

# ANALYTICAL REPORT

March 04, 2019

Work Order: 1B91707

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Report To
Jeff Jones
Decker Construction
710 North Street
Lathrop, MO 64465

Work Order Information
Date Received: 02/27/2019 1:20PM
Collector: Long, Mark
Phone: (816) 740-7000
PO Number: Routine Analysis

Project : Routine Analysis

Project Number: Clay Co. PWSD#3

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
<b>1B91707-01</b>	Clay #3 Water Treatment Plant E. Pt			Matrix:Drink Wtr		Collected: 02/26/19 13:45	
<b>Chloroform</b>	<b>6.57 ug/L</b>	<b>0.50</b>	1CC0004	524.2	BDF	02/28/19 17:22	
<b>Bromodichloromethane</b>	<b>4.58 ug/L</b>	<b>0.50</b>	1CC0004	524.2	BDF	02/28/19 17:22	
<b>Chlorodibromomethane</b>	<b>2.44 ug/L</b>	<b>0.50</b>	1CC0004	524.2	BDF	02/28/19 17:22	
Bromoform	<0.50 ug/L	0.50	1CC0004	524.2	BDF	02/28/19 17:22	
<b>Total Trihalomethanes (TTHM)</b>	<b>13.6 ug/L</b>	<b>2.00</b>	1CC0004	524.2	BDF	02/28/19 17:22	
<i>Surrogate: Dibromofluoromethane</i>	<i>99.5 %</i>			<i>84-125</i>	BDF	02/28/19 17:22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>107 %</i>			<i>71-134</i>	BDF	02/28/19 17:22	
<i>Surrogate: Toluene-d8</i>	<i>108 %</i>			<i>90-112</i>	BDF	02/28/19 17:22	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>102 %</i>			<i>74-118</i>	BDF	02/28/19 17:22	
<b>1B91707-02</b>	14401 NE 188th St			Matrix:Water		Collected: 02/26/19 14:15	
<b>Chloroform</b>	<b>13.7 ug/L</b>	<b>0.50</b>	1CC0004	524.2	BDF	02/28/19 18:08	
<b>Bromodichloromethane</b>	<b>7.84 ug/L</b>	<b>0.50</b>	1CC0004	524.2	BDF	02/28/19 18:08	
<b>Chlorodibromomethane</b>	<b>3.68 ug/L</b>	<b>0.50</b>	1CC0004	524.2	BDF	02/28/19 18:08	
Bromoform	<0.50 ug/L	0.50	1CC0004	524.2	BDF	02/28/19 18:08	
<b>Total Trihalomethanes (TTHM)</b>	<b>25.2 ug/L</b>	<b>2.00</b>	1CC0004	524.2	BDF	02/28/19 18:08	
<i>Surrogate: Dibromofluoromethane</i>	<i>106 %</i>			<i>84-125</i>	BDF	02/28/19 18:08	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>111 %</i>			<i>71-134</i>	BDF	02/28/19 18:08	
<i>Surrogate: Toluene-d8</i>	<i>92.1 %</i>			<i>90-112</i>	BDF	02/28/19 18:08	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>95.6 %</i>			<i>74-118</i>	BDF	02/28/19 18:08	
<b>1B91707-03</b>	3351 SE Freeway Farms Dr			Matrix:Drink Wtr		Collected: 02/26/19 14:40	
<b>Chloroform</b>	<b>21.5 ug/L</b>	<b>0.50</b>	1CC0004	524.2	BDF	02/28/19 18:54	
<b>Bromodichloromethane</b>	<b>7.71 ug/L</b>	<b>0.50</b>	1CC0004	524.2	BDF	02/28/19 18:54	
<b>Chlorodibromomethane</b>	<b>2.52 ug/L</b>	<b>0.50</b>	1CC0004	524.2	BDF	02/28/19 18:54	
Bromoform	<0.50 ug/L	0.50	1CC0004	524.2	BDF	02/28/19 18:54	
<b>Total Trihalomethanes (TTHM)</b>	<b>31.7 ug/L</b>	<b>2.00</b>	1CC0004	524.2	BDF	02/28/19 18:54	
<i>Surrogate: Dibromofluoromethane</i>	<i>99.8 %</i>			<i>84-125</i>	BDF	02/28/19 18:54	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>105 %</i>			<i>71-134</i>	BDF	02/28/19 18:54	

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Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
<b>1B91707-03</b>	3351 SE Freeway Farms Dr			Matrix:Drink Wtr		Collected: 02/26/19 14:40	
<i>Surrogate: Toluene-d8</i>	104 %			90-112	BDF	02/28/19 18:54	
<i>Surrogate: 4-Bromofluorobenzene</i>	99.4 %			74-118	BDF	02/28/19 18:54	
<b>1B91707-04</b>	Clay #3 Control Valve			Matrix:Drink Wtr		Collected: 02/26/19 15:20	
<b>Chloroform</b>	<b>12.9 ug/L</b>	<b>0.50</b>	1CC0004	524.2	BDF	02/28/19 19:41	
<b>Bromodichloromethane</b>	<b>3.82 ug/L</b>	<b>0.50</b>	1CC0004	524.2	BDF	02/28/19 19:41	
<b>Chlorodibromomethane</b>	<b>1.35 ug/L</b>	<b>0.50</b>	1CC0004	524.2	BDF	02/28/19 19:41	
Bromoform	<0.50 ug/L	0.50	1CC0004	524.2	BDF	02/28/19 19:41	
<b>Total Trihalomethanes (TTHM)</b>	<b>18.1 ug/L</b>	<b>2.00</b>	1CC0004	524.2	BDF	02/28/19 19:41	
<i>Surrogate: Dibromofluoromethane</i>	103 %			84-125	BDF	02/28/19 19:41	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	111 %			71-134	BDF	02/28/19 19:41	
<i>Surrogate: Toluene-d8</i>	92.9 %			90-112	BDF	02/28/19 19:41	
<i>Surrogate: 4-Bromofluorobenzene</i>	99.2 %			74-118	BDF	02/28/19 19:41	
<b>1B91707-05</b>	Clay #3 Entry Vault Ex-Spgs			Matrix:Drink Wtr		Collected: 02/26/19 13:15	
<b>Chloroform</b>	<b>19.9 ug/L</b>	<b>0.50</b>	1CC0004	524.2	BDF	02/28/19 20:28	
<b>Bromodichloromethane</b>	<b>6.05 ug/L</b>	<b>0.50</b>	1CC0004	524.2	BDF	02/28/19 20:28	
<b>Chlorodibromomethane</b>	<b>1.78 ug/L</b>	<b>0.50</b>	1CC0004	524.2	BDF	02/28/19 20:28	
Bromoform	<0.50 ug/L	0.50	1CC0004	524.2	BDF	02/28/19 20:28	
<b>Total Trihalomethanes (TTHM)</b>	<b>27.7 ug/L</b>	<b>2.00</b>	1CC0004	524.2	BDF	02/28/19 20:28	
<i>Surrogate: Dibromofluoromethane</i>	108 %			84-125	BDF	02/28/19 20:28	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	116 %			71-134	BDF	02/28/19 20:28	
<i>Surrogate: Toluene-d8</i>	94.8 %			90-112	BDF	02/28/19 20:28	
<i>Surrogate: 4-Bromofluorobenzene</i>	102 %			74-118	BDF	02/28/19 20:28	

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## Determination of Total Trihalomethanes - Quality Control

### Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 1CC0004 - EPA 5030B</b>										
<b>Blank (1CC0004-BLK1)</b>										
Prepared & Analyzed: 02/28/19										
Surrogate: Dibromofluoromethane	52.6		ug/L	50.0000		105	84-125			
Surrogate: 1,2-Dichloroethane-d4	57.2		"	50.0000		114	71-134			
Surrogate: Toluene-d8	46.7		"	50.0000		93.5	90-112			
Surrogate: 4-Bromofluorobenzene	48.7		"	50.0000		97.4	74-118			
Chloroform	ND	0.50	"							
Bromodichloromethane	ND	0.50	"							
Chlorodibromomethane	ND	0.50	"							
Bromoform	ND	0.50	"							
Total Trihalomethanes (TTHM)	ND	2.00	"							
<b>LCS (1CC0004-BS1)</b>										
Prepared & Analyzed: 02/28/19										
Surrogate: Dibromofluoromethane	46.1		ug/L	50.0000		92.3	84-125			
Surrogate: 1,2-Dichloroethane-d4	48.6		"	50.0000		97.2	71-134			
Surrogate: Toluene-d8	56.2		"	50.0000		112	90-112			
Surrogate: 4-Bromofluorobenzene	52.1		"	50.0000		104	74-118			
Chloroform	52.92	0.50	"	50.0000		106	76-132			
Bromodichloromethane	51.59	0.50	"	50.0000		103	76-115			
Chlorodibromomethane	51.29	0.50	"	50.0000		103	79-117			
Bromoform	48.18	0.50	"	50.0000		96.4	70-126			
Total Trihalomethanes (TTHM)	204.0	2.00	"	200.000		102	83-116			
<b>LCS Dup (1CC0004-BSD1)</b>										
Prepared & Analyzed: 02/28/19										
Surrogate: Dibromofluoromethane	49.1		ug/L	50.0000		98.1	84-125			
Surrogate: 1,2-Dichloroethane-d4	51.2		"	50.0000		102	71-134			
Surrogate: Toluene-d8	54.2		"	50.0000		108	90-112			
Surrogate: 4-Bromofluorobenzene	48.8		"	50.0000		97.5	74-118			
Chloroform	56.40	0.50	"	50.0000		113	76-132	6.37	17	
Bromodichloromethane	50.06	0.50	"	50.0000		100	76-115	3.01	16	
Chlorodibromomethane	47.91	0.50	"	50.0000		95.8	79-117	6.81	15	
Bromoform	44.86	0.50	"	50.0000		89.7	70-126	7.14	15	
Total Trihalomethanes (TTHM)	199.2	2.00	"	200.000		99.6	83-116	2.36	14	

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## Determination of Total Trihalomethanes - Quality Control

### Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 1CC0004 - EPA 5030B</b>										
<b>Matrix Spike (1CC0004-MS1)</b>										
<b>Source: 1B91706-01</b>										
Prepared & Analyzed: 02/28/19										
Surrogate: Dibromofluoromethane	536		ug/L	500.000		107	84-125			
Surrogate: 1,2-Dichloroethane-d4	538		"	500.000		108	71-134			
Surrogate: Toluene-d8	559		"	500.000		112	90-112			
Surrogate: 4-Bromofluorobenzene	529		"	500.000		106	74-118			
Chloroform	571.9	5.00	"	500.000	35.37	107	70-141			
Bromodichloromethane	520.6	5.00	"	500.000	9.70	102	43-141			
Chlorodibromomethane	462.1	5.00	"	500.000	ND	92.4	44-143			
Bromoform	446.3	5.00	"	500.000	ND	89.3	50-135			
Total Trihalomethanes (TTHM)	2001	20.0	"	2000.00	47.53	97.7	56-137			
<b>Matrix Spike Dup (1CC0004-MSD1)</b>										
<b>Source: 1B91706-01</b>										
Prepared & Analyzed: 02/28/19										
Surrogate: Dibromofluoromethane	497		ug/L	500.000		99.4	84-125			
Surrogate: 1,2-Dichloroethane-d4	507		"	500.000		101	71-134			
Surrogate: Toluene-d8	544		"	500.000		109	90-112			
Surrogate: 4-Bromofluorobenzene	546		"	500.000		109	74-118			
Chloroform	540.3	5.00	"	500.000	35.37	101	70-141	5.68	16	
Bromodichloromethane	500.4	5.00	"	500.000	9.70	98.1	43-141	3.96	14	
Chlorodibromomethane	484.2	5.00	"	500.000	ND	96.8	44-143	4.67	12	
Bromoform	459.8	5.00	"	500.000	ND	92.0	50-135	2.98	17	
Total Trihalomethanes (TTHM)	1985	20.0	"	2000.00	47.53	96.9	56-137	0.813	12	

ND = Non Detect; REC= Recovery; RPD= Relative Percent Difference

### Certified Analyses included in this Report

Method/Matrix	Analyte	Certifications
<b>524.2 in Water</b>		
	Chloroform	SIA1X
	Bromodichloromethane	SIA1X
	Chlorodibromomethane	SIA1X
	Bromoform	SIA1X
	Total Trihalomethanes (TTHM)	SIA1X

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Code	Description	Number	Expires
KS-KC	Kansas Department of Health and Environment-KC	E-10110	04/30/2019
KS-NT	Kansas Department of Health and Environment (NELAP)	E-10287	10/31/2019
MO-KC	Missouri Department of Natural Resources	140	04/30/2019
SIA1X	Iowa Department of Natural Resources	95	02/01/2019

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End of Report



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Keystone Laboratories, Inc.

Carolyn Jackson  
Project Manager

# CHAIN OF CUSTODY RECORD



LABORATORIES, INC.

600 E. 17<sup>th</sup> St. S.  
Newton, IA 50208  
Phone: 641-792-8451  
Fax: 641-792-7989

3012 Ansborough Ave.  
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www.keystone labs.com

835 S St Paul  
Kansas City, KS 66105  
Phone: 913-321-7856  
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23698 217<sup>th</sup> Ave  
Centerville, IA 52544  
Phone: 641-437-7023  
Fax: 641-437-7040

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PRINT OR TYPE INFORMATION BELOW  
**SAMPLER:** Mark Long  
**SITE NAME:** Clay Co. PUGS#3 THM Sample Sites  
**ADDRESS:** 710 North St  
**CITY/ST/ZIP:** Lathrop MO 64465  
**PHONE:** 816-740-7000

**REPORT TO:**  
**NAME:** JEFF JONES  
**COMPANY NAME:** DECKER CONST.  
**ADDRESS:** 710 North St.  
**CITY/ST/ZIP:** Lathrop MO 64465  
**PHONE:** 816-740-7000  
**FAX:** 816-740-7005

**BILL TO:**  
**NAME:** JEFF JONES  
**COMPANY NAME:** DECKER CONST.  
**ADDRESS:** SAME  
**CITY/ST/ZIP:** LATHROP MO  
**PHONE:** 816-740-7000  
 Keystone Quote No.: \_\_\_\_\_  
 (If Applicable)

CLIENT SAMPLE NUMBER	DATE	TIME	SAMPLE LOCATION	NO. OF CONTAINERS	MATRIX	GRAB/COMPOSITE	ANALYSES REQUIRED						
WTP	2-26-19	1:45pm	Clay #3 Water Treatment Plant E. Pt	3	DW	G	X						
188 <sup>th</sup>	2-26-19	2:15pm	14401 NE 188 <sup>th</sup> St	3	DW	G	X						
FW/F	2-26-19	2:40pm	3351 SE Freeway Farms Dr	3	DW	G	X						
CV	2-26-19	3:20pm	Clay #3 Control Valve	3	DW	G	X						
EV	2-26-19	13:15	Clay #3 Entry Vault EX Spring	3	DW	G	X						

Relinquished by: (Signature) Mark Long Date: 2-27-19 Time: 9:05 AM

Received by: (Signature) Jeff Jones Date: 2-27-19 Time: 9:05 AM

Relinquished by: (Signature) Jeff Jones Date: 2-27-19 Time: 13:20

Received for Lab by: (Signature) Annalynne Date: 2/27/19 Time: 13:20

Turn-Around:  Standard  Rush

Contact Lab Prior to Submission

**LAB USE ONLY**  
 LABORATORY WORK ORDER NO. 1841701

SAMPLE TEMPERATURE UPON RECEIPT: 20 °C  
 SAMPLE CONDITION/COMMENTS: 1841701-01