APPENDIX A

Photographs from Pipe Plugging Activities

Photograph 1. Manhole D in foreground, Catch Basins C and B, respectively, in background, looking south.

Photograph 2. Catch Basin B in foreground, Catch Basin C in background, looking north.

Photograph 3. Catch Basin A in foreground, Catch Basins B and C, respectively, in background, looking north.

Photograph 1. Catch basins for B1 (background) and B2 (foreground), with downstream B2 pipe initially exposed.

Photograph 2. B1 pipe at B2 catch basin excavation. B1 pipe was fully removed up to B2 catch basin, which was also removed.

Photograph 3. Downstream Pipe B2 exposed, preplugging.

Photograph 4. Pipe B2 pipe CDF plug ~6 feet downstream of its former catch basin location.

Photograph 5. B3 catch basin preexcavation. Thin veneer of CM adjacent to catch basin was removed and stockpiled.

Photograph 6: Pipe B3 downstream of former catch basin, before being plugged.

Photograph 6. 2020.05.15: Pipe B3 after plugging with CDF.

Photograph 1. Pipe C manhole adjacent to station 10+98.

Photograph 2. Open Pipe C manhole (adjacent to station 10+98).

Photograph 3. Pipe C after vactor cleaning (1).

Photograph 4. Pipe C after vactor cleaning (2).

Photograph 5. One Pipe C sandbag dam prior to placing CDF between dams.

Photograph 6. Pipe C CDF plug at station 10+98.

Photograph 7. Pipe C CDF plug at station 11+31.

Photograph 1. Pipe D not observed at west end of ecology block wall, adjacent to bulkhead (it is plugged 18 inches east of bulkhead)

Photograph 2. Same as Photograph 1.

Photograph 1. Pipe E, uncovered. T-junction at ~45 feet inland shown.

Photograph 2. Trench after removal of pipe E.

Photograph 3. Section of pipe E left in ground, preplugging.

Photograph 4. Pipe E plugged with CDF ~7 feet east of bulkhead.

Photograph 5. Pipe E T-joint (at 45 feet) plugged on both ends with CDF.

Photograph 1. Exposing top of Pipe F, east side of the bulkhead.

Photograph 2. Pipe F, looking east from under wharf at void in bulkhead around pipe.

Photograph 3. Pipe F at bulkhead, fabric and quarry spalls placed to stabilize materials around void.

Photograph 4. Top of Pipe F exposed 75 feet east of bulkhead.

Photograph 5. Saw cutting 16+ inches of concrete 15 feet east of bulkhead.

Photograph 6. Pipe F breached 15 feet east of bulkhead.

Photograph 7. Pipe F breached 75 feet east of bulkhead.

Photograph 8. Interior of Pipe F near 15-foot breach.

Photograph 9. Tide gate in Pipe F approx. 80 feet inland from bulkhead.

Photograph 10. Pneumatic plug in place at bulkhead.

Photograph 11. Sandbag wall in place at 15-foot breach. Air line and cable for pneumatic plug visible.

Photograph 12. Top of CDF plug at bulkhead.

Photograph 13. Top of CDF plug at 75 feet inland. CDF plug is continuous from bulkhead to 75 feet.

Photograph 1. Pipe G exposed near bulkhead, preplugging.

Photograph 2. Trench after Pipe G removal to ~78 feet inland.

Photograph 3. Pipe G after being removed.

Photograph 4. Pipe G CDF plug at bulkhead .

Photograph 1. Pipe H catch basin near bulkhead before excavation.

Photograph 2. Pipe H catch basin and pipe through bulkhead with thermos plug installed.

Photograph 3. Pipe H catch basin plugged with CDF.

Photograph 1. Pipe J not present on west side of ecology block wall adjacent to bulkhead. Pipe plugged 16 feet east of bulkhead.

Photograph 2. Pipe J location excavated to 4.5 feet on west side of ecology block wall.

Photograph 1. Pipe K outfall under wharf with temporary pneumatic plug.

Photograph 2. Pipe K cut ~12 feet east of bulkhead, within shored excavation with active dewatering from sump. Tieback on right side was not damaged during excavation.

Photograph 3. Pipe K with “Fernco” removable plug attached.

Photograph 4. Pipe K with “Fernco” plug and ecology block to brace the plug against tidal pressure.

Photograph 5. Pipe K excavation backfilled, view west. A vertical 2-x-4 protruding from the backfill marks the location of the “Fernco” plug at depth.

Photograph 1. Pipe L, with thermos plug installed, on west side of ecology block wall adjacent to bulkhead.

Photograph 2. Pipe L plugged with CDF adjacent to bulkhead.

Photograph 1. Pipe M exposed 75 feet inland; concrete covering encountered on the wood stave pipe was partially intact.

Photograph 2. Pipe M exposed 75 feet inland; concrete covering completely removed to expose wood stave pipe.

Photograph 3. Pipe M entering/exiting vault near shoreline.

Photograph 4. Jet set concrete in Pipe M placed downstream of vault.

Photograph 5. Sandbags placed to confine area of CDF placement around sealed pipe entry/exit points, and, thus avoid, filling entire vault bottom with CDF.

Photograph 6. CDF plug placed in bottom of vault covering pipe entry/exit points.

Photograph 7. Vault backfilled with Parcel O sand.

Photograph 8. Backfilled trench from removed pipe inland from vault.

Photograph 1. Pipe N not present 7 feet east of bulkhead.

Photograph 1. Pipe P not present 7 feet east of bulkhead.

Q-Series Pipes (Q and Q1 through Q5)

Photograph 1. Excavation for pipe Q, ~7 feet east of bulkhead, no pipe found.

Photograph 2. Excavation for pipes Q1 and Q2 (collocated), ~7 feet east of bulkhead, no pipes found.

Photograph 3. Excavation for pipes Q3, Q4, and Q5, ~7 feet east of bulkhead, no pipes found.

APPENDIX B

Photographs from Soil Removal Activities

Photograph 1. Initial excavation above water table, 10/5/2020, view looking east-northeast.

Photograph 2. Eastern wall in initial excavation, 10/5/2020, view looking east. Note treated timbers in north sidewall (left side of photo)

Photograph 3. Initial excavation, 10/5/2020, view looking southwest.

Photograph 4. Excavation bottom at ~ 9 feet, 10/12/2020. Note lower portion of BA-MW-7 well casing next to creosote-treated wood piling, quarry spalls across entire base.

Photograph 5. View beneath wharf just west of BA-MW-7 excavation, looking east at concrete bulkhead. Black geotextile containing quarry spalls visible beneath bulkhead—same materials as in BA-MW-7 excavation immediately east of bulkhead, 10/12/2020.

Photograph 6. BA-MW-7 excavation backfilled, 10/13/2020.

Photograph 1. Southern leg of BBH Area excavation, view looking north towards yet-to-be-excavated main excavation.

BOILER BAGHOUSE AREA EXCAVATION

Photograph 2. Western end of western extension of BBH Area excavation, view looking north.

Photograph 3. Eastern end of western extension of BBH Area excavation, view looking east.

Photograph 4. Western extension of BBH Area excavation, view looking west from main excavation area.

Photograph 5. Northern leg of BBH Area excavation, view looking north.

Photograph 6. Concrete slab in south sidewall of western excavation extension, beneath sidewall sample S-25 at approximately 5 feet bgs.

Photograph 7. Concrete slab in north sidewall of western excavation extension, beneath sidewall sample S-26 at approximately 5 feet bgs.

Photograph 8. Southern leg of BBH Area excavation, view looking north towards yet to be excavated main excavation.

Photograph 9. Southern sidewall of main BBH Area excavation, showing concrete in upper 6 feet above sample S-67.

Photograph 10. Final limits of southern leg of BBH Area excavation, view looking southwest.

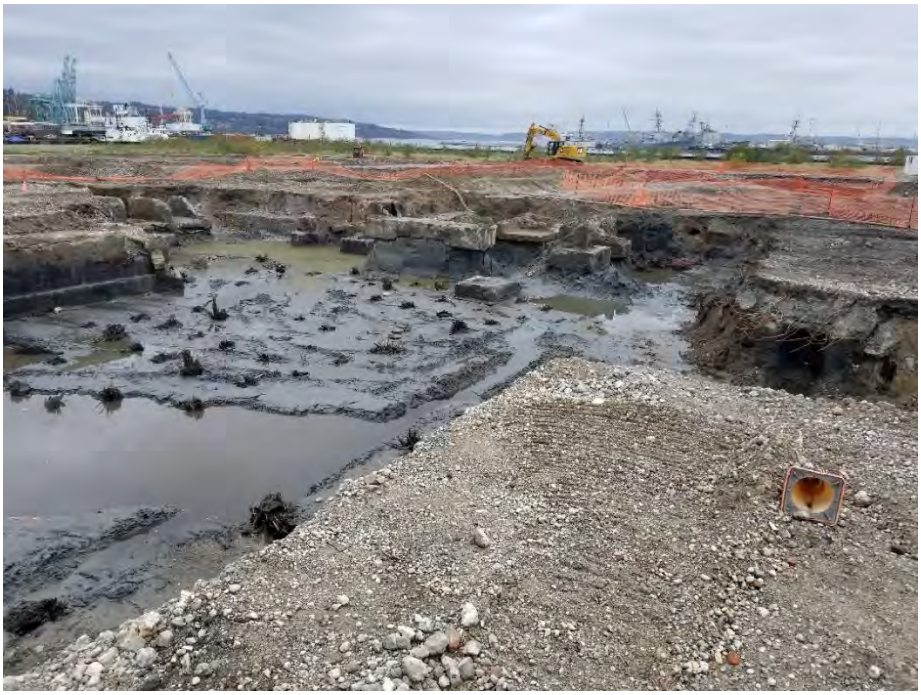
Photograph 11. Final limits of southern leg of BBH Area excavation, northern portion of west sidewall, view looking west.

BOILER BAGHOUSE AREA EXCAVATION

Photograph 12. View from NE corner of north leg, looking south into main part of BBH Area excavation. Concrete in eastern portion of south sidewall is evident in background.

Photograph 13. View from west leg of BBH Area looking at connector segment to GFB12 Area in the background, looking south. Concrete on both sidewalls and base.

Photograph 14. View across main BBH Area, looking southwest towards the south leg of the excavation area.



Photograph 15. View across main BBH Area to the west-southwest, with south leg to the left, west leg in the middle, and north leg on the right.

Photograph 16. View across main BBH Area, looking east.

Photograph 17. View of south leg, looking south-southeast.

Photograph 1. South end of excavation, looking east. North-south-trending wooden utilidor on west side of concrete foundation elements.

Photograph 2. South end of excavation, looking west. Concrete-encased wood stave pipe in foreground.

Photograph 3. Eastern side of south end of excavation, looking south. Concrete-encased wood stave pipe in center of photo, runs through/beneath east-west-trending concrete foundation structure.

Photograph 4. Same as Photograph 3, but looking north. East-west-trending sheet pile wall in foreground.

Photograph 5. Initial observation of Bunker C fuel pipe and utility pipe near south end of excavation.

Photograph 6. Asbestos-containing material insulation on pipes.

Photograph 7. One Bunker C fuel pipe encountered within wooden conduit, looking north.

Photograph 8. Utilidor covered pending asbestos abatement (left side), dewatering in process, view north.

Photograph 9. South end of excavation, looking south.

Photograph 10. Open excavation extent on 7/30/2020, view looking southwest.

Photograph 11. Open excavation extent on 7/30/2020, view looking southeast.

Photograph 12. Open excavation prior to dewatering on 8/10/2020, view looking northeast.

Photograph 13. Aerial view of excavation taken on 8/12/2020, view looking north.

Photograph 14. Initial observation of fuel pipes near northwest corner of excavation.

Photograph 15. Northwest corner of excavation on 8/18/2020.

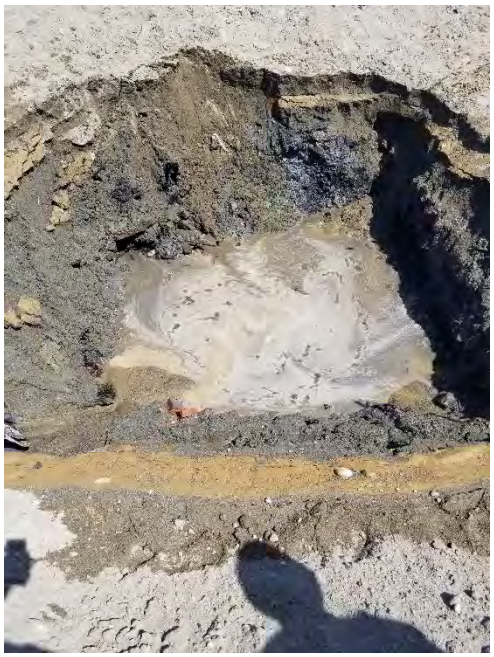
Photograph 16. Limits of excavation on 8/20/2020 for removal of NW bunker fuel pipes.

Photograph 17. Concrete slab and structures at base of CMS excavation at B-36 sample location, view looking west.

Photograph 1. Stockpiled overburden from CN-West excavation.

Photograph 2. CN-West initial excavation, dewatering turned off.

Photograph 3. CN-East excavation, dewatering turned off.



Photograph 4. CN-West after overexcavation of base, dewatering turned off.

Photograph 5. CN-East excavation backfilled.

Photograph 6. CN-West excavation backfilled.

Photograph 1. Initial excavation limits, view to the southeast.

Photograph 2. Initial excavation limits, looking northeast.

Photograph 3. Limits after first overexcavation, view looking north.

Photograph 4. Limits after first overexcavation, view looking northwest.

Photograph 5. Excavation extension between south leg of BBH Area (in foreground) and GFB12 Area (in background), view looking west, concrete structure comprising north sidewall evident in upper righthand corner of photo.

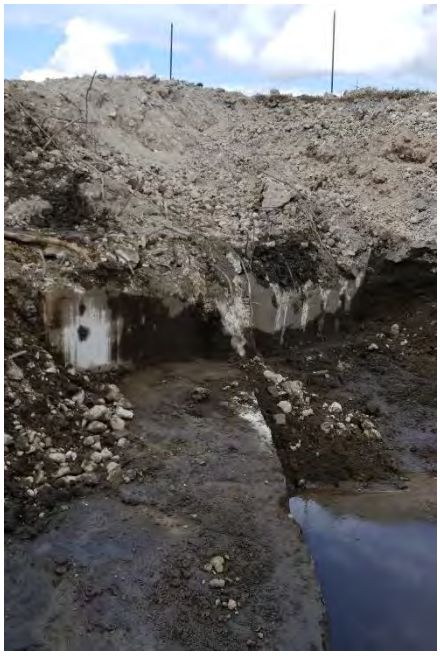
Photograph 6. North sidewall of extension between south leg of BBH Area and GFB12 Area, view looking north.

Photograph 7. South sidewall of extension between east sidewall of GFB12 Area and south leg of BBH Area, view looking south.

Photograph 8. Excavation extension between south leg of BBH Area (in background) and GFB12 Area (in foreground), view looking east, concrete structure comprising north sidewall evident in lefthand side of photo.

Photograph 1. South wall of excavation at 12-foot depth prior to installing dewatering sump.

Photograph 2. Excavation after first overexcavation of north sidewall with dewatering turned off, view west. Soil on visqueen is staged awaiting loading for off-site disposal.



Photograph 3. East side of north sidewall of excavation after second overexcavation encounters large concrete structure.

Photograph 4. Hydraulic Barker excavation backfilled to surrounding soil grade (beneath adjacent CM awaiting removal).

Photograph 1. Initial dewatered excavation, conveyor foundation on right, looking south.

Photograph 2. Initial dewatered excavation, conveyor foundation on left, looking north.

Photograph 3. West sidewall beneath foundation after second overexcavation, looking west.

Photograph 4. Looking south in excavation after second overexcavation.

Photograph 5. Log Pond Chip Conveyor excavation being backfilled, 7/14/2020.

Photograph 1. Large concrete foundation elements extending beneath excavation base, looking west.

Photograph 2. Excavation looking east prior to overexcavation.

OLD MACHINE SHOP AREA EXCAVATION

Photograph 3. South sidewall, start of excavation, looking east.

Photograph 4. Excavation looking east after first overexcavation.

Photograph 5. South sidewall after ecology blocks moved back and first overexcavation performed.

Photograph 6. South sidewall following removal of ecology blocks and second overexcavation.

Photograph 7. Southern sidewall showing backfill placed immediately after second overexcavation to protect bank stability.

Photograph 8. Southern sidewall showing top of shoreline bank after second overexcavation, looking west.

Photograph 9. Southern sidewall showing top of shoreline bank after second overexcavation, looking east.

Photograph 10. Eastern corner of southern sidewall showing third overexcavation to wood stave Pipe C on 8/27/2020, looking southwest.

Photograph 11. Close up of wood stave Pipe C in southeasternmost sidewall.

Photograph 12. Southern sidewall and shoreline bank, including remnants of wooden bulkhead, after third overexcavation on 8/27/2020.

Photograph 13. Southern shoreline bank, including remnants of wooden bulkhead, after third overexcavation on 8/27/2020.

Photograph 14. Excavation backfilled, looking south, 9/14/2020.

Photograph 1. Approximately 3 feet of CM overlying soil at the PM-B-6 Area, view looking east.

Photograph 2. Excavation showing mid-excavation concrete wall and wood stave pipe on north sidewall, view looking west.

Photograph 3. Extensive structures and little soil on west sidewall north of concrete wall, view looking west.

Photograph 4. North and east sidewalls on north side of concrete wall, view looking east.

Photograph 5. West sidewall on south side of concrete wall, view looking west.

Photograph 6. South sidewall with concrete wall in the foreground, view looking east.

Photograph 7. East sidewall on south side of concrete wall, view looking east.

Photograph 8. Western overexcavation of west sidewall, on the south side of the concrete wall, view looking south.

Photograph 9. PM-B-6 Area excavation backfilled.

Photograph 1. Initial excavation limits on 8/28/2020, view looking northeast.

Photograph 2. Initial excavation limits on 8/28/2020 with sheet pile wall on west sidewall, view looking west.

Photograph 3. Final excavation limits on 8/28/2020, view looking southwest.

Photograph 4. Excavation backfilled, 9/16/2020, view looking west.

Photograph 1. Fuel oil pipe exposed, in place.

Photograph 2. Fuel oil pipe trench, after pipe removal.

Photograph 3. Fuel oil pipe staged in visqueen pending off-site disposal.

Photograph 4. Impacted soil removed from fuel oil pipe trench, stockpiled pending off-site disposal.

APPENDIX C

Data Validation Reports

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

Aspect Consulting LLC
701 Second Ave., Suite 550
Seattle, WA 98104
ATTN: Carla Brock, LHG
cbrock@aspectconsulting.com

August 19, 2020

SUBJECT: Kimberly-Clark Upland Area, Data Validation

Dear Ms. Brock,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on July 27, 2020. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #48734:

SDG #	Fraction
005373,005398,006082 006251,006275,006294 006358,006387,006419 006466,006498	Polynuclear Aromatic Hydrocarbons, Polychlorinated Biphenyls, Metals, TPH as Gasoline, TPH as Extractables

The data validation was performed under Stage 2A guidelines. The analyses were validated using the following documents, as applicable to each method:

- USEPA National Functional Guidelines for Organic Superfund Methods Data Review, January 2017
- USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review; January 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
crink@lab-data.com
Project Manager/Senior Chemist

Stage 2A EDD **LDC #48734 (Aspect Consulting, LLC - Seattle, WA / Kimberly-Clark Upland Area 2020 Interm Action)**

LDC	SDG#	DATE REC'D	(3) DATE DUE	(16) PAH (8270E -SIM)		(7) PAHs (8270E -SIM)		PCBs (8082A)		(5) Metals (6020B)		Cu (6020B)		Cu,Zn (6020B)		Hg (1631E)		TPH-G (NWTPH -Gx)		TPH-E (NWTPH -Dx)																	
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
A	005373	07/27/20	08/17/20	-	-	-	-	0	5	-	-	-	-	0	4	0	4	-	-	0	4																
B	005398	07/27/20	08/17/20	-	-	-	-	0	10	-	-	-	-	0	11	0	10	-	-	0	10																
C	006082	07/27/20	08/17/20	-	-	-	-	0	5	-	-	-	-	0	4	0	4	-	-	0	4																
D	006251	07/27/20	08/17/20	-	-	-	-	-	-	-	-	0	19	-	-	0	19	-	-	-	-																
E	006275	07/27/20	08/17/20	-	-	0	6	-	-	-	-	-	-	-	-	0	6	0	6	0	6																
F	006294	07/27/20	08/17/20	-	-	0	8	-	-	-	-	-	-	-	-	0	8	0	8	0	8																
G	006358	07/27/20	08/17/20	-	-	-	-	-	-	-	-	0	16	-	-	0	16	-	-	-	-																
H	006387	07/27/20	08/17/20	0	15	0	7	0	3	0	3	-	-	-	-	0	10	-	-	-	-																
I	006419	07/27/20	08/17/20	0	11	-	-	-	-	-	-	0	12	-	-	0	12	-	-	-	-																
J	006466	07/27/20	08/17/20	-	-	-	-	0	17	-	-	0	16	-	-	0	16	-	-	-	-																
K	006498	07/27/20	08/17/20	-	-	0	6	0	7	-	-	0	6	-	-	0	11	-	-	-	-																
Total	T/CR			0	26	0	27	0	47	0	3	0	69	0	19	0	116	0	14	0	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	353

Shaded cells indicate Stage 4 validation (all other cells are Stage 2A validation). These sample counts do not include MS, MSD, or DUP's.

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: August 17, 2020

Parameters: Polychlorinated Biphenyls

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 005373

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
HB-S-01-9-052820	005373-01	Soil	05/28/20
HB-S-02-9-052820	005373-02	Soil	05/28/20
HB-S-03-9-052820	005373-03	Soil	05/28/20
HB-S-04-9-052820	005373-04	Soil	05/28/20
HB-501-052820	005373-05	Soil	05/28/20
HB-S-01-9-052820MS	005373-01MS	Soil	05/28/20
HB-S-01-9-052820MSD	005373-01MSD	Soil	05/28/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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 Stage 2A 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 and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Initial Calibration and Initial Calibration Verification

Initial calibration data were not reviewed for Stage 2A validation.

III. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

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 with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	Flag	A or P
HB-S-01-9-052820MS/MSD (HB-S-01-9-052820)	Aroclor-1260	200 (38-124)	172 (38-124)	NA	-

Relative percent differences (RPD) were within QC limits.

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

Samples HB-S-03-9-052820 and HB-501-052820 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Compound	Concentration (mg/Kg)		RPD
	HB-S-03-9-052820	HB-501-052820	
Aroclor-1262	0.04	0.057	35

X. Compound Quantitation

Raw data were not reviewed for Stage 2A validation.

XI. Target Compound Identification

Raw data were not reviewed for Stage 2A validation.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Data Qualification Summary - SDG 005373

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 005373

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 005373

No Sample Data Qualified in this SDG

LDC #: 48734A3b
SDG #: 005373
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 8/13/20
Page: 1 of 1
Reviewer: LT
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	N/N	
III.	Continuing calibration	N	
IV.	Laboratory Blanks	A	
V.	Field blanks	N	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	SW	(6,7)
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	SW	D = 3+5
X.	Compound quantitation/RL/LOQ/LODs	N	Dry weight basis
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	HB-S-01-9-052820		005373-01	Soil	05/28/20
2	HB-S-02-9-052820		005373-02	Soil	05/28/20
3	HB-S-03-9-052820	D	005373-03	Soil	05/28/20
4	HB-S-04-9-052820		005373-04	Soil	05/28/20
5	HB-501-052820	D	005373-05	Soil	05/28/20
6	HB-S-01-9-052820MS		005373-01MS	Soil	05/28/20
7	HB-S-01-9-052820MSD		005373-01MSD	Soil	05/28/20
8					
9					
10					
11					
12					
13					

Notes:

1	00-120 MB 1/6						

LDC #: 48734A3b

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: LT
2nd Reviewer:

METHOD: X **GC** ___ **HPLC**

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y x N___ N/A ___ Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG?

Y x N___ N/A___ Was an MS/MSD analyzed every 20 samples for each matrix or whenever a sample extraction was performed?

Y___ N x N/A___ Were the MS/MSD percent recoveries (%R) and relative percent differences (RPD) within QC limits?

#	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	6/7	Aroclor 1260	200 (38 - 124)	172 (38 - 124)		1 (ND)	J/A dets

LDC#:48734A3b **VALIDATION FINDINGS WORKSHEET**
Field Duplicates

Page:_1_of_1_
Reviewer:__LT__
2nd Reviewer:__

METHOD: GC PCBs (EPA SW846 Method 8082A)

Compound	Concentration (mg/kg)		RPD
	3	5	
Aroclor 1262	0.04	0.057	35

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: August 13, 2020

Parameters: Metals

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 005373

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
HB-S-02-9-052820	005373-02	Soil	05/28/20
HB-S-03-9-052820	005373-03	Soil	05/28/20
HB-S-04-9-052820	005373-04	Soil	05/28/20
HB-501-052820	005373-05	Soil	05/28/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 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 Zinc by Environmental Protection Agency (EPA) SW 846 Method 6020B
Mercury by EPA Method 1631E

All sample results were subjected to Stage 2A 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

ICP-MS tune data were not reviewed for Stage 2A validation.

III. Instrument Calibration

Instrument calibration data were not reviewed for Stage 2A validation.

IV. ICP Interference Check Sample Analysis

ICP Interference check sample (ICS) analysis data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the methods. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

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. 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 was not performed for this SDG.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the methods. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

Samples HB-S-03-9-052820 and HB-501-052820 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/Kg)		RPD
	HB-S-03-9-052820	HB-501-052820	
Copper	45.2	28.8	44
Zinc	49.1	43.4	12
Mercury	0.076	0.07U	Not calculable

XII. Internal Standards (ICP-MS)

Internal standards data were not reviewed for Stage 2A validation.

XIII. Sample Result Verification

Raw data were not reviewed for Stage 2A validation.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Metals - Data Qualification Summary - SDG 005373

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Metals - Laboratory Blank Data Qualification Summary - SDG 005373

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Metals - Field Blank Data Qualification Summary - SDG 005373

No Sample Data Qualified in this SDG

LDC #: 48734A4a
SDG #: 005373
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 8/12/2020
Page: 1 of 1
Reviewer: DM
2nd Reviewer:

METHOD: Metals (EPA SW 846 Method 6020B/EPA Method 1631E)

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	N	
III.	Instrument Calibration	N	
IV.	ICP Interference Check Sample (ICS) Analysis	N	
V.	Laboratory Blanks	A	
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	N	
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	N	(2,4)
XII.	Internal Standard (ICP-MS)	N	
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	HB-S-02-9-052820	005373-02	Soil	05/28/20
2	HB-S-03-9-052820	005373-03	Soil	05/28/20
3	HB-S-04-9-052820	005373-04	Soil	05/28/20
4	HB-501-052820	005373-05	Soil	05/28/20
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13				

Notes:

LDC #: 49731A49

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: DTM
2nd reviewer:

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
All	S	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, (Cu), Fe, Pb, Li, Mg, Mo, Mn, (Hg), Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, (Zn)
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
Analysis Method		
ICP		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
ICP-MS		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
GFAA		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn

Comments: Mercury by CVAA if performed

LDC#: 48734A4a

VALIDATION FINDINGS WORKSHEET

Field Duplicates

Reviewer: DTM

2nd Reviewer:

METHOD: Metals (EPA Method 6010/6020/7000)

Analyte	Concentration (mg/Kg)		RPD
	2	4	
Copper	45.2	28.8	44
Zinc	49.1	43.4	12
Mercury	0.076	0.07U	NC

V:\Darionna\FIELD DUPLICATES\Field Duplicates\FD_inorganic\2020\48734A4a.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: August 17, 2020

Parameters: Total Petroleum Hydrocarbons as Extractables

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 005373

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
HB-S-02-9-052820	005373-02	Soil	05/28/20
HB-S-03-9-052820	005373-03	Soil	05/28/20
HB-S-04-9-052820	005373-04	Soil	05/28/20
HB-501-052820	005373-05	Soil	05/28/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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:

Total Petroleum Hydrocarbons (TPH) as Extractables by NWTPH-Dx

All sample results were subjected to Stage 2A 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 not 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

Initial calibration data were not reviewed for Stage 2A validation.

III. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

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

Samples HB-S-03-9-052820 and HB-501-052820 were identified as field duplicates. No results were detected in any of the samples.

X. Compound Quantitation

Raw data were not reviewed for Stage 2A validation.

XI. Target Compound Identifications

Raw data were not reviewed for Stage 2A validation.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG 005373

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data Qualification Summary - SDG 005373

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Total Petroleum Hydrocarbons as Extractables - Field Blank Data Qualification Summary - SDG 005373

No Sample Data Qualified in this SDG

LDC #: 48734A8 **VALIDATION COMPLETENESS WORKSHEET** Date: 08/13/20
SDG #: 005373 Stage 2A Page: 1 of 1
Laboratory: Friedman & Bruya, Inc. Reviewer: LF
2nd Reviewer:

METHOD: GC TPH as Extractables (NWTPH-Dx)

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	N/N	
III.	Continuing calibration	N	
IV.	Laboratory Blanks	A	
V.	Field blanks	N	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Non client
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	ND	D= 2+4
X.	Compound quantitation RL/LOQ/LODs	N	Dry weight basis
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	HB-S-02-9-052820		005373-02	Soil	05/28/20
2	HB-S-03-9-052820	D	005373-03	Soil	05/28/20
3	HB-S-04-9-052820		005373-04	Soil	05/28/20
4	HB-501-052820	D	005373-05	Soil	05/28/20
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Notes:

1	DD-1198 MB2						

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: August 17, 2020

Parameters: Polychlorinated Biphenyls

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 005398

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
HB-B-01-13-052920	005398-01	Soil	05/29/20
HB-B-02-13-052920	005398-02	Soil	05/29/20
HB-B-03-13-052920	005398-03	Soil	05/29/20
HB-S-02-12-052920	005398-04	Soil	05/29/20
HB-S-03-12-052920	005398-05	Soil	05/29/20
HB-S-04-12-052920	005398-06	Soil	05/29/20
HB-S-05-12-052920	005398-07	Soil	05/29/20
HB-S-06-12-052920	005398-08	Soil	05/29/20
HB-S-07-12-052920	005398-09	Soil	05/29/20
HB-S-08-12-052920	005398-10	Soil	05/29/20
HB-B-01-13-052920MS	005398-01MS	Soil	05/29/20
HB-B-01-13-052920MSD	005398-01MSD	Soil	05/29/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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 Stage 2A 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 and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Initial Calibration and Initial Calibration Verification

Initial calibration data were not reviewed for Stage 2A validation.

III. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

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 with the following exceptions:

Spike ID (Associated Samples)	Compound	RPD (Limits)	Flag	A or P
HB-B-01-13-052920MS/MSD (HB-B-01-13-052920)	Aroclor-1016 Aroclor-1260	34 (≤20) 26 (≤20)	NA	-

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 Stage 2A validation.

XI. Target Compound Identification

Raw data were not reviewed for Stage 2A validation.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Data Qualification Summary - SDG 005398

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 005398

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 005398

No Sample Data Qualified in this SDG

LDC #: 48734B3b
SDG #: 005398
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 8/13/20
Page: 1 of 1
Reviewer: LS
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	N/N	
III.	Continuing calibration	N	
IV.	Laboratory Blanks	A	
V.	Field blanks	N	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	SW	(11,12)
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	N	
X.	Compound quantitation/RL/LOQ/LODs	N	Dry weight basis
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	HB-B-01-13-052920	005398-01	Soil	05/29/20
2	HB-B-02-13-052920	005398-02	Soil	05/29/20
3	HB-B-03-13-052920	005398-03	Soil	05/29/20
4	HB-S-02-12-052920	005398-04	Soil	05/29/20
5	HB-S-03-12-052920	005398-05	Soil	05/29/20
6	HB-S-04-12-052920	005398-06	Soil	05/29/20
7	HB-S-05-12-052920	005398-07	Soil	05/29/20
8	HB-S-06-12-052920	005398-08	Soil	05/29/20
9	HB-S-07-12-052920	005398-09	Soil	05/29/20
10	HB-S-08-12-052920	005398-10	Soil	05/29/20
11	HB-B-01-13-052920MS	005398-01MS	Soil	05/29/20
12	HB-B-01-13-052920MSD	005398-01MSD	Soil	05/29/20
13				
14				

Notes:

1	00-1212MB 1/6						

LDC #: 48734B3b

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: LT
2nd Reviewer:

METHOD: X **GC** ___ **HPLC**

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y x N___ N/A ___ Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG?

Y x N___ N/A___ Was an MS/MSD analyzed every 20 samples for each matrix or whenever a sample extraction was performed?

Y___ N x N/A___ Were the MS/MSD percent recoveries (%R) and relative percent differences (RPD) within QC limits?

#	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	11/12	Aroclor 1016			34 (≤20)	1 (ND)	J/A dets
		Aroclor 1260			26 (≤20)	↓	↓

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: August 13, 2020

Parameters: Metals

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 005398

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
HB-B-01-13-052920	005398-01	Soil	05/29/20
HB-B-02-13-052920	005398-02	Soil	05/29/20
HB-B-03-13-052920	005398-03	Soil	05/29/20
HB-S-02-12-052920	005398-04	Soil	05/29/20
HB-S-03-12-052920	005398-05	Soil	05/29/20
HB-S-04-12-052920	005398-06	Soil	05/29/20
HB-S-04-12-052920DL	005398-06DL	Soil	05/29/20
HB-S-05-12-052920	005398-07	Soil	05/29/20
HB-S-06-12-052920	005398-08	Soil	05/29/20
HB-S-07-12-052920	005398-09	Soil	05/29/20
HB-S-08-12-052920	005398-10	Soil	05/29/20
HB-B-01-13-052920MS	005398-01MS	Soil	05/29/20
HB-B-01-13-052920MSD	005398-01MSD	Soil	05/29/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 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 Zinc by Environmental Protection Agency (EPA) SW 846 Method 6020B
Mercury by EPA Method 1631E

All sample results were subjected to Stage 2A 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.

DNR Do not report from this analysis; the result for this analyte is to be reported from an alternative analysis.

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

ICP-MS tune data were not reviewed for Stage 2A validation.

III. Instrument Calibration

Instrument calibration data were not reviewed for Stage 2A validation.

IV. ICP Interference Check Sample Analysis

ICP Interference check sample (ICS) analysis data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the methods. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

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
HB-B-01-13-052920MS/MSD (All samples in SDG 005398)	Zinc	61 (75-125)	70 (75-125)	J (all detects) UJ (all non-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 was not performed for this SDG.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the methods. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

No field duplicates were identified in this SDG.

XII. Internal Standards (ICP-MS)

Internal standards data were not reviewed for Stage 2A validation.

XIII. Sample Result Verification

Raw data were not reviewed for Stage 2A validation.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods.

In the case where more than one result was reported for an individual sample, the least technically acceptable results were deemed not reportable as follows:

Sample	Analyte	Reason	Flag	A or P
HB-S-04-12-052920DL	Copper Zinc	Diluted results were non-detect.	DNR	A

Due to MS/MSD %R, data were qualified as estimated in ten samples.

No results were rejected in this SDG.

Kimberly-Clark Upland Area
Metals - Data Qualification Summary - SDG 005398

Sample	Analyte	Flag	A or P	Reason
HB-B-01-13-052920 HB-B-02-13-052920 HB-B-03-13-052920 HB-S-02-12-052920 HB-S-03-12-052920 HB-S-04-12-052920 HB-S-05-12-052920 HB-S-06-12-052920 HB-S-07-12-052920 HB-S-08-12-052920	Zinc	J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (%R)
HB-S-04-12-052920DL	Copper Zinc	DNR	A	Overall assessment of data

Kimberly-Clark Upland Area
Metals - Laboratory Blank Data Qualification Summary - SDG 005398

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Metals - Field Blank Data Qualification Summary - SDG 005398

No Sample Data Qualified in this SDG

LDC #: 48734B4a
SDG #: 005398
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 8/12/2020
Page: 1 of 1
Reviewer: DTM
2nd Reviewer:

METHOD: Metals (EPA SW 846 Method 6020B/EPA Method 1631E)

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	N	
III.	Instrument Calibration	N	
IV.	ICP Interference Check Sample (ICS) Analysis	N	
V.	Laboratory Blanks	A	
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	SW	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	N	
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	N	
XIII.	Sample Result Verification	N	
XIV	Overall Assessment of Data	ASW	

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	HB-B-01-13-052920	005398-01	Soil	05/29/20
2	HB-B-02-13-052920	005398-02	Soil	05/29/20
3	HB-B-03-13-052920	005398-03	Soil	05/29/20
4	HB-S-02-12-052920	005398-04	Soil	05/29/20
5	HB-S-03-12-052920	005398-05	Soil	05/29/20
6	HB-S-04-12-052920	005398-06	Soil	05/29/20
7	HB-S-04-12-052920DL	005398-06DL	Soil	05/29/20
8	HB-S-05-12-052920	005398-07	Soil	05/29/20
9	HB-S-06-12-052920	005398-08	Soil	05/29/20
10	HB-S-07-12-052920	005398-09	Soil	05/29/20
11	HB-S-08-12-052920	005398-10	Soil	05/29/20
12	HB-B-01-13-052920MS	005398-01MS	Soil	05/29/20
13	HB-B-01-13-052920MSD	005398-01MSD	Soil	05/29/20
14				
15				

Notes:

LDC #: 49784B49

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: DTM
2nd reviewer:

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
16,8-11	S	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, (Cu), Fe, Pb, Li, Mg, Mo, Mn, (Hg), Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, (Zn)
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
7	S	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, (Cu), Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, (Zn)
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
QC123	S	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, (Cu), Fe, Pb, Li, Mg, Mo, Mn, (Hg), Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, (Zn)
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
Analysis Method		
ICP		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
ICP-MS		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
GFAA		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn

Comments: Mercury by CVAA if performed

LDC #: 48734B4a

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: DTM
2nd Reviewer:

METHOD: Trace metals (EPA SW 846 Method 6020/6010/7470)

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
	12/13	S	Zn	61	70		ALL	J/UJ/A (det,ND)

Comments:

LDC #: 48734B4a

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Reviewer: DTM
2nd Reviewer:

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".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

Y N N/A Was the overall quality and usability of the data acceptable?

#	Date	Sample ID	Analyte	Finding	Qualification
		~~6~~ 7	Cu,Zn	Sample was re-~~analyzed~~ with a ~~dilution~~ due to internal standard failure.	(J) NR
				Dilution ND	

Comments: _____

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: August 17, 2020

Parameters: Total Petroleum Hydrocarbons as Extractables

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 005398

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
HB-B-01-13-052920	005398-01	Soil	05/29/20
HB-B-02-13-052920	005398-02	Soil	05/29/20
HB-B-03-13-052920	005398-03	Soil	05/29/20
HB-S-02-12-052920	005398-04	Soil	05/29/20
HB-S-03-12-052920	005398-05	Soil	05/29/20
HB-S-04-12-052920	005398-06	Soil	05/29/20
HB-S-05-12-052920	005398-07	Soil	05/29/20
HB-S-06-12-052920	005398-08	Soil	05/29/20
HB-S-07-12-052920	005398-09	Soil	05/29/20
HB-S-08-12-052920	005398-10	Soil	05/29/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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:

Total Petroleum Hydrocarbons (TPH) as Extractables by NWTPH-Dx

All sample results were subjected to Stage 2A 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 not 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

Initial calibration data were not reviewed for Stage 2A validation.

III. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

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 Stage 2A validation.

XI. Target Compound Identifications

Raw data were not reviewed for Stage 2A validation.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG 005398

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data Qualification Summary - SDG 005398

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Total Petroleum Hydrocarbons as Extractables - Field Blank Data Qualification Summary - SDG 005398

No Sample Data Qualified in this SDG

LDC #: 48734B8
SDG #: 005398
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 08/13/20
Page: 1 of 1
Reviewer: KT
2nd Reviewer:

METHOD: GC TPH as Extractables (NWTPH-Dx)

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	N/N	
III.	Continuing calibration	N	
IV.	Laboratory Blanks	A	
V.	Field blanks	N	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Non client
VIII.	Laboratory control samples	A	& LCS
IX.	Field duplicates	N	
X.	Compound quantitation RL/LOQ/LODs	N	Dry weight basis
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	HB-B-01-13-052920	005398-01	Soil	05/29/20
2	HB-B-02-13-052920	005398-02	Soil	05/29/20
3	HB-B-03-13-052920	005398-03	Soil	05/29/20
4	HB-S-02-12-052920	005398-04	Soil	05/29/20
5	HB-S-03-12-052920	005398-05	Soil	05/29/20
6	HB-S-04-12-052920	005398-06	Soil	05/29/20
7	HB-S-05-12-052920	005398-07	Soil	05/29/20
8	HB-S-06-12-052920	005398-08	Soil	05/29/20
9	HB-S-07-12-052920	005398-09	Soil	05/29/20
10	HB-S-08-12-052920	005398-10	Soil	05/29/20
11				
12				

Notes:

1	00-1243 MB						

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: August 17, 2020

Parameters: Polychlorinated Biphenyls

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 006082

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
HB-S-05-9-060420	006082-01	Soil	06/04/20
HB-S-06-9-060420	006082-02	Soil	06/04/20
HB-S-07-9-060420	006082-03	Soil	06/04/20
HB-S-08-9-060420	006082-04	Soil	06/04/20
HB-S-09-9-060420	006082-05	Soil	06/04/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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 Stage 2A 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 and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Initial Calibration and Initial Calibration Verification

Initial calibration data were not reviewed for Stage 2A validation.

III. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

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 Stage 2A validation.

XI. Target Compound Identification

Raw data were not reviewed for Stage 2A validation.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Data Qualification Summary - SDG 006082

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 006082

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 006082

No Sample Data Qualified in this SDG

LDC #: 48734C3b
SDG #: 006082
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 08/13/20
Page: 1 of 1
Reviewer: LT
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	N/N	
III.	Continuing calibration	N	
IV.	Laboratory Blanks	A	
V.	Field blanks	N	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Non Client
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	N	
X.	Compound quantitation/RL/LOQ/LODs	N	Dry weight basis
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	HB-S-05-9-060420	006082-01	Soil	06/04/20
2	HB-S-06-060420	006082-02	Soil	06/04/20
3	HB-S-07-060420	006082-03	Soil	06/04/20
4	HB-S-08-060420	006082-04	Soil	06/04/20
5	HB-S-09-060420	006082-05	Soil	06/04/20
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Notes:

1	00-1246 MB 1/6							

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: August 13, 2020

Parameters: Metals

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 006082

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
HB-S-06-9-060420	006082-02	Soil	06/04/20
HB-S-07-9-060420	006082-03	Soil	06/04/20
HB-S-08-9-060420	006082-04	Soil	06/04/20
HB-S-09-9-060420	006082-05	Soil	06/04/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 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 Zinc by Environmental Protection Agency (EPA) SW 846 Method 6020B
Mercury by EPA Method 1631E

All sample results were subjected to Stage 2A 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

ICP-MS tune data were not reviewed for Stage 2A validation.

III. Instrument Calibration

Instrument calibration data were not reviewed for Stage 2A validation.

IV. ICP Interference Check Sample Analysis

ICP Interference check sample (ICS) analysis data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the methods. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

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. 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 was not performed for this SDG.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the methods. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

No field duplicates were identified in this SDG.

XII. Internal Standards (ICP-MS)

Internal standards data were not reviewed for Stage 2A validation.

XIII. Sample Result Verification

Raw data were not reviewed for Stage 2A validation.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Metals - Data Qualification Summary - SDG 006082

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Metals - Laboratory Blank Data Qualification Summary - SDG 006082

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Metals - Field Blank Data Qualification Summary - SDG 006082

No Sample Data Qualified in this SDG

LDC #: 48734C4a
SDG #: 006082
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 9/12/2020
Page: 1 of 1
Reviewer: ORM
2nd Reviewer:

METHOD: Metals (EPA SW 846 Method 6020B/EPA Method 1631E)

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	N	
III.	Instrument Calibration	N	
IV.	ICP Interference Check Sample (ICS) Analysis	N	
V.	Laboratory Blanks	A	
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	N	
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	N	
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	~~HB-S-06-060420~~ HB-S-06-9-060420	006082-02	Soil	06/04/20
2	~~HB-S-07-060420~~ -07-9-	006082-03	Soil	06/04/20
3	~~HB-S-08-060420~~ -08-9-	006082-04	Soil	06/04/20
4	~~HB-S-09-060420~~ -09-9-	006082-05	Soil	06/04/20
5				
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13				

Notes:

LDC #: 49734C4G

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: DTM
2nd reviewer:

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
All	S	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, (Cu) Fe, Pb, Li, Mg, Mo, Mn, (Hg) Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, (Zn)
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
Analysis Method		
ICP		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
ICP-MS		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
GFAA		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn

Comments: Mercury by CVAA if performed

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: August 17, 2020

Parameters: Total Petroleum Hydrocarbons as Extractables

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 006082

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
HB-S-06-9-060420	006082-02	Soil	06/04/20
HB-S-07-9-060420	006082-03	Soil	06/04/20
HB-S-08-9-060420	006082-04	Soil	06/04/20
HB-S-09-9-060420	006082-05	Soil	06/04/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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:

Total Petroleum Hydrocarbons (TPH) as Extractables by NWTPH-Dx

All sample results were subjected to Stage 2A 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 not 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

Initial calibration data were not reviewed for Stage 2A validation.

III. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

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 Stage 2A validation.

XI. Target Compound Identifications

Raw data were not reviewed for Stage 2A validation.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG 006082

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data Qualification Summary - SDG 006082

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Total Petroleum Hydrocarbons as Extractables - Field Blank Data Qualification Summary - SDG 006082

No Sample Data Qualified in this SDG

LDC #: 48734C8 **VALIDATION COMPLETENESS WORKSHEET** Date: 08/13/20
SDG #: 006082 Stage 2A Page: 1 of 1
Laboratory: Friedman & Bruya, Inc. Reviewer: LT
2nd Reviewer:

METHOD: GC TPH as Extractables (NWTPH-Dx)

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	N/N	
III.	Continuing calibration	N	
IV.	Laboratory Blanks	A	
V.	Field blanks	N	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Non client
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	N	
X.	Compound quantitation RL/LOQ/LODs	N	Dry weight basis
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	HB-S-06-060420	006082-02	Soil	06/04/20
2	HB-S-07-060420	006082-03	Soil	06/04/20
3	HB-S-08-060420	006082-04	Soil	06/04/20
4	HB-S-09-060420	006082-05	Soil	06/04/20
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Notes:

1	00-1259 MB2							

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: August 13, 2020

Parameters: Metals

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 006251

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
PM-B-6-S-06-6	006251-01	Soil	06/16/20
PM-B-6-S-07-6	006251-02	Soil	06/16/20
PM-B-6-S-08-6	006251-03	Soil	06/16/20
PM-B-6-502	006251-04	Soil	06/16/20
PM-B-6-S-05-6	006251-05	Soil	06/16/20
PM-B-6-S-05-9	006251-06	Soil	06/16/20
PM-B-6-S-06-9	006251-07	Soil	06/16/20
PM-B-6-S-07-9	006251-08	Soil	06/16/20
PM-B-6-S-01-6	006251-09	Soil	06/16/20
PM-B-6-S-02-6	006251-10	Soil	06/16/20
PM-B-6-B-01-10	006251-11	Soil	06/16/20
PM-B-6-B-02-10	006251-12	Soil	06/16/20
PM-B-6-B-03-10	006251-13	Soil	06/16/20
PM-B-6-S-01-4	006251-14	Soil	06/16/20
PM-B-6-S-02-4	006251-15	Soil	06/16/20
PM-B-6-S-03-6	006251-16	Soil	06/16/20
PM-B-6-S-03-9	006251-17	Soil	06/16/20
PM-B-6-S-04-6	006251-18	Soil	06/16/20
PM-B-6-S-04-9	006251-19	Soil	06/16/20
PM-B-6-S-06-6MS	006251-01MS	Soil	06/16/20
PM-B-6-S-06-6MSD	006251-01MSD	Soil	06/16/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 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 by Environmental Protection Agency (EPA) SW 846 Method 6020B
Mercury by EPA Method 1631E

All sample results were subjected to Stage 2A 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

ICP-MS tune data were not reviewed for Stage 2A validation.

III. Instrument Calibration

Instrument calibration data were not reviewed for Stage 2A validation.

IV. ICP Interference Check Sample Analysis

ICP Interference check sample (ICS) analysis data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the methods. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

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
PM-B-6-S-06-6MS/MSD (PM-B-6-S-06-6 PM-B-6-S-07-6 PM-B-6-S-08-6 PM-B-6-502 PM-B-6-S-05-6 PM-B-6-S-05-9 PM-B-6-S-01-6 PM-B-6-S-02-6 PM-B-6-B-02-10 PM-B-6-S-01-4 PM-B-6-S-02-4 PM-B-6-S-03-6 PM-B-6-S-03-9 PM-B-6-S-04-6 PM-B-6-S-04-9)	Mercury	185 (75-125)	118 (75-125)	J (all detects)	A

Spike ID (Associated Samples)	Analyte	MS (%R) (Limits)	MSD (%R) (Limits)	Flag	A or P
PM-B-6-S-06-6MS/MSD (PM-B-6-S-06-9 PM-B-6-S-07-9 PM-B-6-B-01-10 PM-B-6-B-03-10)	Mercury	185 (75-125)	118 (75-125)	NA	-

Relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	RPD (Limits)	Flag	A or P
PM-B-6-S-06-6MS/MSD (All samples in SDG 006251)	Mercury	44 (≤20)	J (all detects) UJ (all non-detects)	A

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 was not performed for this SDG.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the methods. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

Samples PM-B-6-S-06-6 and PM-B-6-502 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/Kg)		RPD
	PM-B-6-S-06-6	PM-B-6-502	
Copper	39.9	33.6	17
Mercury	4.4	2.5	55

XII. Internal Standards (ICP-MS)

Internal standards data were not reviewed for Stage 2A validation.

XIII. Sample Result Verification

Raw data were not reviewed for Stage 2A validation.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods.

Due to MS/MSD %R and RPD, data were qualified as estimated in nineteen samples.

No results were rejected in this SDG.

Kimberly-Clark Upland Area
Metals - Data Qualification Summary - SDG 006251

Sample	Analyte	Flag	A or P	Reason
PM-B-6-S-06-6 PM-B-6-S-07-6 PM-B-6-S-08-6 PM-B-6-502 PM-B-6-S-05-6 PM-B-6-S-05-9 PM-B-6-S-01-6 PM-B-6-S-02-6 PM-B-6-B-02-10 PM-B-6-S-01-4 PM-B-6-S-02-4 PM-B-6-S-03-6 PM-B-6-S-03-9 PM-B-6-S-04-6 PM-B-6-S-04-9	Mercury	J (all detects)	A	Matrix spike/Matrix spike duplicate (%R)
PM-B-6-S-06-6 PM-B-6-S-07-6 PM-B-6-S-08-6 PM-B-6-502 PM-B-6-S-05-6 PM-B-6-S-05-9 PM-B-6-S-06-9 PM-B-6-S-07-9 PM-B-6-S-01-6 PM-B-6-S-02-6 PM-B-6-B-01-10 PM-B-6-B-02-10 PM-B-6-B-03-10 PM-B-6-S-01-4 PM-B-6-S-02-4 PM-B-6-S-03-6 PM-B-6-S-03-9 PM-B-6-S-04-6 PM-B-6-S-04-9	Mercury	J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (RPD)

Kimberly-Clark Upland Area
Metals - Laboratory Blank Data Qualification Summary - SDG 006251

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Metals - Field Blank Data Qualification Summary - SDG 006251

No Sample Data Qualified in this SDG

LDC #: 48734D4a
SDG #: 006251
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 8/12/2020
Page: 1 of 2
Reviewer: DM
2nd Reviewer:

METHOD: Cr, Hg (EPA SW 846 Method 6020B/EPA Method 1631E)

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	N	
III.	Instrument Calibration	N	
IV.	ICP Interference Check Sample (ICS) Analysis	N	
V.	Laboratory Blanks	A	
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	SW	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	N	
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	NOW	(1, 4)
XII.	Internal Standard (ICP-MS)	N	
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	PM-B-6-S-06-6	006251-01	Soil	06/16/20
2	PM-B-6-S-07-6	006251-02	Soil	06/16/20
3	PM-B-6-S-08-6	006251-03	Soil	06/16/20
4	PM-B-6-502	006251-04	Soil	06/16/20
5	PM-B-6-S-05-6	006251-05	Soil	06/16/20
6	PM-B-6-S-05-9	006251-06	Soil	06/16/20
7	PM-B-6-S-06-9	006251-07	Soil	06/16/20
8	PM-B-6-S-07-9	006251-08	Soil	06/16/20
9	PM-B-6-S-01-6	006251-09	Soil	06/16/20
10	PM-B-6-S-02-6	006251-10	Soil	06/16/20
11	PM-B-6-B-01-10	006251-11	Soil	06/16/20
12	PM-B-6-B-02-10	006251-12	Soil	06/16/20
13	PM-B-6-B-03-10	006251-13	Soil	06/16/20
14	PM-B-6-S-01-4	006251-14	Soil	06/16/20
15	PM-B-6-S-02-4	006251-15	Soil	06/16/20

LDC #: 48734D4a
SDG #: 006251
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 9/12/2020
Page: 2 of 2
Reviewer: DM
2nd Reviewer:

METHOD: Cr, Hg (EPA SW 846 Method 6020B/EPA Method 1631E)

	Client ID	Lab ID	Matrix	Date
16	PM-B-6-S-03-6	006251-16	Soil	06/16/20
17	PM-B-6-S-03-9	006251-17	Soil	06/16/20
18	PM-B-6-S-04-6	006251-18	Soil	06/16/20
19	PM-B-6-S-04-9	006251-19	Soil	06/16/20
20	PM-B-6-S-06-6MS	006251-01MS	Soil	06/16/20
21	PM-B-6-S-06-6MSD	006251-01MSD	Soil	06/16/20
22				
23				
24				

Notes:

LDC #: 49734D4a

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: DTM
2nd reviewer:

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-19	S	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, (Cu), Fe, Pb, Li, Mg, Mo, Mn, (Hg), Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
QC20-21	S	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, (Cu), Fe, Pb, Li, Mg, Mo, Mn, (Hg), Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
Analysis Method		
ICP		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
ICP-MS		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
GFAA		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn

Comments: Mercury by CVAA if performed

LDC #: 48734D4a

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: DTM
2nd Reviewer:

METHOD: Trace metals (EPA SW 846 Method 6020/6010/7470)

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
	20/21	S	Hg	185	118		ALL	J/A (det) NO NO=7,8,11,13
			Hg			44	ALL	J/UJ/A (det) NO

Comments:

LDC#: 48734D4a

VALIDATION FINDINGS WORKSHEET

Field Duplicates

Reviewer: DTM

2nd Reviewer:

METHOD: Metals (EPA Method 6010/6020/7000)

Analyte	Concentration (mg/Kg)		RPD
	1	4	
Copper	39.9	33.6	17
Mercury	4.4	2.5	55

V:\Darionna\FIELD DUPLICATES\Field Duplicates\FD_inorganic\2020\48734D4a.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: August 17, 2020

Parameters: Polynuclear Aromatic Hydrocarbons

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 006275

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
LP-S-01-6.5	006275-01	Soil	06/17/20
LP-S-02-6.5	006275-02	Soil	06/17/20
LP-S-03-6.5	006275-03	Soil	06/17/20
LP-B-01-8	006275-04	Soil	06/17/20
LP-S-10-6.5	006275-05	Soil	06/17/20
LP-503	006275-06	Soil	06/17/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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:

Polynuclear Aromatic Hydrocarbons (PAHs) by Environmental Protection Agency (EPA) SW 846 Method 8270E in Selected Ion Monitoring (SIM) mode

All sample results were subjected to Stage 2A 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 and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Stage 2A validation.

III. Initial Calibration and Initial Calibration Verification

Initial calibration data were not reviewed for Stage 2A validation.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. 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.

IX. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

X. Field Duplicates

Samples LP-B-01-8 and LP-503 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Compound	Concentration (mg/Kg)		RPD
	LP-B-01-8	LP-503	
Benzo(a)anthracene	0.087	0.064	30
Chrysene	0.098	0.079	21
Benzo(a)pyrene	0.11	0.080	32
Benzo(b)fluoranthene	0.12	0.086	33
Benzo(k)fluoranthene	0.045	0.034	28
Indeno(1,2,3-cd)pyrene	0.053	0.040	28
Dibenzo(a,h)anthracene	0.011	0.01U	Not calculable

XI. Internal Standards

Internal standards data were not reviewed for Stage 2A validation.

XII. Compound Quantitation

Raw data were not reviewed for Stage 2A validation.

XIII. Target Compound Identifications

Raw data were not reviewed for Stage 2A validation.

XIV. System Performance

Raw data were not reviewed for Stage 2A validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG 006275

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG 006275

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Field Blank Data Qualification Summary - SDG 006275

No Sample Data Qualified in this SDG

LDC #: 48734E2b

SDG #: 006275

Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET

Stage 2A

Date: 08/13/20

Page: 1 of 1

Reviewer: VT

2nd Reviewer:

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270E-SIM)

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.	GC/MS Instrument performance check	N	
III.	Initial calibration/ICV	N/N	
IV.	Continuing calibration	N	
V.	Laboratory Blanks	A	
VI.	Field blanks	N	
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	N	Non client
IX.	Laboratory control samples	A	LCS
X.	Field duplicates	SW	D= 4+6
XI.	Internal standards	N	
XII.	Compound quantitation RL/LOQ/LODs	N	Dry weight basis
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	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	LP-S-01-6.5		006275-01	Soil	06/17/20
2	LP-S-02-6.5		006275-02	Soil	06/17/20
3	LP-S-03-6.5		006275-03	Soil	06/17/20
4	LP-B-01-8	D	006275-04	Soil	06/17/20
5	LP-S-10-6.5		006275-05	Soil	06/17/20
6	LP-503	D	006275-06	Soil	06/17/20
7					
8					
9					

Notes:

1	00-1408MB2 115							

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS SVOA

A. Phenol	CC. Dimethylphthalate	EEE. Bis(2-ethylhexyl)phthalate	GGGG. C30-Hopane	I1. Methyl methanesulfonate
B. Bis (2-chloroethyl) ether	DD. Acenaphthylene	FFF. Di-n-octylphthalate	HHHH. 1-Methylphenanthrene	J1. Ethyl methanesulfonate
C. 2-Chlorophenol	EE. 2,6-Dinitrotoluene	GGG. Benzo(b)fluoranthene	IIII. 1,4-Dioxane	K1. o,o',o''-Triethylphosphorothioate
D. 1,3-Dichlorobenzene	FF. 3-Nitroaniline	HHH. Benzo(k)fluoranthene	JJJJ. Acetophenone	L1. n-Phenylene diamine
E. 1,4-Dichlorobenzene	GG. Acenaphthene	III. Benzo(a)pyrene	KKKK. Atrazine	M1. 1,4-Naphthoquinone
F. 1,2-Dichlorobenzene	HH. 2,4-Dinitrophenol	JJJ. Indeno(1,2,3-cd)pyrene	LLLL. Benzaldehyde	N1. N-Nitro-o-toluidine
G. 2-Methylphenol	II. 4-Nitrophenol	KKK. Dibenz(a,h)anthracene	MMMM. Caprolactam	O1. 1,3,5-Trinitrobenzene
H. 2,2'-Oxybis(1-chloropropane)	JJ. Dibenzofuran	LLL. Benzo(g,h,i)perylene	NNNN. 2,6-Dichlorophenol	P1. Pentachlorobenzene
I. 4-Methylphenol	KK. 2,4-Dinitrotoluene	MMM. Bis(2-Chloroisopropyl)ether	OOOO. 1,2-Diphenylhydrazine	Q1. 4-Aminobiphenyl
J. N-Nitroso-di-n-propylamine	LL. Diethylphthalate	NNN. Aniline	PPPP. 3-Methylphenol	R1. 2-Naphthylamine
K. Hexachloroethane	MM. 4-Chlorophenyl-phenyl ether	OOO. N-Nitrosodimethylamine	QQQQ. 3&4-Methylphenol	S1. Triphenylene
L. Nitrobenzene	NN. Fluorene	PPP. Benzoic Acid	RRRR. 4-Dimethyldibenzothiophene (4MDT)	T1. Octachlorostyrene
M. Isophorone	OO. 4-Nitroaniline	QQQ. Benzyl alcohol	SSSS. 2/3-Dimethyldibenzothiophene (4MDT)	U1. Famphur
N. 2-Nitrophenol	PP. 4,6-Dinitro-2-methylphenol	RRR. Pyridine	TTTT. 1-Methyldibenzothiophene (1MDT)	V1. 1,4-phenylenediamine
O. 2,4-Dimethylphenol	QQ. N-Nitrosodiphenylamine	SSS. Benzidine	UUUU.. 2,3,4,6-Tetrachlorophenol	W1. Methapyrilene
P. Bis(2-chloroethoxy)methane	RR. 4-Bromophenyl-phenylether	TTT. 1-Methylnaphthalene	VVVV. 1,2,4,5-Tetrachlorobenzene	X1. Pentachloroethane
Q. 2,4-Dichlorophenol	SS. Hexachlorobenzene	UUU.Benzo(b)thiophene	WWWW.. 2-Picoline	Y1. 3,3'-Dimethylbenzidine
R. 1,2,4-Trichlorobenzene	TT. Pentachlorophenol	VVV.Benzonaphthothiophene	XXXX. 3-Methylcholanthrene	Z1. o-Toluidine
S. Naphthalene	UU. Phenanthrene	WWW.Benzo(e)pyrene	YYYY. a,a-Dimethylphenethylamine	A2. 1-Naphthylamine
T. 4-Chloroaniline	VV. Anthracene	XXX. 2,6-Dimethylnaphthalene	ZZZZ. Hexachloropropene	B2. 4-Aminobiphenyl
U. Hexachlorobutadiene	WW. Carbazole	YYY. 2,3,5-Trimethylnaphthalene	A1. N-Nitrosodiethylamine	C2. 4-Nitroquinoline-1-oxide
V. 4-Chloro-3-methylphenol	XX. Di-n-butylphthalate	ZZZ. Perylene	B1. N-Nitrosodi-n-butylamine	D2. Hexachloropene
W. 2-Methylnaphthalene	YY. Fluoranthene	AAAA. Dibenzothiophene	C1. N-Nitrosomethylethylamine	E2. Bis (2-chloro-1-methylethyl) ether
X. Hexachlorocyclopentadiene	ZZ. Pyrene	BBBB. Benzo(a)fluoranthene	D1. N-Nitrosomorpholine	F2. Bifenthrin
Y. 2,4,6-Trichlorophenol	AAA. Butylbenzylphthalate	CCCC. Benzo(b)fluorene	E1. N-Nitrosopyrrolidine	G2. Cyfluthrin
Z. 2,4,5-Trichlorophenol	BBB. 3,3'-Dichlorobenzidine	DDDD. cis/trans-Decalin	F1. Phenacetin	H2. Cypermethrin
AA. 2-Chloronaphthalene	CCC. Benzo(a)anthracene	EEEE. 1,1'-Biphenyl	G1. 2-Acetylaminofluorene	I2. Permethrin (cis/trans)
BB. 2-Nitroaniline	DDD. Chrysene	FFFF. Retene	H1. Pronamide	J2. 5-Nitro-o-toluidine

LDC#:48734E2b **VALIDATION FINDINGS WORKSHEET** Page:_1_of_1_
Field Duplicates Reviewer:__LT____
2nd Reviewer:

METHOD: GC/MS PAHs (EPA SW846 Method 8270E SIM)

Compound	Concentration (mg/kg)		RPD
	4	6	
CCC	0.087	0.064	30
DDD	0.098	0.079	21
III	0.11	0.080	32
GGG	0.12	0.086	33
HHH	0.045	0.034	28
JJJ	0.053	0.040	28
KKK	0.011	0.01U	NC

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: August 13, 2020

Parameters: Mercury

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 006275

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
LP-S-01-6.5	006275-01	Soil	06/17/20
LP-S-02-6.5	006275-02	Soil	06/17/20
LP-S-03-6.5	006275-03	Soil	06/17/20
LP-B-01-8	006275-04	Soil	06/17/20
LP-S-10-6.5	006275-05	Soil	06/17/20
LP-503	006275-06	Soil	06/17/20
LP-503MS	006275-06MS	Soil	06/17/20
LP-503MSD	006275-06MSD	Soil	06/17/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 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:

Mercury by Environmental Protection Agency (EPA) Method 1631E

All sample results were subjected to Stage 2A 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. Instrument Calibration

Instrument calibration data were not reviewed for Stage 2A validation.

III. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

IV. Field Blanks

No field blanks were identified in this SDG.

V. 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.

VI. 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.

VII. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

VIII. Field Duplicates

Samples LP-B-01-8 and LP-503 were identified as field duplicates. No results were detected in any of the samples.

IX. Sample Result Verification

Raw data were not reviewed for Stage 2A validation.

X. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Mercury - Data Qualification Summary - SDG 006275

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Mercury - Laboratory Blank Data Qualification Summary - SDG 006275

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Mercury - Field Blank Data Qualification Summary - SDG 006275

No Sample Data Qualified in this SDG

LDC #: 48734E4c
SDG #: 006275
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 8/12/2020
Page: 1 of 1
Reviewer: DM
2nd Reviewer:

METHOD: Mercury (EPA Method 1631E)

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.	Instrument Calibration	N	
III.	Laboratory Blanks	A	
IV.	Field Blanks	N	
V.	Matrix Spike/Matrix Spike Duplicates	A	
VI.	Duplicate sample analysis	N	
VII.	Laboratory control samples	A	LCS
VIII.	Field Duplicates	ND	(4,6)
IX.	Sample Result Verification	N	
X.	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	LP-S-01-6.5	006275-01	Soil	06/17/20
2	LP-S-02-6.5	006275-02	Soil	06/17/20
3	LP-S-03-6.5	006275-03	Soil	06/17/20
4	LP-B-01-8	006275-04	Soil	06/17/20
5	LP-S-10-6.5	006275-05	Soil	06/17/20
6	LP-503	006275-06	Soil	06/17/20
7	LP-503MS	006275-06MS	Soil	06/17/20
8	LP-503MSD	006275-06MSD	Soil	06/17/20
9				
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12				
13				
14				
15				
16				
17				

Notes:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: August 17, 2020

Parameters: Total Petroleum Hydrocarbons as Gasoline

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 006275

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
LP-S-01-6.5	006275-01	Soil	06/17/20
LP-S-02-6.5	006275-02	Soil	06/17/20
LP-S-03-6.5	006275-03	Soil	06/17/20
LP-B-01-8	006275-04	Soil	06/17/20
LP-S-10-6.5	006275-05	Soil	06/17/20
LP-503	006275-06	Soil	06/17/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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:

Total Petroleum Hydrocarbons (TPH) as Gasoline by NWTPH-Gx

All sample results were subjected to Stage 2A 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 not 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

Initial calibration data were not reviewed for Stage 2A validation.

III. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

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

Samples LP-B-01-8 and LP-503 were identified as field duplicates. No results were detected in any of the samples.

X. Compound Quantitation

Raw data were not reviewed for Stage 2A validation.

XI. Target Compound Identifications

Raw data were not reviewed for Stage 2A validation.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Total Petroleum Hydrocarbons as Gasoline - Data Qualification Summary - SDG 006275

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Total Petroleum Hydrocarbons as Gasoline - Laboratory Blank Data Qualification Summary - SDG 006275

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Total Petroleum Hydrocarbons as Gasoline - Field Blank Data Qualification Summary - SDG 006275

No Sample Data Qualified in this SDG

LDC #: 48734E7 **VALIDATION COMPLETENESS WORKSHEET** Date: 8/13/20
SDG #: 006275 Stage 2A Page: 1 of 1
Laboratory: Friedman & Bruya, Inc. Reviewer: LT
2nd Reviewer:

METHOD: GC TPH as Gasoline (NWTPH-Gx)

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	N/N	
III.	Continuing calibration	N	
IV.	Laboratory Blanks	A	
V.	Field blanks	N	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Non client
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	MD	D = 4+6
X.	Compound quantitation RL/LOQ/LODs	N	Dry weight basis
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	LP-S-01-6.5		006275-01	Soil	06/17/20
2	LP-S-02-6.5		006275-02	Soil	06/17/20
3	LP-S-03-6.5		006275-03	Soil	06/17/20
4	LP-B-01-8	D	006275-04	Soil	06/17/20
5	LP-S-10-6.5		006275-05	Soil	06/17/20
6	LP-503	D	006275-06	Soil	06/17/20
7					
8					
9					
10					
11					
12					

Notes:

1	00-B12MB2						

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: August 17, 2020

Parameters: Total Petroleum Hydrocarbons as Extractables

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 006275

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
LP-S-01-6.5	006275-01	Soil	06/17/20
LP-S-02-6.5	006275-02	Soil	06/17/20
LP-S-03-6.5	006275-03	Soil	06/17/20
LP-B-01-8	006275-04	Soil	06/17/20
LP-S-10-6.5	006275-05	Soil	06/17/20
LP-503	006275-06	Soil	06/17/20
LP-S-01-6.5MS	006275-01MS	Soil	06/17/20
LP-S-01-6.5MSD	006275-01MSD	Soil	06/17/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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:

Total Petroleum Hydrocarbons (TPH) as Extractables by NWTPH-Dx

All sample results were subjected to Stage 2A 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 not 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

Initial calibration data were not reviewed for Stage 2A validation.

III. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

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) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

IX. Field Duplicates

Samples LP-B-01-8 and LP-503 were identified as field duplicates. No results were detected in any of the samples.

X. Compound Quantitation

Raw data were not reviewed for Stage 2A validation.

XI. Target Compound Identifications

Raw data were not reviewed for Stage 2A validation.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG 006275

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data Qualification Summary - SDG 006275

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Total Petroleum Hydrocarbons as Extractables - Field Blank Data Qualification Summary - SDG 006275

No Sample Data Qualified in this SDG

LDC #: 48734E8
SDG #: 006275
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 08/13/20
Page: 1 of 1
Reviewer: VT
2nd Reviewer:

METHOD: GC TPH as Extractables (NWTPH-Dx)

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	N/N	
III.	Continuing calibration	N	
IV.	Laboratory Blanks	A	
V.	Field blanks	N	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	(7,8)
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	ND	D = 4+6
X.	Compound quantitation RL/LOQ/LODs	N	Dry weight basis
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	LP-S-01-6.5		006275-01	Soil	06/17/20
2	LP-S-02-6.5		006275-02	Soil	06/17/20
3	LP-S-03-6.5		006275-03	Soil	06/17/20
4	LP-B-01-8	D	006275-04	Soil	06/17/20
5	LP-S-10-6.5		006275-05	Soil	06/17/20
6	LP-503	D	006275-06	Soil	06/17/20
7	LP-S-01-6.5MS		006275-01MS	Soil	06/17/20
8	LP-S-01-6.5MSD		006275-01MSD	Soil	06/17/20
9					
10					
11					
12					

Notes:

1	00-1413 MB							

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: August 17, 2020

Parameters: Polynuclear Aromatic Hydrocarbons

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 006294

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
LP-S-09-6.5	006294-01	Soil	06/18/20
LP-B-02-8	006294-02	Soil	06/18/20
LP-S-04-6.5	006294-03	Soil	06/18/20
LP-S-08-6.5	006294-04	Soil	06/18/20
LP-S-06-6.5	006294-05	Soil	06/18/20
LP-B-03-8	006294-06	Soil	06/18/20
LP-S-05-6.5	006294-07	Soil	06/18/20
LP-S-07-6.5	006294-08	Soil	06/18/20
LP-S-09-6.5MS	006294-01MS	Soil	06/18/20
LP-S-09-6.5MSD	006294-01MSD	Soil	06/18/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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:

Polynuclear Aromatic Hydrocarbons (PAHs) by Environmental Protection Agency (EPA) SW 846 Method 8270E in Selected Ion Monitoring (SIM) mode

All sample results were subjected to Stage 2A 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 and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Stage 2A validation.

III. Initial Calibration and Initial Calibration Verification

Initial calibration data were not reviewed for Stage 2A validation.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. 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)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	Flag	A or P
LP-S-09-6.5MS/MSD (LP-S-09-6.5)	Indeno(1,2,3-cd)pyrene Dibenzo(a,h)anthracene	16 (23-170) 20 (31-146)	14 (23-170) 18 (31-146)	J (all detects) J (all detects)	A

Relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	RPD (Limits)	Flag	A or P
LP-S-09-6.5MS/MSD (LP-S-09-6.5)	Benzo(a)anthracene	41 (≤20)	J (all detects)	A
	Chrysene	55 (≤20)	J (all detects)	
	Benzo(b)fluoranthene	91 (≤20)	J (all detects)	
	Benzo(k)fluoranthene	43 (≤20)	J (all detects)	
	Benzo(a)pyrene	69 (≤20)	J (all detects)	

IX. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Internal Standards

Internal standards data were not reviewed for Stage 2A validation.

XII. Compound Quantitation

Raw data were not reviewed for Stage 2A validation.

XIII. Target Compound Identifications

Raw data were not reviewed for Stage 2A validation.

XIV. System Performance

Raw data were not reviewed for Stage 2A validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method.

Due to MS/MSD %R and RPD, data were qualified as estimated in one sample.

No results were rejected in this SDG.

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG 006294

Sample	Compound	Flag	A or P	Reason
LP-S-09-6.5	Indeno(1,2,3-cd)pyrene Dibenzo(a,h)anthracene	J (all detects) J (all detects)	A	Matrix spike/Matrix spike duplicate (%R)
LP-S-09-6.5	Benzo(a)anthracene Chrysene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene	J (all detects) J (all detects) J (all detects) J (all detects) J (all detects)	A	Matrix spike/Matrix spike duplicate (RPD)

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG 006294

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Field Blank Data Qualification Summary - SDG 006294

No Sample Data Qualified in this SDG

LDC #: 48734F2b

SDG #: 006294

Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET

Stage 2A

Date: 8/13/20

Page: 1 of 1

Reviewer: CN

2nd Reviewer:

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270E-SIM)

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.	GC/MS Instrument performance check	N	
III.	Initial calibration/ICV	N/N	
IV.	Continuing calibration	N	
V.	Laboratory Blanks	A	
VI.	Field blanks	N	
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	SW	(9,10)
IX.	Laboratory control samples	A	LCS
X.	Field duplicates	N	
XI.	Internal standards	N	
XII.	Compound quantitation RL/LOQ/LODs	N	Dry weight basis
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	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	LP-S-09-6.5	006294-01	Soil	06/18/20
2	LP-B-02-8	006294-02	Soil	06/18/20
3	LP-S-04-6.5	006294-03	Soil	06/18/20
4	LP-S-08-6.5	006294-04	Soil	06/18/20
5	LP-S-06-6.5	006294-05	Soil	06/18/20
6	LP-B-03-8	006294-06	Soil	06/18/20
7	LP-S-05-6.5	006294-07	Soil	06/18/20
8	LP-S-07-6.5	006294-08	Soil	06/18/20
9	LP-S-09-6.5MS	006294-01MS	Soil	06/18/20
10	LP-S-09-6.5MSD	006294-01MSD	Soil	06/18/20
11				

Notes:

1	00-146MB						

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS SVOA

A. Phenol	CC. Dimethylphthalate	EEE. Bis(2-ethylhexyl)phthalate	GGGG. C30-Hopane	I1. Methyl methanesulfonate
B. Bis (2-chloroethyl) ether	DD. Acenaphthylene	FFF. Di-n-octylphthalate	HHHH. 1-Methylphenanthrene	J1. Ethyl methanesulfonate
C. 2-Chlorophenol	EE. 2,6-Dinitrotoluene	GGG. Benzo(b)fluoranthene	IIII. 1,4-Dioxane	K1. o,o',o''-Triethylphosphorothioate
D. 1,3-Dichlorobenzene	FF. 3-Nitroaniline	HHH. Benzo(k)fluoranthene	JJJJ. Acetophenone	L1. n-Phenylene diamine
E. 1,4-Dichlorobenzene	GG. Acenaphthene	III. Benzo(a)pyrene	KKKK. Atrazine	M1. 1,4-Naphthoquinone
F. 1,2-Dichlorobenzene	HH. 2,4-Dinitrophenol	JJJ. Indeno(1,2,3-cd)pyrene	LLLL. Benzaldehyde	N1. N-Nitro-o-toluidine
G. 2-Methylphenol	II. 4-Nitrophenol	KKK. Dibenz(a,h)anthracene	MMMM. Caprolactam	O1. 1,3,5-Trinitrobenzene
H. 2,2'-Oxybis(1-chloropropane)	JJ. Dibenzofuran	LLL. Benzo(g,h,i)perylene	NNNN. 2,6-Dichlorophenol	P1. Pentachlorobenzene
I. 4-Methylphenol	KK. 2,4-Dinitrotoluene	MMM. Bis(2-Chloroisopropyl)ether	OOOO. 1,2-Diphenylhydrazine	Q1. 4-Aminobiphenyl
J. N-Nitroso-di-n-propylamine	LL. Diethylphthalate	NNN. Aniline	PPPP. 3-Methylphenol	R1. 2-Naphthylamine
K. Hexachloroethane	MM. 4-Chlorophenyl-phenyl ether	OOO. N-Nitrosodimethylamine	QQQQ. 3&4-Methylphenol	S1. Triphenylene
L. Nitrobenzene	NN. Fluorene	PPP. Benzoic Acid	RRRR. 4-Dimethyldibenzothiophene (4MDT)	T1. Octachlorostyrene
M. Isophorone	OO. 4-Nitroaniline	QQQ. Benzyl alcohol	SSSS. 2/3-Dimethyldibenzothiophene (4MDT)	U1. Famphur
N. 2-Nitrophenol	PP. 4,6-Dinitro-2-methylphenol	RRR. Pyridine	TTTT. 1-Methyldibenzothiophene (1MDT)	V1. 1,4-phenylenediamine
O. 2,4-Dimethylphenol	QQ. N-Nitrosodiphenylamine	SSS. Benzidine	UUUU.. 2,3,4,6-Tetrachlorophenol	W1. Methapyrilene
P. Bis(2-chloroethoxy)methane	RR. 4-Bromophenyl-phenylether	TTT. 1-Methylnaphthalene	VVVV. 1,2,4,5-Tetrachlorobenzene	X1. Pentachloroethane
Q. 2,4-Dichlorophenol	SS. Hexachlorobenzene	UUU.Benzo(b)thiophene	WWWW.. 2-Picoline	Y1. 3,3'-Dimethylbenzidine
R. 1,2,4-Trichlorobenzene	TT. Pentachlorophenol	VVV.Benzonaphthothiophene	XXXX. 3-Methylcholanthrene	Z1. o-Toluidine
S. Naphthalene	UU. Phenanthrene	WWW.Benzo(e)pyrene	YYYY. a,a-Dimethylphenethylamine	A2. 1-Naphthylamine
T. 4-Chloroaniline	VV. Anthracene	XXX. 2,6-Dimethylnaphthalene	ZZZZ. Hexachloropropene	B2. 4-Aminobiphenyl
U. Hexachlorobutadiene	WW. Carbazole	YYY. 2,3,5-Trimethylnaphthalene	A1. N-Nitrosodiethylamine	C2. 4-Nitroquinoline-1-oxide
V. 4-Chloro-3-methylphenol	XX. Di-n-butylphthalate	ZZZ. Perylene	B1. N-Nitrosodi-n-butylamine	D2. Hexachloropene
W. 2-Methylnaphthalene	YY. Fluoranthene	AAAA. Dibenzothiophene	C1. N-Nitrosomethylethylamine	E2. Bis (2-chloro-1-methylethyl) ether
X. Hexachlorocyclopentadiene	ZZ. Pyrene	BBBB. Benzo(a)fluoranthene	D1. N-Nitrosomorpholine	F2. Bifenthrin
Y. 2,4,6-Trichlorophenol	AAA. Butylbenzylphthalate	CCCC. Benzo(b)fluorene	E1. N-Nitrosopyrrolidine	G2. Cyfluthrin
Z. 2,4,5-Trichlorophenol	BBB. 3,3'-Dichlorobenzidine	DDDD. cis/trans-Decalin	F1. Phenacetin	H2. Cypermethrin
AA. 2-Chloronaphthalene	CCC. Benzo(a)anthracene	EEEE. 1,1'-Biphenyl	G1. 2-Acetylaminofluorene	I2. Permethrin (cis/trans)
BB. 2-Nitroaniline	DDD. Chrysene	FFFF. Retene	H1. Pronamide	J2. 5-Nitro-o-toluidine

LDC #: 48734F2b

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: LT
2nd Reviewer:

METHOD: GC/MS PAHs (EPA SW 846 Method 8270E SIM)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y x N__ N/A__ Were a matrix spike (MS) and matrix spike duplicate (MSD) or duplicate sample analyzed for each matrix in this SDG?

Y x N__ N/A__ Was a MS/MSD analyzed every 20 samples of each matrix?

Y__ N x N/A__ Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

#	Date	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		9/10	JJJ	16 (23 - 170)	14 (23 - 170)		1 (DET)	J/UJ/A
			KKK	20 (31 -146)	18 (31 -146)		↓	↓
			CCC			41 (≤20)	↓	J/A DETS
			DDD			55 (≤20)	↓	↓
			GGG			91 (≤20)	↓	↓
			HHH			43 (≤20)	↓	↓
			III			69 (≤20)	↓	↓

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: August 13, 2020

Parameters: Mercury

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 006294

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
LP-S-09-6.5	006294-01	Soil	06/18/20
LP-B-02-8	006294-02	Soil	06/18/20
LP-S-04-6.5	006294-03	Soil	06/18/20
LP-S-08-6.5	006294-04	Soil	06/18/20
LP-S-06-6.5	006294-05	Soil	06/18/20
LP-B-03-8	006294-06	Soil	06/18/20
LP-S-05-6.5	006294-07	Soil	06/18/20
LP-S-07-6.5	006294-08	Soil	06/18/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 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:

Mercury by Environmental Protection Agency (EPA) Method 1631E

All sample results were subjected to Stage 2A 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. Instrument Calibration

Instrument calibration data were not reviewed for Stage 2A validation.

III. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

IV. Field Blanks

No field blanks were identified in this SDG.

V. 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.

VI. 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.

VII. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

VIII. Field Duplicates

No field duplicates were identified in this SDG.

IX. Sample Result Verification

Raw data were not reviewed for Stage 2A validation.

X. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Mercury - Data Qualification Summary - SDG 006294

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Mercury - Laboratory Blank Data Qualification Summary - SDG 006294

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Mercury - Field Blank Data Qualification Summary - SDG 006294

No Sample Data Qualified in this SDG

LDC #: 48734F4c
SDG #: 006294
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 9/12/2020
Page: 1 of 1
Reviewer: DM
2nd Reviewer:

METHOD: Mercury (EPA Method 1631E)

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.	Instrument Calibration	N	
III.	Laboratory Blanks	A	
IV.	Field Blanks	N	
V.	Matrix Spike/Matrix Spike Duplicates	N	
VI.	Duplicate sample analysis	N	
VII.	Laboratory control samples	A	LCS
VIII.	Field Duplicates	N	
IX.	Sample Result Verification	N	
X.	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	LP-S-09-6.5	006294-01	Soil	06/18/20
2	LP-B-02-8	006294-02	Soil	06/18/20
3	LP-S-04-6.5	006294-03	Soil	06/18/20
4	LP-S-08-6.5	006294-04	Soil	06/18/20
5	LP-S-06-6.5	006294-05	Soil	06/18/20
6	LP-B-03-8	006294-06	Soil	06/18/20
7	LP-S-05-6.5	006294-07	Soil	06/18/20
8	LP-S-07-6.5	006294-08	Soil	06/18/20
9				
10				
11				
12				
13				
14				
15				
16				
17				

Notes:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: August 17, 2020

Parameters: Total Petroleum Hydrocarbons as Gasoline

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 006294

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
LP-S-09-6.5	006294-01	Soil	06/18/20
LP-B-02-8	006294-02	Soil	06/18/20
LP-S-04-6.5	006294-03	Soil	06/18/20
LP-S-08-6.5	006294-04	Soil	06/18/20
LP-S-06-6.5	006294-05	Soil	06/18/20
LP-B-03-8	006294-06	Soil	06/18/20
LP-S-05-6.5	006294-07	Soil	06/18/20
LP-S-07-6.5	006294-08	Soil	06/18/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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:

Total Petroleum Hydrocarbons (TPH) as Gasoline by NWTPH-Gx

All sample results were subjected to Stage 2A 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 not 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

Initial calibration data were not reviewed for Stage 2A validation.

III. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

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 Stage 2A validation.

XI. Target Compound Identifications

Raw data were not reviewed for Stage 2A validation.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Total Petroleum Hydrocarbons as Gasoline - Data Qualification Summary - SDG 006294

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Total Petroleum Hydrocarbons as Gasoline - Laboratory Blank Data Qualification Summary - SDG 006294

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Total Petroleum Hydrocarbons as Gasoline - Field Blank Data Qualification Summary - SDG 006294

No Sample Data Qualified in this SDG

LDC #: 48734F7 **VALIDATION COMPLETENESS WORKSHEET** Date: 08/04/20
SDG #: 006294 Stage 2A Page: 1 of 1
Laboratory: Friedman & Bruya, Inc. Reviewer: LT
2nd Reviewer:

METHOD: GC TPH as Gasoline (NWTPH-Gx)

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	N/N	
III.	Continuing calibration	N	
IV.	Laboratory Blanks	A	
V.	Field blanks	N	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Non client LCS
VIII.	Laboratory control samples	A	
IX.	Field duplicates	N	
X.	Compound quantitation RL/LOQ/LODs	N	Dry weight basis
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	LP-S-09-6.5	006294-01	Soil	06/18/20
2	LP-B-02-8	006294-02	Soil	06/18/20
3	LP-S-04-6.5	006294-03	Soil	06/18/20
4	LP-S-08-6.5	006294-04	Soil	06/18/20
5	LP-S-06-6.5	006294-05	Soil	06/18/20
6	LP-B-03-8	006294-06	Soil	06/18/20
7	LP-S-05-6.5	006294-07	Soil	06/18/20
8	LP-S-07-6.5	006294-08	Soil	06/18/20
9				
10				
11				
12				

Notes:

1	00-1312 MB2						

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: August 17, 2020

Parameters: Total Petroleum Hydrocarbons as Extractables

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 006294

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
LP-S-09-6.5	006294-01	Soil	06/18/20
LP-B-02-8	006294-02	Soil	06/18/20
LP-S-04-6.5	006294-03	Soil	06/18/20
LP-S-08-6.5	006294-04	Soil	06/18/20
LP-S-06-6.5	006294-05	Soil	06/18/20
LP-B-03-8	006294-06	Soil	06/18/20
LP-S-05-6.5	006294-07	Soil	06/18/20
LP-S-07-6.5	006294-08	Soil	06/18/20
LP-S-09-6.5MS	006294-01MS	Soil	06/18/20
LP-S-09-6.5MSD	006294-01MSD	Soil	06/18/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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:

Total Petroleum Hydrocarbons (TPH) as Extractables by NWTPH-Dx

All sample results were subjected to Stage 2A 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 not 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

Initial calibration data were not reviewed for Stage 2A validation.

III. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

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) 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 Stage 2A validation.

XI. Target Compound Identifications

Raw data were not reviewed for Stage 2A validation.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG 006294

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data Qualification Summary - SDG 006294

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Total Petroleum Hydrocarbons as Extractables - Field Blank Data Qualification Summary - SDG 006294

No Sample Data Qualified in this SDG

LDC #: 48734F8
SDG #: 006294
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 08/13/20
Page: 1 of 1
Reviewer: LC
2nd Reviewer:

METHOD: GC TPH as Extractables (NWTPH-Dx)

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	N/N	
III.	Continuing calibration	N	
IV.	Laboratory Blanks	A	
V.	Field blanks	N	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	(9,10)
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	N	
X.	Compound quantitation RL/LOQ/LODs	N	Dry weight basis
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	LP-S-09-6.5	006294-01	Soil	06/18/20
2	LP-B-02-8	006294-02	Soil	06/18/20
3	LP-S-04-6.5	006294-03	Soil	06/18/20
4	LP-S-08-6.5	006294-04	Soil	06/18/20
5	LP-S-06-6.5	006294-05	Soil	06/18/20
6	LP-B-03-8	006294-06	Soil	06/18/20
7	LP-S-05-6.5	006294-07	Soil	06/18/20
8	LP-S-07-6.5	006294-08	Soil	06/18/20
9	LP-S-09-6.5MS	006294-01MS	Soil	06/18/20
10	LP-S-09-6.5MSD	006294-01MSD	Soil	06/18/20
11				
12				

Notes:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: August 13, 2020

Parameters: Metals

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 006358

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
PB-B-6-S-09-6-062220	006358-01	Soil	06/22/20
PB-B-6-S-09-4-062220	006358-02	Soil	06/22/20
PB-B-6-S-10-6-062220	006358-03	Soil	06/22/20
PB-B-6-S-10-4-062220	006358-04	Soil	06/22/20
PB-B-6-S-11-6-062220	006358-05	Soil	06/22/20
PB-B-6-S-11-9-062220	006358-06	Soil	06/22/20
PB-B-6-S-15-6-062220	006358-07	Soil	06/22/20
PB-B-6-B-02-11-062220	006358-08	Soil	06/22/20
PB-B-6-B-03-11-062220	006358-09	Soil	06/22/20
PB-B-6-S-12-6-062220	006358-10	Soil	06/22/20
PB-B-6-S-12-9-062220	006358-11	Soil	06/22/20
PB-B-6-S-13-6-062220	006358-12	Soil	06/22/20
PB-B-6-S-13-9-062220	006358-13	Soil	06/22/20
PB-B-6-S-14-6-062220	006358-14	Soil	06/22/20
PB-B-6-S03-062220	006358-15	Soil	06/22/20
PB-B-6-S-14-9-062220	006358-16	Soil	06/22/20
PB-B-6-S-09-9-062220MS	006358-01MS	Soil	06/22/20
PB-B-6-S-09-9-062220MSD	006358-01MSD	Soil	06/22/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 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 by Environmental Protection Agency (EPA) SW 846 Method 6020B
Mercury by EPA Method 1631E

All sample results were subjected to Stage 2A 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

ICP-MS tune data were not reviewed for Stage 2A validation.

III. Instrument Calibration

Instrument calibration data were not reviewed for Stage 2A validation.

IV. ICP Interference Check Sample Analysis

ICP Interference check sample (ICS) analysis data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the methods. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

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 with the following exceptions:

Spike ID (Associated Samples)	Analyte	RPD (Limits)	Flag	A or P
PB-B-6-S-09-9-062220MS/MSD (All samples in SDG 006358)	Mercury	36 (≤20)	J (all detects) UJ (all non-detects)	A

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 was not performed for this SDG.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the methods. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

Samples PB-B-6-S-14-6-062220 and PB-B-6-S03-062220 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/Kg)		RPD
	PB-B-6-S-14-6-062220	PB-B-6-S03-062220	
Copper	31.7	42.7	30
Mercury	3.1	7.2	80

XII. Internal Standards (ICP-MS)

Internal standards data were not reviewed for Stage 2A validation.

XIII. Sample Result Verification

Raw data were not reviewed for Stage 2A validation.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods.

Due to MS/MSD RPD, data were qualified as estimated in sixteen samples.

No results were rejected in this SDG.

Kimberly-Clark Upland Area
Metals - Data Qualification Summary - SDG 006358

Sample	Analyte	Flag	A or P	Reason
PB-B-6-S-09-6-062220 PB-B-6-S-09-4-062220 PB-B-6-S-10-6-062220 PB-B-6-S-10-4-062220 PB-B-6-S-11-6-062220 PB-B-6-S-11-9-062220 PB-B-6-S-15-6-062220 PB-B-6-B-02-11-062220 PB-B-6-B-03-11-062220 PB-B-6-S-12-6-062220 PB-B-6-S-12-9-062220 PB-B-6-S-13-6-062220 PB-B-6-S-13-9-062220 PB-B-6-S-14-6-062220 PB-B-6-S03-062220 PB-B-6-S-14-9-062220	Mercury	J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (RPD)

Kimberly-Clark Upland Area
Metals - Laboratory Blank Data Qualification Summary - SDG 006358

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Metals - Field Blank Data Qualification Summary - SDG 006358

No Sample Data Qualified in this SDG

LDC #: 48734G4a
SDG #: 006358
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 8/12/2020
Page: 1 of 2
Reviewer: DM
2nd Reviewer:

METHOD: Cr, Hg (EPA SW 846 Method 6020B/EPA Method 1631E)

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	N	
III.	Instrument Calibration	N	
IV.	ICP Interference Check Sample (ICS) Analysis	N	
V.	Laboratory Blanks	A	
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	SW	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	N	
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	NSW	(14,15)
XII.	Internal Standard (ICP-MS)	N	
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	PB-B-6-S-09-6-062220	006358-01	Soil	06/22/20
2	PB-B-6-S-09-4-062220	006358-02	Soil	06/22/20
3	PB-B-6-S-10-6-062220	006358-03	Soil	06/22/20
4	PB-B-6-S-10-4-062220	006358-04	Soil	06/22/20
5	PB-B-6-S-11-6-062220	006358-05	Soil	06/22/20
6	PB-B-6-S-11-9-062220	006358-06	Soil	06/22/20
7	PB-B-6-S-15-6-062220	006358-07	Soil	06/22/20
8	PB-B-6-B-02-11-062220	006358-08	Soil	06/22/20
9	PB-B-6-B-03-11-062220	006358-09	Soil	06/22/20
10	PB-B-6-S-12-6-062220	006358-10	Soil	06/22/20
11	PB-B-6-S-12-9-062220	006358-11	Soil	06/22/20
12	PB-B-6-S-13-6-062220	006358-12	Soil	06/22/20
13	PB-B-6-S-13-9-062220	006358-13	Soil	06/22/20
14	PB-B-6-S-14-6-062220	006358-14	Soil	06/22/20
15	PB-B-6-S03-062220	006358-15	Soil	06/22/20

LDC #: 48734G4a

SDG #: 006358

Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET

Stage 2A

Date: 8/12/2020

Page: 1 of 1

Reviewer: DTM

2nd Reviewer:

METHOD: Cr, Hg (EPA SW 846 Method 6020B/EPA Method 1631E)

	Client ID	Lab ID	Matrix	Date
16	PB-B-6-S-14-9-062220	006358-16	Soil	06/22/20
17	PB-B-6-S-09-9-062220MS	006358-01MS	Soil	06/22/20
18	PB-B-6-S-09-9-062220MSD	006358-01MSD	Soil	06/22/20
19				
20				
21				

Notes:

LDC #: 48734G4G

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: DTM
2nd reviewer:

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-116	S	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, (Cu), Fe, Pb, Li, Mg, Mo, Mn, (Hg), Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
OCF-1B	S	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, (Cu), Fe, Pb, Li, Mg, Mo, Mn, (Hg), Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
Analysis Method		
ICP		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
ICP-MS		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
GFAA		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn

Comments: Mercury by CVAA if performed

LDC #: 48734G4a

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: DTM
2nd Reviewer:

METHOD: Trace metals (EPA SW 846 Method 6020/6010/7470)

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
	17/18	S	Hg			36	ALL	J/UJ/A (det)

Comments:

LDC#: 48734G4a

VALIDATION FINDINGS WORKSHEET

Field Duplicates

Reviewer: DTM

2nd Reviewer:

METHOD: Metals (EPA Method 6010/6020/7000)

Analyte	Concentration (mg/Kg)		RPD
	14	26	
Copper	31.7	42.7	30
Mercury	3.1	7.2	80

V:\Darionna\FIELD DUPLICATES\Field Duplicates\FD_inorganic\2020\48734G4a.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: August 17, 2020

Parameters: Polynuclear Aromatic Hydrocarbons

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 006387

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
LP-S-17-6.5-062320	006387-02	Soil	06/23/20
LP-B-03-9-062320	006387-03	Soil	06/23/20
LP-S-11-6.5-062320	006387-04	Soil	06/23/20
LP-S-12-6.5-062320	006387-05	Soil	06/23/20
LP-S-13-6.5-062320	006387-06	Soil	06/23/20
LP-S-14-6.5-062320	006387-07	Soil	06/23/20
LP-S-15-6.5-062320	006387-08	Soil	06/23/20
CNW-OB-01-062320	006387-09	Soil	06/23/20
CNW-OB-02-062320	006387-10	Soil	06/23/20
CNW-OB-03-062320	006387-11	Soil	06/23/20
CNW-B-01-6-062320	006387-12	Soil	06/23/20
CNW-B-02-6-062320	006387-13	Soil	06/23/20
CNW-B-03-6-062320	006387-14	Soil	06/23/20
CNW-S-01-5-062320	006387-15	Soil	06/23/20
CNW-S-02-5-062320	006387-16	Soil	06/23/20
CNW-S-03-5-062320	006387-17	Soil	06/23/20
CNW-S-04-5-062320	006387-18	Soil	06/23/20
CNW-S04-062320	006387-19	Soil	06/23/20
CNW-S-05-5-062320	006387-20	Soil	06/23/20
CNW-S-06-5-062320	006387-21	Soil	06/23/20
CNW-S-07-5-062320	006387-22	Soil	06/23/20
CNW-S-08-5-062320	006387-23	Soil	06/23/20
CNW-S-01-5-062320MS	006387-15MS	Soil	06/23/20
CNW-S-01-5-062320MSD	006387-15MSD	Soil	06/23/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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:

Polynuclear Aromatic Hydrocarbons (PAHs) by Environmental Protection Agency (EPA) SW 846 Method 8270E in Selected Ion Monitoring (SIM) mode

All sample results were subjected to Stage 2A 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 and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Stage 2A validation.

III. Initial Calibration and Initial Calibration Verification

Initial calibration data were not reviewed for Stage 2A validation.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. 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.

IX. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

X. Field Duplicates

Samples CNW-S-03-5-062320 and CNW-S04-062320 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Compound	Concentration (mg/Kg)		RPD
	CNW-S-03-5-062320	CNW-S04-062320	
Phenanthrene	0.01U	0.019	Not calculable
Fluoranthene	0.01U	0.022	Not calculable
Pyrene	0.01U	0.025	Not calculable
Benzo(a)anthracene	0.01U	0.016	Not calculable
Chrysene	0.01U	0.014	Not calculable
Benzo(a)pyrene	0.01U	0.013	Not calculable
Benzo(b)fluoranthene	0.01U	0.014	Not calculable

XI. Internal Standards

Internal standards data were not reviewed for Stage 2A validation.

XII. Compound Quantitation

Raw data were not reviewed for Stage 2A validation.

XIII. Target Compound Identifications

Raw data were not reviewed for Stage 2A validation.

XIV. System Performance

Raw data were not reviewed for Stage 2A validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG 006387

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG 006387

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Field Blank Data Qualification Summary - SDG 006387

No Sample Data Qualified in this SDG

LDC #: 48734H2b **VALIDATION COMPLETENESS WORKSHEET** Date: 08/13/20
SDG #: 006387 Stage 2A Page: 1 of 2
Laboratory: Friedman & Bruya, Inc. Reviewer: VT
2nd Reviewer:

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270E-SIM)

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.	GC/MS Instrument performance check	N	
III.	Initial calibration/ICV	N/N	
IV.	Continuing calibration	N	
V.	Laboratory Blanks	A	
VI.	Field blanks	N	
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	A	(23,24)
IX.	Laboratory control samples	A	LCS
X.	Field duplicates	SW	D = 16+18
XI.	Internal standards	N	
XII.	Compound quantitation RL/LOQ/LODs	N	Dry weight basis
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
SW = See worksheet FB = Field blank EB = Equipment blank

	Client ID	Lab ID	Matrix	Date
1	LP-S-17-6.5-062320	006387-02	Soil	06/23/20
2	LP-B-03-9-062320	006387-03	Soil	06/23/20
3	LP-S-11-6.5-062320	006387-04	Soil	06/23/20
4	LP-S-12-6.5-062320	006387-05	Soil	06/23/20
5	LP-S-13-6.5-062320	006387-06	Soil	06/23/20
6	LP-S-14-6.5-062320	006387-07	Soil	06/23/20
7	LP-S-15-6.5-062320	006387-08	Soil	06/23/20
8	CNW-OB-01-062320	006387-09	Soil	06/23/20
9	CNW-OB-02-062320	006387-10	Soil	06/23/20
10	CNW-OB-03-062320	006387-11	Soil	06/23/20
11	CNW-B-01-6-062320	006387-12	Soil	06/23/20
12	CNW-B-02-6-062320	006387-13	Soil	06/23/20
13	CNW-B-03-6-062320	006387-14	Soil	06/23/20
14	CNW-S-01-5-062320	006387-15	Soil	06/23/20

LDC #: 48734H2b

SDG #: 006387

Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET

Stage 2A

Date: 8/13/20

Page: 2 of 2

Reviewer: LN

2nd Reviewer: [signature]

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270E-SIM)

	Client ID	Lab ID	Matrix	Date
15	CNW-S-02-5-062320	006387-16	Soil	06/23/20
16	CNW-S-03-5-062320 D	006387-17	Soil	06/23/20
17	CNW-S-04-5-062320	006387-18	Soil	06/23/20
18	CNW-S04-062320 D	006387-19	Soil	06/23/20
19	CNW-S-05-5-062320	006387-20	Soil	06/23/20
20	CNW-S-06-5-062320	006387-21	Soil	06/23/20
21	CNW-S-07-5-062320	006387-22	Soil	06/23/20
22	CNW-S-08-5-062320	006387-23	Soil	06/23/20
23	CNW-S-01-5-062320MS	006387-15MS	Soil	06/23/20
24	CNW-S-01-5-062320MSD	006387-15MSD	Soil	06/23/20
25				
26				
27				

Notes:

~~1~~	~~M: 00-1455-MB2 1/5~~						
1 ~~2~~	00-1455-MB2 1/5						
2	00-1468-MB 1/5						
3	00-1462-MB 1/5						

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS SVOA

A. Phenol	CC. Dimethylphthalate	EEE. Bis(2-ethylhexyl)phthalate	GGGG. C30-Hopane	I1. Methyl methanesulfonate
B. Bis (2-chloroethyl) ether	DD. Acenaphthylene	FFF. Di-n-octylphthalate	HHHH. 1-Methylphenanthrene	J1. Ethyl methanesulfonate
C. 2-Chlorophenol	EE. 2,6-Dinitrotoluene	GGG. Benzo(b)fluoranthene	IIII. 1,4-Dioxane	K1. o,o',o''-Triethylphosphorothioate
D. 1,3-Dichlorobenzene	FF. 3-Nitroaniline	HHH. Benzo(k)fluoranthene	JJJJ. Acetophenone	L1. n-Phenylene diamine
E. 1,4-Dichlorobenzene	GG. Acenaphthene	III. Benzo(a)pyrene	KKKK. Atrazine	M1. 1,4-Naphthoquinone
F. 1,2-Dichlorobenzene	HH. 2,4-Dinitrophenol	JJJ. Indeno(1,2,3-cd)pyrene	LLLL. Benzaldehyde	N1. N-Nitro-o-toluidine
G. 2-Methylphenol	II. 4-Nitrophenol	KKK. Dibenz(a,h)anthracene	MMMM. Caprolactam	O1. 1,3,5-Trinitrobenzene
H. 2,2'-Oxybis(1-chloropropane)	JJ. Dibenzofuran	LLL. Benzo(g,h,i)perylene	NNNN. 2,6-Dichlorophenol	P1. Pentachlorobenzene
I. 4-Methylphenol	KK. 2,4-Dinitrotoluene	MMM. Bis(2-Chloroisopropyl)ether	OOOO. 1,2-Diphenylhydrazine	Q1. 4-Aminobiphenyl
J. N-Nitroso-di-n-propylamine	LL. Diethylphthalate	NNN. Aniline	PPPP. 3-Methylphenol	R1. 2-Naphthylamine
K. Hexachloroethane	MM. 4-Chlorophenyl-phenyl ether	OOO. N-Nitrosodimethylamine	QQQQ. 3&4-Methylphenol	S1. Triphenylene
L. Nitrobenzene	NN. Fluorene	PPP. Benzoic Acid	RRRR. 4-Dimethyldibenzothiophene (4MDT)	T1. Octachlorostyrene
M. Isophorone	OO. 4-Nitroaniline	QQQ. Benzyl alcohol	SSSS. 2/3-Dimethyldibenzothiophene (4MDT)	U1. Famphur
N. 2-Nitrophenol	PP. 4,6-Dinitro-2-methylphenol	RRR. Pyridine	TTTT. 1-Methyldibenzothiophene (1MDT)	V1. 1,4-phenylenediamine
O. 2,4-Dimethylphenol	QQ. N-Nitrosodiphenylamine	SSS. Benzidine	UUUU.. 2,3,4,6-Tetrachlorophenol	W1. Methapyrilene
P. Bis(2-chloroethoxy)methane	RR. 4-Bromophenyl-phenylether	TTT. 1-Methylnaphthalene	VVVV. 1,2,4,5-Tetrachlorobenzene	X1. Pentachloroethane
Q. 2,4-Dichlorophenol	SS. Hexachlorobenzene	UUU.Benzo(b)thiophene	WWWW.. 2-Picoline	Y1. 3,3'-Dimethylbenzidine
R. 1,2,4-Trichlorobenzene	TT. Pentachlorophenol	VVV.Benzonaphthothiophene	XXXX. 3-Methylcholanthrene	Z1. o-Toluidine
S. Naphthalene	UU. Phenanthrene	WWW.Benzo(e)pyrene	YYYY. a,a-Dimethylphenethylamine	A2. 1-Naphthylamine
T. 4-Chloroaniline	VV. Anthracene	XXX. 2,6-Dimethylnaphthalene	ZZZZ. Hexachloropropene	B2. 4-Aminobiphenyl
U. Hexachlorobutadiene	WW. Carbazole	YYY. 2,3,5-Trimethylnaphthalene	A1. N-Nitrosodiethylamine	C2. 4-Nitroquinoline-1-oxide
V. 4-Chloro-3-methylphenol	XX. Di-n-butylphthalate	ZZZ. Perylene	B1. N-Nitrosodi-n-butylamine	D2. Hexachloropene
W. 2-Methylnaphthalene	YY. Fluoranthene	AAAA. Dibenzothiophene	C1. N-Nitrosomethylethylamine	E2. Bis (2-chloro-1-methylethyl) ether
X. Hexachlorocyclopentadiene	ZZ. Pyrene	BBBB. Benzo(a)fluoranthene	D1. N-Nitrosomorpholine	F2. Bifenthrin
Y. 2,4,6-Trichlorophenol	AAA. Butylbenzylphthalate	CCCC. Benzo(b)fluorene	E1. N-Nitrosopyrrolidine	G2. Cyfluthrin
Z. 2,4,5-Trichlorophenol	BBB. 3,3'-Dichlorobenzidine	DDDD. cis/trans-Decalin	F1. Phenacetin	H2. Cypermethrin
AA. 2-Chloronaphthalene	CCC. Benzo(a)anthracene	EEEE. 1,1'-Biphenyl	G1. 2-Acetylaminofluorene	I2. Permethrin (cis/trans)
BB. 2-Nitroaniline	DDD. Chrysene	FFFF. Retene	H1. Pronamide	J2. 5-Nitro-o-toluidine

LDC#:48734H2b **VALIDATION FINDINGS WORKSHEET** Page:_1_of_1_
Field Duplicates Reviewer:__LT____
2nd Reviewer:_____

METHOD: GC/MS PAHs (EPA SW846 Method 8270E SIM)

Compound	Concentration (mg/kg)		RPD
	16	18	
UU	0.01U	0.019	NC
YY	0.01U	0.022	NC
ZZ	0.01U	0.025	NC
CCC	0.01U	0.016	NC
DDD	0.01U	0.014	NC
III	0.01U	0.013	NC
GGG	0.01U	0.014	NC

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: August 17, 2020

Parameters: Polychlorinated Biphenyls

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 006387

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
CNW-OB-01-062320	006387-09	Soil	06/23/20
CNW-OB-02-062320	006387-10	Soil	06/23/20
CNW-OB-03-062320	006387-11	Soil	06/23/20
CNW-OB-03-062320MS	006387-11MS	Soil	06/23/20
CNW-OB-03-062320MSD	006387-11MSD	Soil	06/23/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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 Stage 2A 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 and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Initial Calibration and Initial Calibration Verification

Initial calibration data were not reviewed for Stage 2A validation.

III. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

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) 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 Stage 2A validation.

XI. Target Compound Identification

Raw data were not reviewed for Stage 2A validation.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Data Qualification Summary - SDG 006387

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 006387

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 006387

No Sample Data Qualified in this SDG

LDC #: 48734H3b
SDG #: 006387
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 08/13/20
Page: 1 of 1
Reviewer: LT
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	N/N	
III.	Continuing calibration	N	
IV.	Laboratory Blanks	A	
V.	Field blanks	N	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	(4,5)
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	N	
X.	Compound quantitation/RL/LOQ/LODs	N	Dry weight basis
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	CNW-OB-01-062320	006387-09	Soil	06/23/20
2	CNW-OB-02-062320	006387-10	Soil	06/23/20
3	CNW-OB-03-062320	006387-11	Soil	06/23/20
4	CNW-OB-03-062320MS	006387-11MS	Soil	06/23/20
5	CNW-OB-03-062320MSD	006387-11MSD	Soil	06/23/20
6				
7				
8				
9				
10				
11				
12				
13				

Notes:

1	00-146 MB 1/6						

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: August 13, 2020

Parameters: Metals

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 006387

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
LP-S-17-6.5-062320	006387-02	Soil	06/23/20
LP-B-03-9-062320	006387-03	Soil	06/23/20
LP-S-11-6.5-062320	006387-04	Soil	06/23/20
LP-S-12-6.5-062320	006387-05	Soil	06/23/20
LP-S-13-6.5-062320	006387-06	Soil	06/23/20
LP-S-14-6.5-062320	006387-07	Soil	06/23/20
LP-S-15-6.5-062320	006387-08	Soil	06/23/20
CNW-OB-01-062320	006387-09	Soil	06/23/20
CNW-OB-02-062320	006387-10	Soil	06/23/20
CNW-OB-03-062320	006387-11	Soil	06/23/20
CNW-OB-01-062320MS	006387-09MS	Soil	06/23/20
CNW-OB-01-062320MSD	006387-09MSD	Soil	06/23/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 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:

Arsenic, Copper, Lead, Nickel, and Zinc by Environmental Protection Agency (EPA) SW 846 Method 6020B
Mercury by EPA Method 1631E

All sample results were subjected to Stage 2A 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

ICP-MS tune data were not reviewed for Stage 2A validation.

III. Instrument Calibration

Instrument calibration data were not reviewed for Stage 2A validation.

IV. ICP Interference Check Sample Analysis

ICP Interference check sample (ICS) analysis data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the methods. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

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 was not performed for this SDG.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the methods. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

No field duplicates were identified in this SDG.

XII. Internal Standards (ICP-MS)

Internal standards data were not reviewed for Stage 2A validation.

XIII. Sample Result Verification

Raw data were not reviewed for Stage 2A validation.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Metals - Data Qualification Summary - SDG 006387

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Metals - Laboratory Blank Data Qualification Summary - SDG 006387

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Metals - Field Blank Data Qualification Summary - SDG 006387

No Sample Data Qualified in this SDG

LDC #: 48734H4a

SDG #: 006387

Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET

Stage 2A

Date: 8/12/2020

Page: 1 of 1

Reviewer: OTM

2nd Reviewer:

METHOD: Metals (EPA SW 846 Method 6020B/EPA Method 1631E)

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	N	
III.	Instrument Calibration	N	
IV.	ICP Interference Check Sample (ICS) Analysis	N	
V.	Laboratory Blanks	A	
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	A	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	N	
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	N	
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	LP-S-17-6.5-062320	006387-02	Soil	06/23/20
2	LP-B-03-9-062320	006387-03	Soil	06/23/20
3	LP-S-11-6.5-062320	006387-04	Soil	06/23/20
4	LP-S-12-6.5-062320	006387-05	Soil	06/23/20
5	LP-S-13-6.5-062320	006387-06	Soil	06/23/20
6	LP-S-14-6.5-062320	006387-07	Soil	06/23/20
7	LP-S-15-6.5-062320	006387-08	Soil	06/23/20
8	CNW-OB-01-062320	006387-09	Soil	06/23/20
9	CNW-OB-02-062320	006387-10	Soil	06/23/20
10	CNW-OB-03-062320	006387-11	Soil	06/23/20
11	CNW-OB-01-062320MS	006387-09MS	Soil	06/23/20
12	CNW-OB-01-062320MSD	006387-09MSD	Soil	06/23/20
13				

Notes:

LDC #: 40734H4a

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: DTM
2nd reviewer:

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
8-10	S	Al, Sb, (As), Ba, Be, B, Cd, Ca, Cr, Co, (Cu), Fe, (Pb), Li, Mg, Mo, Mn, (Hg), (Ni), K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, (Zn)
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
1-7	S	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, (Hg), Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
DC 11-12	S	Al, Sb, (As), Ba, Be, B, Cd, Ca, Cr, Co, (Cu), Fe, (Pb), Li, Mg, Mo, Mn, Hg, (Ni), K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, (Zn)
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
Analysis Method		
ICP		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
ICP-MS		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
GFAA		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn

Comments: Mercury by CVAA if performed

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: August 17, 2020

Parameters: Polynuclear Aromatic Hydrocarbons

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 006419

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
CNE-S-08-3-062420	006419-01	Soil	06/24/20
CNE-S-07-3-062420	006419-02	Soil	06/24/20
CNE-S-05-3-062420	006419-03	Soil	06/24/20
CNE-S-06-3-062420	006419-04	Soil	06/24/20
CNE-B-02-6-062420	006419-05	Soil	06/24/20
CNE-S-01-3-062420	006419-06	Soil	06/24/20
CNE-S-04-3-062420	006419-07	Soil	06/24/20
CNE-B-03-6-062420	006419-08	Soil	06/24/20
CNE-S-02-3-062420	006419-09	Soil	06/24/20
CNE-S-03-3-062420	006419-10	Soil	06/24/20
CNE-B-01-6-062420	006419-11	Soil	06/24/20
CNE-S-08-3-062420MS	006419-01MS	Soil	06/24/20
CNE-S-08-3-062420MSD	006419-01MSD	Soil	06/24/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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:

Polynuclear Aromatic Hydrocarbons (PAHs) by Environmental Protection Agency (EPA) SW 846 Method 8270E in Selected Ion Monitoring (SIM) mode

All sample results were subjected to Stage 2A 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 and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Stage 2A validation.

III. Initial Calibration and Initial Calibration Verification

Initial calibration data were not reviewed for Stage 2A validation.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. 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.

IX. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Internal Standards

Internal standards data were not reviewed for Stage 2A validation.

XII. Compound Quantitation

Raw data were not reviewed for Stage 2A validation.

XIII. Target Compound Identifications

Raw data were not reviewed for Stage 2A validation.

XIV. System Performance

Raw data were not reviewed for Stage 2A validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG 006419

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG 006419

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Field Blank Data Qualification Summary - SDG 006419

No Sample Data Qualified in this SDG

LDC #: 48734I2b

SDG #: 006419

Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET

Stage 2A

Date: 08/13/20

Page: 1 of 1

Reviewer: LS

2nd Reviewer:

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270E-SIM)

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.	GC/MS Instrument performance check	N	
III.	Initial calibration/ICV	N/N	
IV.	Continuing calibration	N	
V.	Laboratory Blanks	A	
VI.	Field blanks	N	
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	A	(11,12)
IX.	Laboratory control samples	A	LCS
X.	Field duplicates	N	
XI.	Internal standards	N	
XII.	Compound quantitation RL/LOQ/LODs	N	Dry weight basis
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	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	CNE-S-08-3-062420	006419-01	Soil	06/24/20
2	CNE-S-07-3-062420	006419-02	Soil	06/24/20
3	CNE-S-05-3-062420	006419-03	Soil	06/24/20
4	CNE-S-06-3-062420	006419-04	Soil	06/24/20
5	CNE-B-02-6-062420	006419-05	Soil	06/24/20
6	CNE-S-01-3-062420	006419-06	Soil	06/24/20
7	CNE-S-04-3-062420	006419-07	Soil	06/24/20
8	CNE-B-03-6-062420	006419-08	Soil	06/24/20
9	CNE-S-02-3-062420	006419-09	Soil	06/24/20
10	CNE-S-03-3-062420	006419-10	Soil	06/24/20
11	CNE-B-01-6-062420	006419-11	Soil	06/24/20
12	CNE-S-08-3-062420MS	006419-01MS	Soil	06/24/20
13	CNE-S-08-3-062420MSD	006419-01MSD	Soil	06/24/20
14				

1.00-1468 MB 1/5

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: August 13, 2020

Parameters: Metals

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 006419

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
PM-B-6-S-16-4-062420	006419-12	Soil	06/24/20
PM-B-6-S-16-6-062420	006419-13	Soil	06/24/20
PM-B-6-S-17-4-062420	006419-14	Soil	06/24/20
PM-B-6-S-17-6-062420	006419-15	Soil	06/24/20
PM-B-6-S-18-6-062420	006419-16	Soil	06/24/20
PM-B-6-B-02-12-062420	006419-17	Soil	06/24/20
PM-B-6-S-20-9-062420	006419-18	Soil	06/24/20
PM-B-6-S-21-9-062420	006419-19	Soil	06/24/20
PM-B-6-S-22-6-062420	006419-20	Soil	06/24/20
PM-B-6-S-19-6-062420	006419-21	Soil	06/24/20
PM-B-6-S-19-9-062420	006419-22	Soil	06/24/20
PM-B-6-S-505-062420	006419-23	Soil	06/24/20
PM-B-6-S-16-4-062420MS	006419-12MS	Soil	06/24/20
PM-B-6-S-16-4-062420MSD	006419-12MSD	Soil	06/24/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 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 by Environmental Protection Agency (EPA) SW 846 Method 6020B
Mercury by EPA Method 1631E

All sample results were subjected to Stage 2A 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

ICP-MS tune data were not reviewed for Stage 2A validation.

III. Instrument Calibration

Instrument calibration data were not reviewed for Stage 2A validation.

IV. ICP Interference Check Sample Analysis

ICP Interference check sample (ICS) analysis data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the methods. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

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 with the following exceptions:

Spike ID (Associated Samples)	Analyte	RPD (Limits)	Flag	A or P
PM-B-6-S-16-4-062420MS/MSD (All samples in SDG 006419)	Mercury	36 (≤20)	J (all detects) UJ (all non-detects)	A

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 was not performed for this SDG.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the methods. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

Samples PM-B-6-S-16-4-062420 and PM-B-6-S-505-062420 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/Kg)		RPD
	PM-B-6-S-16-4-062420	PM-B-6-S-505-062420	
Copper	43.5	33.7	25
Mercury	0.31	0.24	25

XII. Internal Standards (ICP-MS)

Internal standards data were not reviewed for Stage 2A validation.

XIII. Sample Result Verification

Raw data were not reviewed for Stage 2A validation.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods.

Due to MS/MSD RPD, data were qualified as estimated in twelve samples.

No results were rejected in this SDG.

Kimberly-Clark Upland Area
Metals - Data Qualification Summary - SDG 006419

Sample	Analyte	Flag	A or P	Reason
PM-B-6-S-16-4-062420 PM-B-6-S-16-6-062420 PM-B-6-S-17-4-062420 PM-B-6-S-17-6-062420 PM-B-6-S-18-6-062420 PM-B-6-B-02-12-062420 PM-B-6-S-20-9-062420 PM-B-6-S-21-9-062420 PM-B-6-S-22-6-062420 PM-B-6-S-19-6-062420 PM-B-6-S-19-9-062420 PM-B-6-S-505-062420	Mercury	J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (RPD)

Kimberly-Clark Upland Area
Metals - Laboratory Blank Data Qualification Summary - SDG 006419

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Metals - Field Blank Data Qualification Summary - SDG 006419

No Sample Data Qualified in this SDG

LDC #: 48734l4a

SDG #: 006419

Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET

Stage 2A

Date: 8/12/2020

Page: 1 of 1

Reviewer: DM

2nd Reviewer:

METHOD: Cr, Hg (EPA SW 846 Method 6020B/EPA Method 1631E)

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	N	
III.	Instrument Calibration	N	
IV.	ICP Interference Check Sample (ICS) Analysis	N	
V.	Laboratory Blanks	A	
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	SW	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	N	
X.	Laboratory control samples	A	LCS (1,12)
XI.	Field Duplicates	SW	
XII.	Internal Standard (ICP-MS)	N	
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	PM-B-6-S-16-4-062420	006419-12	Soil	06/24/20
2	PM-B-6-S-16-6-062420	006419-13	Soil	06/24/20
3	PM-B-6-S-17-4-062420	006419-14	Soil	06/24/20
4	PM-B-6-S-17-6-062420	006419-15	Soil	06/24/20
5	PM-B-6-S-18-6-062420	006419-16	Soil	06/24/20
6	PM-B-6-B-02-12-062420	006419-17	Soil	06/24/20
7	PM-B-6-S-20-9-062420	006419-18	Soil	06/24/20
8	PM-B-6-S-21-9-062420	006419-19	Soil	06/24/20
9	PM-B-6-S-22-6-062420	006419-20	Soil	06/24/20
10	PM-B-6-S-19-6-062420	006419-21	Soil	06/24/20
11	PM-B-6-S-19-9-062420	006419-22	Soil	06/24/20
12	PM-B-6-S-505-062420	006419-23	Soil	06/24/20
13	PM-B-6-S-16-4-062420MS	006419-12MS	Soil	06/24/20
14	PM-B-6-S-16-4-062420MSD	006419-12MSD	Soil	06/24/20
15				

LDC #: 49734149

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: DTM
2nd reviewer:

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-12	S	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, (Cu), Fe, Pb, Li, Mg, Mo, Mn, (Hg), Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
QC1314	S	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, (Cu), Fe, Pb, Li, Mg, Mo, Mn, (Hg), Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
Analysis Method		
ICP		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
ICP-MS		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
GFAA		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn

Comments: Mercury by CVAA if performed

LDC #: 48734l4a

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: DTM
2nd Reviewer:

METHOD: Trace metals (EPA SW 846 Method 6020/6010/7470)

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
	13/14	S	Hg			36	ALL	J/UJ/A (det) MD

Comments:

LDC#: 48734l4a

VALIDATION FINDINGS WORKSHEET

Field Duplicates

Reviewer: DTM

2nd Reviewer:

METHOD: Metals (EPA Method 6010/6020/7000)

Analyte	Concentration (mg/Kg)		RPD
	1	12	
Copper	43.5	33.7	25
Mercury	0.31	0.24	25

V:\Darionna\FIELD DUPLICATES\Field Duplicates\FD_inorganic\2020\48734l4a.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: August 17, 2020

Parameters: Polychlorinated Biphenyls

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 006466

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
OMS-S-01-2.5-062620	006466-01	Soil	06/26/20
OMS-S-02-2.5-062620	006466-02	Soil	06/26/20
OMS-S-02-2.5-062620DL	006466-02DL	Soil	06/26/20
OMS-S-03-2.5-062620	006466-03	Soil	06/26/20
OMS-S-04-2.5-062620	006466-04	Soil	06/26/20
OMS-B-01-5-062620	006466-05	Soil	06/26/20
OMS-B-02-5-062620	006466-06	Soil	06/26/20
OMS-B-03-5-062620	006466-07	Soil	06/26/20
OMS-S-05-2.5-062620	006466-08	Soil	06/26/20
OMS-S-06-2.5-062620	006466-09	Soil	06/26/20
OMS-B-04-5-062620	006466-10	Soil	06/26/20
OMS-506-062620	006466-11	Soil	06/26/20
OMS-S-07-2.5-062620	006466-12	Soil	06/26/20
OMS-B-05-5-062620	006466-13	Soil	06/26/20
OMS-S-12-2.5-062620	006466-14	Soil	06/26/20
OMS-S-11-2.5-062620	006466-15	Soil	06/26/20
OMS-B-06-5-062620	006466-16	Soil	06/26/20
OMS-S-01-2.5-062620MS	006466-01MS	Soil	06/26/20
OMS-S-01-2.5-062620MSD	006466-01MSD	Soil	06/26/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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 Stage 2A 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.

DNR Do not report from this analysis; the result for this analyte is to be reported from an alternative analysis.

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

Initial calibration data were not reviewed for Stage 2A validation.

III. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

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) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

IX. Field Duplicates

Samples OMS-B-04-5-062620 and OMS-506-062620 were identified as field duplicates. No results were detected in any of the samples.

X. Compound Quantitation

Raw data were not reviewed for Stage 2A validation.

XI. Target Compound Identification

Raw data were not reviewed for Stage 2A validation.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method.

In the case where more than one result was reported for an individual sample, the least technically acceptable results were deemed not reportable as follows:

Sample	Compound	Reason	Flag	A or P
OMS-S-02-2.5-062620	Aroclor-1254	Results exceeded calibration range.	DNR	A
OMS-S-02-2.5-062620DL	All compounds except Aroclor-1254	Results from undiluted analyses were more usable.	DNR	A

No results were rejected in this SDG.

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Data Qualification Summary - SDG 006466

Sample	Compound	Flag	A or P	Reason
OMS-S-02-2.5-062620	Aroclor-1254	DNR	A	Overall assessment of data
OMS-S-02-2.5-062620DL	All compounds except Aroclor-1254	DNR	A	Overall assessment of data

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 006466

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 006466

No Sample Data Qualified in this SDG

LDC #: 48734J3b
SDG #: 006466
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 08/13/20
Page: 1 of 2
Reviewer: LT
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	N/N	
III.	Continuing calibration	N	
IV.	Laboratory Blanks	A	
V.	Field blanks	N	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	(18,19)
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	ND	D= 11+12
X.	Compound quantitation/RL/LOQ/LODs	N	Dry weight basis
XI.	Target compound identification	N	
XII.	Overall assessment of data	SW	

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	OMS-S-01-2.5-062620		006466-01	Soil	06/26/20
2	OMS-S-02-2.5-062620		006466-02	Soil	06/26/20
3	OMS-S-02-2.5-062620DL		006466-02DL	Soil	06/26/20
4	OMS-S-03-2.5-062620		006466-03	Soil	06/26/20
5	OMS-S-04-2.5-062620		006466-04	Soil	06/26/20
6	OMS-B-01-5-062620		006466-05	Soil	06/26/20
7	OMS-B-02-5-062620		006466-06	Soil	06/26/20
8	OMS-B-03-5-062620		006466-07	Soil	06/26/20
9	OMS-S-05-2.5-062620		006466-08	Soil	06/26/20
10	OMS-S-06-2.5-062620		006466-09	Soil	06/26/20
11	OMS-B-04-5-062620	D	006466-10	Soil	06/26/20
12	OMS-506-062620	D	006466-11	Soil	06/26/20
13	OMS-S-07-2.5-062620		006466-12	Soil	06/26/20
14	OMS-B-05-5-062620		006466-13	Soil	06/26/20
15	OMS-S-12-2.5-062620		006466-14	Soil	06/26/20
16	OMS-S-11-2.5-062620		006466-15	Soil	06/26/20
17	OMS-B-06-5-062620		006466-16	Soil	06/26/20

LDC #: 48734J3b

SDG #: 006466

Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET

Stage 2A

Date: 08/6/20

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: GC Polychlorinated Biphenyls (EPA SW846 Method 8082A)

	Client ID	Lab ID	Matrix	Date
18	OMS-S-01-2.5-062620MS	006466-01MS	Soil	06/26/20
19	OMS-S-01-2.5-062620MSD	006466-01MSD	Soil	06/26/20
20				
21				
22				

Notes:

1	00-1482MB1/6						

LDC #: 48734J3b

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Reviewer: LT
2nd Reviewer:

METHOD: GC PCBs (EPA SW 846 Method 8082A)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

Yes x No__ N/A__ Was the overall quality and usability of the data acceptable?

#	Date	Sample ID	Compound	Finding	Qualifications
		2	Aroclor 1254	exceed calibration range	DNR
		3	All except Aroclor 1254	diluted	DNR

Comments: _____

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: August 13, 2020

Parameters: Metals

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 006466

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
OMS-S-01-2.5-062620	006466-01	Soil	06/26/20
OMS-S-02-2.5-062620	006466-02	Soil	06/26/20
OMS-S-03-2.5-062620	006466-03	Soil	06/26/20
OMS-S-04-2.5-062620	006466-04	Soil	06/26/20
OMS-B-01-5-062620	006466-05	Soil	06/26/20
OMS-B-02-5-062620	006466-06	Soil	06/26/20
OMS-B-03-5-062620	006466-07	Soil	06/26/20
OMS-S-05-2.5-062620	006466-08	Soil	06/26/20
OMS-S-06-2.5-062620	006466-09	Soil	06/26/20
OMS-B-04-5-062620	006466-10	Soil	06/26/20
OMS-506-062620	006466-11	Soil	06/26/20
OMS-S-07-2.5-062620	006466-12	Soil	06/26/20
OMS-B-05-5-062620	006466-13	Soil	06/26/20
OMS-S-12-2.5-062620	006466-14	Soil	06/26/20
OMS-S-11-2.5-062620	006466-15	Soil	06/26/20
OMS-B-06-5-062620	006466-16	Soil	06/26/20
OMS-S-01-2.5-062620MS	006466-01MS	Soil	06/26/20
OMS-S-01-2.5-062620MSD	006466-01MSD	Soil	06/26/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 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 by Environmental Protection Agency (EPA) SW 846 Method 6020B
Mercury by EPA Method 1631E

All sample results were subjected to Stage 2A 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

ICP-MS tune data were not reviewed for Stage 2A validation.

III. Instrument Calibration

Instrument calibration data were not reviewed for Stage 2A validation.

IV. ICP Interference Check Sample Analysis

ICP Interference check sample (ICS) analysis data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the methods. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

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
OMS-S-01-2.5-062620MS/MSD (OMS-S-01-2.5-062620 OMS-S-02-2.5-062620 OMS-S-03-2.5-062620 OMS-S-04-2.5-062620 OMS-B-01-5-062620 OMS-B-02-5-062620 OMS-S-05-2.5-062620 OMS-S-06-2.5-062620 OMS-506-062620 OMS-S-07-2.5-062620 OMS-B-05-5-062620 OMS-S-12-2.5-062620 OMS-S-11-2.5-062620 OMS-B-06-5-062620)	Copper	-	164 (75-125)	J (all detects)	A

Spike ID (Associated Samples)	Analyte	MS (%R) (Limits)	MSD (%R) (Limits)	Flag	A or P
OMS-S-01-2.5-062620MS/MSD (OMS-B-03-5-062620 OMS-B-04-5-062620)	Copper	-	164 (75-125)	NA	-

Relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	RPD (Limits)	Flag	A or P
OMS-S-01-2.5-062620MS/MSD (All samples in SDG 006466)	Copper	56 (≤20)	J (all detects) UJ (all non-detects)	A

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 was not performed for this SDG.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the methods. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

Samples OMS-B-04-5-062620 and OMS-506-062620 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/Kg)		RPD
	OMS-B-04-5-062620	OMS-506-062620	
Copper	5U	5.11	Not calculable

XII. Internal Standards (ICP-MS)

Internal standards data were not reviewed for Stage 2A validation.

XIII. Sample Result Verification

Raw data were not reviewed for Stage 2A validation.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods.

Due to MS/MSD %R and RPD, data were qualified as estimated in sixteen samples.

No results were rejected in this SDG.

Kimberly-Clark Upland Area
Metals - Data Qualification Summary - SDG 006466

Sample	Analyte	Flag	A or P	Reason
OMS-S-01-2.5-062620 OMS-S-02-2.5-062620 OMS-S-03-2.5-062620 OMS-S-04-2.5-062620 OMS-B-01-5-062620 OMS-B-02-5-062620 OMS-S-05-2.5-062620 OMS-S-06-2.5-062620 OMS-506-062620 OMS-S-07-2.5-062620 OMS-B-05-5-062620 OMS-S-12-2.5-062620 OMS-S-11-2.5-062620 OMS-B-06-5-062620	Copper	J (all detects)	A	Matrix spike/Matrix spike duplicate (%R)
OMS-S-01-2.5-062620 OMS-S-02-2.5-062620 OMS-S-03-2.5-062620 OMS-S-04-2.5-062620 OMS-B-01-5-062620 OMS-B-02-5-062620 OMS-B-03-5-062620 OMS-S-05-2.5-062620 OMS-S-06-2.5-062620 OMS-B-04-5-062620 OMS-506-062620 OMS-S-07-2.5-062620 OMS-B-05-5-062620 OMS-S-12-2.5-062620 OMS-S-11-2.5-062620 OMS-B-06-5-062620	Copper	J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (RPD)

Kimberly-Clark Upland Area
Metals - Laboratory Blank Data Qualification Summary - SDG 006466

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Metals - Field Blank Data Qualification Summary - SDG 006466

No Sample Data Qualified in this SDG

LDC #: 48734J4a

SDG #: 006466

Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET

Stage 2A

Date: 8/12/2020

Page: 1 of 2

Reviewer: DTM

2nd Reviewer:

METHOD: Cu, Hg (EPA SW 846 Method 6020B/EPA Method 1631E)

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	N	
III.	Instrument Calibration	N	
IV.	ICP Interference Check Sample (ICS) Analysis	N	
V.	Laboratory Blanks	A	
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	SW	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	N	
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	~~A~~ SW	(10, 11)
XII.	Internal Standard (ICP-MS)	N	
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	OMS-S-01-2.5-062620	006466-01	Soil	06/26/20
2	OMS-S-02-2.5-062620	006466-02	Soil	06/26/20
3	OMS-S-03-2.5-062620	006466-03	Soil	06/26/20
4	OMS-S-04-2.5-062620	006466-04	Soil	06/26/20
5	OMS-B-01-5-062620	006466-05	Soil	06/26/20
6	OMS-B-02-5-062620	006466-06	Soil	06/26/20
7	OMS-B-03-5-062620	006466-07	Soil	06/26/20
8	OMS-S-05-2.5-062620	006466-08	Soil	06/26/20
9	OMS-S-06-2.5-062620	006466-09	Soil	06/26/20
10	OMS-B-04-5-062620	006466-10	Soil	06/26/20
11	OMS-506-062620	006466-11	Soil	06/26/20
12	OMS-S-07-2.5-062620	006466-12	Soil	06/26/20
13	OMS-B-05-5-062620	006466-13	Soil	06/26/20
14	OMS-S-12-2.5-062620	006466-14	Soil	06/26/20
15	OMS-S-11-2.5-062620	006466-15	Soil	06/26/20

LDC #: 48734J4a

SDG #: 006466

Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET

Stage 2A

Date: 8/12/2020

Reviewer: DM

2nd Reviewer:

METHOD: Cu, Hg (EPA SW 846 Method 6020B/EPA Method 1631E)

	Client ID	Lab ID	Matrix	Date
16	OMS-B-06-5-062620	006466-16	Soil	06/26/20
17	OMS-S-01-2.5-062620MS	006466-01MS	Soil	06/26/20
18	OMS-S-01-2.5-062620MSD	006466-01MSD	Soil	06/26/20
19				
20				
21				

Notes:

LDC #: 49734J4q

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: DTM
2nd reviewer:

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-16	S	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, (Cu), Fe, ~~Pb~~ DTM, Li, Mg, Mo, Mn, (Hg), Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
6C17-18	S	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, (Cu), Fe, Pb, Li, Mg, Mo, Mn, (Hg), Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
Analysis Method		
ICP		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
ICP-MS		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
GFAA		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn

Comments: Mercury by CVAA if performed

LDC #: 48734J4a

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: DTM
2nd Reviewer:

METHOD: Trace metals (EPA SW 846 Method 6020/6010/7470)

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
	17/18	S	Cu		164		ALL	J/A (det,ND) 7,10=M
			Cu			56	ALL	J/UJ/A (det,ND)

Comments:

LDC#: 48734J4a

VALIDATION FINDINGS WORKSHEET

Field Duplicates

Reviewer: DTM
2nd Reviewer:

METHOD: Metals (EPA Method 6010/6020/7000)

Analyte	Concentration (mg/Kg)		RPD
	10	11	
Copper	5U	5.11	NC

V:\Darionna\FIELD DUPLICATES\Field Duplicates\FD_inorganic\2020\48734J4a.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: August 17, 2020

Parameters: Polynuclear Aromatic Hydrocarbons

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 006498

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
LP-S-18-6.5	006498-07	Soil	06/29/20
LP-S-19-6.5	006498-08	Soil	06/29/20
LP-S-20-6.5	006498-09	Soil	06/29/20
LP-S-21-6.5	006498-10	Soil	06/29/20
LP-B-03-10	006498-11	Soil	06/29/20
CNW-B-03-7	006498-12	Soil	06/29/20
LP-S-18-6.5MS	006498-07MS	Soil	06/29/20
LP-S-18-6.5MSD	006498-07MSD	Soil	06/29/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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:

Polynuclear Aromatic Hydrocarbons (PAHs) by Environmental Protection Agency (EPA) SW 846 Method 8270E in Selected Ion Monitoring (SIM) mode

All sample results were subjected to Stage 2A 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 and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Stage 2A validation.

III. Initial Calibration and Initial Calibration Verification

Initial calibration data were not reviewed for Stage 2A validation.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. 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.

IX. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Internal Standards

Internal standards data were not reviewed for Stage 2A validation.

XII. Compound Quantitation

Raw data were not reviewed for Stage 2A validation.

XIII. Target Compound Identifications

Raw data were not reviewed for Stage 2A validation.

XIV. System Performance

Raw data were not reviewed for Stage 2A validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG 006498

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG 006498

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Field Blank Data Qualification Summary - SDG 006498

No Sample Data Qualified in this SDG

LDC #: 48734K2b **VALIDATION COMPLETENESS WORKSHEET** Date: 08/13/20
SDG #: 006498 Stage 2A Page: 1 of 1
Laboratory: Friedman & Bruya, Inc. Reviewer: VT
2nd Reviewer:

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270E-SIM)

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.	GC/MS Instrument performance check	N	
III.	Initial calibration/ICV	N/N	
IV.	Continuing calibration	N	
V.	Laboratory Blanks	A	
VI.	Field blanks	N	
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	A ~~SW~~	(7,8)
IX.	Laboratory control samples	A	LCS
X.	Field duplicates	N	
XI.	Internal standards	N	
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
SW = See worksheet FB = Field blank EB = Equipment blank

	Client ID	Lab ID	Matrix	Date
1	LP-S-18-6.5	006498-07	Soil	06/29/20
2	LP-S-19-6.5	006498-08	Soil	06/29/20
3	LP-S-20-6.5	006498-09	Soil	06/29/20
4	LP-S-21-6.5	006498-10	Soil	06/29/20
5	LP-B-03-10	006498-11	Soil	06/29/20
6	CNW-B-03-7	006498-12	Soil	06/29/20
7	LP-S-18-6.5MS	006498-07MS	Soil	06/29/20
8	LP-S-18-6.5MSD	006498-07MSD	Soil	06/29/20
9				
10				

Notes:

1	00-1529MB LCS						

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: August 17, 2020

Parameters: Polychlorinated Biphenyls

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 006498

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
OMS-B-07-5	006498-01	Soil	06/29/20
OMS-B-08-5	006498-02	Soil	06/29/20
OMS-S-10-2.5	006498-03	Soil	06/29/20
OMS-S-10-2.5DL	006498-03DL	Soil	06/29/20
OMS-S-09-2.5	006498-04	Soil	06/29/20
OMS-S-08-2.5	006498-05	Soil	06/29/20
OMS-B-09-5	006498-06	Soil	06/29/20
OMS-B-07-5MS	006498-01MS	Soil	06/29/20
OMS-B-07-5MSD	006498-01MSD	Soil	06/29/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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 Stage 2A 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.

DNR Do not report from this analysis; the result for this analyte is to be reported from an alternative analysis.

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

Initial calibration data were not reviewed for Stage 2A validation.

III. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

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) 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 Stage 2A validation.

XI. Target Compound Identification

Raw data were not reviewed for Stage 2A validation.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method.

In the case where more than one result was reported for an individual sample, the least technically acceptable results were deemed not reportable as follows:

Sample	Compound	Reason	Flag	A or P
OMS-S-10-2.5	Aroclor-1254	Results exceeded calibration range.	DNR	A

No results were rejected in this SDG.

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Data Qualification Summary - SDG 006498

Sample	Compound	Flag	A or P	Reason
OMS-S-10-2.5	Aroclor-1254	DNR	A	Overall assessment of data

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 006498

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 006498

No Sample Data Qualified in this SDG

LDC #: 48734K3b
SDG #: 006498
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 08/13/20
Page: 1 of 1
Reviewer: LT
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	N/N	
III.	Continuing calibration	N	
IV.	Laboratory Blanks	A	
V.	Field blanks	N	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	(8,9)
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	N	
X.	Compound quantitation/RL/LOQ/LODs	N	
XI.	Target compound identification	N	
XII.	Overall assessment of data	SW	

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	OMS-B-07-5	006498-01	Soil	06/29/20
2	OMS-B-08-5	006498-02	Soil	06/29/20
3	OMS-S-10-2.5	006498-03	Soil	06/29/20
4	OMS-S-10-2.5DL	006498-03DL	Soil	06/29/20
5	OMS-S-09-2.5	006498-04	Soil	06/29/20
6	OMS-S-08-2.5	006498-05	Soil	06/29/20
7	OMS-B-09-5	006498-06	Soil	06/29/20
8	OMS-B-07-5MS	006498-01MS	Soil	06/29/20
9	OMS-B-07-5MSD	006498-01MSD	Soil	06/29/20
10				
11				
12				
13				

Notes:

1	00-1578-MB 1/6						

LDC #: 48734K3b

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Reviewer: LT
2nd Reviewer:

METHOD: GC PCBs (EPA SW 846 Method 8082A)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

Yes x No__ N/A__ Was the overall quality and usability of the data acceptable?

#	Date	Sample ID	Compound	Finding	Qualifications
		3	Aroclor 1254	exceed calibration range	DNR

Comments: _____

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: August 13, 2020

Parameters: Metals

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 006498

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
OMS-B-07-5	006498-01	Soil	06/29/20
OMS-B-08-5	006498-02	Soil	06/29/20
OMS-S-10-2.5	006498-03	Soil	06/29/20
OMS-S-09-2.5	006498-04	Soil	06/29/20
OMS-S-08-2.5	006498-05	Soil	06/29/20
OMS-B-09-5	006498-06	Soil	06/29/20
LP-S-18-6.5	006498-07	Soil	06/29/20
LP-S-19-6.5	006498-08	Soil	06/29/20
LP-S-20-63.5	006498-09	Soil	06/29/20
LP-S-21-3.5	006498-10	Soil	06/29/20
LP-B-03-10	006498-11	Soil	06/29/20
OMS-B-07-5MS	006498-01MS	Soil	06/29/20
OMS-B-07-5MSD	006498-01MSD	Soil	06/29/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 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 by Environmental Protection Agency (EPA) SW 846 Method 6020B
Mercury by EPA Method 1631E

All sample results were subjected to Stage 2A 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

ICP-MS tune data were not reviewed for Stage 2A validation.

III. Instrument Calibration

Instrument calibration data were not reviewed for Stage 2A validation.

IV. ICP Interference Check Sample Analysis

ICP Interference check sample (ICS) analysis data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the methods. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

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 was not performed for this SDG.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the methods. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

No field duplicates were identified in this SDG.

XII. Internal Standards (ICP-MS)

Internal standards data were not reviewed for Stage 2A validation.

XIII. Sample Result Verification

Raw data were not reviewed for Stage 2A validation.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Metals - Data Qualification Summary - SDG 006498

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Metals - Laboratory Blank Data Qualification Summary - SDG 006498

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Metals - Field Blank Data Qualification Summary - SDG 006498

No Sample Data Qualified in this SDG

LDC #: 48734K4a
SDG #: 006498
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 9/12/2020
Page: 1 of 1
Reviewer: DM
2nd Reviewer:

METHOD: Cu, Hg (EPA SW 846 Method 6020B/EPA Method 1631E)

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	N	
III.	Instrument Calibration	N	
IV.	ICP Interference Check Sample (ICS) Analysis	N	
V.	Laboratory Blanks	A	
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	A	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	N	
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	N	
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	OMS-B-07-5	006498-01	Soil	06/29/20
2	OMS-B-08-5	006498-02	Soil	06/29/20
3	OMS-S-10-2.5	006498-03	Soil	06/29/20
4	OMS-S-09-2.5	006498-04	Soil	06/29/20
5	OMS-S-08-2.5	006498-05	Soil	06/29/20
6	OMS-B-09-5	006498-06	Soil	06/29/20
7	LP-S-18-6.5	006498-07	Soil	06/29/20
8	LP-S-19-6.5	006498-08	Soil	06/29/20
9	LP-S-20-63.5	006498-09	Soil	06/29/20
10	LP-S-21-3.5	006498-10	Soil	06/29/20
11	LP-B-03-10	006498-11	Soil	06/29/20
12	OMS-B-07-5MS	006498-01MS	Soil	06/29/20
13	OMS-B-07-5MSD	006498-01MSD	Soil	06/29/20
14				
15				

LDC #: 48734KNa

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: DTM
2nd reviewer:

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-36	S	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, (Cu) Fe, Pb, Li, Mg, Mo, Mn, (Hg) Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
7-11	S	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, (Hg) Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
QC12-13	S	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, (Cu) Fe, Pb, Li, Mg, Mo, Mn, (Hg) Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
Analysis Method		
ICP		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
ICP-MS		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
GFAA		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn

Comments: Mercury by CVAA if performed

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

Aspect Consulting LLC
701 Second Ave., Suite 550
Seattle, WA 98104
ATTN: Carla Brock, LHG
cbrock@aspectconsulting.com

September 11, 2020

SUBJECT: Kimberly-Clark Upland Area, Data Validation

Dear Ms. Brock,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 20, 2020. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #48922:

SDG #	Fraction
007064, 007149, 007180, 007206 007234, 007259, 007302, 007347 007450, 007468, 007498, 007525 008016, 008046, 008072, 008170 008214	Polynuclear Aromatic Hydrocarbons, Polychlorinated Biphenyls, Metals, Oil & Grease

The data validation was performed under Stage 2A guidelines. The analyses were validated using the following documents, as applicable to each method:

- USEPA National Functional Guidelines for Organic Superfund Methods Data Review, January 2017
- USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review; January 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
crink@lab-data.com
Project Manager/Senior Chemist

Stage 2A EDD **LDC #48922 (Aspect Consulting, LLC - Seattle, WA / Kimberly-Clark Upland Area 2020 Interm Action)**

LDC	SDG#	DATE REC'D	(3) DATE DUE	(16) PAH (8270E -SIM)		PCBs (8082A)		(9) Metals (200.8)		Cu (6020B)		Hg (1631E)		O&G (1664)																					
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
A	007064	08/20/20	09/11/20	-	-	0	8	-	-	0	6	0	12	-	-																				
B	007149	08/20/20	09/11/20	0	8	0	9	-	-	-	-	-	-	-	-																				
C	007180	08/20/20	09/11/20	0	6	0	6	-	-	-	-	-	-	-	-																				
D	007206	08/20/20	09/11/20	0	5	0	6	-	-	-	-	-	-	-	-																				
E	007234	08/20/20	09/11/20	0	5	0	5	-	-	-	-	-	-	-	-																				
F	007259	08/20/20	09/11/20	-	-	0	6	-	-	0	4	0	5	-	-																				
G	007302	08/20/20	09/11/20	0	9	0	9	-	-	-	-	-	-	-	-																				
H	007347	08/20/20	09/11/20	-	-	-	-	-	-	-	-	0	1	-	-																				
I	007450	08/20/20	09/11/20	0	12	0	12	-	-	-	-	-	-	-	-																				
J	007468	08/20/20	09/11/20	0	11	0	11	-	-	-	-	-	-	-	-																				
K	007498	08/20/20	09/11/20	0	3	0	3	-	-	-	-	-	-	-	-																				
L	007525	08/20/20	09/11/20	0	2	0	2	-	-	-	-	-	-	-	-																				
M	008016	08/20/20	09/11/20	0	5	0	5	1	0	-	-	-	-	1	0																				
N	008046	08/20/20	09/11/20	0	4	0	5	-	-	-	-	-	-	-	-																				
O	008072	08/20/20	09/11/20	0	2	0	2	-	-	-	-	-	-	-	-																				
P	008170	08/20/20	09/11/20	0	2	0	11	-	-	-	-	0	3	-	-																				
Q	008214	08/20/20	09/11/20	0	1	0	5	-	-	-	-	-	-	-	-																				
Total	T/CR			0	75	0	105	1	0	0	10	0	21	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	213

Shaded cells indicate Stage 4 validation (all other cells are Stage 2A validation). These sample counts do not include MS, MSD, or DUP's.

L:\Aspect Consulting\Kimberly Clark\48922ST.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: September 9, 2020

Parameters: Polychlorinated Biphenyls

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 007064

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
OMS-S-13-2.5-070620	007064-07	Soil	07/06/20
OMS-S-13-2.5-070620DL	007064-07DL	Soil	07/06/20
OMS-S-14-2.5-070620	007064-08	Soil	07/06/20
OMS-S-14-2.5-070620DL	007064-08DL	Soil	07/06/20
OMS-S-15-2.5-070620	007064-09	Soil	07/06/20
OMS-S-17-2.5-070620	007064-10	Soil	07/06/20
OMS-S-16-2.5-070620	007064-11	Soil	07/06/20
OMS-S-18-2.5-070620	007064-12	Soil	07/06/20
OMS-S-13-2.5-070620MS	007064-07MS	Soil	07/06/20
OMS-S-13-2.5-070620MSD	007064-07MSD	Soil	07/06/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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 Stage 2A 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.

DNR Do not report from this analysis; the result for this analyte is to be reported from an alternative analysis.

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

Initial calibration data were not reviewed for Stage 2A validation.

III. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

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 with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	Flag	A or P
OMS-S-13-2.5-070620MS/MSD (OMS-S-13-2.5-070620)	Aroclor-1016 Aroclor-1260	156 (44-107) 10500 (38-124)	- 6460 (38-124)	NA	-

Relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	RPD (Limits)	Flag	A or P
OMS-S-13-2.5-070620MS/MSD (OMS-S-13-2.5-070620)	Aroclor-1016 Aroclor-1260	50 (≤20) 48 (≤20)	NA	-

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 Stage 2A validation.

XI. Target Compound Identification

Raw data were not reviewed for Stage 2A validation.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method.

In the case where more than one result was reported for an individual sample, the least technically acceptable results were deemed not reportable as follows:

Sample	Compound	Reason	Flag	A or P
OMS-S-13-2.5-070620 OMS-S-14-2.5-070620	Aroclor-1254	Results exceeded calibration range.	DNR	A

No results were rejected in this SDG.

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Data Qualification Summary - SDG 007064

Sample	Compound	Flag	A or P	Reason
OMS-S-13-2.5-070620 OMS-S-14-2.5-070620	Aroclor-1254	DNR	A	Overall assessment of data

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 007064

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 007064

No Sample Data Qualified in this SDG

LDC #: 48922A3b
SDG #: 007064
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 09/04/20
Page: 1 of 1
Reviewer: LF
2nd Reviewer: [signature]

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	N/N	
III.	Continuing calibration	N	
IV.	Laboratory Blanks	A	
V.	Field blanks	N	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	SW	(9,10)
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	N	
X.	Compound quantitation/RL/LOQ/LODs	N	Dry weight basis = 1-8
XI.	Target compound identification	N	
XII.	Overall assessment of data	SW	

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	OMS-S-13-2.5-070620	007064-07	Soil	07/06/20
2	OMS-S-13-2.5-070620DL	007064-07DL	Soil	07/06/20
3	OMS-S-14-2.5-070620	007064-08	Soil	07/06/20
4	OMS-S-14-2.5-070620DL	007064-08DL	Soil	07/06/20
5	OMS-S-15-2.5-070620	007064-09	Soil	07/06/20
6	OMS-S-17-2.5-070620	007064-10	Soil	07/06/20
7	OMS-S-16-2.5-070620	007064-11	Soil	07/06/20
8	OMS-S-18-2.5-070620	007064-12	Soil	07/06/20
9	OMS-S-13-2.5-070620MS	007064-07MS	Soil	07/06/20
10	OMS-S-13-2.5-070620MSD	007064-07MSD	Soil	07/06/20
11				
12				
13				

Notes:

1	00-1561 MB 1/6						

LDC #: 48922A3b

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: LT

METHOD: X **GC** ___ **HPLC**

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y**x** N___ N/A___ Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG?

Y**x** N___ N/A___ Was an MS/MSD analyzed every 20 samples for each matrix or whenever a sample extraction was performed?

Y___ N**x** N/A___ Were the MS/MSD percent recoveries (%R) and relative percent differences (RPD) within QC limits?

#	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	9/10	Aroclor-1016	156 (44 - 107)			1 (ND)	J/A DETS
		Aroclor-1260	10,500 (38 - 124)	6,460 (38 - 124)		↓	↓
		Aroclor-1016			50 (≤ 20)	↓	↓
		Aroclor-1260			48 (≤ 20)	↓	↓

LDC #: 48922A3b

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Reviewer: LT

METHOD: GC PCBs (EPA SW 846 Method 8082A)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

Yes x No_ N/A_ Was the overall quality and usability of the data acceptable?

#	Date	Sample ID	Compound	Finding	Qualifications
		1,3	Aroclor 1254	exceed calibration range	DNR

Comments: _____

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: August 27, 2020

Parameters: Metals

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 007064

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
PM-B-6-S-26-6-070620	007064-01	Soil	07/06/20
PM-B-6-S-23-6-070620	007064-02	Soil	07/06/20
PM-B-6-S-24-4-070620	007064-03	Soil	07/06/20
PM-B-6-S07-070620	007064-04	Soil	07/06/20
PM-B-6-S-24-6-070620	007064-05	Soil	07/06/20
PM-B-6-S-25-6-070620	007064-06	Soil	07/06/20
OMS-S-13-2.5-070620	007064-07	Soil	07/06/20
OMS-S-14-2.5-070620	007064-08	Soil	07/06/20
OMS-S-15-2.5-070620	007064-09	Soil	07/06/20
OMS-S-17-2.5-070620	007064-10	Soil	07/06/20
OMS-S-16-2.5-070620	007064-11	Soil	07/06/20
OMS-S-18-2.5-070620	007064-12	Soil	07/06/20
OMS-S-13-2.5-070620MS	007064-07MS	Soil	07/06/20
OMS-S-13-2.5-070620MSD	007064-07MSD	Soil	07/06/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 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 by Environmental Protection Agency (EPA) SW 846 Method 6020B
Mercury by EPA Method 1631E

All sample results were subjected to Stage 2A 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

ICP-MS tune data were not reviewed for Stage 2A validation.

III. Instrument Calibration

Instrument calibration data were not reviewed for Stage 2A validation.

IV. ICP Interference Check Sample Analysis

ICP Interference check sample (ICS) analysis data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the methods. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample.

For OMS-S-13-2.5-070620MS/MSD, no data were qualified for mercury and copper percent recoveries (%R) outside the QC limits since the parent sample results were greater than 4X the spike concentration.

Relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	RPD (Limits)	Flag	A or P
OMS-S-13-2.5-070620MS/MSD (All samples in SDG 007064)	Mercury	200 (≤20)	J (all detects) UJ (all non-detects)	A

Spike ID (Associated Samples)	Analyte	RPD (Limits)	Flag	A or P
OMS-S-13-2.5-070620MS/MSD (OMS-S-13-2.5-070620 OMS-S-14-2.5-070620 OMS-S-15-2.5-070620 OMS-S-17-2.5-070620 OMS-S-16-2.5-070620 OMS-S-18-2.5-070620)	Copper	147 (≤20)	J (all detects)	A

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 was not performed for this SDG.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the methods. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

No field duplicates were identified in this SDG.

XII. Internal Standards (ICP-MS)

Internal standards data were not reviewed for Stage 2A validation.

XIII. Sample Result Verification

Raw data were not reviewed for Stage 2A validation.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods.

Due to MS/MSD RPD, data were qualified as estimated in twelve samples.

No results were rejected in this SDG.

Kimberly-Clark Upland Area
Metals - Data Qualification Summary - SDG 007064

Sample	Analyte	Flag	A or P	Reason
PM-B-6-S-26-6-070620 PM-B-6-S-23-6-070620 PM-B-6-S-24-4-070620 PM-B-6-S07-070620 PM-B-6-S-24-6-070620 PM-B-6-S-25-6-070620 OMS-S-13-2.5-070620 OMS-S-14-2.5-070620 OMS-S-15-2.5-070620 OMS-S-17-2.5-070620 OMS-S-16-2.5-070620 OMS-S-18-2.5-070620	Mercury	J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (RPD)
OMS-S-13-2.5-070620 OMS-S-14-2.5-070620 OMS-S-15-2.5-070620 OMS-S-17-2.5-070620 OMS-S-16-2.5-070620 OMS-S-18-2.5-070620	Copper	J (all detects)	A	Matrix spike/Matrix spike duplicate (RPD)

Kimberly-Clark Upland Area
Metals - Laboratory Blank Data Qualification Summary - SDG 007064

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Metals - Field Blank Data Qualification Summary - SDG 007064

No Sample Data Qualified in this SDG

LDC #: 48922A4a
SDG #: 007064
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 9/29/2020
Page: 1 of 1
Reviewer: DM
2nd Reviewer:

METHOD: ~~Cr~~ CU, Hg (EPA SW 846 Method 6020B/EPA Method 1631E)

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	N	
III.	Instrument Calibration	N	
IV.	ICP Interference Check Sample (ICS) Analysis	N	
V.	Laboratory Blanks	A	
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	SW	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	N	
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	N	
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	PM-B-6-S-26-6-070620	007064-01	Soil	07/06/20
2	PM-B-6-S-23-6-070620	007064-02	Soil	07/06/20
3	PM-B-6-S-24-4-070620	007064-03	Soil	07/06/20
4	PM-B-6-S07-070620	007064-04	Soil	07/06/20
5	PM-B-6-S-24-6-070620	007064-05	Soil	07/06/20
6	PM-B-6-S-25-6-070620	007064-06	Soil	07/06/20
7	OMS-S-13-2.5-070620	007064-07	Soil	07/06/20
8	OMS-S-14-2.5-070620	007064-08	Soil	07/06/20
9	OMS-S-15-2.5-070620	007064-09	Soil	07/06/20
10	OMS-S-17-2.5-070620	007064-10	Soil	07/06/20
11	OMS-S-16-2.5-070620	007064-11	Soil	07/06/20
12	OMS-S-18-2.5-070620	007064-12	Soil	07/06/20
13	OMS-S-13-2.5-070620MS	007064-07MS	Soil	07/06/20
14	OMS-S-13-2.5-070620MSD	007064-07MSD	Soil	07/06/20
15				

Notes:

LDC #: 48922A4a

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: DTM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-6	S	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, (Hg), Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
7-12	S	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, (Cu), Fe, Pb, Li, Mg, Mo, Mn, (Hg), Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
QC13-14	S	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, (Cu), Fe, Pb, Li, Mg, Mo, Mn, (Hg), Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
Analysis Method		
ICP		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
ICP-MS		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
GFAA		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn

Comments: Mercury by CVAA if performed

LDC #: 48922A4a

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

METHOD: Trace metals (EPA SW 846 Method 6020/6010/7470)

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
	13/14	S	Hg			200(20)	ALL	J/UJ/A (det/ND)
			Cu			147(20)	ALL	J/UJ/A (det)

Comments: 13/14 Hg, Cu >4xSpike

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: September 9, 2020

Parameters: Polynuclear Aromatic Hydrocarbons

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 007149

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
CMS-S-01-4-070920	007149-01	Soil	07/09/20
CMS-S-02-4-070920	007149-02	Soil	07/09/20
CMS-S-03-4-070920	007149-03	Soil	07/09/20
CMS-S-04-4-070920	007149-04	Soil	07/09/20
CMS-B-35-6-070920	007149-05	Soil	07/09/20
CMS-B-38-6-070920	007149-06	Soil	07/09/20
CMS-B-36-6-070920	007149-07	Soil	07/09/20
CMS-S-05-4-070920	007149-08	Soil	07/09/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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:

Polynuclear Aromatic Hydrocarbons (PAHs) by Environmental Protection Agency (EPA) SW 846 Method 8270E in Selected Ion Monitoring (SIM) mode

All sample results were subjected to Stage 2A 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 and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Stage 2A validation.

III. Initial Calibration and Initial Calibration Verification

Initial calibration data were not reviewed for Stage 2A validation.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. 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.

IX. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Internal Standards

Internal standards data were not reviewed for Stage 2A validation.

XII. Compound Quantitation

Raw data were not reviewed for Stage 2A validation.

XIII. Target Compound Identifications

Raw data were not reviewed for Stage 2A validation.

XIV. System Performance

Raw data were not reviewed for Stage 2A validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG 007149

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG 007149

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Field Blank Data Qualification Summary - SDG 007149

No Sample Data Qualified in this SDG

LDC #: 48922B2b
SDG #: 007149
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 08/04/20
Page: 1 of 1
Reviewer: LS
2nd Reviewer:

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270E-SIM)

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.	GC/MS Instrument performance check	N	
III.	Initial calibration/ICV	N/N	
IV.	Continuing calibration	N	
V.	Laboratory Blanks	A	
VI.	Field blanks	N	
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	N	Non client
IX.	Laboratory control samples	A	LCS
X.	Field duplicates	N	
XI.	Internal standards	N	
XII.	Compound quantitation RL/LOQ/LODs	N	Dry weight basis = 1-8
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	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	MS CSM-S-01-4-070920	007149-01	Soil	07/09/20
2	MS CSM-S-02-4-070920	007149-02	Soil	07/09/20
3	MS CSM-S-03-4-070920	007149-03	Soil	07/09/20
4	MS CSM-S-04-4-070920	007149-04	Soil	07/09/20
5	MS CSM-B-35-6-070920	007149-05	Soil	07/09/20
6	MS CSM-B-38-6-070920	007149-06	Soil	07/09/20
7	MS CSM-B-36-6-070920	007149-07	Soil	07/09/20
8	MS CSM-S-05-4-070920	007149-08	Soil	07/09/20
9				

Notes:

1	DD-1576 MB2 1/5						

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: September 9, 2020

Parameters: Polychlorinated Biphenyls

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 007149

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
CMS-S-01-4-070920	007149-01	Soil	07/09/20
CMS-S-02-4-070920	007149-02	Soil	07/09/20
CMS-S-03-4-070920	007149-03	Soil	07/09/20
CMS-S-04-4-070920	007149-04	Soil	07/09/20
CMS-B-35-6-070920	007149-05	Soil	07/09/20
CMS-B-38-6-070920	007149-06	Soil	07/09/20
CMS-B-36-6-070920	007149-07	Soil	07/09/20
CMS-B-36-6-070920DL	007149-07DL	Soil	07/09/20
CMS-S-05-4-070920	007149-08	Soil	07/09/20
CMS-S-01-4-070920MS	007149-01MS	Soil	07/09/20
CMS-S-01-4-070920MSD	007149-01MSD	Soil	07/09/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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 Stage 2A 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.

DNR Do not report from this analysis; the result for this analyte is to be reported from an alternative analysis.

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

Initial calibration data were not reviewed for Stage 2A validation.

III. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

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 with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	Flag	A or P
CMS-S-01-4-070920MS/MSD (CMS-S-01-4-070920)	Aroclor-1260	-	199 (38-124)	J (all detects)	A

Relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	RPD (Limits)	Flag	A or P
CMS-S-01-4-070920MS/MSD (CMS-S-01-4-070920)	Aroclor-1260	74 (≤20)	J (all detects)	A

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 Stage 2A validation.

XI. Target Compound Identification

Raw data were not reviewed for Stage 2A validation.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method.

In the case where more than one result was reported for an individual sample, the least technically acceptable results were deemed not reportable as follows:

Sample	Compound	Reason	Flag	A or P
CMS-B-36-6-070920	Aroclor-1254 Aroclor-1260	Results exceeded calibration range.	DNR	A

Due to MS/MSD %R and RPD, data were qualified as estimated in one sample.

No results were rejected in this SDG.

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Data Qualification Summary - SDG 007149

Sample	Compound	Flag	A or P	Reason
CMS-S-01-4-070920	Aroclor-1260	J (all detects)	A	Matrix spike/Matrix spike duplicate (%R)
CMS-S-01-4-070920	Aroclor-1260	J (all detects)	A	Matrix spike/Matrix spike duplicate (RPD)
CMS-B-36-6-070920	Aroclor-1254 Aroclor-1260	DNR	A	Overall assessment of data

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 007149

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 007149

No Sample Data Qualified in this SDG

LDC #: 48922B3b
SDG #: 007149
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 01/04/21
Page: 1 of 1
Reviewer: LT
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	N/N	
III.	Continuing calibration	N	
IV.	Laboratory Blanks	A	
V.	Field blanks	N	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	SW	(10, 11)
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	N	
X.	Compound quantitation/RL/LOQ/LODs	N	Dry weight basis = 1-9
XI.	Target compound identification	N	
XII	Overall assessment of data	SW	

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	MS CSM-S-01-4-070920	007149-01	Soil	07/09/20
2	MS CSM-S-02-4-070920	007149-02	Soil	07/09/20
3	MS CSM-S-03-4-070920	007149-03	Soil	07/09/20
4	MS CSM-S-04-4-070920	007149-04	Soil	07/09/20
5	MS CSM-B-35-6-070920	007149-05	Soil	07/09/20
6	MS CSM-B-38-6-070920	007149-06	Soil	07/09/20
7	MS CSM-B-36-6-070920	007149-07	Soil	07/09/20
8	MS CSM-B-36-6-070920DL	007149-07DL	Soil	07/09/20
9	MS CSM-S-05-4-070920	007149-08	Soil	07/09/20
10	MS CSM-S-01-4-070920MS	007149-01MS	Soil	07/09/20
11	MS CSM-S-01-4-070920MSD	007149-01MSD	Soil	07/09/20
12				
13				

Notes:

1	00-530 MB 16						

LDC #: 48922B3b

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: LT

METHOD: X **GC** ___ **HPLC**

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y x N___ N/A___ Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG?

Y x N___ N/A___ Was an MS/MSD analyzed every 20 samples for each matrix or whenever a sample extraction was performed?

Y___ N x N/A___ Were the MS/MSD percent recoveries (%R) and relative percent differences (RPD) within QC limits?

#	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	10/11	Aroclor-1260		199 (38 - 124)		1 (DET)	J/A DETS
		Aroclor-1260			74 (≤ 20)	↓	↓

LDC #: 48922B3b

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Reviewer: LT

METHOD: GC PCBs (EPA SW 846 Method 8082A)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

Yes x No__ N/A__ Was the overall quality and usability of the data acceptable?

#	Date	Sample ID	Compound	Finding	Qualifications
		7	Aroclor 1254 and Aroclor 1260	exceed calibration range	DNR

Comments: _____

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: September 9, 2020

Parameters: Polynuclear Aromatic Hydrocarbons

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 007180

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
CMS-B-37-6-071020	007180-01	Soil	07/10/20
CMS-S-06-4-071020	007180-02	Soil	07/10/20
CMS-S-07-4-071020	007180-03	Soil	07/10/20
CMS-508-071020	007180-04	Soil	07/10/20
CMS-S-08-4-071020	007180-05	Soil	07/10/20
CMS-B-34-6-071020	007180-06	Soil	07/10/20
CMS-B-37-6-071020MS	007180-01MS	Soil	07/10/20
CMS-B-37-6-071020MSD	007180-01MSD	Soil	07/10/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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:

Polynuclear Aromatic Hydrocarbons (PAHs) by Environmental Protection Agency (EPA) SW 846 Method 8270E in Selected Ion Monitoring (SIM) mode

All sample results were subjected to Stage 2A 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 and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Stage 2A validation.

III. Initial Calibration and Initial Calibration Verification

Initial calibration data were not reviewed for Stage 2A validation.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. 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.

IX. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

X. Field Duplicates

Samples CMS-S-07-4-071020 and CMS-508-071020 were identified as field duplicates. No results were detected in any of the samples.

XI. Internal Standards

Internal standards data were not reviewed for Stage 2A validation.

XII. Compound Quantitation

Raw data were not reviewed for Stage 2A validation.

XIII. Target Compound Identifications

Raw data were not reviewed for Stage 2A validation.

XIV. System Performance

Raw data were not reviewed for Stage 2A validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG 007180

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG 007180

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Field Blank Data Qualification Summary - SDG 007180

No Sample Data Qualified in this SDG

LDC #: 48922C2b

SDG #: 007180

Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET

Stage 2A

Date: 09/04/20

Page: 1 of 1

Reviewer: LT

2nd Reviewer:

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270E-SIM)

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.	GC/MS Instrument performance check	N	
III.	Initial calibration/ICV	N/N	
IV.	Continuing calibration	N	
V.	Laboratory Blanks	A	
VI.	Field blanks	N	
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	A	(7,8)
IX.	Laboratory control samples	A	LCS
X.	Field duplicates	ND	D=3+4
XI.	Internal standards	N	
XII.	Compound quantitation RL/LOQ/LODs	N	Dry weight basis= 1-6
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	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	CMS-B-37-6-071020		007180-01	Soil	07/10/20
2	CMS-S-06-4-071020		007180-02	Soil	07/10/20
3	CMS-S-07-4-071020	D	007180-03	Soil	07/10/20
4	CMS-508-071020	D	007180-04	Soil	07/10/20
5	CMS-S-08-4-071020		007180-05	Soil	07/10/20
6	CMS-B-34-6-071020		007180-06	Soil	07/10/20
7	CMS-B-37-6-071020MS		007180-01MS	Soil	07/10/20
8	CMS-B-37-6-071020MSD		007180-01MSD	Soil	07/10/20
9					

Notes:

1	06-1587 MB 1/5						

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: September 9, 2020

Parameters: Polychlorinated Biphenyls

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 007180

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
CMS-B-37-6-071020	007180-01	Soil	07/10/20
CMS-S-06-4-071020	007180-02	Soil	07/10/20
CMS-S-07-4-071020	007180-03	Soil	07/10/20
CMS-508-071020	007180-04	Soil	07/10/20
CMS-S-08-4-071020	007180-05	Soil	07/10/20
CMS-B-34-6-071020	007180-06	Soil	07/10/20
CMS-B-37-6-071020MS	007180-01MS	Soil	07/10/20
CMS-B-37-6-071020MSD	007180-01MSD	Soil	07/10/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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 Stage 2A 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 and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Initial Calibration and Initial Calibration Verification

Initial calibration data were not reviewed for Stage 2A validation.

III. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

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 with the following exceptions:

Spike ID (Associated Samples)	Compound	RPD (Limits)	Flag	A or P
CMS-B-37-6-071020MS/MSD (CMS-B-37-6-071020)	Aroclor-1016 Aroclor-1260	27 (≤20) 29 (≤20)	NA	-

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

Samples CMS-S-07-4-071020 and CMS-508-071020 were identified as field duplicates. No results were detected in any of the samples.

X. Compound Quantitation

Raw data were not reviewed for Stage 2A validation.

XI. Target Compound Identification

Raw data were not reviewed for Stage 2A validation.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Data Qualification Summary - SDG 007180

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 007180

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 007180

No Sample Data Qualified in this SDG

LDC #: 48922C3b
SDG #: 007180
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 09/04/20
Page: 1 of 1
Reviewer: LT
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	N/N	
III.	Continuing calibration	N	
IV.	Laboratory Blanks	A	
V.	Field blanks	N	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	SW	(7,8)
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	ND	D=3+4
X.	Compound quantitation/RL/LOQ/LODs	N	Dry weight basis = 1-6
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	CMS-B-37-6-071020		007180-01	Soil	07/10/20
2	CMS-S-06-4-071020		007180-02	Soil	07/10/20
3	CMS-S-07-4-071020	D	007180-03	Soil	07/10/20
4	CMS-508-071020	D	007180-04	Soil	07/10/20
5	CMS-S-08-4-071020		007180-05	Soil	07/10/20
6	CMS-B-34-6-071020		007180-06	Soil	07/10/20
7	CMS-B-37-6-071020MS		007180-01MS	Soil	07/10/20
8	CMS-B-37-6-071020MSD		007180-01MSD	Soil	07/10/20
9					
10					
11					
12					
13					

Notes:

1	60-1587 MB 1/5						

LDC #: 48922C3b

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: LT

METHOD: _X_ **GC** __ **HPLC**

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y**x** N__ N/A__ Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG?

Y**x** N__ N/A__ Was an MS/MSD analyzed every 20 samples for each matrix or whenever a sample extraction was performed?

Y__ N**x** N/A__ Were the MS/MSD percent recoveries (%R) and relative percent differences (RPD) within QC limits?

#	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	7/8	Aroclor-1016			27 (≤ 20)	1 (ND)	J/A DETS
		Aroclor-1260			29 (≤ 20)	↓	↓

LDC Report# 48922D2b

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: September 9, 2020

Parameters: Polynuclear Aromatic Hydrocarbons

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 007206

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
CMS-B-27-6	007206-01	Soil	07/13/20
CMS-B-26-6	007206-02	Soil	07/13/20
CMS-B-31-6	007206-03	Soil	07/13/20
CMS-S-09-4	007206-04	Soil	07/13/20
CMS-S-10-4	007206-05	Soil	07/13/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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:

Polynuclear Aromatic Hydrocarbons (PAHs) by Environmental Protection Agency (EPA) SW 846 Method 8270E in Selected Ion Monitoring (SIM) mode

All sample results were subjected to Stage 2A 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 and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Stage 2A validation.

III. Initial Calibration and Initial Calibration Verification

Initial calibration data were not reviewed for Stage 2A validation.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. 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.

IX. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Internal Standards

Internal standards data were not reviewed for Stage 2A validation.

XII. Compound Quantitation

Raw data were not reviewed for Stage 2A validation.

XIII. Target Compound Identifications

Raw data were not reviewed for Stage 2A validation.

XIV. System Performance

Raw data were not reviewed for Stage 2A validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG 007206

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG 007206

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Field Blank Data Qualification Summary - SDG 007206

No Sample Data Qualified in this SDG

LDC #: 48922D2b
SDG #: 007206
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 09/04/20
Page: 1 of 1
Reviewer: LT
2nd Reviewer:

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270E-SIM)

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.	GC/MS Instrument performance check	N	
III.	Initial calibration/ICV	N/N	
IV.	Continuing calibration	N	
V.	Laboratory Blanks	A	
VI.	Field blanks	N	
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	A	SDG 007180
IX.	Laboratory control samples	A	LCS
X.	Field duplicates	N	
XI.	Internal standards	N	
XII.	Compound quantitation RL/LOQ/LODs	N	Dry weight basis = 1-5
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	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	CMS-B-27-6	007206-01	Soil	07/13/20
2	CMS-B-26-6	007206-02	Soil	07/13/20
3	CMS-B-31-6	007206-03	Soil	07/13/20
4	CMS-S-09-4	007206-04	Soil	07/13/20
5	CMS-S-10-4	007206-05	Soil	07/13/20
6				
7				
8				
9				

Notes:

1	00-158 MB21/5						

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: September 9, 2020

Parameters: Polychlorinated Biphenyls

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 007206

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
CMS-B-27-6	007206-01	Soil	07/13/20
CMS-B-26-6	007206-02	Soil	07/13/20
CMS-B-31-6	007206-03	Soil	07/13/20
CMS-S-09-4	007206-04	Soil	07/13/20
CMS-S-09-4DL	007206-04DL	Soil	07/13/20
CMS-S-10-4	007206-05	Soil	07/13/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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 Stage 2A 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.

DNR Do not report from this analysis; the result for this analyte is to be reported from an alternative analysis.

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

Initial calibration data were not reviewed for Stage 2A validation.

III. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

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 not within QC limits. No data were qualified since there were no associated samples in 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 Stage 2A validation.

XI. Target Compound Identification

Raw data were not reviewed for Stage 2A validation.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method.

In the case where more than one result was reported for an individual sample, the least technically acceptable results were deemed not reportable as follows:

Sample	Compound	Reason	Flag	A or P
CMS-S-09-4	Aroclor-1254 Aroclor-1260	Results exceeded calibration range.	DNR	A

No results were rejected in this SDG.

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Data Qualification Summary - SDG 007206

Sample	Compound	Flag	A or P	Reason
CMS-S-09-4	Aroclor-1254 Aroclor-1260	DNR	A	Overall assessment of data

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 007206

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 007206

No Sample Data Qualified in this SDG

LDC #: 48922D3b
SDG #: 007206
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 09/04/20
Page: 1 of 1
Reviewer: CT
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	N/N	
III.	Continuing calibration	N	
IV.	Laboratory Blanks	A	
V.	Field blanks	N	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	SW	SDG 007180 RPDs out, not associated
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	N	
X.	Compound quantitation/RL/LOQ/LODs	N	Dry weight basis = 1-6
XI.	Target compound identification	N	
XII	Overall assessment of data	SW	

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	CMS-B-27-6	007206-01	Soil	07/13/20
2	CMS-B-26-6	007206-02	Soil	07/13/20
3	CMS-B-31-6	007206-03	Soil	07/13/20
4	CMS-S-09-4	007206-04	Soil	07/13/20
5	CMS-S-09-4DL	007206-04DL	Soil	07/13/20
6	CMS-S-10-4	007206-05	Soil	07/13/20
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Notes:

1	00-1586 MB2 1/6						

LDC #: 48922D3b

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Reviewer: LT

METHOD: GC PCBs (EPA SW 846 Method 8082A)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

Yes x No__ N/A__ Was the overall quality and usability of the data acceptable?

#	Date	Sample ID	Compound	Finding	Qualifications
		4	Aroclor 1254 and Aroclor 1260	exceed calibration range	DNR

Comments: _____

LDC Report# 48922E2b

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: September 9, 2020

Parameters: Polynuclear Aromatic Hydrocarbons

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 007234

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
CMS-B-33-6	007234-01	Soil	07/14/20
CMS-B-32-6	007234-02	Soil	07/14/20
CMS-B-28-6	007234-03	Soil	07/14/20
CMS-B-29-6	007234-04	Soil	07/14/20
CMS-B-30-6	007234-05	Soil	07/14/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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:

Polynuclear Aromatic Hydrocarbons (PAHs) by Environmental Protection Agency (EPA) SW 846 Method 8270E in Selected Ion Monitoring (SIM) mode

All sample results were subjected to Stage 2A 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 and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Stage 2A validation.

III. Initial Calibration and Initial Calibration Verification

Initial calibration data were not reviewed for Stage 2A validation.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

VII. Surrogates

Surrogates were added to all samples as required by the method. Surrogate recoveries (%R) were not within QC limits for sample CMS-B-28-6. Using professional judgment, no data were qualified when one surrogate %R was outside the QC limits and the %R was greater than or equal to 10% or for samples analyzed at greater than or equal to 5X dilution.

VIII. 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.

IX. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Internal Standards

Internal standards data were not reviewed for Stage 2A validation.

XII. Compound Quantitation

Raw data were not reviewed for Stage 2A validation.

XIII. Target Compound Identifications

Raw data were not reviewed for Stage 2A validation.

XIV. System Performance

Raw data were not reviewed for Stage 2A validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG 007234

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG 007234

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Field Blank Data Qualification Summary - SDG 007234

No Sample Data Qualified in this SDG

LDC #: 48922E2b
SDG #: 007234
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 09/04/20
Page: 1 of 1
Reviewer: LT
2nd Reviewer:

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270E-SIM)

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.	GC/MS Instrument performance check	N	
III.	Initial calibration/ICV	N/N	
IV.	Continuing calibration	N	
V.	Laboratory Blanks	A	
VI.	Field blanks	N	
VII.	Surrogate spikes	SW	3-one out 3 ≥5X dilution = ND
VIII.	Matrix spike/Matrix spike duplicates	N	Non client
IX.	Laboratory control samples	A	LCS
X.	Field duplicates	N	
XI.	Internal standards	N	
XII.	Compound quantitation RL/LOQ/LODs	N	Dry weight basis = 1-5
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	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	CMS-B-33-6	007234-01	Soil	07/14/20
2	CMS-B-32-6	007234-02	Soil	07/14/20
3	CMS-B-28-6	007234-03	Soil	07/14/20
4	CMS-B-29-6	007234-04	Soil	07/14/20
5	CMS-B-30-6	007234-05	Soil	07/14/20
6				
7				
8				
9				

Notes:

1	00-1603MB21/5						

LDC Report# 48922E3b

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: September 9, 2020

Parameters: Polychlorinated Biphenyls

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 007234

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
CMS-B-33-6	007234-01	Soil	07/14/20
CMS-B-32-6	007234-02	Soil	07/14/20
CMS-B-28-6	007234-03	Soil	07/14/20
CMS-B-29-6	007234-04	Soil	07/14/20
CMS-B-30-6	007234-05	Soil	07/14/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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 Stage 2A 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 and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Initial Calibration and Initial Calibration Verification

Initial calibration data were not reviewed for Stage 2A validation.

III. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

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 Stage 2A validation.

XI. Target Compound Identification

Raw data were not reviewed for Stage 2A validation.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Data Qualification Summary - SDG 007234

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 007234

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 007234

No Sample Data Qualified in this SDG

LDC #: 48922E3b
SDG #: 007234
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 09/04/20
Page: 1 of 1
Reviewer: V
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	N/N	
III.	Continuing calibration	N	
IV.	Laboratory Blanks	A	
V.	Field blanks	N	
VI.	Surrogate spikes	A	~~3 one out,~~
VII.	Matrix spike/Matrix spike duplicates	N	Non client
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	N	
X.	Compound quantitation/RL/LOQ/LODs	N	Dry weight basis = 1-5
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	CMS-B-33-6	007234-01	Soil	07/14/20
2	CMS-B-32-6	007234-02	Soil	07/14/20
3	CMS-B-28-6	007234-03	Soil	07/14/20
4	CMS-B-29-6	007234-04	Soil	07/14/20
5	CMS-B-30-6	007234-05	Soil	07/14/20
6				
7				
8				
9				
10				
11				
12				
13				

Notes:

1	00-1600 MB3 1/6						

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: September 9, 2020

Parameters: Polychlorinated Biphenyls

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 007259

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
OMS-S-17-2.5	007259-01	Soil	07/15/20
OMS-S-17-2.5DL	007259-01DL	Soil	07/15/20
OMS-S-18-2.5	007259-02	Soil	07/15/20
OMS-509	007259-03	Soil	07/15/20
OMS-509DL	007259-03DL	Soil	07/15/20
OMS-S-19-2.5	007259-04	Soil	07/15/20
OMS-S-17-2.5MS	007259-01MS	Soil	07/15/20
OMS-S-17-2.5MSD	007259-01MSD	Soil	07/15/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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 Stage 2A 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.

DNR Do not report from this analysis; the result for this analyte is to be reported from an alternative analysis.

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

Initial calibration data were not reviewed for Stage 2A validation.

III. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

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 with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	Flag	A or P
OMS-S-17-2.5MS/MSD (OMS-S-17-2.5)	Aroclor-1260	1600 (38-124)	1400 (38-124)	NA	-

Relative percent differences (RPD) were within QC limits.

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

Samples OMS-S-17-2.5 and OMS-509 and samples OMS-S-17-2.5DL and OMS-509DL were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Compound	Concentration (mg/Kg)		RPD
	OMS-S-17-2.5DL	OMS-509DL	
Aroclor-1254	20	8.0	86

X. Compound Quantitation

Raw data were not reviewed for Stage 2A validation.

XI. Target Compound Identification

Raw data were not reviewed for Stage 2A validation.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method.

In the case where more than one result was reported for an individual sample, the least technically acceptable results were deemed not reportable as follows:

Sample	Compound	Reason	Flag	A or P
OMS-S-17-2.5 OMS-509	Aroclor-1254	Results exceeded calibration range.	DNR	A

No results were rejected in this SDG.

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Data Qualification Summary - SDG 007259

Sample	Compound	Flag	A or P	Reason
OMS-S-17-2.5 OMS-509	Aroclor-1254	DNR	A	Overall assessment of data

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 007259

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 007259

No Sample Data Qualified in this SDG

LDC #: 48922F3b
SDG #: 007259
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 09/21/20
Page: 1 of 1
Reviewer: LT
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	N/N	
III.	Continuing calibration	N	
IV.	Laboratory Blanks	A	
V.	Field blanks	N	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	SW	(7,8)
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	SW	D = 1+4, 2+5
X.	Compound quantitation/RL/LOQ/LODs	N	Dry weight basis = 1-6
XI.	Target compound identification	N	
XII	Overall assessment of data	SW	

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	OMS-S-17-2.5	D	007259-01	Soil	07/15/20
2	OMS-S-17-2.5DL	D	007259-01DL	Soil	07/15/20
3	OMS-S-18-2.5		007259-02	Soil	07/15/20
4	OMS-509	D	007259-03	Soil	07/15/20
5	OMS-509DL	D	007259-03DL	Soil	07/15/20
6	OMS-S-19-2.5		007259-04	Soil	07/15/20
7	OMS-S-17-2.5MS		007259-01MS	Soil	07/15/20
8	OMS-S-17-2.5MSD		007259-01MSD	Soil	07/15/20
9					
10					
11					
12					
13					

Notes:

1	00-1640MB1/6						

LDC #: 48922F3b

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

METHOD: _X_ **GC** __ **HPLC**

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y**x** N__ N/A__ Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG?

Y**x** N__ N/A__ Was an MS/MSD analyzed every 20 samples for each matrix or whenever a sample extraction was performed?

Y__ N**x** N/A__ Were the MS/MSD percent recoveries (%R) and relative percent differences (RPD) within QC limits?

#	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	7/8	Aroclor-1260	1,600 (38 - 124)	1,400 (38 - 124)		1 (ND)	J/A DETS

LDC#:48922F3b **VALIDATION FINDINGS WORKSHEET** Page:_1_of_1_
Field Duplicates Reviewer:__LT_____
2nd Reviewer:_____

METHOD: GC PCBs (EPA SW846 Method 8082A)

Compound	Concentration (mg/kg)		RPD
	2	5	
Aroclor 1254	20	8.0	86

LDC #: 48922F3b

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Reviewer: LT

METHOD: GC PCBs (EPA SW 846 Method 8082A)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

Yes x No__ N/A__ Was the overall quality and usability of the data acceptable?

#	Date	Sample ID	Compound	Finding	Qualifications
		1,4	Aroclor 1254	exceed calibration range	DNR

Comments: _____

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: August 27, 2020

Parameters: Metals

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 007259

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
OMS-S-17-2.5	007259-01	Soil	07/15/20
OMS-S-18-2.5	007259-02	Soil	07/15/20
OMS-509	007259-03	Soil	07/15/20
OMS-S-19-2.5	007259-04	Soil	07/15/20
PM-B-6-S-27-6	007259-05	Soil	07/15/20
OMS-S-17-2.5MS	007259-01MS	Soil	07/15/20
OMS-S-17-2.5MSD	007259-01MSD	Soil	07/15/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 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 by Environmental Protection Agency (EPA) SW 846 Method 6020B
Mercury by EPA Method 1631E

All sample results were subjected to Stage 2A 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

ICP-MS tune data were not reviewed for Stage 2A validation.

III. Instrument Calibration

Instrument calibration data were not reviewed for Stage 2A validation.

IV. ICP Interference Check Sample Analysis

ICP Interference check sample (ICS) analysis data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the methods. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

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
OMS-S-17-2.5MS/MSD (All samples in SDG 007259)	Mercury	134 (71-125)	-	J (all detects) UJ (all non-detects)	A
OMS-S-17-2.5MS/MSD (OMS-S-17-2.5 OMS-S-18-2.5 OMS-509 OMS-S-19-2.5)	Copper	471 (75-125)	66 (75-125)	J (all detects)	A

Relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	RPD (Limits)	Flag	A or P
OMS-S-17-2.5MS/MSD (OMS-S-17-2.5 OMS-S-18-2.5 OMS-509 OMS-S-19-2.5)	Copper	151 (≤20)	J (all detects)	A

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 was not performed for this SDG.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the methods. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

Samples OMS-S-17-2.5 and OMS-509 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/Kg)		RPD
	OMS-S-17-2.5	OMS-509	
Copper	66.2	81.9	21
Mercury	0.12	0.13	8

XII. Internal Standards (ICP-MS)

Internal standards data were not reviewed for Stage 2A validation.

XIII. Sample Result Verification

Raw data were not reviewed for Stage 2A validation.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods.

Due to MS/MSD %R and RPD, data were qualified as estimated in five samples.

No results were rejected in this SDG.

Kimberly-Clark Upland Area
Metals - Data Qualification Summary - SDG 007259

Sample	Analyte	Flag	A or P	Reason
OMS-S-17-2.5 OMS-S-18-2.5 OMS-509 OMS-S-19-2.5 PM-B-6-S-27-6	Mercury	J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (%R)
OMS-S-17-2.5 OMS-S-18-2.5 OMS-509 OMS-S-19-2.5	Copper	J (all detects)	A	Matrix spike/Matrix spike duplicate (%R)
OMS-S-17-2.5 OMS-S-18-2.5 OMS-509 OMS-S-19-2.5	Copper	J (all detects)	A	Matrix spike/Matrix spike duplicate (RPD)

Kimberly-Clark Upland Area
Metals - Laboratory Blank Data Qualification Summary - SDG 007259

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Metals - Field Blank Data Qualification Summary - SDG 007259

No Sample Data Qualified in this SDG

LDC #: 48922F4a
SDG #: 007259
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 8/24/2020
Page: 1 of 1
Reviewer: OM
2nd Reviewer:

METHOD: Of, Hg (EPA SW 846 Method 6020B/EPA Method 1631E)

The samples (W) 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	N	
III.	Instrument Calibration	N	
IV.	ICP Interference Check Sample (ICS) Analysis	N	
V.	Laboratory Blanks	A	
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	SW	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	N	
X.	Laboratory control samples	A	ICS
XI.	Field Duplicates	SW	(1,3)
XII.	Internal Standard (ICP-MS)	N	
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	OMS-S-17-2.5	007259-01	Soil	07/15/20
2	OMS-S-18-2.5	007259-02	Soil	07/15/20
3	OMS-509	007259-03	Soil	07/15/20
4	OMS-S-19-2.5	007259-04	Soil	07/15/20
5	PM-B-6-S-27-6	007259-05	Soil	07/15/20
6	OMS-S-17-2.5MS	007259-01MS	Soil	07/15/20
7	OMS-S-17-2.5MSD	007259-01MSD	Soil	07/15/20
8				
9				
10				
11				
12				
13				

Notes:

LDC #: 48922F4a

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: DTM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-4	S	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, (Cu), Fe, Pb, Li, Mg, Mo, Mn, (Hg), Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
5	S	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, (Hg), Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
DC6-7	S	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, (Cu), Fe, Pb, Li, Mg, Mo, Mn, (Hg), Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
Analysis Method		
ICP		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
ICP-MS		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
GFAA		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn

Comments: Mercury by CVAA if performed

LDC #: 48922F4a

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: DTM
2nd Reviewer:

METHOD: Trace metals (EPA SW 846 Method 6020/6010/7470)

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
	6/7	S	Hg	134(71-125)			ALL	J/A (det/ND)
			Cu	471(75-125)	66		1-4	J/UJ/A (det)
						151(20)	1-4	J/UJ/A (det)

Comments:

LDC#: 48922F4a

VALIDATION FINDINGS WORKSHEET

Field Duplicates

Reviewer: DTM

2nd Reviewer:

METHOD: Metals (EPA Method 6010/6020/7000)

Analyte	Concentration (mg/Kg)		RPD
	1	3	
Copper	66.2	81.9	21
Mercury	0.12	0.13	8

V:\Darionna\FIELD DUPLICATES\Field Duplicates\FD_inorganic\2020\48922F4a.wpd

LDC Report# 48922G2b

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: September 9, 2020

Parameters: Polynuclear Aromatic Hydrocarbons

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 007302

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
CMS-B-24-6	007302-01	Soil	07/16/20
CMS-B-25-6	007302-02	Soil	07/16/20
CMS-B-18-6	007302-03	Soil	07/17/20
CMS-B-19-6	007302-04	Soil	07/17/20
CMS-B-20-6	007302-05	Soil	07/17/20
CMS-S-11-4	007302-06	Soil	07/17/20
CMS-S-12-4	007302-07	Soil	07/17/20
CMS-B-22-6	007302-08	Soil	07/17/20
CMS-B-21-6	007302-09	Soil	07/17/20
CMS-B-25-6MS	007302-02MS	Soil	07/16/20
CMS-B-25-6MSD	007302-02MSD	Soil	07/16/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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:

Polynuclear Aromatic Hydrocarbons (PAHs) by Environmental Protection Agency (EPA) SW 846 Method 8270E in Selected Ion Monitoring (SIM) mode

All sample results were subjected to Stage 2A 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 and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Stage 2A validation.

III. Initial Calibration and Initial Calibration Verification

Initial calibration data were not reviewed for Stage 2A validation.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. 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.

IX. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Internal Standards

Internal standards data were not reviewed for Stage 2A validation.

XII. Compound Quantitation

Raw data were not reviewed for Stage 2A validation.

XIII. Target Compound Identifications

Raw data were not reviewed for Stage 2A validation.

XIV. System Performance

Raw data were not reviewed for Stage 2A validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG 007302

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG 007302

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Field Blank Data Qualification Summary - SDG 007302

No Sample Data Qualified in this SDG

LDC #: 48922G2b
SDG #: 007302
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 09/04/20
Page: 1 of 1
Reviewer: LT
2nd Reviewer:

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270E-SIM)

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.	GC/MS Instrument performance check	N	
III.	Initial calibration/ICV	N/N	
IV.	Continuing calibration	N	
V.	Laboratory Blanks	A	
VI.	Field blanks	N	
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	A	(1911)
IX.	Laboratory control samples	A	LCS
X.	Field duplicates	N	
XI.	Internal standards	N	
XII.	Compound quantitation RL/LOQ/LODs	N	Dry weight basis = 1-9
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	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	CMS-B-24-6	007302-01	Soil	07/16/20
2	CMS-B-25-6	007302-02	Soil	07/16/20
3	CMS-B-18-6	007302-03	Soil	07/17/20
4	CMS-B-19-6	007302-04	Soil	07/17/20
5	CMS-B-20-6	007302-05	Soil	07/17/20
6	CMS-S-11-4	007302-06	Soil	07/17/20
7	CMS-S-12-4	007302-07	Soil	07/17/20
8	CMS-B-22-6	007302-08	Soil	07/17/20
9	CMS-B-21-6	007302-09	Soil	07/17/20
10	CMS-B-25-6MS	007302-02MS	Soil	07/16/20
11	CMS-B-25-6MSD	007302-02MSD	Soil	07/16/20
12				
13	1.00-1650 MB 1/5			
14				

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: September 9, 2020

Parameters: Polychlorinated Biphenyls

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 007302

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
CMS-B-24-6	007302-01	Soil	07/16/20
CMS-B-25-6	007302-02	Soil	07/16/20
CMS-B-18-6	007302-03	Soil	07/17/20
CMS-B-19-6	007302-04	Soil	07/17/20
CMS-B-20-6	007302-05	Soil	07/17/20
CMS-S-11-4	007302-06	Soil	07/17/20
CMS-S-12-4	007302-07	Soil	07/17/20
CMS-B-22-6	007302-08	Soil	07/17/20
CMS-B-21-6	007302-09	Soil	07/17/20
CMS-B-24-6MS	007302-01MS	Soil	07/16/20
CMS-B-24-6MSD	007302-01MSD	Soil	07/16/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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 Stage 2A 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 and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Initial Calibration and Initial Calibration Verification

Initial calibration data were not reviewed for Stage 2A validation.

III. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

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 with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	Flag	A or P
CMS-B-24-6MS/MSD (CMS-B-24-6)	Aroclor-1260	-	614 (38-124)	J (all detects)	A

Relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	RPD (Limits)	Flag	A or P
CMS-B-24-6MS/MSD (CMS-B-24-6)	Aroclor-1016	33 (≤20)	NA	-

Spike ID (Associated Samples)	Compound	RPD (Limits)	Flag	A or P
CMS-B-24-6MS/MSD (CMS-B-24-6)	Aroclor-1260	149 (≤20)	J (all detects)	A

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 Stage 2A validation.

XI. Target Compound Identification

Raw data were not reviewed for Stage 2A validation.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method.

Due to MS/MSD %R and RPD, data were qualified as estimated in one sample.

No results were rejected in this SDG.

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Data Qualification Summary - SDG 007302

Sample	Compound	Flag	A or P	Reason
CMS-B-24-6	Aroclor-1260	J (all detects)	A	Matrix spike/Matrix spike duplicate (%R)
CMS-B-24-6	Aroclor-1260	J (all detects)	A	Matrix spike/Matrix spike duplicate (RPD)

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 007302

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 007302

No Sample Data Qualified in this SDG

LDC #: 48922G3b
SDG #: 007302
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 09/04/20
Page: 1 of 1
Reviewer: LT
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	N/N	
III.	Continuing calibration	N	
IV.	Laboratory Blanks	A	
V.	Field blanks	N	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	SW	(10,11)
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	N	
X.	Compound quantitation/RL/LOQ/LODs	N	Dry weight basis = 1-9
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	CMS-B-24-6	007302-01	Soil	07/16/20
2	CMS-B-25-6	007302-02	Soil	07/16/20
3	CMS-B-18-6	007302-03	Soil	07/17/20
4	CMS-B-19-6	007302-04	Soil	07/17/20
5	CMS-B-20-6	007302-05	Soil	07/17/20
6	CMS-S-11-4	007302-06	Soil	07/17/20
7	CMS-S-12-4	007302-07	Soil	07/17/20
8	CMS-B-22-6	007302-08	Soil	07/17/20
9	CMS-B-21-6	007302-09	Soil	07/17/20
10	CMS-B-24-6MS	007302-01MS	Soil	07/16/20
11	CMS-B-24-6MSD	007302-01MSD	Soil	07/16/20
12				
13				

Notes:

1	OD-1651 MB 1/8						

LDC #: 48922G3b

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: LT

METHOD: _X_ **GC** ___ **HPLC**

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y**x** N___ N/A___ Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG?

Y**x** N___ N/A___ Was an MS/MSD analyzed every 20 samples for each matrix or whenever a sample extraction was performed?

Y___ N**x** N/A___ Were the MS/MSD percent recoveries (%R) and relative percent differences (RPD) within QC limits?

#	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	10/11	Aroclor-1260		614 (38 - 124)		1 (DET)	J/A DETS
		Aroclor-1016			33 (≤20)	(ND)	↓
		Aroclor-1260			149 (≤20)	(DET)	↓

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: August 27, 2020

Parameters: Mercury

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 007347

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
PM-B-6-S-28-6-072220	007347-01	Soil	07/22/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 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:

Mercury by Environmental Protection Agency (EPA) Method 1631E

All sample results were subjected to Stage 2A 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. Instrument Calibration

Instrument calibration data were not reviewed for Stage 2A validation.

III. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

IV. Field Blanks

No field blanks were identified in this SDG.

V. 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.

VI. 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.

VII. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

VIII. Field Duplicates

No field duplicates were identified in this SDG.

IX. Sample Result Verification

Raw data were not reviewed for Stage 2A validation.

X. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Mercury - Data Qualification Summary - SDG 007347

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Mercury - Laboratory Blank Data Qualification Summary - SDG 007347

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Mercury - Field Blank Data Qualification Summary - SDG 007347

No Sample Data Qualified in this SDG

LDC #: 48922H4c
SDG #: 007347
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 8/25/2020
Page: 1 of 1
Reviewer: DM
2nd Reviewer:

METHOD: Mercury (EPA Method 1631E)

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.	Instrument Calibration	N	
III.	Laboratory Blanks	A	
IV.	Field Blanks	N	
V.	Matrix Spike/Matrix Spike Duplicates	N	
VI.	Duplicate sample analysis	N	
VII.	Laboratory control samples	A	LCS
VIII.	Field Duplicates	N	
IX.	Sample Result Verification	N	
X	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	PM-B-6-S-28-6-072220	007347-01	Soil	07/22/20
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				

Notes:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: September 9, 2020

Parameters: Polynuclear Aromatic Hydrocarbons

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 007450

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
CMS-B-17-6	007450-01	Soil	07/27/20
CMS-B-16-6	007450-02	Soil	07/27/20
CMS-B-12-6	007450-03	Soil	07/27/20
CMS-S-13-4	007450-04	Soil	07/27/20
CMS-S-14-4	007450-05	Soil	07/27/20
CMS-S-15-4	007450-06	Soil	07/27/20
CMS-S-16-4	007450-07	Soil	07/27/20
CMS-510	007450-08	Soil	07/27/20
CMS-S-17-4	007450-09	Soil	07/27/20
CMS-S-18-4	007450-10	Soil	07/27/20
CMS-S-19-4	007450-11	Soil	07/27/20
CMS-S-20-4	007450-12	Soil	07/27/20
CMS-S-19-4MS	007450-11MS	Soil	07/27/20
CMS-S-19-4MSD	007450-11MSD	Soil	07/27/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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:

Polynuclear Aromatic Hydrocarbons (PAHs) by Environmental Protection Agency (EPA) SW 846 Method 8270E in Selected Ion Monitoring (SIM) mode

All sample results were subjected to Stage 2A 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 and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Stage 2A validation.

III. Initial Calibration and Initial Calibration Verification

Initial calibration data were not reviewed for Stage 2A validation.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. 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.

IX. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

X. Field Duplicates

Samples CMS-S-16-4 and CMS-510 were identified as field duplicates. No results were detected in any of the samples.

XI. Internal Standards

Internal standards data were not reviewed for Stage 2A validation.

XII. Compound Quantitation

Raw data were not reviewed for Stage 2A validation.

XIII. Target Compound Identifications

Raw data were not reviewed for Stage 2A validation.

XIV. System Performance

Raw data were not reviewed for Stage 2A validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG 007450

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG 007450

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Field Blank Data Qualification Summary - SDG 007450

No Sample Data Qualified in this SDG

LDC #: 48922I2b
SDG #: 007450
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 09/04/20
Page: 1 of 1
Reviewer: VT
2nd Reviewer:

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270E-SIM)

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.	GC/MS Instrument performance check	N	
III.	Initial calibration/ICV	N/N	
IV.	Continuing calibration	N	
V.	Laboratory Blanks	A	
VI.	Field blanks	N	
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	A	(13,14)
IX.	Laboratory control samples	A	LCS
X.	Field duplicates	ND	D = 7+8
XI.	Internal standards	N	
XII.	Compound quantitation RL/LOQ/LODs	N	Dry weight basis = 1-12
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	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	CMS-B-17-6		007450-01	Soil	07/27/20
2	CMS-B-16-6		007450-02	Soil	07/27/20
3	CMS-B-12-6		007450-03	Soil	07/27/20
4	CMS-S-13-4		007450-04	Soil	07/27/20
5	CMS-S-14-4		007450-05	Soil	07/27/20
6	CMS-S-15-4		007450-06	Soil	07/27/20
7	CMS-S-16-4	D	007450-07	Soil	07/27/20
8	CMS-510	D	007450-08	Soil	07/27/20
9	CMS-S-17-4		007450-09	Soil	07/27/20
10	CMS-S-18-4		007450-10	Soil	07/27/20
11	CMS-S-19-4		007450-11	Soil	07/27/20
12	CMS-S-20-4		007450-12	Soil	07/27/20
13	CMS-S-19-4MS		007450-11MS	Soil	07/27/20
14	CMS-S-19-4MSD		007450-11MSD	Soil	07/27/20

1. 00-1678MB2 1/5
2. 00-1701 MB1/5

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: September 9, 2020

Parameters: Polychlorinated Biphenyls

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 007450

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
CMS-B-17-6	007450-01	Soil	07/27/20
CMS-B-16-6	007450-02	Soil	07/27/20
CMS-B-12-6	007450-03	Soil	07/27/20
CMS-S-13-4	007450-04	Soil	07/27/20
CMS-S-14-4	007450-05	Soil	07/27/20
CMS-S-15-4	007450-06	Soil	07/27/20
CMS-S-16-4	007450-07	Soil	07/27/20
CMS-510	007450-08	Soil	07/27/20
CMS-S-17-4	007450-09	Soil	07/27/20
CMS-S-18-4	007450-10	Soil	07/27/20
CMS-S-19-4	007450-11	Soil	07/27/20
CMS-S-20-4	007450-12	Soil	07/27/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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 Stage 2A 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 and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Initial Calibration and Initial Calibration Verification

Initial calibration data were not reviewed for Stage 2A validation.

III. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

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

Samples CMS-S-16-4 and CMS-510 were identified as field duplicates. No results were detected in any of the samples.

X. Compound Quantitation

Raw data were not reviewed for Stage 2A validation.

XI. Target Compound Identification

Raw data were not reviewed for Stage 2A validation.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Data Qualification Summary - SDG 007450

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 007450

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 007450

No Sample Data Qualified in this SDG

LDC #: 48922I3b
SDG #: 007450
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 09/04/20
Page: 1 of 1
Reviewer: VF
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	N/N	
III.	Continuing calibration	N	
IV.	Laboratory Blanks	A	
V.	Field blanks	N	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Non client
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	ND	D = 7+8
X.	Compound quantitation/RL/LOQ/LODs	N	Dry weight basis = 1-12
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	CMS-B-17-6		007450-01	Soil	07/27/20
2	CMS-B-16-6		007450-02	Soil	07/27/20
3	CMS-B-12-6		007450-03	Soil	07/27/20
4	CMS-S-13-4		007450-04	Soil	07/27/20
5	CMS-S-14-4		007450-05	Soil	07/27/20
6	CMS-S-15-4		007450-06	Soil	07/27/20
7	CMS-S-16-4	D	007450-07	Soil	07/27/20
8	CMS-510	D	007450-08	Soil	07/27/20
9	CMS-S-17-4		007450-09	Soil	07/27/20
10	CMS-S-18-4		007450-10	Soil	07/27/20
11	CMS-S-19-4		007450-11	Soil	07/27/20
12	CMS-S-20-4		007450-12	Soil	07/27/20
13					
14					

Notes:

1	00-1694 MB2 1/6						

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: September 9, 2020

Parameters: Polynuclear Aromatic Hydrocarbons

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 007468

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
CMS-B-06-6	007468-01	Soil	07/28/20
CMS-B-11-6	007468-02	Soil	07/28/20
CMS-S-21-4	007468-03	Soil	07/28/20
CMS-S-22-4	007468-04	Soil	07/28/20
CMS-B-10-6	007468-05	Soil	07/28/20
CMS-B-05-6	007468-06	Soil	07/28/20
CMS-B-15-6	007468-07	Soil	07/28/20
CMS-B-14-6	007468-08	Soil	07/28/20
CMS-B-13-6	007468-09	Soil	07/28/20
CMS-B-09-6	007468-10	Soil	07/28/20
CMS-S-23-4	007468-11	Soil	07/28/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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:

Polynuclear Aromatic Hydrocarbons (PAHs) by Environmental Protection Agency (EPA) SW 846 Method 8270E in Selected Ion Monitoring (SIM) mode

All sample results were subjected to Stage 2A 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 and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Stage 2A validation.

III. Initial Calibration and Initial Calibration Verification

Initial calibration data were not reviewed for Stage 2A validation.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. 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.

IX. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Internal Standards

Internal standards data were not reviewed for Stage 2A validation.

XII. Compound Quantitation

Raw data were not reviewed for Stage 2A validation.

XIII. Target Compound Identifications

Raw data were not reviewed for Stage 2A validation.

XIV. System Performance

Raw data were not reviewed for Stage 2A validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG 007468

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG 007468

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Field Blank Data Qualification Summary - SDG 007468

No Sample Data Qualified in this SDG

LDC #: 48922J2b
SDG #: 007468
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 09/04/20
Page: 1 of 1
Reviewer: LT
2nd Reviewer:

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270E-SIM)

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.	GC/MS Instrument performance check	N	
III.	Initial calibration/ICV	N/N	
IV.	Continuing calibration	N	
V.	Laboratory Blanks	A	
VI.	Field blanks	N	
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	A	SDG 007450
IX.	Laboratory control samples	A	LCS
X.	Field duplicates	N	
XI.	Internal standards	N	
XII.	Compound quantitation RL/LOQ/LODs	N	Dry weight basis = 1-11
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	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	CMS-B-06-6	007468-01	Soil	07/28/20
2	CMS-B-11-6	007468-02	Soil	07/28/20
3	CMS-S-21-4	007468-03	Soil	07/28/20
4	CMS-S-22-4	007468-04	Soil	07/28/20
5	CMS-B-10-6	007468-05	Soil	07/28/20
6	CMS-B-05-6	007468-06	Soil	07/28/20
7	CMS-B-15-6	007468-07	Soil	07/28/20
8	CMS-B-14-6	007468-08	Soil	07/28/20
9	CMS-B-13-6	007468-09	Soil	07/28/20
10	CMS-B-09-6	007468-10	Soil	07/28/20
11	CMS-S-23-4	007468-11	Soil	07/28/20
12				
13	1.00-1701 MB2 1/5			
14				

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: September 9, 2020

Parameters: Polychlorinated Biphenyls

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 007468

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
CMS-B-06-6	007468-01	Soil	07/28/20
CMS-B-11-6	007468-02	Soil	07/28/20
CMS-S-21-4	007468-03	Soil	07/28/20
CMS-S-22-4	007468-04	Soil	07/28/20
CMS-B-10-6	007468-05	Soil	07/28/20
CMS-B-05-6	007468-06	Soil	07/28/20
CMS-B-15-6	007468-07	Soil	07/28/20
CMS-B-14-6	007468-08	Soil	07/28/20
CMS-B-13-6	007468-09	Soil	07/28/20
CMS-B-09-6	007468-10	Soil	07/28/20
CMS-S-23-4	007468-11	Soil	07/28/20
CMS-B-06-6MS	007468-01MS	Soil	07/28/20
CMS-B-06-6MSD	007468-01MSD	Soil	07/28/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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 Stage 2A 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 and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Initial Calibration and Initial Calibration Verification

Initial calibration data were not reviewed for Stage 2A validation.

III. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

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) 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 Stage 2A validation.

XI. Target Compound Identification

Raw data were not reviewed for Stage 2A validation.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Data Qualification Summary - SDG 007468

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 007468

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 007468

No Sample Data Qualified in this SDG

LDC #: 48922J3b
SDG #: 007468
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 09/04/20
Page: 1 of 1
Reviewer: LT
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	N/N	
III.	Continuing calibration	N	
IV.	Laboratory Blanks	A	
V.	Field blanks	N	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	(12/13)
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	N	
X.	Compound quantitation/RL/LOQ/LODs	N	Dry weight basis = 1-11
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	CMS-B-06-6	007468-01	Soil	07/28/20
2	CMS-B-11-6	007468-02	Soil	07/28/20
3	CMS-S-21-4	007468-03	Soil	07/28/20
4	CMS-S-22-4	007468-04	Soil	07/28/20
5	CMS-B-10-6	007468-05	Soil	07/28/20
6	CMS-B-05-6	007468-06	Soil	07/28/20
7	CMS-B-15-6	007468-07	Soil	07/28/20
8	CMS-B-14-6	007468-08	Soil	07/28/20
9	CMS-B-13-6	007468-09	Soil	07/28/20
10	CMS-B-09-6	007468-10	Soil	07/28/20
11	CMS-S-23-4	007468-11	Soil	07/28/20
12	CMS-B-06-6MS	007468-01MS	Soil	07/28/20
13	CMS-B-06-6MSD	007468-01MSD	Soil	07/28/20
14				

Notes:

1	00-1752 MB 1/6						

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: September 9, 2020

Parameters: Polynuclear Aromatic Hydrocarbons

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 007498

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
CMS-S-24-4	007498-01	Soil	07/29/20
CMS-B-04-6	007498-02	Soil	07/29/20
CMS-B-03-6	007498-03	Soil	07/29/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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:

Polynuclear Aromatic Hydrocarbons (PAHs) by Environmental Protection Agency (EPA) SW 846 Method 8270E in Selected Ion Monitoring (SIM) mode

All sample results were subjected to Stage 2A 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 and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Stage 2A validation.

III. Initial Calibration and Initial Calibration Verification

Initial calibration data were not reviewed for Stage 2A validation.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. 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.

IX. 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.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Internal Standards

Internal standards data were not reviewed for Stage 2A validation.

XII. Compound Quantitation

Raw data were not reviewed for Stage 2A validation.

XIII. Target Compound Identifications

Raw data were not reviewed for Stage 2A validation.

XIV. System Performance

Raw data were not reviewed for Stage 2A validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG 007498

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG 007498

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Field Blank Data Qualification Summary - SDG 007498

No Sample Data Qualified in this SDG

LDC #: 48922K2b
SDG #: 007498
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 09/04/20
Page: 1 of 1
Reviewer: LT
2nd Reviewer:

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270E-SIM)

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.	GC/MS Instrument performance check	N	
III.	Initial calibration/ICV	N/N	
IV.	Continuing calibration	N	
V.	Laboratory Blanks	A	
VI.	Field blanks	N	
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	A	LCS/D
X.	Field duplicates	N	
XI.	Internal standards	N	
XII.	Compound quantitation RL/LOQ/LODs	N	Dry weight basis = 1-3
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	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	CMS-S-24-4	007498-01	Soil	07/29/20
2	CMS-B-04-6	007498-02	Soil	07/29/20
3	CMS-B-03-6	007498-03	Soil	07/29/20
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Notes:

1	00-1708 MB 1/5						

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: September 9, 2020

Parameters: Polychlorinated Biphenyls

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 007498

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
CMS-S-24-4	007498-01	Soil	07/29/20
CMS-B-04-6	007498-02	Soil	07/29/20
CMS-B-03-6	007498-03	Soil	07/29/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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 Stage 2A 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 and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Initial Calibration and Initial Calibration Verification

Initial calibration data were not reviewed for Stage 2A validation.

III. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

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) 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 Stage 2A validation.

XI. Target Compound Identification

Raw data were not reviewed for Stage 2A validation.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Data Qualification Summary - SDG 007498

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 007498

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 007498

No Sample Data Qualified in this SDG

LDC #: 48922K3b
SDG #: 007498
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 09/04/20
Page: 1 of 1
Reviewer: [illegible]
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	N/N	
III.	Continuing calibration	N	
IV.	Laboratory Blanks	A	
V.	Field blanks	N	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	SDG 007498
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	N	
X.	Compound quantitation/RL/LOQ/LODs	N	Dry weight basis = 1-3
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	CMS-S-24-4	007498-01	Soil	07/29/20
2	CMS-B-04-6	007498-02	Soil	07/29/20
3	CMS-B-03-6	007498-03	Soil	07/29/20
4				
5				
6				
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8				
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10				
11				
12				
13				

Notes:

1	10-1702 MB2 1/6						

LDC Report# 48922L2b

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: September 9, 2020

Parameters: Polynuclear Aromatic Hydrocarbons

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 007525

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
CMS-S-25-4	007525-01	Soil	07/30/20
CMS-B-02-6	007525-02	Soil	07/30/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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:

Polynuclear Aromatic Hydrocarbons (PAHs) by Environmental Protection Agency (EPA) SW 846 Method 8270E in Selected Ion Monitoring (SIM) mode

All sample results were subjected to Stage 2A 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 and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Stage 2A validation.

III. Initial Calibration and Initial Calibration Verification

Initial calibration data were not reviewed for Stage 2A validation.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. 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.

IX. 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.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Internal Standards

Internal standards data were not reviewed for Stage 2A validation.

XII. Compound Quantitation

Raw data were not reviewed for Stage 2A validation.

XIII. Target Compound Identifications

Raw data were not reviewed for Stage 2A validation.

XIV. System Performance

Raw data were not reviewed for Stage 2A validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG 007525

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG 007525

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Field Blank Data Qualification Summary - SDG 007525

No Sample Data Qualified in this SDG

LDC #: 48922L2b
SDG #: 007525
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 09/04/20
Page: 1 of 1
Reviewer: VT
2nd Reviewer:

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270E-SIM)

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.	GC/MS Instrument performance check	N	
III.	Initial calibration/ICV	N/N	
IV.	Continuing calibration	N	
V.	Laboratory Blanks	A	
VI.	Field blanks	N	
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	A	LCS/D
X.	Field duplicates	N	
XI.	Internal standards	N	
XII.	Compound quantitation RL/LOQ/LODs	N	Dry weight basis = 1, 2
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	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	CMS-S-25-4	007525-01	Soil	07/30/20
2	CMS-B-02-6	007525-02	Soil	07/30/20
3				
4				
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Notes:

1	00-1708 MB2 1/5						

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: September 9, 2020

Parameters: Polychlorinated Biphenyls

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 007525

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
CMS-S-25-4	007525-01	Soil	07/30/20
CMS-B-02-6	007525-02	Soil	07/30/20
CMS-S-25-4MS	007525-01MS	Soil	07/30/20
CMS-S-25-4MSD	007525-01MSD	Soil	07/30/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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 Stage 2A 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 and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Initial Calibration and Initial Calibration Verification

Initial calibration data were not reviewed for Stage 2A validation.

III. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

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) 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 Stage 2A validation.

XI. Target Compound Identification

Raw data were not reviewed for Stage 2A validation.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Data Qualification Summary - SDG 007525

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 007525

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 007525

No Sample Data Qualified in this SDG

LDC #: 48922L3b
SDG #: 007525
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 9/04/20
Page: 1 of 1
Reviewer: VT
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	N/N	
III.	Continuing calibration	N	
IV.	Laboratory Blanks	A	
V.	Field blanks	N	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	(3,4)
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	N	
X.	Compound quantitation/RL/LOQ/LODs	N	Dry weight basis = 1,2
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	CMS-S-25-4	007525-01	Soil	07/30/20
2	CMS-B-02-6	007525-02	Soil	07/30/20
3	CMS-S-25-4MS	007525-01MS	Soil	07/30/20
4	CMS-S-25-4MSD	007525-01MSD	Soil	07/30/20
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Notes:

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Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: September 9, 2020

Parameters: Polynuclear Aromatic Hydrocarbons

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 008016

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
CMS-S-26-4-080320	008016-02	Soil	08/03/20
CMS-B-08-6-080320	008016-03	Soil	08/03/20
CMS-S-27-4-080320	008016-04	Soil	08/03/20
CMS-S-28-4-080320	008016-05	Soil	08/03/20
CMS-B-01-6-080320	008016-06	Soil	08/03/20
CMS-S-26-4-080320MS	008016-02MS	Soil	08/03/20
CMS-S-26-4-080320MSD	008016-02MSD	Soil	08/03/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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:

Polynuclear Aromatic Hydrocarbons (PAHs) by Environmental Protection Agency (EPA) SW 846 Method 8270E in Selected Ion Monitoring (SIM) mode

All sample results were subjected to Stage 2A 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 and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Stage 2A validation.

III. Initial Calibration and Initial Calibration Verification

Initial calibration data were not reviewed for Stage 2A validation.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

VII. Surrogates

Surrogates were added to all samples as required by the method. Surrogate recoveries (%R) were not within QC limits for samples CMS-S-26-4-080320 and CMS-S-27-4-080320. Using professional judgment, no data were qualified when one surrogate %R was outside the QC limits and the %R was greater than or equal to 10% or for samples analyzed at greater than or equal to 5X dilution.

VIII. 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 with the following exceptions:

Spike ID (Associated Samples)	Compound	RPD (Limits)	Flag	A or P
CMS-S-26-4-080320MS/MSD (CMS-S-26-4-080320)	Benzo(g,h,i)perylene	22 (≤20)	NA	-

IX. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Internal Standards

Internal standards data were not reviewed for Stage 2A validation.

XII. Compound Quantitation

Raw data were not reviewed for Stage 2A validation.

XIII. Target Compound Identifications

Raw data were not reviewed for Stage 2A validation.

XIV. System Performance

Raw data were not reviewed for Stage 2A validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG 008016

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG 008016

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Field Blank Data Qualification Summary - SDG 008016

No Sample Data Qualified in this SDG

LDC #: 48922M2b **VALIDATION COMPLETENESS WORKSHEET** Date: 09/04/20
SDG #: 008016 Stage 2A Page: 1 of 1
Laboratory: Friedman & Bruya, Inc. Reviewer: VT
2nd Reviewer:

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270E-SIM)

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.	GC/MS Instrument performance check	N	
III.	Initial calibration/ICV	N/N	
IV.	Continuing calibration	N	
V.	Laboratory Blanks	A	
VI.	Field blanks	N	
VII.	Surrogate spikes	SW	1- one out; NQ 3 - one out 3 = 5x dilution - NQ
VIII.	Matrix spike/Matrix spike duplicates	SW	(6,7)
IX.	Laboratory control samples	A	LCS
X.	Field duplicates	N	
XI.	Internal standards	N	
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
SW = See worksheet FB = Field blank EB = Equipment blank

	Client ID	Lab ID	Matrix	Date
1	CMS-S-26-4-080320	008016-02	Soil	08/03/20
2	CMS-B-08-6-080320	008016-03	Soil	08/03/20
3	CMS-S-27-4-080320	008016-04	Soil	08/03/20
4	CMS-S-28-4-080320	008016-05	Soil	08/03/20
5	CMS-B-01-6-080320	008016-06	Soil	08/03/20
6	CMS-S-26-4-080320MS	008016-02MS	Soil	08/03/20
7	CMS-S-26-4-080320MSD	008016-02MSD	Soil	08/03/20
8				
9				

Notes:

1	00-1765 MB 1/5						

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS SVOA

A. Phenol	CC. Dimethylphthalate	EEE. Bis(2-ethylhexyl)phthalate	GGGG. C30-Hopane	I1. Methyl methanesulfonate
B. Bis (2-chloroethyl) ether	DD. Acenaphthylene	FFF. Di-n-octylphthalate	HHHH. 1-Methylphenanthrene	J1. Ethyl methanesulfonate
C. 2-Chlorophenol	EE. 2,6-Dinitrotoluene	GGG. Benzo(b)fluoranthene	IIII. 1,4-Dioxane	K1. o,o',o''-Triethylphosphorothioate
D. 1,3-Dichlorobenzene	FF. 3-Nitroaniline	HHH. Benzo(k)fluoranthene	JJJJ. Acetophenone	L1. n-Phenylene diamine
E. 1,4-Dichlorobenzene	GG. Acenaphthene	III. Benzo(a)pyrene	KKKK. Atrazine	M1. 1,4-Naphthoquinone
F. 1,2-Dichlorobenzene	HH. 2,4-Dinitrophenol	JJJ. Indeno(1,2,3-cd)pyrene	LLLL. Benzaldehyde	N1. N-Nitro-o-toluidine
G. 2-Methylphenol	II. 4-Nitrophenol	KKK. Dibenz(a,h)anthracene	MMMM. Caprolactam	O1. 1,3,5-Trinitrobenzene
H. 2,2'-Oxybis(1-chloropropane)	JJ. Dibenzofuran	LLL. Benzo(g,h,i)perylene	NNNN. 2,6-Dichlorophenol	P1. Pentachlorobenzene
I. 4-Methylphenol	KK. 2,4-Dinitrotoluene	MMM. Bis(2-Chloroisopropyl)ether	OOOO. 1,2-Diphenylhydrazine	Q1. 4-Aminobiphenyl
J. N-Nitroso-di-n-propylamine	LL. Diethylphthalate	NNN. Aniline	PPPP. 3-Methylphenol	R1. 2-Naphthylamine
K. Hexachloroethane	MM. 4-Chlorophenyl-phenyl ether	OOO. N-Nitrosodimethylamine	QQQQ. 3&4-Methylphenol	S1. Triphenylene
L. Nitrobenzene	NN. Fluorene	PPP. Benzoic Acid	RRRR. 4-Dimethyldibenzothiophene (4MDT)	T1. Octachlorostyrene
M. Isophorone	OO. 4-Nitroaniline	QQQ. Benzyl alcohol	SSSS. 2/3-Dimethyldibenzothiophene (4MDT)	U1. Famphur
N. 2-Nitrophenol	PP. 4,6-Dinitro-2-methylphenol	RRR. Pyridine	TTTT. 1-Methyldibenzothiophene (1MDT)	V1. 1,4-phenylenediamine
O. 2,4-Dimethylphenol	QQ. N-Nitrosodiphenylamine	SSS. Benzidine	UUUU.. 2,3,4,6-Tetrachlorophenol	W1. Methapyrilene
P. Bis(2-chloroethoxy)methane	RR. 4-Bromophenyl-phenylether	TTT. 1-Methylnaphthalene	VVVV. 1,2,4,5-Tetrachlorobenzene	X1. Pentachloroethane
Q. 2,4-Dichlorophenol	SS. Hexachlorobenzene	UUU.Benzo(b)thiophene	WWWW.. 2-Picoline	Y1. 3,3'-Dimethylbenzidine
R. 1,2,4-Trichlorobenzene	TT. Pentachlorophenol	VVV.Benzonaphthothiophene	XXXX. 3-Methylcholanthrene	Z1. o-Toluidine
S. Naphthalene	UU. Phenanthrene	WWW.Benzo(e)pyrene	YYYY. a,a-Dimethylphenethylamine	A2. 1-Naphthylamine
T. 4-Chloroaniline	VV. Anthracene	XXX. 2,6-Dimethylnaphthalene	ZZZZ. Hexachloropropene	B2. 4-Aminobiphenyl
U. Hexachlorobutadiene	WW. Carbazole	YYY. 2,3,5-Trimethylnaphthalene	A1. N-Nitrosodiethylamine	C2. 4-Nitroquinoline-1-oxide
V. 4-Chloro-3-methylphenol	XX. Di-n-butylphthalate	ZZZ. Perylene	B1. N-Nitrosodi-n-butylamine	D2. Hexachloropene
W. 2-Methylnaphthalene	YY. Fluoranthene	AAAA. Dibenzothiophene	C1. N-Nitrosomethylethylamine	E2. Bis (2-chloro-1-methylethyl) ether
X. Hexachlorocyclopentadiene	ZZ. Pyrene	BBBB. Benzo(a)fluoranthene	D1. N-Nitrosomorpholine	F2. Bifenthrin
Y. 2,4,6-Trichlorophenol	AAA. Butylbenzylphthalate	CCCC. Benzo(b)fluorene	E1. N-Nitrosopyrrolidine	G2. Cyfluthrin
Z. 2,4,5-Trichlorophenol	BBB. 3,3'-Dichlorobenzidine	DDDD. cis/trans-Decalin	F1. Phenacetin	H2. Cypermethrin
AA. 2-Chloronaphthalene	CCC. Benzo(a)anthracene	EEEE. 1,1'-Biphenyl	G1. 2-Acetylaminofluorene	I2. Permethrin (cis/trans)
BB. 2-Nitroaniline	DDD. Chrysene	FFFF. Retene	H1. Pronamide	J2. 5-Nitro-o-toluidine

LDC #: 48922M2b

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: LT

METHOD: GC/MS PAHs (EPA SW 846 Method 8270E SIM)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y x N__ N/A__ Were a matrix spike (MS) and matrix spike duplicate (MSD) or duplicate sample analyzed for each matrix in this SDG?

Y x N__ N/A__ Was a MS/MSD analyzed every 20 samples of each matrix?

Y__ N x N/A__ Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

#	Date	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		6/7	LLL			22 (≤20)	1 (ND)	J/A DETS

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: September 9, 2020

Parameters: Polychlorinated Biphenyls

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 008016

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
CMS-S-26-4-080320	008016-02	Soil	08/03/20
CMS-B-08-6-080320	008016-03	Soil	08/03/20
CMS-S-27-4-080320	008016-04	Soil	08/03/20
CMS-S-28-4-080320	008016-05	Soil	08/03/20
CMS-B-01-6-080320	008016-06	Soil	08/03/20
CMS-S-26-4-080320MS	008016-02MS	Soil	08/03/20
CMS-S-26-4-080320MSD	008016-02MSD	Soil	08/03/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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 Stage 2A 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 and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Initial Calibration and Initial Calibration Verification

Initial calibration data were not reviewed for Stage 2A validation.

III. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

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) 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 Stage 2A validation.

XI. Target Compound Identification

Raw data were not reviewed for Stage 2A validation.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Data Qualification Summary - SDG 008016

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 008016

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 008016

No Sample Data Qualified in this SDG

LDC #: 48922M3b
SDG #: 008016
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 10/20/20
Page: 1 of 1
Reviewer: VT
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	N/N	
III.	Continuing calibration	N	
IV.	Laboratory Blanks	A	
V.	Field blanks	N	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	(6,7)
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	N	
X.	Compound quantitation/RL/LOQ/LODs	N	
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	CMS-S-26-4-080320	008016-02	Soil	08/03/20
2	CMS-B-08-6-080320	008016-03	Soil	08/03/20
3	CMS-S-27-4-080320	008016-04	Soil	08/03/20
4	CMS-S-28-4-080320	008016-05	Soil	08/03/20
5	CMS-B-01-6-080320	008016-06	Soil	08/03/20
6	CMS-S-26-4-080320MS	008016-02MS	Soil	08/03/20
7	CMS-S-26-4-080320MSD	008016-02MSD	Soil	08/03/20
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11				
12				
13				

Notes:

1	00-1766 MB 1/6						

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: August 31, 2020

Parameters: Metals

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 008016

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
WT-EffluentA-080320	008016-01	Water	08/03/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 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:

Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Silver, and Zinc by Environmental Protection Agency (EPA) Method 200.8

All sample results were subjected to Stage 2A 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

ICP-MS tune data were not reviewed for Stage 2A validation.

III. Instrument Calibration

Instrument calibration data were not reviewed for Stage 2A validation.

IV. ICP Interference Check Sample Analysis

ICP Interference check sample (ICS) analysis data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

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. 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 was not performed for this SDG.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

No field duplicates were identified in this SDG.

XII. Internal Standards (ICP-MS)

Internal standards data were not reviewed for Stage 2A validation.

XIII. Sample Result Verification

Raw data were not reviewed for Stage 2A validation.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Metals - Data Qualification Summary - SDG 008016

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Metals - Laboratory Blank Data Qualification Summary - SDG 008016

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Metals - Field Blank Data Qualification Summary - SDG 008016

No Sample Data Qualified in this SDG

LDC #: 48922M4a
SDG #: 008016
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 9/25/2020
Page: 1 of 1
Reviewer: DM
2nd Reviewer:

METHOD: Metals (EPA Method 200.8)

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	N	
III.	Instrument Calibration	N	
IV.	ICP Interference Check Sample (ICS) Analysis	N	
V.	Laboratory Blanks	A	
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	N	
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	N	
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	WT-Effluent-080320	008016-01	Water	08/03/20
2				
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Notes:

LDC #: 48922M4a

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: DTM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
MI	W	Al, Sb, (As), Ba, Be, B, (Cd), Ca, (Cr), Co, (Cu), Fe, (Pb), Li, Mg, Mo, Mn, (Hg), (Ni), K, Se, (Ag), Na, Sr, Tl, Sn, Ti, W, U, V, (Zn)
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn

Analysis Method		
ICP		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
ICP-MS		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
GFAA		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn

Comments: Mercury by CVAA if performed

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: August 31, 2020

Parameters: Oil & Grease

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 008016

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
WT-EffluentA-080320	008016-01	Water	08/03/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 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:

Oil and Grease by Environmental Protection Agency (EPA) Method 1664

All sample results were subjected to Stage 2A 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. Initial Calibration

Initial calibration data were not reviewed for Stage 2A validation.

III. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

VI. 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.

VII. 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.

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. Sample Result Verification

Raw data were not reviewed for Stage 2A validation.

XI. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Oil & Grease - Data Qualification Summary - SDG 008016

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Oil & Grease - Laboratory Blank Data Qualification Summary - SDG 008016

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Oil & Grease - Field Blank Data Qualification Summary - SDG 008016

No Sample Data Qualified in this SDG

LDC #: 48922M6
SDG #: 008016
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 8/20/20
Page: 1 of 1
Reviewer: VDM
2nd Reviewer:

METHOD: (Analyte) Oil & Grease (EPA Method 1664)

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	N	
III.	Calibration verification	N	
IV	Laboratory Blanks	A	
V	Field blanks	N	
VI.	Matrix Spike/Matrix Spike Duplicates	N	
VII.	Duplicate sample analysis	N	
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	N	
X.	Sample result verification	N	
XI	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	WT-Effluent-080320 A	008016-01	Water	08/03/20
2				
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Notes:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: September 9, 2020

Parameters: Polynuclear Aromatic Hydrocarbons

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 008046

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
CMS-B-07-6-080420	008046-01	Soil	08/04/20
CMS-S-29-4-080420	008046-02	Soil	08/04/20
CMS-B-30-7-080420	008046-03	Soil	08/04/20
CMS-511-080420	008046-04	Soil	08/04/20
CMS-B-07-6-080420MS	008046-01MS	Soil	08/04/20
CMS-B-07-6-080420MSD	008046-01MSD	Soil	08/04/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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:

Polynuclear Aromatic Hydrocarbons (PAHs) by Environmental Protection Agency (EPA) SW 846 Method 8270E in Selected Ion Monitoring (SIM) mode

All sample results were subjected to Stage 2A 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 and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Stage 2A validation.

III. Initial Calibration and Initial Calibration Verification

Initial calibration data were not reviewed for Stage 2A validation.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. 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 with the following exceptions:

Spike ID (Associated Samples)	Compound	RPD (Limits)	Flag	A or P
CMS-B-07-6-080420MS/MSD (CMS-B-07-6-080420)	Naphthalene	24 (≤20)	NA	-

IX. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

X. Field Duplicates

Samples CMS-B-30-7-080420 and CMS-511-080420 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Compound	Concentration (mg/Kg)		RPD
	CMS-B-30-7-080420	CMS-511-080420	
Naphthalene	0.021	0.13	144
Acenaphthene	0.028	0.12	124
Fluorene	0.027	0.60	183
Phenanthrene	0.12	1.5	170
Anthracene	0.042	1.6	190
Fluoranthene	0.26	0.83	105
Pyrene	0.24	0.84	111
Benzo(a)anthracene	0.10	0.52	135
Chrysene	0.12	0.81	148
Benzo(a)pyrene	0.096	0.45	130
Benzo(b)fluoranthene	0.11	0.48	125
Benzo(k)fluoranthene	0.044	0.17	118
Indeno(1,2,3-cd)pyrene	0.051	0.20	119
Dibenzo(a,h)anthracene	0.013	0.060	129
Benzo(g,h,i)perylene	0.050	0.17	109

XI. Internal Standards

Internal standards data were not reviewed for Stage 2A validation.

XII. Compound Quantitation

Raw data were not reviewed for Stage 2A validation.

XIII. Target Compound Identifications

Raw data were not reviewed for Stage 2A validation.

XIV. System Performance

Raw data were not reviewed for Stage 2A validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG 008046

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG 008046

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Field Blank Data Qualification Summary - SDG 008046

No Sample Data Qualified in this SDG

LDC #: 48922N2b

SDG #: 008046

Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET

Stage 2A

Date: 09/04/20

Page: 1 of 1

Reviewer: VT

2nd Reviewer:

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270E-SIM)

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.	GC/MS Instrument performance check	N	
III.	Initial calibration/ICV	N/N	
IV.	Continuing calibration	N	
V.	Laboratory Blanks	A	
VI.	Field blanks	N	
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	SW	(5,6)
IX.	Laboratory control samples	A	LCS
X.	Field duplicates	SW	D = 3,4
XI.	Internal standards	N	
XII.	Compound quantitation RL/LOQ/LODs	N	Dry weight basis = 4
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	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	CMS-B-07-06-080420		008046-01	Soil	08/04/20
2	CMS-S-29-4-080420		008046-02	Soil	08/04/20
3	CMS-B-30-7-080420	D	008046-03	Soil	08/04/20
4	CMS-511-080420	D	008046-04	Soil	08/04/20
5	CMS-B-07-06-080420MS		008046-01MS	Soil	08/04/20
6	CMS-B-07-06-080420MSD		008046-01MSD	Soil	08/04/20
7					
8					
9					

Notes:

1	00-1768MB 1/5						

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS SVOA

A. Phenol	CC. Dimethylphthalate	EEE. Bis(2-ethylhexyl)phthalate	GGGG. C30-Hopane	I1. Methyl methanesulfonate
B. Bis (2-chloroethyl) ether	DD. Acenaphthylene	FFF. Di-n-octylphthalate	HHHH. 1-Methylphenanthrene	J1. Ethyl methanesulfonate
C. 2-Chlorophenol	EE. 2,6-Dinitrotoluene	GGG. Benzo(b)fluoranthene	IIII. 1,4-Dioxane	K1. o,o',o''-Triethylphosphorothioate
D. 1,3-Dichlorobenzene	FF. 3-Nitroaniline	HHH. Benzo(k)fluoranthene	JJJJ. Acetophenone	L1. n-Phenylene diamine
E. 1,4-Dichlorobenzene	GG. Acenaphthene	III. Benzo(a)pyrene	KKKK. Atrazine	M1. 1,4-Naphthoquinone
F. 1,2-Dichlorobenzene	HH. 2,4-Dinitrophenol	JJJ. Indeno(1,2,3-cd)pyrene	LLLL. Benzaldehyde	N1. N-Nitro-o-toluidine
G. 2-Methylphenol	II. 4-Nitrophenol	KKK. Dibenz(a,h)anthracene	MMMM. Caprolactam	O1. 1,3,5-Trinitrobenzene
H. 2,2'-Oxybis(1-chloropropane)	JJ. Dibenzofuran	LLL. Benzo(g,h,i)perylene	NNNN. 2,6-Dichlorophenol	P1. Pentachlorobenzene
I. 4-Methylphenol	KK. 2,4-Dinitrotoluene	MMM. Bis(2-Chloroisopropyl)ether	OOOO. 1,2-Diphenylhydrazine	Q1. 4-Aminobiphenyl
J. N-Nitroso-di-n-propylamine	LL. Diethylphthalate	NNN. Aniline	PPPP. 3-Methylphenol	R1. 2-Naphthylamine
K. Hexachloroethane	MM. 4-Chlorophenyl-phenyl ether	OOO. N-Nitrosodimethylamine	QQQQ. 3&4-Methylphenol	S1. Triphenylene
L. Nitrobenzene	NN. Fluorene	PPP. Benzoic Acid	RRRR. 4-Dimethyldibenzothiophene (4MDT)	T1. Octachlorostyrene
M. Isophorone	OO. 4-Nitroaniline	QQQ. Benzyl alcohol	SSSS. 2/3-Dimethyldibenzothiophene (4MDT)	U1. Famphur
N. 2-Nitrophenol	PP. 4,6-Dinitro-2-methylphenol	RRR. Pyridine	TTTT. 1-Methyldibenzothiophene (1MDT)	V1. 1,4-phenylenediamine
O. 2,4-Dimethylphenol	QQ. N-Nitrosodiphenylamine	SSS. Benzidine	UUUU.. 2,3,4,6-Tetrachlorophenol	W1. Methapyrilene
P. Bis(2-chloroethoxy)methane	RR. 4-Bromophenyl-phenylether	TTT. 1-Methylnaphthalene	VVVV. 1,2,4,5-Tetrachlorobenzene	X1. Pentachloroethane
Q. 2,4-Dichlorophenol	SS. Hexachlorobenzene	UUU.Benzo(b)thiophene	WWWW.. 2-Picoline	Y1. 3,3'-Dimethylbenzidine
R. 1,2,4-Trichlorobenzene	TT. Pentachlorophenol	VVV.Benzonaphthothiophene	XXXX. 3-Methylcholanthrene	Z1. o-Toluidine
S. Naphthalene	UU. Phenanthrene	WWW.Benzo(e)pyrene	YYYY. a,a-Dimethylphenethylamine	A2. 1-Naphthylamine
T. 4-Chloroaniline	VV. Anthracene	XXX. 2,6-Dimethylnaphthalene	ZZZZ. Hexachloropropene	B2. 4-Aminobiphenyl
U. Hexachlorobutadiene	WW. Carbazole	YYY. 2,3,5-Trimethylnaphthalene	A1. N-Nitrosodiethylamine	C2. 4-Nitroquinoline-1-oxide
V. 4-Chloro-3-methylphenol	XX. Di-n-butylphthalate	ZZZ. Perylene	B1. N-Nitrosodi-n-butylamine	D2. Hexachloropene
W. 2-Methylnaphthalene	YY. Fluoranthene	AAAA. Dibenzothiophene	C1. N-Nitrosomethylethylamine	E2. Bis (2-chloro-1-methylethyl) ether
X. Hexachlorocyclopentadiene	ZZ. Pyrene	BBBB. Benzo(a)fluoranthene	D1. N-Nitrosomorpholine	F2. Bifenthrin
Y. 2,4,6-Trichlorophenol	AAA. Butylbenzylphthalate	CCCC. Benzo(b)fluorene	E1. N-Nitrosopyrrolidine	G2. Cyfluthrin
Z. 2,4,5-Trichlorophenol	BBB. 3,3'-Dichlorobenzidine	DDDD. cis/trans-Decalin	F1. Phenacetin	H2. Cypermethrin
AA. 2-Chloronaphthalene	CCC. Benzo(a)anthracene	EEEE. 1,1'-Biphenyl	G1. 2-Acetylaminofluorene	I2. Permethrin (cis/trans)
BB. 2-Nitroaniline	DDD. Chrysene	FFFF. Retene	H1. Pronamide	J2. 5-Nitro-o-toluidine

LDC #: 48922N2b

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: LT

METHOD: GC/MS PAHs (EPA SW 846 Method 8270E SIM)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y x N__ N/A__ Were a matrix spike (MS) and matrix spike duplicate (MSD) or duplicate sample analyzed for each matrix in this SDG?

Y x N__ N/A__ Was a MS/MSD analyzed every 20 samples of each matrix?

Y__ N x N/A__ Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

#	Date	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		5/6	S			24 (≤20)	1 (ND)	J/A DETS

LDC#:48922N2b **VALIDATION FINDINGS WORKSHEET** Page:_1_of_1_
Field Duplicates Reviewer:__LT____

METHOD: GC/MS PAHs (EPA SW846 Method 8270E SIM)

Compound	Concentration (mg/kg)		RPD
	3	4	
S	0.021	0.13	144
GG	0.028	0.12	124
NN	0.027	0.60	183
UU	0.12	1.5	170
VV	0.042	1.6	190
YY	0.26	0.83	105
ZZ	0.24	0.84	111
CCC	0.10	0.52	135
DDD	0.12	0.81	148
III	0.096	0.45	130
GGG	0.11	0.48	125
HHH	0.044	0.17	118
JJJ	0.051	0.20	119
KKK	0.013	0.060	129
LLL	0.050	0.17	109

LDC Report# 48922N3b

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: September 9, 2020

Parameters: Polychlorinated Biphenyls

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 008046

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
CMS-B-07-6-080420	008046-01	Soil	08/04/20
CMS-S-29-4-080420	008046-02	Soil	08/04/20
CMS-B-30-7-080420	008046-03	Soil	08/04/20
CMS-511-080420	008046-04	Soil	08/04/20
CMS-B-31-7-080420	008046-05	Soil	08/04/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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 Stage 2A 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 and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Initial Calibration and Initial Calibration Verification

Initial calibration data were not reviewed for Stage 2A validation.

III. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

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) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

IX. Field Duplicates

Samples CMS-B-30-7-080420 and CMS-511-080420 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Compound	Concentration (mg/Kg)		RPD
	CMS-B-30-7-080420	CMS-511-080420	
Aroclor-1254	0.042	0.12	96
Aroclor-1260	0.025	0.12	131

X. Compound Quantitation

Raw data were not reviewed for Stage 2A validation.

XI. Target Compound Identification

Raw data were not reviewed for Stage 2A validation.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Data Qualification Summary - SDG 008046

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 008046

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 008046

No Sample Data Qualified in this SDG

LDC #: 48922N3b
SDG #: 008046
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 09/09/20
Page: 1 of 1
Reviewer: VT
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	N/N	
III.	Continuing calibration	N	
IV.	Laboratory Blanks	A	
V.	Field blanks	N	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	SDG 008046
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	SW	D=3+4
X.	Compound quantitation/RL/LOQ/LODs	N	Dry weight basis = 1-5
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	CMS-B-07-06-080420		008046-01	Soil	08/04/20
2	CMS-S-29-4-080420		008046-02	Soil	08/04/20
3	CMS-B-30-7-080420	D	008046-03	Soil	08/04/20
4	CMS-511-080420	D	008046-04	Soil	08/04/20
5	CMS-B-31-7-080420		008046-05	Soil	08/04/20
6					
7					
8					
9					
10					
11					
12					
13					

Notes:

1	10-1766 MB321/6						

LDC#:48922N3b **VALIDATION FINDINGS WORKSHEET** Page:_1_of_1_
Field Duplicates Reviewer:__LT____
2nd Reviewer:_____

METHOD: GC PCBs (EPA SW846 Method 8082A)

Compound	Concentration (mg/kg)		RPD
	3	4	
Aroclor 1254	0.042	0.12	96
Aroclor 1260	0.025	0.12	131

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: September 9, 2020

Parameters: Polynuclear Aromatic Hydrocarbons

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 008072

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
CMS-S-30-4-080520	008072-01	Soil	08/05/20
CMS-S-31-4-080520	008072-02	Soil	08/05/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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:

Polynuclear Aromatic Hydrocarbons (PAHs) by Environmental Protection Agency (EPA) SW 846 Method 8270E in Selected Ion Monitoring (SIM) mode

All sample results were subjected to Stage 2A 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 and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Stage 2A validation.

III. Initial Calibration and Initial Calibration Verification

Initial calibration data were not reviewed for Stage 2A validation.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. 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 not within QC limits. No data were qualified since there were no associated samples in this SDG.

IX. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Internal Standards

Internal standards data were not reviewed for Stage 2A validation.

XII. Compound Quantitation

Raw data were not reviewed for Stage 2A validation.

XIII. Target Compound Identifications

Raw data were not reviewed for Stage 2A validation.

XIV. System Performance

Raw data were not reviewed for Stage 2A validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG 008072

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG 008072

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Field Blank Data Qualification Summary - SDG 008072

No Sample Data Qualified in this SDG

LDC #: 48922O2b
SDG #: 008072
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 09/04/20
Page: 1 of 1
Reviewer: LT
2nd Reviewer:

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270E-SIM)

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.	GC/MS Instrument performance check	N	
III.	Initial calibration/ICV	N/N	
IV.	Continuing calibration	N	
V.	Laboratory Blanks	A	
VI.	Field blanks	N	
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	SW	SPG 008046 RPD out, not associated
IX.	Laboratory control samples	A	LCS
X.	Field duplicates	N	
XI.	Internal standards	N	
XII.	Compound quantitation RL/LOQ/LODs	N	Dry weight basis = 1,2
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	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	CMS-S-30-4-080520	008072-01	Soil	08/05/20
2	CMS-S-31-4-080520	008072-02	Soil	08/05/20
3				
4				
5				
6				
7				
8				
9				

Notes:

1	00-1768 MB 1/5						

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: September 9, 2020

Parameters: Polychlorinated Biphenyls

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 008072

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
CMS-S-30-4-080520	008072-01	Soil	08/05/20
CMS-S-31-4-080520	008072-02	Soil	08/05/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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 Stage 2A 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 and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Initial Calibration and Initial Calibration Verification

Initial calibration data were not reviewed for Stage 2A validation.

III. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

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) 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 Stage 2A validation.

XI. Target Compound Identification

Raw data were not reviewed for Stage 2A validation.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Data Qualification Summary - SDG 008072

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 008072

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 008072

No Sample Data Qualified in this SDG

LDC #: 48922O3b
SDG #: 008072
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 09/04/20
Page: 1 of 1
Reviewer: LT
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	N/N	
III.	Continuing calibration	N	
IV.	Laboratory Blanks	A	
V.	Field blanks	N	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	SDG 008016
VIII.	Laboratory control samples	A	
IX.	Field duplicates	N	
X.	Compound quantitation/RL/LOQ/LODs	N	Dry weight basis = 1,2
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	CMS-S-30-4-080520	008072-01	Soil	08/05/20
2	CMS-S-31-4-080520	008072-02	Soil	08/05/20
3				
4				
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Notes:

1	001766 MB2 1/6						

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: September 9, 2020

Parameters: Polynuclear Aromatic Hydrocarbons

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 008170

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
CMS-B-23-6	008170-09	Soil	08/11/20
CMS-512	008170-10	Soil	08/11/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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:

Polynuclear Aromatic Hydrocarbons (PAHs) by Environmental Protection Agency (EPA) SW 846 Method 8270E in Selected Ion Monitoring (SIM) mode

All sample results were subjected to Stage 2A 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 and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Stage 2A validation.

III. Initial Calibration and Initial Calibration Verification

Initial calibration data were not reviewed for Stage 2A validation.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. 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.

IX. 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.

X. Field Duplicates

Samples CMS-B-23-6 and CMS-512 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Compound	Concentration (mg/Kg)		RPD
	CMS-B-23-6	CMS-512	
Fluoranthene	0.014	0.01U	Not calculable
Pyrene	0.017	0.01U	Not calculable
Chrysene	0.012	0.01U	Not calculable
4-Nitrophenol	0.012	0.01U	Not calculable
Benzo(b)fluoranthene	0.013	0.01U	Not calculable

XI. Internal Standards

Internal standards data were not reviewed for Stage 2A validation.

XII. Compound Quantitation

Raw data were not reviewed for Stage 2A validation.

XIII. Target Compound Identifications

Raw data were not reviewed for Stage 2A validation.

XIV. System Performance

Raw data were not reviewed for Stage 2A validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG 008170

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG 008170

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Field Blank Data Qualification Summary - SDG 008170

No Sample Data Qualified in this SDG

LDC #: 48922P2b
SDG #: 008170
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 09/04/20
Page: 1 of 1
Reviewer: LC
2nd Reviewer:

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270E-SIM)

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.	GC/MS Instrument performance check	N	
III.	Initial calibration/ICV	N/N	
IV.	Continuing calibration	N	
V.	Laboratory Blanks	A	
VI.	Field blanks	N	
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	A	LCS/D
X.	Field duplicates	SW	D= 1+2
XI.	Internal standards	N	
XII.	Compound quantitation RL/LOQ/LODs	N	Dry weight basis = 1,2
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	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	CMS-B-23-6	008170-09	Soil	08/11/20
2	CMS-512	008170-10	Soil	08/11/20
3				
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Notes:

1	06-1838 MB2 1/8						

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS SVOA

A. Phenol	CC. Dimethylphthalate	EEE. Bis(2-ethylhexyl)phthalate	GGGG. C30-Hopane	I1. Methyl methanesulfonate
B. Bis (2-chloroethyl) ether	DD. Acenaphthylene	FFF. Di-n-octylphthalate	HHHH. 1-Methylphenanthrene	J1. Ethyl methanesulfonate
C. 2-Chlorophenol	EE. 2,6-Dinitrotoluene	GGG. Benzo(b)fluoranthene	IIII. 1,4-Dioxane	K1. o,o',o''-Triethylphosphorothioate
D. 1,3-Dichlorobenzene	FF. 3-Nitroaniline	HHH. Benzo(k)fluoranthene	JJJJ. Acetophenone	L1. n-Phenylene diamine
E. 1,4-Dichlorobenzene	GG. Acenaphthene	III. Benzo(a)pyrene	KKKK. Atrazine	M1. 1,4-Naphthoquinone
F. 1,2-Dichlorobenzene	HH. 2,4-Dinitrophenol	JJJ. Indeno(1,2,3-cd)pyrene	LLLL. Benzaldehyde	N1. N-Nitro-o-toluidine
G. 2-Methylphenol	II. 4-Nitrophenol	KKK. Dibenz(a,h)anthracene	MMMM. Caprolactam	O1. 1,3,5-Trinitrobenzene
H. 2,2'-Oxybis(1-chloropropane)	JJ. Dibenzofuran	LLL. Benzo(g,h,i)perylene	NNNN. 2,6-Dichlorophenol	P1. Pentachlorobenzene
I. 4-Methylphenol	KK. 2,4-Dinitrotoluene	MMM. Bis(2-Chloroisopropyl)ether	OOOO. 1,2-Diphenylhydrazine	Q1. 4-Aminobiphenyl
J. N-Nitroso-di-n-propylamine	LL. Diethylphthalate	NNN. Aniline	PPPP. 3-Methylphenol	R1. 2-Naphthylamine
K. Hexachloroethane	MM. 4-Chlorophenyl-phenyl ether	OOO. N-Nitrosodimethylamine	QQQQ. 3&4-Methylphenol	S1. Triphenylene
L. Nitrobenzene	NN. Fluorene	PPP. Benzoic Acid	RRRR. 4-Dimethyldibenzothiophene (4MDT)	T1. Octachlorostyrene
M. Isophorone	OO. 4-Nitroaniline	QQQ. Benzyl alcohol	SSSS. 2/3-Dimethyldibenzothiophene (4MDT)	U1. Famphur
N. 2-Nitrophenol	PP. 4,6-Dinitro-2-methylphenol	RRR. Pyridine	TTTT. 1-Methyldibenzothiophene (1MDT)	V1. 1,4-phenylenediamine
O. 2,4-Dimethylphenol	QQ. N-Nitrosodiphenylamine	SSS. Benzidine	UUUU.. 2,3,4,6-Tetrachlorophenol	W1. Methapyrilene
P. Bis(2-chloroethoxy)methane	RR. 4-Bromophenyl-phenylether	TTT. 1-Methylnaphthalene	VVVV. 1,2,4,5-Tetrachlorobenzene	X1. Pentachloroethane
Q. 2,4-Dichlorophenol	SS. Hexachlorobenzene	UUU.Benzo(b)thiophene	WWWW.. 2-Picoline	Y1. 3,3'-Dimethylbenzidine
R. 1,2,4-Trichlorobenzene	TT. Pentachlorophenol	VVV.Benzonaphthothiophene	XXXX. 3-Methylcholanthrene	Z1. o-Toluidine
S. Naphthalene	UU. Phenanthrene	WWW.Benzo(e)pyrene	YYYY. a,a-Dimethylphenethylamine	A2. 1-Naphthylamine
T. 4-Chloroaniline	VV. Anthracene	XXX. 2,6-Dimethylnaphthalene	ZZZZ. Hexachloropropene	B2. 4-Aminobiphenyl
U. Hexachlorobutadiene	WW. Carbazole	YYY. 2,3,5-Trimethylnaphthalene	A1. N-Nitrosodiethylamine	C2. 4-Nitroquinoline-1-oxide
V. 4-Chloro-3-methylphenol	XX. Di-n-butylphthalate	ZZZ. Perylene	B1. N-Nitrosodi-n-butylamine	D2. Hexachloropene
W. 2-Methylnaphthalene	YY. Fluoranthene	AAAA. Dibenzothiophene	C1. N-Nitrosomethylethylamine	E2. Bis (2-chloro-1-methylethyl) ether
X. Hexachlorocyclopentadiene	ZZ. Pyrene	BBBB. Benzo(a)fluoranthene	D1. N-Nitrosomorpholine	F2. Bifenthrin
Y. 2,4,6-Trichlorophenol	AAA. Butylbenzylphthalate	CCCC. Benzo(b)fluorene	E1. N-Nitrosopyrrolidine	G2. Cyfluthrin
Z. 2,4,5-Trichlorophenol	BBB. 3,3'-Dichlorobenzidine	DDDD. cis/trans-Decalin	F1. Phenacetin	H2. Cypermethrin
AA. 2-Chloronaphthalene	CCC. Benzo(a)anthracene	EEEE. 1,1'-Biphenyl	G1. 2-Acetylaminofluorene	I2. Permethrin (cis/trans)
BB. 2-Nitroaniline	DDD. Chrysene	FFFF. Retene	H1. Pronamide	J2. 5-Nitro-o-toluidine

LDC#:48922P2b **VALIDATION FINDINGS WORKSHEET** Page:_1_of_1_
Field Duplicates Reviewer:__LT____

METHOD: GC/MS PAHs (EPA SW846 Method 8270E SIM)

Compound	Concentration (mg/kg)		RPD
	1	2	
YY	0.014	0.01U	NC
ZZ	0.017	0.01U	NC
DDD	0.012	0.01U	NC
II	0.012	0.01U	NC
GGG	0.013	0.01U	NC

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: September 9, 2020

Parameters: Polychlorinated Biphenyls

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 008170

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
CMS-B-27-7	008170-04	Soil	08/11/20
CMS-S-32-4	008170-05	Soil	08/11/20
CMS-S-33-4	008170-06	Soil	08/11/20
CMS-S-34-4	008170-07	Soil	08/11/20
CMS-S-35-4	008170-08	Soil	08/11/20
CMS-B-23-6	008170-09	Soil	08/11/20
CMS-512	008170-10	Soil	08/11/20
CMS-B-19-7	008170-11	Soil	08/12/20
CMS-B-14-7	008170-12	Soil	08/12/20
CMS-B-20-7	008170-13	Soil	08/12/20
CMS-B-16-7	008170-14	Soil	08/12/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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 Stage 2A 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 and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Initial Calibration and Initial Calibration Verification

Initial calibration data were not reviewed for Stage 2A validation.

III. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

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

Samples CMS-B-23-6 and CMS-512 were identified as field duplicates. No results were detected in any of the samples.

X. Compound Quantitation

Raw data were not reviewed for Stage 2A validation.

XI. Target Compound Identification

Raw data were not reviewed for Stage 2A validation.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Data Qualification Summary - SDG 008170

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 008170

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 008170

No Sample Data Qualified in this SDG

LDC #: 48922P3b
SDG #: 008170
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 09/04/20
Page: 1 of 1
Reviewer: G
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	N/N	
III.	Continuing calibration	N	
IV.	Laboratory Blanks	A	
V.	Field blanks	N	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Non client
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	ND	D=6+7
X.	Compound quantitation/RL/LOQ/LODs	N	Dry weight basis = 1-11
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	CMS-B-27-7	008170-04	Soil	08/11/20
2	CMS-S-32-4	008170-05	Soil	08/11/20
3	CMS-S-33-4	008170-06	Soil	08/11/20
4	CMS-S-34-4	008170-07	Soil	08/11/20
5	CMS-S-35-4	008170-08	Soil	08/11/20
6	CMS-B-23-6 D	008170-09	Soil	08/11/20
7	CMS-512 D	008170-10	Soil	08/11/20
8	CMS-B-19-7	008170-11	Soil	08/12/20
9	CMS-B-14-7	008170-12	Soil	08/12/20
10	CMS-B-20-7	008170-13	Soil	08/12/20
11	CMS-B-16-7	008170-14	Soil	08/12/20
12				
13				

Notes:

1	10-1834 MB2 1/6						

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: August 27, 2020

Parameters: Mercury

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 008170

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
TP-GFB12-03-5	008170-01	Soil	08/11/20
TP-GFB12-02-5	008170-02	Soil	08/11/20
TP-GFB12-01-5	008170-03	Soil	08/11/20
TP-GFB12-03-5MS	008170-01MS	Soil	08/11/20
TP-GFB12-03-5MSD	008170-01MSD	Soil	08/11/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 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:

Mercury by Environmental Protection Agency (EPA) Method 1631E

All sample results were subjected to Stage 2A 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. Instrument Calibration

Instrument calibration data were not reviewed for Stage 2A validation.

III. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

IV. Field Blanks

No field blanks were identified in this SDG.

V. 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
TP-GFB12-03-5MS/MSD (All samples in SDG 008170)	Mercury	-	54 (71-125)	J (all detects)	A

Relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	RPD (Limits)	Flag	A or P
TP-GFB12-03-5MS/MSD (All samples in SDG 008170)	Mercury	79 (≤20)	J (all detects)	A

VI. 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.

VII. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

VIII. Field Duplicates

No field duplicates were identified in this SDG.

IX. Sample Result Verification

Raw data were not reviewed for Stage 2A validation.

X. Overall Assessment of Data

The analysis was conducted within all specifications of the method.

Due to MS/MSD %R and RPD, data were qualified as estimated in three samples.

No results were rejected in this SDG.

Kimberly-Clark Upland Area
Mercury - Data Qualification Summary - SDG 008170

Sample	Analyte	Flag	A or P	Reason
TP-GFB12-03-5 TP-GFB12-02-5 TP-GFB12-01-5	Mercury	J (all detects)	A	Matrix spike/Matrix spike duplicate (%R)
TP-GFB12-03-5 TP-GFB12-02-5 TP-GFB12-01-5	Mercury	J (all detects)	A	Matrix spike/Matrix spike duplicate (RPD)

Kimberly-Clark Upland Area
Mercury - Laboratory Blank Data Qualification Summary - SDG 008170

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Mercury - Field Blank Data Qualification Summary - SDG 008170

No Sample Data Qualified in this SDG

LDC #: 48922P4c
SDG #: 008170
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 8/26/2020
Page: 1 of 1
Reviewer: DM
2nd Reviewer:

METHOD: Mercury (EPA Method 1631E)

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.	Instrument Calibration	N	
III.	Laboratory Blanks	A	
IV.	Field Blanks	N	
V.	Matrix Spike/Matrix Spike Duplicates	SW	
VI.	Duplicate sample analysis	N	
VII.	Laboratory control samples	A	LCS
VIII.	Field Duplicates	N	
IX.	Sample Result Verification	N	
X.	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	TP-GFB12-03-5	008170-01	Soil	08/11/20
2	TP-GFB12-02-5	008170-02	Soil	08/11/20
3	TP-GFB12-01-5	008170-03	Soil	08/11/20
4	TP-GFB12-03-5MS	008170-01MS	Soil	08/11/20
5	TP-GFB12-03-5MSD	008170-01MSD	Soil	08/11/20
6				
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17				

Notes:

LDC #: 48922P4c

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: DTM
2nd Reviewer:

METHOD: Trace metals (EPA SW 846 Method 6020/6010/7470)

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
	4/5	S	Hg		54(71-125)		ALL	J/UJ/A (det)
						79(20)	ALL	J/UJ/A (det)

Comments:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: September 9, 2020

Parameters: Polynuclear Aromatic Hydrocarbons

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 008214

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
CMS-B-29-7	008214-02	Soil	08/13/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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:

Polynuclear Aromatic Hydrocarbons (PAHs) by Environmental Protection Agency (EPA) SW 846 Method 8270E in Selected Ion Monitoring (SIM) mode

All sample results were subjected to Stage 2A 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 and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Stage 2A validation.

III. Initial Calibration and Initial Calibration Verification

Initial calibration data were not reviewed for Stage 2A validation.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. 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.

IX. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Internal Standards

Internal standards data were not reviewed for Stage 2A validation.

XII. Compound Quantitation

Raw data were not reviewed for Stage 2A validation.

XIII. Target Compound Identifications

Raw data were not reviewed for Stage 2A validation.

XIV. System Performance

Raw data were not reviewed for Stage 2A validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG 008214

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG 008214

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Field Blank Data Qualification Summary - SDG 008214

No Sample Data Qualified in this SDG

LDC #: 48922Q2b
SDG #: 008214
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 09/04/20
Page: 1 of 1
Reviewer: VT
2nd Reviewer:

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270E-SIM)

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.	GC/MS Instrument performance check	N	
III.	Initial calibration/ICV	N/N	
IV.	Continuing calibration	N	
V.	Laboratory Blanks	A	
VI.	Field blanks	N	
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	N	Non client
IX.	Laboratory control samples	A	LCS
X.	Field duplicates	N	
XI.	Internal standards	N	
XII.	Compound quantitation RL/LOQ/LODs	N	Dry weight basis = 1
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	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	CMS-B-29-7	008214-02	Soil	08/13/20
2				
3				
4				
5				
6				
7				
8				
9				

Notes:

1	00-1876 MB 1/5						

LDC Report# 48922Q3b

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: September 9, 2020

Parameters: Polychlorinated Biphenyls

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 008214

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
CMS-B-33-7	008214-01	Soil	08/13/20
CMS-B-29-7	008214-02	Soil	08/13/20
CMS-B-24-7	008214-03	Soil	08/13/20
CMS-B-05-7	008214-04	Soil	08/14/20
CMS-B-03-7	008214-05	Soil	08/14/20
CMS-B-33-7MS	008214-01MS	Soil	08/13/20
CMS-B-33-7MSD	008214-01MSD	Soil	08/13/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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 Stage 2A 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 and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Initial Calibration and Initial Calibration Verification

Initial calibration data were not reviewed for Stage 2A validation.

III. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

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) 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 Stage 2A validation.

XI. Target Compound Identification

Raw data were not reviewed for Stage 2A validation.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Data Qualification Summary - SDG 008214

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 008214

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 008214

No Sample Data Qualified in this SDG

LDC #: 48922Q3b
SDG #: 008214
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 09/04/20
Page: 1 of 1
Reviewer: VJ
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	N/N	
III.	Continuing calibration	N	
IV.	Laboratory Blanks	A	
V.	Field blanks	N	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	(6,7)
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	N	
X.	Compound quantitation/RL/LOQ/LODs	N	Dry weight basis = 1-5
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	CMS-B-33-7	008214-01	Soil	08/13/20
2	CMS-B-29-7	008214-02	Soil	08/13/20
3	CMS-B-24-7	008214-03	Soil	08/13/20
4	CMS-B-05-7	008214-04	Soil	08/14/20
5	CMS-B-03-7	008214-05	Soil	08/14/20
6	CMS-B-33-7MS	008214-01MS	Soil	08/13/20
7	CMS-B-33-7MSD	008214-01MSD	Soil	08/13/20
8				
9				
10				
11				
12				
13				

Notes:

1	00-1879MB 1/6						

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

Aspect Consulting LLC
701 Second Ave., Suite 550
Seattle, WA 98104
ATTN: Carla Brock, LHG
cbrock@aspectconsulting.com

October 13, 2020

SUBJECT: Kimberly-Clark Upland Area, Data Validation

Dear Ms. Brock,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on September 22, 2020. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #49215:

SDG #	Fraction
008290, 008321, 008379, 008403 008433, 008462, 008492, 009024 009056, 009132, 009182, 009238	Polynuclear Aromatic Hydrocarbons, Polychlorinated Biphenyls, Metals, Total Petroleum Hydrocarbons as Extractables

The data validation was performed under Stage 2A guidelines. The analyses were validated using the following documents, as applicable to each method:

- USEPA National Functional Guidelines for Organic Superfund Methods Data Review, January 2017
- USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review; January 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
crink@lab-data.com
Project Manager/Senior Chemist

Stage 2A EDD **LDC #49215 (Aspect Consulting, LLC - Seattle, WA / Kimberly-Clark Upland Area 2020 Interm Action)**

LDC	SDG#	DATE REC'D	(3) DATE DUE	(16) PAH (8270E -SIM)		PCBs (8082A)		Cu (6020B)		(3) Metals (6020B)		(2) Metals (6020B)		Hg (1631E)		TPH-E (NWTPH -Dx)																					
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
A	008290	09/22/20	10/13/20	-	-	0	4	-	-	-	-	-	-	-	-	0	2																				
B	008321	09/22/20	10/13/20	0	2	0	1	-	-	-	-	-	-	-	-	0	2																				
C	008379	09/22/20	10/13/20	0	2	0	10	-	-	-	-	-	-	-	-	-	-																				
D	008403	09/22/20	10/13/20	0	1	0	3	-	-	-	-	-	-	-	-	0	3																				
E	008433	09/22/20	10/13/20	0	2	0	2	0	1	-	-	-	-	0	1	0	5																				
F	008462	09/22/20	10/13/20	-	-	-	-	-	-	0	29	-	-	-	-	-	-																				
G	008492	09/22/20	10/13/20	-	-	0	4	-	-	-	-	-	-	-	-	-	-																				
H	009024	09/22/20	10/13/20	-	-	-	-	-	-	-	-	0	8	0	8	-	-																				
I	009056	09/22/20	10/13/20	-	-	-	-	-	-	-	-	0	9	0	8	-	-																				
J	009132	09/22/20	10/13/20	-	-	-	-	-	-	-	-	0	9	0	7	-	-																				
K	009182	09/22/20	10/13/20	-	-	-	-	-	-	-	-	0	23	0	23	-	-																				
L	009238	09/22/20	10/13/20	-	-	-	-	0	4	-	-	-	-	0	8	-	-																				
Total	T/CR			0	7	0	24	0	5	0	29	0	49	0	55	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	181

Shaded cells indicate Stage 4 validation (all other cells are Stage 2A validation). These sample counts do not include MS, MSD, or DUP's.

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: October 12, 2020

Parameters: Polychlorinated Biphenyls

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 008290

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
CMS-S-36-4	008290-01	Soil	08/17/20
CMS-S-37-4	008290-04	Soil	08/17/20
CMS-S-38-4	008290-05	Soil	08/17/20
CMS-S-39-4	008290-06	Soil	08/17/20
CMS-S-36-4MS	008290-01MS	Soil	08/17/20
CMS-S-36-4MSD	008290-01MSD	Soil	08/17/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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 Stage 2A 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 and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Initial Calibration and Initial Calibration Verification

Initial calibration data were not reviewed for Stage 2A validation.

III. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

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) 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 Stage 2A validation.

XI. Target Compound Identification

Raw data were not reviewed for Stage 2A validation.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Data Qualification Summary - SDG 008290

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 008290

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 008290

No Sample Data Qualified in this SDG

LDC #: 49215A3b
SDG #: 008290
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 10/10/20
Page: 1 of 1
Reviewer: K
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	N/N	
III.	Continuing calibration	N	
IV.	Laboratory Blanks	A	
V.	Field blanks	N	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	(5,6)
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	N	
X.	Compound quantitation/RL/LOQ/LODs	N	Dry weight = 1-4
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	CMS-S-36-4	008290-01	Soil	08/17/20
2	CMS-S-37-4	008290-04	Soil	08/17/20
3	CMS-S-38-4	008290-05	Soil	08/17/20
4	CMS-S-39-4	008290-06	Soil	08/17/20
5	CMS-S-36-4MS	008290-01MS	Soil	08/17/20
6	CMS-S-36-4MSD	008290-01MSD	Soil	08/17/20
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Notes:

1	10-1899 MB						

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: October 12, 2020

Parameters: Total Petroleum Hydrocarbons as Extractables

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 008290

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
CMSB2-S-1-4	008290-02	Soil	08/17/20
CMSB2-S-2-4	008290-03	Soil	08/17/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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:

Total Petroleum Hydrocarbons (TPH) as Extractables by NWTPH-Dx

All sample results were subjected to Stage 2A 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 not 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

Initial calibration data were not reviewed for Stage 2A validation.

III. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

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 Stage 2A validation.

XI. Target Compound Identifications

Raw data were not reviewed for Stage 2A validation.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG 008290

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data Qualification Summary - SDG 008290

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Total Petroleum Hydrocarbons as Extractables - Field Blank Data Qualification Summary - SDG 008290

No Sample Data Qualified in this SDG

LDC #: 49215A8 **VALIDATION COMPLETENESS WORKSHEET** Date: 10/10/20
SDG #: 008290 Stage 2A Page: 1 of 1
Laboratory: Friedman & Bruya, Inc. Reviewer: LT
2nd Reviewer:

METHOD: GC TPH as Extractables (NWTPH-Dx)

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	N/N	
III.	Continuing calibration	N	
IV.	Laboratory Blanks	A	
V.	Field blanks	N	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Non client
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	N	
X.	Compound quantitation RL/LOQ/LODs	N	Dry weight basis = 1,2
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	CMSB2-S-1-4	008290-02	Soil	08/17/20
2	CMSB2-S-2-4	008290-03	Soil	08/17/20
3				
4				
5				
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11				
12				
13				

Notes:

1	OU-1895 MB2						

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: October 12, 2020

Parameters: Polynuclear Aromatic Hydrocarbons

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 008321

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
CMSB2-B-1-7	008321-01	Soil	08/20/20
CMSB2-B-2-7.5	008321-02	Soil	08/20/20
CMSB2-B-1-7MS	008321-01MS	Soil	08/20/20
CMSB2-B-1-7MSD	008321-01MSD	Soil	08/20/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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:

Polynuclear Aromatic Hydrocarbons (PAHs) by Environmental Protection Agency (EPA) SW 846 Method 8270E in Selected Ion Monitoring (SIM) mode

All sample results were subjected to Stage 2A 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 and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Stage 2A validation.

III. Initial Calibration and Initial Calibration Verification

Initial calibration data were not reviewed for Stage 2A validation.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. 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.

IX. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Internal Standards

Internal standards data were not reviewed for Stage 2A validation.

XII. Compound Quantitation

Raw data were not reviewed for Stage 2A validation.

XIII. Target Compound Identifications

Raw data were not reviewed for Stage 2A validation.

XIV. System Performance

Raw data were not reviewed for Stage 2A validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG 008321

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG 008321

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Field Blank Data Qualification Summary - SDG 008321

No Sample Data Qualified in this SDG

LDC #: 49215B2b
SDG #: 008321
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 1/11/21
Page: 1 of 1
Reviewer: VT
2nd Reviewer:

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270E-SIM)

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.	GC/MS Instrument performance check	N	
III.	Initial calibration/ICV	N/N	
IV.	Continuing calibration	N	
V.	Laboratory Blanks	A	
VI.	Field blanks	N	
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	A	(3,4)
IX.	Laboratory control samples	A	LCS
X.	Field duplicates	N	
XI.	Internal standards	N	
XII.	Compound quantitation RL/LOQ/LODs	N	Dry weight basis = 1,2
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	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	CMSB2-B-1-7	008321-01	Soil	08/20/20
2	CMSB2-B-2-7.5	008321-02	Soil	08/20/20
3	CMSB2-B-1-7MS	008321-01MS	Soil	08/20/20
4	CMSB2-B-1-7MSD	008321-01MSD	Soil	08/20/20
5				
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9				

Notes:

1	00-1902 MB						

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: October 12, 2020

Parameters: Polychlorinated Biphenyls

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 008321

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
CMS-S-40-4	008321-03	Soil	08/20/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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 Stage 2A 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 and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Initial Calibration and Initial Calibration Verification

Initial calibration data were not reviewed for Stage 2A validation.

III. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

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) 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 Stage 2A validation.

XI. Target Compound Identification

Raw data were not reviewed for Stage 2A validation.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Data Qualification Summary - SDG 008321

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 008321

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 008321

No Sample Data Qualified in this SDG

LDC #: 49215B3b
SDG #: 008321
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 10/10/20
Page: 1 of 1
Reviewer: LT
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	N/N	
III.	Continuing calibration	N	
IV.	Laboratory Blanks	A	
V.	Field blanks	N	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	SDG 008290
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	N	
X.	Compound quantitation/RL/LOQ/LODs	N	Dry weight basis = 1
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	CMS-S-40-4	008321-03	Soil	08/20/20
2				
3				
4				
5				
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Notes:

1	00-1899 MB						

LDC Report# 49215B8

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: October 12, 2020

Parameters: Total Petroleum Hydrocarbons as Extractables

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 008321

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
CMSB2-B-1-7	008321-01	Soil	08/20/20
CMSB2-B-2-7.5	008321-02	Soil	08/20/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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:

Total Petroleum Hydrocarbons (TPH) as Extractables by NWTPH-Dx

All sample results were subjected to Stage 2A 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 not 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

Initial calibration data were not reviewed for Stage 2A validation.

III. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

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 Stage 2A validation.

XI. Target Compound Identifications

Raw data were not reviewed for Stage 2A validation.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG 008321

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data Qualification Summary - SDG 008321

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Total Petroleum Hydrocarbons as Extractables - Field Blank Data Qualification Summary - SDG 008321

No Sample Data Qualified in this SDG

LDC #: 49215B8 **VALIDATION COMPLETENESS WORKSHEET** Date: 12/10/20
SDG #: 008321 Stage 2A Page: 1 of 1
Laboratory: Friedman & Bruya, Inc. Reviewer: LT
2nd Reviewer:

METHOD: GC TPH as Extractables (NWTPH-Dx)

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	N/N	
III.	Continuing calibration	N	
IV.	Laboratory Blanks	A	
V.	Field blanks	N	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Non client
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	N	
X.	Compound quantitation RL/LOQ/LODs	N	Dry weight basis = 1,2
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	CMSB2-B-1-7	008321-01	Soil	08/20/20
2	CMSB2-B-2-7.5	008321-02	Soil	08/20/20
3				
4				
5				
6				
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12				
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Notes:

1	00-1901 MB2						

LDC Report# 49215C2b

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: October 12, 2020

Parameters: Polynuclear Aromatic Hydrocarbons

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 008379

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
CMS-B-28-9	008379-01	Soil	08/25/20
CMS-B-30-8	008379-03	Soil	08/25/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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:

Polynuclear Aromatic Hydrocarbons (PAHs) by Environmental Protection Agency (EPA) SW 846 Method 8270E in Selected Ion Monitoring (SIM) mode

All sample results were subjected to Stage 2A 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 and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Stage 2A validation.

III. Initial Calibration and Initial Calibration Verification

Initial calibration data were not reviewed for Stage 2A validation.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. 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.

IX. 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 with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	Flag	A or P
LCS/LCSD-082620 (CMS-B-28-9 CMS-B-30-8)	Naphthalene	92 (69-89)	92 (69-89)	NA	-

Relative percent differences (RPD) were within QC limits.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Internal Standards

Internal standards data were not reviewed for Stage 2A validation.

XII. Compound Quantitation

Raw data were not reviewed for Stage 2A validation.

XIII. Target Compound Identifications

Raw data were not reviewed for Stage 2A validation.

XIV. System Performance

Raw data were not reviewed for Stage 2A validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG 008379

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG 008379

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Field Blank Data Qualification Summary - SDG 008379

No Sample Data Qualified in this SDG

LDC #: 49215C2b

SDG #: 008379

Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET

Stage 2A

Date: 9/10/20

Page: 1 of 1

Reviewer: LG

2nd Reviewer:

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270E-SIM)

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.	GC/MS Instrument performance check	N	
III.	Initial calibration/ICV	N/N	
IV.	Continuing calibration	N	
V.	Laboratory Blanks	A	
VI.	Field blanks	N	
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	SW	LCS/D
X.	Field duplicates	N	
XI.	Internal standards	N	
XII.	Compound quantitation RL/LOQ/LODs	N	Dry weight = 1,2
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	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	CMS-B-28-9	008379-01	Soil	08/25/20
2	CMS-B-30-8	008379-03	Soil	08/25/20
3				
4				
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Notes:

1	00-1946 MB3						

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS SVOA

A. Phenol	CC. Dimethylphthalate	EEE. Bis(2-ethylhexyl)phthalate	GGGG. C30-Hopane	I1. Methyl methanesulfonate
B. Bis (2-chloroethyl) ether	DD. Acenaphthylene	FFF. Di-n-octylphthalate	HHHH. 1-Methylphenanthrene	J1. Ethyl methanesulfonate
C. 2-Chlorophenol	EE. 2,6-Dinitrotoluene	GGG. Benzo(b)fluoranthene	IIII. 1,4-Dioxane	K1. o,o',o''-Triethylphosphorothioate
D. 1,3-Dichlorobenzene	FF. 3-Nitroaniline	HHH. Benzo(k)fluoranthene	JJJJ. Acetophenone	L1. n-Phenylene diamine
E. 1,4-Dichlorobenzene	GG. Acenaphthene	III. Benzo(a)pyrene	KKKK. Atrazine	M1. 1,4-Naphthoquinone
F. 1,2-Dichlorobenzene	HH. 2,4-Dinitrophenol	JJJ. Indeno(1,2,3-cd)pyrene	LLLL. Benzaldehyde	N1. N-Nitro-o-toluidine
G. 2-Methylphenol	II. 4-Nitrophenol	KKK. Dibenz(a,h)anthracene	MMMM. Caprolactam	O1. 1,3,5-Trinitrobenzene
H. 2,2'-Oxybis(1-chloropropane)	JJ. Dibenzofuran	LLL. Benzo(g,h,i)perylene	NNNN. 2,6-Dichlorophenol	P1. Pentachlorobenzene
I. 4-Methylphenol	KK. 2,4-Dinitrotoluene	MMM. Bis(2-Chloroisopropyl)ether	OOOO. 1,2-Diphenylhydrazine	Q1. 4-Aminobiphenyl
J. N-Nitroso-di-n-propylamine	LL. Diethylphthalate	NNN. Aniline	PPPP. 3-Methylphenol	R1. 2-Naphthylamine
K. Hexachloroethane	MM. 4-Chlorophenyl-phenyl ether	OOO. N-Nitrosodimethylamine	QQQQ. 3&4-Methylphenol	S1. Triphenylene
L. Nitrobenzene	NN. Fluorene	PPP. Benzoic Acid	RRRR. 4-Dimethyldibenzothiophene (4MDT)	T1. Octachlorostyrene
M. Isophorone	OO. 4-Nitroaniline	QQQ. Benzyl alcohol	SSSS. 2/3-Dimethyldibenzothiophene (4MDT)	U1. Famphur
N. 2-Nitrophenol	PP. 4,6-Dinitro-2-methylphenol	RRR. Pyridine	TTTT. 1-Methyldibenzothiophene (1MDT)	V1. 1,4-phenylenediamine
O. 2,4-Dimethylphenol	QQ. N-Nitrosodiphenylamine	SSS. Benzidine	UUUU.. 2,3,4,6-Tetrachlorophenol	W1. Methapyrilene
P. Bis(2-chloroethoxy)methane	RR. 4-Bromophenyl-phenylether	TTT. 1-Methylnaphthalene	VVVV. 1,2,4,5-Tetrachlorobenzene	X1. Pentachloroethane
Q. 2,4-Dichlorophenol	SS. Hexachlorobenzene	UUU.Benzo(b)thiophene	WWWW.. 2-Picoline	Y1. 3,3'-Dimethylbenzidine
R. 1,2,4-Trichlorobenzene	TT. Pentachlorophenol	VVV.Benzonaphthothiophene	XXXX. 3-Methylcholanthrene	Z1. o-Toluidine
S. Naphthalene	UU. Phenanthrene	WWW.Benzo(e)pyrene	YYYY. a,a-Dimethylphenethylamine	A2. 1-Naphthylamine
T. 4-Chloroaniline	VV. Anthracene	XXX. 2,6-Dimethylnaphthalene	ZZZZ. Hexachloropropene	B2. 4-Aminobiphenyl
U. Hexachlorobutadiene	WW. Carbazole	YYY. 2,3,5-Trimethylnaphthalene	A1. N-Nitrosodiethylamine	C2. 4-Nitroquinoline-1-oxide
V. 4-Chloro-3-methylphenol	XX. Di-n-butylphthalate	ZZZ. Perylene	B1. N-Nitrosodi-n-butylamine	D2. Hexachloropene
W. 2-Methylnaphthalene	YY. Fluoranthene	AAAA. Dibenzothiophene	C1. N-Nitrosomethylethylamine	E2. Bis (2-chloro-1-methylethyl) ether
X. Hexachlorocyclopentadiene	ZZ. Pyrene	BBBB. Benzo(a)fluoranthene	D1. N-Nitrosomorpholine	F2. Bifenthrin
Y. 2,4,6-Trichlorophenol	AAA. Butylbenzylphthalate	CCCC. Benzo(b)fluorene	E1. N-Nitrosopyrrolidine	G2. Cyfluthrin
Z. 2,4,5-Trichlorophenol	BBB. 3,3'-Dichlorobenzidine	DDDD. cis/trans-Decalin	F1. Phenacetin	H2. Cypermethrin
AA. 2-Chloronaphthalene	CCC. Benzo(a)anthracene	EEEE. Biphenyl	G1. 2-Acetylaminofluorene	I2. Permethrin (cis/trans)
BB. 2-Nitroaniline	DDD. Chrysene	FFFF. Retene	H1. Pronamide	J2. 5-Nitro-o-toluidine

LDC #: 49215C2b

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Reviewer: LT

METHOD: GC/MS PAHs (EPA SW 846 Method 8270C-SIM)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y x N N/A Was a LCS required?

Y N x N/A Were the LCS/LCSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

#	Date	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		LCS/LCSD-082620	S	92 (69 - 89)	92 (69 - 89)		1,2 (ND)	J/P DETS

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: October 12, 2020

Parameters: Polychlorinated Biphenyls

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 008379

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
CMS-B-28-9	008379-01	Soil	08/25/20
CMS-B-30-8	008379-03	Soil	08/25/20
CMS-B-27-8	008379-04	Soil	08/25/20
CMS-S-41-4	008379-05	Soil	08/25/20
CMS-S-42-4	008379-06	Soil	08/25/20
CMS-S-42-4DL	008379-06DL	Soil	08/25/20
CMS-513	008379-07	Soil	08/25/20
CMS-S-43-4	008379-08	Soil	08/25/20
CMS-B-38-7	008379-09	Soil	08/25/20
CMS-S-44-4	008379-10	Soil	08/25/20
CMS-B-28-9MS	008379-01MS	Soil	08/25/20
CMS-B-28-9MSD	008379-01MSD	Soil	08/25/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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 Stage 2A 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.

DNR Do not report from this analysis; the result for this analyte is to be reported from an alternative analysis.

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

Initial calibration data were not reviewed for Stage 2A validation.

III. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

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) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

IX. Field Duplicates

Samples CMS-S-41-4 and CMS-513 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Compound	Concentration (mg/Kg)		RPD
	CMS-S-41-4	CMS-513	
Aroclor-1254	0.21	0.17	21
Aroclor-1260	0.23	0.18	24

X. Compound Quantitation

Raw data were not reviewed for Stage 2A validation.

XI. Target Compound Identification

Raw data were not reviewed for Stage 2A validation.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method.

In the case where more than one result was reported for an individual sample, the least technically acceptable results were deemed not reportable as follows:

Sample	Compound	Reason	Flag	A or P
CMS-S-42-4	Arolcor-1254 Arolcor-1260	Results exceeded calibration range.	DNR	-
CMS-S-42-4DL	All compounds except Arolcor-1254 Arolcor-1260	Results from undiluted analyses were more usable.	DNR	-

No results were rejected in this SDG.

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Data Qualification Summary - SDG 008379

Sample	Compound	Flag	A or P	Reason
CMS-S-42-4	Arolcor-1254 Arolcor-1260	DNR	-	Overall assessment of data
CMS-S-42-4DL	All compounds except Arolcor-1254 Arolcor-1260	DNR	-	Overall assessment of data

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 008379

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 008379

No Sample Data Qualified in this SDG

LDC #: 49215C3b
SDG #: 008379
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 10/10/20
Page: 1 of 1
Reviewer: LC
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	N/N	
III.	Continuing calibration	N	
IV.	Laboratory Blanks	A	
V.	Field blanks	N	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	~~(11) MS only~~ (11, 12)
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	SW	D = 4+7
X.	Compound quantitation/RL/LOQ/LODs	N	Dry weight basis = 1-10
XI.	Target compound identification	N	
XII.	Overall assessment of data	SW	

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	CMS-B-28-9		008379-01	Soil	08/25/20
2	CMS-B-30-8		008379-03	Soil	08/25/20
3	CMS-B-27-8		008379-04	Soil	08/25/20
4	CMS-S-41-4	D,	008379-05	Soil	08/25/20
5	CMS-S-42-4		008379-06	Soil	08/25/20
6	CMS-S-42-4DL		008379-06DL	Soil	08/25/20
7	CMS-513	D,	008379-07	Soil	08/25/20
8	CMS-S-43-4		008379-08	Soil	08/25/20
9	CMS-B-38-7		008379-09	Soil	08/25/20
10	CMS-S-44-4		008379-10	Soil	08/25/20
11	CMS-B-28-9MS		008379-01MS	Soil	08/25/20
12	↓ MSD		↓ MSD	↓	↓
13					

Notes:

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LDC#:49215C3b **VALIDATION FINDINGS WORKSHEET** Page:_1_of_1_
Field Duplicates Reviewer:__LT____

METHOD: GC PCBs (EPA SW846 Method 8082A)

Compound	Concentration (mg/kg)		RPD
	4	7	
Aroclor 1254	0.21	0.17	21
Aroclor 1260	0.23	0.18	24

LDC #: 49215C3b

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Reviewer: LT

METHOD: GC PCBs (EPA SW 846 Method 8082A)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

Yes x No__ N/A__ Was the overall quality and usability of the data acceptable?

#	Date	Sample ID	Compound	Finding	Qualifications
		5	Aroclor 1254 and Aroclor 1260	exceed calibration range	DNR
		6	All except Aroclor 1254 and Aroclor 1260	diluted	DNR

Comments: _____

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: October 12, 2020

Parameters: Polynuclear Aromatic Hydrocarbons

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 008403

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
CMSB1-B-01-6	008403-04	Soil	08/26/20
CMSB1-B-01-6MS	008403-04MS	Soil	08/26/20
CMSB1-B-01-6MSD	008403-04MSD	Soil	08/26/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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:

Polynuclear Aromatic Hydrocarbons (PAHs) by Environmental Protection Agency (EPA) SW 846 Method 8270E in Selected Ion Monitoring (SIM) mode

All sample results were subjected to Stage 2A 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 and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Stage 2A validation.

III. Initial Calibration and Initial Calibration Verification

Initial calibration data were not reviewed for Stage 2A validation.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

VIII. 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.

IX. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Internal Standards

Internal standards data were not reviewed for Stage 2A validation.

XII. Compound Quantitation

Raw data were not reviewed for Stage 2A validation.

XIII. Target Compound Identifications

Raw data were not reviewed for Stage 2A validation.

XIV. System Performance

Raw data were not reviewed for Stage 2A validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG 008403

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG 008403

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Field Blank Data Qualification Summary - SDG 008403

No Sample Data Qualified in this SDG

LDC #: 49215D2b

SDG #: 008403

Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET

Stage 2A

Date: 10/10/20

Page: 1 of 1

Reviewer: LS

2nd Reviewer:

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270E-SIM)

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.	GC/MS Instrument performance check	N	
III.	Initial calibration/ICV	N/N	
IV.	Continuing calibration	N	
V.	Laboratory Blanks	A	
VI.	Field blanks	N	
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	A	(2,3)
IX.	Laboratory control samples	A	LCS
X.	Field duplicates	N	
XI.	Internal standards	N	
XII.	Compound quantitation RL/LOQ/LODs	N	Dry weight basis = 1
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	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	CMSB1-B-01-6	008403-04	Soil	08/26/20
2	CMSB1-B-01-6MS	008403-04MS	Soil	08/26/20
3	CMSB1-B-01-6MSD	008403-04MSD	Soil	08/26/20
4				
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Notes:

1	OD-197-MB						

LDC Report# 49215D3b

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: October 12, 2020

Parameters: Polychlorinated Biphenyls

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 008403

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
CMS-S-45-4	008403-01	Soil	08/26/20
CMS-S-46-4	008403-02	Soil	08/26/20
CMS-S-47-4	008403-03	Soil	08/26/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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 Stage 2A 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 and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Initial Calibration and Initial Calibration Verification

Initial calibration data were not reviewed for Stage 2A validation.

III. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

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) 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 Stage 2A validation.

XI. Target Compound Identification

Raw data were not reviewed for Stage 2A validation.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Data Qualification Summary - SDG 008403

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 008403

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 008403

No Sample Data Qualified in this SDG

LDC #: 49215D3b
SDG #: 008403
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 10/10/20
Page: 1 of 1
Reviewer: LS
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	N/N	
III.	Continuing calibration	N	
IV.	Laboratory Blanks	A	
V.	Field blanks	N	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	SDG 008379
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	N	
X.	Compound quantitation/RL/LOQ/LODs	N	Dry weight basis = 1-3
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	CMS-S-45-4	008403-01	Soil	08/26/20
2	CMS-S-46-4	008403-02	Soil	08/26/20
3	CMS-S-47-4	008403-03	Soil	08/26/20
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Notes:

1	00-1921 MB						

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: October 12, 2020

Parameters: Total Petroleum Hydrocarbons as Extractables

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 008403

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
CMSB1-B-01-6	008403-04	Soil	08/26/20
CMSB1-S-01-4	008403-05	Soil	08/26/20
CMSB1-S-02-4	008403-06	Soil	08/26/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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:

Total Petroleum Hydrocarbons (TPH) as Extractables by NWTPH-Dx

All sample results were subjected to Stage 2A 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 not 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

Initial calibration data were not reviewed for Stage 2A validation.

III. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

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 Stage 2A validation.

XI. Target Compound Identifications

Raw data were not reviewed for Stage 2A validation.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG 008403

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data Qualification Summary - SDG 008403

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Total Petroleum Hydrocarbons as Extractables - Field Blank Data Qualification Summary - SDG 008403

No Sample Data Qualified in this SDG

LDC #: 49215D8
SDG #: 008403
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 10/10/20
Page: 1 of 1
Reviewer: LS
2nd Reviewer: [signature]

METHOD: GC TPH as Extractables (NWTPH-Dx)

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	N/N	
III.	Continuing calibration	N	
IV.	Laboratory Blanks	A	
V.	Field blanks	N	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Non client
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	N	
X.	Compound quantitation RL/LOQ/LODs	N	Dry weight basis = 1-3
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	CMSB1-B-01-6	008403-04	Soil	08/26/20
2	CMSB1-S-01-4	008403-05	Soil	08/26/20
3	CMSB1-S-02-4	008403-06	Soil	08/26/20
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				

Notes:

1	00-1926MB2						

LDC Report# 49215E2b

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: October 12, 2020

Parameters: Polynuclear Aromatic Hydrocarbons

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 008433

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
CMSB1-B-03-6	008433-03	Soil	08/27/20
CMSB1-B-02-6	008433-04	Soil	08/27/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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:

Polynuclear Aromatic Hydrocarbons (PAHs) by Environmental Protection Agency (EPA) SW 846 Method 8270E in Selected Ion Monitoring (SIM) mode

All sample results were subjected to Stage 2A 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 and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Stage 2A validation.

III. Initial Calibration and Initial Calibration Verification

Initial calibration data were not reviewed for Stage 2A validation.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

VII. Surrogates

Surrogates were added to all samples as required by the method. Surrogate recoveries (%R) were not within QC limits for sample CMSB1-B-02-6. Using professional judgment, no data were qualified when one surrogate %R was outside the QC limits and the %R was greater than or equal to 10%.

VIII. 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.

IX. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Internal Standards

Internal standards data were not reviewed for Stage 2A validation.

XII. Compound Quantitation

Raw data were not reviewed for Stage 2A validation.

XIII. Target Compound Identifications

Raw data were not reviewed for Stage 2A validation.

XIV. System Performance

Raw data were not reviewed for Stage 2A validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG 008433

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG 008433

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Field Blank Data Qualification Summary - SDG 008433

No Sample Data Qualified in this SDG

LDC #: 49215E2b

SDG #: 008433

Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET

Stage 2A

Date: 10/16/20

Page: 1 of 1

Reviewer: VT

2nd Reviewer:

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270E-SIM)

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.	GC/MS Instrument performance check	N	
III.	Initial calibration/ICV	N/N	
IV.	Continuing calibration	N	
V.	Laboratory Blanks	A	
VI.	Field blanks	N	
VII.	Surrogate spikes	SW	2-one at, NB
VIII.	Matrix spike/Matrix spike duplicates	A	SDG 008403
IX.	Laboratory control samples	A	LCS
X.	Field duplicates	N	
XI.	Internal standards	N	
XII.	Compound quantitation RL/LOQ/LODs	N	Dry weight basis=12
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	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	CMSB1-B-03-6	008433-03	Soil	08/27/20
2	CMSB1-B-02-6	008433-04	Soil	08/27/20
3				
4				
5				
6				
7				
8				
9				

Notes:

1	00-1057MB						

LDC Report# 49215E3b

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: October 12, 2020

Parameters: Polychlorinated Biphenyls

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 008433

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
OMS-S-20-2.5	008433-02	Soil	08/27/20
OMS-S-20-2.5DL	008433-02DL	Soil	08/27/20
OMS-S-20-2.5MS	008433-02MS	Soil	08/27/20
OMS-S-20-2.5MSD	008433-02MSD	Soil	08/27/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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 Stage 2A 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.

DNR Do not report from this analysis; the result for this analyte is to be reported from an alternative analysis.

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

Initial calibration data were not reviewed for Stage 2A validation.

III. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

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 with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	Flag	A or P
OMS-S-20-2.5MS/MSD (OMS-S-20-2.5)	Aroclor-1260	880 (25-137)	1300 (25-137)	NA	-

Relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	RPD (Limits)	Flag	A or P
OMS-S-20-2.5MS/MSD (OMS-S-20-2.5)	Aroclor-1016 Aroclor-1260	23 (≤20) 39 (≤20)	NA	-

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 Stage 2A validation.

XI. Target Compound Identification

Raw data were not reviewed for Stage 2A validation.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method.

In the case where more than one result was reported for an individual sample, the least technically acceptable results were deemed not reportable as follows:

Sample	Compound	Reason	Flag	A or P
OMS-S-20-2.5	Aroclor-1254	Results exceeded calibration range.	DNR	-

No results were rejected in this SDG.

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Data Qualification Summary - SDG 008433

Sample	Compound	Flag	A or P	Reason
OMS-S-20-2.5	Aroclor-1254	DNR	-	Overall assessment of data

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 008433

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 008433

No Sample Data Qualified in this SDG

LDC #: 49215E3b
SDG #: 008433
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 10/10/20
Page: 1 of 1
Reviewer: VT
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	N/N	
III.	Continuing calibration	N	
IV.	Laboratory Blanks	A	
V.	Field blanks	N	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	SW	(3,4)
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	N	
X.	Compound quantitation/RL/LOQ/LODs	N	Dry weight basis = 1,2
XI.	Target compound identification	N	
XII.	Overall assessment of data	SW	

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	OMS-S-20-2.5	008433-02	Soil	08/27/20
2	OMS-S-20-2.5DL	008433-02DL	Soil	08/27/20
3	OMS-S-20-2.5MS	008433-02MS	Soil	08/27/20
4	OMS-S-20-2.5MSD	008433-02MSD	Soil	08/27/20
5				
6				
7				
8				
9				
10				
11				
12				
13				

Notes:

1	082807-MB						

LDC #: 49215E3b

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: LT

METHOD: X **GC** ___ **HPLC**

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y x N___ N/A ___ Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG?

Y x N___ N/A___ Was an MS/MSD analyzed every 20 samples for each matrix or whenever a sample extraction was performed?

Y___ N x N/A___ Were the MS/MSD percent recoveries (%R) and relative percent differences (RPD) within QC limits?

#	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	3/4	Aroclor 1260	880 (25 - 137)	1300 (25 - 137)		1 (ND)	J/A dets
		Aroclor 1016			23 (≤ 20)	↓	↓
		Aroclor 1260			39 (≤ 20)	↓	↓

LDC #: 49215E3b

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

METHOD: GC PCBs (EPA SW 846 Method 8082A)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

Yes x No__ N/A__ Was the overall quality and usability of the data acceptable?

#	Date	Sample ID	Compound	Finding	Qualifications
		1	Aroclor 1254	exceed calibration range	DNR

Comments: _____

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: October 12, 2020

Parameters: Metals

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 008433

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
OMS-S-20-2.5	008433-02	Soil	08/27/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 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 by Environmental Protection Agency (EPA) SW 846 Method 6020B
Mercury by EPA Method 1631E

All sample results were subjected to Stage 2A 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

ICP-MS tune data were not reviewed for Stage 2A validation.

III. Instrument Calibration

Instrument calibration data were not reviewed for Stage 2A validation.

IV. ICP Interference Check Sample Analysis

ICP Interference check sample (ICS) analysis data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the methods. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

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. 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 was not performed for this SDG.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the methods. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

No field duplicates were identified in this SDG.

XII. Internal Standards (ICP-MS)

Internal standards data were not reviewed for Stage 2A validation.

XIII. Sample Result Verification

Raw data were not reviewed for Stage 2A validation.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Metals - Data Qualification Summary - SDG 008433

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Metals - Laboratory Blank Data Qualification Summary - SDG 008433

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Metals - Field Blank Data Qualification Summary - SDG 008433

No Sample Data Qualified in this SDG

LDC #: 49215E4a

SDG #: 008433

Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET

Stage 2A

Date: 10/16/20

Page: 1 of 1

Reviewer: VT

2nd Reviewer:

METHOD: Cu, Cr, Hg (EPA SW 846 Method 6020B/EPA Method 1631E)

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	N	
III.	Instrument Calibration	N	
IV.	ICP Interference Check Sample (ICS) Analysis	N	
V.	Laboratory Blanks	A	
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	Non client
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	N	
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	N	
XIII.	Sample Result Verification	N	Dry weight basis = 1
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	OMS-S-20-2.5	008433-02	Soil	08/27/20
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				

Notes:

LDC #: 49215E4a

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: LT

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1	S	Cu, Hg

Analysis Method		
ICP/MS	S	Cu
CVAA	S	Hg

Comments: Mercury by CVAA if performed

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: October 12, 2020

Parameters: Total Petroleum Hydrocarbons as Extractables

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 008433

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
CMSB1-S-03-4	008433-01	Soil	08/27/20
CMSB1-B-03-6	008433-03	Soil	08/27/20
CMSB1-B-02-6	008433-04	Soil	08/27/20
CMSB1-S-04-4	008433-05	Soil	08/27/20
CMSB1-S-05-4	008433-06	Soil	08/27/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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:

Total Petroleum Hydrocarbons (TPH) as Extractables by NWTPH-Dx

All sample results were subjected to Stage 2A 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 not 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

Initial calibration data were not reviewed for Stage 2A validation.

III. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

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 Stage 2A validation.

XI. Target Compound Identifications

Raw data were not reviewed for Stage 2A validation.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG 008433

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data Qualification Summary - SDG 008433

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Total Petroleum Hydrocarbons as Extractables - Field Blank Data Qualification Summary - SDG 008433

No Sample Data Qualified in this SDG

LDC #: 49215E8 **VALIDATION COMPLETENESS WORKSHEET** Date: 10/6/20
SDG #: 008433 Stage 2A Page: 1 of 1
Laboratory: Friedman & Bruya, Inc. Reviewer: VT
2nd Reviewer:

METHOD: GC TPH as Extractables (NWTPH-Dx)

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	N/N	
III.	Continuing calibration	N	
IV.	Laboratory Blanks	A	
V.	Field blanks	N	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Non client
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	N	
X.	Compound quantitation RL/LOQ/LODs	N	Dry weight basis = 1-5
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	CMSB1-S-03-4	008433-01	Soil	08/27/20
2	CMSB1-B-03-6	008433-03	Soil	08/27/20
3	CMSB1-B-02-6	008433-04	Soil	08/27/20
4	CMSB1-S-04-4	008433-05	Soil	08/27/20
5	CMSB1-S-05-4	008433-06	Soil	08/27/20
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Notes:

1	00-1960 MB						

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: October 8, 2020

Parameters: Metals

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 008462

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
REC5-S-01-4	008462-01	Soil	08/28/20
REC5-S-01-7	008462-02	Soil	08/28/20
REC5-S-01-10	008462-03	Soil	08/28/20
REC5-B-01-12	008462-04	Soil	08/28/20
REC5-S-02-4	008462-05	Soil	08/28/20
REC5-S-02-7	008462-06	Soil	08/28/20
REC5-S-02-7DL	008462-06DL	Soil	08/28/20
REC5-514	008462-07	Soil	08/28/20
REC5-514DL	008462-07DL	Soil	08/28/20
REC5-S-06-4	008462-08	Soil	08/28/20
REC5-S-03-4	008462-09	Soil	08/28/20
REC5-S-03-7	008462-10	Soil	08/28/20
REC5-S-02-10	008462-11	Soil	08/28/20
REC5-S-03-10	008462-12	Soil	08/28/20
REC5-B-02-12	008462-13	Soil	08/28/20
REC5-B-02-12DL	008462-13DL	Soil	08/28/20
REC5-S-06-7	008462-14	Soil	08/28/20
REC5-S-05-4	008462-15	Soil	08/28/20
REC5-S-04-4	008462-16	Soil	08/28/20
REC5-B-03-12	008462-17	Soil	08/28/20
REC5-B-03-12DL	008462-17DL	Soil	08/28/20
REC5-S-06-10	008462-18	Soil	08/28/20
REC5-S-06-10DL	008462-18DL	Soil	08/28/20
REC5-S-05-7	008462-19	Soil	08/28/20
REC5-S-05-10	008462-20	Soil	08/28/20
REC5-S-05-10DL	008462-20DL	Soil	08/28/20
REC5-S-04-7	008462-21	Soil	08/28/20

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
REC5-S-04-7DL	008462-21DL	Soil	08/28/20
REC5-S-04-10	008462-22	Soil	08/28/20
REC5-S-01-4MS	008462-01MS	Soil	08/28/20
REC5-S-01-4MSD	008462-01MSD	Soil	08/28/20
REC5-S-04-7MS	008462-21MS	Soil	08/28/20
REC5-S-04-7MSD	008462-21MSD	Soil	08/28/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 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:

Arsenic, Copper and Lead by Environmental Protection Agency (EPA) SW 846 Method 6020B

All sample results were subjected to Stage 2A 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.

DNR (Do Not Report): A more appropriate result is reported from another analysis or dilution.

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

ICP-MS tune data were not reviewed for Stage 2A validation.

III. Instrument Calibration

Instrument calibration data were not reviewed for Stage 2A validation.

IV. ICP Interference Check Sample Analysis

ICP Interference check sample (ICS) analysis data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the methods. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

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
REC5-S-04-7MS/MSD (REC5-S-04-7 REC5-S-04-10)	Arsenic	72 (75-125)	74 (75-125)	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 was not performed for this SDG.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the methods. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

Samples REC5-B-01-12 and REC5-514 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/Kg)		RPD
	REC5-B-01-12	REC5-514	
Arsenic	4.75	6.51	31
Copper	17.7	19.9	12
Lead	2.59	3.17	20

XII. Internal Standards (ICP-MS)

Internal standards data were not reviewed for Stage 2A validation.

XIII. Sample Result Verification

Raw data were not reviewed for Stage 2A validation.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods.

In the case where more than one result was reported for an individual sample, the least technically acceptable results were deemed not reportable as follows:

Sample	Analyte	Reason	Flag	A or P
REC5-S-02-7DL REC5-514DL REC5-B-02-12DL REC5-B-03-12DL REC5-S-06-10DL REC5-S-05-10DL REC5-S-04-7DL	Copper	Results from undiluted analyses were more usable.	DNR	-

Due to MS/MSD %R, data were qualified as estimated in two samples.

No results were rejected in this SDG.

Kimberly-Clark Upland Area
Metals - Data Qualification Summary - SDG 008462

Sample	Analyte	Flag	A or P	Reason
REC5-S-04-7 REC5-S-04-10	Arsenic	J (all detects)	A	Matrix spike/Matrix spike duplicate (%R)
REC5-S-02-7DL REC5-514DL REC5-B-02-12DL REC5-B-03-12DL REC5-S-06-10DL REC5-S-05-10DL REC5-S-04-7DL	Copper	DNR	-	Overall assessment of data

Kimberly-Clark Upland Area
Metals - Laboratory Blank Data Qualification Summary - SDG 008462

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Metals - Field Blank Data Qualification Summary - SDG 008462

No Sample Data Qualified in this SDG

LDC #: 49215F4a
SDG #: 008462
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 10/2/2020
Page: 1 of 2
Reviewer: DM
2nd Reviewer:

METHOD: Metals (EPA SW 846 Method 6020B)

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	N	
III.	Instrument Calibration	N	
IV.	ICP Interference Check Sample (ICS) Analysis	N	
V.	Laboratory Blanks	A	
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	SW	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	N	
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	~~SW~~	(4,8) (4,9)
XII.	Internal Standard (ICP-MS)	N	
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	SW	

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	REC5-S-01-4	008462-01	Soil	08/28/20
2	REC5-S-01-7	008462-02	Soil	08/28/20
3	REC5-S-01-10	008462-03	Soil	08/28/20
4	REC5-B-01-12	008462-04	Soil	08/28/20
5	REC5-S-02-4	008462-05	Soil	08/28/20
6	REC5-S-02-7	008462-06	Soil	08/28/20
7	REC5-S-02-7DL	008462-06DL	Soil	08/28/20
8	REC5-514	008462-07	Soil	08/28/20
9	REC5-514DL	008462-07DL	Soil	08/28/20
10	REC5-S-06-4	008462-08	Soil	08/28/20
11	REC5-S-03-4	008462-09	Soil	08/28/20
12	REC5-S-03-7	008462-10	Soil	08/28/20
13	REC5-S-02-10	008462-11	Soil	08/28/20
14	REC5-S-03-10	008462-12	Soil	08/28/20
15	REC5-B-02-12	008462-13	Soil	08/28/20

LDC #: 49215F4a
SDG #: 008462
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 10/2/2020

Reviewer: DM
2nd Reviewer:

METHOD: Metals (EPA SW 846 Method 6020B)

	Client ID	Lab ID	Matrix	Date
16	REC5-B-02-12DL	008462-13DL	Soil	08/28/20
17	REC5-S-06-7	008462-14	Soil	08/28/20
18	REC5-S-05-4	008462-15	Soil	08/28/20
19	REC5-S-04-4	008462-16	Soil	08/28/20
20	REC5-B-03-12	008462-17	Soil	08/28/20
21	REC5-B-03-12DL	008462-17DL	Soil	08/28/20
22	REC5-S-06-10	008462-18	Soil	08/28/20
23	REC5-S-06-10DL	008462-18DL	Soil	08/28/20
24	REC5-S-05-7	008462-19	Soil	08/28/20
25	REC5-S-05-10	008462-20	Soil	08/28/20
26	REC5-S-05-10DL	008462-20DL	Soil	08/28/20
27	REC5-S-04-7	008462-21	Soil	08/28/20
28	REC5-S-04-7DL	008462-21DL	Soil	08/28/20
29	REC5-S-04-10	008462-22	Soil	08/28/20
30	REC5-S-01-4MS	008462-01MS	Soil	08/28/20
31	REC5-S-01-4MSD	008462-01MSD	Soil	08/28/20
32	REC5-S-04-7MS	008462-21MS	Soil	08/28/20
33	REC5-S-04-7MSD	008462-21MSD	Soil	08/28/20
34				
35				
36				

Notes:

LDC #: 49215F4 9

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: DTM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
~~1-6,8~~	S	Al, Sb, (As), Ba, Be, B, Cd, Ca, Cr, Co, (Cu), Fe, (Pb), Li, Mg, Mo, Mn, (~~Hg~~ DTM), Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
1-6,8,10-15,		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
17-20, 22,		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
24-25, 27,		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
29		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
7, 16, 21,	S	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, (Cu), Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
23, 26, 29		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
QC 30-33	S	Al, Sb, (As), Ba, Be, B, Cd, Ca, Cr, Co, (Cu), Fe, (Pb), Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
Analysis Method		
ICP		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
ICP-MS		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
GFAA		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn

Comments: Mercury by CVAA if performed

LDC #:49215F4a

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

METHOD: Trace metals (EPA SW 846 Method 6020/6010/7470)

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
	32/33	S	As	72(75-125)	74		27,29	J/UJ/A (det)

Comments:_____

LDC#: 49215F4a

VALIDATION FINDINGS WORKSHEET

Field Duplicates

METHOD: Metals (EPA Method 6010/6020/7000)

Analyte	Concentration (mg/Kg)		RPD
	4	8	
Arsenic	4.75	6.51	31
Copper	17.7	19.9	12
Lead	2.59	3.17	20

Analyte	Concentration (mg/Kg)		RPD
	4	9	
Copper		25U	NC

V:\Darionna\FIELD DUPLICATES\Field Duplicates\FD_inorganic\2020\49215F4a.wpd

LDC #: 49215F4a

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Reviewer: DTM

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".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

Y N N/A Was the overall quality and usability of the data acceptable?

#	Date	Sample ID	Analyte	Finding	Qualification
		7,9,16,21,23,26,28	Cu	Samples' internal standard passed, but original analyses was accepted due to detected result.	D NR

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: October 12, 2020

Parameters: Polychlorinated Biphenyls

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 008492

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
CMS-S-48-4	008492-01	Soil	08/31/20
CMS-S-49-4	008492-02	Soil	08/31/20
CMS-515	008492-03	Soil	08/31/20
CMS-S-50-4	008492-04	Soil	08/31/20
CMS-S-48-4MS	008492-01MS	Soil	08/31/20
CMS-S-48-4MSD	008492-01MSD	Soil	08/31/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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 Stage 2A 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 and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. Initial Calibration and Initial Calibration Verification

Initial calibration data were not reviewed for Stage 2A validation.

III. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

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 with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	Flag	A or P
CMS-S-48-4MS/MSD (CMS-S-48-4)	Aroclor-1260	-	140 (25-137)	NA	-

Relative percent differences (RPD) were within QC limits.

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

Samples CMS-515 and CMS-S-50-4 were identified as field duplicates. No results were detected in any of the samples.

X. Compound Quantitation

Raw data were not reviewed for Stage 2A validation.

XI. Target Compound Identification

Raw data were not reviewed for Stage 2A validation.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Data Qualification Summary - SDG 008492

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 008492

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 008492

No Sample Data Qualified in this SDG

LDC #: 49215G3b
SDG #: 008492
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 10/10/20
Page: 1 of 1
Reviewer: VT
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	N/N	
III.	Continuing calibration	N	
IV.	Laboratory Blanks	A	
V.	Field blanks	N	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	SW	(5,6)
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	ND	D=3+4
X.	Compound quantitation/RL/LOQ/LODs	N	
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	CMS-S-48-4		008492-01	Soil	08/31/20
2	CMS-S-49-4		008492-02	Soil	08/31/20
3	CMS-515	D	008492-03	Soil	08/31/20
4	CMS-S-50-4	D	008492-04	Soil	08/31/20
5	CMS-S-48-4MS		008492-01MS	Soil	08/31/20
6	CMS-S-48-4MSD		008492-01MSD	Soil	08/31/20
7					
8					
9					
10					
11					
12					
13					

Notes:

1	00-1976 MB						

LDC #: 49215G3b

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: LT

METHOD: X **GC** ___ **HPLC**

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y x N___ N/A ___ Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG?

Y x N___ N/A___ Was an MS/MSD analyzed every 20 samples for each matrix or whenever a sample extraction was performed?

Y___ N x N/A___ Were the MS/MSD percent recoveries (%R) and relative percent differences (RPD) within QC limits?

#	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	5/6	Aroclor 1260		140 (25 - 137)		1 (ND)	J/A dets

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: October 8, 2020

Parameters: Metals

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 009024

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
BBH-S-01-4	009024-01	Soil	09/01/20
BBH-S-02-4	009024-02	Soil	09/01/20
BBH-S-03-4	009024-03	Soil	09/01/20
BBH-S-04-4	009024-04	Soil	09/01/20
BBH-S-05-4	009024-05	Soil	09/01/20
BBH-S-06-4	009024-06	Soil	09/01/20
BBH-S-08-4	009024-07	Soil	09/01/20
BBH-S-07-4	009024-08	Soil	09/01/20
BBH-S-01-4MS	009024-01MS	Soil	09/01/20
BBH-S-01-4MSD	009024-01MSD	Soil	09/01/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 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 Zinc by Environmental Protection Agency (EPA) SW 846 Method 6020B
Mercury by EPA Method 1631E

All sample results were subjected to Stage 2A 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

ICP-MS tune data were not reviewed for Stage 2A validation.

III. Instrument Calibration

Instrument calibration data were not reviewed for Stage 2A validation.

IV. ICP Interference Check Sample Analysis

ICP Interference check sample (ICS) analysis data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the methods. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

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
BBH-S-01-4MS/MSD (All samples in SDG 009024)	Copper	0 (75-125)	0 (75-125)	J (all detects)	A
BBH-S-01-4MS/MSD (BBH-S-01-4 BBH-S-02-4 BBH-S-03-4 BBH-S-05-4 BBH-S-08-4)	Mercury	224 (71-125)	232 (71-125)	J (all detects)	A
BBH-S-01-4MS/MSD (BBH-S-04-4 BBH-S-06-4 BBH-S-07-4)	Mercury	224 (71-125)	232 (71-125)	NA	-

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 was not performed for this SDG.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the methods. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

No field duplicates were identified in this SDG.

XII. Internal Standards (ICP-MS)

Internal standards data were not reviewed for Stage 2A validation.

XIII. Sample Result Verification

Raw data were not reviewed for Stage 2A validation.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods.

Due to MS/MSD %R, data were qualified as estimated in eight samples.

No results were rejected in this SDG.

Kimberly-Clark Upland Area
Metals - Data Qualification Summary - SDG 009024

Sample	Analyte	Flag	A or P	Reason
BBH-S-01-4 BBH-S-02-4 BBH-S-03-4 BBH-S-04-4 BBH-S-05-4 BBH-S-06-4 BBH-S-08-4 BBH-S-07-4	Copper	J (all detects)	A	Matrix spike/Matrix spike duplicate (%R)
BBH-S-01-4 BBH-S-02-4 BBH-S-03-4 BBH-S-05-4 BBH-S-08-4	Mercury	J (all detects)	A	Matrix spike/Matrix spike duplicate (%R)

Kimberly-Clark Upland Area
Metals - Laboratory Blank Data Qualification Summary - SDG 009024

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Metals - Field Blank Data Qualification Summary - SDG 009024

No Sample Data Qualified in this SDG

LDC #: 49215H4a
SDG #: 009024
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 10/2/2020
Page: 1 of 1
Reviewer: OM
2nd Reviewer:

METHOD: Metals (EPA SW 846 Method 6020B/EPA Method 1631E)

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	N	
III.	Instrument Calibration	N	
IV.	ICP Interference Check Sample (ICS) Analysis	N	
V.	Laboratory Blanks	A	
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	SW	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	N	
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	N	
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	BBH-S-01-4	009024-01	Soil	09/01/20
2	BBH-S-02-4	009024-02	Soil	09/01/20
3	BBH-S-03-4	009024-03	Soil	09/01/20
4	BBH-S-04-4	009024-04	Soil	09/01/20
5	BBH-S-05-4	009024-05	Soil	09/01/20
6	BBH-S-06-4	009024-06	Soil	09/01/20
7	BBH-S-08-4	009024-07	Soil	09/01/20
8	BBH-S-07-4	009024-08	Soil	09/01/20
9	BBH-S-01-4MS	009024-01MS	Soil	09/01/20
10	BBH-S-01-4MSD	009024-01MSD	Soil	09/01/20
11				
12				
13				
14				

Notes:

LDC #: 49215HH9

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: DTM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-8	S	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, (Cu), Fe, Pb, Li, Mg, Mo, Mn, (Hg), Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, (Zn)
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
QC9-10	S	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn

Analysis Method		
ICP		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
ICP-MS		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
GFAA		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn

Comments: Mercury by CVAA if performed

LDC #:49215H4a

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

METHOD: Trace metals (EPA SW 846 Method 6020/6010/7470)

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
	9/10	S	Cu	0(75-125)	0		ALL	J/R/A (det)
			Hg	224(71-125)	232		ALL	J/A ~~(ND/det)~~ (1-3,5,7=det)

Comments:_____

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: October 8, 2020

Parameters: Metals

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 009056

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
BBH-S-09-4	009056-01	Soil	09/02/20
BBH-S-10-4	009056-02	Soil	09/02/20
BBH-S-11-4	009056-03	Soil	09/02/20
BBH-S-12-4	009056-04	Soil	09/02/20
BBH-S-13-4	009056-05	Soil	09/02/20
BBH-S-14-4	009056-06	Soil	09/02/20
BBH-S-15-4	009056-07	Soil	09/02/20
BBH-S-16-4	009056-08	Soil	09/02/20
BBH-S-16-4DL	009056-08DL	Soil	09/02/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 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 Zinc by Environmental Protection Agency (EPA) SW 846 Method 6020B
Mercury by EPA Method 1631E

All sample results were subjected to Stage 2A 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.

DNR (Do Not Report): A more appropriate result is reported from another analysis or dilution.

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

ICP-MS tune data were not reviewed for Stage 2A validation.

III. Instrument Calibration

Instrument calibration data were not reviewed for Stage 2A validation.

IV. ICP Interference Check Sample Analysis

ICP Interference check sample (ICS) analysis data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the methods. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

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. 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 was not performed for this SDG.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the methods. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

No field duplicates were identified in this SDG.

XII. Internal Standards (ICP-MS)

Internal standards data were not reviewed for Stage 2A validation.

XIII. Sample Result Verification

Raw data were not reviewed for Stage 2A validation.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods.

In the case where more than one result was reported for an individual sample, the least technically acceptable results were deemed not reportable as follows:

Sample	Analyte	Reason	Flag	A or P
BBH-S-16-4DL	Copper Zinc	Results from undiluted analyses were more usable.	DNR	-

No results were rejected in this SDG.

Kimberly-Clark Upland Area
Metals - Data Qualification Summary - SDG 009056

Sample	Analyte	Flag	A or P	Reason
BBH-S-16-4DL	Copper Zinc	DNR	-	Overall assessment of data

Kimberly-Clark Upland Area
Metals - Laboratory Blank Data Qualification Summary - SDG 009056

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Metals - Field Blank Data Qualification Summary - SDG 009056

No Sample Data Qualified in this SDG

LDC #: 49215l4a
SDG #: 009056
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 9/7/2020
Page: 1 of 1
Reviewer: KM
2nd Reviewer:

METHOD: Metals (EPA SW 846 Method 6020B/EPA Method 1631E)

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	N	
III.	Instrument Calibration	N	
IV.	ICP Interference Check Sample (ICS) Analysis	N	
V.	Laboratory Blanks	A	
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	N	
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	N	
XIII.	Sample Result Verification	N	
XIV	Overall Assessment of Data	SW	

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	BBH-S-09-4	009056-01	Soil	09/02/20
2	BBH-S-10-4	009056-02	Soil	09/02/20
3	BBH-S-11-4	009056-03	Soil	09/02/20
4	BBH-S-12-4	009056-04	Soil	09/02/20
5	BBH-S-13-4	009056-05	Soil	09/02/20
6	BBH-S-14-4	009056-06	Soil	09/02/20
7	BBH-S-15-4	009056-07	Soil	09/02/20
8	BBH-S-16-4	009056-08	Soil	09/02/20
9	BBH-S-16-4DL	009056-08DL	Soil	09/02/20
10				
11				
12				
13				
14				

Notes:

LDC #: 49215I49

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: DTM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-9	S	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, (Cu), Fe, Pb, Li, Mg, Mo, Mn, (Hg), Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, (Zn)
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
9	S	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, (Cu), Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, (Zn)
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
Analysis Method		
ICP		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
ICP-MS		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
GFAA		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn

Comments: Mercury by CVAA if performed

LDC #: 49215l4a

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Reviewer: DTM

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".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

Y N N/A Was the overall quality and usability of the data acceptable?

#	Date	Sample ID	Analyte	Finding	Qualification
		9	Cu,Zn	Samples' internal standard passed, but original analyses was accepted due to detected result.	DNR

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: October 8, 2020

Parameters: Metals

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 009132

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
BBH-S-17-4	009132-01	Soil	09/08/20
BBH-S-17-4DL	009132-01DL	Soil	09/08/20
BBH-S-18-4	009132-02	Soil	09/08/20
BBH-S-19-4	009132-03	Soil	09/08/20
BBH-S-19-4DL	009132-03DL	Soil	09/08/20
BBH-S-20-4	009132-04	Soil	09/08/20
BBH-516	009132-05	Soil	09/08/20
BBH-S-21-4	009132-06	Soil	09/08/20
BBH-S-22-4	009132-07	Soil	09/08/20
BBH-S-17-4MS	009132-01MS	Soil	09/08/20
BBH-S-17-4MSD	009132-01MSD	Soil	09/08/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 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 Zinc by Environmental Protection Agency (EPA) SW 846 Method 6020B
Mercury by EPA Method 1631E

All sample results were subjected to Stage 2A 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.

DNR (Do Not Report): A more appropriate result is reported from another analysis or dilution.

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

ICP-MS tune data were not reviewed for Stage 2A validation.

III. Instrument Calibration

Instrument calibration data were not reviewed for Stage 2A validation.

IV. ICP Interference Check Sample Analysis

ICP Interference check sample (ICS) analysis data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the methods. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

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 was not performed for this SDG.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the methods. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

Samples BBH-S-20-4 and BBH-516 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/Kg)		RPD
	BBH-S-20-4	BBH-516	
Copper	28.7	23.4	20
Zinc	50.6	44.5	13
Mercury	0.30	0.37	21

XII. Internal Standards (ICP-MS)

Internal standards data were not reviewed for Stage 2A validation.

XIII. Sample Result Verification

Raw data were not reviewed for Stage 2A validation.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods.

In the case where more than one result was reported for an individual sample, the least technically acceptable results were deemed not reportable as follows:

Sample	Analyte	Reason	Flag	A or P
BBH-S-17-4DL BBH-S-19-4DL	Copper	Results from undiluted analyses were more usable.	DNR	-

No results were rejected in this SDG.

Kimberly-Clark Upland Area
Metals - Data Qualification Summary - SDG 009132

Sample	Analyte	Flag	A or P	Reason
BBH-S-17-4DL BBH-S-19-4DL	Copper	DNR	-	Overall assessment of data

Kimberly-Clark Upland Area
Metals - Laboratory Blank Data Qualification Summary - SDG 009132

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Metals - Field Blank Data Qualification Summary - SDG 009132

No Sample Data Qualified in this SDG

LDC #: 49215J4a
SDG #: 009132
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 10/2/2020
Page: 1 of 1
Reviewer: DM
2nd Reviewer:

METHOD: Metals (EPA SW 846 Method 6020B/EPA Method 1631E)

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	N	
III.	Instrument Calibration	N	
IV.	ICP Interference Check Sample (ICS) Analysis	N	
V.	Laboratory Blanks	A	
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	A	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	N	
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	SW	(6,7)
XII.	Internal Standard (ICP-MS)	N	
XIII.	Sample Result Verification	N	
XIV	Overall Assessment of Data	A SW	

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	BBH-S-17-4	009132-01	Soil	09/08/20
2	BBH-S-17-4DL	009132-01DL	Soil	09/08/20
3	BBH-S-18-4	009132-02	Soil	09/08/20
4	BBH-S-19-4	009132-03	Soil	09/08/20
5	BBH-S-19-4DL	009132-03DL	Soil	09/08/20
6	BBH-S-20-4	009132-04	Soil	09/08/20
7	BBH-516	009132-05	Soil	09/08/20
8	BBH-S-21-4	009132-06	Soil	09/08/20
9	BBH-S-22-4	009132-07	Soil	09/08/20
10	BBH-S-17-4MS	009132-01MS	Soil	09/08/20
11	BBH-S-17-4MSD	009132-01MSD	Soil	09/08/20
12				
13				
14				

Notes:

LDC #: 49215J49

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: DTM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1,4	S	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, (Cu), Fe, Pb, Li, Mg, Mo, Mn, (Hg), Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
2,5	S	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, (Cu), Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, (Zn)
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
3,7-9	S	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, (Cu), Fe, Pb, Li, Mg, Mo, Mn, (Hg), Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, (Zn)
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
6	S	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, (Cu), Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, (Zn)
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
6	S	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, (Hg), Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
QC 10-11	S	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, (Cu), Fe, Pb, Li, Mg, Mo, Mn, (Hg), Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, (Zn)
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn

Analysis Method		
ICP		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
ICP-MS		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
GFAA		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn

Comments: Mercury by CVAA if performed

LDC#: 49215J4a

VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: Metals (EPA Method 6010/6020/7000)

Analyte	Concentration (mg/Kg)		RPD
	6	7	
Copper	28.7	23.4	20
Zinc	50.6	44.5	13
Mercury	0.30	0.37	21

V:\Darionna\FIELD DUPLICATES\Field Duplicates\FD_inorganic\2020\49215J4a.wpd

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

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".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

Y N N/A Was the overall quality and usability of the data acceptable?

#	Date	Sample ID	Analyte	Finding	Qualification
		2,5	Cu	Samples' internal standard passed, but original analyses was accepted due to detected result.	DNR

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: October 8, 2020

Parameters: Metals

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 009182

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
BBH-S-23-4	009182-01	Soil	09/09/20
BBH-S-24-4	009182-02	Soil	09/09/20
BBH-S-25-4	009182-03	Soil	09/09/20
BBH-S-26-4	009182-04	Soil	09/09/20
BBH-S-27-4	009182-05	Soil	09/09/20
BBH-S-28-4	009182-06	Soil	09/09/20
BBH-S-27-8	009182-07	Soil	09/10/20
BBH-S-28-8	009182-08	Soil	09/10/20
BBH-S-29-4	009182-09	Soil	09/10/20
BBH-S-29-8	009182-10	Soil	09/10/20
BBH-S-30-4	009182-11	Soil	09/10/20
BBH-S-30-8	009182-12	Soil	09/10/20
BBH-B-30-10	009182-13	Soil	09/10/20
BBH-B-36-10	009182-14	Soil	09/10/20
BBH-S-31-4	009182-15	Soil	09/10/20
BBH-S-31-8	009182-16	Soil	09/10/20
BBH-S-32-4	009182-17	Soil	09/10/20
BBH-S-32-8	009182-18	Soil	09/10/20
BBH-517	009182-19	Soil	09/10/20
BBH-S-34-4	009182-20	Soil	09/10/20
BBH-S-34-8	009182-21	Soil	09/10/20
BBH-B-31-10	009182-22	Soil	09/10/20
BBH-S-33-4	009182-23	Soil	09/10/20
BBH-S-23-4MS	009182-01MS	Soil	09/09/20
BBH-S-23-4MSD	009182-01MSD	Soil	09/09/20
BBH-S-34-8MS	009182-21MS	Soil	09/10/20
BBH-S-34-8MSD	009182-21MSD	Soil	09/10/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 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 Zinc by Environmental Protection Agency (EPA) SW 846 Method 6020B
Mercury by EPA Method 1631E

All sample results were subjected to Stage 2A 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

ICP-MS tune data were not reviewed for Stage 2A validation.

III. Instrument Calibration

Instrument calibration data were not reviewed for Stage 2A validation.

IV. ICP Interference Check Sample Analysis

ICP Interference check sample (ICS) analysis data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the methods. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

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
BBH-S-34-8MS/MSD (BBH-S-34-8 BBH-B-31-10 BBH-S-33-4)	Copper	361 (75-125)	0 (75-125)	J (all detects)	A
BBH-S-34-8MS/MSD (BBH-S-34-8 BBH-B-31-10 BBH-S-33-4)	Zinc	69 (75-125)	152 (75-125)	J (all detects) UJ (all non-detects)	A
BBH-S-34-8MS/MSD (BBH-S-33-4)	Mercury	127 (71-125)	-	J (all detects)	A

Spike ID (Associated Samples)	Analyte	MS (%R) (Limits)	MSD (%R) (Limits)	Flag	A or P
BBH-S-34-8MS/MSD (BBH-S-34-8 BBH-B-31-10)	Mercury	127 (71-125)	-	NA	-

Relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	RPD (Limits)	Flag	A or P
BBH-S-34-8MS/MSD (BBH-S-34-8 BBH-B-31-10 BBH-S-33-4)	Copper	200 (≤20)	J (all detects)	A

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 was not performed for this SDG.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the methods. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

Samples BBH-S-32-8 and BBH-517 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/Kg)		RPD
	BBH-S-32-8	BBH-517	
Copper	32.0	44.6	33
Zinc	101	75.2	29

XII. Internal Standards (ICP-MS)

Internal standards data were not reviewed for Stage 2A validation.

XIII. Sample Result Verification

Raw data were not reviewed for Stage 2A validation.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods.

Due to MS/MSD %R and RPD, data were qualified as estimated in three samples.

No results were rejected in this SDG.

Kimberly-Clark Upland Area
Metals - Data Qualification Summary - SDG 009182

Sample	Analyte	Flag	A or P	Reason
BBH-S-34-8 BBH-B-31-10 BBH-S-33-4	Copper	J (all detects)	A	Matrix spike/Matrix spike duplicate (%R)
BBH-S-34-8 BBH-B-31-10 BBH-S-33-4	Zinc	J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (%R)
BBH-S-33-4	Mercury	J (all detects)	A	Matrix spike/Matrix spike duplicate (%R)
BBH-S-34-8 BBH-B-31-10 BBH-S-33-4	Copper	J (all detects)	A	Matrix spike/Matrix spike duplicate (RPD)

Kimberly-Clark Upland Area
Metals - Laboratory Blank Data Qualification Summary - SDG 009182

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Metals - Field Blank Data Qualification Summary - SDG 009182

No Sample Data Qualified in this SDG

LDC #: 49215K4a
SDG #: 009182
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 10/2/2020
Page: 1 of 2
Reviewer: DM
2nd Reviewer:

METHOD: Metals (EPA SW 846 Method 6020B/EPA Method 1631E)

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	N	
III.	Instrument Calibration	N	
IV.	ICP Interference Check Sample (ICS) Analysis	N	
V.	Laboratory Blanks	A	
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	SW	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	N	
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	SW	(18,19)
XII.	Internal Standard (ICP-MS)	N	
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	BBH-S-23-4	009182-01	Soil	09/09/20
2	BBH-S-24-4	009182-02	Soil	09/09/20
3	BBH-S-25-4	009182-03	Soil	09/09/20
4	BBH-S-26-4	009182-04	Soil	09/09/20
5	BBH-S-27-4	009182-05	Soil	09/09/20
6	BBH-S-28-4	009182-06	Soil	09/09/20
7	BBH-S-27-8	009182-07	Soil	09/10/20
8	BBH-S-28-8	009182-08	Soil	09/10/20
9	BBH-S-29-4	009182-09	Soil	09/10/20
10	BBH-S-29-8	009182-10	Soil	09/10/20
11	BBH-S-30-4	009182-11	Soil	09/10/20
12	BBH-S-30-8	009182-12	Soil	09/10/20
13	BBH-B-30-10	009182-13	Soil	09/10/20
14	BBH-B-36-10	009182-14	Soil	09/10/20
15	BBH-S-31-4	009182-15	Soil	09/10/20

LDC #: 49215K4a

SDG #: 009182

Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET

Stage 2A

Date: 10/2/2020

Reviewer: DM

2nd Reviewer:

METHOD: Metals (EPA SW 846 Method 6020B/EPA Method 1631E)

	Client ID	Lab ID	Matrix	Date
16	BBH-S-31-8	009182-16	Soil	09/10/20
17	BBH-S-32-4	009182-17	Soil	09/10/20
18	BBH-S-32-8	009182-18	Soil	09/10/20
19	BBH-517	009182-19	Soil	09/10/20
20	BBH-S-34-4	009182-20	Soil	09/10/20
21	BBH-S-34-8	009182-21	Soil	09/10/20
22	BBH-B-31-10	009182-22	Soil	09/10/20
23	BBH-S-33-4	009182-23	Soil	09/10/20
24	BBH-S-23-4MS	009182-01MS	Soil	09/09/20
25	BBH-S-23-4MSD	009182-01MSD	Soil	09/09/20
26	BBH-S-34-8MS	009182-21MS	Soil	09/10/20
27	BBH-S-34-8MSD	009182-21MSD	Soil	09/10/20
28				
29				
30				

Notes:

LDC #: 49215K4q

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: DTM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
I-14, 1673	S	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, (Cu), Fe, Pb, Li, Mg, Mo, Mn, (Hg), Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, (Zn)
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
15	S	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, (Cu), Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, (Zn)
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
15	S	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, (Hg), Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
DC 24-77	S	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, (Cu), Fe, Pb, Li, Mg, Mo, Mn, (Hg), Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, (Zn)
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn

Analysis Method		
ICP		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
ICP-MS		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
GFAA		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn

Comments: Mercury by CVAA if performed

LDC #:49215K4a

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

METHOD: Trace metals (EPA SW 846 Method 6020/6010/7470)

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
	26/27	S	Cu	361	0		21-23	J/R/A (det)
			Zn	69	152		21-23	J/UJ/A (det)
			Cu			200	21-23	J/UJ/A (det)
			Hg	127 (71-125)			21-23	~~J/UJ/A (ND/det)~~ 23=Det 5det|A

Comments:_____

LDC#: 49215K4a

VALIDATION FINDINGS WORKSHEET
Field Duplicates

METHOD: Metals (EPA Method 6010/6020/7000)

Analyte	Concentration (mg/Kg)		RPD
	18	19	
Copper	32.0	44.6	33
Zinc	101	75.2	29

V:\Darionna\FIELD DUPLICATES\Field Duplicates\FD_inorganic\2020\49215K4a.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: October 8, 2020

Parameters: Metals

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 009238

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
BBH-S-35-4	009238-01	Soil	09/14/20
BBH-S-36-4	009238-02	Soil	09/14/20
BBH-S-37-4	009238-03	Soil	09/14/20
BBH-S-38-4	009238-04	Soil	09/14/20
BBH-S-39-4	009238-05	Soil	09/14/20
BBH-S-40-4	009238-06	Soil	09/14/20
BBH-S-41-4	009238-07	Soil	09/14/20
BBH-S-42-4	009238-08	Soil	09/14/20
BBH-S-35-4MS	009238-01MS	Soil	09/14/20
BBH-S-35-4MSD	009238-01MSD	Soil	09/14/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 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 by Environmental Protection Agency (EPA) SW 846 Method 6020B
Mercury by EPA Method 1631E

All sample results were subjected to Stage 2A 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.

DNR (Do Not Report): A more appropriate result is reported from another analysis or dilution.

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

ICP-MS tune data were not reviewed for Stage 2A validation.

III. Instrument Calibration

Instrument calibration data were not reviewed for Stage 2A validation.

IV. ICP Interference Check Sample Analysis

ICP Interference check sample (ICS) analysis data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the methods. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

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 was not performed for this SDG.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the methods. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

No field duplicates were identified in this SDG.

XII. Internal Standards (ICP-MS)

Internal standards data were not reviewed for Stage 2A validation.

XIII. Sample Result Verification

Raw data were not reviewed for Stage 2A validation.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Metals - Data Qualification Summary - SDG 009238

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Metals - Laboratory Blank Data Qualification Summary - SDG 009238

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Metals - Field Blank Data Qualification Summary - SDG 009238

No Sample Data Qualified in this SDG

LDC #: 49215L4a

SDG #: 009238

Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET

Stage 2A

Date: 10/2/2020

Page: 1 of 1

Reviewer: DM

2nd Reviewer:

METHOD: Cr, Hg (EPA SW 846 Method 6020B/EPA Method 1631E)

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	N	
III.	Instrument Calibration	N	
IV.	ICP Interference Check Sample (ICS) Analysis	N	
V.	Laboratory Blanks	A	
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	A	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	N	
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	N	
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	BBH-S-35-4	009238-01	Soil	09/19/20
2	BBH-S-36-4	009238-02	Soil	09/19/20
3	BBH-S-37-4	009238-03	Soil	09/19/20
4	BBH-S-38-4	009238-04	Soil	09/19/20
5	BBH-S-39-4	009238-05	Soil	09/19/20
6	BBH-S-40-4	009238-06	Soil	09/19/20
7	BBH-S-41-4	009238-07	Soil	09/19/20
8	BBH-S-42-4	009238-08	Soil	09/19/20
9	BBH-S-35-4MS	009238-01MS	Soil	09/19/20
10	BBH-S-35-4MSD	009238-01MSD	Soil	09/19/20
11				
12				
13				
14				

Notes:

LDC #: 49215L4q

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: DTM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-3, 7	S	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, (Cu) Fe, Pb, Li, Mg, Mo, Mn, (Hg), Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
4-6, 8	S	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, (Hg), Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
oc 9-10	S	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, (Cu) Fe, Pb, Li, Mg, Mo, Mn, (Hg), Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn

Analysis Method		
ICP		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
ICP-MS		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
GFAA		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn

Comments: Mercury by CVAA if performed

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

Aspect Consulting LLC
701 Second Ave., Suite 550
Seattle, WA 98104
ATTN: Ms. Carla Brock
cbrock@aspectconsulting.com

November 17, 2020

SUBJECT: Kimberly-Clark Upland Area, Data Validation

Dear Ms. Brock,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on October 30, 2020. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #49554:

SDG #	Fraction
009289, 009316, 009348, 009369 009431, 009494, 009564, 010033 010063, 010302, 010084, 010110 010130, 010155, 010179, 010208 010237, 010269	Polynuclear Aromatic Hydrocarbons, Metals, Total Petroleum Hydrocarbons as Extractables

The data validation was performed under Stage 2A guidelines. The analyses were validated using the following documents, as applicable to each method:

- USEPA National Functional Guidelines for Organic Superfund Methods Data Review, January 2017
- USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review; January 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
crink@lab-data.com
Project Manager/Senior Chemist

Stage 2A EDD **LDC #49554 (Aspect Consulting, LLC - Seattle, WA / Kimberly-Clark Upland Area 2020 Interm Action)**

LDC	SDG#	DATE REC'D	(3) DATE DUE	(18) PAH (8270E -SIM)		(3) Metals (6020B)		Cu (6020B)		Cu,Zn (6020B)		Zn (6020B)		Hg (1631E)		TPH-E (NWTPH -Dx)																					
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
A	009289	10/30/20	11/20/20	-	-	-	-	0	1	0	3	-	-	0	7	-	-																				
B	009316	10/30/20	11/20/20	-	-	-	-	-	-	0	13	-	-	0	13	-	-																				
C	009348	10/30/20	11/20/20	-	-	-	-	-	-	0	4	-	-	0	4	-	-																				
D	009369	10/30/20	11/20/20	-	-	-	-	-	-	0	19	-	-	0	19	-	-																				
E	009431	10/30/20	11/20/20	-	-	-	-	-	-	0	8	-	-	0	8	-	-																				
F	009494	10/30/20	11/20/20	-	-	0	1	-	-	-	-	-	-	0	1	0	1																				
G	009564	10/30/20	11/20/20	-	-	-	-	0	1	0	4	-	-	0	10	-	-																				
H	010033	10/30/20	11/20/20	-	-	-	-	-	-	0	5	-	-	0	7	-	-																				
I	010063	10/30/20	11/20/20	-	-	0	5	0	2	0	2	-	-	0	8	0	5																				
J	010302	10/30/20	11/20/20	-	-	-	-	0	5	0	1	0	1	0	13	-	-																				
K	010084	10/30/20	11/20/20	0	4	-	-	-	-	0	1	-	-	0	1	-	-																				
L	010110	10/30/20	11/20/20	-	-	-	-	-	-	0	6	-	-	0	6	-	-																				
M	010130	10/30/20	11/20/20	-	-	-	-	-	-	0	12	-	-	0	12	-	-																				
N	010155	10/30/20	11/20/20	-	-	-	-	-	-	0	10	-	-	0	10	-	-																				
O	010179	10/30/20	11/20/20	-	-	-	-	-	-	0	13	-	-	0	13	-	-																				
P	010208	10/30/20	11/20/20	-	-	-	-	0	4	0	1	0	1	0	11	-	-																				
Q	010237	10/30/20	11/20/20	-	-	-	-	0	4	-	-	-	-	0	3	-	-																				
R	010269	10/30/20	11/20/20	-	-	-	-	0	3	-	-	-	-	0	17	-	-																				
Total	T/CR			0	4	0	6	0	20	0	102	0	2	0	163	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	303

Shaded cells indicate Stage 4 validation (all other cells are Stage 2A validation). These sample counts do not include MS, MSD, or DUP's.

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: November 16, 2020

Parameters: Metals

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 009289

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
BBH-S-43-41	009289-01	Soil	09/16/20
BBH-S-44-4	009289-02	Soil	09/16/20
BBH-S-45-4	009289-03	Soil	09/16/20
BBH-S-46-4	009289-04	Soil	09/16/20
BBH-B-25-10	009289-05	Soil	09/16/20
BBH-S-16-8	009289-06	Soil	09/16/20
BBH-S-33-8	009289-07	Soil	09/16/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 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 Zinc by Environmental Protection Agency (EPA) SW 846 Method 6020B
Mercury by EPA Method 1631E

All sample results were subjected to Stage 2A 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

ICP-MS tune data were not reviewed for Stage 2A validation.

III. Instrument Calibration

Instrument calibration data were not reviewed for Stage 2A validation.

IV. ICP Interference Check Sample Analysis

ICP Interference check sample (ICS) analysis data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the methods. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

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. 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 was not performed for this SDG.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the methods. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

No field duplicates were identified in this SDG.

XII. Internal Standards (ICP-MS)

Internal standards data were not reviewed for Stage 2A validation.

XIII. Sample Result Verification

Raw data were not reviewed for Stage 2A validation.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Metals - Data Qualification Summary - SDG 009289

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Metals - Laboratory Blank Data Qualification Summary - SDG 009289

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Metals - Field Blank Data Qualification Summary - SDG 009289

No Sample Data Qualified in this SDG

LDC #: 49554A4a
SDG #: 009289
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 11/12/2020

Reviewer: DTM
2nd Reviewer:

METHOD: Metals (EPA SW 846 Method 6020B/EPA Method 1631E)

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	N	
III.	Instrument Calibration	N	
IV.	ICP Interference Check Sample (ICS) Analysis	N	
V.	Laboratory Blanks	A	
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	N	
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	N	
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	A	

Note: A = Acceptable; ND = No compounds detected; D = Duplicate; SB=Source blank
N = Not provided/applicable; R = Rinsate; TB = Trip blank; OTHER:
SW = See worksheet; FB = Field blank; EB = Equipment blank

	Client ID	Lab ID	Matrix	Date
1	BBH-S-43-41	009289-01	Soil	09/16/20
2	BBH-S-44-4	009289-02	Soil	09/16/20
3	BBH-S-45-4	009289-03	Soil	09/16/20
4	BBH-S-46-4	009289-04	Soil	09/16/20
5	BBH-B-25-10	009289-05	Soil	09/16/20
6	BBH-S-16-8	009289-06	Soil	09/16/20
7	BBH-S-33-8	009289-07	Soil	09/16/20
8				

Notes:

LDC #: 49554A4a

VALIDATION FINDINGS WORKSHEET

Sample Specific Element Reference

Reviewer: DTM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1	S	Cu
5-7	S	Cu, Zn
ALL	S	Hg
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
Analysis Method		
ICP		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
ICP-MS		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
GFAA		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn

Comments: Mercury by CVAA if performed

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: November 16, 2020

Parameters: Metals

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 009316

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
BBH-B-23-10	009316-01	Soil	09/17/20
BBH-S-18-8	009316-02	Soil	09/17/20
BBH-S-17-8	009316-03	Soil	09/17/20
BBH-B-22-10	009316-04	Soil	09/17/20
BBH-S-14-8	009316-05	Soil	09/17/20
BBH-S-13-8	009316-06	Soil	09/17/20
BBH-518	009316-07	Soil	09/17/20
BBH-S-15-8	009316-08	Soil	09/17/20
BBH-S-19-8	009316-09	Soil	09/17/20
BBH-S-20-8	009316-10	Soil	09/17/20
BBH-B-25-10	009316-11	Soil	09/17/20
BBH-S-22-8	009316-12	Soil	09/17/20
BBH-S-21-8	009316-13	Soil	09/17/20
BBH-B-23-10MS	009316-01MS	Soil	09/17/20
BBH-B-23-10MSD	009316-01MSD	Soil	09/17/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 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 Zinc by Environmental Protection Agency (EPA) SW 846 Method 6020B
Mercury by EPA Method 1631E

All sample results were subjected to Stage 2A 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

ICP-MS tune data were not reviewed for Stage 2A validation.

III. Instrument Calibration

Instrument calibration data were not reviewed for Stage 2A validation.

IV. ICP Interference Check Sample Analysis

ICP Interference check sample (ICS) analysis data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the methods. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

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
BBH-B-23-10MS/MSD (BBH-B-23-10)	Mercury	157 (71-125)	-	J (all detects)	A
BBH-B-23-10MS/MSD (BBH-S-18-8 BBH-S-17-8 BBH-B-22-10 BBH-S-14-8 BBH-S-13-8 BBH-518 BBH-S-15-8 BBH-S-19-8 BBH-S-20-8 BBH-B-25-10 BBH-S-22-8 BBH-S-21-8)	Mercury	157 (71-125)	-	NA	-

Relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	RPD (Limits)	Flag	A or P
BBH-B-23-10MS/MSD (All samples in SDG 009316)	Mercury	23 (≤20)	J (all detects) UJ (all non-detects)	A

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 was not performed for this SDG.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the methods. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

Samples BBH-B-23-10 and BBH-518 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/Kg)		RPD
	BBH-B-23-10	BBH-518	
Copper	49.2	32.5	41
Zinc	86.3	60.2	36
Mercury	0.13	0.1U	Not calculable

XII. Internal Standards (ICP-MS)

Internal standards data were not reviewed for Stage 2A validation.

XIII. Sample Result Verification

Raw data were not reviewed for Stage 2A validation.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods.

Due to MS/MSD %R and RPD, data were qualified as estimated in thirteen samples.

No results were rejected in this SDG.

Kimberly-Clark Upland Area
Metals - Data Qualification Summary - SDG 009316

Sample	Analyte	Flag	A or P	Reason
BBH-B-23-10	Mercury	J (all detects)	A	Matrix spike/Matrix spike duplicate (%R)
BBH-B-23-10 BBH-S-18-8 BBH-S-17-8 BBH-B-22-10 BBH-S-14-8 BBH-S-13-8 BBH-518 BBH-S-15-8 BBH-S-19-8 BBH-S-20-8 BBH-B-25-10 BBH-S-22-8 BBH-S-21-8	Mercury	J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (RPD)

Kimberly-Clark Upland Area
Metals - Laboratory Blank Data Qualification Summary - SDG 009316

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Metals - Field Blank Data Qualification Summary - SDG 009316

No Sample Data Qualified in this SDG

LDC #: 49554B4a

SDG #: 009316

Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET

Stage 2A

Date: 11/12/2020

Reviewer: DTM

2nd Reviewer:

METHOD: Metals (EPA SW 846 Method 6020B/EPA Method 1631E)

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	N	
III.	Instrument Calibration	N	
IV.	ICP Interference Check Sample (ICS) Analysis	N	
V.	Laboratory Blanks	A	
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	SW	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	N	
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	SW	(1,7)
XII.	Internal Standard (ICP-MS)	N	
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	BBH-B-23-10	009316-01	Soil	09/17/20
2	BBH-S-18-8	009316-02	Soil	09/17/20
3	BBH-S-17-8	009316-03	Soil	09/17/20
4	BBH-B-22-10	009316-04	Soil	09/17/20
5	BBH-S-14-8	009316-05	Soil	09/17/20
6	BBH-S-13-8	009316-06	Soil	09/17/20
7	BBH-518	009316-07	Soil	09/17/20
8	BBH-S-15-8	009316-08	Soil	09/17/20
9	BBH-S-19-8	009316-09	Soil	09/17/20
10	BBH-S-20-8	009316-10	Soil	09/17/20
11	BBH-B-25-10	009316-11	Soil	09/17/20
12	BBH-S-22-8	009316-12	Soil	09/17/20

LDC #: 49554B4a

SDG #: 009316

Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET

Stage 2A

Date: 11/12/2020

Reviewer: DTM

2nd Reviewer:

METHOD: Metals (EPA SW 846 Method 6020B/EPA Method 1631E)

	Client ID	Lab ID	Matrix	Date
13	BBH-S-21-8	009316-13	Soil	09/17/20
14	BBH-B-23-10MS	009316-01MS	Soil	09/17/20
15	BBH-B-23-10MSD	009316-01MSD	Soil	09/17/20
16				
17				
18				

Notes:

LDC #: 49554B4a

VALIDATION FINDINGS WORKSHEET

Sample Specific Element Reference

Reviewer: DTM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
2-3,5-7,10-13	S	Cu, Zn, Hg
1,4,8-9	S	Cu, Zn
1,4,8-9	S	Hg
QC 14-15	S	Cu, Zn, Hg
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
Analysis Method		
ICP		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
ICP-MS		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
GFAA		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn

Comments: Mercury by CVAA if performed

LDC #: 49554B4a

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: DTM

METHOD: Trace metals (EPA SW 846 Method 6020/6010/7470)

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	Qual	DET	ND	PS Recovery%
	14/15	S	Hg	157(71-125)			ALL	J/A	1	2-13	
			Hg			23(20)	ALL	J/UJ/A	1	2-13	

Comments:

LDC#: 49554B4a

VALIDATION FINDINGS WORKSHEET

Field Duplicates

Page: 1 of 1

Reviewer: DTM

METHOD: Metals (EPA Method 6010/6020/7000)

Analyte	Concentration (mg/Kg)		RPD
	1	7	
Copper	49.2	32.5	41
Zinc	86.3	60.2	36
Mercury	0.13	0.1U	NC

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: November 16, 2020

Parameters: Metals

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 009348

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
BBH-B-16-10	009348-01	Soil	09/18/20
BBH-S-23-8	009348-02	Soil	09/18/20
BBH-S-24-8	009348-03	Soil	09/18/20
BBH-B-27-10	009348-04	Soil	09/18/20
BBH-B-16-10MS	009348-01MS	Soil	09/18/20
BBH-B-16-10MSD	009348-01MSD	Soil	09/18/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 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 Zinc by Environmental Protection Agency (EPA) SW 846 Method 6020B
Mercury by EPA Method 1631E

All sample results were subjected to Stage 2A 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

ICP-MS tune data were not reviewed for Stage 2A validation.

III. Instrument Calibration

Instrument calibration data were not reviewed for Stage 2A validation.

IV. ICP Interference Check Sample Analysis

ICP Interference check sample (ICS) analysis data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the methods. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

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 was not performed for this SDG.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the methods. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

No field duplicates were identified in this SDG.

XII. Internal Standards (ICP-MS)

Internal standards data were not reviewed for Stage 2A validation.

XIII. Sample Result Verification

Raw data were not reviewed for Stage 2A validation.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Metals - Data Qualification Summary - SDG 009348

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Metals - Laboratory Blank Data Qualification Summary - SDG 009348

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Metals - Field Blank Data Qualification Summary - SDG 009348

No Sample Data Qualified in this SDG

LDC #: 49554C4a

SDG #: 009348

Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET

Stage 2A

Date: 11/12/2020

Reviewer: DTM

2nd Reviewer:

METHOD: Metals (EPA SW 846 Method 6020B/EPA Method 1631E)

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	N	
III.	Instrument Calibration	N	
IV.	ICP Interference Check Sample (ICS) Analysis	N	
V.	Laboratory Blanks	A	
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	A	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	N	
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	N	
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	BBH-B-16-10	009348-01	Soil	09/18/20
2	BBH-S-23-8	009348-02	Soil	09/18/20
3	BBH-S-24-8	009348-03	Soil	09/18/20
4	BBH-B-27-10	009348-04	Soil	09/18/20
5	BBH-B-16-10MS	009348-01MS	Soil	09/18/20
6	BBH-B-16-10MSD	009348-01MSD	Soil	09/18/20
7				
8				
9				

Notes:

LDC #: 49554C4a

VALIDATION FINDINGS WORKSHEET

Sample Specific Element Reference

Reviewer: DTM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-4	S	Cu, Zn, Hg
QC 5-6	S	Cu, Zn, Hg
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
Analysis Method		
ICP		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
ICP-MS		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
GFAA		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn

Comments: Mercury by CVAA if performed

LDC Report# 49554D4a

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: November 16, 2020

Parameters: Metals

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 009369

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
BBH-S-47-4	0093969-01	Soil	09/21/20
BBH-S-48-4	0093969-02	Soil	09/21/20
BBH-S-49-4	0093969-03	Soil	09/21/20
BBH-S-49-8	0093969-04	Soil	09/21/20
BBH-519	0093969-05	Soil	09/21/20
BBH-S-50-4	0093969-06	Soil	09/21/20
BBH-S-51-4	0093969-07	Soil	09/21/20
BBH-S-51-8	0093969-08	Soil	09/21/20
BBH-S-53-4	0093969-09	Soil	09/21/20
BBH-S-52-8	0093969-10	Soil	09/21/20
BBH-S-54-4	0093969-11	Soil	09/21/20
BBH-S-55-4	0093969-12	Soil	09/21/20
BBH-B-21-10	0093969-13	Soil	09/21/20
BBH-S-04-8	0093969-14	Soil	09/21/20
BBH-S-06-8	0093969-15	Soil	09/21/20
BBH-B-26-10	0093969-16	Soil	09/21/20
BBH-S-56-4	0093969-17	Soil	09/21/20
BBH-S-08-8	0093969-18	Soil	09/21/20
BBH-S-05-8	0093969-19	Soil	09/21/20
BBH-S-47-4MS	0093969-01MS	Soil	09/21/20
BBH-S-47-4MSD	0093969-01MSD	Soil	09/21/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 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 Zinc by Environmental Protection Agency (EPA) SW 846 Method 6020B
Mercury by EPA Method 1631E

All sample results were subjected to Stage 2A 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

ICP-MS tune data were not reviewed for Stage 2A validation.

III. Instrument Calibration

Instrument calibration data were not reviewed for Stage 2A validation.

IV. ICP Interference Check Sample Analysis

ICP Interference check sample (ICS) analysis data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the methods. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

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 was not performed for this SDG.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the methods. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

Samples BBH-S-49-8 and BBH-519 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/Kg)		RPD
	BBH-S-49-8	BBH-519	
Copper	20.5	18.7	9
Zinc	43.0	42.4	1

XII. Internal Standards (ICP-MS)

Internal standards data were not reviewed for Stage 2A validation.

XIII. Sample Result Verification

Raw data were not reviewed for Stage 2A validation.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Metals - Data Qualification Summary - SDG 009369

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Metals - Laboratory Blank Data Qualification Summary - SDG 009369

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Metals - Field Blank Data Qualification Summary - SDG 009369

No Sample Data Qualified in this SDG

LDC #: 49554D4a

SDG #: 009369

Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET

Stage 2A

Date: 11/12/2020

Reviewer: DTM

2nd Reviewer:

METHOD: Metals (EPA SW 846 Method 6020B/EPA Method 1631E)

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	N	
III.	Instrument Calibration	N	
IV.	ICP Interference Check Sample (ICS) Analysis	N	
V.	Laboratory Blanks	A	
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	A	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	N	
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	SW	(4,5)
XII.	Internal Standard (ICP-MS)	N	
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	BBH-S-47-4	0093969-01	Soil	09/21/20
2	BBH-S-48-4	0093969-02	Soil	09/21/20
3	BBH-S-49-4	0093969-03	Soil	09/21/20
4	BBH-S-49-8	0093969-04	Soil	09/21/20
5	BBH-519	0093969-05	Soil	09/21/20
6	BBH-S-50-4	0093969-06	Soil	09/21/20
7	BBH-S-51-4	0093969-07	Soil	09/21/20
8	BBH-S-51-8	0093969-08	Soil	09/21/20
9	BBH-S-53-4	0093969-09	Soil	09/21/20
10	BBH-S-52-8	0093969-10	Soil	09/21/20
11	BBH-S-54-4	0093969-11	Soil	09/21/20
12	BBH-S-55-4	0093969-12	Soil	09/21/20

LDC #: 49554D4a

SDG #: 009369

Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET

Stage 2A

Date:11/12/2020

Reviewer: DTM

2nd Reviewer:

METHOD: Metals (EPA SW 846 Method 6020B/EPA Method 1631E)

	Client ID	Lab ID	Matrix	Date
13	BBH-B-21-10	0093969-13	Soil	09/21/20
14	BBH-S-04-8	0093969-14	Soil	09/21/20
15	BBH-S-06-8	0093969-15	Soil	09/21/20
16	BBH-B-26-10	0093969-16	Soil	09/21/20
17	BBH-S-56-4	0093969-17	Soil	09/21/20
18	BBH-S-08-8	0093969-18	Soil	09/21/20
19	BBH-S-05-8	0093969-19	Soil	09/21/20
20	BBH-S-47-4MS	0093969-01MS	Soil	09/21/20
21	BBH-S-47-4MSD	0093969-01MSD	Soil	09/21/20
22				
23				
24				

Notes:

LDC #: 49554D4a

VALIDATION FINDINGS WORKSHEET

Page: 1 of 1

Sample Specific Element Reference

Reviewer: DTM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-19	S	Cu, Zn, Hg
QC20-21	S	Cu, Zn, Hg
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
Analysis Method		
ICP		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
ICP-MS		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
GFAA		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn

Comments: Mercury by CVAA if performed

LDC#: 49554D4a

VALIDATION FINDINGS WORKSHEET

Field Duplicates

Reviewer:_DTM_

METHOD: Metals (EPA Method 6010/6020/7000)

Analyte	Concentration (mg/Kg)		RPD
	4	5	
Copper	20.5	18.7	9
Zinc	43.0	42.4	1

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: November 16, 2020

Parameters: Metals

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 009431

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
BBH-S-57-4	009431-01	Soil	09/22/20
BBH-S-57-8	009431-02	Soil	09/22/20
BBH-B-24-10	009431-03	Soil	09/22/20
BBH-S-58-4	009431-04	Soil	09/23/20
BBH-S-59-4	009431-05	Soil	09/23/20
BBH-S-10-8	009431-06	Soil	09/23/20
BBH-B-15-10	009431-07	Soil	09/23/20
BBH-S-09-8	009431-08	Soil	09/23/20
BBH-S-57-4MS	009431-01MS	Soil	09/22/20
BBH-S-57-4MSD	009431-01MSD	Soil	09/22/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 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 Zinc by Environmental Protection Agency (EPA) SW 846 Method 6020B
Mercury by EPA Method 1631E

All sample results were subjected to Stage 2A 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

ICP-MS tune data were not reviewed for Stage 2A validation.

III. Instrument Calibration

Instrument calibration data were not reviewed for Stage 2A validation.

IV. ICP Interference Check Sample Analysis

ICP Interference check sample (ICS) analysis data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the methods. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

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
BBH-S-57-4MS/MSD (BBH-S-57-4 BBH-S-57-8 BBH-S-58-4 BBH-S-59-4 BBH-S-10-8 BBH-B-15-10 BBH-S-09-8)	Mercury	-	137 (71-125)	J (all detects)	A
BBH-S-57-4MS/MSD (BBH-B-24-10)	Mercury	-	137 (71-125)	NA	-

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 was not performed for this SDG.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the methods. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

No field duplicates were identified in this SDG.

XII. Internal Standards (ICP-MS)

Internal standards data were not reviewed for Stage 2A validation.

XIII. Sample Result Verification

Raw data were not reviewed for Stage 2A validation.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods.

Due to MS/MSD %R, data were qualified as estimated in seven samples.

No results were rejected in this SDG.

Kimberly-Clark Upland Area
Metals - Data Qualification Summary - SDG 009431

Sample	Analyte	Flag	A or P	Reason
BBH-S-57-4 BBH-S-57-8 BBH-S-58-4 BBH-S-59-4 BBH-S-10-8 BBH-B-15-10 BBH-S-09-8	Mercury	J (all detects)	A	Matrix spike/Matrix spike duplicate (%R)

Kimberly-Clark Upland Area
Metals - Laboratory Blank Data Qualification Summary - SDG 009431

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Metals - Field Blank Data Qualification Summary - SDG 009431

No Sample Data Qualified in this SDG

LDC #: 49554E4a

SDG #: 009431

Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET

Stage 2A

Date: 11/12/2020

Page: 1 of 1

Reviewer: DTM

2nd Reviewer:

METHOD: Metals (EPA SW 846 Method 6020B/EPA Method 1631E)

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	N	
III.	Instrument Calibration	N	
IV.	ICP Interference Check Sample (ICS) Analysis	N	
V.	Laboratory Blanks	A	
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	SW	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	N	
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	N	
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	BBH-S-57-4	009431-01	Soil	09/22/20
2	BBH-S-57-8	009431-02	Soil	09/22/20
3	BBH-B-24-10	009431-03	Soil	09/22/20
4	BBH-S-58-4	009431-04	Soil	09/23/20
5	BBH-S-59-4	009431-05	Soil	09/23/20
6	BBH-S-10-8	009431-06	Soil	09/23/20
7	BBH-B-15-10	009431-07	Soil	09/23/20
8	BBH-S-09-8	009431-08	Soil	09/23/20
9	BBH-S-57-4MS	009431-01MS	Soil	09/22/20
10	BBH-S-57-4MSD	009431-01MSD	Soil	09/22/20

Notes:

LDC #: 49544E4a

VALIDATION FINDINGS WORKSHEET

Sample Specific Element Reference

Reviewer: DTM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-6	S	Cu, Zn
1-6	S	Hg
7-8	S	Cu, Zn, Hg
QC910	S	Cu, Zn, Hg
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
Analysis Method		
ICP		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
ICP-MS		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
GFAA		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn

Comments: Mercury by CVAA if performed

LDC #: 49554E4a

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: DTM

METHOD: Trace metals (EPA SW 846 Method 6020/6010/7470)

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	Qual	DET	ND	PS Recovery%
	9/10	S	Hg		137(71-125)		ALL	J/A	1-2,4-8	3	

Comments:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: November 16, 2020

Parameters: Metals

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 009494

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
B2-Trench-01-8	009494-01	Soil	09/25/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 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, Lead, and Zinc by Environmental Protection Agency (EPA) SW 846 Method 6020B
Mercury by EPA Method 1631E

All sample results were subjected to Stage 2A 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

ICP-MS tune data were not reviewed for Stage 2A validation.

III. Instrument Calibration

Instrument calibration data were not reviewed for Stage 2A validation.

IV. ICP Interference Check Sample Analysis

ICP Interference check sample (ICS) analysis data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the methods. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

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. 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 was not performed for this SDG.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the methods. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

No field duplicates were identified in this SDG.

XII. Internal Standards (ICP-MS)

Internal standards data were not reviewed for Stage 2A validation.

XIII. Sample Result Verification

Raw data were not reviewed for Stage 2A validation.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Metals - Data Qualification Summary - SDG 009494

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Metals - Laboratory Blank Data Qualification Summary - SDG 009494

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Metals - Field Blank Data Qualification Summary - SDG 009494

No Sample Data Qualified in this SDG

LDC #: 49554F4a

SDG #: 009494

Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET

Stage 2A

Date: 11/12/2020

Page: 1 of 1

Reviewer: DTM

2nd Reviewer:

METHOD: Metals (EPA SW 846 Method 6020B/EPA Method 1631E)

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	N	
III.	Instrument Calibration	N	
IV.	ICP Interference Check Sample (ICS) Analysis	N	
V.	Laboratory Blanks	A	
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	N	
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	N	
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	B2-Trench-01-8	009494-01	Soil	09/25/20
2				
3				
4				
5				
6				

Notes:

LDC #: 49554F4a

VALIDATION FINDINGS WORKSHEET

Sample Specific Element Reference

Reviewer: DTM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
ALL	S	Pb, Cu, Zn,
ALL	S	Hg
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
Analysis Method		
ICP		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
ICP-MS		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
GFAA		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn

Comments: Mercury by CVAA if performed

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: November 16, 2020

Parameters: Total Petroleum Hydrocarbons as Extractables

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 009494

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
B2-Trench-01-8	009494-01	Soil	09/25/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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:

Total Petroleum Hydrocarbons (TPH) as Extractables by NWTPH-Dx

All sample results were subjected to Stage 2A 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 not 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

Initial calibration data were not reviewed for Stage 2A validation.

III. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

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 Stage 2A validation.

XI. Target Compound Identifications

Raw data were not reviewed for Stage 2A validation.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG 009494

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data Qualification Summary - SDG 009494

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Total Petroleum Hydrocarbons as Extractables - Field Blank Data Qualification Summary - SDG 009494

No Sample Data Qualified in this SDG

LDC #: 49554F8 **VALIDATION COMPLETENESS WORKSHEET** Date: 11/12/20
SDG #: 009494 Stage 2A Page: 1 of 1
Laboratory: Friedman & Bruya, Inc. Reviewer: LT
2nd Reviewer:

METHOD: GC TPH as Extractables (NWTPH-Dx)

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	N/N	
III.	Continuing calibration	N	
IV.	Laboratory Blanks	A	
V.	Field blanks	N	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Non client
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	N	
X.	Compound quantitation RL/LOQ/LODs	N	Dry weight basis = 1
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	B2-Trench-01-8	009494-01	Soil	09/25/20
2				
3				
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Notes:

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Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: November 16, 2020

Parameters: Metals

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 009564

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
BBH-S-60-4	009564-01	Soil	09/30/20
BBH-S-60-8	009564-02	Soil	09/30/20
BBH-S-61-4	009564-03	Soil	09/30/20
BBH-S-61-8	009564-04	Soil	09/30/20
BBH-S-62-4	009564-05	Soil	09/30/20
BBH-S-63-4	009564-06	Soil	09/30/20
BBH-520	009564-07	Soil	09/30/20
BBH-S-64-4	009564-08	Soil	09/30/20
BBH-S-12-8	009564-09	Soil	09/30/20
BBH-B-13-10	009564-10	Soil	09/30/20
BBH-S-61-4MS	009564-03MS	Soil	09/30/20
BBH-S-61-4MSD	009564-03MSD	Soil	09/30/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 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 Zinc by Environmental Protection Agency (EPA) SW 846 Method 6020B
Mercury by EPA Method 1631E

All sample results were subjected to Stage 2A 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

ICP-MS tune data were not reviewed for Stage 2A validation.

III. Instrument Calibration

Instrument calibration data were not reviewed for Stage 2A validation.

IV. ICP Interference Check Sample Analysis

ICP Interference check sample (ICS) analysis data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the methods. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

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
BBH-S-61-4MS/MSD (BBH-S-61-4 BBH-S-63-4 BBH-S-64-4 BBH-S-12-8 BBH-B-13-10)	Copper	-	153 (75-125)	J (all detects)	A
BBH-S-61-4MS/MSD (BBH-S-61-4 BBH-S-63-4 BBH-S-12-8 BBH-B-13-10)	Zinc	162 (75-125)	215 (75-125)	J (all detects)	A

Relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	RPD (Limits)	Flag	A or P
BBH-S-61-4MS/MSD (BBH-S-61-4 BBH-S-63-4 BBH-S-64-4 BBH-S-12-8 BBH-B-13-10)	Copper	25 (≤20)	J (all detects)	A
BBH-S-61-4MS/MSD (BBH-S-61-4 BBH-S-63-4 BBH-S-12-8 BBH-B-13-10)	Zinc	28 (≤20)	J (all detects)	A

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 was not performed for this SDG.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the methods. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

Samples BBH-S-60-4 and BBH-520 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/Kg)		RPD
	BBH-S-60-4	BBH-520	
Mercury	1.9	1.5	24

XII. Internal Standards (ICP-MS)

Internal standards data were not reviewed for Stage 2A validation.

XIII. Sample Result Verification

Raw data were not reviewed for Stage 2A validation.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods.

Due to MS/MSD %R and RPD, data were qualified as estimated in five samples.

No results were rejected in this SDG.

Kimberly-Clark Upland Area
Metals - Data Qualification Summary - SDG 009564

Sample	Analyte	Flag	A or P	Reason
BBH-S-61-4 BBH-S-63-4 BBH-S-64-4 BBH-S-12-8 BBH-B-13-10	Copper	J (all detects)	A	Matrix spike/Matrix spike duplicate (%R)(RPD)
BBH-S-61-4 BBH-S-63-4 BBH-S-12-8 BBH-B-13-10	Zinc	J (all detects)	A	Matrix spike/Matrix spike duplicate (%R)(RPD)

Kimberly-Clark Upland Area
Metals - Laboratory Blank Data Qualification Summary - SDG 009564

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Metals - Field Blank Data Qualification Summary - SDG 009564

No Sample Data Qualified in this SDG

LDC #: 49554G4a
SDG #: 009564
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 11/12/2020
Page: 1 of 1
Reviewer: DTM
2nd Reviewer:

METHOD: Metals (EPA SW 846 Method 6020B/EPA Method 1631E)

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	N	
III.	Instrument Calibration	N	
IV.	ICP Interference Check Sample (ICS) Analysis	N	
V.	Laboratory Blanks	A	
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	SW	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	N	
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	SW	(1,7)
XII.	Internal Standard (ICP-MS)	N	
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	A	

Note: A = Acceptable; ND = No compounds detected; D = Duplicate; SB=Source blank
N = Not provided/applicable; R = Rinsate; TB = Trip blank; OTHER:
SW = See worksheet; FB = Field blank; EB = Equipment blank

	Client ID	Lab ID	Matrix	Date
1	BBH-S-60-4	009564-01	Soil	09/30/20
2	BBH-S-60-8	009564-02	Soil	09/30/20
3	BBH-S-61-4	009564-03	Soil	09/30/20
4	BBH-S-61-8	009564-04	Soil	09/30/20
5	BBH-S-62-4	009564-05	Soil	09/30/20
6	BBH-S-63-4	009564-06	Soil	09/30/20
7	BBH-520	009564-07	Soil	09/30/20
8	BBH-S-64-4	009564-08	Soil	09/30/20
9	BBH-S-12-8	009564-09	Soil	09/30/20
10	BBH-B-13-10	009564-10	Soil	09/30/20
11	BBH-S-61-4MS	009564-03MS	Soil	09/30/20
12	BBH-S-61-4MSD	009564-03MSD	Soil	09/30/20

Notes:

LDC #: 49554G4a

VALIDATION FINDINGS WORKSHEET

Sample Specific Element Reference

Reviewer: DTM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
3,6	S	Cu, Zn
3,6	S	Hg
8	S	Cu
9-10	S	Cu, Zn, Hg
1-7	S	Hg
QC 11-12	S	Cu, Zn, Hg
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
Analysis Method		
ICP		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
ICP-MS		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
GFAA		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn

Comments: Mercury by CVAA if performed

LDC #: 49554G4a

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: DTM

METHOD: Trace metals (EPA SW 846 Method 6020/6010/7470)

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	Qual	DET	ND	PS Recovery%
	11/12	S	Cu		153(75-125)		3,6,8-10	J/A	ALL		
			Cu			25(20)	3,6,8-10	J/UJ/A	ALL		
			Zn	162(75-125)	215		3,6,9-10	J/A	ALL		
			Zn			28(20)	3,6,9-10	J/UJ/A	ALL		

Comments:

METHOD: Metals (EPA Method 6010/6020/7000)

Analyte	Concentration (mg/Kg)		RPD
	1	7	
Mercury	1.9	1.5	24

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: November 16, 2020

Parameters: Metals

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 010033

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
BBH-S-65-4	010033-01	Soil	10/01/20
BBH-S-66-4	010033-02	Soil	10/01/20
BBH-B-19-10	010033-03	Soil	10/01/20
BBH-S-42-8	010033-04	Soil	10/01/20
BBH-B-20-10	010033-05	Soil	10/01/20
BBH-S-67-8	010033-06	Soil	10/01/20
BBH-B-04-10	010033-07	Soil	10/01/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 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 Zinc by Environmental Protection Agency (EPA) SW 846 Method 6020B
Mercury by EPA Method 1631E

All sample results were subjected to Stage 2A 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

ICP-MS tune data were not reviewed for Stage 2A validation.

III. Instrument Calibration

Instrument calibration data were not reviewed for Stage 2A validation.

IV. ICP Interference Check Sample Analysis

ICP Interference check sample (ICS) analysis data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the methods. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

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. 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 was not performed for this SDG.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the methods. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

No field duplicates were identified in this SDG.

XII. Internal Standards (ICP-MS)

Internal standards data were not reviewed for Stage 2A validation.

XIII. Sample Result Verification

Raw data were not reviewed for Stage 2A validation.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Metals - Data Qualification Summary - SDG 010033

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Metals - Laboratory Blank Data Qualification Summary - SDG 010033

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Metals - Field Blank Data Qualification Summary - SDG 010033

No Sample Data Qualified in this SDG

LDC #: 49554H4a

SDG #: 010033

Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET

Stage 2A

Date: 11/12/2020

Reviewer: DTM

2nd Reviewer:

METHOD: Metals (EPA SW 846 Method 6020B/EPA Method 1631E)

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	N	
III.	Instrument Calibration	N	
IV.	ICP Interference Check Sample (ICS) Analysis	N	
V.	Laboratory Blanks	A	
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	N	
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	N	
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	BBH-S-65-4	010033-01	Soil	10/01/20
2	BBH-S-66-4	010033-02	Soil	10/01/20
3	BBH-B-19-10	010033-03	Soil	10/01/20
4	BBH-S-42-8	010033-04	Soil	10/01/20
5	BBH-B-20-10	010033-05	Soil	10/01/20
6	BBH-S-67-8	010033-06	Soil	10/01/20
7	BBH-B-04-10	010033-07	Soil	10/01/20
8				

Notes:

LDC #: 49554H4a

VALIDATION FINDINGS WORKSHEET

Sample Specific Element Reference

Reviewer: DTM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
2-3,5-7	S	Cu, Zn, Hg
1,4	S	Hg
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
Analysis Method		
ICP		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
ICP-MS		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
GFAA		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn

Comments: Mercury by CVAA if performed

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: November 16, 2020

Parameters: Metals

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 010063

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
BBH-B-24-11	010063-01	Soil	10/02/20
BBH-B-17-10	010063-02	Soil	10/02/20
DT-B-04-8	010063-03	Soil	10/02/20
DT-B-02-8	010063-04	Soil	10/02/20
DT-B-05-8	010063-05	Soil	10/02/20
DT-521	010063-06	Soil	10/02/20
DT-B-03-8	010063-07	Soil	10/02/20
BBH-S-68-8	010063-08	Soil	10/02/20
BBH-S-69-4	010063-09	Soil	10/02/20
BBH-B-17-10MS	010063-02MS	Soil	10/02/20
BBH-B-17-10MSD	010063-02MSD	Soil	10/02/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 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, Lead, and Zinc by Environmental Protection Agency (EPA) SW 846 Method 6020B
Mercury by EPA Method 1631E

All sample results were subjected to Stage 2A 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

ICP-MS tune data were not reviewed for Stage 2A validation.

III. Instrument Calibration

Instrument calibration data were not reviewed for Stage 2A validation.

IV. ICP Interference Check Sample Analysis

ICP Interference check sample (ICS) analysis data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the methods. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

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 was not performed for this SDG.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the methods. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

Samples DT-B-05-8 and DT-521 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/Kg)		RPD
	DT-B-05-8	DT-521	
Copper	45.2	51.0	12
Lead	12.7	13.7	8
Zinc	55.4	65.5	17
Mercury	0.14	0.20	35

XII. Internal Standards (ICP-MS)

Internal standards data were not reviewed for Stage 2A validation.

XIII. Sample Result Verification

Raw data were not reviewed for Stage 2A validation.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Metals - Data Qualification Summary - SDG 010063

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Metals - Laboratory Blank Data Qualification Summary - SDG 010063

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Metals - Field Blank Data Qualification Summary - SDG 010063

No Sample Data Qualified in this SDG

LDC #: 49554I4a

SDG #: 010063

Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET

Stage 2A

Date: 11/12/2020

Page: 1 of 1

Reviewer: DTM

2nd Reviewer:

METHOD: Metals (EPA SW 846 Method 6020B/EPA Method 1631E)

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	N	
III.	Instrument Calibration	N	
IV.	ICP Interference Check Sample (ICS) Analysis	N	
V.	Laboratory Blanks	A	
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	A	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	N	
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	SW	(5,6)
XII.	Internal Standard (ICP-MS)	N	
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	BBH-B-24-11	010063-01	Soil	10/02/20
2	BBH-B-17-10	010063-02	Soil	10/02/20
3	DT-B-04-8	010063-03	Soil	10/02/20
4	DT-B-02-8	010063-04	Soil	10/02/20
5	DT-B-05-8	010063-05	Soil	10/02/20
6	DT-521	010063-06	Soil	10/02/20
7	DT-B-03-8	010063-07	Soil	10/02/20
8	BBH-S-68-8	010063-08	Soil	10/02/20
9	BBH-S-69-4	010063-09	Soil	10/02/20
10	BBH-B-17-10MS	010063-02MS	Soil	10/02/20
11	BBH-B-17-10MSD	010063-02MSD	Soil	10/02/20

Notes:

LDC #: 49554I4a

VALIDATION FINDINGS WORKSHEET

Sample Specific Element Reference

Reviewer: DTM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1	S	Cu
8	S	Cu, Hg
2,9	S	Cu, Zn, Hg
3-7	S	Cu, Pb, Zn
3-7	S	Hg
QC 10-11	S	Cu, Pb, Zn, Hg
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
Analysis Method		
ICP		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
ICP-MS		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
GFAA		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn

Comments: Mercury by CVAA if performed

METHOD: Metals (EPA Method 6010/6020/7000)

Analyte	Concentration (mg/Kg)		RPD
	5	6	
Copper	45.2	51.0	12
Lead	12.7	13.7	8
Zinc	55.4	65.5	17
Mercury	0.14	0.20	35

LDC Report# 49554I8

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: November 16, 2020

Parameters: Total Petroleum Hydrocarbons as Extractables

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 010063

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
DT-B-04-8	010063-03	Soil	10/02/20
DT-B-02-8	010063-04	Soil	10/02/20
DT-B-05-8	010063-05	Soil	10/02/20
DT-521	010063-06	Soil	10/02/20
DT-B-03-8	010063-07	Soil	10/02/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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:

Total Petroleum Hydrocarbons (TPH) as Extractables by NWTPH-Dx

All sample results were subjected to Stage 2A 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 not 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

Initial calibration data were not reviewed for Stage 2A validation.

III. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

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

Samples DT-B-05-8 and DT-521 were identified as field duplicates. No results were detected in any of the samples.

X. Compound Quantitation

Raw data were not reviewed for Stage 2A validation.

XI. Target Compound Identifications

Raw data were not reviewed for Stage 2A validation.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG 010063

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data Qualification Summary - SDG 010063

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Total Petroleum Hydrocarbons as Extractables - Field Blank Data Qualification Summary - SDG 010063

No Sample Data Qualified in this SDG

LDC #: 49554I8 **VALIDATION COMPLETENESS WORKSHEET** Date: 11/12/20
SDG #: 010063 Stage 2A Page: 1 of 1
Laboratory: Friedman & Bruya, Inc. Reviewer: LT
2nd Reviewer:

METHOD: GC TPH as Extractables (NWTPH-Dx)

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	N/N	
III.	Continuing calibration	N	
IV.	Laboratory Blanks	A	
V.	Field blanks	N	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Non Client
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	ND	D = 3+4
X.	Compound quantitation RL/LOQ/LODs	N	Dry weight basis = 1-5
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	DT-B-04-8		010063-03	Soil	10/02/20
2	DT-B-02-8		010063-04	Soil	10/02/20
3	DT-B-05-8	D	010063-05	Soil	10/02/20
4	DT-521	D	010063-06	Soil	10/02/20
5	DT-B-03-8		010063-07	Soil	10/02/20
6					
7					
8					
9					
10					
11					
12					
13					

Notes:

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Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: November 16, 2020

Parameters: Metals

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 010302

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
BBH-B-05-11	010302-01	Soil	10/16/20
BBH-S-91-4	010302-02	Soil	10/16/20
BBH-S-91-8	010302-03	Soil	10/16/20
BBH-B-02-11	010302-04	Soil	10/16/20
BBH-S-94-4	010302-05	Soil	10/16/20
BBH-S-92-8	010302-06	Soil	10/16/20
BBH-S-93-8	010302-07	Soil	10/16/20
BBH-S-94-4	010302-08	Soil	10/16/20
BBH-S-95-4	010302-09	Soil	10/16/20
BBH-S-96-4	010302-10	Soil	10/16/20
BBH-S-97-8	010302-11	Soil	10/16/20
BBH-525	010302-12	Soil	10/16/20
BBH-525DL	010302-12DL	Soil	10/16/20
BBH-S-94-8	010302-13	Soil	10/16/20
BBH-S-94-8DL	010302-13DL	Soil	10/16/20
BBH-S-97-8MS	010302-11MS	Soil	10/16/20
BBH-S-97-8MSD	010302-11MSD	Soil	10/16/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 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 Zinc by Environmental Protection Agency (EPA) SW 846 Method 6020B
Mercury by EPA Method 1631E

All sample results were subjected to Stage 2A 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.

DNR Do not report from this analysis; the result for this analyte is to be reported from an alternative analysis.

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

ICP-MS tune data were not reviewed for Stage 2A validation.

III. Instrument Calibration

Instrument calibration data were not reviewed for Stage 2A validation.

IV. ICP Interference Check Sample Analysis

ICP Interference check sample (ICS) analysis data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the methods. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

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
BBH-S-97-8MS/MSD (BBH-S-91-4 BBH-S-97-8 BBH-525 BBH-525DL BBH-S-94-8 BBH-S-94-8DL)	Copper	30 (75-125)	136 (75-125)	J (all detects) UJ (all non-detects)	A

Relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	RPD (Limits)	Flag	A or P
BBH-S-97-8MS/MSD (BBH-S-91-4 BBH-S-97-8 BBH-525 BBH-525DL BBH-S-94-8 BBH-S-94-8DL)	Copper	128 (≤20)	J (all detects) UJ (all non-detects)	A

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 was not performed for this SDG.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the methods. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

Samples BBH-525 and BBH-S-94-8 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/Kg)		RPD
	BBH-525	BBH-S-94-8	
Copper	19.8	18.4	7
Mercury	0.83	0.78	6

XII. Internal Standards (ICP-MS)

Internal standards data were not reviewed for Stage 2A validation.

XIII. Sample Result Verification

Raw data were not reviewed for Stage 2A validation.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods.

In the case where more than one result was reported for an individual sample, the least technically acceptable results were deemed not reportable as follows:

Sample	Analyte	Reason	Flag	A or P
BBH-525DL BBH-S-94-8DL	Copper	Sample with lower dilution is more acceptable due to having a detected result.	DNR	-

Due to MS/MSD %R and RPD, data were qualified as estimated in four samples.

No results were rejected in this SDG.

Kimberly-Clark Upland Area
Metals - Data Qualification Summary - SDG 010302

Sample	Analyte	Flag	A or P	Reason
BBH-S-91-4 BBH-S-97-8 BBH-525 BBH-S-94-8	Copper	J (all detects)	A	Matrix spike/Matrix spike duplicate (%R)
BBH-S-91-4 BBH-S-97-8 BBH-525 BBH-S-94-8	Copper	J (all detects)	A	Matrix spike/Matrix spike duplicate (RPD)
BBH-525DL BBH-S-94-8DL	Copper	DNR	-	Overall assessment of data

Kimberly-Clark Upland Area
Metals - Laboratory Blank Data Qualification Summary - SDG 010302

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Metals - Field Blank Data Qualification Summary - SDG 010302

No Sample Data Qualified in this SDG

LDC #: 49554J4a
SDG #: 010302
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 11/12/2020

Reviewer: DTM
2nd Reviewer:

METHOD: Metals (EPA SW 846 Method 6020B/EPA Method 1631E)

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	N	
III.	Instrument Calibration	N	
IV.	ICP Interference Check Sample (ICS) Analysis	N	
V.	Laboratory Blanks	A	
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	SW	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	N	
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	SW	(12,14)(13,15)
XII.	Internal Standard (ICP-MS)	N	
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	SW	

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	BBH-B-05-11	010302-01	Soil	10/16/20
2	BBH-S-91-4	010302-02	Soil	10/16/20
3	BBH-S-91-8	010302-03	Soil	10/16/20
4	BBH-B-02-11	010302-04	Soil	10/16/20
5	BBH-S-94-4	010302-05	Soil	10/16/20
6	BBH-S-92-8	010302-06	Soil	10/16/20
7	BBH-S-93-8	010302-07	Soil	10/16/20
8	BBH-S-94-4	010302-08	Soil	10/16/20
9	BBH-S-95-4	010302-09	Soil	10/16/20
10	BBH-S-96-4	010302-10	Soil	10/16/20
11	BBH-S-97-8	010302-11	Soil	10/16/20
12	BBH-525	010302-12	Soil	10/16/20

LDC #: 49554J4a

SDG #: 010302

Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET

Stage 2A

Date: 11/12/2020

Reviewer: DTM

2nd Reviewer:

METHOD: Metals (EPA SW 846 Method 6020B/EPA Method 1631E)

	Client ID	Lab ID	Matrix	Date
13	BBH-525DL	010302-12DL	Soil	10/16/20
14	BBH-S-94-8	010302-13	Soil	10/16/20
15	BBH-S-94-8DL	010302-13DL	Soil	10/16/20
16	BBH-S-97-8MS	010302-11MS	Soil	10/16/20
17	BBH-S-97-8MSD	010302-11MSD	Soil	10/16/20
18				
19				
20				

Notes:

LDC #: 49554J4a

VALIDATION FINDINGS WORKSHEET

Sample Specific Element Reference

Reviewer: DTM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
2, 13,15	S	Cu
12,14	S	Cu, Hg
3	S	Zn
11	S	Cu, Zn
1-11,	S	Hg
QC 16-17	S	Cu, Zn, Hg
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
Analysis Method		
ICP		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
ICP-MS		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
GFAA		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn

Comments: Mercury by CVAA if performed

LDC #: 49554J4a

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: DTM

METHOD: Trace metals (EPA SW 846 Method 6020/6010/7470)

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	Qual	DET	ND	PS Recovery%
	16/17	S	Cu	30(75-125)	136		2, 11-15	J/UJ/A		13,15	
			Cu			128(20)	2, 11-15	J/UJ/A		13,15	

Comments:

METHOD: Metals (EPA Method 6010/6020/7000)

Analyte	Concentration (mg/Kg)		RPD
	12	14	
Copper	19.8	18.4	7
Mercury	0.83	0.78	6

LDC #: 49554J4a

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

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".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

Y N N/A Was the overall quality and usability of the data acceptable?

#	Sample ID	Analyte	Finding	Qualification
	13,15	Cu	Sample with lower dilution is more acceptable due to having a detected result.	DNR

Comments:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: November 16, 2020

Parameters: Polynuclear Aromatic Hydrocarbons

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 010084

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
BA7-S-01-3	010084-01	Soil	10/05/20
BA7-S-02-3	010084-02	Soil	10/05/20
BA7-S-01-6	010084-03	Soil	10/05/20
BA7-S-02-6	010084-04	Soil	10/05/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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:

Polynuclear Aromatic Hydrocarbons (PAHs) by Environmental Protection Agency (EPA) SW 846 Method 8270E in Selected Ion Monitoring (SIM) mode

All sample results were subjected to Stage 2A 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 and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

Instrument performance check data were not reviewed for Stage 2A validation.

III. Initial Calibration and Initial Calibration Verification

Initial calibration data were not reviewed for Stage 2A validation.

IV. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

VII. Surrogates

Surrogates were added to all samples as required by the method. Surrogate recoveries (%R) were not within QC limits for sample BA7-S-02-3. Using professional judgment, no data were qualified when one surrogate %R was outside the QC limits and the %R was greater than or equal to 10%.

VIII. 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.

IX. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Internal Standards

Internal standards data were not reviewed for Stage 2A validation.

XII. Compound Quantitation

Raw data were not reviewed for Stage 2A validation.

XIII. Target Compound Identifications

Raw data were not reviewed for Stage 2A validation.

XIV. System Performance

Raw data were not reviewed for Stage 2A validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG 010084

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG 010084

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Polynuclear Aromatic Hydrocarbons - Field Blank Data Qualification Summary - SDG 010084

No Sample Data Qualified in this SDG

LDC #: 49554K2b

SDG #: 010084

Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET

Stage 2A

Date: 11/12/20

Page: 1 of 1

Reviewer: VT

2nd Reviewer:

METHOD: GC/MS Polynuclear Aromatic Hydrocarbons (EPA SW 846 Method 8270E-SIM)

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.	GC/MS Instrument performance check	N	
III.	Initial calibration/ICV	N/N	
IV.	Continuing calibration	N	
V.	Laboratory Blanks	A	
VI.	Field blanks	N	
VII.	Surrogate spikes	SW	2- one acid and one base out, NQ
VIII.	Matrix spike/Matrix spike duplicates	N	MB- one base out, NQ Non client
IX.	Laboratory control samples	A	LCS
X.	Field duplicates	N	
XI.	Internal standards	N	
XII.	Compound quantitation RL/LOQ/LODs	N	Dry weight basis = 14.
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	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	BA7-S-01-3	010084-01	Soil	10/05/20
2	BA7-S-02-3	010084-02	Soil	10/05/20
3	BA7-S-01-6	010084-03	Soil	10/05/20
4	BA7-S-02-6	010084-04	Soil	10/05/20
5				
6				
7				
8				
9				

Notes:

1	00-2266 MB2						

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: November 16, 2020

Parameters: Metals

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 010084

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
BBH-B-34-10	010084-05	Soil	10/05/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 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 Zinc by Environmental Protection Agency (EPA) SW 846 Method 6020B
Mercury by EPA Method 1631E

All sample results were subjected to Stage 2A 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

ICP-MS tune data were not reviewed for Stage 2A validation.

III. Instrument Calibration

Instrument calibration data were not reviewed for Stage 2A validation.

IV. ICP Interference Check Sample Analysis

ICP Interference check sample (ICS) analysis data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the methods. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

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. 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 was not performed for this SDG.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the methods. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

No field duplicates were identified in this SDG.

XII. Internal Standards (ICP-MS)

Internal standards data were not reviewed for Stage 2A validation.

XIII. Sample Result Verification

Raw data were not reviewed for Stage 2A validation.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Metals - Data Qualification Summary - SDG 010084

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Metals - Laboratory Blank Data Qualification Summary - SDG 010084

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Metals - Field Blank Data Qualification Summary - SDG 010084

No Sample Data Qualified in this SDG

LDC #: 49554K4a

SDG #: 010084

Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET

Stage 2A

Date: 11/12/2020

Reviewer: DTM

2nd Reviewer:

METHOD: Metals (EPA SW 846 Method 6020B/EPA Method 1631E)

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	N	
III.	Instrument Calibration	N	
IV.	ICP Interference Check Sample (ICS) Analysis	N	
V.	Laboratory Blanks	A	
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	N	
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	N	
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	BBH-B-34-10	010084-05	Soil	10/05/20
2				
3				
4				
5				
6				
7				

Notes:

LDC #: 49554K4a

VALIDATION FINDINGS WORKSHEET

Sample Specific Element Reference

Reviewer: DTM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
ALL	S	Cu, Zn
ALL	S	Hg
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
Analysis Method		
ICP		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
ICP-MS		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
GFAA		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn

Comments: Mercury by CVAA if performed

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: November 16, 2020

Parameters: Metals

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 010110

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
BBH-B-15-11	010110-01	Soil	10/06/20
BBH-B-28-10	010110-02	Soil	10/06/20
BBH-B-32-10	010110-03	Soil	10/06/20
BBH-B-07-10	010110-04	Soil	10/06/20
BBH-B-01-10	010110-05	Soil	10/06/20
BBH-B-10-10	010110-06	Soil	10/06/20
BBH-B-15-11MS	010110-01MS	Soil	10/06/20
BBH-B-15-11MSD	010110-01MSD	Soil	10/06/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 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 Zinc by Environmental Protection Agency (EPA) SW 846 Method 6020B
Mercury by EPA Method 1631E

All sample results were subjected to Stage 2A 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

ICP-MS tune data were not reviewed for Stage 2A validation.

III. Instrument Calibration

Instrument calibration data were not reviewed for Stage 2A validation.

IV. ICP Interference Check Sample Analysis

ICP Interference check sample (ICS) analysis data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the methods. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

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
BBH-B-15-11MS/MSD (All samples in SDG 010110)	Copper	198 (75-125)	130 (75-125)	J (all detects)	A

Relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	RPD (Limits)	Flag	A or P
BBH-B-15-11MS/MSD (All samples in SDG 010110)	Copper	41 (≤20)	J (all detects)	A

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 was not performed for this SDG.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the methods. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

No field duplicates were identified in this SDG.

XII. Internal Standards (ICP-MS)

Internal standards data were not reviewed for Stage 2A validation.

XIII. Sample Result Verification

Raw data were not reviewed for Stage 2A validation.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods.

Due to MS/MSD %R and RPD, data were qualified as estimated in six samples.

No results were rejected in this SDG.

Kimberly-Clark Upland Area
Metals - Data Qualification Summary - SDG 010110

Sample	Analyte	Flag	A or P	Reason
BBH-B-15-11 BBH-B-28-10 BBH-B-32-10 BBH-B-07-10 BBH-B-01-10 BBH-B-10-10	Copper	J (all detects)	A	Matrix spike/Matrix spike duplicate (%R)
BBH-B-15-11 BBH-B-28-10 BBH-B-32-10 BBH-B-07-10 BBH-B-01-10 BBH-B-10-10	Copper	J (all detects)	A	Matrix spike/Matrix spike duplicate (RPD)

Kimberly-Clark Upland Area
Metals - Laboratory Blank Data Qualification Summary - SDG 010110

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Metals - Field Blank Data Qualification Summary - SDG 010110

No Sample Data Qualified in this SDG

LDC #: 49554L4a

SDG #: 010110

Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET

Stage 2A

Date: 11/12/2020

Reviewer: DTM

2nd Reviewer:

METHOD: Metals (EPA SW 846 Method 6020B/EPA Method 1631E)

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	N	
III.	Instrument Calibration	N	
IV.	ICP Interference Check Sample (ICS) Analysis	N	
V.	Laboratory Blanks	A	
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	SW	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	N	
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	N	
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	BBH-B-15-11	010110-01	Soil	10/06/20
2	BBH-B-28-10	010110-02	Soil	10/06/20
3	BBH-B-32-10	010110-03	Soil	10/06/20
4	BBH-B-07-10	010110-04	Soil	10/06/20
5	BBH-B-01-10	010110-05	Soil	10/06/20
6	BBH-B-10-10	010110-06	Soil	10/06/20
7	BBH-B-15-11MS	010110-01MS	Soil	10/06/20
8	BBH-B-15-11MSD	010110-01MSD	Soil	10/06/20
9				

Notes:

LDC #: 49554L4a

VALIDATION FINDINGS WORKSHEET

Sample Specific Element Reference

Reviewer: DTM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-6	S	Cu,Zn, Hg
QC 7-8	S	Cu,Zn, Hg
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
Analysis Method		
ICP		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
ICP-MS		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
GFAA		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn

Comments: Mercury by CVAA if performed

LDC #: 49554L4a

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: DTM

METHOD: Trace metals (EPA SW 846 Method 6020/6010/7470)

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	Qual	DET	ND	PS Recovery%
	7/8	S	Cu	198(75-125)	130		ALL	J/A	ALL		
			Cu			41(20)	ALL	J/UJ/A	ALL		

Comments:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: November 16, 2020

Parameters: Metals

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 010130

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
BBH-S-70-4	010130-01	Soil	10/07/20
BBH-S-70-8	010130-02	Soil	10/07/20
BBH-B-08-10	010130-03	Soil	10/07/20
BBH-B-02-10	010130-04	Soil	10/07/20
BBH-S-71-4	010130-05	Soil	10/07/20
BBH-S-71-8	010130-06	Soil	10/07/20
BBH-S-72-4	010130-07	Soil	10/07/20
BBH-S-72-8	010130-08	Soil	10/07/20
BBH-B-05-10	010130-09	Soil	10/07/20
BBH-B-33-10	010130-10	Soil	10/07/20
BBH-522	010130-11	Soil	10/07/20
BBH-B-29-10	010130-12	Soil	10/07/20
BBH-S-70-4MS	010130-01MS	Soil	10/07/20
BBH-S-70-4MSD	010130-01MSD	Soil	10/07/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 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 Zinc by Environmental Protection Agency (EPA) SW 846 Method 6020B
Mercury by EPA Method 1631E

All sample results were subjected to Stage 2A 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

ICP-MS tune data were not reviewed for Stage 2A validation.

III. Instrument Calibration

Instrument calibration data were not reviewed for Stage 2A validation.

IV. ICP Interference Check Sample Analysis

ICP Interference check sample (ICS) analysis data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the methods. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

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 was not performed for this SDG.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the methods. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

Samples BBH-B-33-10 and BBH-522 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/Kg)		RPD
	BBH-B-33-10	BBH-522	
Copper	9.09	11.7	25
Zinc	22.7	28.5	23

XII. Internal Standards (ICP-MS)

Internal standards data were not reviewed for Stage 2A validation.

XIII. Sample Result Verification

Raw data were not reviewed for Stage 2A validation.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Metals - Data Qualification Summary - SDG 010130

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Metals - Laboratory Blank Data Qualification Summary - SDG 010130

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Metals - Field Blank Data Qualification Summary - SDG 010130

No Sample Data Qualified in this SDG

LDC #: 49554M4a
SDG #: 010130
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 11/12/2020

Reviewer: DTM
2nd Reviewer:

METHOD: Metals (EPA SW 846 Method 6020B/EPA Method 1631E)

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	N	
III.	Instrument Calibration	N	
IV.	ICP Interference Check Sample (ICS) Analysis	N	
V.	Laboratory Blanks	A	
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	A	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	N	
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	SW	(10,11)
XII.	Internal Standard (ICP-MS)	N	
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	BBH-S-70-4	010130-01	Soil	10/07/20
2	BBH-S-70-8	010130-02	Soil	10/07/20
3	BBH-B-08-10	010130-03	Soil	10/07/20
4	BBH-B-02-10	010130-04	Soil	10/07/20
5	BBH-S-71-4	010130-05	Soil	10/07/20
6	BBH-S-71-8	010130-06	Soil	10/07/20
7	BBH-S-72-4	010130-07	Soil	10/07/20
8	BBH-S-72-8	010130-08	Soil	10/07/20
9	BBH-B-05-10	010130-09	Soil	10/07/20
10	BBH-B-33-10	010130-10	Soil	10/07/20
11	BBH-522	010130-11	Soil	10/07/20
12	BBH-B-29-10	010130-12	Soil	10/07/20

LDC #: 49554M4a

SDG #: 010130

Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET

Stage 2A

Date:11/12/2020

Reviewer: DTM

2nd Reviewer:

METHOD: Metals (EPA SW 846 Method 6020B/EPA Method 1631E)

	Client ID	Lab ID	Matrix	Date
13	BBH-S-70-4MS	010130-01MS	Soil	10/07/20
14	BBH-S-70-4MSD	010130-01MSD	Soil	10/07/20
15				
16				
17				

Notes:

LDC #: 49554M4a

VALIDATION FINDINGS WORKSHEET

Sample Specific Element Reference

Reviewer: DTM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-3,7,12	S	Cu, Zn
4-6,8-11	S	Cu, Zn, Hg
1-3,7,12	S	Hg
QC 13-14	S	Cu, Zn, Hg
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
Analysis Method		
ICP		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
ICP-MS		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
GFAA		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn

Comments: Mercury by CVAA if performed

METHOD: Metals (EPA Method 6010/6020/7000)

Analyte	Concentration (mg/Kg)		RPD
	10	11	
Copper	9.09	11.7	25
Mercury	22.7	28.5	23

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: November 16, 2020

Parameters: Metals

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 010155

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
BBH-B-29-10	010155-01	Soil	10/08/20
BBH-B-35-10	010155-02	Soil	10/08/20
BBH-S-73-4	010155-03	Soil	10/08/20
BBH-S-73-8	010155-04	Soil	10/08/20
BBH-S-74-4	010155-05	Soil	10/08/20
BBH-S-74-8	010155-06	Soil	10/08/20
BBH-S-75-4	010155-07	Soil	10/08/20
BBH-B-11-10	010155-08	Soil	10/08/20
BBH-B-09-10	010155-09	Soil	10/08/20
BBH-B-12-10	010155-10	Soil	10/08/20
BBH-B-29-10MS	010155-01MS	Soil	10/08/20
BBH-B-29-10MSD	010155-01MSD	Soil	10/08/20

Introduction

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R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

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All technical holding time requirements were met.

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ICP-MS tune data were not reviewed for Stage 2A validation.

III. Instrument Calibration

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IV. ICP Interference Check Sample Analysis

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V. Laboratory Blanks

Laboratory blanks were analyzed as required by the methods. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

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 was not performed for this SDG.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the methods. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

No field duplicates were identified in this SDG.

XII. Internal Standards (ICP-MS)

Internal standards data were not reviewed for Stage 2A validation.

XIII. Sample Result Verification

Raw data were not reviewed for Stage 2A validation.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Metals - Data Qualification Summary - SDG 010155

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Metals - Laboratory Blank Data Qualification Summary - SDG 010155

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Metals - Field Blank Data Qualification Summary - SDG 010155

No Sample Data Qualified in this SDG

LDC #: 49554N4a

SDG #: 010155

Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET

Stage 2A

Date: 11/13/2020

Reviewer: DTM

2nd Reviewer:

METHOD: Metals (EPA SW 846 Method 6020B/EPA Method 1631E)

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	N	
III.	Instrument Calibration	N	
IV.	ICP Interference Check Sample (ICS) Analysis	N	
V.	Laboratory Blanks	A	
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	A	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	N	
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	N	
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	A	

Note: A = Acceptable; ND = No compounds detected; D = Duplicate; SB=Source blank
N = Not provided/applicable; R = Rinsate; TB = Trip blank; OTHER:
SW = See worksheet; FB = Field blank; EB = Equipment blank

	Client ID	Lab ID	Matrix	Date
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5	BBH-S-74-4	010155-05	Soil	10/08/20
6	BBH-S-74-8	010155-06	Soil	10/08/20
7	BBH-S-75-4	010155-07	Soil	10/08/20
8	BBH-B-11-10	010155-08	Soil	10/08/20
9	BBH-B-09-10	010155-09	Soil	10/08/20
10	BBH-B-12-10	010155-10	Soil	10/08/20
11	BBH-B-29-10MS	010155-01MS	Soil	10/08/20
12	BBH-B-29-10MSD	010155-01MSD	Soil	10/08/20

Notes:

LDC #: 49554N4a

VALIDATION FINDINGS WORKSHEET

Sample Specific Element Reference

Reviewer: DTM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-8,10	S	Cu, Zn, Hg
9	S	Cu, Zn
9	S	Hg
QC 11-12	S	Cu, Zn, Hg
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
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		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
Analysis Method		
ICP		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
ICP-MS		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
GFAA		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn

Comments: Mercury by CVAA if performed

LDC Report# 49554O4a

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: November 16, 2020

Parameters: Metals

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

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BBH-B-06-10	010179-05	Soil	10/09/20
BBH-S-78-4	010179-06	Soil	10/09/20
BBH-S-78-8	010179-07	Soil	10/09/20
BBH-S-79-4	010179-08	Soil	10/09/20
BBH-S-79-8	010179-09	Soil	10/09/20
BBH-S-79-8DL	010179-09DL	Soil	10/09/20
BBH-B-18-10	010179-10	Soil	10/09/20
BBH-S-80-4	010179-11	Soil	10/09/20
BBH-S-80-8	010179-12	Soil	10/09/20
BBH-S-75-8	010179-13	Soil	10/09/20
BBH-S-76-4MS	010179-01MS	Soil	10/09/20
BBH-S-76-4MSD	010179-01MSD	Soil	10/09/20

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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.

DNR Do not report from this analysis; the result for this analyte is to be reported from an alternative analysis.

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.

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VI. Field Blanks

No field blanks were identified in this SDG.

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
BBH-S-76-4MS/MSD (BBH-S-76-4 BBH-S-76-8 BBH-B-03-10 BBH-B-06-10 BBH-S-78-4 BBH-S-78-8 BBH-S-79-4 BBH-S-79-8 BBH-S-79-8DL BBH-B-18-10 BBH-S-80-4 BBH-S-80-8 BBH-S-75-8)	Zinc	68 (75-125)	-	J (all detects) UJ (all non-detects)	A

Spike ID (Associated Samples)	Analyte	MS (%R) (Limits)	MSD (%R) (Limits)	Flag	A or P
BBH-S-76-4MS/MSD (BBH-S-76-4 BBH-S-76-8 BBH-S-78-4 BBH-S-79-4 BBH-S-75-8)	Mercury	-	144 (71-125)	J (all detects)	A
BBH-S-76-4MS/MSD (BBH-S-77-8 BBH-B-03-10 BBH-B-06-10 BBH-S-78-8 BBH-S-79-8 BBH-B-18-10 BBH-S-80-4 BBH-S-80-8)	Mercury	-	144 (71-125)	NA	-

Relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	RPD (Limits)	Flag	A or P
BBH-S-76-4MS/MSD (BBH-S-76-4 BBH-S-76-8 BBH-B-03-10 BBH-B-06-10 BBH-S-78-4 BBH-S-78-8 BBH-S-79-4 BBH-S-79-8 BBH-S-79-8DL BBH-B-18-10 BBH-S-80-4 BBH-S-80-8 BBH-S-75-8)	Copper Zinc	21 (≤20) 32 (≤20)	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A
BBH-S-76-4MS/MSD (BBH-S-76-4 BBH-S-76-8 BBH-S-77-8 BBH-B-03-10 BBH-B-06-10 BBH-S-78-4 BBH-S-78-8 BBH-S-79-4 BBH-S-79-8 BBH-B-18-10 BBH-S-80-4 BBH-S-80-8 BBH-S-75-8)	Mercury	26 (≤20)	J (all detects) UJ (all non-detects)	A

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 was not performed for this SDG.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the methods. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

No field duplicates were identified in this SDG.

XII. Internal Standards (ICP-MS)

Internal standards data were not reviewed for Stage 2A validation.

XIII. Sample Result Verification

Raw data were not reviewed for Stage 2A validation.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods.

In the case where more than one result was reported for an individual sample, the least technically acceptable results were deemed not reportable as follows:

Sample	Analyte	Reason	Flag	A or P
BBH-S-79-8DL	Copper Zinc	Sample with lower dilution is more acceptable due to having a detected result.	DNR	-

Due to MS/MSD %R and RPD, data were qualified as estimated in thirteen samples.

No results were rejected in this SDG.

Kimberly-Clark Upland Area
Metals - Data Qualification Summary - SDG 010179

Sample	Analyte	Flag	A or P	Reason
BBH-S-76-4 BBH-S-76-8 BBH-B-03-10 BBH-B-06-10 BBH-S-78-4 BBH-S-78-8 BBH-S-79-4 BBH-S-79-8 BBH-B-18-10 BBH-S-80-4 BBH-S-80-8 BBH-S-75-8	Zinc	J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (%R)
BBH-S-76-4 BBH-S-76-8 BBH-S-78-4 BBH-S-79-4 BBH-S-75-8	Mercury	J (all detects)	A	Matrix spike/Matrix spike duplicate (%R)
BBH-S-76-4 BBH-S-76-8 BBH-B-03-10 BBH-B-06-10 BBH-S-78-4 BBH-S-78-8 BBH-S-79-4 BBH-S-79-8 BBH-B-18-10 BBH-S-80-4 BBH-S-80-8 BBH-S-75-8	Copper Zinc	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (RPD)
BBH-S-76-4 BBH-S-76-8 BBH-S-77-8 BBH-B-03-10 BBH-B-06-10 BBH-S-78-4 BBH-S-78-8 BBH-S-79-4 BBH-S-79-8 BBH-B-18-10 BBH-S-80-4 BBH-S-80-8 BBH-S-75-8	Mercury	J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (RPD)
BBH-S-79-8DL	Copper Zinc	DNR	-	Overall assessment of data

Kimberly-Clark Upland Area
Metals - Laboratory Blank Data Qualification Summary - SDG 010179

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Metals - Field Blank Data Qualification Summary - SDG 010179

No Sample Data Qualified in this SDG

LDC #: 49554O4a
SDG #: 010179
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 11/13/2020

Reviewer:DTM
2nd Reviewer:

METHOD: Metals (EPA SW 846 Method 6020B/EPA Method 1631E)

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	N	
III.	Instrument Calibration	N	
IV.	ICP Interference Check Sample (ICS) Analysis	N	
V.	Laboratory Blanks	A	
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	SW	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	N	
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	N	
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	SW	

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	BBH-S-76-4	010179-01	Soil	10/09/20
2	BBH-S-76-8	010179-02	Soil	10/09/20
3	BBH-S-77-8	010179-03	Soil	10/09/20
4	BBH-B-03-10	010179-04	Soil	10/09/20
5	BBH-B-06-10	010179-05	Soil	10/09/20
6	BBH-S-78-4	010179-06	Soil	10/09/20
7	BBH-S-78-8	010179-07	Soil	10/09/20
8	BBH-S-79-4	010179-08	Soil	10/09/20
9	BBH-S-79-8	010179-09	Soil	10/09/20
10	BBH-S-79-8DL	010179-09DL	Soil	10/09/20
11	BBH-B-18-10	010179-10	Soil	10/09/20
12	BBH-S-80-4	010179-11	Soil	10/09/20

LDC #: 49554O4a

SDG #: 010179

Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET

Stage 2A

Date: 11/13/2020

Reviewer: DTM

2nd Reviewer:

METHOD: Metals (EPA SW 846 Method 6020B/EPA Method 1631E)

	Client ID	Lab ID	Matrix	Date
13	BBH-S-80-8	010179-12	Soil	10/09/20
14	BBH-S-75-8	010179-13	Soil	10/09/20
15	BBH-S-76-4MS	010179-01MS	Soil	10/09/20
16	BBH-S-76-4MSD	010179-01MSD	Soil	10/09/20
17				
18				
19				

Notes:

LDC #: 49554O4a

VALIDATION FINDINGS WORKSHEET

Sample Specific Element Reference

Reviewer: DTM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-2,8-13	S	Cu, Zn, Hg
4-7,14	S	Cu, Zn
3-7,14	S	Hg
QC 15-16	S	Cu, Zn, Hg
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
Analysis Method		
ICP		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
ICP-MS		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
GFAA		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn

Comments: Mercury by CVAA if performed

LDC #: 49554O4a

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: DTM

METHOD: Trace metals (EPA SW 846 Method 6020/6010/7470)

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	Qual	DET	ND	PS Recovery%
	15/16	S	Cu			21(20)	1-2, 4-14	J/UJ/A		10	
		S	Zn	68(75-125)			1-2, 4-14	J/UJ/A		10	
			Zn			32(20)	1-2, 4-14	J/UJ/A		10	
			Hg		144(71-125)		1-9,11-14	J/A	1,2,6,8,14		
			Hg			26(20)	1-9,11-14	J/UJ/A	1,2,6,8,14		

Comments:

LDC #: 49554O4a

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Reviewer: DTM

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".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

Y N N/A Was the overall quality and usability of the data acceptable?

#	Sample ID	Analyte	Finding	Qualification
	10	Cu, Zn	Sample with lower dilution is more acceptable due to having a detected result.	DNR

Comments:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: November 16, 2020

Parameters: Metals

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 010208

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
BBH-523	010208-01	Soil	10/12/20
BBH-S-39-8	010208-02	Soil	10/12/20
BBH-S-81-4	010208-03	Soil	10/12/20
BBH-S-82-4	010208-04	Soil	10/12/20
BBH-S-83-4	010208-05	Soil	10/13/20
BBH-S-84-4	010208-06	Soil	10/13/20
BBH-S-85-8	010208-07	Soil	10/13/20
BBH-S-85-4	010208-08	Soil	10/13/20
BBH-S-65-8	010208-09	Soil	10/13/20
BBH-S-86-4	010208-10	Soil	10/13/20
BBH-S-57-8	010208-11	Soil	10/13/20
BBH-S-41-8	010208-12	Soil	10/13/20
BBH-523MS	010208-01MS	Soil	10/12/20
BBH-523MSD	010208-01MSD	Soil	10/12/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 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 Zinc by Environmental Protection Agency (EPA) SW 846 Method 6020B
Mercury by EPA Method 1631E

All sample results were subjected to Stage 2A 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

ICP-MS tune data were not reviewed for Stage 2A validation.

III. Instrument Calibration

Instrument calibration data were not reviewed for Stage 2A validation.

IV. ICP Interference Check Sample Analysis

ICP Interference check sample (ICS) analysis data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the methods. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

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
BBH-523MS/MSD (BBH-S-81-4 BBH-S-82-4 BBH-S-83-4 BBH-S-85-4 BBH-S-65-8)	Copper	63 (75-125)	-	J (all detects) UJ (all non-detects)	A

For BBH-523MS/MSD, no data were qualified for mercury percent recoveries (%R) outside the QC limits since the parent sample results were greater than 4X the spike concentration.

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 was not performed for this SDG.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the methods. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

Samples BBH-523 and BBH-S-39-8 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/Kg)		RPD
	BBH-523	BBH-S-39-8	
Mercury	1.1	0.94	16

XII. Internal Standards (ICP-MS)

Internal standards data were not reviewed for Stage 2A validation.

XIII. Sample Result Verification

Raw data were not reviewed for Stage 2A validation.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods.

Due to MS/MSD %R, data were qualified as estimated in five samples.

No results were rejected in this SDG.

Kimberly-Clark Upland Area
Metals - Data Qualification Summary - SDG 010208

Sample	Analyte	Flag	A or P	Reason
BBH-S-81-4 BBH-S-82-4 BBH-S-83-4 BBH-S-85-4 BBH-S-65-8	Copper	J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicate (%R)

Kimberly-Clark Upland Area
Metals - Laboratory Blank Data Qualification Summary - SDG 010208

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Metals - Field Blank Data Qualification Summary - SDG 010208

No Sample Data Qualified in this SDG

LDC #: 49554P4a

SDG #: 010208

Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET

Stage 2A

Date: 11/13/2020

Reviewer: DTM

2nd Reviewer:

METHOD: Metals (EPA SW 846 Method 6020B/EPA Method 1631E)

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	N	
III.	Instrument Calibration	N	
IV.	ICP Interference Check Sample (ICS) Analysis	N	
V.	Laboratory Blanks	A	
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	SW	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	N	
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	SW	(1,2)
XII.	Internal Standard (ICP-MS)	N	
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	BBH-523	010208-01	Soil	10/12/20
2	BBH-S-39-8	010208-02	Soil	10/12/20
3	BBH-S-81-4	010208-03	Soil	10/12/20
4	BBH-S-82-4	010208-04	Soil	10/12/20
5	BBH-S-83-4	010208-05	Soil	10/13/20
6	BBH-S-84-4	010208-06	Soil	10/13/20
7	BBH-S-85-8	010208-07	Soil	10/13/20
8	BBH-S-85-4	010208-08	Soil	10/13/20
9	BBH-S-65-8	010208-09	Soil	10/13/20
10	BBH-S-86-4	010208-10	Soil	10/13/20
11	BBH-S-57-8	010208-11	Soil	10/13/20
12	BBH-S-41-8	010208-12	Soil	10/13/20

LDC #: 49554P4a
SDG #: 010208
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date:12/13/2020

Reviewer: DTM
2nd Reviewer:

METHOD: Metals (EPA SW 846 Method 6020B/EPA Method 1631E)

	Client ID	Lab ID	Matrix	Date
13	BBH-523MS	010208-01MS	Soil	10/12/20
14	BBH-523MSD	010208-01MSD	Soil	10/12/20
15				
16				
17				

Notes:

LDC #: 49554P4a

VALIDATION FINDINGS WORKSHEET

Sample Specific Element Reference

Reviewer: DTM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
3-4, 8-9	S	Cu, Hg
5	S	Cu, Zn, Hg
12	S	Zn
1-2, 6-7, 10-11	S	Hg
QC 13/14	S	Cu, Zn, Hg
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
Analysis Method		
ICP		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
ICP-MS		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
GFAA		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn

Comments: Mercury by CVAA if performed

LDC #: 49554P4a

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: DTM

METHOD: Trace metals (EPA SW 846 Method 6020/6010/7470)

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	Qual	DET	ND	PS Recovery%
	13/14	S	Cu	63(75-125)	75		3-5,8-9	J/UJ/A		3	

Comments: 13/14 Hg >4x Spike

LDC#: 49554P4a

VALIDATION FINDINGS WORKSHEET

Field Duplicates

Reviewer: DTM

METHOD: Metals (EPA Method 6010/6020/7000)

Analyte	Concentration (mg/Kg)		RPD
	1	2	
Mercury	1.1	0.94	16

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: November 16, 2020

Parameters: Metals

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 010237

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
BBH-B-15-12	010237-01	Soil	10/14/20
BBH-S-87-4	010237-02	Soil	10/14/20
BBH-S-88-8	010237-03	Soil	10/14/20
BBH-B-23-11	010237-04	Soil	10/14/20
BBH-B-23-11DL	010237-04DL	Soil	10/14/20
BBH-B-15-12MS	010237-01MS	Soil	10/14/20
BBH-B-15-12MSD	010237-01MSD	Soil	10/14/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 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 by Environmental Protection Agency (EPA) SW 846 Method 6020B
Mercury by EPA Method 1631E

All sample results were subjected to Stage 2A 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.

DNR Do not report from this analysis; the result for this analyte is to be reported from an alternative analysis.

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

ICP-MS tune data were not reviewed for Stage 2A validation.

III. Instrument Calibration

Instrument calibration data were not reviewed for Stage 2A validation.

IV. ICP Interference Check Sample Analysis

ICP Interference check sample (ICS) analysis data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the methods. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

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 was not performed for this SDG.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the methods. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

No field duplicates were identified in this SDG.

XII. Internal Standards (ICP-MS)

Internal standards data were not reviewed for Stage 2A validation.

XIII. Sample Result Verification

Raw data were not reviewed for Stage 2A validation.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods.

In the case where more than one result was reported for an individual sample, the least technically acceptable results were deemed not reportable as follows:

Sample	Analyte	Reason	Flag	A or P
BBH-B-23-11DL	Copper	Sample with lower dilution is more acceptable due to having a detected result.	DNR	-

No results were rejected in this SDG.

Kimberly-Clark Upland Area
Metals - Data Qualification Summary - SDG 010237

Sample	Analyte	Flag	A or P	Reason
BBH-B-23-11DL	Copper	DNR	-	Overall assessment of data

Kimberly-Clark Upland Area
Metals - Laboratory Blank Data Qualification Summary - SDG 010237

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Metals - Field Blank Data Qualification Summary - SDG 010237

No Sample Data Qualified in this SDG

LDC #: 49554Q4a
SDG #: 010237
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 11/13/2020
Page: 1 of1
Reviewer: DTM
2nd Reviewer:

METHOD: Cu, Hg (EPA SW 846 Method 6020B/EPA Method 1631E)

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	N	
III.	Instrument Calibration	N	
IV.	ICP Interference Check Sample (ICS) Analysis	N	
V.	Laboratory Blanks	A	
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	A	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	N	
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	N	
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	SW	

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	BBH-B-15-12	010237-01	Soil	10/14/20
2	BBH-S-87-4	010237-02	Soil	10/14/20
3	BBH-S-88-8	010237-03	Soil	10/14/20
4	BBH-B-23-11	010237-04	Soil	10/14/20
5	BBH-B-23-11DL	010237-04DL	Soil	10/14/20
6	BBH-B-15-12MS	010237-01MS	Soil	10/14/20
7	BBH-B-15-12MSD	010237-01MSD	Soil	10/14/20
8				

Notes:

LDC #: 49554Q4a

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: DTM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1, 4	S	Cu, Hg
3, 5	S	Cu
2	S	Hg
QC 6-7	S	Hg, Cu
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
Analysis Method		
ICP		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
ICP-MS		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
GFAA		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn

Comments: Mercury by CVAA if performed

LDC #: 49554Q4a

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Reviewer: DTM

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".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

Y N N/A Was the overall quality and usability of the data acceptable?

#	Sample ID	Analyte	Finding	Qualification
	5	Cu	Sample with lower dilution is more acceptable due to having a detected result.	DNR

Comments:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: November 16, 2020

Parameters: Metals

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 010269

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
GFB12-S-01-4	010269-01	Soil	10/15/20
GFB12-S-02-4	010269-02	Soil	10/15/20
GFB12-S-03-4	010269-03	Soil	10/15/20
GFB12-S-04-4	010269-04	Soil	10/15/20
GFB12-S-05-4	010269-05	Soil	10/15/20
GFB12-S-06-4	010269-06	Soil	10/15/20
GFB12-S-07-4	010269-07	Soil	10/15/20
GFB12-S-08-4	010269-08	Soil	10/15/20
GFB12-B-01-6	010269-09	Soil	10/15/20
GFB12-B-02-6	010269-10	Soil	10/15/20
GFB12-524	010269-11	Soil	10/15/20
BBH-S-89-4	010269-12	Soil	10/15/20
BBH-B-20-11	010269-13	Soil	10/15/20
BBH-B-04-11	010269-14	Soil	10/15/20
BBH-S-90-8	010269-15	Soil	10/15/20
BBH-B-28-11	010269-16	Soil	10/15/20
BBH-B-08-11	010269-17	Soil	10/15/20
BBH-B-08-11DL	010269-17DL	Soil	10/15/20
BBH-B-08-11MS	010269-17MS	Soil	10/15/20
BBH-B-08-11MSD	010269-17MSD	Soil	10/15/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 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 by Environmental Protection Agency (EPA) SW 846 Method 6020B
Mercury by EPA Method 1631E

All sample results were subjected to Stage 2A 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.

DNR Do not report from this analysis; the result for this analyte is to be reported from an alternative analysis.

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

ICP-MS tune data were not reviewed for Stage 2A validation.

III. Instrument Calibration

Instrument calibration data were not reviewed for Stage 2A validation.

IV. ICP Interference Check Sample Analysis

ICP Interference check sample (ICS) analysis data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the methods. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

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 was not performed for this SDG.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the methods. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

Samples GFB12-S-06-4 and GFB12-524 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/Kg)		RPD
	GFB12-S-06-4	GFB12-524	
Mercury	1.2	1.3	8

XII. Internal Standards (ICP-MS)

Internal standards data were not reviewed for Stage 2A validation.

XIII. Sample Result Verification

Raw data were not reviewed for Stage 2A validation.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods.

In the case where more than one result was reported for an individual sample, the least technically acceptable results were deemed not reportable as follows:

Sample	Analyte	Reason	Flag	A or P
BBH-B-08-11DL	Copper	Sample with lower dilution is more acceptable due to having a detected result.	DNR	-

No results were rejected in this SDG.

Kimberly-Clark Upland Area
Metals - Data Qualification Summary - SDG 010269

Sample	Analyte	Flag	A or P	Reason
BBH-B-08-11DL	Copper	DNR	-	Overall assessment of data

Kimberly-Clark Upland Area
Metals - Laboratory Blank Data Qualification Summary - SDG 010269

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Metals - Field Blank Data Qualification Summary - SDG 010269

No Sample Data Qualified in this SDG

LDC #: 49554R4a
SDG #: 010269
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date:11/13/2020

Reviewer:DTM
2nd Reviewer:

METHOD: Cu, Hg (EPA SW 846 Method 6020B/EPA Method 1631E)

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	N	
III.	Instrument Calibration	N	
IV.	ICP Interference Check Sample (ICS) Analysis	N	
V.	Laboratory Blanks	A	
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	A	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	N	
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	SW	(6,11)
XII.	Internal Standard (ICP-MS)	N	
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	SW	

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	GFB12-S-01-4	010269-01	Soil	10/15/20
2	GFB12-S-02-4	010269-02	Soil	10/15/20
3	GFB12-S-03-4	010269-03	Soil	10/15/20
4	GFB12-S-04-4	010269-04	Soil	10/15/20
5	GFB12-S-05-4	010269-05	Soil	10/15/20
6	GFB12-S-06-4	010269-06	Soil	10/15/20
7	GFB12-S-07-4	010269-07	Soil	10/15/20
8	GFB12-S-08-4	010269-08	Soil	10/15/20
9	GFB12-B-01-6	010269-09	Soil	10/15/20
10	GFB12-B-02-6	010269-10	Soil	10/15/20
11	GFB12-524	010269-11	Soil	10/15/20

LDC #: 49554R4a
SDG #: 010269
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 11/13/2020

Reviewer: DTM
2nd Reviewer:

METHOD: Cu, Hg (EPA SW 846 Method 6020B/EPA Method 1631E)

	Client ID	Lab ID	Matrix	Date
12	BBH-S-89-4	010269-12	Soil	10/15/20
13	BBH-B-20-11	010269-13	Soil	10/15/20
14	BBH-B-04-11	010269-14	Soil	10/15/20
15	BBH-S-90-8	010269-15	Soil	10/15/20
16	BBH-B-28-11	010269-16	Soil	10/15/20
17	BBH-B-08-11	010269-17	Soil	10/15/20
18	BBH-B-08-11DL	010269-17DL	Soil	10/15/20
19	BBH-B-08-11MS	010269-17MS	Soil	10/15/20
20	BBH-B-08-11MSD	010269-17MSD	Soil	10/15/20
21				
22				
23				

Notes:

LDC #: 49554R4a

VALIDATION FINDINGS WORKSHEET

Sample Specific Element Reference

Reviewer: DTM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
13,17	S	Cu, Hg
18	S	Cu
QC 19-20	S	Cu, Hg
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
Analysis Method		
ICP		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
ICP-MS		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
GFAA		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn

Comments: Mercury by CVAA if performed

LDC#: 49554R4a

VALIDATION FINDINGS WORKSHEET

Page: 1 of 1

Field Duplicates

Reviewer: DTM

METHOD: Metals (EPA Method 6010/6020/7000)

Analyte	Concentration (mg/Kg)		RPD
	6	11	
Mercury	1.2	1.3	8

LDC #: 49554R4a

VALIDATION FINDINGS WORKSHEET
Overall Assessment of Data

Reviewer: DTN

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".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

Y N N/A Was the overall quality and usability of the data acceptable?

#	Sample ID	Analyte	Finding	Qualification
	18	Cu	Sample with lower dilution is more acceptable due to having a detected result.	DNR

Comments:

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

Aspect Consulting LLC
701 Second Ave., Suite 550
Seattle, WA 98104
ATTN: Ms. Carla Brock
cbrock@aspectconsulting.com

December 3, 2020

SUBJECT: Kimberly-Clark Upland Area, Data Validation

Dear Ms. Brock,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on November 12, 2020. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #49664:

SDG #	Fraction
010352, 010369, 010391 010462, 010506, 010541 011027, 011068	Metals, Total Petroleum Hydrocarbons as Extractables

The data validation was performed under Stage 2A guidelines. The analyses were validated using the following documents, as applicable to each method:

- USEPA National Functional Guidelines for Organic Superfund Methods Data Review, January 2017
- USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review; January 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
crink@lab-data.com
Project Manager/Senior Chemist

Stage 2A EDD

LDC #49664 (Aspect Consulting, LLC - Seattle, WA / Kimberly-Clark Upland Area 2020 Interm Action)

LDC	SDG#	DATE REC'D	(3) DATE DUE	(3) Metals (6020B)		Cu (6020B)		Hg (1631E)		TPH-E (NWTPH -Dx)																									
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
A	010352	11/12/20	12/07/20	-	-	0	1	0	8	-	-																								
B	010369	11/12/20	12/07/20	-	-	-	-	0	6	-	-																								
C	010391	11/12/20	12/07/20	-	-	-	-	0	5	-	-																								
D	010462	11/12/20	12/07/20	-	-	-	-	0	3	-	-																								
E	010506	11/12/20	12/07/20	0	2	-	-	0	3	0	2																								
F	010541	11/12/20	12/07/20	-	-	-	-	0	1	-	-																								
G	011027	11/12/20	12/07/20	-	-	-	-	0	1	-	-																								
H	011068	11/12/20	12/07/20	-	-	-	-	0	1	-	-																								
Total	T/CR			0	2	0	1	0	28	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	33

Shaded cells indicate Stage 4 validation (all other cells are Stage 2A validation). These sample counts do not include MS, MSD, or DUP's.

L:\Aspect Consulting\Kimberly Clark\49664ST.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: December 2, 2020

Parameters: Metals

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 010352

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
BBH-S-98-4	010352-01	Soil	10/20/20
BBH-S-99-8	010352-02	Soil	10/20/20
BBH-S-100-4	010352-03	Soil	10/20/20
GFB12-S-09-4	010352-04	Soil	10/20/20
GFB12-S-10-4	010352-05	Soil	10/20/20
GFB12-S-11-4	010352-06	Soil	10/20/20
GFB12-S-12-4	010352-07	Soil	10/20/20
GFB12-B-01-8	010352-08	Soil	10/20/20
BBH-S-98-4MS	010352-01MS	Soil	10/20/20
BBH-S-98-4MSD	010352-01MSD	Soil	10/20/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 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 by Environmental Protection Agency (EPA) SW 846 Method 6020B
Mercury by EPA Method 1631E

All sample results were subjected to Stage 2A 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

ICP-MS tune data were not reviewed for Stage 2A validation.

III. Instrument Calibration

Instrument calibration data were not reviewed for Stage 2A validation.

IV. ICP Interference Check Sample Analysis

ICP Interference check sample (ICS) analysis data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the methods. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

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
BBH-S-98-4MS/MSD (BBH-S-98-4 BBH-S-99-8 GFB12-S-09-4 GFB12-S-12-4)	Mercury	-	130 (71-125)	J (all detects)	A
BBH-S-98-4MS/MSD (BBH-S-100-4 GFB12-S-10-4 GFB12-S-11-4 GFB12-B-01-8)	Mercury	-	130 (71-125)	NA	-

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 was not performed for this SDG.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the methods. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

No field duplicates were identified in this SDG.

XII. Internal Standards (ICP-MS)

Internal standards data were not reviewed for Stage 2A validation.

XIII. Sample Result Verification

Raw data were not reviewed for Stage 2A validation.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods.

Due to MS/MSD %R, data were qualified as estimated in four samples.

No results were rejected in this SDG.

Kimberly-Clark Upland Area
Metals - Data Qualification Summary - SDG 010352

Sample	Analyte	Flag	A or P	Reason
BBH-S-98-4 BBH-S-99-8 GFB12-S-09-4 GFB12-S-12-4	Mercury	J (all detects)	A	Matrix spike/Matrix spike duplicate (%R)

Kimberly-Clark Upland Area
Metals - Laboratory Blank Data Qualification Summary - SDG 010352

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Metals - Field Blank Data Qualification Summary - SDG 010352

No Sample Data Qualified in this SDG

LDC #: 49664A4a

SDG #: 010352

Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET

Stage 2A

Date: 12/1/2020

Page: 1 of 1

Reviewer: DTM

2nd Reviewer:

METHOD: Metals (EPA SW 846 Method 6020B/EPA Method 1631E)

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	N	
III.	Instrument Calibration	N	
IV.	ICP Interference Check Sample (ICS) Analysis	N	
V.	Laboratory Blanks	A	
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	SW	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	N	
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	N	
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	A	

Note: A = Acceptable; ND = No compounds detected; D = Duplicate; SB=Source blank
N = Not provided/applicable; R = Rinsate; TB = Trip blank; OTHER:
SW = See worksheet; FB = Field blank; EB = Equipment blank

	Client ID	Lab ID	Matrix	Date
1	BBH-S-98-4	010352-01	Soil	10/20/20
2	BBH-S-99-8	010352-02	Soil	10/20/20
3	BBH-S-100-4	010352-03	Soil	10/20/20
4	GFB12-S-09-4	010352-04	Soil	10/20/20
5	GFB12-S-10-4	010352-05	Soil	10/20/20
6	GFB12-S-11-4	010352-06	Soil	10/20/20
7	GFB12-S-12-4	010352-07	Soil	10/20/20
8	GFB12-B-01-8	010352-08	Soil	10/20/20
9	BBH-S-98-4MS	010352-01MS	Soil	10/20/20
10	BBH-S-98-4MSD	010352-01MSD	Soil	10/20/20

Notes:

LDC #: 49664A4a

VALIDATION FINDINGS WORKSHEET

Page: 1 of 1

Sample Specific Element Reference

Reviewer: DTM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1	S	Cu, Hg
2-8	S	Hg
QC 9-10	S	Cu, Hg
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
Analysis Method		
ICP		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
ICP-MS		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
GFAA		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn

Comments: Mercury by CVAA if performed

LDC #: 49664A4a

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: DTM

METHOD: Trace metals (EPA SW 846 Method 6020/6010/7470)

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	Qual	DET	ND	PS Recovery%
	9-10	S	Hg		130 (71-125)		ALL	J/A		3,5-6,8	

Comments:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: December 2, 2020

Parameters: Mercury

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 010369

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
GFB12-S-13-4	010369-01	Soil	10/21/20
GFB12-S-14-4	010369-02	Soil	10/21/20
GFB12-S-15-4	010369-03	Soil	10/21/20
GFB12-B-02-8	010369-04	Soil	10/21/20
GFB12-B-03-8	010369-05	Soil	10/21/20
BBH-S-101-4	010369-06	Soil	10/21/20
GFB12-S-13-4MS	010369-01MS	Soil	10/21/20
GFB12-S-13-4MSD	010369-01MSD	Soil	10/21/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 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:

Mercury by Environmental Protection Agency (EPA) Method 1631E

All sample results were subjected to Stage 2A 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. Instrument Calibration

Instrument calibration data were not reviewed for Stage 2A validation.

III. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

IV. Field Blanks

No field blanks were identified in this SDG.

V. 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.

VI. 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.

VII. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

VIII. Field Duplicates

No field duplicates were identified in this SDG.

IX. Sample Result Verification

Raw data were not reviewed for Stage 2A validation.

X. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Mercury - Data Qualification Summary - SDG 010369

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Mercury - Laboratory Blank Data Qualification Summary - SDG 010369

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Mercury - Field Blank Data Qualification Summary - SDG 010369

No Sample Data Qualified in this SDG

LDC #: 49664B4c
SDG #: 010369
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 12/1/2020

Reviewer: DTM
2nd Reviewer:

METHOD: Mercury (EPA Method 1631E)

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.	Instrument Calibration	N	
III.	Laboratory Blanks	A	
IV.	Field Blanks	N	
V.	Matrix Spike/Matrix Spike Duplicates	A	
VI.	Duplicate sample analysis	N	
VII.	Laboratory control samples	A	LCS
VIII.	Field Duplicates	N	
IX.	Sample Result Verification	N	
X.	Overall Assessment of Data	A	

Note: A = Acceptable; ND = No compounds detected; D = Duplicate; SB=Source blank
N = Not provided/applicable; R = Rinsate; TB = Trip blank; OTHER:
SW = See worksheet; FB = Field blank; EB = Equipment blank

	Client ID	Lab ID	Matrix	Date
1	GFB12-S-13-4	010369-01	Soil	10/21/20
2	GFB12-S-14-4	010369-02	Soil	10/21/20
3	GFB12-S-15-4	010369-03	Soil	10/21/20
4	GFB12-B-02-8	010369-04	Soil	10/21/20
5	GFB12-B-03-8	010369-05	Soil	10/21/20
6	BBH-S-101-4	010369-06	Soil	10/21/20
7	GFB12-S-13-4MS	010369-01MS	Soil	10/21/20
8	GFB12-S-13-4MSD	010369-01MSD	Soil	10/21/20
9				
10				

Notes:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: December 2, 2020

Parameters: Mercury

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 010391

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
BBH-S-102-8	010391-01	Soil	10/22/20
BBH-S-102-4	010391-02	Soil	10/22/20
BBH-S-103-4	010391-03	Soil	10/22/20
BBH-S-104-4	010391-04	Soil	10/22/20
BBH-S-105-8	010391-05	Soil	10/22/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 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:

Mercury by Environmental Protection Agency (EPA) Method 1631E

All sample results were subjected to Stage 2A 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. Instrument Calibration

Instrument calibration data were not reviewed for Stage 2A validation.

III. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

IV. Field Blanks

No field blanks were identified in this SDG.

V. 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.

VI. 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.

VII. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

VIII. Field Duplicates

No field duplicates were identified in this SDG.

IX. Sample Result Verification

Raw data were not reviewed for Stage 2A validation.

X. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Mercury - Data Qualification Summary - SDG 010391

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Mercury - Laboratory Blank Data Qualification Summary - SDG 010391

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Mercury - Field Blank Data Qualification Summary - SDG 010391

No Sample Data Qualified in this SDG

LDC #: 49664C4c
SDG #: 010391
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 12/1/2020

Reviewer: DTM
2nd Reviewer:

METHOD: Mercury (EPA Method 1631E)

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.	Instrument Calibration	N	
III.	Laboratory Blanks	A	
IV.	Field Blanks	N	
V.	Matrix Spike/Matrix Spike Duplicates	N	
VI.	Duplicate sample analysis	N	
VII.	Laboratory control samples	A	LCS
VIII.	Field Duplicates	N	
IX.	Sample Result Verification	N	
X.	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	BBH-S-102-8	010391-01	Soil	10/22/20
2	BBH-S-102-4	010391-02	Soil	10/22/20
3	BBH-S-103-4	010391-03	Soil	10/22/20
4	BBH-S-104-4	010391-04	Soil	10/22/20
5	BBH-S-105-8	010391-05	Soil	10/22/20
6				
7				
8				
9				

Notes:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: December 2, 2020

Parameters: Mercury

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 010462

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
BBH-S-106-4	010462-01	Soil	10/27/20
BBH-S-107-4	010462-02	Soil	10/27/20
BBH-S-108-4	010462-03	Soil	10/27/20
BBH-S-106-4MS	010462-01MS	Soil	10/27/20
BBH-S-106-4MSD	010462-01MSD	Soil	10/27/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 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:

Mercury by Environmental Protection Agency (EPA) Method 1631E

All sample results were subjected to Stage 2A 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. Instrument Calibration

Instrument calibration data were not reviewed for Stage 2A validation.

III. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

IV. Field Blanks

No field blanks were identified in this SDG.

V. 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
BBH-S-106-4MS/MSD (All samples in SDG 010462)	Mercury	145 (71-125)	148 (71-125)	J (all detects)	A

Relative percent differences (RPD) were within QC limits.

VI. 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.

VII. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

VIII. Field Duplicates

No field duplicates were identified in this SDG.

IX. Sample Result Verification

Raw data were not reviewed for Stage 2A validation.

X. Overall Assessment of Data

The analysis was conducted within all specifications of the method.

Due to MS/MSD %R, data were qualified as estimated in three samples.

No results were rejected in this SDG.

Kimberly-Clark Upland Area
Mercury - Data Qualification Summary - SDG 010462

Sample	Analyte	Flag	A or P	Reason
BBH-S-106-4 BBH-S-107-4 BBH-S-108-4	Mercury	J (all detects)	A	Matrix spike/Matrix spike duplicate (%R)

Kimberly-Clark Upland Area
Mercury - Laboratory Blank Data Qualification Summary - SDG 010462

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Mercury - Field Blank Data Qualification Summary - SDG 010462

No Sample Data Qualified in this SDG

LDC #: 49664D4c

SDG #: 010462

Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET

Stage 2A

Date:12/1/2020

Page: 1 of 1

Reviewer: DTM

2nd Reviewer:

METHOD: Mercury (EPA Method 1631E)

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.	Instrument Calibration	N	
III.	Laboratory Blanks	A	
IV.	Field Blanks	N	
V.	Matrix Spike/Matrix Spike Duplicates	SW	
VI.	Duplicate sample analysis	N	
VII.	Laboratory control samples	A	LCS
VIII.	Field Duplicates	N	
IX.	Sample Result Verification	N	
X.	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	BBH-S-106-4	010462-01	Soil	10/27/20
2	BBH-S-107-4	010462-02	Soil	10/27/20
3	BBH-S-108-4	010462-03	Soil	10/27/20
4	BBH-S-106-4MS	010462-01MS	Soil	10/27/20
5	BBH-S-106-4MSD	010462-01MSD	Soil	10/27/20
6				
7				
8				
9				
10				
11				

Notes:

LDC #: 49664D4c

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: DTM

METHOD: Trace metals (EPA SW 846 Method 6020/6010/7470)

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	Qual	DET	ND	P Recov
	4/5	S	Hg	145(71-125)	148		ALL	J/A	ALL		

Comments:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: December 2, 2020

Parameters: Metals

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 010506

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
BBH-S-109-4	010506-01	Soil	10/28/20
DT-B-06-8	010506-02	Soil	10/28/20
DT-S-01-4	010506-03	Soil	10/28/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 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, Lead, and Zinc by Environmental Protection Agency (EPA) SW 846 Method 6020B
Mercury by EPA Method 1631E

All sample results were subjected to Stage 2A 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

ICP-MS tune data were not reviewed for Stage 2A validation.

III. Instrument Calibration

Instrument calibration data were not reviewed for Stage 2A validation.

IV. ICP Interference Check Sample Analysis

ICP Interference check sample (ICS) analysis data were not reviewed for Stage 2A validation.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the methods. No contaminants were found in the laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

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. 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 was not performed for this SDG.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the methods. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

No field duplicates were identified in this SDG.

XII. Internal Standards (ICP-MS)

Internal standards data were not reviewed for Stage 2A validation.

XIII. Sample Result Verification

Raw data were not reviewed for Stage 2A validation.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Metals - Data Qualification Summary - SDG 010506

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Metals - Laboratory Blank Data Qualification Summary - SDG 010506

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Metals - Field Blank Data Qualification Summary - SDG 010506

No Sample Data Qualified in this SDG

LDC #: 49664E4a

SDG #: 010506

Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET

Stage 2A

Date: 12/1/2020

Page: 1 of 1

Reviewer: DTM

2nd Reviewer:

METHOD: Metals (EPA SW 846 Method 6020B/EPA Method 1631E)

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	N	
III.	Instrument Calibration	N	
IV.	ICP Interference Check Sample (ICS) Analysis	N	
V.	Laboratory Blanks	A	
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	N	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	N	
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	N	
XII.	Internal Standard (ICP-MS)	N	
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	BBH-S-109-4	010506-01	Soil	10/28/20
2	DT-B-06-8	010506-02	Soil	10/28/20
3	DT-S-01-4	010506-03	Soil	10/28/20
4				

Notes:

LDC #: 49664E4a

VALIDATION FINDINGS WORKSHEET

Sample Specific Element Reference

Reviewer: DTM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
2-3	S	Cu, Pb, Zn, Hg
1	S	Hg
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
Analysis Method		
ICP		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
ICP-MS		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn
GFAA		Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mo, Mn, Hg, Ni, K, Se, Ag, Na, Sr, Tl, Sn, Ti, W, U, V, Zn

Comments: Mercury by CVAA if performed

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: November 20, 2020

Parameters: Total Petroleum Hydrocarbons as Extractables

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 010506

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
DT-B-06-8	010506-02	Soil	10/28/20
DT-S-01-4	010506-03	Soil	10/28/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 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:

Total Petroleum Hydrocarbons (TPH) as Extractables by NWTPH-Dx

All sample results were subjected to Stage 2A 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 not 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

Initial calibration data were not reviewed for Stage 2A validation.

III. Continuing Calibration

Continuing calibration data were not reviewed for Stage 2A validation.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

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 Stage 2A validation.

XI. Target Compound Identifications

Raw data were not reviewed for Stage 2A validation.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG 010506

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data Qualification Summary - SDG 010506

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Total Petroleum Hydrocarbons as Extractables - Field Blank Data Qualification Summary - SDG 010506

No Sample Data Qualified in this SDG

LDC #: 49664E8
SDG #: 010506
Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET
Stage 2A

Date: 11/18/20
Page: 1 of 1
Reviewer: LT
2nd Reviewer:

METHOD: GC TPH as Extractables (NWTPH-Dx)

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	N/N	
III.	Continuing calibration	N	
IV.	Laboratory Blanks	A	
V.	Field blanks	N	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	N	Non client
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	N	
X.	Compound quantitation RL/LOQ/LODs	N	Dry weight basis= 1,2
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	DT-B-06-8	010506-02	Soil	10/28/20
2	DT-S-01-4	010506-03	Soil	10/28/20
3				
4				
5				
6				
7				
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9				
10				
11				
12				
13				

Notes:

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Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: December 2, 2020

Parameters: Mercury

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 010541

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
GFB12-S-16-4	010541-01	Soil	10/29/20
GFB12-S-16-4MS	010541-01MS	Soil	10/29/20
GFB12-S-16-4MSD	010541-01MSD	Soil	10/29/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 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:

Mercury by Environmental Protection Agency (EPA) Method 1631E

All sample results were subjected to Stage 2A 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. Instrument Calibration

Instrument calibration data were not reviewed for Stage 2A validation.

III. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

IV. Field Blanks

No field blanks were identified in this SDG.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. For GFB12-S-16-4MS/MSD, no data were qualified for mercury percent recoveries outside the QC limits since the parent sample results were greater than 4X the spike concentration. Relative percent differences (RPD) were within QC limits.

VI. 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.

VII. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

VIII. Field Duplicates

No field duplicates were identified in this SDG.

IX. Sample Result Verification

Raw data were not reviewed for Stage 2A validation.

X. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Mercury - Data Qualification Summary - SDG 010541

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Mercury - Laboratory Blank Data Qualification Summary - SDG 010541

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Mercury - Field Blank Data Qualification Summary - SDG 010541

No Sample Data Qualified in this SDG

LDC #: 49664F4c

SDG #: 010541

Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET

Stage 2A

Date: 12/2/2020

Page: 1 of 1

Reviewer: DTM

2nd Reviewer:

METHOD: Mercury (EPA Method 1631E)

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.	Instrument Calibration	N	
III.	Laboratory Blanks	A	
IV.	Field Blanks	N	
V.	Matrix Spike/Matrix Spike Duplicates	SW	2/3 Hg > 4xSpike
VI.	Duplicate sample analysis	N	
VII.	Laboratory control samples	A	LCS
VIII.	Field Duplicates	N	
IX.	Sample Result Verification	N	
X.	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	GFB12-S-16-4	010541-01	Soil	10/29/20
2	GFB12-S-16-4MS	010541-01MS	Soil	10/29/20
3	GFB12-S-16-4MSD	010541-01MSD	Soil	10/29/20
4				
5				
6				
7				
8				

Notes:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: December 2, 2020

Parameters: Mercury

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 011027

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
GFB12-S-17-4	011027-01	Soil	11/03/20
GFB12-S-17-4MS	011027-01MS	Soil	11/03/20
GFB12-S-17-4MSD	011027-01MSD	Soil	11/03/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 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:

Mercury by Environmental Protection Agency (EPA) Method 1631E

All sample results were subjected to Stage 2A 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. Instrument Calibration

Instrument calibration data were not reviewed for Stage 2A validation.

III. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

IV. Field Blanks

No field blanks were identified in this SDG.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample.

For GFB12-S-17-4MS/MSD, no data were qualified for mercury percent recoveries outside the QC limits since the parent sample results were greater than 4X the spike concentration.

Relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	RPD (Limits)	Flag	A or P
GFB12-S-17-4MS/MSD (All samples in SDG 011027)	Mercury	50 (≤20)	J (all detects)	A

VI. 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.

VII. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

VIII. Field Duplicates

No field duplicates were identified in this SDG.

IX. Sample Result Verification

Raw data were not reviewed for Stage 2A validation.

X. Overall Assessment of Data

The analysis was conducted within all specifications of the method.

Due to MS/MSD RPD, data were qualified as estimated in one sample.

No results were rejected in this SDG.

Kimberly-Clark Upland Area
Mercury - Data Qualification Summary - SDG 011027

Sample	Analyte	Flag	A or P	Reason
GFB12-S-17-4	Mercury	J (all detects)	A	Matrix spike/Matrix spike duplicate (RPD)

Kimberly-Clark Upland Area
Mercury - Laboratory Blank Data Qualification Summary - SDG 011027

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Mercury - Field Blank Data Qualification Summary - SDG 011027

No Sample Data Qualified in this SDG

LDC #: 49664G4c

SDG #: 011027

Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET

Stage 2A

Date: 12/2/2020

Reviewer: DTM

2nd Reviewer:

METHOD: Mercury (EPA Method 1631E)

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.	Instrument Calibration	N	
III.	Laboratory Blanks	A	
IV.	Field Blanks	N	
V.	Matrix Spike/Matrix Spike Duplicates	SW	2/3 > 4x Spike
VI.	Duplicate sample analysis	N	
VII.	Laboratory control samples	A	LCS
VIII.	Field Duplicates	N	
IX.	Sample Result Verification	N	
X.	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	GFB12-S-17-4	011027-01	Soil	11/03/20
2	GFB12-S-17-4MS	011027-01MS	Soil	11/03/20
3	GFB12-S-17-4MSD	011027-01MSD	Soil	11/03/20
4				
5				
6				
7				
8				

Notes:

LDC #: 49664G4c

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Reviewer: DTM

METHOD: Trace metals (EPA SW 846 Method 6020/6010/7470)

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	Qual	DET	ND	P Recov
	2/3	S	Hg			50(20)	ALL	J/UJ/A	ALL		

Comments:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Kimberly-Clark Upland Area

LDC Report Date: December 2, 2020

Parameters: Mercury

Validation Level: Stage 2A

Laboratory: Friedman & Bruya, Inc.

Sample Delivery Group (SDG): 011068

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
GFB12-S-18-4	011068-01	Soil	11/04/20
GFB12-S-18-4MS	011068-01MS	Soil	11/04/20
GFB12-S-18-4MSD	011068-01MSD	Soil	11/04/20

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 a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 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:

Mercury by Environmental Protection Agency (EPA) Method 1631E

All sample results were subjected to Stage 2A 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. Instrument Calibration

Instrument calibration data were not reviewed for Stage 2A validation.

III. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

IV. Field Blanks

No field blanks were identified in this SDG.

V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. For GFB12-S-18-4MS/MSD, no data were qualified for mercury percent recoveries outside the QC limits since the parent sample results were greater than 4X the spike concentration. Relative percent differences (RPD) were within QC limits.

VI. 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.

VII. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

VIII. Field Duplicates

No field duplicates were identified in this SDG.

IX. Sample Result Verification

Raw data were not reviewed for Stage 2A validation.

X. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Kimberly-Clark Upland Area
Mercury - Data Qualification Summary - SDG 011068

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Mercury - Laboratory Blank Data Qualification Summary - SDG 011068

No Sample Data Qualified in this SDG

Kimberly-Clark Upland Area
Mercury - Field Blank Data Qualification Summary - SDG 011068

No Sample Data Qualified in this SDG

LDC #: 49664H4c

SDG #: 011068

Laboratory: Friedman & Bruya, Inc.

VALIDATION COMPLETENESS WORKSHEET

Stage 2A

Date: 12/2/2020

Reviewer: DTM

2nd Reviewer:

METHOD: Mercury (EPA Method 1631E)

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.	Instrument Calibration	N	
III.	Laboratory Blanks	A	
IV.	Field Blanks	N	
V.	Matrix Spike/Matrix Spike Duplicates	SW	2/3 Hg >4x Spike
VI.	Duplicate sample analysis	N	
VII.	Laboratory control samples	A	LCS
VIII.	Field Duplicates	N	
IX.	Sample Result Verification	N	
X.	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	GFB12-S-18-4	011068-01	Soil	11/04/20
2	GFB12-S-18-4MS	011068-01MS	Soil	11/04/20
3	GFB12-S-18-4MSD	011068-01MSD	Soil	11/04/20
4				
5				
6				
7				
8				

Notes:

APPENDIX D

Report of Archaeological Monitoring (Perteet Inc.)

Allyson Brooks Ph.D., Director
State Historic Preservation Officer

December 28, 2020

Mr. Steve Germiat
Principal Hydrogeologist
Aspect Consulting

In future correspondence please refer to:
Project Tracking Code: 050912-24-SN
Property: Kimberly Clark Pulp and Paper Mill Demolition World Wide
Re: Archaeology - Concur with Monitoring Report

Dear Mr. Germiat:

The State Historic Preservation Officer (SHPO) and the Department of Archaeology and Historic Preservation (DAHP) has been provided with documentation regarding the above referenced project. In response, we concur with the results and recommendations made in the monitoring report entitled "Results of Archaeological Monitoring for the Kimberly-Clark Everett Interim Action." Specifically, we agree that although the building remnants and infrastructure found during monitoring likely date to the historical period, not enough was found during this project to require any further archaeological work at this time. No further archaeological work is recommended for this project.

These comments are based on the information available at the time of this review and on behalf of the SHPO pursuant to Washington State law. Please note that should the project scope of work and/or location change significantly, please contact DAHP for further review.

Thank you for the opportunity to review and comment. Please ensure that the DAHP Project Number (a.k.a. Project Tracking Code) is attached to any further communications with the DAHP about this project. Should you have any questions, please feel free to contact me.

Sincerely,

Stephanie Jolivette
Local Governments Archaeologist
(360) 628-2755
Stephanie.Jolivette@dahp.wa.gov

CULTURAL RESOURCES REPORT COVER SHEET

Author: Jack Johnson, PhD, RPA

Title of Report: Results of Archaeological Monitoring for the Kimberly-Clark Everett Interim Action

Date of Report: October 23, 2020

County(ies): Snohomish Section: 19 Township: 29 N Range: 5 E

Quad: Everett, Wa, 7.5' Quad. Acres: <1

PDF of report submitted (REQUIRED) ☒ Yes

Historic Property Export Files submitted? ☐ Yes ☒ No

Archaeological Site(s)/Isolate(s) Found or Amended? ☐ Yes ☒ No

TCP(s) found? ☐ Yes ☒ No

Replace a draft? ☐ Yes ☒ No

Satisfy a DAHP Archaeological Excavation Permit requirement? ☐ Yes # ☒ No

DAHP Archaeological Site #:

_____
_____
_____
_____
_____
_____
_____
_____
_____

PERTEET
Better communities, by design

PERTEET.COM
505 FIFTH AVENUE S, SUITE 300
SEATTLE, WA 98104
206.436.0515

October 23, 2020

Steve J. Germiat, LHG
Principal Hydrogeologist
Aspect Consulting, LLC
710 Second Avenue, Suite 550
Seattle, WA 98104

Re: Results of Archaeological Monitoring for the Kimberly-Clark Everett Interim Action

Dear Mr. Germiat,

This letter provides the results of cultural resources monitoring conducted by Perteet for the Kimberly-Clark Interim Action Project at the Kimberly-Clark Worldwide Site Upland Area (Site) in Everett, Washington (Figure 1). The project location, regulatory context, monitoring methods, and results are described in detail below. Detailed background information on the natural and cultural environments of the project area are provided by Rinck and colleagues (2013) and will not be repeated in this report.

Archaeological monitoring of excavations for the current phase of the Interim Action Project is now complete. Sediments removed during excavation were limited to historical fill; no native sediments or soils were encountered during monitoring. No pre-contact archaeological materials were observed during monitoring. Subsurface remnants of historical mill structures were encountered and documented during monitoring of excavation in two project areas. Structural elements documented in the Hydraulic Barker (HB) area probably represent remnants of the hydraulic debarking facility erected by the Soundview Pulp Company in 1945 (Everett Daily Herald, Feb. 8, 1954:20). Structural elements documented in the Central Maintenance Shop (CMS) area represent remnants of various infrastructure and facilities installed from the 1930s onward. Subsurface structural remains observed during monitoring were not removed and remain in situ.

No observed structural elements incorporated distinctive features that could yield historical insight through additional research, and no historical artifacts were encountered in association with structural remains. Standing historical mill structures throughout the site were demolished in 2013 after a Final Mitigated Determination of Non-Significance issued by the City of Everett (Attachment A) required an evaluation of the historical significance of only the Puget Sound Pulp and Timber Main Office Building, which is outside the current project area. No additional work is therefore recommended within the current project area.

PROJECT LOCATION AND DESCRIPTION

Kimberly-Clark (K-C) has undertaken removal of contaminated soil in nine areas within the Site (Figure 2). The Site lies within Section 19 of Township 29 North, Range 5 East, Willamette Meridian. It is south of US Naval Station Everett, adjacent to the East Waterway in Port Gardner Bay, and bordered to the west by the BNSF railroad. Data from geotechnical boreholes and geoarchaeological analysis indicate that seven of the nine

planned cleanup areas were entirely within historical dredge fill associated with development of the mill site (Rinck et al. 2013). However, the CMS and HB areas lie within an area previously identified as having a high potential for encountering native sediment during excavations (Figure 3). These two areas therefore required archaeological monitoring during removal of contaminated sediments.

Removal of contaminated materials involved excavation of uncontaminated backfill overburden and underlying contaminated deposits, followed by disposal of contaminated materials at an off-site facility. Cleanup work was conducted by Aspect Consulting, LLC (Aspect) on behalf of K-C under the guidance of an Interim Action Work Plan (IAWP) prepared by Aspect as an exhibit to an Amendment to Agreed Order No. DE 9476 (Order) between K-C and the Washington State Department of Ecology (Ecology) (Aspect 2019). A prior phase of interim cleanup was undertaken in 2013-2014 under this Order. All documents pertaining to the current IAWP and Order are available on the Ecology website (WSDE 2020).

REGULATORY SETTING

The project is subject to the Washington State Environmental Policy Act (SEPA) that requires the project proponent to identify any places or objects listed on or eligible for national, state, or local preservation registers in the vicinity of the project. The regulation also requires proponents to describe evidence for sites of historic, archaeological, scientific, or cultural importance in the vicinity of a project, and describe proposed measures to reduce or control impacts to those sites. Agencies are encouraged by SEPA to consult with others to find acceptable ways to avoid or mitigate any adverse impacts that may be caused by the project.

The project is also subject to several Washington state laws pertaining to archaeological cultural resources. For example, the Archaeological Sites and Resources Act [RCW 27.53] prohibits knowingly excavating or disturbing prehistoric and historic archaeological sites on public or private land. The Indian Graves and Records Act [RCW 27.44] prohibits knowingly destroying American Indian graves and provides that inadvertent disturbance through construction or other activities requires re-interment under supervision of the appropriate Indian tribe. In order to prevent the looting or depredation of sites, any maps, records, or other information identifying the location of archaeological sites, historic sites, artifacts, or the site of traditional ceremonial, or social uses and activities of Indian Tribes are also exempt from disclosure [RCW 42.56.300].

The Tulalip Tribes have previously communicated to Ecology that the Everett waterfront is a very culturally sensitive area. Previous cultural resources assessment (Rinck et al. 2013) and was completed due to the Tribe's and other interested parties' concern for cultural resources in the project vicinity.

PROJECT BACKGROUND

A cultural resources assessment was conducted in 2013 prior to demolition of historical mill structures and initial cleanup efforts at the Site (Rinck et al. 2013). This work reviewed extensive historical and geotechnical data to detail the long history of use of the project vicinity by Native Americans and subsequent Euroamerican settlers, including extensive modification of the Site in conjunction with development of the historical mill. This land modification emplaced large amounts of dredge and mill fill across the Site, and extended the former shoreline westward by over 500 feet (152 meters) in some areas, covering native foreshore, marshland, and sub-tidal depositional environments. Variable depths of fill across the Site were documented, and areas of high archaeological sensitivity within the Site were identified (Figure 3). An archaeological monitoring and discovery plan (MDP) was formulated to guide subsequent demolition and cleanup efforts (Rinck 2013). This plan calls for monitoring of fill excavations by a geologist, and archaeological monitoring of excavation below fill in moderate and high sensitivity areas or when intact cultural materials are observed by the geologist.

Archaeological monitoring following this MDP was performed during prior cleanup efforts at the site in 2013 to the south of current project areas (Undem et al. 2014). Monitoring efforts documented a small amount of historical and pre-contact cultural material within historical fill. In all cases where cultural materials were encountered, poor integrity and a lack of data potential precluded the need for additional targeted recovery or mitigation measures. Historical features observed were associated with mill construction and operation. Pre-contact materials encountered include one pre-contact edge-altered cobble (stone chopping/digging tool) and several fragments of fire-modified rock (FMR). All pre-contact materials were encountered in displaced contexts within lower fill at about 6.5 feet (2 meters) below the surface. The stone tool was recorded as an isolate (Smithsonian trinomial 45SN629) (Undem 2014) and donated to Hibulb Cultural Center; no other cultural remains encountered during this phase of work were formally recorded as archaeological sites.

In the current project area, fill deposits were expected to be roughly 6 feet (1.8 meters) thick in the HB area and between 6 and 12 feet (1.8 to 3.7 meters) thick in the CMS area based on available geotechnical data (Rinck et al. 2013) and observations from previous cleanup efforts in the vicinity (Aspect 2015). Natural deposits below the fill include sediments deposited in backshore, beach, foreshore, marsh, and sub-tidal deltaic environments. Thus current project excavations had potential to encounter pre-contact and early historical cultural materials along the historical shoreline but buried below the fill. The fill could also harbor stable former surfaces with potential for historical cultural materials.

CULTURAL RESOURCES MONITORING METHODS

Prior to the start of excavation, Perteet archaeologist Emily Peterson coordinated with Aspect project leads to review the site MDP established prior to earlier cleanup efforts. As per this plan, site excavation in historical fill containing no cultural remains was monitored by a geologist. Aspect notified Perteet when excavation was anticipated to extend below fill, and a Perteet archaeologist was then deployed to perform excavation monitoring. On the first day of archaeological monitoring, Perteet archaeologist Jack Johnson met with Aspect and other project personnel on-site to review monitoring and site safety protocols.

Archaeological monitoring was performed in two distinct areas within the Site: the Hydraulic Barker (HB) area and the Central Maintenance Shop (CMS) area. Archaeological monitoring of the HB area was performed on May 29, 2020 by Jack Johnson. In this location, removal of a roughly 50 foot by 20 foot (15.2 by 9.1 meter) area of overburden to a depth of roughly 6 feet (1.8 meters) below surface was completed prior to archaeological monitoring to allow equipment access for dewatering. At the eastern edge of this area, a roughly 20 foot by 20 foot (6 by 6 meter) area of historical fill had also been excavated to a depth of roughly 10 feet (3 meters) below surface prior to the arrival of the archaeological monitor. The archaeological monitor observed subsequent excavation of this smaller area to a depth of roughly 13 feet (4 meters) below the surface, where excavation ended. Archaeological monitoring of the CMS area was performed on July 10, 13, and 14 by Perteet archaeologist Patrick Garrison. A small amount of overburden fill had been removed prior to archaeological monitoring in this area; archaeological monitoring observed subsequent excavation of this area to a depth of about 6 feet (1.8 meters) below the surface, where excavation ended.

Throughout archaeological monitoring, Perteet archaeologists described excavation methods, sediments, and cultural materials encountered using standardized forms and terminology. Photographs were taken using digital cameras and a log of all photographs taken was kept. Location data were recorded on hand-drawn maps. Excavation spoils were examined for cultural materials.

Due to the contaminated nature of the site, archaeological monitoring in both areas was performed at a safe distance from potentially-contaminated deposits. This inhibited the archaeologists' ability to closely examine cultural materials or subsurface stratigraphy encountered during excavation, especially in the small HB area

where a combination of contaminated materials, space constraints, and excavation depth prevented safe entry into the fully-excavated pit. However, historical structural remains and debris encountered during excavation were identifiable from the surface grade in this area. Further, because project objectives focused on the removal of loose contaminated sediment, site excavation was able to work around extant structural remains without displacing these remains, facilitating exposure and documentation from a safe working distance.

RESULTS OF CULTURAL RESOURCES MONITORING

In both excavation areas, archaeological monitors observed and documented structural remains and building debris associated with historical mill operations. Identified structural remains were within historical fill, and no evidence of intact cultural remains within native sediment was observed. No pre-contact cultural materials were observed.

Within the HB area, structural remains included concrete foundations, wood pilings, and brick and metal debris. Debris was encountered between roughly 6 and 10 feet (1.8 to 3 meters) below the surface within mottled brown fill (Figure 4). Concrete features and wood piling were encountered at roughly 10 feet (3 meters) to 11 feet (3.35 meters) below the surface. They include a 10-inch (25 centimeter) thick, 5-foot (1.5 meter) wide concrete foundation in the south wall of the excavation pit, a small concrete footing at the east edge of the pit, and an elbow-shaped concrete feature protruding from the north wall of the pit and trending westward (Figures 5 and 6). One displaced timber piling protruded from the south wall of the pit adjacent to the concrete foundation, and another remained *in situ* at the elbow of the concrete feature protruding from the north wall. These materials are remnants of the former hydraulic bark removal facility erected in 1945 at this location (Figure 7), and the elbow-shaped concrete feature probably represents the remnant of the southernmost of the former log ways used to collect floated logs from the shoreline waterway, which was adjacent to this structure at the time.

Within the CMS area, structural remains included a concrete vault, concrete pipe, foundations, and walkways, one segment of wood stave pipe, steel pipes, and brick debris (Figure 8). Cultural materials in this location were shallowly-buried, and all lie within historical fill in the upper 6 feet (1.8 meters) of subsurface deposits. The wood stave pipe (Figure 9) represents remnant mill process sewer pipes indicated in historic maps from 1957 (Figure 10), and were probably installed during the early period of mill operation in the 1930s given the construction methods and materials used. Other extant structural remains probably date to the 1950s or later; historic maps and aerial imagery indicate this portion of the site was relatively undeveloped until sometime between 1941 and 1952 (Figures 11 and 12) with most of the previous structures in this area dating to the 1960s or later.

The types of historic features and debris encountered during monitoring are ubiquitous and lack the potential to yield historical insights in the absence of diagnostic features or associated intact deposits of contemporary artifacts. For example, similar structural remnants of dozens of buildings can be expected at this Site alone. Perteet therefore did not record these features as one or more archaeological sites, but instead documented them with detailed notes and photographs. Observed structural features described above also remain *in situ*, and were not removed or otherwise adversely affected by cleanup excavations.

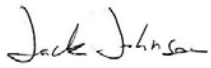
DISCUSSION

Structural remains associated with the historical mill were encountered during archaeological monitoring of excavations in both the HB and the CMS areas. Observed structural remains date primarily to the mid-1940s or later, although a segment of wood stave pipe in the CMS area may date to initial mill operation in the 1930s. Remains were not associated with deposits of other cultural materials that could provide additional information related to the history of mill operations at the Site, and therefore do not hold any potential for yielding additional historical insights.

No precontact artifacts or buried surfaces were observed during monitoring. Ground disturbance in the HB and CMS areas is now complete, and no further monitoring or cultural resources investigations are recommended.

Thank you for the opportunity to work with you on this project. Please do not hesitate to contact me with any questions regarding this report.

Sincerely,



Jack Johnson, Ph.D., RPA
Project Archaeologist, Perteet Inc.

REFERENCES

Aspect Consulting, LLC

2015 *Interim Action Report, Kimberly-Clark Worldwide Site Upland Area, Everett, Washington*. Report Prepared for Kimberly-Clark Worldwide, Inc.

2019 *Work Plan for Second Interim Action, Kimberly-Clark Worldwide Site Upland Area, Everett, Washington*. Report prepared for Kimberly-Clark Worldwide, Inc.

Rinck, Brandy

2013 *Cultural Resources Monitoring and Discovery Plan for the Kimberly-Clark Worldwide Site Upland Area, Everett, Snohomish County, Washington*. Report prepared for Aspect Consulting, LLC. SWCA/Northwest Archaeological Associates, Seattle, Washington.

Rinck, Brandy, Sharon Boswell, and Johonna Shea

2013 *Archaeological Resources Assessment for the Kimbely-Clark Worldwide Site Upland Area, Everett, Snohomish County, Washington*. Report prepared for Aspect Consulting, LLC. SWCA/Northwest Archaeological Associates, Seattle, Washington.

Undem, Cyrena

2014 State of Washington Archaeological Isolate Inventory Form, 45SN629, KC-WW-13-01. On file, Washington State Department of Archaeology and Historic Preservation, Olympia, Washington.

Undem, Cyrena, Michael Shong, and Brandy Rinck

2014 Results of Cultural Resources Monitoring at the Kimberly-Clark Worldwide Site Upland Area, Everett, Washington. SWCA Project No. 24976. Letter report to Aspect Consulting, LLC. SWCA Environmental Consultants, Seattle, Washington.

Washington State Department of Ecology
2020 *Kimberly-Clark Worldwide*. Online resource accessed October 15, 2020. https://apps.ecology.wa.gov/gsp/Sitepage.aspx?csid=2569

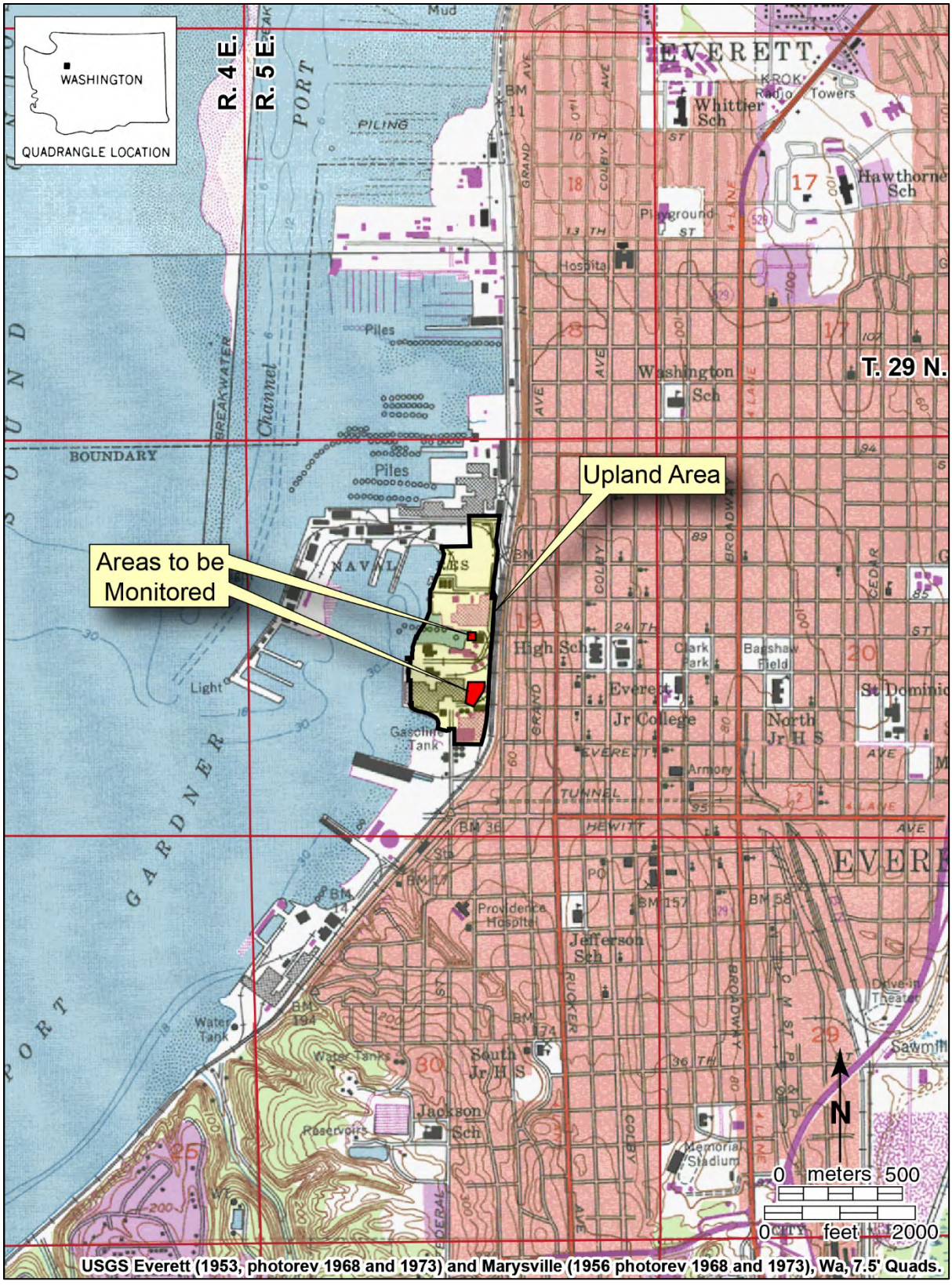


Figure 1. Project location.

Figure 2. Air photo showing the nine Interim Action Cleanup Areas.

Figure 3. Air photo showing monitored areas over site sensitivity model in Rinck et al. 2013:55 (Figure 24).

Figure 4. Cultural debris observed in the Hydraulic Barker Area.

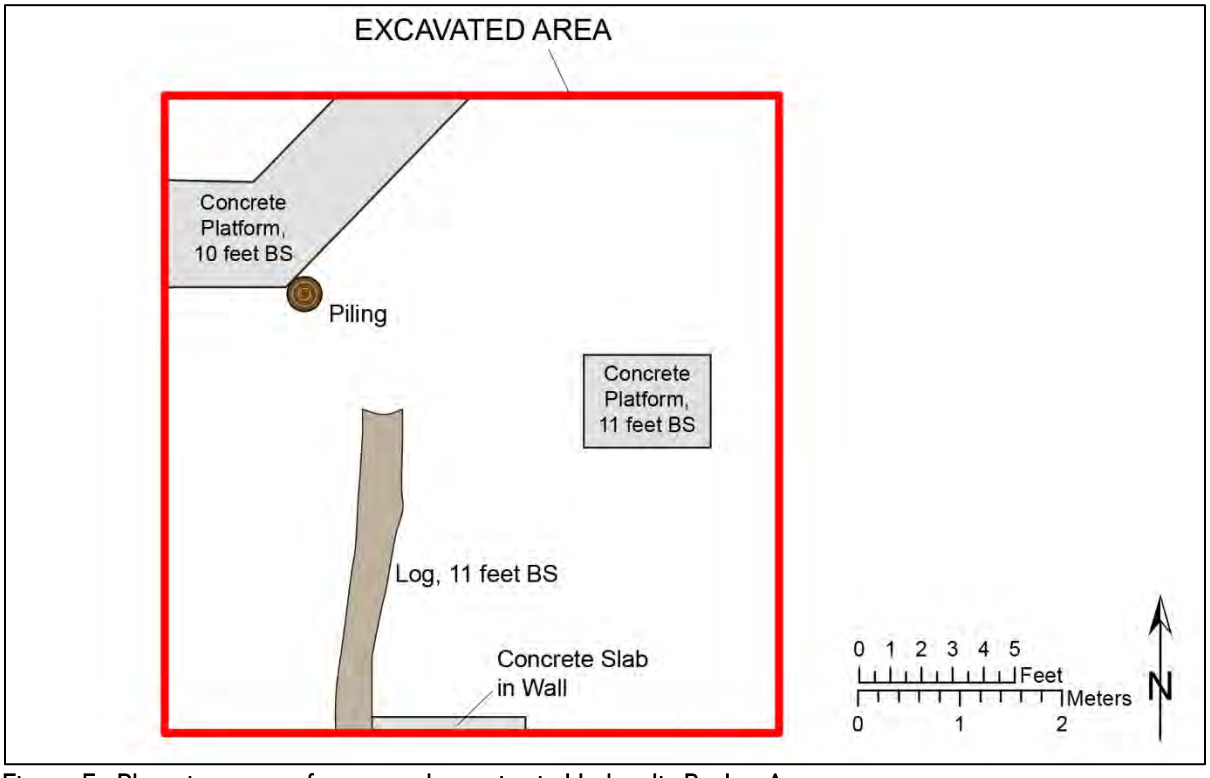


Figure 5. Plan view map of structural remains in Hydraulic Barker Area.

Figure 6. Photo of excavated Hydraulic Barker Area showing concrete and wood structural remains.

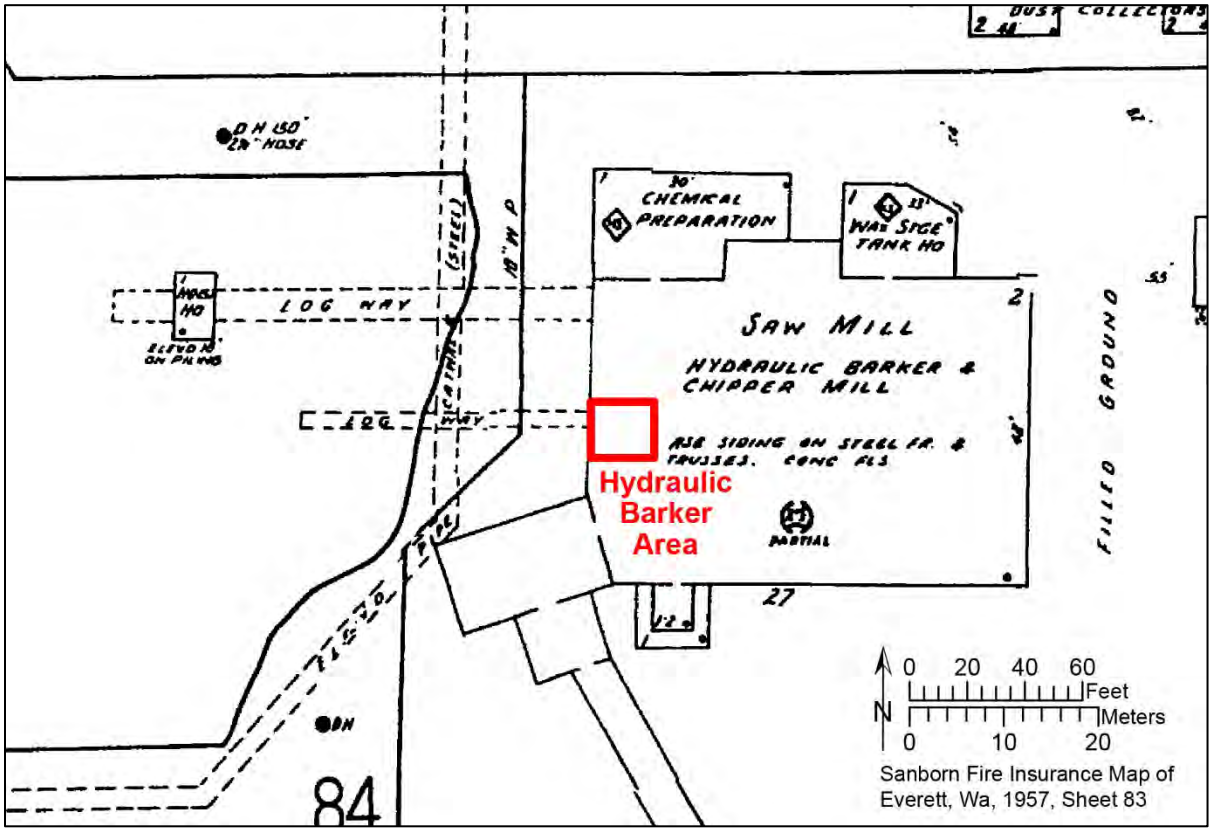


Figure 7. Sanborn Fire Insurance Map, 1957, showing the Hydraulic Barker Area.

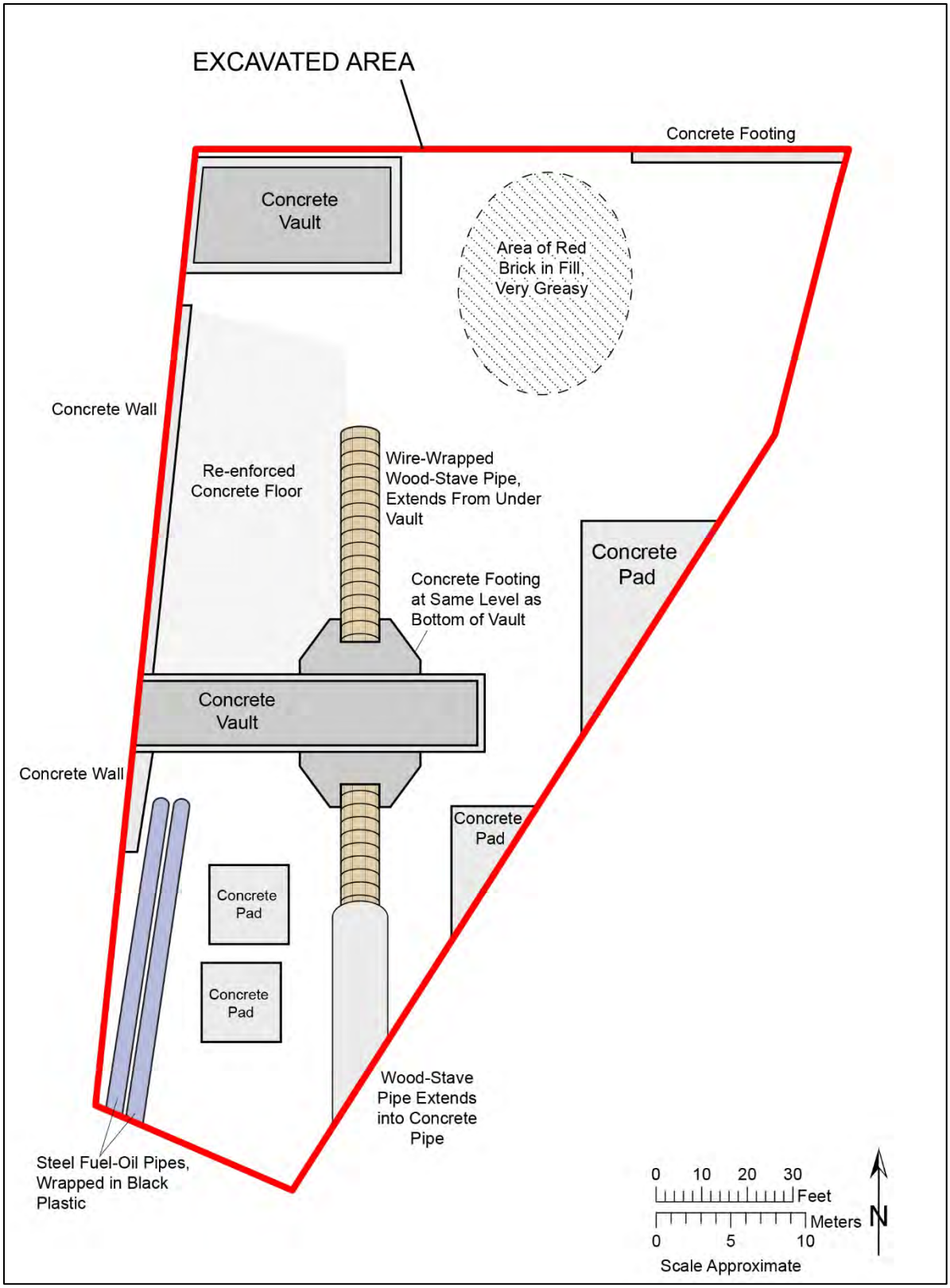


Figure 8. Plan view of observed remains in the CMS Area.

Figure 9. Overview of wood-stave pipe in the CMS Area.

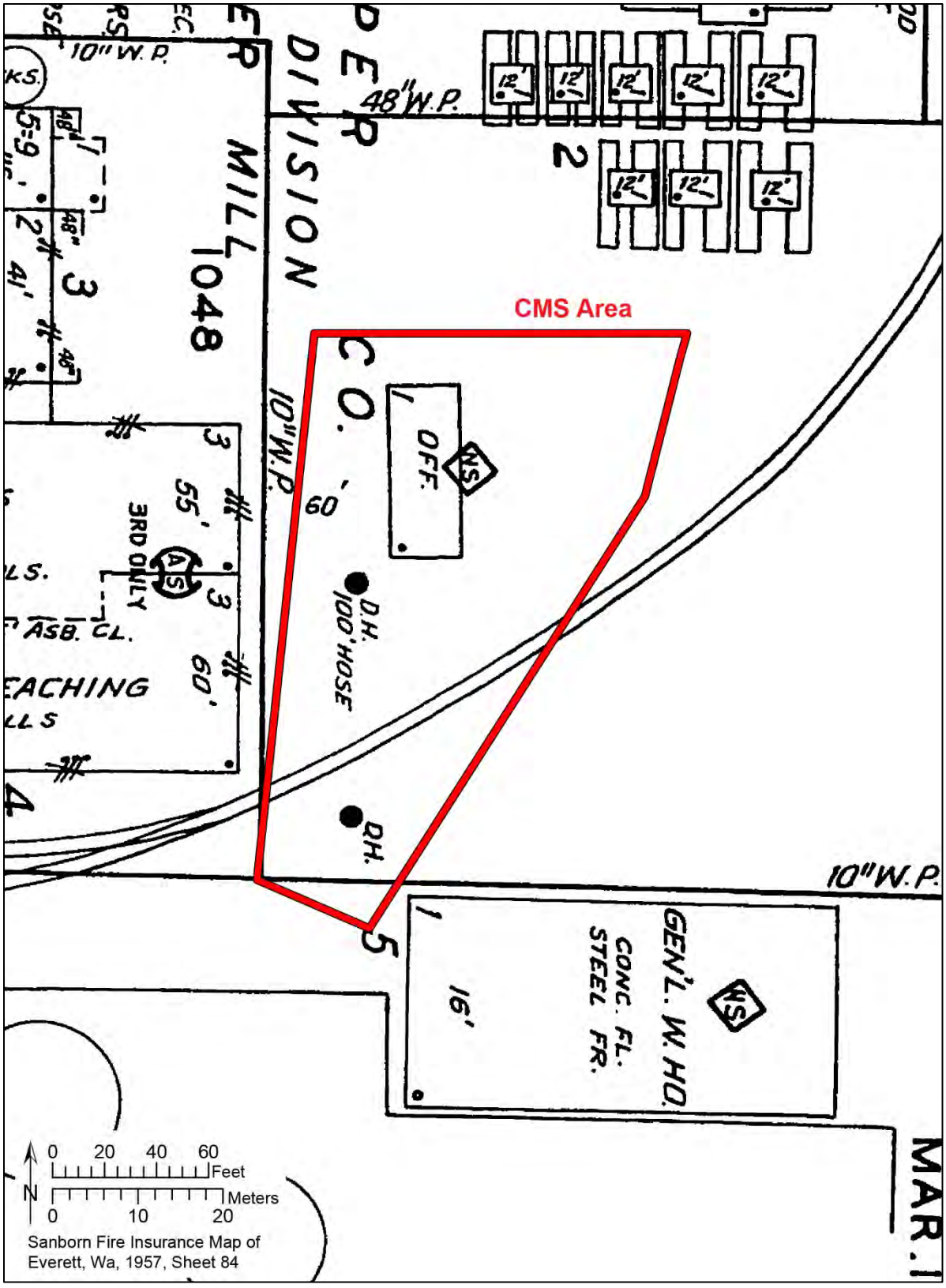


Figure 10. Sanborn Fire Insurance Map, 1957, showing the CMS Area.

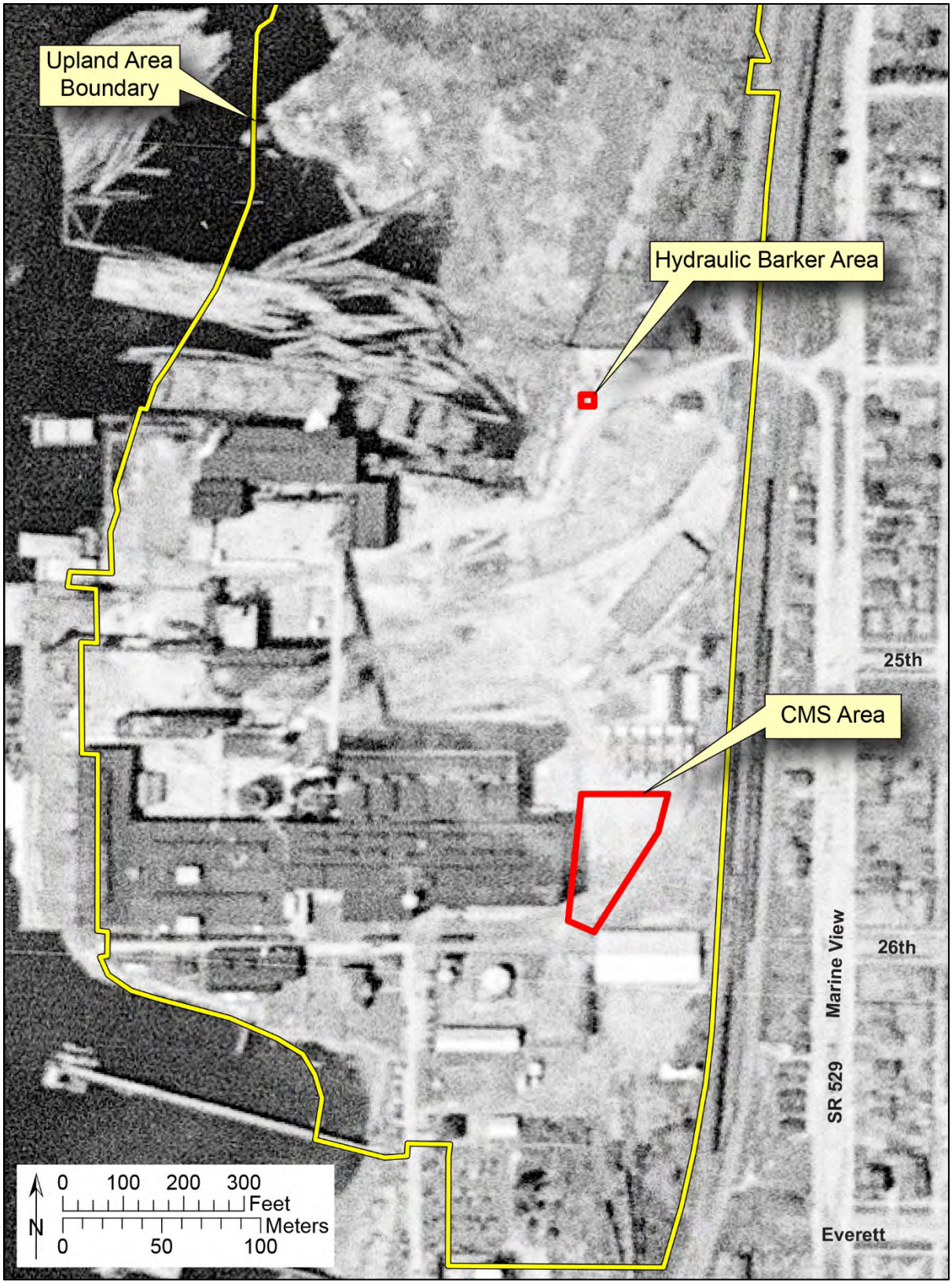


Figure 11. Historical air photo, 1941, showing monitored areas.

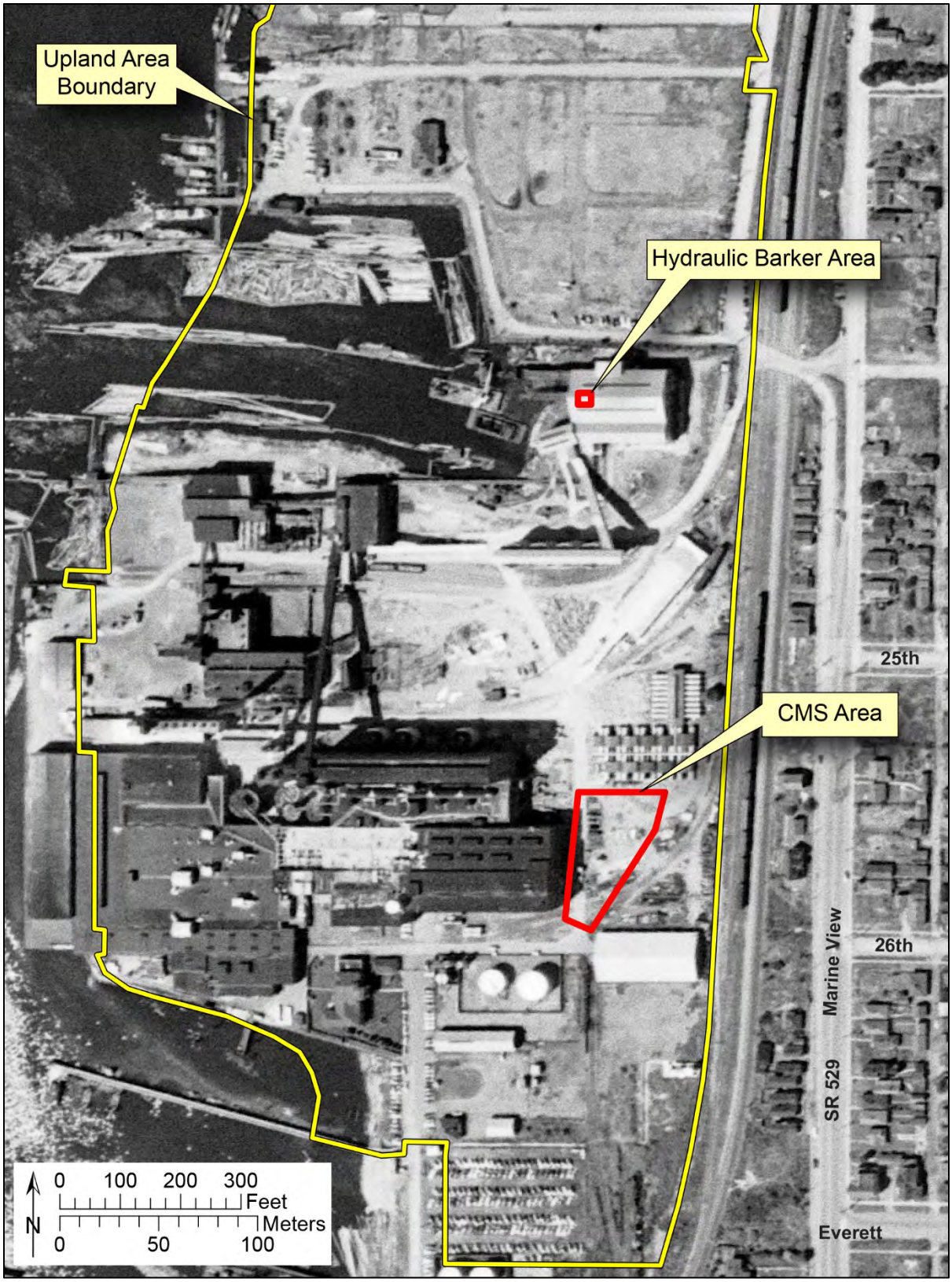


Figure 12. Historical air photo, 1952, showing monitored areas.

ATTACHMENT A
Determination of Non-Significance

FINAL MITIGATED
DETERMINATION OF NON-SIGNIFICANCE
SEPA12-010
May 25, 2012

Description of Proposal: Demolition of Kimberly Clark Pulp and Paper Mill facilities upland from the shoreline, not including any structures or utilities located more than 2 feet below existing grade.

Applicant: Kimberly Clark Worldwide
Rick Tucker, Mill Manager
2600 Federal Avenue
Everett, WA 98201

Location: 2600 Federal Ave

Zoning: M-2 -- Heavy Industry

Lead Agency: City of Everett Planning Department

Contact Person: John Jimerson Phone: (425) 257-8731

AGENCIES WITH JURISDICTION

The following agencies have been identified as possibly having jurisdiction over the proposal. It is the responsibility of the applicant to identify and obtain all necessary permits and approvals.

1. Department of Ecology (Construction Stormwater General Permit, NPDES Water Discharge Permit Modification/ Demolition Notification).

2. Department of Labor and Industries (Asbestos Abatement/Demolition Notification).

THRESHOLD DETERMINATION

The lead agency for this proposal has determined that it does not have a probable significant adverse impact on the environment. An Environmental Impact Statement is not required under RCW 43.21C.030(2)(c). This determination assumes compliance with State law and City ordinances related to general environmental protection including but not limited to right-of-way improvement requirements, drainage, etc. This decision was made after review of a completed environmental checklist and other information on file with the lead agency. This information is available to the public on request. This Mitigated Determination of Non-Significance is specifically conditioned on compliance with the conditions attached hereto which are incorporated by reference as if fully set forth herein.

This Final DNS is issued under WAC 197-11-355. A 14-day public comment period for this proposal has been completed.

MITIGATION MEASURES

1. No demolition in the immediate vicinity of the Puget Sound Pulp and Timber Main Office Building, or of the building itself, may be commenced before: 1) Kimberly Clark has submitted an evaluation of the historical significance of that building, prepared by a qualified historian or other professional qualified to

perform such evaluation; 2) the City, in consultation with the Washington State Department of Archeology and Historic Preservation, has deemed the evaluation complete and adequate; and 3) Kimberly Clark has made a binding commitment approved by the City in consultation with the Washington State Department of Archeology and Historic Preservation to document and record historically significant aspects or features of the building and contribute same to an agency or entity as directed by the City.

This Final DNS is issued under WAC 197-11-355. A 14-day public comment period for this proposal has been completed.

Responsible Official: Allan Giffen, Director Phone: (425) 257-8731

Address: 2930 Wetmore Avenue, Suite 8-A, Everett, WA 98201

Date: May 25, 2012

Signature: _____

You may appeal this determination by filing an appeal on forms provided by the Planning Department and a *fee to the* Planning/Community Development Permit Services Counter at 3200 Cedar Street, 2nd Floor, no later than June 8, 2012.

Contact John Jimerson to read or ask about the procedures for SEPA appeals.

NOTE: A DNS may be withdrawn in the event of significant changes in the proposal, disclosure of new significant information, misrepresentation by the applicant, or failure to comply with the conditions upon which this Determination of Non-Significance is predicated.

APPENDIX E

Statistical Calculation Results for Area-Specific Compliance Evaluations

Nonparametric UCL Statistics for Data Sets with Non-Detects

User Selected Options	BBH Area
Date/Time of Computation	ProUCL 5.112/18/2020 9:28:14 AM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Copper

General Statistics

Total Number of Observations	84	Number of Distinct Observations	66
Number of Detects	81	Number of Non-Detects	3
Number of Distinct Detects	65	Number of Distinct Non-Detects	2
Minimum Detect	6.81	Minimum Non-Detect	5
Maximum Detect	58.3	Maximum Non-Detect	25
Variance Detects	112.6	Percent Non-Detects	3.571%
Mean Detects	17.52	SD Detects	10.61
Median Detects	13.7	CV Detects	0.605
Skewness Detects	2.122	Kurtosis Detects	4.388
Mean of Logged Detects	2.736	SD of Logged Detects	0.474

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	17.18	Standard Error of Mean	1.159
SD	10.55	95% KM (BCA) UCL	19.17
95% KM (t) UCL	19.11	95% KM (Percentile Bootstrap) UCL	19.15
95% KM (z) UCL	19.09	95% KM Bootstrap t UCL	19.5
90% KM Chebyshev UCL	20.66	95% KM Chebyshev UCL	22.23
97.5% KM Chebyshev UCL	24.42	99% KM Chebyshev UCL	28.71

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM SD (logged)	0.495	95% Critical H Value (KM-Log)	1.841
KM Mean (logged)	2.707	KM Geo Mean	14.99
KM Standard Error of Mean (logged)	0.0545	95% H-UCL (KM -Log)	18.73

Suggested UCL to Use

95% KM (t) UCL	19.11	KM H-UCL	18.73
95% KM (BCA) UCL	19.17		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Data Sets with Non-Detects

User Selected Options	BBH Area
Date/Time of Computation	ProUCL 5.112/18/2020 9:30:52 AM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Zinc

General Statistics

Total Number of Observations	75	Number of Distinct Observations	72
		Number of Missing Observations	0
Minimum	12.2	Mean	35.26
Maximum	220	Median	29.9
SD	25.59	Std. Error of Mean	2.955
Coefficient of Variation	0.726	Skewness	5.314
Mean of logged Data	3.437	SD of logged Data	0.454

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	40.18	95% Adjusted-CLT UCL (Chen-1995)	42.05
		95% Modified-t UCL (Johnson-1978)	40.48

Nonparametric Distribution Free UCLs

95% CLT UCL	40.12	95% Jackknife UCL	40.18
95% Standard Bootstrap UCL	40.16	95% Bootstrap-t UCL	43.78
95% Hall's Bootstrap UCL	62.52	95% Percentile Bootstrap UCL	40.8
95% BCA Bootstrap UCL	42.72		
90% Chebyshev(Mean, Sd) UCL	44.12	95% Chebyshev(Mean, Sd) UCL	48.14
97.5% Chebyshev(Mean, Sd) UCL	53.71	99% Chebyshev(Mean, Sd) UCL	64.66

Suggested UCL to Use

95% Student's-t UCL	40.18	or 95% Modified-t UCL	40.48

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Data Sets with Non-Detects

User Selected Options	BBH Area
Date/Time of Computation	ProUCL 5.112/18/2020 9:35:48 AM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Mercury

General Statistics

Total Number of Observations	113	Number of Distinct Observations	17
Number of Detects	20	Number of Non-Detects	93
Number of Distinct Detects	16	Number of Distinct Non-Detects	1
Minimum Detect	0.11	Minimum Non-Detect	0.1
Maximum Detect	0.78	Maximum Non-Detect	0.1
Variance Detects	0.0544	Percent Non-Detects	82.3%
Mean Detects	0.313	SD Detects	0.233
Median Detects	0.195	CV Detects	0.745
Skewness Detects	1.17	Kurtosis Detects	-0.132
Mean of Logged Detects	-1.391	SD of Logged Detects	0.669

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.138	Standard Error of Mean	0.0121
SD	0.126	95% KM (BCA) UCL	0.158
95% KM (t) UCL	0.158	95% KM (Percentile Bootstrap) UCL	0.157
95% KM (z) UCL	0.158	95% KM Bootstrap t UCL	0.168
90% KM Chebyshev UCL	0.174	95% KM Chebyshev UCL	0.191
97.5% KM Chebyshev UCL	0.213	99% KM Chebyshev UCL	0.258

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM SD (logged)	0.443	95% Critical H Value (KM-Log)	1.803
KM Mean (logged)	-2.141	KM Geo Mean	0.118
KM Standard Error of Mean (logged)	0.0428	95% H-UCL (KM -Log)	0.14

Suggested UCL to Use

95% KM (Chebyshev) UCL	0.191

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Lognormal UCL Statistics for Data Sets with Non-Detects

User Selected Options	Central Maintenance Shop Area
Date/Time of Computation	ProUCL 5.112/9/2020 11:49:16 AM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Total PCBs

General Statistics

Total Number of Observations	68	Number of Distinct Observations	10
Number of Detects	9	Number of Non-Detects	59
Number of Distinct Detects	9	Number of Distinct Non-Detects	1
Minimum Detect	0.024	Minimum Non-Detect	0.02
Maximum Detect	0.3	Maximum Non-Detect	0.02
Variance Detects	0.0093	Percent Non-Detects	86.76%
Mean Detects	0.0883	SD Detects	0.0964
Median Detects	0.054	CV Detects	1.092
Skewness Detects	1.773	Kurtosis Detects	2.305
Mean of Logged Detects	-2.844	SD of Logged Detects	0.909

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.862	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.829	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.212	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.274	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0136	Mean in Log Scale	-6.933
SD in Original Scale	0.0446	SD in Log Scale	2.504
Geometric d_mean	9.7539E-4	95% Percentile Bootstrap UCL	0.0232
95% t UCL (assumes normality of ROS data)	0.0226	95% BCA Bootstrap UCL	0.0283
95% Bootstrap t UCL	0.0404	95% H-UCL (Log ROS)	0.0569

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-3.771	KM Geo Mean	0.023
KM SD (logged)	0.478	95% Critical H Value (KM-Log)	1.854
KM Standard Error of Mean (logged)	0.0614	95% H-UCL (KM -Log)	0.0288

	A	B	C	D	E	F	G	H	I	J	K	L
1	**UCL Statistics for Data Sets with Non-Detects**											
2												
3	User Selected Options	Hydraulic Barker Area Record Samples										
4	Date/Time of Computation	ProUCL 5.112/8/2020 3:04:22 PM										
5	From File	WorkSheet.xls										
6	Full Precision	OFF										
7	Confidence Coefficient	95%										
8	Number of Bootstrap Operations	2000										
9												
10												
11	**Copper**											
12												
13	**General Statistics**											
14	Total Number of Observations					18	Number of Distinct Observations					18
15							Number of Missing Observations					0
16	Minimum					9.64	Mean					33.61
17	Maximum					64.4	Median					29.6
18	SD					18.32	Std. Error of Mean					4.317
19	Coefficient of Variation					0.545	Skewness					0.281
20												
21	**Normal GOF Test**											
22	Shapiro Wilk Test Statistic					0.933	**Shapiro Wilk GOF Test**					
23	5% Shapiro Wilk Critical Value					0.897	Data appear Normal at 5% Significance Level					
24	Lilliefors Test Statistic					0.136	**Lilliefors GOF Test**					
25	5% Lilliefors Critical Value					0.202	Data appear Normal at 5% Significance Level					
26	Data appear Normal at 5% Significance Level											
27												
28	**Assuming Normal Distribution**											
29	**95% Normal UCL**						**95% UCLs (Adjusted for Skewness)**					
30	95% Student's-t UCL					41.12	95% Adjusted-CLT UCL (Chen-1995)					41.02
31							95% Modified-t UCL (Johnson-1978)					41.17
32												
33	**Gamma GOF Test**											
34	A-D Test Statistic					0.432	**Anderson-Darling Gamma GOF Test**					
35	5% A-D Critical Value					0.746	Detected data appear Gamma Distributed at 5% Significance Level					
36	K-S Test Statistic					0.147	**Kolmogorov-Smirnov Gamma GOF Test**					
37	5% K-S Critical Value					0.205	Detected data appear Gamma Distributed at 5% Significance Level					
38	Detected data appear Gamma Distributed at 5% Significance Level											
39												
40	**Gamma Statistics**											
41	k hat (MLE)					3.038	k star (bias corrected MLE)					2.569
42	Theta hat (MLE)					11.06	Theta star (bias corrected MLE)					13.09
43	nu hat (MLE)					109.4	nu star (bias corrected)					92.47
44	MLE Mean (bias corrected)					33.61	MLE Sd (bias corrected)					20.97
45							Approximate Chi Square Value (0.05)					71.3
46	Adjusted Level of Significance					0.0357	Adjusted Chi Square Value					69.51
47												
48	**Assuming Gamma Distribution**											
49	95% Approximate Gamma UCL (use when n>=50))					43.6	95% Adjusted Gamma UCL (use when n<50)					44.71
50												
51	**Lognormal GOF Test**											
52	Shapiro Wilk Test Statistic					0.904	**Shapiro Wilk Lognormal GOF Test**					

53				5% Shapiro Wilk Critical Value		0.897	Data appear Lognormal at 5% Significance Level					
54				Lilliefors Test Statistic		0.15	**Lilliefors Lognormal GOF Test**					
55				5% Lilliefors Critical Value		0.202	Data appear Lognormal at 5% Significance Level					
56	Data appear Lognormal at 5% Significance Level											
57												
58	**Lognormal Statistics**											
59				Minimum of Logged Data		2.266	Mean of logged Data					3.341
60				Maximum of Logged Data		4.165	SD of logged Data					0.647
61												
62	**Assuming Lognormal Distribution**											
63				95% H-UCL		49.05	90% Chebyshev (MVUE) UCL					50.98
64				95% Chebyshev (MVUE) UCL		58.49	97.5% Chebyshev (MVUE) UCL					68.93
65				99% Chebyshev (MVUE) UCL		89.43						
66												
67	**Nonparametric Distribution Free UCL Statistics**											
68	Data appear to follow a Discernible Distribution at 5% Significance Level											
69												
70	**Nonparametric Distribution Free UCLs**											
71				95% CLT UCL		40.71	95% Jackknife UCL					41.12
72				95% Standard Bootstrap UCL		40.49	95% Bootstrap-t UCL					41.85
73				95% Hall's Bootstrap UCL		41.43	95% Percentile Bootstrap UCL					40.76
74				95% BCA Bootstrap UCL		40.76						
75				90% Chebyshev(Mean, Sd) UCL		46.56	95% Chebyshev(Mean, Sd) UCL					52.43
76				97.5% Chebyshev(Mean, Sd) UCL		60.57	99% Chebyshev(Mean, Sd) UCL					76.57
77												
78	**Suggested UCL to Use**											
79				95% Student's-t UCL		41.12						
80												
81	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
82	Recommendations are based upon data size, data distribution, and skewness.											
83	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
84	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
85												
86	**Mercury**											
87												
88	**General Statistics**											
89				Total Number of Observations		18	Number of Distinct Observations					8
90				Number of Detects		8	Number of Non-Detects					10
91				Number of Distinct Detects		7	Number of Distinct Non-Detects					1
92				Minimum Detect		0.076	Minimum Non-Detect					0.07
93				Maximum Detect		0.34	Maximum Non-Detect					0.07
94				Variance Detects		0.0079	Percent Non-Detects					55.56%
95				Mean Detects		0.165	SD Detects					0.0889
96				Median Detects		0.17	CV Detects					0.538
97				Skewness Detects		0.977	Kurtosis Detects					1.094
98				Mean of Logged Detects		-1.926	SD of Logged Detects					0.541
99												
100	**Normal GOF Test on Detects Only**											
101				Shapiro Wilk Test Statistic		0.874	**Shapiro Wilk GOF Test**					
102				5% Shapiro Wilk Critical Value		0.818	Detected Data appear Normal at 5% Significance Level					
103				Lilliefors Test Statistic		0.223	**Lilliefors GOF Test**					
104				5% Lilliefors Critical Value		0.283	Detected Data appear Normal at 5% Significance Level					

105	Detected Data appear Normal at 5% Significance Level											
106												
107	Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs											
108					KM Mean	0.112				KM Standard Error of Mean	0.0184	
109					KM SD	0.0729				95% KM (BCA) UCL	0.144	
110					95% KM (t) UCL	0.144				95% KM (Percentile Bootstrap) UCL	0.142	
111					95% KM (z) UCL	0.143				95% KM Bootstrap t UCL	0.158	
112					90% KM Chebyshev UCL	0.167				95% KM Chebyshev UCL	0.192	
113					97.5% KM Chebyshev UCL	0.227				99% KM Chebyshev UCL	0.295	
114												
115	Gamma GOF Tests on Detected Observations Only											
116					A-D Test Statistic	0.448	Anderson-Darling GOF Test					
117					5% A-D Critical Value	0.719	Detected data appear Gamma Distributed at 5% Significance Level					
118					K-S Test Statistic	0.222	Kolmogorov-Smirnov GOF					
119					5% K-S Critical Value	0.295	Detected data appear Gamma Distributed at 5% Significance Level					
120	Detected data appear Gamma Distributed at 5% Significance Level											
121												
122	Gamma Statistics on Detected Data Only											
123					k hat (MLE)	4.122				k star (bias corrected MLE)	2.66	
124					Theta hat (MLE)	0.0401				Theta star (bias corrected MLE)	0.0621	
125					nu hat (MLE)	65.96				nu star (bias corrected)	42.56	
126					Mean (detects)	0.165						
127												
128	Gamma ROS Statistics using Imputed Non-Detects											
129	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
130	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)											
131	For such situations, GROS method may yield incorrect values of UCLs and BTVs											
132	This is especially true when the sample size is small.											
133	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
134					Minimum	0.01				Mean	0.0805	
135					Maximum	0.34				Median	0.0231	
136					SD	0.0968				CV	1.203	
137					k hat (MLE)	0.741				k star (bias corrected MLE)	0.654	
138					Theta hat (MLE)	0.109				Theta star (bias corrected MLE)	0.123	
139					nu hat (MLE)	26.67				nu star (bias corrected)	23.56	
140					Adjusted Level of Significance (β)	0.0357						
141					Approximate Chi Square Value (23.56, α)	13.51				Adjusted Chi Square Value (23.56, β)	12.78	
142					95% Gamma Approximate UCL (use when n>=50)	0.14				95% Gamma Adjusted UCL (use when n<50)	0.148	
143												
144	Estimates of Gamma Parameters using KM Estimates											
145					Mean (KM)	0.112				SD (KM)	0.0729	
146					Variance (KM)	0.00531				SE of Mean (KM)	0.0184	
147					k hat (KM)	2.375				k star (KM)	2.016	
148					nu hat (KM)	85.5				nu star (KM)	72.59	
149					theta hat (KM)	0.0473				theta star (KM)	0.0557	
150					80% gamma percentile (KM)	0.168				90% gamma percentile (KM)	0.218	
151					95% gamma percentile (KM)	0.266				99% gamma percentile (KM)	0.372	
152												
153	Gamma Kaplan-Meier (KM) Statistics											
154					Approximate Chi Square Value (72.59, α)	53.97				Adjusted Chi Square Value (72.59, β)	52.43	
155					95% Gamma Approximate KM-UCL (use when n>=50)	0.151				95% Gamma Adjusted KM-UCL (use when n<50)	0.156	
156												

157	**Lognormal GOF Test on Detected Observations Only**											
158				Shapiro Wilk Test Statistic		0.898	**Shapiro Wilk GOF Test**					
159				5% Shapiro Wilk Critical Value		0.818	Detected Data appear Lognormal at 5% Significance Level					
160				Lilliefors Test Statistic		0.21	**Lilliefors GOF Test**					
161				5% Lilliefors Critical Value		0.283	Detected Data appear Lognormal at 5% Significance Level					
162	Detected Data appear Lognormal at 5% Significance Level											
163												
164	**Lognormal ROS Statistics Using Imputed Non-Detects**											
165				Mean in Original Scale		0.0912	Mean in Log Scale					-2.845
166				SD in Original Scale		0.0896	SD in Log Scale					1.007
167				95% t UCL (assumes normality of ROS data)		0.128	95% Percentile Bootstrap UCL					0.126
168				95% BCA Bootstrap UCL		0.131	95% Bootstrap t UCL					0.141
169				95% H-UCL (Log ROS)		0.184						
170												
171	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
172				KM Mean (logged)		-2.334	KM Geo Mean					0.0969
173				KM SD (logged)		0.497	95% Critical H Value (KM-Log)					2.018
174				KM Standard Error of Mean (logged)		0.125	95% H-UCL (KM -Log)					0.14
175				KM SD (logged)		0.497	95% Critical H Value (KM-Log)					2.018
176				KM Standard Error of Mean (logged)		0.125						
177												
178	**DL/2 Statistics**											
179	**DL/2 Normal**						**DL/2 Log-Transformed**					
180				Mean in Original Scale		0.0929	Mean in Log Scale					-2.719
181				SD in Original Scale		0.0877	SD in Log Scale					0.808
182				95% t UCL (Assumes normality)		0.129	95% H-Stat UCL					0.145
183	DL/2 is not a recommended method, provided for comparisons and historical reasons											
184												
185	**Nonparametric Distribution Free UCL Statistics**											
186	Detected Data appear Normal Distributed at 5% Significance Level											
187												
188	**Suggested UCL to Use**											
189				95% KM (t) UCL		0.144						
190												
191	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
192	Recommendations are based upon data size, data distribution, and skewness.											
193	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
194	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
195												
196												
197	**Zinc**											
198												
199	**General Statistics**											
200				Total Number of Observations		18	Number of Distinct Observations					18
201							Number of Missing Observations					0
202				Minimum		17.4	Mean					61.2
203				Maximum		145	Median					61.45
204				SD		35.59	Std. Error of Mean					8.389
205				Coefficient of Variation		0.582	Skewness					0.919
206												
207	**Normal GOF Test**											
208				Shapiro Wilk Test Statistic		0.901	**Shapiro Wilk GOF Test**					

209				5% Shapiro Wilk Critical Value		0.897	Data appear Normal at 5% Significance Level					
210				Lilliefors Test Statistic		0.173	**Lilliefors GOF Test**					
211				5% Lilliefors Critical Value		0.202	Data appear Normal at 5% Significance Level					
212	Data appear Normal at 5% Significance Level											
213												
214	**Assuming Normal Distribution**											
215	**95% Normal UCL**						**95% UCLs (Adjusted for Skewness)**					
216				95% Student's-t UCL		75.79	95% Adjusted-CLT UCL (Chen-1995)					76.94
217							95% Modified-t UCL (Johnson-1978)					76.1
218												
219	**Gamma GOF Test**											
220				A-D Test Statistic		0.575	**Anderson-Darling Gamma GOF Test**					
221				5% A-D Critical Value		0.746	Detected data appear Gamma Distributed at 5% Significance Level					
222				K-S Test Statistic		0.149	**Kolmogorov-Smirnov Gamma GOF Test**					
223				5% K-S Critical Value		0.205	Detected data appear Gamma Distributed at 5% Significance Level					
224	Detected data appear Gamma Distributed at 5% Significance Level											
225												
226	**Gamma Statistics**											
227				k hat (MLE)		2.954	k star (bias corrected MLE)					2.498
228				Theta hat (MLE)		20.72	Theta star (bias corrected MLE)					24.5
229				nu hat (MLE)		106.3	nu star (bias corrected)					89.94
230				MLE Mean (bias corrected)		61.2	MLE Sd (bias corrected)					38.72
231							Approximate Chi Square Value (0.05)					69.07
232				Adjusted Level of Significance		0.0357	Adjusted Chi Square Value					67.32
233												
234	**Assuming Gamma Distribution**											
235				95% Approximate Gamma UCL (use when n>=50))		79.69	95% Adjusted Gamma UCL (use when n<50)					81.76
236												
237	**Lognormal GOF Test**											
238				Shapiro Wilk Test Statistic		0.899	**Shapiro Wilk Lognormal GOF Test**					
239				5% Shapiro Wilk Critical Value		0.897	Data appear Lognormal at 5% Significance Level					
240				Lilliefors Test Statistic		0.186	**Lilliefors Lognormal GOF Test**					
241				5% Lilliefors Critical Value		0.202	Data appear Lognormal at 5% Significance Level					
242	Data appear Lognormal at 5% Significance Level											
243												
244	**Lognormal Statistics**											
245				Minimum of Logged Data		2.856	Mean of logged Data					3.935
246				Maximum of Logged Data		4.977	SD of logged Data					0.652
247												
248	**Assuming Lognormal Distribution**											
249				95% H-UCL		89.35	90% Chebyshev (MVUE) UCL					92.77
250				95% Chebyshev (MVUE) UCL		106.5	97.5% Chebyshev (MVUE) UCL					125.6
251				99% Chebyshev (MVUE) UCL		163.1						
252												
253	**Nonparametric Distribution Free UCL Statistics**											
254	Data appear to follow a Discernible Distribution at 5% Significance Level											
255												
256	**Nonparametric Distribution Free UCLs**											
257				95% CLT UCL		75	95% Jackknife UCL					75.79
258				95% Standard Bootstrap UCL		74.52	95% Bootstrap-t UCL					78.47
259				95% Hall's Bootstrap UCL		84.87	95% Percentile Bootstrap UCL					74.79
260				95% BCA Bootstrap UCL		74.84						

	A	B	C	D	E	F	G	H	I	J	K	L
261				90% Chebyshev(Mean, Sd) UCL		86.37				95% Chebyshev(Mean, Sd) UCL		97.76
262				97.5% Chebyshev(Mean, Sd) UCL		113.6				99% Chebyshev(Mean, Sd) UCL		144.7
263												
264						**Suggested UCL to Use**						
265					95% Student's-t UCL	75.79						
266												
267												
268												
269												
270												
271												

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Data Sets with Non-Detects

User Selected Options	BBH Area
Date/Time of Computation	ProUCL 5.112/18/2020 9:30:52 AM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Zinc

General Statistics

Total Number of Observations	75	Number of Distinct Observations	72
		Number of Missing Observations	0
Minimum	12.2	Mean	35.26
Maximum	220	Median	29.9
SD	25.59	Std. Error of Mean	2.955
Coefficient of Variation	0.726	Skewness	5.314
Mean of logged Data	3.437	SD of logged Data	0.454

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	40.18	95% Adjusted-CLT UCL (Chen-1995)	42.05
		95% Modified-t UCL (Johnson-1978)	40.48

Nonparametric Distribution Free UCLs

95% CLT UCL	40.12	95% Jackknife UCL	40.18
95% Standard Bootstrap UCL	40.16	95% Bootstrap-t UCL	43.78
95% Hall's Bootstrap UCL	62.52	95% Percentile Bootstrap UCL	40.8
95% BCA Bootstrap UCL	42.72		
90% Chebyshev(Mean, Sd) UCL	44.12	95% Chebyshev(Mean, Sd) UCL	48.14
97.5% Chebyshev(Mean, Sd) UCL	53.71	99% Chebyshev(Mean, Sd) UCL	64.66

Suggested UCL to Use

95% Student's-t UCL	40.18	or 95% Modified-t UCL	40.48

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nonparametric UCL Statistics for Data Sets with Non-Detects

User Selected Options	BBH Area
Date/Time of Computation	ProUCL 5.112/18/2020 9:35:48 AM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Mercury

General Statistics

Total Number of Observations	113	Number of Distinct Observations	17
Number of Detects	20	Number of Non-Detects	93
Number of Distinct Detects	16	Number of Distinct Non-Detects	1
Minimum Detect	0.11	Minimum Non-Detect	0.1
Maximum Detect	0.78	Maximum Non-Detect	0.1
Variance Detects	0.0544	Percent Non-Detects	82.3%
Mean Detects	0.313	SD Detects	0.233
Median Detects	0.195	CV Detects	0.745
Skewness Detects	1.17	Kurtosis Detects	-0.132
Mean of Logged Detects	-1.391	SD of Logged Detects	0.669

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.138	Standard Error of Mean	0.0121
SD	0.126	95% KM (BCA) UCL	0.158
95% KM (t) UCL	0.158	95% KM (Percentile Bootstrap) UCL	0.157
95% KM (z) UCL	0.158	95% KM Bootstrap t UCL	0.168
90% KM Chebyshev UCL	0.174	95% KM Chebyshev UCL	0.191
97.5% KM Chebyshev UCL	0.213	99% KM Chebyshev UCL	0.258

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM SD (logged)	0.443	95% Critical H Value (KM-Log)	1.803
KM Mean (logged)	-2.141	KM Geo Mean	0.118
KM Standard Error of Mean (logged)	0.0428	95% H-UCL (KM -Log)	0.14

Suggested UCL to Use

95% KM (Chebyshev) UCL	0.191

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Lognormal UCL Statistics for Data Sets with Non-Detects

User Selected Options	Central Maintenance Shop Area
Date/Time of Computation	ProUCL 5.112/9/2020 11:49:16 AM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Total PCBs

General Statistics

Total Number of Observations	68	Number of Distinct Observations	10
Number of Detects	9	Number of Non-Detects	59
Number of Distinct Detects	9	Number of Distinct Non-Detects	1
Minimum Detect	0.024	Minimum Non-Detect	0.02
Maximum Detect	0.3	Maximum Non-Detect	0.02
Variance Detects	0.0093	Percent Non-Detects	86.76%
Mean Detects	0.0883	SD Detects	0.0964
Median Detects	0.054	CV Detects	1.092
Skewness Detects	1.773	Kurtosis Detects	2.305
Mean of Logged Detects	-2.844	SD of Logged Detects	0.909

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.862	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.829	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.212	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.274	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0136	Mean in Log Scale	-6.933
SD in Original Scale	0.0446	SD in Log Scale	2.504
Geometric d_mean	9.7539E-4	95% Percentile Bootstrap UCL	0.0232
95% t UCL (assumes normality of ROS data)	0.0226	95% BCA Bootstrap UCL	0.0283
95% Bootstrap t UCL	0.0404	95% H-UCL (Log ROS)	0.0569

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-3.771	KM Geo Mean	0.023
KM SD (logged)	0.478	95% Critical H Value (KM-Log)	1.854
KM Standard Error of Mean (logged)	0.0614	95% H-UCL (KM -Log)	0.0288

	A	B	C	D	E	F	G	H	I	J	K	L
1	**UCL Statistics for Data Sets with Non-Detects**											
2												
3	User Selected Options	Hydraulic Barker Area Record Samples										
4	Date/Time of Computation	ProUCL 5.112/8/2020 3:04:22 PM										
5	From File	WorkSheet.xls										
6	Full Precision	OFF										
7	Confidence Coefficient	95%										
8	Number of Bootstrap Operations	2000										
9												
10												
11	**Copper**											
12												
13	**General Statistics**											
14	Total Number of Observations					18	Number of Distinct Observations					18
15							Number of Missing Observations					0
16	Minimum					9.64	Mean					33.61
17	Maximum					64.4	Median					29.6
18	SD					18.32	Std. Error of Mean					4.317
19	Coefficient of Variation					0.545	Skewness					0.281
20												
21	**Normal GOF Test**											
22	Shapiro Wilk Test Statistic					0.933	**Shapiro Wilk GOF Test**					
23	5% Shapiro Wilk Critical Value					0.897	Data appear Normal at 5% Significance Level					
24	Lilliefors Test Statistic					0.136	**Lilliefors GOF Test**					
25	5% Lilliefors Critical Value					0.202	Data appear Normal at 5% Significance Level					
26	Data appear Normal at 5% Significance Level											
27												
28	**Assuming Normal Distribution**											
29	**95% Normal UCL**						**95% UCLs (Adjusted for Skewness)**					
30	95% Student's-t UCL					41.12	95% Adjusted-CLT UCL (Chen-1995)					41.02
31							95% Modified-t UCL (Johnson-1978)					41.17
32												
33	**Gamma GOF Test**											
34	A-D Test Statistic					0.432	**Anderson-Darling Gamma GOF Test**					
35	5% A-D Critical Value					0.746	Detected data appear Gamma Distributed at 5% Significance Level					
36	K-S Test Statistic					0.147	**Kolmogorov-Smirnov Gamma GOF Test**					
37	5% K-S Critical Value					0.205	Detected data appear Gamma Distributed at 5% Significance Level					
38	Detected data appear Gamma Distributed at 5% Significance Level											
39												
40	**Gamma Statistics**											
41	k hat (MLE)					3.038	k star (bias corrected MLE)					2.569
42	Theta hat (MLE)					11.06	Theta star (bias corrected MLE)					13.09
43	nu hat (MLE)					109.4	nu star (bias corrected)					92.47
44	MLE Mean (bias corrected)					33.61	MLE Sd (bias corrected)					20.97
45							Approximate Chi Square Value (0.05)					71.3
46	Adjusted Level of Significance					0.0357	Adjusted Chi Square Value					69.51
47												
48	**Assuming Gamma Distribution**											
49	95% Approximate Gamma UCL (use when n>=50))					43.6	95% Adjusted Gamma UCL (use when n<50)					44.71
50												
51	**Lognormal GOF Test**											
52	Shapiro Wilk Test Statistic					0.904	**Shapiro Wilk Lognormal GOF Test**					

53				5% Shapiro Wilk Critical Value		0.897	Data appear Lognormal at 5% Significance Level					
54				Lilliefors Test Statistic		0.15	**Lilliefors Lognormal GOF Test**					
55				5% Lilliefors Critical Value		0.202	Data appear Lognormal at 5% Significance Level					
56	Data appear Lognormal at 5% Significance Level											
57												
58	**Lognormal Statistics**											
59				Minimum of Logged Data		2.266	Mean of logged Data					3.341
60				Maximum of Logged Data		4.165	SD of logged Data					0.647
61												
62	**Assuming Lognormal Distribution**											
63				95% H-UCL		49.05	90% Chebyshev (MVUE) UCL					50.98
64				95% Chebyshev (MVUE) UCL		58.49	97.5% Chebyshev (MVUE) UCL					68.93
65				99% Chebyshev (MVUE) UCL		89.43						
66												
67	**Nonparametric Distribution Free UCL Statistics**											
68	Data appear to follow a Discernible Distribution at 5% Significance Level											
69												
70	**Nonparametric Distribution Free UCLs**											
71				95% CLT UCL		40.71	95% Jackknife UCL					41.12
72				95% Standard Bootstrap UCL		40.49	95% Bootstrap-t UCL					41.85
73				95% Hall's Bootstrap UCL		41.43	95% Percentile Bootstrap UCL					40.76
74				95% BCA Bootstrap UCL		40.76						
75				90% Chebyshev(Mean, Sd) UCL		46.56	95% Chebyshev(Mean, Sd) UCL					52.43
76				97.5% Chebyshev(Mean, Sd) UCL		60.57	99% Chebyshev(Mean, Sd) UCL					76.57
77												
78	**Suggested UCL to Use**											
79				95% Student's-t UCL		41.12						
80												
81	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
82	Recommendations are based upon data size, data distribution, and skewness.											
83	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
84	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
85												
86	**Mercury**											
87												
88	**General Statistics**											
89				Total Number of Observations		18	Number of Distinct Observations					8
90				Number of Detects		8	Number of Non-Detects					10
91				Number of Distinct Detects		7	Number of Distinct Non-Detects					1
92				Minimum Detect		0.076	Minimum Non-Detect					0.07
93				Maximum Detect		0.34	Maximum Non-Detect					0.07
94				Variance Detects		0.0079	Percent Non-Detects					55.56%
95				Mean Detects		0.165	SD Detects					0.0889
96				Median Detects		0.17	CV Detects					0.538
97				Skewness Detects		0.977	Kurtosis Detects					1.094
98				Mean of Logged Detects		-1.926	SD of Logged Detects					0.541
99												
100	**Normal GOF Test on Detects Only**											
101				Shapiro Wilk Test Statistic		0.874	**Shapiro Wilk GOF Test**					
102				5% Shapiro Wilk Critical Value		0.818	Detected Data appear Normal at 5% Significance Level					
103				Lilliefors Test Statistic		0.223	**Lilliefors GOF Test**					
104				5% Lilliefors Critical Value		0.283	Detected Data appear Normal at 5% Significance Level					

105	Detected Data appear Normal at 5% Significance Level											
106												
107	Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs											
108					KM Mean	0.112				KM Standard Error of Mean	0.0184	
109					KM SD	0.0729				95% KM (BCA) UCL	0.144	
110					95% KM (t) UCL	0.144				95% KM (Percentile Bootstrap) UCL	0.142	
111					95% KM (z) UCL	0.143				95% KM Bootstrap t UCL	0.158	
112					90% KM Chebyshev UCL	0.167				95% KM Chebyshev UCL	0.192	
113					97.5% KM Chebyshev UCL	0.227				99% KM Chebyshev UCL	0.295	
114												
115	Gamma GOF Tests on Detected Observations Only											
116					A-D Test Statistic	0.448	Anderson-Darling GOF Test					
117					5% A-D Critical Value	0.719	Detected data appear Gamma Distributed at 5% Significance Level					
118					K-S Test Statistic	0.222	Kolmogorov-Smirnov GOF					
119					5% K-S Critical Value	0.295	Detected data appear Gamma Distributed at 5% Significance Level					
120	Detected data appear Gamma Distributed at 5% Significance Level											
121												
122	Gamma Statistics on Detected Data Only											
123					k hat (MLE)	4.122				k star (bias corrected MLE)	2.66	
124					Theta hat (MLE)	0.0401				Theta star (bias corrected MLE)	0.0621	
125					nu hat (MLE)	65.96				nu star (bias corrected)	42.56	
126					Mean (detects)	0.165						
127												
128	Gamma ROS Statistics using Imputed Non-Detects											
129	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
130	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)											
131	For such situations, GROS method may yield incorrect values of UCLs and BTVs											
132	This is especially true when the sample size is small.											
133	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
134					Minimum	0.01				Mean	0.0805	
135					Maximum	0.34				Median	0.0231	
136					SD	0.0968				CV	1.203	
137					k hat (MLE)	0.741				k star (bias corrected MLE)	0.654	
138					Theta hat (MLE)	0.109				Theta star (bias corrected MLE)	0.123	
139					nu hat (MLE)	26.67				nu star (bias corrected)	23.56	
140					Adjusted Level of Significance (β)	0.0357						
141					Approximate Chi Square Value (23.56, α)	13.51				Adjusted Chi Square Value (23.56, β)	12.78	
142					95% Gamma Approximate UCL (use when n>=50)	0.14				95% Gamma Adjusted UCL (use when n<50)	0.148	
143												
144	Estimates of Gamma Parameters using KM Estimates											
145					Mean (KM)	0.112				SD (KM)	0.0729	
146					Variance (KM)	0.00531				SE of Mean (KM)	0.0184	
147					k hat (KM)	2.375				k star (KM)	2.016	
148					nu hat (KM)	85.5				nu star (KM)	72.59	
149					theta hat (KM)	0.0473				theta star (KM)	0.0557	
150					80% gamma percentile (KM)	0.168				90% gamma percentile (KM)	0.218	
151					95% gamma percentile (KM)	0.266				99% gamma percentile (KM)	0.372	
152												
153	Gamma Kaplan-Meier (KM) Statistics											
154					Approximate Chi Square Value (72.59, α)	53.97				Adjusted Chi Square Value (72.59, β)	52.43	
155					95% Gamma Approximate KM-UCL (use when n>=50)	0.151				95% Gamma Adjusted KM-UCL (use when n<50)	0.156	
156												

157	**Lognormal GOF Test on Detected Observations Only**											
158				Shapiro Wilk Test Statistic		0.898	**Shapiro Wilk GOF Test**					
159				5% Shapiro Wilk Critical Value		0.818	Detected Data appear Lognormal at 5% Significance Level					
160				Lilliefors Test Statistic		0.21	**Lilliefors GOF Test**					
161				5% Lilliefors Critical Value		0.283	Detected Data appear Lognormal at 5% Significance Level					
162	Detected Data appear Lognormal at 5% Significance Level											
163												
164	**Lognormal ROS Statistics Using Imputed Non-Detects**											
165				Mean in Original Scale		0.0912	Mean in Log Scale					-2.845
166				SD in Original Scale		0.0896	SD in Log Scale					1.007
167				95% t UCL (assumes normality of ROS data)		0.128	95% Percentile Bootstrap UCL					0.126
168				95% BCA Bootstrap UCL		0.131	95% Bootstrap t UCL					0.141
169				95% H-UCL (Log ROS)		0.184						
170												
171	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
172				KM Mean (logged)		-2.334	KM Geo Mean					0.0969
173				KM SD (logged)		0.497	95% Critical H Value (KM-Log)					2.018
174				KM Standard Error of Mean (logged)		0.125	95% H-UCL (KM -Log)					0.14
175				KM SD (logged)		0.497	95% Critical H Value (KM-Log)					2.018
176				KM Standard Error of Mean (logged)		0.125						
177												
178	**DL/2 Statistics**											
179	**DL/2 Normal**						**DL/2 Log-Transformed**					
180				Mean in Original Scale		0.0929	Mean in Log Scale					-2.719
181				SD in Original Scale		0.0877	SD in Log Scale					0.808
182				95% t UCL (Assumes normality)		0.129	95% H-Stat UCL					0.145
183	DL/2 is not a recommended method, provided for comparisons and historical reasons											
184												
185	**Nonparametric Distribution Free UCL Statistics**											
186	Detected Data appear Normal Distributed at 5% Significance Level											
187												
188	**Suggested UCL to Use**											
189				95% KM (t) UCL		0.144						
190												
191	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
192	Recommendations are based upon data size, data distribution, and skewness.											
193	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
194	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
195												
196												
197	**Zinc**											
198												
199	**General Statistics**											
200				Total Number of Observations		18	Number of Distinct Observations					18
201							Number of Missing Observations					0
202				Minimum		17.4	Mean					61.2
203				Maximum		145	Median					61.45
204				SD		35.59	Std. Error of Mean					8.389
205				Coefficient of Variation		0.582	Skewness					0.919
206												
207	**Normal GOF Test**											
208				Shapiro Wilk Test Statistic		0.901	**Shapiro Wilk GOF Test**					

209				5% Shapiro Wilk Critical Value		0.897	Data appear Normal at 5% Significance Level					
210				Lilliefors Test Statistic		0.173	**Lilliefors GOF Test**					
211				5% Lilliefors Critical Value		0.202	Data appear Normal at 5% Significance Level					
212	Data appear Normal at 5% Significance Level											
213												
214	**Assuming Normal Distribution**											
215	**95% Normal UCL**						**95% UCLs (Adjusted for Skewness)**					
216				95% Student's-t UCL		75.79	95% Adjusted-CLT UCL (Chen-1995)					76.94
217							95% Modified-t UCL (Johnson-1978)					76.1
218												
219	**Gamma GOF Test**											
220				A-D Test Statistic		0.575	**Anderson-Darling Gamma GOF Test**					
221				5% A-D Critical Value		0.746	Detected data appear Gamma Distributed at 5% Significance Level					
222				K-S Test Statistic		0.149	**Kolmogorov-Smirnov Gamma GOF Test**					
223				5% K-S Critical Value		0.205	Detected data appear Gamma Distributed at 5% Significance Level					
224	Detected data appear Gamma Distributed at 5% Significance Level											
225												
226	**Gamma Statistics**											
227				k hat (MLE)		2.954	k star (bias corrected MLE)					2.498
228				Theta hat (MLE)		20.72	Theta star (bias corrected MLE)					24.5
229				nu hat (MLE)		106.3	nu star (bias corrected)					89.94
230				MLE Mean (bias corrected)		61.2	MLE Sd (bias corrected)					38.72
231							Approximate Chi Square Value (0.05)					69.07
232				Adjusted Level of Significance		0.0357	Adjusted Chi Square Value					67.32
233												
234	**Assuming Gamma Distribution**											
235				95% Approximate Gamma UCL (use when n>=50))		79.69	95% Adjusted Gamma UCL (use when n<50)					81.76
236												
237	**Lognormal GOF Test**											
238				Shapiro Wilk Test Statistic		0.899	**Shapiro Wilk Lognormal GOF Test**					
239				5% Shapiro Wilk Critical Value		0.897	Data appear Lognormal at 5% Significance Level					
240				Lilliefors Test Statistic		0.186	**Lilliefors Lognormal GOF Test**					
241				5% Lilliefors Critical Value		0.202	Data appear Lognormal at 5% Significance Level					
242	Data appear Lognormal at 5% Significance Level											
243												
244	**Lognormal Statistics**											
245				Minimum of Logged Data		2.856	Mean of logged Data					3.935
246				Maximum of Logged Data		4.977	SD of logged Data					0.652
247												
248	**Assuming Lognormal Distribution**											
249				95% H-UCL		89.35	90% Chebyshev (MVUE) UCL					92.77
250				95% Chebyshev (MVUE) UCL		106.5	97.5% Chebyshev (MVUE) UCL					125.6
251				99% Chebyshev (MVUE) UCL		163.1						
252												
253	**Nonparametric Distribution Free UCL Statistics**											
254	Data appear to follow a Discernible Distribution at 5% Significance Level											
255												
256	**Nonparametric Distribution Free UCLs**											
257				95% CLT UCL		75	95% Jackknife UCL					75.79
258				95% Standard Bootstrap UCL		74.52	95% Bootstrap-t UCL					78.47
259				95% Hall's Bootstrap UCL		84.87	95% Percentile Bootstrap UCL					74.79
260				95% BCA Bootstrap UCL		74.84						

	A	B	C	D	E	F	G	H	I	J	K	L
261				90% Chebyshev(Mean, Sd) UCL		86.37				95% Chebyshev(Mean, Sd) UCL		97.76
262				97.5% Chebyshev(Mean, Sd) UCL		113.6				99% Chebyshev(Mean, Sd) UCL		144.7
263												
264						**Suggested UCL to Use**						
265					95% Student's-t UCL	75.79						
266												
267												
268												
269												
270												
271												

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

APPENDIX F

Groundwater pH Monitoring Data Collected during CM Removal

F. Groundwater pH Monitoring Conducted during CM Removal

This appendix presents groundwater pH monitoring data collected throughout the crushed material (CM) removal project, conducted in general accordance with the pH Monitoring Plan included as Appendix E to the Interim Action Work Plan (Work Plan; Aspect, 2019).

F.1.1. pH Monitoring Methods

As required by the CM Removal Plan of Operations (K-C, 2018), the CM was removed from 17 CM Excavation Sequencing Areas (Areas), arranged in three "rows" denoted Eastern Areas, Central Areas, and Western Areas based on their position on the Site, as follows:

- The Eastern Areas were, from south to north, A1, B1, F, G, L, and M (Figure F1)
- The Central Areas were, from south to north, A2, B2, E, H, K, and N (Figure F2)
- The Western Areas were, from south to north, C, D, I, J, and O (Figure F3)

CM removal was conducted in the Eastern Areas, followed by the Central Areas, followed by the Western Areas, except for minor areas of CM serving as haul roads and remaining beneath part of the eastern fence line until the last phases of the project.

Groundwater across the Site flows generally from east to west with discharge to the East Waterway. Monitoring was conducted in existing monitoring wells located downgradient (west) of an Area undergoing CM removal to assess whether that action created a pH increase in groundwater that posed a risk of migration to the East Waterway.

For each Area, two sets of wells were established in the pH Monitoring Plan: "proximal wells" positioned as close as possible downgradient (west) of the Area, and "downgradient wells" located downgradient of the proximal wells. Due to decommissioning of monitoring wells as the interim action or CM removal projects progressed, the following changes to wells monitored were implemented during the monitoring program, following discussion with and approval by Washington State Department of Ecology (Ecology):

- For monitoring of Eastern Area G, downgradient well GF9-MW-1 was not found in the field. Adjacent well GF9-MW-2, located approximately 25 feet south of it, was monitored to achieve coverage (Figure F1).
- For monitoring of Western Area C, well MW-1 replaced proximal wells PM-MW-7, REC7-MW-3, and UST68-MW-5 (Figure F3).
- For monitoring of Western Area D, wells UST71-MW-102 and BA6-MW-101 replaced proximal wells UST71-MW-101, UST71-MW-104, and BA-MW-5 (Figure F3).

As required by the pH Monitoring Plan, Ecology evaluated the pH data being collected during CM removal and agreed that no change to the proposed Area K proximal wells TM-MW-5 and LP-MW-1 was warranted based on the lack of other suitably located wells and lack of pH impact observed in monitoring through the first 3 months of CM removal, including all of the Eastern Areas.

Figures F1, F2, and F3 depict the proximal wells (blue-highlighted) and downgradient wells (orange-highlighted) monitored for the Eastern, Central, and Western Areas, respectively. The wells monitored for each Area are also included with their data in Tables F-1 through F-17.

Prior to the start of CM removal in each Area, monitoring was conducted in designated proximal and downgradient wells three times within a 1-week or longer period to document the baseline pH condition, defined as the average of the three pH measurements. Throughout the subsequent CM removal in an Area, and for a period of 3 weeks following its completion, pH monitoring was conducted at least weekly in the proximal wells. When CM excavation was occurring in the first Areas (A1 and B1), pH monitoring was conducted daily as required by the pH Monitoring Plan. Based on that initial dataset, Ecology agreed to maintain the weekly monitoring frequency unless CM was observed beneath the water table during its removal in a specific Area. Ultimately, CM was not observed beneath the water table[1] during the removal project, except in localized subsurface structures (e.g., vaults) that were generally isolated from the surrounding subsurface, and around the LP-MW-1 well location as described in Section F.1.2.1 below.

A "trigger pH" value was defined for each well as the baseline pH value plus 0.5 pH unit. If, during or following CM removal in an Area, groundwater pH in a proximal monitoring well was observed to increase and exceed the trigger pH for a period of 3 weeks, it would have triggered daily monitoring of the proximal wells and the start of monitoring in the downgradient wells for that Area. If groundwater pH was observed to increase and exceed the trigger pH for 1 week at the downgradient wells, K-C would have notified Ecology to discuss the situation and decide whether to implement a contingency remediation action to achieve protection of the East Waterway. The pH Monitoring Plan provides additional details regarding the pH monitoring program and the contingency action decision process.

F.1.2. pH Monitoring Results

Monitoring of 35 proximal wells over more than 4 months of CM removal covering approximately 32 acres documented no exceedances of a trigger pH value attributable to the CM removal action (Tables F-1 through F-17). Well LP-MW-1 did record a substantial pH increase, but it was not related to the CM removal action as discussed in the following section.

[1] Largely because CM removal was conducted during dry-season conditions when the water table was low.

The collective pH monitoring data demonstrate that removing the more than 200,000 tons of CM from the Site did not create migration of high-pH groundwater toward the East Waterway.

F.1.2.1. Well LP-MW-1

Between September 22 and 28, 2020, a dramatic groundwater pH increase, from pH 7.20 to pH 9.72, was measured in well LP-MW-1, which is located on the boundary between Western Areas I and J and within the footprint of the former log pond (Figure F2). As per the pH Monitoring Plan, LP-MW-1 was a proximal well to be monitored during CM removal in Areas H and K east of it. The pH spike was confirmed with a second measurement on September 29—a reading of pH 10.52, which was nearly 3 pH units greater than the pH 7.62 trigger value based on the well's baseline readings (Table F-10). However, collective information indicates that the pH spike was a result of a rapidly rising groundwater level submerging the base of the CM in that area, in response to a large-scale rain event; it was not due to CM removal activities.

As discussed in Aspect (2017) and again in the pH Monitoring Plan, well LP-MW-1 has historically had the highest pH readings measured on the Site, which is due to the facts that (1) its well screen is shallow enough that it intercepts the thick layer of CM in that area and (2) the log pond fill has low enough permeability that precipitation does not infiltrate there nearly as readily as the dredge fill outside of the log pond. Consequently, when the seasonal rains begin, the groundwater level within the log pond footprint "mounds up" because infiltration is so slow. The mounded groundwater submerges CM within the well's screened interval, which creates very high pH groundwater in the shallow depth interval screened by LP-MW-1.

Between August 31 and September 22, 2020, the pH readings in LP-MW-1, collected prior to and then during CM removal in Areas H and K, ranged from 7.0 to 7.5—near-neutral values typical of the water table being below the base of the CM in that area. For example, on September 3, the water level was 7.0 feet below the well's top of casing, confirming it was below the base of the CM. Between September 24 and 26, the Site received approximately 1.6 inches of rain. On September 28, the pH in LP-MW-1 had risen to 9.7; the water level was not measured that day. On September 29, when a pH of 10.5 was measured, the water level had risen to 3.3 feet below top of casing. Comparing the September 3 and September 29 readings, the water level rose about 3.7 feet, submerging the base of the CM, and the pH increased about 3.3 units in response. Figure F4 illustrates the relationship of water level (relative to the base of the CM) and pH at well LP-MW-1, with data going back to 2013.

The water level-pH effect was clearly observed at well LP-MW-1 both in 2016 and 2017, and the September 2020 data are a continuation of that seasonal effect—a result of the large precipitation event that preceded it and not the CM removal activities occurring east of it. That conclusion is further supported by the fact that pH changed by 0.3 pH units or less in each of the other six wells monitored on September 28 that are located outside of the log pond footprint: wells BA-MW-2, BA-MW-3, and CN-MW-101 increased slightly, while wells SHB-MW-102, PM-MW-4, and TM-MW-5 decreased slightly, relative to their prior measurement (Tables F-8, F-9, F-10, and F-12).

TABLES

Table F-1. Groundwater pH Data for Excavation Sequencing Area A1

Project No. 110207, Everett, Washington

	pH Reading in Standard Units				
	Proximal Wells		Downgradient Wells to Monitor if pH Increase >0.5 unit is Observed in Proximal Well(s)		
Date	BCT-MW-104	BCT-MW-106	REC7-MW-3	UST68-MW-5	REC7-MW-4
Baseline Readings for this Sequencing Area (3x in 1 week)					
6/3/2020	7.25	7.08		7.88	7.81
6/4/2020	7.34	7.18		7.93	7.95
6/5/2020	7.33	7.18		7.96	7.94
6/10/2020	7.24	7.12	7.53		7.77
6/11/2020			7.67		
6/12/2020			7.84		
Average Baseline	*7.29*	*7.14*	*7.68*	*7.92*	*7.87*
"Trigger pH"	***7.79***	***7.64***	***8.18***	***8.42***	***8.37***
First Areas A1 + B1: Daily Compliance Readings During CM Removal in this Sequencing Area					
6/30/2020	7.06	7.19			
7/1/2020	7.21	7.12			
7/6/2020	7.35	7.19			
7/7/2020	7.37	7.17			
7/8/2020	7.35	7.17			
Weekly (at least) Compliance Readings for 3 Weeks After CM Removal is Done in this Sequencing Area					
7/9/2020	7.44	7.12			
7/13/2020	7.40	7.18			
7/21/2020	7.52	7.16			
7/27/2020	7.43	7.14			
8/3/2020	7.38	7.10			

Notes

"Trigger pH" for proximal wells is the pH that, if exceeded for 3 weeks, triggers daily monitoring of proximal well and start monitoring of downgradient wells.

"Trigger pH" for downgradient wells is the pH that, if exceeded for 1 week, triggers consultation with Ecology regarding response action.

Table F-2. Groundwater pH Data for Excavation Sequencing Area B1

Project No. 110207, Everett, Washington

	pH Reading in Standard Units			
	Proximal Wells		Downgradient Wells to Monitor if pH Increase >0.5 unit is Observed in Proximal Well(s)	
Date	PM-MW-5	BCT-MW-108	PM-MW-2	PM-MW-4
Baseline Readings for this Sequencing Area (3x in 1 week)				
6/3/2020	10.74	11.02	7.65	10.11
6/4/2020	10.72	11.06	7.63	10.15
6/5/2020	10.72	11.04	7.63	10.16
Average Baseline	*10.73*	*11.04*	*7.64*	*10.14*
"Trigger pH"	***11.23***	***11.54***	***8.14***	***10.64***
First Areas A1 + B1: Daily Compliance Readings During CM Removal in this Sequencing Area				
6/30/2020	10.80	10.82		
7/1/2020	10.85	10.90		
7/6/2020	10.76	11.14		
7/7/2020	10.73	11.22		
7/8/2020	10.69	11.20		
7/9/2020	10.73	11.22		
7/10/2020	10.67	11.13		
7/13/2020	10.66	11.19		
Weekly (at least) Compliance Readings for 3 Weeks After CM Removal is Done in this Sequencing Area				
7/14/2020	10.68	11.14		
7/16/2020	10.68	11.20		
7/17/2020	10.58	11.11		
7/20/2020	10.57	11.04		
7/22/2020	10.54	11.11		
7/23/2020	10.48	11.08		
7/27/2020	10.55	11.09		
7/29/2020	10.53	11.03		
7/30/2020	10.54	11.06		
8/3/2020	10.41	11.05		
8/10/2020	10.40	11.01		

Notes

"Trigger pH" for proximal wells is the pH that, if exceeded for 3 weeks, triggers daily monitoring of proximal well and start monitoring of downgradient wells.

"Trigger pH" for downgradient wells is the pH that, if exceeded for 1 week, triggers consultation with Ecology regarding response action.

Table F-3. Groundwater pH Data for Excavation Sequencing Area F

Project No. 110207, Everett, Washington

	pH Reading in Standard Units				
	Proximal Wells		Downgradient Wells to Monitor if pH Increase >0.5 unit is Observed in Proximal Well(s)		
Date	AP-MW-1R	PM-MW-3	BA-MW-2	BA-MW-3	PM-MW-6
Baseline Readings for this Sequencing Area (3x in 1 week)					
6/10/2020	10.63		9.30	7.28	6.86
6/11/2020	10.44	9.52	9.32	7.34	7.05
6/12/2020	10.40	9.58	9.29	7.31	7.15
6/15/2020		9.46			
6/19/2020		9.20			
Average Baseline	*10.49*	*9.44*	*9.30*	*7.31*	*7.02*
"Trigger pH"	***10.99***	***9.94***	***9.80***	***7.81***	***7.52***
Weekly (at least) Compliance Readings During CM Removal in this Sequencing Area					
7/9/2020	10.37	8.98			
7/10/2020	10.41	9.22			
7/13/2020	10.35	8.91			
7/14/2020	10.27	8.59			
7/21/2020	10.34	8.07			
Weekly (at least) Compliance Readings for 3 Weeks After CM Removal is Done in this Sequencing Area					
7/27/2020	10.30	8.62			
8/3/2020	10.23	7.78			
8/10/2020	10.20	7.85			

Notes

"Trigger pH" for proximal wells is the pH that, if exceeded for 3 weeks, triggers daily monitoring of proximal well and start monitoring of downgradient wells.

"Trigger pH" for downgradient wells is the pH that, if exceeded for 1 week, triggers consultation with Ecology regarding response action.

Table F-4. Groundwater pH Data for Excavation Sequencing Area G

Project No. 110207, Everett, Washington

	pH Reading in Standard Units		
	Proximal Wells	Downgradient Wells to Monitor if pH Increase >0.5 unit is Observed in Proximal Well(s)	
Date	GF9-MW-3	GF9-MW-1	GF9-MW-2
Baseline Readings for this Sequencing Area (3x in 1 week)			
7/13/2020	6.90	Well not found. GF9-MW-2 is 24 ft from it.	
7/14/2020	6.91		
7/16/2020	6.88		11.70
7/17/2020	6.93		11.75
7/20/2020	6.91		11.83
Average Baseline	*6.91*		*11.76*
"Trigger pH"	***7.41***		***12.26***
Weekly (at least) Compliance Readings During CM Removal in this Sequencing Area			
7/21/2020	6.92		
8/3/2020	6.84		
8/10/2020	6.88		
8/17/2020	6.88		
Weekly (at least) Compliance Readings for 3 Weeks After CM Removal is Done in this Sequencing Area			
8/24/2020	6.92		
8/31/2020	6.88		
9/3/2020	6.92		
9/8/2020	6.92		

Notes

"Trigger pH" for proximal wells is the pH that, if exceeded for 3 weeks, triggers daily monitoring of proximal well and start monitoring of downgradient wells.

"Trigger pH" for downgradient wells is the pH that, if exceeded for 1 week, triggers consultation with Ecology regarding response action.

Table F-5. Groundwater pH Data for Excavation Sequencing Area L

Project No. 110207, Everett, Washington

	pH Reading in Standard Units			
	Proximal Wells		Downgradient Wells to Monitor if pH Increase >0.5 unit is Observed in Proximal Well(s)	
Date	UST29-MW-103	LP-MW-4	UST29-MW101	UST29-MW102
Baseline Readings for this Sequencing Area (3x in 1 week)				
7/13/2020	9.21	6.92		
7/14/2020	9.22	6.92		
7/16/2020	9.19	6.91	9.97	7.91
7/17/2020	9.21	6.90	10.01	7.91
7/20/2020	8.82	6.89	10.07	8.68
Average Baseline	*9.13*	*6.91*	*10.02*	*8.17*
"Trigger pH"	***9.63***	***7.41***	***10.52***	***8.67***
Weekly (at least) Compliance Readings During CM Removal in this Sequencing Area *(Daily if CM is observed below water table)*				
8/3/2020	8.68	6.89		
8/10/2020	8.66	6.91		
8/17/2020	8.29	6.98		
Weekly (at least) Compliance Readings for 3 Weeks After CM Removal is Done in this Sequencing Area				
8/24/2020	8.33	6.95		
8/31/2020	8.43	6.90		
9/3/2020	8.68	6.90		
9/8/2020	8.06	6.99		

Notes

No CM was observed below water table during removal.

"Trigger pH" for proximal wells is the pH that, if exceeded for 3 weeks, triggers daily monitoring of proximal well and start monitoring of downgradient wells.

"Trigger pH" for downgradient wells is the pH that, if exceeded for 1 week, triggers consultation with Ecology regarding response action.

Table F-6. Groundwater pH Data for Excavation Sequencing Area M

Project No. 110207, Everett, Washington

	pH Reading in Standard Units			
	Proximal Wells	Downgradient Wells to Monitor if pH Increase >0.5 unit is Observed in Proximal Well(s)		
Date	TM-MW-2	TM-MW-1	CN-MW-103	TM-MW-5
Baseline Readings for this Sequencing Area (3x in 1 week)				
7/14/2020	8.61			
7/16/2020	8.64	6.57	6.51	7.78
7/17/2020	8.66	6.58	6.48	7.79
7/20/2020	7.37	6.56	6.50	7.83
Average Baseline	*8.32*	*6.57*	*6.50*	*7.80*
"Trigger pH"	***8.82***	***7.07***	***7.00***	***8.30***
Weekly (at least) Compliance Readings During CM Removal in this Sequencing Area *(Daily if CM is observed below water table)*				
8/5/2020	7.29	6.63		
8/10/2020	7.32			
8/17/2020	7.26			
8/24/2020	7.22			
Weekly (at least) Compliance Readings for 3 Weeks After CM Removal is Done in this Sequencing Area				
8/31/2020	7.24			
9/8/2020	7.06			
9/14/2020	7.20			
9/22/2020	7.01			

Notes

"Trigger pH" for proximal wells is the pH that, if exceeded for 3 weeks, triggers daily monitoring of proximal well and start monitoring of downgradient wells.

"Trigger pH" for downgradient wells is the pH that, if exceeded for 1 week, triggers consultation with Ecology regarding response action.

Table F-7. Groundwater pH Data for Excavation Sequencing Area A2

Project No. 110207, Everett, Washington

	pH Reading in Standard Units				
	Proximal Wells			Downgradient Wells to Monitor if pH Increase >0.5 unit is Observed in Proximal Well(s)	
Date	UST68-MW-5	MW-2	REC7-MW-4	REC7-MW-3	MW-1
Baseline Readings for this Sequencing Area (3x in 1 week)					
8/10/2020	8.05	7.82	7.95	7.17	7.41
8/12/2020	8.08	7.88	7.96	7.60	7.43
8/13/2020	8.04	7.89	7.93	7.62	7.45
8/17/2020	7.99	7.72	7.85		
Average Baseline	*8.04*	*7.83*	*7.92*	*7.46*	*7.43*
"Trigger pH"	***8.54***	***8.33***	***8.42***	***7.96***	***7.93***
Weekly (at least) Compliance Readings During CM Removal in this Sequencing Area					
8/31/2020	7.92	7.77	7.87		
Weekly (at least) Compliance Readings for 3 Weeks After CM Removal is Done in this Sequencing Area					
9/8/2020	8.18	7.68	7.77		
9/14/2020	8.27	7.77	7.90		
9/21/2020	8.12				
9/22/2020	8.13	7.60	7.82		

Notes

"Trigger pH" for proximal wells is the pH that, if exceeded for 3 weeks, triggers daily monitoring of proximal well and start monitoring of downgradient wells.

"Trigger pH" for downgradient wells is the pH that, if exceeded for 1 week, triggers consultation with Ecology regarding response action.

Table F-8. Groundwater pH Data for Excavation Sequencing Area B2

Project No. 110207, Everett, Washington

	pH Reading in Standard Units		
	Proximal Wells	Downgradient Wells to Monitor if pH Increase >0.5 unit is Observed in Proximal Well(s)	
Date	PM-MW-4	REC7-MW-3	PM-MW-7
Baseline Readings for this Sequencing Area (3x in 1 week)			
8/10/2020	10.14	7.60	7.17
8/12/2020	10.18	7.60	7.15
8/13/2020	10.17	7.62	7.09
8/17/2020	9.86		
Average Baseline	*10.09*	*7.61*	*7.14*
"Trigger pH"	***10.59***	***8.11***	***7.64***
Weekly (at least) Compliance Readings During CM Removal in this Sequencing Area			
9/8/2020	9.79		
Weekly (at least) Compliance Readings for 3 Weeks After CM Removal is Done in this Sequencing Area			
9/14/2020	9.77		
9/22/2020	9.75		
9/28/2020	9.60		

Notes

"Trigger pH" for proximal wells is the pH that, if exceeded for 3 weeks, triggers daily monitoring of proximal well and start monitoring of downgradient wells.

"Trigger pH" for downgradient wells is the pH that, if exceeded for 1 week, triggers consultation with Ecology regarding response action.

Table F-9. Groundwater pH Data for Excavation Sequencing Area E

Project No. 110207, Everett, Washington

	pH Reading in Standard Units					
	Proximal Wells		Downgradient Wells to Monitor if pH Increase >0.5 unit is Observed in Proximal Well(s)			
Date	BA-MW-2	BA-MW-3	BA-MW-1	UST71-MW-104	UST71-MW-103	PM-MW-6
Baseline Readings for this Sequencing Area (3x in 1 week)						
8/26/2020	9.03	7.41	7.50	7.56	6.43	7.12
8/27/2020	9.05	7.44	7.49	7.58	6.46	7.11
8/28/2020	9.03	7.40	7.52	7.57	6.47	7.09
Average Baseline	*9.04*	*7.42*	*7.50*	*7.57*	*6.45*	*7.11*
"Trigger pH"	***9.54***	***7.92***	***8.00***	***8.07***	***6.95***	***7.61***
Weekly (at least) Compliance Readings During CM Removal in this Sequencing Area						
9/8/2020	8.88	7.25				
Weekly (at least) Compliance Readings for 3 Weeks After CM Removal is Done in this Sequencing Area						
9/14/2020	8.79	7.50				
9/22/2020	8.90	7.27				
9/28/2020	9.15	7.58				

Notes

"Trigger pH" for proximal wells is the pH that, if exceeded for 3 weeks, triggers daily monitoring of proximal well and start monitoring of downgradient wells.

"Trigger pH" for downgradient wells is the pH that, if exceeded for 1 week, triggers consultation with Ecology regarding response action.

Table F-10. Groundwater pH Data for Excavation Sequencing Area H

Project No. 110207, Everett, Washington

	pH Reading in Standard Units				
	Proximal Wells			Downgradient Wells to Monitor if pH Increase >0.5 unit is Observed in Proximal Well(s)	
Date	LP-MW-1	SHB-MW-102*	SHB-MW101	LP-MW-2	SHB-MW-2
Baseline Readings for this Sequencing Area (3x in 1 week)					
8/31/2020	7.04	7.28	6.84	6.52	6.69
9/2/2020	7.07	7.30	6.83	6.50	6.63
9/3/2020	7.24	7.31	6.82	6.54	6.61
Average Baseline	*7.12*	*7.30*	*6.83*	*6.52*	*6.64*
"Trigger pH"	***7.62***	***7.80***	***7.33***	***7.02***	***7.14***
Weekly (at least) Compliance Readings During CM Removal in this Sequencing Area					
9/14/2020	7.52	7.35	7.52		
Weekly (at least) Compliance Readings for 3 Weeks After CM Removal is Done in this Sequencing Area					
9/22/2020	7.20	7.30			
9/28/2020	9.72	7.20			
9/29/2020	10.52	inaccessible*	6.85		
10/1/2020	10.84		6.85	6.71	6.60
10/2/2020	10.85				
10/5/2020	11.34		6.87	6.95	7.13
10/7/2020	11.30		6.98	6.97	7.06
10/9/2020	11.38		6.99	7.02	7.13
10/12/2020	11.60		7.07	6.57	6.66

Notes

Red highlighted values exceed Trigger pH value.

*: The driller decommissioning wells in an adjacent area inadvertently decommissioned this well on 9/29. Well SHB-MW-101, located 25 feet from this well, is substituted as a proximal well for the rest of the monitoring.

"Trigger pH" for proximal wells is the pH that, if exceeded for 3 weeks, triggers daily monitoring of proximal well and start monitoring of downgradient wells.

"Trigger pH" for downgradient wells is the pH that, if exceeded for 1 week, triggers consultation with Ecology regarding response action.

Table F-11. Groundwater pH Data for Excavation Sequencing Area K

Project No. 110207, Everett, Washington

	pH Reading in Standard Units				
	Proximal Wells		Downgradient Wells to Monitor if pH Increase >0.5 unit is Observed in Proximal Well(s)		
Date	TM-MW-5	LP-MW-1	TM-MW-6	REC6-MW-2	MW-6
Baseline Readings for this Sequencing Area (3x in 1 week)					
9/8/2020	7.68	7.18	7.37	7.00	7.13
9/9/2020	7.49	7.27	7.34	7.02	7.14
9/10/2020	7.56	7.26	7.31	7.01	7.19
Average Baseline	*7.58*	*7.24*	*7.34*	*7.01*	*7.15*
"Trigger pH"	***8.08***	***7.74***	***7.84***	***7.51***	***7.65***
Weekly (at least) Compliance Readings During CM Removal in this Sequencing Area					
9/22/2020	7.60	7.20			
9/28/2020	7.50	9.72			
9/29/2020		10.52			
Weekly (at least) Compliance Readings for 3 Weeks After CM Removal is Done in this Sequencing Area					
10/1/2020	8.05	10.84	7.35	6.96	7.20
10/2/2020	7.45	10.85			
10/5/2020	7.43	11.24	7.52	7.22	7.29
10/7/2020	7.50	11.31	7.57	7.20	7.34
10/9/2020	7.41	11.38	7.55	7.18	7.32
10/12/2020	7.67	11.60	7.21	6.99	7.17

Notes

Red highlighted values exceed Trigger pH value.

"Trigger pH" for proximal wells is the pH that, if exceeded for 3 weeks, triggers daily monitoring of proximal well and start monitoring of downgradient wells.

"Trigger pH" for downgradient wells is the pH that, if exceeded for 1 week, triggers consultation with Ecology regarding response action.

Table F-12. Groundwater pH Data for Excavation Sequencing Area N

Project No. 110207, Everett, Washington

	pH Reading in Standard Units					
	Proximal Wells		Downgradient Wells to Monitor if pH Increase >0.5 unit is Observed in Proximal Well(s)			
Date	CN-MW-101	TM-MW-5	NRU-MW-102	NRS-MW-102	REC7-MW-2	TM-MW-6
Baseline Readings for this Sequencing Area (3x in 1 week)						
9/8/2020	6.52	7.68	7.12	6.56	6.85	7.37
9/9/2020	6.59	7.49	6.89	6.67	6.86	7.34
9/10/2020	6.56	7.56	6.91	6.54	6.89	7.31
Average Baseline	*6.56*	*7.58*	*6.97*	*6.59*	*6.87*	*7.34*
"Trigger pH"	***7.06***	***8.08***	***7.47***	***7.09***	***7.37***	***7.84***
Weekly (at least) Compliance Readings During CM Removal in this Sequencing Area						
9/28/2020	6.57	7.50				
10/1/2020		8.05				
10/2/2020	6.57	7.45				
Weekly (at least) Compliance Readings for 3 Weeks After CM Removal is Done in this Sequencing Area						
10/5/2020	6.56	7.41				
10/12/2020	6.50	7.67				
10/19/2020	6.56	7.38				

Notes

"Trigger pH" for proximal wells is the pH that, if exceeded for 3 weeks, triggers daily monitoring of proximal well and start monitoring of downgradient wells.

"Trigger pH" for downgradient wells is the pH that, if exceeded for 1 week, triggers consultation with Ecology regarding response action.

Table F-13. Groundwater pH Data for Excavation Sequencing Area C

Project No. 110207, Everett, Washington

	pH Reading in Standard Units			
	Proximal Wells			
Date	PM-MW-7*	REC7-MW-3*	UST68-MW-5*	MW-1
Baseline Readings for this Sequencing Area (3x in 1 week)				
9/21/2020	7.17	7.57	8.12	7.40
9/22/2020	7.16	7.60	8.13	7.43
9/23/2020	7.17	7.57	8.15	7.49
Average Baseline	*7.17*	*7.58*	*8.13*	*7.44*
"Trigger pH"	***7.67***	***8.08***	***8.63***	***7.94***
Weekly (at least) Compliance Readings During CM Removal in this Sequencing Area				
10/2/2020	inaccessible*	inaccessible*	inaccessible*	6.84
10/5/2020				6.88
Weekly (at least) Compliance Readings for 3 Weeks After CM Removal is Done in this Sequencing Area				
10/12/2020	inaccessible*	inaccessible*	inaccessible*	7.50
10/19/2020				6.79
10/28/2020				7.26

Notes

*: The driller decommissioning wells in an adjacent area inadvertently decommissioned these wells on 9/29. Therefore, well MW-1 has been substituted as a proximal well for the rest of the monitoring. Other adjacent wells were decommissioned for the OMS excavation.

"Trigger pH" for proximal wells is the pH that, if exceeded for 3 weeks, triggers daily monitoring of proximal well and start monitoring of downgradient wells.

"Trigger pH" for downgradient wells is the pH that, if exceeded for 1 week, triggers consultation with Ecology regarding response action.

Table F-14. Groundwater pH Data for Excavation Sequencing Area D

Project No. 110207, Everett, Washington

	pH Reading in Standard Units								
	Proximal Wells					Downgradient Wells to Monitor if pH Increase >0.5 unit is Observed in Proximal Well(s)			
Date	BA-MW-5*	UST71-MW-101*	UST71-MW-103*	UST71-MW-102	BA6-MW101	RCD-MW-101	UST70-MW-2	REC3-MW-1R	PM-MW-8
Baseline Readings for this Sequencing Area (3x in 1 week)									
9/21/2020	6.62	7.12	6.21			6.66	7.08	7.26	7.05
9/22/2020	6.62	7.14	6.24			6.68	7.12	7.24	7.07
9/23/2020	6.64	7.17	6.26			6.64	7.11	7.30	7.10
10/2/2020	inaccessible*	inaccessible*	inaccessible*	6.30	7.20				
10/5/2020				6.33	7.22				
10/6/2020				6.35	7.19				
Avg Baseline	*6.63*	*7.14*	*6.24*	*6.33*	*7.20*	*6.66*	*7.10*	*7.27*	*7.07*
"Trigger pH"	***7.13***	***7.64***	***6.74***	***6.83***	***7.70***	***7.16***	***7.60***	***7.77***	***7.57***
Weekly (at least) Compliance Readings During CM Removal in this Sequencing Area									
10/9/2020	inaccessible*	inaccessible*	inaccessible*	6.36	7.26				
Weekly (at least) Compliance Readings for 3 Weeks After CM Removal is Done in this Sequencing Area									
10/12/2020				Dry	7.07				
10/19/2020	inaccessible*	inaccessible*	inaccessible*	6.33	7.05				
10/28/2020				6.26	6.61				

Notes

*: Well UST71-MW-103 was located just within the CM footprint and required decommissioning to allow complete CM removal. However, the driller inadvertently also decommissioned nearby wells UST71-MW-101 and BA-MW-5 on 9/29. Consequently, adjacent non-shoreline wells UST71-MW-102 and BA6-MW-101 have been replaced as proximal wells.

"Trigger pH" for proximal wells is the pH that, if exceeded for 3 weeks, triggers daily monitoring of proximal well and start monitoring of downgradient wells.

"Trigger pH" for downgradient wells is the pH that, if exceeded for 1 week, triggers consultation with Ecology regarding response action.

Table F-15. Groundwater pH Data for Excavation Sequencing Area I

Project No. 110207, Everett, Washington

	pH Reading in Standard Units		
	Proximal Wells		No Downgradient Wells
Date	LP-MW-2	SHB-MW-2	
Baseline Readings for this Sequencing Area (3x in 1 week)			
10/5/2020	6.95	7.13	
10/6/2020	6.92	7.14	
10/7/2020	7.17	7.16	
Average Baseline	*7.01*	*7.14*	
"Trigger pH"	***7.51***	***7.64***	
Weekly (at least) Compliance Readings During CM Removal in this Sequencing Area			
10/9/2020	7.02	7.13	
10/12/2020	6.57	6.66	
Weekly (at least) Compliance Readings for 3 Weeks After CM Removal is Done in this Sequencing Area			
10/19/2020	6.55	6.87	
10/28/2020	6.65	6.89	
11/2/2020	6.60	6.87	

Notes

"Trigger pH" for proximal wells is the pH that, if exceeded for 3 weeks, triggers daily monitoring of proximal well and start monitoring of downgradient wells.

"Trigger pH" for downgradient wells is the pH that, if exceeded for 1 week, triggers consultation with Ecology regarding response action.

Table F-16. Groundwater pH Data for Excavation Sequencing Area J

Project No. 110207, Everett, Washington

	pH Reading in Standard Units			
	Proximal Wells			No Downgradient Wells
Date	TM-MW-6	REC6-MW-2	MW-6	
Baseline Readings for this Sequencing Area (3x in 1 week)				
10/1/2020	7.35	6.96	7.20	
10/5/2020	7.52	7.22	7.29	
10/7/2020	7.57	7.20	7.34	
10/9/2020	7.55	7.18	7.32	
Average Baseline	*7.50*	*7.14*	*7.29*	
"Trigger pH"	***8.00***	***7.64***	***7.79***	
Weekly (at least) Compliance Readings During CM Removal in this Sequencing Area				
10/12/2020	7.21	6.99	7.17	
10/19/2020	7.22	6.67	7.20	
Weekly (at least) Compliance Readings for 3 Weeks After CM Removal is Done in this Sequencing Area				
10/28/2020	7.18	6.66	7.22	
11/2/2020	7.15	6.67	7.10	
11/12/2020	7.18	6.75	7.06	

Notes

"Trigger pH" for proximal wells is the pH that, if exceeded for 3 weeks, triggers daily monitoring of proximal well and start monitoring of downgradient wells.

"Trigger pH" for downgradient wells is the pH that, if exceeded for 1 week, triggers consultation with Ecology regarding response action.

Table F-17. Groundwater pH Data for Excavation Sequencing Area O

Project No. 110207, Everett, Washington

	pH Reading in Standard Units			
	Proximal Wells			
Date	NRU-MW-102	NRS-MW-102	REC7-MW-2	TM-MW-6
Baseline Readings for this Sequencing Area (3x in 1 week)				
10/8/2020	6.96	7.05	6.99	7.54
10/9/2020	6.99	7.09	6.93	7.55
10/12/2020	7.04	6.91	6.64	7.21
Average Baseline	*7.00*	*7.02*	*6.85*	*7.43*
"Trigger pH"	***7.50***	***7.52***	***7.35***	***7.93***
Weekly (at least) Compliance Readings During CM Removal in this Sequencing Area				
10/19/2020	7.00	7.03	6.65	7.22
Weekly (at least) Compliance Readings for 3 Weeks After CM Removal is Done in this Sequencing Area				
10/28/2020	7.02	7.05	6.68	7.18
11/2/2020	6.96	6.92	6.66	7.15
11/12/2020	7.00	6.94	7.33	7.18

No Downgradient Wells

Notes

"Trigger pH" for proximal wells is the pH that, if exceeded for 3 weeks, triggers daily monitoring of proximal well and start monitoring of downgradient wells.

"Trigger pH" for downgradient wells is the pH that, if exceeded for 1 week, triggers consultation with Ecology regarding response action.

FIGURES

GIS Path: T:\projects_8\KimberlyClark\Env_Support_110207\Delivered\IA_Fall2020\Deliverable\F1 Wells Monitored for pH - East.mxd || Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet || Date Saved: 2020-12-15 || User: truilen || Print Date: 2020-12-15

Proximal Well
Downgradient Well (Refer to text)
Monitoring Wells
Proposed Interim Action Area
CM Removal Sequencing Area (CM Removal Plan of Operations, July 2017)
Former Log Pond
Crushed Material Boundary
Upland Area Boundary

N

CN-MW-3
CN-MW-2
CN-MW-1
REC7-MW-1
NRP-MW-3
NRU-MW-102
MW-5
NRP-MW-2
NRU-MW-101
NRS-MW-101
NRS-MW-102
UG-MW-1
CN-MW-101
CN-MW-104
TM-MW-1
CN-MW-102
CN-MW-103
TM-MW-2
M
TM-MW-3
TM-MW-5
REC7-MW-2
TM-MW-6
TM-MW-4
REC6-MW-2
UST29-MW-101
UST29-MW-102
UST29-MW-103
L
HBV-MW-101
MW-6
LP-MW-4
LP-MW-2
LP-MW-1
HB-MW-1R
SHB-MW-101
SHB-MW-102
GF9-MW-3
GF9-MW-4
GF9-MW-1
GF9-MW-2
SHB-MW-2
G
RCD-MW-101
AP-MW-1R
UG-MW-2R
BA-MW-5
BA-MW-2
BA6-MW-101
BA-MW-1
REC5-MW-1R
BA-MW-7
UST70-MW-101
UST71-MW-104
UST70-MW-2
UST70-MW-102
BA-MW-3
BA-MW-4
UST71-MW-101
UST71-MW-102
UST71-MW-103
F
REC3-MW-1R
PM-MW-3
BBH-MW-101
BBH-MW-103
BBH-MW-102
BBH-MW-104
PM-MW-6
OPS-MW-1
PM-MW-8
PM-MW-1
CMS-MW-1R
CMS-MW-2
PM-MW-2
PM-MW-5
B1
PM-MW-7
PM-MW-4
DAST-MW-101
REC7-MW-3
BCT-MW-108
BCT-MW-107
OMS-MW-2
A1
UST68-MW-5
BCT-MW-106
OMS-MW-1
BCT-MW-103
MW-1
BCT-MW-105
BCT-MW-102
BCT-MW-101
MW-2
BCT-MW-104
REC1-MW-3
REC1-MW-4
REC1-MW-1
REC7-MW-4
REC1-MW-15
REC1-MW-14
REC1-MW-12
REC1-MW-2
REC1-MW-9
REC1-MW-10
REC1-MW-8
REC1-MW-5
REC1-MW-11
REC1-MW-7
REC1-MW-6

0 100 200
Feet

Wells Monitored for pH during CM Removal in Eastern Excavation Areas A1, B1, F, G, L, and M

Report for 2nd Interim Action
K-C Worldwide Site Upland Area
Everett, Washington

Aspect Consulting	DEC-2020	BY: SJG / TDR	FIGURE NO. F1
	PROJECT NO. 110207	REVISED BY: RAP	

GIS Path: T:\projects_8\KimberlyClark\Env_Support_110207\Delivered\IA_Fall2020\Deliverable\F2 Wells Monitored for pH - Central.mxd || Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet || Date Saved: 2020-12-15 || User: tullen || Print Date: 2020-12-15

Proximal Well
Downgradient Well (Refer to text)
Monitoring Wells
Proposed Interim Action Area
CM Removal Sequencing Area (CM Removal Plan of Operations, July 2017)
Former Log Pond
Crushed Material Boundary
Upland Area Boundary

CN-MW-3
CN-MW-2
CN-MW-1
REC7-MW-1
NRU-MW-102
NRP-MW-3
MW-5
NRP-MW-2
NRU-MW-101
NRS-MW-101
NRS-MW-102
UG-MW-1
N
CN-MW-101
CN-MW-104
TM-MW-1
REC7-MW-2
CN-MW-102
CN-MW-103
TM-MW-2
TM-MW-3
TM-MW-5
TM-MW-6
K
TM-MW-4
REC6-MW-2
UST29-MW-101
UST29-MW-102
UST29-MW-103
HBV-MW-101
MW-6
LP-MW-4
LP-MW-2
LP-MW-1
HB-MW-1R
SHB-MW-101
SHB-MW-102
GF9-MW-3
GF9-MW-4
GF9-MW-1
GF9-MW-2
SHB-MW-2
H
AP-MW-1R
UG-MW-2R
RCD-MW-101
BA-MW-5
BA6-MW-101
BA-MW-1
BA-MW-2
REC5-MW-1R
BA-MW-7
UST70-MW-101
UST71-MW-104
UST70-MW-2
E
UST70-MW-102
BA-MW-3
BA-MW-4
UST71-MW-101
UST71-MW-102
UST71-MW-103
REC3-MW-1R
PM-MW-3
BBH-MW-101
BBH-MW-103
BBH-MW-102
BBH-MW-104
PM-MW-6
OPS-MW-1
PM-MW-8
PM-MW-1
CMS-MW-1R
CMS-MW-2
PM-MW-2
PM-MW-5
PM-MW-7
PM-MW-4
B2
DAST-MW-101
REC7-MW-3
BCT-MW-108
BCT-MW-107
OMS-MW-2
UST68-MW-5
BCT-MW-106
A2
BCT-MW-103
OMS-MW-1
MW-1
BCT-MW-105
BCT-MW-102
BCT-MW-101
MW-2
BCT-MW-104
REC1-MW-3
REC1-MW-4
REC1-MW-1
REC7-MW-4
REC1-MW-15
REC1-MW-14
REC1-MW-12
REC1-MW-2
REC1-MW-9
REC1-MW-10
REC1-MW-8
REC1-MW-5
REC1-MW-11
REC1-MW-7
REC1-MW-6

0 100 200
Feet

Wells Monitored for pH during CM Removal in Central Excavation Areas A2, B2, E, H, K, and N

Report for 2nd Interim Action
K-C Worldwide Site Upland Area
Everett, Washington

Aspect CONSULTING	DEC-2020	BY: SJG / TDR	FIGURE NO. F2
	PROJECT NO. 110207	REVISED BY: RAP	

GIS Path: T:\projects_8\KimberlyClark\Env_Support_110207\Delivered\A_Fall2020\Deliverable\F3 Wells Monitored for pH - West.mxd || Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet || Date Saved: 2020-12-15 || User: ttrullen || Print Date: 2020-12-15

Proximal Well
Downgradient Well (Refer to text)
Monitoring Wells
Proposed Interim Action Area
CM Removal Sequencing Area (CM Removal Plan of Operations, July 2017)
Former Log Pond
Crushed Material Boundary
Upland Area Boundary

N

CN-MW-3
CN-MW-2
CN-MW-1
REC7-MW-1
NRU-MW-102
NRP-MW-3
MW-5
NRP-MW-2
NRU-MW-101
NRS-MW-101
NRS-MW-102
UG-MW-1
CN-MW-101
CN-MW-104
TM-MW-1
CN-MW-102
TM-MW-3
CN-MW-103
TM-MW-2
O
TM-MW-5
REC7-MW-2
TM-MW-6
TM-MW-4
REC6-MW-2
UST29-MW-101
UST29-MW-102
UST29-MW-103
HBV-MW-101
MW-6
J
LP-MW-4
LP-MW-2
LP-MW-1
HB-MW-1R
SHB-MW-101
SHB-MW-102
GF9-MW-3
GF9-MW-4
GF9-MW-1
GF9-MW-2
SHB-MW-2
I
AP-MW-1R
UG-MW-2R
RCD-MW-101
BA6-MW-101
BA-MW-5
BA-MW-1
BA-MW-2
BA-MW-7
REC5-MW-1R
UST70-MW-101
UST70-MW-2
D
UST71-MW-104
UST70-MW-102
BA-MW-3
BA-MW-4
UST71-MW-101
UST71-MW-102
UST71-MW-103
REC3-MW-1R
PM-MW-3
BBH-MW-101
BBH-MW-103
BBH-MW-102
PM-MW-6
BBH-MW-104
OPS-MW-1
PM-MW-8
PM-MW-1
CMS-MW-2
PM-MW-2
CMS-MW-1R
PM-MW-5
PM-MW-7
C
PM-MW-4
DAST-MW-101
REC7-MW-3
BCT-MW-108
UST68-MW-5
BCT-MW-107
OMS-MW-2
BCT-MW-106
OMS-MW-1
BCT-MW-103
MW-1
BCT-MW-102
BCT-MW-105
BCT-MW-101
MW-2
BCT-MW-104
REC1-MW-3
REC1-MW-4
REC1-MW-1
REC7-MW-4
REC1-MW-15
REC1-MW-14
REC1-MW-12
REC1-MW-2
REC1-MW-9
REC1-MW-10
REC1-MW-8
REC1-MW-5
REC1-MW-11
REC1-MW-7
REC1-MW-6

0 100 200
Feet

Wells Monitored for pH during CM Removal in Western Excavation Areas C, D, I, J, and O

Report for 2nd Interim Action
K-C Worldwide Site Upland Area
Everett, Washington

Aspect Consulting	DEC-2020	BY: SJG / TDR	FIGURE NO. F3
	PROJECT NO. 110207	REVISED BY: RAP	

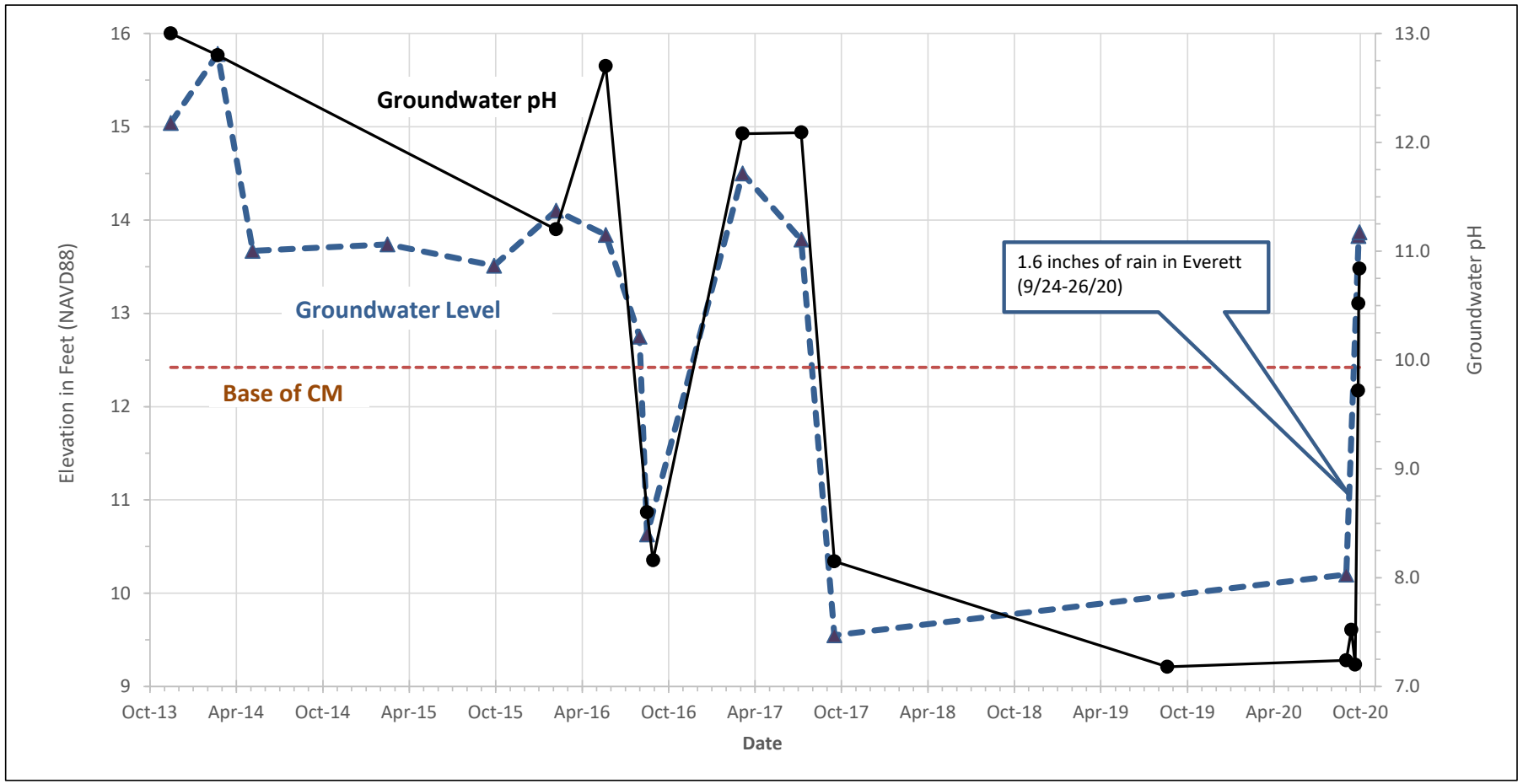


Figure F4
Well LP-MW-1 Groundwater Levels and pH Over Time
Report for Second Interim Action
K-C Upland Area, Everett, WA

Aspect Consulting
11/18//2020
V:\110207 KC Everett Mill\Deliverables\Interim Action Report 2020\Client Review Draft\App F pH monitoring\Figure F4 pH and water levels plot

APPENDIX G

Tabulation of Dust Monitoring Data/Observations and Controls Implemented

TABLE

Table G-1. Daily Average Dust (PM_{10}) Concentrations, Visual Observations, and Dust Control Measures Employed

Project No. 110207, Everett, Washington

		Quantitative Measurements			
Date	General Site Earthwork Activities	Monitoring Duration (Hour:Min)	Daily Average PM_{10} Conc. (mg/m^3)	Qualitative Observations regarding Visible Dust	Contractor Dust Control Measures Employed
	Maximum Daily Average PM_{10} Concentration during Work Hours (mg/m^3), excluding smoke and fog days =		**0.029**	***Air quality standard for PM10 is 0.15 mg/m^3 as 24-hr average.***	
	Average PM_{10} Concentration during Work Hours for Project Duration (mg/m^3), excluding smoke and fog days =		**0.008**		
05/20/20	Breach Pipe C; constructed settling basin on pavement for vactor materials	6:20	0.005		
05/21/20	Video/vactor pipes C and M. Remove unusable wood chips	6:50	0.004		
05/22/20	Remove unusable wood chips	2:40	0.005		
05/26/20	Pipe K excavation; Remove unusable wood chips	7:40	0.001		
05/27/20	Pipe K excavation; Pipe C plug w/ CDF	7:05	0.002		
05/28/20	Hydraulic Barker area scrape/stockpile CM, start soil excavation. Wood chip removal.	7:35	0.010		
05/29/20	Hydraulic Barker area soil excavation	8:00	0.010		
06/01/20	Removal of Pipe M inland of plugged vault.	7:40	0.003		
06/02/20	Expose, breach, plug Pipe K at shoreline	6:00	0.008		
06/03/20	Removed inland portion of Pipe M. Potholed to find inland portion of Pipe K.	7:45	0.005		
06/04/20	Pipe K plugging. Backfill Pipe M vault. Hydraulic Barker overexcavation.	7:10	0.002		
06/05/20	Cut concrete to expose wooden Pipe F @ shoreline. Pipe M pipe removal, backfill.	7:10	0.007		
06/08/20	Breached Pipe F @ 15' and 75', video pipe. Hydraulic Barker overexcavation.	Rain - no monitoring			
06/09/20	Begin filling Pipe F with CDF.	Rain - no monitoring			
06/10/20	Complete CDF placement inside and around Pipe F @15' and 75' breaches.	8:00	0.003		
06/11/20	CM potholing.	6:00	0.008		
06/12/20	(half-day rain) CM removal from PM-B-6 area. CM potholing.	4:20	0.008		
06/15/20	PM-B-6 CM scraping/stockpiling and soil excavation.	Rain - no monitoring			
06/16/20	PM-B-6 soil excavation.	6:45	0.001		
06/17/20	Log Pond chip conveyor area CM stripping, then soil excavation.	6:50	0.002		
06/18/20	Log Pond chip conveyor area soil excav. Clark Nickerson CM & overburden stripping,	8:00	0.002		
06/19/20	Brush clearing but no earthwork.	No earthwork - no monitoring			
06/22/20	Soil over-excavation in PMB6 and Log Pond conveyor areas.	7:15	0.002		
06/23/20	Soil excavation in Log Pond conveyor and Clark-Nickerson west areas.	7:25	0.002		
06/24/20	Soil excavation in Clark Nickerson east and soil over-excavation in PMB6 areas.	8:00	0.005		
06/25/20	Soil excavation in OMS area.	8:00	0.005		
06/26/20	Soil excavation in OMS area.	7:20	0.004		
06/29/20	Soil excavation in OMS area, soil over-excavation in LP Conveyor and CN-west areas.	8:00	0.014		
06/30/20	CM excavation/stockpiling onsite from areas A1 and B1.	3:05 before rain	0.004		
07/01/20	CM removal from A1 and B1.	Rain - no monitoring			
07/02/20	CM removal from A1 and B1.	Rain - no monitoring			
07/06/20	Over-excavation in PMB6 and OMS areas.	7:30	0.009		
07/07/20	Soil excavation in OMS area. Backfilling Log Pond & CN excavations. CM removal A1 & B1.	Rain - no monitoring			
07/08/20	CMS soil excavation. CM removal A1 & B1.	7:40	0.006		
07/09/20	CMS soil excavation. CM removal B1 & F.	7:30	0.008		
07/10/20	CMS soil excavation. CM removal B1 & F.	7:20	0.005		
07/13/20	Soil excavation in CMS area. CM removal B1 & F.	7:50	0.008		
07/14/20	Soil excavation in CMS area. CM removal F.	7:55	-0.001*		
07/15/20	Soil over-excavation in OMS and PMB6 areas. CM removal F.	7:50	0.010		
07/16/20	Soil excavation in CMS area. CM removal F.	7:35	0.014		
07/17/20	Soil excavation in CMS area. CM removal F.	7:10	0.013		
07/20/20	Soil excavation in CMS area. CM removal F.	8:00	0.009		

Table G-1. Daily Average Dust (PM_{10}) Concentrations, Visual Observations, and Dust Control Measures Employed

Project No. 110207, Everett, Washington

		Quantitative Measurements			
Date	General Site Earthwork Activities	Monitoring Duration (Hour:Min)	Daily Average PM_{10} Conc. (mg/m^3)	Qualitative Observations regarding Visible Dust	Contractor Dust Control Measures Employed
07/21/20	CM removal in F and G areas.	8:00	0.013		
07/22/20	Soil over-excavation in PMB6 area. CM removal in Areas F and G.	8:00	0.008	Minimal dust generated from CM excavation, moderate dust beneath trucks on site. No visible dust observed at fenceline.	Water truck operated continuously to control dust on travelways.
07/23/20	CM removal in Areas F and G.	8:00	0.010	Same as above.	Same as above
07/24/20	CM removal in Area G.	Meter malfunction		Same as above.	Same as above.
07/27/20	Soil excavation in CMS area. CM removal in Area G.	7:55	0.029	Same as above. Observed BNSF locomotive idling near dust monitor all day, and large dust cloud originating well south of site.	Same as above.
07/28/20	Soil excavation in CMS area. CM removal in Area G.	7:30	0.004	Minimal dust generated from CM excavation, minimal to moderate dust when loading CM, and beneath trucks, on site. No visible dust observed at fenceline.	Same as above.
07/29/20	Soil excavation in CMS area. CM removal in Area G.	7:20	0.009	Same as above.	Same as above.
07/30/20	Soil excavation in CMS area. CM removal in Areas G and L.	6:40	0.004	Same as above.	Same as above.
07/31/20	CM removal in Area L.	7:40	0.013	Same as above.	Same as above.
08/03/20	Soil excavation in CMS area. CM removal in Areas G and L.	7:40	0.010	Same as above.	Same as above.
08/04/20	Soil excavation in CMS area. CM removal in Areas G and L.	8:00	0.010	Same as above.	Same as above.
08/05/20	Soil excavation in CMS area. CM removal in Areas L and M.	8:00	0.008	Same as above.	Same as above.
08/06/20	CM removal in Areas L and M.	Rain - no monitoring		No dust observed at fenceline.	None.
08/07/20	CM removal in Area M.	Mist - no monitoring			Periodic use of water truck for selected parts of haul route.
08/10/20	CM removal in Area M. Backfilling PMB6 excavation and CM Area F.	5:15	0.004	No dust observed at fenceline.	Water truck operated continuously to control dust on travelways.
08/11/20	Soil excavation in CMS area. Test pitting GFB12 location. CM removal in Area M.	7:25	0.003	No dust observed at fenceline.	Same as above.
08/12/20	Soil excavation in CMS area. CM removal in Area M.	7:20	0.015	No dust observed at fenceline.	Same as above.
08/13/20	Soil excavation in CMS area. CM removal in Area M.	8:00	0.013	No dust observed at fenceline. City conducted construction work near the site--on 25th St. west of 529.	Same as above.
08/14/20	Soil excavation in CMS area. CM removal in Area M.	6:50	0.018	Same as above.	Same as above.
08/17/20	Soil excavation in CMS area incl. bunker pipe area. CM removal in Area M. Backfilling Areas B1 & F.	8:00	0.017	Same as above.	Same as above.
08/18/20	Soil excavation in CMS area. CM removal in Area M. Backfilling Areas B1 & F.	7:35	0.010	Same as above.	Same as above.
08/19/20	Soil excavation in CMS area. CM removal in Area M. Backfilling Areas B1 & F.	7:35	0.010	Same as above.	Same as above.
08/20/20	Soil excavation in CMS area. CM removal in Area M. Backfilling Areas B1 & F.	Rain - no monitoring		Same as above.	Periodic use of water truck for selected parts of haul route.
08/21/20	Soil excavation in CMS area. CM removal in Area M. Moved water conveyance line and water storage tank. Backfilling Areas F & L.	8:00	0.007	Same as above.	Water truck operated continuously to control dust on travelways.
08/24/20	CM removal in Areas M, A2, and B2. Backfilling Areas F & G.	6:20	0.014	No dust observed at fenceline.	Same as above.
08/25/20	Soil excavation in CMS area. CM removal in Areas M, A2, and B2. Backfilling Areas F & G.	7:35	0.008	No dust observed at fenceline.	Same as above.
08/26/20	Soil excavation in CMS area. CM removal in Areas M, A2, and B2. Backfilling Areas F & G.	7:00	0.013	City conducted construction work near the site--on 25th St. west of 529. No dust observed at fenceline.	Same as above.
08/27/20	Soil excavation in CMS area (bunker pipe trench) and SE corner of OMS area. CM removal in Areas A2 and B2. Backfilling Areas F & G.	6:55	0.006	No dust observed at fenceline.	Same as above.
08/28/20	Soil excavation in REC5-MW-1 area. CM removal in Areas A2 and B2. Backfilling Areas F & G.	7:30	0.007	Same as above.	Same as above.
08/31/20	Soil excavation in CMS area. CM removal in Areas A2, and B2. Backfilling Areas F & G.	7:15	0.012	Same as above.	Same as above.
09/01/20	Soil excavation in BBH area. CM removal in Areas A2, B2, and E. Backfilling Areas F, G, & L.	5:55	0.001	Same as above.	Same as above.
09/02/20	Soil excavation in BBH area. CM removal in Areas B2 and E. Backfilling Areas F & L.	7:35	0.004	Same as above.	Same as above.
09/03/20	CM removal in Areas B2 and E. Backfilling Areas F & L.	7:55	0.002	Same as above.	Same as above.
09/04/20	CM removal in Areas B2 and E. Backfilling Areas F & L.	7:05	0.012	Same as above.	Same as above.

Table G-1. Daily Average Dust (PM_{10}) Concentrations, Visual Observations, and Dust Control Measures Employed

Project No. 110207, Everett, Washington

		Quantitative Measurements			
Date	**General Site Earthwork Activities**	**Monitoring Duration (Hour:Min)**	**Daily Average PM_{10} Conc. (mg/m^3)**	**Qualitative Observations regarding Visible Dust**	**Contractor Dust Control Measures Employed**
09/08/20	Soil excavation in BBH area. CM removal in Area E. Backfilling Areas F & L.	7:40	0.171	**Heavy to moderate smoke from fires present all day** - reflected in particulate monitoring data (max reading = 0.245 mg/m3). Slight dust generated during CM removal activities, no dust visible at fence line.	Two water trucks operated continuously to control dust on travelways.
09/09/20	Soil excavation in BBH area. CM removal in Area E, minor removal in A2 and B2 as needed to maintain haul road. Backfilling Areas F & L.	7:45	0.103	**Light to moderate smoke from fires present all day** - reflected in particulate monitoring data. Slight dust generated during CM removal activities, no visible dust at fence line.	Water truck operated continuously to control dust on travelways.
09/10/20	Soil excavation in BBH area. CM removal in Area E. Backfilling Areas F & L.	7:25	0.109	**Same as above.**	Same as above.
09/11/20	CM removal in Area E, minor removal in A2 and B2 as needed to maintain haul road. Backfilling Areas F & L.	Wildfire Smoke - no monitoring		**Moderate to heavy smoke from fires present throughout the day**. ICI water truck watered roads onsite throughout the day. No dust visible at fence line.	Same as above.
09/14/20	Soil excvation in BBH area. CM removal in Area H and minor removal in B2. Backfilling CMS area and Area L.	Wildfire Smoke - no monitoring		**Same as above.**	Same as above.
09/15/20	CM removal in Area H and minor removal in B2. Backfilling CMS and REC5 areas and CM Areas B2 and L.	Wildfire Smoke - no monitoring		**Same as above.**	Same as above.
09/16/20	Soil excavation in BBH area. CM removal in Area H and minor removal in B2. Backfilling CMS and REC5 areas and Areas B1 and B2.	Wildfire Smoke - no monitoring		**Same as above.**	Same as above.
09/17/20	Soil excavation in BBH area. CM removal in Area H and minor removal in Area E. Backfilling CMS area and Areas B1 and B2.	Wildfire Smoke - no monitoring		**Same as above.**	Same as above.
09/18/20	Soil excavation in BBH area. CM removal in Area H and started removal in Area K. Backfilling CMS area and Areas B1 and B2.	Wildfire Smoke - no monitoring		**Same as above.**	Same as above.
09/21/20	Soil excavation in BBH area. CM removal in Area K. Backfilling Areas B2 and L.	7:05	0.010	No dust observed at fenceline.	Same as above.
09/22/20	Soil excavation in BBH area. CM removal in Area K and minor removal in Area E. Backfilling Areas B2 and L.	3:05	0.008	Monitoring stopped once light rain began. No dust observed at fenceline.	Water truck operated until rain was well underway.
09/23/20	Soil excavation in BBH area. CM removal in Area K. Backfilling Areas A1, A2, B2, and L.	Rain - no monitoring		No dust observed at fenceline.	Active dust control not needed due to rain.
09/24/20	Excavation in Digester Trench area. CM removal in Area K. Backfilling Areas B2 and L.	Rain - no monitoring		Same as above.	Same as above.
09/25/20	Excavation in Digester Trench area. CM removal in Area K and starting Area N. Backfilling Area L.	Rain - no monitoring		Same as above.	Same as above.
09/28/20	Excavation in Digester Trench area. CM removal in Areas K and N. Backfilling Area L.	6:25	0.008	Same as above.	Water truck operated continuously to control dust on travelways.
09/29/20	Excavation in Digester Trench area. CM removal in Areas K and N. Backfilling Area L.	8:00	0.016	Same as above.	Same as above.
09/30/20	Excavation in Digester Trench and BBH areas. CM removal in Areas N and C.	7:05	0.018	City of Everett doing construction on 25th St east of site. Visible dust not apparent at fenceline.	Same as above.
10/01/20	Excavation in BBH area. CM removal in Areas N and C.	8:00	0.035	**Fog^ present most of day.** City of Everett doing construction on 25th St east of site. Visible dust not apparent at fenceline.	Same as above.
10/02/20	Excavation in Digester Trench and BBH areas. CM removal in Areas N and C.	7:25	0.038	**Fog^ present much of day.** Visible dust not apparent at fenceline.	Same as above.
10/05/20	Excavation in BBH area. CM removal in Areas N, C. Backfill in completed eastern and central areas.	7:20	0.032	**Fog^ present much of day.** Visible dust not apparent at fenceline.	Same as above.
10/06/20	Excavation in BBH area. CM removal in Area C. Backfill in completed eastern and central areas.	6:20	0.027	**Fog^ present until early afternoon.** Visible dust not apparent at fenceline.	Same as above.
10/07/20	Excavation in BBH area. CM removal in Areas C,D. Backfill in completed eastern and central areas.	Rain - no monitoring		Visible dust not apparent at fenceline.	Water truck operated periodically as needed.
10/08/20	Excavation in BBH area. CM removal in Areas D. Backfill in completed eastern and central areas.	6:00	0.003	Same as above.	Water truck operated continuously to control dust on travelways.
10/09/20	Excavation in BBH area. CM removal in Areas D,I. Backfill in completed eastern and central areas.	6:15	0.009	Same as above.	Same as above.

Table G-1. Daily Average Dust (PM_{10}) Concentrations, Visual Observations, and Dust Control Measures Employed

Project No. 110207, Everett, Washington

		Quantitative Measurements			
Date	General Site Earthwork Activities	Monitoring Duration (Hour:Min)	Daily Average PM_{10} Conc. (mg/m^3)	Qualitative Observations regarding Visible Dust	Contractor Dust Control Measures Employed
10/12/20	Excavation in BBH and BAMW7 areas. CM removal in Area I. Backfill in completed eastern and central areas.	Rain - no monitoring		Visible dust not apparent at fenceline.	Water truck operated periodically as needed.
10/13/20	Excavation in BBH area. CM removal in Area I. Backfill in completed eastern and central areas.	Rain - no monitoring		Visible dust not apparent at fenceline.	Same as above.
10/14/20	Excavation in BBH and GFB12 areas. CM removal in Area I. Backfill in completed eastern and central areas.	Rain - no monitoring		Visible dust not apparent at fenceline.	Same as above.
10/15/20	Excavation in BBH and GFB12 areas. CM removal in Areas I, J. Backfill in completed eastern and central areas.	7:05	0.011	Visible dust not apparent at fenceline.	Same as above.
10/16/20	Excavation in BBH area. CM removal in Areas I, J, O. Backfill in completed eastern and central areas.	7:05	0.009	Visible dust not apparent at fenceline.	Same as above.
10/19/20	CM removal in Area J. Backfill in completed eastern and central areas.	Rain - no monitoring		Visible dust not apparent at fenceline.	Water truck operated periodically as needed.
10/20/20	Excavation in BBH and GFB12 areas. CM removal in Area J. Backfill in completed eastern and central areas.	Rain - no monitoring		Visible dust not apparent at fenceline.	Same as above.
10/21/20	Excavation in BBH and GFB12 areas. CM removal in Areas J, O. Backfill in completed eastern and central areas.	Rain - no monitoring		Visible dust not apparent at fenceline.	Same as above.
10/22/20	Excavation in BBH area. CM removal in Areas J, O. Backfill in completed eastern and central areas.	Rain - no monitoring		Visible dust not apparent at fenceline.	Same as above.
10/23/20	CM removal in Areas J, O. Backfill in completed eastern and central areas.	Rain - no monitoring		Visible dust not apparent at fenceline.	Same as above.

Notes:

*: Meter malfunctioned, generating negative readings.

^: High humidity and esp. fog can cause high bias in the dust monitor's readings. This is due to water-uptake and resulting hygroscopic growth of the aerosol particles, causing them to scatter more light and generate higher apparent mass concentration readings by the photometric instrument (TSI Application Note EXPMN-008 [2014]).

FIGURE

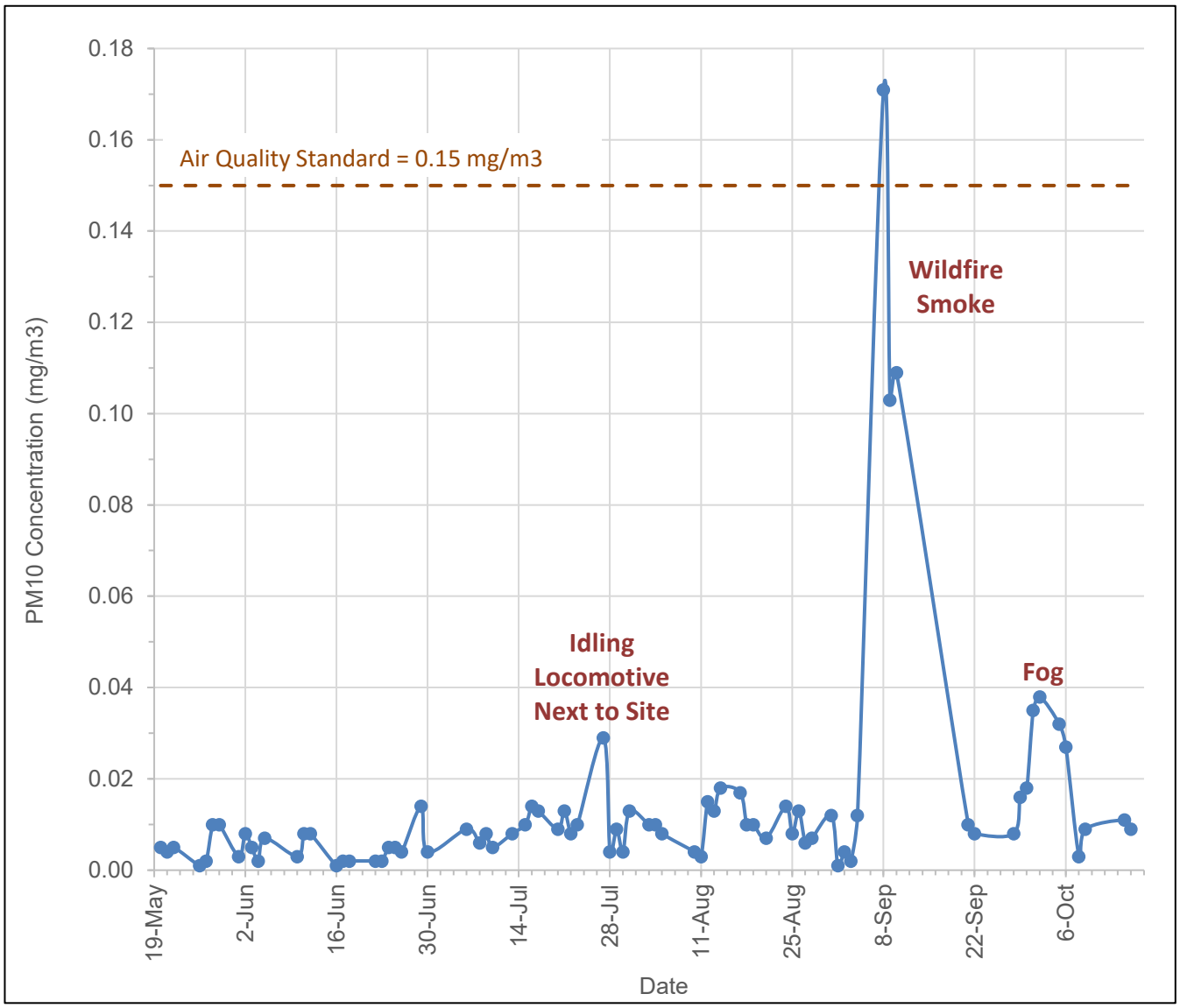


Figure G1
Daily Avg. Dust (PM10) Concentrations Over Time
Report for Second Interim Action
K-C Upland Area, Everett, WA

APPENDIX H

Waste Disposal Records

ASN 4 ASBESTOS WASTE SHIPMENT REPORT FORM

PLEASE PRINT OR TYPE. If you have questions, contact your local DEQ Regional Office in Portland 503-229-5982, Salem 503-378-5086, Medford 541-776-6010 ext. 235, or Bend 541-633-2019, Pendleton 541-278-4626, OR call 800-452-4011 for the location of your local regional DEQ office.

WASTE GENERATOR: (Contractor, Facility, or Operator)

1. Asbestos removal site name and address: TCI JOB # 20-09139
   2600 Federal Ave Everett WA 98201
   Street / City/State / County / Zip
   Contact person: Reed Frubling Phone: 360-661-6301
2. Operator's name and address: Performance Abatement Services Phone: 425-806-8404
   7415 W. Bostian Rd. | Woodinville, WA | Snohomish | 98072
   Street / City/State / County / Zip
3. Waste disposal site: Wasco County Landfill Phone: 541-296-4082
   2550 Steele Road | The Dalles, OR | Wasco | 97058
   Street / City/State / County / Zip
4. Describe asbestos materials: A-cm pipe insulation
5. Containers: Number: 10 wrap 86 bags Type: wrap bags
6. Total quantity (cubic yards): 0.4
7. **OPERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packaged, marked and labeled, and are in all respects in proper condition for transport according to all government regulations. All movement of this asbestos-containing material is recorded on this Waste Shipment Record Form.
   Name: Anicero Garcia Company: Performance Abatement Services
   Signature: [signature] Date: 8-19-20

TRANSPORTER(S):

8. Transporter #1: (Acknowledgment of receipt of materials)
   Agent: Anicero Garcia Company: PAS
   Address: 7415 W. Bostian Rd. Woodinville, WA 98072 Phone: 425-806-8404
   Signature: [signature] Date: 8-19-20
9. Transporter #2: (Acknowledgment of receipt of materials)
   Agent: _____ Company: _____
   Address: _____ Phone: _____
   Signature: _____ Date: _____

DISPOSAL: (Certification of receipt of asbestos materials covered by this manifest, except as noted in item 11 below.)

10. Waste Disposal Site: Wasco County Landfill
    Name and Title: WASCO COUNTY LANDFILL Linda Miller Date: AUG 25 2020
    Signature: [signature] Phone: 541-296-4082 ~~541-296-4082~~
11. **DISCREPANCY SPACE:** (Add attachments as needed)

(Revised 7/12)

12-AQ-042

CERTIFICATE OF DESTRUCTION

I, Joseph Allen-Thompson, of Regional Disposal Company (RSI facility), hereby certify that the entire product described in Section A has been properly and legally disposed of in Roosevelt Regional MSW Landfill on 6/02-10/16, 2020 (attach any appropriate documentation).

I understand that due to potential concerns related to such things as health, quality, and loss of goodwill, Interwest Construction (Company) does not want this product to be distributed to consumers, even through so called "distressed merchandise" channels of trade, and I further certify that these items were destroyed in such a manner that it cannot be sold, and that the company has taken every reasonable step to prevent resale of said items.

Name (print): Joseph Allen-Thompson

Signature: Joseph Allen-Thompson

Title: General Manager

Date: 12/22/2020

Section A- Products Destroyed (attached additional sheets if needed):

Waste Profile Number (if applicable): 4178201498, 4178201504 4178201495, 4178202676

Description of Product	***Quantity or Weight***
Contaminated Soil MC-19151(intermodal)	15,733.20 Tons
Contaminated Soil MC-19193 (dirt pit)	4,942.40 Tons

APPENDIX I

City of Everett Documentation for

PS04 Outfall Decommissioning

CITY OF EVERETT
Public Works

MEMORANDUM

Abandonment Close Out Report for Puget Sound Outfall No. 4, Work Order 2018 1433

FROM: Brian Doolan, P.E. Sewer/Drainage Maintenance Supervisor

DATE: February 24, 2021

PSO 4 Abandonment Work Plan (submitted February 19, 2020)

The City of Everett's plans to abandon Puget Sound Outfall No. 4 (PSO 4) were submitted to the Department of Ecology on February 19, 2020. PSO 4 runs through the former Kimberly Clark (KC) upland property.

The PSO4 pipeline previously carried stormwater from the local collection basin and infrequently the combined sewer overflow from the City's Lift Station No. 5. Approximately seven acres of storm water from two private parking lots and a small area of West Marine View Drive flowed through the line and out PS0 4 whenever it rained. When PSO 4 was functional, stormwater (that bypassed LS No. 5) or combined sewer overflows (from LS No. 5) entered a manhole east of the railroad tracks and were carried through a 10-inch pipe under the tracks. The PSO 4 pipeline also carried the historical discharges originating from the KC site.

The abandonment of PSO 4 has resulted in no further stormwater or combined sewer overflow discharges from the outfall. With Ecology Water Quality approval, city forces have temporarily re-routed PSO 4 stormwater and combined sewer flows to combine with the city's PSO No. 5 located at Lift Station No. 3.PSO 4 is permitted by Ecology to discharge combined sewer overflows and stormwater. The City of Everett's NPDES wastewater collection and treatment permit, Permit No. WA0024490 (expired October 30, 2020 and now administratively extended), lists PSO 4 as a permitted point of discharge for combined sewer (Section S.8); stormwater discharges from PSO 4 and the city's stormwater collection are covered under the Western Washington Phase II Stormwater General Permit (effective date August 1, 2019).

The PSO 4 pipeline started at Lift Station No. 5 as a 10-inch diameter pipe, where it crossed under the railroad tracks to enter the former KC site. As the pipeline traveled west across the KC site, multiple revisions, pipe types, and pipe upsizing occurred over the years to accommodate the site's historical industrial use, with multiple connections added from the KC facilities. By the time effluent reached the point of discharge, the pipe was 30 inches in diameter, an increase of nine times the flow capacity. Pipe types used included clay tiles, ductile, and concrete. Nine manhole structures were abandoned across the site, varying between brick and concrete.

The methods used to abandon the pipeline and manholes were from documents provided to the Ecology Toxics Cleanup Program for this site (Aspect Consulting memorandum to Andy Kallus, *Approach for Plugging Open Pipes at Shoreline,* June 27, 2018) and were referenced in the February 2020 work plan.

Each manhole and pipe access location along the pipeline alignment was filled with a control density fill mix (CDF) as specified in the submitted work plan. The CDF mix was applied for a length of at least five times the pipe diameter at each manhole and all connections. The CDF mix is lean cement, which upon setting has only a few hundred psi compressive strength. The work plan presented the metal analyses of the CDF aggregate materials from the gravel pit indicating the aggregate metal levels are well below MTCA Method A for soils.

Figure 1 shows PSO 4 across the former KC site, the manhole locations, and the lay lengths that were fully filled with CDF.

Concrete trucks were brought on site and delivered the CDF at a consistency and viscosity that allowed the CDF to be pumped to at least the five times the pipe diameter length for each manhole connection stated in the Aspect Consulting memo. The CDF supplier provided a mix that was able to fill the pipes (adjustments had to be made as viscosity specifications are not normal for concrete mixes). The pump hose was measured and marked with the required length to be used at each manhole location to ensure the volume requirement of five times the diameter length was met. At the end of the entire pour the volume required at all nine manhole locations was exceeded by one yard of CDF, surpassing the established quantity for the length requirement.

The CDF was delivered in two pours due to the CDF viscosity and to ensure the head pressure of CDF in a manhole did not push the CDF beyond the length needed to keep the pipe's full circumference filled. The first pour filled the pipes to the required length and then was allowed to set, preventing the CDF from being pushed further down the pipe due to the manhole head pressure. A visual inspection was completed after each pour to ensure the pipe's circumference was filled after the pump hose was removed. Once the pipe connections were filled and

allowed to initially set, the entire manhole structure was filled but for the last foot. The remaining roughly one-foot depth from the top of the CDF fill to the surface of the manholes was left unfilled to allow for final grading of the site by KC's contractor and to avoid impacting and damaging the structure and CDF.

Specific Details

On Thursday February 27, 2020, all connections including inlet and outlet pipes from each of the nine manholes across the site were filled with the specified CDF mix. At each location, the manhole was prepared by city crews prior to being abandoned. Manholes and their connecting pipes were previously cleaned by city crews and were void of debris. At each location, a crew member made entry to and inspected the manhole and connecting lines to verify the lines were still clean.

Once a manhole was ready, a cement mixer with a pumper delivered the CDF directly to each manhole and their connecting pipes. The pumper hose was inserted by the crew member into each pipe for the CDF volume needed to meet the five times the diameter length requirement. For example, the first upstream manhole had a 10-inch pipe for its inlet and outlet and therefore required a length of 50 inches of each pipe to be filled. The hose was inserted 50 inches resulting in the CDF being pumped into and filling the pipe beyond the required 50 inches. This allowed the full lay length of CDF required to fully fill the circumference. This was repeated at each of the manhole and connecting pipe locations for all inlets and the outlet segments of pipe. Once the pumping was completed at each manhole the pipe was visually checked to ensure that it was filled.

On Friday February 28th, 2020, after the previous day's applied CDF could initially cure, each of the nine manholes had additional CDF added to within one foot of the surface. This eliminated air gaps and prevented ground water inflow.

Some of the manholes were smaller due to their last section being a cone rather than a cylinder shape. Manhole No. 9, the last structure discharge was smaller than was estimated.

See photos below for typical installation examples. Photo 1 shows how a pump line was typically processed with the entrant entering the manhole to push the line up the pipe. Photo 2 shows a manhole after both upstream and downstream pipes had been filled.

Below is a summary of the abandonment information for each location, listed by manhole number (per Figure 1).

Manhole No. 1

Manhole No. 1 has a 10-inch pipe entering and exiting the structure. The structure is 5-feet deep and 4-feet in dimeter. The pipe distance filled with CDF was 50 inches in both directions. The estimated total CDF volume that filled the pipes and the manhole was three cubic yards.

Manhole No. 2

This manhole has a 10-inch pipe entering and a 16-inch pipe exiting the structure. The structure is 6-feet deep and 4-feet in diameter. The pipe length filled was 50 inches on the inlet pipe and 80 inches on the outlet pipe. Approximately five cubic yards of CDF filled the pipes and manhole.

Manhole No. 3

This manhole has a 16-inch pipe entering and a 16-inch pipe exiting the structure. The structure is 6-feet deep and 4-feet in diameter. The pipe length filled was 80 inches on both the inlet and outlet pipes. About six cubic yards of CDF filled the pipes and manhole.

Manhole No. 4

This manhole has a 16-inch pipe entering and a 16-inch pipe exiting the structure. The structure is 6-feet deep and 4-feet in diameter. The pipe length filled was 80 inches on both the inlet and outlet pipes. An estimated six cubic yards of CDF filled the pipes and manhole.

Manhole No. 5

This manhole has a 16-inch pipe entering and an 18-inch pipe exiting the structure. The structure is 8.5 feet deep and 4.5 feet in diameter. The pipe length filled was 80 inches on the inlet pipe and 90 inches on the outlet pipe. An estimated nine cubic yards of CDF filled the pipes and manhole.

Manhole No. 6

This manhole has an 18-inch pipe entering and an 18-inch pipe exiting the structure. The structure is 9-feet deep and 4.5 feet in diameter. The pipe length filled was 90 inches on the inlet pipe and 90 inches on the outlet pipe. Just over nine cubic yards of CDF filled the pipes and manhole.

Manhole No. 7

This manhole has an 18-inch pipe entering and an 18-inch pipe exiting the structure. The structure is 13.5 feet deep and 4.5 feet in diameter. The pipe length filled was 90 inches on the inlet pipe and 90 inches on the outlet pipe. An estimated 12 cubic yards of CDF filled the pipes and manhole.

Manhole No. 8

This manhole has an 18-inch pipe entering and a 30-inch pipe exiting the structure. The structure is 14-feet deep and 6-feet in diameter. The pipe length filled was 90 inches on the inlet pipe and 150 inches on the outlet pipe. An estimated 20 cubic yards of CDF filled the pipes and manhole.

Manhole No. 9 – (or Vault)

This structure is a vault rather than a manhole. The structure has a 30-inch pipe entering and a 30-inch pipe exiting the structure. The vault was smaller than expected. The pipe length filled was 90 inches on the inlet pipe and the outlet pipe. Both the inlet and outlet pipe were capped at the structure to allow complete filling and blocked to prevent water from entering or exiting. The total volume of CDF to abandon this vault and piping was approximately 20 cubic yards.

End of Pipe for PS 04

The pipe west of Manhole No. 9 is attached underneath the wharf and is a 30-inch diameter clay-tile pipe. City crews planned to plug the accessible end of pipe with a mechanical plug during low tides in July 2020. Due to the cleanup effort going on during the summer of 2020, city forces could not access the wharf area to install the plug. This work is now being coordinated with the Port of Everett and installation of the mechanical plug is now scheduled during a low tide cycle the last week of March 2021.

Once the mechanical plug is installed photos will be emailed to Ecology.

Photo 1: Preparing a manhole for CDF Fill

Photo 2: Typical CDF Fill of Pipes and Manhole

Att. Figure 1, Site Map

Cc: Andy Kallus, Department of Ecology Toxics Cleanup
Kate Snider, Floyd|Snider
Hanna Lintukorpi, City of Everett
Mark Sadler, City of Everett
Project Files

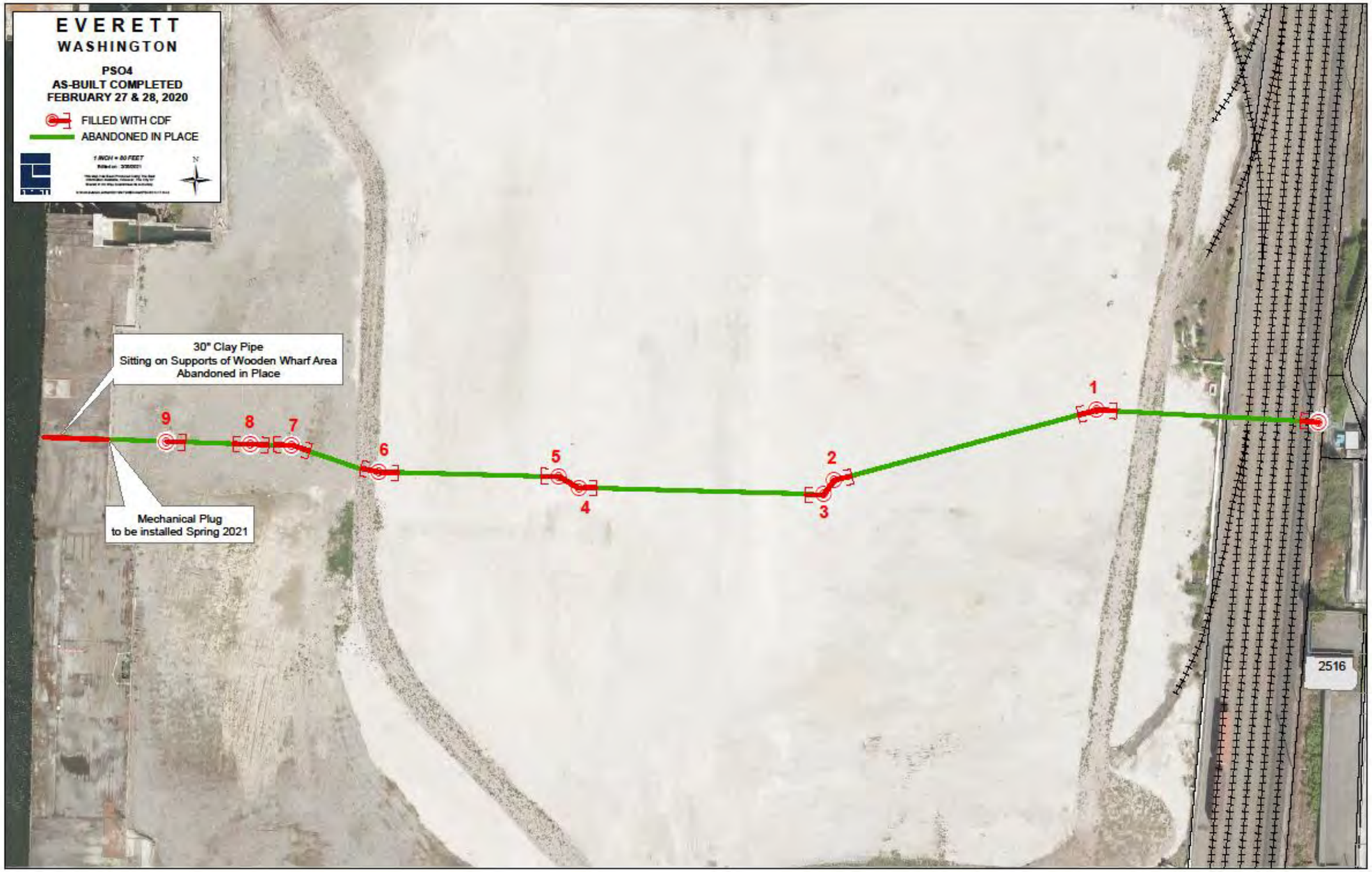



Figure 1, Site Map