ALS ENVIRONMENTAL

DETAIL SUMMARY REPORT

Client: CH2M Hill
Project ID: Keystone

Service Request: P1700992

Date Received: 3/1/2017
Time Received: 14:32

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	Container ID	Pi1 (psig)	Pf1 (psig)	TO-15 - VOC SIM	TO-15 - VOC Cans
17CY03-32	P1700992-001	Air	2/24/2017	15:40	AC02182	-3.58	3.70	X	
17CY03-34	P1700992-002	Air	2/24/2017	12:44	SC00114	-3.48	3.97		X
17CY03-79	P1700992-003	Air	2/24/2017	15:10	AS01108	-3.38	3.75	X	
17CY04-32	P1700992-004	Air	2/24/2017	15:10	AS00757	-2.74	3.95	X	
17CY03-83	P1700992-006	Air	2/24/2017	17:32	AC01458	-4.50	3.58	X	
17CY03-99	P1700992-007	Air	2/24/2017	16:57	SC01859	-2.40	5.25		X
17CY04-20	P1700992-008	Air	2/24/2017	17:32	SC02219	-4.54	3.65	X	
17CY03-33	P1700992-009	Air	2/24/2017	12:41	SC00371	-2.23	4.32		X
17CY03-91	P1700992-010	Air	2/25/2017	11:30	SC00553	-2.88	3.71		X
17CY04-04	P1700992-011	Air	2/24/2017	19:19	SC02070	-2.85	4.07		X
17CY04-31	P1700992-012	Air	2/25/2017	11:30	SC00857	-2.94	3.71		X
17CY03-92	P1700992-013	Air	2/25/2017	11:17	SC00335	-2.43	5.17		X
17CY03-96	P1700992-014	Air	2/25/2017	12:36	AC02060	-1.05	3.67	X	
17CY03-97	P1700992-015	Air	2/25/2017	12:35	AS00824	-3.97	3.68	X	
17CY04-22	P1700992-016	Air	2/25/2017	12:36	AS00617	-1.55	3.79	X	
17CY03-23	P1700992-017	Air	2/26/2017	17:20	AS01046	-1.71	3.79	X	
17CY04-05	P1700992-018	Air	2/25/2017	16:53	AS00970	-0.12	3.99	X	
17CY04-12	P1700992-019	Air	2/25/2017	18:54	AC01564	-2.38	3.86	X	
17CY04-36	P1700992-020	Air	2/26/2017	17:24	AC01076	-4.81	3.78	X	

P1700992

USEPA CLP COC (LAB COPY)

DateShipped: 2/27/2017
CarrierName: FedEx
AirbillNo: 6492 1134 0002

CHAIN OF CUSTODY RECORD

DAS #:
Cooler #: 19

No: 5-022617-205409-0064

Lab: ALS Environmental - Simi Valley
Lab Contact: Sue Anderson
Lab Phone: 805-577-2086

	Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
1 *	KC-CP-016-IA-02-022417	17CY03-32	Air/ CH2M	Grab	VOC/TO-15SIM(21)	5-37782 (None) (1)	CP-016-02	02/24/2017 15:40	
2	KC-CP-016-SS-06-022417	17CY03-34	Air/ CH2M	Grab	VOC/TO-15(~~21~~) (21) AS	5-37784 (None) (1)	CP-016-03	02/24/2017 12:44	
3 *	KC-CP-013-IA-02-022417	17CY03-79	Air/ CH2M	Grab	VOC/TO-15SIM(21)	5-37829 (None) (1)	CP-016-02	02/24/2017 ~~15:40~~ 15:10 AS	
4 *	KC-IA-FD-002-022417	17CY04-32	Air/ CH2M	Grab	VOC/TO-15SIM(21)	5-37881 (None) (1)	CP-016	02/24/2017 15:10	

Special Instructions: COC#19 Custody Seal Nos: 59709, 59710 * hold pending analysis

Shipment for Case Complete? N

Samples Transferred From Chain of Custody #

Analysis Key: VOC/TO-15SIM=VOCs by TO-15SIM (TAT 21 DAYS), VOC/TO-15=VOCs by TO-15 (TAT 21 DAYS)

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
	Amanda Sellers CH2M	2/27/17 11:35			
	3/1/17 1022				

P170992

USEPA CLP COC (LAB COPY)

DateShipped: 2/27/2017
CarrierName: FedEx
AirbillNo: 6492 1133 9535

CHAIN OF CUSTODY RECORD

DAS #:
Cooler #: 21

No: 5-022617-211410-0066

Lab: ALS Environmental - Simi Valley
Lab Contact: Sue Anderson
Lab Phone: 805-577-2086

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
KC-CP-016-SS-05-022417	17CY03-33	Air/ CH2M	Grab	VOC/TO-15(21)	5-37783 (None) (1)	CP-016-03	02/24/2017 12:41	
KC-CP-056-SS-01-022517	17CY03-91	Air/ CH2M	Grab	VOC/TO-15(3)	5-37841 (None) (1)	CP-056	02/25/2017 11:30	
KC-RP-062-SS-01-022417	17CY04-04	Air/ CH2M	Grab	VOC/TO-15(3)	5-37853 (None) (1)	RP-062	02/24/2017 19:19	
KC-SS-FD-006-022517	17CY04-31	Air/ CH2M	Grab	VOC/TO-15(3)	5-37880 (None) (1)	CP-056	02/25/2017 11:30	

9
10
11
12

Special Instructions: COC#21 Custody Seal Nos: 59713, 59714

Shipment for Case Complete? N

Samples Transferred From Chain of Custody #

Analysis Key: VOC/TO-15=VOCs by TO-15 (TAT 21 DAYS)

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
	Kathleen CH2M	2/27/17 1230			
	3/1/17 1022				

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **17CY03-34** ALS Project ID: P1700992
Client Project ID: **Keystone** ALS Sample ID: P1700992-002

Test Code: EPA TO-15 Date Collected: 2/24/17
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 3/1/17
Analyst: Simon Cao Date Analyzed: 3/7/17
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.010 Liter(s)
Test Notes:
Container ID: SC00114

Initial Pressure (psig): -3.48 Final Pressure (psig): 3.97

Canister Dilution Factor: 1.66

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	83	28	ND	17	5.7	
74-87-3	Chloromethane	ND	83	25	ND	40	12	
75-01-4	Vinyl Chloride	ND	83	28	ND	32	11	
74-83-9	Bromomethane	ND	83	32	ND	21	8.1	
75-00-3	Chloroethane	ND	83	28	ND	31	11	
75-35-4	1,1-Dichloroethene	ND	83	28	ND	21	7.1	
75-09-2	Methylene Chloride	ND	83	28	ND	24	8.1	
76-13-1	Trichlorotrifluoroethane (CFC 113)	ND	83	28	ND	11	3.7	
156-60-5	trans-1,2-Dichloroethene	ND	83	32	ND	21	8.0	
75-34-3	1,1-Dichloroethane	ND	83	27	ND	21	6.6	
156-59-2	cis-1,2-Dichloroethene	ND	83	27	ND	21	6.7	
67-66-3	Chloroform	ND	83	28	ND	17	5.8	
107-06-2	1,2-Dichloroethane	ND	83	27	ND	21	6.6	
71-55-6	1,1,1-Trichloroethane	**1,100**	83	28	**200**	15	5.2	
56-23-5	Carbon Tetrachloride	ND	83	25	ND	13	4.0	
78-87-5	1,2-Dichloropropane	ND	83	27	ND	18	5.7	
75-27-4	Bromodichloromethane	ND	83	25	ND	12	3.7	
79-01-6	Trichloroethene	**11,000**	83	23	**2,100**	15	4.3	
79-00-5	1,1,2-Trichloroethane	ND	83	27	ND	15	4.9	
124-48-1	Dibromochloromethane	ND	83	27	ND	9.7	3.1	
106-93-4	1,2-Dibromoethane	ND	83	27	ND	11	3.5	
127-18-4	Tetrachloroethene	**14,000**	83	23	**2,100**	12	3.4	
75-25-2	Bromoform	ND	83	25	ND	8.0	2.4	
79-34-5	1,1,2,2-Tetrachloroethane	ND	83	25	ND	12	3.6	
96-12-8	1,2-Dibromo-3-chloropropane	ND	83	16	ND	8.6	1.7	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **17CY03-34** ALS Project ID: P1700992
Client Project ID: **Keystone** ALS Sample ID: P1700992-002

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	2/24/17
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	3/1/17
Analyst:	Simon Cao	Date Analyzed:	3/7/17
Sample Type:	6.0 L Summa Canister	Volume(s) Analyzed:	0.010 Liter(s)
Test Notes:			
Container ID:	SC00114		

Initial Pressure (psig): -3.48 Final Pressure (psig): 3.97

Canister Dilution Factor: 1.66

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Hexachloroethane	NF	

NF = Compound was searched for, but not found.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **17CY03-33** ALS Project ID: P1700992
Client Project ID: **Keystone** ALS Sample ID: P1700992-009

Test Code: EPA TO-15 Date Collected: 2/24/17
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 3/1/17
Analyst: Simon Cao Date Analyzed: 3/7/17
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.050 Liter(s)
Test Notes:
Container ID: SC00371

Initial Pressure (psig): -2.23 Final Pressure (psig): 4.32

Canister Dilution Factor: 1.53

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	15	5.2	ND	3.1	1.1	
74-87-3	Chloromethane	ND	15	4.6	ND	7.4	2.2	
75-01-4	Vinyl Chloride	ND	15	5.2	ND	6.0	2.0	
74-83-9	Bromomethane	ND	15	5.8	ND	3.9	1.5	
75-00-3	Chloroethane	ND	15	5.2	ND	5.8	2.0	
75-35-4	1,1-Dichloroethene	ND	15	5.2	ND	3.9	1.3	
75-09-2	Methylene Chloride	ND	15	5.2	ND	4.4	1.5	
76-13-1	Trichlorotrifluoroethane (CFC 113)	**11**	15	5.2	**1.4**	2.0	0.68	**J**
156-60-5	trans-1,2-Dichloroethene	ND	15	5.8	ND	3.9	1.5	
75-34-3	1,1-Dichloroethane	ND	15	4.9	ND	3.8	1.2	
156-59-2	cis-1,2-Dichloroethene	ND	15	4.9	ND	3.9	1.2	
67-66-3	Chloroform	ND	15	5.2	ND	3.1	1.1	
107-06-2	1,2-Dichloroethane	ND	15	4.9	ND	3.8	1.2	
71-55-6	1,1,1-Trichloroethane	**2,600**	15	5.2	**480**	2.8	0.95	
56-23-5	Carbon Tetrachloride	ND	15	4.6	ND	2.4	0.73	
78-87-5	1,2-Dichloropropane	ND	15	4.9	ND	3.3	1.1	
75-27-4	Bromodichloromethane	ND	15	4.6	ND	2.3	0.69	
79-01-6	Trichloroethene	**2,400**	15	4.3	**440**	2.8	0.80	
79-00-5	1,1,2-Trichloroethane	ND	15	4.9	ND	2.8	0.90	
124-48-1	Dibromochloromethane	ND	15	4.9	ND	1.8	0.57	
106-93-4	1,2-Dibromoethane	ND	15	4.9	ND	2.0	0.64	
127-18-4	Tetrachloroethene	**1,600**	15	4.3	**240**	2.3	0.63	
75-25-2	Bromoform	ND	15	4.6	ND	1.5	0.44	
79-34-5	1,1,2,2-Tetrachloroethane	ND	15	4.6	ND	2.2	0.67	
96-12-8	1,2-Dibromo-3-chloropropane	ND	15	3.0	ND	1.6	0.31	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **17CY03-33** ALS Project ID: P1700992
Client Project ID: **Keystone** ALS Sample ID: P1700992-009

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	2/24/17
Instrument ID:	Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9	Date Received:	3/1/17
Analyst:	Simon Cao	Date Analyzed:	3/7/17
Sample Type:	6.0 L Summa Canister	Volume(s) Analyzed:	0.050 Liter(s)
Test Notes:			
Container ID:	SC00371		

Initial Pressure (psig): -2.23 Final Pressure (psig): 4.32

Canister Dilution Factor: 1.53

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Hexachloroethane	NF	

NF = Compound was searched for, but not found.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **17CY03-32** ALS Project ID: P1700992
Client Project ID: **Keystone** ALS Sample ID: P1700992-001

Test Code: EPA TO-15 SIM Date Collected: 2/24/17
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19 Date Received: 3/1/17
Analyst: Cory Lewis Date Analyzed: 3/7/17
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC02182

Initial Pressure (psig): -3.58 Final Pressure (psig): 3.70

Canister Dilution Factor: 1.65

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
75-71-8	Dichlorodifluoromethane (CFC 12)	**3.2**	0.083	0.028	**0.64**	0.017	0.0057	**I**
74-87-3	Chloromethane	**0.55**	0.083	0.031	**0.27**	0.040	0.015	**I**
75-01-4	Vinyl Chloride	ND	0.041	0.013	ND	0.016	0.0049	**I**
74-83-9	Bromomethane	**0.038**	0.041	0.015	**0.0099**	0.011	0.0040	**J, I**
75-00-3	Chloroethane	**0.051**	0.041	0.014	**0.019**	0.016	0.0053	**I**
75-35-4	1,1-Dichloroethene	**0.033**	0.041	0.014	**0.0083**	0.010	0.0036	**J, I**
75-09-2	Methylene Chloride	**4.8**	0.17	0.021	**1.4**	0.048	0.0062	**I**
76-13-1	Trichlorotrifluoroethane	**0.61**	0.041	0.015	**0.079**	0.0054	0.0019	**I**
156-60-5	trans-1,2-Dichloroethene	ND	0.041	0.012	ND	0.010	0.0030	**I**
75-34-3	1,1-Dichloroethane	ND	0.041	0.010	ND	0.010	0.0025	**I**
156-59-2	cis-1,2-Dichloroethene	ND	0.041	0.015	ND	0.010	0.0038	**I**
67-66-3	Chloroform	**0.37**	0.17	0.030	**0.076**	0.034	0.0061	**I**
107-06-2	1,2-Dichloroethane	**0.12**	0.041	0.014	**0.028**	0.010	0.0034	**I**
71-55-6	1,1,1-Trichloroethane	**3.3**	0.041	0.0097	**0.60**	0.0076	0.0018	**I**
56-23-5	Carbon Tetrachloride	**0.55**	0.041	0.020	**0.087**	0.0066	0.0031	**I**
78-87-5	1,2-Dichloropropane	**0.036**	0.041	0.012	**0.0077**	0.0089	0.0026	**J, I**
75-27-4	Bromodichloromethane	ND	0.041	0.011	ND	0.0062	0.0017	**I**
79-01-6	Trichloroethene	**4.9**	0.041	0.014	**0.92**	0.0077	0.0026	**I**
79-00-5	1,1,2-Trichloroethane	ND	0.17	0.013	ND	0.030	0.0024	**I**
124-48-1	Dibromochloromethane	**0.024**	0.041	0.015	**0.0028**	0.0048	0.0017	**J, I**
106-93-4	1,2-Dibromoethane	ND	0.041	0.013	ND	0.0054	0.0017	**I**
127-18-4	Tetrachloroethene	**34**	0.041	0.014	**5.0**	0.0061	0.0020	**I**
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.041	0.012	ND	0.0060	0.0017	**I**
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.17	0.016	ND	0.017	0.0016	**I**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
I = Internal standard not within the specified limits. See case narrative.