

Certifications

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Analytical and Quality Control Report

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Report Date: August 17, 2016

Work Order: 16081001



Project Location: Lea County, NM
Project Name: EPNG Line 3031 Spike Test
Project Number: AFE 403828

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
426116	Rupture #5 Release	water	2016-08-04	09:45	2016-08-08
426119	Rupture #6 Release	water	2016-08-04	09:50	2016-08-08

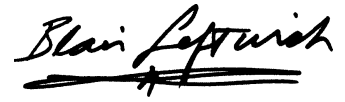
Notes

- **Work Order 16081001:** Broken voa when received

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

TraceAnalysis, Inc. uses the attached chain of custody (COC) as the laboratory check-in documentation which includes sample receipt, temperature, sample preservation method and condition, collection date and time, testing requested, company, sampler, contacts and any special remarks.

This report consists of a total of 29 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

A handwritten signature in black ink, reading "Blair Leftwich". The signature is written in a cursive style with a prominent horizontal stroke at the bottom.

Dr. Blair Leftwich, Director
James Taylor, Assistant Director
Johnny Grindstaff, Operations Manager

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Case Narrative

Samples for project EPNG Line 3031 Spike Test were received by TraceAnalysis, Inc. on 2016-08-08 and assigned to work order 16081001. Samples for work order 16081001 were received intact at a temperature of 4.2 C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
Chloride (IC)	E 300.0	111971	2016-08-15 at 09:00	132122	2016-08-15 at 09:36
TPH DRO	S 8015 D	111970	2016-08-15 at 13:00	132127	2016-08-16 at 09:03
TPH GRO	S 8015 D	111947	2016-08-12 at 16:15	132100	2016-08-12 at 16:15
Volatiles	S 8260 C	111933	2016-08-11 at 13:00	132085	2016-08-11 at 14:00

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 16081001 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

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Analytical Report

Sample: 426116 - Rupture #5 Release

Laboratory:	Lubbock	Analytical Method:	E 300.0	Prep Method:	N/A
Analysis:	Chloride (IC)	Date Analyzed:	2016-08-15	Analyzed By:	RL
QC Batch:	132122	Sample Preparation:	2016-08-15	Prepared By:	RL
Prep Batch:	111971				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1,2,3,4	70.6	mg/L	5	2.50

Sample: 426116 - Rupture #5 Release

Laboratory:	Lubbock	Analytical Method:	S 8015 D	Prep Method:	N/A
Analysis:	TPH DRO	Date Analyzed:	2016-08-16	Analyzed By:	HJ
QC Batch:	132127	Sample Preparation:	2016-08-15	Prepared By:	HJ
Prep Batch:	111970				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	U	1,2,3	<5.00	mg/L	1	5.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			2.84	mg/L	1	2.50	114	70 - 130

Sample: 426116 - Rupture #5 Release

Laboratory:	Lubbock	Analytical Method:	S 8015 D	Prep Method:	S 5030B
Analysis:	TPH GRO	Date Analyzed:	2016-08-12	Analyzed By:	MT
QC Batch:	132100	Sample Preparation:	2016-08-12	Prepared By:	MT
Prep Batch:	111947				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1,2,3	5.48	mg/L	10	0.200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.20	mg/L	10	1.00	120	72.8 - 136

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sample continued ...

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
4-Bromofluorobenzene (4-BFB)	Q _{sr}	Q _{sr}	1.31	mg/L	10	1.00	131	73.3 - 120

Sample: 426116 - Rupture #5 Release

Laboratory: Lubbock
Analysis: Volatiles
QC Batch: 132085
Prep Batch: 111933

Analytical Method: S 8260 C
Date Analyzed: 2016-08-11
Sample Preparation: 2016-08-11

Prep Method: S 5030B
Analyzed By: JG
Prepared By: JG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Bromochloromethane	U	1,2,3,4	<10.0	µg/L	10	1.00
Dichlorodifluoromethane	Q _c ,U	1,2,3,4	<10.0	µg/L	10	1.00
Chloromethane (methyl chloride)	Q _c ,U	1,2,3,4	<10.0	µg/L	10	1.00
Vinyl Chloride	U	1,2,3,4	<10.0	µg/L	10	1.00
Bromomethane (methyl bromide)	Q _c ,U	1,2,3,4	<50.0	µg/L	10	5.00
Chloroethane	U	1,2,3,4	<10.0	µg/L	10	1.00
Trichlorofluoromethane	U	1,2,3,4	<10.0	µg/L	10	1.00
Acetone	U	1,2,3,4	<100	µg/L	10	10.0
Iodomethane (methyl iodide)	U	1,2,3,4	<50.0	µg/L	10	5.00
Carbon Disulfide		1,2,3,4	11.8	µg/L	10	1.00
Acrylonitrile	Q _r ,U	1,2,3,4	<10.0	µg/L	10	1.00
2-Butanone (MEK)	Q _c ,U	1,2,3,4	<50.0	µg/L	10	5.00
4-Methyl-2-pentanone (MIBK)	Q _c ,U	1,2,3,4	<50.0	µg/L	10	5.00
2-Hexanone	Q _c ,U	1,2,3,4	<50.0	µg/L	10	5.00
trans 1,4-Dichloro-2-butene	Q _c ,U	1,2,3,4	<100	µg/L	10	10.0
1,1-Dichloroethene	U	1,2,3,4	<10.0	µg/L	10	1.00
Methylene chloride	U	1,2,3,4	<50.0	µg/L	10	5.00
MTBE	U	1,2,3,4	<10.0	µg/L	10	1.00
trans-1,2-Dichloroethene	U	1,2,3,4	<10.0	µg/L	10	1.00
1,1-Dichloroethane	U	1,2,3,4	<10.0	µg/L	10	1.00
cis-1,2-Dichloroethene	U	1,2,3,4	<10.0	µg/L	10	1.00
2,2-Dichloropropane	U	1,2,3,4	<10.0	µg/L	10	1.00
1,2-Dichloroethane (EDC)	U	1,2,3,4	<10.0	µg/L	10	1.00
Chloroform	U	1,2,3,4	<10.0	µg/L	10	1.00
1,1,1-Trichloroethane	U	1,2,3,4	<10.0	µg/L	10	1.00
1,1-Dichloropropene	U	1,2,3,4	<10.0	µg/L	10	1.00
Benzene		1,2,3,4	26.3	µg/L	10	1.00
Carbon Tetrachloride	U	1,2,3,4	<10.0	µg/L	10	1.00
1,2-Dichloropropane	U	1,2,3,4	<10.0	µg/L	10	1.00
Trichloroethene (TCE)	U	1,2,3,4	<10.0	µg/L	10	1.00
Dibromomethane (methylene bromide)	U	1,2,3,4	<10.0	µg/L	10	1.00
Bromodichloromethane	U	1,2,3,4	<10.0	µg/L	10	1.00

continued ...

sample 426116 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
2-Chloroethyl vinyl ether	U	1,2,3,4	<50.0	µg/L	10	5.00
cis-1,3-Dichloropropene	U	1,2,3,4	<10.0	µg/L	10	1.00
trans-1,3-Dichloropropene	U	1,2,3,4	<10.0	µg/L	10	1.00
Toluene		1,2,3,4	<10.0	µg/L	10	1.00
1,1,2-Trichloroethane	U	1,2,3,4	<10.0	µg/L	10	1.00
1,3-Dichloropropane	U	1,2,3,4	<10.0	µg/L	10	1.00
Dibromochloromethane	U	1,3,4	<10.0	µg/L	10	1.00
1,2-Dibromoethane (EDB)	U	1,2,3,4	<10.0	µg/L	10	1.00
Tetrachloroethene (PCE)	U	1,2,3,4	<10.0	µg/L	10	1.00
Chlorobenzene	U	1,2,3,4	<10.0	µg/L	10	1.00
1,1,1,2-Tetrachloroethane	U	1,2,3,4	<10.0	µg/L	10	1.00
Ethylbenzene	U	1,2,3,4	<10.0	µg/L	10	1.00
m,p-Xylene	U	1,2,3,4	<10.0	µg/L	10	1.00
Bromoform	U	1,2,3,4	<10.0	µg/L	10	1.00
Styrene	U	1,2,3,4	<10.0	µg/L	10	1.00
o-Xylene	U	1,2,3,4	<10.0	µg/L	10	1.00
1,1,2,2-Tetrachloroethane	U	1,2,3,4	<10.0	µg/L	10	1.00
2-Chlorotoluene	U	1,2,3,4	<10.0	µg/L	10	1.00
1,2,3-Trichloropropane	U	1,2,3,4	<10.0	µg/L	10	1.00
Isopropylbenzene	U	1,2,3,4	<10.0	µg/L	10	1.00
Bromobenzene	U	1,2,3,4	<10.0	µg/L	10	1.00
n-Propylbenzene	U	1,2,3,4	<10.0	µg/L	10	1.00
1,3,5-Trimethylbenzene	U	1,2,3,4	<10.0	µg/L	10	1.00
tert-Butylbenzene	U	1,2,3,4	<10.0	µg/L	10	1.00
1,2,4-Trimethylbenzene	U	1,2,3,4	<10.0	µg/L	10	1.00
1,4-Dichlorobenzene (para)	U	1,2,3,4	<10.0	µg/L	10	1.00
sec-Butylbenzene	U	1,2,3,4	<10.0	µg/L	10	1.00
1,3-Dichlorobenzene (meta)	U	1,2,3,4	<10.0	µg/L	10	1.00
p-Isopropyltoluene	U	1,2,3	<10.0	µg/L	10	1.00
4-Chlorotoluene	U	1,2,3,4	<10.0	µg/L	10	1.00
1,2-Dichlorobenzene (ortho)	U	1,2,3,4	<10.0	µg/L	10	1.00
n-Butylbenzene	B,U	1,2,3,4	<10.0	µg/L	10	1.00
1,2-Dibromo-3-chloropropane	U	1,3	<50.0	µg/L	10	5.00
1,2,3-Trichlorobenzene	U	1,2,3,4	<50.0	µg/L	10	5.00
1,2,4-Trichlorobenzene	U	1,2,3,4	<50.0	µg/L	10	5.00
Naphthalene	U	1,2,3,4	<50.0	µg/L	10	5.00
Hexachlorobutadiene	U	1,2,3,4	<50.0	µg/L	10	5.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane			535	µg/L	10	500	107	70 - 130
Toluene-d8			485	µg/L	10	500	97	70 - 130
4-Bromofluorobenzene (4-BFB)			499	µg/L	10	500	100	70 - 130

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Sample: 426119 - Rupture #6 Release

Laboratory:	Lubbock	Analytical Method:	E 300.0	Prep Method:	N/A
Analysis:	Chloride (IC)	Date Analyzed:	2016-08-15	Analyzed By:	RL
QC Batch:	132122	Sample Preparation:	2016-08-15	Prepared By:	RL
Prep Batch:	111971				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1,2,3,4	103	mg/L	5	2.50

Sample: 426119 - Rupture #6 Release

Laboratory:	Lubbock	Analytical Method:	S 8015 D	Prep Method:	N/A
Analysis:	TPH DRO	Date Analyzed:	2016-08-16	Analyzed By:	HJ
QC Batch:	132127	Sample Preparation:	2016-08-15	Prepared By:	HJ
Prep Batch:	111970				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1,2,3	<5.00	mg/L	1	5.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			2.84	mg/L	1	2.50	114	70 - 130

Sample: 426119 - Rupture #6 Release

Laboratory:	Lubbock	Analytical Method:	S 8015 D	Prep Method:	S 5030B
Analysis:	TPH GRO	Date Analyzed:	2016-08-12	Analyzed By:	MT
QC Batch:	132100	Sample Preparation:	2016-08-12	Prepared By:	MT
Prep Batch:	111947				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1,2,3	3.30	mg/L	10	0.200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.22	mg/L	10	1.00	122	72.8 - 136
4-Bromofluorobenzene (4-BFB)			1.13	mg/L	10	1.00	113	73.3 - 120

Sample: 426119 - Rupture #6 Release

Laboratory: Lubbock

Analysis: Volatiles

QC Batch: 132085

Prep Batch: 111933

Analytical Method: S 8260 C

Date Analyzed: 2016-08-11

Sample Preparation: 2016-08-11

Prep Method: S 5030B

Analyzed By: JG

Prepared By: JG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Bromochloromethane	U	1,2,3,4	<10.0	µg/L	10	1.00
Dichlorodifluoromethane	QC,U	1,2,3,4	<10.0	µg/L	10	1.00
Chloromethane (methyl chloride)	QC,U	1,2,3,4	<10.0	µg/L	10	1.00
Vinyl Chloride	U	1,2,3,4	<10.0	µg/L	10	1.00
Bromomethane (methyl bromide)	QC,U	1,2,3,4	<50.0	µg/L	10	5.00
Chloroethane	U	1,2,3,4	<10.0	µg/L	10	1.00
Trichlorofluoromethane	U	1,2,3,4	<10.0	µg/L	10	1.00
Acetone	U	1,2,3,4	<100	µg/L	10	10.0
Iodomethane (methyl iodide)	U	1,2,3,4	<50.0	µg/L	10	5.00
Carbon Disulfide		1,2,3,4	12.9	µg/L	10	1.00
Acrylonitrile	QR,U	1,2,3,4	<10.0	µg/L	10	1.00
2-Butanone (MEK)	QC,U	1,2,3,4	<50.0	µg/L	10	5.00
4-Methyl-2-pentanone (MIBK)	QC,U	1,2,3,4	<50.0	µg/L	10	5.00
2-Hexanone	QC,U	1,2,3,4	<50.0	µg/L	10	5.00
trans 1,4-Dichloro-2-butene	QC,U	1,2,3,4	<100	µg/L	10	10.0
1,1-Dichloroethene	U	1,2,3,4	<10.0	µg/L	10	1.00
Methylene chloride	U	1,2,3,4	<50.0	µg/L	10	5.00
MTBE	U	1,2,3,4	<10.0	µg/L	10	1.00
trans-1,2-Dichloroethene	U	1,2,3,4	<10.0	µg/L	10	1.00
1,1-Dichloroethane	U	1,2,3,4	<10.0	µg/L	10	1.00
cis-1,2-Dichloroethene	U	1,2,3,4	<10.0	µg/L	10	1.00
2,2-Dichloropropane	U	1,2,3,4	<10.0	µg/L	10	1.00
1,2-Dichloroethane (EDC)	U	1,2,3,4	<10.0	µg/L	10	1.00
Chloroform	U	1,2,3,4	<10.0	µg/L	10	1.00
1,1,1-Trichloroethane	U	1,2,3,4	<10.0	µg/L	10	1.00
1,1-Dichloropropene	U	1,2,3,4	<10.0	µg/L	10	1.00
Benzene		1,2,3,4	18.9	µg/L	10	1.00
Carbon Tetrachloride	U	1,2,3,4	<10.0	µg/L	10	1.00
1,2-Dichloropropane	U	1,2,3,4	<10.0	µg/L	10	1.00
Trichloroethene (TCE)	U	1,2,3,4	<10.0	µg/L	10	1.00
Dibromomethane (methylene bromide)	U	1,2,3,4	<10.0	µg/L	10	1.00
Bromodichloromethane	U	1,2,3,4	<10.0	µg/L	10	1.00
2-Chloroethyl vinyl ether	U	1,2,3,4	<50.0	µg/L	10	5.00
cis-1,3-Dichloropropene	U	1,2,3,4	<10.0	µg/L	10	1.00
trans-1,3-Dichloropropene	U	1,2,3,4	<10.0	µg/L	10	1.00
Toluene		1,2,3,4	<10.0	µg/L	10	1.00
1,1,2-Trichloroethane	U	1,2,3,4	<10.0	µg/L	10	1.00
1,3-Dichloropropane	U	1,2,3,4	<10.0	µg/L	10	1.00
Dibromochloromethane	U	1,3,4	<10.0	µg/L	10	1.00

continued ...

sample 426119 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
1,2-Dibromoethane (EDB)	U	1,2,3,4	<10.0	µg/L	10	1.00
Tetrachloroethene (PCE)	U	1,2,3,4	<10.0	µg/L	10	1.00
Chlorobenzene	U	1,2,3,4	<10.0	µg/L	10	1.00
1,1,1,2-Tetrachloroethane	U	1,2,3,4	<10.0	µg/L	10	1.00
Ethylbenzene	U	1,2,3,4	<10.0	µg/L	10	1.00
m,p-Xylene	U	1,2,3,4	<10.0	µg/L	10	1.00
Bromoform	U	1,2,3,4	<10.0	µg/L	10	1.00
Styrene	U	1,2,3,4	<10.0	µg/L	10	1.00
o-Xylene	U	1,2,3,4	<10.0	µg/L	10	1.00
1,1,2,2-Tetrachloroethane	U	1,2,3,4	<10.0	µg/L	10	1.00
2-Chlorotoluene	U	1,2,3,4	<10.0	µg/L	10	1.00
1,2,3-Trichloropropane	U	1,2,3,4	<10.0	µg/L	10	1.00
Isopropylbenzene	U	1,2,3,4	<10.0	µg/L	10	1.00
Bromobenzene	U	1,2,3,4	<10.0	µg/L	10	1.00
n-Propylbenzene	U	1,2,3,4	<10.0	µg/L	10	1.00
1,3,5-Trimethylbenzene	U	1,2,3,4	<10.0	µg/L	10	1.00
tert-Butylbenzene	U	1,2,3,4	<10.0	µg/L	10	1.00
1,2,4-Trimethylbenzene	U	1,2,3,4	<10.0	µg/L	10	1.00
1,4-Dichlorobenzene (para)	U	1,2,3,4	<10.0	µg/L	10	1.00
sec-Butylbenzene	U	1,2,3,4	<10.0	µg/L	10	1.00
1,3-Dichlorobenzene (meta)	U	1,2,3,4	<10.0	µg/L	10	1.00
p-Isopropyltoluene		1,2,3	<10.0	µg/L	10	1.00
4-Chlorotoluene	U	1,2,3,4	<10.0	µg/L	10	1.00
1,2-Dichlorobenzene (ortho)	U	1,2,3,4	<10.0	µg/L	10	1.00
n-Butylbenzene	B,U	1,2,3,4	<10.0	µg/L	10	1.00
1,2-Dibromo-3-chloropropane	U	1,3	<50.0	µg/L	10	5.00
1,2,3-Trichlorobenzene	U	1,2,3,4	<50.0	µg/L	10	5.00
1,2,4-Trichlorobenzene	U	1,2,3,4	<50.0	µg/L	10	5.00
Naphthalene	U	1,2,3,4	<50.0	µg/L	10	5.00
Hexachlorobutadiene	U	1,2,3,4	<50.0	µg/L	10	5.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane			523	µg/L	10	500	105	70 - 130
Toluene-d8			483	µg/L	10	500	97	70 - 130
4-Bromofluorobenzene (4-BFB)			505	µg/L	10	500	101	70 - 130

Method Blanks

Method Blank (1) QC Batch: 132085

QC Batch: 132085
Prep Batch: 111933

Date Analyzed: 2016-08-11
QC Preparation: 2016-08-11

Analyzed By: JG
Prepared By: JG

Parameter	Flag	Cert	MDL Result	Units	RL
Bromochloromethane		1,2,3,4	<0.330	µg/L	1
Dichlorodifluoromethane		1,2,3,4	<0.350	µg/L	1
Chloromethane (methyl chloride)		1,2,3,4	<0.330	µg/L	1
Vinyl Chloride		1,2,3,4	<0.410	µg/L	1
Bromomethane (methyl bromide)		1,2,3,4	<1.69	µg/L	5
Chloroethane		1,2,3,4	<0.420	µg/L	1
Trichlorofluoromethane		1,2,3,4	<0.410	µg/L	1
Acetone		1,2,3,4	<1.09	µg/L	10
Iodomethane (methyl iodide)		1,2,3,4	<2.47	µg/L	5
Carbon Disulfide		1,2,3,4	<0.400	µg/L	1
Acrylonitrile		1,2,3,4	<0.360	µg/L	1
2-Butanone (MEK)		1,2,3,4	<1.67	µg/L	5
4-Methyl-2-pentanone (MIBK)		1,2,3,4	<2.14	µg/L	5
2-Hexanone		1,2,3,4	<1.49	µg/L	5
trans 1,4-Dichloro-2-butene		1,2,3,4	<1.75	µg/L	10
1,1-Dichloroethene		1,2,3,4	<0.330	µg/L	1
Methylene chloride		1,2,3,4	<2.04	µg/L	5
MTBE		1,2,3,4	<0.320	µg/L	1
trans-1,2-Dichloroethene		1,2,3,4	<0.360	µg/L	1
1,1-Dichloroethane		1,2,3,4	<0.330	µg/L	1
cis-1,2-Dichloroethene		1,2,3,4	<0.330	µg/L	1
2,2-Dichloropropane		1,2,3,4	<0.380	µg/L	1
1,2-Dichloroethane (EDC)		1,2,3,4	<0.280	µg/L	1
Chloroform		1,2,3,4	<0.390	µg/L	1
1,1,1-Trichloroethane		1,2,3,4	<0.370	µg/L	1
1,1-Dichloropropene		1,2,3,4	<0.320	µg/L	1
Benzene		1,2,3,4	<0.340	µg/L	1
Carbon Tetrachloride		1,2,3,4	<0.350	µg/L	1
1,2-Dichloropropane		1,2,3,4	<0.270	µg/L	1
Trichloroethene (TCE)		1,2,3,4	<0.310	µg/L	1
Dibromomethane (methylene bromide)		1,2,3,4	<0.230	µg/L	1
Bromodichloromethane		1,2,3,4	<0.320	µg/L	1
2-Chloroethyl vinyl ether		1,2,3,4	<0.480	µg/L	5
cis-1,3-Dichloropropene		1,2,3,4	<0.210	µg/L	1
trans-1,3-Dichloropropene		1,2,3,4	<0.310	µg/L	1
Toluene		1,2,3,4	<0.350	µg/L	1

continued ...

method blank continued ...

Parameter	Flag	Cert	MDL Result	Units	RL
1,1,2-Trichloroethane		1,2,3,4	<0.390	µg/L	1
1,3-Dichloropropane		1,2,3,4	<0.310	µg/L	1
Dibromochloromethane		1,3,4	<0.370	µg/L	1
1,2-Dibromoethane (EDB)		1,2,3,4	<0.310	µg/L	1
Tetrachloroethene (PCE)		1,2,3,4	<0.190	µg/L	1
Chlorobenzene		1,2,3,4	<0.290	µg/L	1
1,1,1,2-Tetrachloroethane		1,2,3,4	<0.300	µg/L	1
Ethylbenzene		1,2,3,4	<0.260	µg/L	1
m,p-Xylene		1,2,3,4	<0.480	µg/L	1
Bromoform		1,2,3,4	<0.480	µg/L	1
Styrene		1,2,3,4	<0.250	µg/L	1
o-Xylene		1,2,3,4	<0.260	µg/L	1
1,1,2,2-Tetrachloroethane		1,2,3,4	<0.560	µg/L	1
2-Chlorotoluene		1,2,3,4	<0.250	µg/L	1
1,2,3-Trichloropropane		1,2,3,4	<0.450	µg/L	1
Isopropylbenzene		1,2,3,4	<0.260	µg/L	1
Bromobenzene		1,2,3,4	<0.280	µg/L	1
n-Propylbenzene		1,2,3,4	<0.240	µg/L	1
1,3,5-Trimethylbenzene		1,2,3,4	<0.260	µg/L	1
tert-Butylbenzene		1,2,3,4	<0.270	µg/L	1
1,2,4-Trimethylbenzene		1,2,3,4	<0.270	µg/L	1
1,4-Dichlorobenzene (para)		1,2,3,4	<0.310	µg/L	1
sec-Butylbenzene		1,2,3,4	<0.200	µg/L	1
1,3-Dichlorobenzene (meta)		1,2,3,4	<0.280	µg/L	1
p-Isopropyltoluene		1,2,3	<0.200	µg/L	1
4-Chlorotoluene		1,2,3,4	<0.290	µg/L	1
1,2-Dichlorobenzene (ortho)		1,2,3,4	<0.250	µg/L	1
n-Butylbenzene	B	B	0.310	µg/L	1
1,2-Dibromo-3-chloropropane		1,3	<1.70	µg/L	5
1,2,3-Trichlorobenzene		1,2,3,4	<0.400	µg/L	5
1,2,4-Trichlorobenzene		1,2,3,4	<2.12	µg/L	5
Naphthalene		1,2,3,4	<2.23	µg/L	5
Hexachlorobutadiene		1,2,3,4	<0.760	µg/L	5

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane			52.3	µg/L	1	50.0	105	70 - 130
Toluene-d8			48.9	µg/L	1	50.0	98	70 - 130
4-Bromofluorobenzene (4-BFB)			48.4	µg/L	1	50.0	97	70 - 130

Report Date: August 17, 2016
AFE 403828

Work Order: 16081001
EPNG Line 3031 Spike Test

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Lea County, NM

Method Blank (1) QC Batch: 132100

QC Batch: 132100
Prep Batch: 111947

Date Analyzed: 2016-08-12
QC Preparation: 2016-08-12

Analyzed By: MT
Prepared By: MT

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1,2,3	<0.0369	mg/L	0.2

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.119	mg/L	1	0.100	119	72.8 - 136
4-Bromofluorobenzene (4-BFB)			0.102	mg/L	1	0.100	102	73.3 - 120

Method Blank (1) QC Batch: 132122

QC Batch: 132122
Prep Batch: 111971

Date Analyzed: 2016-08-15
QC Preparation: 2016-08-15

Analyzed By: RL
Prepared By: RL

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1,2,3,4	<0.297	mg/L	2.5

Method Blank (1) QC Batch: 132127

QC Batch: 132127
Prep Batch: 111970

Date Analyzed: 2016-08-16
QC Preparation: 2016-08-15

Analyzed By: HJ
Prepared By: HJ

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1,2,3	<0.890	mg/L	5

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			2.82	mg/L	1	2.50	113	70 - 130

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 132085
Prep Batch: 111933

Date Analyzed: 2016-08-11
QC Preparation: 2016-08-11

Analyzed By: JG
Prepared By: JG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Bromochloromethane		1,2,3,4	50.3	µg/L	1	50.0	<0.330	101	74.4 - 128
Dichlorodifluoromethane		1,2,3,4	32.6	µg/L	1	50.0	<0.350	65	46.8 - 148
Chloromethane (methyl chloride)		1,2,3,4	39.6	µg/L	1	50.0	<0.330	79	63.8 - 125
Vinyl Chloride		1,2,3,4	42.2	µg/L	1	50.0	<0.410	84	60.3 - 129
Bromomethane (methyl bromide)		1,2,3,4	39.0	µg/L	1	50.0	<1.69	78	49.7 - 141
Chloroethane		1,2,3,4	41.5	µg/L	1	50.0	<0.420	83	62.4 - 131
Trichlorofluoromethane		1,2,3,4	42.9	µg/L	1	50.0	<0.410	86	53.5 - 152
Acetone		1,2,3,4	37.0	µg/L	1	50.0	<1.09	74	20 - 190
Iodomethane (methyl iodide)		1,2,3,4	48.4	µg/L	1	50.0	<2.47	97	67.8 - 135
Carbon Disulfide		1,2,3,4	48.4	µg/L	1	50.0	<0.400	97	68.9 - 136
Acrylonitrile		1,2,3,4	44.4	µg/L	1	50.0	<0.360	89	67.6 - 131
2-Butanone (MEK)		1,2,3,4	37.4	µg/L	1	50.0	<1.67	75	45 - 137
4-Methyl-2-pentanone (MIBK)		1,2,3,4	40.9	µg/L	1	50.0	<2.14	82	61.4 - 142
2-Hexanone		1,2,3,4	37.0	µg/L	1	50.0	<1.49	74	51.7 - 145
trans 1,4-Dichloro-2-butene		1,2,3,4	68.1	µg/L	1	50.0	<1.75	136	44.3 - 137
1,1-Dichloroethene		1,2,3,4	49.3	µg/L	1	50.0	<0.330	99	70.6 - 132
Methylene chloride		1,2,3,4	47.5	µg/L	1	50.0	<2.04	95	66.5 - 135
MTBE		1,2,3,4	48.3	µg/L	1	50.0	<0.320	97	72.1 - 130
trans-1,2-Dichloroethene		1,2,3,4	49.8	µg/L	1	50.0	<0.360	100	75.5 - 127
1,1-Dichloroethane		1,2,3,4	48.8	µg/L	1	50.0	<0.330	98	73.7 - 129
cis-1,2-Dichloroethene		1,2,3,4	49.0	µg/L	1	50.0	<0.330	98	75.5 - 127
2,2-Dichloropropane		1,2,3,4	56.4	µg/L	1	50.0	<0.380	113	24.3 - 158
1,2-Dichloroethane (EDC)		1,2,3,4	46.0	µg/L	1	50.0	<0.280	92	71 - 134
Chloroform		1,2,3,4	50.6	µg/L	1	50.0	<0.390	101	74 - 131
1,1,1-Trichloroethane		1,2,3,4	50.9	µg/L	1	50.0	<0.370	102	59.2 - 150
1,1-Dichloropropene		1,2,3,4	50.6	µg/L	1	50.0	<0.320	101	77.7 - 128
Benzene		1,2,3,4	48.6	µg/L	1	50.0	<0.340	97	73 - 124
Carbon Tetrachloride		1,2,3,4	49.4	µg/L	1	50.0	<0.350	99	61.2 - 146
1,2-Dichloropropane		1,2,3,4	49.5	µg/L	1	50.0	<0.270	99	78 - 125
Trichloroethene (TCE)		1,2,3,4	49.7	µg/L	1	50.0	<0.310	99	70.9 - 137
Dibromomethane (methylene bromide)		1,2,3,4	47.0	µg/L	1	50.0	<0.230	94	76.2 - 127
Bromodichloromethane		1,2,3,4	50.1	µg/L	1	50.0	<0.320	100	73.6 - 130
2-Chloroethyl vinyl ether		1,2,3,4	50.9	µg/L	1	50.0	<0.480	102	61.1 - 136
cis-1,3-Dichloropropene		1,2,3,4	47.9	µg/L	1	50.0	<0.210	96	79 - 125
trans-1,3-Dichloropropene		1,2,3,4	47.6	µg/L	1	50.0	<0.310	95	77.1 - 128

continued ...

control spikes continued . . .

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Toluene		1,2,3,4	49.8	µg/L	1	50.0	<0.350	100	75.4 - 126
1,1,2-Trichloroethane		1,2,3,4	43.8	µg/L	1	50.0	<0.390	88	72.9 - 122
1,3-Dichloropropane		1,2,3,4	44.2	µg/L	1	50.0	<0.310	88	75 - 120
Dibromochloromethane		1,3,4	47.3	µg/L	1	50.0	<0.370	95	64.8 - 128
1,2-Dibromoethane (EDB)		1,2,3,4	44.4	µg/L	1	50.0	<0.310	89	74.6 - 121
Tetrachloroethene (PCE)		1,2,3,4	42.7	µg/L	1	50.0	<0.190	85	28.6 - 177
Chlorobenzene		1,2,3,4	48.7	µg/L	1	50.0	<0.290	97	73.5 - 120
1,1,1,2-Tetrachloroethane		1,2,3,4	48.8	µg/L	1	50.0	<0.300	98	67 - 128
Ethylbenzene		1,2,3,4	47.8	µg/L	1	50.0	<0.260	96	73 - 123
m,p-Xylene		1,2,3,4	97.9	µg/L	1	100	<0.480	98	71 - 126
Bromoform		1,2,3,4	50.8	µg/L	1	50.0	<0.480	102	55.5 - 131
Styrene		1,2,3,4	47.7	µg/L	1	50.0	<0.250	95	75.7 - 122
o-Xylene		1,2,3,4	48.9	µg/L	1	50.0	<0.260	98	70.2 - 125
1,1,2,2-Tetrachloroethane		1,2,3,4	43.3	µg/L	1	50.0	<0.560	87	61.1 - 133
2-Chlorotoluene		1,2,3,4	45.4	µg/L	1	50.0	<0.250	91	71.8 - 120
1,2,3-Trichloropropane		1,2,3,4	43.9	µg/L	1	50.0	<0.450	88	67.2 - 132
Isopropylbenzene		1,2,3,4	44.6	µg/L	1	50.0	<0.260	89	72.2 - 123
Bromobenzene		1,2,3,4	44.1	µg/L	1	50.0	<0.280	88	66.7 - 121
n-Propylbenzene		1,2,3,4	45.0	µg/L	1	50.0	<0.240	90	72.9 - 121
1,3,5-Trimethylbenzene		1,2,3,4	46.3	µg/L	1	50.0	<0.260	93	68.4 - 126
tert-Butylbenzene		1,2,3,4	44.8	µg/L	1	50.0	<0.270	90	68.7 - 128
1,2,4-Trimethylbenzene		1,2,3,4	45.4	µg/L	1	50.0	<0.270	91	70.4 - 124
1,4-Dichlorobenzene (para)		1,2,3,4	49.4	µg/L	1	50.0	<0.310	99	73.5 - 120
sec-Butylbenzene		1,2,3,4	45.6	µg/L	1	50.0	<0.200	91	69.6 - 128
1,3-Dichlorobenzene (meta)		1,2,3,4	48.9	µg/L	1	50.0	<0.280	98	74.2 - 120
p-Isopropyltoluene		1,2,3	47.2	µg/L	1	50.0	<0.200	94	73.1 - 124
4-Chlorotoluene		1,2,3,4	44.8	µg/L	1	50.0	<0.290	90	72.8 - 120
1,2-Dichlorobenzene (ortho)		1,2,3,4	47.1	µg/L	1	50.0	<0.250	94	65.2 - 126
n-Butylbenzene		1,2,3,4	48.6	µg/L	1	50.0	0.31	96	70.1 - 127
1,2-Dibromo-3-chloropropane		1,3	41.2	µg/L	1	50.0	<1.70	82	50.5 - 136
1,2,3-Trichlorobenzene		1,2,3,4	58.0	µg/L	1	50.0	<0.400	116	43.3 - 153
1,2,4-Trichlorobenzene		1,2,3,4	55.1	µg/L	1	50.0	<2.12	110	59.6 - 134
Naphthalene		1,2,3,4	55.5	µg/L	1	50.0	<2.23	111	38.5 - 159
Hexachlorobutadiene		1,2,3,4	51.8	µg/L	1	50.0	<0.760	104	35.8 - 175

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Bromochloromethane		1,2,3,4	52.4	µg/L	1	50.0	<0.330	105	74.4 - 128	4	20
Dichlorodifluoromethane		1,2,3,4	34.4	µg/L	1	50.0	<0.350	69	46.8 - 148	5	20
Chloromethane (methyl chloride)		1,2,3,4	41.2	µg/L	1	50.0	<0.330	82	63.8 - 125	4	20
Vinyl Chloride		1,2,3,4	44.8	µg/L	1	50.0	<0.410	90	60.3 - 129	6	20
Bromomethane (methyl bromide)		1,2,3,4	42.2	µg/L	1	50.0	<1.69	84	49.7 - 141	8	20
Chloroethane		1,2,3,4	45.2	µg/L	1	50.0	<0.420	90	62.4 - 131	8	20

continued . . .

control spikes continued ...

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Trichlorofluoromethane		1,2,3,4	46.1	µg/L	1	50.0	<0.410	92	53.5 - 152	7	20
Acetone		1,2,3,4	31.9	µg/L	1	50.0	<1.09	64	20 - 190	15	20
Iodomethane (methyl iodide)		1,2,3,4	52.1	µg/L	1	50.0	<2.47	104	67.8 - 135	7	20
Carbon Disulfide		1,2,3,4	52.0	µg/L	1	50.0	<0.400	104	68.9 - 136	7	20
Acrylonitrile		1,2,3,4	47.8	µg/L	1	50.0	<0.360	96	67.6 - 131	7	20
2-Butanone (MEK)		1,2,3,4	37.7	µg/L	1	50.0	<1.67	75	45 - 137	1	20
4-Methyl-2-pentanone (MIBK)		1,2,3,4	46.6	µg/L	1	50.0	<2.14	93	61.4 - 142	13	20
2-Hexanone		1,2,3,4	38.4	µg/L	1	50.0	<1.49	77	51.7 - 145	4	20
trans 1,4-Dichloro-2-butene	Qs	Qs	72.9	µg/L	1	50.0	<1.75	146	44.3 - 137	7	20
1,1-Dichloroethene		1,2,3,4	52.7	µg/L	1	50.0	<0.330	105	70.6 - 132	7	20
Methylene chloride		1,2,3,4	51.0	µg/L	1	50.0	<2.04	102	66.5 - 135	7	20
MTBE		1,2,3,4	51.7	µg/L	1	50.0	<0.320	103	72.1 - 130	7	20
trans-1,2-Dichloroethene		1,2,3,4	54.2	µg/L	1	50.0	<0.360	108	75.5 - 127	8	20
1,1-Dichloroethane		1,2,3,4	52.0	µg/L	1	50.0	<0.330	104	73.7 - 129	6	20
cis-1,2-Dichloroethene		1,2,3,4	53.3	µg/L	1	50.0	<0.330	107	75.5 - 127	8	20
2,2-Dichloropropane		1,2,3,4	62.0	µg/L	1	50.0	<0.380	124	24.3 - 158	9	20
1,2-Dichloroethane (EDC)		1,2,3,4	48.6	µg/L	1	50.0	<0.280	97	71 - 134	6	20
Chloroform		1,2,3,4	53.0	µg/L	1	50.0	<0.390	106	74 - 131	5	20
1,1,1-Trichloroethane		1,2,3,4	53.5	µg/L	1	50.0	<0.370	107	59.2 - 150	5	20
1,1-Dichloropropene		1,2,3,4	52.2	µg/L	1	50.0	<0.320	104	77.7 - 128	3	20
Benzene		1,2,3,4	52.4	µg/L	1	50.0	<0.340	105	73 - 124	8	20
Carbon Tetrachloride		1,2,3,4	52.6	µg/L	1	50.0	<0.350	105	61.2 - 146	6	20
1,2-Dichloropropane		1,2,3,4	52.7	µg/L	1	50.0	<0.270	105	78 - 125	6	20
Trichloroethene (TCE)		1,2,3,4	51.9	µg/L	1	50.0	<0.310	104	70.9 - 137	4	20
Dibromomethane (methylene bromide)		1,2,3,4	48.4	µg/L	1	50.0	<0.230	97	76.2 - 127	3	20
Bromodichloromethane		1,2,3,4	52.4	µg/L	1	50.0	<0.320	105	73.6 - 130	4	20
2-Chloroethyl vinyl ether		1,2,3,4	52.4	µg/L	1	50.0	<0.480	105	61.1 - 136	3	20
cis-1,3-Dichloropropene		1,2,3,4	50.3	µg/L	1	50.0	<0.210	101	79 - 125	5	20
trans-1,3-Dichloropropene		1,2,3,4	50.1	µg/L	1	50.0	<0.310	100	77.1 - 128	5	20
Toluene		1,2,3,4	53.2	µg/L	1	50.0	<0.350	106	75.4 - 126	7	20
1,1,2-Trichloroethane		1,2,3,4	46.7	µg/L	1	50.0	<0.390	93	72.9 - 122	6	20
1,3-Dichloropropane		1,2,3,4	47.4	µg/L	1	50.0	<0.310	95	75 - 120	7	20
Dibromochloromethane		1,3,4	50.3	µg/L	1	50.0	<0.370	101	64.8 - 128	6	20
1,2-Dibromoethane (EDB)		1,2,3,4	46.4	µg/L	1	50.0	<0.310	93	74.6 - 121	4	20
Tetrachloroethene (PCE)		1,2,3,4	45.3	µg/L	1	50.0	<0.190	91	28.6 - 177	6	20
Chlorobenzene		1,2,3,4	51.5	µg/L	1	50.0	<0.290	103	73.5 - 120	6	20
1,1,1,2-Tetrachloroethane		1,2,3,4	51.6	µg/L	1	50.0	<0.300	103	67 - 128	6	20
Ethylbenzene		1,2,3,4	50.8	µg/L	1	50.0	<0.260	102	73 - 123	6	20
m,p-Xylene		1,2,3,4	102	µg/L	1	100	<0.480	102	71 - 126	4	20
Bromoform		1,2,3,4	52.6	µg/L	1	50.0	<0.480	105	55.5 - 131	4	20
Styrene		1,2,3,4	49.0	µg/L	1	50.0	<0.250	98	75.7 - 122	3	20
o-Xylene		1,2,3,4	52.5	µg/L	1	50.0	<0.260	105	70.2 - 125	7	20
1,1,2,2-Tetrachloroethane		1,2,3,4	44.2	µg/L	1	50.0	<0.560	88	61.1 - 133	2	20
2-Chlorotoluene		1,2,3,4	48.8	µg/L	1	50.0	<0.250	98	71.8 - 120	7	20

continued ...

control spikes continued ...

Param	F	C	LCSD		Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
1,2,3-Trichloropropane		1,2,3,4	43.4	µg/L	1	50.0	<0.450	87	67.2 - 132	1	20
Isopropylbenzene		1,2,3,4	48.4	µg/L	1	50.0	<0.260	97	72.2 - 123	8	20
Bromobenzene		1,2,3,4	48.0	µg/L	1	50.0	<0.280	96	66.7 - 121	8	20
n-Propylbenzene		1,2,3,4	49.0	µg/L	1	50.0	<0.240	98	72.9 - 121	8	20
1,3,5-Trimethylbenzene		1,2,3,4	50.0	µg/L	1	50.0	<0.260	100	68.4 - 126	8	20
tert-Butylbenzene		1,2,3,4	49.5	µg/L	1	50.0	<0.270	99	68.7 - 128	10	20
1,2,4-Trimethylbenzene		1,2,3,4	50.7	µg/L	1	50.0	<0.270	101	70.4 - 124	11	20
1,4-Dichlorobenzene (para)		1,2,3,4	52.7	µg/L	1	50.0	<0.310	105	73.5 - 120	6	20
sec-Butylbenzene		1,2,3,4	50.6	µg/L	1	50.0	<0.200	101	69.6 - 128	10	20
1,3-Dichlorobenzene (meta)		1,2,3,4	52.3	µg/L	1	50.0	<0.280	105	74.2 - 120	7	20
p-Isopropyltoluene		1,2,3	51.9	µg/L	1	50.0	<0.200	104	73.1 - 124	10	20
4-Chlorotoluene		1,2,3,4	48.0	µg/L	1	50.0	<0.290	96	72.8 - 120	7	20
1,2-Dichlorobenzene (ortho)		1,2,3,4	51.2	µg/L	1	50.0	<0.250	102	65.2 - 126	8	20
n-Butylbenzene		1,2,3,4	52.4	µg/L	1	50.0	0.31	104	70.1 - 127	8	20
1,2-Dibromo-3-chloropropane		1,3	46.8	µg/L	1	50.0	<1.70	94	50.5 - 136	13	20
1,2,3-Trichlorobenzene		1,2,3,4	61.6	µg/L	1	50.0	<0.400	123	43.3 - 153	6	20
1,2,4-Trichlorobenzene		1,2,3,4	59.5	µg/L	1	50.0	<2.12	119	59.6 - 134	8	20
Naphthalene		1,2,3,4	60.0	µg/L	1	50.0	<2.23	120	38.5 - 159	8	20
Hexachlorobutadiene		1,2,3,4	56.6	µg/L	1	50.0	<0.760	113	35.8 - 175	9	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Dibromofluoromethane	50.9	51.1	µg/L	1	50.0	102	102	70 - 130
Toluene-d8	47.8	47.7	µg/L	1	50.0	96	95	70 - 130
4-Bromofluorobenzene (4-BFB)	51.1	49.7	µg/L	1	50.0	102	99	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 132100
Prep Batch: 111947

Date Analyzed: 2016-08-12
QC Preparation: 2016-08-12

Analyzed By: MT
Prepared By: MT

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1,2,3	0.998	mg/L	1	1.00	<0.0369	100	74.6 - 123

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD		Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1,2,3	1.03	mg/L	1	1.00	<0.0369	103	74.6 - 123	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

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Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.112	0.114	mg/L	1	0.100	112	114	72.8 - 136
4-Bromofluorobenzene (4-BFB)	0.111	0.110	mg/L	1	0.100	111	110	73.3 - 120

Laboratory Control Spike (LCS-1)

QC Batch: 132122
Prep Batch: 111971

Date Analyzed: 2016-08-15
QC Preparation: 2016-08-15

Analyzed By: RL
Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1,2,3,4	24.7	mg/L	1	25.0	<0.297	99	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1,2,3,4	24.2	mg/L	1	25.0	<0.297	97	90 - 110	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 132127
Prep Batch: 111970

Date Analyzed: 2016-08-16
QC Preparation: 2016-08-15

Analyzed By: HJ
Prepared By: HJ

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1,2,3	56.9	mg/L	1	50.0	<0.890	114	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1,2,3	50.6	mg/L	1	50.0	<0.890	101	70 - 130	12	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	3.10	3.00	mg/L	1	2.50	124	120	70 - 130

Matrix Spikes

Matrix Spike (MS-1) Spiked Sample: 426171

QC Batch: 132085
Prep Batch: 111933

Date Analyzed: 2016-08-11
QC Preparation: 2016-08-11

Analyzed By: JG
Prepared By: JG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Bromochloromethane		1,2,3,4	48.3	µg/L	1	50.0	<0.330	97	64.4 - 146
Dichlorodifluoromethane		1,2,3,4	29.5	µg/L	1	50.0	<0.350	59	36.2 - 162
Chloromethane (methyl chloride)		1,2,3,4	35.3	µg/L	1	50.0	<0.330	71	56.1 - 142
Vinyl Chloride		1,2,3,4	39.1	µg/L	1	50.0	<0.410	78	12 - 172
Bromomethane (methyl bromide)		1,2,3,4	36.3	µg/L	1	50.0	<1.69	73	43.6 - 159
Chloroethane		1,2,3,4	39.4	µg/L	1	50.0	<0.420	79	58 - 148
Trichlorofluoromethane		1,2,3,4	43.0	µg/L	1	50.0	<0.410	86	52.2 - 163
Acetone		1,2,3,4	31.9	µg/L	1	50.0	<1.09	64	12.8 - 120
Iodomethane (methyl iodide)		1,2,3,4	46.8	µg/L	1	50.0	<2.47	94	10 - 200
Carbon Disulfide		1,2,3,4	47.2	µg/L	1	50.0	<0.400	94	57.6 - 149
Acrylonitrile		1,2,3,4	35.0	µg/L	1	50.0	<0.360	70	67.2 - 134
2-Butanone (MEK)		1,2,3,4	32.2	µg/L	1	50.0	<1.67	64	31.3 - 124
4-Methyl-2-pentanone (MIBK)		1,2,3,4	39.9	µg/L	1	50.0	<2.14	80	56.5 - 143
2-Hexanone		1,2,3,4	36.0	µg/L	1	50.0	<1.49	72	29 - 144
trans 1,4-Dichloro-2-butene		1,2,3,4	68.9	µg/L	1	50.0	<1.75	138	10 - 143
1,1-Dichloroethene		1,2,3,4	46.7	µg/L	1	50.0	<0.330	93	34.6 - 166
Methylene chloride		1,2,3,4	45.1	µg/L	1	50.0	<2.04	90	64.3 - 140
MTBE		1,2,3,4	48.8	µg/L	1	50.0	<0.320	98	41.6 - 161
trans-1,2-Dichloroethene		1,2,3,4	49.4	µg/L	1	50.0	<0.360	99	63.2 - 146
1,1-Dichloroethane		1,2,3,4	48.6	µg/L	1	50.0	<0.330	97	69.2 - 143
cis-1,2-Dichloroethene		1,2,3,4	47.9	µg/L	1	50.0	<0.330	96	64.8 - 144
2,2-Dichloropropane		1,2,3,4	52.1	µg/L	1	50.0	<0.380	104	21.7 - 152
1,2-Dichloroethane (EDC)		1,2,3,4	49.6	µg/L	1	50.0	<0.280	99	62 - 157
Chloroform		1,2,3,4	51.8	µg/L	1	50.0	<0.390	104	64.9 - 150
1,1,1-Trichloroethane		1,2,3,4	51.7	µg/L	1	50.0	<0.370	103	62.3 - 163
1,1-Dichloropropene		1,2,3,4	49.6	µg/L	1	50.0	<0.320	99	31 - 174
Benzene		1,2,3,4	48.4	µg/L	1	50.0	<0.340	97	62 - 139
Carbon Tetrachloride		1,2,3,4	52.4	µg/L	1	50.0	<0.350	105	58 - 164
1,2-Dichloropropane		1,2,3,4	50.4	µg/L	1	50.0	<0.270	101	68.1 - 140
Trichloroethene (TCE)		1,2,3,4	46.8	µg/L	1	50.0	<0.310	94	49.9 - 163
Dibromomethane (methylene bromide)		1,2,3,4	47.6	µg/L	1	50.0	<0.230	95	66.8 - 142
Bromodichloromethane		1,2,3,4	52.1	µg/L	1	50.0	<0.320	104	63.9 - 152
2-Chloroethyl vinyl ether		1,2,3,4	<0.480	µg/L	1	50.0	<0.480	0	0 - 120
cis-1,3-Dichloropropene		1,2,3,4	47.7	µg/L	1	50.0	<0.210	95	32.6 - 160
trans-1,3-Dichloropropene		1,2,3,4	48.3	µg/L	1	50.0	<0.310	97	31.4 - 163

continued ...

matrix spikes continued ...

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Toluene		1,2,3,4	49.4	µg/L	1	50.0	<0.350	99	40.7 - 160
1,1,2-Trichloroethane		1,2,3,4	44.2	µg/L	1	50.0	<0.390	88	66 - 130
1,3-Dichloropropane		1,2,3,4	44.0	µg/L	1	50.0	<0.310	88	66.2 - 131
Dibromochloromethane		1,3,4	48.2	µg/L	1	50.0	<0.370	96	58.8 - 143
1,2-Dibromoethane (EDB)		1,2,3,4	43.7	µg/L	1	50.0	<0.310	87	66.8 - 132
Tetrachloroethene (PCE)		1,2,3,4	43.7	µg/L	1	50.0	<0.190	87	28.8 - 126
Chlorobenzene		1,2,3,4	47.4	µg/L	1	50.0	<0.290	95	61.6 - 134
1,1,1,2-Tetrachloroethane		1,2,3,4	49.0	µg/L	1	50.0	<0.300	98	63.1 - 139
Ethylbenzene		1,2,3,4	47.5	µg/L	1	50.0	<0.260	95	43 - 148
m,p-Xylene		1,2,3,4	97.5	µg/L	1	100	<0.480	98	21.5 - 165
Bromoform		1,2,3,4	51.7	µg/L	1	50.0	<0.480	103	49 - 144
Styrene		1,2,3,4	46.2	µg/L	1	50.0	<0.250	92	10 - 192
o-Xylene		1,2,3,4	49.4	µg/L	1	50.0	<0.260	99	28.4 - 160
1,1,2,2-Tetrachloroethane		1,2,3,4	43.9	µg/L	1	50.0	<0.560	88	65.3 - 133
2-Chlorotoluene		1,2,3,4	43.5	µg/L	1	50.0	<0.250	87	56 - 134
1,2,3-Trichloropropane		1,2,3,4	41.9	µg/L	1	50.0	<0.450	84	62.8 - 126
Isopropylbenzene		1,2,3,4	42.2	µg/L	1	50.0	<0.260	84	31.4 - 156
Bromobenzene		1,2,3,4	43.6	µg/L	1	50.0	<0.280	87	57.8 - 128
n-Propylbenzene		1,2,3,4	43.1	µg/L	1	50.0	<0.240	86	30.5 - 154
1,3,5-Trimethylbenzene		1,2,3,4	44.3	µg/L	1	50.0	<0.260	89	10 - 183
tert-Butylbenzene		1,2,3,4	43.3	µg/L	1	50.0	<0.270	87	42.8 - 148
1,2,4-Trimethylbenzene		1,2,3,4	45.2	µg/L	1	50.0	<0.270	90	10 - 179
1,4-Dichlorobenzene (para)		1,2,3,4	46.8	µg/L	1	50.0	<0.310	94	66 - 123
sec-Butylbenzene		1,2,3,4	43.3	µg/L	1	50.0	<0.200	87	30.8 - 155
1,3-Dichlorobenzene (meta)		1,2,3,4	46.0	µg/L	1	50.0	<0.280	92	66 - 124
p-Isopropyltoluene		1,2,3	44.8	µg/L	1	50.0	<0.200	90	20.9 - 164
4-Chlorotoluene		1,2,3,4	43.4	µg/L	1	50.0	<0.290	87	54.8 - 136
1,2-Dichlorobenzene (ortho)		1,2,3,4	46.0	µg/L	1	50.0	<0.250	92	65.9 - 124
n-Butylbenzene		1,2,3,4	44.4	µg/L	1	50.0	<0.170	89	31.3 - 153
1,2-Dibromo-3-chloropropane		1,3	40.1	µg/L	1	50.0	<1.70	80	49.3 - 138
1,2,3-Trichlorobenzene		1,2,3,4	49.0	µg/L	1	50.0	<0.400	98	37.5 - 146
1,2,4-Trichlorobenzene		1,2,3,4	48.8	µg/L	1	50.0	<2.12	98	55.3 - 132
Naphthalene		1,2,3,4	46.2	µg/L	1	50.0	<2.23	92	10 - 169
Hexachlorobutadiene		1,2,3,4	45.7	µg/L	1	50.0	<0.760	91	47.4 - 146

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Bromochloromethane		1,2,3,4	48.8	µg/L	1	50.0	<0.330	98	64.4 - 146	1	20
Dichlorodifluoromethane		1,2,3,4	30.6	µg/L	1	50.0	<0.350	61	36.2 - 162	4	20
Chloromethane (methyl chloride)		1,2,3,4	36.2	µg/L	1	50.0	<0.330	72	56.1 - 142	2	20
Vinyl Chloride		1,2,3,4	40.1	µg/L	1	50.0	<0.410	80	12 - 172	2	20
Bromomethane (methyl bromide)		1,2,3,4	37.0	µg/L	1	50.0	<1.69	74	43.6 - 159	2	20
Chloroethane		1,2,3,4	38.1	µg/L	1	50.0	<0.420	76	58 - 148	3	20

continued ...

matrix spikes continued ...

Param			MSD		Dil.	Spike Amount	Matrix		Rec.		RPD	
	F	C	Result	Units			Result	Rec.	Limit	RPD	Limit	
Trichlorofluoromethane		1,2,3,4	42.5	µg/L	1	50.0	<0.410	85	52.2 - 163	1	20	
Acetone		1,2,3,4	34.5	µg/L	1	50.0	<1.09	69	12.8 - 120	8	20	
Iodomethane (methyl iodide)		1,2,3,4	46.4	µg/L	1	50.0	<2.47	93	10 - 200	1	20	
Carbon Disulfide		1,2,3,4	47.2	µg/L	1	50.0	<0.400	94	57.6 - 149	0	20	
Acrylonitrile	Qr	Qr	44.2	µg/L	1	50.0	<0.360	88	67.2 - 134	23	20	
2-Butanone (MEK)		1,2,3,4	36.3	µg/L	1	50.0	<1.67	73	31.3 - 124	12	20	
4-Methyl-2-pentanone (MIBK)		1,2,3,4	43.4	µg/L	1	50.0	<2.14	87	56.5 - 143	8	20	
2-Hexanone		1,2,3,4	37.6	µg/L	1	50.0	<1.49	75	29 - 144	4	20	
trans 1,4-Dichloro-2-butene		1,2,3,4	67.1	µg/L	1	50.0	<1.75	134	10 - 143	3	20	
1,1-Dichloroethene		1,2,3,4	47.0	µg/L	1	50.0	<0.330	94	34.6 - 166	1	20	
Methylene chloride		1,2,3,4	45.6	µg/L	1	50.0	<2.04	91	64.3 - 140	1	20	
MTBE		1,2,3,4	47.8	µg/L	1	50.0	<0.320	96	41.6 - 161	2	20	
trans-1,2-Dichloroethene		1,2,3,4	49.1	µg/L	1	50.0	<0.360	98	63.2 - 146	1	20	
1,1-Dichloroethane		1,2,3,4	47.2	µg/L	1	50.0	<0.330	94	69.2 - 143	3	20	
cis-1,2-Dichloroethene		1,2,3,4	47.5	µg/L	1	50.0	<0.330	95	64.8 - 144	1	20	
2,2-Dichloropropane		1,2,3,4	49.2	µg/L	1	50.0	<0.380	98	21.7 - 152	6	20	
1,2-Dichloroethane (EDC)		1,2,3,4	47.7	µg/L	1	50.0	<0.280	95	62 - 157	4	20	
Chloroform		1,2,3,4	50.5	µg/L	1	50.0	<0.390	101	64.9 - 150	2	20	
1,1,1-Trichloroethane		1,2,3,4	50.7	µg/L	1	50.0	<0.370	101	62.3 - 163	2	20	
1,1-Dichloropropene		1,2,3,4	48.4	µg/L	1	50.0	<0.320	97	31 - 174	2	20	
Benzene		1,2,3,4	46.7	µg/L	1	50.0	<0.340	93	62 - 139	4	20	
Carbon Tetrachloride		1,2,3,4	50.4	µg/L	1	50.0	<0.350	101	58 - 164	4	20	
1,2-Dichloropropane		1,2,3,4	49.6	µg/L	1	50.0	<0.270	99	68.1 - 140	2	20	
Trichloroethene (TCE)		1,2,3,4	46.5	µg/L	1	50.0	<0.310	93	49.9 - 163	1	20	
Dibromomethane (methylene bromide)		1,2,3,4	46.8	µg/L	1	50.0	<0.230	94	66.8 - 142	2	20	
Bromodichloromethane		1,2,3,4	50.0	µg/L	1	50.0	<0.320	100	63.9 - 152	4	20	
2-Chloroethyl vinyl ether		1,2,3,4	<0.480	µg/L	1	50.0	<0.480	0	0 - 120	0	20	
cis-1,3-Dichloropropene		1,2,3,4	45.8	µg/L	1	50.0	<0.210	92	32.6 - 160	4	20	
trans-1,3-Dichloropropene		1,2,3,4	46.9	µg/L	1	50.0	<0.310	94	31.4 - 163	3	20	
Toluene		1,2,3,4	48.7	µg/L	1	50.0	<0.350	97	40.7 - 160	1	20	
1,1,2-Trichloroethane		1,2,3,4	42.6	µg/L	1	50.0	<0.390	85	66 - 130	4	20	
1,3-Dichloropropane		1,2,3,4	44.1	µg/L	1	50.0	<0.310	88	66.2 - 131	0	20	
Dibromochloromethane		1,3,4	46.8	µg/L	1	50.0	<0.370	94	58.8 - 143	3	20	
1,2-Dibromoethane (EDB)		1,2,3,4	43.0	µg/L	1	50.0	<0.310	86	66.8 - 132	2	20	
Tetrachloroethene (PCE)		1,2,3,4	41.7	µg/L	1	50.0	<0.190	83	28.8 - 126	5	20	
Chlorobenzene		1,2,3,4	46.0	µg/L	1	50.0	<0.290	92	61.6 - 134	3	20	
1,1,1,2-Tetrachloroethane		1,2,3,4	47.6	µg/L	1	50.0	<0.300	95	63.1 - 139	3	20	
Ethylbenzene		1,2,3,4	45.3	µg/L	1	50.0	<0.260	91	43 - 148	5	20	
m,p-Xylene		1,2,3,4	93.5	µg/L	1	100	<0.480	94	21.5 - 165	4	20	
Bromoform		1,2,3,4	50.4	µg/L	1	50.0	<0.480	101	49 - 144	2	20	
Styrene		1,2,3,4	44.5	µg/L	1	50.0	<0.250	89	10 - 192	4	20	
o-Xylene		1,2,3,4	47.6	µg/L	1	50.0	<0.260	95	28.4 - 160	4	20	
1,1,2,2-Tetrachloroethane		1,2,3,4	42.9	µg/L	1	50.0	<0.560	86	65.3 - 133	2	20	
2-Chlorotoluene		1,2,3,4	43.2	µg/L	1	50.0	<0.250	86	56 - 134	1	20	

continued ...

matrix spikes continued ...

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
1,2,3-Trichloropropane		1,2,3,4	46.9	µg/L	1	50.0	<0.450	94	62.8 - 126	11	20
Isopropylbenzene		1,2,3,4	41.5	µg/L	1	50.0	<0.260	83	31.4 - 156	2	20
Bromobenzene		1,2,3,4	43.6	µg/L	1	50.0	<0.280	87	57.8 - 128	0	20
n-Propylbenzene		1,2,3,4	42.4	µg/L	1	50.0	<0.240	85	30.5 - 154	2	20
1,3,5-Trimethylbenzene		1,2,3,4	43.4	µg/L	1	50.0	<0.260	87	10 - 183	2	20
tert-Butylbenzene		1,2,3,4	42.1	µg/L	1	50.0	<0.270	84	42.8 - 148	3	20
1,2,4-Trimethylbenzene		1,2,3,4	44.5	µg/L	1	50.0	<0.270	89	10 - 179	2	20
1,4-Dichlorobenzene (para)		1,2,3,4	46.5	µg/L	1	50.0	<0.310	93	66 - 123	1	20
sec-Butylbenzene		1,2,3,4	43.7	µg/L	1	50.0	<0.200	87	30.8 - 155	1	20
1,3-Dichlorobenzene (meta)		1,2,3,4	45.2	µg/L	1	50.0	<0.280	90	66 - 124	2	20
p-Isopropyltoluene		1,2,3	43.8	µg/L	1	50.0	<0.200	88	20.9 - 164	2	20
4-Chlorotoluene		1,2,3,4	42.5	µg/L	1	50.0	<0.290	85	54.8 - 136	2	20
1,2-Dichlorobenzene (ortho)		1,2,3,4	46.0	µg/L	1	50.0	<0.250	92	65.9 - 124	0	20
n-Butylbenzene		1,2,3,4	44.1	µg/L	1	50.0	<0.170	88	31.3 - 153	1	20
1,2-Dibromo-3-chloropropane		1,3	44.1	µg/L	1	50.0	<1.70	88	49.3 - 138	10	20
1,2,3-Trichlorobenzene		1,2,3,4	56.3	µg/L	1	50.0	<0.400	113	37.5 - 146	14	20
1,2,4-Trichlorobenzene		1,2,3,4	52.0	µg/L	1	50.0	<2.12	104	55.3 - 132	6	20
Naphthalene		1,2,3,4	54.4	µg/L	1	50.0	<2.23	109	10 - 169	16	20
Hexachlorobutadiene		1,2,3,4	46.0	µg/L	1	50.0	<0.760	92	47.4 - 146	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Dibromofluoromethane	52.4	52.5	µg/L	1	50	105	105	70 - 130
Toluene-d8	48.3	47.5	µg/L	1	50	97	95	70 - 130
4-Bromofluorobenzene (4-BFB)	51.9	50.8	µg/L	1	50	104	102	70 - 130

Matrix Spike (MS-1) Spiked Sample: 426316

QC Batch: 132100
Prep Batch: 111947

Date Analyzed: 2016-08-12
QC Preparation: 2016-08-12

Analyzed By: MT
Prepared By: MT

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1,2,3	14.4	mg/L	10	10.0	6.13	83	57 - 134

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1,2,3	15.1	mg/L	10	10.0	6.13	90	57 - 134	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

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Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.08	1.09	mg/L	10	1	108	109	72.8 - 136
4-Bromofluorobenzene (4-BFB)	Q _{sr}	Q _{sr}	mg/L	10	1	147	145	73.3 - 120

Matrix Spike (MS-1) Spiked Sample: 426201

QC Batch: 132122
Prep Batch: 111971

Date Analyzed: 2016-08-15
QC Preparation: 2016-08-15

Analyzed By: RL
Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1,2,3,4	3000	mg/L	100	2500	513	99	80 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1,2,3,4	2970	mg/L	100	2500	513	98	80 - 120	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 426116

QC Batch: 132127
Prep Batch: 111970

Date Analyzed: 2016-08-16
QC Preparation: 2016-08-15

Analyzed By: HJ
Prepared By: HJ

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1,2,3	46.7	mg/L	1	50.0	<0.890	93	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1,2,3	48.1	mg/L	1	50.0	<0.890	96	70 - 130	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	3.04	3.13	mg/L	1	2.5	122	125	70 - 130

Calibration Standards

Standard (CCV-1)

QC Batch: 132085

Date Analyzed: 2016-08-11

Analyzed By: JG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Bromochloromethane		1,2,3,4	µg/L	50.0	48.3	97	80 - 120	2016-08-11
Dichlorodifluoromethane	Qc	Qc	µg/L	50.0	35.1	70	80 - 120	2016-08-11
Chloromethane (methyl chloride)	Qc	Qc	µg/L	50.0	38.6	77	80 - 120	2016-08-11
Vinyl Chloride		1,2,3,4	µg/L	50.0	42.8	86	80 - 120	2016-08-11
Bromomethane (methyl bromide)	Qc	Qc	µg/L	50.0	39.9	80	80 - 120	2016-08-11
Chloroethane		1,2,3,4	µg/L	50.0	42.7	85	80 - 120	2016-08-11
Trichlorofluoromethane		1,2,3,4	µg/L	50.0	45.5	91	80 - 120	2016-08-11
Acetone		1,2,3,4	µg/L	50.0	55.9	112	80 - 120	2016-08-11
Iodomethane (methyl iodide)		1,2,3,4	µg/L	50.0	49.6	99	80 - 120	2016-08-11
Carbon Disulfide		1,2,3,4	µg/L	50.0	49.3	99	80 - 120	2016-08-11
Acrylonitrile		1,2,3,4	µg/L	50.0	42.5	85	80 - 120	2016-08-11
2-Butanone (MEK)	Qc	Qc	µg/L	50.0	33.9	68	80 - 120	2016-08-11
4-Methyl-2-pentanone (MIBK)	Qc	Qc	µg/L	50.0	39.2	78	80 - 120	2016-08-11
2-Hexanone	Qc	Qc	µg/L	50.0	39.1	78	80 - 120	2016-08-11
trans 1,4-Dichloro-2-butene	Qc	Qc	µg/L	50.0	70.9	142	80 - 120	2016-08-11
1,1-Dichloroethene		1,2,3,4	µg/L	50.0	49.0	98	80 - 120	2016-08-11
Methylene chloride		1,2,3,4	µg/L	50.0	48.4	97	80 - 120	2016-08-11
MTBE		1,2,3,4	µg/L	50.0	47.2	94	80 - 120	2016-08-11
trans-1,2-Dichloroethene		1,2,3,4	µg/L	50.0	49.0	98	80 - 120	2016-08-11
1,1-Dichloroethane		1,2,3,4	µg/L	50.0	48.2	96	80 - 120	2016-08-11
cis-1,2-Dichloroethene		1,2,3,4	µg/L	50.0	49.1	98	80 - 120	2016-08-11
2,2-Dichloropropane		1,2,3,4	µg/L	50.0	58.9	118	80 - 120	2016-08-11
1,2-Dichloroethane (EDC)		1,2,3,4	µg/L	50.0	45.2	90	80 - 120	2016-08-11
Chloroform		1,2,3,4	µg/L	50.0	50.4	101	80 - 120	2016-08-11
1,1,1-Trichloroethane		1,2,3,4	µg/L	50.0	51.3	103	80 - 120	2016-08-11
1,1-Dichloropropene		1,2,3,4	µg/L	50.0	49.3	99	80 - 120	2016-08-11
Benzene		1,2,3,4	µg/L	50.0	47.0	94	80 - 120	2016-08-11
Carbon Tetrachloride		1,2,3,4	µg/L	50.0	50.4	101	80 - 120	2016-08-11
1,2-Dichloropropane		1,2,3,4	µg/L	50.0	48.4	97	80 - 120	2016-08-11
Trichloroethene (TCE)		1,2,3,4	µg/L	50.0	47.2	94	80 - 120	2016-08-11
Dibromomethane (methylene bromide)		1,2,3,4	µg/L	50.0	41.9	84	80 - 120	2016-08-11
Bromodichloromethane		1,2,3,4	µg/L	50.0	45.7	91	80 - 120	2016-08-11
2-Chloroethyl vinyl ether		1,2,3,4	µg/L	50.0	46.2	92	80 - 120	2016-08-11
cis-1,3-Dichloropropene		1,2,3,4	µg/L	50.0	45.5	91	80 - 120	2016-08-11
trans-1,3-Dichloropropene		1,2,3,4	µg/L	50.0	44.8	90	80 - 120	2016-08-11
Toluene		1,2,3,4	µg/L	50.0	47.9	96	80 - 120	2016-08-11

continued . . .

standard continued ...

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
1,1,2-Trichloroethane		1,2,3,4	µg/L	50.0	41.4	83	80 - 120	2016-08-11
1,3-Dichloropropane		1,2,3,4	µg/L	50.0	42.8	86	80 - 120	2016-08-11
Dibromochloromethane		1,3,4	µg/L	50.0	44.5	89	80 - 120	2016-08-11
1,2-Dibromoethane (EDB)		1,2,3,4	µg/L	50.0	42.4	85	80 - 120	2016-08-11
Tetrachloroethene (PCE)		1,2,3,4	µg/L	50.0	42.7	85	80 - 120	2016-08-11
Chlorobenzene		1,2,3,4	µg/L	50.0	47.6	95	80 - 120	2016-08-11
1,1,1,2-Tetrachloroethane		1,2,3,4	µg/L	50.0	48.6	97	80 - 120	2016-08-11
Ethylbenzene		1,2,3,4	µg/L	50.0	47.3	95	80 - 120	2016-08-11
m,p-Xylene		1,2,3,4	µg/L	100	96.9	97	80 - 120	2016-08-11
Bromoform		1,2,3,4	µg/L	50.0	47.2	94	80 - 120	2016-08-11
Styrene		1,2,3,4	µg/L	50.0	46.2	92	80 - 120	2016-08-11
o-Xylene		1,2,3,4	µg/L	50.0	49.4	99	80 - 120	2016-08-11
1,1,2,2-Tetrachloroethane		1,2,3,4	µg/L	50.0	40.8	82	80 - 120	2016-08-11
2-Chlorotoluene		1,2,3,4	µg/L	50.0	45.2	90	80 - 120	2016-08-11
1,2,3-Trichloropropane		1,2,3,4	µg/L	50.0	41.7	83	80 - 120	2016-08-11
Isopropylbenzene		1,2,3,4	µg/L	50.0	44.3	89	80 - 120	2016-08-11
Bromobenzene		1,2,3,4	µg/L	50.0	46.7	93	80 - 120	2016-08-11
n-Propylbenzene		1,2,3,4	µg/L	50.0	44.9	90	80 - 120	2016-08-11
1,3,5-Trimethylbenzene		1,2,3,4	µg/L	50.0	46.5	93	80 - 120	2016-08-11
tert-Butylbenzene		1,2,3,4	µg/L	50.0	46.2	92	80 - 120	2016-08-11
1,2,4-Trimethylbenzene		1,2,3,4	µg/L	50.0	46.5	93	80 - 120	2016-08-11
1,4-Dichlorobenzene (para)		1,2,3,4	µg/L	50.0	48.0	96	80 - 120	2016-08-11
sec-Butylbenzene		1,2,3,4	µg/L	50.0	47.5	95	80 - 120	2016-08-11
1,3-Dichlorobenzene (meta)		1,2,3,4	µg/L	50.0	47.4	95	80 - 120	2016-08-11
p-Isopropyltoluene		1,2,3	µg/L	50.0	48.3	97	80 - 120	2016-08-11
4-Chlorotoluene		1,2,3,4	µg/L	50.0	43.8	88	80 - 120	2016-08-11
1,2-Dichlorobenzene (ortho)		1,2,3,4	µg/L	50.0	48.0	96	80 - 120	2016-08-11
n-Butylbenzene		1,2,3,4	µg/L	50.0	49.4	99	80 - 120	2016-08-11
1,2-Dibromo-3-chloropropane		1,3	µg/L	50.0	44.6	89	80 - 120	2016-08-11
1,2,3-Trichlorobenzene		1,2,3,4	µg/L	50.0	59.6	119	80 - 120	2016-08-11
1,2,4-Trichlorobenzene		1,2,3,4	µg/L	50.0	55.2	110	80 - 120	2016-08-11
Naphthalene		1,2,3,4	µg/L	50.0	57.1	114	80 - 120	2016-08-11
Hexachlorobutadiene		1,2,3,4	µg/L	50.0	54.3	109	80 - 120	2016-08-11

Standard (CCV-1)

QC Batch: 132100

Date Analyzed: 2016-08-12

Analyzed By: MT

Report Date: August 17, 2016
AFE 403828

Work Order: 16081001
EPNG Line 3031 Spike Test

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Lea County, NM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1,2,3	mg/L	1.00	1.17	117	80 - 120	2016-08-12

Standard (CCV-2)

QC Batch: 132100

Date Analyzed: 2016-08-12

Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1,2,3	mg/L	1.00	1.05	105	80 - 120	2016-08-12

Standard (CCV-1)

QC Batch: 132122

Date Analyzed: 2016-08-15

Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1,2,3,4	mg/L	25.0	25.1	100	90 - 110	2016-08-15

Standard (CCV-2)

QC Batch: 132122

Date Analyzed: 2016-08-15

Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1,2,3,4	mg/L	25.0	27.2	109	90 - 110	2016-08-15

Standard (CCV-1)

QC Batch: 132127

Date Analyzed: 2016-08-16

Analyzed By: HJ

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1,2,3	mg/L	500	561	112	80 - 120	2016-08-16

Standard (CCV-2)

QC Batch: 132127

Date Analyzed: 2016-08-16

Analyzed By: HJ

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1,2,3	mg/L	500	570	114	80 - 120	2016-08-16

Appendix

Report Definitions

Name	Definition
MDL	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	L-A-B	L2418	Lubbock
2	Kansas	Kansas E-10317	Lubbock
3	NELAP	T104704219-16-12	Lubbock
4		2015-066	Lubbock

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less than ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
MI1	Split peak or shoulder peak
MI2	Instrument software did not integrate
MI3	Instrument software misidentified the peak
MI4	Instrument software integrated improperly
MI5	Baseline correction
Qc	Calibration check outside of laboratory limits.
Qr	RPD outside of laboratory limits
Qs	Spike recovery outside of laboratory limits.
Qsr	Surrogate recovery outside of laboratory limits.
U	The analyte is not detected above the SDL

Attachments

The scanned attachments will follow this page.
Please note, each attachment may consist of more than one page.

LAB Order ID # 1608092
Trace Analysis, Inc.
email: lab@traceanalysis.com

6701 Aberdeen Avenue, Suite 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296

200 East Sunset Rd., Suite E
El Paso, Texas 79922
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

BioAquatic Testing
2501 Mayton Rd., Ste 100
Carrollton, Texas 75006
Tel (972) 242-7750
Fax (972) 242-7561
Fax (972) 392-4508

Company Name: Kinder Morgan Phone #: (719) 505-5255
Address: 2 North Nevada Ave., Colorado Springs, CO 80903 Fax #:
Contact Person: Mary Martino E-mail: mary_martino@kindermorgan.com
Invoice to:
(If different from above)

Project #: AFE 403828 Project Name: EPNG Line 3031 Spike Test
Project Location (including state): Lea County, NM Sampler Signature: *Alvin Westcott*

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume / Amount	MATRIX			PRESERVATIVE METHOD					SAMPLING	
				WATER	AIR	SLUDGE	HCl	HNO ₃	H ₂ SO ₄	NaOH	ICE	DATE	TIME
426 114	Rupture #5 background	1		X							X	08/04	9:45am
115	Rupture #5 contaminated	1		X							X	08/04	9:45am
116	Rupture #5 release	1	250mL	X							X	08/04	9:45am
116	Rupture #5 release	98	40mL	X			X					08/04	9:45am
117	Rupture #6 background	1		X							X	08/05	9:50am
118	Rupture #6 contaminated	1		X							X	08/05	9:50am
118	Rupture #6 release	1	250mL	X							X	08/05	9:50am
119	Rupture #6 release	98	40mL	X			X					08/05	9:50am

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	INST	OBS	COR
Elisabeth Westcott	KMI	8/18/06	3:07pm	<i>Alvin Westcott</i>	Bridges	8/8	15:07		22	
Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	INST	OBS	COR
				<i>Alvin Westcott</i>	Bridges	8/10/06	8:55		3.8	
Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	INST	OBS	COR
				<i>Alvin Westcott</i>	Bridges	8/10/06	8:55		3.8	

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C. O. C.
Revision 1, 09/15/15
ORIGINAL COPY

ANALYSIS REQUEST
(Circle or Specify Method No.)

MTBE	8021 / 602 / 8260 / 624	
BTEX	8021 / 602 / 8260 / 624	
TPH 418.1 / TX1005 / TX1005 Ex(C35)		
TPH 8015 (GRO) / DRG / TVHC		
PAH 8270 / 625		
Total Metals Ag As Ba Cd Cr Pb Se Hg 6010/200.7		
TCLP Metals Ag As Ba Cd Cr Pb Se Hg		
TCLP Volatiles		
TCLP Semi Volatiles		
TCLP Pesticides		
RCI		
GC/MS Vol. 8260 / 624		
GC/MS Semi. Vol. 8270 / 625		
PCBs 8082 / 608		
Pesticides 8081 / 608		
BOD, TSS, pH		
Moisture Content		
Cl ⁻ , SO ₄ ⁻ , NO ₃ ⁻ , NO ₂ ⁻ , PO ₄ ⁻ , P, Alkalinity		
Na, Ca, Mg, K, TDS, EC		
Turn Around Time if different from standard		

REMARKS:
LAB USE ONLY
In Lab ☒ N
Headspace ☐ Y / N / NA
Log-in-Review ☒
Dry Weight Basis Required ☐
TRRP Report Required ☐
Check if Special Reporting Limits Are Needed ☐
2 Broken Vials
Carrier # 25 24008431