	2.094641E+01	712321.19	ppb	0.90	
44 Ca	72	3	14470.0000	1.153477E+01	392271.31	ppb	0.57	
51 V	72	2	105.1000	3.137718E+00	27745.63	ppb	2.00	
52 Cr	72	2	69.0800	2.331172E+00	20613.60	ppb	1.98	
55 Mn	72	2	755.4000	2.347415E+01	207579.30	ppb	1.61	>LDR
56 Fe	72	1	28720.0000	9.038302E+02	10275390.00	ppb	1.38	>LDR
59 Co	72	2	55.3800	2.467336E+00	21816.40	ppb	2.44	
60 Ni	72	2	71.4600	7.510483E-01	6641.10	ppb	2.12	
63 Cu	89	2	112.7000	3.116210E-01	26208.38	ppb	0.98	
66 Zn	89	2	85.1200	5.747568E-02	4834.13	ppb	0.57	
75 As	89	2	48.1100	2.412229E-02	2028.81	ppb	0.87	
78 Se	89	1	38.5200	4.179894E-03	655.35	ppb	2.42	
98 Mo	89	3	36.4100	7.548931E-02	23573.36	ppb	2.05	
107 Ag	115	3	4.1510	1.373074E-02	4132.93	ppb	0.83	
111 Cd	115	3	39.6200	3.082070E-02	9277.59	ppb	2.34	
121 Sb	115	3	13.1800	3.739882E-02	11251.23	ppb	4.23	
137 Ba	209	3	152.1000	1.838282E-01	53314.67	ppb	4.00	
205 Tl	209	3	38.2800	3.175594E-01	92122.01	ppb	1.76	
208 Pb	209	3	40.9700	4.477069E-01	129885.30	ppb	1.34	
238 U	209	3	36.3900	4.483302E-01	130053.00	ppb	2.01	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	35634	1.95	54773	65.1	30 - 120	
72 Ge	1	11370	1.42	12557	90.5	30 - 120	
72 Ge	2	8844	1.65	10168	87.0	30 - 120	
72 Ge	3	34008	0.79	38413	88.5	30 - 120	
89 Y	1	156809	1.07	161998	96.8	30 - 120	
89 Y	2	84106	0.47	96013	87.6	30 - 120	
89 Y	3	312388	2.76	342628	91.2	30 - 120	
115 In	3	301036	2.36	377350	79.8	30 - 120	
209 Bi	3	290160	1.97	416919	69.6	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B12r00.B\009CALB.D\009CALB.D#

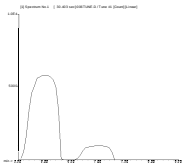
2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

MET26 QC Tune Report

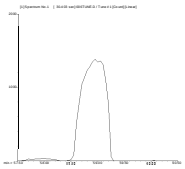
Data File: C:\ICPCHEM\1\DATA\18B12r00.B\006TUNE.D
Date Acquired: Feb 12 2018 05:39 pm
Acq. Method: TN6020K.M
Operator:
Sample Name: tun,s35938
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\TN6020K.M

RSD (%)

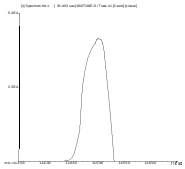
Element	Rep1	Rep2	Rep3	Rep4	Rep5	Actual	Required	Flag
7 Li	5270	5425	5335	5359	5270	1.92	5.00	
59 Co	7503	7494	7370	7295	7162	1.71	5.00	
115 In	206705	207156	205387	203455	203679	0.85	5.00	
205 Tl	15531	15578	15429	15482	15537	1.30	5.00	



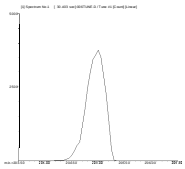
7 Li
Mass Calib.
Actual: 7.00
Required: 6.90 - 7.10
Flag:
Peak Width @ 5%
Actual: 0.65
Required: 0.75
Flag:



59 Co
Mass Calib.
Actual: 59.00
Required: 58.90 - 59.10
Flag:
Peak Width @ 5%
Actual: 0.60
Required: 0.75
Flag:



115 In
Mass Calib.
Actual: 115.00
Required: 114.90 - 115.10
Flag:
Peak Width @ 5%
Actual: 0.65
Required: 0.75
Flag:



205 Tl
Mass Calib.
Actual: 204.95
Required: 204.90 - 205.10
Flag:
Peak Width @ 5%
Actual: 0.65
Required: 0.75
Flag:

ENTHALPY INITIAL CALIBRATION FOR 297025 METALS Soil: EPA 6020A

Inst : MET26
Calnum : 1018062954001
Units : ug/L

Date : 12-FEB-2018 17:53
X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	18b12r00010	1018062954010		12-FEB-2018 17:58	S35940 (400X), S35939
L2	18b12r00011	1018062954011		12-FEB-2018 18:03	S35940 (200X), S35939
L3	18b12r00012	1018062954012		12-FEB-2018 18:08	S35940 (40X), S35939
L4	18b12r00013	1018062954013		12-FEB-2018 18:13	S35940 (20X), S35939
L5	18b12r00014	1018062954014		12-FEB-2018 18:18	S35940 (4X), S35939
L6	18b12r00015	1018062954015		12-FEB-2018 18:22	S35940 (2X), S35939
L7	18b12r00016	1018062954016		12-FEB-2018 18:27	S35940, S35939

Analyte	Ch	L1	L2	L3	L4	L5	L6	L7	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	Flg
Lead	A	0.0116	0.0113	0.0109	0.0107	0.0108	0.0108	0.0109	BLNK	-0.0530	91.6365		0.0110	1.000	0.995	
Copper	E	0.0046	0.0036	0.0031	0.0031	0.0029	0.0028	0.0028	BLNK	-0.1347	361.967		0.0033	1.000	0.995	

Spiked Amounts / Drifts	Ch	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D	L6	%D	L7	%D
Lead	A	0.5000	-4	1.0000	-1	5.0000	-2	10.000	-2	50.000	-1	100.00	-1	200.00	0
Copper	E	0.5000	**39**	1.0000	16	5.0000	10	10.000	10	50.000	4	100.00	0	200.00	0

Instrument amount = a0 + response * a1 + response^2 * a2; BLNK=Y=aX+[blank]

ENTHALPY 2ND SOURCE CALIBRATION SUMMARY FOR 297025 METALS Soil
EPA 6020A

Inst : MET26
Calnum : 1018062954001 Cal Date : 12-FEB-2018

ICV 1018062954018 (18b12r00018 12-FEB-2018) stds: S35983, S35939

Analyte	Ch	Spiked	Quant	Units	%D	Max	Flags
Lead	A	50.00	49.12	ug/L	-2	10	
Copper	E	50.00	50.53	ug/L	1	10	

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B12r00.B\009CALB.D\009CALB.D#
Date Acquired: Feb 12 2018 05:53 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: calblank
Misc Info:
Vial Number: 1301
Current Method: C:\ICPCHEM\1\DATA\18B12r00.B\6020newj.M
Calibration File: C:\ICPCHEM\1\DATA\18B12r00.B\6020newj.C
Last Cal. Update: Feb 12 2018 06:31 pm
Sample Type: CalBlk
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	0.0000	4.119476E-05	2.22	ppb	14901000000.00	
23 Na	72	2	0.0000	4.569170E-01	4643.04	ppb	139250000.00	
24 Mg	72	3	0.0000	4.494347E-02	1725.71	ppb	363050000.00	
27 Al	72	3	0.0000	6.054664E-03	232.23	ppb	217350000.00	
31 P	72	2	0.0000	4.345760E-03	44.45	ppb	15083000000.00	
39 K	72	3	0.0000	3.272979E+00	125648.80	ppb	261640000.00	
44 Ca	72	3	0.0000	4.717005E-03	181.12	ppb	5965700000.00	
51 V	72	2	0.0000	4.571400E-02	464.83	ppb	244460000.00	
52 Cr	72	2	0.0000	5.645245E-02	573.72	ppb	461550000.00	
55 Mn	72	2	0.0000	1.380202E-03	14.07	ppb	299910000.00	
56 Fe	72	1	0.0000	3.852361E-02	483.72	ppb	137800000.00	
59 Co	72	2	0.0000	1.450467E-04	1.48	ppb	736870000.00	
60 Ni	72	2	0.0000	2.205826E-04	2.22	ppb	2474700000.00	
63 Cu	89	2	0.0000	3.720054E-04	35.56	ppb	893270000.00	
66 Zn	89	2	0.0000	2.144100E-04	20.37	ppb	1177100000.00	
75 As	89	2	0.0000	7.908003E-05	7.56	ppb	1448800000.00	
78 Se	89	1	0.0000	4.116369E-06	0.67	ppb	36290000.00	
98 Mo	89	3	0.0000	9.445789E-05	32.22	ppb	1987600000.00	
107 Ag	115	3	0.0000	2.939511E-05	11.11	ppb	530680000.00	
111 Cd	115	3	0.0000	0.000000E-01	0.00	ppb	0.00	
121 Sb	115	3	0.0000	3.808193E-05	14.44	ppb	2393400000.00	
137 Ba	209	3	0.0000	1.052013E-05	4.44	ppb	2578700000.00	
205 Tl	209	3	0.0000	3.218334E-05	13.33	ppb	7118500000.00	
208 Pb	209	3	0.0000	5.779722E-04	241.12	ppb	2167100000.00	
238 U	209	3	0.0000	5.377076E-06	2.22	ppb	1428000000.00	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	54773	1.53	54773	100.0	80 - 120	
72 Ge	1	12557	0.51	12557	100.0	80 - 120	
72 Ge	2	10168	2.79	10168	100.0	80 - 120	
72 Ge	3	38413	2.59	38413	100.0	80 - 120	
89 Y	1	161998	1.98	161998	100.0	80 - 120	
89 Y	2	96013	3.17	96013	100.0	80 - 120	
89 Y	3	342628	2.12	342628	100.0	80 - 120	
115 In	3	377350	2.17	377350	100.0	80 - 120	
209 Bi	3	416919	1.83	416919	100.0	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : ---

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B12r00.B\010CALS.D\010CALS.D#
Date Acquired: Feb 12 2018 05:58 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: s35940,400x
Misc Info:
Vial Number: 1101
Current Method: C:\ICPCHEM\1\DATA\18B12r00.B\6020newj.M
Calibration File: C:\ICPCHEM\1\DATA\18B12r00.B\6020newj.C
Last Cal. Update: Feb 12 2018 06:31 pm
Sample Type: CalStd
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	0.5347	1.922091E-03	105.56	ppb	8.78	
23 Na	72	2	51.7200	8.023188E-01	8282.38	ppb	5.23	
24 Mg	72	3	51.7600	8.829659E-01	33678.32	ppb	2.18	
27 Al	72	3	50.2400	1.087660E+00	41480.19	ppb	3.17	
31 P	72	2	37.5000	1.001702E-02	103.34	ppb	12.89	
39 K	72	3	49.8600	4.564989E+00	174133.00	ppb	4.57	
44 Ca	72	3	52.0700	4.620969E-02	1762.38	ppb	6.34	
51 V	72	2	0.3885	5.714435E-02	590.02	ppb	3.15	
52 Cr	72	2	0.6140	7.667225E-02	791.51	ppb	17.85	
55 Mn	72	2	0.5286	1.780614E-02	183.71	ppb	6.63	
56 Fe	72	1	54.1300	1.741858E+00	22210.64	ppb	0.71	
59 Co	72	2	0.5440	2.437834E-02	251.86	ppb	8.54	
60 Ni	72	2	0.5177	5.659740E-03	58.52	ppb	21.58	
63 Cu	89	2	0.6969	2.297324E-03	222.60	ppb	8.17	
66 Zn	89	2	0.9826	8.754086E-04	84.82	ppb	21.67	
75 As	89	2	0.6266	3.922121E-04	38.00	ppb	19.65	
78 Se	89	1	0.4906	5.730120E-05	9.56	ppb	48.86	
98 Mo	89	3	0.5468	1.226794E-03	418.91	ppb	5.47	
107 Ag	115	3	0.4966	1.668735E-03	630.04	ppb	16.08	
111 Cd	115	3	0.4769	3.709922E-04	140.01	ppb	6.10	
121 Sb	115	3	0.4476	1.307178E-03	493.36	ppb	4.25	
137 Ba	209	3	0.4614	5.681986E-04	235.57	ppb	5.34	
205 Tl	209	3	0.2446	2.061055E-03	854.50	ppb	8.96	
208 Pb	209	3	0.4776	5.789789E-03	2400.17	ppb	5.92	
238 U	209	3	0.4758	5.867424E-03	2432.52	ppb	5.86	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	54889	1.28	54773	100.2	80 - 120	
72 Ge	1	12751	0.72	12557	101.5	80 - 120	
72 Ge	2	10325	2.01	10168	101.5	80 - 120	
72 Ge	3	38151	1.82	38413	99.3	80 - 120	
89 Y	1	166679	0.42	161998	102.9	80 - 120	
89 Y	2	96897	0.10	96013	100.9	80 - 120	
89 Y	3	341526	0.52	342628	99.7	80 - 120	
115 In	3	377361	0.75	377350	100.0	80 - 120	
209 Bi	3	414567	0.11	416919	99.4	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B12r00.B\009CALB.D\009CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B12r00.B\011CALS.D\011CALS.D#
Date Acquired: Feb 12 2018 06:03 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: s35940,200x
Misc Info:
Vial Number: 1102
Current Method: C:\ICPCHEM\1\DATA\18B12r00.B\6020newj.M
Calibration File: C:\ICPCHEM\1\DATA\18B12r00.B\6020newj.C
Last Cal. Update: Feb 12 2018 06:31 pm
Sample Type: CalStd
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	0.9854	3.507509E-03	193.34	ppb	10.44	
23 Na	72	2	101.4000	1.133808E+00	11651.24	ppb	0.91	
24 Mg	72	3	99.9000	1.662247E+00	64733.45	ppb	1.95	
27 Al	72	3	98.1300	2.118816E+00	82515.12	ppb	1.68	
31 P	72	2	100.6000	1.956524E-02	201.12	ppb	14.42	
39 K	72	3	96.6500	5.777372E+00	225000.59	ppb	2.87	
44 Ca	72	3	100.3000	8.461753E-02	3296.01	ppb	1.58	
51 V	72	2	0.8056	6.941771E-02	713.36	ppb	10.76	
52 Cr	72	2	1.1220	9.339697E-02	959.67	ppb	9.84	
55 Mn	72	2	1.0250	3.323149E-02	341.49	ppb	7.38	
56 Fe	72	1	106.2000	3.379022E+00	43278.47	ppb	1.46	
59 Co	72	2	1.1250	5.026489E-02	516.68	ppb	5.90	
60 Ni	72	2	1.0630	1.138764E-02	117.04	ppb	5.44	
63 Cu	89	2	1.1560	3.564923E-03	349.27	ppb	2.76	
66 Zn	89	2	1.1990	1.020766E-03	100.00	ppb	8.28	
75 As	89	2	1.1980	6.779442E-04	66.45	ppb	4.88	
78 Se	89	1	0.9172	1.035504E-04	17.56	ppb	32.67	
98 Mo	89	3	0.9911	2.147023E-03	745.60	ppb	9.84	
107 Ag	115	3	1.0010	3.333188E-03	1280.10	ppb	5.18	
111 Cd	115	3	1.0420	8.103028E-04	311.13	ppb	17.25	
121 Sb	115	3	0.9591	2.757526E-03	1058.96	ppb	2.88	
137 Ba	209	3	0.9117	1.112570E-03	467.80	ppb	7.58	
205 Tl	209	3	0.4798	4.012212E-03	1687.94	ppb	10.11	
208 Pb	209	3	0.9855	1.133291E-02	4766.05	ppb	2.73	
238 U	209	3	0.9139	1.126440E-02	4737.63	ppb	3.62	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	55116	0.78	54773	100.6	80 - 120	
72 Ge	1	12809	1.20	12557	102.0	80 - 120	
72 Ge	2	10276	0.70	10168	101.1	80 - 120	
72 Ge	3	38949	1.09	38413	101.4	80 - 120	
89 Y	1	169772	0.66	161998	104.8	80 - 120	
89 Y	2	97986	0.86	96013	102.1	80 - 120	
89 Y	3	347252	0.14	342628	101.3	80 - 120	
115 In	3	384003	0.33	377350	101.8	80 - 120	
209 Bi	3	420584	0.55	416919	100.9	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B12r00.B\009CALB.D\009CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B12r00.B\012CALS.D\012CALS.D#
Date Acquired: Feb 12 2018 06:08 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: s35940,40x
Misc Info:
Vial Number: 1103
Current Method: C:\ICPCHEM\1\DATA\18B12r00.B\6020newj.M
Calibration File: C:\ICPCHEM\1\DATA\18B12r00.B\6020newj.C
Last Cal. Update: Feb 12 2018 06:31 pm
Sample Type: CalStd
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	4.9530	1.746459E-02	983.39	ppb	5.14	
23 Na	72	2	494.7000	3.760921E+00	39836.02	ppb	0.80	
24 Mg	72	3	502.0000	8.172216E+00	319982.41	ppb	2.42	
27 Al	72	3	493.6000	1.063397E+01	416397.59	ppb	2.11	
31 P	72	2	512.2000	8.181163E-02	866.72	ppb	5.59	
39 K	72	3	495.7000	1.611656E+01	631064.69	ppb	2.65	
44 Ca	72	3	495.6000	3.996654E-01	15648.16	ppb	3.27	
51 V	72	2	4.5720	1.802438E-01	1909.03	ppb	3.43	
52 Cr	72	2	5.0440	2.225559E-01	2357.24	ppb	1.58	
55 Mn	72	2	5.0860	1.594366E-01	1689.00	ppb	3.69	
56 Fe	72	1	526.2000	1.659831E+01	219007.59	ppb	1.13	
59 Co	72	2	5.2660	2.347455E-01	2486.52	ppb	0.57	
60 Ni	72	2	5.1120	5.392513E-02	571.13	ppb	2.82	
63 Cu	89	2	5.4870	1.553062E-02	1569.73	ppb	3.09	
66 Zn	89	2	5.5050	3.917410E-03	395.94	ppb	2.49	
75 As	89	2	5.1260	2.640571E-03	266.89	ppb	3.05	
78 Se	89	1	5.2490	5.731606E-04	99.56	ppb	4.62	
98 Mo	89	3	4.9010	1.024436E-02	3625.00	ppb	0.85	
107 Ag	115	3	5.1220	1.693590E-02	6596.10	ppb	1.04	
111 Cd	115	3	5.1100	3.974724E-03	1547.91	ppb	3.60	
121 Sb	115	3	4.8300	1.373382E-02	5348.92	ppb	1.49	
137 Ba	209	3	4.6560	5.638436E-03	2395.83	ppb	4.93	
205 Tl	209	3	2.3810	1.978619E-02	8407.24	ppb	2.61	
208 Pb	209	3	4.9210	5.428322E-02	23064.80	ppb	1.92	
238 U	209	3	4.6000	5.667425E-02	24081.62	ppb	0.42	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	56349	2.24	54773	102.9	80 - 120	
72 Ge	1	13195	0.80	12557	105.1	80 - 120	
72 Ge	2	10592	0.68	10168	104.2	80 - 120	
72 Ge	3	39169	2.43	38413	102.0	80 - 120	
89 Y	1	173699	0.20	161998	107.2	80 - 120	
89 Y	2	101072	0.10	96013	105.3	80 - 120	
89 Y	3	353849	1.48	342628	103.3	80 - 120	
115 In	3	389456	0.84	377350	103.2	80 - 120	
209 Bi	3	424923	0.87	416919	101.9	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B12r00.B\009CALB.D\009CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B12r00.B\013CALS.D\013CALS.D#
Date Acquired: Feb 12 2018 06:13 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: s35940,20x
Misc Info:
Vial Number: 1104
Current Method: C:\ICPCHEM\1\DATA\18B12r00.B\6020newj.M
Calibration File: C:\ICPCHEM\1\DATA\18B12r00.B\6020newj.C
Last Cal. Update: Feb 12 2018 06:31 pm
Sample Type: CalStd
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	10.7100	3.773089E-02	2092.42	ppb	4.13	
23 Na	72	2	992.9000	7.088060E+00	74667.99	ppb	1.17	
24 Mg	72	3	1013.0000	1.644984E+01	635752.38	ppb	0.78	
27 Al	72	3	1008.0000	2.171879E+01	839381.38	ppb	0.95	
31 P	72	2	940.5000	1.465761E-01	1544.57	ppb	7.97	
39 K	72	3	1011.0000	2.947881E+01	1139299.00	ppb	0.85	
44 Ca	72	3	1007.0000	8.073267E-01	31201.53	ppb	0.97	
51 V	72	2	9.8210	3.346904E-01	3525.99	ppb	1.59	
52 Cr	72	2	10.0600	3.876865E-01	4084.28	ppb	0.42	
55 Mn	72	2	10.5700	3.297035E-01	3473.01	ppb	1.95	
56 Fe	72	1	1033.0000	3.254213E+01	434816.91	ppb	1.31	
59 Co	72	2	10.3800	4.626695E-01	4873.77	ppb	1.65	
60 Ni	72	2	10.4200	1.097230E-01	1155.98	ppb	2.95	
63 Cu	89	2	11.0300	3.083766E-02	3097.01	ppb	2.53	
66 Zn	89	2	12.7400	8.783553E-03	882.26	ppb	3.36	
75 As	89	2	10.3600	5.254794E-03	527.79	ppb	2.98	
78 Se	89	1	10.3600	1.127454E-03	199.56	ppb	5.21	
98 Mo	89	3	9.9700	2.074281E-02	7280.86	ppb	4.66	
107 Ag	115	3	10.2200	3.375450E-02	13018.23	ppb	1.54	
111 Cd	115	3	10.2900	8.007943E-03	3088.20	ppb	4.69	
121 Sb	115	3	9.6910	2.751682E-02	10613.01	ppb	1.46	
137 Ba	209	3	9.3580	1.132183E-02	4752.02	ppb	1.43	
205 Tl	209	3	4.8890	4.058848E-02	17036.32	ppb	1.92	
208 Pb	209	3	9.7850	1.073606E-01	45061.81	ppb	0.35	
238 U	209	3	9.4130	1.159762E-01	48677.98	ppb	1.09	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	55450	0.72	54773	101.2	80 - 120	
72 Ge	1	13363	0.83	12557	106.4	80 - 120	
72 Ge	2	10535	0.83	10168	103.6	80 - 120	
72 Ge	3	38649	0.53	38413	100.6	80 - 120	
89 Y	1	177085	1.55	161998	109.3	80 - 120	
89 Y	2	100438	0.73	96013	104.6	80 - 120	
89 Y	3	351043	0.70	342628	102.5	80 - 120	
115 In	3	385680	0.60	377350	102.2	80 - 120	
209 Bi	3	419726	0.24	416919	100.7	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B12r00.B\009CALB.D\009CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B12r00.B\014CALS.D\014CALS.D#
Date Acquired: Feb 12 2018 06:18 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: s35940,4x
Misc Info:
Vial Number: 1105
Current Method: C:\ICPCHEM\1\DATA\18B12r00.B\6020newj.M
Calibration File: C:\ICPCHEM\1\DATA\18B12r00.B\6020newj.C
Last Cal. Update: Feb 12 2018 06:31 pm
Sample Type: CalStd
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	50.6500	1.782117E-01	9981.17	ppb	1.19	
23 Na	72	2	4971.0000	3.365870E+01	353843.09	ppb	1.68	
24 Mg	72	3	4973.0000	8.055899E+01	3167276.00	ppb	0.20	
27 Al	72	3	4920.0000	1.059263E+02	4164625.00	ppb	0.02	
31 P	72	2	5031.0000	7.651434E-01	8042.28	ppb	4.06	
39 K	72	3	4930.0000	1.310239E+02	5151366.00	ppb	0.21	
44 Ca	72	3	4905.0000	3.913694E+00	153871.59	ppb	0.79	
51 V	72	2	49.5900	1.504816E+00	15821.39	ppb	0.37	
52 Cr	72	2	50.4300	1.717161E+00	18052.34	ppb	1.44	
55 Mn	72	2	50.5400	1.571790E+00	16524.36	ppb	1.42	
56 Fe	72	1	4963.0000	1.562162E+02	2055868.00	ppb	0.55	
59 Co	72	2	51.0600	2.274698E+00	23913.16	ppb	1.69	
60 Ni	72	2	51.8200	5.446459E-01	5725.55	ppb	1.98	
63 Cu	89	2	51.8600	1.436443E-01	14575.06	ppb	0.58	
66 Zn	89	2	53.2300	3.602316E-02	3655.28	ppb	2.58	
75 As	89	2	50.7700	2.544809E-02	2582.01	ppb	0.94	
78 Se	89	1	53.0400	5.754543E-03	1000.93	ppb	1.15	
98 Mo	89	3	49.6300	1.028670E-01	36490.11	ppb	0.96	
107 Ag	115	3	50.5400	1.668697E-01	63973.73	ppb	1.19	
111 Cd	115	3	50.3400	3.915569E-02	15011.30	ppb	2.40	
121 Sb	115	3	49.6500	1.408137E-01	53984.95	ppb	0.40	
137 Ba	209	3	48.3300	5.843170E-02	24017.93	ppb	1.04	
205 Tl	209	3	24.4800	2.031209E-01	83492.26	ppb	0.28	
208 Pb	209	3	49.3300	5.389340E-01	221523.00	ppb	0.92	
238 U	209	3	47.9700	5.909391E-01	242898.41	ppb	0.96	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	56009	0.39	54773	102.3	80 - 120	
72 Ge	1	13161	0.32	12557	104.8	80 - 120	
72 Ge	2	10514	1.17	10168	103.4	80 - 120	
72 Ge	3	39316	0.03	38413	102.4	80 - 120	
89 Y	1	173939	0.67	161998	107.4	80 - 120	
89 Y	2	101465	0.46	96013	105.7	80 - 120	
89 Y	3	354725	0.28	342628	103.5	80 - 120	
115 In	3	383378	0.10	377350	101.6	80 - 120	
209 Bi	3	411051	0.49	416919	98.6	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B12r00.B\009CALB.D\009CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B12r00.B\015CALS.D\015CALS.D#
Date Acquired: Feb 12 2018 06:22 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: s35940,2x
Misc Info:
Vial Number: 1106
Current Method: C:\ICPCHEM\1\DATA\18B12r00.B\6020newj.M
Calibration File: C:\ICPCHEM\1\DATA\18B12r00.B\6020newj.C
Last Cal. Update: Feb 12 2018 06:31 pm
Sample Type: CalStd
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	99.7000	3.507276E-01	19932.79	ppb	1.43	
23 Na	72	2	9834.0000	6.613517E+01	706384.00	ppb	1.58	
24 Mg	72	3	10010.0000	1.621581E+02	6325778.00	ppb	1.46	
27 Al	72	3	9977.0000	2.148172E+02	8379751.00	ppb	1.68	
31 P	72	2	9829.0000	1.490896E+00	15927.30	ppb	0.74	
39 K	72	3	9971.0000	2.616290E+02	10205970.00	ppb	1.57	
44 Ca	72	3	9949.0000	7.933538E+00	309496.50	ppb	1.20	
51 V	72	2	98.4500	2.942556E+00	31431.08	ppb	1.14	
52 Cr	72	2	97.9400	3.281385E+00	35049.83	ppb	1.28	
55 Mn	72	2	99.1400	3.082205E+00	32919.76	ppb	1.78	
56 Fe	72	1	9734.0000	3.063668E+02	4092068.00	ppb	1.46	
59 Co	72	2	99.5200	4.433334E+00	47352.92	ppb	1.40	
60 Ni	72	2	100.5000	1.056014E+00	11278.97	ppb	1.78	
63 Cu	89	2	100.3000	2.775607E-01	28627.82	ppb	2.09	
66 Zn	89	2	100.0000	6.749610E-02	6957.91	ppb	4.57	
75 As	89	2	99.8500	4.997543E-02	5154.00	ppb	2.99	
78 Se	89	1	98.4300	1.067451E-02	1918.80	ppb	1.20	
98 Mo	89	3	99.7300	2.066186E-01	73140.71	ppb	0.06	
107 Ag	115	3	100.9000	3.332215E-01	125600.80	ppb	0.85	
111 Cd	115	3	99.9200	7.772855E-02	29298.12	ppb	1.01	
121 Sb	115	3	99.7300	2.828075E-01	106598.60	ppb	0.77	
137 Ba	209	3	97.5700	1.179525E-01	47253.05	ppb	1.31	
205 Tl	209	3	49.3600	4.095486E-01	164067.70	ppb	0.82	
208 Pb	209	3	99.1900	1.083064E+00	433881.41	ppb	0.41	
238 U	209	3	97.8700	1.205764E+00	483033.31	ppb	0.65	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	56835	0.49	54773	103.8	80 - 120	
72 Ge	1	13358	1.31	12557	106.4	80 - 120	
72 Ge	2	10683	1.93	10168	105.1	80 - 120	
72 Ge	3	39017	1.83	38413	101.6	80 - 120	
89 Y	1	179760	1.04	161998	111.0	80 - 120	
89 Y	2	103182	3.05	96013	107.5	80 - 120	
89 Y	3	353988	0.58	342628	103.3	80 - 120	
115 In	3	376930	0.07	377350	99.9	80 - 120	
209 Bi	3	400607	0.24	416919	96.1	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B12r00.B\009CALB.D\009CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B12r00.B\016CALS.D\016CALS.D#
Date Acquired: Feb 12 2018 06:27 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: s35940
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\DATA\18B12r00.B\6020newj.M
Calibration File: C:\ICPCHEM\1\DATA\18B12r00.B\6020newj.C
Last Cal. Update: Feb 12 2018 06:31 pm
Sample Type: CalStd
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	200.0000	7.033764E-01	40022.46	ppb	2.64	
23 Na	72	2	20090.0000	1.346319E+02	1426996.00	ppb	0.29	
24 Mg	72	3	20000.0000	3.238194E+02	12762970.00	ppb	1.82	
27 Al	72	3	20030.0000	4.312868E+02	16998390.00	ppb	1.96	
31 P	72	2	20080.0000	3.041136E+00	32234.40	ppb	1.40	
39 K	72	3	20030.0000	5.223102E+02	20586070.00	ppb	1.91	
44 Ca	72	3	20050.0000	1.598201E+01	629900.19	ppb	1.97	
51 V	72	2	200.9000	5.956872E+00	63138.23	ppb	0.45	
52 Cr	72	2	200.9000	6.672453E+00	70723.24	ppb	0.10	
55 Mn	72	2	200.3000	6.224371E+00	65973.84	ppb	0.23	
56 Fe	72	1	20140.0000	6.338105E+02	8209691.00	ppb	1.77	
59 Co	72	2	200.0000	8.907388E+00	94411.81	ppb	0.19	
60 Ni	72	2	199.3000	2.093895E+00	22193.65	ppb	0.64	
63 Cu	89	2	199.3000	5.509843E-01	56227.93	ppb	0.73	
66 Zn	89	2	199.0000	1.341047E-01	13685.01	ppb	0.83	
75 As	89	2	199.8000	9.994993E-02	10200.07	ppb	1.10	
78 Se	89	1	200.0000	2.168638E-02	3764.92	ppb	0.20	
98 Mo	89	3	200.2000	4.147678E-01	147362.41	ppb	1.13	
107 Ag	115	3	199.4000	6.581503E-01	244563.70	ppb	0.39	
111 Cd	115	3	199.9000	1.555255E-01	57790.47	ppb	0.98	
121 Sb	115	3	200.2000	5.678310E-01	211004.80	ppb	0.01	
137 Ba	209	3	201.7000	2.437776E-01	94357.05	ppb	0.03	
205 Tl	209	3	100.4000	8.333941E-01	322574.19	ppb	0.31	
208 Pb	209	3	200.6000	2.189466E+00	847460.13	ppb	0.13	
238 U	209	3	201.6000	2.483863E+00	961410.31	ppb	0.22	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	56911	1.07	54773	103.9	80 - 120	
72 Ge	1	12956	2.23	12557	103.2	80 - 120	
72 Ge	2	10599	0.19	10168	104.2	80 - 120	
72 Ge	3	39423	1.96	38413	102.6	80 - 120	
89 Y	1	173609	0.77	161998	107.2	80 - 120	
89 Y	2	102050	0.49	96013	106.3	80 - 120	
89 Y	3	355308	0.71	342628	103.7	80 - 120	
115 In	3	371598	0.71	377350	98.5	80 - 120	
209 Bi	3	387062	0.25	416919	92.8	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B12r00.B\009CALB.D\009CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B12r00.B\018_ICV.D\018_ICV.D#
Date Acquired: Feb 12 2018 06:37 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: icv,s35983
Misc Info:
Vial Number: 3
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 12 2018 06:31 pm
Sample Type: 6-ICV
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Fail
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	50.2900	1.769320E-01	9751.00	ppb	1.68	
23 Na	72	2	4940.0000	3.345169E+01	344753.00	ppb	1.73	
24 Mg	72	3	4971.0000	8.052499E+01	3114658.00	ppb	0.49	
27 Al	72	3	4870.0000	1.048506E+02	4055567.00	ppb	0.43	
31 P	72	2	5116.0000	7.780659E-01	8018.94	ppb	1.52	
39 K	72	3	4879.0000	1.296893E+02	5016342.00	ppb	0.27	
44 Ca	72	3	4855.0000	3.873544E+00	149826.80	ppb	0.39	
51 V	72	2	49.3200	1.497011E+00	15429.16	ppb	1.38	
52 Cr	72	2	50.0000	1.703067E+00	17554.34	ppb	0.94	
55 Mn	72	2	49.5300	1.540420E+00	15876.66	ppb	1.20	
56 Fe	72	1	4999.0000	1.573438E+02	2016521.00	ppb	1.36	
59 Co	72	2	50.7400	2.260465E+00	23294.85	ppb	2.35	
60 Ni	72	2	51.1900	5.380043E-01	5545.48	ppb	0.65	
63 Cu	89	2	50.5300	1.399599E-01	14144.30	ppb	0.35	
66 Zn	89	2	49.7800	3.369872E-02	3405.59	ppb	0.38	
75 As	89	2	50.0800	2.510651E-02	2537.11	ppb	1.86	
78 Se	89	1	51.5100	5.588102E-03	970.93	ppb	1.20	
98 Mo	89	3	51.2900	1.063095E-01	37621.86	ppb	1.32	
107 Ag	115	3	49.6400	1.638790E-01	61970.05	ppb	1.10	
111 Cd	115	3	49.8500	3.877886E-02	14664.23	ppb	1.91	
121 Sb	115	3	49.8600	1.414119E-01	53476.26	ppb	0.27	
137 Ba	209	3	47.0000	5.682305E-02	23194.44	ppb	1.43	Fail
205 Tl	209	3	24.1900	2.007343E-01	81935.30	ppb	0.84	Fail
208 Pb	209	3	49.1200	5.365697E-01	219014.41	ppb	0.40	
238 U	209	3	47.9600	5.908778E-01	241177.91	ppb	0.21	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	55117	1.12	54773	100.6	80 - 120	
72 Ge	1	12817	1.08	12557	102.1	80 - 120	
72 Ge	2	10308	1.68	10168	101.4	80 - 120	
72 Ge	3	38680	0.66	38413	100.7	80 - 120	
89 Y	1	173748	0.35	161998	107.3	80 - 120	
89 Y	2	101060	0.64	96013	105.3	80 - 120	
89 Y	3	353904	0.48	342628	103.3	80 - 120	
115 In	3	378165	0.76	377350	100.2	80 - 120	
209 Bi	3	408170	0.45	416919	97.9	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B12r00.B\009CALB.D\009CALB.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY LOW-LEVEL PERFORMANCE VERIFICATION STANDARD FOR 297025 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018062954019.1 File : 18b12r00019 Time : 12-FEB-2018 18:42
Cal : 1018062954001 Caldate : 12-FEB-2018
Standards: S35885, S35939

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Lead	A	1.000	0.9582	ug/L	-4	30	
Copper	E	1.000	1.229	ug/L	**23**	30	!cri+

ISTD (ICALBLK 18b12r00009)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	54773	54537	-0.43
Germanium	H	12557	12670	0.90
Germanium	A	38413	38141	-0.71
Germanium	E	10168	10252	0.83
Indium	A	377350	384903	2.00
Bismuth	A	416919	422421	1.32
Yttrium	E	96013	98341	2.42
Yttrium	H	161998	167125	3.16
Yttrium	A	342628	346727	1.20

!=warning +=high bias

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B12r00.B\019SPKA.D\019SPKA.D#
Date Acquired: Feb 12 2018 06:42 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: cri,s35885
Misc Info:
Vial Number: 1302
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 12 2018 06:31 pm
Sample Type: 6-Spike1
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Fail
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	1.1230	3.990082E-03	217.79	ppb	13.27	
23 Na	72	2	494.2000	3.757306E+00	38519.33	ppb	1.45	
24 Mg	72	3	511.6000	8.327073E+00	317601.41	ppb	0.35	
27 Al	72	3	98.9000	2.135345E+00	81440.82	ppb	1.09	
31 P	72	2	90.2700	1.799696E-02	184.45	ppb	24.43	
39 K	72	3	498.0000	1.617621E+01	616965.63	ppb	0.57	
44 Ca	72	3	497.9000	4.014697E-01	15313.38	ppb	1.00	
51 V	72	2	0.9940	7.496213E-02	768.55	ppb	4.81	
52 Cr	72	2	0.9976	8.930354E-02	915.59	ppb	6.79	
55 Mn	72	2	1.0670	3.453924E-02	354.08	ppb	1.97	
56 Fe	72	1	109.4000	3.480658E+00	44097.42	ppb	1.02	
59 Co	72	2	1.1180	4.996257E-02	512.24	ppb	1.53	
60 Ni	72	2	1.2510	1.336863E-02	137.04	ppb	6.13	Fail
63 Cu	89	2	1.2290	3.766742E-03	370.38	ppb	2.77	Fail
66 Zn	89	2	5.2730	3.761627E-03	370.01	ppb	5.93	
75 As	89	2	1.1570	6.572898E-04	64.67	ppb	13.52	
78 Se	89	1	0.9438	1.064303E-04	17.78	ppb	12.62	
98 Mo	89	3	1.2310	2.644258E-03	916.72	ppb	1.89	Fail
107 Ag	115	3	0.9976	3.322404E-03	1278.99	ppb	4.20	
111 Cd	115	3	1.1090	8.628933E-04	332.24	ppb	13.14	
121 Sb	115	3	1.0800	3.099842E-03	1193.42	ppb	6.58	
137 Ba	209	3	0.9314	1.136307E-03	480.02	ppb	4.70	Fail
205 Tl	209	3	0.5167	4.318563E-03	1824.62	ppb	3.72	Fail
208 Pb	209	3	0.9582	1.103434E-02	4661.59	ppb	1.96	
238 U	209	3	0.9594	1.182519E-02	4995.53	ppb	1.53	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	54537	1.00	54773	99.6	80 - 120	
72 Ge	1	12670	0.97	12557	100.9	80 - 120	
72 Ge	2	10252	0.40	10168	100.8	80 - 120	
72 Ge	3	38141	0.88	38413	99.3	80 - 120	
89 Y	1	167125	0.77	161998	103.2	80 - 120	
89 Y	2	98341	0.78	96013	102.4	80 - 120	
89 Y	3	346727	1.26	342628	101.2	80 - 120	
115 In	3	384903	0.66	377350	102.0	80 - 120	
209 Bi	3	422421	0.83	416919	101.3	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B12r00.B\009CALB.D\009CALB.D#

5 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY INSTRUMENT BLANK FOR 297025 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018062954020.2 File : 18b12r00020 Time : 12-FEB-2018 18:47
Cal : 1018062954001 Caldate : 12-FEB-2018

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Lead	A	ND	0.5000	0.1000	ug/L	
Copper	E	ND	0.5000	0.4000	ug/L	

ISTD (ICALBLK 18b12r00009)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	54773	52414	-4.31
Germanium	H	12557	12611	0.43
Germanium	A	38413	37227	-3.09
Germanium	E	10168	10068	-0.98
Indium	A	377350	371125	-1.65
Bismuth	A	416919	411592	-1.28
Yttrium	E	96013	95279	-0.76
Yttrium	H	161998	164812	1.74
Yttrium	A	342628	332661	-2.91

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B12r00.B\020_ICB.D\020_ICB.D#
Date Acquired: Feb 12 2018 06:47 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: icb
Misc Info:
Vial Number: 5
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 12 2018 06:31 pm
Sample Type: 6-ICB
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Fail
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	0.0423	1.901351E-04	10.00	ppb	40.60	
23 Na	72	2	-3.9140	4.307762E-01	4349.83	ppb	452.48	
24 Mg	72	3	1.0660	6.220547E-02	2314.69	ppb	19.25	
27 Al	72	3	-0.0944	4.021256E-03	150.01	ppb	43.55	
31 P	72	2	-8.2970	3.090857E-03	31.11	ppb	61.08	
39 K	72	3	-1.4270	3.235989E+00	120451.20	ppb	111.28	
44 Ca	72	3	0.7470	5.312316E-03	197.79	ppb	80.08	
51 V	72	2	-0.1182	4.223555E-02	425.20	ppb	37.88	
52 Cr	72	2	-0.0831	5.371711E-02	540.76	ppb	82.65	
55 Mn	72	2	-0.0171	8.476040E-04	8.52	ppb	26.68	
56 Fe	72	1	0.1184	4.224853E-02	532.61	ppb	50.79	
59 Co	72	2	0.0042	3.311561E-04	3.33	ppb	102.75	
60 Ni	72	2	0.0001	2.214342E-04	2.22	ppb	13091.00	
63 Cu	89	2	-0.0418	2.565224E-04	24.44	ppb	8.53	
66 Zn	89	2	-0.2031	7.776723E-05	7.41	ppb	13.20	
75 As	89	2	0.0701	1.141139E-04	10.89	ppb	90.00	
78 Se	89	1	-0.0254	1.359817E-06	0.22	ppb	85.45	
98 Mo	89	3	0.1029	3.075854E-04	102.23	ppb	20.48	Fail
107 Ag	115	3	-0.0053	1.202506E-05	4.44	ppb	31.05	
111 Cd	115	3	0.0000	0.000000E-01	0.00	ppb	0.00	
121 Sb	115	3	0.0119	7.191045E-05	26.67	ppb	46.91	
137 Ba	209	3	0.0070	1.892713E-05	7.78	ppb	57.94	
205 Tl	209	3	0.0020	4.879966E-05	20.00	ppb	178.28	
208 Pb	209	3	-0.0003	5.746939E-04	236.68	ppb	3395.50	
238 U	209	3	0.0031	4.322916E-05	17.78	ppb	33.04	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	52414	1.64	54773	95.7	80 - 120	
72 Ge	1	12611	1.13	12557	100.4	80 - 120	
72 Ge	2	10068	1.81	10168	99.0	80 - 120	
72 Ge	3	37227	1.41	38413	96.9	80 - 120	
89 Y	1	164812	0.73	161998	101.7	80 - 120	
89 Y	2	95279	1.16	96013	99.2	80 - 120	
89 Y	3	332661	0.99	342628	97.1	80 - 120	
115 In	3	371125	1.40	377350	98.4	80 - 120	
209 Bi	3	411592	1.06	416919	98.7	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B12r00.B\009CALB.D\009CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY INTERFERENCE CHECK STANDARD A FOR 297025 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018062954027.2 File : 18b12r00027 Time : 12-FEB-2018 19:22
Cal : 1018062954001 Caldate : 12-FEB-2018
Standards: S35821, S35939

Analyte	Ch	Quant	IQL	Units	Flags
Lead	A	[0.1116]	0.5000	ug/L	
Copper	E	0.7549	0.5000	ug/L	

Interferent	Ch	Spiked	Quant	Units	%Rec	Flags
Aluminum	A	100000	89080	ug/L	89	
Calcium	A	300000	272400	ug/L	91	
Magnesium	A	100000	88510	ug/L	89	
Molybdenum	A	2000	2015	ug/L	101	
Potassium	A	100000	92260	ug/L	92	
Sodium	E	250000	236600	ug/L	95	
Phosphorus	E	100000	93490	ug/L	93	
Iron	H	250000	244300	ug/L	98	

ISTD (ICALBLK 18b12r00009)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	54773	52747	-3.70
Germanium	H	12557	12235	-2.56
Germanium	A	38413	43817	14.07
Germanium	E	10168	11182	9.97
Indium	A	377350	349445	-7.39
Bismuth	A	416919	325485	-21.93
Yttrium	E	96013	100063	4.22
Yttrium	H	161998	162419	0.26
Yttrium	A	342628	346636	1.17

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B12r00.B\027ICSA.D\027ICSA.D#
Date Acquired: Feb 12 2018 07:22 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: icsa,s35821
Misc Info:
Vial Number: 1203
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 12 2018 06:31 pm
Sample Type: 6-ICSA
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	-0.0058	2.086038E-05	1.11	ppb	177.68	
23 Na	72	2	236600.0000	1.580889E+03	17676720.00	ppb	0.46	
24 Mg	72	3	88510.0000	1.433012E+03	62789728.00	ppb	0.32	
27 Al	72	3	89080.0000	1.918012E+03	84040816.00	ppb	0.29	
31 P	72	2	93490.0000	1.414280E+01	158126.91	ppb	1.26	
39 K	72	3	92260.0000	2.393841E+03	104888700.00	ppb	0.56	
44 Ca	72	3	272400.0000	2.170461E+02	9509972.00	ppb	0.87	
51 V	72	2	0.7081	6.654812E-02	744.10	ppb	1.81	
52 Cr	72	2	1.2490	9.757481E-02	1090.79	ppb	10.35	
55 Mn	72	2	2.7040	8.540427E-02	955.23	ppb	3.98	
56 Fe	72	1	244300.0000	7.689571E+03	94080208.00	ppb	1.12	
59 Co	72	2	1.3100	5.849012E-02	654.10	ppb	3.14	
60 Ni	72	2	2.1380	2.268201E-02	253.71	ppb	3.47	
63 Cu	89	2	0.7549	2.457539E-03	245.93	ppb	6.13	
66 Zn	89	2	1.5030	1.225541E-03	122.59	ppb	17.41	
75 As	89	2	1.0460	6.018627E-04	60.22	ppb	7.32	
78 Se	89	1	0.0122	5.434281E-06	0.89	ppb	471.05	
98 Mo	89	3	2015.0000	4.173901E+00	1446806.00	ppb	0.50	
99 (Ru)	115	3	320.0000	2.227518E-05	7.78	ppb	25.24	
107 Ag	115	3	0.0373	1.526543E-04	53.34	ppb	47.11	
111 Cd	115	3	2.1130	1.643568E-03	574.47	ppb	12.51	
121 Sb	115	3	0.0393	1.494748E-04	52.22	ppb	13.44	
137 Ba	209	3	0.1692	2.150494E-04	70.00	ppb	27.78	
205 Tl	209	3	0.0056	7.850755E-05	25.56	ppb	25.27	
208 Pb	209	3	0.1116	1.795768E-03	584.47	ppb	9.13	
238 U	209	3	0.0026	3.754572E-05	12.22	ppb	66.14	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	52747	1.37	54773	96.3	30 - 120	
72 Ge	1	12235	1.02	12557	97.4	30 - 120	
72 Ge	2	11182	1.43	10168	110.0	30 - 120	
72 Ge	3	43817	0.69	38413	114.1	30 - 120	
89 Y	1	162419	0.97	161998	100.3	30 - 120	
89 Y	2	100063	0.32	96013	104.2	30 - 120	
89 Y	3	346636	0.60	342628	101.2	30 - 120	
115 In	3	349445	0.47	377350	92.6	30 - 120	
209 Bi	3	325485	0.24	416919	78.1	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B12r00.B\009CALB.D\009CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY INTERFERENCE CHECK STANDARD AB FOR 297025 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018062954028.2 File : 18b12r00028 Time : 12-FEB-2018 19:27
Cal : 1018062954001 Caldate : 12-FEB-2018
Standards: S35822, S35939

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Copper	E	200.0	193.2	ug/L	-3	20	

ISTD (ICALBLK 18b12r00009)	Ch	ICALBLK Abund	Abund	%Drift
Germanium	H	12557	12363	-1.54
Germanium	A	38413	40749	6.08
Germanium	E	10168	10690	5.13
Indium	A	377350	335832	-11.00
Yttrium	E	96013	95448	-0.59
Yttrium	H	161998	164389	1.48
Yttrium	A	342628	330794	-3.45

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B12r00.B\028ICSB.D\028ICSB.D#
Date Acquired: Feb 12 2018 07:27 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: icsab,s35822
Misc Info:
Vial Number: 1204
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 12 2018 06:31 pm
Sample Type: 6-ICSAB
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Fail
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
23 Na	72	2	237700.0000	1.588195E+03	16973960.00	ppb	1.85	
24 Mg	72	3	89180.0000	1.443795E+03	58833032.00	ppb	0.30	
27 Al	72	3	89650.0000	1.930302E+03	78657440.00	ppb	0.08	
31 P	72	2	94980.0000	1.436915E+01	153573.91	ppb	1.72	
39 K	72	3	93120.0000	2.416048E+03	98450960.00	ppb	0.22	
44 Ca	72	3	276400.0000	2.202565E+02	8975189.00	ppb	0.10	
51 V	72	2	197.4000	5.854649E+00	62572.76	ppb	1.81	
52 Cr	72	2	192.3000	6.388351E+00	68278.11	ppb	1.58	
55 Mn	72	2	192.5000	5.982901E+00	63945.95	ppb	1.38	
56 Fe	72	1	245100.0000	7.712563E+03	95347264.00	ppb	0.61	
59 Co	72	2	188.8000	8.411953E+00	89901.56	ppb	2.04	
60 Ni	72	2	183.6000	1.929586E+00	20620.36	ppb	2.89	
63 Cu	89	2	193.2000	5.339938E-01	50964.83	ppb	1.38	
66 Zn	89	2	92.3700	6.235074E-02	5950.82	ppb	1.34	
75 As	89	2	105.9000	5.301651E-02	5059.96	ppb	1.73	
78 Se	89	1	100.4000	1.089196E-02	1790.56	ppb	0.56	
98 Mo	89	3	2019.0000	4.180550E+00	1382880.00	ppb	0.46	
107 Ag	115	3	46.0300	1.519640E-01	51034.73	ppb	0.60	Fail
111 Cd	115	3	92.8900	7.225779E-02	24266.85	ppb	1.76	Fail

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	48697	2.40	54773	88.9	30 - 120	
72 Ge	1	12363	0.78	12557	98.5	30 - 120	
72 Ge	2	10690	1.61	10168	105.1	30 - 120	
72 Ge	3	40749	0.32	38413	106.1	30 - 120	
89 Y	1	164389	0.68	161998	101.5	30 - 120	
89 Y	2	95448	0.83	96013	99.4	30 - 120	
89 Y	3	330794	0.84	342628	96.5	30 - 120	
115 In	3	335832	0.39	377350	89.0	30 - 120	
209 Bi	3	312514	0.32	416919	75.0	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B12r00.B\009CALB.D\009CALB.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY CONTINUING CALIBRATION FOR 297025 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018062954090.1 File : 18b12r00090 Time : 13-FEB-2018 00:33
Cal : 1018062954001 Caldate : 12-FEB-2018
Standards: S35983, S35939

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Lead	A	0.0110	0.0106	50.00	48.67	ug/L	-3	10	
Copper	E	0.0033	0.0035	50.00	63.01	ug/L	**26**	10	c+ i+ ***

ISTD (ICALBLK 18b12r00009)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	54773	84269	**53.85 ***
Germanium	H	12557	18690	**48.84 ***
Germanium	A	38413	53247	**38.62 ***
Germanium	E	10168	14798	**45.54 ***
Indium	A	377350	365270	-3.20
Bismuth	A	416919	288620	-30.77
Yttrium	E	96013	124752	**29.93 ***
Yttrium	H	161998	227260	**40.29 ***
Yttrium	A	342628	412442	**20.38 ***

+=high bias c=CCV i=ISTD failure

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B12r00.B\090_CCV.D\090_CCV.D#
Date Acquired: Feb 13 2018 12:33 am
Acq. Method: 6020newj.M
Operator:
Sample Name: ccv,s35983
Misc Info:
Vial Number: 3
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 12 2018 06:31 pm
Sample Type: 6-CCV
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Fail
ISTD: Fail

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	50.9200	1.791535E-01	15094.09	ppb	2.65	Fail
23 Na	72	2	5671.0000	3.832889E+01	567160.88	ppb	0.69	Fail
24 Mg	72	3	5937.0000	9.616269E+01	5120126.00	ppb	1.00	Fail
27 Al	72	3	5759.0000	1.240022E+02	6602509.00	ppb	0.75	Fail
31 P	72	2	5616.0000	8.536567E-01	12629.80	ppb	3.61	Fail
39 K	72	3	5571.0000	1.476173E+02	7860067.00	ppb	0.56	Fail
44 Ca	72	3	5401.0000	4.308786E+00	229428.20	ppb	1.06	Fail
51 V	72	2	54.7300	1.656064E+00	24504.72	ppb	1.03	Fail
52 Cr	72	2	55.6100	1.887629E+00	27932.30	ppb	0.31	Fail
55 Mn	72	2	52.4300	1.630738E+00	24129.78	ppb	1.25	Fail
56 Fe	72	1	5280.0000	1.661831E+02	3105977.00	ppb	0.30	Fail
59 Co	72	2	53.7900	2.396379E+00	35460.18	ppb	0.85	Fail
60 Ni	72	2	55.4200	5.824524E-01	8618.38	ppb	1.21	Fail
63 Cu	89	2	63.0100	1.744431E-01	21761.93	ppb	0.74	Fail
66 Zn	89	2	63.4000	4.286414E-02	5347.27	ppb	1.01	Fail
75 As	89	2	63.4500	3.178650E-02	3965.42	ppb	0.39	Fail
78 Se	89	1	52.3500	5.679569E-03	1290.73	ppb	0.60	Fail
98 Mo	89	3	49.8700	1.033666E-01	42633.96	ppb	0.53	Fail
107 Ag	115	3	52.8600	1.745226E-01	63746.30	ppb	0.72	Fail
111 Cd	115	3	50.2000	3.904967E-02	14263.84	ppb	0.97	Fail
121 Sb	115	3	53.5400	1.518415E-01	55457.00	ppb	1.36	Fail
137 Ba	209	3	61.0100	7.375540E-02	21287.03	ppb	0.58	Fail
205 Tl	209	3	24.1600	2.004956E-01	57866.96	ppb	0.13	Fail
208 Pb	209	3	48.6700	5.317383E-01	153469.30	ppb	0.35	Fail
238 U	209	3	45.0900	5.555171E-01	160329.91	ppb	1.00	Fail

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	84269	1.15	54773	153.9	80 - 120	ISFail
72 Ge	1	18690	0.43	12557	148.8	80 - 120	ISFail
72 Ge	2	14798	0.87	10168	145.5	80 - 120	ISFail
72 Ge	3	53247	1.31	38413	138.6	80 - 120	ISFail
89 Y	1	227260	0.22	161998	140.3	80 - 120	ISFail
89 Y	2	124752	0.34	96013	129.9	80 - 120	ISFail
89 Y	3	412442	1.02	342628	120.4	80 - 120	ISFail
115 In	3	365270	1.49	377350	96.8	80 - 120	
209 Bi	3	288620	0.36	416919	69.2	80 - 120	ISFail

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B12r00.B\009CALB.D\009CALB.D#

25 :Element Failures 0 :Max. Number of Failures Allowed
8 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY INSTRUMENT BLANK FOR 297025 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018062954092.1 File : 18b12r00092 Time : 13-FEB-2018 00:43
Cal : 1018062954001 Caldate : 12-FEB-2018

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Lead	A	ND	0.5000	0.1000	ug/L	
Copper	E	ND	0.5000	0.4000	ug/L	

ISTD (ICALBLK 18b12r00009)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	54773	76077	**38.90 ***
Germanium	H	12557	16354	**30.24 ***
Germanium	A	38413	49092	**27.80 ***
Germanium	E	10168	13380	**31.59 ***
Indium	A	377350	347396	-7.94
Bismuth	A	416919	284219	-31.83
Yttrium	E	96013	112244	16.91
Yttrium	H	161998	198081	**22.27 ***
Yttrium	A	342628	377644	10.22

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B12r00.B\092_CCB.D\092_CCB.D#
Date Acquired: Feb 13 2018 12:43 am
Acq. Method: 6020newj.M
Operator:
Sample Name: ccb
Misc Info:
Vial Number: 5
Current Method: C:\ICPCHEM\1\DATA\18B12r00.B\6020newj.M
Calibration File: C:\ICPCHEM\1\DATA\18B12r00.B\6020newj.C
Last Cal. Update: Feb 12 2018 06:31 pm
Sample Type: 6-CCB
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Fail
ISTD: Fail

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	0.0049	5.858045E-05	4.44	ppb	291.73	
23 Na	72	2	72.2400	9.393853E-01	12566.42	ppb	3.59	Fail
24 Mg	72	3	12.2600	2.434048E-01	11948.22	ppb	2.61	Fail
27 Al	72	3	-0.0753	4.433478E-03	217.79	ppb	39.69	
31 P	72	2	-7.8280	3.161863E-03	42.22	ppb	37.52	
39 K	72	3	52.9300	4.644461E+00	227996.00	ppb	2.78	Fail
44 Ca	72	3	4.7650	8.514243E-03	417.80	ppb	13.69	
51 V	72	2	-0.5318	3.006418E-02	402.23	ppb	9.39	
52 Cr	72	2	0.5487	7.452103E-02	997.08	ppb	14.61	Fail
55 Mn	72	2	0.1016	4.536349E-03	60.74	ppb	8.11	Fail
56 Fe	72	1	0.2095	4.511515E-02	737.80	ppb	12.35	
59 Co	72	2	-0.0002	1.378449E-04	1.85	ppb	637.38	
60 Ni	72	2	-0.0132	8.190243E-05	1.11	ppb	58.73	
63 Cu	89	2	0.0192	4.250032E-04	47.78	ppb	120.49	
66 Zn	89	2	-0.2455	4.920668E-05	5.56	ppb	15.17	
75 As	89	2	0.0404	9.924438E-05	11.11	ppb	99.46	
78 Se	89	1	0.0965	1.457683E-05	2.89	ppb	36.80	
98 Mo	89	3	0.0468	1.913929E-04	72.22	ppb	33.16	
107 Ag	115	3	0.0153	7.993813E-05	27.78	ppb	28.50	
111 Cd	115	3	0.0000	0.000000E-01	0.00	ppb	0.00	
121 Sb	115	3	0.0182	8.968696E-05	31.11	ppb	103.30	
137 Ba	209	3	0.0010	1.178285E-05	3.33	ppb	936.17	
205 Tl	209	3	0.0023	5.085717E-05	14.44	ppb	38.34	
208 Pb	209	3	-0.0031	5.436233E-04	154.45	ppb	121.64	
238 U	209	3	0.0034	4.678942E-05	13.33	ppb	84.62	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	76077	0.53	54773	138.9	80 - 120	ISFail
72 Ge	1	16354	0.91	12557	130.2	80 - 120	ISFail
72 Ge	2	13380	2.11	10168	131.6	80 - 120	ISFail
72 Ge	3	49092	1.11	38413	127.8	80 - 120	ISFail
89 Y	1	198081	0.60	161998	122.3	80 - 120	ISFail
89 Y	2	112244	2.02	96013	116.9	80 - 120	
89 Y	3	377644	0.81	342628	110.2	80 - 120	
115 In	3	347396	0.52	377350	92.1	80 - 120	
209 Bi	3	284219	0.72	416919	68.2	80 - 120	ISFail

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B12r00.B\009CALB.D\009CALB.D#

5 :Element Failures 0 :Max. Number of Failures Allowed
6 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY CONTINUING CALIBRATION FOR 297025 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018062954105.1 File : 18b12r00105 Time : 13-FEB-2018 01:46
Cal : 1018062954001 Caldate : 12-FEB-2018
Standards: S35983, S35939

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Lead	A	0.0110	0.0108	50.00	49.31	ug/L	-1	10	
Copper	E	0.0033	0.0033	50.00	59.21	ug/L	**18**	10	c+ ***

ISTD (ICALBLK 18b12r00009)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	54773	40808	-25.50
Germanium	H	12557	12235	-2.56
Germanium	A	38413	37048	-3.55
Germanium	E	10168	9286	-8.67
Indium	A	377350	317915	-15.75
Bismuth	A	416919	298773	-28.34
Yttrium	E	96013	82150	-14.44
Yttrium	H	161998	158179	-2.36
Yttrium	A	342628	318382	-7.08

+=high bias c=CCV

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B12r00.B\105_CCV.D\105_CCV.D#
Date Acquired: Feb 13 2018 01:46 am
Acq. Method: 6020newj.M
Operator:
Sample Name: ccv,s35983
Misc Info:
Vial Number: 3
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 12 2018 06:31 pm
Sample Type: 6-CCV
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Fail
ISTD: Fail

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	53.6000	1.885858E-01	7696.50	ppb	2.29	Fail
23 Na	72	2	4529.0000	3.070428E+01	284464.19	ppb	5.90	Fail
24 Mg	72	3	4423.0000	7.165362E+01	2654612.00	ppb	0.41	Fail
27 Al	72	3	4392.0000	9.457413E+01	3503775.00	ppb	0.28	Fail
31 P	72	2	4808.0000	7.314822E-01	6783.88	ppb	3.82	Fail
39 K	72	3	4686.0000	1.247069E+02	4620099.00	ppb	0.44	Fail
44 Ca	72	3	4742.0000	3.783473E+00	140167.59	ppb	0.62	Fail
51 V	72	2	51.0200	1.547046E+00	14331.80	ppb	6.53	Fail
52 Cr	72	2	52.3500	1.780252E+00	16490.97	ppb	6.46	Fail
55 Mn	72	2	51.2000	1.592497E+00	14749.26	ppb	6.93	Fail
56 Fe	72	1	4863.0000	1.530843E+02	1872864.00	ppb	0.56	Fail
59 Co	72	2	52.3600	2.332757E+00	21620.24	ppb	4.81	Fail
60 Ni	72	2	53.3800	5.610266E-01	5195.72	ppb	6.74	Fail
63 Cu	89	2	59.2100	1.639434E-01	13353.21	ppb	12.14	Fail
66 Zn	89	2	61.6400	4.167838E-02	3398.18	ppb	10.72	Fail
75 As	89	2	63.2300	3.167492E-02	2581.12	ppb	11.41	Fail
78 Se	89	1	53.7500	5.831285E-03	922.48	ppb	2.60	Fail
98 Mo	89	3	51.4800	1.067048E-01	33973.16	ppb	0.60	Fail
107 Ag	115	3	51.2200	1.690970E-01	53755.42	ppb	1.46	Fail
111 Cd	115	3	51.1600	3.979903E-02	12653.47	ppb	1.57	Fail
121 Sb	115	3	53.8500	1.527251E-01	48551.97	ppb	1.03	Fail
137 Ba	209	3	55.0400	6.653834E-02	19879.49	ppb	1.15	
205 Tl	209	3	24.6100	2.041929E-01	61006.98	ppb	0.35	Fail
208 Pb	209	3	49.3100	5.387311E-01	160955.59	ppb	1.04	Fail
238 U	209	3	46.2800	5.701424E-01	170342.50	ppb	0.34	Fail

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	40808	0.62	54773	74.5	80 - 120	ISFail
72 Ge	1	12235	0.78	12557	97.4	80 - 120	
72 Ge	2	9286	6.05	10168	91.3	80 - 120	
72 Ge	3	37048	0.74	38413	96.4	80 - 120	
89 Y	1	158179	1.07	161998	97.6	80 - 120	
89 Y	2	82150	10.63	96013	85.6	80 - 120	
89 Y	3	318382	1.13	342628	92.9	80 - 120	
115 In	3	317915	0.69	377350	84.2	80 - 120	
209 Bi	3	298773	0.25	416919	71.7	80 - 120	ISFail

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B12r00.B\009CALB.D\009CALB.D#

24 :Element Failures 0 :Max. Number of Failures Allowed
2 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY INSTRUMENT BLANK FOR 297025 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018062954107.1 File : 18b12r00107 Time : 13-FEB-2018 01:56
Cal : 1018062954001 Caldate : 12-FEB-2018

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Lead	A	ND	0.5000	0.1000	ug/L	
Copper	E	ND	0.5000	0.4000	ug/L	

ISTD (ICALBLK 18b12r00009)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	54773	37947	-30.72
Germanium	H	12557	11695	-6.86
Germanium	A	38413	34948	-9.02
Germanium	E	10168	9071	-10.79
Indium	A	377350	306968	-18.65
Bismuth	A	416919	296563	-28.87
Yttrium	E	96013	82463	-14.11
Yttrium	H	161998	147824	-8.75
Yttrium	A	342628	296475	-13.47

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B12r00.B\107_CCB.D\107_CCB.D#
Date Acquired: Feb 13 2018 01:56 am
Acq. Method: 6020newj.M
Operator:
Sample Name: ccb
Misc Info:
Vial Number: 5
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 12 2018 06:31 pm
Sample Type: 6-CCB
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Fail
ISTD: Fail

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	0.0133	8.797050E-05	3.33	ppb	189.17	
23 Na	72	2	15.2200	5.585753E-01	5064.31	ppb	22.73	Fail
24 Mg	72	3	6.8720	1.561981E-01	5458.87	ppb	3.03	
27 Al	72	3	-0.0966	3.974351E-03	138.89	ppb	9.41	
31 P	72	2	-8.4890	3.061864E-03	27.78	ppb	168.34	
39 K	72	3	11.2700	3.565075E+00	124588.10	ppb	12.87	Fail
44 Ca	72	3	0.6977	5.272990E-03	184.45	ppb	151.78	
51 V	72	2	-0.4184	3.340289E-02	302.97	ppb	2.61	
52 Cr	72	2	0.3122	6.673333E-02	604.83	ppb	44.30	Fail
55 Mn	72	2	0.0425	2.699700E-03	24.44	ppb	36.13	
56 Fe	72	1	-0.3458	2.764026E-02	322.97	ppb	20.10	
59 Co	72	2	0.0013	2.020098E-04	1.85	ppb	323.14	
60 Ni	72	2	-0.0014	2.055946E-04	1.85	ppb	972.65	
63 Cu	89	2	-0.0031	3.635326E-04	30.00	ppb	603.07	
66 Zn	89	2	-0.2585	4.045471E-05	3.33	ppb	13.46	
75 As	89	2	-0.0072	7.550101E-05	6.22	ppb	479.20	
78 Se	89	1	-0.0102	3.005195E-06	0.44	ppb	234.47	
98 Mo	89	3	0.0558	2.100885E-04	62.22	ppb	63.86	
107 Ag	115	3	0.0470	1.844299E-04	56.67	ppb	35.92	
111 Cd	115	3	0.0046	3.605114E-06	1.11	ppb	173.18	
121 Sb	115	3	0.0146	7.948882E-05	24.45	ppb	150.48	
137 Ba	209	3	-0.0087	0.000000E-01	0.00	ppb	0.00	
205 Tl	209	3	0.0020	4.865695E-05	14.45	ppb	238.77	
208 Pb	209	3	-0.0035	5.393753E-04	160.01	ppb	283.37	
238 U	209	3	0.0038	5.240245E-05	15.56	ppb	68.64	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	37947	0.93	54773	69.3	80 - 120	ISFail
72 Ge	1	11695	1.74	12557	93.1	80 - 120	
72 Ge	2	9071	1.86	10168	89.2	80 - 120	
72 Ge	3	34948	0.88	38413	91.0	80 - 120	
89 Y	1	147824	0.18	161998	91.3	80 - 120	
89 Y	2	82463	0.82	96013	85.9	80 - 120	
89 Y	3	296475	0.60	342628	86.5	80 - 120	
115 In	3	306968	0.50	377350	81.3	80 - 120	
209 Bi	3	296563	0.25	416919	71.1	80 - 120	ISFail

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B12r00.B\009CALB.D\009CALB.D#

3 :Element Failures 0 :Max. Number of Failures Allowed
2 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY CONTINUING CALIBRATION FOR 297025 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018062954118.1 File : 18b12r00118 Time : 13-FEB-2018 02:49
Cal : 1018062954001 Caldate : 12-FEB-2018
Standards: S35983, S35939

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Lead	A	0.0110	0.0108	50.00	49.63	ug/L	-1	10	
Copper	E	0.0033	0.0028	50.00	50.62	ug/L	1	10	

ISTD (ICALBLK 18b12r00009)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	54773	27983	-48.91
Germanium	H	12557	9423	-24.96
Germanium	A	38413	28367	-26.15
Germanium	E	10168	7320	-28.01
Indium	A	377350	272583	-27.76
Bismuth	A	416919	273785	-34.33
Yttrium	E	96013	70346	-26.73
Yttrium	H	161998	126520	-21.90
Yttrium	A	342628	258242	-24.63

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B12r00.B\118_CCV.D\118_CCV.D#
Date Acquired: Feb 13 2018 02:49 am
Acq. Method: 6020newj.M
Operator:
Sample Name: ccv,s35983
Misc Info:
Vial Number: 3
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 12 2018 06:31 pm
Sample Type: 6-CCV
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Fail
ISTD: Fail

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	52.5700	1.849610E-01	5176.53	ppb	2.60	Fail
23 Na	72	2	3823.0000	2.599147E+01	190257.09	ppb	0.80	Fail
24 Mg	72	3	3962.0000	6.418770E+01	1820512.00	ppb	1.56	Fail
27 Al	72	3	3956.0000	8.517201E+01	2415713.00	ppb	1.40	Fail
31 P	72	2	4177.0000	6.360841E-01	4655.29	ppb	4.14	Fail
39 K	72	3	4259.0000	1.136226E+02	3222605.00	ppb	1.59	Fail
44 Ca	72	3	4370.0000	3.487583E+00	98914.52	ppb	1.76	Fail
51 V	72	2	46.9800	1.428157E+00	10454.31	ppb	0.46	Fail
52 Cr	72	2	47.1500	1.609220E+00	11779.32	ppb	1.36	Fail
55 Mn	72	2	47.2400	1.469409E+00	10755.63	ppb	1.29	Fail
56 Fe	72	1	4723.0000	1.486598E+02	1400670.00	ppb	1.10	Fail
59 Co	72	2	49.3100	2.196651E+00	16079.86	ppb	0.81	Fail
60 Ni	72	2	49.5900	5.212258E-01	3815.32	ppb	1.02	Fail
63 Cu	89	2	50.6200	1.402178E-01	9862.83	ppb	1.57	Fail
66 Zn	89	2	53.1600	3.597869E-02	2530.97	ppb	2.48	Fail
75 As	89	2	55.0800	2.760054E-02	1941.47	ppb	0.97	Fail
78 Se	89	1	53.3300	5.785756E-03	732.02	ppb	0.22	Fail
98 Mo	89	3	52.8200	1.094855E-01	28272.53	ppb	0.82	Fail
107 Ag	115	3	50.3700	1.663117E-01	45330.01	ppb	1.56	Fail
111 Cd	115	3	49.2100	3.828125E-02	10435.06	ppb	0.76	Fail
121 Sb	115	3	54.5000	1.545829E-01	42136.85	ppb	0.77	Fail
137 Ba	209	3	51.7400	6.254830E-02	17123.75	ppb	1.82	
205 Tl	209	3	24.5400	2.035707E-01	55734.09	ppb	0.48	Fail
208 Pb	209	3	49.6300	5.422172E-01	148444.09	ppb	1.17	Fail
238 U	209	3	46.5900	5.739322E-01	157131.91	ppb	0.36	Fail

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	27983	0.75	54773	51.1	80 - 120	ISFail
72 Ge	1	9423	1.39	12557	75.0	80 - 120	ISFail
72 Ge	2	7320	0.98	10168	72.0	80 - 120	ISFail
72 Ge	3	28367	1.50	38413	73.8	80 - 120	ISFail
89 Y	1	126520	0.56	161998	78.1	80 - 120	ISFail
89 Y	2	70346	0.95	96013	73.3	80 - 120	ISFail
89 Y	3	258242	1.06	342628	75.4	80 - 120	ISFail
115 In	3	272583	0.94	377350	72.2	80 - 120	ISFail
209 Bi	3	273785	0.61	416919	65.7	80 - 120	ISFail

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B12r00.B\009CALB.D\009CALB.D#

24 :Element Failures 0 :Max. Number of Failures Allowed
9 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY INSTRUMENT BLANK FOR 297025 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018062954120.1 File : 18b12r00120 Time : 13-FEB-2018 02:59
Cal : 1018062954001 Caldate : 12-FEB-2018

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Lead	A	ND	0.5000	0.1000	ug/L	
Copper	E	ND	0.5000	0.4000	ug/L	

ISTD (ICALBLK 18b12r00009)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	54773	26227	-52.12
Germanium	H	12557	9076	-27.72
Germanium	A	38413	26838	-30.13
Germanium	E	10168	7013	-31.03
Indium	A	377350	259423	-31.25
Bismuth	A	416919	264063	-36.66
Yttrium	E	96013	65632	-31.64
Yttrium	H	161998	117943	-27.19
Yttrium	A	342628	238248	-30.46

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B12r00.B\120_CCB.D\120_CCB.D#
Date Acquired: Feb 13 2018 02:59 am
Acq. Method: 6020newj.M
Operator:
Sample Name: ccb
Misc Info:
Vial Number: 5
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 12 2018 06:31 pm
Sample Type: 6-CCB
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Fail

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	0.0122	8.426054E-05	2.22	ppb	169.53	
23 Na	72	2	-7.1320	4.092823E-01	2870.35	ppb	19.48	
24 Mg	72	3	2.6910	8.850583E-02	2375.81	ppb	5.85	
27 Al	72	3	-0.0176	5.676692E-03	152.23	ppb	234.13	
31 P	72	2	-6.7490	3.325045E-03	23.33	ppb	241.37	
39 K	72	3	-3.0140	3.194862E+00	85741.92	ppb	30.15	
44 Ca	72	3	-0.1011	4.636433E-03	124.45	ppb	199.21	
51 V	72	2	-0.5035	3.089694E-02	216.67	ppb	16.07	
52 Cr	72	2	0.0996	5.973351E-02	418.90	ppb	78.91	
55 Mn	72	2	0.0134	1.795322E-03	12.59	ppb	95.66	
56 Fe	72	1	1.1810	7.568801E-02	687.06	ppb	7.21	
59 Co	72	2	0.0074	4.753720E-04	3.33	ppb	83.12	
60 Ni	72	2	-0.0009	2.110397E-04	1.48	ppb	1915.90	
63 Cu	89	2	-0.0161	3.274063E-04	21.48	ppb	97.03	
66 Zn	89	2	-0.2098	7.322719E-05	4.81	ppb	29.72	
75 As	89	2	0.0248	9.148620E-05	6.00	ppb	88.76	
78 Se	89	1	0.0314	7.516711E-06	0.89	ppb	253.12	
98 Mo	89	3	0.0332	1.632015E-04	38.89	ppb	46.67	
107 Ag	115	3	0.0197	9.447999E-05	24.45	ppb	80.98	
111 Cd	115	3	0.0000	0.000000E-01	0.00	ppb	0.00	
121 Sb	115	3	0.0017	4.281489E-05	11.11	ppb	153.03	
137 Ba	209	3	0.0121	2.517829E-05	6.67	ppb	84.58	
205 Tl	209	3	0.0027	5.469021E-05	14.44	ppb	85.74	
208 Pb	209	3	0.0030	6.102299E-04	161.12	ppb	162.58	
238 U	209	3	0.0009	1.691066E-05	4.44	ppb	127.00	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	26227	1.78	54773	47.9	80 - 120	ISFail
72 Ge	1	9076	1.45	12557	72.3	80 - 120	ISFail
72 Ge	2	7013	0.18	10168	69.0	80 - 120	ISFail
72 Ge	3	26838	1.00	38413	69.9	80 - 120	ISFail
89 Y	1	117943	0.39	161998	72.8	80 - 120	ISFail
89 Y	2	65632	1.23	96013	68.4	80 - 120	ISFail
89 Y	3	238248	0.38	342628	69.5	80 - 120	ISFail
115 In	3	259423	0.99	377350	68.7	80 - 120	ISFail
209 Bi	3	264063	0.85	416919	63.3	80 - 120	ISFail

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B12r00.B\009CALB.D\009CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
9 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY CONTINUING CALIBRATION FOR 297025 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018062954127.1 File : 18b12r00127 Time : 13-FEB-2018 03:33
Cal : 1018062954001 Caldate : 12-FEB-2018
Standards: S35983, S35939

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Lead	A	0.0110	0.0105	50.00	48.06	ug/L	-4	10	
Copper	E	0.0033	0.0027	50.00	49.28	ug/L	-1	10	

ISTD (ICALBLK 18b12r00009)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	54773	25531	-53.39
Germanium	H	12557	8959	-28.65
Germanium	A	38413	26073	-32.12
Germanium	E	10168	6790	-33.22
Indium	A	377350	258821	-31.41
Bismuth	A	416919	262085	-37.14
Yttrium	E	96013	65793	-31.47
Yttrium	H	161998	119080	-26.49
Yttrium	A	342628	242487	-29.23

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B12r00.B\127_CCV.D\127_CCV.D#
Date Acquired: Feb 13 2018 03:33 am
Acq. Method: 6020newj.M
Operator:
Sample Name: ccv,s35983
Misc Info:
Vial Number: 3
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 12 2018 06:31 pm
Sample Type: 6-CCV
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Fail
ISTD: Fail

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	51.1800	1.800565E-01	4598.57	ppb	4.45	Fail
23 Na	72	2	3622.0000	2.464509E+01	167215.41	ppb	3.45	Fail
24 Mg	72	3	3760.0000	6.092102E+01	1587916.00	ppb	2.12	Fail
27 Al	72	3	3733.0000	8.037227E+01	2094926.00	ppb	2.07	Fail
31 P	72	2	4079.0000	6.212373E-01	4214.04	ppb	7.43	Fail
39 K	72	3	3986.0000	1.065557E+02	2777502.00	ppb	1.86	Fail
44 Ca	72	3	4090.0000	3.264110E+00	85084.59	ppb	1.76	Fail
51 V	72	2	43.5500	1.327261E+00	9003.39	ppb	4.70	Fail
52 Cr	72	2	45.4400	1.552642E+00	10530.66	ppb	5.40	Fail
55 Mn	72	2	45.0400	1.400857E+00	9502.59	ppb	4.47	Fail
56 Fe	72	1	4479.0000	1.409870E+02	1263072.00	ppb	0.54	Fail
59 Co	72	2	47.4500	2.114013E+00	14341.13	ppb	4.16	Fail
60 Ni	72	2	48.1600	5.062214E-01	3433.75	ppb	4.88	Fail
63 Cu	89	2	49.2800	1.365034E-01	8953.38	ppb	7.08	Fail
66 Zn	89	2	52.6600	3.564082E-02	2340.20	ppb	4.99	Fail
75 As	89	2	54.8700	2.750020E-02	1802.56	ppb	8.62	Fail
78 Se	89	1	49.9600	5.420707E-03	645.57	ppb	4.18	Fail
98 Mo	89	3	50.9000	1.055063E-01	25583.24	ppb	1.17	Fail
107 Ag	115	3	47.9300	1.582360E-01	40954.08	ppb	0.81	Fail
111 Cd	115	3	48.7500	3.791860E-02	9813.51	ppb	2.76	Fail
121 Sb	115	3	52.1800	1.480060E-01	38306.51	ppb	1.19	Fail
137 Ba	209	3	50.5400	6.110328E-02	16014.69	ppb	2.03	
205 Tl	209	3	23.9000	1.983251E-01	51977.63	ppb	1.50	Fail
208 Pb	209	3	48.0600	5.250861E-01	137615.30	ppb	1.22	Fail
238 U	209	3	45.1800	5.566458E-01	145886.30	ppb	1.30	Fail

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	25531	1.08	54773	46.6	80 - 120	ISFail
72 Ge	1	8959	0.55	12557	71.3	80 - 120	ISFail
72 Ge	2	6790	3.12	10168	66.8	80 - 120	ISFail
72 Ge	3	26073	2.02	38413	67.9	80 - 120	ISFail
89 Y	1	119080	0.53	161998	73.5	80 - 120	ISFail
89 Y	2	65793	6.52	96013	68.5	80 - 120	ISFail
89 Y	3	242487	0.43	342628	70.8	80 - 120	ISFail
115 In	3	258821	0.34	377350	68.6	80 - 120	ISFail
209 Bi	3	262085	0.20	416919	62.9	80 - 120	ISFail

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B12r00.B\009CALB.D\009CALB.D#

24 :Element Failures 0 :Max. Number of Failures Allowed
9 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY INSTRUMENT BLANK FOR 297025 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018062954129.1 File : 18b12r00129 Time : 13-FEB-2018 03:43
Cal : 1018062954001 Caldate : 12-FEB-2018

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Lead	A	ND	0.5000	0.1000	ug/L	
Copper	E	ND	0.5000	0.4000	ug/L	

ISTD (ICALBLK 18b12r00009)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	54773	20751	-62.11
Germanium	H	12557	7077	-43.64
Germanium	A	38413	20989	-45.36
Germanium	E	10168	5480	-46.11
Indium	A	377350	209200	-44.56
Bismuth	A	416919	219529	-47.34
Yttrium	E	96013	52306	-45.52
Yttrium	H	161998	90784	-43.96
Yttrium	A	342628	189779	-44.61

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B12r00.B\129_CCB.D\129_CCB.D#
Date Acquired: Feb 13 2018 03:43 am
Acq. Method: 6020newj.M
Operator:
Sample Name: ccb
Misc Info:
Vial Number: 5
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 12 2018 06:31 pm
Sample Type: 6-CCB
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Fail
ISTD: Fail

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	-0.0117	0.000000E-01	0.00	ppb	0.00	
23 Na	72	2	1.4660	4.667107E-01	2556.95	ppb	151.77	
24 Mg	72	3	4.1170	1.115956E-01	2342.47	ppb	2.40	
27 Al	72	3	-0.1287	3.282063E-03	68.89	ppb	6.39	
31 P	72	2	-10.0100	2.830855E-03	15.56	ppb	81.35	
39 K	72	3	5.5310	3.416291E+00	71703.86	ppb	9.46	
44 Ca	72	3	0.5267	5.136752E-03	107.78	ppb	230.11	
51 V	72	2	-0.5683	2.899156E-02	158.89	ppb	3.54	
52 Cr	72	2	0.2084	6.331397E-02	347.05	ppb	33.45	Fail
55 Mn	72	2	0.0251	2.160877E-03	11.85	ppb	82.25	
56 Fe	72	1	0.8732	6.600159E-02	467.05	ppb	3.21	
59 Co	72	2	0.0059	4.069397E-04	2.22	ppb	78.86	
60 Ni	72	2	0.0111	3.374029E-04	1.85	ppb	98.56	
63 Cu	89	2	-0.0296	2.903189E-04	15.19	ppb	14.98	
66 Zn	89	2	-0.2344	5.669294E-05	2.96	ppb	15.68	
75 As	89	2	0.0204	8.926814E-05	4.67	ppb	376.31	
78 Se	89	1	0.0072	4.899756E-06	0.44	ppb	541.66	
98 Mo	89	3	0.0081	1.112212E-04	21.11	ppb	367.39	
107 Ag	115	3	0.0297	1.275304E-04	26.67	ppb	32.76	
111 Cd	115	3	0.0000	0.000000E-01	0.00	ppb	0.00	
121 Sb	115	3	0.0091	6.381427E-05	13.33	ppb	124.63	
137 Ba	209	3	-0.0045	5.065715E-06	1.11	ppb	160.88	
205 Tl	209	3	0.0047	7.081971E-05	15.56	ppb	44.62	
208 Pb	209	3	0.0189	7.845560E-04	172.23	ppb	47.38	
238 U	209	3	0.0004	1.010625E-05	2.22	ppb	185.05	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	20751	1.24	54773	37.9	80 - 120	ISFail
72 Ge	1	7077	1.53	12557	56.4	80 - 120	ISFail
72 Ge	2	5480	1.08	10168	53.9	80 - 120	ISFail
72 Ge	3	20989	0.75	38413	54.6	80 - 120	ISFail
89 Y	1	90784	0.80	161998	56.0	80 - 120	ISFail
89 Y	2	52306	0.33	96013	54.5	80 - 120	ISFail
89 Y	3	189779	0.08	342628	55.4	80 - 120	ISFail
115 In	3	209200	0.37	377350	55.4	80 - 120	ISFail
209 Bi	3	219529	0.38	416919	52.7	80 - 120	ISFail

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B12r00.B\009CALB.D\009CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
9 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY INTERFERENCE CHECK STANDARD A FOR 297025 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018062954130.2 File : 18b12r00130 Time : 13-FEB-2018 03:48
Cal : 1018062954001 Caldate : 12-FEB-2018
Standards: S35984, S35939

Analyte	Ch	Quant	IQL	Units	Flags
Lead	A	[0.1025]	0.5000	ug/L	
Copper	E	0.6063	0.5000	ug/L	

Interferent	Ch	Spiked	Quant	Units	%Rec	Flags
Aluminum	A	100000	69860	ug/L	70	
Calcium	A	300000	235800	ug/L	79	
Magnesium	A	100000	68630	ug/L	69	
Molybdenum	A	2000	2055	ug/L	103	
Potassium	A	100000	76710	ug/L	77	
Sodium	E	250000	171500	ug/L	69	
Phosphorus	E	100000	75730	ug/L	76	
Iron	H	250000	222000	ug/L	89	

ISTD (ICALBLK 18b12r00009)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	54773	24446	-55.37
Germanium	H	12557	8452	-32.69
Germanium	A	38413	28900	-24.77
Germanium	E	10168	7190	-29.29
Indium	A	377350	247811	-34.33
Bismuth	A	416919	225569	-45.90
Yttrium	E	96013	65462	-31.82
Yttrium	H	161998	112089	-30.81
Yttrium	A	342628	240612	-29.77

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B12r00.B\130ICSA.D\130ICSA.D#
Date Acquired: Feb 13 2018 03:48 am
Acq. Method: 6020newj.M
Operator:
Sample Name: icsa,s35821
Misc Info:
Vial Number: 1203
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 12 2018 06:31 pm
Sample Type: 6-ICSA
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	0.0523	2.251502E-04	5.56	ppb	152.94	
23 Na	72	2	171500.0000	1.146055E+03	8239751.00	ppb	1.48	
24 Mg	72	3	68630.0000	1.111102E+03	32105560.00	ppb	1.74	
27 Al	72	3	69860.0000	1.504156E+03	43462672.00	ppb	1.80	
31 P	72	2	75730.0000	1.145682E+01	82369.42	ppb	2.24	
39 K	72	3	76710.0000	1.990813E+03	57526040.00	ppb	1.55	
44 Ca	72	3	235800.0000	1.879103E+02	5429829.00	ppb	1.51	
51 V	72	2	-0.0200	4.512607E-02	324.45	ppb	364.71	
52 Cr	72	2	1.2570	9.783998E-02	703.36	ppb	15.72	
55 Mn	72	2	2.5140	7.948965E-02	571.50	ppb	8.97	
56 Fe	72	1	222000.0000	6.986581E+03	59036880.00	ppb	1.39	
59 Co	72	2	1.3160	5.878024E-02	422.60	ppb	2.35	
60 Ni	72	2	1.7100	1.818714E-02	130.74	ppb	15.44	
63 Cu	89	2	0.6063	2.047014E-03	134.08	ppb	11.97	
66 Zn	89	2	1.3550	1.126017E-03	73.70	ppb	6.79	
75 As	89	2	0.7865	4.721108E-04	30.89	ppb	14.08	
78 Se	89	1	-0.0194	2.009893E-06	0.22	ppb	165.26	
98 Mo	89	3	2055.0000	4.256428E+00	1024034.00	ppb	1.23	
99 (Ru)	115	3	64.1900	4.468565E-06	1.11	ppb	173.24	
107 Ag	115	3	0.0578	2.201645E-04	54.45	ppb	30.92	
111 Cd	115	3	1.8380	1.429512E-03	354.46	ppb	15.33	
121 Sb	115	3	0.0641	2.198020E-04	54.45	ppb	5.87	
137 Ba	209	3	0.1708	2.169148E-04	48.89	ppb	18.78	
205 Tl	209	3	0.0033	5.918557E-05	13.33	ppb	55.88	
208 Pb	209	3	0.1025	1.696184E-03	382.24	ppb	30.35	
238 U	209	3	0.0024	3.448493E-05	7.78	ppb	29.31	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	24446	1.74	54773	44.6	30 - 120	
72 Ge	1	8452	2.12	12557	67.3	30 - 120	
72 Ge	2	7190	0.33	10168	70.7	30 - 120	
72 Ge	3	28900	1.41	38413	75.2	30 - 120	
89 Y	1	112089	1.18	161998	69.2	30 - 120	
89 Y	2	65462	0.90	96013	68.2	30 - 120	
89 Y	3	240612	1.36	342628	70.2	30 - 120	
115 In	3	247811	1.33	377350	65.7	30 - 120	
209 Bi	3	225569	1.39	416919	54.1	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B12r00.B\009CALB.D\009CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY INTERFERENCE CHECK STANDARD AB FOR 297025 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018062954131.2 File : 18b12r00131 Time : 13-FEB-2018 03:53
Cal : 1018062954001 Caldate : 12-FEB-2018
Standards: S35985, S35939

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Copper	E	200.0	181.3	ug/L	-9	20	

ISTD (ICALBLK 18b12r00009)	Ch	ICALBLK Abund	Abund	%Drift
Germanium	H	12557	8480	-32.47
Germanium	A	38413	28278	-26.38
Germanium	E	10168	7169	-29.49
Indium	A	377350	249717	-33.82
Yttrium	E	96013	65826	-31.44
Yttrium	H	161998	114681	-29.21
Yttrium	A	342628	242649	-29.18

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B12r00.B\131ICSB.D\131ICSB.D#
Date Acquired: Feb 13 2018 03:53 am
Acq. Method: 6020newj.M
Operator:
Sample Name: icsab,s35822
Misc Info:
Vial Number: 1204
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 12 2018 06:31 pm
Sample Type: 6-ICSAB
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Fail
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
23 Na	72	2	173700.0000	1.160532E+03	8319229.00	ppb	1.54	
24 Mg	72	3	68860.0000	1.114781E+03	31515450.00	ppb	1.87	
27 Al	72	3	70100.0000	1.509366E+03	42670400.00	ppb	1.90	
31 P	72	2	75860.0000	1.147744E+01	82271.20	ppb	1.97	
39 K	72	3	76880.0000	1.995315E+03	56409088.00	ppb	1.81	
44 Ca	72	3	235800.0000	1.879421E+02	5313233.00	ppb	1.87	
51 V	72	2	178.2000	5.289835E+00	37920.84	ppb	1.53	
52 Cr	72	2	174.7000	5.810647E+00	41651.00	ppb	2.07	
55 Mn	72	2	174.6000	5.427403E+00	38905.25	ppb	1.67	
56 Fe	72	1	223600.0000	7.036032E+03	59661100.00	ppb	1.04	
59 Co	72	2	176.5000	7.862548E+00	56360.02	ppb	1.86	
60 Ni	72	2	174.2000	1.830235E+00	13118.19	ppb	2.89	
63 Cu	89	2	181.3000	5.012694E-01	32993.77	ppb	1.16	
66 Zn	89	2	90.6500	6.119369E-02	4027.97	ppb	0.80	
75 As	89	2	110.9000	5.551782E-02	3654.45	ppb	0.75	
78 Se	89	1	97.6600	1.059181E-02	1214.72	ppb	1.50	
98 Mo	89	3	2016.0000	4.174353E+00	1012871.00	ppb	0.63	
107 Ag	115	3	45.8800	1.514806E-01	37821.44	ppb	1.71	Fail
111 Cd	115	3	95.2900	7.412510E-02	18506.33	ppb	2.56	Fail

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	24417	0.58	54773	44.6	30 - 120	
72 Ge	1	8480	0.81	12557	67.5	30 - 120	
72 Ge	2	7169	1.55	10168	70.5	30 - 120	
72 Ge	3	28278	2.02	38413	73.6	30 - 120	
89 Y	1	114681	0.57	161998	70.8	30 - 120	
89 Y	2	65826	1.14	96013	68.6	30 - 120	
89 Y	3	242649	0.73	342628	70.8	30 - 120	
115 In	3	249717	1.37	377350	66.2	30 - 120	
209 Bi	3	229587	1.03	416919	55.1	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B12r00.B\009CALB.D\009CALB.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 1018063987

Instrument : MET26 Begun : 02/13/18 10:27
Method : EPA 6020A SOP Version : icpms metals_rv10

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	18b13k00001	X	RINSE			02/13/18 10:27	1.0	1	
002	18b13k00002	TUN				02/13/18 10:32	1.0	2	
003	18b13k00003	X	RINSE			02/13/18 10:37	1.0	1	
004	18b13k00004	X	RINSE			02/13/18 10:42	1.0	1	
005	18b13k00005	ICALBLK	CALBLANK			02/13/18 10:46	1.0	1	
006	18b13k00006	ICAL				02/13/18 10:51	1.0	3 1	
007	18b13k00007	ICAL				02/13/18 10:56	1.0	3 1	
008	18b13k00008	ICAL				02/13/18 11:01	1.0	3 1	
009	18b13k00009	ICAL				02/13/18 11:06	1.0	3 1	
010	18b13k00010	ICAL				02/13/18 11:11	1.0	3 1	
011	18b13k00011	ICAL				02/13/18 11:15	1.0	3 1	
012	18b13k00012	ICAL				02/13/18 11:20	1.0	3 1	
013	18b13k00013	X	RINSE			02/13/18 11:25	1.0	1	
014	18b13k00014	ICV				02/13/18 11:30	1.0	4 1	
015	18b13k00015	CRI				02/13/18 11:35	1.0	5 1	
016	18b13k00016	ICB				02/13/18 11:40	1.0	1	
017	18b13k00017	ICSA				02/13/18 11:45	1.0	6 1	8:CA=300000
018	18b13k00018	ICSAB				02/13/18 11:50	1.0	7 1	10:CA=300000
019	18b13k00019	X	RINSE			02/13/18 11:55	1.0	1	
020	18b13k00020	X	RINSE			02/13/18 12:00	1.0	1	
021	18b13k00021	X	RINSE			02/13/18 12:05	1.0	1	
022	18b13k00022	X	RINSE			02/13/18 12:10	1.0	1	
023	18b13k00023	BLANK	QC918341	Soil	256072	02/13/18 12:15	25.0	1	
024	18b13k00024	SAMPLE	296654-004	Soil	256072	02/13/18 12:20	25.0	1	2:MN=260
025	18b13k00025	X	RINSE			02/13/18 12:25	1.0	1	
026	18b13k00026	MSS	296942-001	Soil	256366	02/13/18 12:30	25.0	1	2:FE=29000
027	18b13k00027	SAMPLE	296942-002	Soil	256366	02/13/18 12:35	25.0	1	2:FE=31000
028	18b13k00028	SAMPLE	296942-004	Soil	256366	02/13/18 12:40	25.0	1	1:MN=390
029	18b13k00029	SAMPLE	296942-005	Soil	256366	02/13/18 12:44	25.0	1	2:CA=22000
030	18b13k00030	CCV				02/13/18 12:49	1.0	4 1	
031	18b13k00031	X	XCCB			02/13/18 12:54	1.0	1	
032	18b13k00032	CCB				02/13/18 12:59	1.0	1	
033	18b13k00033	ICSA				02/13/18 13:04	1.0	6 1	8:CA=310000
034	18b13k00034	ICSAB				02/13/18 13:09	1.0	7 1	11:CA=300000
035	18b13k00035	X	RINSE			02/13/18 13:15	1.0	1	
036	18b13k00036	X	RINSE			02/13/18 13:19	1.0	1	
037	18b13k00037	X	RINSE			02/13/18 13:24	1.0	1	
038	18b13k00038	X	RINSE			02/13/18 13:29	1.0	1	
039	18b13k00039	BLANK	QC919604	Filtrate	256374	02/13/18 13:34	1.0	1	
040	18b13k00040	BLANK	QC919603	Filtrate	256374	02/13/18 13:39	1.0	1	
041	18b13k00041	BLANK	QC919605	Filtrate	256374	02/13/18 13:44	1.0	1	
042	18b13k00042	BS	QC919606	Filtrate	256374	02/13/18 13:49	1.0	1	
043	18b13k00043	BSD	QC919607	Filtrate	256374	02/13/18 13:54	1.0	1	
044	18b13k00044	SAMPLE	296174-003	Filtrate	256374	02/13/18 13:58	1.0	1	3:NA=520000
045	18b13k00045	X	RINSE			02/13/18 14:04	1.0	1	
046	18b13k00046	MSS	296647-002	Filtrate	256374	02/13/18 14:08	1.0	1	4:NA=450000
047	18b13k00047	MS	QC919608	Filtrate	256374	02/13/18 14:13	1.0	1	4:NA=490000
048	18b13k00048	MSD	QC919609	Filtrate	256374	02/13/18 14:18	1.0	1	4:NA=460000
049	18b13k00049	SER	QC919610	Filtrate	256374	02/13/18 14:23	5.0	1	3:NA=86000
050	18b13k00050	CCV				02/13/18 14:28	1.0	4 1	
051	18b13k00051	X	XCCB			02/13/18 14:33	1.0	1	
052	18b13k00052	CCB				02/13/18 14:38	1.0	1	

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 1018063987

Instrument : MET26 Begun : 02/13/18 10:27
Method : EPA 6020A SOP Version : icpms metals_rv10

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
053	18b13k00053	PDS	QC919611	Filtrate	256374	02/13/18 14:43	1.0	8 9 10 1	4:NA=430000
054	18b13k00054	X	RINSE			02/13/18 14:48	1.0	1	
055	18b13k00055	BLANK	QC919596	Filtrate	256373	02/13/18 14:53	1.0	1	
056	18b13k00056	BS	QC919597	Filtrate	256373	02/13/18 14:58	1.0	1	
057	18b13k00057	BSD	QC919598	Filtrate	256373	02/13/18 15:03	1.0	1	
058	18b13k00058	SAMPLE	295771-001	Filtrate	256373	02/13/18 15:08	1.0	1	3:MG=120000
059	18b13k00059	SAMPLE	295771-002	Filtrate	256373	02/13/18 15:13	1.0	1	3:MG=120000
060	18b13k00060	SAMPLE	295771-003	Filtrate	256373	02/13/18 15:18	1.0	1	
061	18b13k00061	SAMPLE	295771-004	Filtrate	256373	02/13/18 15:22	1.0	1	
062	18b13k00062	CCV				02/13/18 15:27	1.0	4 1	
063	18b13k00063	X	XCCB			02/13/18 15:32	1.0	1	
064	18b13k00064	CCB				02/13/18 15:37	1.0	1	
065	18b13k00065	ICSA				02/13/18 15:42	1.0	6 1	8:CA=300000
066	18b13k00066	ICSAB				02/13/18 15:47	1.0	7 1	8:CA=290000
067	18b13k00067	X	RINSE			02/13/18 15:52	1.0	1	
068	18b13k00068	X	RINSE			02/13/18 15:57	1.0	1	
069	18b13k00069	X	RINSE			02/13/18 16:02	1.0	1	
070	18b13k00070	X	RINSE			02/13/18 16:09	1.0	1	
071	18b13k00071	BLANK	QC919563	Soil	256366	02/13/18 16:14	25.0	1	
072	18b13k00072	SAMPLE	297013-004	Soil	256366	02/13/18 16:18	250.0	1	
073	18b13k00073	SAMPLE	297025-004	Soil	256366	02/13/18 16:23	100.0	1	
074	18b13k00074	SAMPLE	296825-002	Soil	256220	02/13/18 16:28	100.0	1	
075	18b13k00075	MS	QC919566	Soil	256366	02/13/18 16:35	25.0	1	2:FE=30000
076	18b13k00076	MSD	QC919567	Soil	256366	02/13/18 16:39	25.0	1	2:FE=28000
077	18b13k00077	SER	QC919921	Soil	256366	02/13/18 16:44	125.0	1	
078	18b13k00078	PDS	QC919922	Soil	256366	02/13/18 16:49	25.0	1 8 9 10	3:FE=29000
079	18b13k00079	SAMPLE	297013-001	Soil	256366	02/13/18 16:54	25.0	1	3:FE=25000
080	18b13k00080	SAMPLE	297013-002	Soil	256366	02/13/18 16:59	25.0	1	3:AL=27000
081	18b13k00081	CCV				02/13/18 17:04	1.0	4 1	
082	18b13k00082	X	XCCB			02/13/18 17:09	1.0	1	
083	18b13k00083	CCB				02/13/18 17:14	1.0	1	
084	18b13k00084	SAMPLE	297013-003	Soil	256366	02/13/18 17:19	25.0	1	3:AL=24000
085	18b13k00085	SAMPLE	297013-005	Soil	256366	02/13/18 17:24	25.0	1	3:AL=28000
086	18b13k00086	SAMPLE	296825-001	Soil	256220	02/13/18 17:29	25.0	1	1:MN=350
087	18b13k00087	SAMPLE	296825-003	Soil	256220	02/13/18 17:34	25.0	1	
088	18b13k00088	SAMPLE	296825-004	Soil	256220	02/13/18 17:39	25.0	1	1:MN=290
089	18b13k00089	SAMPLE	296825-005	Soil	256220	02/13/18 17:44	25.0	1	1:MN=390
090	18b13k00090	SAMPLE	297013-004	Soil	256366	02/13/18 17:49	25.0	1	4:FE=21000
091	18b13k00091	SAMPLE	296825-002	Soil	256220	02/13/18 17:54	25.0	1	2:ZN=220
092	18b13k00092	PDS	QC919301	Soil	256296	02/13/18 17:58	25.0	1 8 9 10	4:CA=90000
093	18b13k00093	X	RINSE			02/13/18 18:04	1.0	1	
094	18b13k00094	MSS	296501-001	Filtrate	256193	02/13/18 18:08	1.0	1	
095	18b13k00095	CCV				02/13/18 18:13	1.0	4 1	
096	18b13k00096	X	XCCB			02/13/18 18:18	1.0	1	
097	18b13k00097	CCB				02/13/18 18:23	1.0	1	
098	18b13k00098	MS	QC918878	Filtrate	256193	02/13/18 18:28	1.0	1	1:CA=28000
099	18b13k00099	MSD	QC918879	Filtrate	256193	02/13/18 18:33	1.0	1	1:CA=27000
100	18b13k00100	SAMPLE	296501-002	Filtrate	256193	02/13/18 18:38	1.0	1	
101	18b13k00101	X	RINSE			02/13/18 18:43	1.0	1	
102	18b13k00102	BLANK	QC919596	Filtrate	256373	02/13/18 18:48	1.0	1	
103	18b13k00103	BS	QC919597	Filtrate	256373	02/13/18 18:53	1.0	1	
104	18b13k00104	BSD	QC919598	Filtrate	256373	02/13/18 18:58	1.0	1	

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 1018063987

Instrument : MET26 Begun : 02/13/18 10:27
Method : EPA 6020A SOP Version : icpms metals_rv10

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
105	18b13k00105	SAMPLE	295771-001	Filtrate	256373	02/13/18 19:02	1.0	1	3:MG=120000
106	18b13k00106	SAMPLE	295771-002	Filtrate	256373	02/13/18 19:07	1.0	1	3:MG=120000
107	18b13k00107	SAMPLE	295771-003	Filtrate	256373	02/13/18 19:12	1.0	1	
108	18b13k00108	SAMPLE	295771-004	Filtrate	256373	02/13/18 19:17	1.0	1	
109	18b13k00109	CCV				02/13/18 19:22	1.0	4 1	
110	18b13k00110	X	XCCB			02/13/18 19:27	1.0	1	
111	18b13k00111	CCB				02/13/18 19:32	1.0	1	
112	18b13k00112	X	RINSE			02/13/18 19:37	1.0	1	
113	18b13k00113	MSS	296739-001	Filtrate	256373	02/13/18 19:42	1.0	1	4:NA=520000
114	18b13k00114	MS	QC919599	Filtrate	256373	02/13/18 19:47	1.0	1	4:NA=510000
115	18b13k00115	MSD	QC919600	Filtrate	256373	02/13/18 19:52	1.0	1	4:NA=490000
116	18b13k00116	SER	QC919601	Filtrate	256373	02/13/18 19:57	5.0	1	3:NA=91000
117	18b13k00117	PDS	QC919602	Filtrate	256373	02/13/18 20:02	1.0	8 9 10 1	4:NA=490000
118	18b13k00118	CCV				02/13/18 20:07	1.0	4 1	
119	18b13k00119	X	XCCB			02/13/18 20:12	1.0	1	
120	18b13k00120	CCB				02/13/18 20:17	1.0	1	
121	18b13k00121	ICSA				02/13/18 20:22	1.0	6 1	8:CA=260000
122	18b13k00122	ICSAB				02/13/18 20:27	1.0	7 1	8:CA=260000
123	18b13k00123	X	RINSE			02/13/18 20:32	1.0	1	
124	18b13k00124	X	RINSE			02/13/18 20:37	1.0	1	
125	18b13k00125	X	RINSE			02/13/18 20:42	1.0	1	
126	18b13k00126	X	RINSE			02/13/18 20:47	1.0	1	

NBB 02/13/18 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 001 through 034.

NBB 02/13/18 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 035 through 066.

NBB 02/14/18 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 067 through 122.

Standards used: 1=S35939 2=S35938 3=S35940 4=S35983 5=S35885 6=S35984 7=S35985 8=S34361 9=S34362 10=S34743

ENTHALPY SAMPLE USER REPORT FOR EPA 6020A

Inst	: MET26	Lab ID	: 297025-004	Client ID	: HPP-FSS-009D
Seqnum	: 1018063987073	Matrix	: Soil	Acct	: IEECI (MJD)
File	: 18b13k00073	Batch	: 256366	Time	: 13-FEB-2018 16:23
Cal	: 1018063987001	Caldate	: 13-FEB-2018		
IDF	: 100.0			Units	: mg/Kg

1.05 g --> 50.0 ml = 47.62 ml/g PDF

Analyte	Ch	Result	RL	Blank	Flags
Copper	E	420	2.4		u
Lead	A	80	2.4		

ISTD (ICALBLK 18b13k00005)	Ch	ICALBLK Abund	SAMPLE Abund	%Drift
Bismuth	A	1156720	1038221	-10.24
Yttrium	E	375524	377463	0.52

u=use

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B13k00.B\073SMPL.D\073SMPL.D#
Date Acquired: Feb 13 2018 04:23 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: 297025-004
Misc Info: 256366
Vial Number: 2502
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 13 2018 11:24 am
Sample Type: Sample
Dilution Factor: 100.00
Autodil Factor: Undiluted
Final Dil Factor: 100.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	0.0298	8.324710E-05	58.89	ppb	3.65	
23 Na	72	2	661.4000	1.222167E+01	576022.50	ppb	1.31	
24 Mg	72	3	2012.0000	1.022032E+02	12656020.00	ppb	1.74	
27 Al	72	3	1048.0000	6.545193E+01	8105190.00	ppb	1.52	
31 P	72	2	58.2200	2.374539E-02	1118.97	ppb	6.94	
39 K	72	3	195.3000	1.338091E+01	1657084.00	ppb	1.32	
44 Ca	72	3	3294.0000	5.300603E+00	656411.31	ppb	1.34	
51 V	72	2	3.4850	1.792275E-01	8450.50	ppb	2.80	
52 Cr	72	2	28.0700	1.578651E+00	74421.08	ppb	2.15	
55 Mn	72	2	53.5200	2.326063E+00	109660.80	ppb	2.25	
56 Fe	72	1	4710.0000	2.564334E+02	11208410.00	ppb	0.33	
59 Co	72	2	1.6790	1.163962E-01	5489.54	ppb	3.46	
60 Ni	72	2	15.9400	2.640865E-01	12453.61	ppb	3.14	
63 Cu	89	2	88.9500	4.402416E-01	166248.09	ppb	1.47	
66 Zn	89	2	32.2600	3.111992E-02	11749.37	ppb	1.10	
75 As	89	2	2.4660	1.455788E-03	549.79	ppb	3.14	
78 Se	89	1	0.0334	1.015969E-05	6.67	ppb	67.86	
98 Mo	89	3	0.2805	7.537319E-04	698.93	ppb	11.50	
107 Ag	115	3	0.0162	1.783196E-04	163.34	ppb	39.61	
111 Cd	115	3	0.0463	3.640935E-05	33.33	ppb	28.38	
121 Sb	115	3	0.2528	8.007258E-04	733.38	ppb	6.52	
137 Ba	209	3	8.3000	8.370436E-03	8688.34	ppb	2.20	
205 Tl	209	3	0.0087	1.767278E-04	183.34	ppb	28.77	
208 Pb	209	3	16.7300	1.928936E-01	200240.30	ppb	1.27	
238 U	209	3	0.0763	1.131977E-03	1175.65	ppb	3.47	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	707477	0.39	729652	97.0	30 - 120	
72 Ge	1	43709	0.64	39206	111.5	30 - 120	
72 Ge	2	47113	4.56	46788	100.7	30 - 120	
72 Ge	3	123851	1.31	125097	99.0	30 - 120	
89 Y	1	656154	0.74	613557	106.9	30 - 120	
89 Y	2	377463	4.58	375524	100.5	30 - 120	
89 Y	3	927009	0.80	961514	96.4	30 - 120	
115 In	3	915727	0.66	994323	92.1	30 - 120	
209 Bi	3	1038221	1.59	1156720	89.8	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B13k00.B\005CALB.D\005CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY BLANK USER REPORT FOR 297025 METALS Soil
EPA 6020A

Inst : MET26 Lab ID : QC919563
Seqnum : 1018063987071.2 Matrix : Soil
File : 18b13k00071 Batch : 256366 Time : 13-FEB-2018 16:14
Cal : 1018063987001 Caldate : 13-FEB-2018
IDF : 25.0 Units : mg/Kg

0.96 g --> 50.0 ml = 52.08 ml/g PDF

Analyte	Ch	Result	RL	Flags
Copper	E	ND	0.65	u
Lead	A	ND	0.65	

ISTD (ICALBLK 18b13k00005)	Ch	ICALBLK Abund	BLANK Abund	%Drift
Bismuth	A	1156720	975852	-15.64
Yttrium	E	375524	311733	-16.99

u=use

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B13k00.B\071SMPL.D\071SMPL.D#
Date Acquired: Feb 13 2018 04:14 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: qc919563
Misc Info: 256366
Vial Number: 2408
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 13 2018 11:24 am
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	-0.0006	0.000000E-01	0.00	ppb	0.00	
23 Na	72	2	-2.8220	1.910426E-01	7363.05	ppb	3.55	
24 Mg	72	3	-0.8305	5.676963E-02	5957.98	ppb	5.58	
27 Al	72	3	-0.9154	6.238635E-02	6548.23	ppb	0.81	
31 P	72	2	-1.9730	5.451258E-03	210.01	ppb	187.28	
39 K	72	3	-3.9900	2.653116E+00	278473.31	ppb	6.66	
44 Ca	72	3	-165.1000	7.757285E-02	8141.25	ppb	1.19	
51 V	72	2	-0.0708	1.441611E-02	555.57	ppb	18.72	
52 Cr	72	2	0.1549	9.353265E-02	3604.90	ppb	42.14	
55 Mn	72	2	-0.0229	1.960305E-03	75.56	ppb	9.69	
56 Fe	72	1	0.1923	1.679921E-01	6009.36	ppb	36.40	
59 Co	72	2	-0.0041	3.459970E-04	13.33	ppb	46.42	
60 Ni	72	2	-0.0240	9.995982E-04	38.52	ppb	42.38	
63 Cu	89	2	-0.3755	1.091840E-03	340.38	ppb	1.96	
66 Zn	89	2	-0.6085	2.803587E-04	87.41	ppb	4.75	
75 As	89	2	0.0342	9.622695E-05	30.00	ppb	47.91	
78 Se	89	1	-0.0288	2.808020E-06	1.56	ppb	73.69	
98 Mo	89	3	0.0361	2.802398E-04	225.57	ppb	5.20	
107 Ag	115	3	-0.0271	3.312580E-05	26.67	ppb	8.07	
111 Cd	115	3	-0.0030	0.000000E-01	0.00	ppb	0.00	
121 Sb	115	3	-0.0048	1.806628E-04	145.56	ppb	239.13	
137 Ba	209	3	-0.0141	1.363305E-05	13.33	ppb	40.67	
205 Tl	209	3	-0.0034	7.283563E-05	71.11	ppb	25.09	
208 Pb	209	3	-0.0194	6.354979E-04	620.04	ppb	18.22	
238 U	209	3	0.0000	1.138715E-05	11.11	ppb	1833.80	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	584827	0.44	729652	80.2	30 - 120	
72 Ge	1	35774	0.59	39206	91.2	30 - 120	
72 Ge	2	38541	0.33	46788	82.4	30 - 120	
72 Ge	3	104963	0.48	125097	83.9	30 - 120	
89 Y	1	557261	1.03	613557	90.8	30 - 120	
89 Y	2	311733	0.21	375524	83.0	30 - 120	
89 Y	3	804896	1.00	961514	83.7	30 - 120	
115 In	3	805726	0.68	994323	81.0	30 - 120	
209 Bi	3	975852	0.92	1156720	84.4	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B13k00.B\005CALB.D\005CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY SPIKE USER REPORT FOR 297025 METALS Soil
EPA 6020A

Type : MS
Inst : MET26
Seqnum : 1018063987075.2
File : 18b13k00075
IDF : 25.0
Lab ID : QC919566
Matrix : Soil
Batch : 256366
Time : 13-FEB-2018 16:35
Cal : 1018063987001
MSS : 296942-001

Type : MSD
Inst : MET26
Seqnum : 1018063987076.2
File : 18b13k00076
IDF : 25.0
Lab ID : QC919567
Matrix : Soil
Batch : 256366
Time : 13-FEB-2018 16:39
Cal : 1018063987001
Units : mg/Kg

MS: 1.07 g --> 50.0 ml = 46.73 ml/g PDF
MSD: 1.01 g --> 50.0 ml = 49.50 ml/g PDF

Analyte	MSS Seqnum	Result	Ch	Spiked	MS	Ch	%Rec	Spiked	MSD	Ch	%Rec	Limits	RPD	Lim	Flags
Copper	1018063987026	60.74	E	46.73	100.3	E	85	49.50	127.0	E	**134***	84-119	**21***	20	u
Lead	1018062954109	3.107	A	46.73	49.73	A	100	49.50	49.50	A	94	84-118	6	20	

ISTD (ICALBLK 18b13k00005)	Ch	ICALBLK Abund	MS Abund	%Drift
Bismuth	A	1156720	1112595	-3.81
Yttrium	E	375524	450280	19.91

ISTD (ICALBLK 18b13k00005)	Ch	ICALBLK Abund	MSD Abund	%Drift
Bismuth	A	1156720	1001272	-13.44
Yttrium	E	375524	377090	0.42

u=use

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B13k00.B\075SMPL.D\075SMPL.D#
Date Acquired: Feb 13 2018 04:35 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: qc919566
Misc Info: 256366
Vial Number: 2409
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 13 2018 11:24 am
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

Data Results:
Analytes: Fail
ISTD: Fail

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	21.3800	5.856040E-02	47208.34	ppb	1.99	
23 Na	72	2	922.3000	1.694663E+01	879932.31	ppb	0.54	
24 Mg	72	3	14180.0000	7.200646E+02	97876960.00	ppb	1.64	
27 Al	72	3	17230.0000	1.074586E+03	146063010.00	ppb	1.83	
31 P	72	2	565.5000	1.779267E-01	9238.54	ppb	1.59	
39 K	72	3	715.7000	4.139522E+01	5626900.00	ppb	1.52	
44 Ca	72	3	12330.0000	1.894420E+01	2575165.00	ppb	1.22	
51 V	72	2	108.4000	5.042746E+00	261841.70	ppb	0.15	
52 Cr	72	2	64.2600	3.504617E+00	181974.09	ppb	0.43	
55 Mn	72	2	736.0000	3.195152E+01	1659066.00	ppb	0.09	>LDR
56 Fe	72	1	29810.0000	1.621948E+03	82629920.00	ppb	1.86	>LDR
59 Co	72	2	53.8200	3.711854E+00	192736.00	ppb	0.08	
60 Ni	72	2	70.7500	1.167689E+00	60631.49	ppb	0.03	
63 Cu	89	2	85.8500	4.249915E-01	191364.91	ppb	0.13	
66 Zn	89	2	83.8800	7.954655E-02	35818.30	ppb	0.12	
75 As	89	2	43.9600	2.465609E-02	11102.02	ppb	0.28	
78 Se	89	1	38.9800	4.616706E-03	3828.27	ppb	2.24	
98 Mo	89	3	36.7300	7.136609E-02	78735.11	ppb	1.83	
107 Ag	115	3	4.1850	1.415292E-02	14262.73	ppb	1.50	
111 Cd	115	3	42.0900	3.108091E-02	31329.97	ppb	0.93	
121 Sb	115	3	14.8600	3.596518E-02	36245.97	ppb	1.14	
137 Ba	209	3	152.1000	1.528974E-01	170103.09	ppb	0.89	
205 Tl	209	3	39.3200	3.371150E-01	375042.59	ppb	1.09	
208 Pb	209	3	42.5700	4.895339E-01	544600.69	ppb	1.12	
238 U	209	3	38.4800	5.654516E-01	629046.13	ppb	1.29	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	806290	1.35	729652	110.5	30 - 120	
72 Ge	1	50956	1.84	39206	130.0	30 - 120	IS Fail
72 Ge	2	51924	0.37	46788	111.0	30 - 120	
72 Ge	3	135952	1.67	125097	108.7	30 - 120	
89 Y	1	829415	2.09	613557	135.2	30 - 120	IS Fail
89 Y	2	450280	0.65	375524	119.9	30 - 120	
89 Y	3	1103563	2.35	961514	114.8	30 - 120	
115 In	3	1007929	1.84	994323	101.4	30 - 120	
209 Bi	3	1112595	1.36	1156720	96.2	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B13k00.B\005CALB.D\005CALB.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
2 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B13k00.B\076SMPL.D\076SMPL.D#
Date Acquired: Feb 13 2018 04:39 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: qc919567
Misc Info: 256366
Vial Number: 2410
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 13 2018 11:24 am
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

Data Results:
Analytes: Fail
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	20.8500	5.711521E-02	40972.47	ppb	0.61	
23 Na	72	2	1500.0000	2.740429E+01	1226110.00	ppb	0.27	
24 Mg	72	3	14300.0000	7.257148E+02	87309792.00	ppb	0.33	
27 Al	72	3	18400.0000	1.147201E+03	138017790.00	ppb	0.44	
31 P	72	2	560.6000	1.764534E-01	7895.56	ppb	4.07	
39 K	72	3	721.4000	4.170141E+01	5017035.00	ppb	0.44	
44 Ca	72	3	15090.0000	2.311386E+01	2780810.00	ppb	0.16	
51 V	72	2	102.3000	4.758049E+00	212883.59	ppb	0.14	
52 Cr	72	2	66.9100	3.645126E+00	163088.50	ppb	0.30	
55 Mn	72	2	753.9000	3.272693E+01	1464248.00	ppb	0.41	>LDR
56 Fe	72	1	27890.0000	1.517746E+03	65488020.00	ppb	1.36	>LDR
59 Co	72	2	52.5700	3.625935E+00	162228.80	ppb	0.54	
60 Ni	72	2	67.5100	1.114233E+00	49852.55	ppb	0.25	
63 Cu	89	2	102.6000	5.070937E-01	191218.50	ppb	0.33	
66 Zn	89	2	81.6400	7.744023E-02	29201.14	ppb	1.57	
75 As	89	2	44.3500	2.487657E-02	9380.88	ppb	0.60	
78 Se	89	1	38.4200	4.550672E-03	3145.00	ppb	2.34	
98 Mo	89	3	36.4800	7.087979E-02	68000.47	ppb	0.77	
107 Ag	115	3	4.0860	1.382208E-02	12259.79	ppb	0.20	
111 Cd	115	3	41.0400	3.030721E-02	26882.42	ppb	1.52	
121 Sb	115	3	13.1600	3.186550E-02	28264.05	ppb	0.65	
137 Ba	209	3	139.6000	1.403264E-01	140504.00	ppb	0.43	
205 Tl	209	3	37.1900	3.188761E-01	319276.91	ppb	0.61	
208 Pb	209	3	40.0000	4.600691E-01	460646.50	ppb	0.62	
238 U	209	3	36.4000	5.349161E-01	535592.38	ppb	0.37	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	717374	0.32	729652	98.3	30 - 120	
72 Ge	1	43153	1.13	39206	110.1	30 - 120	
72 Ge	2	44742	0.40	46788	95.6	30 - 120	
72 Ge	3	120310	0.36	125097	96.2	30 - 120	
89 Y	1	691275	1.80	613557	112.7	30 - 120	
89 Y	2	377090	0.49	375524	100.4	30 - 120	
89 Y	3	959356	0.65	961514	99.8	30 - 120	
115 In	3	886973	0.34	994323	89.2	30 - 120	
209 Bi	3	1001272	0.42	1156720	86.6	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B13k00.B\005CALB.D\005CALB.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY SERIAL DILUTION FOR 297025 METALS Soil
EPA 6020A

Type : SER
Inst : MET26
Seqnum : 1018063987077.2
File : 18b13k00077
IDF : 125.0
Lab ID : QC919921
Matrix : Soil
Batch : 256366
Time : 13-FEB-2018 16:44
Cal : 1018063987001
MSS : 296942-001
Units : mg/Kg

SER: 1.03 g --> 50.0 ml = 48.54 ml/g PDF

Analyte	MSS Seqnum	MSS	Ch	RL	SER	Ch	RL	%D	Lim	Flags
Copper	1018063987026	60.74	E	0.6068	61.41	E	3.034	1	10	u
Lead	1018062954109	3.107	A	0.6068	3.001 J	A	3.034		10	u

ISTD (ICALBLK 18b13k00005)	Ch	ICALBLK Abund	SER Abund	%Drift
Bismuth	A	1156720	1036570	-10.39
Yttrium	E	375524	365074	-2.78

u=use

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B13k00.B\077SMPL.D\077SMPL.D#
Date Acquired: Feb 13 2018 04:44 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: qc919921
Misc Info: 256366
Vial Number: 2411
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 13 2018 11:24 am
Sample Type: Sample
Dilution Factor: 125.00
Autodil Factor: Undiluted
Final Dil Factor: 125.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	0.0386	1.073106E-04	77.78	ppb	32.94	
23 Na	72	2	165.0000	3.230171E+00	147237.41	ppb	0.87	
24 Mg	72	3	2502.0000	1.271003E+02	15814540.00	ppb	0.31	
27 Al	72	3	3184.0000	1.986102E+02	24712390.00	ppb	0.08	
31 P	72	2	40.3800	1.832385E-02	834.50	ppb	16.68	
39 K	72	3	74.8500	6.897061E+00	858170.50	ppb	0.62	
44 Ca	72	3	2288.0000	3.781863E+00	470561.41	ppb	0.27	
51 V	72	2	12.3400	5.895017E-01	26872.28	ppb	0.42	
52 Cr	72	2	5.3670	3.708346E-01	16905.14	ppb	1.04	
55 Mn	72	2	129.6000	5.630091E+00	256619.20	ppb	1.30	
56 Fe	72	1	5219.0000	2.841325E+02	12389830.00	ppb	0.40	
59 Co	72	2	2.7430	1.897689E-01	8650.62	ppb	1.20	
60 Ni	72	2	5.5560	9.298635E-02	4238.02	ppb	2.61	
63 Cu	89	2	10.1200	5.269502E-02	19234.91	ppb	1.79	
66 Zn	89	2	8.3770	8.710193E-03	3179.62	ppb	1.12	
75 As	89	2	1.0690	6.749726E-04	246.45	ppb	8.61	
78 Se	89	1	0.0976	1.776151E-05	11.78	ppb	24.73	
98 Mo	89	3	0.1820	5.628977E-04	527.81	ppb	8.14	
107 Ag	115	3	-0.0279	3.036938E-05	27.78	ppb	12.17	
111 Cd	115	3	0.0183	1.577536E-05	14.44	ppb	31.64	
121 Sb	115	3	0.0829	3.916716E-04	358.91	ppb	11.99	
137 Ba	209	3	17.0800	1.720125E-02	17827.90	ppb	2.19	
205 Tl	209	3	0.0315	3.718118E-04	385.57	ppb	11.67	
208 Pb	209	3	0.4946	6.536656E-03	6774.25	ppb	3.61	
238 U	209	3	0.0297	4.471806E-04	463.36	ppb	5.57	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	725408	0.46	729652	99.4	30 - 120	
72 Ge	1	43606	0.19	39206	111.2	30 - 120	
72 Ge	2	45585	1.29	46788	97.4	30 - 120	
72 Ge	3	124427	0.35	125097	99.5	30 - 120	
89 Y	1	662944	0.57	613557	108.0	30 - 120	
89 Y	2	365074	1.30	375524	97.2	30 - 120	
89 Y	3	937803	0.47	961514	97.5	30 - 120	
115 In	3	916715	1.10	994323	92.2	30 - 120	
209 Bi	3	1036570	1.14	1156720	89.6	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B13k00.B\005CALB.D\005CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY POST DIGEST SPIKE USER REPORT FOR 297025 METALS Soil
EPA 6020A

Type : PDS
Inst : MET26
Seqnum : 1018063987078.2
File : 18b13k00078
IDF : 25.0
Lab ID : QC919922
Matrix : Soil
Batch : 256366
Time : 13-FEB-2018 16:49
Cal : 1018063987001
MSS : 296942-001
Units : ug/L

PDS: 1.03 g --> 50.0 ml = 48.54 ml/g PDF

PDS standards: S35939, S34361 (200X), S34362 (200X), S34743 (200X)

Analyte	MSS Seqnum	Result	Ch	Spiked	PDS	Ch	%Rec	Limits	Flags
Copper	1018063987026	50.05	E	50.00	94.96	E	90	80-120	u
Lead	1018062954109	2.560	A	50.00	51.19	A	97	80-120	u

ISTD (ICALBLK 18b13k00005)	Ch	ICALBLK Abund	PDS Abund	%Drift
Bismuth	A	1156720	1049085	-9.31
Yttrium	E	375524	384413	2.37

u=use

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B13k00.B\078SMPL.D\078SMPL.D#
Date Acquired: Feb 13 2018 04:49 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: qc919922
Misc Info: 256366
Vial Number: 2412
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 13 2018 11:24 am
Sample Type: Sample
Dilution Factor: 25.00
Autodil Factor: Undiluted
Final Dil Factor: 25.00

Data Results:
Analytes: Fail
ISTD: Fail

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	52.2000	1.429590E-01	110045.80	ppb	1.17	
23 Na	72	2	5147.0000	9.346602E+01	4260576.00	ppb	0.36	
24 Mg	72	3	17150.0000	8.704474E+02	112640900.00	ppb	1.34	
27 Al	72	3	20720.0000	1.292030E+03	167204400.00	ppb	1.30	>LDR
31 P	72	2	4645.0000	1.417939E+00	64634.97	ppb	1.25	
39 K	72	3	5166.0000	2.809661E+02	36358472.00	ppb	1.36	
44 Ca	72	3	16990.0000	2.598725E+01	3362966.00	ppb	1.41	
51 V	72	2	110.7000	5.149439E+00	234732.41	ppb	0.48	
52 Cr	72	2	74.7400	4.061821E+00	185154.09	ppb	0.68	
55 Mn	72	2	698.0000	3.030232E+01	1381307.00	ppb	0.37	>LDR
56 Fe	72	1	28660.0000	1.559448E+03	74838912.00	ppb	3.95	>LDR
59 Co	72	2	61.0300	4.208958E+00	191862.80	ppb	0.22	
60 Ni	72	2	75.5600	1.246861E+00	56837.34	ppb	0.25	
63 Cu	89	2	94.9600	4.697602E-01	180582.09	ppb	0.16	
66 Zn	89	2	89.9400	8.522951E-02	32763.39	ppb	0.36	
75 As	89	2	54.2200	3.039503E-02	11684.23	ppb	0.41	
78 Se	89	1	43.1000	5.103344E-03	4019.66	ppb	4.69	
98 Mo	89	3	47.7300	9.268560E-02	96668.25	ppb	2.21	
107 Ag	115	3	44.7400	1.500946E-01	143445.70	ppb	1.42	
111 Cd	115	3	51.1500	3.776448E-02	36070.95	ppb	2.63	
121 Sb	115	3	51.3500	1.237858E-01	118273.80	ppb	1.84	
137 Ba	209	3	142.7000	1.434463E-01	150486.00	ppb	1.12	
205 Tl	209	3	24.3000	2.084137E-01	218620.00	ppb	0.94	
208 Pb	209	3	51.1900	5.885180E-01	617413.13	ppb	0.95	
238 U	209	3	47.6300	6.998860E-01	734278.69	ppb	1.31	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	770041	5.39	729652	105.5	30 - 120	
72 Ge	1	48042	4.04	39206	122.5	30 - 120	IS Fail
72 Ge	2	45585	0.38	46788	97.4	30 - 120	
72 Ge	3	129461	5.73	125097	103.5	30 - 120	
89 Y	1	788787	5.01	613557	128.6	30 - 120	IS Fail
89 Y	2	384413	0.12	375524	102.4	30 - 120	
89 Y	3	1043895	6.94	961514	108.6	30 - 120	
115 In	3	956111	5.96	994323	96.2	30 - 120	
209 Bi	3	1049085	4.93	1156720	90.7	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B13k00.B\005CALB.D\005CALB.D#

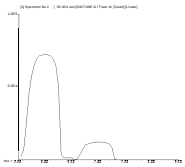
3 :Element Failures 0 :Max. Number of Failures Allowed
2 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

MET26 QC Tune Report

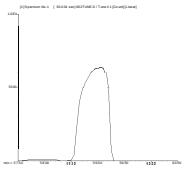
Data File: C:\ICPCHEM\1\DATA\18B13k00.B\002TUNE.D
Date Acquired: Feb 13 2018 10:32 am
Acq. Method: TN6020K.M
Operator:
Sample Name: tun,s35938
Misc Info:
Vial Number: 1307
Current Method: C:\ICPCHEM\1\METHODS\TN6020K.M

RSD (%)

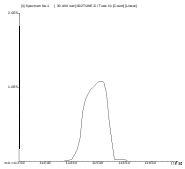
Element	Rep1	Rep2	Rep3	Rep4	Rep5	Actual	Required	Flag
7 Li	67544	68505	68763	68705	69062	0.64	5.00	
59 Co	35411	35824	35489	35713	35724	0.85	5.00	
115 In	549010	555745	555740	554611	557622	0.48	5.00	
205 Tl	47527	47322	47281	47663	47575	0.91	5.00	



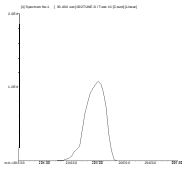
7 Li
Mass Calib.
Actual: 7.00
Required: 6.90 - 7.10
Flag:
Peak Width @ 5%
Actual: 0.65
Required: 0.75
Flag:



59 Co
Mass Calib.
Actual: 59.00
Required: 58.90 - 59.10
Flag:
Peak Width @ 5%
Actual: 0.65
Required: 0.75
Flag:



115 In
Mass Calib.
Actual: 115.00
Required: 114.90 - 115.10
Flag:
Peak Width @ 5%
Actual: 0.65
Required: 0.75
Flag:



205 Tl
Mass Calib.
Actual: 205.00
Required: 204.90 - 205.10
Flag:
Peak Width @ 5%
Actual: 0.70
Required: 0.75
Flag:

ENTHALPY INITIAL CALIBRATION FOR 297025 METALS Soil: EPA 6020A

Inst : MET26
Calnum : 1018063987001
Units : ug/L

Date : 13-FEB-2018 10:46
X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	18b13k00006	1018063987006		13-FEB-2018 10:51	S35940 (400X), S35939
L2	18b13k00007	1018063987007		13-FEB-2018 10:56	S35940 (200X), S35939
L3	18b13k00008	1018063987008		13-FEB-2018 11:01	S35940 (40X), S35939
L4	18b13k00009	1018063987009		13-FEB-2018 11:06	S35940 (20X), S35939
L5	18b13k00010	1018063987010		13-FEB-2018 11:11	S35940 (4X), S35939
L6	18b13k00011	1018063987011		13-FEB-2018 11:15	S35940 (2X), S35939
L7	18b13k00012	1018063987012		13-FEB-2018 11:20	S35940, S35939

Analyte	Ch	L1	L2	L3	L4	L5	L6	L7	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	Flg
Lead	A	0.0128	0.0119	0.0114	0.0112	0.0115	0.0113	0.0115	BLNK	-0.0748	87.1101		0.0117	1.000	0.995	
Copper	E	0.0118	0.0123	0.0060	0.0058	0.0050	0.0050	0.0049	BLNK	-0.5977	203.416		0.0072	1.000	0.995	

Spiked Amounts / Drifts	Ch	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D	L6	%D	L7	%D
Lead	A	0.5000	-4	1.0000	-4	5.0000	-2	10.000	-3	50.000	0	100.00	-1	200.00	0
Copper	E	0.5000	20	1.0000	**91**	5.0000	10	10.000	11	50.000	0	100.00	1	200.00	0

Instrument amount = a0 + response * a1 + response^2 * a2; BLNK=Y=aX+[blank]

ENTHALPY 2ND SOURCE CALIBRATION SUMMARY FOR 297025 METALS Soil
EPA 6020A

Inst : MET26
Calnum : 1018063987001 Cal Date : 13-FEB-2018

ICV 1018063987014 (18b13k00014 13-FEB-2018) stds: S35983, S35939

Analyte	Ch	Spiked	Quant	Units	%D	Max	Flags
Lead	A	50.00	50.89	ug/L	2	10	
Copper	E	50.00	49.99	ug/L	0	10	

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B13k00.B\005CALB.D\005CALB.D#
Date Acquired: Feb 13 2018 10:46 am
Acq. Method: 6020newj.M
Operator:
Sample Name: calblank
Misc Info:
Vial Number: 1301
Current Method: C:\ICPCHEM\1\DATA\18B13k00.B\6020newj.M
Calibration File: C:\ICPCHEM\1\DATA\18B13k00.B\6020newj.C
Last Cal. Update: Feb 13 2018 11:24 am
Sample Type: CalBlk
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	0.0000	1.521418E-06	1.11	ppb	2340300000.00	
23 Na	72	2	0.0000	2.421706E-01	11314.30	ppb	1008900000.00	
24 Mg	72	3	0.0000	9.892539E-02	12375.15	ppb	133270000.00	
27 Al	72	3	0.0000	1.194591E-01	14942.95	ppb	167960000.00	
31 P	72	2	0.0000	6.051216E-03	282.23	ppb	645770000.00	
39 K	72	3	0.0000	2.867925E+00	358760.41	ppb	15925000.00	
44 Ca	72	3	0.0000	3.269485E-01	40897.38	ppb	298170000.00	
51 V	72	2	0.0000	1.769737E-02	826.33	ppb	308150000.00	
52 Cr	72	2	0.0000	8.529075E-02	3983.14	ppb	429720000.00	
55 Mn	72	2	0.0000	2.954310E-03	137.78	ppb	598650000.00	
56 Fe	72	1	0.0000	1.575289E-01	6182.40	ppb	319390000.00	
59 Co	72	2	0.0000	6.304859E-04	29.63	ppb	428990000.00	
60 Ni	72	2	0.0000	1.395655E-03	65.19	ppb	195970000.00	
63 Cu	89	2	0.0000	2.938140E-03	1100.05	ppb	1001600000.00	
66 Zn	89	2	0.0000	8.513164E-04	319.27	ppb	100300000.00	
75 As	89	2	0.0000	7.710717E-05	28.89	ppb	220670000.00	
78 Se	89	1	0.0000	6.215796E-06	3.78	ppb	86953000000.00	
98 Mo	89	3	0.0000	2.103616E-04	202.23	ppb	670040000.00	
107 Ag	115	3	0.0000	1.239483E-04	123.34	ppb	1058600000.00	
111 Cd	115	3	0.0000	2.243892E-06	2.22	ppb	6787000000.00	
121 Sb	115	3	0.0000	1.921795E-04	191.12	ppb	623620000.00	
137 Ba	209	3	0.0000	2.784919E-05	32.22	ppb	181300000.00	
205 Tl	209	3	0.0000	1.018530E-04	117.78	ppb	779560000.00	
208 Pb	209	3	0.0000	8.586835E-04	993.39	ppb	263210000.00	
238 U	209	3	0.0000	1.149485E-05	13.33	ppb	3726900000.00	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	729652	0.23	729652	100.0	80 - 120	
72 Ge	1	39206	5.44	39206	100.0	80 - 120	
72 Ge	2	46788	4.55	46788	100.0	80 - 120	
72 Ge	3	125097	0.82	125097	100.0	80 - 120	
89 Y	1	613557	6.20	613557	100.0	80 - 120	
89 Y	2	375524	5.76	375524	100.0	80 - 120	
89 Y	3	961514	0.45	961514	100.0	80 - 120	
115 In	3	994323	0.51	994323	100.0	80 - 120	
209 Bi	3	1156720	0.68	1156720	100.0	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : ---

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B13k00.B\006CALS.D\006CALS.D#
Date Acquired: Feb 13 2018 10:51 am
Acq. Method: 6020newj.M
Operator:
Sample Name: s35940,400x
Misc Info:
Vial Number: 1101
Current Method: C:\ICPCHEM\1\DATA\18B13k00.B\6020newj.M
Calibration File: C:\ICPCHEM\1\DATA\18B13k00.B\6020newj.C
Last Cal. Update: Feb 13 2018 11:24 am
Sample Type: CalStd
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	0.5429	1.488445E-03	1066.74	ppb	2.00	
23 Na	72	2	50.5000	1.156851E+00	53768.99	ppb	0.35	
24 Mg	72	3	51.4500	2.710589E+00	329118.50	ppb	3.39	
27 Al	72	3	50.9800	3.297891E+00	400411.59	ppb	3.60	
31 P	72	2	55.5200	2.292724E-02	1065.63	ppb	3.75	
39 K	72	3	51.2200	5.625298E+00	683081.50	ppb	5.83	
44 Ca	72	3	42.1700	3.906307E-01	47436.57	ppb	16.16	
51 V	72	2	0.4990	4.082582E-02	1897.54	ppb	1.97	
52 Cr	72	2	0.5037	1.120894E-01	5209.43	ppb	9.60	
55 Mn	72	2	0.5140	2.526443E-02	1174.50	ppb	3.91	
56 Fe	72	1	51.6500	2.967747E+00	120569.10	ppb	0.39	
59 Co	72	2	0.5163	3.623588E-02	1684.55	ppb	3.79	
60 Ni	72	2	0.5691	1.077678E-02	500.75	ppb	5.27	
63 Cu	89	2	0.6011	5.892962E-03	2184.25	ppb	3.86	
66 Zn	89	2	0.4993	1.319771E-03	488.90	ppb	18.40	
75 As	89	2	0.5880	4.059225E-04	150.45	ppb	3.19	
78 Se	89	1	0.6489	8.295892E-05	52.67	ppb	5.82	
98 Mo	89	3	0.5329	1.242789E-03	1157.86	ppb	4.12	
107 Ag	115	3	0.5939	2.114758E-03	2043.54	ppb	4.22	
111 Cd	115	3	0.5501	4.083727E-04	394.46	ppb	6.31	
121 Sb	115	3	0.5302	1.468423E-03	1417.89	ppb	7.20	
137 Ba	209	3	0.5249	5.554105E-04	627.81	ppb	15.85	
205 Tl	209	3	0.2378	2.139940E-03	2425.85	ppb	3.06	
208 Pb	209	3	0.4818	6.390173E-03	7248.81	ppb	2.81	
238 U	209	3	0.4749	6.990156E-03	7923.66	ppb	3.62	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	716905	3.40	729652	98.3	80 - 120	
72 Ge	1	40627	0.82	39206	103.6	80 - 120	
72 Ge	2	46478	0.99	46788	99.3	80 - 120	
72 Ge	3	121504	3.18	125097	97.1	80 - 120	
89 Y	1	635265	2.06	613557	103.5	80 - 120	
89 Y	2	370616	1.07	375524	98.7	80 - 120	
89 Y	3	932235	4.74	961514	97.0	80 - 120	
115 In	3	967385	4.67	994323	97.3	80 - 120	
209 Bi	3	1134413	3.69	1156720	98.1	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B13k00.B\005CALB.D\005CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B13k00.B\007CALS.D\007CALS.D#
Date Acquired: Feb 13 2018 10:56 am
Acq. Method: 6020newj.M
Operator:
Sample Name: s35940,200x
Misc Info:
Vial Number: 1102
Current Method: C:\ICPCHEM\1\DATA\18B13k00.B\6020newj.M
Calibration File: C:\ICPCHEM\1\DATA\18B13k00.B\6020newj.C
Last Cal. Update: Feb 13 2018 11:24 am
Sample Type: CalStd
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	1.0550	2.891455E-03	2302.47	ppb	3.44	
23 Na	72	2	99.3300	2.041113E+00	96165.56	ppb	1.05	
24 Mg	72	3	99.7800	5.163246E+00	689421.38	ppb	1.71	
27 Al	72	3	98.5400	6.263021E+00	836402.88	ppb	1.63	
31 P	72	2	107.6000	3.874324E-02	1825.72	ppb	2.87	
39 K	72	3	97.8800	8.136640E+00	1084915.00	ppb	2.76	
44 Ca	72	3	64.9400	4.250049E-01	56579.07	ppb	20.63	
51 V	72	2	0.9963	6.387872E-02	3009.95	ppb	1.65	
52 Cr	72	2	1.0340	1.403326E-01	6612.19	ppb	3.08	
55 Mn	72	2	0.9774	4.538039E-02	2137.95	ppb	2.85	
56 Fe	72	1	115.6000	6.447431E+00	233857.20	ppb	5.62	
59 Co	72	2	1.0180	7.080300E-02	3335.57	ppb	3.20	
60 Ni	72	2	1.1370	2.014538E-02	949.30	ppb	2.01	
63 Cu	89	2	1.9080	1.231809E-02	4650.37	ppb	1.77	
66 Zn	89	2	1.3540	2.121970E-03	800.77	ppb	8.38	
75 As	89	2	1.0860	6.842433E-04	258.23	ppb	4.90	
78 Se	89	1	1.1780	1.455107E-04	79.33	ppb	5.08	
98 Mo	89	3	0.9363	2.024285E-03	2103.55	ppb	5.32	
107 Ag	115	3	1.0370	3.600248E-03	3870.64	ppb	1.38	
111 Cd	115	3	1.0550	7.814801E-04	838.94	ppb	7.13	
121 Sb	115	3	1.0240	2.656064E-03	2849.27	ppb	4.72	
137 Ba	209	3	0.9714	1.004279E-03	1263.43	ppb	6.21	
205 Tl	209	3	0.4603	4.047143E-03	5079.97	ppb	0.40	
208 Pb	209	3	0.9643	1.192821E-02	14962.63	ppb	1.36	
238 U	209	3	0.8914	1.310981E-02	16463.88	ppb	1.43	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	794856	8.56	729652	108.9	80 - 120	
72 Ge	1	36357	6.46	39206	92.7	80 - 120	
72 Ge	2	47117	0.96	46788	100.7	80 - 120	
72 Ge	3	133448	7.64	125097	106.7	80 - 120	
89 Y	1	545317	7.93	613557	88.9	80 - 120	
89 Y	2	377487	1.09	375524	100.5	80 - 120	
89 Y	3	1039191	8.04	961514	108.1	80 - 120	
115 In	3	1074425	8.24	994323	108.1	80 - 120	
209 Bi	3	1254967	8.57	1156720	108.5	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B13k00.B\005CALB.D\005CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B13k00.B\008CALS.D\008CALS.D#
Date Acquired: Feb 13 2018 11:01 am
Acq. Method: 6020newj.M
Operator:
Sample Name: s35940,40x
Misc Info:
Vial Number: 1103
Current Method: C:\ICPCHEM\1\DATA\18B13k00.B\6020newj.M
Calibration File: C:\ICPCHEM\1\DATA\18B13k00.B\6020newj.C
Last Cal. Update: Feb 13 2018 11:24 am
Sample Type: CalStd
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	5.4450	1.491516E-02	11890.26	ppb	1.63	
23 Na	72	2	485.4000	9.034490E+00	452290.59	ppb	1.06	
24 Mg	72	3	500.7000	2.551257E+01	3474629.00	ppb	0.86	
27 Al	72	3	495.5000	3.100898E+01	4223256.00	ppb	0.62	
31 P	72	2	510.7000	1.612810E-01	8073.41	ppb	3.68	
39 K	72	3	493.3000	2.942124E+01	4007028.00	ppb	0.57	
44 Ca	72	3	467.8000	1.033417E+00	140746.09	ppb	0.85	
51 V	72	2	4.8920	2.444354E-01	12237.45	ppb	0.50	
52 Cr	72	2	4.9950	3.510352E-01	17573.26	ppb	2.28	
55 Mn	72	2	5.0100	2.204123E-01	11034.35	ppb	2.04	
56 Fe	72	1	491.2000	2.688077E+01	1148185.00	ppb	0.11	
59 Co	72	2	5.1530	3.559810E-01	17821.37	ppb	1.06	
60 Ni	72	2	5.3760	9.001850E-02	4506.99	ppb	1.93	
63 Cu	89	2	5.4800	2.987932E-02	11888.70	ppb	1.80	
66 Zn	89	2	5.5080	6.019100E-03	2395.02	ppb	1.96	
75 As	89	2	5.4090	3.101588E-03	1234.06	ppb	2.66	
78 Se	89	1	5.7830	6.901292E-04	464.01	ppb	1.94	
98 Mo	89	3	4.9760	9.850185E-03	10293.79	ppb	1.42	
107 Ag	115	3	5.3800	1.815716E-02	19527.60	ppb	2.56	
111 Cd	115	3	5.4770	4.046272E-03	4353.00	ppb	3.78	
121 Sb	115	3	5.2080	1.272872E-02	13690.02	ppb	2.14	
137 Ba	209	3	4.9350	4.988102E-03	6194.85	ppb	2.40	
205 Tl	209	3	2.4220	2.086314E-02	25911.22	ppb	2.33	
208 Pb	209	3	4.8940	5.704312E-02	70845.53	ppb	2.10	
238 U	209	3	4.5510	6.688462E-02	83073.69	ppb	1.36	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	797240	0.96	729652	109.3	80 - 120	
72 Ge	1	42714	0.56	39206	108.9	80 - 120	
72 Ge	2	50064	0.54	46788	107.0	80 - 120	
72 Ge	3	136198	0.67	125097	108.9	80 - 120	
89 Y	1	672346	0.72	613557	109.6	80 - 120	
89 Y	2	397918	0.71	375524	106.0	80 - 120	
89 Y	3	1044997	1.37	961514	108.7	80 - 120	
115 In	3	1075723	1.52	994323	108.2	80 - 120	
209 Bi	3	1242203	1.40	1156720	107.4	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B13k00.B\005CALB.D\005CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B13k00.B\009CALS.D\009CALS.D#
Date Acquired: Feb 13 2018 11:06 am
Acq. Method: 6020newj.M
Operator:
Sample Name: s35940,20x
Misc Info:
Vial Number: 1104
Current Method: C:\ICPCHEM\1\DATA\18B13k00.B\6020newj.M
Calibration File: C:\ICPCHEM\1\DATA\18B13k00.B\6020newj.C
Last Cal. Update: Feb 13 2018 11:24 am
Sample Type: CalStd
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	10.6700	2.921529E-02	23926.01	ppb	0.42	
23 Na	72	2	983.9000	1.806137E+01	925864.13	ppb	0.77	
24 Mg	72	3	990.8000	5.038580E+01	7004272.00	ppb	0.49	
27 Al	72	3	985.1000	6.153242E+01	8553763.00	ppb	0.61	
31 P	72	2	1021.0000	3.162733E-01	16212.04	ppb	1.95	
39 K	72	3	979.8000	5.560912E+01	7730334.00	ppb	0.68	
44 Ca	72	3	948.7000	1.759513E+00	244596.70	ppb	0.44	
51 V	72	2	9.8010	4.719781E-01	24194.63	ppb	0.82	
52 Cr	72	2	9.9910	6.168657E-01	31622.19	ppb	0.54	
55 Mn	72	2	10.4800	4.578916E-01	23471.00	ppb	2.04	
56 Fe	72	1	980.8000	5.352183E+01	2390374.00	ppb	1.06	
59 Co	72	2	10.3500	7.143076E-01	36616.90	ppb	0.79	
60 Ni	72	2	10.5700	1.756956E-01	9006.38	ppb	1.28	
63 Cu	89	2	11.1300	5.763862E-02	23736.31	ppb	1.09	
66 Zn	89	2	12.7300	1.279022E-02	5267.24	ppb	0.76	
75 As	89	2	10.6500	6.035005E-03	2485.33	ppb	0.33	
78 Se	89	1	11.1100	1.319679E-03	932.70	ppb	1.22	
98 Mo	89	3	10.0000	1.958722E-02	20959.46	ppb	0.80	
107 Ag	115	3	10.6300	3.576084E-02	39369.92	ppb	0.99	
111 Cd	115	3	10.5000	7.755435E-03	8538.23	ppb	0.94	
121 Sb	115	3	10.1500	2.461292E-02	27096.44	ppb	1.17	
137 Ba	209	3	9.6970	9.774735E-03	12446.70	ppb	1.28	
205 Tl	209	3	4.8110	4.133628E-02	52631.22	ppb	1.18	
208 Pb	209	3	9.6990	1.122061E-01	142869.00	ppb	0.75	
238 U	209	3	8.9960	1.322016E-01	168327.91	ppb	0.87	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	818966	0.52	729652	112.2	80 - 120	
72 Ge	1	44664	0.75	39206	113.9	80 - 120	
72 Ge	2	51264	0.71	46788	109.6	80 - 120	
72 Ge	3	139016	0.64	125097	111.1	80 - 120	
89 Y	1	706748	0.37	613557	115.2	80 - 120	
89 Y	2	411817	0.17	375524	109.7	80 - 120	
89 Y	3	1070023	0.61	961514	111.3	80 - 120	
115 In	3	1100917	0.32	994323	110.7	80 - 120	
209 Bi	3	1273298	0.54	1156720	110.1	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B13k00.B\005CALB.D\005CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B13k00.B\010CALS.D\010CALS.D#
Date Acquired: Feb 13 2018 11:11 am
Acq. Method: 6020newj.M
Operator:
Sample Name: s35940,4x
Misc Info:
Vial Number: 1105
Current Method: C:\ICPCHEM\1\DATA\18B13k00.B\6020newj.M
Calibration File: C:\ICPCHEM\1\DATA\18B13k00.B\6020newj.C
Last Cal. Update: Feb 13 2018 11:24 am
Sample Type: CalStd
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Fail

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	51.5900	1.413085E-01	143287.70	ppb	0.45	
23 Na	72	2	4811.0000	8.736854E+01	4944586.00	ppb	5.23	
24 Mg	72	3	5196.0000	2.638064E+02	41754620.00	ppb	0.48	
27 Al	72	3	5199.0000	3.242389E+02	51320000.00	ppb	0.41	
31 P	72	2	4832.0000	1.474684E+00	83332.18	ppb	6.44	
39 K	72	3	5142.0000	2.796424E+02	44261820.00	ppb	0.26	
44 Ca	72	3	5120.0000	8.057674E+00	1275377.00	ppb	0.22	
51 V	72	2	47.6100	2.224435E+00	125741.10	ppb	6.20	
52 Cr	72	2	48.1600	2.647993E+00	149622.30	ppb	6.69	
55 Mn	72	2	48.7900	2.120721E+00	119936.80	ppb	5.80	
56 Fe	72	1	4941.0000	2.690005E+02	11821710.00	ppb	0.25	
59 Co	72	2	49.1900	3.392506E+00	191729.91	ppb	6.32	
60 Ni	72	2	49.8600	8.233097E-01	46539.13	ppb	6.17	
63 Cu	89	2	49.8000	2.477648E-01	115566.60	ppb	8.51	
66 Zn	89	2	50.4300	4.816001E-02	22468.33	ppb	8.43	
75 As	89	2	48.8500	2.739134E-02	12769.36	ppb	8.84	
78 Se	89	1	53.4500	6.327686E-03	4449.78	ppb	2.61	
98 Mo	89	3	50.2700	9.759758E-02	123855.50	ppb	0.38	
107 Ag	115	3	52.0200	1.744929E-01	225915.50	ppb	0.20	
111 Cd	115	3	52.0900	3.846201E-02	49791.97	ppb	1.29	
121 Sb	115	3	49.9000	1.203138E-01	155767.30	ppb	0.46	
137 Ba	209	3	48.8300	4.910356E-02	73192.48	ppb	0.53	
205 Tl	209	3	25.0300	2.146439E-01	319956.50	ppb	0.26	
208 Pb	209	3	49.9600	5.744063E-01	856218.81	ppb	0.40	
238 U	209	3	49.6500	7.296168E-01	1087557.00	ppb	0.50	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	1014021	1.18	729652	139.0	80 - 120	ISFail
72 Ge	1	43947	0.24	39206	112.1	80 - 120	
72 Ge	2	56967	18.84	46788	121.8	80 - 120	ISFail
72 Ge	3	158283	1.07	125097	126.5	80 - 120	ISFail
89 Y	1	703311	0.76	613557	114.6	80 - 120	
89 Y	2	471786	20.22	375524	125.6	80 - 120	ISFail
89 Y	3	1269008	1.15	961514	132.0	80 - 120	ISFail
115 In	3	1294709	1.32	994323	130.2	80 - 120	ISFail
209 Bi	3	1490616	0.91	1156720	128.9	80 - 120	ISFail

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B13k00.B\005CALB.D\005CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
7 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B13k00.B\011CALS.D\011CALS.D#
Date Acquired: Feb 13 2018 11:15 am
Acq. Method: 6020newj.M
Operator:
Sample Name: s35940,2x
Misc Info:
Vial Number: 1106
Current Method: C:\ICPCHEM\1\DATA\18B13k00.B\6020newj.M
Calibration File: C:\ICPCHEM\1\DATA\18B13k00.B\6020newj.C
Last Cal. Update: Feb 13 2018 11:24 am
Sample Type: CalStd
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	101.7000	2.785098E-01	226433.50	ppb	0.93	
23 Na	72	2	9828.0000	1.782313E+02	8836961.00	ppb	4.73	
24 Mg	72	3	10030.0000	5.090320E+02	66421048.00	ppb	0.82	
27 Al	72	3	9953.0000	6.206470E+02	80984944.00	ppb	0.88	
31 P	72	2	9971.0000	3.036576E+00	150572.41	ppb	4.41	
39 K	72	3	9960.0000	5.390123E+02	70333392.00	ppb	0.73	
44 Ca	72	3	9999.0000	1.542584E+01	2012847.00	ppb	0.77	
51 V	72	2	97.9900	4.559760E+00	226077.09	ppb	4.78	
52 Cr	72	2	98.4100	5.321575E+00	263858.91	ppb	4.72	
55 Mn	72	2	98.9500	4.297930E+00	213105.00	ppb	4.61	
56 Fe	72	1	10050.0000	5.470398E+02	22619680.00	ppb	1.45	
59 Co	72	2	99.3700	6.852752E+00	339774.50	ppb	4.67	
60 Ni	72	2	100.2000	1.652648E+00	81952.29	ppb	4.25	
63 Cu	89	2	101.0000	4.995265E-01	203476.20	ppb	5.61	
66 Zn	89	2	102.4000	9.687793E-02	39462.93	ppb	5.56	
75 As	89	2	100.4000	5.621997E-02	22903.64	ppb	5.26	
78 Se	89	1	106.0000	1.254595E-02	8340.51	ppb	1.29	
98 Mo	89	3	100.4000	1.948154E-01	201556.41	ppb	2.26	
107 Ag	115	3	101.7000	3.410337E-01	358188.81	ppb	1.86	
111 Cd	115	3	102.8000	7.588655E-02	79700.99	ppb	2.14	
121 Sb	115	3	100.9000	2.430634E-01	255283.41	ppb	2.07	
137 Ba	209	3	97.6700	9.819809E-02	118365.10	ppb	1.99	
205 Tl	209	3	49.3800	4.233663E-01	510318.59	ppb	1.87	
208 Pb	209	3	98.6300	1.133129E+00	1365888.00	ppb	1.66	
238 U	209	3	97.8400	1.437739E+00	1733055.00	ppb	1.75	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	813048	0.61	729652	111.4	80 - 120	
72 Ge	1	41353	1.00	39206	105.5	80 - 120	
72 Ge	2	49651	4.47	46788	106.1	80 - 120	
72 Ge	3	130489	0.60	125097	104.3	80 - 120	
89 Y	1	664876	1.58	613557	108.4	80 - 120	
89 Y	2	408157	5.40	375524	108.7	80 - 120	
89 Y	3	1034891	1.87	961514	107.6	80 - 120	
115 In	3	1050538	1.82	994323	105.7	80 - 120	
209 Bi	3	1205624	1.60	1156720	104.2	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B13k00.B\005CALB.D\005CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B13k00.B\012CALS.D\012CALS.D#
Date Acquired: Feb 13 2018 11:20 am
Acq. Method: 6020newj.M
Operator:
Sample Name: s35940
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\DATA\18B13k00.B\6020newj.M
Calibration File: C:\ICPCHEM\1\DATA\18B13k00.B\6020newj.C
Last Cal. Update: Feb 13 2018 11:24 am
Sample Type: CalStd
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	198.7000	5.442433E-01	444560.91	ppb	1.45	
23 Na	72	2	20130.0000	3.649097E+02	17828340.00	ppb	0.35	
24 Mg	72	3	19940.0000	1.012080E+03	131818600.00	ppb	1.88	
27 Al	72	3	19970.0000	1.245433E+03	162215300.00	ppb	1.70	
31 P	72	2	20060.0000	6.101545E+00	298097.81	ppb	0.84	
39 K	72	3	19980.0000	1.078649E+03	140492400.00	ppb	1.67	
44 Ca	72	3	19970.0000	3.048779E+01	3970988.00	ppb	1.69	
51 V	72	2	201.6000	9.362624E+00	457424.41	ppb	0.62	
52 Cr	72	2	201.3000	1.079316E+01	527321.19	ppb	0.21	
55 Mn	72	2	200.8000	8.719139E+00	425987.09	ppb	0.52	
56 Fe	72	1	19990.0000	1.087787E+03	46121960.00	ppb	0.85	
59 Co	72	2	200.5000	1.382649E+01	675514.50	ppb	0.47	
60 Ni	72	2	199.9000	3.296646E+00	161064.41	ppb	0.05	
63 Cu	89	2	199.5000	9.835381E-01	395949.50	ppb	0.28	
66 Zn	89	2	198.6000	1.871427E-01	75339.70	ppb	0.26	
75 As	89	2	200.0000	1.119376E-01	45063.74	ppb	0.49	
78 Se	89	1	196.0000	2.319181E-02	16107.78	ppb	0.29	
98 Mo	89	3	199.7000	3.871262E-01	405032.31	ppb	1.41	
107 Ag	115	3	198.6000	6.658622E-01	699380.69	ppb	0.84	
111 Cd	115	3	198.0000	1.462259E-01	153583.80	ppb	1.27	
121 Sb	115	3	199.6000	4.805247E-01	504699.31	ppb	1.12	
137 Ba	209	3	201.5000	2.025364E-01	238007.91	ppb	0.95	
205 Tl	209	3	100.3000	8.599040E-01	1010466.00	ppb	1.34	
208 Pb	209	3	200.7000	2.304971E+00	2708557.00	ppb	1.17	
238 U	209	3	201.2000	2.956887E+00	3474593.00	ppb	1.22	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	816979	1.76	729652	112.0	80 - 120	
72 Ge	1	42401	0.80	39206	108.1	80 - 120	
72 Ge	2	48857	0.46	46788	104.4	80 - 120	
72 Ge	3	130277	1.98	125097	104.1	80 - 120	
89 Y	1	694548	0.66	613557	113.2	80 - 120	
89 Y	2	402580	0.43	375524	107.2	80 - 120	
89 Y	3	1046459	2.14	961514	108.8	80 - 120	
115 In	3	1050434	1.76	994323	105.6	80 - 120	
209 Bi	3	1175235	1.58	1156720	101.6	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B13k00.B\005CALB.D\005CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B13k00.B\014_ICV.D\014_ICV.D#
Date Acquired: Feb 13 2018 11:30 am
Acq. Method: 6020newj.M
Operator:
Sample Name: icv,s35983
Misc Info:
Vial Number: 3
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 13 2018 11:24 am
Sample Type: 6-ICV
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Fail
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	52.2900	1.432207E-01	113452.60	ppb	1.54	
23 Na	72	2	4778.0000	8.677630E+01	4126112.00	ppb	1.31	
24 Mg	72	3	5213.0000	2.646942E+02	33640152.00	ppb	4.05	
27 Al	72	3	5120.0000	3.193359E+02	40592912.00	ppb	4.69	
31 P	72	2	4895.0000	1.493849E+00	71031.07	ppb	1.37	
39 K	72	3	5089.0000	2.768191E+02	35183752.00	ppb	4.34	
44 Ca	72	3	5084.0000	8.003430E+00	1017344.00	ppb	4.36	
51 V	72	2	47.6500	2.226148E+00	105853.60	ppb	0.96	
52 Cr	72	2	48.4200	2.661758E+00	126565.10	ppb	1.19	
55 Mn	72	2	48.4400	2.105709E+00	100125.70	ppb	1.05	
56 Fe	72	1	4765.0000	2.594310E+02	10579500.00	ppb	1.38	
59 Co	72	2	49.1400	3.389192E+00	161153.91	ppb	1.12	
60 Ni	72	2	49.7100	8.208106E-01	39029.08	ppb	1.25	
63 Cu	89	2	49.9900	2.486827E-01	97261.56	ppb	1.67	
66 Zn	89	2	51.3100	4.898708E-02	19157.84	ppb	2.25	
75 As	89	2	49.7800	2.791365E-02	10916.33	ppb	3.01	
78 Se	89	1	51.2300	6.065243E-03	3993.65	ppb	1.48	
98 Mo	89	3	54.8000	1.063855E-01	105325.50	ppb	5.80	
107 Ag	115	3	52.8500	1.772803E-01	178403.00	ppb	4.37	
111 Cd	115	3	54.2700	4.006814E-02	40328.87	ppb	4.51	
121 Sb	115	3	53.6400	1.293044E-01	130054.90	ppb	4.06	
137 Ba	209	3	48.1600	4.843365E-02	58931.09	ppb	5.20	Fail
205 Tl	209	3	25.1200	2.154518E-01	262090.30	ppb	4.26	Fail
208 Pb	209	3	50.8900	5.850648E-01	711695.00	ppb	3.68	
238 U	209	3	50.1600	7.370788E-01	897888.81	ppb	5.67	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	792330	11.12	729652	108.6	80 - 120	
72 Ge	1	40784	1.06	39206	104.0	80 - 120	
72 Ge	2	47552	0.92	46788	101.6	80 - 120	
72 Ge	3	126919	8.08	125097	101.5	80 - 120	
89 Y	1	658503	0.84	613557	107.3	80 - 120	
89 Y	2	391187	1.88	375524	104.2	80 - 120	
89 Y	3	988992	8.73	961514	102.9	80 - 120	
115 In	3	1005191	8.33	994323	101.1	80 - 120	
209 Bi	3	1215361	8.85	1156720	105.1	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B13k00.B\005CALB.D\005CALB.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY LOW-LEVEL PERFORMANCE VERIFICATION STANDARD FOR 297025 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018063987015.2 File : 18b13k00015 Time : 13-FEB-2018 11:35
Cal : 1018063987001 Caldate : 13-FEB-2018
Standards: S35885, S35939

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Lead	A	1.000	0.9655	ug/L	-3	30	
Copper	E	1.000	1.027	ug/L	3	30	

ISTD (ICALBLK 18b13k00005)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	729652	720129	-1.31
Germanium	H	39206	38190	-2.59
Germanium	A	125097	120573	-3.62
Germanium	E	46788	44757	-4.34
Indium	A	994323	969503	-2.50
Bismuth	A	1156720	1190388	2.91
Yttrium	E	375524	354867	-5.50
Yttrium	H	613557	600527	-2.12
Yttrium	A	961514	928512	-3.43

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B13k00.B\015SPKA.D\015SPKA.D#
Date Acquired: Feb 13 2018 11:35 am
Acq. Method: 6020newj.M
Operator:
Sample Name: cri,s35885
Misc Info:
Vial Number: 1302
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 13 2018 11:24 am
Sample Type: 6-Spike1
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Fail
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	1.0960	3.004405E-03	2163.55	ppb	4.69	
23 Na	72	2	489.9000	9.114092E+00	407916.19	ppb	0.54	
24 Mg	72	3	509.0000	2.593552E+01	3127109.00	ppb	0.14	
27 Al	72	3	96.7500	6.151456E+00	741694.69	ppb	0.27	
31 P	72	2	101.2000	3.679525E-02	1646.81	ppb	2.63	
39 K	72	3	495.8000	2.955814E+01	3563874.00	ppb	0.56	
44 Ca	72	3	424.4000	9.677494E-01	116683.50	ppb	1.00	
51 V	72	2	0.9307	6.083636E-02	2722.86	ppb	3.59	
52 Cr	72	2	1.0330	1.402339E-01	6276.12	ppb	3.74	
55 Mn	72	2	0.9764	4.533653E-02	2029.04	ppb	1.42	
56 Fe	72	1	103.1000	5.768452E+00	220294.20	ppb	0.38	
59 Co	72	2	1.0230	7.117078E-02	3185.54	ppb	2.14	
60 Ni	72	2	1.1000	1.952351E-02	873.74	ppb	2.73	
63 Cu	89	2	1.0270	7.986357E-03	2833.99	ppb	3.29	
66 Zn	89	2	5.2160	5.745003E-03	2038.67	ppb	3.42	
75 As	89	2	1.1790	7.364169E-04	261.34	ppb	10.31	
78 Se	89	1	1.1930	1.472602E-04	88.45	ppb	7.15	
98 Mo	89	3	1.2390	2.610229E-03	2423.62	ppb	1.46	Fail
107 Ag	115	3	1.0140	3.522250E-03	3414.94	ppb	5.01	
111 Cd	115	3	1.0670	7.896716E-04	765.60	ppb	1.36	
121 Sb	115	3	1.0730	2.775992E-03	2691.44	ppb	3.57	
137 Ba	209	3	0.9095	9.419634E-04	1121.19	ppb	4.94	Fail
205 Tl	209	3	0.4896	4.298381E-03	5116.65	ppb	1.24	Fail
208 Pb	209	3	0.9655	1.194187E-02	14214.51	ppb	3.57	
238 U	209	3	0.9255	1.361104E-02	16202.25	ppb	0.49	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	720129	0.04	729652	98.7	80 - 120	
72 Ge	1	38190	0.13	39206	97.4	80 - 120	
72 Ge	2	44757	0.47	46788	95.7	80 - 120	
72 Ge	3	120573	0.33	125097	96.4	80 - 120	
89 Y	1	600527	0.30	613557	97.9	80 - 120	
89 Y	2	354867	0.27	375524	94.5	80 - 120	
89 Y	3	928512	0.27	961514	96.6	80 - 120	
115 In	3	969503	0.24	994323	97.5	80 - 120	
209 Bi	3	1190388	0.33	1156720	102.9	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B13k00.B\005CALB.D\005CALB.D#

3 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY INSTRUMENT BLANK FOR 297025 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018063987016.3 File : 18b13k00016 Time : 13-FEB-2018 11:40
Cal : 1018063987001 Caldate : 13-FEB-2018

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Lead	A	ND	0.5000	0.1000	ug/L	
Copper	E	ND	0.5000	0.4000	ug/L	

ISTD (ICALBLK 18b13k00005)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	729652	700412	-4.01
Germanium	H	39206	37897	-3.34
Germanium	A	125097	118713	-5.10
Germanium	E	46788	49357	5.49
Indium	A	994323	948281	-4.63
Bismuth	A	1156720	1169616	1.11
Yttrium	E	375524	396904	5.69
Yttrium	H	613557	593575	-3.26
Yttrium	A	961514	912886	-5.06

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B13k00.B\016_ICB.D\016_ICB.D#
Date Acquired: Feb 13 2018 11:40 am
Acq. Method: 6020newj.M
Operator:
Sample Name: icb
Misc Info:
Vial Number: 5
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 13 2018 11:24 am
Sample Type: 6-ICB
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	0.0018	6.326876E-06	4.44	ppb	114.08	
23 Na	72	2	-4.9000	1.534200E-01	7433.07	ppb	26.51	
24 Mg	72	3	-1.1430	4.086349E-02	4850.89	ppb	2.00	
27 Al	72	3	-1.0850	5.177220E-02	6145.81	ppb	3.46	
31 P	72	2	-0.3220	5.953318E-03	292.24	ppb	351.86	
39 K	72	3	-1.9160	2.764776E+00	328215.69	ppb	6.61	
44 Ca	72	3	-78.6900	2.081246E-01	24706.68	ppb	2.92	
51 V	72	2	-0.0092	1.727237E-02	855.22	ppb	106.39	
52 Cr	72	2	-0.0764	8.122656E-02	3958.32	ppb	210.40	
55 Mn	72	2	-0.0345	1.456543E-03	71.48	ppb	4.62	
56 Fe	72	1	-0.8156	1.131480E-01	4288.04	ppb	4.23	
59 Co	72	2	-0.0046	3.126529E-04	15.93	ppb	38.38	
60 Ni	72	2	-0.0289	9.187483E-04	46.67	ppb	51.68	
63 Cu	89	2	-0.2602	1.658574E-03	645.21	ppb	18.03	
66 Zn	89	2	-0.7775	1.218417E-04	48.52	ppb	0.70	
75 As	89	2	0.0273	9.238288E-05	36.67	ppb	10.25	
78 Se	89	1	-0.0019	5.988823E-06	3.56	ppb	1998.40	
98 Mo	89	3	0.0611	3.286376E-04	300.01	ppb	34.91	
107 Ag	115	3	-0.0069	1.007451E-04	95.56	ppb	35.86	
111 Cd	115	3	-0.0015	1.159567E-06	1.11	ppb	185.29	
121 Sb	115	3	-0.0034	1.840814E-04	174.45	ppb	533.29	
137 Ba	209	3	-0.0192	8.521051E-06	10.00	ppb	38.93	
205 Tl	209	3	-0.0024	8.170884E-05	95.56	ppb	33.23	
208 Pb	209	3	-0.0128	7.122789E-04	833.38	ppb	41.02	
238 U	209	3	0.0045	7.795860E-05	91.11	ppb	20.95	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	700412	0.69	729652	96.0	80 - 120	
72 Ge	1	37897	0.14	39206	96.7	80 - 120	
72 Ge	2	49357	18.14	46788	105.5	80 - 120	
72 Ge	3	118713	0.27	125097	94.9	80 - 120	
89 Y	1	593575	0.19	613557	96.7	80 - 120	
89 Y	2	396904	22.08	375524	105.7	80 - 120	
89 Y	3	912886	0.57	961514	94.9	80 - 120	
115 In	3	948281	0.96	994323	95.4	80 - 120	
209 Bi	3	1169616	0.68	1156720	101.1	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B13k00.B\005CALB.D\005CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY CONTINUING CALIBRATION FOR 297025 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018063987062.2 File : 18b13k00062 Time : 13-FEB-2018 15:27
Cal : 1018063987001 Caldate : 13-FEB-2018
Standards: S35983, S35939

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Lead	A	0.0117	0.0113	50.00	48.97	ug/L	-2	10	
Copper	E	0.0072	0.0048	50.00	48.16	ug/L	-4	10	

ISTD (ICALBLK 18b13k00005)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	729652	843718	15.63
Germanium	H	39206	50389	**28.52 ***
Germanium	A	125097	135839	8.59
Germanium	E	46788	51690	10.48
Indium	A	994323	1043224	4.92
Bismuth	A	1156720	1175544	1.63
Yttrium	E	375524	430578	14.66
Yttrium	H	613557	827046	**34.80 ***
Yttrium	A	961514	1069763	11.26

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B13k00.B\062_CCV.D\062_CCV.D#
Date Acquired: Feb 13 2018 03:27 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: ccv,s35983
Misc Info:
Vial Number: 3
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 13 2018 11:24 am
Sample Type: 6-CCV
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Fail
ISTD: Fail

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	49.7200	1.361902E-01	114906.50	ppb	0.85	Fail
23 Na	72	2	4370.0000	7.939676E+01	4104060.00	ppb	0.34	Fail
24 Mg	72	3	4770.0000	2.421930E+02	32898740.00	ppb	0.75	Fail
27 Al	72	3	4669.0000	2.912134E+02	39557528.00	ppb	0.72	Fail
31 P	72	2	4438.0000	1.354780E+00	70035.54	ppb	1.06	Fail
39 K	72	3	4888.0000	2.659520E+02	36126112.00	ppb	0.71	Fail
44 Ca	72	3	4854.0000	7.656759E+00	1040071.00	ppb	0.74	Fail
51 V	72	2	46.7600	2.185063E+00	112948.20	ppb	0.66	Fail
52 Cr	72	2	47.5300	2.614116E+00	135120.50	ppb	0.49	Fail
55 Mn	72	2	49.7300	2.161424E+00	111730.10	ppb	0.85	Fail
56 Fe	72	1	4499.0000	2.449491E+02	12332610.00	ppb	3.66	Fail
59 Co	72	2	48.7400	3.361681E+00	173771.70	ppb	0.52	Fail
60 Ni	72	2	48.8900	8.073209E-01	41731.21	ppb	0.54	Fail
63 Cu	89	2	48.1600	2.396928E-01	103166.60	ppb	1.90	Fail
66 Zn	89	2	50.6800	4.840204E-02	20834.42	ppb	1.63	Fail
75 As	89	2	49.9200	2.799323E-02	12044.28	ppb	3.86	Fail
78 Se	89	1	46.8100	5.542922E-03	4574.26	ppb	5.99	Fail
98 Mo	89	3	50.6500	9.833379E-02	105194.10	ppb	0.16	Fail
107 Ag	115	3	50.8900	1.707170E-01	178093.80	ppb	0.62	Fail
111 Cd	115	3	51.6100	3.810689E-02	39753.28	ppb	0.60	Fail
121 Sb	115	3	50.5100	1.217813E-01	127040.30	ppb	1.25	Fail
137 Ba	209	3	48.7700	4.904362E-02	57652.11	ppb	0.56	
205 Tl	209	3	24.2300	2.077611E-01	244230.91	ppb	0.52	Fail
208 Pb	209	3	48.9700	5.629907E-01	661824.31	ppb	0.51	Fail
238 U	209	3	48.5800	7.138429E-01	839166.63	ppb	0.70	Fail

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	843718	0.12	729652	115.6	80 - 120	
72 Ge	1	50389	3.38	39206	128.5	80 - 120	ISFail
72 Ge	2	51690	1.40	46788	110.5	80 - 120	
72 Ge	3	135839	0.33	125097	108.6	80 - 120	
89 Y	1	827046	5.46	613557	134.8	80 - 120	ISFail
89 Y	2	430578	3.14	375524	114.7	80 - 120	
89 Y	3	1069763	0.28	961514	111.3	80 - 120	
115 In	3	1043224	0.46	994323	104.9	80 - 120	
209 Bi	3	1175544	0.40	1156720	101.6	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B13k00.B\005CALB.D\005CALB.D#

24 :Element Failures 0 :Max. Number of Failures Allowed
2 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY INSTRUMENT BLANK FOR 297025 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018063987064.2 File : 18b13k00064 Time : 13-FEB-2018 15:37
Cal : 1018063987001 Caldate : 13-FEB-2018

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Lead	A	ND	0.5000	0.1000	ug/L	
Copper	E	ND	0.5000	0.4000	ug/L	

ISTD (ICALBLK 18b13k00005)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	729652	704077	-3.51
Germanium	H	39206	40303	2.80
Germanium	A	125097	115114	-7.98
Germanium	E	46788	41887	-10.47
Indium	A	994323	862653	-13.24
Bismuth	A	1156720	1027219	-11.20
Yttrium	E	375524	332328	-11.50
Yttrium	H	613557	609960	-0.59
Yttrium	A	961514	862802	-10.27

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B13k00.B\064_CCB.D\064_CCB.D#
Date Acquired: Feb 13 2018 03:37 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: ccb
Misc Info:
Vial Number: 5
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 13 2018 11:24 am
Sample Type: 6-CCB
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	0.0017	6.311627E-06	4.44	ppb	56.97	
23 Na	72	2	-2.2670	2.011048E-01	8423.60	ppb	19.17	
24 Mg	72	3	-0.3316	8.209178E-02	9448.79	ppb	46.23	
27 Al	72	3	-0.7530	7.251076E-02	8345.86	ppb	10.68	
31 P	72	2	-5.1750	4.478267E-03	187.78	ppb	21.22	
39 K	72	3	-0.4005	2.846361E+00	327652.31	ppb	49.09	
44 Ca	72	3	-153.1000	9.561841E-02	11006.41	ppb	1.05	
51 V	72	2	-0.0647	1.470008E-02	615.57	ppb	7.89	
52 Cr	72	2	0.0386	8.734171E-02	3656.02	ppb	148.66	
55 Mn	72	2	-0.0282	1.729011E-03	72.22	ppb	19.17	
56 Fe	72	1	0.0147	1.583275E-01	6377.39	ppb	5440.70	
59 Co	72	2	-0.0019	4.990178E-04	20.74	ppb	142.55	
60 Ni	72	2	-0.0578	4.432244E-04	18.52	ppb	5.65	
63 Cu	89	2	-0.4054	9.448846E-04	313.34	ppb	4.68	
66 Zn	89	2	-0.8364	6.655079E-05	22.22	ppb	1.47	
75 As	89	2	0.0556	1.081753E-04	35.78	ppb	59.70	
78 Se	89	1	-0.0218	3.634556E-06	2.22	ppb	63.47	
98 Mo	89	3	0.0264	2.614291E-04	225.57	ppb	21.54	
107 Ag	115	3	-0.0297	2.446848E-05	21.11	ppb	4.45	
111 Cd	115	3	0.0022	3.864029E-06	3.33	ppb	238.97	
121 Sb	115	3	-0.0188	1.468747E-04	126.67	ppb	60.36	
137 Ba	209	3	-0.0191	8.662746E-06	8.89	ppb	25.96	
205 Tl	209	3	-0.0038	6.921999E-05	71.11	ppb	83.24	
208 Pb	209	3	-0.0234	5.906038E-04	606.70	ppb	12.51	
238 U	209	3	0.0031	5.734024E-05	58.89	ppb	11.15	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	704077	0.26	729652	96.5	80 - 120	
72 Ge	1	40303	0.33	39206	102.8	80 - 120	
72 Ge	2	41887	3.09	46788	89.5	80 - 120	
72 Ge	3	115114	0.51	125097	92.0	80 - 120	
89 Y	1	609960	0.81	613557	99.4	80 - 120	
89 Y	2	332328	4.28	375524	88.5	80 - 120	
89 Y	3	862802	0.12	961514	89.7	80 - 120	
115 In	3	862653	0.32	994323	86.8	80 - 120	
209 Bi	3	1027219	0.30	1156720	88.8	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B13k00.B\005CALB.D\005CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY INTERFERENCE CHECK STANDARD A FOR 297025 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018063987065.2 File : 18b13k00065 Time : 13-FEB-2018 15:42
Cal : 1018063987001 Caldate : 13-FEB-2018
Standards: S35984, S35939

Analyte	Ch	Quant	IQL	Units	Flags
Lead	A	[0.08660]	0.5000	ug/L	
Copper	E	[0.1490]	0.5000	ug/L	

Interferent	Ch	Spiked	Quant	Units	%Rec	Flags
Aluminum	A	100000	88560	ug/L	89	
Calcium	A	300000	297300	ug/L	99	
Magnesium	A	100000	88650	ug/L	89	
Molybdenum	A	2000	2083	ug/L	104	
Potassium	A	100000	95860	ug/L	96	
Sodium	E	250000	229800	ug/L	92	
Phosphorus	E	100000	88180	ug/L	88	
Iron	H	250000	244400	ug/L	98	

ISTD (ICALBLK 18b13k00005)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	729652	613334	-15.94
Germanium	H	39206	38965	-0.61
Germanium	A	125097	103143	-17.55
Germanium	E	46788	39896	-14.73
Indium	A	994323	798828	-19.66
Bismuth	A	1156720	772209	-33.24
Yttrium	E	375524	323679	-13.81
Yttrium	H	613557	628792	2.48
Yttrium	A	961514	816991	-15.03

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B13k00.B\065ICSA.D\065ICSA.D#
Date Acquired: Feb 13 2018 03:42 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: icsa,s35984
Misc Info:
Vial Number: 1203
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 13 2018 11:24 am
Sample Type: 6-ICSA
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	0.0074	2.166194E-05	13.33	ppb	78.98	
23 Na	72	2	229800.0000	4.162873E+03	166036990.00	ppb	3.91	
24 Mg	72	3	88650.0000	4.499696E+03	464052610.00	ppb	1.19	
27 Al	72	3	88560.0000	5.521499E+03	569432580.00	ppb	1.14	
31 P	72	2	88180.0000	2.680775E+01	1069266.00	ppb	3.44	
39 K	72	3	95860.0000	5.162962E+03	532457310.00	ppb	1.17	
44 Ca	72	3	297300.0000	4.492236E+02	46329660.00	ppb	0.99	
51 V	72	2	0.2195	2.786923E-02	1111.53	ppb	11.84	
52 Cr	72	2	1.1890	1.485386E-01	5924.14	ppb	11.15	
55 Mn	72	2	2.4740	1.103239E-01	4400.66	ppb	2.84	
56 Fe	72	1	244400.0000	1.329595E+04	518067900.00	ppb	0.52	
59 Co	72	2	1.4410	1.000206E-01	3989.44	ppb	3.74	
60 Ni	72	2	1.5940	2.767213E-02	1103.76	ppb	3.61	
63 Cu	89	2	0.1490	3.670601E-03	1187.47	ppb	19.84	
66 Zn	89	2	0.5945	1.409066E-03	455.94	ppb	15.49	
75 As	89	2	0.8516	5.533263E-04	178.89	ppb	10.67	
78 Se	89	1	0.0311	9.891237E-06	6.22	ppb	42.99	
98 Mo	89	3	2083.0000	4.035425E+00	3296629.00	ppb	0.79	
99 (Ru)	115	3	243.9000	2.502988E-05	20.00	ppb	17.74	
107 Ag	115	3	0.0070	1.475109E-04	117.78	ppb	28.90	
111 Cd	115	3	0.9723	7.201485E-04	575.59	ppb	5.06	
121 Sb	115	3	0.1096	4.560058E-04	364.46	ppb	15.89	
137 Ba	209	3	0.1255	1.539786E-04	118.89	ppb	28.33	
205 Tl	209	3	-0.0016	8.781070E-05	67.78	ppb	26.91	
208 Pb	209	3	0.0866	1.853323E-03	1431.20	ppb	4.95	
238 U	209	3	0.0047	8.059072E-05	62.22	ppb	35.35	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	613334	2.66	729652	84.1	30 - 120	
72 Ge	1	38965	0.61	39206	99.4	30 - 120	
72 Ge	2	39896	1.08	46788	85.3	30 - 120	
72 Ge	3	103143	1.67	125097	82.5	30 - 120	
89 Y	1	628792	0.94	613557	102.5	30 - 120	
89 Y	2	323679	2.40	375524	86.2	30 - 120	
89 Y	3	816991	1.74	961514	85.0	30 - 120	
115 In	3	798828	1.69	994323	80.3	30 - 120	
209 Bi	3	772209	1.46	1156720	66.8	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B13k00.B\005CALB.D\005CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY INTERFERENCE CHECK STANDARD AB FOR 297025 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018063987066.2 File : 18b13k00066 Time : 13-FEB-2018 15:47
Cal : 1018063987001 Caldate : 13-FEB-2018
Standards: S35985, S35939

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Copper	E	200.0	169.3	ug/L	-15	20	

ISTD (ICALBLK 18b13k00005)	Ch	ICALBLK Abund	Abund	%Drift
Germanium	H	39206	35710	-8.92
Germanium	A	125097	96534	-22.83
Germanium	E	46788	36798	-21.35
Indium	A	994323	755789	-23.99
Yttrium	E	375524	304472	-18.92
Yttrium	H	613557	582875	-5.00
Yttrium	A	961514	767225	-20.21

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B13k00.B\066ICSB.D\066ICSB.D#
Date Acquired: Feb 13 2018 03:47 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: icsab,s35985
Misc Info:
Vial Number: 1204
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 13 2018 11:24 am
Sample Type: 6-ICSAB
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Fail
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
23 Na	72	2	215600.0000	3.905429E+03	143704500.00	ppb	1.79	
24 Mg	72	3	86120.0000	4.371331E+03	421957890.00	ppb	0.70	
27 Al	72	3	86010.0000	5.362269E+03	517616700.00	ppb	0.58	
31 P	72	2	83310.0000	2.532656E+01	931924.00	ppb	1.61	
39 K	72	3	93980.0000	5.061429E+03	488575100.00	ppb	0.62	
44 Ca	72	3	292200.0000	4.416000E+02	42627592.00	ppb	0.53	
51 V	72	2	196.3000	9.116991E+00	335476.09	ppb	1.25	
52 Cr	72	2	192.3000	1.031656E+01	379611.81	ppb	1.60	
55 Mn	72	2	198.8000	8.632717E+00	317653.69	ppb	1.48	
56 Fe	72	1	240300.0000	1.307462E+04	466887300.00	ppb	0.27	
59 Co	72	2	184.9000	1.275355E+01	469286.91	ppb	1.43	
60 Ni	72	2	174.8000	2.882483E+00	106065.90	ppb	1.33	
63 Cu	89	2	169.3000	8.351048E-01	254261.91	ppb	0.70	
66 Zn	89	2	79.7700	7.569051E-02	23045.30	ppb	0.79	
75 As	89	2	93.4200	5.231789E-02	15929.35	ppb	0.20	
78 Se	89	1	89.1900	1.055398E-02	6151.70	ppb	1.34	
98 Mo	89	3	2102.0000	4.072556E+00	3124216.00	ppb	1.05	
107 Ag	115	3	42.8500	1.437525E-01	108647.30	ppb	0.07	Fail
111 Cd	115	3	89.0100	6.571733E-02	49667.12	ppb	0.43	Fail

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	550801	1.18	729652	75.5	30 - 120	
72 Ge	1	35710	0.40	39206	91.1	30 - 120	
72 Ge	2	36798	0.55	46788	78.7	30 - 120	
72 Ge	3	96534	1.20	125097	77.2	30 - 120	
89 Y	1	582875	0.08	613557	95.0	30 - 120	
89 Y	2	304472	0.67	375524	81.1	30 - 120	
89 Y	3	767225	1.62	961514	79.8	30 - 120	
115 In	3	755789	1.50	994323	76.0	30 - 120	
209 Bi	3	736714	0.67	1156720	63.7	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B13k00.B\005CALB.D\005CALB.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY CONTINUING CALIBRATION FOR 297025 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018063987081.1 File : 18b13k00081 Time : 13-FEB-2018 17:04
Cal : 1018063987001 Caldate : 13-FEB-2018
Standards: S35983, S35939

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Lead	A	0.0117	0.0108	50.00	46.87	ug/L	-6	10	
Copper	E	0.0072	0.0049	50.00	49.74	ug/L	-1	10	

ISTD (ICALBLK 18b13k00005)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	729652	749504	2.72
Germanium	H	39206	46901	19.63
Germanium	A	125097	131694	5.27
Germanium	E	46788	48823	4.35
Indium	A	994323	950433	-4.41
Bismuth	A	1156720	1044613	-9.69
Yttrium	E	375524	386236	2.85
Yttrium	H	613557	707226	15.27
Yttrium	A	961514	978771	1.79

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B13k00.B\081_CCV.D\081_CCV.D#
Date Acquired: Feb 13 2018 05:04 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: ccv,s35983
Misc Info:
Vial Number: 3
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 13 2018 11:24 am
Sample Type: 6-CCV
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Fail
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	53.5300	1.466084E-01	109883.30	ppb	0.26	Fail
23 Na	72	2	4138.0000	7.518032E+01	3670441.00	ppb	0.30	Fail
24 Mg	72	3	4513.0000	2.291545E+02	30176510.00	ppb	0.89	Fail
27 Al	72	3	4378.0000	2.730811E+02	35960872.00	ppb	0.98	Fail
31 P	72	2	4547.0000	1.388030E+00	67764.36	ppb	1.33	Fail
39 K	72	3	4624.0000	2.517606E+02	33153790.00	ppb	0.72	Fail
44 Ca	72	3	4518.0000	7.148904E+00	941419.13	ppb	0.85	Fail
51 V	72	2	45.5300	2.128214E+00	103899.30	ppb	1.04	Fail
52 Cr	72	2	46.3600	2.551861E+00	124586.80	ppb	0.52	Fail
55 Mn	72	2	46.6200	2.026723E+00	98947.30	ppb	0.61	Fail
56 Fe	72	1	4392.0000	2.391154E+02	11214810.00	ppb	0.26	Fail
59 Co	72	2	46.3900	3.199860E+00	156217.41	ppb	1.06	Fail
60 Ni	72	2	47.2700	7.805465E-01	38107.55	ppb	0.53	Fail
63 Cu	89	2	49.7400	2.474864E-01	95586.38	ppb	0.72	Fail
66 Zn	89	2	53.7100	5.124311E-02	19791.95	ppb	0.41	Fail
75 As	89	2	54.5600	3.058529E-02	11812.99	ppb	0.45	Fail
78 Se	89	1	50.8000	6.014387E-03	4253.50	ppb	0.29	Fail
98 Mo	89	3	51.5900	1.001504E-01	98023.26	ppb	0.67	Fail
107 Ag	115	3	50.7300	1.701888E-01	161751.70	ppb	0.81	Fail
111 Cd	115	3	52.7800	3.897103E-02	37037.55	ppb	1.82	Fail
121 Sb	115	3	53.5000	1.289590E-01	122568.60	ppb	0.56	Fail
137 Ba	209	3	50.2800	5.056647E-02	52821.73	ppb	0.70	
205 Tl	209	3	23.2600	1.995095E-01	208406.09	ppb	1.10	Fail
208 Pb	209	3	46.8700	5.389157E-01	562956.63	ppb	0.15	Fail
238 U	209	3	43.3100	6.364319E-01	664825.50	ppb	0.62	Fail

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	749504	0.24	729652	102.7	80 - 120	
72 Ge	1	46901	0.84	39206	119.6	80 - 120	
72 Ge	2	48823	0.84	46788	104.3	80 - 120	
72 Ge	3	131694	0.96	125097	105.3	80 - 120	
89 Y	1	707226	0.71	613557	115.3	80 - 120	
89 Y	2	386236	0.45	375524	102.9	80 - 120	
89 Y	3	978771	0.35	961514	101.8	80 - 120	
115 In	3	950433	0.47	994323	95.6	80 - 120	
209 Bi	3	1044613	0.27	1156720	90.3	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B13k00.B\005CALB.D\005CALB.D#

24 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY INSTRUMENT BLANK FOR 297025 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018063987083.1 File : 18b13k00083 Time : 13-FEB-2018 17:14
Cal : 1018063987001 Caldate : 13-FEB-2018

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Lead	A	ND	0.5000	0.1000	ug/L	
Copper	E	ND	0.5000	0.4000	ug/L	

ISTD (ICALBLK 18b13k00005)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	729652	708328	-2.92
Germanium	H	39206	44302	13.00
Germanium	A	125097	121637	-2.77
Germanium	E	46788	47472	1.46
Indium	A	994323	870848	-12.42
Bismuth	A	1156720	981120	-15.18
Yttrium	E	375524	369424	-1.62
Yttrium	H	613557	648043	5.62
Yttrium	A	961514	881756	-8.30

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B13k00.B\083_CCB.D\083_CCB.D#
Date Acquired: Feb 13 2018 05:14 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: ccb
Misc Info:
Vial Number: 5
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 13 2018 11:24 am
Sample Type: 6-CCB
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	0.0040	1.235903E-05	8.89	ppb	130.81	
23 Na	72	2	-3.6830	1.754554E-01	8327.99	ppb	6.03	
24 Mg	72	3	-1.1330	4.139799E-02	5032.07	ppb	3.56	
27 Al	72	3	-1.2670	4.042723E-02	4912.02	ppb	3.08	
31 P	72	2	-4.4110	4.710402E-03	223.34	ppb	89.41	
39 K	72	3	7.0070	3.245082E+00	394555.00	ppb	19.91	
44 Ca	72	3	-136.7000	1.205085E-01	14658.35	ppb	0.04	
51 V	72	2	-0.1272	1.179742E-02	560.39	ppb	13.06	
52 Cr	72	2	0.0687	8.894723E-02	4222.46	ppb	11.89	
55 Mn	72	2	-0.0222	1.989431E-03	94.45	ppb	1.91	
56 Fe	72	1	-1.2320	9.046803E-02	4007.23	ppb	5.11	
59 Co	72	2	0.0012	7.107882E-04	33.70	ppb	120.26	
60 Ni	72	2	-0.0563	4.681343E-04	22.22	ppb	6.68	
63 Cu	89	2	-0.4128	9.085745E-04	335.56	ppb	1.20	
66 Zn	89	2	-0.8122	8.929121E-05	32.96	ppb	2.20	
75 As	89	2	-0.0044	7.465369E-05	27.56	ppb	178.82	
78 Se	89	1	-0.0293	2.750983E-06	1.78	ppb	45.85	
98 Mo	89	3	0.0130	2.355843E-04	207.79	ppb	89.56	
107 Ag	115	3	-0.0294	2.547451E-05	22.22	ppb	3.93	
111 Cd	115	3	0.0006	2.652146E-06	2.22	ppb	1125.30	
121 Sb	115	3	0.0251	2.524660E-04	220.01	ppb	15.11	
137 Ba	209	3	-0.0164	1.137836E-05	11.11	ppb	24.90	
205 Tl	209	3	0.0022	1.211238E-04	118.89	ppb	158.23	
208 Pb	209	3	-0.0174	6.588836E-04	646.70	ppb	10.51	
238 U	209	3	0.0011	2.732570E-05	26.67	ppb	43.44	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	708328	2.85	729652	97.1	80 - 120	
72 Ge	1	44302	0.69	39206	113.0	80 - 120	
72 Ge	2	47472	1.42	46788	101.5	80 - 120	
72 Ge	3	121637	2.76	125097	97.2	80 - 120	
89 Y	1	648043	0.73	613557	105.6	80 - 120	
89 Y	2	369424	2.16	375524	98.4	80 - 120	
89 Y	3	881756	3.43	961514	91.7	80 - 120	
115 In	3	870848	3.32	994323	87.6	80 - 120	
209 Bi	3	981120	3.16	1156720	84.8	80 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B13k00.B\005CALB.D\005CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY INTERFERENCE CHECK STANDARD A FOR 297025 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018063987121.1 File : 18b13k00121 Time : 13-FEB-2018 20:22
Cal : 1018063987001 Caldate : 13-FEB-2018
Standards: S35984, S35939

Analyte	Ch	Quant	IQL	Units	Flags
Lead	A	[0.08270]	0.5000	ug/L	
Copper	E	[0.1217]	0.5000	ug/L	

Interferent	Ch	Spiked	Quant	Units	%Rec	Flags
Aluminum	A	100000	74270	ug/L	74	
Calcium	A	300000	257500	ug/L	86	
Magnesium	A	100000	74180	ug/L	74	
Molybdenum	A	2000	2044	ug/L	102	
Potassium	A	100000	83990	ug/L	84	
Sodium	E	250000	182500	ug/L	73	
Phosphorus	E	100000	78770	ug/L	79	
Iron	H	250000	214700	ug/L	86	

ISTD (ICALBLK 18b13k00005)	Ch	ICALBLK Abund	Abund	%Drift
Lithium	A	729652	539216	-26.10
Germanium	H	39206	46458	18.50
Germanium	A	125097	117100	-6.39
Germanium	E	46788	45901	-1.90
Indium	A	994323	828566	-16.67
Bismuth	A	1156720	765061	-33.86
Yttrium	E	375524	358600	-4.51
Yttrium	H	613557	698152	13.79
Yttrium	A	961514	875043	-8.99

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B13k00.B\121ICSA.D\121ICSA.D#
Date Acquired: Feb 13 2018 08:22 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: icsa,s35984
Misc Info:
Vial Number: 1203
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 13 2018 11:24 am
Sample Type: 6-ICSA
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Pass
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
9 Be	6	3	0.0024	8.173181E-06	4.44	ppb	106.38	
23 Na	72	2	182500.0000	3.305999E+03	151740190.00	ppb	1.40	
24 Mg	72	3	74180.0000	3.765366E+03	440877310.00	ppb	0.90	
27 Al	72	3	74270.0000	4.630280E+03	542156030.00	ppb	0.76	
31 P	72	2	78770.0000	2.394691E+01	1099122.00	ppb	1.43	
39 K	72	3	83990.0000	4.524021E+03	529708800.00	ppb	0.86	
44 Ca	72	3	257500.0000	3.891328E+02	45563900.00	ppb	0.66	
51 V	72	2	0.0960	2.214553E-02	1016.34	ppb	29.06	
52 Cr	72	2	0.6909	1.220499E-01	5601.79	ppb	7.09	
55 Mn	72	2	2.1790	9.753989E-02	4476.61	ppb	2.88	
56 Fe	72	1	214700.0000	1.168137E+04	542688380.00	ppb	0.26	
59 Co	72	2	1.0820	7.525879E-02	3454.86	ppb	2.45	
60 Ni	72	2	1.2650	2.225538E-02	1021.53	ppb	3.41	
63 Cu	89	2	0.1217	3.536258E-03	1267.88	ppb	37.12	
66 Zn	89	2	0.7690	1.572759E-03	564.09	ppb	15.25	
75 As	89	2	0.6912	4.636033E-04	166.22	ppb	5.49	
78 Se	89	1	0.0067	7.002258E-06	4.89	ppb	139.76	
98 Mo	89	3	2044.0000	3.960691E+00	3465754.00	ppb	0.39	
99 (Ru)	115	3	234.7000	2.417320E-05	20.00	ppb	49.13	
107 Ag	115	3	-0.0026	1.153269E-04	95.56	ppb	336.13	
111 Cd	115	3	1.0000	7.409131E-04	614.48	ppb	11.25	
121 Sb	115	3	0.0756	3.742497E-04	310.01	ppb	13.15	
137 Ba	209	3	0.1500	1.786278E-04	136.67	ppb	30.37	
205 Tl	209	3	0.0024	1.220013E-04	93.34	ppb	22.00	
208 Pb	209	3	0.0827	1.808321E-03	1383.42	ppb	9.11	
238 U	209	3	0.0046	7.842215E-05	60.00	ppb	36.18	

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	539216	1.61	729652	73.9	30 - 120	
72 Ge	1	46458	0.79	39206	118.5	30 - 120	
72 Ge	2	45901	0.74	46788	98.1	30 - 120	
72 Ge	3	117100	1.82	125097	93.6	30 - 120	
89 Y	1	698152	0.12	613557	113.8	30 - 120	
89 Y	2	358600	0.49	375524	95.5	30 - 120	
89 Y	3	875043	1.38	961514	91.0	30 - 120	
115 In	3	828566	1.36	994323	83.3	30 - 120	
209 Bi	3	765061	0.17	1156720	66.1	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B13k00.B\005CALB.D\005CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

ENTHALPY INTERFERENCE CHECK STANDARD AB FOR 297025 METALS Soil
EPA 6020A

Inst : MET26 IDF : 1.0
Seqnum : 1018063987122.1 File : 18b13k00122 Time : 13-FEB-2018 20:27
Cal : 1018063987001 Caldate : 13-FEB-2018
Standards: S35985, S35939

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Copper	E	200.0	171.0	ug/L	-14	20	

ISTD (ICALBLK 18b13k00005)	Ch	ICALBLK Abund	Abund	%Drift
Germanium	H	39206	44710	14.04
Germanium	A	125097	114239	-8.68
Germanium	E	46788	44005	-5.95
Indium	A	994323	824355	-17.09
Yttrium	E	375524	347467	-7.47
Yttrium	H	613557	692637	12.89
Yttrium	A	961514	863985	-10.14

MET26 Sample QC Report

Data File: C:\ICPCHEM\1\DATA\18B13k00.B\122ICSB.D\122ICSB.D#
Date Acquired: Feb 13 2018 08:27 pm
Acq. Method: 6020newj.M
Operator:
Sample Name: icsab,s35985
Misc Info:
Vial Number: 1204
Current Method: C:\ICPCHEM\1\METHODS\6020newj.M
Calibration File: C:\ICPCHEM\1\CALIB\6020newj.C
Last Cal. Update: Feb 13 2018 11:24 am
Sample Type: 6-ICSAB
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

Data Results:
Analytes: Fail
ISTD: Pass

QC Elements

Element	IS Ref	Tune	Raw Conc	CPS Mean	Raw CPS Mean	Units	RSD(%)	Flag
23 Na	72	2	175400.0000	3.176188E+03	139768700.00	ppb	0.15	
24 Mg	72	3	71570.0000	3.632947E+03	414969790.00	ppb	0.99	
27 Al	72	3	72000.0000	4.488829E+03	512723900.00	ppb	1.16	
31 P	72	2	76020.0000	2.311222E+01	1017050.00	ppb	0.35	
39 K	72	3	82740.0000	4.456579E+03	509037180.00	ppb	1.20	
44 Ca	72	3	255400.0000	3.860350E+02	44093920.00	ppb	1.11	
51 V	72	2	181.6000	8.436640E+00	371250.50	ppb	0.23	
52 Cr	72	2	177.3000	9.519912E+00	418923.00	ppb	0.12	
55 Mn	72	2	181.7000	7.889769E+00	347187.50	ppb	0.18	
56 Fe	72	1	216300.0000	1.176986E+04	526221700.00	ppb	0.22	
59 Co	72	2	172.1000	1.186742E+01	522229.09	ppb	0.23	
60 Ni	72	2	166.2000	2.741757E+00	120651.10	ppb	0.08	
63 Cu	89	2	171.0000	8.435904E-01	293110.41	ppb	0.39	
66 Zn	89	2	86.7100	8.219947E-02	28560.36	ppb	0.55	
75 As	89	2	104.8000	5.869918E-02	20394.34	ppb	1.25	
78 Se	89	1	91.8100	1.086399E-02	7524.98	ppb	1.10	
98 Mo	89	3	2061.0000	3.992493E+00	3449307.00	ppb	0.49	
107 Ag	115	3	44.3400	1.487402E-01	122618.80	ppb	0.47	Fail
111 Cd	115	3	92.9700	6.864574E-02	56589.52	ppb	0.24	Fail

ISTD Elements

Element	Tune	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3	503815	1.32	729652	69.0	30 - 120	
72 Ge	1	44710	0.92	39206	114.0	30 - 120	
72 Ge	2	44005	0.57	46788	94.1	30 - 120	
72 Ge	3	114239	1.96	125097	91.3	30 - 120	
89 Y	1	692637	0.54	613557	112.9	30 - 120	
89 Y	2	347467	1.22	375524	92.5	30 - 120	
89 Y	3	863985	1.36	961514	89.9	30 - 120	
115 In	3	824355	1.21	994323	82.9	30 - 120	
209 Bi	3	766211	0.50	1156720	66.2	30 - 120	

Tune File# 1 c:\icpchem\1\7500\h2.u
Tune File# 2 c:\icpchem\1\7500\he.u
Tune File# 3 c:\icpchem\1\7500\nogas.u

ISTD Ref File : C:\ICPCHEM\1\DATA\18B13k00.B\005CALB.D\005CALB.D#

2 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Mercury Raw Data

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 1068067221

Instrument : MET44 Begun : 02/15/18 16:21
Method : EPA 7471B SOP Version : hg_water_rv19

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	met44	ICALBLK				02/15/18 16:21	1.0		
002	met44	ICAL	ICAL1			02/15/18 16:23	1.0	1	
003	met44	ICAL	ICAL2			02/15/18 16:24	1.0	1	
004	met44	ICAL	ICAL3			02/15/18 16:26	1.0	1	
005	met44	ICAL	ICAL4			02/15/18 16:27	1.0	1	
006	met44	ICAL	ICAL5			02/15/18 16:28	1.0	1	
007	met44	ICV				02/15/18 16:30	1.0	2	
008	met44	ICB				02/15/18 16:31	1.0		
009	met44	BLANK	QC920233	Soil	256534	02/15/18 16:33	1.0		
010	met44	BS	QC920234	Soil	256534	02/15/18 16:34	1.0		
011	met44	BSD	QC920235	Soil	256534	02/15/18 16:35	1.0		
012	met44	MSS	297025-001	Soil	256534	02/15/18 16:37	1.0		
013	met44	MS	QC920236	Soil	256534	02/15/18 16:38	1.0		
014	met44	MSD	QC920237	Soil	256534	02/15/18 16:39	1.0		
015	met44	SER	QC920238	Soil	256534	02/15/18 16:41	5.0		
016	met44	SAMPLE	297025-002	Soil	256534	02/15/18 16:42	1.0		1:HG=23
017	met44	SAMPLE	297025-003	Soil	256534	02/15/18 16:44	1.0		1:HG=19
018	met44	SAMPLE	297025-004	Soil	256534	02/15/18 16:46	1.0		1:HG=15
019	met44	CCV				02/15/18 16:47	1.0	3	
020	met44	CCB				02/15/18 16:49	1.0		
021	met44	SAMPLE	297124-001	Soil	256534	02/15/18 16:50	1.0		
022	met44	SAMPLE	297130-006	Soil	256534	02/15/18 16:52	1.0		
023	met44	SAMPLE	297139-001	Soil	256534	02/15/18 16:53	1.0		
024	met44	SAMPLE	297025-002	Soil	256534	02/15/18 16:54	100.0		
025	met44	SAMPLE	297025-003	Soil	256534	02/15/18 16:56	100.0		
026	met44	SAMPLE	297025-004	Soil	256534	02/15/18 16:57	100.0		
027	met44	CCV				02/15/18 16:59	1.0	3	
028	met44	CCB				02/15/18 17:00	1.0		
029	met44	SAMPLE	297025-002	Soil	256534	02/15/18 17:26	10.0		
030	met44	SAMPLE	297025-003	Soil	256534	02/15/18 17:28	10.0		
031	met44	SAMPLE	297025-004	Soil	256534	02/15/18 17:29	10.0		
032	met44	CCV				02/15/18 17:30	1.0	3	
033	met44	CCB				02/15/18 17:32	1.0		

SL 02/15/18 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 33.

Standards used: 1=S36038 2=S36040 3=S36043

ENTHALPY SAMPLE USER REPORT FOR EPA 7471B

Inst	: MET44	Lab ID	: 297025-001	Client ID	: HPP-FSS-009A
Seqnum	: 1068067221012	Matrix	: Soil	Acct	: IEECI (MJD)
File	: met44	Batch	: 256534	Time	: 15-FEB-2018 16:37
Cal	: 1068067221001	Caldate	: 15-FEB-2018		
IDF	: 1.0			Units	: mg/Kg

0.64 g --> 50.0 ml = 78.13 ml/g PDF

Analyte	Result	RL	Blank	Flags
Mercury	0.28	0.016		u

u=use

==========

Method Loaded
Method Name: MET44 **Method Last Saved: 2/15/2018 1:51:23 PM**
Method Description: MET 44

==========

Sequence No.: 12 **Autosampler Location: 14**
Sample ID: 297025-001,256534,1 **Date Collected: 2/15/2018 4:37:09 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: 297025-001,256534,1 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	3.627	3.627	0.3669	0.3703	0.0709	4:38:15 PM	Yes

ENTHALPY BLANK USER REPORT FOR 297025 METALS Soil
EPA 7471B

Inst : MET44 Lab ID : QC920233
Seqnum : 1068067221009.1 Matrix : Soil
File : met44 Batch : 256534 Time : 15-FEB-2018 16:33
Cal : 1068067221001 Caldate : 15-FEB-2018
IDF : 1.0 Units : mg/Kg

0.64 g --> 50.0 ml = 78.13 ml/g PDF

Analyte	Result	RL	Flags
Mercury	ND	0.016	u

u=use

==========

Method Loaded
Method Name: MET44 **Method Last Saved: 2/15/2018 1:51:23 PM**
Method Description: MET 44

==========

Sequence No.: 9 **Autosampler Location: 11**
Sample ID: qc920233,256534,1 **Date Collected: 2/15/2018 4:33:05 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: qc920233,256534,1 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	-0.046	-0.046	-0.0014	0.0021	0.0005	4:34:10 PM	Yes

ENTHALPY SPIKE USER REPORT FOR 297025 METALS Soil
EPA 7471B

Type : BS
Inst : MET44
Seqnum : 1068067221010.4
File : met44
IDF : 1.0
Lab ID : QC920234
Matrix : Soil
Batch : 256534
Time : 15-FEB-2018 16:34
Cal : 1068067221001
Units : mg/Kg

Type : BSD
Inst : MET44
Seqnum : 1068067221011.4
File : met44
IDF : 1.0
Lab ID : QC920235
Matrix : Soil
Batch : 256534
Time : 15-FEB-2018 16:35
Cal : 1068067221001

BS: 0.61 g --> 50.0 ml = 81.97 ml/g PDF
BSD: 0.63 g --> 50.0 ml = 79.37 ml/g PDF

Analyte	Spiked	BS	%Rec	Spiked	BSD	%Rec	Limits	RPD	Lim	Flags
Mercury	0.1639	0.1596	97	0.1587	0.1418	89	80-124	9	20	u

u=use

==========

Method Loaded
Method Name: MET44 **Method Last Saved: 2/15/2018 1:51:23 PM**
Method Description: MET 44

==========

Sequence No.: 10 **Autosampler Location: 12**
Sample ID: qc920234,256534,1 **Date Collected: 2/15/2018 4:34:26 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: qc920234,256534,1 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	1.946	1.946	0.1984	0.2019	0.0394	4:35:32 PM	Yes

==========

Method Loaded
Method Name: MET44 **Method Last Saved: 2/15/2018 1:51:23 PM**
Method Description: MET 44

==========

Sequence No.: 11 **Autosampler Location: 13**
Sample ID: qc920235,256534,1 **Date Collected: 2/15/2018 4:35:47 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: qc920235,256534,1 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	1.786	1.786	0.1823	0.1858	0.0362	4:36:53 PM	Yes

ENTHALPY SPIKE USER REPORT FOR 297025 METALS Soil
EPA 7471B

Type : MSS	Type : MS	Type : MSD
Inst : MET44	Inst : MET44	Inst : MET44
Seqnum : 1068067221012	Seqnum : 1068067221013.4	Seqnum : 1068067221014.4
File : met44	File : met44	File : met44
IDF : 1.0	IDF : 1.0	IDF : 1.0
Lab ID : 297025-001	Lab ID : QC920236	Lab ID : QC920237
Matrix : Soil	Matrix : Soil	Matrix : Soil
Batch : 256534	Batch : 256534	Batch : 256534
Time : 15-FEB-2018 16:37	Time : 15-FEB-2018 16:38	Time : 15-FEB-2018 16:39
Cal : 1068067221001	Cal : 1068067221001	Cal : 1068067221001
Units : mg/Kg		

MSS: 0.64 g --> 50.0 ml = 78.13 ml/g PDF
MS: 0.60 g --> 50.0 ml = 83.33 ml/g PDF
MSD: 0.59 g --> 50.0 ml = 84.75 ml/g PDF

Analyte	MSS	Spiked	MS	%Rec	Spiked	MSD	%Rec	Limits	RPD	Lim	Flags
Mercury	0.2834	0.1667	0.3214	**23***	0.1695	0.2923	**5***	80-124	10	20	u

u=use

==========

Method Loaded
Method Name: MET44 **Method Last Saved: 2/15/2018 1:51:23 PM**
Method Description: MET 44

==========

Sequence No.: 13 **Autosampler Location: 15**
Sample ID: qc920236,256534,1 **Date Collected: 2/15/2018 4:38:31 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: qc920236,256534,1 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	3.857	3.857	0.3899	0.3934	0.0743	4:39:38 PM	Yes

==========

Method Loaded
Method Name: MET44 **Method Last Saved: 2/15/2018 1:51:23 PM**
Method Description: MET 44

==========

Sequence No.: 14 **Autosampler Location: 16**
Sample ID: qc920237,256534,1 **Date Collected: 2/15/2018 4:39:54 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: qc920237,256534,1 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	3.449	3.449	0.3490	0.3525	0.0673	4:41:00 PM	Yes

ENTHALPY SERIAL DILUTION FOR 297025 METALS Soil
EPA 7471B

Type : MSS
Inst : MET44
Seqnum : 1068067221012
File : met44
IDF : 1.0
Lab ID : 297025-001
Matrix : Soil
Batch : 256534
Time : 15-FEB-2018 16:37
Cal : 1068067221001
Units : mg/Kg

Type : SER
Inst : MET44
Seqnum : 1068067221015.4
File : met44
IDF : 5.0
Lab ID : QC920238
Matrix : Soil
Batch : 256534
Time : 15-FEB-2018 16:41
Cal : 1068067221001

MSS: 0.64 g --> 50.0 ml = 78.13 ml/g PDF
SER: 0.64 g --> 50.0 ml = 78.13 ml/g PDF

Analyte	MSS	RL	SER	RL	%D	Lim	Flags
Mercury	0.2834	0.01563	0.3129	0.07813	10	10	u

u=use

==========

Method Loaded
Method Name: MET44 **Method Last Saved: 2/15/2018 1:51:23 PM**
Method Description: MET 44

==========

Sequence No.: 15 **Autosampler Location: 17**
Sample ID: qc920238,256534,5 **Date Collected: 2/15/2018 4:41:16 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: qc920238,256534,5 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.800	0.800	0.0835	0.0870	0.0175	4:42:23 PM	Yes

ENTHALPY INITIAL CALIBRATION FOR 297025 METALS Soil: EPA 7471B

Inst : MET44
Calnum : 1068067221001
Units : ug/L

Date : 15-FEB-2018 16:21
X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	met44	1068067221002	ICAL1	15-FEB-2018 16:23	S36038 (500X)
L2	met44	1068067221003	ICAL2	15-FEB-2018 16:24	S36038 (200X)
L3	met44	1068067221004	ICAL3	15-FEB-2018 16:26	S36038 (50X)
L4	met44	1068067221005	ICAL4	15-FEB-2018 16:27	S36038 (20X)
L5	met44	1068067221006	ICAL5	15-FEB-2018 16:28	S36038 (10X)

Analyte	L1	L2	L3	L4	L5	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	Flg
Mercury	0.1030	0.1036	0.1044	0.1022	0.1002	LIN0	-0.0319	9.97332		0.1027	1.000	.99	

Spiked Amounts / Drifts	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D
Mercury	0.2000	-13	0.5000	-3	2.0000	3	5.0000	1	10.000	0

Instrument amount = a0 + response * a1 + response^2 * a2; LIN0=Linear regression including 0,0 point

ENTHALPY 2ND SOURCE CALIBRATION SUMMARY FOR 297025 METALS Soil
EPA 7471B

Inst : MET44
Calnum : 1068067221001 Cal Date : 15-FEB-2018

ICV 1068067221007 (15-FEB-2018) stds: S36040

Analyte	Spiked	Quant	Units	%D	Max	Flags
Mercury	5.000	5.134	ug/L	3	10	

==========

Analysis Begun

Logged In Analyst: mercury **Technique: AA FIMS-MHS**
Spectrometer: FIMS-100, S/N B050-9550 **Autosampler: Cetac**

Sample Information File:
Batch ID:
Results Data Set: 021518s2
Results Library: C:\Users\Public\PerkinElmer\AA\Data\Results\Results.mdb

==========

Sequence No.: 1 **Autosampler Location: 1**
Sample ID: ICALBLK **Date Collected: 2/15/2018 4:21:56 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: ICALBLK **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1		[0.00]	0.0035	0.0035	0.0007	4:23:02 PM	Yes

Auto-zero performed.

==========

Method Loaded
Method Name: MET44 **Method Last Saved: 2/15/2018 1:51:23 PM**
Method Description: MET 44

==========

Sequence No.: 2 **Autosampler Location: 2**
Sample ID: ICAL, ICAL1,S36038,500 **Date Collected: 2/15/2018 4:23:18 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: ICAL, ICAL1,S36038,500 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1		[0.2]	0.0206	0.0241	0.0046	4:24:24 PM	Yes

Standard number 1 applied. [0.2]
Correlation Coef.: 1.000000 Slope: 0.10320 Intercept: 0.00000

==========

Method Loaded
Method Name: MET44 **Method Last Saved: 2/15/2018 1:51:23 PM**
Method Description: MET 44

==========

Sequence No.: 3 **Autosampler Location: 3**
Sample ID: ICAL, ICAL2,S36038,200 **Date Collected: 2/15/2018 4:24:40 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: ICAL, ICAL2,S36038,200 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1		[0.5]	0.0518	0.0553	0.0108	4:25:47 PM	Yes

Standard number 2 applied. [0.5]
Correlation Coef.: 0.999998 Slope: 0.10367 Intercept: -0.00004

==========

Method Loaded
Method Name: MET44 **Method Last Saved: 2/15/2018 1:51:23 PM**
Method Description: MET 44

==========

Sequence No.: 4 **Autosampler Location: 4**
Sample ID: ICAL, ICAL3,S36038,50 **Date Collected: 2/15/2018 4:26:02 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: ICAL, ICAL3,S36038,50 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1		[2.0]	0.2088	0.2123	0.0410	4:27:09 PM	Yes

Standard number 3 applied. [2.0]
Correlation Coef.: 0.999998 Slope: 0.10448 Intercept: -0.00020

==========

Method Loaded
Method Name: MET44 **Method Last Saved: 2/15/2018 1:51:23 PM**
Method Description: MET 44

==========

Sequence No.: 5 **Autosampler Location: 5**
Sample ID: ICAL, ICAL4,S36038,20 **Date Collected: 2/15/2018 4:27:25 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: ICAL, ICAL4,S36038,20 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1		[5.0]	0.5109	0.5144	0.0986	4:28:33 PM	Yes

Standard number 4 applied. [5.0]
Correlation Coef.: 0.999960 Slope: 0.10224 Intercept: 0.00098

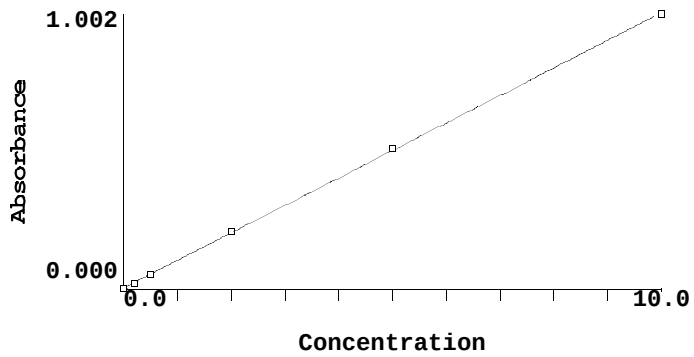
Method Loaded
Method Name: MET44 Method Last Saved: 2/15/2018 1:51:23 PM
Method Description: MET 44

Sequence No.: 6 Autosampler Location: 6
Sample ID: ICAL, ICAL5,S36038,10 Date Collected: 2/15/2018 4:28:49 PM
Analyst: Data Type: Original
Initial Sample Wt: Initial Sample Vol:
Dilution: Sample Prep Vol:

Replicate Data: ICAL, ICAL5,S36038,10 Analyte: Hg 253.7

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1		[10.0]	1.0018	1.0053	0.1916	4:29:56 PM	Yes

Standard number 5 applied. [10.0]
Correlation Coef.: 0.999934 Slope: 0.10026 Intercept: 0.00322



Calibration data for Hg 253.7 Equation: Linear, Calculated Intercept

ID	Mean Signal (Abs)	Entered Conc. ug/L	Calculated Conc. ug/L	Standard Deviation	%RSD
ICALBLK	0.0000	0	-0.032	----	----
ICAL, ICAL1,S36038,500	0.0206	0.2	0.174	----	----
ICAL, ICAL2,S36038,200	0.0518	0.5	0.485	----	----
ICAL, ICAL3,S36038,50	0.2088	2.0	2.050	----	----
ICAL, ICAL4,S36038,20	0.5109	5.0	5.064	----	----
ICAL, ICAL5,S36038,10	1.0018	10.0	9.959	----	----

Correlation Coef.: 0.999934 Slope: 0.10026 Intercept: 0.00322

==========

Method Loaded
Method Name: MET44 **Method Last Saved: 2/15/2018 1:51:23 PM**
Method Description: MET 44

==========

Sequence No.: 7 **Autosampler Location: 8**
Sample ID: ICV,s36040 **Date Collected: 2/15/2018 4:30:13 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: ICV,s36040 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	5.134	5.134	0.5180	0.5215	0.1002	4:31:21 PM	Yes

QC value within limits for Hg 253.7 Recovery = 102.68%
All analyte(s) passed QC.

ENTHALPY INSTRUMENT BLANK FOR 297025 METALS Soil
EPA 7471B

Inst : MET44 IDF : 1.0
Seqnum : 1068067221008.1 File : met44 Time : 15-FEB-2018 16:31
Cal : 1068067221001 Caldate : 15-FEB-2018

Analyte	Quant	IQL	LOD	Units	Flags
Mercury	ND	0.2000	0.1000	ug/L	

==========

Method Loaded
Method Name: MET44 **Method Last Saved: 2/15/2018 1:51:23 PM**
Method Description: MET 44

==========

Sequence No.: 8 **Autosampler Location: 9**
Sample ID: ICB **Date Collected: 2/15/2018 4:31:39 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: ICB **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	-0.018	-0.018	0.0014	0.0049	0.0012	4:32:47 PM	Yes

QC value within limits for Hg 253.7 Recovery = Not calculated
All analyte(s) passed QC.

ENTHALPY CONTINUING CALIBRATION FOR 297025 METALS Soil
EPA 7471B

Inst : MET44 IDF : 1.0
Seqnum : 1068067221019.1 File : met44 Time : 15-FEB-2018 16:47
Cal : 1068067221001 Caldate : 15-FEB-2018
Standards: S36043

Analyte	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Mercury	0.1027	0.0937	5.000	4.641	ug/L	-7	10	

==========

Method Loaded
Method Name: MET44 **Method Last Saved: 2/15/2018 1:51:23 PM**
Method Description: MET 44

==========

Sequence No.: 19 **Autosampler Location: 7**
Sample ID: CCV,s36043 **Date Collected: 2/15/2018 4:47:54 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: CCV,s36043 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	4.641	4.641	0.4685	0.4720	0.0990	4:49:02 PM	Yes

QC value within limits for Hg 253.7 Recovery = 92.82%
All analyte(s) passed QC.

ENTHALPY INSTRUMENT BLANK FOR 297025 METALS Soil
EPA 7471B

Inst : MET44 IDF : 1.0
Seqnum : 1068067221020.1 File : met44 Time : 15-FEB-2018 16:49
Cal : 1068067221001 Caldate : 15-FEB-2018

Analyte	Quant	IQL	LOD	Units	Flags
Mercury	ND	0.2000	0.1000	ug/L	

==========

Method Loaded
Method Name: MET44 **Method Last Saved: 2/15/2018 1:51:23 PM**
Method Description: MET 44

==========

Sequence No.: 20 **Autosampler Location: 10**
Sample ID: CCB **Date Collected: 2/15/2018 4:49:20 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: CCB **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	-0.058	-0.058	-0.0026	0.0009	0.0005	4:50:28 PM	Yes

QC value within limits for Hg 253.7 Recovery = Not calculated
All analyte(s) passed QC.

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 1068067324

Instrument : MET44 Begun : 02/15/18 18:04
Method : EPA 7471B SOP Version : hg_water_rv19

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	met44	ICALBLK				02/15/18 18:04	1.0		
002	met44	ICAL	ICAL1			02/15/18 18:05	1.0	1	
003	met44	ICAL	ICAL2			02/15/18 18:06	1.0	1	
004	met44	ICAL	ICAL3			02/15/18 18:08	1.0	1	
005	met44	ICAL	ICAL4			02/15/18 18:09	1.0	1	
006	met44	ICAL	ICAL5			02/15/18 18:10	1.0	1	
007	met44	ICV				02/15/18 18:12	1.0	2	
008	met44	ICB				02/15/18 18:13	1.0		
009	met44	SAMPLE	297025-002	Soil	256534	02/15/18 18:15	10.0		
010	met44	SAMPLE	297025-003	Soil	256534	02/15/18 18:16	10.0		
011	met44	SAMPLE	297025-004	Soil	256534	02/15/18 18:17	10.0		
012	met44	CCV				02/15/18 18:19	1.0	3	
013	met44	CCB				02/15/18 18:20	1.0		

SL 02/15/18 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 13.

Standards used: 1=S36038 2=S36040 3=S36043

ENTHALPY SAMPLE USER REPORT FOR EPA 7471B

Inst	: MET44	Lab ID	: 297025-002	Client ID	: HPP-FSS-009B
Seqnum	: 1068067324009	Matrix	: Soil	Acct	: IEECI (MJD)
File	: met44	Batch	: 256534	Time	: 15-FEB-2018 18:15
Cal	: 1068067324001	Caldate	: 15-FEB-2018		
IDF	: 10.0			Units	: mg/Kg

0.60 g --> 50.0 ml = 83.33 ml/g PDF

Analyte	Result	RL	Blank	Flags
Mercury	2.4	0.17		u

u=use

1068067324009

==========

Method Loaded
Method Name: MET44 **Method Last Saved: 2/15/2018 1:51:23 PM**
Method Description: MET 44

==========

Sequence No.: 9 **Autosampler Location: 18**
Sample ID: 297025-002,256534,10 **Date Collected: 2/15/2018 6:15:07 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: 297025-002,256534,10 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	2.827	2.827	0.2922	0.2969	0.0561	6:16:14 PM	Yes

ENTHALPY SAMPLE USER REPORT FOR EPA 7471B

Inst	: MET44	Lab ID	: 297025-003	Client ID	: HPP-FSS-009C
Seqnum	: 1068067324010	Matrix	: Soil	Acct	: IEECI (MJD)
File	: met44	Batch	: 256534	Time	: 15-FEB-2018 18:16
Cal	: 1068067324001	Caldate	: 15-FEB-2018		
IDF	: 10.0			Units	: mg/Kg

0.57 g --> 50.0 ml = 87.72 ml/g PDF

Analyte	Result	RL	Blank	Flags
Mercury	2.1	0.18		u

u=use

1068067324010

==========

Method Loaded
Method Name: MET44 **Method Last Saved: 2/15/2018 1:51:23 PM**
Method Description: MET 44

==========

Sequence No.: 10 **Autosampler Location: 19**
Sample ID: 297025-003,256534,10 **Date Collected: 2/15/2018 6:16:30 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: 297025-003,256534,10 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	2.436	2.436	0.2519	0.2567	0.0486	6:17:37 PM	Yes

ENTHALPY SAMPLE USER REPORT FOR EPA 7471B

Inst	: MET44	Lab ID	: 297025-004	Client ID	: HPP-FSS-009D
Seqnum	: 1068067324011	Matrix	: Soil	Acct	: IEECI (MJD)
File	: met44	Batch	: 256534	Time	: 15-FEB-2018 18:17
Cal	: 1068067324001	Caldate	: 15-FEB-2018		
IDF	: 10.0			Units	: mg/Kg

0.60 g --> 50.0 ml = 83.33 ml/g PDF

Analyte	Result	RL	Blank	Flags
Mercury	1.4	0.17		u

u=use

1068067324011

==========

Method Loaded
Method Name: MET44 **Method Last Saved: 2/15/2018 1:51:23 PM**
Method Description: MET 44

==========

Sequence No.: 11 **Autosampler Location: 20**
Sample ID: 297025-004,256534,10 **Date Collected: 2/15/2018 6:17:54 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: 297025-004,256534,10 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	1.707	1.707	0.1769	0.1817	0.0344	6:19:01 PM	Yes

ENTHALPY INITIAL CALIBRATION FOR 297025 METALS Soil: EPA 7471B

Inst : MET44
Calnum : 1068067324001
Units : ug/L

Date : 15-FEB-2018 18:04
X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	met44	1068067324002	ICAL1	15-FEB-2018 18:05	S36038 (500X)
L2	met44	1068067324003	ICAL2	15-FEB-2018 18:06	S36038 (200X)
L3	met44	1068067324004	ICAL3	15-FEB-2018 18:08	S36038 (50X)
L4	met44	1068067324005	ICAL4	15-FEB-2018 18:09	S36038 (20X)
L5	met44	1068067324006	ICAL5	15-FEB-2018 18:10	S36038 (10X)

Analyte	L1	L2	L3	L4	L5	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	Flg
Mercury	0.0960	0.0924	0.1072	0.1048	0.1025	LIN0	-0.0122	9.71958		0.1006	1.000	.99	

Spiked Amounts / Drifts	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D
Mercury	0.2000	-13	0.5000	-13	2.0000	4	5.0000	2	10.000	-1

Instrument amount = a0 + response * a1 + response^2 * a2; LIN0=Linear regression including 0,0 point

ENTHALPY 2ND SOURCE CALIBRATION SUMMARY FOR 297025 METALS Soil
EPA 7471B

Inst : MET44
Calnum : 1068067324001 Cal Date : 15-FEB-2018

ICV 1068067324007 (15-FEB-2018) stds: S36040

Analyte	Spiked	Quant	Units	%D	Max	Flags
Mercury	5.000	5.116	ug/L	2	10	

==========

Analysis Begun

Logged In Analyst: mercury **Technique: AA FIMS-MHS**
Spectrometer: FIMS-100, S/N B050-9550 **Autosampler: Cetac**

Sample Information File:
Batch ID:
Results Data Set: 021518s2
Results Library: C:\Users\Public\PerkinElmer\AA\Data\Results\Results.mdb

==========

Sequence No.: 1 **Autosampler Location: 1**
Sample ID: ICALBLK **Date Collected: 2/15/2018 6:04:00 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: ICALBLK **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1		[0.00]	0.0047	0.0047	0.0007	6:05:06 PM	Yes

Auto-zero performed.

==========

Method Loaded
Method Name: MET44 **Method Last Saved: 2/15/2018 1:51:23 PM**
Method Description: MET 44

==========

Sequence No.: 2 **Autosampler Location: 2**
Sample ID: ICAL, ICAL1,S36038,500 **Date Collected: 2/15/2018 6:05:21 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: ICAL, ICAL1,S36038,500 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1		[0.2]	0.0192	0.0240	0.0044	6:06:28 PM	Yes

Standard number 1 applied. [0.2]
Correlation Coef.: 1.000000 Slope: 0.09618 Intercept: 0.00000

==========

Method Loaded
Method Name: MET44 **Method Last Saved: 2/15/2018 1:51:23 PM**
Method Description: MET 44

==========

Sequence No.: 3 **Autosampler Location: 3**
Sample ID: ICAL, ICAL2,S36038,200 **Date Collected: 2/15/2018 6:06:43 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: ICAL, ICAL2,S36038,200 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1		[0.5]	0.0462	0.0510	0.0095	6:07:50 PM	Yes

Standard number 2 applied. [0.5]
Correlation Coef.: 0.999830 Slope: 0.09225 Intercept: 0.00029

==========

Method Loaded
Method Name: MET44 **Method Last Saved: 2/15/2018 1:51:23 PM**
Method Description: MET 44

==========

Sequence No.: 4 **Autosampler Location: 4**
Sample ID: ICAL, ICAL3,S36038,50 **Date Collected: 2/15/2018 6:08:06 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: ICAL, ICAL3,S36038,50 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1		[2.0]	0.2144	0.2191	0.0403	6:09:12 PM	Yes

Standard number 3 applied. [2.0]
Correlation Coef.: 0.999410 Slope: 0.10815 Intercept: -0.00303

==========

Method Loaded
Method Name: MET44 **Method Last Saved: 2/15/2018 1:51:23 PM**
Method Description: MET 44

==========

Sequence No.: 5 **Autosampler Location: 5**
Sample ID: ICAL, ICAL4,S36038,20 **Date Collected: 2/15/2018 6:09:28 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: ICAL, ICAL4,S36038,20 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1		[5.0]	0.5239	0.5287	0.0981	6:10:35 PM	Yes

Standard number 4 applied. [5.0]
Correlation Coef.: 0.999857 Slope: 0.10541 Intercept: -0.00158

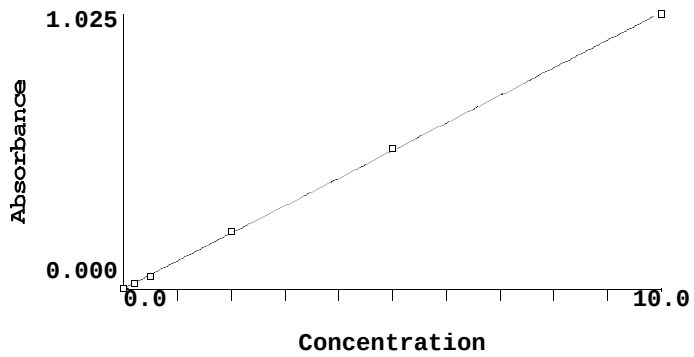
Method Loaded
Method Name: MET44 Method Last Saved: 2/15/2018 1:51:23 PM
Method Description: MET 44

Sequence No.: 6 Autosampler Location: 6
Sample ID: ICAL, ICAL5,S36038,10 Date Collected: 2/15/2018 6:10:52 PM
Analyst: Data Type: Original
Initial Sample Wt: Initial Sample Vol:
Dilution: Sample Prep Vol:

Replicate Data: ICAL, ICAL5,S36038,10 Analyte: Hg 253.7

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1		[10.0]	1.0249	1.0296	0.1887	6:11:59 PM	Yes

Standard number 5 applied. [10.0]
Correlation Coef.: 0.999878 Slope: 0.10288 Intercept: 0.00127



Calibration data for Hg 253.7 Equation: Linear, Calculated Intercept

ID	Mean Signal (Abs)	Entered Conc. ug/L	Calculated Conc. ug/L	Standard Deviation	%RSD
ICALBLK	0.0000	0	-0.012	----	----
ICAL, ICAL1,S36038,500	0.0192	0.2	0.175	----	----
ICAL, ICAL2,S36038,200	0.0462	0.5	0.437	----	----
ICAL, ICAL3,S36038,50	0.2144	2.0	2.071	----	----
ICAL, ICAL4,S36038,20	0.5239	5.0	5.080	----	----
ICAL, ICAL5,S36038,10	1.0249	10.0	9.949	----	----

Correlation Coef.: 0.999878 Slope: 0.10288 Intercept: 0.00127

==========

Method Loaded
Method Name: MET44 **Method Last Saved: 2/15/2018 1:51:23 PM**
Method Description: MET 44

==========

Sequence No.: 7 **Autosampler Location: 8**
Sample ID: ICV,s36040 **Date Collected: 2/15/2018 6:12:16 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: ICV,s36040 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	5.116	5.116	0.5276	0.5324	0.0985	6:13:24 PM	Yes

QC value within limits for Hg 253.7 Recovery = 102.32%
All analyte(s) passed QC.

ENTHALPY INSTRUMENT BLANK FOR 297025 METALS Soil
EPA 7471B

Inst : MET44 IDF : 1.0
Seqnum : 1068067324008.1 File : met44 Time : 15-FEB-2018 18:13
Cal : 1068067324001 Caldate : 15-FEB-2018

Analyte	Quant	IQL	LOD	Units	Flags
Mercury	ND	0.2000	0.1000	ug/L	

==========

Method Loaded
Method Name: MET44 **Method Last Saved: 2/15/2018 1:51:23 PM**
Method Description: MET 44

==========

Sequence No.: 8 **Autosampler Location: 9**
Sample ID: ICB **Date Collected: 2/15/2018 6:13:41 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: ICB **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	0.001	0.001	0.0014	0.0062	0.0013	6:14:50 PM	Yes

QC value within limits for Hg 253.7 Recovery = Not calculated
All analyte(s) passed QC.

ENTHALPY CONTINUING CALIBRATION FOR 297025 METALS Soil
EPA 7471B

Inst : MET44 IDF : 1.0
Seqnum : 1068067324012.1 File : met44 Time : 15-FEB-2018 18:19
Cal : 1068067324001 Caldate : 15-FEB-2018
Standards: S36043

Analyte	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Mercury	0.1006	0.1092	5.000	5.297	ug/L	6	10	

==========

Method Loaded
Method Name: MET44 **Method Last Saved: 2/15/2018 1:51:23 PM**
Method Description: MET 44

==========

Sequence No.: 12 **Autosampler Location: 7**
Sample ID: CCV,s36043 **Date Collected: 2/15/2018 6:19:18 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: CCV,s36043 **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	5.297	5.297	0.5462	0.5510	0.1029	6:20:25 PM	Yes

QC value within limits for Hg 253.7 Recovery = 105.93%
All analyte(s) passed QC.

ENTHALPY INSTRUMENT BLANK FOR 297025 METALS Soil
EPA 7471B

Inst : MET44 IDF : 1.0
Seqnum : 1068067324013.1 File : met44 Time : 15-FEB-2018 18:20
Cal : 1068067324001 Caldate : 15-FEB-2018

Analyte	Quant	IQL	LOD	Units	Flags
Mercury	ND	0.2000	0.1000	ug/L	

==========

Method Loaded
Method Name: MET44 **Method Last Saved: 2/15/2018 1:51:23 PM**
Method Description: MET 44

==========

Sequence No.: 13 **Autosampler Location: 10**
Sample ID: CCB **Date Collected: 2/15/2018 6:20:43 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Replicate Data: CCB **Analyte: Hg 253.7**

Repl #	SampleConc ug/L	StndConc ug/L	BlnkCorr Signal	Peak Area	Peak Height	Time	Peak Stored
1	-0.055	-0.055	-0.0044	0.0003	0.0001	6:21:51 PM	Yes

QC value within limits for Hg 253.7 Recovery = Not calculated
All analyte(s) passed QC.

Enthalpy Analytical

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 297025
ANALYTICAL REPORT
Wet Chemistry

Insight EEC, Inc. 3013 E Miraloma Ave Anaheim, CA 92806	Project : 4-14214 Location : HPNS-Parcel F Level : IV

Sample ID	Lab ID
HPP-FSS-009A	297025-001
HPP-FSS-009B	297025-002
HPP-FSS-009C	297025-003
HPP-FSS-009D	297025-004

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAP and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: _____ Date: 02/20/2018

Mike Dahlquist
Project Manager
mike.dahlquist@enthalpy.com
(510) 204-2225 Ext 13101

CA ELAP# 2896, NELAP# 4044-001

ENTHALPY ANALYTICAL

CASE NARRATIVE
WET CHEMISTRY (ASTM D2216-98/CLP)

Laboratory number:	**297025**
Client:	**Insight EEC, Inc.**
Project:	**4-14214**
Location:	**HPNS-Parcel F**
Request Date:	**02/09/18**
Samples Received:	**02/01/18**

Moisture (ASTM D2216-98/CLP):

No analytical problems were encountered.

Chain of Custody

297025

MONTROSE

Mike Dahlquist <mdahlquist@montrose-env.com>

RE: 4-14214 - Enthalpy (Berkeley) Data (296840)

Nick Weinberger <NWeinberger@ieeci.com> Fri, Feb 9, 2018 at 1:17 PM
To: "mike.dahlquist@enthalpy.com" <mike.dahlquist@enthalpy.com>
Cc: Mitra Fattahipour <MFattahipour@ieeci.com>, Aaron Heidt <AHeidt@ieeci.com>, Scott Donovan <SDonovan@ieeci.com>, Dave Marks <DMarks@ieeci.com>, Mehdi Siavoshani <MSiavoshani@ieeci.com>

Mike,

Based on the results, we need to analyze all the sub-samples for sample HPP-FSS-009 (-009A, -009B, -009C, and -009D) for PCBs, copper, lead, and mercury.

regards,

-Nick

T:714.678.6700x311 C:714.272.1634

From: Mike Dahlquist [mailto:mike.dahlquist@enthalpy.com]
Sent: Thursday, February 08, 2018 4:43 PM
To: Nick Weinberger <NWeinberger@ieeci.com>
Subject: 4-14214 - Enthalpy (Berkeley) Data (296840)

Hi Nick,

Please find attached the following file:
• PDF Level IV Deliverable

You may also access this data at https://labline-berkeley.enthalpy.com/

Results & QC Summary

Percent Moisture Summary Report

Batch: 256577
Date: 02/17/18
Method: CLP SOW 390
Analyst: MFV

Sample	Tare (g)	Wet (g)	Dry (g)	Percent Solids	Percent Moisture
297025-001	10.90	17.43	13.80	44	56
297025-002	11.35	19.90	17.53	72	28
297025-003	11.25	19.41	15.92	57	43
297025-004	11.30	16.97	14.91	64	36
297198-001	11.35	17.02	16.66	94	6
297204-001	11.27	17.16	16.99	97	3
297204-002	11.35	17.44	17.23	97	3
297206-001	11.20	17.14	16.56	90	10
297206-002	11.04	17.62	17.26	95	5
297206-003	11.12	17.58	16.98	91	9
297206-004	11.03	17.10	16.56	91	9
297206-005	11.61	17.96	17.79	97	3
297208-001	11.33	17.72	16.29	78	22
297217-001	11.03	17.46	16.95	92	8
QC920408	11.36	17.63	17.44	97	3
of 297204-001			RPD:	0.1%	4.9%

Moisture LOG Enthalpy Analytical LLC - Berkeley rev.3.2, July 2017

LIMS Batch #: 256577
Date: 2-17-18

Page: 2
Benchbook#: **BK 4232**

Balance ID: B-13
calibration has been checked? ☑ Yes ☐ No

Sample # / Letter	Dish #	Dish Weight (g)	Sample + Dish Wt (g)	Final Weight (g)	*Comments
BLK	93	11.31	Ø	11.32	
297025-001 A	33	10.90	17.43	13.80	296840-014
-002	86	11.35	19.90	17.53	-015
-003	4	11.25	19.41	15.92	-016
-004	36	11.30	16.97	14.91	-017
297198-001 E→H	5	11.35	17.02	16.66	COMP E→H 5GEA.
297204-001 A	22	11.27	17.16	16.99	
-002	45	11.35	17.44	17.23	
297206-001 B	85	11.20	17.14	16.56	
-002	64	11.04	17.62	17.26	
-003	78	11.12	17.58	16.98	
-004	73	11.03	17.10	16.56	
-005	15	11.61	17.96	17.79	
297208-001 E→H	82	11.33	17.72	16.29	COMP E→H 5GEA.
297217-001 B	49	11.03	17.46	16.95	
297204-001 A	92	11.36	17.63	17.44	SDUP

	In	Out	In-2	Out-2
Date:	2-17-18	2-18-18		
Time:	0436	04:35		
Min/Max Range (°C)	104	104°C		
Thermometer ID:	P49096	P49096		
Weighed by:	MV	VV		

MV 2-17-18
Analyst Initials / Date

Reviewed Online / See LIMS

PROJECT (B-13) OHAUS SP602 BALANCE CAL.

Notebook No. BK 3384

Continued From Page

DATE	0.2g	SET#	500g	SET#	INITIALS
2-5-18	0.20	40417	499.93	28659	MV
2-6-18	0.20	40417	499.94	28659	MV
2-7-18	0.20	40417	499.96	28659	MV
2-8-18	0.20	40417	499.92	28659	MV
2-9-18	0.20	40417	499.93	28659	MV
2-10-18	0.20	40417	499.92	28659	MV
2-13-18	0.20	40417	499.90	28659	MV
2-15-18	0.20	40417	499.91	28659	MV
2-16-18	0.20	40417	499.91	28659	MV
2-17-18	0.20	40417	499.93	28659	MV
2-18-18	0.20	40417	499.88	28659	VV

Continued on Page

Read and Understood By

Signed | Date | Signed | Date

Data Validation Reports

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

Insight Environmental
Engineering and Construction, Inc.
2749 Saturn Street
Brea, CA 92821
ATTN: Mr. Nick Weinberger

June 25, 2018

SUBJECT: REVISED Hunters Point, Parcel F, Data Validation

Dear Mr. Weinberger,

Enclosed are the final validation reports, including a revision for the fractions listed below:

- The laboratory changed the Aroclor-1260 result for samples HPP-FSS-002, HPP-FSS-003, and HPP-FSS-004 to non-detect because there was no second column confirmation. Since the results were revised to non-detect, the NJ (presumptively positive at an estimated quantity) qualifier was removed. (SDG# 296798, 41483A3b)

These SDGs were received on March 6, 2018. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #41483:

SDG #	**Fraction**
296798, 296840, 297025	Polychlorinated Biphenyls, Metals

The data validation was performed under Level III & IV guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Sampling and Analysis Plan Sediment Investigation and Bathymetric Survey for Parcel F Hunters Point Naval Shipyard, San Francisco, California, November 2017
- U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, Version 5.1, 2017
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

Christina Rink

Christina Rink
Project Manager/Senior Chemist

III/IV Client Select

LDC #41483 (Insight - Brea, CA / Hunters Point, Parcel F)

LDC	SDG#	DATE REC'D	(3) DATE DUE	PCBs (8082A)		3 Metals (6020A /7000)																																	
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	296798	03/06/18	03/27/18	0	6	0	6																																
B	296840	03/06/18	03/27/18	2	4	2	4																																
C	297025	03/06/18	03/27/18	0	4	0	4																																
Total	T/CR			2	14	2	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32

Shaded cells indicate Level IV validation (all other cells are Level III validation). These counts do not include MS, MSD, Dups.

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Hunters Point, Parcel F

LDC Report Date: June 25, 2018

Parameters: Polychlorinated Biphenyls

Validation Level: Level III

Laboratory: Enthalpy Analytical, Inc.

Sample Delivery Group (SDG): 296798

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
HPP-FSS-001	296798-001	Soil	01/30/18
HPP-FSS-002	296798-006	Soil	01/30/18
HPP-FSS-003	296798-011	Soil	01/30/18
HPP-FSS-004	296798-016	Soil	01/30/18
HPP-FSS-005	296798-021	Soil	01/30/18
HPP-FSS-006	296798-026	Soil	01/30/18

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Sampling and Analysis Plan Sediment Investigation and Bathymetric Survey for Parcel F Hunters Point Naval Shipyard, San Francisco, California (November 2017) and the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.1 (2017). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Polychlorinated Biphenyls (PCBs) by Environmental Protection Agency (EPA) SW 846 Method 8082A

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

NJ (Presumptive and estimated): The analysis indicates the presence of a compound or analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 20.0% for all compounds.

III. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 20.0% for all compounds.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

Sample HPP-FSS-EB01 (from SDG 296840) was identified as an equipment blank. No contaminants were found.

Sample HPP-FSS-FB01 (from SDG 296840) was identified as a source blank. No contaminants were found.

VI. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

IX. Field Duplicates

No field duplicates were identified in this SDG.

X. Compound Quantitation

Raw data were not reviewed for Level III validation.

XI. Target Compound Identification

Raw data were not reviewed for Level III validation.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

Hunters Point, Parcel F
Polychlorinated Biphenyls - Data Qualification Summary - SDG 296798

No Sample Data Qualified in this SDG

Hunters Point, Parcel F
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 296798

No Sample Data Qualified in this SDG

Hunters Point, Parcel F
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 296798

No Sample Data Qualified in this SDG

LDC #: 41483A3b
SDG #: 296798
Laboratory: Enthalpy Analytical, Inc.

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 3/14/18
Page: 1 of 1
Reviewer:
2nd Reviewer:

METHOD: GC Polychlorinated Biphenyls (EPA SW846 Method 8082A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / A	
II.	Initial calibration/ICV	A / A	% RSD / ICV ≤ 20
III.	Continuing calibration	A	CCV ≤ 20
IV.	Laboratory Blanks	A	
V.	Field blanks	ND	EB= HPP-FSS-EB01, SB= HPP-FSS-FB01 both from 296840
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	CS
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	N	
X.	Compound quantitation/RL/LOQ/LODs	~~SW~~ A	
XI.	Target compound identification	N	
XII.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	HPP-FSS-001	296798-001	Soil	01/30/18
2	HPP-FSS-002	296798-006	Soil	01/30/18
3	HPP-FSS-003	296798-011	Soil	01/30/18
4	HPP-FSS-004	296798-016	Soil	01/30/18
5	HPP-FSS-005	296798-021	Soil	01/30/18
6	HPP-FSS-006	296798-026	Soil	01/30/18
7				
8				
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11				
12				

Notes:

	256131						

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Hunters Point, Parcel F

LDC Report Date: March 16, 2018

Parameters: Metals

Validation Level: Level III

Laboratory: Enthalpy Analytical, Inc.

Sample Delivery Group (SDG): 296798

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
HPP-FSS-001	296798-001	Soil	01/30/18
HPP-FSS-002	296798-006	Soil	01/30/18
HPP-FSS-003	296798-011	Soil	01/30/18
HPP-FSS-004	296798-016	Soil	01/30/18
HPP-FSS-005	296798-021	Soil	01/30/18
HPP-FSS-006	296798-026	Soil	01/30/18
HPP-FSS-001MS	296798-001MS	Soil	01/30/18
HPP-FSS-001MSD	296798-001MSD	Soil	01/30/18

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Sampling and Analysis Plan Sediment Investigation and Bathymetric Survey for Parcel F Hunters Point Naval Shipyard, San Francisco, California (November 2017) and the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.1 (2017). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Copper and Lead by Environmental Protection Agency (EPA) SW 846 Method 6020A
Mercury by EPA SW 846 Method 7471B

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5%.

III. Instrument Calibration

Initial and continuing calibrations were performed as required by the methods.

The initial calibration verification (ICV) and continuing calibration verification (CCV) standards were within QC limits.

IV. ICP Interference Check Sample Analysis

The frequency of interference check sample (ICS) analysis was met. All criteria were within QC limits.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the methods. No contaminants were found in the laboratory blanks.

VI. Field Blanks

Sample HPP-FSS-EB01 (from SDG 296840) was identified as an equipment blank. No contaminants were found with the following exceptions:

Blank ID	Collection Date	Analyte	Concentration	Associated Samples
HPP-FSS-EB01	01/31/18	Copper Lead	0.63 ug/L 0.19 ug/L	All samples in SDG 296798

Sample HPP-FSS-FB01 (from SDG 296840) was identified as a source blank. No contaminants were found with the following exceptions:

Blank ID	Collection Date	Analyte	Concentration	Associated Samples
HPP-FSS-FB01	01/31/18	Copper	0.26 ug/L	All samples in SDG 296798

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

VIII. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

IX. Serial Dilution

Serial dilution analysis was performed on an associated project sample. Percent differences (%D) were within QC limits.

X. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

XI. Field Duplicates

No field duplicates were identified in this SDG.

XII. Internal Standards (ICP-MS)

All internal standard percent recoveries (%R) were within QC limits.

XIII. Sample Result Verification

Raw data were not reviewed for Level III validation.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

Hunters Point, Parcel F
Metals - Data Qualification Summary - SDG 296798

No Sample Data Qualified in this SDG

Hunters Point, Parcel F
Metals - Laboratory Blank Data Qualification Summary - SDG 296798

No Sample Data Qualified in this SDG

Hunters Point, Parcel F
Metals - Field Blank Data Qualification Summary - SDG 296798

No Sample Data Qualified in this SDG

LDC #: 41483A4a

SDG #: 296798

Laboratory: Enthalpy Analytical, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 3/12/18

Page: 1 of 1

Reviewer: VB

2nd Reviewer: [signature]

METHOD: Metals (EPA SW 846 Method 6020A/7471B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / A	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	A	
VI.	Field Blanks	SW	EB = HPP-FSS-EB01, FB= HPP-FSS-FB01 From 296840
VII.	Matrix Spike/Matrix Spike Duplicates	A	7, 8 S
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	
X.	Laboratory control samples	A	LCS ID
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	HPP-FSS-001	296798-001	Soil	01/30/18
2	HPP-FSS-002	296798-006	Soil	01/30/18
3	HPP-FSS-003	296798-011	Soil	01/30/18
4	HPP-FSS-004	296798-016	Soil	01/30/18
5	HPP-FSS-005	296798-021	Soil	01/30/18
6	HPP-FSS-006	296798-026	Soil	01/30/18
7	HPP-FSS-001MS	296798-001MS	Soil	01/30/18
8	HPP-FSS-001MSD	296798-001MSD	Soil	01/30/18
9				
10				
11				
12				

Notes:

LDC #: 41483A4a

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: JB
2nd reviewer:

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-6	S	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
6c		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
7, 8	S	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,

Comments: Mercury by CVAA if performed

LDC #: 41483A4a

VALIDATION FINDINGS WORKSHEET
Field Blanks

Page: 6 of 1
Reviewer: JB
2nd Reviewer: C

METHOD: Trace Metals (EPA SW846 6010B/7000)

Blank units: ug/L **Associated sample units:** mg/Kg
Sampling date: 1/31/18 Soil factor applied _____
Field blank type: (circle one) Field Blank / Rinsate / Other: EB Associated Samples: All soils

Analyte	Blank ID	Sample Identification										
	HPP-FSS-EB01 from SDG 296840	Action Limit										
Cu	0.63	0.00315										
Pb	0.19	0.001										

Blank units: ug/L **Associated sample units:** mg/Kg
Sampling date: 1/31/18 Soil factor applied _____
Field blank type: (circle one) Field Blank / Rinsate / Other: FB Associated Samples: All soils

Analyte	Blank ID	Sample Identification										
	HPP-FSS-FB01 from SDG 296840	Action Limit										
Cu	0.26	0.0013										

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Hunters Point, Parcel F

LDC Report Date: March 16, 2018

Parameters: Polychlorinated Biphenyls

Validation Level: Level IV

Laboratory: Enthalpy Analytical, Inc.

Sample Delivery Group (SDG): 296840

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
HPP-FSS-007	296840-001	Soil	01/31/18
HPP-FSS-008	296840-006	Soil	01/31/18
HPP-FSS-EB01	296840-011	Water	01/31/18
HPP-FSS-FB01	296840-012	Water	01/31/18
HPP-FSS-009	296840-013	Soil	01/31/18
HPP-FSS-010	296840-018	Soil	01/31/18
HPP-FSS-007MS	296840-001MS	Soil	01/31/18
HPP-FSS-007MSD	296840-001MSD	Soil	01/31/18

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Sampling and Analysis Plan Sediment Investigation and Bathymetric Survey for Parcel F Hunters Point Naval Shipyard, San Francisco, California (November 2017) and the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.1 (2017). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Polychlorinated Biphenyls (PCBs) by Environmental Protection Agency (EPA) SW 846 Method 8082A

All sample results were subjected to Level IV data validation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

For compounds where average calibration factors were utilized, percent relative standard deviations (%RSD) were less than or equal to 20.0%.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990.

Retention time windows were established as required by the method.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 20.0% for all compounds.

III. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 20.0% for all compounds.

Retention times of all compounds in the calibration standards were within the established retention time windows.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

Sample HPP-FSS-EB01 was identified as an equipment blank. No contaminants were found.

Sample HPP-FSS-FB01 was identified as a source blank. No contaminants were found.

VI. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

IX. Field Duplicates

Samples HPP-FSS-008 and HPP-FSS-010 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/Kg)		RPD (Limits)
	HPP-FSS-008	HPP-FSS-010	
Aroclor-1260	30	23	26 (≤30)

X. Compound Quantitation

All compound quantitations met validation criteria.

XI. Target Compound Identification

All target compound identifications met validation criteria.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

Hunters Point, Parcel F
Polychlorinated Biphenyls - Data Qualification Summary - SDG 296840

No Sample Data Qualified in this SDG

Hunters Point, Parcel F
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 296840

No Sample Data Qualified in this SDG

Hunters Point, Parcel F
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 296840

No Sample Data Qualified in this SDG

LDC #: 41483B3b
SDG #: 296840
Laboratory: Enthalpy Analytical, Inc.

VALIDATION COMPLETENESS WORKSHEET
Level IV

Date: 3/14/18
Page: 1 of 1
Reviewer: FZ
2nd Reviewer: [illegible]

METHOD: GC Polychlorinated Biphenyls (EPA SW846 Method 8082A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/A	
II.	Initial calibration/ICV	A/A	% RSD ≤ 20, r² ICV ≤ 20
III.	Continuing calibration	A	CCV ≤ 20
IV.	Laboratory Blanks	A	
V.	Field blanks	ND	EB = 3 TB SB = 4
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS/D
IX.	Field duplicates	SW	D = 2, 6
X.	Compound quantitation/RL/LOQ/LODs	A	
XI.	Target compound identification	A	
XII.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1 +1	HPP-FSS-007	296840-001	Soil	01/31/18
2 +1	HPP-FSS-008 D	296840-006	Soil	01/31/18
3 2	HPP-FSS-EB01	296840-011	Water	01/31/18
4 2	HPP-FSS-FB01	296840-012	Water	01/31/18
5 +1	HPP-FSS-009	296840-013	Soil	01/31/18
6 +1	HPP-FSS-010 D	296840-018	Soil	01/31/18
7 1	HPP-FSS-007MS	296840-001MS	Soil	01/31/18
8 1	HPP-FSS-007MSD	296840-001MSD	Soil	01/31/18
9				
10				
11				
12				

Notes:

1	256161						
2	256210						

LDC #: 41483 B3b

VALIDATION FINDINGS CHECKLIST

Reviewer: FZ
2nd Reviewer: [illegible]

Method: ✓ GC ____ HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	✓			
Was cooler temperature criteria met?	✓			
IIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20%?	✓			
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit acceptance criteria of ≥0.990?	✓			
Were the RT windows properly established?		✓		
IIb. Initial calibration verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	✓			
Were all percent differences (%D) ≤ 20% or percent recoveries (%R) 80-120%?	✓			
III. Continuing calibration				
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) ≤ 20% or percent recoveries (%R) 80-120%?	✓			
Were all the retention times within the acceptance windows?	✓			
IV. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	✓			
Was a laboratory blank analyzed for each matrix and concentration?	✓			
Was there contamination in the laboratory blanks? If yes, please see the Blanks validation completeness worksheet.			✓	
V. Field Blanks				
Were field blanks identified in this SDG?	✓			
Were target compounds detected in the field blanks?			✓	
VI. Surrogate spikes				
Were all surrogate percent recovery (%R) within the QC limits?	✓			
If the percent recovery (%R) of one or more surrogates was outside QC limits, was a reanalysis performed to confirm %R?			✓	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	✓			
Was a MS/MSD analyzed every 20 samples of each matrix?	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	✓			

LDC #: 41483B36

VALIDATION FINDINGS CHECKLIST

Reviewer: FT
2nd Reviewer: [illegible]

Validation Area	Yes	No	NA	Findings/Comments
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Field duplicates				
Were field duplicate pairs identified in this SDG?	✓			
Were target compounds detected in the field duplicates?	✓			
X. Compound quantitation				
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XI. Target compound identification				
Were the retention times of reported detects within the RT windows?	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			

VALIDATION FINDINGS WORKSHEET

METHOD: Pesticide/PCBs (EPASW 846 Method 8081/8082)

A. alpha-BHC	I. Dieldrin	Q. Endrin ketone	Y. Aroclor-1242	GG. Chlordane
B. beta-BHC	J. 4,4'-DDE	R. Endrin aldehyde	Z. Aroclor-1248	HH. Chlordane (Technical)
C. delta-BHC	K. Endrin	S. alpha-Chlordane	AA. Aroclor-1254	II. Aroclor 1262
D. gamma-BHC	L. Endosulfan II	T. gamma-Chlordane	BB. Aroclor-1260	JJ. Aroclor 1268
E. Heptachlor	M. 4,4'-DDD	U. Toxaphene	CC. 2,4'-DDD	KK. Oxychlordane
F. Aldrin	N. Endosulfan sulfate	V. Aroclor-1016	DD. 2,4'-DDE	LL. trans-Nonachlor
G. Heptachlor epoxide	O. 4,4'-DDT	W. Aroclor-1221	EE. 2,4'-DDT	MM. cis-Nonachlor
H. Endosulfan I	P. Methoxychlor	X. Aroclor-1232	FF. Hexachlorobenzene	NN.

Notes:_____

LDC #: 41483B3b

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: FT
2nd reviewer: [illegible]

METHOD: ✓ **GC** ___ **HPLC**

Y N N/A Were field duplicate pairs identified in this SDG?
Y N N/A Were target compounds detected in the field duplicate pairs?

Compound	Concentration (ug/kg)		%RPD Limit (≤ 30 %)	Qualification (Parent only)
	2	6		
BB	30	23	26	

Compound	Concentration ( )		%RPD Limit (≤_____%)	Qualification (Parent only)

Compound	Concentration ( )		%RPD Limit (≤_____%))	Qualification (Parent only)

LDC #: 41483 B3b

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: FT
2nd Reviewer: C

METHOD:PCB 8082

The calibration factors (CF), average CF, and relative standard deviation (%RSD) were recalculated for compounds identified below using the following calculations:

CF = A/C
average CF = sum of the CF/number of standards
%RSD = 100 * (S/X)

Where:
A = Area of compound
C = Concentration of compound
S = Standard deviation of calibration factors
X = Mean of calibration factors

#	Standard ID	Calibration Date	Compound	Reported 250	Recalculated 250	Reported Average CF (Initial)	Recalculated Average CF (Initial)	Reported %RSD	Recalculated %RSD
	ICAL	1/26/2018	Aroclor 1260-1 ChA	1202.6	1202.6	1136.5	1136.5	13	13
	GC16		Aroclor 1260-1 ChB	462.19	462.19	446.53	446.53	12	12

LDC #: 41483B3b

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: FT
2nd Reviewer: [illegible]

METHOD:PCB 8082

The calibration factors (CF), average CF, and relative standard deviation (%RSD) were recalculated for compounds identified below using the following calculations:

CF = A/C
average CF = sum of the CF/number of standards
%RSD = 100 * (S/X)

Where:
A = Area of compound
C = Concentration of compound
S = Standard deviation of calibration factors
X = Mean of calibration factors

#	Standard ID	Calibration Date	Compound	Reported 250	Recalculated 250	Reported Average CF (Initial)	Recalculated Average CF (Initial)	Reported %RSD	Recalculated %RSD
	ICAL	2/5/2018	Aroclor 1260-1 ChA	404.82	404.82	409.52	409.52	6	6
	GC06		Aroclor 1260-1 ChB	343.21	343.21	325.24	325.24	13	13

LDC #: 41483B3b

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Page: 1 of 1
Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC ✓ HPLC _____

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration CF were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. CF -CF)/ave.CF

Where: ave. CF = initial calibration average CF
CF = continuing calibration CF
A = Area of compound
C = Concentration of compound

#	Standard ID	Calibration Date	Compound	Average CF(ICAL)/ CCV Conc.	Reported CF/ Conc. CCV	Recalculated CF/ Conc. CCV	Reported %D	Recalculated %D
1	CCV 1716	2/2/18	Aroclor 1260 chA	500.0	421.6	421.6	16	16
			chB	500.0	439.9	439.9	12	12
2	CCV 1436	2/6/18	↓	250.0	239.5	239.5	4	4
			↓	250.0	230.1	230.1	8	8
3								
4								

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 41483B3b

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Page: 1 of 1
Reviewer: FT
2nd reviewer: [illegible]

METHOD: ✓ GC ___ HPLC

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: #1 5X

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
TCMX	chA	50	6.684	67	67	0
DCB	↓	↓	9.814	98	98	0

Sample ID: _____

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

	Surrogate Compound		Surrogate Compound		Surrogate Compound		Surrogate Compound		Surrogate Compound
A	Chlorobenzene (CBZ)	G	Octacosane	M	Benzo(e)Pyrene	S	1-Chloro-3-Nitrobenzene	Y	Tetrachloro-m- xylene
B	4-Bromofluorobenzene (BFB)	H	Ortho-Terphenyl	N	Terphenyl-D14	T	3,4-Dinitrotoluene	Z	2-Bromonaphthalene
C`	a,a,a-Trifluorotoluene	I	Fluorobenzene (FBZ)	O	Decachlorobiphenyl (DCB)	U	Tripentyltin	AA	Chloro-octadecane
D	Bromochlorobenene	J	n-Triacontane	P	1-methylnaphthalene	V	Tri-n-propyltin	BB	2,4-Dichlorophenylacetic acid
E	1,4-Dichlorobutane	K	Hexacosane	Q	Dichlorophenyl Acetic Acid (DCAA)	W	Tributyl Phosphate	CC	2,5-Dibromotoluene
F	1,4-Difluorobenzene (DFB)	L	Bromobenzene	R	4-Nitrophenol	X	Triphenyl Phosphate		

LDC #: 41483B36

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Page: 1 of 1
Reviewer: FT
2nd Reviewer: [illegible]

METHOD: ✓ GC ___HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = 100 * (SSC - SC)/SA

RPD =(({SSCMS - SSCMSD} * 2) / (SSCMS + SSCMSD))*100

Where SSC = Spiked sample concentration; SC = Sample concentration; SA = Spike added; MS = Matrix spike; MSD = Matrix spike duplicate

MS/MSD samples: 7 + 8

Compound	Spike Added (ug/Kg)		Sample Conc. (ug/Kg)	Spike Sample Concentration (ug/Kg)		Matrix spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	---	MS	MSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)											
Diesel (8015)											
Benzene (8021B)											
Methane (RSK-175)											
2,4-D (8151)											
Dinoseb (8151)											
Naphthalene (8310)											
Anthracene (8310)											
HMX (8330)											
2,4,6-Trinitrotoluene (8330)											
Phorate (8141A)											
Malathion (8141A)											
Formaldehyde (8315A)	F7										
Aroclor 1260	~~195.1~~ 162.1	160.4	195.1	384.0	366.0	117	117	107	107	4	4

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

MSDCLC_r1.wpd

LDC #: 41483B36

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Page: 1 of 1
Reviewer: FT
2nd Reviewer: [illegible]

METHOD: ✓ GC ___ HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = 100 * (SSC/SA)
RPD =(({SSCLCS - SSCLCSD} * 2) / (SSCLCS + SSCLCSD))*100

Where SSC = Spiked sample concentration
LCS = Laboratory Control Sample
SA = Spike added
LCSD = Laboratory Control Sample duplicate

LCS/LCSD samples: 256161 LCS

Compound	Spike Added (ug/kg)		Spike Sample Concentration (ug/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)										
Diesel (8015)										
Benzene (8021B)										
Methane (RSK-175)										
2,4-D (8151)										
Dinoseb (8151)										
Naphthalene (8310)										
Anthracene (8310)										
HMX (8330)										
2,4,6-Trinitrotoluene (8330)										
Phorate (8141A)										
Malathion (8141A)										
Formaldehyde (8315A)										
Aroclor 1260	84.20	NA	87.84	NA	104	104	NA			

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 41483B3b

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: FT
2nd Reviewer: G

METHOD: ✓ GC __ HPLC

DL= 5X
M= 4X

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds within 10% of the reported results?

Concentration= (A)(Fv)(Df) / (RF)(Vs or Ws)(%S/100)

A= Area or height of the compound to be measured
Fv= Final Volume of extract
Df= Dilution Factor
RF= Average response factor of the compound In the initial calibration
Vs= Initial volume of the sample
Ws= Initial weight of the sample
%S= Percent Solid

Example:

Sample ID. #1 Compound Name Aroclor 1260

Concentration = 60.28 (10) (5) / (29.71) (0.52) =

= 195.1 ug/kg

#	Sample ID	Compound	Reported Concentrations (ug/kg)	Recalculated Results Concentrations (ug/kg)	Qualifications
	1	BB	200	195.1	
			1260-1 =	70.705	
	1260-1 = .315 72		-2 =	53.593	
	446.53		-3 =	47.328	
			-4 =	65.829	
	= 70.705		-5 =	63.966	
			Ave =	60.28	

Comments:

SAMPCLC_r1.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Hunters Point, Parcel F

LDC Report Date: March 16, 2018

Parameters: Metals

Validation Level: Level IV

Laboratory: Enthalpy Analytical, Inc.

Sample Delivery Group (SDG): 296840

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
HPP-FSS-007	296840-001	Soil	01/31/18
HPP-FSS-008	296840-006	Soil	01/31/18
HPP-FSS-EB01	296840-011	Water	01/31/18
HPP-FSS-FB01	296840-012	Water	01/31/18
HPP-FSS-009	296840-013	Soil	01/31/18
HPP-FSS-010	296840-018	Soil	01/31/18
HPP-FSS-007MS	296840-001MS	Soil	01/31/18
HPP-FSS-007MSD	296840-001MSD	Soil	01/31/18
HPP-FSS-EB01MS	296840-011MS	Water	01/31/18
HPP-FSS-EB01MSD	296840-011MSD	Water	01/31/18

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Sampling and Analysis Plan Sediment Investigation and Bathymetric Survey for Parcel F Hunters Point Naval Shipyard, San Francisco, California (November 2017) and the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.1 (2017). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Copper and Lead by Environmental Protection Agency (EPA) SW 846 Method 6020A
Mercury by EPA SW 846 Methods 7470A/7471B

All sample results were subjected to Level IV evaluation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5%.

III. Instrument Calibration

Initial and continuing calibrations were performed as required by the methods.

The initial calibration verification (ICV) and continuing calibration verification (CCV) standards were within QC limits.

IV. ICP Interference Check Sample Analysis

The frequency of interference check sample (ICS) analysis was met. All criteria were within QC limits.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the methods. No contaminants were found in the laboratory blanks with the following exceptions:

Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Copper Lead	11 ug/L 0.23 ug/L	All water samples in SDG 296840

Data qualification by the laboratory blanks was based on the maximum contaminant concentration in the laboratory blanks in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated laboratory blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
HPP-FSS-EB01	Copper Lead	0.63 ug/L 0.19 ug/L	0.63U ug/L 0.19U ug/L
HPP-FSS-FB01	Copper	0.26 ug/L	0.26U ug/L

VI. Field Blanks

Sample HPP-FSS-EB01 was identified as an equipment blank. No contaminants were found with the following exceptions:

Blank ID	Collection Date	Analyte	Concentration	Associated Samples
HPP-FSS-EB01	01/31/18	Copper Lead	0.63 ug/L 0.19 ug/L	All soil samples in SDG 296840

Sample HPP-FSS-FB01 was identified as a source blank. No contaminants were found with the following exceptions:

Blank ID	Collection Date	Analyte	Concentration	Associated Samples
HPP-FSS-FB01	01/31/18	Copper	0.26 ug/L	All soil samples in SDG 296840

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks with the following exceptions:

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	MS (%R) (Limits)	MSD (%R) (Limits)	Flag	A or P
HPP-FSS-007MS/MSD (HPP-FSS-007)	Copper	74 (84-119)	-	J (all detects)	A

Relative percent differences (RPD) were within QC limits.

VIII. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

IX. Serial Dilution

Serial dilution analysis was performed on an associated project sample. Percent differences (%D) were within QC limits with the following exceptions:

Diluted Sample	Analyte	%D (Limits)	Associated Samples	Flag	A or P
HPP-FSS-007	Lead	11 (≤10)	HPP-FSS-007	J (all detects)	A

X. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

XI. Field Duplicates

Samples HPP-FSS-008 and HPP-FSS-010 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/Kg)		RPD (Limits)
	HPP-FSS-008	HPP-FSS-010	
Copper	58	40	37 (≤30)
Lead	40	17	81 (≤30)
Mercury	0.70	0.31	77 (≤30)

XII. Internal Standards (ICP-MS)

All internal standard percent recoveries (%R) were within QC limits.

XIII. Sample Result Verification

All sample result verifications were acceptable.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods. No results were rejected in this SDG.

Due to MS/MSD %R and serial dilution %D, data were qualified as estimated in one sample.

Due to laboratory blank contamination, data were qualified as not detected in two samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

Hunters Point, Parcel F
Metals - Data Qualification Summary - SDG 296840

Sample	Analyte	Flag	A or P	Reason
HPP-FSS-007	Copper	J (all detects)	A	Matrix spike/Matrix spike duplicate (%R)
HPP-FSS-007	Lead	J (all detects)	A	Serial dilution (%D)

Hunters Point, Parcel F
Metals - Laboratory Blank Data Qualification Summary - SDG 296840

Sample	Analyte	Modified Final Concentration	A or P
HPP-FSS-EB01	Copper Lead	0.63U ug/L 0.19U ug/L	A
HPP-FSS-FB01	Copper	0.26U ug/L	A

Hunters Point, Parcel F
Metals - Field Blank Data Qualification Summary - SDG 296840

No Sample Data Qualified in this SDG

LDC #: 41483B4a

VALIDATION COMPLETENESS WORKSHEET

Level IV

Date: 3/12/18

SDG #: 296840

Page: 1 of 1

Laboratory: Enthalpy Analytical, Inc.

Reviewer: JB

2nd Reviewer: [illegible]

METHOD: Metals (EPA SW 846 Method 6020A/7470A/7471B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / A	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	EB 5
VI.	Field Blanks	SW	3, 4 - FB
VII.	Matrix Spike/Matrix Spike Duplicates	SW	(7, 8) (9, 10)
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	SW	
X.	Laboratory control samples	A	LCS ID
XI.	Field Duplicates	SW	(2, 6)
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	A	
XIV	Overall Assessment of Data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	HPP-FSS-007	296840-001	Soil	01/31/18
2	HPP-FSS-008	296840-006	Soil	01/31/18
3	HPP-FSS-EB01	296840-011	Water	01/31/18
4	HPP-FSS-FB01	296840-012	Water	01/31/18
5	HPP-FSS-009	296840-013	Soil	01/31/18
6	HPP-FSS-010	296840-018	Soil	01/31/18
7	HPP-FSS-007MS	296840-001MS	Soil	01/31/18
8	HPP-FSS-007MSD	296840-001MSD	Soil	01/31/18
9	HPP-FSS-EB01MS	296840-011MS	Water	01/31/18
10	HPP-FSS-EB01MSD	296840-011MSD	Water	01/31/18
11				
12				

Notes:

LDC #: 41483B4a

VALIDATION FINDINGS CHECKLIST

Reviewer: JB
2nd Reviewer: [illegible]

Method: Metals (EPA SW 846 Method 6010/6020/7000)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. ICP/MS Tune				
Were all isotopes in the tuning solution mass resolution within 0.1 amu?	✓			
Were %RSD of isotopes in the tuning solution ≤5%?	✓			
III. Calibration				
Were all instruments calibrated daily, each set-up time?	✓			
Were the proper number of standards used?	✓			
Were all initial and continuing calibration verification %Rs within the 90-110% (80-120% for mercury) QC limits?	✓			
Were the low standard checks within 70-130%	✓			
Were all initial calibration correlation coefficients within limits as specified by the method?	✓			
IV. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.	✓			
V. ICP Interference Check Sample				
Were ICP interference check samples performed daily?	✓			
Were the AB solution percent recoveries (%R) with the 80-120% QC limits?	✓			
VI. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.		✓		
Were the MS/MSD or duplicate relative percent differences (RPD) ≤ 20% for waters and ≤ 35% for soil samples? A control limit of +/- RL(+/-2X RL for soil) was used for samples that were ≤ 5X the RL, including when only one of the duplicate sample values were ≤ 5X the RL.	✓			
VII. Laboratory control samples				
Was an LCS anaylzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% QC limits for water samples and laboratory established QC limits for soils?	✓			

Validation Area	Yes	No	NA	Findings/Comments
VIII. Internal Standards (EPA SW 846 Method 6020/EPA 200.8)				
Were all the percent recoveries (%R) within the 30-120% (6020)/60-125% (200.8) of the intensity of the internal standard in the associated initial calibration?	✓			
If the %Rs were outside the criteria, was a reanalysis performed?			✓	
IX. ICP Serial Dilution				
Was an ICP serial dilution analyzed if analyte concentrations were > 50X the MDL (ICP)/>100X the MDL(ICP/MS)?	✓			
Were all percent differences (%Ds) < 10%?		✓		
Was there evidence of negative interference? If yes, professional judgement will be used to qualify the data.		✓		
X. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XI. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XII. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target analytes were detected in the field duplicates.			✓	
XIII. Field blanks				
Field blanks were identified in this SDG.	✓			
Target analytes were detected in the field blanks.	✓			

LDC #: 41483B4a

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: JB
2nd reviewer: [illegible]

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1,2,5,6	S	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U,
3,4	W	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U,
QC		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U,
7,8	S	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U,
9,10	W	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U,

Analysis Method		
CP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U,
CP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U,
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U,

Comments: Mercury by CVAA if performed

LDC #: 41483B4a

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Reviewer: JB
2nd Reviewer:

METHOD: Trace metals (EPA SW 864 Method 6010B/6020/7000)
Sample Concentration units, unless otherwise noted: ug/L

Soil preparation factor applied: NA
Associated Samples: All waters

Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (mg/L)	Action Level	3	4							
Cu		11		55	0.63	0.26							
Pb		0.23		1.15	0.19								

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".
Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC #: 41483B4a

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: VB
2nd Reviewer: [illegible]

METHOD: Trace Metals (EPA SW846 6010B/7000)

Blank units: ug/L **Associated sample units:** mg/Kg
Sampling date: 1/31/18 Soil factor applied _____
Field blank type: (circle one) Field Blank / Rinsate / Other: EB Associated Samples: All soils

Analyte	Blank ID	Sample Identification											
	3	Action Limit											
Cu	0.63	0.00315											
Pb	0.19	0.001											

Blank units: ug/L **Associated sample units:** mg/Kg
Sampling date: 1/31/18 Soil factor applied _____
Field blank type: (circle one) Field Blank / Rinsate / Other: FB Associated Samples: All soils

Analyte	Blank ID	Sample Identification											
	4	Action Limit											
Cu	0.26	0.0013											

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

LDC #: 41483B4c

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: JB
2nd Reviewer: [illegible]

METHOD: Trace metals (EPA SW 846 Method 6010/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a matrix spike analyzed for each matrix in this SDG?

Y N N/A Were matrix spike percent recoveries (%R) within the control limits of 75-125? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.

Y N N/A Were all duplicate sample relative percent differences (RPD) ≤ 20% for samples?

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	MS/MSD ID	Matrix	Analyte	MS %Recovery	MSD %Recovery	RPD (Limits)	Associated Samples	Qualifications
	7,8	S	Cu	74 (84-119)			1	J / UJ / A (Det)

Comments:

LDC #: 41483B4a

VALIDATION FINDINGS WORKSHEET
ICP Serial Dilution

Reviewer: VB
2nd Reviewer: [illegible]

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A If analyte concentrations were > 50X the MDL (ICP) ,or >100X the MDL (ICP/MS), was a serial dilution analyzed?
Y N N/A Were ICP serial dilution percent differences (%D) ≤10%?
Y N N/A Is there evidence of negative interference? If yes, professional judgement will be used to qualify the data.

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Diluted Sample ID	Matrix	Analyte	~~RPD~~ %D (Limits)	Associated Samples	Qualifications
	1	S	Pb	11 (10)	1	J / UJ-A (Det)

Comments: (1); Hg ok

LDC#: 41483B4a

VALIDATION FINDINGS WORKSHEET

Field Duplicates

Reviewer: VB

2nd Reviewer: [signature]

METHOD: Metals (EPA Method 6020A/7000)

Analyte	Concentration (mg/Kg)		RPD ≤30	
	2	6		
Copper	58	40	37	
Lead	40	17	81	
Mercury	0.70	0.31	77	

V:\FIELD DUPLICATES\Field Duplicates\FD_inorganic\2018\41483B4a.wpd

LDC #: 41483B4a

VALIDATION FINDINGS WORKSHEET
Initial and Continuing Calibration Calculation Verification

Reviewer: JB
2nd Reviewer:

METHOD: Trace metals (EPA SW 846 Method 6010/6020/7000)
An initial and continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

$\%R = \frac{Found}{True} \times 100$ Where, Found = concentration (in ug/L) of each analyte measured in the analysis of the ICV or CCV solution
True = concentration (in ug/L) of each analyte in the ICV or CCV source

Standard ID	Type of Analysis	Element	Found (ug/L)	True (ug/L)	Recalculated %R	Reported %R	Acceptable (Y/N)
	ICP (Low Level calibration)						
CRI	ICP/MS (Low Level calibration) 13:41	Cu	1.1550 ug/L	1.000 ug/L	16% D	16% D	Y
	ICP (Initial calibration)						
ICV	ICP/MS (Initial calibration) 17:25	Pb	49.3100 ug/L	50.00 ug/L	-1% D	-1% D	Y
ICV	CVAA (Initial calibration)	Hg	4.982 ug/L	5.000 ug/L	0% D	0% D	Y
	ICP (Continuing calibration)						
CCV	ICP/MS (Continuing calibration) 2/8 15:30	Cu	49.4700 ug/L	50.00 ug/L	-1% D	-1% D	Y
CCV	CVAA (Continuing calibration) 11:51	Hg	5.270 ug/L	5.000 ug/L	5% D	5% D	Y

ICP-MS TUNE	Calculation	Mass	Actual (Mean Counts / Axis)	Required (Counts / Axis)	Recalculated /Found %RSD / X%	Acceptable (Y/N)
	Mass Axis	7	7.00	± 0.1 AMU	NA	Y
	%RSD	115	~~3120~~ JB 819258.4	≤ 5% RSD	3.21%	

Comments:

LDC #: 41483B4a

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

Reviewer: JB
2nd Reviewer: [illegible]

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

Percent recoveries (%R) for an ICP interference check sample, a laboratory control sample and a matrix spike sample were recalculated using the following formula:

%R = Found / True x 100 Where, Found = Concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation, Found = SSR (spiked sample result) - SR (sample result).
True = Concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

RPD = |S-D| / (S+D)/2 x 100 Where, S = Original sample concentration
D = Duplicate sample concentration

An ICP serial dilution percent difference (%D) was recalculated using the following formula:

%D = |I-SDR| / I x 100 Where, I = Initial Sample Result (mg/L)
SDR = Serial Dilution Result (mg/L) (Instrument Reading x 5)

Sample ID	Type of Analysis	Element	Found / S / I (units)	True / D / SDR (units)	Recalculated %R / RPD / %D	Reported %R / RPD / %D	Acceptable (Y/N)
ICSAB	ICP interference check 13:54	Cu	160.9000 ug/L	200.0 ug/L	-20%	-20%D	y
LCS	Laboratory control sample	Pb	95.9800 ug/L	100.0 ug/L	96%	94%	y
MS	Matrix spike	Hg	0.1466 (SSR-SR) 0.29859 - SR = 0.15199 mg/kg	0.1754 mg/kg	87%	87%	y
MSD	Duplicate	Hg	0.28885 mg/kg	FOUND: 0.29859 mg/kg	3 RPD	3 RPD	y
PS	Post digestion spike	Pb	172.423 - SR = 149.143 mg/kg	SR 23.26 SA 130.6 mg/kg	114%	114%	y
SD	ICP serial dilution	Cu	52.7017 mg/kg	50.95 mg/kg	3%D	3%D	y

Comments:

LDC #: 44483B4a
SDG #: 296842

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: UB
2nd reviewer: [illegible]

METHOD: Trace metals (EPA CLP SOW ILM02.1)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Have results been reported and calculated correctly?
Y N N/A Are results within the calibrated range of the instruments and within the linear range of the ICP?
Y N N/A Are all detection limits below the CRDL?

Detected analyte results for Pb #5 were recalculated and verified using the following equation:

Concentration = (RD)(FV)(Dil) / (In. Vol.)

RD = Raw data concentration
FV = Final volume (ml)
In. Vol. = Initial volume (ml) or weight (G)
Dil = Dilution factor

Recalculation:

$$Pb\ \#5 = \frac{19.3200\ ug/L \times 50\ mL}{0.97 \times 0.64 \times 1000} \times 25\ (DF)$$

$$= 38.9014\ mg/kg$$

#	Sample ID	Analyte	Reported Concentration ( )	Calculated Concentration ( )	Acceptable (Y/N)
	1	Hg	0.28 mg/kg	0.28 mg/kg	Y
	2	Cu	58 mg/kg	58 mg/kg	Y
	3	Pb	0.19 ug/L	0.19 ug/L	Y
	4	Cu	0.26 ug/L	0.26 ug/L	Y
	5	Pb	39 mg/kg	39 mg/kg	Y
	6	Hg	0.31 mg/kg	0.31 mg/kg	Y

Note:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Hunters Point, Parcel F

LDC Report Date: March 16, 2018

Parameters: Polychlorinated Biphenyls

Validation Level: Level IV

Laboratory: Enthalpy Analytical, Inc.

Sample Delivery Group (SDG): 297025

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
HPP-FSS-009A	297025-001	Soil	01/31/18
HPP-FSS-009B	297025-002	Soil	01/31/18
HPP-FSS-009C	297025-003	Soil	01/31/18
HPP-FSS-009D	297025-004	Soil	01/31/18

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Sampling and Analysis Plan Sediment Investigation and Bathymetric Survey for Parcel F Hunters Point Naval Shipyard, San Francisco, California (November 2017) and the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.1 (2017). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Polychlorinated Biphenyls (PCBs) by Environmental Protection Agency (EPA) SW 846 Method 8082A

All sample results were subjected to Level IV data validation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

For compounds where average calibration factors were utilized, percent relative standard deviations (%RSD) were less than or equal to 20.0%.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990.

Retention time windows were established as required by the method.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 20.0% for all compounds.

III. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 20.0% for all compounds.

Retention times of all compounds in the calibration standards were within the established retention time windows.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

Sample HPP-FSS-EB01 (from SDG 296840) was identified as an equipment blank. No contaminants were found.

Sample HPP-FSS-FB01 (from SDG 296840) was identified as a source blank. No contaminants were found.

VI. Surrogates

Surrogates were added to all samples as required by the method. Surrogate recoveries (%R) were not within QC limits for sample HPP-FSS-009D. No data were qualified for samples analyzed at greater than or equal to 5X dilution.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

IX. Field Duplicates

No field duplicates were identified in this SDG.

X. Compound Quantitation

The sample results for detected compounds from the two columns were within 40% relative percent difference (RPD) with the following exceptions:

Sample	Compound	RPD	Flag	A or P
HPP-FSS-009C	Aroclor-1260	74	J (all detects)	A

All compound quantitations met validation criteria.

XI. Target Compound Identification

All target compound identifications met validation criteria.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to RPD between two columns, data were qualified as estimated in one sample.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

Hunters Point, Parcel F
Polychlorinated Biphenyls - Data Qualification Summary - SDG 297025

Sample	Compound	Flag	A or P	Reason
HPP-FSS-009C	Aroclor-1260	J (all detects)	A	Compound quantitation (RPD between two columns)

Hunters Point, Parcel F
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 297025

No Sample Data Qualified in this SDG

Hunters Point, Parcel F
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 297025

No Sample Data Qualified in this SDG

LDC #: 41483C3b

SDG #: 297025

Laboratory: Enthalpy Analytical, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level IV

Date: 3/14/18

Page: 1 of 1

Reviewer:

2nd Reviewer:

METHOD: GC Polychlorinated Biphenyls (EPA SW846 Method 8082A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / A	
II.	Initial calibration/ICV	A / A	% RSD ≤ 20, r² ICV ≤ 20
III.	Continuing calibration	A	CCV ≤ 20
IV.	Laboratory Blanks	A	
V.	Field blanks	ND	EB = HPP-FSS-EB01, SB = HPP-FSS-FB01
VI.	Surrogate spikes	SW	(296840)
VII.	Matrix spike/Matrix spike duplicates	N	CS
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	N	
X.	Compound quantitation/RL/LOQ/LODs	SW	
XI.	Target compound identification	A	
XII.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	HPP-FSS-009A	297025-001	Soil	01/31/18
2	HPP-FSS-009B	297025-002	Soil	01/31/18
3	HPP-FSS-009C	297025-003	Soil	01/31/18
4	HPP-FSS-009D	297025-004	Soil	01/31/18
5				
6				
7				
8				
9				
10				
11				
12				

Notes:

256407

LDC #: 41483 C3b

VALIDATION FINDINGS CHECKLIST

Reviewer: FZ
2nd Reviewer: [illegible]

Method: ✓ GC ____ HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	✓			
Was cooler temperature criteria met?	✓			
IIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20%?	✓			
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit acceptance criteria of ≥0.990?	✓			
Were the RT windows properly established?		✓		
IIb. Initial calibration verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	✓			
Were all percent differences (%D) ≤ 20% or percent recoveries (%R) 80-120%?	✓			
III. Continuing calibration				
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) ≤ 20% or percent recoveries (%R) 80-120%?	✓			
Were all the retention times within the acceptance windows?	✓			
IV. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	✓			
Was a laboratory blank analyzed for each matrix and concentration?	✓			
Was there contamination in the laboratory blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
V. Field Blanks				
Were field blanks identified in this SDG?	✓			
Were target compounds detected in the field blanks?		✓		
VI. Surrogate spikes				
Were all surrogate percent recovery (%R) within the QC limits?	✓			
If the percent recovery (%R) of one or more surrogates was outside QC limits, was a reanalysis performed to confirm %R?			✓	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.			✓	
Was a MS/MSD analyzed every 20 samples of each matrix?			✓	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	

LDC #: 41483C3b

VALIDATION FINDINGS CHECKLIST

Reviewer: FT
2nd Reviewer: [illegible]

Validation Area	Yes	No	NA	Findings/Comments
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Field duplicates				
Were field duplicate pairs identified in this SDG?		✓		
Were target compounds detected in the field duplicates?			✓	
X. Compound quantitation				
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XI. Target compound identification				
Were the retention times of reported detects within the RT windows?	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			

VALIDATION FINDINGS WORKSHEET

METHOD: Pesticide/PCBs (EPASW 846 Method 8081/8082)

A. alpha-BHC	I. Dieldrin	Q. Endrin ketone	Y. Aroclor-1242	GG. Chlordane
B. beta-BHC	J. 4,4'-DDE	R. Endrin aldehyde	Z. Aroclor-1248	HH. Chlordane (Technical)
C. delta-BHC	K. Endrin	S. alpha-Chlordane	AA. Aroclor-1254	II. Aroclor 1262
D. gamma-BHC	L. Endosulfan II	T. gamma-Chlordane	BB. Aroclor-1260	JJ. Aroclor 1268
E. Heptachlor	M. 4,4'-DDD	U. Toxaphene	CC. 2,4'-DDD	KK. Oxychlordane
F. Aldrin	N. Endosulfan sulfate	V. Aroclor-1016	DD. 2,4'-DDE	LL. trans-Nonachlor
G. Heptachlor epoxide	O. 4,4'-DDT	W. Aroclor-1221	EE. 2,4'-DDT	MM. cis-Nonachlor
H. Endosulfan I	P. Methoxychlor	X. Aroclor-1232	FF. Hexachlorobenzene	NN.

Notes:_____

LDC #: 41483C3b

VALIDATION FINDINDS WORKSHEET
Surrogate Recovery

Reviewer: FT
2nd Reviewer: [signature]

METHOD: ✓ GC __ HPLC
Are surrogates required by the method? Yes____ or No____.
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
(Y) N N/A Were surrogates spiked into all samples and blanks?
Y (N) N/A Did all surrogate recoveries (%R) meet the QC limits?

#	Sample ID	Detector/ Column	Surrogate Compound	%R (Limits)	Qualifications
	4	surrogate	were	diluted out ( )	no qual 50X DL
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	

	Surrogate Compound		Surrogate Compound		Surrogate Compound		Surrogate Compound		
A	Chlorobenzene (CBZ)	G	Octacosane	M	Benzo(e)Pyrene	S	1-Chloro-3-Nitrobenzene	Y	Tetrachloro-m- xylene
B	4-Bromofluorobenzene (BFB)	H	Ortho-Terphenyl	N	Terphenyl-D14	T	3,4-Dinitrotoluene	Z	2-Bromonaphthalene
C	a,a,a-Trifluorotoluene	I	Fluorobenzene (FBZ)	O	Decachlorobiphenyl (DCB)	U	Tripentyltin	AA	Chloro-octadecane
D	Bromochlorobenene	J	n-Triacontane	P	1-methylnaphthalene	V	Tri-n-propyltin	BB	2,4-Dichlorophenylacetic acid
E	1,4-Dichlorobutane	K	Hexacosane	Q	Dichlorophenyl Acetic Acid (DCAA)	W	Tributyl Phosphate	CC	2,5-Dibromotoluene
F	1,4-Difluorobenzene (DFB)	L	Bromobenzene	R	4-Nitrophenol	X	Triphenyl Phosphate		

LDC #: 41483C3b

VALIDATION FINDINGS WORKSHEET
Compound Quantitation and Reported CRQLs

Page: 1 of 1
Reviewer: FT
2nd Reviewer: [illegible]

METHOD: ✓ GC __ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Level IV/D Only

Y N N/A Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?

Y N N/A Did the reported results for detected target compounds agree within 10.0% of the recalculated results?

#	Associated Samples	Compound Name	Findings % RPD Bet 2 col	Qualifications
	3	BB	74	Jdet / A

Comments: See sample calculation verification worksheet for recalculations

COMQUA_r1.wpd

LDC #: 41483C36

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: FT
2nd Reviewer: [illegible]

METHOD:PCB 8082

The calibration factors (CF), average CF, and relative standard deviation (%RSD) were recalculated for compounds identified below using the following calculations:

CF = A/C
average CF = sum of the CF/number of standards
%RSD = 100 * (S/X)

Where:
A = Area of compound
C = Concentration of compound
S = Standard deviation of calibration factors
X = Mean of calibration factors

#	Standard ID	Calibration Date	Compound	Reported 250	Recalculated 250	Reported Average CF (Initial)	Recalculated Average CF (Initial)	Reported %RSD	Recalculated %RSD
	ICAL	2/5/2018	Aroclor 1260-1 ChA	404.82	404.82	409.52	409.52	6	6
	GC06		Aroclor 1260-1 ChB	343.21	343.21	325.24	325.24	13	13

LDC #: 41483 c3b

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Page: 1 of 1
Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC ✓ HPLC _____

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration CF were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. CF -CF)/ave.CF

Where: ave. CF = initial calibration average CF
CF = continuing calibration CF
A = Area of compound
C = Concentration of compound

#	Standard ID	Calibration Date	Compound	Average CF(ICAL)/ CCV Conc.	Reported CF/ Conc. CCV	Recalculated CF/ Conc. CCV	Reported %D	Recalculated %D
1	ccv 1517	2/12/18	Aroclor 1260 chA	500.0	573.5	573.5	15	15
			chB	↓	523.0	523.0	5	5
2	ccv 1708	2/13/18	↓	500.0	516.7	516.7	3	3
				↓	512.8	512.8	3	3
3								
4								

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 41483C36

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Page: 1 of 1
Reviewer: FT
2nd reviewer: [illegible]

METHOD: ✓ GC ___ HPLC

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: #2 5X

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
TCMX	chA	50	8.189	82	82	0
DCB	↓	↓	12.146	121	121	0

Sample ID: _____

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

	Surrogate Compound		Surrogate Compound		Surrogate Compound		Surrogate Compound		Surrogate Compound
A	Chlorobenzene (CBZ)	G	Octacosane	M	Benzo(e)Pyrene	S	1-Chloro-3-Nitrobenzene	Y	Tetrachloro-m- xylene
B	4-Bromofluorobenzene (BFB)	H	Ortho-Terphenyl	N	Terphenyl-D14	T	3,4-Dinitrotoluene	Z	2-Bromonaphthalene
C	a,a,a-Trifluorotoluene	I	Fluorobenzene (FBZ)	O	Decachlorobiphenyl (DCB)	U	Tripentyltin	AA	Chloro-octadecane
D	Bromochlorobenene	J	n-Triacontane	P	1-methylnaphthalene	V	Tri-n-propyltin	BB	2,4-Dichlorophenylacetic acid
E	1,4-Dichlorobutane	K	Hexacosane	Q	Dichlorophenyl Acetic Acid (DCAA)	W	Tributyl Phosphate	CC	2,5-Dibromotoluene
F	1,4-Difluorobenzene (DFB)	L	Bromobenzene	R	4-Nitrophenol	X	Triphenyl Phosphate		

LDC #: 41483C3b

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Page: 1 of 1
Reviewer: FT
2nd Reviewer: [illegible]

METHOD: ✓ GC ___HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = 100 * (SSC/SA)
RPD =(({SSCLCS - SSCLCSD} * 2) / (SSCLCS + SSCLCSD))*100

Where SSC = Spiked sample concentration
LCS = Laboratory Control Sample
SA = Spike added
LCSD = Laboratory Control Sample duplicate

LCS/LCSD samples: 256407 LCS

Compound	Spike Added (ug/kg)		Spike Sample Concentration (ug/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)										
Diesel (8015)										
Benzene (8021B)										
Methane (RSK-175)										
2,4-D (8151)										
Dinoseb (8151)										
Naphthalene (8310)										
Anthracene (8310)										
HMX (8330)										
2,4,6-Trinitrotoluene (8330)										
Phorate (8141A)										
Malathion (8141A)										
Formaldehyde (8315A)										
Aroclor 1260	83.28	NA	110.5	NA	133	133	NA	—		

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 41483C3b

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: FT
2nd Reviewer: [illegible]

METHOD: ✓ GC __ HPLC

5X
M= 28%

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds within 10% of the reported results?

Concentration= (A)(Fv)(Df) / (RF)(Vs or Ws)(%S/100)

A= Area or height of the compound to be measured
Fv= Final Volume of extract
Df= Dilution Factor
RF= Average response factor of the compound In the initial calibration
Vs= Initial volume of the sample
Ws= Initial weight of the sample
%S= Percent Solid

Example:

Sample ID. 2 Compound Name Aroclor 1260

Concentration = 605.811 (10) (5) / (29.68) (0.72) =

= 1417.46 ug/kg

#	Sample ID	Compound	Reported Concentrations (ug/Kg	Recalculated Results Concentrations (ug/Kg	Qualifications
	2	BB	1400 J	1417.46	
	1260-1 = 225 286		1260-1 =	550.123	
	409.52		-2 =	569.061	
			-4 =	698.251	
	= 550.123			605.811	

Comments:

SAMPCLC_r1.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Hunters Point, Parcel F

LDC Report Date: March 16, 2018

Parameters: Metals

Validation Level: Level IV

Laboratory: Enthalpy Analytical, Inc.

Sample Delivery Group (SDG): 297025

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
HPP-FSS-009A	297025-001	Soil	01/31/18
HPP-FSS-009B	297025-002	Soil	01/31/18
HPP-FSS-009C	297025-003	Soil	01/31/18
HPP-FSS-009D	297025-004	Soil	01/31/18
HPP-FSS-009AMS	297025-001MS	Soil	01/31/18
HPP-FSS-009AMSD	297025-001MSD	Soil	01/31/18

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Sampling and Analysis Plan Sediment Investigation and Bathymetric Survey for Parcel F Hunters Point Naval Shipyard, San Francisco, California (November 2017) and the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.1 (2017). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Copper and Lead by Environmental Protection Agency (EPA) SW 846 Method 6020A
Mercury by EPA SW 846 Method 7471B

All sample results were subjected to Level IV evaluation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5%.

III. Instrument Calibration

Initial and continuing calibrations were performed as required by the methods.

The initial calibration verification (ICV) and continuing calibration verification (CCV) standards were within QC limits with the following exceptions:

Date	Lab. Reference/ID	Analyte	%R (Limits)	Associated Samples	Flag	A or P
02/12/18	CRI (18:42)	Copper	123 (80-120)	HPP-FSS-009A HPP-FSS-009B HPP-FSS-009C	NQ	-

NQ = All results were > 2x the limit of quantitation, therefore no data were qualified.

IV. ICP Interference Check Sample Analysis

The frequency of interference check sample (ICS) analysis was met. All criteria were within QC limits.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the methods. No contaminants were found in the laboratory blanks.

VI. Field Blanks

Sample HPP-FSS-EB01 (from SDG 296840) was identified as an equipment blank. No contaminants were found with the following exceptions:

Blank ID	Collection Date	Analyte	Concentration	Associated Samples
HPP-FSS-EB01	01/31/18	Copper Lead	0.63 ug/L 0.19 ug/L	All samples in SDG 297025

Sample HPP-FSS-FB01 (from SDG 296840) was identified as a source blank. No contaminants were found with the following exceptions:

Blank ID	Collection Date	Analyte	Concentration	Associated Samples
HPP-FSS-FB01	01/31/18	Copper	0.26 ug/L	All samples in SDG 297025

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated field blanks with the following exceptions:

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	MS (%R) (Limits)	MSD (%R) (Limits)	Flag	A or P
HPP-FSS-009AMS/MSD (HPP-FSS-009A)	Mercury	23 (80-124)	5 (80-124)	J (all detects)	A

Relative percent differences (RPD) were within QC limits.

VIII. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

IX. Serial Dilution

Serial dilution analysis was performed on an associated project sample. Percent differences (%D) were within QC limits.

X. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

XI. Field Duplicates

No field duplicates were identified in this SDG.

XII. Internal Standards (ICP-MS)

All internal standard percent recoveries (%R) were within QC limits.

XIII. Sample Result Verification

All sample result verifications were acceptable.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods. No results were rejected in this SDG.

Due to MS/MSD %R, data were qualified as estimated in one sample.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

Hunters Point, Parcel F
Metals - Data Qualification Summary - SDG 297025

Sample	Analyte	Flag	A or P	Reason
HPP-FSS-009A	Mercury	J (all detects)	A	Matrix spike/Matrix spike duplicate (%R)

Hunters Point, Parcel F
Metals - Laboratory Blank Data Qualification Summary - SDG 297025

No Sample Data Qualified in this SDG

Hunters Point, Parcel F
Metals - Field Blank Data Qualification Summary - SDG 297025

No Sample Data Qualified in this SDG

LDC #: 41483C4a

SDG #: 297025

Laboratory: Enthalpy Analytical, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level IV

Date: 3/13/18

Page: 1 of 1

Reviewer: JB

2nd Reviewer: [illegible]

METHOD: Metals (EPA SW 846 Method 6020A/7471B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / A	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	SW	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	A	
VI.	Field Blanks	SW	EB = HPP-FSS-EB01, FB = HPP-FSS-FB01 From 296840
VII.	Matrix Spike/Matrix Spike Duplicates	SW	5, 6
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	
X.	Laboratory control samples	A	LCS ID
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	A	
XIV	Overall Assessment of Data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	HPP-FSS-009A	297025-001	Soil	01/31/18
2	HPP-FSS-009B	297025-002	Soil	01/31/18
3	HPP-FSS-009C	297025-003	Soil	01/31/18
4	HPP-FSS-009D	297025-004	Soil	01/31/18
5	HPP-FSS-009AMS	297025-001MS	Soil	01/31/18
6	HPP-FSS-009AMSD	297025-001MSD	Soil	01/31/18
7				
8				
9				
10				
11				
12				

Notes:

LDC #: 41483C4a

VALIDATION FINDINGS CHECKLIST

Reviewer: JB
2nd Reviewer: [signature]

Method: Metals (EPA SW 846 Method 6010/6020/7000)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. ICP/MS Tune				
Were all isotopes in the tuning solution mass resolution within 0.1 amu?	✓			
Were %RSD of isotopes in the tuning solution ≤5%?	✓			
III. Calibration				
Were all instruments calibrated daily, each set-up time?	✓			
Were the proper number of standards used?	✓			
Were all initial and continuing calibration verification %Rs within the 90-110% (80-120% for mercury) QC limits?	✓			
Were the low standard checks within 70-130%		✓		
Were all initial calibration correlation coefficients within limits as specified by the method?	✓			
IV. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
V. ICP Interference Check Sample				
Were ICP interference check samples performed daily?	✓			
Were the AB solution percent recoveries (%R) with the 80-120% QC limits?	✓			
VI. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.		✓		
Were the MS/MSD or duplicate relative percent differences (RPD) ≤ 20% for waters and ≤ 35% for soil samples? A control limit of +/- RL(+/-2X RL for soil) was used for samples that were ≤ 5X the RL, including when only one of the duplicate sample values were ≤ 5X the RL.	✓			
VII. Laboratory control samples				
Was an LCS anaylzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% QC limits for water samples and laboratory established QC limits for soils?				

Validation Area	Yes	No	NA	Findings/Comments
VIII. Internal Standards (EPA SW 846 Method 6020/EPA 200.8)				
Were all the percent recoveries (%R) within the 30-120% (6020)/60-125% (200.8) of the intensity of the internal standard in the associated initial calibration?	✓			
If the %Rs were outside the criteria, was a reanalysis performed?			✓	
IX. ICP Serial Dilution				
Was an ICP serial dilution analyzed if analyte concentrations were > 50X the MDL (ICP)/>100X the MDL(ICP/MS)?	✓			
Were all percent differences (%Ds) < 10%?	✓			
Was there evidence of negative interference? If yes, professional judgement will be used to qualify the data.		✓		
X. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XI. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XII. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target analytes were detected in the field duplicates.			✓	
XIII. Field blanks				
Field blanks were identified in this SDG.	✓			
Target analytes were detected in the field blanks.	✓			

LDC #: 41483C4c

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: JB
2nd reviewer: [illegible]

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-4	S	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U,
DC		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U,
5,6	S	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U,
Analysis Method		
CP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U,
CP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U,
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, U,

Comments: Mercury by CVAA if performed

LDC #: 41483C4a
SDG # 297025

VALIDATION FINDINGS WORKSHEET
Calibration

Reviewer: JB
2nd Reviewer: [illegible]

METHOD: Trace Metals (EPA SW 846 Method 6010/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were all instruments calibrated daily, each set-up time, and were the proper number of standards used?

Y N N/A Were all initial and continuing calibration verification percent recoveries (%R) within the control limits of 90-110% for all analytes except mercury (80-120%) and cyanide (85-115%)?

LEVEL IV ONLY:

Y N N/A Was a midrange cyanide standard distilled?

Y N N/A Are all correlation coefficients ≥0.995?

Y N N/A Were recalculated results acceptable? See Level IV Initial and Continuing Calibration Recalculation Worksheet for recalculations.

#	Date	Calibration ID	Analyte	~~%R~~ %R	Associated Samples	Qualification of Data
	2/12/18	CRI (18:42)	Cu	123% ~~R (120%)~~ 80-120	1-3	No Qual. > 2x RL

Comments:

LDC #: 41483A4a

VALIDATION FINDINGS WORKSHEET
Field Blanks

Reviewer: VB
2nd Reviewer: [illegible]

METHOD: Trace Metals (EPA SW846 6010B/7000)

Blank units: ug/L **Associated sample units:** mg/Kg
Sampling date: 1/31/18 Soil factor applied _____
Field blank type: (circle one) Field Blank / Rinsate / Other: EB Associated Samples: All soils

Analyte	Blank ID	Sample Identification										
	HPP-FSS-EB01 from SDG 296840	Action Limit										
Cu	0.63	0.00315										
Pb	0.19	0.001										

Blank units: ug/L **Associated sample units:** mg/Kg
Sampling date: 1/31/18 Soil factor applied _____
Field blank type: (circle one) Field Blank / Rinsate / Other: FB Associated Samples: All soils

Analyte	Blank ID	Sample Identification										
	HPP-FSS-FB01 from SDG 296840	Action Limit										
Cu	0.26	0.0013										

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

LDC #: 41483C4a

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: JB
2nd Reviewer: [illegible]

METHOD: Trace metals (EPA SW 846 Method 6010/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a matrix spike analyzed for each matrix in this SDG?
Y N N/A Were matrix spike percent recoveries (%R) within the control limits of 75-125? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.
Y N N/A Were all duplicate sample relative percent differences (RPD) ≤ 20% for samples?

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	MS/MSD ID	Matrix	Analyte	MS %Recovery	MSD %Recovery	RPD (Limits)	Associated Samples	Qualifications
	5,6	SOIL	Hg	23 (80-124)	5 (80-124)		1	J/R/A (Det)

Comments:

LDC #: 41483C4a

VALIDATION FINDINGS WORKSHEET
Initial and Continuing Calibration Calculation Verification

Reviewer: JB
2nd Reviewer: [illegible]

METHOD: Trace metals (EPA SW 846 Method 6010/6020/7000)
An initial and continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

$\%R = \frac{Found}{True} \times 100$ Where, Found = concentration (in ug/L) of each analyte measured in the analysis of the ICV or CCV solution
True = concentration (in ug/L) of each analyte in the ICV or CCV source

Standard ID	Type of Analysis	Element	Found (ug/L)	True (ug/L)	Recalculated %R	Reported %R	Acceptable (Y/N)
	ICP (Low Level calibration)						
	ICP/MS (Low Level calibration) 18:42	Pb	0.9582 ug/L	1.000 ug/L	-4.2D	-4.2D	Y
	ICP (Initial calibration)						
ICV	ICP/MS (Initial calibration) 18:37	Pb	49.1200 ug/L	50.00 ug/L	-2.2D	-2.2D	Y
ICV	CVAA (Initial calibration)	Hg	5.134 ug/L	5.000 ug/L	3.7D	(3.2D) 102.6%	Y
	ICP (Continuing calibration)						
CCV	ICP/MS (Continuing calibration) 17:04	Cu	49.7400 ug/L	50.00 ug/L	-1.2D	-1.2D	Y
CCV	CVAA (Continuing calibration)	Hg	5.297 ug/L	5.000 ug/L	6.0D	6.0D	Y

ICP-MS TUNE	Calculation	Mass	Actual (Mean Counts / Axis)	Required (Counts / Axis)	Recalculated /Found %RSD / X%	Acceptable (Y/N)
	Mass Axis	59	59.00	± 0.1 AMU	NA	Y
	%RSD	205	15511.4	≤ 5% RSD	0.3692	Y

Comments:

LDC #: 41483C4a

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

Page: 1 of 1
Reviewer: JB
2nd Reviewer: [illegible]

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

Percent recoveries (%R) for an ICP interference check sample, a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$\%R = \frac{Found}{True} \times 100$ Where, Found = Concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation, Found = SSR (spiked sample result) - SR (sample result).
True = Concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$RPD = \frac{|S-D|}{(S+D)/2} \times 100$ Where, S = Original sample concentration
D = Duplicate sample concentration

An ICP serial dilution percent difference (%D) was recalculated using the following formula:

$\%D = \frac{|I-SDR|}{I} \times 100$ Where, I = Initial Sample Result (mg/L)
SDR = Serial Dilution Result (mg/L) (Instrument Reading x 5)

Sample ID	Type of Analysis	Element	Found / S / I (units)	True / D / SDR (units)	Recalculated %R / RPD / %D	Reported %R / RPD / %D	Acceptable (Y/N)
ICSAB	ICP interference check 15:47	Cu	169.3000 ug/L	200.0ug/L	-15% D	-15% D	Y
LCS	QC919564 Laboratory control sample	Pb	50.0257 mg/kg	51.55 mg/kg	97%	97%	Y
MS	Matrix spike	Hg	0.6441 (SSR-SR) 0.7304 - 0.6441 = 0.0863 mg/kg	0.3788 mg/kg	23%	23%	Y
MSD	Duplicate	Hg	0.66429 mg/kg	FOUND: 0.7304 mg/kg	9 RPD	10 RPD	Y
	Post digestion spike						
SD	ICP serial dilution	Hg	0.7102 mg/kg	0.6441 mg/kg	10% D	10% D	Y

Comments: Post Digestion- N/A. Non-Client Sample used

LDC #: 41483C4a
SDG #: 297025

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: JB
2nd reviewer: [illegible]

METHOD: Trace metals (EPA CLP SOW ILM02.1)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Have results been reported and calculated correctly?
Y N N/A Are results within the calibrated range of the instruments and within the linear range of the ICP?
Y N N/A Are all detection limits below the CRDL?

Detected analyte results for Pb were recalculated and verified using the following equation:

Concentration = (RD)(FV)(Dil) / (In. Vol.)

RD = Raw data concentration
FV = Final volume (ml)
In. Vol. = Initial volume (ml) or weight (G)
Dil = Dilution factor

Recalculation:

$Pb = \frac{11.2100\ ug/L \times 50mL}{0.94g \times 1000 \times 0.72} \times 25_{(DF)}$

$= 20.704\ mg/kg$

#	Sample ID	Analyte	Reported Concentration (mg/kg)	Calculated Concentration (mg/kg)	Acceptable (Y/N)
	1	Cu	110	110	Y
	2	Pb	21	21	Y
	3	Hg	3.7	3.7	Y
	4	Cu	660	660	Y

Note:

Appendix F

Waste Disposal Documentation

Cascade 4129041-1

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: CA0001019594
2. Page 1 of 1
3. Emergency Response Phone: 800-6754066
4. Manifest Tracking Number: **019008180 JJK**

5. Generator's Name and Mailing Address:
NAVY EFD SFBMO-W (HPNS)
1 AVENUE OF THE PALMS, STE 161
SAN FRANCISCO, CA 94130 USA
415-743-4729

Generator's Site Address (if different than mailing address):
322 INNES AVE (PARCEL-C IR-28 B-251)
SAN FRANCISCO, CA 94130 USA

Generator's Phone:

6. Transporter 1 Company Name: DEPARD ENVIRONMENTAL SERVICES #1715 — U.S. EPA ID Number: CAD982523433

7. Transporter 2 Company Name — U.S. EPA ID Number:

8. Designated Facility Name and Site Address: US ECOLOGY NEVADA
Highway 95, 11 Miles S of Beatty
Beatty, NV 89003 USA
U.S. EPA ID Number: NVT330010000
Facility's Phone: 775-553-2203

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. NON-RCRA HAZARDOUS WASTE SOLID (SEA SEDIMENT)	1	DM	20	P	H132
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
PF# 07012830U-29843
Des Job# 4129-041
H-19105

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Jacinto Delong — Signature: [signature] — Month 10 Day 03 Year 18

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: JASON WILSON — Signature: [signature] — Month 10 Day 3 Year 18
Transporter 2 Printed/Typed Name — Signature — Month Day Year

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) — Month Day Year

RECEIVED OCT 11 2018 By

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
H132 | 2. | 3. | 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Larissa Downie — Signature: [signature] — Month 10 Day 5 Year 18

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete. **TRANSPORTER'S COPY**

Appendix G

Response to Comments

Response to BCT Comments on the Draft Sediment Investigation
Beneath Former Parcels B and C Pier and Wharf Structures and Bathymetric Survey for Parcel F,
Hunters Point Naval Shipyard, California, July 2018

The following comments were submitted in a letter by Ms. Judy C. Huang, P.E. of United States Environmental Protection Agency on 7 August 2018 to Derek J. Robinson, BRAC Environmental Coordinator, BRAC PMO West:

	Comment	Response
	GENERAL COMMENTS	
1.	The Draft Sediment Investigation Beneath Former Parcels B and C Pier and Wharf Structures and Bathymetric Survey for Parcel F, Hunters Point Naval Shipyard, San Francisco, California, July 2018 (the Draft Report) should discuss why singlebeam and multibeam surveys were used for different areas. For example, the text should explain why a multibeam survey was conducted in 2018 when a singlebeam survey was conducted originally in the former pier and wharf structures and Area III. While the text states that deeper areas were surveyed using multibeam systems and shallow areas were surveyed using singlebeam systems, the text should explain specifically why each system was used. Please revise the text to discuss why different bathymetric survey beams were used in different areas.	Field activities, including the methodology for the bathymetric surveys, was conducted in accordance with the approved Final Work Plan for Sediment Investigation and Bathymetric Survey for Parcel F (ECC-Insight and CDM Smith, 2017). A multibeam bathymetric echo sounder provides continuous coverage of the bathymetry at a higher resolution than a singlebeam survey but could only be used in Area III due to the dimensions of the equipment required. The depth of water in Areas IX and X are shallow – typically less than 6 feet and only lend itself to a singlebeam bathymetric survey method. Section 3, First Paragraph, Page 3-1 was modified as follows (underlined text was added): *"A bathymetric survey was conducted in the following three areas of Parcel F between February 1 and 3, 2018: 1) area adjacent to and within the footprints of the former pier and wharf structures (Figure 1-3); 2) Area III; and 3) Areas IX and X (Figure 1-5). <u>The depth of water in Areas IX and X is typically less than 6 feet while the depth of water in Area III is greater than 80 feet.</u> Due to the differences in water depths between these areas, <u>two</u> different bathymetric survey methodologies were utilized: <u>multibeam and singlebeam surveys</u>. <u>Multibeam surveys provide greater resolution than singlebeam surveys but could only be used in deeper waters of the former pier and wharf structures and Area III due to the limitations of the multibeam survey equipment</u>. <u>Within Areas IX and X, the shallow water depths precluded a multibeam survey and therefore a singlebeam survey was performed instead.</u>"*
2.	Due to elevated sediment metals concentrations, the Draft Report recommends additional sediment investigation in the eastern and southern portion of Wharf #2 to better define the areal extend of Parcel F Area III. Please expend *[sic]* the current footprint of Area III to include Wharf #2 and to conduct additional sediment investigation as part of the upcoming Parcel F Remedial Design.	The Navy is contracting work for additional investigation of Area III in 2018. As part of the newly contracted work, the exact footprint of Area III will be modified to ensure all Remedial Action Objectives for Parcel F are met. The last sentence of Section 5 "Summary and Recommendations" will be replaced by: *"The Navy will be conducting additional investigation in Area III, including identifying the extent of contamination above remedial goals around Wharf #2, to further refine the areal extent of Area III requiring remedial action. Hence, the extent of Area III will be modified during the subsequent investigation and incorporated into the remedial action for Area III. A separate work plan will be prepared and submitted for stakeholder approval prior to implementation of the upcoming additional investigation."*

Response to BCT Comments on the Draft Sediment Investigation
Beneath Former Parcels B and C Pier and Wharf Structures and Bathymetric Survey for Parcel F,
Hunters Point Naval Shipyard, California, July 2018

Comment		Response
	SPECIFIC COMMENTS	
1.	**Section 4.1, Sediment Sample Collection, Pages 4-1 and 4-2 and Figure 4-1, Composite Sediment Sample Results:** The text states that sample locations HPF-Wharf-CS01C and HPF-Wharf 2-CS02D were moved, but the figures do not depict the locations of the original samples relative to where they were moved. Additionally, the distance the samples were moved is not specified. Please include a figure depicting the original proposed sample locations and the revised locations. Please also revise the text to discuss the distance the samples were moved relative to their original proposed locations.	Figures 1-4 and 4-1 were modified to show the locations of the proposed original and actual sample locations that had to be stepped out due to rip rap or other debris. The sample locations that were stepped out from the original location were: a) Composite sample Location HPF-QuayWall-CS01 (sub-sample HPP-FSS-007A through D), which were moved approximately 10 feet off-shore due to rip rap encountered, b) Composite sample location HPF-Wharf-CS01 (sub-sample ID HPP-FSS-008C), which was moved approximately 90-feet northwest, and c) Composite sample location HPF-Wharf 2-CS02 (sub-sample ID HPP-FSS-009D), which was moved approximately 45 feet east. Text from the second to last paragraph in Section 4-1 was modified as follows, modified text underlined: *"All surface sediment sub-samples were collected from the original proposed sample locations proposed in the Final Work Plan (ECC-Insight and CDM Smith, 2017), with the exception of sediment sub-samples HPP-FSS-007A through D (sample location HPF-QuayWall-CS01), HPP-FSS-008C (sample location HPF-Wharf2-CS01), and HPP-FSS-009D (sample location HPF-Wharf2-CS02). The Quay Wall sub-sample locations (HPP-FSS-007A through D) were moved further offshore by approximately 10 feet due to rip rap encountered at the originally proposed locations. Sediment sub-sample locations HPP-FSS-008C and HPP-FSS-009D were moved approximately 90 feet northwest and 45 feet east, respectively, after multiple attempts to collect a sediment sample, due to debris encountered on the sediment surface (e.g., concrete) (Figure 4-1)."*
2.	**Figure 1-4, Sediment Sampling Locations:** The figure should include the sample and subsample identification numbers with the corresponding sampling locations. This will facilitate understanding the text, which discusses some subsample locations. Please revise the figure to include sample identification Numbers.	Figures 1-4 and 4-1, along with Tables in Section 4 and corresponding text, was modified to clarify location and laboratory composite sample and sub-sample identification numbers.

Comment		Response
3.	**Appendix E, Laboratory Analytical Data Reports and Data Validation Reports:** The Chain of Custody forms on PDF Page 300, 424, 680, and 842 include sample identification numbers with HPP-FSS-010 (and sub-samples A through D) but these samples were not discussed in the text. Based on Table 4-3, Composite Sediment Sampling Analytical Results Summary, it appears that this was a blind Quality Control sample, so these results should be discussed in the main body of the text and presented in Table 4-3. Please revise the Draft Report to discuss sample HPP-FSS-010 and include the results in Table 4-3.	A field duplicate sample was collected at composite sample location HPF-Wharf2-CS01 (laboratory composite sample ID HPP-FSS-008) as a blind quality control sample and field duplicate. The following text has been added to Section 4.5 (third paragraph), Data Validation and Quality Assessment. *"A field duplicate was collected from sample location HPF-Wharf2-CS01 (composite sample ID HPP-FSS-008, with sub-sample IDs HPP-FSS-008A through D) and submitted as a blind quality control sample. Sample results for the field duplicate sample from the HPF-Wharf2-CS01 location were composited by the laboratory into sample ID HPP-FSS-010 and are presented in Table 4-3 and Figure 4-2."* In addition, Figure 4-2 and Table 4-3 have been updated to clarify the sample identifiers. The following bullet was also added to Section 4.1: • *"Former Wharf #2 Area consisted of two sample locations: HPF-Wharf2-CS01 and HPF-Wharf2-CS02. Sample location HPF-Wharf2-CS01 consisted of four (4) sub-samples to create one (1) composite sample (HPP-FSS-008). An additional four (4) sub-samples were collected from sample location HPF-Wharf2-CS01 to create one (1) composite field duplicate sample (HPP-FSS-010). Sample location HPF-Wharf2-CS02 consisted of four (4) sub-samples to create one (1) composite sample (HPP-FSS-009)."*

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The following comments were made by Ms. Nina Bacey, California Department of Toxic Substances Control, via e-mail on 8 August 2018:

Comment		Response
	GENERAL COMMENTS	
1.	The report indicates that samples collected from the eastern portion of Wharf #2 (HPP-FSS-009) exceeded ½ the PALs for copper and mercury and that additional sediment sampling is recommended in the eastern and southern portion of Wharf #2 to better define the areal extent of Area III requiring remedial action. DTSC recommends expanding the investigation area beyond the Parcel F boundary to fully delineate the extent of the contamination and, the Navy should consider conducting the investigation as part of the upcoming Parcel F remedial design.	Concur. Please see response to EPA General Comment #2.

The following comments were made by Ms. Amy Brownell, of City and County of San Francisco Department of Environmental Health Environmental Health on 10 August 2018:

Comment		Response
	SPECIFIC COMMENTS	
1.	**Section 3.3. Former Pier and Wharf Structures and Area III Multibeam Bathymetric Survey, Page 3-3:** In the underlined section "Comparison of 2018 and 2003 bathymetric surveys", the statement starting in the eighth line "The areas showing the greatest accumulation change are the northern side of former Pier B and the southeast corner of the piers structure east of Berth 64 (up to +11 feet – see Chart 3 of Appendix A). Please clarify the text to read "The areas with the greatest sediment accumulation change are the northern side of former Pier B and the northeast corner of Berth 64 (up to +11 feet – see Chart 3 of Appendix A).	Text changed as requested.
2.	**Section 5.2 Summary and Recommendations from the Sediment Sampling Investigation, Page 5-2:** In the last paragraph "Additional sediment sampling is recommended in the eastern and southern portion of Warf #2 to better define the aerial extent of Area II requiring remedial action". Can you please provide the next steps for the proposed sediment sampling? Will a supplemental work plan be provided?	Please see response to EPA General Comment #2.

Response to BCT Comments on the Draft Sediment Investigation
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Hunters Point Naval Shipyard, California, July 2018

Comment		Response
3.	**Figures 3-3 Bathymetric Survey Comparison Between 2018 Multibeam Data and 2003 Single Beam Data for Parcel F Area III and Former Parcels B and C Pier and Warf Structures and Figure 3-4 Bathymetric Survey Comparison Between 2018 Multibeam Data and 2003 Single Beam Data for Parcel F Area IX:** In the lower part of the chart where the colors changes are presented in legend it states "Comparison in feet, Fugro 2018 value minus Fugro 2003 value". Please consider clarifying the statement to read "Comparison in feet between Fugro 2018 value and Fugro 2003 value, minus sign (-) = erosion and plus sign (+) = accumulation".	Figures 3-3 and 3-4 have been revised accordingly.
	MINOR COMMENTS	
1.	**Second Page:** Second page after the first title page was left blank and not marked by "This page left intentionally blank".	The second page after the first title page will be identified accordingly.
2.	**Section 3, Bathymetric Survey Results, Page 3-1:** End of the first line of this section, please leave a space between "and" and "3".	Text corrected.
3.	**Subsection 4.2 Sediment Sample Description, Page 4-3:** The statement starting in the middle of the fourth line "More course grained material consisting of silty sand was observed at sample locations HPF-Wharf2-CS02B and HPF-Wharf2-CS02D." Please replace the word "course" with the word "coarse" to read "More coarse grained material consisting of silty sand was observed at sample locations HPF-Wharf2-CS02B and HPF-Wharf2-CS02D."	Text corrected.
4.	**Table of Contents and Hyperlinks:** Please add the hyperlink option for ease of use.	Hyperlinks will be added to final version of the report.

Response to BCT Comments on the Draft Sediment Investigation
Beneath Former Parcels B and C Pier and Wharf Structures and Bathymetric Survey for Parcel F,
Hunters Point Naval Shipyard, California, July 2018

The following comment was made by Ms. Tina Low, of the San Francisco Bay Regional Water Quality Control Board on 17 August 2018:

Comment		**Response**
	COMMENT	
1.	**Section 5.2** Summary and Recommendation from the Sediment Sampling Investigation: This section states that there were exceedances of Project Action Levels (PAL) for copper, mercury, and Total PCBs in the eastern portion of Wharf #2 in Area III. These exceedances occurred at sub-samples HPP-FSS-009 A through D. We agree with the recommendation that additional sediment sampling be conducted to better define the extent of Area III requiring remedial action. In addition to sampling the eastern and southern area of Wharf #2, we also recommend sampling the area to the north of HPP-FSS-009B, as this sample location had exceedances of the PALs for mercury and total PCBs, and there is no bounding sample to the north. What are the next steps to conduct additional sampling? How will the results of this investigation and any follow-up investigation be incorporated into the Proposed Plan and Record of Decision?	Please see response to EPA General Comment #2.

The following set of comments was made by Mr. Charlie Huang, of the State of California Department of Fish and Wildlife on 20 August 2018:

Comment		Response
	The California Department of Fish and Wildlife, Office of Spill Prevention and Response (CDFW-OSPR) has completed its review of the subject document, received on July 12, 2018. The comments that follow are provided as part of our role as a natural resource Trustee for the State of California's fish and wildlife, and their habitats. The CDFW is the State's Trustee for fish and wildlife resources pursuant to Fish and Game Code Section 711.7. The CDFW is also designated as a Trustee for natural resources pursuant to Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 107 (f)(2)(B). **Background** Hunters Point Naval Shipyard (HPNS), located in southeast San Francisco on a peninsula that extends east into San Francisco Bay, was identified for closure during the Base Realignment and Closure process of 1991. The shipyard is approximately 936 acres in size, 443 acres of which are on land with the remaining acreage extending under water (Tetra Tech, 2000). HPNS is bounded on the north and east by San Francisco Bay and on the south and west by the Hunters Point district of San Francisco, which consists of public and private housing and commercial and industrial buildings. The north and east shores of HPNS have been developed for ship repair with dry docks and berths. Shipping facilities are present on the southwest shore. HPNS previously operated as a commercial dry dock facility from 1869 until 1939. In 1940, the Navy obtained ownership of the shipyard for ship building, repair, and maintenance activities. Activities shifted from ship repair to submarine servicing and testing after World War II. HPNS was deactivated in 1974. Between 1976 and 1986, the Navy leased most of the property to a privately-owned ship repair firm. In 1986, the Navy again occupied the shipyard and began a program to investigate and clean up contamination resulting from past activities (Barajas & Associates, 2008).	No response required.

Comment		Response
	HPNS is divided into parcels A through F. Parcel F includes all of the off-shore underwater property at HPNS and is approximately 457 acres. Chemicals of potential concern in Parcel F include copper, mercury, polychlorinated biphenyls (PCBs), and radionuclides. Areas IX and X include a shallow basin located south of HPNS and is called the South Basin. The South Basin is connected the Yosemite Slough. Area Ill is located north of HPNS and is called Point Avisadero. Prior to review of the subject report, CDFW-OSPR staff provided comments on the following documents: • Hunters Point Shipyard Facility-Specific Ecological Risk Assessment Work Plan (Huang, 1999a) • Appendix C: Pretest to Evaluate Influence of Confounding Factors, Hunters Point Shipyard Facility-Specific Ecological Risk assessment Work Plan (Huang, 1999b) • Draft Regional and Hunters Point Shipyard Facility-Specific Ecological and Human Health Risk Assessment Work Plan (Huang, 2000a) • Draft Sediment Bioassay Pretest Field Summary Report (Huang, 2000b) • Draft Pretest to Evaluate the Potential Influence of Confounding Factors in Sediment Bioassays (Huang, 2000b) • Working Draft Hunters Point Shipyard Parcel F Data Summary Memorandum (Huang, 2000b) • Draft Hunters Point Shipyard Parcel F Validation Study Work Plan (Huang, 2000c) • Revised Draft Feasibility Study Report for Parcel F (Huang and Gray, 2007) • Draft Work Plan for Radiological Data Gap Investigation at Parcel F (Huang, 2010) • Draft Technical Memorandum for Radiological Data Gap Investigation Phase 2a, Parcel F Submarine Areas, Parcel B Revetment Wall Areas, and San Francisco Bay Reference Sites (Huang, 2012) • Draft Technical Memorandum, Radiological Data Gap Investigation,	

Comment		Response
	Phase 2B, Parcel F (Huang, 2013) • Final Addendum to the Feasibility Study (FS) Report for Parcel F (Huang, 2017) • Draft Technical Memorandum, Optimized Remedial Alternative for Parcel F (Huang and Nakahara, 2017) • Draft Proposed Plan for Sediment Cleanup of Areas Ill, IX, and X, Parcel F (Huang and LaBonty, 2017) • Draft Demonstration Activated Carbon Amendments to Reduce PCB Bioavailability (Huang, 2018) In addition, CDFW-OSPR provided Applicable or Relevant and Appropriate Requirements (ARARs) for Parcel F in a memorandum dated February 2, 2006 (Huang, 2006). The primary objective of the subject report is to present the results of sediment sampling conducted in the footprint of the previously removed former pier and wharf structures (ERS, 2012) and to present current bathymetric data to address previously identified data gaps associated with offshore sediments at Parcel F	
	GENERAL COMMENT	
1.	CDFW-OSPR appreciate the opportunity to provide guidance on the planned cleanup at HPNS. This memo will serve to inform the Navy of our continuing interest in coordinating any natural resources issues, as one of the designated State natural resource trustees.	Comment noted.
2.	The main text of the sediment investigation report and the associated appendices provided the results of studies which will be useful in developing the remedial alternatives for Parcel F. However, the text of the main report should more fully discuss and summarize the results and conclusion provided in the appendices.	The summary and results of the sediment investigation and bathymetry survey are documented in Section 5 and are supported by the appendices provided. Also please see response to EPA Comment #2 for additional future investigation of the Wharf #2 area to further refine the areal extent of Area III requiring remedial action.
3.	For Parcel F, hydrodynamic measurements of waves and currents taken in the summer need to be presented. Since spring and summer winds are usually stronger than winter winds, bottom shear stress is also usually higher in the summer at shallow locations in the Bay. CDFW-OSPR believes that measurement of waves and currents during the spring also would have been useful. Furthermore, the discussion of erosion and deposition of sediments needs to include and evaluation of the seasonality of both of these processes rather than simply focus on net	No Response has been requested from the Navy. All work was conducted per the approved Final Work Plan (ECC-Insight and CDM Smith, 2017). However, we would like to refer CDFW-OSPR and DTSC to the sediment dynamics study and hydrodynamic measurements collected as part of the Parcel F Data Validation Study (Battelle, BBL, and Neptune & Company, 2005) and Feasibility Study Data Gap Investigation (Battelle et al., 2007). In addition, the hydrodynamic model will be updated to consider the effects of a 100-year storm event during remedial design. The model will be based on recent models developed by the Federal Emergency

Comment		Response
	erosion. This comment is meant for the DTSC Project Manager and no response is required Navy or Navy contractors.	Management Agency (FEMA) that consider winds and currents generated throughout the year. The model will be used to estimate bottom shear stress associated with wind driven waves and tidal currents.
	SPECIFIC COMMENTS	
1.	**Page 2-3, Section 2.5.1, Hydrodynamic Setting.** Estimated overall sediment deposition rate in the South Basin are approximately 1 cm/yr. An estimate of the sediment erosion rate during a 'typical year' is 4.2 cm/yr. This would indicate a sediment input rate to South Basin in the vicinity of 5.2 cm/yr to produce an overall sediment deposit rate of 1 cm/yr. Evaluation of remedial alternatives affecting inputs to the South Basin must assess potential alteration of sedimentation rates and the potential for erosion of any deeper sediments left in place.	The feasibility study and remedy selection process considered sediment erosion and deposition in the South Basin. Also, please see the response to CDFW-OSPR General Comment 3 regarding consideration of sediment dynamics and hydrodynamic processes during remedial design.
2.	**Page 2-3, Section 2.5, Current Conceptual Site Model.** The Conceptual Site Model (CSM) presented for Areas IX and X (South Basin), as well as Point Avisidero (Area III) agree with CDFW-OSPR interpretation of the sediment data collected in these areas (Huang and Nakahara, 2017). This comment is meant for the DTSC Project Manager and no response is required Navy or Navy contractors.	Comment noted.
3.	**Page 2-4, Section 2.5.2, Contaminant Extent and Distribution.** The Navy has presented copper, lead, mercury, and PCBs in the CSM for both the South Basin Areas X and IX) and Point Avisadero (Area III), but not for elevated mercury concentrations between Areas VIII and IX. Without a CSM for this area it is difficult to evaluate the factors that influence fate and transport of the contaminants in this area (e.g., sediment deposition and erosion) and the effectiveness of remedial alternatives for Parcel F. Please expand Section 2.5 to include a discussion of the CSM for mercury contamination between Areas VIII and IX.	Only Areas III, IX, and X are discussed in the CSM section of this report, because these are the Parcel F areas defined by the 2008 FS (Barajas) as requiring remediation and have been carried forward in the CERCLA cleanup process. Surface sediment samples collected from Area VIII (and Area I) were generally found to have the lowest mercury concentrations of all of Parcel F, having concentrations less than San Francisco Bay ambient threshold and ER-M values (Barajas, 2008; Battelle, BBL, and Neptune & Company, 2005). Also, the 2005 Validation Study, as well as the 2008 FS, concluded that Area VIII posed a low potential of ecological or human health risk. Finally, source control measures have been implemented along the Parcel E shoreline adjacent to Areas VIII and IX to remove contamination sources and prevent further migration of contaminants into Parcel F including: shoreline cleanup; metal slag removal; and metal debris reef removal. A more detailed write-up of Area VIII and IX source characterization, identification of pathways and COCs driving risk, nature and extent of COCs, and fate and transport of COCs may be found in the 2005 Data Validation Study and the 2008 FS. Also, please

Comment		Response
		see the response to CDFW-OSPR General Comment 3 regarding consideration of sediment dynamics and hydrodynamic processes during remedial design.
4.	**Page 3-1, Section 3, Bathymetric Survey Results.** CDFW-OSPR has no comments on the methods for comparison of 2018 and 2003 bathymetric surveys (Appendix A) and two survey methods. The appendix provides a clear presentation methods. This comment is meant for the DTSC Project Manager and no response is required Navy or Navy contractors.	Comment noted.
5.	**Page 3-3, Section 3.4, Areas IX and X Singlebeam Bathymetric Survey.** The text states "This bathymetric sounding refines the intertidal and subtidal areas previously identified in FS (Barajas, 2008)", Regardless of the sedimentation rate, the strength of the sediment bed or the flux of the PCBs from the subsurface, surface sediment of total PCBs in Area X is 2000 mg/kg (Battelle et al., 2003). CDFW-OSPR strongly recommends that this area identified in the referenced figure be part of the boundaries for the remedial alternatives for Parcel F.	Concur. This area is included as part of Areas IX and X identified for remediation.
6.	**Page 4-2, Section 4.1.2, Chemical Analysis.** Agreement has not been reached on the preliminary remediation goals (PRGs) proposed in the Validation Study Report (VSR) (Battelle et al., 2004). These PRGs are compared to analytical results from environmental samples as presented in the report. Further, the comparisons presented in the report appear to use the less protective of the site-specific PRGs calculated in the VSR. For example, the PCB concentration in the upper 15 centimeters (cm) in most of the South Basin sediments exceed the most protective PRG from the VSR (Table 4-2). It appears that the Navy used preferred Project Action Levels (PALs) for sediment that are among the less protective PRGs from the VSR, but this is not clearly stated, and no rationale for selecting these values is provided. Please provide the source of the PALs and discuss the rationale for selecting these values.	The PALs are based on the sediment sampling screening levels in the Final Work Plan (ECC-Insight and CDM Smith, 2017) and the not-to-exceed levels for the proposed remediation goals established in the Proposed Plan (Navy, 2018). The rationale for selecting ½ the PALs for screening levels for the composite samples was based on BCT comments on the Work Plan (ECC-Insight and CDM Smith, 2017). All work was conducted per the approved Work Plan.
7.	**Page 4-3, Section 4.3, Sediment Sample Results**. The text states, "All total PCB sample results were below ½ the PAL for total PCBs (675 µg/kg)." The information regarding stability of sediments, sediment transport and deposition rates, Total Organic Carbon (TOC), and grain size are listed as missing information, which does not provide evidence of the lack of PCB in composite sediment sample. Please discuss and	The objective of this investigation was to sample surface sediment from beneath former pier and wharf structures that were previously inaccessible for sampling as requested by the BCT for the purpose of filling a sediment data gap. Samples were to be analyzed for the presence of Parcel F COCs by comparing concentrations to ½ project action levels (i.e., remedial action objective remedial goals as published in the Parcel F 2018 Proposed Plan and 2018 Draft Record of Decision) per the November 2017 Final

Comment		Response
	provide a rationale for the apparent lack of PCBs beneath Former Parcels B and C Pier and Wharf Structure. Please also include a discussion and comparison of Area III sediments that area above the proposed San Francisco Regional Water Quality Control Board (SFRWQCB) Total Maximum Daily Load (TMDL) for total PCBs (approximately 200 µg/kg) in sediment.	Work Plan. This report presents the data collected pursuant to the Work Plan. The Navy does not agree that additional discussion/interpretation of the data is warranted in this report. Because we have identified areas of sediment that exceed composite and sub-sample screening levels, the Navy will be conducting a follow-on investigation to further refine the remedial footprint of Area III prior to remediation. Please see response to EPA Comment #2.
8.	**Appendix D** should be expanded to include a rationale and process for developing what appears to be radiological measure of background in the sediment cores collected.	Parcel F sediment has been evaluated for radiological constituents and the results are presented in the 2017 Parcel F FS Addendum.

Attachments: Updated Text, Tables and Figures. Specific updated Figures are: 1-4, 3-3, 3-4, 4-1, and 4-2; Specific updated Tables are: 4-1, 4-2, and 4-3.