
Memo

CLIENT : William Smalling, attorney
SUBJECT: Level II data validation of 3 Laboratory Analytical Reports
DATE: 02/16/2018

P&J Carson Consulting, llc performed Level II Data validation of analytical data for 12 environmental samples collected at 7012 Banyan Street, Huston TX. Data were submitted to us in 3 laboratory reports:

- ALS, Work Order HS17120041
- A&B Labs, Job ID 171220958
- A&B Labs, Job ID 18010244

A Level II data validation covers the following quality control samples: Method Blank, Laboratory Method Spike, Matrix Spike (if project sample is chosen for analysis), and Surrogate Recoveries.

This set of parameters are reviewed to determine if the instrument used to analyze samples is in control. The method blank determines if the sample preparation method is free from contamination from other samples or laboratory glassware. The laboratory control spike determines if the sample preparation method is adequate to remove target analytes from the sample. The surrogates indicate the preparation method ability to extract target analytes across a broad range. The matrix spike, when employed using the clients specific sample, determines the method ability to extract target analytes from the matrix, which may contain interferences.

When parameters do not meet the requirements of the method, the reviewer will assign a qualifier or flag to the data to let the user know that there may be an impact to using the data.

Summary of Level II Data validation

ALS, Work Order HS17120041

The Level II Quality Control data provided in the laboratory report is representative of adequate method accuracy and precision with respect to project objectives. The surrogate outlier (BTEX) and CCB contamination (Metals) do not impact the ability to use the data for the intended purpose. The Boron results have been qualified as estimated. The reported data should be utilized in the intended project decision-making processes, noting the qualification of Boron results.

After Boron CCB issue was reviewed with ALS, they indicated that they will re-issue the affected report.

A&B Labs, Job ID 171220958

The Level II Quality Control data provided in the laboratory report is representative of adequate method accuracy and precision with respect to project objectives. The surrogate outliers (Texas TPH) and low LCS recovery (Silver) do not impact the ability to use the data for the intended purpose. The reported data should be utilized in the intended project decision-making processes without reservation.

A&B Labs, Job ID 18010244

The Level II Quality Control data provided in the laboratory report is representative of adequate method accuracy and precision with respect to project objectives. The surrogate outliers (Texas TPH) do not impact the ability to use the data for the intended purpose. The reported data should be utilized in the intended project decision-making processes without reservation.

Attachments:

- Data Validation Reports:
 - ALS HS17120041 DATA VAL.pdf
 - ABLabs 17120958 DATA VAL.pdf
 - ABLabs 17120958 DATA VAL.pdf

Polona K Carson

Polona K Carson, PhD, MBA
Owner & Managing Principal

Data Validation Report

Client Project Information:		Laboratory Information:	
Client Name:	Law Office of C. William Smalling	Laboratory Name:	ALS Group USA, Corp
Client Contact:	William Smalling	Laboratory Contact:	Dane Wacasey
Client Project Name/ID:	RSB / W. Smalling PC	Laboratory SDG:	HS17120041
Client Project Location:	Houston, TX	Laboratory Sample Receipt:	December 1, 2017

Overview:

P&J Carson Consulting LLC (PJCC) has performed the data validation of the data deliverable submitted by client who has requested a Level II review. The review was performed in accordance with the respective method guidelines found in SW-846 Test Methods and TX1005 submitted along with the Data Deliverable performed by ALS Laboratory, Houston, TX. The results are for five (5) soil samples collected on December 1, 2017. The samples were analyzed for the parameters listed in the Sample Summary Table below:

SAMPLE SUMMARY TABLE

Sample Number	Collection Date	Analysis Requested
Samples 1 through 5	12/01/2017	BTEXs by Method 8260 Texas TPH by Method TX1005 Fluoride by Method 9056 TAL Metals by Method 6020 Mercury by Method 7471

Sample Receipt:

The samples were received in one cooler at ALS laboratory on December 1, 2017. ALS completed a **Sample Receipt Checklist**. The cooler was received within an acceptable temperature range at 4.6° C. All samples were received intact and matched the information on the COC.

Preservation and Hold Times:

A review of the **Date Times** log indicates the samples were extracted and analyzed within method hold times. The following describes the overall QA/QC indicators.

HOLD TIME SUMMARY TABLE

Sample ID	Analysis	Collection Date	Preparation Date	Analysis Date	Days to Preparation	Days to Analysis	Hold Time Met?
1	BTEX	12/1/17	12/6/17	12/6/17	5	5	Yes
1	Texas TPH	12/1/17	12/1/17	12/5/17	0	4	Yes
1	TAL Metals	12/1/17	12/5/17	12/7-8/17	4	6-7	Yes
1	Mercury	12/1/17	12/6/17	12/6/17	5	5	Yes
1	Fluoride	12/1/17	12/4/17	12/4/17	3	3	Yes
2	BTEX	12/1/17	12/7/17	12/7/17	6	6	Yes
2	Texas TPH	12/1/17	12/1/17	12/5/17	0	4	Yes
2	TAL Metals	12/1/17	12/5/17	12/7-8/17	4	6-7	Yes
2	Mercury	12/1/17	12/6/17	12/6/17	5	5	Yes
2	Fluoride	12/1/17	12/4/17	12/4/17	3	3	Yes
3	BTEX	12/1/17	12/6/17	12/6/17	5	5	Yes



3	Texas TPH	12/1/17	12/1/17	12/5/17	0	4	Yes
3	TAL Metals	12/1/17	12/5/18	12/7-8/17	4	6-7	Yes
3	Mercury	12/1/17	12/6/17	12/6/17	5	5	Yes
3	Fluoride	12/1/17	12/4/17	12/4/17	3	3	Yes
4	BTEX	12/1/17	12/7/17	12/7/17	6	6	Yes
4	Texas TPH	12/1/17	12/1/17	12/6/17	0	5	Yes
4	TAL Metals	12/1/17	12/5/17	12/7-8/17	4	6-7	Yes
4	Mercury	12/1/17	12/6/17	12/6/17	5	5	Yes
4	Fluoride	12/1/17	12/4/17	12/4/17	3	3	Yes
5	BTEX	12/1/17	12/7/17	12/7/17	6	6	Yes
5	Texas TPH	12/1/17	12/1/17	12/5/17	0	4	Yes
5	TAL Metals	12/1/17	12/5/17	12/7-8/17	4	6-7	Yes
5	Mercury	12/1/17	12/6/17	12/6/17	5	5	Yes
5	Fluoride	12/1/17	12/4/17	12/4/17	3	3	Yes

BTEX Analysis by SW846 Method 5035/8260C

The laboratory data package includes the CLP-level forms for sample reporting and quality control (QC) sample data. The samples and associated QC were analyzed on one instrument (VOA5) in four separate batches (R306624, R306661, R306693, and R306722).

Laboratory Control Blank (LCB)

The LCB results for all laboratory batches are below method detection limits (MDL) for all BTEX analytes indicating a contaminant free system.

Laboratory Control Spike (LCS)

The LCS results for all laboratory batches are within laboratory established control limits demonstrating laboratory instrument is in control.

Matrix Spike / Matrix Spike Duplicate (MS/MSD)

Data were provided for analysis of MS/MSD. The samples selected by ALS for spiking are not associated with the sample set reported in this data package. Therefore, this information was not reviewed as it does not provide meaningful data regarding the matrix effects of this projects samples.

Surrogates

All Surrogate recovery data for the project samples and associated QC samples are within acceptance limits demonstrating acceptable method extraction accuracy with the exception of surrogate Toluene-d8 in sample "2". The recovery of this surrogate (122%) was above the laboratory established control limits (82-121%). ALS Laboratory stated the sample was reanalyzed to confirm the result. The reanalysis confirmed a matrix effect is present. Since the result was above the laboratory established control limit the results for analytes associated with the surrogate are considered to have a high bias. However, all results for sample "2" are below MDL therefore the perceived high bias has no effect on undetected analytes.

General Notes

The BTEX results should be utilized without reservation in project decisions, noting the surrogate recovery outlier identified in the *Surrogate* discussion.



Texas TPH by SW-846 Method 5035 and Method TX1005

The laboratory data package included the CLP-level forms for sample reporting and QC. The samples and associated QC were analyzed on one instrument (FID-11) in one batch (122857).

Laboratory Control Blank

The LCB results are below MDLs for all three TPH groups indicating a contaminant free system.

Laboratory Control Spike / Laboratory Control Spike Duplicate (LCS/LCSD)

The LCS/LCSD recovery results are within laboratory established control limits demonstrating the instrument is operating with acceptable method accuracy and precision.

Matrix Spike / Matrix Spike Duplicate (MS/MSD)

Data were provided for analysis of MS/MSD. The samples selected by ALS for spiking are not associated with this project's sample set reported in this data package. Therefore, this information was not reviewed as it does not provide meaningful data regarding the matrix effects of this projects samples.

Surrogates

All Surrogate recovery data for the project samples and associated QC samples are within acceptance limits demonstrating acceptable method extraction accuracy.

General Notes

The Texas TPH results should be utilized without reservation in project decisions.

General Chemistry: Fluoride by SW-846 Method 9056

The laboratory data package included the CLP-level forms for sample reporting and QC. The samples and associated QC were analyzed on one instrument (ICS3K2) in one batch (122932).

Laboratory Control Blank

The LCB results are below MDLs for Fluoride indicating a contaminant free system.

Laboratory Control Spike / Laboratory Control Spike Duplicate

The LCS/LCSD recovery results are within laboratory established control limits demonstrating the instrument is in control with acceptable method accuracy and precision.

Matrix Spike / Matrix Spike Duplicate

ALS selected client sample "1" for matrix spike analysis. The MS/MSD recoveries for Fluoride indicate acceptable accuracy and precision for the project sample matrix.

General Notes

The Fluoride results should be utilized without reservation in project decisions.

Metals by SW-846 Method 6020

The laboratory data package included the CLP-level forms for sample reporting and QC. The samples and associated QC were analyzed on one instrument (ICPMS05) in one batch (122824).

Instrument Calibration

The ALS Laboratory reported that continuing calibration blanks (CCBs) contained contamination of boron, antimony and vanadium above the MDL. Boron was detected above the reporting limit. The LCB and LCS were re-analyzed on a different day and were within control limits, however, the sample results were reported from the



original run sequence with the CCB contamination. Therefore, all results for Boron are qualified as estimated, J, with a high bias. The laboratory was notified of this issue and a revised report will be re-issued. At the time of the review the revised report was not available for review.

Laboratory Control Blank

The LCB results are below reporting limits for all reported target analytes indicating a contaminant free system in both associated QC batches.

Laboratory Control Spike/Laboratory Control Spike Duplicate

The LCS/LCSD recovery results are within laboratory established control limits demonstrating the instrument is in control with acceptable method accuracy and precision.

Matrix Spike/Matrix Spike Duplicate

Data were provided for analysis of MS/MSD. The samples selected by ALS for spiking are not associated with this project's sample set reported in this data package. Therefore, this information was not reviewed as it does not provide meaningful data regarding the matrix effects of this projects samples.

Serial Dilution/Post Spike

Data were provided for the serial dilution and post spike analyses. The samples selected by ALS for these QC analyses are not associated with this project's sample set reported in this data package. Therefore, this information was not reviewed as it does not provide meaningful data regarding the matrix effects of this project's samples.

General Notes

The metals results should be utilized without reservation noting the continuing calibration blank contamination identified in the *Instrument Calibration* discussion and the qualification of boron results as estimated, J.

Mercury by SW-846 Method 7471

The laboratory data package included the CLP-level forms for sample reporting and QC. The samples and associated QC were analyzed on one instrument (HG03) in one batch (122983).

Laboratory Control Blank

The LCB result is below reporting limit for Mercury indicating a contaminant free system.

Laboratory Control Spike

The LCS recovery is within laboratory established control limits indicating the instrument is in control.

Matrix Spike / Matrix Spike Duplicate (MS/MSD)

Data were provided for analysis of MS/MSD. The samples selected by ALS for spiking are not associated with this project's sample set reported in this data package. Therefore, this information was not reviewed as it does not provide meaningful data regarding the matrix effects of this projects samples.

General Notes

The Mercury result should be utilized without reservation in project decisions.

Summary of Analysis

The Level II Quality Control data provided in the laboratory report is representative of adequate method accuracy and precision with respect to project objectives. The surrogate outlier (BTEX) and CCB contamination (Metals) do not impact the ability to use the data for the intended purpose. The Boron results have been qualified as estimated. The reported data should be utilized in the intended project decision-making processes, noting the qualification of Boron results.

Prepared by

Philip D. Conley – Environmental Chemist

Polona & Carson

Polona Carson, PhD, MBA – Owner & Managing Principal

Date: 02/16/2018



Data Validation Report

Client Project Information:		Laboratory Information:	
Client Name:	Law Office of C. William Smalling	Laboratory Name:	A&B Labs
Client Contact:	William Smalling	Laboratory Contact:	Shantall Carpenter
Client Project Name/ID:	7012 Banyan	Laboratory SDG:	17120958
Client Project Location:	Houston, TX	Laboratory Sample Receipt:	December 18, 2017

Overview:

P&J Carson Consulting LLC (PJCC) has performed the data validation of the data deliverable submitted by the client who has requested a Level II review. The review was performed in accordance with the respective method guidelines found in SW-846 Test Methods and TX1005 submitted along with the Data Deliverable performed by A&B Labs, Houston, TX. The results are for five (5) soil samples collected on December 18, 2017. The samples were analyzed for the parameters listed in the Sample Summary Table below:

SAMPLE SUMMARY TABLE

Sample Number	Collection Date	Analysis Requested
Samples 7, 9, and 10	12/18/2017	BTEXs by Method 8260 Texas TPH by Method TX1005
Sample 6	12/18/2017	BTEXs by Method 8260 Texas TPH by Method TX1005 TAL Metals by Method 6010 Mercury by Method 7471
Sample 8	12/18/2017	BTEXs by Method 8260 Texas TPH by Method TX1005 TAL Metals by Method 6010

Sample Receipt:

The samples were received in one cooler at A&B Labs on December 18, 2017. A&B Labs completed a **Sample Condition Checklist**. The cooler was received within an acceptable temperature range at 3.4° C. All samples were received intact and matched the information on the COC. The samples received as 1 through 5 were renumbered to 6 through 10 to distinguish the results from samples submitted to ALS Laboratory.

Preservation and Hold Times:

A review of the **Date Times** log indicates the samples were extracted and analyzed within method hold times. The following describes the overall QA/QC indicators.



SAMPLE HOLDTIME SUMMARY TABLE

Sample ID	Analysis	Collection Date	Preparation Date	Analysis Date	Days to Preparation	Days to Analysis	Hold Time Met?
6	BTEX	12/18/17	12/18/17	12/19/17	0	28.67 hrs	Yes (48hr)
6	Texas TPH	12/18/17	12/18/17	12/19/17	0	15 hrs	Yes (48hr)
6	TAL Metals	12/18/17	12/21/17	12/21/17	3	3	Yes
6	Mercury	12/18/17	12/21/17	12/21/17	3	3	Yes
7	BTEX	12/18/17	12/18/17	12/19/17	0	18.5 hrs	Yes
7	Texas TPH	12/18/17	12/18/17	12/19/17	0	28 hrs	Yes
8	BTEX	12/18/17	12/18/17	12/19/17	0	29 hrs	Yes
8	Texas TPH	12/18/17	12/18/17	12/19/17	0	13 hrs	Yes
8	TAL Metals	12/18/17	1/4/18	1/4/18	17	17	Yes
9	BTEX	12/18/17	12/18/17	12/19/17	0	19 hrs	Yes
9	Texas TPH	12/18/17	12/18/17	12/19/17	0	18 hrs	Yes
10	BTEX	12/18/17	12/18/17	12/19/17	0	19 hrs	Yes
10	Texas TPH	12/18/17	12/18/17	12/19/17	0	12 hrs	Yes

Purgeable Aromatics (BTEX) Analysis by SW846 Method 5035A/8260C

The laboratory data package includes the CLP-level forms for sample reporting and quality control (QC) sample data. The samples and associated QC were analyzed in one batch (Qb17121933).

Laboratory Control Blank (LCB)

The LCB results for all laboratory batches are below method detection limits (MDL) for all BTEX analytes indicating a contaminant free system.

Laboratory Control Spike / Laboratory Control Spike Duplicate (LCS/LCSD)

The LCS/LCSD results for all laboratory batches are within laboratory established control limits demonstrating laboratory instrument is in control with acceptable method accuracy and precision.

Matrix Spike (MS)

Data were provided for analysis of MS. The sample selected by A&B Labs was not identified in the data deliverable, therefore, this information was not reviewed.

Surrogates

All Surrogate recovery data for the project samples and associated QC samples are within acceptance limits demonstrating acceptable method extraction accuracy.

General Notes

Sample "8" was diluted due to high analyte concentration in the sample. The BTEX results should be utilized without reservation in project decision making processes.

Texas TPH by SW-846 Method 5035 and Method TX1005

The laboratory data package included the CLP-level forms for sample reporting and QC. The samples and associated QC were analyzed in one batch (Qb17122028).

Laboratory Control Blank

The LCB results are below MDLs for all three TPH groups indicating a contaminant free system.



Laboratory Control Spike / Laboratory Control Spike Duplicate (LCS/LCSD)

The LCS/LCSD recovery results are within laboratory established control limits demonstrating the instrument is operating with acceptable method accuracy and precision.

Matrix Spike / Matrix Spike Duplicate (MS/MSD)

Data were provided for analysis of MS/MSD. The samples selected by A&B Labs for spiking are not associated with this project's sample set reported in this data package. Therefore, this information was not reviewed as it does not provide meaningful data regarding the matrix effects of this projects samples.

Surrogates

Samples "6, 7, 8, and 9" were diluted due to high concentrations of total petroleum hydrocarbons in the samples. This dilution step is necessary to bring the analyte concentration within range of the instrument calibration. This causes the surrogate to be diluted out of detection or below calibration range. Therefore the surrogate recovery data is not evaluated as it does not provide meaningful information. The Surrogate recovery data for sample "10" and associated QC samples are within acceptance limits demonstrating acceptable method extraction accuracy.

General Notes

The Texas TPH results should be utilized without reservation in project decision making processes.

Metals by SW-846 Method 6010

The laboratory data package included the CLP-level forms for sample reporting and QC. The samples and associated QC were analyzed in two batches (Qb17122178 and Qb18010460).

Laboratory Control Blank

The LCB results are below reporting limits for all reported target analytes indicating a contaminant free system in both associated QC batches.

Laboratory Control Spike/Laboratory Control Spike Duplicate

The LCS/LCSD recovery results were within laboratory established control limits demonstrating acceptable method accuracy and precision with the exception of silver (78%) in QC batch Qb18010640 is slightly below the method control limits (80-120%). The LCS recovery (89.6%) was within acceptance limits as well as the relative percent difference (RPD) demonstrating acceptable method precision. The data reviewer's assessment is the slight outlier does not impact the ability to use the reported result for silver in project decision-making processes. The LCS/LCSD recovery and RPD for the remaining metals demonstrate acceptable method accuracy and precision.

Matrix Spike / Matrix Spike Duplicate (MS/MSD)

Data were provided for analysis of MS/MSD. The samples selected by A&B Labs for spiking are not associated with this project's sample set reported in this data package. Therefore, this information was not reviewed as it does not provide meaningful data regarding the matrix effects of this projects samples.

Serial Dilution/Post Spike

Data were provided for the serial dilution and post spike analyses. The sample selected by A&B Labs for this QC analysis is not associated with this project's sample set reported in this data package. Therefore, this information was not reviewed as it does not provide meaningful data regarding the matrix effects of this project's samples.

General Notes

The metals results should be utilized without reservation in project decision making processes noting the data reviewer's assessment regarding the low recovery of silver in the LCSD identified in the *Laboratory Control Spike/Laboratory Control Spike Duplicate* discussion.

Mercury by SW-846 Method 7470

The laboratory data package included the CLP-level forms for sample reporting and QC. Sample "6" and associated QC were analyzed in one batch (Qb17122165).

Laboratory Control Blank

The LCB result is below reporting limit for Mercury indicating a contaminant free system.

Laboratory Control Spike/Laboratory Control Spike Duplicate

The LCS/LCSD recoveries are within method control limits indicating the instrument is in control.

Matrix Spike / Matrix Spike Duplicate (MS/MSD)

Data were provided for analysis of MS/MSD. The sample selected by A&B Labs for spiking is not associated with this project's sample reported in this data package. Therefore, this information was not reviewed as it does not provide meaningful data regarding the matrix effects of this projects samples.

General Notes

The Mercury result should be utilized without reservation in project decision making processes.

Summary of Analysis

The Level II Quality Control data provided in the laboratory report is representative of adequate method accuracy and precision with respect to project objectives. The surrogate outliers (Texas TPH) and low LCS recovery (Silver) do not impact the ability to use the data for the intended purpose. The reported data should be utilized in the intended project decision-making processes without reservation.

Prepared by

Philip D. Conley – Environmental Chemist

Polona & Carson

Polona Carson, PhD, MBA – Owner & Managing Principal

Date: 02/13/2018



P&J Carson Consulting LLC
1700 Fostoria Ave., Suite 1200
Findlay, OH 45840

Data Validation Report

Client Project Information:		Laboratory Information:	
Client Name:	Law Office of C. William Smalling	Laboratory Name:	A&B Labs
Client Contact:	William Smalling	Laboratory Contact:	Shantall Carpenter
Client Project Name/ID:	7012 Banyan	Laboratory SDG:	18010244
Client Project Location:	Houston, TX	Laboratory Sample Receipt:	January 5, 2018

Overview:

P&J Carson Consulting LLC (PJCC) has performed the data validation of the data deliverable submitted by the client who has requested a Level II review. The review was performed in accordance with the respective method guidelines found in SW-846 Test Methods and TX1005 submitted along with the Data Deliverable performed by A&B Labs, Houston, TX. The results are for two (2) soil samples collected on January 5, 2018. The samples were analyzed for the parameters listed in the Sample Summary Table below:

SAMPLE SUMMARY TABLE

Sample Number	Collection Date	Analysis Requested
Sample 11	1/5/18	VOCs by Method 8260 SVOCs by method 8270 Texas TPH by Method TX1005 TCLP Metals by 1311/6010 TCLP Mercury by Method 1311/7470A
Sample 12	1/5/18	VOCs by Method 8260 Texas TPH by Method TX1005 TCLP Metals by Method 1311/6010 TCLP Mercury by Method 1311/7470A

Sample Receipt:

The samples were received in one cooler at A&B Labs on January 5, 2018. A&B Labs completed a **Sample Condition Checklist**. The cooler was received within an acceptable temperature range at 5.2° C. All samples were received intact and matched the information on the COC.

Preservation and Hold Times:

A review of the **Date Times** log indicates the samples were extracted and analyzed within method hold times. The following describes the overall QA/QC indicators.



SAMPLE HOLDTIME SUMMARY TABLE

Sample ID	Analysis	Collection Date	Preparation Date	Analysis Date	Days to Preparation	Days to Analysis	Hold Time Met?
11	VOCs	1/5/18	1/10/18	1/10/18	5	5	Yes
11	SVOCs	1/5/18	1/8/18	1/8/18	3	3	Yes
11	Texas TPH	1/5/18	1/5/18	1/7/18	0	2	Yes
11	TCLP Metals	1/5/18	1/5/10 1/8/18	1/8/18	TCLP 0 Extract 3	3	Yes
11	TCLP Mercury	1/5/18	1/5/10 1/10/18	1/10/18	TCLP 0 Extract 5	5	Yes
12	VOCs	1/5/18	1/10/18	1/10/18	5	5	Yes
12	Texas TPH	1/5/18	1/5/18	1/7/18	0	2	Yes
12	TCLP Metals	1/5/18	1/5/10 1/8/18	1/8/18	TCLP 0 Extract 3	3	Yes
12	TCLP Mercury	1/5/18	1/5/10 1/10/18	1/10/18	TCLP 0 Extract 5	5	Yes

VOC Analysis by SW846 Method 8260C

The laboratory data package includes the CLP-level forms for sample reporting and quality control (QC) sample data. The samples and associated QC were analyzed in one batch (Qb18011068).

Laboratory Control Blank (LCB)

The LCB results for all laboratory batches are below method detection limits (MDL) for all VOC analytes indicating a contaminant free system.

Laboratory Control Spike / Laboratory Control Spike Duplicate (LCS/LCSD)

The LCS/LCSD results for all laboratory batches are within laboratory established control limits demonstrating laboratory instrument is in control with acceptable method accuracy and precision, with the exception of analyte 4-Isopropyltoluene (LCS, 115%). Although the analyte was above the laboratory established control limit (114%) for the LCS, Method 8000 allows for control limits of 70%-130%. Additionally, the LCSD recovery and relative percent difference (RPD) met control limits. Lastly the analyte was not detected in the samples therefore the data is not impacted by the analyte outlier in the LCS.

Matrix Spike (MS)

Data were provided for analysis of MS/MSD. The samples selected by A&B Labs for spiking are not associated with this project's sample set reported in this data package. Therefore, this information was not reviewed as it does not provide meaningful data regarding the matrix effects of this projects samples.

Surrogates

All Surrogate recovery data for the project samples and associated QC samples are within acceptance limits demonstrating acceptable method extraction accuracy.

General Notes

The sample detection limits were elevated due to high matrix interference from purgeable hydrocarbons (see Laboratory Test Results for Texas TPH summary). This is a normal process for labs to protect instrumentation from contamination and long down times. The VOC results should be utilized without reservation in this project decision making processes noting the data reviewer's assessment regarding the high LCS recovery of 4-Isopropyltoluene identified in the *Laboratory Control Spike / Laboratory Control Spike Duplicate* discussion.



SVOC Analysis by SW846 Method 8270D

The laboratory data package includes the CLP-level forms for sample reporting and quality control (QC) sample data. The samples and associated QC were analyzed in one batch (Qb18010848).

Laboratory Control Blank (LCB)

The LCB results for all laboratory batches are below method detection limits (MDL) for all VOC analytes indicating a contaminant free system.

Laboratory Control Spike / Laboratory Control Spike Duplicate (LCS/LCSD)

The LCS/LCSD results for all laboratory batches are within laboratory established control limits demonstrating laboratory instrument is in control with acceptable method accuracy and precision.

Matrix Spike (MS)

Data were provided for analysis of MS/MSD. The samples selected by A&B Labs for spiking are not associated with this project's sample set reported in this data package. Therefore, this information was not reviewed as it does not provide meaningful data regarding the matrix effects of this projects samples.

Surrogates

The Surrogate recoveries were not detected due to a high dilution of sample extract. This dilution was necessary to prevent instrument contamination from high concentration of purgeable hydrocarbons.

General Notes

The sample detection limits were elevated due to high matrix interference from purgeable hydrocarbons (see Laboratory Test Results for Texas TPH summary). This is a normal process for labs to protect instrumentation from contamination and long down times. The SVOC results should be utilized without reservation in project decision making processes.

Texas TPH by SW-846 Method 5035 and Method TX1005

The laboratory data package included the CLP-level forms for sample reporting and QC. The samples and associated QC were analyzed in one batch (Qb18010903).

Laboratory Control Blank

The LCB results are below MDLs for all three TPH groups indicating a contaminant free system.

Laboratory Control Spike / Laboratory Control Spike Duplicate (LCS/LCSD)

The LCS/LCSD recovery results are within laboratory established control limits demonstrating the instrument is operating with acceptable method accuracy and precision.

Matrix Spike / Matrix Spike Duplicate (MS/MSD)

Data were provided for analysis of MS/MSD. The samples selected by A&B Labs for spiking are not associated with this project's sample set reported in this data package. Therefore, this information was not reviewed as it does not provide meaningful data regarding the matrix effects of this projects samples.

Surrogates

Samples "11" and "12" were diluted due to high concentrations of total petroleum hydrocarbons in the samples. This dilution step is necessary to bring the analyte concentration within range of the instrument calibration. This causes the surrogate to be diluted out of detection or below calibration range. Therefore, the surrogate recovery data is not evaluated as it does not provide meaningful information. The Surrogate recovery data associated with QC samples are within acceptance limits demonstrating acceptable method extraction accuracy.



General Notes

The Texas TPH results should be utilized without reservation in project decision making processes.

TCLP Metals by SW-846 Method 1311/6010

The laboratory data package included the CLP-level forms for sample reporting and QC. The samples and associated QC were analyzed in two batches (Qb18010838).

Laboratory Control Blank

The LCB results are below reporting limits for all reported target analytes indicating a contaminant free system in both associated QC batches.

Laboratory Control Spike/Laboratory Control Spike Duplicate

The LCS/LCSD recovery results are within laboratory established control limits demonstrating the instrument is operating with acceptable method accuracy and precision.

Matrix Spike / Matrix Spike Duplicate (MS/MSD)

Data were provided for analysis of MS/MSD. The samples selected by A&B Labs for spiking are not associated with this project's sample set reported in this data package. Therefore, this information was not reviewed as it does not provide meaningful data regarding the matrix effects of this projects samples.

General Notes

The metals results should be utilized without reservation in project decision making processes.

TCLP Mercury by SW-846 Method 7470A

The laboratory data package included the CLP-level forms for sample reporting and QC. The samples and associated QC were analyzed in one batch (Qb18011040).

Laboratory Control Blank

The LCB result is below reporting limit for Mercury indicating a contaminant free system.

Laboratory Control Spike/Laboratory Control Spike Duplicate

The LCS/LCSD recoveries are within method control limits indicating the instrument is in control.

Matrix Spike / Matrix Spike Duplicate (MS/MSD)

Data were provided for analysis of MS/MSD. The sample selected by A&B Labs for spiking is not associated with this project's sample reported in this data package. Therefore, this information was not reviewed as it does not provide meaningful data regarding the matrix effects of this projects samples.

General Notes

The Mercury result should be utilized without reservation in project decision making processes.

Summary of Analysis

The Level II Quality Control data provided in the laboratory report is representative of adequate method accuracy and precision with respect to project objectives. The surrogate outliers (Texas TPH) do not impact the ability to use the data for the intended purpose. The reported data should be utilized in the intended project decision-making processes without reservation.



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