Thursday, June 07, 2018

Karen Waters-Husted
CH2M HILL Plateau Remediation Company
825 Jadwin Avenue
Richland, WA 99352

Re: ALS Workorder: 1804534
Project Name: RCRA_WAC, APRIL 2018
Project Number: W18-004

Dear Ms. Waters-Husted:

Five water samples were received from CH2M HILL Plateau Remediation Company, on 4/25/2018. The samples were scheduled for the following analyses:

Herbicides
Metals

The results for these analyses are contained in the enclosed reports.

This report was originally submitted on May 30, 2018. The Dalapon QC results have been corrected.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Thank you for your confidence in ALS Environmental. Should you have any questions, please call.

Sincerely,

ALS Environmental
Katie M. OBrien
Project Manager

We certify that theis data package is in compliance with the SOW, both technically and for completeness, including a full description of, explanation of, and corrective actions for, an and all deviations, from either the analyses requested or the case narrative requested. Release of the data contained in this hard copy data package has been authorized by the Laboratory Analytical Manager (or designee) and the laboratory's client services representative as verified by their signatures on this report.

ALS -- Fort Collins

Sample Number(s) Cross-Reference Table

OrderNum: 1804534
Client Name: CH2M HILL Plateau Remediation Company
Client Project Name: RCRA_WAC, APRIL 2018
Client Project Number: W18-004
Client PO Number: BOA 54854

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
B3HPX8	1804534-1		WATER	23-Apr-18	13:31
B3HWJ0	1804534-2		WATER	23-Apr-18	13:31
B3HPY4	1804534-3		WATER	23-Apr-18	11:57
B3HRB9	1804534-4		WATER	23-Apr-18	11:57
B3HWH5	1804534-5		WATER	24-Apr-18	8:06

1804334 53165

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # W18-004-303
		Page 1 of 1

Collector: Juan Aguilar /CHPRC	**Contact/Requester:** Karen Waters-Husted	**Telephone No.:** 509-376-4650
SAF No.: W18-004	**Sampling Origin:** Hanford Site	**Purchase Order/Charge Code:** 300071 PO. 4/24/18
Project Title: RCRA_WAC, APRIL 2018	**Logbook No.:** HNF-N-506-98178	**Ice Chest No.:** GWS-384 1660
Shipped To (Lab): ALS Environmental Ft. Collins	**Method of Shipment** Commercial Carrier	**Bill of Lading/Air Bill No.:** 7720 6683 3491
Protocol RCRA	**Priority:** 30 Days	**Offsite Property No.:** 9344

POSSIBLE SAMPLE HAZARDS/REMARK
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS
N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
1) B3HPX8	Y	W	4-23-18	1331	1x500-mL G/P	7470_MERCURY_CV: COMMON (AQUEOUS); 6010_METALS_ICP: GW 04; 6020_METALS_ICPMS: GW 01	28 Days	HNO3 to pH <2
2) B3HWJ0	N	W	4-23-18	1331	1x500-mL G/P	7470_MERCURY_CV: COMMON (AQUEOUS); 6010_METALS_ICP: GW 04; 6020_METALS_ICPMS: GW 01	28 Days	HNO3 to pH <2

06/07/2018

Relinquished By: Juan Aguilar /CHPRC	APR 23 2018 1430	Received By: SSU #1	APR 23 2018 1430
Print First and Last Name	*Signature* *Date/Time*	*Print First and Last Name*	*Signature* *Date/Time*
Relinquished By: SSU-1	APR 24 2018 0945	Received By: Tim Calloway /CHPRC FEDEX	APR 24 2018 0945
Print First and Last Name	*Signature* *Date/Time*	*Print First and Last Name*	*Signature* *Date/Time*
Relinquished By: Tim Calloway /CHPRC	APR 24 2018 1400	Received By: FEDEX	
Print First and Last Name	*Signature* *Date/Time*	*Print First and Last Name*	*Signature* *Date/Time*
Relinquished By: FEDEX		Received By: KELLI JEAN SMITH	4.25.18 0920
Print First and Last Name	*Signature* *Date/Time*	*Print First and Last Name*	*Signature* *Date/Time*

Matrix *

S = Soil	DS = Drum Solids
SE = Sediment	DL = Drum Liquid
SO = Solid	T = Tissue
SL = Sludge	WI = Wipe
W = Water	L = Liquid
O = Oil	V = Vegetation
A = Air	X = Other

REV.1

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process):	Disposed By:	Date/Time:

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 1804534	C.O.C. # W18-004-017 Page 1 of ~~1~~ 2

Collector: Juan Aguilar /CHPRC	**Contact/Requester:** Karen Waters-Husted	**Telephone No.:** 509-376-4650
SAF No.: W18-004	**Sampling Origin:** Hanford Site	**Purchase Order/Charge Code:** 300071
Project Title: RCRA_WAC, APRIL 2018	**Logbook No.:** HNF-N-506-98178	**Ice Chest No.:** GWS-389 6000
Shipped To (Lab): ALS Environmental Ft. Collins	**Method of Shipment** Commercial Carrier	**Bill of Lading/Air Bill No.:** 777206883 3991
Protocol RCRA	**Priority:** 30 Days	**Offsite Property No.:** 9344

POSSIBLE SAMPLE HAZARDS/REMARK
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS
N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3HPY4	N	W	4-23-18	1157	1x500-mL G/P	7470_MERCURY_CV: COMMON (AQUEOUS); 6010_METALS_ICP: GW 04; 6020_METALS_ICPMS: GW 01	28 Days	HNO3 to pH <2
B3HRB9	Y	W	4-23-18	1157	1x500-mL G/P	7470_MERCURY_CV: COMMON (AQUEOUS); 6010_METALS_ICP: GW 04; 6020_METALS_ICPMS: GW 01	28 Days	HNO3 to pH <2

06/07/2018

Relinquished By: Juan Aguilar /CHPRC — Print First and Last Name	Signature	APR 2 3 2018 1335 — Date/Time	Received By: Troy Bacon CHPRC — Print First and Last Name; Signature: Troy L Bacon; APR 2 3 2018 1335 — Date/Time
Relinquished By: Troy Bacon CHPRC — Print First and Last Name; Signature: Troy L Bacon; APR 2 3 2018 1410 — Date/Time			Received By: SSU-1 — Print First and Last Name; Signature; APR 2 3 2018 1410 — Date/Time
Relinquished By: SSU-1 — Print First and Last Name	Signature	APR 2 4 2018 0945 — Date/Time	Received By: Tim Calloway /CHPRC — Print First and Last Name; Signature: T-Calloway; APR 2 4 2018 0945 — Date/Time
Relinquished By: Tim Calloway /CHPRC — Print First and Last Name; Signature: T-Calloway; APR 2 4 2018 1400 — Date/Time			Received By: FEDEX — Print First and Last Name; Signature; Date/Time

Matrix *

S = Soil	DS = Drum Solids
SE = Sediment	DL = Drum Liquid
SO = Solid	T = Tissue
SL = Sludge	WI = Wipe
W = Water	L = Liquid
O = Oil	V = Vegetation
A = Air	X = Other

REV.1

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process):	Disposed By:	Date/Time:

1804534

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST (continued)

C.O.C. No. W18-004-017

Page 2 of 2

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
	FEDEX				KELI-JEAN SMITH		11:25:18 0720

06/07/2018

REV.1

5 of 20

A-6003-962 (03/05)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 184534	C.O.C. # W18-004-298 Page 1 of 1

Collector: Kevin Patterson /CHPRC	**Contact/Requester:** Karen Waters-Husted	**Telephone No.:** 509-376-4650
SAF No.: W18-004	**Sampling Origin:** Hanford Site	**Purchase Order/Charge Code:** 300071 PO, 4/24/18
Project Title: RCRA_WAC, APRIL 2018	**Logbook No.:** HNF-N-506 100/14	**Ice Chest No.:** GWS-3564, 6060
Shipped To (Lab): ALS Environmental Ft. Collins	**Method of Shipment** Commercial Carrier	**Bill of Lading/Air Bill No.:** 777206883 39911
Protocol RCRA	**Priority:** 30 Days	**Offsite Property No.:** 9344

POSSIBLE SAMPLE HAZARDS/REMARK
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS
N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3HWH5	N		APR 24 2018	0806	4x1-L aG	8151_HERBICIDE_GC: COMMON	7/40 Days	Cool <=6C

06/07/2018

Relinquished By: Kevin Patterson /CHPRC — Print First and Last Name / Signature / APR 24 2018 0750 Date/Time	Received By: Janelle Zunker CHPRC — Print First and Last Name / Signature / APR 24 2018 0750 Date/Time	Matrix *
Relinquished By: Janelle Zunker CHPRC — Print First and Last Name / Signature / APR 24 2018 1400 Date/Time	Received By: FEDEX — Print First and Last Name / Signature / Date/Time	S = Soil, SE = Sediment, SO = Solid, SL = Sludge, W = Water, O = Oil, A = Air; DS = Drum Solids, DL = Drum Liquid, T = Tissue, WI = Wipe, L = Liquid, V = Vegetation, X = Other
Relinquished By: FEDEX — Print First and Last Name / Signature / Date/Time	Received By: KELI-JEAN SMITH — Print First and Last Name / Signature / 4/25/18 0920 Date/Time	
Relinquished By: — Print First and Last Name / Signature / Date/Time	Received By: — Print First and Last Name / Signature / Date/Time	

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process):	Disposed By:	Date/Time:

Printed On 3/13/2018 FSR ID = FSR58670 A-6004-842 (REV 3)

REV.1

06/07/2018 REV.1

ALS Environmental - Fort Collins

CONDITION OF SAMPLE UPON RECEIPT FORM

Client: CHPRC Workorder No: 1804534

Project Manager: KMC Initials: KS Date: 4.25.18

1. Does this project require any special handling in addition to standard ALS procedures?			YES	NO
2. Are custody seals on shipping containers intact?	NONE		YES	NO
3. Are Custody seals on sample containers intact?	NONE		YES	NO
4. Is there a COC (Chain-of-Custody) present or other representative documents?			YES	NO
5. Are the COC and bottle labels complete and legible?			YES	NO
6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)			YES	NO
7. Were airbills / shipping documents present and/or removable?	DROP OFF		YES	NO
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	N/A		YES	NO
9. Are all aqueous non-preserved samples pH 4-9?	N/A		YES	NO
10. Is there sufficient sample for the requested analyses?			YES	NO
11. Were all samples placed in the proper containers for the requested analyses?			YES	NO
12. Are all samples within holding times for the requested analyses?			YES	NO
13. Were all sample containers received intact? (not broken or leaking, etc.)			YES	NO
14. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) headspace free? Size of bubble: ____ < green pea ____ > green pea	N/A		YES	NO
15. Do any water samples contain sediment? Amount Amount of sediment: ____ dusting ____ moderate ____ heavy	N/A		YES	NO
16. Were the samples shipped on ice?			YES	NO
17. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: #1 #3 #4	RAD ONLY		YES	NO

Cooler #:	1							
Temperature (°C):	1.1							
No. of custody seals on cooler:	2							
DOT Survey/ Acceptance Information — External µR/hr reading:	8							
Background µR/hr reading:	9							

Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? **YES / NO / NA** (If no, see Form 008.)

Additional Information: PROVIDE DETAILS BELOW FOR A NO RESPONSE TO ANY QUESTION ABOVE, EXCEPT #1 AND #16.

If applicable, was the client contacted? **YES / NO / NA** Contact: _____ Date/Time: _____

Project Manager Signature / Date: [signature] 4/26/18

Form 201r25.xls
(02/12/2018)

*IR Gun #1, VWR SN 170560549
*IR Gun #3, VWR SN 170647571
*IR Gun #4, Oakton, SN 2372220101-0002

After printing this label:
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.
Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental,consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

Herbicides Resubmission

Case Narrative

CH2M HILL Plateau Remediation Company

RCRA_WAC, APRIL 2018 -- W18-004

Work Order Number: 1804534

1. This sample was extracted according to SW-846, 3rd Edition procedures. Specifically, the water sample was extracted using separatory funnels according to the current revision of SOP 664 based on Method 8151A. **This report is being re-submitted in order to correct the dalapon recoveries in the laboratory control sample, matrix spike and matrix spike duplicate. (See NCR #14678)**

2. The extracts were then analyzed using GC/ECD (electron capture detectors) according to the current revision of SOP 434 based on SW-846 Method 8151A. All positive results were then confirmed on a second column. Unless interferences were present, the quantitation of each analyte is the higher of the concentrations obtained from each column that met initial and continuing calibration criteria. Note that analyst raw data annotation may provide further clarification.

3. All initial and continuing calibration criteria were met.

4. The method blank associated with this project was below the MDL for all analytes.

5. All laboratory control sample recoveries were within the acceptance criteria.

6. Sample 1804534-5 was designated as the quality control sample for this analysis.

   Similarity of matrix and therefore relevance of the QC results should not be automatically inferred for any sample other than the native sample selected for QC.

   All matrix spike and matrix spike duplicate recoveries and RPDs were within acceptance criteria.

7. All samples were extracted and analyzed within the established holding times.

8. All surrogate recoveries were within acceptance criteria.

9. Manual integrations are performed when needed to provide consistent and defensible data following the guidelines in the current revision of SOP 939.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Megan Johnstone — 6/4/18
Organics Primary Data Reviewer — Date

Organics Final Data Reviewer — 6/7/18
Date

ALS
Data Qualifier Flags
Organics

U or ND:	**This flag indicates that the compound was analyzed for but not detected.**
J:	**This flag indicates an estimated value. This flag is used as follows : (1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; (2) when the mass spectral and retention time data indicate the presence of a compound that meets the volatile and semivolatile GC/MS identification criteria, and the result is less than the reporting limit (RL) but greater than the method detection limit (MDL); (3) when the retention time data indicate the presence of a compound that meets the GC identification criteria, and the result is less than the RL but greater than the MDL; and (4) the reported value is estimated.**
B:	**This flag is used when the analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user. This flag shall be used for a tentatively identified compound (TIC) as well as for a positively identified target compound.**
E:	**This flag identifies compounds whose concentration exceeds the upper level of the calibration range.**
A:	**This flag indicates that a tentatively identified compound is a suspected aldol-condensation product.**
X:	**This flag indicates that the analyte was diluted below an accurate quantitation level.**
***:**	**This flag indicates that a spike recovery is equal to or outside the control criteria used.**
+:	**This flag indicates that the relative percent difference (RPD) equals or exceeds the control criteria.**

Chlorinated Herbicides by GC/ECD

Method SW8151A

Method Blank

Lab Name: ALS -- Fort Collins
Work Order Number: 1804534
Client Name: CH2M HILL Plateau Remediation Company
ClientProject ID: RCRA_WAC, APRIL 2018 W18-004

Lab ID: EX180501-1MB

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 01-May-18
Date Analyzed: 04-May-18

Prep Batch: EX180501-1
QCBatchID: EX180501-1-1
Run ID: PT180504-10A
Cleanup: NONE
Basis: N/A
File Name: 11943.dat

Sample Aliquot: 1000 ml
Final Volume: 10 ml
Result Units: UG/L
Clean DF: 1

CASNO	Target Analyte	DF	Result	Result Qualifier	Reporting Limit	MDL
75-99-0	DALAPON	1	1.2	U	4	1.2
1918-00-9	DICAMBA	1	0.06	U	0.2	0.06
93-65-2	MCPP	1	30	U	100	30
94-74-6	MCPA	1	30	U	100	30
120-36-5	DICHLOROPROP	1	0.3	U	1	0.3
94-75-7	2,4-D	1	0.3	U	1	0.3
93-72-1	SILVEX	1	0.03	U	0.1	0.03
93-76-5	2,4,5-T	1	0.03	U	0.1	0.03
94-82-6	2,4-DB	1	0.3	U	1	0.3
88-85-7	DINOSEB	1	0.32	U	1	0.32

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Flag	Spike Amount	Percent Recovery	Control Limits
19719-28-9	2,4-DICHLOROPHENYLACETIC ACID	2.36		2	118	56 - 140

Data Package ID: *PT1804534-1*

Chlorinated Herbicides by GC/ECD

Method SW8151A

Sample Results

Lab Name: ALS -- Fort Collins
Work Order Number: 1804534
Client Name: CH2M HILL Plateau Remediation Company
ClientProject ID: RCRA_WAC, APRIL 2018 W18-004

Field ID: B3HWH5
Lab ID: 1804534-5

Analysis ReqCode: 8151_HERBICID

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 24-Apr-18
Date Extracted: 01-May-18
Date Analyzed: 04-May-18
Prep Method: METHOD

Prep Batch: EX180501-1
QCBatchID: EX180501-1-1
Run ID: PT180504-10A
Cleanup: NONE
Basis: As Received
File Name: 11945.dat

Analyst: Dan Sheneman
Sample Aliquot: 1035 ml
Final Volume: 10 ml
Result Units: UG/L
Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Result Qualifier	Reporting Limit	MDL
75-99-0	DALAPON	1	1.2	U	3.9	1.2
1918-00-9	DICAMBA	1	0.058	U	0.19	0.058
93-65-2	MCPP	1	29	U	97	29
94-74-6	MCPA	1	29	U	97	29
120-36-5	DICHLOROPROP	1	0.29	U	0.97	0.29
94-75-7	2,4-D	1	0.29	U	0.97	0.29
93-72-1	SILVEX	1	0.029	U	0.097	0.029
93-76-5	2,4,5-T	1	0.029	U	0.097	0.029
94-82-6	2,4-DB	1	0.29	U	0.97	0.29
88-85-7	DINOSEB	1	0.31	U	0.97	0.31

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Flag	Spike Amount	Percent Recovery	Control Limits
19719-28-9	2,4-DICHLOROPHENYLACETIC ACID	2.11		1.93	109	56 - 140

Data Package ID: *PT1804534-1*

Surrogate Summary for Chlorinated Herbicides by GC/ECD

Method SW8151A

Lab Name: ALS -- Fort Collins
Work Order Number: 1804534
Client Name: CH2M HILL Plateau Remediation Company
ClientProject ID: RCRA_WAC, APRIL 2018 W18-004

PrepBatchID: EX180501-1
QC Batch ID: EX180501-1-1
Date Extracted: 5/1/2018

Surrogate Compound	Control Limits Lower	Upper
2,4-dichlorophenylacetic ac	56	140

Lab ID	Client Sample ID	Date Collected	Date Received	% Recovery
EX180501-1MB	XXXXXXX	5/1/2018	4/25/2018	118
EX180501-1LCS	XXXXXXX	5/1/2018	4/25/2018	114
1804534-5	B3HWH5	4/24/2018	4/25/2018	109
1804534-5MS	B3HWH5	4/24/2018	4/25/2018	119
1804534-5MSD	B3HWH5	4/24/2018	4/25/2018	122

Data Package ID: *PT1804534-1*

Chlorinated Herbicides by GC/ECD

Method SW8151A

Laboratory Control Sample

Lab Name: ALS -- Fort Collins
Work Order Number: 1804534
Client Name: CH2M HILL Plateau Remediation Company
ClientProject ID: RCRA_WAC, APRIL 2018 W18-004

Lab ID: EX180501-1LCS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 05/01/2018
Date Analyzed: 05/04/2018
Prep Method: METHOD

Prep Batch: EX180501-1
QCBatchID: EX180501-1-1
Run ID: PT180504-10A
Cleanup: NONE
Basis: N/A
File Name: 11944.dat

Sample Aliquot: 1000 ml
Final Volume: 10 ml
Result Units: UG/L
Clean DF: 1

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
75-99-0	DALAPON	8.75	2.42	4	J	28	17 - 100%
1918-00-9	DICAMBA	0.25	0.182	0.2	J	73	55 - 117%
93-65-2	MCPP	250	193	100		77	19 - 150%
94-74-6	MCPA	250	227	100		91	54 - 122%
120-36-5	DICHLOROPROP	2.5	2.06	1		82	63 - 136%
94-75-7	2,4-D	2.5	2.08	1		83	60 - 135%
93-72-1	SILVEX	0.25	0.217	0.1		87	58 - 123%
93-76-5	2,4,5-T	0.25	0.237	0.1		95	62 - 128%
94-82-6	2,4-DB	2.5	2.33	1		93	18 - 153%
88-85-7	DINOSEB	3.75	2.06	1		55	36 - 100%

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Flag	Spike Amount	Percent Recovery	Control Limits
19719-28-9	2,4-DICHLOROPHENYLACETIC ACID	2.29		2	114	56 - 140

Data Package ID: *PT1804534-1*

Chlorinated Herbicides by GC/ECD

Method SW8151A

Matrix Spike And Matrix Spike Duplicate

Lab Name: ALS -- Fort Collins
Work Order Number: 1804534
Client Name: CH2M HILL Plateau Remediation Company
ClientProject ID: RCRA_WAC, APRIL 2018 W18-004

Field ID: B3HWH5
LabID: 1804534-5MS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 24-Apr-18
Date Extracted: 01-May-18
Date Analyzed: 04-May-18
Prep Method: METHOD

Prep Batch: EX180501-1
QCBatchID: EX180501-1-1
Run ID: PT180504-10A
Cleanup: NONE
Basis: As Received

Sample Aliquot: 1060 ml
Final Volume: 10 ml
Result Units: UG/L
File Name: 11946.dat

CASNO	Target Analyte	Sample Result	Samp Qual	MS Result	MS Qual	Reporting Limit	Spike Added	MS % Rec.	Control Limits
75-99-0	DALAPON	1.13	U	1.91	J	3.77	8.25	23	17 - 100%
1918-00-9	DICAMBA	0.0566	U	0.187	J	0.189	0.236	79	55 - 117%
93-65-2	MCPP	28.3	U	198		94.3	236	84	19 - 150%
94-74-6	MCPA	28.3	U	213		94.3	236	90	54 - 122%
120-36-5	DICHLOROPROP	0.283	U	2.02		0.943	2.36	86	63 - 136%
94-75-7	2,4-D	0.283	U	2.02		0.943	2.36	85	60 - 135%
93-72-1	SILVEX	0.0283	U	0.209		0.0943	0.236	89	58 - 123%
93-76-5	2,4,5-T	0.0283	U	0.241		0.0943	0.236	102	76 - 127%
94-82-6	2,4-DB	0.283	U	2.36		0.943	2.36	100	18 - 153%
88-85-7	DINOSEB	0.302	U	2.2		0.943	3.54	62	36 - 100%

Data Package ID: *PT1804534-1*

Chlorinated Herbicides by GC/ECD

Method SW8151A

Matrix Spike And Matrix Spike Duplicate

Lab Name: ALS -- Fort Collins
Work Order Number: 1804534
Client Name: CH2M HILL Plateau Remediation Company
ClientProject ID: RCRA_WAC, APRIL 2018 W18-004

Field ID: B3HWH5
LabID: 1804534-5MSD

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 24-Apr-18
Date Extracted: 01-May-18
Date Analyzed: 04-May-18
Prep Method: METHOD

Prep Batch: EX180501-1
QCBatchID: EX180501-1-1
Run ID: PT180504-10A
Cleanup: NONE
Basis: As Received

Sample Aliquot: 1065 ml
Final Volume: 10 ml
Result Units: UG/L
File Name: 11947.dat

CASNO	Target Analyte	MSD Result	MSD Qual	Spike Added	MSD % Rec.	Reporting Limit	RPD Limit	RPD
75-99-0	DALAPON	2.42	J	8.22	29	3.76	30	24
1918-00-9	DICAMBA	0.186	J	0.235	79	0.188	30	0
93-65-2	MCPP	198		235	84	93.9	30	0
94-74-6	MCPA	219		235	93	93.9	30	3
120-36-5	DICHLOROPROP	2.02		2.35	86	0.939	30	0
94-75-7	2,4-D	2.04		2.35	87	0.939	30	1
93-72-1	SILVEX	0.21		0.235	89	0.0939	30	0
93-76-5	2,4,5-T	0.236		0.235	100	0.0939	30	2
94-82-6	2,4-DB	2.29		2.35	98	0.939	30	3
88-85-7	DINOSEB	2.6		3.52	74	0.939	30	17

Surrogate Recovery MS/MSD

CASNO	Target Analyte	Spike Added	MS % Rec.	MS Flag	MSD % Rec.	MSD Flag	Control Limits
19719-28-9	2,4-DICHLOROPHENYLACETIC ACID	1.89	119		122		56 - 140

Data Package ID: *PT1804534-1*

Prep Batch ID: EX180501-1

Start Date: 05/01/18
Start Time: 9:10
Prep Analyst: Brendon Howard

End Date: 05/01/18
End Time: 12:15

Concentration Method: CKIS
Extract Method: METHOD
Initial Volume Units: ml
Final Volume Units: ml

Batch Created By: bch
Date Created: 04/30/18
Time Created: 12:37
Validated By: bch
Date Validated: 05/02/18
Time Validated: 11:36

Comments:

QC Batch ID: EX180501-1-1

Lab ID	QC Type	Field ID	Matrix	Date Collected	Initial Wt/Vol	Final Wt/Vol	Cleanup Method	Cleanup DF	Order Number
EX180501-1	MB	XXXXXX	WATER	XXXXXX	1000	10	NONE	1	1804534
EX180501-1	LCS	XXXXXX	WATER	XXXXXX	1000	10	NONE	1	1804534
1804534-5	MS	B3HWH5	WATER	4/24/2018	1060	10	NONE	1	1804534
1804534-5	MSD	B3HWH5	WATER	4/24/2018	1065	10	NONE	1	1804534
1804534-5	SMP	B3HWH5	WATER	4/24/2018	1035	10	NONE	1	1804534

In generating this benchsheet, prep analyst states that all aspects of sample preparation as set forth in the appropriate SOP's (including Kuderna-Danish temperatures, proper flow settings on the N-evap, and final volumes) were properly adhered to (unless otherwise noted herein).

QC Types

CAR	Carrier reference sample		DUP	Laboratory Duplicate
LCS	Laboratory Control Sample		LCSD	Laboratory Control Sample Duplicat
MB	Method Blank		MS	Laboratory Matrix Spike
MSD	Laboratory Matrix Spike Duplicate		REP	Sample replicate
RVS	Reporting Level Verification Standar		SMP	Field Sample
SYS	Sample Yield Spike			

Ft. Collins, Colorado

06/07/2018

NCR #: 14078 REV.1

CONTROLLED
NON-CONFORMANCE REPORT

Non-Conformance

Initiated By: Dan M. Sheneman on 5/30/2018

Event Type: Laboratory Incident/Error

Event Explanation: Dalapon LCS results have been trending low after we started adding an additional spike (Dalapon and Dinoseb only) on top of our regular matrix spike. The reason the additional spike was added is to increase the levels of these two compounds in order to have them be reported from concentrations that are in the middle of the curve. After a recent investigation, it was discovered that the standard ID in the standards database was inadvertently entered as 1000ug/mL instead of 200ug/mL for the additional spike. The vial that was intended to be used was the 1000ug/mL standard. The amount of Dalapon added in our regular unexpired matrix spike that was added to all QC samples comprised of 75% of the total spike added. The additional (25%) Dalapon component was past its expiration date so the standard was derivitized and run against an unexpired source to confirm its concentration and to identify that it was used. Now that the standards database has been updated, the recoveries are now passing for all LCS Data with the exception of EX180425-1LCS (15% recovery with the lower limit at 17%). Dalapon was not present in any of the samples.

Action To Prevent Reccurence: Not Applicable

Corrective Action

Corrective Action:

Department Manager Approval:

Approval Date:

Corrective Action Comments:

Workorders Affected

Workorder -- Procedure
1803539 -- EPA615
1803539 -- METHOD
1803540 -- EPA615
1803540 -- METHOD
1804518 -- EPA615
1804518 -- METHOD
1804519 -- EPA615
1804519 -- METHOD
1804520 -- EPA615
1804520 -- METHOD
1805214 -- METHOD
1805214 -- SW8151
1805278 -- METHOD
1805278 -- SW8151
1805312 -- METHOD
1805312 -- SW8151
1805347 -- METHOD
1805347 -- SW8151

No client contact information.

Approved By	Approval Date
PENDING	

Associated Batches

Date Printed: Monday, June 04, 2018

225 Commerce Drive Ft. Collins, Colorado 80524
Phone (970) 490-1511 Fax (970) 490-1522 www.alsglobal.com

The samples were originally associated with the following Batch(es):

EX180521-4 created on 5/21/2018
EX180514-4 created on 5/14/2018
EX180402-1 created on 4/2/2018
EX180425-1 created on 4/25/2018
EX180501-1 created on 5/1/2018

All rework was completed in the following Batch(es):

Not Applicable

NCR Approval

Project Manager Approval:

Department Manager Approval:

QA Manager Approval:

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