M67001.AR.006978
MCB CAMP LEJEUNE
5090.3a

VALIDATED DATA PACKAGE, A501212, MCB CAMP LEJEUNE NC
5/22/2015
ENVIRONMENTAL DATA SERVICES

ENVIRONMENTAL
Data Services, Inc.

DATA VALIDATION SUMMARY REPORT
MCB CAMP LEJEUNE, NORTH CAROLINA

Client: CH2M HILL, Inc., Virginia Beach, Virginia
SDG: A501212
Laboratory: Environmental Conservation Laboratories, Inc., Orlando, Florida
Site: MCB Camp Lejeune, LTM FY2015 Q2, Site 78, CTO-WE86
Date: October 2, 2015

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	IR78-MWVI01-15A	A501212-01	Water
1RE†	IR78-MWVI01-15ARE	A501212-01RE	Water
2	IR78-GW24-1-15A	A501212-02	Water
2MS	IR78-GW24-1-15AMS	A501212-02MS	Water
2MSD	IR78-GW24-1-15AMSD	A501212-02MSD	Water
2REβ	IR78-GW24-1-15ARE	A501212-02RE	Water
3*	IR78-GW24-2-15A	A501212-03	Water
3RE*	IR78-GW24-2-15ARE	A501212-03RE	Water
4*	IR78-GW24D-2-15A	A501212-04	Water
5*	IR78-GW30-2-15A	A501212-05	Water
6*	IR78-GW30-3-15A	A501212-06	Water
7*	IR78-GW44-15A	A501212-07	Water
8	IR78-GW46-15A	A501212-08	Water
8RE†	IR78-GW46-15ARE	A501212-08RE	Water
9	IR78-GW47-15A	A501212-09	Water
9RE†	IR78-GW47-15ARE	A501212-09RE	Water
10*	IR78-GW79IW-15A	A501212-10	Water
10RE*	IR78-GW79IW-15ARE	A501212-10RE	Water
11*	IR78-GW79IWD-15A	A501212-11	Water
12*	IR78-GW80IW-15A	A501212-12	Water
13*	IR78-GW80DW-15A	A501212-13	Water
14*	IR78-GW81IW-15A	A501212-14	Water
15*	IR78-GW81DW-15A	A501212-15	Water
16*	IR78-GW82IW-15A	A501212-16	Water
17*	IR78-GW84IW-15A	A501212-17	Water
18	IR78-GW85-15A	A501212-18	Water
18REβ	IR78-GW85-15ARE	A501212-18RE	Water
19*	IR78-GW85IW-15A	A501212-19	Water
20*	IR78-GW85IWD-15A	A501212-20	Water
21*	IR78-GW87MCH-15A	A501212-21	Water
22*	IR78-GW87MCHD-15A	A501212-22	Water
23*	IR78-TB-031515-1	A501212-23	Water
24	IR78-EB-031515-GW	A501212-24	Water

* - VOCs only † - Metals only β - VOCs and Metals only

A full data validation was performed on the analytical data for twenty-two water samples, one aqueous equipment blank sample, and one aqueous trip blank sample collected on March 13-15, 2015 by CH2M HILL at MCB Camp Lejeune in North Carolina. The samples were analyzed under the Environmental Protection Agency (USEPA) "Test Methods for the Evaluation of Solid Waste, USEPA SW-846, Third Edition, September 1986, with revisions".

Specific method references are as follows:

Analysis	*Method References*
VOCs	USEPA SW-846 Method 8260B
Metals/Hg	USEPA SW-846 Methods 6020A/7470A

The data have been validated according to the protocols and quality control (QC) requirements of the analytical methods, the USEPA National Functional Guidelines for Organic and Inorganic Data Review as follows:

- The USEPA "Contract Laboratories Program National Functional Guidelines for Superfund Organic Methods Data Review," June 2008;
- The USEPA "Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review," January 2010;
- and the reviewer's professional judgment.

The following items/criteria were reviewed for this report:

Organics

- Holding times and sample preservation
- Gas Chromatography/Mass Spectroscopy (GC/MS) Tuning
- Initial and continuing calibration summaries
- Method blank and field blank contamination
- Surrogate Spike recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries
- Laboratory Control Sample (LCS) recoveries
- Internal standard area and retention time summary forms
- Target Compound Identification
- Compound Quantitation
- Tentatively Identified Compounds (TICs)
- Field Duplicate sample precision

Inorganics

- Holding times and sample preservation
- ICP/MS Tuning
- Initial and continuing calibration verifications
- Method blank and field blank contamination
- ICP Interference Check Sample
- Laboratory Control Sample (LCS) recoveries
- Matrix Spike Analysis

- Duplicate Sample Analysis
- ICP Serial Dilution
- Compound Quantitation
- Field Duplicate sample precision

A full (Level IV) data validation was performed with this review including a recalculation of 10% of the detected results in the samples.

Overall Usability Issues:

There were no rejections of data.

Overall the data is acceptable for the intended purposes as qualified for the deficiencies detailed in this report.

Please note that any results qualified (U) due to blank contamination may be then qualified (J) due to another action. Therefore, the results may be qualified (UJ) due to the culmination of the blank contaminations and actions from other exceedences of QC criteria.

Volatile Organic Compounds (VOC)

Holding Times

- All samples were analyzed within 14 days for preserved water samples except the following.

Sample	Date Sampled	Date Analyzed	# of Days	Qualifier
2RE	03/14/15	04/07/15	23	J/UJ
3RE	03/13/15	04/02/15	19	J/UJ
10RE	03/13/15	04/02/15	20	J/UJ
18RE	03/14/15	04/07/15	23	J/UJ

GC/MS Tuning

- All criteria were met.

Initial Calibration

- All %RSD and/or correlation coefficients and mean RRF criteria were met.

Continuing Calibration

- All %D and RRF criteria were met.

Method Blank

- The method blanks exhibited the following contamination.

Blank ID	Compound	Conc. ug/L	Qualifier	Affected Samples
5C20008-BLK1	1,2-Dibromo-3-chloropropane	3.2	None	All Associated ND

Field Blank

- Field QC results are summarized below.

Blank ID	Compound	Conc. ug/L	Qualifier	Affected Samples
IR78-TB-031515-1	None - ND	-	-	-
IR78-EB-031515-GW	None - ND	-	-	-

Surrogate Spike Recoveries

- All samples exhibited acceptable surrogate %R values except the following.

Sample ID	Surrogate	%R	Qualifier
2	Toluene-d8	86%	J/UJ
2RE	Toluene-d8	88%	None - See HT
3	Toluene-d8	88%	J/UJ
10	Toluene-d8	88%	J/UJ
18	Toluene-d8	84%	J/UJ
18RE	Toluene-d8	87%	None - See HT
23	Toluene-d8	113%	None - Sample ND
24	Dibromofluoromethane	122%	None - Sample ND

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recoveries

- The MS/MSD samples exhibited acceptable %R and RPD values except the following.

MS/MSD Sample ID	Compound	MS %R/MSD %R/ RPD	Qualifier
2	cis-1,2-Dichloroethene	136%/OK/OK	None - See Surrogates

Laboratory Control Samples

- The LCS samples exhibited acceptable percent recoveries (%R) except the following.

LCS ID	Compound	%R	Qualifier	Affected Samples
5C20008-BS1	1,2-Dibromo-3-chloropropane	132%	None	All Associated ND
5C20013-BS1	1,1-Dichloroethene	132%	None	All Associated ND
	trans-1,2-Dichloroethene	132%	None	

LCS ID	Compound	%R	Qualifier	Affected Samples
5C20013-BS1 (cont.)	1,1-Dichloroethane	127%	None	All Associated ND
	Trichloroethene	125%	None	
5C25015-BS1	1,2-Dibromo-3-chloropropane	135%	None	All Associated ND
5D07016-BS1	1,2-Dibromo-3-chloropropane	144%	None	All Associated ND

Internal Standard (IS) Area Performance

- All internal standards met response and retention time (RT) criteria.

Target Compound Identification

- All mass spectra and quantitation criteria were met.

Compound Quantitation

- Several samples exhibited surrogate recoveries outside of QC limits. The samples were reanalyzed outside of holding time and qualified estimated (J/UJ). See Form Is for which results to use for reporting purposes.

Tentatively Identified Compounds (TICs)

- TICs were not reported.

Field Duplicate Sample Precision

- Field duplicate results are summarized below.

VOCs				
Compound	IR78-GW24-2-15A ug/L	IR78-GW24D-2-15A ug/L	RPD	Qualifier
None	ND	ND	-	-

VOCs				
Compound	IR78-GW79IW-15A ug/L	IR78-GW79IWD-15A ug/L	RPD	Qualifier
cis-1,2-Dichloroethene	1.1	1.0	10%	None
Benzene	8.8	7.2	20%	
1,2-Dichloroethene (total)	1.1	1.0	10%	

VOCs				
Compound	IR78-GW85IW-15A ug/L	IR78-GW85IWD-15A ug/L	RPD	Qualifier
None	ND	ND	-	-

VOCs				
Compound	IR78-GW87MCH-15A ug/L	IR78-GW87MCHD-15A ug/L	RPD	Qualifier
None	ND	ND	-	-

Metals & Mercury

Holding Times

- All samples were prepared and analyzed within 28 days for mercury and 180 days for all other metals.

Initial Calibration Verification

- All initial calibration criteria were met.

Continuing Calibration Verification

- All continuing calibration criteria were met.

Method Blank

- The method blanks were free of contamination.

Field Blank

- The field QC samples exhibited the following contamination.

Blank ID	Compound	Conc. ug/L	Qualifier	Affected Samples
IR78-EB-031515-GW	Calcium	117	None	All >10X
	Copper	3.15	None	All ND
	Manganese	0.341	U	1
	Nickel	0.906	U	8, 9
	Sodium	215	None	All >10X
	Zinc	7.73	U	8

ICP Interference Check Sample

- The ICP interference check sample exhibited acceptable %R values.

Laboratory Control Samples

- The LCS sample exhibited acceptable recoveries.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recoveries

- The MS/MSD sample exhibited acceptable %R and RPD values except the following.

MS/MSD Sample ID	Compound	MS %R/MSD %R/ RPD	Qualifier	Affected Samples
2	Calcium	138%/152%/OK	None	4X Rule Applies
	Iron	185%/305%/OK	None	4X Rule Applies
	Magnesium	120%/122%/OK	J	1, 2, 8, 9, 18
	Potassium	131%/130%/OK	J	1, 8, 9, 18
	Sodium	118%/127%/OK	J	1, 2, 8, 9, 18

ICP Serial Dilution

- ICP serial dilution percent differences (%D) were within acceptance limits except the following.

ICP Sample ID	Compound	%D	Qualifier	Affected Samples
2	Sodium	36%	None	See MS/MSD

Compound Quantitation

- Several samples were reanalyzed for various reasons and several compounds were reported in the reanalysis. Please refer to the Form Is for which sample results to use for reporting purposes.

Field Duplicate Sample Precision

- Field duplicate samples were not collected.

Please contact the undersigned at (757) 564-0090 if you have any questions or need further information.

Signed: Nancy Weaver Dated: 10/2/15

Nancy Weaver
Senior Chemist

Data Qualifiers

U	=	The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the adjusted Contract Required Quantitation Limit (CRQL) for sample and method.
UJ	=	The analyte was not detected at a level greater than or equal to the adjusted CRQL. However, the reported adjusted CRQL is approximate and may be inaccurate or imprecise.
J	=	The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain quality control criteria were not met, or the concentration of the analyte was below the CRQL).
J+	=	The result is an estimated quantity, but the result may be biased high.
J-	=	The result is an estimated quantity, but the result may be biased low.
R	=	The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.
NJ	=	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\032015\2CO010.D Vial: 9
Acq On : 20 Mar 2015 10:08 Operator: NMC
Sample : A501212-05 EDS #5 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 20 15:53 2015 Quant Results File: 020615.RES

Quant Method : C:\HPCHEM\1\METHODS\020615.M (RTE Integrator)
Title : ENCO SOPVGCMS/05;element cal 1502029
Last Update : Wed Mar 04 08:10:07 2015
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Pentafluorobenzene(IS)	10.98	168	~~377614~~	50.00 ug/L	-0.02
38) 1,4-Difluorobenzene(IS)	11.56	114	657249	50.00 ug/L	-0.01
58) Chlorobenzene-d5(IS)	14.23	117	~~576654~~	50.00 ug/L	-0.02
82) 1,4-Dichlorobenzene-d4(IS)	16.50	152	259622	50.00 ug/L	-0.03

System Monitoring Compounds					
30) Dibromofluoromethane	10.57	113	235438	51.18 ug/L	-0.02
Spiked Amount 50.000	Range 53 - 146		Recovery = 102.36%		
44) 1,2-Dichloroethane-d4	11.14	65	187369	49.64 ug/l	-0.02
Spiked Amount 50.000	Range 45 - 174		Recovery = 99.28%		
56) D8-Toluene	12.84	98	723657	45.45 ug/L	-0.01
Spiked Amount 50.000	Range 41 - 146		Recovery = 90.90%		
77) Bromofluorobenzene	15.32	95	259365	46.30 ug/L	-0.02
Spiked Amount 50.000	Range 41 - 142		Recovery = 92.60%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.00	85		N.D. d	
3) Chloromethane	0.00	50		N.D.	
4) Vinyl Chloride	0.00	62		N.D.	
5) Bromomethane	0.00	94		N.D. d	
6) Chloroethane	0.00	64		N.D.	
7) Trichlorofluoromethane	0.00	101		N.D.	
8) Trichlorotrifluoroethane	0.00	101		N.D.	
9) acrolein	0.00	56		N.D. d	
10) Acetone	8.51	43	11374	11.72 ug/L	93
11) 1,1-Dichloroethene	0.00	96		N.D.	
12) 3-Chloropropene	0.00	76		N.D.	
13) Acetonitrile	0.00	41		N.D. d	
14) Iodomethane	0.00	142		N.D.	
15) Carbon disulfide	0.00	76		N.D.	
16) Methylene Chloride	0.00	84		N.D.	
17) Methyl tert-butyl ether	0.00	73		N.D.	
18) Acrylonitrile	0.00	53		N.D.	
19) T-1,2-Dichloroethene	0.00	96		N.D.	
20) Isopropyl Ether	0.00	45		N.D.	
21) C-1,2-Dichloroethene	0.00	96		N.D.	
22) 1,1-Dichloroethane	0.00	63		N.D.	
23) Vinyl Acetate	0.00	43		N.D.	
24) Chloroprene	0.00	53		N.D.	
25) 2-Butanone	0.00	72		N.D. d	
26) Propionitrile	0.00	54		N.D.	
27) 2,2-Dichloropropane	0.00	77		N.D.	
28) Methacrylonitrile	0.00	67		N.D. d	
29) Chloroform	0.00	83		N.D.	
31) Dibromofluoromethane	10.57	113	235438	51.18 ug/L	100
32) Bromochloromethane	0.00	128		N.D.	
33) 1,1,1-Trichloroethane	0.00	97		N.D.	
34) 1,1-Dichloropropene	0.00	75		N.D.	
35) Diethyl ether	0.00	59		N.D.	
36) Methyl Acetate	0.00	74		N.D. d	
37) Cyclohexane	0.00	56		N.D. d	
39) Methyl Cyclohexane	0.00	55		N.D. d	
40) Carbon Tetrachloride	0.00	117		N.D.	
41) 1,2-Dichloroethane	0.00	62		N.D.	
42) Benzene	11.00	78	250649	12.34 ug/L #	58
43) Isobutyl Alcohol	0.00	43		N.D. d	
45) 1,2-Dichloroethane-d4	11.14	65	187369	49.64 ug/l #	88

$\frac{250649 \times 50}{657249 \times 1.54} =$
$12.38 \approx 12$
ug/L

(#) = qualifier out of range (m) = manual integration

|	Sb	121	
|-	Ba	135	
|>	Ho	165	95.4
|	Tl	205	
|	Pb	206	
|	Pb	207	
|-	Pb	208	

QC Out of Limits

Measurem	Analyte	Mass	Out of Limits Message
Ca 43 Uppe	Ca	43	Ca ULR = ? ppm
Co 59 RSD	Co	59	Replicate RSD > 20%
Se 78 RSD	Se	78	Replicate RSD > 20%
Ag 107 RSD	Ag	107	Replicate RSD > 20%
Cd 111 RSD	Cd	111	
Sb 121 RSD	Sb	121	Replicate RSD > 20%
Pb 206 RSD	Pb	206	Pb 206 RSD > 20%
Pb 207 RSD	Pb	207	Pb 207 RSD > 20%

QC Action

QC Action I No QC out of limits detected

SOP MET-15 - Summary Report EDS #9RE

Sample ID: A501212-09RE1#20

Sample Dat Friday, March 27, 2015 15:51:22

Sample Typ Sample

Instrument Description: OMICPMS1 S/N W0540312H

Number of 3

Sample File C:\Elandata\Sample\Mar 2015\032715.sam

Method Fil C:\Elandata\Method\Mar 2015\032715_RP2_DOD.mth

Dataset File C:\Elandata\DataSet\Mar 2015\032715\A501212-09RE1#20.111

Tuning File C:\Elandata\Tuning\Mar 2015\032715.tun

Optimizatic C:\Elandata\Optimize\Mar 2015\032715.dac

Concentration Results

	Analyte	Mass	Meas. Inte	Net Intens.	Conc. Mea	Conc. SD	Conc. RSD	Sample Unit	
|-	Be	9	16.667	2.9E-05	0.0408	0.0118	28.8596	ug/L	
|	Na	23	229443	0.79482	285.2129	5.6624	1.9853	ug/L	
|	Mg	24	68356.11	0.237199	25.6635	1.2845	5.0053	ug/L	
|	Al	27	54965.79	0.190518	44.7491	1.3931	3.1132	ug/L	
|	K	39	90481.5	0.199923	-1.3561	1.833	135.1695	ug/L	
|	Ca	43	79689.81	0.276245	5162.313	96.8684	1.8765	ug/L	X 20 ≈ 103,000
|>	Sc	45	287947.9	287947.9				ug/L	
|-	V	51	5602.486	0.012678	0.3257	0.0143	4.3755	ug/L	
|>	In	115	172481.2	172481.2				ug/L	
|	Cr	52	363.341	0.001259	0.2965	0.0288	9.6981	ug/L	
|-	Fe	56	176189.3	1.019323	111.3893	2.9983	2.6918	ug/L	
|-	Cr-1	52	8826.283	0.024762	0.208	0.0213	10.2341	ug/L	
|	Mn	55	22226.48	0.356282	1.6837	0.0666	3.9577	ug/L	
|	Co	59	214.003	0.002553	-0.1617	0.0029	1.7665	ug/L	
|	Ni	60	232.67	0.003056	-0.0185	0.0135	73.1271	ug/L	

PDF Created with deskPDF PDF Writer - Trial :: http://www.docudesk.com

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

IR78-MWVI01-15A

Laboratory:	ENCO Orlando	SDG:	A501212-CTOWE86
Client:	CH2M Hill, Inc. (CH025)	Project:	CTO-WE86 MCB Camp Lejeune Site 78

Matrix:	Ground Water	Laboratory ID:	A501212-01	File ID:	2CT007.D
Sampled:	03/14/15 14:00	Prepared:	03/25/15 00:00	Analyzed:	03/25/15 08:54
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch: 5C25015 Sequence: AA33136 Calibration: 1502029 Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
75-01-4	Vinyl chloride	1	13		0.71	1.0	2.0
75-35-4	1,1-Dichloroethene	1	<1.0	U	0.94	1.0	2.0
75-09-2	Methylene Chloride	1	<5.0	U	2.0	5.0	10
156-60-5	trans-1,2-Dichloroethene	1	<1.0	U	0.73	1.0	2.0
156-59-2	cis-1,2-Dichloroethene	1	11		0.53	1.0	2.0
75-34-3	1,1-Dichloroethane	1	<1.0	U	0.62	1.0	2.0
107-06-2	1,2-Dichloroethane	1	<1.0	U	0.63	1.0	2.0
71-43-2	Benzene	1	0.75	J	0.71	1.0	2.0
79-01-6	Trichloroethene	1	<1.0	U	0.89	1.0	2.0
108-88-3	Toluene	1	<1.0	U	0.72	1.0	2.0
127-18-4	Tetrachloroethene	1	<1.0	U	0.76	1.0	2.0
100-41-4	Ethylbenzene	1	<1.0	U	0.69	1.0	2.0
98-82-8	Isopropylbenzene	1	<1.0	U	0.67	1.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1	<5.0	U~~J~~	0.96	5.0	10
1330-20-7	Xylenes (Total)	1	<2.0	U	1.3	2.0	4.0
540-59-0	1,2-Dichloroethene (Total)	1	11		0.73	1.0	2.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	50	100	80 - 119	
Toluene-d8	50.0	45	89	89 - 112	
4-Bromofluorobenzene	50.0	46	91	85 - 114	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	373156	10.98	360813	11	
1,4-Difluorobenzene	662556	11.55	613683	11.57	
Chlorobenzene-d5	590393	14.23	591959	14.25	
1,4-Dichlorobenzene-d4	250349	16.5	257796	16.52	

* Values outside of QC limits

NW 5/22/15

2

IR78-GW24-1-15A

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

Use reanalysis

Laboratory:	ENCO Orlando	SDG:	A501212-CTOWE86
Client:	CH2M Hill, Inc. (CH025)	Project:	CTO-WE86 MCB Camp Lejeune Site 78

Matrix:	Ground Water	Laboratory ID:	A501212-02	File ID:	2CT008.D
Sampled:	03/14/15 15:25	Prepared:	03/25/15 00:00	Analyzed:	03/25/15 09:23
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch: 5C25015 Sequence: AA33136 Calibration: 1502029 Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
75-01-4	Vinyl chloride	1	<1.0 UJ	U	0.71	1.0	2.0
75-35-4	1,1-Dichloroethene	1	<1.0	U	0.94	1.0	2.0
75-09-2	Methylene Chloride	1	<5.0	U	2.0	5.0	10
156-60-5	trans-1,2-Dichloroethene	1	3.2 J		0.73	1.0	2.0
156-59-2	cis-1,2-Dichloroethene	1	58 J	~~U~~	0.53	1.0	2.0
75-34-3	1,1-Dichloroethane	1	<1.0 UJ	U	0.62	1.0	2.0
107-06-2	1,2-Dichloroethane	1	<1.0	U	0.63	1.0	2.0
71-43-2	Benzene	1	<1.0	U	0.71	1.0	2.0
79-01-6	Trichloroethene	1	14 J		0.89	1.0	2.0
108-88-3	Toluene	1	<1.0 UJ	U	0.72	1.0	2.0
127-18-4	Tetrachloroethene	1	<1.0	U	0.76	1.0	2.0
100-41-4	Ethylbenzene	1	<1.0	U	0.69	1.0	2.0
98-82-8	Isopropylbenzene	1	<1.0	U	0.67	1.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1	<5.0	UQ	0.96	5.0	10
1330-20-7	Xylenes (Total)	1	<2.0	U	1.3	2.0	4.0
540-59-0	1,2-Dichloroethene (Total)	1	61 J		0.73	1.0	2.0

SSL

exceed

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	48	97	80 - 119	
Toluene-d8	50.0	43	86	89 - 112	*
4-Bromofluorobenzene	50.0	52	104	85 - 114	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	344953	10.98	360813	11	
1,4-Difluorobenzene	606887	11.55	613683	11.57	
Chlorobenzene-d5	519990	14.23	591959	14.25	
1,4-Dichlorobenzene-d4	257220	16.49	257796	16.52	

* Values outside of QC limits

MW 5/22/15

2RE

IR78-GW24-1-15A

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

Laboratory:	ENCO Orlando	SDG:	A501212-CTOWE86
Client:	CH2M Hill, Inc. (CH025)	Project:	CTO-WE86 MCB Camp Lejeune Site 78

Matrix:	Ground Water	Laboratory ID:	A501212-02RE1	File ID:	2DB007.D
Sampled:	03/14/15 15:25	Prepared:	04/07/15 00:00	Analyzed:	04/07/15 10:35
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch: 5D07016 Sequence: AA33335 Calibration: 1502029 Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
75-01-4	Vinyl chloride	1	<1.0 UJ	UQ	0.71	1.0	2.0
75-35-4	1,1-Dichloroethene	1	<1.0	UQ	0.94	1.0	2.0
75-09-2	Methylene Chloride	1	<5.0	UQ	2.0	5.0	10
156-60-5	trans-1,2-Dichloroethene	1	3.3 J	Q	0.73	1.0	2.0
156-59-2	cis-1,2-Dichloroethene	1	66 J	Q	0.53	1.0	2.0
75-34-3	1,1-Dichloroethane	1	<1.0 UJ	UQ	0.62	1.0	2.0
107-06-2	1,2-Dichloroethane	1	<1.0	UQ	0.63	1.0	2.0
71-43-2	Benzene	1	<1.0	UQ	0.71	1.0	2.0
79-01-6	Trichloroethene	1	14 J	Q	0.89	1.0	2.0
108-88-3	Toluene	1	<1.0 UJ	UQ	0.72	1.0	2.0
127-18-4	Tetrachloroethene	1	<1.0	UQ	0.76	1.0	2.0
100-41-4	Ethylbenzene	1	<1.0	UQ	0.69	1.0	2.0
98-82-8	Isopropylbenzene	1	<1.0	UQ	0.67	1.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1	<5.0	UQ	0.96	5.0	10
1330-20-7	Xylenes (Total)	1	<2.0	UQ	1.3	2.0	4.0
540-59-0	1,2-Dichloroethene (Total)	1	70 J	Q	0.73	1.0	2.0

HT

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	47	93	80 - 119	
Toluene-d8	50.0	44	88	89 - 112	*
4-Bromofluorobenzene	50.0	47	93	85 - 114	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	383954	10.97	360813	11	
1,4-Difluorobenzene	660695	11.54	613683	11.57	
Chlorobenzene-d5	600233	14.22	591959	14.25	
1,4-Dichlorobenzene-d4	257046	16.49	257796	16.52	

* Values outside of QC limits

MW 5/22/15

3

IR78-GW24-2-15A

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

Laboratory:	ENCO Orlando	SDG:	A501212-CTOWE86
Client:	CH2M Hill, Inc. (CH025)	Project:	CTO-WE86 MCB Camp Lejeune Site 78

Matrix:	Ground Water	Laboratory ID:	A501212-03	File ID:	2CO008.D
Sampled:	03/13/15 15:40	Prepared:	03/20/15 00:00	Analyzed:	03/20/15 09:09
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch: 5C20008 Sequence: AA33067 Calibration: 1502029 Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
75-01-4	Vinyl chloride	1	<1.0 UJ	U	0.71	1.0	2.0
75-35-4	1,1-Dichloroethene	1	<1.0	U	0.94	1.0	2.0
75-09-2	Methylene Chloride	1	<5.0	U	2.0	5.0	10
156-60-5	trans-1,2-Dichloroethene	1	<1.0	U	0.73	1.0	2.0
156-59-2	cis-1,2-Dichloroethene	1	<1.0	U	0.53	1.0	2.0
75-34-3	1,1-Dichloroethane	1	<1.0	U	0.62	1.0	2.0
107-06-2	1,2-Dichloroethane	1	<1.0	U	0.63	1.0	2.0
71-43-2	Benzene	1	<1.0	U	0.71	1.0	2.0
79-01-6	Trichloroethene	1	<1.0	U	0.89	1.0	2.0
108-88-3	Toluene	1	<1.0	U	0.72	1.0	2.0
127-18-4	Tetrachloroethene	1	<1.0	U	0.76	1.0	2.0
100-41-4	Ethylbenzene	1	<1.0	U	0.69	1.0	2.0
98-82-8	Isopropylbenzene	1	<1.0	U	0.67	1.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1	<5.0	UØ	0.96	5.0	10
1330-20-7	Xylenes (Total)	1	<2.0	U	1.3	2.0	4.0
540-59-0	1,2-Dichloroethene (Total)	1	<1.0	U	0.73	1.0	2.0

SSL

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	49	97	80 - 119	
Toluene-d8	50.0	44	88	89 - 112	*
4-Bromofluorobenzene	50.0	45	90	85 - 114	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	391061	10.98	360813	11	
1,4-Difluorobenzene	678574	11.55	613683	11.57	
Chlorobenzene-d5	582867	14.23	591959	14.25	
1,4-Dichlorobenzene-d4	250918	16.5	257796	16.52	

* Values outside of QC limits

MW 5/22/15

3RE

IR78-GW24-2-15A

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

Use original results

Laboratory:	ENCO Orlando			SDG:	A501212-CTOWE86
Client:	CH2M Hill, Inc. (CH025)			Project:	CTO-WE86 MCB Camp Lejeune Site 78
Matrix:	Ground Water	Laboratory ID:	A501212-03RE1	File ID:	5D2012.D
Sampled:	03/13/15 15:40	Prepared:	04/02/15 00:00	Analyzed:	04/02/15 13:39
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch: 5D02011 Sequence: AA33267 Calibration: 1503091 Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
75-01-4	Vinyl chloride	1	<1.0 UJ	UQ	0.71	1.0	2.0
75-35-4	1,1-Dichloroethene	1	<1.0	UQ	0.94	1.0	2.0
75-09-2	Methylene Chloride	1	<5.0	UQ	2.0	5.0	10
156-60-5	trans-1,2-Dichloroethene	1	<1.0	UQ	0.73	1.0	2.0
156-59-2	cis-1,2-Dichloroethene	1	<1.0	UQ	0.53	1.0	2.0
75-34-3	1,1-Dichloroethane	1	<1.0	UQ	0.62	1.0	2.0
107-06-2	1,2-Dichloroethane	1	<1.0	UQ	0.63	1.0	2.0
71-43-2	Benzene	1	<1.0	UQ	0.71	1.0	2.0
79-01-6	Trichloroethene	1	<1.0	UQ	0.89	1.0	2.0
108-88-3	Toluene	1	<1.0	UQ	0.72	1.0	2.0
127-18-4	Tetrachloroethene	1	<1.0	UQ	0.76	1.0	2.0
100-41-4	Ethylbenzene	1	<1.0	UQ	0.69	1.0	2.0
98-82-8	Isopropylbenzene	1	<1.0	UQ	0.67	1.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1	<5.0	UQ	0.96	5.0	10
1330-20-7	Xylenes (Total)	1	<2.0	UQ	1.3	2.0	4.0
540-59-0	1,2-Dichloroethene (Total)	1	<1.0	UQ	0.73	1.0	2.0

HT

exclude

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	55	110	80 - 119	
Toluene-d8	50.0	55	111	89 - 112	
4-Bromofluorobenzene	50.0	48	96	85 - 114	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	517557	11.474	646118	11.491	
1,4-Difluorobenzene	926108	12.172	1132565	12.189	
Chlorobenzene-d5	1001068	15.607	1071316	15.632	
1,4-Dichlorobenzene-d4	536248	18.573	548927	18.606	

* Values outside of QC limits

NW 5/22/15

IR78-GW24D-2-15A

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

Laboratory: ENCO Orlando
SDG: A501212-CTOWE86
Client: CH2M Hill, Inc. (CH025)
Project: CTO-WE86 MCB Camp Lejeune Site 78

Matrix: Ground Water
Laboratory ID: A501212-04
File ID: 2CO009.D
Sampled: 03/13/15 15:45
Prepared: 03/20/15 00:00
Analyzed: 03/20/15 09:38
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 5C20008
Sequence: AA33067
Calibration: 1502029
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
75-01-4	Vinyl chloride	1	<1.0	U	0.71	1.0	2.0
75-35-4	1,1-Dichloroethene	1	<1.0	U	0.94	1.0	2.0
75-09-2	Methylene Chloride	1	<5.0	U	2.0	5.0	10
156-60-5	trans-1,2-Dichloroethene	1	<1.0	U	0.73	1.0	2.0
156-59-2	cis-1,2-Dichloroethene	1	<1.0	U	0.53	1.0	2.0
75-34-3	1,1-Dichloroethane	1	<1.0	U	0.62	1.0	2.0
107-06-2	1,2-Dichloroethane	1	<1.0	U	0.63	1.0	2.0
71-43-2	Benzene	1	<1.0	U	0.71	1.0	2.0
79-01-6	Trichloroethene	1	<1.0	U	0.89	1.0	2.0
108-88-3	Toluene	1	<1.0	U	0.72	1.0	2.0
127-18-4	Tetrachloroethene	1	<1.0	U	0.76	1.0	2.0
100-41-4	Ethylbenzene	1	<1.0	U	0.69	1.0	2.0
98-82-8	Isopropylbenzene	1	<1.0	U	0.67	1.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1	<5.0	U~~J~~	0.96	5.0	10
1330-20-7	Xylenes (Total)	1	<2.0	U	1.3	2.0	4.0
540-59-0	1,2-Dichloroethene (Total)	1	<1.0	U	0.73	1.0	2.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	48	97	80 - 119	
Toluene-d8	50.0	46	91	89 - 112	
4-Bromofluorobenzene	50.0	45	90	85 - 114	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	390975	10.98	360813	11	
1,4-Difluorobenzene	658036	11.56	613683	11.57	
Chlorobenzene-d5	599729	14.23	591959	14.25	
1,4-Dichlorobenzene-d4	245978	16.5	257796	16.52	

* Values outside of QC limits

MW 5/22/15

IR78-GW30-2-15A

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

Laboratory: ENCO Orlando
SDG: A501212-CTOWE86
Client: CH2M Hill, Inc. (CH025)
Project: CTO-WE86 MCB Camp Lejeune Site 78

Matrix: Ground Water
Laboratory ID: A501212-05
File ID: 2CO010.D
Sampled: 03/13/15 13:10
Prepared: 03/20/15 00:00
Analyzed: 03/20/15 10:08
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 5C20008
Sequence: AA33067
Calibration: 1502029
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
75-01-4	Vinyl chloride	1	<1.0	U	0.71	1.0	2.0
75-35-4	1,1-Dichloroethene	1	<1.0	U	0.94	1.0	2.0
75-09-2	Methylene Chloride	1	<5.0	U	2.0	5.0	10
156-60-5	trans-1,2-Dichloroethene	1	<1.0	U	0.73	1.0	2.0
156-59-2	cis-1,2-Dichloroethene	1	<1.0	U	0.53	1.0	2.0
75-34-3	1,1-Dichloroethane	1	<1.0	U	0.62	1.0	2.0
107-06-2	1,2-Dichloroethane	1	<1.0	U	0.63	1.0	2.0
71-43-2	Benzene	1	12		0.71	1.0	2.0
79-01-6	Trichloroethene	1	<1.0	U	0.89	1.0	2.0
108-88-3	Toluene	1	2.2		0.72	1.0	2.0
127-18-4	Tetrachloroethene	1	<1.0	U	0.76	1.0	2.0
100-41-4	Ethylbenzene	1	18		0.69	1.0	2.0
98-82-8	Isopropylbenzene	1	1.4	J	0.67	1.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1	<5.0	U~~Q~~	0.96	5.0	10
1330-20-7	Xylenes (Total)	1	26		1.3	2.0	4.0
540-59-0	1,2-Dichloroethene (Total)	1	<1.0	U	0.73	1.0	2.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	51	102	80 - 119	
Toluene-d8	50.0	45	91	89 - 112	
4-Bromofluorobenzene	50.0	46	93	85 - 114	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	377614	10.98	360813	11	
1,4-Difluorobenzene	657249	11.56	613683	11.57	
Chlorobenzene-d5	576654	14.23	591959	14.25	
1,4-Dichlorobenzene-d4	259622	16.5	257796	16.52	

* Values outside of QC limits

MW 5/22/15

6

IR78-GW30-3-15A

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

Laboratory: ENCO Orlando SDG: A501212-CTOWE86

Client: CH2M Hill, Inc. (CH025) Project: CTO-WE86 MCB Camp Lejeune Site 78

Matrix: Ground Water Laboratory ID: A501212-06 File ID: 2CO011.D

Sampled: 03/13/15 12:55 Prepared: 03/20/15 00:00 Analyzed: 03/20/15 10:37

Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL

Batch: 5C20008 Sequence: AA33067 Calibration: 1502029 Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
75-01-4	Vinyl chloride	1	<1.0	U	0.71	1.0	2.0
75-35-4	1,1-Dichloroethene	1	<1.0	U	0.94	1.0	2.0
75-09-2	Methylene Chloride	1	<5.0	U	2.0	5.0	10
156-60-5	trans-1,2-Dichloroethene	1	<1.0	U	0.73	1.0	2.0
156-59-2	cis-1,2-Dichloroethene	1	<1.0	U	0.53	1.0	2.0
75-34-3	1,1-Dichloroethane	1	<1.0	U	0.62	1.0	2.0
107-06-2	1,2-Dichloroethane	1	<1.0	U	0.63	1.0	2.0
71-43-2	Benzene	1	11		0.71	1.0	2.0
79-01-6	Trichloroethene	1	<1.0	U	0.89	1.0	2.0
108-88-3	Toluene	1	8.1		0.72	1.0	2.0
127-18-4	Tetrachloroethene	1	<1.0	U	0.76	1.0	2.0
100-41-4	Ethylbenzene	1	8.9		0.69	1.0	2.0
98-82-8	Isopropylbenzene	1	1.0	J	0.67	1.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1	<5.0	U~~J~~	0.96	5.0	10
1330-20-7	Xylenes (Total)	1	13		1.3	2.0	4.0
540-59-0	1,2-Dichloroethene (Total)	1	<1.0	U	0.73	1.0	2.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	49	98	80 - 119	
Toluene-d8	50.0	45	90	89 - 112	
4-Bromofluorobenzene	50.0	47	94	85 - 114	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	382608	10.98	360813	11	
1,4-Difluorobenzene	662735	11.55	613683	11.57	
Chlorobenzene-d5	571709	14.23	591959	14.25	
1,4-Dichlorobenzene-d4	260808	16.5	257796	16.52	

* Values outside of QC limits

MW 5/22/15

7

IR78-GW44-15A

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

Laboratory: ENCO Orlando SDG: A501212-CTOWE86

Client: CH2M Hill, Inc. (CH025) Project: CTO-WE86 MCB Camp Lejeune Site 78

Matrix: Ground Water Laboratory ID: A501212-07 File ID: 2CO012.D

Sampled: 03/13/15 14:55 Prepared: 03/20/15 00:00 Analyzed: 03/20/15 11:07

Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL

Batch: 5C20008 Sequence: AA33067 Calibration: 1502029 Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
75-01-4	Vinyl chloride	2	120	~~D~~	1.4	2.0	4.0
75-35-4	1,1-Dichloroethene	2	<2.0	UD	1.9	2.0	4.0
75-09-2	Methylene Chloride	2	<10	UD	4.0	10	20
156-60-5	trans-1,2-Dichloroethene	2	2.2	JD	1.5	2.0	4.0
156-59-2	cis-1,2-Dichloroethene	2	170	~~D~~	1.1	2.0	4.0
75-34-3	1,1-Dichloroethane	2	<2.0	UD	1.2	2.0	4.0
107-06-2	1,2-Dichloroethane	2	<2.0	UD	1.3	2.0	4.0
71-43-2	Benzene	2	<2.0	UD	1.4	2.0	4.0
79-01-6	Trichloroethene	2	<2.0	UD	1.8	2.0	4.0
108-88-3	Toluene	2	<2.0	UD	1.4	2.0	4.0
127-18-4	Tetrachloroethene	2	<2.0	UD	1.5	2.0	4.0
100-41-4	Ethylbenzene	2	<2.0	UD	1.4	2.0	4.0
98-82-8	Isopropylbenzene	2	<2.0	UD	1.3	2.0	4.0
96-12-8	1,2-Dibromo-3-chloropropane	2	<10	UD~~Q~~	1.9	10	20
1330-20-7	Xylenes (Total)	2	<4.0	UD	2.6	4.0	8.0
540-59-0	1,2-Dichloroethene (Total)	2	170	~~D~~	1.5	2.0	4.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	48	97	80 - 119	
Toluene-d8	50.0	46	92	89 - 112	
4-Bromofluorobenzene	50.0	47	94	85 - 114	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	378389	10.98	360813	11	
1,4-Difluorobenzene	646134	11.55	613683	11.57	
Chlorobenzene-d5	572151	14.23	591959	14.25	
1,4-Dichlorobenzene-d4	250210	16.5	257796	16.52	

* Values outside of QC limits

MW 5/22/15

8

IR78-GW46-15A

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

Laboratory: ENCO Orlando SDG: A501212-CTOWE86

Client: CH2M Hill, Inc. (CH025) Project: CTO-WE86 MCB Camp Lejeune Site 78

Matrix: Ground Water Laboratory ID: A501212-08 File ID: 2CT009.D

Sampled: 03/14/15 14:25 Prepared: 03/25/15 00:00 Analyzed: 03/25/15 09:52

Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL

Batch: 5C25015 Sequence: AA33136 Calibration: 1502029 Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
75-01-4	Vinyl chloride	1	<1.0	U	0.71	1.0	2.0
75-35-4	1,1-Dichloroethene	1	<1.0	U	0.94	1.0	2.0
75-09-2	Methylene Chloride	1	<5.0	U	2.0	5.0	10
156-60-5	trans-1,2-Dichloroethene	1	<1.0	U	0.73	1.0	2.0
156-59-2	cis-1,2-Dichloroethene	1	0.99	J	0.53	1.0	2.0
75-34-3	1,1-Dichloroethane	1	<1.0	U	0.62	1.0	2.0
107-06-2	1,2-Dichloroethane	1	<1.0	U	0.63	1.0	2.0
71-43-2	Benzene	1	2.6		0.71	1.0	2.0
79-01-6	Trichloroethene	1	<1.0	U	0.89	1.0	2.0
108-88-3	Toluene	1	<1.0	U	0.72	1.0	2.0
127-18-4	Tetrachloroethene	1	<1.0	U	0.76	1.0	2.0
100-41-4	Ethylbenzene	1	<1.0	U	0.69	1.0	2.0
98-82-8	Isopropylbenzene	1	<1.0	U	0.67	1.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1	<5.0	U	0.96	5.0	10
1330-20-7	Xylenes (Total)	1	<2.0	U	1.3	2.0	4.0
540-59-0	1,2-Dichloroethene (Total)	1	0.99	J	0.73	1.0	2.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	50	100	80 - 119	
Toluene-d8	50.0	44	89	89 - 112	
4-Bromofluorobenzene	50.0	46	91	85 - 114	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	382514	10.98	360813	11	
1,4-Difluorobenzene	667069	11.55	613683	11.57	
Chlorobenzene-d5	594509	14.23	591959	14.25	
1,4-Dichlorobenzene-d4	251259	16.5	257796	16.52	

* Values outside of QC limits

NW 5/22/15

IR78-GW47-15A

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

Laboratory:	ENCO Orlando	SDG:	A501212-CTOWE86
Client:	CH2M Hill, Inc. (CH025)	Project:	CTO-WE86 MCB Camp Lejeune Site 78

Matrix:	Ground Water	Laboratory ID:	A501212-09	File ID:	2CT010.D
Sampled:	03/14/15 16:35	Prepared:	03/25/15 00:00	Analyzed:	03/25/15 10:22
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch: 5C25015 Sequence: AA33136 Calibration: 1502029 Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
75-01-4	Vinyl chloride	1	8.9		0.71	1.0	2.0
75-35-4	1,1-Dichloroethene	1	<1.0	U	0.94	1.0	2.0
75-09-2	Methylene Chloride	1	<5.0	U	2.0	5.0	10
156-60-5	trans-1,2-Dichloroethene	1	2.4		0.73	1.0	2.0
156-59-2	cis-1,2-Dichloroethene	1	15		0.53	1.0	2.0
75-34-3	1,1-Dichloroethane	1	<1.0	U	0.62	1.0	2.0
107-06-2	1,2-Dichloroethane	1	<1.0	U	0.63	1.0	2.0
71-43-2	Benzene	1	4.0		0.71	1.0	2.0
79-01-6	Trichloroethene	1	8.0		0.89	1.0	2.0
108-88-3	Toluene	1	<1.0	U	0.72	1.0	2.0
127-18-4	Tetrachloroethene	1	<1.0	U	0.76	1.0	2.0
100-41-4	Ethylbenzene	1	<1.0	U	0.69	1.0	2.0
98-82-8	Isopropylbenzene	1	<1.0	U	0.67	1.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1	<5.0	U~~J~~	0.96	5.0	10
1330-20-7	Xylenes (Total)	1	<2.0	U	1.3	2.0	4.0
540-59-0	1,2-Dichloroethene (Total)	1	18		0.73	1.0	2.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	49	98	80 - 119	
Toluene-d8	50.0	44	89	89 - 112	
4-Bromofluorobenzene	50.0	46	92	85 - 114	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	379826	10.98	360813	11	
1,4-Difluorobenzene	664972	11.55	613683	11.57	
Chlorobenzene-d5	587766	14.23	591959	14.25	
1,4-Dichlorobenzene-d4	249388	16.5	257796	16.52	

* Values outside of QC limits

MW 5/22/15

10

IR78-GW79IW-15A

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

Laboratory:	ENCO Orlando			SDG:	A501212-CTOWE86
Client:	CH2M Hill, Inc. (CH025)			Project:	CTO-WE86 MCB Camp Lejeune Site 78
Matrix:	Ground Water	Laboratory ID:	A501212-10	File ID:	2CO013.D
Sampled:	03/13/15 08:45	Prepared:	03/20/15 00:00	Analyzed:	03/20/15 11:37
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch: 5C20008 Sequence: AA33067 Calibration: 1502029 Instrument: OVGCMS2

use reanalysis results

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
75-01-4	Vinyl chloride	1	<1.0 UJ	U	0.71	1.0	2.0
75-35-4	1,1-Dichloroethene	1	<1.0	U	0.94	1.0	2.0
75-09-2	Methylene Chloride	1	<5.0	U	2.0	5.0	10
156-60-5	trans-1,2-Dichloroethene	1	<1.0	U	0.73	1.0	2.0
156-59-2	cis-1,2-Dichloroethene	1	0.91 J	J	0.53	1.0	2.0
75-34-3	1,1-Dichloroethane	1	<1.0 UJ	U	0.62	1.0	2.0
107-06-2	1,2-Dichloroethane	1	<1.0	U	0.63	1.0	2.0
71-43-2	Benzene	1	7.0 J		0.71	1.0	2.0
79-01-6	Trichloroethene	1	<1.0 UJ	U	0.89	1.0	2.0
108-88-3	Toluene	1	<1.0	U	0.72	1.0	2.0
127-18-4	Tetrachloroethene	1	<1.0	U	0.76	1.0	2.0
100-41-4	Ethylbenzene	1	<1.0	U	0.69	1.0	2.0
98-82-8	Isopropylbenzene	1	<1.0	U	0.67	1.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1	<5.0	UQ	0.96	5.0	10
1330-20-7	Xylenes (Total)	1	<2.0	U	1.3	2.0	4.0
540-59-0	1,2-Dichloroethene (Total)	1	0.91 J	J	0.73	1.0	2.0

SSL

exclude

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	49	98	80 - 119	
Toluene-d8	50.0	44	88	89 - 112	*
4-Bromofluorobenzene	50.0	45	90	85 - 114	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	381429	10.98	360813	11	
1,4-Difluorobenzene	659827	11.55	613683	11.57	
Chlorobenzene-d5	574947	14.23	591959	14.25	
1,4-Dichlorobenzene-d4	247441	16.5	257796	16.52	

* Values outside of QC limits

MW 5/22/15

10RE

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

IR78-GW79IW-15A

Laboratory:	ENCO Orlando	SDG:	A501212-CTOWE86
Client:	CH2M Hill, Inc. (CH025)	Project:	CTO-WE86 MCB Camp Lejeune Site 78

Matrix:	Ground Water	Laboratory ID:	A501212-10RE1	File ID:	5D2013.D
Sampled:	03/13/15 08:45	Prepared:	04/02/15 00:00	Analyzed:	04/02/15 14:09
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch: 5D02011 Sequence: AA33267 Calibration: 1503091 Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
75-01-4	Vinyl chloride	1	<1.0 UJ	UQ	0.71	1.0	2.0
75-35-4	1,1-Dichloroethene	1	<1.0	UQ	0.94	1.0	2.0
75-09-2	Methylene Chloride	1	<5.0	UQ	2.0	5.0	10
156-60-5	trans-1,2-Dichloroethene	1	<1.0	UQ	0.73	1.0	2.0
156-59-2	cis-1,2-Dichloroethene	1	1.1 J	JQ	0.53	1.0	2.0
75-34-3	1,1-Dichloroethane	1	<1.0 UJ	UQ	0.62	1.0	2.0
107-06-2	1,2-Dichloroethane	1	<1.0 UJ	UQ	0.63	1.0	2.0
71-43-2	Benzene	1	8.8 J	Q	0.71	1.0	2.0
79-01-6	Trichloroethene	1	<1.0 UJ	UQ	0.89	1.0	2.0
108-88-3	Toluene	1	<1.0	UQ	0.72	1.0	2.0
127-18-4	Tetrachloroethene	1	<1.0	UQ	0.76	1.0	2.0
100-41-4	Ethylbenzene	1	<1.0	UQ	0.69	1.0	2.0
98-82-8	Isopropylbenzene	1	<1.0	UQ	0.67	1.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1	<5.0	UQ	0.96	5.0	10
1330-20-7	Xylenes (Total)	1	<2.0	UQ	1.3	2.0	4.0
540-59-0	1,2-Dichloroethene (Total)	1	1.1 J	JQ	0.73	1.0	2.0

HT

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	57	114	80 - 119	
Toluene-d8	50.0	54	108	89 - 112	
4-Bromofluorobenzene	50.0	48	96	85 - 114	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	501354	11.474	646118	11.491	
1,4-Difluorobenzene	928200	12.172	1132565	12.189	
Chlorobenzene-d5	972909	15.607	1071316	15.632	
1,4-Dichlorobenzene-d4	532074	18.573	548927	18.606	

* Values outside of QC limits

MW 5/22/15

11

IR78-GW79IWD-15A

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

Laboratory: ENCO Orlando SDG: A501212-CTOWE86

Client: CH2M Hill, Inc. (CH025) Project: CTO-WE86 MCB Camp Lejeune Site 78

Matrix: Ground Water Laboratory ID: A501212-11 File ID: 2CO014.D

Sampled: 03/13/15 08:50 Prepared: 03/20/15 00:00 Analyzed: 03/20/15 12:07

Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL

Batch: 5C20008 Sequence: AA33067 Calibration: 1502029 Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
75-01-4	Vinyl chloride	1	<1.0	U	0.71	1.0	2.0
75-35-4	1,1-Dichloroethene	1	<1.0	U	0.94	1.0	2.0
75-09-2	Methylene Chloride	1	<5.0	U	2.0	5.0	10
156-60-5	trans-1,2-Dichloroethene	1	<1.0	U	0.73	1.0	2.0
156-59-2	cis-1,2-Dichloroethene	1	1.0	J	0.53	1.0	2.0
75-34-3	1,1-Dichloroethane	1	<1.0	U	0.62	1.0	2.0
107-06-2	1,2-Dichloroethane	1	<1.0	U	0.63	1.0	2.0
71-43-2	Benzene	1	7.2		0.71	1.0	2.0
79-01-6	Trichloroethene	1	<1.0	U	0.89	1.0	2.0
108-88-3	Toluene	1	<1.0	U	0.72	1.0	2.0
127-18-4	Tetrachloroethene	1	<1.0	U	0.76	1.0	2.0
100-41-4	Ethylbenzene	1	<1.0	U	0.69	1.0	2.0
98-82-8	Isopropylbenzene	1	<1.0	U	0.67	1.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1	<5.0	U~~J~~	0.96	5.0	10
1330-20-7	Xylenes (Total)	1	<2.0	U	1.3	2.0	4.0
540-59-0	1,2-Dichloroethene (Total)	1	1.0	J	0.73	1.0	2.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	49	98	80 - 119	
Toluene-d8	50.0	46	93	89 - 112	
4-Bromofluorobenzene	50.0	46	92	85 - 114	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	378360	10.98	360813	11	
1,4-Difluorobenzene	635504	11.55	613683	11.57	
Chlorobenzene-d5	563863	14.23	591959	14.25	
1,4-Dichlorobenzene-d4	250413	16.49	257796	16.52	

* Values outside of QC limits

MW 5/22/15

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

IR78-GW80IW-15A

Laboratory: ENCO Orlando SDG: A501212-CTOWE86

Client: CH2M Hill, Inc. (CH025) Project: CTO-WE86 MCB Camp Lejeune Site 78

Matrix: Ground Water Laboratory ID: A501212-12 File ID: 2CO015.D

Sampled: 03/13/15 09:10 Prepared: 03/20/15 00:00 Analyzed: 03/20/15 12:36

Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL

Batch: 5C20008 Sequence: AA33067 Calibration: 1502029 Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
75-01-4	Vinyl chloride	1	<1.0	U	0.71	1.0	2.0
75-35-4	1,1-Dichloroethene	1	<1.0	U	0.94	1.0	2.0
75-09-2	Methylene Chloride	1	<5.0	U	2.0	5.0	10
156-60-5	trans-1,2-Dichloroethene	1	<1.0	U	0.73	1.0	2.0
156-59-2	cis-1,2-Dichloroethene	1	1.5	J	0.53	1.0	2.0
75-34-3	1,1-Dichloroethane	1	<1.0	U	0.62	1.0	2.0
107-06-2	1,2-Dichloroethane	1	12		0.63	1.0	2.0
71-43-2	Benzene	1	13		0.71	1.0	2.0
79-01-6	Trichloroethene	1	2.1		0.89	1.0	2.0
108-88-3	Toluene	1	<1.0	U	0.72	1.0	2.0
127-18-4	Tetrachloroethene	1	<1.0	U	0.76	1.0	2.0
100-41-4	Ethylbenzene	1	<1.0	U	0.69	1.0	2.0
98-82-8	Isopropylbenzene	1	<1.0	U	0.67	1.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1	<5.0	U~~J~~	0.96	5.0	10
1330-20-7	Xylenes (Total)	1	<2.0	U	1.3	2.0	4.0
540-59-0	1,2-Dichloroethene (Total)	1	1.5	J	0.73	1.0	2.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	49	98	80 - 119	
Toluene-d8	50.0	45	90	89 - 112	
4-Bromofluorobenzene	50.0	45	90	85 - 114	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	380630	10.98	360813	11	
1,4-Difluorobenzene	660481	11.55	613683	11.57	
Chlorobenzene-d5	582572	14.23	591959	14.25	
1,4-Dichlorobenzene-d4	246849	16.49	257796	16.52	

* Values outside of QC limits

MW 5/22/15

IR78-GW80DW-15A

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

Laboratory: ENCO Orlando | SDG: A501212-CTOWE86

Client: CH2M Hill, Inc. (CH025) | Project: CTO-WE86 MCB Camp Lejeune Site 78

Matrix: Ground Water | Laboratory ID: A501212-13 | File ID: 2CO016.D

Sampled: 03/13/15 09:15 | Prepared: 03/20/15 00:00 | Analyzed: 03/20/15 13:06

Solids: | Preparation: EPA 5030B_MS | Initial/Final: 5 mL / 5 mL

Batch: 5C20008 | Sequence: AA33067 | Calibration: 1502029 | Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
75-01-4	Vinyl chloride	1	<1.0	U	0.71	1.0	2.0
75-35-4	1,1-Dichloroethene	1	<1.0	U	0.94	1.0	2.0
75-09-2	Methylene Chloride	1	<5.0	U	2.0	5.0	10
156-60-5	trans-1,2-Dichloroethene	1	<1.0	U	0.73	1.0	2.0
156-59-2	cis-1,2-Dichloroethene	1	0.67	J	0.53	1.0	2.0
75-34-3	1,1-Dichloroethane	1	<1.0	U	0.62	1.0	2.0
107-06-2	1,2-Dichloroethane	1	4.3		0.63	1.0	2.0
71-43-2	Benzene	1	21		0.71	1.0	2.0
79-01-6	Trichloroethene	1	<1.0	U	0.89	1.0	2.0
108-88-3	Toluene	1	<1.0	U	0.72	1.0	2.0
127-18-4	Tetrachloroethene	1	<1.0	U	0.76	1.0	2.0
100-41-4	Ethylbenzene	1	<1.0	U	0.69	1.0	2.0
98-82-8	Isopropylbenzene	1	<1.0	U	0.67	1.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1	<5.0	UQ	0.96	5.0	10
1330-20-7	Xylenes (Total)	1	<2.0	U	1.3	2.0	4.0
540-59-0	1,2-Dichloroethene (Total)	1	<1.0	U	0.73	1.0	2.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	50	100	80 - 119	
Toluene-d8	50.0	45	89	89 - 112	
4-Bromofluorobenzene	50.0	45	90	85 - 114	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	378435	10.98	360813	11	
1,4-Difluorobenzene	648393	11.55	613683	11.57	
Chlorobenzene-d5	564147	14.23	591959	14.25	
1,4-Dichlorobenzene-d4	251270	16.5	257796	16.52	

* Values outside of QC limits

NW 5/22/15

IR78-GW81IW-15A

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

Laboratory: ENCO Orlando SDG: A501212-CTOWE86

Client: CH2M Hill, Inc. (CH025) Project: CTO-WE86 MCB Camp Lejeune Site 78

Matrix: Ground Water Laboratory ID: A501212-14 File ID: 2CO017.D

Sampled: 03/13/15 09:35 Prepared: 03/20/15 00:00 Analyzed: 03/20/15 13:36

Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL

Batch: 5C20008 Sequence: AA33067 Calibration: 1502029 Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
75-01-4	Vinyl chloride	1	<1.0	U	0.71	1.0	2.0
75-35-4	1,1-Dichloroethene	1	<1.0	U	0.94	1.0	2.0
75-09-2	Methylene Chloride	1	<5.0	U	2.0	5.0	10
156-60-5	trans-1,2-Dichloroethene	1	<1.0	U	0.73	1.0	2.0
156-59-2	cis-1,2-Dichloroethene	1	<1.0	U	0.53	1.0	2.0
75-34-3	1,1-Dichloroethane	1	<1.0	U	0.62	1.0	2.0
107-06-2	1,2-Dichloroethane	1	<1.0	U	0.63	1.0	2.0
71-43-2	Benzene	1	<1.0	U	0.71	1.0	2.0
79-01-6	Trichloroethene	1	<1.0	U	0.89	1.0	2.0
108-88-3	Toluene	1	<1.0	U	0.72	1.0	2.0
127-18-4	Tetrachloroethene	1	<1.0	U	0.76	1.0	2.0
100-41-4	Ethylbenzene	1	<1.0	U	0.69	1.0	2.0
98-82-8	Isopropylbenzene	1	<1.0	U	0.67	1.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1	<5.0	U~~Q~~	0.96	5.0	10
1330-20-7	Xylenes (Total)	1	<2.0	U	1.3	2.0	4.0
540-59-0	1,2-Dichloroethene (Total)	1	<1.0	U	0.73	1.0	2.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	50	99	80 - 119	
Toluene-d8	50.0	44	89	89 - 112	
4-Bromofluorobenzene	50.0	45	89	85 - 114	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	379210	10.98	360813	11	
1,4-Difluorobenzene	646224	11.55	613683	11.57	
Chlorobenzene-d5	574374	14.24	591959	14.25	
1,4-Dichlorobenzene-d4	247739	16.5	257796	16.52	

* Values outside of QC limits

MW 5/22/15

15

IR78-GW81DW-15A

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

Laboratory:	ENCO Orlando	SDG:	A501212-CTOWE86
Client:	CH2M Hill, Inc. (CH025)	Project:	CTO-WE86 MCB Camp Lejeune Site 78

Matrix:	Ground Water	Laboratory ID:	A501212-15	File ID:	2CO018.D
Sampled:	03/13/15 09:40	Prepared:	03/20/15 00:00	Analyzed:	03/20/15 14:06
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch: 5C20008 Sequence: AA33067 Calibration: 1502029 Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
75-01-4	Vinyl chloride	1	<1.0	U	0.71	1.0	2.0
75-35-4	1,1-Dichloroethene	1	<1.0	U	0.94	1.0	2.0
75-09-2	Methylene Chloride	1	<5.0	U	2.0	5.0	10
156-60-5	trans-1,2-Dichloroethene	1	<1.0	U	0.73	1.0	2.0
156-59-2	cis-1,2-Dichloroethene	1	<1.0	U	0.53	1.0	2.0
75-34-3	1,1-Dichloroethane	1	<1.0	U	0.62	1.0	2.0
107-06-2	1,2-Dichloroethane	1	<1.0	U	0.63	1.0	2.0
71-43-2	Benzene	1	<1.0	U	0.71	1.0	2.0
79-01-6	Trichloroethene	1	<1.0	U	0.89	1.0	2.0
108-88-3	Toluene	1	<1.0	U	0.72	1.0	2.0
127-18-4	Tetrachloroethene	1	<1.0	U	0.76	1.0	2.0
100-41-4	Ethylbenzene	1	<1.0	U	0.69	1.0	2.0
98-82-8	Isopropylbenzene	1	<1.0	U	0.67	1.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1	<5.0	UQ	0.96	5.0	10
1330-20-7	Xylenes (Total)	1	<2.0	U	1.3	2.0	4.0
540-59-0	1,2-Dichloroethene (Total)	1	<1.0	U	0.73	1.0	2.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	49	99	80 - 119	
Toluene-d8	50.0	45	90	89 - 112	
4-Bromofluorobenzene	50.0	45	90	85 - 114	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	376627	10.98	360813	11	
1,4-Difluorobenzene	655917	11.56	613683	11.57	
Chlorobenzene-d5	576447	14.23	591959	14.25	
1,4-Dichlorobenzene-d4	249651	16.5	257796	16.52	

* Values outside of QC limits

AW 5/22/15

16

IR78-GW82IW-15A

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

Laboratory:	ENCO Orlando	SDG:	A501212-CTOWE86
Client:	CH2M Hill, Inc. (CH025)	Project:	CTO-WE86 MCB Camp Lejeune Site 78

Matrix:	Ground Water	Laboratory ID:	A501212-16	File ID:	2CO019.D
Sampled:	03/13/15 10:05	Prepared:	03/20/15 00:00	Analyzed:	03/20/15 14:36
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch: 5C20008 Sequence: AA33067 Calibration: 1502029 Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
75-01-4	Vinyl chloride	1	<1.0	U	0.71	1.0	2.0
75-35-4	1,1-Dichloroethene	1	<1.0	U	0.94	1.0	2.0
75-09-2	Methylene Chloride	1	<5.0	U	2.0	5.0	10
156-60-5	trans-1,2-Dichloroethene	1	<1.0	U	0.73	1.0	2.0
156-59-2	cis-1,2-Dichloroethene	1	<1.0	U	0.53	1.0	2.0
75-34-3	1,1-Dichloroethane	1	<1.0	U	0.62	1.0	2.0
107-06-2	1,2-Dichloroethane	1	<1.0	U	0.63	1.0	2.0
71-43-2	Benzene	1	6.3		0.71	1.0	2.0
79-01-6	Trichloroethene	1	<1.0	U	0.89	1.0	2.0
108-88-3	Toluene	1	<1.0	U	0.72	1.0	2.0
127-18-4	Tetrachloroethene	1	<1.0	U	0.76	1.0	2.0
100-41-4	Ethylbenzene	1	<1.0	U	0.69	1.0	2.0
98-82-8	Isopropylbenzene	1	<1.0	U	0.67	1.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1	<5.0	U~~Q~~	0.96	5.0	10
1330-20-7	Xylenes (Total)	1	<2.0	U	1.3	2.0	4.0
540-59-0	1,2-Dichloroethene (Total)	1	<1.0	U	0.73	1.0	2.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	51	101	80 - 119	
Toluene-d8	50.0	45	90	89 - 112	
4-Bromofluorobenzene	50.0	46	91	85 - 114	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	367440	10.98	360813	11	
1,4-Difluorobenzene	644735	11.56	613683	11.57	
Chlorobenzene-d5	573230	14.23	591959	14.25	
1,4-Dichlorobenzene-d4	246439	16.5	257796	16.52	

* Values outside of QC limits

MW 5/22/15

IR78-GW84IW-15A

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

Laboratory:	ENCO Orlando	SDG:	A501212-CTOWE86
Client:	CH2M Hill, Inc. (CH025)	Project:	CTO-WE86 MCB Camp Lejeune Site 78

Matrix:	Ground Water	Laboratory ID:	A501212-17	File ID:	2CO020.D
Sampled:	03/13/15 14:05	Prepared:	03/20/15 00:00	Analyzed:	03/20/15 15:05
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch: 5C20008 Sequence: AA33067 Calibration: 1502029 Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
75-01-4	Vinyl chloride	1	13		0.71	1.0	2.0
75-35-4	1,1-Dichloroethene	1	<1.0	U	0.94	1.0	2.0
75-09-2	Methylene Chloride	1	<5.0	U	2.0	5.0	10
156-60-5	trans-1,2-Dichloroethene	1	<1.0	U	0.73	1.0	2.0
156-59-2	cis-1,2-Dichloroethene	1	56		0.53	1.0	2.0
75-34-3	1,1-Dichloroethane	1	<1.0	U	0.62	1.0	2.0
107-06-2	1,2-Dichloroethane	1	<1.0	U	0.63	1.0	2.0
71-43-2	Benzene	1	<1.0	U	0.71	1.0	2.0
79-01-6	Trichloroethene	1	<1.0	U	0.89	1.0	2.0
108-88-3	Toluene	1	<1.0	U	0.72	1.0	2.0
127-18-4	Tetrachloroethene	1	<1.0	U	0.76	1.0	2.0
100-41-4	Ethylbenzene	1	<1.0	U	0.69	1.0	2.0
98-82-8	Isopropylbenzene	1	<1.0	U	0.67	1.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1	<5.0	U~~Ø~~	0.96	5.0	10
1330-20-7	Xylenes (Total)	1	<2.0	U	1.3	2.0	4.0
540-59-0	1,2-Dichloroethene (Total)	1	56		0.73	1.0	2.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	49	98	80 - 119	
Toluene-d8	50.0	45	90	89 - 112	
4-Bromofluorobenzene	50.0	45	90	85 - 114	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	378329	10.98	360813	11	
1,4-Difluorobenzene	641436	11.56	613683	11.57	
Chlorobenzene-d5	567320	14.23	591959	14.25	
1,4-Dichlorobenzene-d4	248938	16.5	257796	16.52	

* Values outside of QC limits

MW 5/22/15

18

IR78-GW85-15A

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

Laboratory:	ENCO Orlando	SDG:	A501212-CTOWE86
Client:	CH2M Hill, Inc. (CH025)	Project:	CTO-WE86 MCB Camp Lejeune Site 78

Matrix:	Ground Water	Laboratory ID:	A501212-18	File ID:	2CT011.D
Sampled:	03/14/15 11:15	Prepared:	03/25/15 00:00	Analyzed:	03/25/15 10:51
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch: 5C25015 Sequence: AA33136 Calibration: 1502029 Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
75-01-4	Vinyl chloride	1	<1.0 UJ	U	0.71	1.0	2.0
75-35-4	1,1-Dichloroethene	1	<1.0	U	0.94	1.0	2.0
75-09-2	Methylene Chloride	1	<5.0	U	2.0	5.0	10
156-60-5	trans-1,2-Dichloroethene	1	<1.0	U	0.73	1.0	2.0
156-59-2	cis-1,2-Dichloroethene	1	<1.0	U	0.53	1.0	2.0
75-34-3	1,1-Dichloroethane	1	<1.0	U	0.62	1.0	2.0
107-06-2	1,2-Dichloroethane	1	<1.0	U	0.63	1.0	2.0
71-43-2	Benzene	1	<1.0	U	0.71	1.0	2.0
79-01-6	Trichloroethene	1	<1.0	U	0.89	1.0	2.0
108-88-3	Toluene	1	<1.0	U	0.72	1.0	2.0
127-18-4	Tetrachloroethene	1	<1.0	U	0.76	1.0	2.0
100-41-4	Ethylbenzene	1	<1.0	U	0.69	1.0	2.0
98-82-8	Isopropylbenzene	1	<1.0	U	0.67	1.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1	<5.0	UQ	0.96	5.0	10
1330-20-7	Xylenes (Total)	1	<2.0	U	1.3	2.0	4.0
540-59-0	1,2-Dichloroethene (Total)	1	<1.0	U	0.73	1.0	2.0

SSL

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	50	99	80 - 119	
Toluene-d8	50.0	42	84	89 - 112	*
4-Bromofluorobenzene	50.0	55	111	85 - 114	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	329803	10.98	360813	11	
1,4-Difluorobenzene	583164	11.55	613683	11.57	
Chlorobenzene-d5	499965	14.23	591959	14.25	
1,4-Dichlorobenzene-d4	259301	16.49	257796	16.52	

* Values outside of QC limits

MW 5/22/15

18RE

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

IR78-GW85-15A

Laboratory:	ENCO Orlando	SDG:	A501212-CTOWE86
Client:	CH2M Hill, Inc. (CH025)	Project:	CTO-WE86 MCB Camp Lejeune Site 78

use original results

Matrix:	Ground Water	Laboratory ID:	A501212-18RE1	File ID:	2DB008.D
Sampled:	03/14/15 11:15	Prepared:	04/07/15 00:00	Analyzed:	04/07/15 11:06
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch: 5D07016 Sequence: AA33335 Calibration: 1502029 Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
75-01-4	Vinyl chloride	1	<1.0 UJ	UQ	0.71	1.0	2.0
75-35-4	1,1-Dichloroethene	1	<1.0	UQ	0.94	1.0	2.0
75-09-2	Methylene Chloride	1	<5.0	UQ	2.0	5.0	10
156-60-5	trans-1,2-Dichloroethene	1	<1.0	UQ	0.73	1.0	2.0
156-59-2	cis-1,2-Dichloroethene	1	<1.0	UQ	0.53	1.0	2.0
75-34-3	1,1-Dichloroethane	1	<1.0	UQ	0.62	1.0	2.0
107-06-2	1,2-Dichloroethane	1	<1.0	UQ	0.63	1.0	2.0
71-43-2	Benzene	1	<1.0	UQ	0.71	1.0	2.0
79-01-6	Trichloroethene	1	<1.0	UQ	0.89	1.0	2.0
108-88-3	Toluene	1	<1.0	UQ	0.72	1.0	2.0
127-18-4	Tetrachloroethene	1	<1.0	UQ	0.76	1.0	2.0
100-41-4	Ethylbenzene	1	<1.0	UQ	0.69	1.0	2.0
98-82-8	Isopropylbenzene	1	<1.0	UQ	0.67	1.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1	<5.0	UQ	0.96	5.0	10
1330-20-7	Xylenes (Total)	1	<2.0	UQ	1.3	2.0	4.0
540-59-0	1,2-Dichloroethene (Total)	1	<1.0	UQ	0.73	1.0	2.0

HT

exclude

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	48	96	80 - 119	
Toluene-d8	50.0	44	87	89 - 112	*
4-Bromofluorobenzene	50.0	45	90	85 - 114	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	376961	10.97	360813	11	
1,4-Difluorobenzene	652969	11.54	613683	11.57	
Chlorobenzene-d5	587259	14.22	591959	14.25	
1,4-Dichlorobenzene-d4	247874	16.49	257796	16.52	

* Values outside of QC limits

MW 5/22/15

IR78-GW85IW-15A

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

Laboratory: ENCO Orlando SDG: A501212-CTOWE86

Client: CH2M Hill, Inc. (CH025) Project: CTO-WE86 MCB Camp Lejeune Site 78

Matrix: Ground Water Laboratory ID: A501212-19 File ID: 2CT012.D

Sampled: 03/14/15 12:20 Prepared: 03/25/15 00:00 Analyzed: 03/25/15 11:20

Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL

Batch: 5C25015 Sequence: AA33136 Calibration: 1502029 Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
75-01-4	Vinyl chloride	1	<1.0	U	0.71	1.0	2.0
75-35-4	1,1-Dichloroethene	1	<1.0	U	0.94	1.0	2.0
75-09-2	Methylene Chloride	1	<5.0	U	2.0	5.0	10
156-60-5	trans-1,2-Dichloroethene	1	<1.0	U	0.73	1.0	2.0
156-59-2	cis-1,2-Dichloroethene	1	<1.0	U	0.53	1.0	2.0
75-34-3	1,1-Dichloroethane	1	<1.0	U	0.62	1.0	2.0
107-06-2	1,2-Dichloroethane	1	<1.0	U	0.63	1.0	2.0
71-43-2	Benzene	1	<1.0	U	0.71	1.0	2.0
79-01-6	Trichloroethene	1	<1.0	U	0.89	1.0	2.0
108-88-3	Toluene	1	<1.0	U	0.72	1.0	2.0
127-18-4	Tetrachloroethene	1	<1.0	U	0.76	1.0	2.0
100-41-4	Ethylbenzene	1	<1.0	U	0.69	1.0	2.0
98-82-8	Isopropylbenzene	1	<1.0	U	0.67	1.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1	<5.0	UQ	0.96	5.0	10
1330-20-7	Xylenes (Total)	1	<2.0	U	1.3	2.0	4.0
540-59-0	1,2-Dichloroethene (Total)	1	<1.0	U	0.73	1.0	2.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	48	97	80 - 119	
Toluene-d8	50.0	44	89	89 - 112	
4-Bromofluorobenzene	50.0	46	92	85 - 114	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	374717	10.98	360813	11	
1,4-Difluorobenzene	664191	11.55	613683	11.57	
Chlorobenzene-d5	584005	14.23	591959	14.25	
1,4-Dichlorobenzene-d4	252662	16.5	257796	16.52	

* Values outside of QC limits

LW 5/22/15

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

IR78-GW85IWD-15A

Laboratory: ENCO Orlando
SDG: A501212-CTOWE86
Client: CH2M Hill, Inc. (CH025)
Project: CTO-WE86 MCB Camp Lejeune Site 78

Matrix: Ground Water
Laboratory ID: A501212-20
File ID: 2CT013.D
Sampled: 03/14/15 12:25
Prepared: 03/25/15 00:00
Analyzed: 03/25/15 11:49
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 5C25015
Sequence: AA33136
Calibration: 1502029
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
75-01-4	Vinyl chloride	1	<1.0	U	0.71	1.0	2.0
75-35-4	1,1-Dichloroethene	1	<1.0	U	0.94	1.0	2.0
75-09-2	Methylene Chloride	1	<5.0	U	2.0	5.0	10
156-60-5	trans-1,2-Dichloroethene	1	<1.0	U	0.73	1.0	2.0
156-59-2	cis-1,2-Dichloroethene	1	<1.0	U	0.53	1.0	2.0
75-34-3	1,1-Dichloroethane	1	<1.0	U	0.62	1.0	2.0
107-06-2	1,2-Dichloroethane	1	<1.0	U	0.63	1.0	2.0
71-43-2	Benzene	1	<1.0	U	0.71	1.0	2.0
79-01-6	Trichloroethene	1	<1.0	U	0.89	1.0	2.0
108-88-3	Toluene	1	<1.0	U	0.72	1.0	2.0
127-18-4	Tetrachloroethene	1	<1.0	U	0.76	1.0	2.0
100-41-4	Ethylbenzene	1	<1.0	U	0.69	1.0	2.0
98-82-8	Isopropylbenzene	1	<1.0	U	0.67	1.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1	<5.0	UJ	0.96	5.0	10
1330-20-7	Xylenes (Total)	1	<2.0	U	1.3	2.0	4.0
540-59-0	1,2-Dichloroethene (Total)	1	<1.0	U	0.73	1.0	2.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	49	98	80 - 119	
Toluene-d8	50.0	45	90	89 - 112	
4-Bromofluorobenzene	50.0	46	93	85 - 114	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	380193	10.98	360813	11	
1,4-Difluorobenzene	664571	11.55	613683	11.57	
Chlorobenzene-d5	603974	14.23	591959	14.25	
1,4-Dichlorobenzene-d4	254414	16.5	257796	16.52	

* Values outside of QC limits

MW 5/22/15

IR78-GW87MCH-15A

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

Laboratory: ENCO Orlando SDG: A501212-CTOWE86

Client: CH2M Hill, Inc. (CH025) Project: CTO-WE86 MCB Camp Lejeune Site 78

Matrix: Ground Water Laboratory ID: A501212-21 File ID: 2CO021.D

Sampled: 03/13/15 13:40 Prepared: 03/20/15 00:00 Analyzed: 03/20/15 15:35

Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL

Batch: 5C20008 Sequence: AA33067 Calibration: 1502029 Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
75-01-4	Vinyl chloride	1	<1.0	U	0.71	1.0	2.0
75-35-4	1,1-Dichloroethene	1	<1.0	U	0.94	1.0	2.0
75-09-2	Methylene Chloride	1	<5.0	U	2.0	5.0	10
156-60-5	trans-1,2-Dichloroethene	1	<1.0	U	0.73	1.0	2.0
156-59-2	cis-1,2-Dichloroethene	1	<1.0	U	0.53	1.0	2.0
75-34-3	1,1-Dichloroethane	1	<1.0	U	0.62	1.0	2.0
107-06-2	1,2-Dichloroethane	1	<1.0	U	0.63	1.0	2.0
71-43-2	Benzene	1	<1.0	U	0.71	1.0	2.0
79-01-6	Trichloroethene	1	<1.0	U	0.89	1.0	2.0
108-88-3	Toluene	1	<1.0	U	0.72	1.0	2.0
127-18-4	Tetrachloroethene	1	<1.0	U	0.76	1.0	2.0
100-41-4	Ethylbenzene	1	<1.0	U	0.69	1.0	2.0
98-82-8	Isopropylbenzene	1	<1.0	U	0.67	1.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1	<5.0	UQ	0.96	5.0	10
1330-20-7	Xylenes (Total)	1	<2.0	U	1.3	2.0	4.0
540-59-0	1,2-Dichloroethene (Total)	1	<1.0	U	0.73	1.0	2.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	50	100	80 - 119	
Toluene-d8	50.0	46	91	89 - 112	
4-Bromofluorobenzene	50.0	46	93	85 - 114	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	370808	10.98	360813	11	
1,4-Difluorobenzene	637886	11.56	613683	11.57	
Chlorobenzene-d5	571342	14.23	591959	14.25	
1,4-Dichlorobenzene-d4	245723	16.5	257796	16.52	

* Values outside of QC limits

MW 5/22/15

IR78-GW87MCHD-15A

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

Laboratory:	ENCO Orlando	SDG:	A501212-CTOWE86
Client:	CH2M Hill, Inc. (CH025)	Project:	CTO-WE86 MCB Camp Lejeune Site 78

Matrix:	Ground Water	Laboratory ID:	A501212-22	File ID:	2CO022.D
Sampled:	03/13/15 13:45	Prepared:	03/20/15 00:00	Analyzed:	03/20/15 16:05
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch: 5C20008 Sequence: AA33067 Calibration: 1502029 Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
75-01-4	Vinyl chloride	1	<1.0	U	0.71	1.0	2.0
75-35-4	1,1-Dichloroethene	1	<1.0	U	0.94	1.0	2.0
75-09-2	Methylene Chloride	1	<5.0	U	2.0	5.0	10
156-60-5	trans-1,2-Dichloroethene	1	<1.0	U	0.73	1.0	2.0
156-59-2	cis-1,2-Dichloroethene	1	<1.0	U	0.53	1.0	2.0
75-34-3	1,1-Dichloroethane	1	<1.0	U	0.62	1.0	2.0
107-06-2	1,2-Dichloroethane	1	<1.0	U	0.63	1.0	2.0
71-43-2	Benzene	1	<1.0	U	0.71	1.0	2.0
79-01-6	Trichloroethene	1	<1.0	U	0.89	1.0	2.0
108-88-3	Toluene	1	<1.0	U	0.72	1.0	2.0
127-18-4	Tetrachloroethene	1	<1.0	U	0.76	1.0	2.0
100-41-4	Ethylbenzene	1	<1.0	U	0.69	1.0	2.0
98-82-8	Isopropylbenzene	1	<1.0	U	0.67	1.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1	<5.0	U~~Q~~	0.96	5.0	10
1330-20-7	Xylenes (Total)	1	<2.0	U	1.3	2.0	4.0
540-59-0	1,2-Dichloroethene (Total)	1	<1.0	U	0.73	1.0	2.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	50	100	80 - 119	
Toluene-d8	50.0	45	90	89 - 112	
4-Bromofluorobenzene	50.0	46	92	85 - 114	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	370218	10.99	360813	11	
1,4-Difluorobenzene	644696	11.56	613683	11.57	
Chlorobenzene-d5	571219	14.23	591959	14.25	
1,4-Dichlorobenzene-d4	246890	16.5	257796	16.52	

* Values outside of QC limits

MW 5/22/15

IR78-TB-031515-1

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

Laboratory:	ENCO Orlando	SDG:	A501212-CTOWE86
Client:	CH2M Hill, Inc. (CH025)	Project:	CTO-WE86 MCB Camp Lejeune Site 78

Matrix:	Ground Water	Laboratory ID:	A501212-23	File ID:	5CO019.D
Sampled:	03/15/15 12:25	Prepared:	03/20/15 00:00	Analyzed:	03/20/15 15:15
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch: 5C20013 Sequence: AA33073 Calibration: 1503031 Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
75-01-4	Vinyl chloride	1	<1.0	U	0.71	1.0	2.0
75-35-4	1,1-Dichloroethene	1	<1.0	U~~Q~~	0.94	1.0	2.0
75-09-2	Methylene Chloride	1	<5.0	U~~Q~~	2.0	5.0	10
156-60-5	trans-1,2-Dichloroethene	1	<1.0	U~~Q~~	0.73	1.0	2.0
156-59-2	cis-1,2-Dichloroethene	1	<1.0	U~~Q~~	0.53	1.0	2.0
75-34-3	1,1-Dichloroethane	1	<1.0	U~~Q~~	0.62	1.0	2.0
107-06-2	1,2-Dichloroethane	1	<1.0	U	0.63	1.0	2.0
71-43-2	Benzene	1	<1.0	U	0.71	1.0	2.0
79-01-6	Trichloroethene	1	<1.0	U~~Q~~	0.89	1.0	2.0
108-88-3	Toluene	1	<1.0	U	0.72	1.0	2.0
127-18-4	Tetrachloroethene	1	<1.0	U	0.76	1.0	2.0
100-41-4	Ethylbenzene	1	<1.0	U	0.69	1.0	2.0
98-82-8	Isopropylbenzene	1	<1.0	U	0.67	1.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1	<5.0	U	0.96	5.0	10
1330-20-7	Xylenes (Total)	1	<2.0	U	1.3	2.0	4.0
540-59-0	1,2-Dichloroethene (Total)	1	<1.0	U	0.73	1.0	2.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	59	119	80 - 119	
Toluene-d8	50.0	57	113	89 - 112	*
4-Bromofluorobenzene	50.0	53	105	85 - 114	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	619807	11.482	591935	11.466	
1,4-Difluorobenzene	1227810	12.181	1054899	12.173	
Chlorobenzene-d5	1657739	15.624	1238789	15.607	
1,4-Dichlorobenzene-d4	977756	18.59	673258	18.574	

* Values outside of QC limits

MW 5/22/15

24

IR78-EB-031515-GW

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

Laboratory:	ENCO Orlando	SDG:	A501212-CTOWE86
Client:	CH2M Hill, Inc. (CH025)	Project:	CTO-WE86 MCB Camp Lejeune Site 78

Matrix:	Ground Water	Laboratory ID:	A501212-24	File ID:	5CO017.D
Sampled:	03/15/15 12:40	Prepared:	03/20/15 00:00	Analyzed:	03/20/15 14:12
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch: 5C20013 Sequence: AA33073 Calibration: 1503031 Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
75-01-4	Vinyl chloride	1	<1.0	U	0.71	1.0	2.0
75-35-4	1,1-Dichloroethene	1	<1.0	U~~Q~~	0.94	1.0	2.0
75-09-2	Methylene Chloride	1	<5.0	U~~Q~~	2.0	5.0	10
156-60-5	trans-1,2-Dichloroethene	1	<1.0	U~~Q~~	0.73	1.0	2.0
156-59-2	cis-1,2-Dichloroethene	1	<1.0	U~~Q~~	0.53	1.0	2.0
75-34-3	1,1-Dichloroethane	1	<1.0	U~~Q~~	0.62	1.0	2.0
107-06-2	1,2-Dichloroethane	1	<1.0	U	0.63	1.0	2.0
71-43-2	Benzene	1	<1.0	U	0.71	1.0	2.0
79-01-6	Trichloroethene	1	<1.0	U~~Q~~	0.89	1.0	2.0
108-88-3	Toluene	1	<1.0	U	0.72	1.0	2.0
127-18-4	Tetrachloroethene	1	<1.0	U	0.76	1.0	2.0
100-41-4	Ethylbenzene	1	<1.0	U	0.69	1.0	2.0
98-82-8	Isopropylbenzene	1	<1.0	U	0.67	1.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1	<5.0	U	0.96	5.0	10
1330-20-7	Xylenes (Total)	1	<2.0	U	1.3	2.0	4.0
540-59-0	1,2-Dichloroethene (Total)	1	<1.0	U	0.73	1.0	2.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	61	122	80 - 119	*
Toluene-d8	50.0	56	112	89 - 112	
4-Bromofluorobenzene	50.0	52	104	85 - 114	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	595116	11.482	591935	11.466	
1,4-Difluorobenzene	1205837	12.181	1054899	12.173	
Chlorobenzene-d5	1632001	15.624	1238789	15.607	
1,4-Dichlorobenzene-d4	962016	18.59	673258	18.574	

* Values outside of QC limits

MW 5/22/15

INORGANIC ANALYSIS DATA SHEET

EPA 6020A

IR78-MWVI01-15A

Laboratory: ENCO Orlando
SDG: A501212-CTOWE86
Client: CH2M Hill, Inc. (CH025)
Project: CTO-WE86 MCB Camp Lejeune Site 78

Matrix: Ground Water
Laboratory ID: A501212-01
File ID: 032715_RP1_Fe_LTZ-138
Sampled: 03/14/15 14:00
Prepared: 03/20/15 08:48
Analyzed: 03/27/15 17:35
Solids: 0.00
Preparation: EPA 3005A
Initial/Final: 50 mL / 50 mL
Batch: 5C19031
Sequence: AA33175
Calibration: 1503102
Instrument: OMICPMS1

CAS NO.	Analyte	Concentration (ug/L)	Dilution Factor	Q	DL	LOD	LOQ	Method	
7429-90-5	Aluminum	120	10	~~JD~~	68.0	250	450	EPA 6020A	
7440-36-0	Antimony	<4.40	10	UD~~Q~~	1.10	4.40	5.00	EPA 6020A	
7440-38-2	Arsenic	<100	10	U~~D~~	6.10	100	150	EPA 6020A	
7440-39-3	Barium	51.7	10	J~~D~~	20.0	80.0	100	EPA 6020A	
7440-41-7	Beryllium	<3.70	10	U~~D~~	0.940	3.70	8.00	EPA 6020A	
7440-43-9	Cadmium	<40.0	10	U~~D~~	1.10	40.0	80.0	EPA 6020A	
7440-70-2	Calcium	54100	10	~~D~~	360	12000	17500	EPA 6020A	
7440-47-3	Chromium	<30.0	10	U~~D~~	4.50	30.0	50.0	EPA 6020A	
7440-48-4	Cobalt	<8.40	10	U~~D~~	2.10	8.40	10.0	EPA 6020A	
7440-50-8	Copper	<8.80	10	U~~D~~	2.20	8.80	15.0	EPA 6020A	
~~7439-89-6~~	~~Iron~~ exclude	~~14500~~	~~10~~	~~DEQ~~	~~38.0~~	~~150~~	~~250~~	~~EPA 6020A~~	
7439-92-1	Lead	<6.00	10	U~~D~~	1.60	6.00	10.0	EPA 6020A	
7439-95-4	Magnesium	2140 J	10	~~D~~	300	1200	2000	EPA 6020A	MSH
7439-96-5	Manganese	31.8 U	10	~~D~~	3.20	12.8	20.0	EPA 6020A	EBL
7440-02-0	Nickel	<12.0	10	U~~D~~	3.20	12.0	20.0	EPA 6020A	
7440-09-7	Potassium	4350 J	10	~~D~~	480	17500	35000	EPA 6020A	MSH
7782-49-2	Selenium	<26.0	10	U~~D~~	6.50	26.0	40.0	EPA 6020A	
7440-22-4	Silver	<1.16	10	U~~D~~	0.290	1.16	2.25	EPA 6020A	
7440-23-5	Sodium	8540 J	10	~~D~~	320	1200	2000	EPA 6020A	MSH
7440-28-0	Thallium	<2.30	10	U~~D~~	0.580	2.30	4.00	EPA 6020A	
7440-62-2	Vanadium	<8.00	10	U~~D~~	2.00	8.00	10.0	EPA 6020A	
7440-66-6	Zinc	<64.0	10	U~~D~~	16.0	64.0	100	EPA 6020A	

MW 5/22/15

1RE

INORGANIC ANALYSIS DATA SHEET

EPA 6020A

IR78-MWVI01-15A

Laboratory: ENCO Orlando
SDG: A501212-CTOWE86
Client: CH2M Hill, Inc. (CH025)
Project: CTO-WE86 MCB Camp Lejeune Site 78

Matrix: Ground Water
Laboratory ID: A501212-01RE1
File ID: 040215a_DOD-041
Sampled: 03/14/15 14:00
Prepared: 03/20/15 08:48
Analyzed: 04/02/15 14:39
Solids: 0.00
Preparation: EPA 3005A
Initial/Final: 50 mL / 50 mL
Batch: 5C19031
Sequence: AA33263
Calibration: 1504011
Instrument: OMICPMS1

CAS NO.	Analyte	Concentration (ug/L)	Dilution Factor	Q	DL	LOD	LOQ	Method
7439-89-6	Iron	13700	50	~~D~~	190	750	1250	EPA 6020A

MW 5/22/15

2

INORGANIC ANALYSIS DATA SHEET

EPA 6020A

IR78-GW24-1-15A

Laboratory: ENCO Orlando
SDG: A501212-CTOWE86
Client: CH2M Hill, Inc. (CH025)
Project: CTO-WE86 MCB Camp Lejeune Site 78

Matrix: Ground Water
Laboratory ID: A501212-02
File ID: 040215_RP1_DOD-015
Sampled: 03/14/15 15:25
Prepared: 03/20/15 08:48
Analyzed: 04/02/15 10:14
Solids: 0.00
Preparation: EPA 3005A
Initial/Final: 50 mL / 50 mL
Batch: 5C19031
Sequence: AA33262
Calibration: 1504007
Instrument: OMICPMS1

CAS NO.	Analyte	Concentration (ug/L)	Dilution Factor	Q	DL	LOD	LOQ	Method	
7429-90-5	Aluminum	78.5	10	J~~D~~	68.0	250	450	EPA 6020A	
7440-36-0	Antimony	<4.40	10	U~~D~~	1.10	4.40	5.00	EPA 6020A	
7440-38-2	Arsenic	<100	10	U~~D~~	6.10	100	150	EPA 6020A	
7440-39-3	Barium	53.9	10	J~~D~~	20.0	80.0	100	EPA 6020A	
7440-41-7	Beryllium	<3.70	10	U~~D~~	0.940	3.70	8.00	EPA 6020A	
7440-43-9	Cadmium	<40.0	10	U~~D~~	1.10	40.0	80.0	EPA 6020A	
7440-70-2	Calcium	38200	10	~~DQ~~	360	12000	17500	EPA 6020A	
7440-47-3	Chromium	<30.0	10	U~~D~~	4.50	30.0	50.0	EPA 6020A	
7440-48-4	Cobalt	<8.40	10	U~~D~~	2.10	8.40	10.0	EPA 6020A	
7440-50-8	Copper	<8.80	10	U~~D~~	2.20	8.80	15.0	EPA 6020A	
~~7439-89-6~~	~~Iron~~ exclude	~~18800~~	~~10~~	~~DEQ~~	~~38.0~~	~~150~~	~~250~~	~~EPA 6020A~~	
7439-92-1	Lead	<6.00	10	U~~D~~	1.60	6.00	10.0	EPA 6020A	
7439-95-4	Magnesium	3960 J	10	~~DQ~~	300	1200	2000	EPA 6020A	MSH
7439-96-5	Manganese	46.0	10	~~D~~	3.20	12.8	20.0	EPA 6020A	
7440-02-0	Nickel	<12.0	10	U~~D~~	3.20	12.0	20.0	EPA 6020A	
7440-09-7	Potassium	<17500	10	U~~DQ~~	480	17500	35000	EPA 6020A	
7782-49-2	Selenium	<26.0	10	U~~D~~	6.50	26.0	40.0	EPA 6020A	
7440-22-4	Silver	<1.16	10	U~~D~~	0.290	1.16	2.25	EPA 6020A	
7440-23-5	Sodium	6310 J	10	~~DQ~~	320	1200	2000	EPA 6020A	MSH
7440-28-0	Thallium	<2.30	10	U~~D~~	0.580	2.30	4.00	EPA 6020A	
7440-62-2	Vanadium	2.83	10	J~~D~~	2.00	8.00	10.0	EPA 6020A	
7440-66-6	Zinc	<64.0	10	U~~D~~	16.0	64.0	100	EPA 6020A	

MS 5/22/15

2RE

INORGANIC ANALYSIS DATA SHEET

EPA 6020A

IR78-GW24-1-15A

Laboratory: ENCO Orlando

SDG: A501212-CTOWE86

Client: CH2M Hill, Inc. (CH025)

Project: CTO-WE86 MCB Camp Lejeune Site 78

Matrix: Ground Water

Laboratory ID: A501212-02RE1

File ID: 040215_RP1_DOD-017

Sampled: 03/14/15 15:25

Prepared: 03/20/15 08:48

Analyzed: 04/02/15 10:25

Solids: 0.00

Preparation: EPA 3005A

Initial/Final: 50 mL / 50 mL

Batch: 5C19031

Sequence: AA33262

Calibration: 1504007

Instrument: OMICPMS1

CAS NO.	Analyte	Concentration (ug/L)	Dilution Factor	Q	DL	LOD	LOQ	Method
7439-89-6	Iron	19300	30	~~D~~	114	450	750	EPA 6020A

NW 5/22/15

8

IR78-GW46-15A

INORGANIC ANALYSIS DATA SHEET

EPA 6020A

Laboratory: ENCO Orlando
SDG: A501212-CTOWE86
Client: CH2M Hill, Inc. (CH025)
Project: CTO-WE86 MCB Camp Lejeune Site 78

Matrix: Ground Water
Laboratory ID: A501212-08
File ID: 032715_RP1_Fe_LTZ-105
Sampled: 03/14/15 14:25
Prepared: 03/20/15 08:48
Analyzed: 03/27/15 15:33
Solids: 0.00
Preparation: EPA 3005A
Initial/Final: 50 mL / 50 mL
Batch: 5C19031
Sequence: AA33175
Calibration: 1503102
Instrument: OMICPMS1

CAS NO.	Analyte	Concentration (ug/L)	Dilution Factor	Q	DL	LOD	LOQ	Method	
7429-90-5	Aluminum	242	3	~~D~~	20.4	75.0	135	EPA 6020A	
7440-36-0	Antimony	<1.32	3	U~~D~~	0.330	1.32	1.50	EPA 6020A	
7440-38-2	Arsenic	<30.0	3	U~~D~~	1.83	30.0	45.0	EPA 6020A	
7440-39-3	Barium	100	3	~~D~~	6.00	24.0	30.0	EPA 6020A	
7440-41-7	Beryllium	<1.11	3	U~~D~~	0.282	1.11	2.40	EPA 6020A	
7440-43-9	Cadmium	<12.0	3	U~~D~~	0.330	12.0	24.0	EPA 6020A	
7440-70-2	Calcium	3680	3	J~~D~~	108	3600	5250	EPA 6020A	
7440-47-3	Chromium	<9.00	3	U~~D~~	1.35	9.00	15.0	EPA 6020A	
7440-48-4	Cobalt	<2.52	3	U~~D~~	0.630	2.52	3.00	EPA 6020A	
7440-50-8	Copper	<2.64	3	U~~D~~	0.660	2.64	4.50	EPA 6020A	
~~7439-89-6~~	~~Iron~~ exclude	~~6430~~	~~3~~	~~DEQ~~	~~11.4~~	~~45.0~~	~~75.0~~	~~EPA 6020A~~	
7439-92-1	Lead	<1.80	3	U~~D~~	0.480	1.80	3.00	EPA 6020A	
7439-95-4	Magnesium	1350 J	3	~~D~~	90.0	360	600	EPA 6020A	MSH
7439-96-5	Manganese	24.1	3	~~D~~	0.960	3.84	6.00	EPA 6020A	
7440-02-0	Nickel	3.60 ~~1.22~~ U	3	J~~D~~	0.960	3.60	6.00	EPA 6020A	EBL
7440-09-7	Potassium	1100 J	3	~~JDQ~~	144	5250	10500	EPA 6020A	MSH
7782-49-2	Selenium	<7.80	3	U~~D~~	1.95	7.80	12.0	EPA 6020A	
7440-22-4	Silver	<0.348	3	U~~D~~	0.0870	0.348	0.675	EPA 6020A	
7440-23-5	Sodium	28200 J	3	~~DQ~~	96.0	360	600	EPA 6020A	MSH
7440-28-0	Thallium	<0.690	3	U~~D~~	0.174	0.690	1.20	EPA 6020A	
7440-62-2	Vanadium	5.63	3	~~D~~	0.600	2.40	3.00	EPA 6020A	
7440-66-6	Zinc	39.6 U	3	~~D~~	4.80	19.2	30.0	EPA 6020A	EBL

MW 10/2/15

8RE

INORGANIC ANALYSIS DATA SHEET

EPA 6020A

IR78-GW46-15A

Laboratory: ENCO Orlando
SDG: A501212-CTOWE86
Client: CH2M Hill, Inc. (CH025)
Project: CTO-WE86 MCB Camp Lejeune Site 78

Matrix: Ground Water
Laboratory ID: A501212-08RE1
File ID: 040215a_DOD-032
Sampled: 03/14/15 14:25
Prepared: 03/20/15 08:48
Analyzed: 04/02/15 14:05
Solids: 0.00
Preparation: EPA 3005A
Initial/Final: 50 mL / 50 mL
Batch: 5C19031
Sequence: AA33263
Calibration: 1504011
Instrument: OMICPMS1

CAS NO.	Analyte	Concentration (ug/L)	Dilution Factor	Q	DL	LOD	LOQ	Method
7439-89-6	Iron	6520	20	D	76.0	300	500	EPA 6020A
~~7440-23-5~~	~~Sodium~~ exclude	~~26700~~	~~20~~	~~D~~	~~640~~	~~2400~~	~~4000~~	~~EPA 6020A~~

MW 5/22/15

9

INORGANIC ANALYSIS DATA SHEET

EPA 6020A

IR78-GW47-15A

Laboratory: ENCO Orlando
SDG: A501212-CTOWE86
Client: CH2M Hill, Inc. (CH025)
Project: CTO-WE86 MCB Camp Lejeune Site 78

Matrix: Ground Water
Laboratory ID: A501212-09
File ID: 032715_RP1_Fe_LTZ-108
Sampled: 03/14/15 16:35
Prepared: 03/20/15 08:48
Analyzed: 03/27/15 15:44
Solids: 0.00
Preparation: EPA 3005A
Initial/Final: 50 mL / 50 mL
Batch: 5C19031
Sequence: AA33175
Calibration: 1503102
Instrument: OMICPMS1

CAS NO.	Analyte	Concentration (ug/L)	Dilution Factor	Q	DL	LOD	LOQ	Method	
7429-90-5	Aluminum	940	3	~~D~~	20.4	75.0	135	EPA 6020A	
7440-36-0	Antimony	<1.32	3	U~~D~~	0.330	1.32	1.50	EPA 6020A	
7440-38-2	Arsenic	<30.0	3	U~~D~~	1.83	30.0	45.0	EPA 6020A	
7440-39-3	Barium	41.1	3	~~D~~	6.00	24.0	30.0	EPA 6020A	
7440-41-7	Beryllium	0.373	3	J~~D~~	0.282	1.11	2.40	EPA 6020A	
7440-43-9	Cadmium	<12.0	3	U~~D~~	0.330	12.0	24.0	EPA 6020A	
~~7440-70-2~~	~~Calcium~~ exclude	~~104000~~	~~3~~	~~DE~~	~~108~~	~~3600~~	~~5250~~	~~EPA 6020A~~	
7440-47-3	Chromium	4.53	3	J~~D~~	1.35	9.00	15.0	EPA 6020A	
7440-48-4	Cobalt	<2.52	3	U~~D~~	0.630	2.52	3.00	EPA 6020A	
7440-50-8	Copper	<2.64	3	U~~D~~	0.660	2.64	4.50	EPA 6020A	
7439-89-6	Iron	2160	3	~~DQ~~	11.4	45.0	75.0	EPA 6020A	
7439-92-1	Lead	<1.80	3	U~~D~~	0.480	1.80	3.00	EPA 6020A	
7439-95-4	Magnesium	1330 J	3	~~D~~	90.0	360	600	EPA 6020A	MSH
7439-96-5	Manganese	36.4	3	~~D~~	0.960	3.84	6.00	EPA 6020A	
7440-02-0	Nickel	3.60 ~~1.47~~ U	3	~~JD~~	0.960	3.60	6.00	EPA 6020A	EBL
7440-09-7	Potassium	789 J	3	~~JDQ~~	144	5250	10500	EPA 6020A	MSH
7782-49-2	Selenium	<7.80	3	U~~D~~	1.95	7.80	12.0	EPA 6020A	
7440-22-4	Silver	<0.348	3	U~~D~~	0.0870	0.348	0.675	EPA 6020A	
7440-23-5	Sodium	6290 J	3	~~DQ~~	96.0	360	600	EPA 6020A	MSH
7440-28-0	Thallium	<0.690	3	U~~D~~	0.174	0.690	1.20	EPA 6020A	
7440-62-2	Vanadium	8.93	3	~~D~~	0.600	2.40	3.00	EPA 6020A	
7440-66-6	Zinc	<19.2	3	U~~D~~	4.80	19.2	30.0	EPA 6020A	

MW 5/22/15

9RE

INORGANIC ANALYSIS DATA SHEET

EPA 6020A

IR78-GW47-15A

Laboratory: ENCO Orlando

SDG: A501212-CTOWE86

Client: CH2M Hill, Inc. (CH025)

Project: CTO-WE86 MCB Camp Lejeune Site 78

Matrix: Ground Water

Laboratory ID: A501212-09RE1

File ID: 032715_RP1_Fe_LTZ-110

Sampled: 03/14/15 16:35

Prepared: 03/20/15 08:48

Analyzed: 03/27/15 15:51

Solids: 0.00

Preparation: EPA 3005A

Initial/Final: 50 mL / 50 mL

Batch: 5C19031

Sequence: AA33175

Calibration: 1503102

Instrument: OMICPMS1

CAS NO.	Analyte	Concentration (ug/L)	Dilution Factor	Q	DL	LOD	LOQ	Method
7440-70-2	Calcium	103000	20	~~D~~	720	24000	35000	EPA 6020A
~~7439-89-6~~	~~Iron~~ exclude	~~2120~~	~~5~~	~~D~~	~~19.0~~	~~75.0~~	~~125~~	~~EPA 6020A~~
~~7440-23-5~~	~~Sodium~~ exclude	~~5950~~	~~5~~	~~D~~	~~160~~	~~600~~	~~1000~~	~~EPA 6020A~~

NW 5/22/15

1B

INORGANIC ANALYSIS DATA SHEET

EPA 6020A

IR78-GW85-15A

Laboratory: ENCO Orlando
SDG: A501212-CTOWE86
Client: CH2M Hill, Inc. (CH025)
Project: CTO-WE86 MCB Camp Lejeune Site 78

Matrix: Ground Water
Laboratory ID: A501212-18
File ID: 032715_RP1_Fe_LTZ-111
Sampled: 03/14/15 11:15
Prepared: 03/20/15 08:48
Analyzed: 03/27/15 15:55
Solids: 0.00
Preparation: EPA 3005A
Initial/Final: 50 mL / 50 mL
Batch: 5C19031
Sequence: AA33175
Calibration: 1503102
Instrument: OMICPMS1

CAS NO.	Analyte	Concentration (ug/L)	Dilution Factor	Q	DL	LOD	LOQ	Method	
7429-90-5	Aluminum	40.2	3	J~~D~~	20.4	75.0	135	EPA 6020A	
7440-36-0	Antimony	<1.32	3	U~~D~~	0.330	1.32	1.50	EPA 6020A	
7440-38-2	Arsenic	5.64	3	J~~D~~	1.83	30.0	45.0	EPA 6020A	
7440-39-3	Barium	36.4	3	~~D~~	6.00	24.0	30.0	EPA 6020A	
7440-41-7	Beryllium	<1.11	3	U~~D~~	0.282	1.11	2.40	EPA 6020A	
7440-43-9	Cadmium	<12.0	3	U~~D~~	0.330	12.0	24.0	EPA 6020A	
~~7440-70-2~~	~~Calcium~~ exclude	~~53800~~	~~3~~	~~DE~~	~~108~~	~~3600~~	~~5250~~	~~EPA 6020A~~	
7440-47-3	Chromium	<9.00	3	U~~D~~	1.35	9.00	15.0	EPA 6020A	
7440-48-4	Cobalt	<2.52	3	U~~D~~	0.630	2.52	3.00	EPA 6020A	
7440-50-8	Copper	<2.64	3	U~~D~~	0.660	2.64	4.50	EPA 6020A	
~~7439-89-6~~	~~Iron~~ exclude	~~4710~~	~~3~~	~~DEQ~~	~~11.4~~	~~45.0~~	~~75.0~~	~~EPA 6020A~~	
7439-92-1	Lead	<1.80	3	U~~D~~	0.480	1.80	3.00	EPA 6020A	
7439-95-4	Magnesium	3190 J	3	~~D~~	90.0	360	600	EPA 6020A	MSH
7439-96-5	Manganese	56.4	3	~~D~~	0.960	3.84	6.00	EPA 6020A	
7440-02-0	Nickel	<3.60	3	U~~D~~	0.960	3.60	6.00	EPA 6020A	
7440-09-7	Potassium	982 J	3	J~~DQ~~	144	5250	10500	EPA 6020A	MSH
7782-49-2	Selenium	<7.80	3	U~~D~~	1.95	7.80	12.0	EPA 6020A	
7440-22-4	Silver	<0.348	3	U~~D~~	0.0870	0.348	0.675	EPA 6020A	
7440-23-5	Sodium	19800 J	3	~~DQ~~	96.0	360	600	EPA 6020A	MSH
7440-28-0	Thallium	<0.690	3	U~~D~~	0.174	0.690	1.20	EPA 6020A	
7440-62-2	Vanadium	2.00	3	J~~D~~	0.600	2.40	3.00	EPA 6020A	
7440-66-6	Zinc	<19.2	3	U~~D~~	4.80	19.2	30.0	EPA 6020A	

MW 5/22/15

18RE

INORGANIC ANALYSIS DATA SHEET

EPA 6020A

IR78-GW85-15A

Laboratory: ENCO Orlando

SDG: A501212-CTOWE86

Client: CH2M Hill, Inc. (CH025)

Project: CTO-WE86 MCB Camp Lejeune Site 78

Matrix: Ground Water

Laboratory ID: A501212-18RE1

File ID: 032715_RP1_Fe_LTZ-113

Sampled: 03/14/15 11:15

Prepared: 03/20/15 08:48

Analyzed: 03/27/15 16:02

Solids: 0.00

Preparation: EPA 3005A

Initial/Final: 50 mL / 50 mL

Batch: 5C19031

Sequence: AA33175

Calibration: 1503102

Instrument: OMICPMS1

CAS NO.	Analyte	Concentration (ug/L)	Dilution Factor	Q	DL	LOD	LOQ	Method
7440-70-2	Calcium	53500	10	~~D~~	360	12000	17500	EPA 6020A
7439-89-6	Iron	4720	10	~~D~~	38.0	150	250	EPA 6020A
~~7440-23-5~~	~~Sodium~~ exude	~~18200~~	~~10~~	~~D~~	~~320~~	~~1200~~	~~2000~~	~~EPA 6020A~~

MW 5/22/15

INORGANIC ANALYSIS DATA SHEET

EPA 6020A

IR78-EB-031515-GW

Laboratory: ENCO Orlando
SDG: A501212-CTOWE86
Client: CH2M Hill, Inc. (CH025)
Project: CTO-WE86 MCB Camp Lejeune Site 78

Matrix: Ground Water
Laboratory ID: A501212-24
File ID: 032715_RP1_Fe_LTZ-026
Sampled: 03/15/15 12:40
Prepared: 03/20/15 08:48
Analyzed: 03/27/15 10:28
Solids: 0.00
Preparation: EPA 3005A
Initial/Final: 50 mL / 50 mL
Batch: 5C19031
Sequence: AA33175
Calibration: 1503102
Instrument: OMICPMS1

CAS NO.	Analyte	Concentration (ug/L)	Dilution Factor	Q	DL	LOD	LOQ	Method
7429-90-5	Aluminum	<25.0	1	U	6.80	25.0	45.0	EPA 6020A
7440-36-0	Antimony	<0.440	1	U	0.110	0.440	0.500	EPA 6020A
7440-38-2	Arsenic	<10.0	1	U	0.610	10.0	15.0	EPA 6020A
7440-39-3	Barium	<8.00	1	U	2.00	8.00	10.0	EPA 6020A
7440-41-7	Beryllium	<0.370	1	U	0.0940	0.370	0.800	EPA 6020A
7440-43-9	Cadmium	<4.00	1	U	0.110	4.00	8.00	EPA 6020A
7440-70-2	Calcium	117	1	J	36.0	1200	1750	EPA 6020A
7440-47-3	Chromium	<3.00	1	U	0.450	3.00	5.00	EPA 6020A
7440-48-4	Cobalt	<0.840	1	U	0.210	0.840	1.00	EPA 6020A
7440-50-8	Copper	3.15	1		0.220	0.880	1.50	EPA 6020A
7439-89-6	Iron	<15.0	1	U	3.80	15.0	25.0	EPA 6020A
7439-92-1	Lead	<0.600	1	U	0.160	0.600	1.00	EPA 6020A
7439-95-4	Magnesium	<120	1	U	30.0	120	200	EPA 6020A
7439-96-5	Manganese	0.341	1	J	0.320	1.28	2.00	EPA 6020A
7440-02-0	Nickel	0.906	1	J	0.320	1.20	2.00	EPA 6020A
7440-09-7	Potassium	<1750	1	U	48.0	1750	3500	EPA 6020A
7782-49-2	Selenium	<2.60	1	U	0.650	2.60	4.00	EPA 6020A
7440-22-4	Silver	<0.116	1	U	0.0290	0.116	0.225	EPA 6020A
7440-23-5	Sodium	215	1	~~U~~	32.0	120	200	EPA 6020A
7440-28-0	Thallium	<0.230	1	U	0.0580	0.230	0.400	EPA 6020A
7440-62-2	Vanadium	<0.800	1	U	0.200	0.800	1.00	EPA 6020A
7440-66-6	Zinc	7.73	1	J	1.60	6.40	10.0	EPA 6020A

MW 5/22/15

INORGANIC ANALYSIS DATA SHEET

EPA 7470A

IR78-MWVI01-15A

Laboratory: ENCO Orlando
SDG: A501212-CTOWE86
Client: CH2M Hill, Inc. (CH025)
Project: CTO-WE86 MCB Camp Lejeune Site 78

Matrix: Ground Water
Laboratory ID: A501212-01
File ID: Hg 5C19020 033 w-052
Sampled: 03/14/15 14:00
Prepared: 03/31/15 10:43
Analyzed: 04/01/15 08:35
Solids: 0.00
Preparation: EPA 7470A
Initial/Final: 30 mL / 30 mL
Batch: 5C19033
Sequence: AA33226
Calibration: 1504002
Instrument: OMHG1

CAS NO.	Analyte	Concentration (ug/L)	Dilution Factor	Q	DL	LOD	LOQ	Method
7439-97-6	Mercury	<0.0690	1	U	0.0230	0.0690	0.200	EPA 7470A

NW 5/22/15

2

INORGANIC ANALYSIS DATA SHEET

EPA 7470A

IR78-GW24-1-15A

Laboratory: ENCO Orlando
SDG: A501212-CTOWE86
Client: CH2M Hill, Inc. (CH025)
Project: CTO-WE86 MCB Camp Lejeune Site 78

Matrix: Ground Water
Laboratory ID: A501212-02
File ID: Hg 5C19020 033 w-045
Sampled: 03/14/15 15:25
Prepared: 03/31/15 10:43
Analyzed: 04/01/15 08:12
Solids: 0.00
Preparation: EPA 7470A
Initial/Final: 30 mL / 30 mL
Batch: 5C19033
Sequence: AA33226
Calibration: 1504002
Instrument: OMHG1

CAS NO.	Analyte	Concentration (ug/L)	Dilution Factor	Q	DL	LOD	LOQ	Method
7439-97-6	Mercury	<0.0690	1	U	0.0230	0.0690	0.200	EPA 7470A

MW 5/22/15

8

INORGANIC ANALYSIS DATA SHEET

EPA 7470A

IR78-GW46-15A

Laboratory: ENCO Orlando
SDG: A501212-CTOWE86
Client: CH2M Hill, Inc. (CH025)
Project: CTO-WE86 MCB Camp Lejeune Site 78

Matrix: Ground Water
Laboratory ID: A501212-08
File ID: Hg 5C19020 033 w-053
Sampled: 03/14/15 14:25
Prepared: 03/31/15 10:43
Analyzed: 04/01/15 08:38
Solids: 0.00
Preparation: EPA 7470A
Initial/Final: 30 mL / 30 mL
Batch: 5C19033
Sequence: AA33226
Calibration: 1504002
Instrument: OMHG1

CAS NO.	Analyte	Concentration (ug/L)	Dilution Factor	Q	DL	LOD	LOQ	Method
7439-97-6	Mercury	<0.0690	1	U	0.0230	0.0690	0.200	EPA 7470A

mw 5/22/15

9

INORGANIC ANALYSIS DATA SHEET

EPA 7470A

IR78-GW47-15A

Laboratory: ENCO Orlando
SDG: A501212-CTOWE86
Client: CH2M Hill, Inc. (CH025)
Project: CTO-WE86 MCB Camp Lejeune Site 78

Matrix: Ground Water
Laboratory ID: A501212-09
File ID: Hg 5C19020 033 w-054
Sampled: 03/14/15 16:35
Prepared: 03/31/15 10:43
Analyzed: 04/01/15 08:41
Solids: 0.00
Preparation: EPA 7470A
Initial/Final: 30 mL / 30 mL
Batch: 5C19033
Sequence: AA33226
Calibration: 1504002
Instrument: OMHG1

CAS NO.	Analyte	Concentration (ug/L)	Dilution Factor	Q	DL	LOD	LOQ	Method
7439-97-6	Mercury	<0.0690	1	U	0.0230	0.0690	0.200	EPA 7470A

MW 5/22/15

18

INORGANIC ANALYSIS DATA SHEET

EPA 7470A

IR78-GW85-15A

Laboratory: ENCO Orlando
SDG: A501212-CTOWE86
Client: CH2M Hill, Inc. (CH025)
Project: CTO-WE86 MCB Camp Lejeune Site 78

Matrix: Ground Water
Laboratory ID: A501212-18
File ID: Hg 5C19020 033 w-055
Sampled: 03/14/15 11:15
Prepared: 03/31/15 10:43
Analyzed: 04/01/15 08:44
Solids: 0.00
Preparation: EPA 7470A
Initial/Final: 30 mL / 30 mL
Batch: 5C19033
Sequence: AA33226
Calibration: 1504002
Instrument: OMHG1

CAS NO.	Analyte	Concentration (ug/L)	Dilution Factor	Q	DL	LOD	LOQ	Method
7439-97-6	Mercury	<0.0690	1	U	0.0230	0.0690	0.200	EPA 7470A

MW 5/22/15

24

INORGANIC ANALYSIS DATA SHEET

EPA 7470A

IR78-EB-031515-GW

Laboratory: ENCO Orlando
SDG: A501212-CTOWE86
Client: CH2M Hill, Inc. (CH025)
Project: CTO-WE86 MCB Camp Lejeune Site 78

Matrix: Ground Water
Laboratory ID: A501212-24
File ID: Hg 5C19020 033 w-056
Sampled: 03/15/15 12:40
Prepared: 03/31/15 10:43
Analyzed: 04/01/15 08:47
Solids: 0.00
Preparation: EPA 7470A
Initial/Final: 30 mL / 30 mL
Batch: 5C19033
Sequence: AA33226
Calibration: 1504002
Instrument: OMHG1

CAS NO.	Analyte	Concentration (ug/L)	Dilution Factor	Q	DL	LOD	LOQ	Method
7439-97-6	Mercury	<0.0690	1	U	0.0230	0.0690	0.200	EPA 7470A

MW 5/22/15