M67001.AR.006916
MCB CAMP LEJUENE
5090.3a

VALIDATED DATA PACKAGE, A407175, MCB CAMP LEJUENE NC
3/12/2015
DATAQUAL ENVIRONMENTAL SERVICES, LLC

DataQual
Environmental Services, LLC

CH2M HILL
14120 Ballantyne Corporate Place
Suite 200
Charlotte, NC 28277

March 12, 2015
SDG# A407175, ENCO
MCB Camp Lejeune-CTO-WE9A

Dear Ms. Kleist,

The following Data Validation report is provided as requested for the parameters noted in the table below for SDG #A407175. The data validation was performed in accordance with the SW846 Methods 8260B for volatiles, 8270D for semivolatiles, 8270D-SIM for PAHs, 8081B for pesticides, 8082 for PCB and 6010/7470/7471 for Metals, as well as good professional judgment. Also used in the validation of these samples were The National Functional Guidelines for Organic Data Review (June, 2008) and the National Functional Guidelines for Inorganic Data Review (January, 2010) as applicable. All areas of concern are discussed in the body of the report and a summary of data qualifications is provided.

Sample ID	Lab ID	Matrix	VOA	SVOA	PAH	Pesticides	PCB	Metals
IR82-SW01-14D	A407175-01	water	X					
IR82-SW01-14D RE	A407175-01 RE	water	X					
IR82-SW01D-14D	A407175-02	water	X					
IR82-SW01D-14D RE	A407175-02 RE	water	X					
IR82-SD01-14D	A407175-03	soil	X	X	X	X	X	X
IR82-SD01-14D RE	A407175-03 RE	soil	X	X				
IR82-SD01D-14D	A407175-04	soil	X	X	X	X	X	X
IR82-SD01D-14D RE	A407175-04 RE	soil	X	X				
IR82-SD01D-14D RE2	A407175-04 RE2	soil		X				
IR82-SD01D-14D RE3	A407175-04 RE3	soil		X				
IR82-TB-121114	A407175-05	water	X					
IR82-TB-121114 RE	A407175-05 RE	water	X					
IR82-EB-121114	A407175-06	water	X	X	X	X	X	X
IR82-EB-121114 RE	A407175-06 RE	water	X	X				X
IR82-SW01-14D MS	A407175-01 MS	water	X	X	X	X	X	
IR82-SW01-14D MSD	A407175-01 MSD	water	X	X	X	X	X	
IR82-SD01-14D MS	A407175-03 MS	soil	X	X	X	X	X	X
IR82-SD01-14D MSD	A407175-03 MSD	soil	X	X	X	X	X	X

The following quality control samples were provided with this SDG: sample IR82-SW01D-14D – field duplicate of sample IR82-SW01-14D; sample IR82-SD01D-14D – field duplicate of sample IR82-SD01-14D; IR82-EB-121114-equipment blank and IR82-TB-121114-SS -trip blank.

The samples were evaluated based on the following criteria:

- Data Completeness
- Technical Holding Times *
- GC/MS Tunes *
- Initial/Continuing Calibrations
- CRI Standards *
- Interference Check Sample *
- Blanks
- GC/MS Internal Standards
- Surrogates
- Laboratory Control Samples *
- Matrix Spike Recoveries
- Matrix Spike Duplicate RPDs *
- Post Digestion Spike Recoveries *
- Serial Dilutions *
- Field Duplicates
- Identification/Quantitation
- Reporting Limits *

* - indicates that no qualifications were required based on this criteria

Overall Evaluation of Data/Potential Usability Issues

A summary of qualifications applied to the sample results are noted below for the fractions validated. Specific details regarding qualification of the data are addressed in the Specific Evaluation section of this narrative. If an issue is not addressed there were no actions required based on unmet quality criteria. When more than one qualifier is associated with a compound/analyte the validator has chosen the qualifier that best indicates possible bias in the results and flagged the data accordingly. However, information regarding all quality control issues is provided in the body of the report and on the qualification summary page. Please note that when a compound or analyte is flagged due to blank contamination the BL qualifier code takes precedence over all other qualifier codes except a code that explains rejected data.

VOA

Qualifications were required based on high %RSDs and low RRF values which were exhibited in the initial calibration.

One sample exhibited non-compliant internal standard area recoveries that resulted in qualifications to the data.

Blank contamination was exhibited in the method and/or QC blanks that resulted in qualifications to the data.

The matrix spike matrix spike duplicate exhibited several compounds with non-compliant recoveries; qualifications were applied to the associated samples.

One of the field duplicate pairs did not exhibited comparable results which resulted in qualifications to the data.

Several samples were re-analyzed for various reasons which are discussed in the *Identification/Quantitation* section of this report. In all case, the re-analysis was excluded in favor of the initial analysis.

SVOA

Qualifications were required based on high %RSDs which were exhibited in the initial calibration.

Two samples exhibited low surrogate recoveries which resulted in qualifications to the base/neutral fraction compounds.

The matrix spike matrix spike duplicate exhibited several compounds with low recoveries; qualifications were applied to the associated sample.

Several samples were re-analyzed for various reasons which are discussed in the *Identification/Quantitation* section of this report.

PAH

The field duplicate pair did not exhibited comparable results which resulted in qualifications to the data.

Pesticides

The initial and calibration check exhibited a non-compliant %D values which resulted in data qualification.

PCB

The field duplicate pair did not exhibited comparable results which resulted in qualifications to the data.

Metals

The field samples required qualification due to rinse blank contamination.

The MS/MSD pair exhibited non-compliant recoveries for antimony and qualifications were required.

One sample analysis was excluded because it was not necessary.

Specific Evaluation of Data

Data Completeness

Resubmissions were required for the Semivolatile fraction as a Form VII was not submitted with RRF and %D values. The laboratory was contacted and a corrected form was submitted. A copy of all correspondence with the laboratory is included in the worksheet section of this report.

Technical Holding Times

According to chain of custody records, sampling was performed on 12/10-11/14 and samples were received at the laboratory between 12/12/14. All sample preparation and analysis was performed within method holding time requirements.

Initial/Continuing Calibration

VOA

Calibration standards exhibited %RSDs, %D, and RRF values that were non-compliant. A summary of these non-compliances and affected samples are noted in the following table. Sample results were qualified as indicated.

Standard ID	Compound(s)	RRF, %RSD, %D	Samples	Q Flag	Q Code
IC 12/18/14	dichlorodifluoromethane	23.48	IR82-SW01-14D IR82-SW01D-14D IR82-TB-121114 IR82-EB-121114	J/UJ	ICH
	vinyl chloride	18.23			
	bromomethane	25.45			
	Freon 113	23.63			
	1,1-dichloroethene	21.83			
	carbon disulfide	20.15			
	methyl-tert-butyl ether	16.33			
	trans-1,2-dichloroethene	19.43			
	cis-1,2-dichloroethene	16.46			
	1,1,1-trichloroethane	19.90			
	cyclohexane	26.11			
	methyl cyclohexane	16.14			
	carbon tetrachloride	28.15			
	trichloroethene	17.42			
	1,2-dichloropropane	16.08			
	bromodichloromethane	17.78			
	2-hexanone	16.48			
	cis-1,3-dichloropropene	16.48			
	trans-1,3-dichloropropene	16.88			
	dibromochloromethane	18.17			
	bromoform	22.17			
	isopropylbenzene	16.85			
	1,2,4-trichlorobenzene	34.83			
	2-butanone	0.048		J/R	ICL
	4-methyl-2-pentanone	0.032			
CC 12/24/14	chloroethane	26.1	IR82-SW01-14D IR82-SW01D-14D IR82-TB-121114 IR82-EB-121114	J/UJ	CCH
IC 12/23/14	dichlorodifluoroethane	16.37	IR82-SD01-14DRE IR82-SD01D-14DRE	J/UJ	ICH
	bromomethane	16.46			
	chloroethane	20.69			
	acetone	83.55			
	methylene chloride	17.32			
	methyl acetate	44.65			
	methyl cyclohexane	22.45			
	2-hexanone	22.68			
	2-butanone	0.048		J/R	ICL
	4-methyl-2-pentanone	0.018			

SVOA

Calibration standards exhibited %RSDs and %Ds that were non-compliant. A summary of these non-compliances and affected samples are noted in the following table. Sample results were qualified as indicated.

Standard ID	Compound(s)	%RSD, %Ds	Samples	Q Flag	Q Code
IC 1/5/15	hexachlorobutadiene n-nitrosodiphenylamine/diphenylamine	16.7 18.4	all samples	J/UJ	ICH
CC 1/16/15	hexachlorocyclopentadiene 4-nitrophenol	29.0 30.3	IR82-SD01-14DRE, IR82-SD01D-14DRE2	J/UJ	CCH
CC 1/19/15	bis(2-chloroethoxy)methane hexachlorocyclopentadiene 4-nitrophenol	32.0 22.0 36.7	IR82-EB-121114RE	J/UJ	CCH

Pesticides

Calibration standards exhibited %RSDs and %Ds that were non-compliant. A summary of these non-compliances and affected samples are noted in the following table. Sample results were qualified as indicated.

Standard ID	Compound(s)	RRF, %RSD, %D	Samples	Q Flag	Q Code
IC 12/18/14	endosulfan II	36.95	all samples	J/UJ	ICH
CC 12/24/14	aldrin	24.3	all samples	J/UJ	CCH
	4,4'-DDE	41.0			

Internal Standards

VOA

Sample IR82-SD01D-14DRE exhibited a low recovery of 41% for internal standard 1,4-dichlorobenzene-d4, the initial analysis exhibited similar recoveries. All compounds associated with this internal standard were qualified as estimated (J/UJ), qualifier code: ISL.

Blanks

VOA

The associated method and/or QC blanks exhibited contamination as noted in the following table. Compounds for which there was no action required, are not included in the following table.

Blank ID	Compound	Concentration	Reporting Limit (LOD)
IR82-EB-121114	methylene chloride	580E ug/L	5.0 ug/L

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Q Code
IR82-SD01-14DRE, IR82-SD01D-14DRE	methylene chloride	U to LOD	EBL

Metals

The associated rinse blank exhibited contamination as noted in the following table. Analytes for which there was no action required, are not included in the following table.

Blank ID	Analyte	Concentration	Action Level	Q Flag
IR82-EB-121114	copper	12.6 ug/L (2.06 mg/Kg)	10X action level	J+ up to action level

Associated samples and required qualifications are noted in the following table.

Sample ID	Analyte	Q Flag	Q Code
IR82-SD01-14D, IR82-SD01D-14D	copper	J+	EBL

Surrogates

SVOA

The samples in the table below exhibited non-compliant recoveries for the surrogates listed; compounds were qualified as stated. The initial analysis exhibited similar results.

Sample ID	Surrogate	% Rec	QC Limit	Qualifier	Q Code
IR82-SD01-14DRE	2-fluorobiphenyl	15	44-115	J/UJ	SSL
	2,4,6-tribromophenol*	22	39-132		
	terphenyl-d14	40	54-127		
IR82-SD01D-14DRE2	2-fluorobiphenyl	12	44-115	J/UJ	SSL
	2,4,6-tribromophenol*	23	39-132		
	terphenyl-d14	41	54-127		

**for informational purposes only*

Matrix Spike/Matrix Spike Duplicates

VOA

An MS/MSD was submitted for IR82-SD01-14D and IR82-SW01-14D. Compounds with non-compliant recoveries for both MS and MSD are listed in the table below; qualifications were applied as stated.

Associated Sample	Compound	MS %Rec	MSD %Rec	QC limit	Qualifier	Q Code
IR82-SD01-14DRE	1,2,4-trichlorobenzene	44	63	67-129	J/UJ	MSL
IR82-SD01D-14DRE	1,2-dibromo-3-chloropropane	134	157	61-132	J	MSH
IR82-SW01-14D	chloroethane	156	150	60-138	J	MSH
IR82-SW0D-14D	carbon disulfide	166	168	64-133		

SVOA

An MS/MSD was submitted for IR82-SW01-14D and IR82-SD01-14D. Compounds with non-compliant recoveries for both MS and MSD are listed in the table below; qualifications were applied as stated.

Associated Sample	Compound	MS %Rec	MSD %Rec	QC limit	Qual	Q Code
IR82-SD01-14D, IR82-SD01D-14D	hexachloroethane	18	26	28-117	J/UJ	MSL
	2-chloronaphthalene	29	39	41-114		
	dibenzofuran	32	42	44-120		
	4-chloro-phenylether	32	44	45-121		
	n-nitrosodiphenylamine/diphenylamine	30	39	38-127		
	4-bromophenyl-phenylether	35	48	46-124		
	hexachlorobenzene	39	55	45-122		
	carbazole	44	56	50-123		
	di-n-butylphthalate	35	49	55-110		

Metals

An MS/MSD was submitted for IR82-SD01-14D. One analyte with non-compliant recoveries for both MS and MSD resulted in qualifications as noted in the following table.

MS/MSD Sample	Analyte	MS/MSD %R	Affected Samples	Qualifier	Q Code
IR82-SD01-14D	antimony	52/55	all field samples	J-	MSL

Field Duplicates

VOA

The field duplicate pairs exhibited non-compliant RPDs (>30%) that resulted in qualifications as noted in the following table.

Field Duplicate Pair	Compound	% RPD	Qualifier	Q Code
IR82-SD01-14DRE, IR82-SD01D-14DRE	2-butanone	35	J	FD
	2-hexanone	44		
	toluene	57		

PAH

The field duplicate pair exhibited non-compliant RPDs (>30%) that resulted in qualifications as noted in the following table.

Field Duplicate Pair	Compound	% RPD	Qualifier	Q Code
IR82-SD01-14D, IR82-SD01D-14D	benzo(b)fluoranthene	49	J/UJ	FD
	anthracene	200		

PCB

The field duplicate pair exhibited non-compliant RPDs (>30%) that resulted in qualifications as noted in the following table.

Field Duplicate Pair	Compound	% RPD	Qualifier	Q Code
IR82-SD01-14D, IR82-SD01D-14D	PCB-1260	51	J/UJ	FD

Identification/Quantitation

VOA

Sample IR82-EB-121114 exhibited results for methylene chloride above the calibration range. The sample was re-analyzed to confirm the results; results were confirmed within the calibration range, however the analysis occurred out of holding time. Therefore the initial analysis was used and the results for methylene chloride are qualified as estimated (J), qualifier code: LR.

According to the case narrative, samples IR82-SW01-14D, IR82-SW01D-14D, and IR82-TB-121114 were re-analyzed due to non-compliant CCV recoveries. The re-analyses samples exhibited non-compliant surrogate recoveries and were analyzed out of holding time therefore the initial analysis was used and the re-analysis was excluded.

The initial analysis of sample IR82-SD01-14D exhibited non-compliant surrogate and internal standard recoveries. The sample was re-analyzed with recoveries within QC criteria; therefore the initial analysis was excluded in favor of the re-analysis.

Sample IR82-SD01D-14D was re-analyzed due to methylene chloride in the associated method blank. Both the initial analysis and the re-analysis exhibited low internal standard area recoveries. The initial analysis was excluded.

For all samples, naphthalene was excluded in the 8260 analysis favor of the 8270-SIM analysis to obtain a lower detection limit.

SVOA

Samples IR82-SD01-14D and IR82-SD01D-14D were re-analyzed. According to the case narrative the continuing calibration was not acceptable. These samples also exhibited non-compliant surrogate recoveries. Therefore the initial analyses were excluded in favor of the re-analyses (qualifier code: RE).

Samples IR82-SD01D-14DRE1 and IR82-SD01D-RE3 were re-extracted out of holding time by 15 days; these samples were excluded in favor of another re-analysis (qualifier code: RE).

The initial analysis of sample IR82-EB-121114 exhibited high surrogate recoveries. The sample was re-analyzed with compliant surrogate recoveries; therefore the initial analysis was excluded in favor of the re-analysis.

Metals

Sample IR82-EB-121114 was re-extracted. This re-extraction was excluded since it was not necessary. The results in the two samples were essentially the same and there was no impact to the data.

A summary of qualifications required is provided on the following page. Please do not hesitate to contact DataQual ES with any questions regarding this validation report.

Sincerely,

Laura Maschhoff

Laura Maschhoff
President

Summary of Data Qualifications

VOA

Sample ID	Compound	Results	Q-Flag	Q Code
IR82-SW01-14D, IR82-SW01D-14D, IR82-TB-121114 IR82-EB-121114	dichlorodifluoromethane vinyl chloride bromomethane Freon 113 1,1-dichloroethene carbon disulfide methyl-tert-butyl ether trans-1,2-dichloroethene cis-1,2-dichloroethene 1,1,1-trichloroethane cyclohexane methyl cyclohexane carbon tetrachloride trichloroethene 1,2-dichloropropane bromodichloromethane 2-hexanone cis-1,3-dichloropropene trans-1,3-dichloropropene dibromochloromethane bromoform isopropylbenzene 1,2,4-trichlorobenzene	+/-	J/UJ	ICH
IR82-SW01-14D, IR82-SW01D-14D, IR82-TB-121114 IR82-EB-121114	2-butanone 4-methyl-2-pentanone	+/-	J/R	ICL
IR82-SW01-14D, IR82-SW01D-14D, IR82-TB-121114 IR82-EB-121114	chloroethane	+/-	J/UJ	CCH
IR82-SD01-14DRE, IR82-SD01D-14DRE	dichlorodifluoroethane bromomethane chloroethane acetone methylene chloride^ methyl acetate methyl cyclohexane 2-hexanone	+/-	J/UJ	ICH
IR82-SD01-14DRE, IR82-SD01D-14DRE	2-butanone* 4-methyl-2-pentanone	+/-	J/R	ICL
IR82-SD01D-14DRE	all compounds associated with: 1,4-dichlorobenzene-d4	+/-	J/UJ	ISL
IR82-SD01-14DRE, IR82-SD01D-14DRE	methylene chloride	+	U to LOD	EBL
IR82-SD01-14DRE, IR82-SD01D-14DRE	1,2,4-trichlorobenzene#	+/-	J/UJ	MSL
	1,2-dibromo-3-chloropropane#	+	J	MSH
IR82-SW01-14D, IR82-SW01D-14D	chloroethane$ carbon disulfide$	+	J	MSH

Sample ID	Compound	Results	Q-Flag	Q Code
IR82-SD01-14D, IR82-SD01D-14D	2-butanone 2-hexanone$ toluene	+	J	FD
IR82-EB-121114	2-hexanone	+	J	LR
IR82-SW01-14DRE, IR82-SW01D-14DRE, IR82-TB-121114RE, IR82-EB-121114RE	toluene	+/-	exclude	RE
IR82-SD01-14D, IR82-SD01D-14D	all results	+/-	exclude	RE
all samples	naphthalene	+/-	exclude	OT

**final qualifier due to non-comparable field duplicate %RPD*
^final qualifier due to blank contamination
#final qualifier due to non-compliant internal standard recoveries
$final qualifier due to non-compliant calibration recoveries

SVOA

Sample ID	Compound	Results	Q-Flag	Q Code
all samples	hexachlorobutadiene^ n-nitrosodiphenylamine/diphenylamine^	+/-	J/UJ	ICH
IR82-SD01-14DRE, IR82-SD01D-14DRE2	hexachlorocyclopentadiene^ 4-nitrophenol	+/-	J/UJ	CCH
IR82-EB-121114RE	bis(2-chloroethoxy)methane hexachlorocyclopentadiene 4-nitrophenol	+/-	J/UJ	CCH
IR82-SD01-14DRE, IR82-SD01D-14DRE2	all base/neutral compounds	+/-	J/UJ	SSL
IR82-SD01-14DRE, IR82-SD01D-14DRE2	hexachloroethane^ 2-chloronaphthalene^ dibenzofuran^ 4-chloro-phenylether^ n-nitrosodiphenylamine/diphenylamine^ 4-bromophenyl-phenylether^ hexachlorobenzene^ carbazole^ di-n-butylphthalate^	+/-	J/UJ	MSL
IR82-SD01-14D, IR82-SD01D-14D, IR82-SD01D-14DRE1, IR82-SD01D-RE3	all results	+/-	excluded	RE
IR82-EB-121114	all results	+/-	excluded	RE

^final qualifier for field samples due to non-compliant surrogate recoveries

PAH

Sample ID	Compound	Results	Q-Flag	Q Code
IR82-SD01-14D, IR82-SD01D-14D	benzo(b)fluoranthene anthracene	+/-	J/UJ	FD

Pesticides

Sample ID	Compound	Results	Q-Flag	Q Code

Sample ID	Compound	Results	Q-Flag	Q Code
all samples	endosulfan II	+/-	J/UJ	ICH
all samples	aldrin	+/-	J/UJ	CCH
	4,4'-DDE			

PCB

Sample ID	Compound	Results	Q-Flag	Q Code
IR82-SD01-14D, IR82-SD01D-14D	PCB-1260	+/-	J/UJ	FD

Metals

Sample ID	Compound	Results	Q-Flag	Q Code
IR82-SD01-14D, IR82-SD01D-14D	copper	+	J+	EBL
IR82-SD01-14D, IR82-SD01D-14D	antimony	+	J-	MSL
IR82-EB-121114RE	zinc	+/-	exclude	RE

Glossary of Qualification Flags and Abbreviations

Qualification Flags (Q-Flags)

U	not detected above the reported sample quantitation limit
J	estimated value
UJ	reported quantitation limit is qualified as estimated
R	result is rejected; the presence or absence of the analyte cannot be verified
NJ	analyte has been tentatively identified, estimated value
L/J-	analyte present, biased low
UL	not detected, quantitation limit is probably higher
K/J+	analyte present, biased high

Inorganic Field/Lab Blank Qualification Flags (Q-Flags)

NA	The sample result for the blank contaminant is greater than the sample RL and is greater than 10X the blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.
RL-U	The sample result for the blank contaminant is less than the sample RL and the result is raised to the RL and flagged U.
R or J_+	The blank contaminant concentration was greater than the RL and the sample result is greater than the RL but less than 10X the blank contaminant concentration. The reported results are flagged either as rejected R or biased high J+ based on the professional judgment of the validator.

Organic Field/Lab Blank Qualification Flags (Q-Flags)

NA	The sample result for the blank contaminant is greater than the sample RL. The sample result for the blank contaminant is not qualified with any blank qualifiers.
RL-U	The sample result for the blank contaminant is less than the sample RL, so the result is raised to the RL and flagged U.

General Abbreviations

RL	reporting limit
DL	detection limit
LOD	limit of detection
LOQ	limit of quantitation
Q Code	qualifier code
+ / -	positive result/non-detect result

QUALIFIER CODE REFERENCE

Qualifier	Description
TN	Tune
BSL	Blank Spike/LCS - High Recovery
BSH	Blank Spike/LCS - Low Recovery
BD	Blank Spike/Blank Spike Duplicate (LCS/LCSD) Precision
BRL	Below Reporting Limit
ISL	Internal Standard - Low Recovery
ISH	Internal Standard - High Recovery
MSL	Matrix Spike and/or Matrix Spike Duplicate - Low Recovery
MSH	Matrix Spike and/or Matrix Spike Duplicate - High Recovery
MI	Matrix interference obscuring the raw data
MDP	Matrix Spike/Matrix Spike Duplicate Precision
2S	Second Source - Bad reproducibility between tandem detectors
SSL	Spiked Surrogate - Low Recovery
SSH	Spiked Surrogate - High Recovery
SD	Serial Dilution Reproducibility
ICL	Initial Calibration - Low Relative Response Factors (RRF)
ICH	Initial Calibration - High Relative Response Factors (RRF)
ICB	Initial Calibration - Bad Linearity or Curve Function
CCL	Continuing Calibration - Low Recovery or %Difference
CCH	Continuing Calibration - High Recovery or %Difference
CC	Continuing Calibration
LD	Lab Duplicate Reproducibility
HT	Holding Time
PD	Pesticide Degradation
2C	Second Column - Poor Dual Column Reproducibility
LR	Concentration Exceeds Linear Range
BL	Blank Contamination (MBL, EBL, FBL, TBL)
RE	Redundant Result - due to Re-analysis or Re-extraction
DL	Redundant Result - due to Dilution
FD	Field Duplicate
OT	Other - explained in data validation report
%SOL	High moisture content

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

IR82-SW01-14D

Laboratory:	ENCO Orlando	SDG:	A407175-CTO-WE9A
Client:	CH2M Hill, Inc. (CH031)	Project:	CTO-WE9A, Camp Lejuene Site 82

Matrix:	Surface Water	Laboratory ID:	A407175-01	File ID:	2LS006.D
Sampled:	12/11/14 11:20	Prepared:	12/24/14 00:00	Analyzed:	12/24/14 06:54
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch: 4L24004 Sequence: AA31886 Calibration: 1412083 Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1	<1.0	UJ ICH ~~UQ~~	0.74	1.0	2.0
74-87-3	Chloromethane	1	<1.0	U	0.82	1.0	2.0
75-01-4	Vinyl chloride	1	<1.0	UJ ICH ~~U~~	0.71	1.0	2.0
74-83-9	Bromomethane	1	<1.0	UJ ICH ~~UQ~~	0.95	1.0	2.0
75-00-3	Chloroethane	1	<1.0	UJ ICH ~~UQ~~	0.98	1.0	2.0
75-69-4	Trichlorofluoromethane	1	<1.0	U	0.94	1.0	2.0
76-13-1	Freon 113	1	<1.0	UJ ICH ~~U~~	0.73	1.0	2.0
67-64-1	Acetone	1	<12	U	5.0	12	25
75-35-4	1,1-Dichloroethene	1	<1.0	UJ ICH ~~U~~	0.94	1.0	2.0
75-15-0	Carbon disulfide	1	<5.0	UJ ICH ~~UQ~~	2.6	5.0	10
75-09-2	Methylene Chloride	1	<5.0	U	2.0	5.0	10
1634-04-4	Methyl-tert-Butyl Ether	1	<1.0	UJ ICH ~~U~~	0.60	1.0	2.0
156-60-5	trans-1,2-Dichloroethene	1	<1.0	UJ ICH ~~U~~	0.73	1.0	2.0
156-59-2	cis-1,2-Dichloroethene	1	0.92	J ICH ~~J~~	0.53	1.0	2.0
75-34-3	1,1-Dichloroethane	1	<1.0	U	0.62	1.0	2.0
78-93-3	2-Butanone	1	<12	RIU ~~U~~	4.5	12	25
67-66-3	Chloroform	1	<1.0	U	0.80	1.0	2.0
71-55-6	1,1,1-Trichloroethane	1	<1.0	UJ ICH ~~U~~	0.80	1.0	2.0
79-20-9	Methyl acetate	1	<1.0	U	0.95	1.0	2.0
110-82-7	Cyclohexane	1	<1.0	UJ ICH ~~U~~	0.93	1.0	2.0
108-87-2	Methyl cyclohexane	1	<1.0	↓ ~~U~~	0.64	1.0	2.0
56-23-5	Carbon Tetrachloride	1	<1.0	↓ ~~U~~	0.94	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	UJ ICH ~~U~~	0.89	1.0	2.0
78-87-5	1,2-Dichloropropane	1	<1.0	↓ ~~U~~	0.80	1.0	2.0
75-27-4	Bromodichloromethane	1	<1.0	↓ ~~U~~	0.52	1.0	2.0
108-10-1	4-Methyl-2-pentanone	1	<2.5	RIU ~~U~~	0.79	2.5	5.0
591-78-6	2-Hexanone	1	<2.5	UJ ICH ~~U~~	1.4	2.5	5.0
10061-01-5	cis-1,3-Dichloropropene	1	<1.0	↓ ~~U~~	0.59	1.0	2.0
108-88-3	Toluene	1	<1.0	U	0.72	1.0	2.0
10061-02-6	trans-1,3-Dichloropropene	1	<1.0	UJ ICH ~~U~~	0.73	1.0	2.0
79-00-5	1,1,2-Trichloroethane	1	<1.0	U	0.76	1.0	2.0
127-18-4	Tetrachloroethene	1	<1.0	U	0.76	1.0	2.0

MM 030115

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

IR82-SW01-14D

Laboratory:	ENCO Orlando	SDG:	A407175-CTO-WE9A
Client:	CH2M Hill, Inc. (CH031)	Project:	CTO-WE9A, Camp Lejuene Site 82

Matrix:	Surface Water	Laboratory ID:	A407175-01	File ID:	2LS006.D
Sampled:	12/11/14 11:20	Prepared:	12/24/14 00:00	Analyzed:	12/24/14 06:54
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch: 4L24004 Sequence: AA31886 Calibration: 1412083 Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
124-48-1	Dibromochloromethane	1	<1.0	UJICH U	0.44	1.0	2.0
106-93-4	1,2-Dibromoethane	1	<1.0	U	0.78	1.0	2.0
108-90-7	Chlorobenzene	1	<1.0	U	0.72	1.0	2.0
100-41-4	Ethylbenzene	1	<1.0	U	0.69	1.0	2.0
108-38-3/106-42-3	m,p-Xylenes	1	<2.0	U	1.3	2.0	4.0
95-47-6	o-Xylene	1	<1.0	U	0.53	1.0	2.0
75-25-2	Bromoform	1	<1.0	UJICH U	0.75	1.0	2.0
100-42-5	Styrene	1	<1.0	U	0.61	1.0	2.0
98-82-8	Isopropylbenzene	1	<1.0	UJICH U	0.67	1.0	2.0
79-34-5	1,1,2,2-Tetrachloroethane	1	<1.0	U	0.54	1.0	2.0
120-82-1	1,2,4-Trichlorobenzene	1	<1.0	UJICH U	0.70	1.0	2.0
541-73-1	1,3-Dichlorobenzene	1	<1.0	U	0.77	1.0	2.0
106-46-7	1,4-Dichlorobenzene	1	<1.0	U	0.76	1.0	2.0
95-50-1	1,2-Dichlorobenzene	1	<1.0	U	0.73	1.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1	<5.0	U	0.96	5.0	10
91-20-3	Naphthalene	1	<1.0	XOT U	0.82	1.0	2.0
1330-20-7	Xylenes (Total)	1	<2.0	U	1.3	2.0	4.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	55	110	80 - 119	
Toluene-d8	50.0	53	105	89 - 112	
4-Bromofluorobenzene	50.0	50	100	85 - 114	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	454227	11	460789	10.98	
1,4-Difluorobenzene	811367	11.57	805842	11.56	
Chlorobenzene-d5	714594	14.24	708168	14.23	

* Values outside of QC limits

UM 030115

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

IR82-SW01-14D RE

Laboratory:	ENCO Orlando	SDG:	A407175-CTO-WE9A
Client:	CH2M Hill, Inc. (CH031)	Project:	CTO-WE9A, Camp Lejuene Site 82

Matrix:	Surface Water	Laboratory ID:	A407175-01RE1	File ID:	2LX014.D
Sampled:	12/11/14 11:20	Prepared:	12/29/14 00:00	Analyzed:	12/29/14 11:17
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch: 4L29031 Sequence: AA31937 Calibration: 1412083 Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1	<1.0	UQ	0.74	1.0	2.0
74-87-3	Chloromethane	1	<1.0	UQ	0.82	1.0	2.0
75-01-4	Vinyl chloride	1	<1.0	UQ	0.71	1.0	2.0
74-83-9	Bromomethane	1	<1.0	UQ	0.95	1.0	2.0
75-00-3	Chloroethane	1	<1.0	UQ	0.98	1.0	2.0
75-69-4	Trichlorofluoromethane	1	<1.0	UQ	0.94	1.0	2.0
76-13-1	Freon 113	1	<1.0	UQ	0.73	1.0	2.0
67-64-1	Acetone	1	<12	UQ	5.0	12	25
75-35-4	1,1-Dichloroethene	1	<1.0	UQ	0.94	1.0	2.0
75-15-0	Carbon disulfide	1	<5.0	UQ	2.6	5.0	10
75-09-2	Methylene Chloride	1	<5.0	UQ	2.0	5.0	10
1634-04-4	Methyl-tert-Butyl Ether	1	<1.0	UQ	0.60	1.0	2.0
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	JQ	0.53	1.0	2.0
75-34-3	1,1-Dichloroethane	1	<1.0	UQ	0.62	1.0	2.0
78-93-3	2-Butanone	1	<12	UQ	4.5	12	25
67-66-3	Chloroform	1	<1.0	UQ	0.80	1.0	2.0
71-55-6	1,1,1-Trichloroethane	1	<1.0	UQ	0.80	1.0	2.0
79-20-9	Methyl acetate	1	<1.0	UQ	0.95	1.0	2.0
110-82-7	Cyclohexane	1	<1.0	UQ	0.93	1.0	2.0
108-87-2	Methyl cyclohexane	1	<1.0	UQ	0.64	1.0	2.0
56-23-5	Carbon Tetrachloride	1	<1.0	UQ	0.94	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	0.90	JQ	0.89	1.0	2.0
78-87-5	1,2-Dichloropropane	1	<1.0	UQ	0.80	1.0	2.0
75-27-4	Bromodichloromethane	1	<1.0	UQ	0.52	1.0	2.0
108-10-1	4-Methyl-2-pentanone	1	<2.5	UQ	0.79	2.5	5.0
591-78-6	2-Hexanone	1	<2.5	UQ	1.4	2.5	5.0
10061-01-5	cis-1,3-Dichloropropene	1	<1.0	UQ	0.59	1.0	2.0
108-88-3	Toluene	1	<1.0	UQ	0.72	1.0	2.0
10061-02-6	trans-1,3-Dichloropropene	1	<1.0	UQ	0.73	1.0	2.0
79-00-5	1,1,2-Trichloroethane	1	<1.0	UQ	0.76	1.0	2.0
127-18-4	Tetrachloroethene	1	0.97	JQ	0.76	1.0	2.0

VM 030115

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

IR82-SW01-14D RE

Laboratory:	ENCO Orlando	SDG:	A407175-CTO-WE9A
Client:	CH2M Hill, Inc. (CH031)	Project:	CTO-WE9A, Camp Lejuene Site 82

Matrix:	Surface Water	Laboratory ID:	A407175-01RE1	File ID:	2LX014.D
Sampled:	12/11/14 11:20	Prepared:	12/29/14 00:00	Analyzed:	12/29/14 11:17
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch: 4L29031 Sequence: AA31937 Calibration: 1412083 Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
124-48-1	Dibromochloromethane	1	<1.0	UQ	0.44	1.0	2.0
106-93-4	1,2-Dibromoethane	1	<1.0	UQ	0.78	1.0	2.0
108-90-7	Chlorobenzene	1	<1.0	UQ	0.72	1.0	2.0
100-41-4	Ethylbenzene	1	<1.0	UQ	0.69	1.0	2.0
108-38-3/106-42-3	m,p-Xylenes	1	<2.0	UQ	1.3	2.0	4.0
95-47-6	o-Xylene	1	<1.0	UQ	0.53	1.0	2.0
75-25-2	Bromoform	1	<1.0	UQ	0.75	1.0	2.0
100-42-5	Styrene	1	<1.0	UQ	0.61	1.0	2.0
98-82-8	Isopropylbenzene	1	<1.0	UQ	0.67	1.0	2.0
79-34-5	1,1,2,2-Tetrachloroethane	1	<1.0	UQ	0.54	1.0	2.0
120-82-1	1,2,4-Trichlorobenzene	1	<1.0	UQ	0.70	1.0	2.0
541-73-1	1,3-Dichlorobenzene	1	<1.0	UQ	0.77	1.0	2.0
106-46-7	1,4-Dichlorobenzene	1	<1.0	UQ	0.76	1.0	2.0
95-50-1	1,2-Dichlorobenzene	1	<1.0	UQ	0.73	1.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1	<5.0	UQ	0.96	5.0	10
91-20-3	Naphthalene	1	<1.0	UQ	0.82	1.0	2.0
1330-20-7	Xylenes (Total)	1	<2.0	UQ	1.3	2.0	4.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	69	138	80 - 119	*
Toluene-d8	50.0	57	115	89 - 112	*
4-Bromofluorobenzene	50.0	50	101	85 - 114	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	343552	10.98	460789	10.98	
1,4-Difluorobenzene	689997	11.55	805842	11.56	
Chlorobenzene-d5	708501	14.23	708168	14.23	

* Values outside of QC limits

VM 030115

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

IR82-SW01D-14D

Laboratory:	ENCO Orlando	SDG:	A407175-CTO-WE9A
Client:	CH2M Hill, Inc. (CH031)	Project:	CTO-WE9A, Camp Lejuene Site 82

Matrix:	Surface Water	Laboratory ID:	A407175-02	File ID:	2LS007.D
Sampled:	12/11/14 11:25	Prepared:	12/24/14 00:00	Analyzed:	12/24/14 07:24
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch: 4L24004 Sequence: AA31886 Calibration: 1412083 Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1	<1.0	UJICH UQ	0.74	1.0	2.0
74-87-3	Chloromethane	1	<1.0	U	0.82	1.0	2.0
75-01-4	Vinyl chloride	1	<1.0	UJICH U	0.71	1.0	2.0
74-83-9	Bromomethane	1	<1.0	UQ	0.95	1.0	2.0
75-00-3	Chloroethane	1	<1.0	UJCCH UQ	0.98	1.0	2.0
75-69-4	Trichlorofluoromethane	1	<1.0	U	0.94	1.0	2.0
76-13-1	Freon 113	1	<1.0	UJICH U	0.73	1.0	2.0
67-64-1	Acetone	1	<12	U	5.0	12	25
75-35-4	1,1-Dichloroethene	1	<1.0	UJICH U	0.94	1.0	2.0
75-15-0	Carbon disulfide	1	<5.0	UQ	2.6	5.0	10
75-09-2	Methylene Chloride	1	<5.0	U	2.0	5.0	10
1634-04-4	Methyl-tert-Butyl Ether	1	<1.0	UJICH U	0.60	1.0	2.0
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	JICH J	0.53	1.0	2.0
75-34-3	1,1-Dichloroethane	1	<1.0	U	0.62	1.0	2.0
78-93-3	2-Butanone	1	<12	RICL U	4.5	12	25
67-66-3	Chloroform	1	<1.0	U	0.80	1.0	2.0
71-55-6	1,1,1-Trichloroethane	1	<1.0	UJICH U	0.80	1.0	2.0
79-20-9	Methyl acetate	1	<1.0	U	0.95	1.0	2.0
110-82-7	Cyclohexane	1	<1.0	UJICH U	0.93	1.0	2.0
108-87-2	Methyl cyclohexane	1	<1.0	U	0.64	1.0	2.0
56-23-5	Carbon Tetrachloride	1	<1.0	U	0.94	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	UJICH U	0.89	1.0	2.0
78-87-5	1,2-Dichloropropane	1	<1.0	U	0.80	1.0	2.0
75-27-4	Bromodichloromethane	1	<1.0	U	0.52	1.0	2.0
108-10-1	4-Methyl-2-pentanone	1	<2.5	RICL U	0.79	2.5	5.0
591-78-6	2-Hexanone	1	<2.5	UJICH U	1.4	2.5	5.0
10061-01-5	cis-1,3-Dichloropropene	1	<1.0	U	0.59	1.0	2.0
108-88-3	Toluene	1	<1.0	U	0.72	1.0	2.0
10061-02-6	trans-1,3-Dichloropropene	1	<1.0	UJICH U	0.73	1.0	2.0
79-00-5	1,1,2-Trichloroethane	1	<1.0	U	0.76	1.0	2.0
127-18-4	Tetrachloroethene	1	<1.0	U	0.76	1.0	2.0

UM 030115

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

IR82-SW01D-14D

Laboratory:	ENCO Orlando	SDG:	A407175-CTO-WE9A
Client:	CH2M Hill, Inc. (CH031)	Project:	CTO-WE9A, Camp Lejuene Site 82

Matrix:	Surface Water	Laboratory ID:	A407175-02	File ID:	2LS007.D
Sampled:	12/11/14 11:25	Prepared:	12/24/14 00:00	Analyzed:	12/24/14 07:24
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch: 4L24004 Sequence: AA31886 Calibration: 1412083 Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
124-48-1	Dibromochloromethane	1	<1.0	UJICA U	0.44	1.0	2.0
106-93-4	1,2-Dibromoethane	1	<1.0	U	0.78	1.0	2.0
108-90-7	Chlorobenzene	1	<1.0	U	0.72	1.0	2.0
100-41-4	Ethylbenzene	1	<1.0	U	0.69	1.0	2.0
108-38-3/106-42-3	m,p-Xylenes	1	<2.0	U	1.3	2.0	4.0
95-47-6	o-Xylene	1	<1.0	U	0.53	1.0	2.0
75-25-2	Bromoform	1	<1.0	UJICA U	0.75	1.0	2.0
100-42-5	Styrene	1	<1.0	U	0.61	1.0	2.0
98-82-8	Isopropylbenzene	1	<1.0	UJICA U	0.67	1.0	2.0
79-34-5	1,1,2,2-Tetrachloroethane	1	<1.0	U	0.54	1.0	2.0
120-82-1	1,2,4-Trichlorobenzene	1	<1.0	UJICA U	0.70	1.0	2.0
541-73-1	1,3-Dichlorobenzene	1	<1.0	U	0.77	1.0	2.0
106-46-7	1,4-Dichlorobenzene	1	<1.0	U	0.76	1.0	2.0
95-50-1	1,2-Dichlorobenzene	1	<1.0	U	0.73	1.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1	<5.0	U	0.96	5.0	10
91-20-3	Naphthalene	1	<1.0	XDT U	0.82	1.0	2.0
1330-20-7	Xylenes (Total)	1	<2.0	U	1.3	2.0	4.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	55	111	80 - 119	
Toluene-d8	50.0	52	104	89 - 112	
4-Bromofluorobenzene	50.0	51	102	85 - 114	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	455663	11	460789	10.98	
1,4-Difluorobenzene	817746	11.57	805842	11.56	
Chlorobenzene-d5	695386	14.24	708168	14.23	

* Values outside of QC limits

VM 030115

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

IR82-SW01D-14D RE

Laboratory:	ENCO Orlando	SDG:	A407175-CTO-WE9A
Client:	CH2M Hill, Inc. (CH031)	Project:	CTO-WE9A, Camp Lejuene Site 82

Matrix:	Surface Water	Laboratory ID:	A407175-02RE1	File ID:	2LX015.D
Sampled:	12/11/14 11:25	Prepared:	12/29/14 00:00	Analyzed:	12/29/14 11:46
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch: 4L29031 Sequence: AA31937 Calibration: 1412083 Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1	<1.0 XRE	UQ	0.74	1.0	2.0
74-87-3	Chloromethane	1	<1.0	UQ	0.82	1.0	2.0
75-01-4	Vinyl chloride	1	<1.0	UQ	0.71	1.0	2.0
74-83-9	Bromomethane	1	<1.0	UQ	0.95	1.0	2.0
75-00-3	Chloroethane	1	<1.0	UQ	0.98	1.0	2.0
75-69-4	Trichlorofluoromethane	1	<1.0	UQ	0.94	1.0	2.0
76-13-1	Freon 113	1	<1.0	UQ	0.73	1.0	2.0
67-64-1	Acetone	1	<12	UQ	5.0	12	25
75-35-4	1,1-Dichloroethene	1	<1.0	UQ	0.94	1.0	2.0
75-15-0	Carbon disulfide	1	<5.0	UQ	2.6	5.0	10
75-09-2	Methylene Chloride	1	<5.0	UQ	2.0	5.0	10
1634-04-4	Methyl-tert-Butyl Ether	1	<1.0	UQ	0.60	1.0	2.0
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	JQ	0.53	1.0	2.0
75-34-3	1,1-Dichloroethane	1	<1.0	UQ	0.62	1.0	2.0
78-93-3	2-Butanone	1	<12	UQ	4.5	12	25
67-66-3	Chloroform	1	<1.0	UQ	0.80	1.0	2.0
71-55-6	1,1,1-Trichloroethane	1	<1.0	UQ	0.80	1.0	2.0
79-20-9	Methyl acetate	1	<1.0	UQ	0.95	1.0	2.0
110-82-7	Cyclohexane	1	<1.0	UQ	0.93	1.0	2.0
108-87-2	Methyl cyclohexane	1	<1.0	UQ	0.64	1.0	2.0
56-23-5	Carbon Tetrachloride	1	<1.0	UQ	0.94	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	0.97	JQ	0.89	1.0	2.0
78-87-5	1,2-Dichloropropane	1	<1.0	UQ	0.80	1.0	2.0
75-27-4	Bromodichloromethane	1	<1.0	UQ	0.52	1.0	2.0
108-10-1	4-Methyl-2-pentanone	1	<2.5	UQ	0.79	2.5	5.0
591-78-6	2-Hexanone	1	<2.5	UQ	1.4	2.5	5.0
10061-01-5	cis-1,3-Dichloropropene	1	<1.0	UQ	0.59	1.0	2.0
108-88-3	Toluene	1	<1.0	UQ	0.72	1.0	2.0
10061-02-6	trans-1,3-Dichloropropene	1	<1.0	UQ	0.73	1.0	2.0
79-00-5	1,1,2-Trichloroethane	1	<1.0	UQ	0.76	1.0	2.0
127-18-4	Tetrachloroethene	1	<1.0	UQ	0.76	1.0	2.0

VM 030115

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

IR82-SW01D-14D RE

Laboratory:	ENCO Orlando	SDG:	A407175-CTO-WE9A
Client:	CH2M Hill, Inc. (CH031)	Project:	CTO-WE9A, Camp Lejuene Site 82

Matrix:	Surface Water	Laboratory ID:	A407175-02RE1	File ID:	2LX015.D
Sampled:	12/11/14 11:25	Prepared:	12/29/14 00:00	Analyzed:	12/29/14 11:46
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch: 4L29031 Sequence: AA31937 Calibration: 1412083 Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
124-48-1	Dibromochloromethane	1	<1.0 XRE	UQ	0.44	1.0	2.0
106-93-4	1,2-Dibromoethane	1	<1.0	UQ	0.78	1.0	2.0
108-90-7	Chlorobenzene	1	<1.0	UQ	0.72	1.0	2.0
100-41-4	Ethylbenzene	1	<1.0	UQ	0.69	1.0	2.0
108-38-3/106-42-3	m,p-Xylenes	1	<2.0	UQ	1.3	2.0	4.0
95-47-6	o-Xylene	1	<1.0	UQ	0.53	1.0	2.0
75-25-2	Bromoform	1	<1.0	UQ	0.75	1.0	2.0
100-42-5	Styrene	1	<1.0	UQ	0.61	1.0	2.0
98-82-8	Isopropylbenzene	1	<1.0	UQ	0.67	1.0	2.0
79-34-5	1,1,2,2-Tetrachloroethane	1	<1.0	UQ	0.54	1.0	2.0
120-82-1	1,2,4-Trichlorobenzene	1	<1.0	UQ	0.70	1.0	2.0
541-73-1	1,3-Dichlorobenzene	1	<1.0	UQ	0.77	1.0	2.0
106-46-7	1,4-Dichlorobenzene	1	<1.0	UQ	0.76	1.0	2.0
95-50-1	1,2-Dichlorobenzene	1	<1.0	UQ	0.73	1.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1	<5.0	UQ	0.96	5.0	10
91-20-3	Naphthalene	1	<1.0	UQ	0.82	1.0	2.0
1330-20-7	Xylenes (Total)	1	<2.0	UQ	1.3	2.0	4.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	72	143	80 - 119	*
Toluene-d8	50.0	59	119	89 - 112	*
4-Bromofluorobenzene	50.0	51	103	85 - 114	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	339265	10.98	460789	10.98	
1,4-Difluorobenzene	683168	11.55	805842	11.56	
Chlorobenzene-d5	701349	14.23	708168	14.23	

* Values outside of QC limits

VM 030115

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

IR82-SD01-14D

Laboratory:	ENCO Orlando	SDG:	A407175-CTO-WE9A
Client:	CH2M Hill, Inc. (CH031)	Project:	CTO-WE9A, Camp Lejuene Site 82

Matrix:	Sediment	Laboratory ID:	A407175-03	File ID:	5LN019.D
Sampled:	12/11/14 11:50	Prepared:	12/19/14 00:00	Analyzed:	12/19/14 17:54
Solids:	38.83	Preparation:	EPA 5030B_MS	Initial/Final:	4.33 g / 5 mL

Batch: 4L19028 Sequence: AA31829 Calibration: 1412093 Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (mg/kg dry)	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1	<0.0030	U	0.0018	0.0030	0.0059
74-87-3	Chloromethane	1	<0.0030	U	0.0019	0.0030	0.0059
75-01-4	Vinyl chloride	1	<0.0030	U	0.0013	0.0030	0.0059
74-83-9	Bromomethane	1	<0.015	U	0.0027	0.015	0.030
75-00-3	Chloroethane	1	<0.0030	U	0.0016	0.0030	0.0059
75-69-4	Trichlorofluoromethane	1	<0.0030	U	0.0016	0.0030	0.0059
76-13-1	Freon 113	1	<0.0030	UQ	0.0018	0.0030	0.0059
67-64-1	Acetone	1	0.18	Q	0.0051	0.037	0.074
75-35-4	1,1-Dichloroethene	1	<0.0030	UQ	0.0018	0.0030	0.0059
75-15-0	Carbon disulfide	1	<0.015	UQ	0.0062	0.015	0.030
75-09-2	Methylene Chloride	1	0.0049	JBQ	0.0021	0.015	0.030
1634-04-4	Methyl-tert-Butyl Ether	1	<0.0030	U	0.0008	0.0030	0.0059
156-60-5	trans-1,2-Dichloroethene	1	<0.0030	UQ	0.0021	0.0030	0.0059
156-59-2	cis-1,2-Dichloroethene	1	<0.0030	U	0.0016	0.0030	0.0059
75-34-3	1,1-Dichloroethane	1	<0.0030	U	0.0017	0.0030	0.0059
78-93-3	2-Butanone	1	<0.0074	U	0.0054	0.0074	0.015
67-66-3	Chloroform	1	<0.0030	U	0.0013	0.0030	0.0059
71-55-6	1,1,1-Trichloroethane	1	<0.0030	UQ	0.0010	0.0030	0.0059
79-20-9	Methyl acetate	1	<0.015	U	0.0048	0.015	0.030
110-82-7	Cyclohexane	1	<0.0030	UQ	0.0016	0.0030	0.0059
108-87-2	Methyl cyclohexane	1	<0.0030	UQ	0.0015	0.0030	0.0059
56-23-5	Carbon Tetrachloride	1	<0.0030	UQ	0.0018	0.0030	0.0059
107-06-2	1,2-Dichloroethane	1	<0.0030	U	0.0010	0.0030	0.0059
71-43-2	Benzene	1	<0.0030	U	0.0012	0.0030	0.0059
79-01-6	Trichloroethene	1	0.0028	J	0.0015	0.0030	0.0059
78-87-5	1,2-Dichloropropane	1	<0.0030	U	0.0016	0.0030	0.0059
75-27-4	Bromodichloromethane	1	<0.0030	U	0.0010	0.0030	0.0059
108-10-1	4-Methyl-2-pentanone	1	<0.0074	U	0.0042	0.0074	0.015
591-78-6	2-Hexanone	1	0.22	Q	0.0027	0.0074	0.015
10061-01-5	cis-1,3-Dichloropropene	1	<0.0030	U	0.0009	0.0030	0.0059
108-88-3	Toluene	1	<0.0030	UQ	0.0014	0.0030	0.0059
10061-02-6	trans-1,3-Dichloropropene	1	<0.0030	U	0.0009	0.0030	0.0059
79-00-5	1,1,2-Trichloroethane	1	<0.0030	U	0.0018	0.0030	0.0059
127-18-4	Tetrachloroethene	1	0.0027	JQ	0.0015	0.0030	0.0059

XPE

UMS 030115

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

IR82-SD01-14D

Laboratory:	ENCO Orlando	SDG:	A407175-CTO-WE9A
Client:	CH2M Hill, Inc. (CH031)	Project:	CTO-WE9A, Camp Lejuene Site 82

Matrix:	Sediment	Laboratory ID:	A407175-03	File ID:	5LN019.D
Sampled:	12/11/14 11:50	Prepared:	12/19/14 00:00	Analyzed:	12/19/14 17:54
Solids:	38.83	Preparation:	EPA 5030B_MS	Initial/Final:	4.33 g / 5 mL

Batch: 4L19028 Sequence: AA31829 Calibration: 1412093 Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (mg/kg dry)	Q	DL	LOD	LOQ
124-48-1	Dibromochloromethane	1	<0.0030	U	0.0008	0.0030	0.0059
106-93-4	1,2-Dibromoethane	1	<0.0030	U	0.0009	0.0030	0.0059
108-90-7	Chlorobenzene	1	<0.0030	UQ	0.0014	0.0030	0.0059
100-41-4	Ethylbenzene	1	<0.0030	UQ	0.0017	0.0030	0.0059
108-38-3/106-42-3	m,p-Xylenes	1	<0.0059	UQ	0.0029	0.0059	0.012
95-47-6	o-Xylene	1	<0.0030	UQ	0.0015	0.0030	0.0059
75-25-2	Bromoform	1	<0.0030	U	0.0009	0.0030	0.0059
100-42-5	Styrene	1	<0.0030	UQ	0.0013	0.0030	0.0059
98-82-8	Isopropylbenzene	1	<0.0030	UQ	0.0016	0.0030	0.0059
79-34-5	1,1,2,2-Tetrachloroethane	1	<0.0030	U	0.0009	0.0030	0.0059
120-82-1	1,2,4-Trichlorobenzene	1	<0.0030	UQ	0.0025	0.0030	0.0059
541-73-1	1,3-Dichlorobenzene	1	<0.0030	U	0.0014	0.0030	0.0059
106-46-7	1,4-Dichlorobenzene	1	<0.0030	U	0.0013	0.0030	0.0059
95-50-1	1,2-Dichlorobenzene	1	<0.0030	UQ	0.0013	0.0030	0.0059
96-12-8	1,2-Dibromo-3-chloropropane	1	<0.0030	UQ	0.0017	0.0030	0.0059
91-20-3	Naphthalene	1	0.0019	JQ	0.0017	0.0030	0.0059
1330-20-7	Xylenes (Total)	1	<0.0059	U	0.0029	0.0059	0.012

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	49	98	78 - 119	
Toluene-d8	50.0	39	79	85 - 116	*
4-Bromofluorobenzene	50.0	40	79	79 - 119	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	640910	10.839	741932	10.839	
1,4-Difluorobenzene	1572989	11.488	1690203	11.488	
Chlorobenzene-d5	1322221	14.684	2579378	14.684	
1,4-Dichlorobenzene-d4	440945	17.289	1250459	17.281	*

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

IR82-SD01-14D RE

Laboratory:	ENCO Orlando	SDG:	A407175-CTO-WE9A
Client:	CH2M Hill, Inc. (CH031)	Project:	CTO-WE9A, Camp Lejuene Site 82

Matrix:	Sediment	Laboratory ID:	A407175-03RE1	File ID:	5LR017.D
Sampled:	12/11/14 11:50	Prepared:	12/23/14 00:00	Analyzed:	12/23/14 17:32
Solids:	38.83	Preparation:	EPA 5030B_MS	Initial/Final:	3.74 g / 5 mL

Batch: 4L23052 Sequence: AA31883 Calibration: 1412100 Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (mg/kg dry)	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1	<0.0034	~~U~~ UJICH	0.0021	0.0034	0.0069
74-87-3	Chloromethane	1	<0.0034	U	0.0022	0.0034	0.0069
75-01-4	Vinyl chloride	1	<0.0034	U	0.0015	0.0034	0.0069
74-83-9	Bromomethane	1	<0.017	~~U~~ UJICH	0.0031	0.017	0.034
75-00-3	Chloroethane	1	<0.0034	~~U~~ UJICH	0.0019	0.0034	0.0069
75-69-4	Trichlorofluoromethane	1	<0.0034	U	0.0019	0.0034	0.0069
76-13-1	Freon 113	1	<0.0034	U	0.0021	0.0034	0.0069
67-64-1	Acetone	1 JICH	0.24	~~J~~ JFD	0.0059	0.043	0.086
75-35-4	1,1-Dichloroethene	1	<0.0034	U	0.0021	0.0034	0.0069
75-15-0	Carbon disulfide	1	<0.017	U	0.0072	0.017	0.034
75-09-2	Methylene Chloride	1	0.017 ~~0.0054~~	U ~~J~~	0.0024	0.017	0.034
1634-04-4	Methyl-tert-Butyl Ether	1	<0.0034	U	0.0009	0.0034	0.0069
156-60-5	trans-1,2-Dichloroethene	1	<0.0034	U	0.0024	0.0034	0.0069
156-59-2	cis-1,2-Dichloroethene	1	<0.0034	U	0.0018	0.0034	0.0069
75-34-3	1,1-Dichloroethane	1	<0.0034	U	0.0020	0.0034	0.0069
78-93-3	2-Butanone	1	0.014	~~J~~ JFD JQ	0.0062	0.0086	0.017
67-66-3	Chloroform	1	<0.0034	U	0.0015	0.0034	0.0069
71-55-6	1,1,1-Trichloroethane	1	<0.0034	U	0.0012	0.0034	0.0069
79-20-9	Methyl acetate	1	<0.017	~~U~~ UJICH	0.0055	0.017	0.034
110-82-7	Cyclohexane	1	<0.0034	U	0.0018	0.0034	0.0069
108-87-2	Methyl cyclohexane	1	<0.0034	~~U~~ UJICH	0.0018	0.0034	0.0069
56-23-5	Carbon Tetrachloride	1	<0.0034	U	0.0021	0.0034	0.0069
107-06-2	1,2-Dichloroethane	1	<0.0034	U	0.0011	0.0034	0.0069
71-43-2	Benzene	1	<0.0034	U	0.0014	0.0034	0.0069
79-01-6	Trichloroethene	1	0.0046 J	~~J~~ JFD J	0.0017	0.0034	0.0069
78-87-5	1,2-Dichloropropane	1	<0.0034	U	0.0019	0.0034	0.0069
75-27-4	Bromodichloromethane	1	<0.0034	U	0.0012	0.0034	0.0069
108-10-1	4-Methyl-2-pentanone	1	<0.0086	RJICH ~~U~~ UQ	0.0048	0.0086	0.017
591-78-6	2-Hexanone	1	0.14	JICH	0.0031	0.0086	0.017
10061-01-5	cis-1,3-Dichloropropene	1	<0.0034	U	0.0010	0.0034	0.0069
108-88-3	Toluene	1	0.0034	~~J~~ JFD J	0.0016	0.0034	0.0069
10061-02-6	trans-1,3-Dichloropropene	1	<0.0034	U	0.0011	0.0034	0.0069
79-00-5	1,1,2-Trichloroethane	1	<0.0034	U	0.0021	0.0034	0.0069
127-18-4	Tetrachloroethene	1	0.0027 J	~~J~~ JFD J	0.0017	0.0034	0.0069

UM 030115

3 corrections UM 031615

~~30~~ 26 UM 031215

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

IR82-SD01-14D RE

Laboratory:	ENCO Orlando	SDG:	A407175-CTO-WE9A
Client:	CH2M Hill, Inc. (CH031)	Project:	CTO-WE9A, Camp Lejuene Site 82

Matrix:	Sediment	Laboratory ID:	A407175-03RE1	File ID:	5LR017.D
Sampled:	12/11/14 11:50	Prepared:	12/23/14 00:00	Analyzed:	12/23/14 17:32
Solids:	38.83	Preparation:	EPA 5030B_MS	Initial/Final:	3.74 g / 5 mL

Batch: 4L23052 Sequence: AA31883 Calibration: 1412100 Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (mg/kg dry	Q	DL	LOD	LOQ
124-48-1	Dibromochloromethane	1	<0.0034	U	0.0009	0.0034	0.0069
106-93-4	1,2-Dibromoethane	1	<0.0034	U	0.0011	0.0034	0.0069
108-90-7	Chlorobenzene	1	<0.0034	U	0.0017	0.0034	0.0069
100-41-4	Ethylbenzene	1	<0.0034	U	0.0019	0.0034	0.0069
108-38-3/106-42-3	m,p-Xylenes	1	<0.0069	U	0.0034	0.0069	0.014
95-47-6	o-Xylene	1	<0.0034	U	0.0018	0.0034	0.0069
75-25-2	Bromoform	1	<0.0034	U	0.0010	0.0034	0.0069
100-42-5	Styrene	1	<0.0034	U	0.0015	0.0034	0.0069
98-82-8	Isopropylbenzene	1	<0.0034	U	0.0019	0.0034	0.0069
79-34-5	1,1,2,2-Tetrachloroethane	1	<0.0034	U	0.0010	0.0034	0.0069
120-82-1	1,2,4-Trichlorobenzene	1	<0.0034	U	0.0029	0.0034	0.0069
541-73-1	1,3-Dichlorobenzene	1	<0.0034	U	0.0016	0.0034	0.0069
106-46-7	1,4-Dichlorobenzene	1	<0.0034	U	0.0015	0.0034	0.0069
95-50-1	1,2-Dichlorobenzene	1	<0.0034	U	0.0015	0.0034	0.0069
96-12-8	1,2-Dibromo-3-chloropropane	1	<0.0034	U	0.0020	0.0034	0.0069
91-20-3	Naphthalene	1	<0.0034	XOU U	0.0020	0.0034	0.0069
1330-20-7	Xylenes (Total)	1	<0.0069	U	0.0034	0.0069	0.014

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	50	100	78 - 119	
Toluene-d8	50.0	50	100	85 - 116	
4-Bromofluorobenzene	50.0	43	87	79 - 119	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	878949	10.855	971952	10.855	
1,4-Difluorobenzene	1760526	11.504	1869908	11.504	
Chlorobenzene-d5	1476309	14.7	2312431	14.7	
1,4-Dichlorobenzene-d4	561371	17.305	994475	17.297	

* Values outside of QC limits

VM 03/20/15

VM 03/25/15 27

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

IR82-SD01D-14D

Laboratory: ENCO Orlando
SDG: A407175-CTO-WE9A
Client: CH2M Hill, Inc. (CH031)
Project: CTO-WE9A, Camp Lejuene Site 82

Matrix: Sediment
Laboratory ID: A407175-04
File ID: 5LN020.D
Sampled: 12/11/14 11:55
Prepared: 12/19/14 00:00
Analyzed: 12/19/14 18:22
Solids: 42.24
Preparation: EPA 5030B_MS
Initial/Final: 4.26 g / 5 mL
Batch: 4L19028
Sequence: AA31829
Calibration: 1412093
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (mg/kg dry	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1	<0.0028	U	0.0017	0.0028	0.0056
74-87-3	Chloromethane	1	<0.0028	U	0.0018	0.0028	0.0056
75-01-4	Vinyl chloride	1	<0.0028	U	0.0012	0.0028	0.0056
74-83-9	Bromomethane	1	<0.014	U	0.0025	0.014	0.028
75-00-3	Chloroethane	1	<0.0028	U	0.0015	0.0028	0.0056
75-69-4	Trichlorofluoromethane	1	<0.0028	U	0.0015	0.0028	0.0056
76-13-1	Freon 113	1	<0.0028	U	0.0017	0.0028	0.0056
67-64-1	Acetone	1	0.13		0.0047	0.035	0.069
75-35-4	1,1-Dichloroethene	1	<0.0028	U	0.0017	0.0028	0.0056
75-15-0	Carbon disulfide	1	<0.014	U	0.0058	0.014	0.028
75-09-2	Methylene Chloride	1	0.0044	JBQ	0.0019	0.014	0.028
1634-04-4	Methyl-tert-Butyl Ether	1	<0.0028	U	0.0008	0.0028	0.0056
156-60-5	trans-1,2-Dichloroethene	1	<0.0028	U	0.0019	0.0028	0.0056
156-59-2	cis-1,2-Dichloroethene	1	0.0015	J	0.0015	0.0028	0.0056
75-34-3	1,1-Dichloroethane	1	<0.0028	U	0.0016	0.0028	0.0056
78-93-3	2-Butanone	1	0.010	J	0.0050	0.0069	0.014
67-66-3	Chloroform	1	<0.0028	U	0.0012	0.0028	0.0056
71-55-6	1,1,1-Trichloroethane	1	<0.0028	U	0.0010	0.0028	0.0056
79-20-9	Methyl acetate	1	<0.014	U	0.0044	0.014	0.028
110-82-7	Cyclohexane	1	<0.0028	U	0.0015	0.0028	0.0056
108-87-2	Methyl cyclohexane	1	<0.0028	U	0.0014	0.0028	0.0056
56-23-5	Carbon Tetrachloride	1	<0.0028	U	0.0017	0.0028	0.0056
107-06-2	1,2-Dichloroethane	1	<0.0028	U	0.0009	0.0028	0.0056
71-43-2	Benzene	1	<0.0028	U	0.0011	0.0028	0.0056
79-01-6	Trichloroethene	1	0.0082		0.0014	0.0028	0.0056
78-87-5	1,2-Dichloropropane	1	<0.0028	U	0.0015	0.0028	0.0056
75-27-4	Bromodichloromethane	1	<0.0028	U	0.0010	0.0028	0.0056
108-10-1	4-Methyl-2-pentanone	1	<0.0069	U	0.0039	0.0069	0.014
591-78-6	2-Hexanone	1	0.16	Q	0.0025	0.0069	0.014
10061-01-5	cis-1,3-Dichloropropene	1	<0.0028	U	0.0008	0.0028	0.0056
108-88-3	Toluene	1	0.0013	J	0.0013	0.0028	0.0056
10061-02-6	trans-1,3-Dichloropropene	1	<0.0028	U	0.0009	0.0028	0.0056
79-00-5	1,1,2-Trichloroethane	1	<0.0028	U	0.0017	0.0028	0.0056
127-18-4	Tetrachloroethene	1	0.0041	J	0.0014	0.0028	0.0056

UM 030115

UM 03/12/15

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

IR82-SD01D-14D

Laboratory:	ENCO Orlando	SDG:	A407175-CTO-WE9A
Client:	CH2M Hill, Inc. (CH031)	Project:	CTO-WE9A, Camp Lejuene Site 82

Matrix:	Sediment	Laboratory ID:	A407175-04	File ID:	5LN020.D
Sampled:	12/11/14 11:55	Prepared:	12/19/14 00:00	Analyzed:	12/19/14 18:22
Solids:	42.24	Preparation:	EPA 5030B_MS	Initial/Final:	4.26 g / 5 mL

Batch: 4L19028 Sequence: AA31829 Calibration: 1412093 Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (mg/kg dry)	Q	DL	LOD	LOQ
124-48-1	Dibromochloromethane	1	<0.0028	X UE U	0.0007	0.0028	0.0056
106-93-4	1,2-Dibromoethane	1	<0.0028	U	0.0009	0.0028	0.0056
108-90-7	Chlorobenzene	1	<0.0028	U	0.0013	0.0028	0.0056
100-41-4	Ethylbenzene	1	<0.0028	U	0.0016	0.0028	0.0056
108-38-3/106-42-3	m,p-Xylenes	1	<0.0056	U	0.0028	0.0056	0.011
95-47-6	o-Xylene	1	<0.0028	U	0.0014	0.0028	0.0056
75-25-2	Bromoform	1	<0.0028	U	0.0008	0.0028	0.0056
100-42-5	Styrene	1	<0.0028	U	0.0012	0.0028	0.0056
98-82-8	Isopropylbenzene	1	<0.0028	U	0.0015	0.0028	0.0056
79-34-5	1,1,2,2-Tetrachloroethane	1	<0.0028	U	0.0008	0.0028	0.0056
120-82-1	1,2,4-Trichlorobenzene	1	<0.0028	U	0.0024	0.0028	0.0056
541-73-1	1,3-Dichlorobenzene	1	<0.0028	U	0.0013	0.0028	0.0056
106-46-7	1,4-Dichlorobenzene	1	<0.0028	U	0.0013	0.0028	0.0056
95-50-1	1,2-Dichlorobenzene	1	<0.0028	U	0.0012	0.0028	0.0056
96-12-8	1,2-Dibromo-3-chloropropane	1	<0.0028	U	0.0016	0.0028	0.0056
91-20-3	Naphthalene	1	<0.0028	U	0.0016	0.0028	0.0056
1330-20-7	Xylenes (Total)	1	<0.0056	U	0.0028	0.0056	0.011

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	48	96	78 - 119	
Toluene-d8	50.0	43	86	85 - 116	
4-Bromofluorobenzene	50.0	41	83	79 - 119	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	662342	10.839	741932	10.839	
1,4-Difluorobenzene	1535169	11.488	1690203	11.488	
Chlorobenzene-d5	1396640	14.684	2579378	14.684	
1,4-Dichlorobenzene-d4	496881	17.281	1250459	17.281	*

* Values outside of QC limits

VM 030115

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

IR82-SD01D-14D RE

Laboratory:	ENCO Orlando	SDG:	A407175-CTO-WE9A
Client:	CH2M Hill, Inc. (CH031)	Project:	CTO-WE9A, Camp Lejuene Site 82

Matrix:	Sediment	Laboratory ID:	A407175-04RE1	File ID:	5LR018.D
Sampled:	12/11/14 11:55	Prepared:	12/23/14 00:00	Analyzed:	12/23/14 18:00
Solids:	42.24	Preparation:	EPA 5030B_MS	Initial/Final:	3.91 g / 5 mL

Batch: 4L23052 Sequence: AA31883 Calibration: 1412100 Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (mg/kg dry)	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1	<0.0030 UJICH	U	0.0019	0.0030	0.0061
74-87-3	Chloromethane	1	<0.0030	U	0.0020	0.0030	0.0061
75-01-4	Vinyl chloride	1	<0.0030	U	0.0013	0.0030	0.0061
74-83-9	Bromomethane	1	<0.015 UJICH	U	0.0027	0.015	0.030
75-00-3	Chloroethane	1	<0.0030 UJICH	U	0.0016	0.0030	0.0061
75-69-4	Trichlorofluoromethane	1	<0.0030	U	0.0016	0.0030	0.0061
76-13-1	Freon 113	1	<0.0030	U	0.0018	0.0030	0.0061
67-64-1	Acetone	1 JICH	0.28	JFD	0.0051	0.038	0.076
75-35-4	1,1-Dichloroethene	1	<0.0030	U	0.0019	0.0030	0.0061
75-15-0	Carbon disulfide	1	<0.015	U	0.0064	0.015	0.030
75-09-2	Methylene Chloride	1 0.015	~~0.0041~~	UEBJ	0.0021	0.015	0.030
1634-04-4	Methyl-tert-Butyl Ether	1	<0.0030	U	0.0008	0.0030	0.0061
156-60-5	trans-1,2-Dichloroethene	1	<0.0030	U	0.0021	0.0030	0.0061
156-59-2	cis-1,2-Dichloroethene	1	<0.0030	U	0.0016	0.0030	0.0061
75-34-3	1,1-Dichloroethane	1	<0.0030	U	0.0017	0.0030	0.0061
78-93-3	2-Butanone	1	0.020 JFD	Q	0.0054	0.0076	0.015
67-66-3	Chloroform	1	<0.0030	U	0.0013	0.0030	0.0061
71-55-6	1,1,1-Trichloroethane	1	<0.0030	U	0.0011	0.0030	0.0061
79-20-9	Methyl acetate	1	<0.015 UJICH	U	0.0048	0.015	0.030
110-82-7	Cyclohexane	1	<0.0030	U	0.0016	0.0030	0.0061
108-87-2	Methyl cyclohexane	1	<0.0030 UJICH	U	0.0016	0.0030	0.0061
56-23-5	Carbon Tetrachloride	1	<0.0030	U	0.0018	0.0030	0.0061
107-06-2	1,2-Dichloroethane	1	<0.0030	U	0.0010	0.0030	0.0061
71-43-2	Benzene	1	<0.0030	U	0.0012	0.0030	0.0061
79-01-6	Trichloroethene	1	0.0047 J JFD	J	0.0015	0.0030	0.0061
78-87-5	1,2-Dichloropropane	1	<0.0030	U	0.0017	0.0030	0.0061
75-27-4	Bromodichloromethane	1	<0.0030	U	0.0011	0.0030	0.0061
108-10-1	4-Methyl-2-pentanone	1	<0.0076 RICH	UQ	0.0042	0.0076	0.015
591-78-6	2-Hexanone	1	0.22 JICH		0.0028	0.0076	0.015
10061-01-5	cis-1,3-Dichloropropene	1	<0.0030	U	0.0009	0.0030	0.0061
108-88-3	Toluene	1	0.0017 JFD	J	0.0014	0.0030	0.0061
10061-02-6	trans-1,3-Dichloropropene	1	<0.0030	U	0.0009	0.0030	0.0061
79-00-5	1,1,2-Trichloroethane	1	<0.0030	U	0.0018	0.0030	0.0061
127-18-4	Tetrachloroethene	1	0.0028 J JFD	J	0.0015	0.0030	0.0061

UM 030115

3 corrections UM 031615

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

IR82-SD01D-14D RE

Laboratory:	ENCO Orlando	SDG:	A407175-CTO-WE9A
Client:	CH2M Hill, Inc. (CH031)	Project:	CTO-WE9A, Camp Lejuene Site 82

Matrix:	Sediment	Laboratory ID:	A407175-04RE1	File ID:	5LR018.D
Sampled:	12/11/14 11:55	Prepared:	12/23/14 00:00	Analyzed:	12/23/14 18:00
Solids:	42.24	Preparation:	EPA 5030B_MS	Initial/Final:	3.91 g / 5 mL

Batch: 4L23052 Sequence: AA31883 Calibration: 1412100 Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (mg/kg dry	Q	DL	LOD	LOQ
124-48-1	Dibromochloromethane	1	<0.0030	U	0.0008	0.0030	0.0061
106-93-4	1,2-Dibromoethane	1	<0.0030	U	0.0009	0.0030	0.0061
108-90-7	Chlorobenzene	1	<0.0030	U	0.0015	0.0030	0.0061
100-41-4	Ethylbenzene	1	<0.0030	U	0.0017	0.0030	0.0061
108-38-3/106-42-3	m,p-Xylenes	1	<0.0061	U	0.0030	0.0061	0.012
95-47-6	o-Xylene	1	<0.0030	U	0.0016	0.0030	0.0061
75-25-2	Bromoform	1	<0.0030	U	0.0009	0.0030	0.0061
100-42-5	Styrene	1	<0.0030	U	0.0013	0.0030	0.0061
98-82-8	Isopropylbenzene	1	<0.0030	U	0.0016	0.0030	0.0061
79-34-5	1,1,2,2-Tetrachloroethane	1	<0.0030	U	0.0009	0.0030	0.0061
120-82-1	1,2,4-Trichlorobenzene	1	<0.0030 UJ ISL	~~U~~	0.0026	0.0030	0.0061
541-73-1	1,3-Dichlorobenzene	1	<0.0030	~~U~~	0.0014	0.0030	0.0061
106-46-7	1,4-Dichlorobenzene	1	<0.0030	~~U~~	0.0014	0.0030	0.0061
95-50-1	1,2-Dichlorobenzene	1	<0.0030	~~U~~	0.0013	0.0030	0.0061
96-12-8	1,2-Dibromo-3-chloropropane	1	<0.0030	~~U~~	0.0017	0.0030	0.0061
91-20-3	Naphthalene	1	0.0017 XOT	~~J~~	0.0017	0.0030	0.0061
1330-20-7	Xylenes (Total)	1	<0.0061	U	0.0030	0.0061	0.012

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	52	105	78 - 119	
Toluene-d8	50.0	52	104	85 - 116	
4-Bromofluorobenzene	50.0	43	86	79 - 119	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	809190	10.855	971952	10.855	
1,4-Difluorobenzene	1611407	11.504	1869908	11.504	
Chlorobenzene-d5	1278907	14.7	2312431	14.7	
1,4-Dichlorobenzene-d4	435237	17.297	994475	17.297	*

* Values outside of QC limits

VM 030115

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

IR82-TB-121114

Laboratory: ENCO Orlando
SDG: A407175-CTO-WE9A
Client: CH2M Hill, Inc. (CH031)
Project: CTO-WE9A, Camp Lejuene Site 82

Matrix: Water
Laboratory ID: A407175-05
File ID: 2LS008.D
Sampled: 12/11/14 07:30
Prepared: 12/24/14 00:00
Analyzed: 12/24/14 07:54
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 4L24004
Sequence: AA31886
Calibration: 1412083
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1	<1.0 VJICH	~~UQ~~	0.74	1.0	2.0
74-87-3	Chloromethane	1	<1.0	U	0.82	1.0	2.0
75-01-4	Vinyl chloride	1	<1.0 VJICH	~~U~~	0.71	1.0	2.0
74-83-9	Bromomethane	1	<1.0 ↓	~~UQ~~	0.95	1.0	2.0
75-00-3	Chloroethane	1	<1.0 VJICH	~~UQ~~	0.98	1.0	2.0
75-69-4	Trichlorofluoromethane	1	<1.0	U	0.94	1.0	2.0
76-13-1	Freon 113	1	<1.0 VJICH	~~U~~	0.73	1.0	2.0
67-64-1	Acetone	1	<12	U	5.0	12	25
75-35-4	1,1-Dichloroethene	1	<1.0 VJICH	~~U~~	0.94	1.0	2.0
75-15-0	Carbon disulfide	1	<5.0 ↓	~~UQ~~	2.6	5.0	10
75-09-2	Methylene Chloride	1	<5.0	U	2.0	5.0	10
1634-04-4	Methyl-tert-Butyl Ether	1	<1.0 VJICH	~~U~~	0.60	1.0	2.0
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
78-93-3	2-Butanone	1	<12 RJCL	~~U~~	4.5	12	25
67-66-3	Chloroform	1	<1.0	U	0.80	1.0	2.0
71-55-6	1,1,1-Trichloroethane	1	<1.0 VJICH	~~U~~	0.80	1.0	2.0
79-20-9	Methyl acetate	1	<1.0	U	0.95	1.0	2.0
110-82-7	Cyclohexane	1	<1.0 VJICH	~~U~~	0.93	1.0	2.0
108-87-2	Methyl cyclohexane	1	<1.0 ↓	~~U~~	0.64	1.0	2.0
56-23-5	Carbon Tetrachloride	1	<1.0 ↓	~~U~~	0.94	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 VJICH	~~U~~	0.89	1.0	2.0
78-87-5	1,2-Dichloropropane	1	<1.0 ↓	~~U~~	0.80	1.0	2.0
75-27-4	Bromodichloromethane	1	<1.0 ↓	~~U~~	0.52	1.0	2.0
108-10-1	4-Methyl-2-pentanone	1	<2.5 RJCL	~~U~~	0.79	2.5	5.0
591-78-6	2-Hexanone	1	<2.5 VJICH	~~U~~	1.4	2.5	5.0
10061-01-5	cis-1,3-Dichloropropene	1	<1.0 ↓	~~U~~	0.59	1.0	2.0
108-88-3	Toluene	1	<1.0	U	0.72	1.0	2.0
10061-02-6	trans-1,3-Dichloropropene	1	<1.0 VJICH	~~U~~	0.73	1.0	2.0
79-00-5	1,1,2-Trichloroethane	1	<1.0	U	0.76	1.0	2.0
127-18-4	Tetrachloroethene	1	<1.0	U	0.76	1.0	2.0

MM 030115

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

IR82-TB-121114

Laboratory:	ENCO Orlando	SDG:	A407175-CTO-WE9A
Client:	CH2M Hill, Inc. (CH031)	Project:	CTO-WE9A, Camp Lejuene Site 82

Matrix:	Water	Laboratory ID:	A407175-05	File ID:	2LS008.D
Sampled:	12/11/14 07:30	Prepared:	12/24/14 00:00	Analyzed:	12/24/14 07:54
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch: 4L24004 Sequence: AA31886 Calibration: 1412083 Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
124-48-1	Dibromochloromethane	1	<1.0	UJICH U	0.44	1.0	2.0
106-93-4	1,2-Dibromoethane	1	<1.0	U	0.78	1.0	2.0
108-90-7	Chlorobenzene	1	<1.0	U	0.72	1.0	2.0
100-41-4	Ethylbenzene	1	<1.0	U	0.69	1.0	2.0
108-38-3/106-42-3	m,p-Xylenes	1	<2.0	U	1.3	2.0	4.0
95-47-6	o-Xylene	1	<1.0	U	0.53	1.0	2.0
75-25-2	Bromoform	1	<1.0	UJICH U	0.75	1.0	2.0
100-42-5	Styrene	1	<1.0	U	0.61	1.0	2.0
98-82-8	Isopropylbenzene	1	<1.0	UJICH U	0.67	1.0	2.0
79-34-5	1,1,2,2-Tetrachloroethane	1	<1.0	U	0.54	1.0	2.0
120-82-1	1,2,4-Trichlorobenzene	1	<1.0	UJICH U	0.70	1.0	2.0
541-73-1	1,3-Dichlorobenzene	1	<1.0	U	0.77	1.0	2.0
106-46-7	1,4-Dichlorobenzene	1	<1.0	U	0.76	1.0	2.0
95-50-1	1,2-Dichlorobenzene	1	<1.0	U	0.73	1.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1	<5.0	U	0.96	5.0	10
91-20-3	Naphthalene	1	<1.0	XOT U	0.82	1.0	2.0
1330-20-7	Xylenes (Total)	1	<2.0	U	1.3	2.0	4.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	56	111	80 - 119	
Toluene-d8	50.0	51	101	89 - 112	
4-Bromofluorobenzene	50.0	51	102	85 - 114	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	456838	11	460789	10.98	
1,4-Difluorobenzene	819089	11.57	805842	11.56	
Chlorobenzene-d5	708236	14.25	708168	14.23	

* Values outside of QC limits

UM 030115

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

IR82-TB-121114 RE

Laboratory:	ENCO Orlando	SDG:	A407175-CTO-WE9A
Client:	CH2M Hill, Inc. (CH031)	Project:	CTO-WE9A, Camp Lejuene Site 82

Matrix:	Water	Laboratory ID:	A407175-05RE1	File ID:	2LX016.D
Sampled:	12/11/14 07:30	Prepared:	12/29/14 00:00	Analyzed:	12/29/14 12:16
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch: 4L29031 Sequence: AA31937 Calibration: 1412083 Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1	<1.0	UQ	0.74	1.0	2.0
74-87-3	Chloromethane	1	<1.0	UQ	0.82	1.0	2.0
75-01-4	Vinyl chloride	1	<1.0	UQ	0.71	1.0	2.0
74-83-9	Bromomethane	1	<1.0	UQ	0.95	1.0	2.0
75-00-3	Chloroethane	1	<1.0	UQ	0.98	1.0	2.0
75-69-4	Trichlorofluoromethane	1	<1.0	UQ	0.94	1.0	2.0
76-13-1	Freon 113	1	<1.0	UQ	0.73	1.0	2.0
67-64-1	Acetone	1	<12	UQ	5.0	12	25
75-35-4	1,1-Dichloroethene	1	<1.0	UQ	0.94	1.0	2.0
75-15-0	Carbon disulfide	1	<5.0	UQ	2.6	5.0	10
75-09-2	Methylene Chloride	1	<5.0	UQ	2.0	5.0	10
1634-04-4	Methyl-tert-Butyl Ether	1	<1.0	UQ	0.60	1.0	2.0
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
78-93-3	2-Butanone	1	<12	UQ	4.5	12	25
67-66-3	Chloroform	1	<1.0	UQ	0.80	1.0	2.0
71-55-6	1,1,1-Trichloroethane	1	<1.0	UQ	0.80	1.0	2.0
79-20-9	Methyl acetate	1	<1.0	UQ	0.95	1.0	2.0
110-82-7	Cyclohexane	1	<1.0	UQ	0.93	1.0	2.0
108-87-2	Methyl cyclohexane	1	<1.0	UQ	0.64	1.0	2.0
56-23-5	Carbon Tetrachloride	1	<1.0	UQ	0.94	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
78-87-5	1,2-Dichloropropane	1	<1.0	UQ	0.80	1.0	2.0
75-27-4	Bromodichloromethane	1	<1.0	UQ	0.52	1.0	2.0
108-10-1	4-Methyl-2-pentanone	1	<2.5	UQ	0.79	2.5	5.0
591-78-6	2-Hexanone	1	<2.5	UQ	1.4	2.5	5.0
10061-01-5	cis-1,3-Dichloropropene	1	<1.0	UQ	0.59	1.0	2.0
108-88-3	Toluene	1	<1.0	UQ	0.72	1.0	2.0
10061-02-6	trans-1,3-Dichloropropene	1	<1.0	UQ	0.73	1.0	2.0
79-00-5	1,1,2-Trichloroethane	1	<1.0	UQ	0.76	1.0	2.0
127-18-4	Tetrachloroethene	1	<1.0	UQ	0.76	1.0	2.0

WM 030115

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

IR82-TB-121114 RE

Laboratory:	ENCO Orlando	SDG:	A407175-CTO-WE9A
Client:	CH2M Hill, Inc. (CH031)	Project:	CTO-WE9A, Camp Lejuene Site 82

Matrix:	Water	Laboratory ID:	A407175-05RE1	File ID:	2LX016.D
Sampled:	12/11/14 07:30	Prepared:	12/29/14 00:00	Analyzed:	12/29/14 12:16
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch: 4L29031 Sequence: AA31937 Calibration: 1412083 Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
124-48-1	Dibromochloromethane	1	<1.0	UQ	0.44	1.0	2.0
106-93-4	1,2-Dibromoethane	1	<1.0	UQ	0.78	1.0	2.0
108-90-7	Chlorobenzene	1	<1.0	UQ	0.72	1.0	2.0
100-41-4	Ethylbenzene	1	<1.0	UQ	0.69	1.0	2.0
108-38-3/106-42-3	m,p-Xylenes	1	<2.0	UQ	1.3	2.0	4.0
95-47-6	o-Xylene	1	<1.0	UQ	0.53	1.0	2.0
75-25-2	Bromoform	1	<1.0	UQ	0.75	1.0	2.0
100-42-5	Styrene	1	<1.0	UQ	0.61	1.0	2.0
98-82-8	Isopropylbenzene	1	<1.0	UQ	0.67	1.0	2.0
79-34-5	1,1,2,2-Tetrachloroethane	1	<1.0	UQ	0.54	1.0	2.0
120-82-1	1,2,4-Trichlorobenzene	1	<1.0	UQ	0.70	1.0	2.0
541-73-1	1,3-Dichlorobenzene	1	<1.0	UQ	0.77	1.0	2.0
106-46-7	1,4-Dichlorobenzene	1	<1.0	UQ	0.76	1.0	2.0
95-50-1	1,2-Dichlorobenzene	1	<1.0	UQ	0.73	1.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1	<5.0	UQ	0.96	5.0	10
91-20-3	Naphthalene	1	<1.0	UQ	0.82	1.0	2.0
1330-20-7	Xylenes (Total)	1	<2.0	UQ	1.3	2.0	4.0

XRE

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	70	140	80 - 119	*
Toluene-d8	50.0	58	116	89 - 112	*
4-Bromofluorobenzene	50.0	51	101	85 - 114	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	337850	10.98	460789	10.98	
1,4-Difluorobenzene	693699	11.55	805842	11.56	
Chlorobenzene-d5	705110	14.23	708168	14.23	

* Values outside of QC limits

MM 030115

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

IR82-EB-121114

Laboratory:	ENCO Orlando	SDG:	A407175-CTO-WE9A
Client:	CH2M Hill, Inc. (CH031)	Project:	CTO-WE9A, Camp Lejuene Site 82

Matrix:	Water	Laboratory ID:	A407175-06	File ID:	2LS009.D
Sampled:	12/11/14 08:00	Prepared:	12/24/14 00:00	Analyzed:	12/24/14 08:24
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch: 4L24004 Sequence: AA31886 Calibration: 1412083 Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1	<1.0 VJICH	~~UQ~~	0.74	1.0	2.0
74-87-3	Chloromethane	1	<1.0	U	0.82	1.0	2.0
75-01-4	Vinyl chloride	1	<1.0 VJICH	~~U~~	0.71	1.0	2.0
74-83-9	Bromomethane	1	<1.0 ↓	~~UQ~~	0.95	1.0	2.0
75-00-3	Chloroethane	1	<1.0 VJICH	~~UQ~~	0.98	1.0	2.0
75-69-4	Trichlorofluoromethane	1	<1.0	U	0.94	1.0	2.0
76-13-1	Freon 113	1	<1.0 VJICH	~~U~~	0.73	1.0	2.0
67-64-1	Acetone	1	<12	U	5.0	12	25
75-35-4	1,1-Dichloroethene	1	<1.0 VJICH	~~U~~	0.94	1.0	2.0
75-15-0	Carbon disulfide	1	<5.0 VJICH	~~UQ~~	2.6	5.0	10
75-09-2	Methylene Chloride	1	580 JLR	~~E~~	2.0	5.0	10
1634-04-4	Methyl-tert-Butyl Ether	1	<1.0 VJICH	~~U~~	0.60	1.0	2.0
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
78-93-3	2-Butanone	1	<12 RICH	~~U~~	4.5	12	25
67-66-3	Chloroform	1	<1.0	U	0.80	1.0	2.0
71-55-6	1,1,1-Trichloroethane	1	<1.0 VJICH	~~U~~	0.80	1.0	2.0
79-20-9	Methyl acetate	1	<1.0	U	0.95	1.0	2.0
110-82-7	Cyclohexane	1	<1.0 VJICH	~~U~~	0.93	1.0	2.0
108-87-2	Methyl cyclohexane	1	<1.0 ↓	~~U~~	0.64	1.0	2.0
56-23-5	Carbon Tetrachloride	1	<1.0 ↓	~~U~~	0.94	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 VJICH	~~U~~	0.89	1.0	2.0
78-87-5	1,2-Dichloropropane	1	<1.0 ↓	~~U~~	0.80	1.0	2.0
75-27-4	Bromodichloromethane	1	<1.0 ↓	~~U~~	0.52	1.0	2.0
108-10-1	4-Methyl-2-pentanone	1	<2.5 RICH	~~U~~	0.79	2.5	5.0
591-78-6	2-Hexanone	1	<2.5 VJICH	~~U~~	1.4	2.5	5.0
10061-01-5	cis-1,3-Dichloropropene	1	<1.0 ↓	~~U~~	0.59	1.0	2.0
108-88-3	Toluene	1	<1.0	U	0.72	1.0	2.0
10061-02-6	trans-1,3-Dichloropropene	1	<1.0 VJICH	~~U~~	0.73	1.0	2.0
79-00-5	1,1,2-Trichloroethane	1	<1.0	U	0.76	1.0	2.0
127-18-4	Tetrachloroethene	1	<1.0	U	0.76	1.0	2.0

VM 130115

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

IR82-EB-121114

Laboratory:	ENCO Orlando	SDG:	A407175-CTO-WE9A
Client:	CH2M Hill, Inc. (CH031)	Project:	CTO-WE9A, Camp Lejuene Site 82

Matrix:	Water	Laboratory ID:	A407175-06	File ID:	2LS009.D
Sampled:	12/11/14 08:00	Prepared:	12/24/14 00:00	Analyzed:	12/24/14 08:24
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch: 4L24004 Sequence: AA31886 Calibration: 1412083 Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
124-48-1	Dibromochloromethane	1	<1.0	~~U~~ UJ JCH	0.44	1.0	2.0
106-93-4	1,2-Dibromoethane	1	<1.0	U	0.78	1.0	2.0
108-90-7	Chlorobenzene	1	<1.0	U	0.72	1.0	2.0
100-41-4	Ethylbenzene	1	<1.0	U	0.69	1.0	2.0
108-38-3/106-42-3	m,p-Xylenes	1	<2.0	U	1.3	2.0	4.0
95-47-6	o-Xylene	1	<1.0	U	0.53	1.0	2.0
75-25-2	Bromoform	1	<1.0	~~U~~ UJ JCH	0.75	1.0	2.0
100-42-5	Styrene	1	<1.0	U	0.61	1.0	2.0
98-82-8	Isopropylbenzene	1	<1.0	~~U~~ UJ JCH	0.67	1.0	2.0
79-34-5	1,1,2,2-Tetrachloroethane	1	<1.0	U	0.54	1.0	2.0
120-82-1	1,2,4-Trichlorobenzene	1	<1.0	~~U~~ UJ JCH	0.70	1.0	2.0
541-73-1	1,3-Dichlorobenzene	1	<1.0	U	0.77	1.0	2.0
106-46-7	1,4-Dichlorobenzene	1	<1.0	U	0.76	1.0	2.0
95-50-1	1,2-Dichlorobenzene	1	<1.0	U	0.73	1.0	2.0
96-12-8	1,2-Dibromo-3-chloropropane	1	<5.0	U	0.96	5.0	10
91-20-3	Naphthalene	1	<1.0	~~U~~ XOT	0.82	1.0	2.0
1330-20-7	Xylenes (Total)	1	<2.0	U	1.3	2.0	4.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	56	111	80 - 119	
Toluene-d8	50.0	52	103	89 - 112	
4-Bromofluorobenzene	50.0	51	101	85 - 114	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	442452	11	460789	10.98	
1,4-Difluorobenzene	809609	11.57	805842	11.56	
Chlorobenzene-d5	695206	14.24	708168	14.23	

* Values outside of QC limits

VM 030115

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

IR82-EB-121114

Laboratory:	ENCO Orlando	SDG:	A407175-CTO-WE9A
Client:	CH2M Hill, Inc. (CH031)	Project:	CTO-WE9A, Camp Lejuene Site 82

Matrix:	Water	Laboratory ID:	A407175-06RE1	File ID:	2AA017.D
Sampled:	12/11/14 08:00	Prepared:	01/06/15 00:00	Analyzed:	01/06/15 15:26
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch: 5A06015 Sequence: AA32039 Calibration: 1501002 Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	5	<5.0	UDQ	3.7	5.0	10
74-87-3	Chloromethane	5	<5.0	UDQ	4.1	5.0	10
75-01-4	Vinyl chloride	5	<5.0	UDQ	3.6	5.0	10
74-83-9	Bromomethane	5	<5.0	UDQ	4.8	5.0	10
75-00-3	Chloroethane	5	<5.0	UDQ	4.9	5.0	10
75-69-4	Trichlorofluoromethane	5	<5.0	UDQ	4.7	5.0	10
76-13-1	Freon 113	5	<5.0	UDQ	3.6	5.0	10
67-64-1	Acetone	5	<62	UDQ	25	62	120
75-35-4	1,1-Dichloroethene	5	<5.0	UDQ	4.7	5.0	10
75-15-0	Carbon disulfide	5	<25	UDQ	13	25	50
75-09-2	Methylene Chloride	5	450	DQ	10	25	50
1634-04-4	Methyl-tert-Butyl Ether	5	<5.0	UDQ	3.0	5.0	10
156-60-5	trans-1,2-Dichloroethene	5	<5.0	UDQ	3.6	5.0	10
156-59-2	cis-1,2-Dichloroethene	5	<5.0	UDQ	2.6	5.0	10
75-34-3	1,1-Dichloroethane	5	<5.0	UDQ	3.1	5.0	10
78-93-3	2-Butanone	5	<62	UDQ	22	62	120
67-66-3	Chloroform	5	<5.0	UDQ	4.0	5.0	10
71-55-6	1,1,1-Trichloroethane	5	<5.0	UDQ	4.0	5.0	10
79-20-9	Methyl acetate	5	<5.0	UDQ	4.8	5.0	10
110-82-7	Cyclohexane	5	<5.0	UDQ	4.6	5.0	10
108-87-2	Methyl cyclohexane	5	<5.0	UDQ	3.2	5.0	10
56-23-5	Carbon Tetrachloride	5	<5.0	UDQ	4.7	5.0	10
107-06-2	1,2-Dichloroethane	5	<5.0	UDQ	3.2	5.0	10
71-43-2	Benzene	5	<5.0	UDQ	3.6	5.0	10
79-01-6	Trichloroethene	5	<5.0	UDQ	4.4	5.0	10
78-87-5	1,2-Dichloropropane	5	<5.0	UDQ	4.0	5.0	10
75-27-4	Bromodichloromethane	5	<5.0	UDQ	2.6	5.0	10
108-10-1	4-Methyl-2-pentanone	5	<12	UDQ	4.0	12	25
591-78-6	2-Hexanone	5	<12	UDQ	7.0	12	25
10061-01-5	cis-1,3-Dichloropropene	5	<5.0	UDQ	3.0	5.0	10
108-88-3	Toluene	5	<5.0	UDQ	3.6	5.0	10
10061-02-6	trans-1,3-Dichloropropene	5	<5.0	UDQ	3.6	5.0	10
79-00-5	1,1,2-Trichloroethane	5	<5.0	UDQ	3.8	5.0	10
127-18-4	Tetrachloroethene	5	<5.0	UDQ	3.8	5.0	10

ORGANIC ANALYSIS DATA SHEET

EPA 8260B

IR82-EB-121114 RE

Laboratory:	ENCO Orlando	SDG:	A407175-CTO-WE9A
Client:	CH2M Hill, Inc. (CH031)	Project:	CTO-WE9A, Camp Lejuene Site 82

Matrix:	Water	Laboratory ID:	A407175-06RE1	File ID:	2AA017.D
Sampled:	12/11/14 08:00	Prepared:	01/06/15 00:00	Analyzed:	01/06/15 15:26
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch: 5A06015 Sequence: AA32039 Calibration: 1501002 Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
124-48-1	Dibromochloromethane	5	<5.0	UDQ	2.2	5.0	10
106-93-4	1,2-Dibromoethane	5	<5.0	UDQ	3.9	5.0	10
108-90-7	Chlorobenzene	5	<5.0	UDQ	3.6	5.0	10
100-41-4	Ethylbenzene	5	<5.0	UDQ	3.4	5.0	10
108-38-3/106-42-3	m,p-Xylenes	5	<10	UDQ	6.5	10	20
95-47-6	o-Xylene	5	<5.0	UDQ	2.6	5.0	10
75-25-2	Bromoform	5	<5.0	UDQ	3.8	5.0	10
100-42-5	Styrene	5	<5.0	UDQ	3.0	5.0	10
98-82-8	Isopropylbenzene	5	<5.0	UDQ	3.4	5.0	10
79-34-5	1,1,2,2-Tetrachloroethane	5	<5.0	UDQ	2.7	5.0	10
120-82-1	1,2,4-Trichlorobenzene	5	<5.0	UDQ	3.5	5.0	10
541-73-1	1,3-Dichlorobenzene	5	<5.0	UDQ	3.8	5.0	10
106-46-7	1,4-Dichlorobenzene	5	<5.0	UDQ	3.8	5.0	10
95-50-1	1,2-Dichlorobenzene	5	<5.0	UDQ	3.6	5.0	10
96-12-8	1,2-Dibromo-3-chloropropane	5	<25	UDQ	4.8	25	50
91-20-3	Naphthalene	5	<5.0	UDQ	4.1	5.0	10
1330-20-7	Xylenes (Total)	5	<10	UDQ	6.5	10	20

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	46	92	80 - 119	
Toluene-d8	50.0	45	90	89 - 112	
4-Bromofluorobenzene	50.0	48	97	85 - 114	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	394151	10.97	270652	10.97	
1,4-Difluorobenzene	712833	11.55	508133	11.55	
Chlorobenzene-d5	622146	14.22	626993	14.22	

* Values outside of QC limits

VM 030115

ORGANIC ANALYSIS DATA SHEET

EPA 8270D

IR82-SD01-14D

Laboratory: ENCO Orlando
SDG: A407175-CTO-WE9A
Client: CH2M Hill, Inc. (CH031)
Project: CTO-WE9A, Camp Lejuene Site 82

Matrix: Sediment
Laboratory ID: A407175-03RE1
File ID: 1ai008.D
Sampled: 12/11/14 11:50
Prepared: 12/23/14 13:36
Analyzed: 01/16/15 15:08
Solids: 38.83
Preparation: EPA 3550C_MS
Initial/Final: 30 g / 1 mL
Batch: 4L23042
Sequence: AA32184
Calibration: 1501007
Instrument: OSVGCMS1

CAS NO.	COMPOUND	DILUTION	CONC. (mg/kg dry)	Q	DL	LOD	LOQ
100-52-7	Benzaldehyde	1	<0.77	UJ ~~U~~	0.70	0.77	0.85
108-95-2	Phenol	1	<0.26	U	0.25	0.26	0.85
111-44-4	Bis(2-chloroethyl)ether	1	<0.52	UJ ~~U~~	0.36	0.52	0.85
95-57-8	2-Chlorophenol	1	<0.77	U	0.59	0.77	0.85
95-48-7	2-Methylphenol	1	<0.52	U	0.28	0.52	0.85
108-60-1	Bis(2-chloroisopropyl)ether	1	<0.26	UJ ~~U~~	0.25	0.26	0.85
98-86-2	Acetophenone	1	<0.52	UJ ~~U~~	0.36	0.52	0.85
108-39-4/106-44-5	3 & 4-Methylphenol	1	<0.77	U	0.64	0.77	0.85
621-64-7	N-Nitroso-di-n-propylamine	1	<0.52	UJ ~~U~~	0.39	0.52	0.85
67-72-1	Hexachloroethane	1	<0.26	~~UQ~~	0.26	0.26	0.85
98-95-3	Nitrobenzene	1	<0.52	~~U~~	0.39	0.52	0.85
78-59-1	Isophorone	1	<0.52	~~U~~	0.44	0.52	0.85
88-75-5	2-Nitrophenol	1	<0.77	U	0.67	0.77	0.85
105-67-9	2,4-Dimethylphenol	1	<0.77	U	0.59	0.77	0.85
111-91-1	Bis(2-chloroethoxy)methane	1	<0.52	UJ ~~U~~	0.39	0.52	0.85
120-83-2	2,4-Dichlorophenol	1	<0.77	U	0.64	0.77	0.85
106-47-8	4-Chloroaniline	1	<0.26	UJ ~~U~~	0.17	0.26	0.85
87-68-3	Hexachlorobutadiene	1	<0.52	~~UQ~~	0.33	0.52	0.85
105-60-2	Caprolactam	1	<0.77	~~U~~	0.77	0.77	0.85
59-50-7	4-Chloro-3-methylphenol	1	<0.77	U	0.72	0.77	0.85
77-47-4	Hexachlorocyclopentadiene	1	<0.52	UJ ~~UQ~~	0.39	0.52	0.85
88-06-2	2,4,6-Trichlorophenol	1	<0.52	U	0.39	0.52	0.85
95-95-4	2,4,5-Trichlorophenol	1	<0.26	U	0.17	0.26	0.85
92-52-4	1,1'-Biphenyl	1	<0.26	UJ ~~UQ~~	0.19	0.26	0.85
91-58-7	2-Chloronaphthalene	1	<0.26	~~UQ~~	0.25	0.26	0.85
88-74-4	2-Nitroaniline	1	<0.26	~~U~~	0.22	0.26	0.85
131-11-3	Dimethylphthalate	1	<0.52	~~U~~	0.33	0.52	0.85
606-20-2	2,6-Dinitrotoluene	1	<0.52	~~U~~	0.46	0.52	0.85
99-09-2	3-Nitroaniline	1	<0.26	~~U~~	0.21	0.26	0.85
51-28-5	2,4-Dinitrophenol	1	<0.26	U	0.23	0.26	0.85
100-02-7	4-Nitrophenol	1	<0.52	UJ ~~UQ~~	0.33	0.52	0.85
132-64-9	Dibenzofuran	1	<0.52	UJ ~~UQ~~	0.33	0.52	0.85
121-14-2	2,4-Dinitrotoluene	1	<0.52	UJ ~~U~~	0.41	0.52	0.85

VM 031015

ORGANIC ANALYSIS DATA SHEET

EPA 8270D

IR82-SD01-14D

Laboratory:	ENCO Orlando	SDG:	A407175-CTO-WE9A
Client:	CH2M Hill, Inc. (CH031)	Project:	CTO-WE9A, Camp Lejuene Site 82

Matrix:	Sediment	Laboratory ID:	A407175-03RE1	File ID:	1ai008.D
Sampled:	12/11/14 11:50	Prepared:	12/23/14 13:36	Analyzed:	01/16/15 15:08
Solids:	38.83	Preparation:	EPA 3550C_MS	Initial/Final:	30 g / 1 mL

Batch: 4L23042 Sequence: AA32184 Calibration: 1501007 Instrument: OSVGCMS1

CAS NO.	COMPOUND	DILUTION	CONC. (mg/kg dry)	Q	DL	LOD	LOQ
84-66-2	Diethylphthalate	1	<0.52	UJ~~UQ~~	0.33	0.52	0.85
7005-72-3	4-Chlorophenyl-phenylether	1	<0.52	~~UQ~~	0.33	0.52	0.85
100-01-6	4-Nitroaniline	1	<0.77	~~U~~	0.67	0.77	0.85
534-52-1	2-Methyl-4,6-dinitrophenol	1	<0.77	U	0.72	0.77	0.85
86-30-6/122-39-4	N-nitrosodiphenylamine/Diphenylamine	1	<0.77	UJ~~UQ~~	0.59	0.77	0.85
101-55-3	4-Bromophenyl-phenylether	1	<0.52	~~UQ~~	0.33	0.52	0.85
118-74-1	Hexachlorobenzene	1	<0.52	~~UQ~~	0.31	0.52	0.85
1912-24-9	Atrazine	1	<0.26	~~U~~	0.19	0.26	0.85
87-86-5	Pentachlorophenol	1	<0.77	U	0.54	0.77	0.85
86-74-8	Carbazole	1	<0.52	UJ~~UQ~~	0.31	0.52	0.85
84-74-2	Di-n-butylphthalate	1	<0.52	~~UQ~~	0.33	0.52	0.85
85-68-7	Butylbenzylphthalate	1	<0.52	~~UQ~~	0.36	0.52	0.85
91-94-1	3,3'-Dichlorobenzidine	1	<0.77	~~UQ~~	0.54	0.77	0.85
117-81-7	Bis(2-ethylhexyl)phthalate	1	<0.52	~~U~~	0.33	0.52	0.85
117-84-0	Di-n-octylphthalate	1	<0.52	~~U~~	0.33	0.52	0.85

SYSTEM MONITORING COMPOUND	ADDED (mg/kg dry)	CONC (mg/kg dry)	% REC	QC LIMITS	Q
2-Fluorophenol	4.29	2.7	62	35 - 115	
Phenol-d5	4.29	3.0	70	33 - 122	
Nitrobenzene-d5	4.29	2.0	46	37 - 122	
2-Fluorobiphenyl	4.29	0.64	15	44 - 115	*
2,4,6-Tribromophenol	4.29	0.96	22	39 - 132	*
Terphenyl-d14	4.29	1.7	40	54 - 127	*

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Dichlorobenzene-d4	402540	6.976	312803	6.966	
Naphthalene-d8	1525240	8.546	1202138	8.546	
Acenaphthene-d10	743754	10.753	663746	10.753	
Phenanthrene-d10	1117694	12.625	1098576	12.637	
Chrysene-d12	654657	16.253	565336	16.253	
Perylene-d12	451698	19.217	404946	19.226	

* Values outside of QC limits

MM 031015

ORGANIC ANALYSIS DATA SHEET

EPA 8270D

IR82-SD01D-14D

Laboratory: ENCO Orlando
SDG: A407175-CTO-WE9A
Client: CH2M Hill, Inc. (CH031)
Project: CTO-WE9A, Camp Lejuene Site 82

Matrix: Sediment
Laboratory ID: A407175-04
File ID: 1ac022.D
Sampled: 12/11/14 11:55
Prepared: 12/23/14 13:36
Analyzed: 01/08/15 16:08
Solids: 42.24
Preparation: EPA 3550C_MS
Initial/Final: 30.5 g / 1 mL
Batch: 4L23042
Sequence: AA32069
Calibration: 1501007
Instrument: OSVGCMS1

CAS NO.	COMPOUND	DILUTION	CONC. (mg/kg dry	Q	DL	LOD	LOQ
100-52-7	Benzaldehyde	1	<0.71	U	0.64	0.71	0.78
108-95-2	Phenol	1	<0.24	U	0.23	0.24	0.78
111-44-4	Bis(2-chloroethyl)ether	1	<0.47	U	0.33	0.47	0.78
95-57-8	2-Chlorophenol	1	<0.71	U	0.54	0.71	0.78
95-48-7	2-Methylphenol	1	<0.47	U	0.26	0.47	0.78
108-60-1	Bis(2-chloroisopropyl)ether	1	<0.24	U	0.23	0.24	0.78
98-86-2	Acetophenone	1	<0.47	U	0.33	0.47	0.78
108-39-4/106-44-5	3 & 4-Methylphenol	1	<0.71	U	0.59	0.71	0.78
621-64-7	N-Nitroso-di-n-propylamine	1	<0.47	U	0.36	0.47	0.78
67-72-1	Hexachloroethane	1	<0.24	U	0.24	0.24	0.78
98-95-3	Nitrobenzene	1	<0.47	U	0.36	0.47	0.78
78-59-1	Isophorone	1	<0.47	U	0.40	0.47	0.78
88-75-5	2-Nitrophenol	1	<0.71	U	0.62	0.71	0.78
105-67-9	2,4-Dimethylphenol	1	<0.71	U	0.54	0.71	0.78
111-91-1	Bis(2-chloroethoxy)methane	1	<0.47	U	0.36	0.47	0.78
120-83-2	2,4-Dichlorophenol	1	<0.71	U	0.59	0.71	0.78
106-47-8	4-Chloroaniline	1	<0.24	U	0.15	0.24	0.78
87-68-3	Hexachlorobutadiene	1	<0.47	U	0.31	0.47	0.78
105-60-2	Caprolactam	1	<0.71	U	0.71	0.71	0.78
59-50-7	4-Chloro-3-methylphenol	1	<0.71	U	0.66	0.71	0.78
77-47-4	Hexachlorocyclopentadiene	1	<0.47	UQ	0.36	0.47	0.78
88-06-2	2,4,6-Trichlorophenol	1	<0.47	U	0.36	0.47	0.78
95-95-4	2,4,5-Trichlorophenol	1	<0.24	U	0.16	0.24	0.78
92-52-4	1,1'-Biphenyl	1	<0.24	U	0.17	0.24	0.78
91-58-7	2-Chloronaphthalene	1	<0.24	U	0.23	0.24	0.78
88-74-4	2-Nitroaniline	1	<0.24	U	0.20	0.24	0.78
131-11-3	Dimethylphthalate	1	<0.47	U	0.31	0.47	0.78
606-20-2	2,6-Dinitrotoluene	1	<0.47	U	0.43	0.47	0.78
99-09-2	3-Nitroaniline	1	<0.24	U	0.19	0.24	0.78
51-28-5	2,4-Dinitrophenol	1	<0.24	U	0.21	0.24	0.78
100-02-7	4-Nitrophenol	1	<0.47	U	0.31	0.47	0.78
132-64-9	Dibenzofuran	1	<0.47	U	0.31	0.47	0.78
121-14-2	2,4-Dinitrotoluene	1	<0.47	U	0.38	0.47	0.78

XPE

UM 031015

ORGANIC ANALYSIS DATA SHEET

EPA 8270D

IR82-SD01D-14D

Laboratory:	ENCO Orlando	SDG:	A407175-CTO-WE9A
Client:	CH2M Hill, Inc. (CH031)	Project:	CTO-WE9A, Camp Lejuene Site 82

Matrix:	Sediment	Laboratory ID:	A407175-04	File ID:	1ac022.D
Sampled:	12/11/14 11:55	Prepared:	12/23/14 13:36	Analyzed:	01/08/15 16:08
Solids:	42.24	Preparation:	EPA 3550C_MS	Initial/Final:	30.5 g / 1 mL

Batch: 4L23042 Sequence: AA32069 Calibration: 1501007 Instrument: OSVGCMS1

CAS NO.	COMPOUND	DILUTION	CONC. (mg/kg dry)	Q	DL	LOD	LOQ
84-66-2	Diethylphthalate	1	<0.47	U	0.31	0.47	0.78
7005-72-3	4-Chlorophenyl-phenylether	1	<0.47	U	0.31	0.47	0.78
100-01-6	4-Nitroaniline	1	<0.71	U	0.62	0.71	0.78
534-52-1	2-Methyl-4,6-dinitrophenol	1	<0.71	U	0.66	0.71	0.78
86-30-6/122-39-4	N-nitrosodiphenylamine/Diphenylamine	1	<0.71	U	0.54	0.71	0.78
101-55-3	4-Bromophenyl-phenylether	1	<0.47	U	0.31	0.47	0.78
118-74-1	Hexachlorobenzene	1	<0.47	U	0.28	0.47	0.78
1912-24-9	Atrazine	1	<0.24	U	0.18	0.24	0.78
87-86-5	Pentachlorophenol	1	<0.71	U	0.50	0.71	0.78
86-74-8	Carbazole	1	<0.47	U	0.28	0.47	0.78
84-74-2	Di-n-butylphthalate	1	<0.47	U	0.31	0.47	0.78
85-68-7	Butylbenzylphthalate	1	<0.47	U	0.33	0.47	0.78
91-94-1	3,3'-Dichlorobenzidine	1	<0.71	UQ	0.50	0.71	0.78
117-81-7	Bis(2-ethylhexyl)phthalate	1	<0.47	UQ	0.31	0.47	0.78
117-84-0	Di-n-octylphthalate	1	<0.47	UQ	0.31	0.47	0.78

SYSTEM MONITORING COMPOUND	ADDED (mg/kg dry)	CONC (mg/kg dry)	% REC	QC LIMITS	Q
2-Fluorophenol	3.88	2.4	63	35 - 115	
Phenol-d5	3.88	2.7	70	33 - 122	
Nitrobenzene-d5	3.88	1.8	47	37 - 122	
2-Fluorobiphenyl	3.88	0.49	13	44 - 115	*
2,4,6-Tribromophenol	3.88	0.91	24	39 - 132	*
Terphenyl-d14	3.88	1.6	41	54 - 127	*

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Dichlorobenzene-d4	378724	6.816	312803	6.966	
Naphthalene-d8	1315866	8.397	1202138	8.546	
Acenaphthene-d10	693516	10.604	663746	10.753	
Phenanthrene-d10	1074086	12.476	1098576	12.637	
Chrysene-d12	649983	16.032	565336	16.253	*
Perylene-d12	479231	18.972	404946	19.226	*

* Values outside of QC limits

MM 051015

ORGANIC ANALYSIS DATA SHEET

EPA 8270D

IR82-SD01D-14D

Laboratory: ENCO Orlando
SDG: A407175-CTO-WE9A
Client: CH2M Hill, Inc. (CH031)
Project: CTO-WE9A, Camp Lejuene Site 82

Matrix: Sediment
Laboratory ID: A407175-04RE1
File ID: 1ae007.D
Sampled: 12/11/14 11:55
Prepared: 01/09/15 14:30
Analyzed: 01/10/15 18:49
Solids: 42.24
Preparation: EPA 3550C_MS
Initial/Final: 30 g / 1 mL
Batch: 5A09022
Sequence: AA32103
Calibration: 1501007
Instrument: OSVGCMS1

CAS NO.	COMPOUND	DILUTION	CONC. (mg/kg dry	Q	DL	LOD	LOQ
100-52-7	Benzaldehyde	1	<0.71	UQ	0.64	0.71	0.78
108-95-2	Phenol	1	<0.24	UQ	0.23	0.24	0.78
111-44-4	Bis(2-chloroethyl)ether	1	<0.47	UQ	0.33	0.47	0.78
95-57-8	2-Chlorophenol	1	<0.71	UQ	0.54	0.71	0.78
95-48-7	2-Methylphenol	1	<0.47	UQ	0.26	0.47	0.78
108-60-1	Bis(2-chloroisopropyl)ether	1	<0.24	UQ	0.23	0.24	0.78
98-86-2	Acetophenone	1	<0.47	UQ	0.33	0.47	0.78
108-39-4/106-44-5	3 & 4-Methylphenol	1	<0.71	UQ	0.59	0.71	0.78
621-64-7	N-Nitroso-di-n-propylamine	1	<0.47	UQ	0.36	0.47	0.78
67-72-1	Hexachloroethane	1	<0.24	UQ	0.24	0.24	0.78
98-95-3	Nitrobenzene	1	<0.47	UQ	0.36	0.47	0.78
78-59-1	Isophorone	1	<0.47	UQ	0.40	0.47	0.78
88-75-5	2-Nitrophenol	1	<0.71	UQ	0.62	0.71	0.78
105-67-9	2,4-Dimethylphenol	1	<0.71	UQ	0.54	0.71	0.78
111-91-1	Bis(2-chloroethoxy)methane	1	<0.47	UQ	0.36	0.47	0.78
120-83-2	2,4-Dichlorophenol	1	<0.71	UQ	0.59	0.71	0.78
106-47-8	4-Chloroaniline	1	<0.24	UQ	0.15	0.24	0.78
87-68-3	Hexachlorobutadiene	1	<0.47	UQ	0.31	0.47	0.78
105-60-2	Caprolactam	1	<0.71	UQ	0.71	0.71	0.78
59-50-7	4-Chloro-3-methylphenol	1	<0.71	UQ	0.66	0.71	0.78
77-47-4	Hexachlorocyclopentadiene	1	<0.47	UQ	0.36	0.47	0.78
88-06-2	2,4,6-Trichlorophenol	1	<0.47	UQ	0.36	0.47	0.78
95-95-4	2,4,5-Trichlorophenol	1	<0.24	UQ	0.16	0.24	0.78
92-52-4	1,1'-Biphenyl	1	<0.24	UQ	0.17	0.24	0.78
91-58-7	2-Chloronaphthalene	1	<0.24	UQ	0.23	0.24	0.78
88-74-4	2-Nitroaniline	1	<0.24	UQ	0.20	0.24	0.78
131-11-3	Dimethylphthalate	1	<0.47	UQ	0.31	0.47	0.78
606-20-2	2,6-Dinitrotoluene	1	<0.47	UQ	0.43	0.47	0.78
99-09-2	3-Nitroaniline	1	<0.24	UQ	0.19	0.24	0.78
51-28-5	2,4-Dinitrophenol	1	<0.24	UQ	0.21	0.24	0.78
100-02-7	4-Nitrophenol	1	<0.47	UQ	0.31	0.47	0.78
132-64-9	Dibenzofuran	1	<0.47	UQ	0.31	0.47	0.78
121-14-2	2,4-Dinitrotoluene	1	<0.47	UQ	0.38	0.47	0.78

XRE

MM 031015

ORGANIC ANALYSIS DATA SHEET

EPA 8270D

IR82-SD01D-14D

Laboratory:	ENCO Orlando	SDG:	A407175-CTO-WE9A
Client:	CH2M Hill, Inc. (CH031)	Project:	CTO-WE9A, Camp Lejuene Site 82

Matrix:	Sediment	Laboratory ID:	A407175-04RE1	File ID:	1ae007.D
Sampled:	12/11/14 11:55	Prepared:	01/09/15 14:30	Analyzed:	01/10/15 18:49
Solids:	42.24	Preparation:	EPA 3550C_MS	Initial/Final:	30 g / 1 mL

Batch: 5A09022 Sequence: AA32103 Calibration: 1501007 Instrument: OSVGCMS1

CAS NO.	COMPOUND	DILUTION	CONC. (mg/kg dry)	Q	DL	LOD	LOQ
84-66-2	Diethylphthalate	1	<0.47	UQ	0.31	0.47	0.78
7005-72-3	4-Chlorophenyl-phenylether	1	<0.47	UQ	0.31	0.47	0.78
100-01-6	4-Nitroaniline	1	<0.71	UQ	0.62	0.71	0.78
534-52-1	2-Methyl-4,6-dinitrophenol	1	<0.71	UQ	0.66	0.71	0.78
86-30-6/122-39-4	N-nitrosodiphenylamine/Diphenylamine	1	<0.71	UQ	0.54	0.71	0.78
101-55-3	4-Bromophenyl-phenylether	1	<0.47	UQ	0.31	0.47	0.78
118-74-1	Hexachlorobenzene	1	<0.47	UQ	0.28	0.47	0.78
1912-24-9	Atrazine	1	<0.24	UQ	0.18	0.24	0.78
87-86-5	Pentachlorophenol	1	<0.71	UQ	0.50	0.71	0.78
86-74-8	Carbazole	1	<0.47	UQ	0.28	0.47	0.78
84-74-2	Di-n-butylphthalate	1	<0.47	UQ	0.31	0.47	0.78
85-68-7	Butylbenzylphthalate	1	<0.47	UQ	0.33	0.47	0.78
91-94-1	3,3'-Dichlorobenzidine	1	<0.71	UQ	0.50	0.71	0.78
117-81-7	Bis(2-ethylhexyl)phthalate	1	<0.47	UQ	0.31	0.47	0.78
117-84-0	Di-n-octylphthalate	1	<0.47	UQ	0.31	0.47	0.78

SYSTEM MONITORING COMPOUND	ADDED (mg/kg dry)	CONC (mg/kg dry)	% REC	QC LIMITS	Q
2-Fluorophenol	3.95	3.2	82	35 - 115	
Phenol-d5	3.95	3.5	88	33 - 122	
Nitrobenzene-d5	3.95	3.2	81	37 - 122	
2-Fluorobiphenyl	3.95	2.7	68	44 - 115	
2,4,6-Tribromophenol	3.95	3.8	97	39 - 132	
Terphenyl-d14	3.95	2.8	70	54 - 127	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Dichlorobenzene-d4	318018	6.786	312803	6.966	
Naphthalene-d8	1176135	8.36	1202138	8.546	
Acenaphthene-d10	610925	10.575	663746	10.753	
Phenanthrene-d10	1010587	12.451	1098576	12.637	
Chrysene-d12	516473	15.999	565336	16.253	*
Perylene-d12	315954	18.929	404946	19.226	*

* Values outside of QC limits

VM 031015

ORGANIC ANALYSIS DATA SHEET

EPA 8270D

IR82-SD01D-14D

Laboratory: ENCO Orlando
SDG: A407175-CTO-WE9A
Client: CH2M Hill, Inc. (CH031)
Project: CTO-WE9A, Camp Lejuene Site 82

Matrix: Sediment
Laboratory ID: A407175-04RE2
File ID: 1ai009.D
Sampled: 12/11/14 11:55
Prepared: 12/23/14 13:36
Analyzed: 01/16/15 15:38
Solids: 42.24
Preparation: EPA 3550C_MS
Initial/Final: 30.5 g / 1 mL
Batch: 4L23042
Sequence: AA32184
Calibration: 1501007
Instrument: OSVGCMS1

CAS NO.	COMPOUND	DILUTION	CONC. (mg/kg dry)	Q	DL	LOD	LOQ
100-52-7	Benzaldehyde	1	<0.71 UJ SL	~~U~~	0.64	0.71	0.78
108-95-2	Phenol	1	<0.24	U	0.23	0.24	0.78
111-44-4	Bis(2-chloroethyl)ether	1	<0.47 UJ SL	~~U~~	0.33	0.47	0.78
95-57-8	2-Chlorophenol	1	<0.71	U	0.54	0.71	0.78
95-48-7	2-Methylphenol	1	<0.47	U	0.26	0.47	0.78
108-60-1	Bis(2-chloroisopropyl)ether	1	<0.24 UJ SL	~~U~~	0.23	0.24	0.78
98-86-2	Acetophenone	1	<0.47 UJ SL	~~U~~	0.33	0.47	0.78
108-39-4/106-44-5	3 & 4-Methylphenol	1	<0.71	U	0.59	0.71	0.78
621-64-7	N-Nitroso-di-n-propylamine	1	<0.47 UJ SL	~~U~~	0.36	0.47	0.78
67-72-1	Hexachloroethane	1	<0.24	~~U~~	0.24	0.24	0.78
98-95-3	Nitrobenzene	1	<0.47	~~U~~	0.36	0.47	0.78
78-59-1	Isophorone	1	<0.47	~~U~~	0.40	0.47	0.78
88-75-5	2-Nitrophenol	1	<0.71	U	0.62	0.71	0.78
105-67-9	2,4-Dimethylphenol	1	<0.71	U	0.54	0.71	0.78
111-91-1	Bis(2-chloroethoxy)methane	1	<0.47 UJ SL	~~U~~	0.36	0.47	0.78
120-83-2	2,4-Dichlorophenol	1	<0.71	U	0.59	0.71	0.78
106-47-8	4-Chloroaniline	1	<0.24 UJ SL	~~U~~	0.15	0.24	0.78
87-68-3	Hexachlorobutadiene	1	<0.47	~~U~~	0.31	0.47	0.78
105-60-2	Caprolactam	1	<0.71	~~U~~	0.71	0.71	0.78
59-50-7	4-Chloro-3-methylphenol	1	<0.71	U	0.66	0.71	0.78
77-47-4	Hexachlorocyclopentadiene	1	<0.47 UJ SL	~~UQ~~	0.36	0.47	0.78
88-06-2	2,4,6-Trichlorophenol	1	<0.47	U	0.36	0.47	0.78
95-95-4	2,4,5-Trichlorophenol	1	<0.24	U	0.16	0.24	0.78
92-52-4	1,1'-Biphenyl	1	<0.24 UJ SL	~~U~~	0.17	0.24	0.78
91-58-7	2-Chloronaphthalene	1	<0.24	~~U~~	0.23	0.24	0.78
88-74-4	2-Nitroaniline	1	<0.24	~~U~~	0.20	0.24	0.78
131-11-3	Dimethylphthalate	1	<0.47	~~U~~	0.31	0.47	0.78
606-20-2	2,6-Dinitrotoluene	1	<0.47	~~U~~	0.43	0.47	0.78
99-09-2	3-Nitroaniline	1	<0.24	~~U~~	0.19	0.24	0.78
51-28-5	2,4-Dinitrophenol	1	<0.24	U	0.21	0.24	0.78
100-02-7	4-Nitrophenol	1	<0.47 UJ CH	~~UQ~~	0.31	0.47	0.78
132-64-9	Dibenzofuran	1	<0.47 UJ SL	~~U~~	0.31	0.47	0.78
121-14-2	2,4-Dinitrotoluene	1	<0.47 UJ SL	~~U~~	0.38	0.47	0.78

UM 03/10/15

ORGANIC ANALYSIS DATA SHEET

EPA 8270D

IR82-SD01D-14D

Laboratory:	ENCO Orlando	SDG:	A407175-CTO-WE9A
Client:	CH2M Hill, Inc. (CH031)	Project:	CTO-WE9A, Camp Lejuene Site 82

Matrix:	Sediment	Laboratory ID:	A407175-04RE2	File ID:	1ai009.D
Sampled:	12/11/14 11:55	Prepared:	12/23/14 13:36	Analyzed:	01/16/15 15:38
Solids:	42.24	Preparation:	EPA 3550C_MS	Initial/Final:	30.5 g / 1 mL

Batch: 4L23042 Sequence: AA32184 Calibration: 1501007 Instrument: OSVGCMS1

CAS NO.	COMPOUND	DILUTION	CONC. (mg/kg dry)	Q	DL	LOD	LOQ
84-66-2	Diethylphthalate	1	<0.47	~~U~~ UJ SL	0.31	0.47	0.78
7005-72-3	4-Chlorophenyl-phenylether	1	<0.47	~~U~~	0.31	0.47	0.78
100-01-6	4-Nitroaniline	1	<0.71	~~U~~	0.62	0.71	0.78
534-52-1	2-Methyl-4,6-dinitrophenol	1	<0.71	U	0.66	0.71	0.78
86-30-6/122-39-4	N-nitrosodiphenylamine/Diphenylamine	1	<0.71	~~UQ~~ UJ SL	0.54	0.71	0.78
101-55-3	4-Bromophenyl-phenylether	1	<0.47	~~U~~	0.31	0.47	0.78
118-74-1	Hexachlorobenzene	1	<0.47	~~U~~	0.28	0.47	0.78
1912-24-9	Atrazine	1	<0.24	~~U~~	0.18	0.24	0.78
87-86-5	Pentachlorophenol	1	<0.71	U	0.50	0.71	0.78
86-74-8	Carbazole	1	<0.47	~~U~~ UJ SL	0.28	0.47	0.78
84-74-2	Di-n-butylphthalate	1	<0.47	~~U~~	0.31	0.47	0.78
85-68-7	Butylbenzylphthalate	1	<0.47	~~U~~	0.33	0.47	0.78
91-94-1	3,3'-Dichlorobenzidine	1	<0.71	~~U~~	0.50	0.71	0.78
117-81-7	Bis(2-ethylhexyl)phthalate	1	<0.47	~~U~~	0.31	0.47	0.78
117-84-0	Di-n-octylphthalate	1	<0.47	~~U~~	0.31	0.47	0.78

SYSTEM MONITORING COMPOUND	ADDED (mg/kg dry)	CONC (mg/kg dry)	% REC	QC LIMITS	Q
2-Fluorophenol	3.88	2.3	60	35 - 115	
Phenol-d5	3.88	2.7	69	33 - 122	
Nitrobenzene-d5	3.88	1.7	44	37 - 122	
2-Fluorobiphenyl	3.88	0.46	12	44 - 115	*
2,4,6-Tribromophenol	3.88	0.87	23	39 - 132	*
Terphenyl-d14	3.88	1.6	41	54 - 127	*

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Dichlorobenzene-d4	488823	6.976	312803	6.966	
Naphthalene-d8	1855687	8.546	1202138	8.546	
Acenaphthene-d10	933591	10.753	663746	10.753	
Phenanthrene-d10	1573931	12.625	1098576	12.637	
Chrysene-d12	973501	16.253	565336	16.253	
Perylene-d12	735137	19.226	404946	19.226	

* Values outside of QC limits

LM 031015

ORGANIC ANALYSIS DATA SHEET

EPA 8270D

IR82-SD01D-14D

Laboratory: ENCO Orlando
SDG: A407175-CTO-WE9A
Client: CH2M Hill, Inc. (CH031)
Project: CTO-WE9A, Camp Lejuene Site 82

Matrix: Sediment
Laboratory ID: A407175-04RE3
File ID: 1ai013.D
Sampled: 12/11/14 11:55
Prepared: 01/09/15 14:30
Analyzed: 01/16/15 17:36
Solids: 42.24
Preparation: EPA 3550C_MS
Initial/Final: 30 g / 1 mL
Batch: 5A09022
Sequence: AA32184
Calibration: 1501007
Instrument: OSVGCMS1

CAS NO.	COMPOUND	DILUTION	CONC. (mg/kg dry)	Q	DL	LOD	LOQ
100-52-7	Benzaldehyde	1	<0.71	UQ	0.64	0.71	0.78
108-95-2	Phenol	1	<0.24	UQ	0.23	0.24	0.78
111-44-4	Bis(2-chloroethyl)ether	1	<0.47	UQ	0.33	0.47	0.78
95-57-8	2-Chlorophenol	1	<0.71	UQ	0.54	0.71	0.78
95-48-7	2-Methylphenol	1	<0.47	UQ	0.26	0.47	0.78
108-60-1	Bis(2-chloroisopropyl)ether	1	<0.24	UQ	0.23	0.24	0.78
98-86-2	Acetophenone	1	<0.47	UQ	0.33	0.47	0.78
108-39-4/106-44-5	3 & 4-Methylphenol	1	<0.71	UQ	0.59	0.71	0.78
621-64-7	N-Nitroso-di-n-propylamine	1	<0.47	UQ	0.36	0.47	0.78
67-72-1	Hexachloroethane	1	<0.24	UQ	0.24	0.24	0.78
98-95-3	Nitrobenzene	1	<0.47	UQ	0.36	0.47	0.78
78-59-1	Isophorone	1	<0.47	UQ	0.40	0.47	0.78
88-75-5	2-Nitrophenol	1	<0.71	UQ	0.62	0.71	0.78
105-67-9	2,4-Dimethylphenol	1	<0.71	UQ	0.54	0.71	0.78
111-91-1	Bis(2-chloroethoxy)methane	1	<0.47	UQ	0.36	0.47	0.78
120-83-2	2,4-Dichlorophenol	1	<0.71	UQ	0.59	0.71	0.78
106-47-8	4-Chloroaniline	1	<0.24	UQ	0.15	0.24	0.78
87-68-3	Hexachlorobutadiene	1	<0.47	UQ	0.31	0.47	0.78
105-60-2	Caprolactam	1	<0.71	UQ	0.71	0.71	0.78
59-50-7	4-Chloro-3-methylphenol	1	<0.71	UQ	0.66	0.71	0.78
77-47-4	Hexachlorocyclopentadiene	1	<0.47	UQ	0.36	0.47	0.78
88-06-2	2,4,6-Trichlorophenol	1	<0.47	UQ	0.36	0.47	0.78
95-95-4	2,4,5-Trichlorophenol	1	<0.24	UQ	0.16	0.24	0.78
92-52-4	1,1'-Biphenyl	1	<0.24	UQ	0.17	0.24	0.78
91-58-7	2-Chloronaphthalene	1	<0.24	UQ	0.23	0.24	0.78
88-74-4	2-Nitroaniline	1	<0.24	UQ	0.20	0.24	0.78
131-11-3	Dimethylphthalate	1	<0.47	UQ	0.31	0.47	0.78
606-20-2	2,6-Dinitrotoluene	1	<0.47	UQ	0.43	0.47	0.78
99-09-2	3-Nitroaniline	1	<0.24	UQ	0.19	0.24	0.78
51-28-5	2,4-Dinitrophenol	1	<0.24	UQ	0.21	0.24	0.78
100-02-7	4-Nitrophenol	1	<0.47	UQ	0.31	0.47	0.78
132-64-9	Dibenzofuran	1	<0.47	UQ	0.31	0.47	0.78
121-14-2	2,4-Dinitrotoluene	1	<0.47	UQ	0.38	0.47	0.78

XRE

LM 031015

ORGANIC ANALYSIS DATA SHEET

EPA 8270D

IR82-SD01D-14D

Laboratory:	ENCO Orlando	SDG:	A407175-CTO-WE9A
Client:	CH2M Hill, Inc. (CH031)	Project:	CTO-WE9A, Camp Lejuene Site 82

Matrix:	Sediment	Laboratory ID:	A407175-04RE3	File ID:	1ai013.D
Sampled:	12/11/14 11:55	Prepared:	01/09/15 14:30	Analyzed:	01/16/15 17:36
Solids:	42.24	Preparation:	EPA 3550C_MS	Initial/Final:	30 g / 1 mL

Batch: 5A09022 Sequence: AA32184 Calibration: 1501007 Instrument: OSVGCMS1

CAS NO.	COMPOUND	DILUTION	CONC. (mg/kg dry)	Q	DL	LOD	LOQ
84-66-2	Diethylphthalate	1	<0.47	UQ	0.31	0.47	0.78
7005-72-3	4-Chlorophenyl-phenylether	1	<0.47	UQ	0.31	0.47	0.78
100-01-6	4-Nitroaniline	1	<0.71	UQ	0.62	0.71	0.78
534-52-1	2-Methyl-4,6-dinitrophenol	1	<0.71	UQ	0.66	0.71	0.78
86-30-6/122-39-4	N-nitrosodiphenylamine/Diphenylamine	1	<0.71	UQ	0.54	0.71	0.78
101-55-3	4-Bromophenyl-phenylether	1	<0.47	UQ	0.31	0.47	0.78
118-74-1	Hexachlorobenzene	1	<0.47	UQ	0.28	0.47	0.78
1912-24-9	Atrazine	1	<0.24	UQ	0.18	0.24	0.78
87-86-5	Pentachlorophenol	1	<0.71	UQ	0.50	0.71	0.78
86-74-8	Carbazole	1	<0.47	UQ	0.28	0.47	0.78
84-74-2	Di-n-butylphthalate	1	<0.47	UQ	0.31	0.47	0.78
85-68-7	Butylbenzylphthalate	1	<0.47	UQ	0.33	0.47	0.78
91-94-1	3,3'-Dichlorobenzidine	1	<0.71	UQ	0.50	0.71	0.78
117-81-7	Bis(2-ethylhexyl)phthalate	1	<0.47	UQ	0.31	0.47	0.78
117-84-0	Di-n-octylphthalate	1	<0.47	UQ	0.31	0.47	0.78

XRE

SYSTEM MONITORING COMPOUND	ADDED (mg/kg dry)	CONC (mg/kg dry)	% REC	QC LIMITS	Q
2-Fluorophenol	3.95	3.1	79	35 - 115	
Phenol-d5	3.95	3.3	83	33 - 122	
Nitrobenzene-d5	3.95	3.0	77	37 - 122	
2-Fluorobiphenyl	3.95	2.6	66	44 - 115	
2,4,6-Tribromophenol	3.95	3.6	92	39 - 132	
Terphenyl-d14	3.95	3.1	77	54 - 127	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Dichlorobenzene-d4	348534	6.976	312803	6.966	
Naphthalene-d8	1289427	8.546	1202138	8.546	
Acenaphthene-d10	651580	10.753	663746	10.753	
Phenanthrene-d10	1082824	12.625	1098576	12.637	
Chrysene-d12	656785	16.253	565336	16.253	
Perylene-d12	385802	19.218	404946	19.226	

* Values outside of QC limits

LM 031015

ORGANIC ANALYSIS DATA SHEET

EPA 8270D

IR82-EB-121114

Laboratory: ENCO Orlando

Client: CH2M Hill, Inc. (CH031)

SDG: A407175-CTO-WE9A

Project: CTO-WE9A, Camp Lejuene Site 82

Matrix: Water

Laboratory ID: A407175-06

File ID: 1ac016.D

Sampled: 12/11/14 08:00

Prepared: 12/17/14 08:50

Analyzed: 01/08/15 13:16

Solids:

Preparation: EPA 3510C_MS

Initial/Final: 495 mL / 0.5 mL

Batch: 4L17006 Sequence: AA32069 Calibration: 1501007 Instrument: OSVGCMS1

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
100-52-7	Benzaldehyde	1	<9.0	U	6.3	9.0	10
108-95-2	Phenol	1	<6.0	U	5.6	6.0	10
111-44-4	Bis(2-chloroethyl)ether	1	<6.0	U	3.8	6.0	10
95-57-8	2-Chlorophenol	1	<9.0	U	7.4	9.0	10
95-48-7	2-Methylphenol	1	<6.0	U	3.5	6.0	10
108-60-1	Bis(2-chloroisopropyl)ether	1	<6.0	U	3.5	6.0	10
98-86-2	Acetophenone	1	<6.0	U	3.8	6.0	10
108-39-4/106-44-5	3 & 4-Methylphenol	1	<9.0	U	8.2	9.0	10
621-64-7	N-Nitroso-di-n-propylamine	1	<6.0	U	4.5	6.0	10
67-72-1	Hexachloroethane	1	<3.0	U	3.0	3.0	10
98-95-3	Nitrobenzene	1	<6.0	U	3.2	6.0	10
78-59-1	Isophorone	1	<6.0	U	4.5	6.0	10
88-75-5	2-Nitrophenol	1	<6.0	U	5.2	6.0	10
105-67-9	2,4-Dimethylphenol	1	<9.0	U	6.4	9.0	10
111-91-1	Bis(2-chloroethoxy)methane	1	<6.0	U	3.3	6.0	10
120-83-2	2,4-Dichlorophenol	1	<9.0	U	6.5	9.0	10
106-47-8	4-Chloroaniline	1	<6.0	U	4.3	6.0	10
87-68-3	Hexachlorobutadiene	1	<6.0	U	4.1	6.0	10
105-60-2	Caprolactam	1	<3.0	U	2.7	3.0	10
59-50-7	4-Chloro-3-methylphenol	1	<9.0	U	7.3	9.0	10
77-47-4	Hexachlorocyclopentadiene	1	<6.0	UQ	3.8	6.0	10
88-06-2	2,4,6-Trichlorophenol	1	<9.0	U	6.4	9.0	10
95-95-4	2,4,5-Trichlorophenol	1	<6.0	U	3.9	6.0	10
92-52-4	1,1'-Biphenyl	1	<9.0	U	7.0	9.0	10
91-58-7	2-Chloronaphthalene	1	<6.0	U	3.2	6.0	10
88-74-4	2-Nitroaniline	1	<6.0	U	3.3	6.0	10
131-11-3	Dimethylphthalate	1	<3.0	U	3.0	3.0	10
606-20-2	2,6-Dinitrotoluene	1	<3.0	U	2.9	3.0	10
99-09-2	3-Nitroaniline	1	<6.0	U	3.3	6.0	10
51-28-5	2,4-Dinitrophenol	1	<9.0	U	7.7	9.0	10
100-02-7	4-Nitrophenol	1	<9.0	U	7.9	9.0	10
132-64-9	Dibenzofuran	1	<3.0	U	2.8	3.0	10
121-14-2	2,4-Dinitrotoluene	1	<6.0	U	3.2	6.0	10

WM 031015

ORGANIC ANALYSIS DATA SHEET

EPA 8270D

IR82-EB-121114

Laboratory: ENCO Orlando
SDG: A407175-CTO-WE9A
Client: CH2M Hill, Inc. (CH031)
Project: CTO-WE9A, Camp Lejuene Site 82

Matrix: Water
Laboratory ID: A407175-06
File ID: 1ac016.D
Sampled: 12/11/14 08:00
Prepared: 12/17/14 08:50
Analyzed: 01/08/15 13:16
Solids:
Preparation: EPA 3510C_MS
Initial/Final: 495 mL / 0.5 mL
Batch: 4L17006
Sequence: AA32069
Calibration: 1501007
Instrument: OSVGCMS1

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
84-66-2	Diethylphthalate	1	<3.0	U	3.0	3.0	10
7005-72-3	4-Chlorophenyl-phenylether	1	<6.0	U	3.2	6.0	10
100-01-6	4-Nitroaniline	1	<6.0	U	3.2	6.0	10
534-52-1	2-Methyl-4,6-dinitrophenol	1	<6.0	U	6.0	6.0	10
86-30-6/122-39-4	N-nitrosodiphenylamine/Diphenylamine	1	<6.0	U	5.4	6.0	10
101-55-3	4-Bromophenyl-phenylether	1	<6.0	U	3.3	6.0	10
118-74-1	Hexachlorobenzene	1	<6.0	U	3.0	6.0	10
1912-24-9	Atrazine	1	<3.0	U	2.9	3.0	10
87-86-5	Pentachlorophenol	1	<9.0	U	8.2	9.0	10
86-74-8	Carbazole	1	<6.0	U	3.3	6.0	10
84-74-2	Di-n-butylphthalate	1	<6.0	U	3.2	6.0	10
85-68-7	Butylbenzylphthalate	1	<6.0	U	5.1	6.0	10
91-94-1	3,3'-Dichlorobenzidine	1	<6.0	UQ	3.3	6.0	10
117-81-7	Bis(2-ethylhexyl)phthalate	1	<6.0	UQ	3.5	6.0	10
117-84-0	Di-n-octylphthalate	1	<6.0	UQ	3.6	6.0	10

XPE

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2-Fluorophenol	50.5	31	60	19 - 119	
Phenol-d5	50.5	26	51	10 - 115	
Nitrobenzene-d5	50.5	39	77	44 - 120	
2-Fluorobiphenyl	50.5	43	85	44 - 119	
2,4,6-Tribromophenol	50.5	46	92	43 - 140	
Terphenyl-d14	50.5	77	152	50 - 134	*

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Dichlorobenzene-d4	299193	6.816	312803	6.966	
Naphthalene-d8	1073286	8.397	1202138	8.546	
Acenaphthene-d10	540884	10.603	663746	10.753	
Phenanthrene-d10	861552	12.476	1098576	12.637	
Chrysene-d12	569168	16.032	565336	16.253	*
Perylene-d12	420707	18.972	404946	19.226	*

* Values outside of QC limits

UM 031015

ORGANIC ANALYSIS DATA SHEET

EPA 8270D

IR82-EB-121114

Laboratory: ENCO Orlando

SDG: A407175-CTO-WE9A

Client: CH2M Hill, Inc. (CH031)

Project: CTO-WE9A, Camp Lejuene Site 82

Matrix: Water

Laboratory ID: A407175-06RE1

File ID: 1al010.D

Sampled: 12/11/14 08:00

Prepared: 12/17/14 08:50

Analyzed: 01/19/15 20:34

Solids:

Preparation: EPA 3510C_MS

Initial/Final: 495 mL / 0.5 mL

Batch: 4L17006 Sequence: AA32210 Calibration: 1501007 Instrument: OSVGCMS1

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
100-52-7	Benzaldehyde	1	<9.0	U	6.3	9.0	10
108-95-2	Phenol	1	<6.0	U	5.6	6.0	10
111-44-4	Bis(2-chloroethyl)ether	1	<6.0	U	3.8	6.0	10
95-57-8	2-Chlorophenol	1	<9.0	U	7.4	9.0	10
95-48-7	2-Methylphenol	1	<6.0	U	3.5	6.0	10
108-60-1	Bis(2-chloroisopropyl)ether	1	<6.0	U	3.5	6.0	10
98-86-2	Acetophenone	1	<6.0	U	3.8	6.0	10
108-39-4/106-44-5	3 & 4-Methylphenol	1	<9.0	U	8.2	9.0	10
621-64-7	N-Nitroso-di-n-propylamine	1	<6.0	U	4.5	6.0	10
67-72-1	Hexachloroethane	1	<3.0	U	3.0	3.0	10
98-95-3	Nitrobenzene	1	<6.0	U	3.2	6.0	10
78-59-1	Isophorone	1	<6.0	U	4.5	6.0	10
88-75-5	2-Nitrophenol	1	<6.0	U	5.2	6.0	10
105-67-9	2,4-Dimethylphenol	1	<9.0	U	6.4	9.0	10
111-91-1	Bis(2-chloroethoxy)methane	1	<6.0 VJCH	~~UQ~~	3.3	6.0	10
120-83-2	2,4-Dichlorophenol	1	<9.0	U	6.5	9.0	10
106-47-8	4-Chloroaniline	1	<6.0	U	4.3	6.0	10
87-68-3	Hexachlorobutadiene	1	<6.0 VJCH	~~U~~	4.1	6.0	10
105-60-2	Caprolactam	1	<3.0	U	2.7	3.0	10
59-50-7	4-Chloro-3-methylphenol	1	<9.0	U	7.3	9.0	10
77-47-4	Hexachlorocyclopentadiene	1	<6.0 VJCH	~~UQ~~	3.8	6.0	10
88-06-2	2,4,6-Trichlorophenol	1	<9.0	U	6.4	9.0	10
95-95-4	2,4,5-Trichlorophenol	1	<6.0	U	3.9	6.0	10
92-52-4	1,1'-Biphenyl	1	<9.0	U	7.0	9.0	10
91-58-7	2-Chloronaphthalene	1	<6.0	U	3.2	6.0	10
88-74-4	2-Nitroaniline	1	<6.0	U	3.3	6.0	10
131-11-3	Dimethylphthalate	1	<3.0	U	3.0	3.0	10
606-20-2	2,6-Dinitrotoluene	1	<3.0	U	2.9	3.0	10
99-09-2	3-Nitroaniline	1	<6.0	U	3.3	6.0	10
51-28-5	2,4-Dinitrophenol	1	<9.0	U	7.7	9.0	10
100-02-7	4-Nitrophenol	1	<9.0 VJCH	~~UQ~~	7.9	9.0	10
132-64-9	Dibenzofuran	1	<3.0	U	2.8	3.0	10
121-14-2	2,4-Dinitrotoluene	1	<6.0	U	3.2	6.0	10

UM 031015

ORGANIC ANALYSIS DATA SHEET

EPA 8270D

IR82-EB-121114

Laboratory: ENCO Orlando

Client: CH2M Hill, Inc. (CH031)

SDG: A407175-CTO-WE9A

Project: CTO-WE9A, Camp Lejuene Site 82

Matrix: Water

Laboratory ID: A407175-06RE1

File ID: 1al010.D

Sampled: 12/11/14 08:00

Prepared: 12/17/14 08:50

Analyzed: 01/19/15 20:34

Solids:

Preparation: EPA 3510C_MS

Initial/Final: 495 mL / 0.5 mL

Batch: 4L17006 Sequence: AA32210 Calibration: 1501007 Instrument: OSVGCMS1

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
84-66-2	Diethylphthalate	1	<3.0	U	3.0	3.0	10
7005-72-3	4-Chlorophenyl-phenylether	1	<6.0	U	3.2	6.0	10
100-01-6	4-Nitroaniline	1	<6.0	U	3.2	6.0	10
534-52-1	2-Methyl-4,6-dinitrophenol	1	<6.0	U	6.0	6.0	10
86-30-6/122-39-4	N-nitrosodiphenylamine/Diphenylamine	1	<6.0	UJ UQ	5.4	6.0	10
101-55-3	4-Bromophenyl-phenylether	1	<6.0	U	3.3	6.0	10
118-74-1	Hexachlorobenzene	1	<6.0	U	3.0	6.0	10
1912-24-9	Atrazine	1	<3.0	U	2.9	3.0	10
87-86-5	Pentachlorophenol	1	<9.0	U	8.2	9.0	10
86-74-8	Carbazole	1	<6.0	U	3.3	6.0	10
84-74-2	Di-n-butylphthalate	1	<6.0	U	3.2	6.0	10
85-68-7	Butylbenzylphthalate	1	<6.0	U	5.1	6.0	10
91-94-1	3,3'-Dichlorobenzidine	1	<6.0	U	3.3	6.0	10
117-81-7	Bis(2-ethylhexyl)phthalate	1	<6.0	U	3.5	6.0	10
117-84-0	Di-n-octylphthalate	1	<6.0	UQ	3.6	6.0	10

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2-Fluorophenol	50.5	21	42	19 - 119	
Phenol-d5	50.5	16	32	10 - 115	
Nitrobenzene-d5	50.5	30	60	44 - 120	
2-Fluorobiphenyl	50.5	33	66	44 - 119	
2,4,6-Tribromophenol	50.5	36	71	43 - 140	
Terphenyl-d14	50.5	65	128	50 - 134	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Dichlorobenzene-d4	323715	6.936	312803	6.966	
Naphthalene-d8	1216520	8.499	1202138	8.546	
Acenaphthene-d10	653687	10.706	663746	10.753	
Phenanthrene-d10	1083099	12.588	1098576	12.637	
Chrysene-d12	631977	16.187	565336	16.253	
Perylene-d12	429392	19.158	404946	19.226	

* Values outside of QC limits

WM 031015

ORGANIC ANALYSIS DATA SHEET

EPA 8270D

IR82-SD01-14D

Laboratory: ENCO Orlando
SDG: A407175-CTO-WE9A
Client: CH2M Hill, Inc. (CH031)
Project: CTO-WE9A, Camp Lejuene Site 82

Matrix: Sediment
Laboratory ID: A407175-03
File ID: 2aa022.D
Sampled: 12/11/14 11:50
Prepared: 12/22/14 15:30
Analyzed: 01/06/15 20:27
Solids: 38.83
Preparation: EPA 3550C_MS
Initial/Final: 15.3 g / 300 mL
Batch: 4L22043
Sequence: AA32030
Calibration: 1405053
Instrument: OSVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (mg/kg dry)	Q	DL	LOD	LOQ
91-57-6	2-Methylnaphthalene	1	<0.070	U	0.046	0.070	0.090
91-20-3	Naphthalene	1	<0.070	U	0.046	0.070	0.090
208-96-8	Acenaphthylene	1	<0.070	U	0.046	0.070	0.090
83-32-9	Acenaphthene	1	<0.070	U	0.039	0.070	0.090
86-73-7	Fluorene	1	<0.070	U	0.044	0.070	0.090
85-01-8	Phenanthrene	1	0.050	J	0.039	0.070	0.090
120-12-7	Anthracene	1	<0.070 UJ	~~U~~	0.036	0.070	0.090
206-44-0	Fluoranthene	1	0.086	J	0.044	0.070	0.090
129-00-0	Pyrene	1	0.076	J	0.041	0.070	0.090
56-55-3	Benzo(a)anthracene	1	0.16		0.036	0.070	0.090
218-01-9	Chrysene	1	0.096		0.031	0.070	0.090
205-99-2	Benzo(b)fluoranthene	1	0.14 JPD	~~Q~~	0.044	0.070	0.090
207-08-9	Benzo(k)fluoranthene	1	0.091	~~Q~~	0.049	0.070	0.090
50-32-8	Benzo(a)pyrene	1	0.096	~~Q~~	0.039	0.070	0.090
193-39-5	Indeno(1,2,3-cd)pyrene	1	0.081	~~JQ~~	0.039	0.070	0.090
53-70-3	Dibenzo(a,h)anthracene	1	0.061	J	0.041	0.070	0.090
191-24-2	Benzo(g,h,i)perylene	1	0.086	~~JQ~~	0.039	0.070	0.090

SYSTEM MONITORING COMPOUND	ADDED (mg/kg dry)	CONC (mg/kg dry)	% REC	QC LIMITS	Q
p-Terphenyl	5.05	4.2	83	58 - 133	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Naphthalene-d8	203097	5.528	291841	5.595	
Acenaphthene-d10	167617	7.304	212305	7.371	
Phenanthrene-d10	335694	8.803	395591	8.855	
Chrysene-d12	339784	11.903	452622	11.957	
Perylene-d12	312424	14.199	364367	14.239	

* Values outside of QC limits

VM 130115

ORGANIC ANALYSIS DATA SHEET

EPA 8270D

IR82-SD01D-14D

Laboratory: ENCO Orlando
SDG: A407175-CTO-WE9A
Client: CH2M Hill, Inc. (CH031)
Project: CTO-WE9A, Camp Lejuene Site 82

Matrix: Sediment
Laboratory ID: A407175-04
File ID: 2aa023.D
Sampled: 12/11/14 11:55
Prepared: 12/22/14 15:30
Analyzed: 01/06/15 20:48
Solids: 42.24
Preparation: EPA 3550C_MS
Initial/Final: 15 g / 300 mL
Batch: 4L22043
Sequence: AA32030
Calibration: 1405053
Instrument: OSVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (mg/kg dry)	Q	DL	LOD	LOQ
91-57-6	2-Methylnaphthalene	1	<0.064	U	0.043	0.064	0.083
91-20-3	Naphthalene	1	<0.064	U	0.043	0.064	0.083
208-96-8	Acenaphthylene	1	<0.064	U	0.043	0.064	0.083
83-32-9	Acenaphthene	1	<0.064	U	0.036	0.064	0.083
86-73-7	Fluorene	1	<0.064	U	0.040	0.064	0.083
85-01-8	Phenanthrene	1	0.057	J	0.036	0.064	0.083
120-12-7	Anthracene	1	0.047 JPD	J	0.033	0.064	0.083
206-44-0	Fluoranthene	1	0.081	J	0.040	0.064	0.083
129-00-0	Pyrene	1	0.085		0.038	0.064	0.083
56-55-3	Benzo(a)anthracene	1	0.14		0.033	0.064	0.083
218-01-9	Chrysene	1	0.099		0.028	0.064	0.083
205-99-2	Benzo(b)fluoranthene	1	0.085 JPD		0.040	0.064	0.083
207-08-9	Benzo(k)fluoranthene	1	0.085		0.045	0.064	0.083
50-32-8	Benzo(a)pyrene	1	0.085		0.036	0.064	0.083
193-39-5	Indeno(1,2,3-cd)pyrene	1	0.090		0.036	0.064	0.083
53-70-3	Dibenzo(a,h)anthracene	1	0.081	J	0.038	0.064	0.083
191-24-2	Benzo(g,h,i)perylene	1	0.095		0.036	0.064	0.083

SYSTEM MONITORING COMPOUND	ADDED (mg/kg dry)	CONC (mg/kg dry)	% REC	QC LIMITS	Q
p-Terphenyl	4.74	3.9	83	58 - 133	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Naphthalene-d8	200963	5.528	291841	5.595	
Acenaphthene-d10	154320	7.304	212305	7.371	
Phenanthrene-d10	322045	8.803	395591	8.855	
Chrysene-d12	346047	11.902	452622	11.957	
Perylene-d12	316674	14.197	364367	14.239	

* Values outside of QC limits

VM 030115

ORGANIC ANALYSIS DATA SHEET

EPA 8270D

IR82-EB-121114

Laboratory: ENCO Orlando
SDG: A407175-CTO-WE9A
Client: CH2M Hill, Inc. (CH031)
Project: CTO-WE9A, Camp Lejuene Site 82

Matrix: Water
Laboratory ID: A407175-06
File ID: 2aa016.D
Sampled: 12/11/14 08:00
Prepared: 12/17/14 11:10
Analyzed: 01/06/15 18:17
Solids:
Preparation: EPA 3511_MS
Initial/Final: 35 mL / 2 mL
Batch: 4L17003
Sequence: AA32030
Calibration: 1405053
Instrument: OSVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
91-57-6	2-Methylnaphthalene	1	<0.090	U	0.044	0.090	0.10
91-20-3	Naphthalene	1	<0.090	U	0.035	0.090	0.10
208-96-8	Acenaphthylene	1	<0.090	U	0.036	0.090	0.10
83-32-9	Acenaphthene	1	<0.090	U	0.037	0.090	0.10
86-73-7	Fluorene	1	<0.090	U	0.038	0.090	0.10
85-01-8	Phenanthrene	1	<0.090	U	0.039	0.090	0.10
120-12-7	Anthracene	1	<0.090	U	0.036	0.090	0.10
206-44-0	Fluoranthene	1	<0.090	U	0.051	0.090	0.10
129-00-0	Pyrene	1	<0.090	U	0.048	0.090	0.10
56-55-3	Benzo(a)anthracene	1	<0.090	U	0.037	0.090	0.10
218-01-9	Chrysene	1	<0.090	U	0.051	0.090	0.10
205-99-2	Benzo(b)fluoranthene	1	<0.090	U	0.059	0.090	0.10
207-08-9	Benzo(k)fluoranthene	1	<0.090	U	0.046	0.090	0.10
50-32-8	Benzo(a)pyrene	1	<0.090	U	0.043	0.090	0.10
193-39-5	Indeno(1,2,3-cd)pyrene	1	<0.090	U	0.037	0.090	0.10
53-70-3	Dibenzo(a,h)anthracene	1	<0.090	U	0.026	0.090	0.10
191-24-2	Benzo(g,h,i)perylene	1	<0.090	U	0.040	0.090	0.10

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
p-Terphenyl	5.71	4.8	83	58 - 132	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Naphthalene-d8	231928	5.527	291841	5.595	
Acenaphthene-d10	194257	7.304	212305	7.371	
Phenanthrene-d10	369127	8.803	395591	8.855	
Chrysene-d12	359424	11.902	452622	11.957	
Perylene-d12	331557	14.198	364367	14.239	

* Values outside of QC limits

VM 030115

ORGANIC ANALYSIS DATA SHEET

EPA 8081B

IR82-SD01-14D

Laboratory: ENCO Orlando
SDG: A407175-CTO-WE9A
Client: CH2M Hill, Inc. (CH031)
Project: CTO-WE9A, Camp Lejuene Site 82

Matrix: Sediment
Laboratory ID: A407175-03
File ID: 2LS019.D
Sampled: 12/11/14 11:50
Prepared: 12/22/14 15:30
Analyzed: 12/24/14 12:08
Solids: 38.83
Preparation: EPA 3550C
Initial/Final: 30 g / 10 mL
Batch: 4L22041
Sequence: AA31896
Calibration: 1412079
Instrument: OSVGCECD2

CAS NO.	COMPOUND	DILUTION	CONC. (mg/kg dry)	Q	DL	LOD	LOQ
319-84-6	alpha-BHC	2	<0.0088	UD	0.0029	0.0088	0.0088
58-89-9	gamma-BHC	2	<0.0088	UD	0.0031	0.0088	0.0088
319-85-7	beta-BHC	2	<0.0088	UD	0.0052	0.0088	0.0088
319-86-8	delta-BHC	2	<0.0088	UD	0.0026	0.0088	0.0088
76-44-8	Heptachlor	2	<0.0088	UD	0.0032	0.0088	0.0088
309-00-2	Aldrin	2	<0.0088	UDQ	0.0026	0.0088	0.0088
1024-57-3	Heptachlor epoxide	2	<0.0088	UD	0.0025	0.0088	0.0088
5566-34-7	Chlordane-gamma	2	<0.0088	UDQ	0.0023	0.0088	0.0088
5103-71-9	Chlordane-alpha	2	<0.0088	UD	0.0023	0.0088	0.0088
72-55-9	4,4'-DDE	2	<0.0088	UDQ	0.0027	0.0088	0.0088
959-98-8	Endosulfan I	2	<0.0088	UD	0.0020	0.0088	0.0088
60-57-1	Dieldrin	2	<0.0088	UDQ	0.0023	0.0088	0.0088
72-20-8	Endrin	2	<0.0088	UD	0.0038	0.0088	0.0088
72-54-8	4,4'-DDD	2	<0.0088	UD	0.0025	0.0088	0.0088
33213-65-9	Endosulfan II	2	<0.0088	UD	0.0025	0.0088	0.0088
50-29-3	4,4'-DDT	2	<0.0088	UD	0.0034	0.0088	0.0088
7421-93-4	Endrin aldehyde	2	<0.0088	UD	0.0043	0.0088	0.0088
72-43-5	Methoxychlor	2	<0.0088	UD	0.0044	0.0088	0.0088
1031-07-8	Endosulfan sulfate	2	<0.0088	UD	0.0025	0.0088	0.0088
53494-70-5	Endrin ketone	2	<0.0088	UD	0.0024	0.0088	0.0088
8001-35-2	Toxaphene	2	<0.15	UD	0.088	0.15	0.17

SYSTEM MONITORING COMPOUND	ADDED (mg/kg dry)	CONC (mg/kg dry)	% REC	QC LIMITS	Q
2,4,5,6-TCMX	0.0858	0.043	50	42 - 129	
Decachlorobiphenyl	0.0858	0.055	64	55 - 130	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
DBC	766900000	5.703	5.959E+08	5.758	

* Values outside of QC limits

030115

ORGANIC ANALYSIS DATA SHEET

EPA 8081B

IR82-SD01D-14D

Laboratory: ENCO Orlando
SDG: A407175-CTO-WE9A
Client: CH2M Hill, Inc. (CH031)
Project: CTO-WE9A, Camp Lejuene Site 82

Matrix: Sediment
Laboratory ID: A407175-04
File ID: 2LS020.D
Sampled: 12/11/14 11:55
Prepared: 12/22/14 15:30
Analyzed: 12/24/14 12:20
Solids: 42.24
Preparation: EPA 3550C
Initial/Final: 30.3 g / 10 mL
Batch: 4L22041
Sequence: AA31896
Calibration: 1412079
Instrument: OSVGCECD2

CAS NO.	COMPOUND	DILUTION	CONC. (mg/kg dry	Q	DL	LOD	LOQ
319-84-6	alpha-BHC	2	<0.0081	UD	0.0027	0.0081	0.0081
58-89-9	gamma-BHC	2	<0.0081	UD	0.0028	0.0081	0.0081
319-85-7	beta-BHC	2	<0.0081	UD	0.0047	0.0081	0.0081
319-86-8	delta-BHC	2	<0.0081	UD	0.0024	0.0081	0.0081
76-44-8	Heptachlor	2	<0.0081	UD	0.0029	0.0081	0.0081
309-00-2	Aldrin	2	<0.0081	~~UDQ~~	0.0024	0.0081	0.0081
1024-57-3	Heptachlor epoxide	2	<0.0081	UD	0.0023	0.0081	0.0081
5566-34-7	Chlordane-gamma	2	<0.0081	UD	0.0021	0.0081	0.0081
5103-71-9	Chlordane-alpha	2	<0.0081	UD	0.0021	0.0081	0.0081
72-55-9	4,4'-DDE	2	<0.0081	~~UDQ~~	0.0025	0.0081	0.0081
959-98-8	Endosulfan I	2	<0.0081	UD	0.0018	0.0081	0.0081
60-57-1	Dieldrin	2	<0.0081	UD	0.0021	0.0081	0.0081
72-20-8	Endrin	2	<0.0081	UD	0.0035	0.0081	0.0081
72-54-8	4,4'-DDD	2	<0.0081	UD	0.0023	0.0081	0.0081
33213-65-9	Endosulfan II	2	<0.0081	~~UD~~	0.0023	0.0081	0.0081
50-29-3	4,4'-DDT	2	<0.0081	UD	0.0031	0.0081	0.0081
7421-93-4	Endrin aldehyde	2	<0.0081	UD	0.0039	0.0081	0.0081
72-43-5	Methoxychlor	2	<0.0081	UD	0.0041	0.0081	0.0081
1031-07-8	Endosulfan sulfate	2	<0.0081	UD	0.0023	0.0081	0.0081
53494-70-5	Endrin ketone	2	<0.0081	UD	0.0022	0.0081	0.0081
8001-35-2	Toxaphene	2	<0.14	UD	0.081	0.14	0.16

SYSTEM MONITORING COMPOUND	ADDED (mg/kg dry)	CONC (mg/kg dry)	% REC	QC LIMITS	Q
2,4,5,6-TCMX	0.0781	0.033	42	42 - 129	
Decachlorobiphenyl	0.0781	0.044	56	55 - 130	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
DBC	647100000	5.705	5.959E+08	5.758	

* Values outside of QC limits

VM 030115

ORGANIC ANALYSIS DATA SHEET

EPA 8081B

IR82-EB-121114

Laboratory: ENCO Orlando

Client: CH2M Hill, Inc. (CH031)

SDG: A407175-CTO-WE9A

Project: CTO-WE9A, Camp Lejuene Site 82

Matrix: Water

Laboratory ID: A407175-06

File ID: 2LS014.D

Sampled: 12/11/14 08:00

Prepared: 12/17/14 06:45

Analyzed: 12/24/14 11:10

Solids:

Preparation: EPA 3510C

Initial/Final: 100 mL / 1 mL

Batch: 4L17002 Sequence: AA31896 Calibration: 1412079 Instrument: OSVGCECD2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
319-84-6	alpha-BHC	1	<0.050	U	0.026	0.050	0.10
58-89-9	gamma-BHC	1	<0.050	U	0.020	0.050	0.10
319-85-7	beta-BHC	1	<0.050	U	0.022	0.050	0.10
319-86-8	delta-BHC	1	<0.050	U	0.019	0.050	0.10
76-44-8	Heptachlor	1	<0.050	U	0.018	0.050	0.10
309-00-2	Aldrin	1	<0.050	~~UQ~~ UJCH	0.032	0.050	0.10
1024-57-3	Heptachlor epoxide	1	<0.050	U	0.018	0.050	0.10
5566-34-7	Chlordane-gamma	1	<0.050	U	0.018	0.050	0.10
5103-71-9	Chlordane-alpha	1	<0.050	U	0.022	0.050	0.10
72-55-9	4,4'-DDE	1	<0.050	~~UQ~~ UJCH	0.036	0.050	0.10
959-98-8	Endosulfan I	1	<0.050	U	0.016	0.050	0.10
60-57-1	Dieldrin	1	<0.050	U	0.017	0.050	0.10
72-20-8	Endrin	1	<0.050	U	0.014	0.050	0.10
72-54-8	4,4'-DDD	1	<0.050	U	0.018	0.050	0.10
33213-65-9	Endosulfan II	1	<0.050	~~U~~ UJCH	0.017	0.050	0.10
50-29-3	4,4'-DDT	1	<0.050	U	0.025	0.050	0.10
7421-93-4	Endrin aldehyde	1	<0.050	U	0.020	0.050	0.10
72-43-5	Methoxychlor	1	<0.050	U	0.020	0.050	0.10
1031-07-8	Endosulfan sulfate	1	<0.050	U	0.016	0.050	0.10
53494-70-5	Endrin ketone	1	<0.050	U	0.017	0.050	0.10
8001-35-2	Toxaphene	1	<0.50	U	0.48	0.50	1.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2,4,5,6-TCMX	1.00	0.87	87	44 - 124	
Decachlorobiphenyl	1.00	0.50	50	30 - 135	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
DBC	629200000	5.7	5.959E+08	5.758	

* Values outside of QC limits

MM 030115

ORGANIC ANALYSIS DATA SHEET

EPA 8082A

IR82-SD01-14D

Laboratory: ENCO Orlando
SDG: A407175-CTO-WE9A
Client: CH2M Hill, Inc. (CH031)
Project: CTO-WE9A, Camp Lejuene Site 82

Matrix: Sediment
Laboratory ID: A407175-03
File ID: 2LU022.D
Sampled: 12/11/14 11:50
Prepared: 12/22/14 15:30
Analyzed: 12/26/14 12:13
Solids: 38.83
Preparation: EPA 3550C
Initial/Final: 30 g / 10 mL
Batch: 4L22042
Sequence: AA31909
Calibration: 1412109
Instrument: OSVGCECD2

CAS NO.	COMPOUND	DILUTION	CONC. (mg/kg dry)	Q	DL	LOD	LOQ
12674-11-2	PCB-1016	1	<0.052	U	0.036	0.052	0.10
53469-21-9	PCB-1242	1	<0.052	U	0.039	0.052	0.10
12674-11-2/53469-21-9	PCB-1016/1242	1	<0.052	U	0.036	0.052	0.10
11104-28-2	PCB-1221	1	<0.052	U	0.036	0.052	0.10
11141-16-5	PCB-1232	1	<0.052	U	0.036	0.052	0.10
12672-29-6	PCB-1248	1	<0.052	U	0.016	0.052	0.10
11097-69-1	PCB-1254	1	<0.052	U	0.041	0.052	0.10
11096-82-5	PCB-1260	1	0.099	~~J~~ JFD	0.028	0.052	0.10

SYSTEM MONITORING COMPOUND	ADDED (mg/kg dry)	CONC (mg/kg dry)	% REC	QC LIMITS	Q
2,4,5,6-TCMX	0.0858	0.048	56	44 - 130	
Decachlorobiphenyl	0.0858	0.058	68	60 - 125	

* Values outside of QC limits

MM
030115

ORGANIC ANALYSIS DATA SHEET

EPA 8082A

IR82-SD01D-14D

Laboratory: ENCO Orlando
Client: CH2M Hill, Inc. (CH031)
SDG: A407175-CTO-WE9A
Project: CTO-WE9A, Camp Lejuene Site 82

Matrix: Sediment
Laboratory ID: A407175-04
File ID: 2LU023.D
Sampled: 12/11/14 11:55
Prepared: 12/22/14 15:30
Analyzed: 12/26/14 12:24
Solids: 42.24
Preparation: EPA 3550C
Initial/Final: 30.3 g / 10 mL
Batch: 4L22042
Sequence: AA31909
Calibration: 1412109
Instrument: OSVGCECD2

CAS NO.	COMPOUND	DILUTION	CONC. (mg/kg dry)	Q	DL	LOD	LOQ
12674-11-2	PCB-1016	1	<0.047	U	0.033	0.047	0.095
53469-21-9	PCB-1242	1	<0.047	U	0.036	0.047	0.095
12674-11-2/53469-21-9	PCB-1016/1242	1	<0.047	U	0.033	0.047	0.095
11104-28-2	PCB-1221	1	<0.047	U	0.033	0.047	0.095
11141-16-5	PCB-1232	1	<0.047	U	0.033	0.047	0.095
12672-29-6	PCB-1248	1	<0.047	U	0.015	0.047	0.095
11097-69-1	PCB-1254	1	<0.047	U	0.038	0.047	0.095
11096-82-5	PCB-1260	1	0.059 JTD	~~J~~	0.026	0.047	0.095

SYSTEM MONITORING COMPOUND	ADDED (mg/kg dry)	CONC (mg/kg dry)	% REC	QC LIMITS	Q
2,4,5,6-TCMX	0.0781	0.040	52	44 - 130	
Decachlorobiphenyl	0.0781	0.047	61	60 - 125	

* Values outside of QC limits

UM
030115

ORGANIC ANALYSIS DATA SHEET

EPA 8082A

IR82-EB-121114

Laboratory: ENCO Orlando

Client: CH2M Hill, Inc. (CH031)

SDG: A407175-CTO-WE9A

Project: CTO-WE9A, Camp Lejuene Site 82

Matrix: Water

Laboratory ID: A407175-06

File ID: 2LU016.D

Sampled: 12/11/14 08:00

Prepared: 12/17/14 06:45

Analyzed: 12/26/14 11:02

Solids:

Preparation: EPA 3510C

Initial/Final: 100 mL / 1 mL

Batch: 4L17007 Sequence: AA31909 Calibration: 1412109 Instrument: OSVGCECD2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	LOD	LOQ
12674-11-2	PCB-1016	1	<1.0	U	0.32	1.0	1.0
53469-21-9	PCB-1242	1	<1.0	U	0.49	1.0	1.0
12674-11-2/53469-21-9	PCB-1016/1242	1	<1.0	U	0.49	1.0	1.0
11104-28-2	PCB-1221	1	<1.0	U	0.46	1.0	1.0
11141-16-5	PCB-1232	1	<1.0	U	0.47	1.0	1.0
12672-29-6	PCB-1248	1	<1.0	U	0.49	1.0	1.0
11097-69-1	PCB-1254	1	<1.0	U	0.50	1.0	1.0
11096-82-5	PCB-1260	1	<1.0	U	0.48	1.0	1.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2,4,5,6-TCMX	1.00	0.80	80	38 - 142	
Decachlorobiphenyl	1.00	0.66	66	40 - 135	

* Values outside of QC limits

MM 030115

INORGANIC ANALYSIS DATA SHEET

EPA 6010C

A407175-03 (1R82-SD01-14D)

A407175-03

1R82-SD01-14D

Laboratory: ENCO Jacksonville

Client: ENCO Orlando

SDG: A407175-CTO-WE9A

Project: CTO-WE9A, Camp Lejuene Site 82

Matrix: Sediment

Laboratory ID: B405538-01

File ID: 010815aRP1-032

Sampled: 12/11/14 11:50

Prepared: 01/07/15 09:10

Analyzed: 01/08/15 11:55

Solids: 38.80

Preparation: EPA 3050B

Initial/Final: 0.79 g / 50 mL

Batch: 5A07003

Sequence: BA16308

Calibration: 1501003

Instrument: JMICP2

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	Q	DL	LOD	LOQ	Method
7429-90-5	Aluminum	6710	1	~~Q~~	16.0	32.6	65.2	EPA 6010C
7440-36-0	Antimony	1.93	1	J-~~10~~ MSL	0.923	3.26	6.52	EPA 6010C
7440-38-2	Arsenic	2.52	1	J	1.16	3.26	6.52	EPA 6010C
7440-39-3	Barium	15.2	1		0.104	0.816	1.63	EPA 6010C
7440-41-7	Beryllium	0.277	1		0.0245	0.0816	0.163	EPA 6010C
7440-43-9	Cadmium	0.146	1	J	0.0294	0.326	0.652	EPA 6010C
7440-70-2	Calcium	2220	1		5.22	40.8	81.6	EPA 6010C
7440-47-3	Chromium	7.73	1		0.101	0.816	1.63	EPA 6010C
7440-48-4	Cobalt	1.13	1	J	0.235	0.816	1.63	EPA 6010C
7440-50-8	Copper	12.1	1	J+EBL	0.232	0.816	1.63	EPA 6010C
7439-89-6	Iron	3720	1	~~Q~~	0.816	8.16	16.3	EPA 6010C
7439-92-1	Lead	48.1	1		0.359	3.26	6.52	EPA 6010C
7439-95-4	Magnesium	1320	1		10.4	40.8	81.6	EPA 6010C
7439-96-5	Manganese	12.9	1		0.0391	1.63	3.26	EPA 6010C
7440-02-0	Nickel	2.69	1		0.183	0.816	1.63	EPA 6010C
7440-09-7	Potassium	425	1		20.6	81.6	163	EPA 6010C
7782-49-2	Selenium	<3.26	1	U	1.17	3.26	6.52	EPA 6010C
7440-22-4	Silver	<0.816	1	U	0.235	0.816	1.63	EPA 6010C
7440-23-5	Sodium	1630	1		5.87	40.8	81.6	EPA 6010C
7440-28-0	Thallium	<6.52	1	U	1.63	6.52	13.0	EPA 6010C
7440-62-2	Vanadium	12.0	1		0.127	1.63	3.26	EPA 6010C
7440-66-6	Zinc	42.6	1		0.848	3.26	6.52	EPA 6010C

JAC 3/15

INORGANIC ANALYSIS DATA SHEET

EPA 6010C

A407175-04 (IR82-SD01D-14D)

A 407175-04

IR82-SD01D-14D

Laboratory: ENCO Jacksonville

Client: ENCO Orlando

SDG: A407175-CTO-WE9A

Project: CTO-WE9A, Camp Lejuene Site 82

Matrix: Sediment

Laboratory ID: B405538-02

File ID: 010815aRP1-033

Sampled: 12/11/14 11:55

Prepared: 01/07/15 09:10

Analyzed: 01/08/15 11:57

Solids: 42.20

Preparation: EPA 3050B

Initial/Final: 0.91 g / 50 mL

Batch: 5A07003

Sequence: BA16308

Calibration: 1501003

Instrument: JMICP2

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	Q	DL	LOD	LOQ	Method
7429-90-5	Aluminum	5900	1		11.6	23.7	47.4	EPA 6010C
7440-36-0	Antimony	1.16	1	J ~~J~~ MS	0.671	2.37	4.74	EPA 6010C
7440-38-2	Arsenic	2.30	1	J	0.844	2.37	4.74	EPA 6010C
7440-39-3	Barium	13.3	1		0.0758	0.592	1.18	EPA 6010C
7440-41-7	Beryllium	0.231	1		0.0178	0.0592	0.118	EPA 6010C
7440-43-9	Cadmium	0.0842	1	J	0.0213	0.237	0.474	EPA 6010C
7440-70-2	Calcium	2180	1		3.79	29.6	59.2	EPA 6010C
7440-47-3	Chromium	6.70	1		0.0735	0.592	1.18	EPA 6010C
7440-48-4	Cobalt	1.02	1	J	0.171	0.592	1.18	EPA 6010C
7440-50-8	Copper	9.46	1	J FEBL	0.168	0.592	1.18	EPA 6010C
7439-89-6	Iron	4210	1		0.592	5.92	11.8	EPA 6010C
7439-92-1	Lead	40.5	1		0.261	2.37	4.74	EPA 6010C
7439-95-4	Magnesium	1290	1		7.58	29.6	59.2	EPA 6010C
7439-96-5	Manganese	18.7	1		0.0284	1.18	2.37	EPA 6010C
7440-02-0	Nickel	2.30	1		0.133	0.592	1.18	EPA 6010C
7440-09-7	Potassium	377	1		14.9	59.2	118	EPA 6010C
7782-49-2	Selenium	<2.37	1	U	0.853	2.37	4.74	EPA 6010C
7440-22-4	Silver	<0.592	1	U	0.171	0.592	1.18	EPA 6010C
7440-23-5	Sodium	1440	1		4.27	29.6	59.2	EPA 6010C
7440-28-0	Thallium	<4.74	1	U	1.18	4.74	9.48	EPA 6010C
7440-62-2	Vanadium	10.6	1		0.0924	1.18	2.37	EPA 6010C
7440-66-6	Zinc	37.4	1		0.616	2.37	4.74	EPA 6010C

JAC 3215

INORGANIC ANALYSIS DATA SHEET

EPA 6010C

A407175-06 (IR82-EB-121114)

A407175-06

IR82-EB-121114

Laboratory: ENCO Jacksonville

Client: ENCO Orlando

SDG: A407175-CTO-WE9A

Project: CTO-WE9A, Camp Lejuene Site 82

Matrix: Water

Laboratory ID: B405538-03

File ID: 010815aRP1-027

Sampled: 12/11/14 08:00

Prepared: 01/06/15 12:15

Analyzed: 01/08/15 11:44

Solids: 0.00

Preparation: EPA 3005A

Initial/Final: 50 mL / 50 mL

Batch: 5A06006

Sequence: BA16308

Calibration: 1501003

Instrument: JMICP2

CAS NO.	Analyte	Concentration (ug/L)	Dilution Factor	Q	DL	LOD	LOQ	Method
7429-90-5	Aluminum	<200	1	U	86.0	200	400	EPA 6010C
7440-36-0	Antimony	<20.0	1	U	5.65	20.0	40.0	EPA 6010C
7440-38-2	Arsenic	<20.0	1	U	7.12	20.0	40.0	EPA 6010C
7440-39-3	Barium	<5.00	1	U	0.630	5.00	10.0	EPA 6010C
7440-41-7	Beryllium	<0.500	1	U	0.100	0.500	1.00	EPA 6010C
7440-43-9	Cadmium	<2.00	1	U	0.170	2.00	4.00	EPA 6010C
7440-70-2	Calcium	50.4	1	J	32.0	250	500	EPA 6010C
7440-47-3	Chromium	<5.00	1	U	1.30	5.00	10.0	EPA 6010C
7440-48-4	Cobalt	<5.00	1	U	1.60	5.00	10.0	EPA 6010C
7440-50-8	Copper	12.6	1		0.940	5.00	10.0	EPA 6010C
7439-89-6	Iron	<50.0	1	U	5.60	50.0	100	EPA 6010C
7439-92-1	Lead	<20.0	1	U	2.20	20.0	40.0	EPA 6010C
7439-95-4	Magnesium	<250	1	U	58.0	250	500	EPA 6010C
7439-96-5	Manganese	0.326	1	J	0.180	10.0	20.0	EPA 6010C
7440-02-0	Nickel	<5.00	1	U	1.10	5.00	10.0	EPA 6010C
7440-09-7	Potassium	<500	1	U	130	500	1000	EPA 6010C
7782-49-2	Selenium	<20.0	1	U	6.60	20.0	40.0	EPA 6010C
7440-22-4	Silver	<5.00	1	U	1.20	5.00	10.0	EPA 6010C
7440-23-5	Sodium	150	1	J	56.0	250	500	EPA 6010C
7440-28-0	Thallium	13.7	1	J	11.0	40.0	80.0	EPA 6010C
7440-62-2	Vanadium	0.583	1	J	0.553	10.0	20.0	EPA 6010C
7440-66-6	Zinc	9.56	1	~~JBQ~~	5.20	10.0	20.0	EPA 6010C

JLC 3215

INORGANIC ANALYSIS DATA SHEET

EPA 6010C

A407175-06 (IR82-EB-121114)

A407175-06

IR82-EB-121114

Laboratory: ENCO Jacksonville

Client: ENCO Orlando

SDG: A407175-CTO-WE9A

Project: CTO-WE9A, Camp Lejuene Site 82

Matrix: Water

Laboratory ID: B405538-03RE1

File ID: 010915a-015

Sampled: 12/11/14 08:00

Prepared: 01/08/15 12:00

Analyzed: 01/09/15 10:29

Solids: 0.00

Preparation: EPA 3005A

Initial/Final: 50 mL / 50 mL

Batch: 5A08015

Sequence: BA16313

Calibration: 1501005

Instrument: JMICP2

CAS NO.	Analyte	Concentration (ug/L)	Dilution Factor	Q	DL	LOD	LOQ	Method
7440-66-6	Zinc	9.70	1	X / RE	5.20	10.0	20.0	EPA 6010C

JAC 3215

INORGANIC ANALYSIS DATA SHEET

EPA 7470A

1R82-EB-121114

1R82-EB-121114

Laboratory: ENCO Orlando

Client: CH2M Hill, Inc. (CH031)

SDG: A407175-CTO-WE9A

Project: CTO-WE9A, Camp Lejuene Site 82

Matrix: Water

Laboratory ID: A407175-06

File ID: Hg 4L22019 18 3063 w-034

Sampled: 12/11/14 08:00

Prepared: 12/30/14 11:48

Analyzed: 12/31/14 08:04

Solids: 0.00

Preparation: EPA 7470A

Initial/Final: 30 mL / 30 mL

Batch: 4L22018 Sequence: AA31966 Calibration: 1412117 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

JC 3215

INORGANIC ANALYSIS DATA SHEET

EPA 7471B

IR82-SD01-14D

1R82-SD01-14D

Laboratory: ENCO Orlando

Client: CH2M Hill, Inc. (CH031)

SDG: A407175-CTO-WE9A

Project: CTO-WE9A, Camp Lejuene Site 82

Matrix: Sediment

Laboratory ID: A407175-03

File ID: Hg 4L22012 14 s-015

Sampled: 12/11/14 11:50

Prepared: 12/26/14 14:15

Analyzed: 12/29/14 07:16

Solids: 38.83

Preparation: EPA 7471B

Initial/Final: 0.35 g / 36 mL

Batch: 4L22012

Sequence: AA31922

Calibration: 1412106

Instrument: OMHG1

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	Q	DL	LOD	LOQ	Method
7439-97-6	Mercury	0.162	1		0.00861	0.0258	0.0464	EPA 7471B

JAC
3215

INORGANIC ANALYSIS DATA SHEET

EPA 7471B

IR82-SD01D-14D

1R82-SD01D-14D

Laboratory: ENCO Orlando

Client: CH2M Hill, Inc. (CH031)

SDG: A407175-CTO-WE9A

Project: CTO-WE9A, Camp Lejuene Site 82

Matrix: Sediment

Laboratory ID: A407175-04

File ID: Hg 4L22012 14 s-018

Sampled: 12/11/14 11:55

Prepared: 12/26/14 14:15

Analyzed: 12/29/14 07:26

Solids: 42.24

Preparation: EPA 7471B

Initial/Final: 0.31 g / 36 mL

Batch: 4L22012

Sequence: AA31922

Calibration: 1412106

Instrument: OMHG1

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	Q	DL	LOD	LOQ	Method
7439-97-6	Mercury	0.0953	1		0.00923	0.0277	0.0497	EPA 7471B

JAC 3/15

www.encolabs.com

PROJECT NARRATIVE

Client: CH2M Hill, Inc.
Project: CTO-WE9A Camp Lejuene Site 82
Project Number: 495027
ENCO Project ID: A407175
SDG: A407175-CTO-WE9A

Overview

All samples submitted were analyzed by Environmental Conservation Laboratories, Inc. in accordance with the methods referenced in the laboratory report. Any particular difficulties encountered during sample handling and processing will be discussed in the Remarks section below.

Remarks

List of instruments used:

Analytical and Preparation Method	SOP Reference Instrument
EPA 8260B	OVGCMS2, OVGCMS5
EPA 8270D	OSVGCMS1
EPA 8270D PAH SIM	OSVGCMS2
EPA 8081B	OSVGCECD2
EPA 8082A	OSVGCECD2
EPA 7470A Data Summary Package	OMHG1
EPA 6010C (total) Data Summary Package	JMICP1

This is an amendment to the report dated January 22, 2015.
Analysis: EPA 8260B
The surrogate recovery range for Dibromofluoromethane was reported with incorrectly. The analytical code was updated and the report re-generated.

Analysis: EPA 8260B
Sequence: AA31801
Affected Sample(s): AA31801-CAL1, AA31801-CAL2, AA31801-CAL7, AA31801-CAL8
Nonconformance: Manual integrations
The following manual integrations were performed in the sample(s) AA31801-CAL1, AA31801-CAL2 due to incorrect peak selection/peak not found: 1,4-Dichlorobenzene.
The following manual integrations were performed in the sample(s) AA31801-CAL7, AA31801-CAL8 due to split peaks: Isobutyl Alcohol.

Analysis: EPA 8260B
Sequence: AA31826
Affected Sample(s): AA31826-CAL7
Nonconformance: Manual integrations
The following manual integrations were performed in the sample(s) AA31826-CAL7 due to split peak: Isobutyl Alcohol.

Analysis: EPA 8260B
Sequence: AA31877
Affected Sample(s): AA31877-CAL1, AA31877-CAL2, AA31877-CAL3, AA31877-CAL4, AA31877-CAL7, AA31877-SCV1
Nonconformance: Manual integrations
The following manual integrations were performed in the sample(s) AA31877-CAL1 due to incorrect peak selection/peak not found: 1,4-Dioxane, DBCP.
The following manual integrations were performed in the sample(s) AA31877-CAL3, AA31877-CAL4, AA31877-SCV1 due to baseline drop for split peaks: 2-Butanone.
The following manual integrations were performed in the sample(s) AA31877-CAL4, AA31877-CAL7 due to

070

split peaks: Isobutyl Alcohol.
The following manual integrations were performed in the sample(s) AA31877-CAL1, AA31877-CAL3 due to split peaks: Acetone.
The following manual integrations were performed in the sample(s) AA31877-CAL2 due to poor integration (peak tailing, baseline selection): Acetone.

Analysis: EPA 8260B
Sequence: AA31829
Affected Sample(s): 4L19028-BS1, 4L19028-MS1, 4L19028-MSD1, AA31829-LCV1
Nonconformance: Manual integrations
The following manual integrations were performed in the sample(s) 4L19028-BS1, 4L19028-MS1, 4L19028-MSD1, AA31829-LCV1 due to baseline drop for split peaks: 2-Butanone.

Analysis: EPA 8260B
Sequence: AA31883
Affected Sample(s): AA31883-LCV1
Nonconformance: Manual integrations
The following manual integrations were performed in the sample(s) AA31883-LCV1 due to baseline drop for split peaks: 2-Butanone.

Analysis: EPA 8270D
Sequence: AA31981
Affected Sample(s): AA31981-CAL7, AA31981-CAL8
Nonconformance: Manual integrations
The following manual integrations were performed in the sample(s) AA31981-CAL7, AA31981-CAL8 due to incorrect peak selection/peak not found: Benzo(k)fluoranthene.
The following manual integrations were performed in the sample(s) AA31981-CAL8 due to incorrect peak selection/peak not found: Benzoic Acid.

Analysis: EPA 8270D PAH SIM
Sequence: AA32030
Affected Sample(s): IR82-SD01-14D [A407175-03], IR82-SD01D-14D [A407175-04]
Nonconformance: Manual integrations
The following manual integrations were performed in the sample(s) IR82-SD01-14D [A407175-03], IR82-SD01D-14D [A407175-04] due to incorrect peak selection/peak not found: Pyrene, Chrysene, Benzo(k)fluoranthene

---

Analysis: EPA 8081B
Sequence: AA31769
Affected Sample(s): AA31769-CAL1, AA31769-CAL2, AA31769-CAL3, AA31769-CAL4, AA31769-CAL5, AA31769-CAL6, AA31769-SCV1
Nonconformance: Manual integrations
The following manual integrations were performed in the sample(s) AA31769-CAL1, AA31769-CAL2. AA31769-CAL3 due to poor integration (peak tailing, baseline selection): 4,4'-DDD, 4,4'-DDT.
The following manual integrations were performed in the sample(s) AA31769-CAL4, AA31769-CAL5, AA31769-CAL6, AA31769-SCV1 due to poor integration (peak tailing, baseline selection): 4,4'-DDT.

Analysis: EPA 8081B
Sequence: AA31896
Affected Sample(s): AA31896-CCV1, AA31896-LCV1, 4L22041-BS1, IR82-SD01-14D [A407175-03], IR82-SD01D-14D [A407175-04]
Nonconformance: Manual integrations
The following manual integrations were performed in the sample(s) AA31896-CCV1, AA31896-LCV1, 4L22041-BS1 due to poor integration (peak tailing, baseline selection): 4,4'-DDT.
The following manual integrations were performed in the sample(s) IR82-SD01-14D [A407175-03], IR82-SD01D-14D [A407175-04] due to ISTD reintegration: DBC.
The following manual integrations were performed in the sample(s) IR82-SD01-14D [A407175-03] due to poor integration (peak tailing, baseline selection): Decachlorobiphenyl.

PROJECT NARRATIVE

Analysis: EPA 8082A
Sequence: AA31909
Affected Sample(s): AA31909-CCV2
Nonconformance: Manual integrations
The following manual integrations were performed in the sample(s) AA31909-CCV2 due to incorrect peak selection/peak not found: PCB1260#9, PCB1260#10

Analysis: EPA 8270D
Affected Samples: AA32069-CCV1, AA32069-CCV2, 4L17006-BLK1, 4L17006-BS1, 4L17006-MS1, 4L17006-MSD1, AA32069-LCV1, AA32069-LCV2, IR82-SD01-14D [A407175-03], IR82-SD01D-14D [A407175-04], AA32103-CCV1, AA32103-CCV2, 5A09022-BLK1, 5A09022-BS1, 5A09022-BSD1, IR82-SD01D-14D [A407175-04RE1], AA32103-LCV1, AA32103-LCV2
The internal standards, Chrysene-d12 and Perylene-d12, were outside the retention time limits for DOD QSM 5.0. The samples were re-analyzed for confirmation. In the rerun the internal standards were within acceptable limits, all data is reported.

Analysis: EPA 8260B
Affected Samples: IR82-EB-121114 [A407175-06], IR82-EB-121114 [A407175-06RE1]
The concentration of Methylene Chloride is an estimated value above the calibration range of the instrument. The sample was re-analyzed at a dilution for confirmation. The re-extraction was performed after acceptable holding time. All data is reported.

Analysis: EPA 8260B
Affected Samples: 4L29031-BS1, IR82-SW01-14D [A407175-01RE1], IR82-SW01D-14D [A407175-02RE1], IR82-TB-121114 [A407175-05RE1]
The associated laboratory control sample exhibited high bias for 1,1-Dichloroethane, 1,1-Dichloroethene, Carbon disulfide, and trans-1,2-Dichloroethene; since the result is ND, the impact on data quality is minimal.

Analysis: EPA 8260B
Affected Samples: AA31937-CCV1, IR82-SW01-14D [A407175-01RE1], IR82-SW01D-14D [A407175-02RE1], IR82-TB-121114 [A407175-05RE1]
The associated calibration verification standard exhibited high bias for 2-Butanone, Acetone, Bromomethane, Carbon disulfide, Chloroethane, Chloroform, Dichlorodifluoromethane, Trichlorofluoromethane, and Vinyl Chloride; since the result is ND, the impact on data quality is minimal.

Analysis: EPA 8260B
Affected Samples: AA31886-CCV1, IR82-SW01-14D [A407175-01], IR82-SW01D-14D [A407175-02], IR82-TB-121114 [A407175-05], IR82-EB-121114 [A407175-06], AA31937-CCV1, IR82-SW01-14D [A407175-01RE1], IR82-SW01D-14D [A407175-02RE1], IR82-TB-121114 [A407175-05RE1], AA32039-CCV1, IR82-EB-121114 [A407175-06RE1]
The associated calibration verification standard exhibited low bias for Bromomethane. The sample was re-analyzed for confirmation. The re-run was performed after acceptable holding time. In the re-run the CCV was within acceptable limits, all data is reported.

Analysis: EPA 8260B
Affected Samples: AA31937-CCV1, IR82-SW01-14D [A407175-01RE1], IR82-SW01D-14D [A407175-02RE1], IR82-TB-121114 [A407175-05RE1]
The associated calibration verification standard exhibited low bias for 1,2-Dibromo-3-chloropropane, Bromoform, Dibromochloromethane, Dichlorodifluoromethane, Naphthalene. This is a re-analysis for confirmation. In the original analysis the CCV was within acceptable limits.

Analysis: EPA 8260B
Affected Samples: 4L24004-BS1, IR82-SW01-14D [A407175-01], IR82-SW01D-14D [A407175-02], IR82-TB-121114 [A407175-05], IR82-EB-121114 [A407175-06]
The associated laboratory control sample exhibited high bias for Carbon disulfide, Chloroethane, Dichlorodifluoromethane; since the result is ND, the impact on data quality is minimal.

Analysis: EPA 8260B
Affected Samples: 5A06015-BS1, 5A06015-BSD1 IR82-EB-121114 [A407175-06RE1]
The associated laboratory control sample exhibited high bias for Naphthalene; since the result is ND, the impact on data quality is minimal.

PROJECT NARRATIVE

Analysis: EPA 8260B
Affected Samples: 4L24004-MS1, 4L24004-MSD1, IR82-SW01-14D [A407175-01]
The spike recovery was outside acceptance limits for Carbon Disulfide, Chloroethane in the MS and/or MSD.

Analysis: EPA 8260B
Affected Samples: IR82-SW01-14D [A407175-01RE1], IR82-SW01D-14D [A407175-02RE1], IR82-TB-121114 [A407175-05RE1]
The surrogate recoveries were outside acceptance limits for Dibromofluoromethane and Toluene-d8. The surrogate recoveries failed with high bias.

Analysis: EPA 8260B
Affected Samples: 4L19028-MS1, 4L19028-MSD1
Precision between duplicate spikes of the same sample was outside acceptance limits for 1,1,1-Trichloroethane, 1,1-Dichloroethene, 1,2,4-Trichlorobenzene, 1,2-Dichlorobenzene, Carbon disulfide, Carbon Tetrachloride, Chlorobenzene, Cyclohexane, Ethylbenzene, Freon 113, Isopropylbenzene, m,p-Xylene, Methyl cyclohexane, Methylene Chloride, Naphthalene, o-Xylene, Styrene, Tetrachloroethene, Toluene, and trans-1,2-Dichloroethene. The batch was accepted based on acceptable LCS recovery.

Analysis: EPA 8260B
Affected Samples: 4L19028-MS1, 4L19028-MSD1, IR82-SD01—14D [A407175-03]
The spike recovery was outside acceptance limits for 1,2,4-Trichlorobenzene, 1,2-Dibromo-3-chloropropane, 1,2-Dichlorobenzene, Chlorobenzene, Cyclohexane, Methyl cyclohexane, Methylene Chloride, Naphthalene, Styrene, and Toluene in the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.

Analysis: EPA 8260B
Affected Samples: 4L23052-BS1, 4L23052-BSD1
The RPD and/or percent recovery for 2-Butanone, 4-Methyl-2-pentanone for the QC spike sample cannot be accurately calculated due to the high concentration of analyte inherent in the source sample.

Analysis: EPA 8260B
Affected Samples: 4L19028-MS1, 4L19028-MSD1, IR82-SD01—14D [A407175-03]
Matrix spike recovery for 2-Hexaone, Acetone was outside acceptance limits due to high concentrations of analyte in source sample. The batch was accepted based on acceptable LCS recovery.

Analysis: EPA 8260B
Affected Samples: AA31829-CCV1, IR82-SD01-14D [A407175-03], IR82-SD01D-14D [A407175-04]
Result estimated for 2-Hexanone, calibration verification standard exhibited high bias. The sample was re-analyzed for confirmation. In the re-run the CCV was within acceptable limits, all data is reported.

Analysis: EPA 8260B
Affected Samples: 4L19028-BLK1, IR82-SD01-14D [A407175-03], IR82-SD01D-14D [A407175-04], 4L23052-BLK1, IR82-SD01-14D [A407175-03RE1], IR82-SD01D-14D [A407175-04RE1]
Methylene Chloride is a common laboratory contaminant. Result is estimated due to the positive results in the associated laboratory blank. The sample was re-analyzed for confirmation. In the re-run the blank was ND, all data is reported. Confirmed laboratory contamination.

Analysis: EPA 8260B
Affected Samples: 4L19028-BS1, IR82-SD01-14D [A407175-03], IR82-SD01D-14D [A407175-04], 4L23052-BS1, IR82-SD01-14D [A407175-03RE1], IR82-SD01D-14D [A407175-04RE1]
Result is estimated for Methylene Chloride due to bias in the associated laboratory control sample. The sample was re-analyzed for confirmation. In the re-run the LCS was within acceptable , all data is reported. Confirmed laboratory contamination.

Analysis: EPA 8260B
Affected Samples: IR82-SD01-14D [A407175-03], IR82-SD01-14D [A407175-03RE1]
The surrogate recovery was outside acceptance limits for Toluene-d8. The surrogate recoveries failed with low bias. The sample was re-analyzed for confirmation. In the re-run the surrogate recovery was within acceptable limits, all data is reported.

PROJECT NARRATIVE

Analysis: EPA 8260B
Affected Samples: 4L19028-MS1, 4L19028-MSD1
The surrogate recoveries were outside acceptance limits for 4-Bromofluorobenzene and Toluene-d8. The surrogates failed with low bias.

Analysis: EPA 8260B
Affected Samples: 4L29031-BLK1, 4L29031-BS1
The surrogate recoveries were outside acceptance limits for Dibromofluoromethane and Toluene-d8. The surrogates failed with high bias.

Analysis: EPA 8270D
Affected Samples: 4L23042-MS1, 4L23042-MSD1, 4L23042-MS2, 4L23042-MSD2
Precision between duplicate spikes of the same sample was outside acceptance limits for 1,1'-Biphenyl, 2-Chloronaphthlene, 3,3'-Dichlorobenzidine, 4-Bromophenyl-phenylether, 4-CHlorophenyl-phenylether, Butylbenzylphthalate, Carbazole, Dibenzofuran, Diethylphthalate, Di-n-butylphthalate, Di-n-octylphthalate, Hexachlorobenzene, Hexachlorobutadiene, Hexachlorocyclopentadiene, Hexachloroethane, and N-nitrosodiphenylamine/Diphenylamine . The batch was accepted based on acceptable LCS recovery.

Analysis: EPA 8270D
Affected Samples: 4L23042-MS1, 4L23042-MSD1, IR82-SD01-14D [A407175-03], 4L23042-MS2, 4L23042-MSD2, IR82-SD01-14D [A407175-03RE1]
The spike recovery was outside acceptance limits for 1,1'-Biphenyl, 2-Chloronaphthlene, 4-Bromophenyl-phenylether, 4-CHlorophenyl-phenylether, Butylbenzylphthalate, Carbazole, Dibenzofuran, Diethylphthalate, Di-n-butylphthalate, Hexachlorobenzene, Hexachlorobutadiene, Hexachloroethane, and N-nitrosodiphenylamine/Diphenylamine in the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.

Analysis: EPA 8270D
Affected Samples: AA32184-CCV1, IR82-SD01-14D [A407175-03RE1], IR82-SD01D-14D [A407175-03RE2], IR82-SD01D-14D [A407175-03RE3]
The associated continuing calibration verification standard exhibited high bias for 4-Nitrophenol and N-nitrosodiphenylamine/Diphenylamine; since the result is ND, the impact on data quality is minimal.

Analysis: EPA 8270D
Affected Samples: AA32103-CCV1, IR82-SD01D-14D [A407175-04RE1]
The associated continuing calibration verification standard exhibited high bias for Bis(2-chloroethoxy)methane; since the result is ND, the impact on data quality is minimal.

Analysis: EPA 8270D
Affected Samples: AA32103-CCV1, IR82-EB-121114[A407175-06RE1]
The associated continuing calibration verification standard exhibited high bias for 4-Nitrophenol , Bis(2-chloroethoxy)methane, Di-n-ocytlphthalate, N-nitrosodiphenylamine/Diphenylamine; since the result is ND, the impact on data quality is minimal.

Analysis: EPA 8270D
Affected Samples: AA32069-CCV1, IR82-SD01-14D [A407175-03], IR82-SD01D-14D [A407175-04], IR82-EB-121114[A407175-06], AA32103-CCV1, IR82-SD01D-14D [A407175-04RE1], AA32184-LCV1, IR82-SD01-14D [A407175-03RE1], IR82-SD01D-14D [A407175-04RE2], IR82-SD01D-14D [A407175-04RE3], AA32210-CCV1, IR82-EB-121114[A407175-06RE1]
Result is estimated for Hexachlorocylcopentadiene, the associated continuing calibration verification standard exhibited low bias for 4-Nitrophenol. The sample was re-extracted and re-analyzed for confirmation. The failure is attributed to the limits in QSM 5.0. All data is reported.

Analysis: EPA 8270D
Affected Samples: IR82-SD01-14D [A407175-03], IR82-SD01-14D [A407175-03RE1]
The surrogate recoveries were outside acceptance limits for 2,4,6-Tribromophenol, 2-Fluorobiphenyl, and Terphenyl-d14. The surrogates failed with low bias. The sample was re-extracted and re-analyzed for confirmation. In the re-run the surrogates failed with low bias, this is a confirmed matrix effect.

PROJECT NARRATIVE

Analysis: EPA 8270D
Affected Samples: IR82-SD01D-14D [A407175-04], IR82-SD01D-14D [A407175-04RE2]
The surrogate recoveries were outside acceptance limits for 2,4,6-Tribromophenol, 2-Fluorobiphenyl, and Terphenyl-d14. The surrogates failed with low bias. The sample was re-extracted and re-analyzed for confirmation. In the re-run the surrogates failed with low bias, this is a confirmed matrix effect.

Analysis: EPA 8270D
Affected Samples: IR82-EB-121114[A407175-06RE1]
The surrogate recovery for Terphenyl-d14 was outside acceptance limits. The surrogate failed with high bias.

Analysis: EPA 8270D PAH SIM
Affected Samples: 4L17003-MS1, 4L17003-MSD1
Precision between duplicate spikes of the same sample was outside acceptance limits for Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(g,h,i)perylene, Benzo(k)fluoranthene, and Indeno(1,2,3-cd)pyrene . The batch was accepted based on acceptable LCS recovery.

Analysis: EPA 8081B
Affected Samples: 4L17002-MS1, 4L17002-MSD1, IR82-SD01-14D [A407175-03]
The spike recovery was outside acceptance limits for Chlordane-gamma and Dieldrin in the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.

Analysis: EPA 8081B
Affected Samples: AA31896-CCV1, IR82-SD01-14D [A407175-03], IR82-SD01D-14D [A407175-04], IR82-EB-121114[A407175-06]
The associated continuing calibration verification standard exhibited high bias for 4,4'-DDE and Aldrin; since the result is ND, the impact on data quality is minimal.

Analysis: EPA 8081B
Affected Samples: 4L17002-BS1, IR82-SD01-14D [A407175-03], IR82-SD01D-14D [A407175-04], IR82-EB-121114[A407175-06]
The associated laboratory control sample exhibited high bias for 4,4'-DDE; since the result is ND, the impact on data quality is minimal.

Analysis: EPA 6010C
Affected Samples: A407175-03 (IR82-SD01-14D)[B405538-01], A407175-04 (IR82-SD01D-14D)[B405538-02]
The laboratory blank 5A07003-BLK1 had concentration for cobalt and iron above the DL but below the LOD. The concentration of cobalt and iron found in the laboratory blank was less than 1/2 the reporting limit.

Analysis: EPA 6010C
Affected Samples: A407175-06 (IR82-EB-121114)[B405538-03]
The laboratory blank 5A06006-BLK1 had concentration for manganese above the DL but below the LOD. The concentration of manganese found in the laboratory blank was less than 1/2 the reporting limit.

Analysis: EPA 6010C
Affected Samples: A407175-06 (IR82-EB-121114)[B405538-03]
The method blank associated to the flagged samples showed a positive result above the MDL, but below the reporting limit for Zinc. The sample associated to this blank was re-prepped and re-analyzed for Zinc. Both sets of data have been reported.

Analysis: EPA 6010C
Affected Samples: A407175-03 (IR82-SD01-14D)[B405538-01], A407175-04 (IR82-SD01D-14D)[B405538-02]
Aluminum, Calcium and Iron concentrations for the above samples were above the calibration range. High concentration calibration verification standards were analyzed and within control limits

---

Analysis: EPA 6010C
Affected Samples: 5A07003-MS1, 5A07003-MSD1, A407175-03 (IR82-SD01-14D)[B405538-01]
The sample selected for matrix spiking had high levels of the target analyte aluminum and iron, rendering the spike used invalid. This may be reflected in matrix spike and matrix spike duplicate recoveries outside of acceptance limits, but is not a reflection of laboratory performance; the laboratory control sample (LCS) passed acceptance criteria, and therefore the analytical system is considered to be in control.

---

www.encolabs.com

PROJECT NARRATIVE

Analysis: EPA 6010C
Affected Samples: 5A07003-MS1, 5A07003-MSD1, A407175-03 (IR82-SD01-14D)[B405538-01]
The matrix spike and matrix spike duplicate had recoveries that were outside acceptance limits for antimony, but by virtue of a laboratory control sample being in control, the laboratory has demonstrated to be in control of its internal process.

Analysis: EPA 6010C
Affected Samples: 5A07003-MS1, 5A07003-MSD1, A407175-03 (IR82-SD01-14D)[B405538-01]
Precision between duplicate matrix spikes of the same sample was outside acceptance limits for iron.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy package and in computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signatures.

Digitally signed by Marcia Colon
Reason: I am the author of this document
Date: 2015.01.30 09:42:57 -05'00'

Marcia Colon
January 30, 2015

Project Manager

ENVIRONMENTAL CONSERVATION LABORATORIES **CHAIN-OF-CUSTODY RECORD**

10775 Central Port Dr. Orlando, FL 32824 (407) 826-5314 Fax (407) 850-6945
4810 Executive Park Court, Suite 111 Jacksonville, FL 32216-6069 (904) 296-3007 Fax (904) 296-6210
102-A Woodwinds Industrial Ct Cary, NC 27511 (919) 467-3090 Fax (919) 467-3515

www.encolabs.com

Page 1 of 1

Client Name: CH2M Hill, Inc. (CH029)
Address: 15010 Conference Center Drive, Suite 200
City/ST/Zip: Chantilly, VA 20151
Tel: 757-671-6335 Fax:
Sampler(s) Name, Affiliation (Print): Bridget Berg Ind
Sampler(s) Signature:

Project Number: ~~486519~~ 495027
Project Name/Desc: CTO-WE~~80~~ 9A MCB Camp Lejeune Site ~~9~~ 82
PO # / Billing Info: ~~954934~~
Reporting Contact: ~~Clairette Campbell~~ Barca Kleist
Billing Contact: Accounts Payable
Site Location / Time Zone: Site 82

Requested Analyses: ~~8270D BOD Extended GSM 5.0~~ | ~~8270D PAH SIM BOD GSM 5.0~~ | 8260B VOCs SW | 8260B VOCs Sed | 8270D TCL SVOCs | 8270D PAHs | 8081B Pest | 8082A PCBs | 6010C 7470A Metals

Requested Turnaround Times: Note: Rush requests subject to acceptance by the facility. Per SOW ___ Standard ___ Expedited Due __/__/__

Lab Workorder: A407175 ~~A406845~~ LJC

Item #	Sample ID (Field Identification)	Collection Date	Collection Time	Comp / Grab	Matrix (see codes)	Total # of Containers	8270D BOD Extended GSM 5.0	8270D PAH SIM BOD GSM 5.0	8260B VOCs SW	8260B VOCs Sed	8270D TCL SVOCs	8270D PAHs	8081B Pest	8082A PCBs	6010C 7470A Metals	Sample Comments
							Preservation (See Codes) (Combine as necessary)		H	O	I	I	I	I	I	
	IR82-SW01-14D	12-10-14	1120		SW	3			X							12/12/2014
	IR82-SW01-14D-MS	↓	1120		↓	3			X							
	IR82-SW01-14D-SD		1120			3			X							
	IR82-SW01D-14D		1125			3			X							
	IR82-SD01-14D		1150		SE	6				X	X	X	X	X	X	
	IR82-SD01-14D-MS		1150			6				X	X	X	X	X	X	
	IR82-SD01-14D-SD		1150			6				X	X	X	X	X	X	
	IR82-SD01D-14D	↓	1155		↓	6				X	X	X	X	X	X	
	IR82-TB-121114	12-11-14	0730		DI	2			X							
	IR82-EB-121114	12-11-14	0800		DI	8				X	X	X	X	X	X	

<-- Total # of Containers

Sample Kit Prepared By: BNH Date/Time: 11-21-14 1010
Comments/Special Reporting Requirements:

Relinquished By: Brandy Hu Date/Time: 11/21-14 1010 Received By: Date/Time:
Relinquished By: Betty Reed Date/Time: 12/11/14 1730 Received By: R Calle Date/Time: 12/12/2014 0907
Relinquished By: Date/Time: Received By: Date/Time:

Cooler #'s & Temps on Receipt: 1 G BTW 2°C

Condition Upon Receipt: Acceptable ___ Unacceptable

Matrix: GW-Groundwater SO-Soil DW-Drinking Water SE-Sediment SW-Surface Water WW-Wastewater A-Air O-Other (detail in comments) Preservation: I-Ice H-HCl N-HNO3 S-H2SO4 NO-NaOH O-Other (detail in comments)

Note: All samples submitted to ENCO Labs are in accordance with the terms and conditions listed on the reverse of this form, unless prior written agreements exist

077

Data Completeness

The data package was received complete and intact. Resubmissions were not required. (SW846 Method 8260C)

Laboratory: ENCO

Holding Times

Sampling Date: 12/10-11/14
Received Date: 12/12/14
Analysis Dates: 12/19/14-1/6/15
Cooler Temp: 2°C

All holding time requirements were met.

Calibrations

Mass assignments were verified by the injection of BFB.

Qualifications were required for the initial calibration due to high %RSDs and low RRF values, see attached Form VI.

Internal Standards

Sample IR82-SD01D-14DRE exhibited low recoveries of 41% for internal standard 1,4-dichlorobenzene-d4, the initial analysis exhibited similar recoveries. All compounds associated with this internal standard were qualified as estimated (J/UJ), qualifier code: ISL.

Blank Summary

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying criteria.
- Qualification/Action codes where applied as stated in table below:

Blank Type	Blank Result	Sample Result	Action for Samples
Method, Field	Detects	Not detected	No qualifications
	< LOD*	< LOD*	Report LOD value with a U
		≥ LOD*	Use professional judgment
	> LOD*	< LOD*	Report LOD value with a U
		≥ LOD* and < blank concentration	Report the concentration for the sample with a U, or qualify the data as unusable R
		≥ LOD* and ≥ blank concentration	Use professional judgment
	= LOD*	< LOD*	Report LOD value with a U
		≥ LOD*	Use professional judgment
	Gross contamination	Detects	Qualify results as unusable R

*2x the LOD for methylene chloride, 2-butanone and acetone

Contamination was exhibited in the method blanks; however no qualifications were required. Associated QC blanks: IR82-TB-121114- trip blank (no positive results) and IR82-EB-121114- equipment blank.

Blank Contamination and Qualification Summaries

Blank ID	Compound	Concentration	Reporting Limit (LOD)
IR82-EB-121114	methylene chloride	580E ug/L	5.0 ug/L

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Qual Code
IR82-SD01-14D, IR82-SD01D-14D	methylene chloride	U	EBL

Surrogates

All criteria were met for the analyses used.

Laboratory Control Sample

Several LCS and LCSD exhibited high recoveries however none of the associated samples exhibited recopveries for the corresponding compounds.

Matrix Spike/Spike Duplicate Samples

An MS/MSD was submitted for IR82-SD01-14D and IR82-SW01-14D. Compounds with non-compliant recoveries for both MS and MSD are listed in the table below; qualifications were applied as stated.

Associated Sample	Compound	MS %Rec	MSD %Rec	QC limit	Qualifier	Qual Code
IR82-SD01-14D	1,2,4-trichlorobenzene	44	63	67-129	J/UJ	MSL
	1,2-dibromo-3-chloropropane	134	157	61-132	J	MSH
	naphthalene	33	55	62-129	J/UJ	MSL
IR82-SW01-14D	chloroethane	156	150	60-138	J	MSH
	carbon disulfide	166	168	64-133		

Field Duplicate Sample

A field duplicate was submitted for samples IR82-SW01-14D4A- no qualifications were required and IR82-SD01-14D-qualifications required, see attached sheet.

Specific Comments:

All sample results were reported within the calibration range of the instruments. Sample IR82-EB-121114 exhibited results for methylene chloride above the calibration range. The sample was re-analyzed to confirm the results; results were confirmed within the calibration range, however the analysis occurred out of holding time. Therefore the initial analysis was used and the results for methylene chloride are qualified as estimated (J), qualifier code: LR.

According to the case narrative, samples IR82-SW01-14D, IR82-SW01D-14D, and IR82-TB-121114 were re-analyzed due to non-compliant CCV recoveries. The re-analyses samples exhibited non-compliant surrogate recoveries and were analyzed out of holding time therefore the initial analysis was used and the re-analysis was excluded.

The initial analysis of sample IR82-SD01-14D exhibited non-compliant surrogate and internal standard recoveries. The sample was re-analyzed with recoveries within QC criteria; therefore the initial analysis was excluded in favor of the re-analysis.

Sample IR82-SD01D-14D was re-analyzed due to methylene chloride in the associated method blank. Both the initial analysis and the re-analysis exhibited low internal standard area recoveries. The initial analysis was excluded.

Detection limits were acceptable. Raw data and calculations were verified.

We have limited the supporting documentation, found with these worksheets, to those forms that indicate qualifications were required.

Validator Signature: _____ **Date:** 2/28/15

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8260B

Laboratory: ENCO Orlando

Client: CH2M Hill, Inc. (CH031)

Sequence: AA31801

SDG: A407175-CTO-WE9A

Project: CTO-WE9A, Camp Lejuene Site 82

Instrument: OVGCMS2

Calibration: 1412083

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	AA31801-TUN1	2LM004.D	12/18/14 09:38
Cal Standard	AA31801-CAL1	2LM005.D	12/18/14 10:16
Cal Standard	AA31801-CAL2	2LM006.D	12/18/14 10:46
Cal Standard	AA31801-CAL3	2LM007.D	12/18/14 11:16
Cal Standard	AA31801-CAL4	2LM008.D	12/18/14 11:46
Cal Standard	AA31801-CAL5	2LM009.D	12/18/14 12:16
Cal Standard	AA31801-CAL6	2LM010.D	12/18/14 12:47
Cal Standard	AA31801-CAL7	2LM011.D	12/18/14 13:16
Cal Standard	AA31801-CAL8	2LM012.D	12/18/14 13:46
Secondary Cal Check	AA31801-SCV1	2LM014.D	12/18/14 14:46

INITIAL CALIBRATION DATA (Continued)

EPA 8260B

Laboratory: ENCO Orlando

Client: CH2M Hill, Inc. (CH031)

Calibration: 1412083

Matrix: Water

SDG: A407175-CTO-WE9A

Project: CTO-WE9A, Camp Lejuene Site 82

Instrument: OVGCMS2

Calibration Date: 12/19/14 10:33

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Dichlorodifluoromethane	0.3610834	23.48001	4.64875	7.729651E-02	J/UJ			
Chloromethane	0.5747444	14.18467	5.1525	9.014503E-02			SPCC (0.1)	
Vinyl chloride	0.6064824	18.22703	5.38125	0.0647764	J/UJ		CCC (30)	
Bromomethane	0.2417945	25.45063	6.13375	8.459396E-02	J/UJ			
Chloroethane	0.3314	11.9539	6.397143	0.2159242				
Trichlorofluoromethane	0.5419454	15.77691	6.67125	0.2934987				
Freon 113	0.4097086	23.62576	7.62875	4.314819E-02	J/UJ			
Acetone	0.1513605	8.217104	8.51	6.390755E-02				
1,1-Dichloroethene	0.3968357	21.8333	7.58875	0.0831149	J/UJ		CCC (30)	
Carbon disulfide	1.317962	20.15406	7.665	0.0688213	J/UJ			
Methylene Chloride	0.5863638	10.82022	8.45125	7.537099E-02				
Methyl-tert-Butyl Ether	1.262697	16.32725	8.77625	5.921323E-02	J/UJ			
trans-1,2-Dichloroethene	0.4754875	19.4327	8.66625	5.851692E-02	↓			
cis-1,2-Dichloroethene	0.5371036	16.45804	10.0975	4.839322E-02				
1,1-Dichloroethane	0.8979111	14.44783	9.4725	0.0520098			SPCC (0.1)	
2-Butanone	4.794961E-02	43.03229	9.34625	40.40612	J/R			
Chloroform	0.8483553	12.11223	10.365	4.896981E-02			CCC (30)	
1,1,1-Trichloroethane	0.5467863	19.9014	10.6225	4.643303E-02	J/UJ			
Methyl acetate	0.1122972	10.73137	8.6475	5.430091E-02				
Cyclohexane	0.8198102	26.11173	10.33	5.359852E-02	J/UJ			
Methyl cyclohexane	0.3592905	16.14264	11.56	4.512236E-02	↓			
Carbon Tetrachloride	0.2409395	28.15374	10.55	1.228016E-02				
1,2-Dichloroethane	0.2940144	14.791	11.20875	3.111261E-02				
Benzene	1.147122	14.21735	11.00875	3.575421E-02				
Trichloroethene	0.243725	17.42724	11.55875	2.706026E-02	J/UJ			
1,2-Dichloropropane	0.3110968	16.08451	12.07625	3.821386E-02	↓		CCC (30)	
Bromodichloromethane	0.3426843	17.78428	12.10125	4.912245E-02				
4-Methyl-2-pentanone	0.0323648	34.83418	13.17375	3.536483E-02	J/R			
2-Hexanone	0.1978635	16.48328	13.8875	3.607409E-02	J/UJ			
cis-1,3-Dichloropropene	0.4741088	20.0017	12.66875	2.457477E-02	J/UJ			
Toluene	0.7567795	12.78873	12.89	2.034436E-02			CCC (30)	
trans-1,3-Dichloropropene	0.4197002	16.88422	13.23125	4.543646E-02	J/UJ			

INITIAL CALIBRATION DATA (Continued)

EPA 8260B

Laboratory: ENCO Orlando

Client: CH2M Hill, Inc. (CH031)

Calibration: 1412083

Matrix: Water

SDG: A407175-CTO-WE9A

Project: CTO-WE9A, Camp Lejuene Site 82

Instrument: OVGCMS2

Calibration Date: 12/19/14 10:33

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
1,1,2-Trichloroethane	0.2696236	15.60858	13.39375	3.893474E-02				
Tetrachloroethene	0.200942	14.99825	13.245	3.963423E-02				
Dibromochloromethane	0.2836534	18.17279	13.57625	3.942826E-02	J/UJ			
1,2-Dibromoethane	0.3005269	15.3272	13.8325	4.942394E-02				
Chlorobenzene	0.7503255	14.07732	14.25125	2.536236E-02			SPCC (0.3)	
Ethylbenzene	0.3878579	15.34704	14.22	1.313651E-02			CCC (30)	
m,p-Xylenes	0.4684383	13.5604	14.335	3.532841E-02				
o-Xylene	0.4642441	15.65093	14.74125	4.342065E-02				
Bromoform	0.166495	22.16882	14.87875	4.140191E-02	J/UJ		SPCC (0.1)	
Styrene	0.8341849	14.42591	14.7825	3.213625E-02				
Isopropylbenzene	1.070766	16.85413	15.005	3.667419E-02	J/UJ			
1,1,2,2-Tetrachloroethane	0.351024	13.82856	15.46875	2.162387E-02			SPCC (0.3)	
1,2,4-Trichlorobenzene	0.6799259	34.83021	19.255	2.559487E-02	J/UJ			
1,3-Dichlorobenzene	1.176848	12.64578	16.43	1.559349E-02				
1,4-Dichlorobenzene	1.188187	13.53071	16.52375	0.0284389				
1,2-Dichlorobenzene	1.085575	14.70839	17.05125	2.767313E-02				
1,2-Dibromo-3-chloropropane	0.1023591	19.104	18.14625	5.668744E-02				
Naphthalene	1.723542	55.19017	19.93	3.055422E-02	J/UJ			
Dibromofluoromethane	0.559224	5.478969	10.57	1.403355E-02				
Toluene-d8	1.025118	9.641362	12.83857	2.653959E-02				
4-Bromofluorobenzene	0.4385857	10.26896	15.32857	2.335929E-02				

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8260B

Laboratory: ENCO Orlando

Client: CH2M Hill, Inc. (CH031)

Sequence: AA31886

SDG: A407175-CTO-WE9A

Project: CTO-WE9A, Camp Lejuene Site 82

Instrument: OVGCMS2

Calibration: 1412083

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	AA31886-TUN1	2LS001.D	12/24/14 04:20
Calibration Check	AA31886-CCV1	2LS002.D	12/24/14 04:53
LCS	4L24004-BS1	2LS003.D	12/24/14 05:26
Blank	4L24004-BLK1	2LS005.D	12/24/14 06:25
IR82-SW01-14D	A407175-01	2LS006.D	12/24/14 06:54
IR82-SW01D-14D	A407175-02	2LS007.D	12/24/14 07:24
IR82-TB-121114	A407175-05	2LS008.D	12/24/14 07:54
IR82-EB-121114	A407175-06	2LS009.D	12/24/14 08:24
IR82-SW01-14D	4L24004-MS1	2LS018.D	12/24/14 12:47
IR82-SW01-14D	4L24004-MSD1	2LS019.D	12/24/14 13:17
Low Cal Check	AA31886-LCV1	2LS022.D	12/24/14 14:45

CONTINUING CALIBRATION CHECK

EPA 8260B

Laboratory:	ENCO Orlando	SDG:	A407175-CTO-WE9A
Client:	CH2M Hill, Inc. (CH031)	Project:	CTO-WE9A, Camp Lejuene Site 82
Instrument ID:	OVGCMS2	Calibration:	1412083
Lab File ID:	2LS002.D	Calibration Date:	12/19/14 10:33
Sequence:	AA31886	Injection Date:	12/24/14
Lab Sample ID:	AA31886-CCV1	Injection Time:	04:53

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Dichlorodifluoromethane	A	50.0	78	0.3610834	0.6608336		56.6	20 *
Chloromethane	A	50.0	58	0.5747444	0.7558836	0.1	15.0	20
Vinyl chloride	A	50.0	60	0.6064824	0.8324492		19.9	20
Bromomethane	A	50.0	33	0.2417945	0.1457144		-34.7	20 *
Chloroethane	A	50.0	63	0.3314	0.4345551		26.1	20 *
Trichlorofluoromethane	A	50.0	55	0.5419454	0.6566138		9.5	20
Freon 113	A	50.0	55	0.4097086	0.5222526		9.5	20
Acetone	A	50.0	58	0.1513605	0.1775247		16.2	20
1,1-Dichloroethene	A	50.0	52	0.3968357	0.4776212		3.3	20
Carbon disulfide	A	50.0	92	1.317962	2.776188		85.0	20 *
Methylene Chloride	A	50.0	53	0.5863638	0.666694		5.6	20
Methyl-tert-Butyl Ether	A	50.0	51	1.262697	1.467461		2.2	20
trans-1,2-Dichloroethene	A	50.0	52	0.4754875	0.5698396		3.7	20
cis-1,2-Dichloroethene	A	50.0	51	0.5371036	0.6330328		2.7	20
1,1-Dichloroethane	A	50.0	53	0.8979111	1.078888	0.1	6.9	20
2-Butanone	A	50.0	57	4.794961E-02	6.713854E-02		14.0	20
Chloroform	A	50.0	53	0.8483553	0.9840727		6.1	20
1,1,1-Trichloroethane	A	50.0	52	0.5467863	0.6640771		4.9	20
Methyl acetate	A	50.0	46	0.1122972	0.1138444		-7.2	20
Cyclohexane	A	50.0	55	0.8198102	1.068332		10.1	20
Methyl cyclohexane	A	50.0	56	0.3592905	0.4143461		11.3	20
Carbon Tetrachloride	A	50.0	50	0.2409395	0.2994138		-0.5	20
1,2-Dichloroethane	A	50.0	49	0.2940144	0.3276116		-1.8	20
Benzene	A	50.0	52	1.147122	1.34326		3.3	20
Trichloroethene	A	50.0	50	0.243725	0.2807004		-0.5	20
1,2-Dichloropropane	A	50.0	51	0.3110968	0.3663933		2.5	20
Bromodichloromethane	A	50.0	50	0.3426843	0.4028418		0.08	20
4-Methyl-2-pentanone	A	50.0	52	0.0323648	4.174423E-02		4.1	20
2-Hexanone	A	50.0	51	0.1978635	0.2268674		2.2	20

CONTINUING CALIBRATION CHECK

EPA 8260B

Laboratory:	ENCO Orlando	SDG:	A407175-CTO-WE9A
Client:	CH2M Hill, Inc. (CH031)	Project:	CTO-WE9A, Camp Lejuene Site 82
Instrument ID:	OVGCMS2	Calibration:	1412083
Lab File ID:	2LS002.D	Calibration Date:	12/19/14 10:33
Sequence:	AA31886	Injection Date:	12/24/14
Lab Sample ID:	AA31886-CCV1	Injection Time:	04:53

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
cis-1,3-Dichloropropene	A	50.0	50	0.4741088	0.5672749		0.08	20
Toluene	A	50.0	50	0.7567795	0.8407048		0.2	20
trans-1,3-Dichloropropene	A	50.0	49	0.4197002	0.4730326		-2.1	20
1,1,2-Trichloroethane	A	50.0	49	0.2696236	0.3033287		-1.2	20
Tetrachloroethene	A	50.0	48	0.200942	0.2177917		-3.0	20
Dibromochloromethane	A	50.0	48	0.2836534	0.3181565		-4.7	20
1,2-Dibromoethane	A	50.0	48	0.3005269	0.3269921		-4.6	20
Chlorobenzene	A	50.0	50	0.7503255	0.8347085	0.3	-0.4	20
Ethylbenzene	A	50.0	51	0.3878579	0.4439603		1.9	20
m,p-Xylenes	A	100	100	0.4684383	0.5347523		3.0	20
o-Xylene	A	50.0	50	0.4642441	0.536122		0.7	20
Bromoform	A	50.0	46	0.166495	0.1899871	0.1	-7.4	20
Styrene	A	50.0	49	0.8341849	0.9215475		-2.4	20
Isopropylbenzene	A	50.0	50	1.070766	1.22984		-0.7	20
1,1,2,2-Tetrachloroethane	A	50.0	47	0.351024	0.3707265	0.3	-5.6	20
1,2,4-Trichlorobenzene	A	50.0	47	0.6799259	0.6123445		-5.9	20
1,3-Dichlorobenzene	A	50.0	50	1.176848	1.280438		-0.4	20
1,4-Dichlorobenzene	A	50.0	50	1.188187	1.305975		0.2	20
1,2-Dichlorobenzene	A	50.0	48	1.085575	1.168594		-3.4	20
1,2-Dibromo-3-chloropropane	A	50.0	40	0.1023591	0.0839925		-19.9	20
Naphthalene	A	50.0	41	1.723542	1.232923		-17.2	20

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8260B

Laboratory: ENCO Orlando

Client: CH2M Hill, Inc. (CH031)

Sequence: AA31877

SDG: A407175-CTO-WE9A

Project: CTO-WE9A, Camp Lejuene Site 82

Instrument: OVGCMS5

Calibration: 1412100

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	AA31877-TUN1	5LR002.D	12/23/14 10:14
Cal Standard	AA31877-CAL1	5LR004.D	12/23/14 11:26
Cal Standard	AA31877-CAL2	5LR005.D	12/23/14 11:54
Cal Standard	AA31877-CAL3	5LR006.D	12/23/14 12:22
Cal Standard	AA31877-CAL4	5LR007.D	12/23/14 12:50
Cal Standard	AA31877-CAL5	5LR008.D	12/23/14 13:19
Cal Standard	AA31877-CAL6	5LR009.D	12/23/14 13:47
Cal Standard	AA31877-CAL7	5LR010.D	12/23/14 14:15
Secondary Cal Check	AA31877-SCV1	5LR012.D	12/23/14 15:12
Secondary Cal Check	AA31877-SCV2	5LR013.D	12/23/14 15:40

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8260B

Laboratory: ENCO Orlando

Client: CH2M Hill, Inc. (CH031)

Sequence: AA31883

SDG: A407175-CTO-WE9A

Project: CTO-WE9A, Camp Lejuene Site 82

Instrument: OVGCMS5

Calibration: 1412100

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	AA31883-TUN1	5LR002.D	12/23/14 10:14
LCS	4L23052-BS1	5LR013.D	12/23/14 15:40
LCS Dup	4L23052-BSD1	5LR014.D	12/23/14 16:08
Blank	4L23052-BLK1	5LR016.D	12/23/14 17:04
IR82-SD01-14D	A407175-03RE1	5LR017.D	12/23/14 17:32
IR82-SD01D-14D	A407175-04RE1	5LR018.D	12/23/14 18:00
Low Cal Check	AA31883-LCV1	5LR025.D	12/23/14 21:15

INITIAL CALIBRATION DATA (Continued)

EPA 8260B

Laboratory: ENCO Orlando

SDG: A407175-CTO-WE9A

Client: CH2M Hill, Inc. (CH031)

Project: CTO-WE9A, Camp Lejuene Site 82

Calibration: 1412100

Instrument: OVGCMS5

Matrix: Soil

Calibration Date: 12/24/14 11:23

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Dichlorodifluoromethane	0.9092987	16.37704	4.156857	6.958393E-02	J/UJ			
Chloromethane	1.44637	15.15771	4.602	1.512235E-02			SPCC (0.1)	
Vinyl chloride	1.112872	13.91951	4.807	1.284333E-02			CCC (30)	
Bromomethane	0.4852998	16.46379	5.537714	0.0603396	J/UJ			
Chloroethane	0.6298453	20.69465	5.802833	6.284761E-02	J/UJ			
Trichlorofluoromethane	1.066782	15.07352	6.086714	6.331944E-02				
Freon 113	0.6355953	10.21886	7.090571	4.613067E-02			15	
Acetone	0.290317	83.54883	8.0596	0.1954042	J/UJ			
1,1-Dichloroethene	0.6679886	7.765611	7.036286	8.475377E-02			CCC (30)	
Carbon disulfide	2.930827	11.43806	7.108	1.789689E-02				
Methylene Chloride	0.8205386	17.32982	7.973286	0.0473908	J/UJ			
Methyl-tert-Butyl Ether	1.164622	10.23687	8.355857	3.652008E-02			15	
trans-1,2-Dichloroethene	0.769693	6.961236	8.223	5.380651E-02			15	
cis-1,2-Dichloroethene	0.8261414	5.554926	9.830286	6.042001E-02			15	
1,1-Dichloroethane	1.53756	8.347973	9.133	5.360117E-02			SPCC (0.1)	
2-Butanone	4.829988E-02	35.87608	10.5066	0.1315818	J/R			
Chloroform	1.316158	8.705045	10.14	0.0203037			CCC (30)	
1,1,1-Trichloroethane	1.053094	6.738983	10.43029	0.0393786			15	
Methyl acetate	0.5024888	44.65235	8.216	8.998196E-02	J/UJ	0.996929	0.99	
Cyclohexane	1.804406	12.61315	10.107	1.738414E-02			15	
Methyl cyclohexane	1.033037	22.44833	11.512	2.591121E-02	J/UJ			
Carbon Tetrachloride	0.4322162	5.746846	10.35271	2.704984E-02			15	
1,2-Dichloroethane	0.3642641	7.868441	11.085	1.356303E-02			15	
Benzene	1.671495	6.081817	10.86186	2.995312E-02			15	
Trichloroethene	0.4844529	5.666948	11.496	1.528415E-02			15	
1,2-Dichloropropane	0.4548441	5.915021	12.08871	2.473387E-02			CCC (30)	
Bromodichloromethane	0.4118216	7.425981	12.12629	3.902159E-02			15	
4-Methyl-2-pentanone	1.754496E-02	3.003659	14.3	0.0315817	J/R		15	
2-Hexanone	0.1936831	22.67862	14.298	1.070497E-02	J/UJ			
cis-1,3-Dichloropropene	0.3689013	13.42812	13.49514	2.951897E-02			15	
Toluene	1.120346	6.549257	13.07571	0.0286324			CCC (30)	
trans-1,3-Dichloropropene	0.3745541	13.43605	13.49514	2.951897E-02			15	

INITIAL CALIBRATION DATA (Continued)

EPA 8260B

Laboratory: ENCO Orlando

SDG: A407175-CTO-WE9A

Client: CH2M Hill, Inc. (CH031)

Project: CTO-WE9A, Camp Lejuene Site 82

Calibration: 1412100

Instrument: OVGCMS5

Matrix: Soil

Calibration Date: 12/24/14 11:23

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
1,1,2-Trichloroethane	0.3064859	12.59435	13.68871	4.383797E-02			15	
Tetrachloroethene	0.3927858	8.582212	13.50657	5.701056E-02			15	
Dibromochloromethane	0.3020362	9.063117	13.91057	4.232252E-02			15	
1,2-Dibromoethane	0.2740736	10.42394	14.20729	3.254068E-02			15	
Chlorobenzene	1.380804	7.613952	14.72157	2.935527E-02			SPCC (0.3)	
Ethylbenzene	0.7521517	6.779077	14.68971	4.001457E-02			CCC (30)	
m,p-Xylenes	0.9402287	5.644497	14.82514	2.594496E-02			15	
o-Xylene	0.8479382	13.86778	15.29657	0.0315139			15	
Bromoform	0.1758939	11.57209	15.45614	1.730647E-02			SPCC (0.1)	
Styrene	1.279813	15.14751	15.34267	2.369649E-02				
Isopropylbenzene	2.123548	8.426855	15.60286	1.918929E-02			15	
1,1,2,2-Tetrachloroethane	0.3477673	13.07121	16.115	3.832681E-02			SPCC (0.3)	
1,2,4-Trichlorobenzene	1.194206	11.88087	20.24014	3.283359E-02			15	
1,3-Dichlorobenzene	2.26422	6.749697	17.21843	2.533685E-02			15	
1,4-Dichlorobenzene	2.391999	5.058947	17.31957	2.105833E-02			15	
1,2-Dichlorobenzene	2.035179	4.355736	17.913	1.596181E-02			15	
1,2-Dibromo-3-chloropropane	0.1065751	15.46602	19.099	6.326565E-02		0.9984572	0.99	
Naphthalene	2.027229	14.20934	20.90133	1.438313E-02			15	
Dibromofluoromethane	0.6925423	13.47584	10.36429	3.888589E-02			15	
Toluene-d8	1.562045	6.352655	13.016	2.054718E-02			15	
4-Bromofluorobenzene	0.5617455	12.17234	15.97	2.701831E-02				

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8260B

Laboratory: ENCO Orlando
SDG: A407175-CTO-WE9A
Client: CH2M Hill, Inc. (CH031)
Project: CTO-WE9A, Camp Lejuene Site 82
Sequence: AA31829
Instrument: OVGCMS5
Matrix: Soil
Calibration: 1412093

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS (4L19028-BS1)			Lab File ID: 5LN015.D			Analyzed: 12/19/14 15:57			
Pentafluorobenzene	828662	10.839	741932	10.839	112	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	1934369	11.488	1690203	11.488	114	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	2410560	14.692	2579378	14.684	93	50 - 200	0.0080	+/-0.50	
1,4-Dichlorobenzene-d4	1358515	17.289	1250459	17.281	109	50 - 200	0.0080	+/-0.50	
Blank (4L19028-BLK1)			Lab File ID: 5LN018.D			Analyzed: 12/19/14 17:26			
Pentafluorobenzene	724368	10.838	741932	10.839	98	50 - 200	-0.0010	+/-0.50	
1,4-Difluorobenzene	1713230	11.488	1690203	11.488	101	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	2016967	14.684	2579378	14.684	78	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	1254056	17.281	1250459	17.281	100	50 - 200	0.0000	+/-0.50	
IR82-SD01-14D (A407175-03)			Lab File ID: 5LN019.D			Analyzed: 12/19/14 17:54			
Pentafluorobenzene	640910	10.839	741932	10.839	86	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	1572989	11.488	1690203	11.488	93	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	1322221	14.684	2579378	14.684	51	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	440945	17.289	1250459	17.281	35	50 - 200	0.0080	+/-0.50	*
IR82-SD01D-14D (A407175-04)			Lab File ID: 5LN020.D			Analyzed: 12/19/14 18:22			
Pentafluorobenzene	662342	10.839	741932	10.839	89	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	1535169	11.488	1690203	11.488	91	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	1396640	14.684	2579378	14.684	54	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	496881	17.281	1250459	17.281	40	50 - 200	0.0000	+/-0.50	*
Matrix Spike (4L19028-MS1)			Lab File ID: 5LN021.D			Analyzed: 12/19/14 18:49			
Pentafluorobenzene	747197	10.839	741932	10.839	101	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	1649102	11.488	1690203	11.488	98	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	1673502	14.684	2579378	14.684	65	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	547906	17.272	1250459	17.281	44	50 - 200	-0.0090	+/-0.50	*
Matrix Spike Dup (4L19028-MSD1)			Lab File ID: 5LN022.D			Analyzed: 12/19/14 19:17			
Pentafluorobenzene	771104	10.839	741932	10.839	104	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	1756945	11.488	1690203	11.488	104	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	1773396	14.684	2579378	14.684	69	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	553590	17.281	1250459	17.281	44	50 - 200	0.0000	+/-0.50	*
Low Cal Check (AA31829-LCV1)			Lab File ID: 5LN023.D			Analyzed: 12/19/14 19:45			
Pentafluorobenzene	797650	10.838	741932	10.839	108	50 - 200	-0.0010	+/-0.50	
1,4-Difluorobenzene	1965883	11.488	1690203	11.488	116	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	2838166	14.684	2579378	14.684	110	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	1364005	17.281	1250459	17.281	109	50 - 200	0.0000	+/-0.50	

* not used

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8260B

Laboratory: ENCO Orlando
SDG: A407175-CTO-WE9A
Client: CH2M Hill, Inc. (CH031)
Project: CTO-WE9A, Camp Lejuene Site 82
Sequence: AA31883
Instrument: OVGCMS5
Matrix: Soil
Calibration: 1412100

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS (4L23052-BS1)			Lab File ID: 5LR013.D			Analyzed: 12/23/14 15:40			
Pentafluorobenzene	1088139	10.855	971952	10.855	112	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	2112007	11.504	1869908	11.504	113	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	2120569	14.701	2312431	14.7	92	50 - 200	0.0010	+/-0.50	
1,4-Dichlorobenzene-d4	1050893	17.297	994475	17.297	106	50 - 200	0.0000	+/-0.50	
LCS Dup (4L23052-BSD1)			Lab File ID: 5LR014.D			Analyzed: 12/23/14 16:08			
Pentafluorobenzene	1070608	10.855	971952	10.855	110	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	2096717	11.504	1869908	11.504	112	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	2110041	14.701	2312431	14.7	91	50 - 200	0.0010	+/-0.50	
1,4-Dichlorobenzene-d4	1026596	17.297	994475	17.297	103	50 - 200	0.0000	+/-0.50	
Blank (4L23052-BLK1)			Lab File ID: 5LR016.D			Analyzed: 12/23/14 17:04			
Pentafluorobenzene	975819	10.855	971952	10.855	100	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	2039970	11.504	1869908	11.504	109	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	1859361	14.7	2312431	14.7	80	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	974665	17.297	994475	17.297	98	50 - 200	0.0000	+/-0.50	
IR82-SD01-14D (A407175-03RE1)			Lab File ID: 5LR017.D			Analyzed: 12/23/14 17:32			
Pentafluorobenzene	878949	10.855	971952	10.855	90	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	1760526	11.504	1869908	11.504	94	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	1476309	14.7	2312431	14.7	64	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	561371	17.305	994475	17.297	56	50 - 200	0.0080	+/-0.50	
IR82-SD01D-14D (A407175-04RE1)			Lab File ID: 5LR018.D			Analyzed: 12/23/14 18:00			
Pentafluorobenzene	809190	10.855	971952	10.855	83	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	1611407	11.504	1869908	11.504	86	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	1278907	14.7	2312431	14.7	55	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	435237	17.297	994475	17.297	44	50 - 200	0.0000	+/-0.50	* J/UJ
Low Cal Check (AA31883-LCV1)			Lab File ID: 5LR025.D			Analyzed: 12/23/14 21:15			
Pentafluorobenzene	985257	10.847	971952	10.855	101	50 - 200	-0.0080	+/-0.50	
1,4-Difluorobenzene	1929410	11.504	1869908	11.504	103	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	2465284	14.701	2312431	14.7	107	50 - 200	0.0010	+/-0.50	
1,4-Dichlorobenzene-d4	1097071	17.297	994475	17.297	110	50 - 200	0.0000	+/-0.50	

PREPARATION BATCH SUMMARY

EPA 8260B

Laboratory: ENCO Orlando

SDG: A407175-CTO-WE9A

Client: CH2M Hill, Inc. (CH031)

Project: CTO-WE9A, Camp Lejuene Site 82

Batch: 4L23052 Batch Matrix: Soil Preparation: EPA 5030B_MS

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Blank	4L23052-BLK1	5LR016.D	12/23/14 00:00	
LCS	4L23052-BS1	5LR013.D	12/23/14 00:00	
LCS Dup	4L23052-BSD1	5LR014.D	12/23/14 00:00	
IR82-SD01-14D	A407175-03RE1	5LR017.D	12/23/14 00:00	
IR82-SD01D-14D	A407175-04RE1	5LR018.D	12/23/14 00:00	

Samples RE from Batch 4L19028 due to Methylene Chloride contamination

No qual

METHOD BLANK DATA SHEET
EPA 8260B

Laboratory:	ENCO Orlando	SDG:	A407175-CTO-WE9A
Client:	CH2M Hill, Inc. (CH031)	Project:	CTO-WE9A, Camp Lejuene Site 82

Matrix:	Soil	Laboratory ID:	4L23052-BLK1	File ID:	5LR016.D
Prepared:	12/23/14 00:00	Preparation:	EPA 5030B_MS	Initial/Final:	5 g / 5 mL
Analyzed:	12/23/14 17:04	Instrument:	OVGCMS5		
Batch:	4L23052	Sequence:	AA31883	Calibration:	1412100

CAS NO.	COMPOUND	CONC. (mg/kg wet)	Q
75-71-8	Dichlorodifluoromethane	<0.0010	U
74-87-3	Chloromethane	<0.0010	U
75-01-4	Vinyl chloride	<0.0010	U
74-83-9	Bromomethane	<0.0050	U
75-00-3	Chloroethane	<0.0010	U
75-69-4	Trichlorofluoromethane	<0.0010	U
76-13-1	Freon 113	<0.0010	U
67-64-1	Acetone	0.0066	J
75-35-4	1,1-Dichloroethene	<0.0010	U
75-15-0	Carbon disulfide	<0.0050	U
75-09-2	Methylene Chloride	<0.0050	U
1634-04-4	Methyl-tert-Butyl Ether	<0.0010	U
156-60-5	trans-1,2-Dichloroethene	<0.0010	U
156-59-2	cis-1,2-Dichloroethene	<0.0010	U
75-34-3	1,1-Dichloroethane	<0.0010	U
78-93-3	2-Butanone	<0.0025	U
67-66-3	Chloroform	<0.0010	U
71-55-6	1,1,1-Trichloroethane	<0.0010	U
79-20-9	Methyl acetate	<0.0050	U
110-82-7	Cyclohexane	<0.0010	U
108-87-2	Methyl cyclohexane	<0.0010	U
56-23-5	Carbon Tetrachloride	<0.0010	U
107-06-2	1,2-Dichloroethane	<0.0010	U
71-43-2	Benzene	<0.0010	U
79-01-6	Trichloroethene	<0.0010	U
78-87-5	1,2-Dichloropropane	<0.0010	U
75-27-4	Bromodichloromethane	<0.0010	U
108-10-1	4-Methyl-2-pentanone	<0.0025	U
591-78-6	2-Hexanone	<0.0025	U
10061-01-5	cis-1,3-Dichloropropene	<0.0010	U

PREPARATION BATCH SUMMARY

EPA 8260B

Laboratory: ENCO Orlando

SDG: A407175-CTO-WE9A

Client: CH2M Hill, Inc. (CH031)

Project: CTO-WE9A, Camp Lejuene Site 82

Batch: 4L19028 Batch Matrix: Soil Preparation: EPA 5030B_MS

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Blank	4L19028-BLK1	5LN018.D	12/19/14 00:00	
LCS	4L19028-BS1	5LN015.D	12/19/14 00:00	
IR82-SD01-14D	4L19028-MS1	5LN021.D	12/19/14 00:00	
IR82-SD01-14D	4L19028-MSD1	5LN022.D	12/19/14 00:00	
IR82-SD01-14D	A407175-03	5LN019.D	12/19/14 00:00	
IR82-SD01D-14D	A407175-04	5LN020.D	12/19/14 00:00	

METHOD BLANK DATA SHEET
EPA 8260B

Laboratory:	ENCO Orlando			SDG:	A407175-CTO-WE9A
Client:	CH2M Hill, Inc. (CH031)			Project:	CTO-WE9A, Camp Lejuene Site 82
Matrix:	Soil	Laboratory ID:	4L19028-BLK1	File ID:	5LN018.D
Prepared:	12/19/14 00:00	Preparation:	EPA 5030B_MS	Initial/Final:	5 g / 5 mL
Analyzed:	12/19/14 17:26	Instrument:	OVGCMS5		
Batch:	4L19028	Sequence:	AA31829	Calibration:	1412093

CAS NO.	COMPOUND	CONC. (mg/kg wet)	Q
75-71-8	Dichlorodifluoromethane	<0.0010	U
74-87-3	Chloromethane	<0.0010	U
75-01-4	Vinyl chloride	<0.0010	U
74-83-9	Bromomethane	<0.0050	U
75-00-3	Chloroethane	<0.0010	U
75-69-4	Trichlorofluoromethane	<0.0010	U
76-13-1	Freon 113	<0.0010	U
67-64-1	Acetone	0.0047	J
75-35-4	1,1-Dichloroethene	<0.0010	U
75-15-0	Carbon disulfide	<0.0050	U
75-09-2	Methylene Chloride	0.0081	JQ
1634-04-4	Methyl-tert-Butyl Ether	<0.0010	U
156-60-5	trans-1,2-Dichloroethene	<0.0010	U
156-59-2	cis-1,2-Dichloroethene	<0.0010	U
75-34-3	1,1-Dichloroethane	<0.0010	U
78-93-3	2-Butanone	<0.0025	U
67-66-3	Chloroform	<0.0010	U
71-55-6	1,1,1-Trichloroethane	<0.0010	U
79-20-9	Methyl acetate	<0.0050	U
110-82-7	Cyclohexane	<0.0010	U
108-87-2	Methyl cyclohexane	<0.0010	U
56-23-5	Carbon Tetrachloride	<0.0010	U
107-06-2	1,2-Dichloroethane	<0.0010	U
71-43-2	Benzene	<0.0010	U
79-01-6	Trichloroethene	<0.0010	U
78-87-5	1,2-Dichloropropane	<0.0010	U
75-27-4	Bromodichloromethane	<0.0010	U
108-10-1	4-Methyl-2-pentanone	<0.0025	U
591-78-6	2-Hexanone	<0.0025	U
10061-01-5	cis-1,3-Dichloropropene	<0.0010	U

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260B

IR82-SD01-14D

Laboratory: ENCO Orlando

SDG: A407175-CTO-WE9A

Client: CH2M Hill, Inc. (CH031)

Project: CTO-WE9A, Camp Lejuene Site 82

Matrix: Soil

Batch: 4L19028

Laboratory ID: 4L19028-MS1

Preparation: EPA 5030B_MS

Initial/Final: 5 g / 5 mL

Source Sample Name: IR82-SD01-14D

COMPOUND	SPIKE ADDED (mg/kg dry)	SAMPLE CONCENTRATION (mg/kg dry)	MS CONCENTRATION (mg/kg dry)	MS % REC. #	QC LIMITS REC.
Dichlorodifluoromethane	0.0515	ND	0.037	72	29 - 149
Chloromethane	0.0515	ND	0.037	71	50 - 136
Vinyl chloride	0.0515	ND	0.039	76	56 - 135
Bromomethane	0.0515	ND	0.037	71	53 - 143
Chloroethane	0.0515	ND	0.045	87	59 - 139
Trichlorofluoromethane	0.0515	ND	0.042	82	62 - 140
Freon 113	0.0515	ND	0.041	79	66 - 136
Acetone	0.0515	0.18	0.10	-142 *	36 - 164
1,1-Dichloroethene	0.0515	ND	0.042	82	70 - 131
Carbon disulfide	0.0515	ND	0.033	64	63 - 132
Methylene Chloride	0.0515	0.0049	0.082	150 *	70 - 128
Methyl-tert-Butyl Ether	0.0515	ND	0.041	80	73 - 125
trans-1,2-Dichloroethene	0.0515	ND	0.042	81	74 - 125
cis-1,2-Dichloroethene	0.0515	ND	0.040	77	77 - 123
1,1-Dichloroethane	0.0515	ND	0.044	86	76 - 125
2-Butanone	0.0515	ND	0.040	78	51 - 148
Chloroform	0.0515	ND	0.041	79	78 - 123
1,1,1-Trichloroethane	0.0515	ND	0.042	82	73 - 130
Methyl acetate	0.0515	ND	0.056	110	53 - 144
Cyclohexane	0.0515	ND	0.032	62 *	67 - 131
Methyl cyclohexane	0.0515	ND	0.028	54 *	66 - 133
Carbon Tetrachloride	0.0515	ND	0.042	82	70 - 135
1,2-Dichloroethane	0.0515	ND	0.038	74	73 - 128
Benzene	0.0515	ND	0.042	82	77 - 121
Trichloroethene	0.0515	0.0028	0.045	82	77 - 123
1,2-Dichloropropane	0.0515	ND	0.045	87	76 - 123
Bromodichloromethane	0.0515	ND	0.043	83	75 - 127
4-Methyl-2-pentanone	0.0515	ND	0.036	70	65 - 135
2-Hexanone	0.0515	0.22	0.17	-89 *	53 - 145
cis-1,3-Dichloropropene	0.0515	ND	0.041	79	74 - 126
Toluene	0.0515	ND	0.050	98	77 - 121

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260B

IR82-SD01-14D

Laboratory: ENCO Orlando

Client: CH2M Hill, Inc. (CH031)

Matrix: Soil

Batch: 4L19028

Preparation: EPA 5030B_MS

Source Sample Name: IR82-SD01-14D

SDG: A407175-CTO-WE9A

Project: CTO-WE9A, Camp Lejuene Site 82

Laboratory ID: 4L19028-MS1

Initial/Final: 5 g / 5 mL

COMPOUND	SPIKE ADDED (mg/kg dry)	SAMPLE CONCENTRATION (mg/kg dry)	MS CONCENTRATION (mg/kg dry)	MS % REC. #	QC LIMITS REC.	
trans-1,3-Dichloropropene	0.0515	ND	0.053	103	71 - 130	
1,1,2-Trichloroethane	0.0515	ND	0.055	106	78 - 121	
Tetrachloroethene	0.0515	0.0027	0.046	84	73 - 128	
Dibromochloromethane	0.0515	ND	0.050	97	74 - 126	
1,2-Dibromoethane	0.0515	ND	0.050	97	78 - 122	
Chlorobenzene	0.0515	ND	0.037	73 *	79 - 120	
Ethylbenzene	0.0515	ND	0.045	88	76 - 122	
m,p-Xylenes	0.103	ND	0.090	87	77 - 124	
o-Xylene	0.0515	ND	0.041	80	77 - 123	
Bromoform	0.0515	ND	0.043	83	67 - 132	
Styrene	0.0515	ND	0.032	63 *	76 - 124	
Isopropylbenzene	0.0515	ND	0.043	83	68 - 134	
1,1,2,2-Tetrachloroethane	0.0515	ND	0.042	82	70 - 124	
1,2,4-Trichlorobenzene	0.0515	ND	0.023	44 *	67 - 129	J/UJ
1,3-Dichlorobenzene	0.0515	ND	0.041	80	77 - 121	
1,4-Dichlorobenzene	0.0515	ND	0.039	75	75 - 120	
1,2-Dichlorobenzene	0.0515	ND	0.038	73 *	78 - 121	
1,2-Dibromo-3-chloropropane	0.0515	ND	0.069	134 *	61 - 132	J
Naphthalene	0.0515	0.0019	0.019	33 *	62 - 129	J/UJ

COMPOUND	SPIKE ADDED (mg/kg dry)	MSD CONCENTRATION (mg/kg dry)	MSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	0.0515	0.043	83	15	20	29 - 149
Chloromethane	0.0515	0.042	82	14	20	50 - 136
Vinyl chloride	0.0515	0.046	89	15	20	56 - 135
Bromomethane	0.0515	0.042	82	14	20	53 - 143
Chloroethane	0.0515	0.050	97	11	20	59 - 139
Trichlorofluoromethane	0.0515	0.048	93	13	20	62 - 140
Freon 113	0.0515	0.058	113	35 *	20	66 - 136
Acetone	0.0515	0.12	-118 *	11	20	36 - 164
1,1-Dichloroethene	0.0515	0.057	111	30 *	20	70 - 131

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260B

IR82-SD01-14D

Laboratory: ENCO Orlando

Client: CH2M Hill, Inc. (CH031)

Matrix: Soil

Batch: 4L19028

Preparation: EPA 5030B_MS

Source Sample Name: IR82-SD01-14D

SDG: A407175-CTO-WE9A

Project: CTO-WE9A, Camp Lejuene Site 82

Laboratory ID: 4L19028-MSD1

Initial/Final: 5 g / 5 mL

COMPOUND	SPIKE ADDED (mg/kg dry)	MSD CONCENTRATION (mg/kg dry)	MSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Carbon disulfide	0.0515	0.045	87	31 *	20	63 - 132
Methylene Chloride	0.0515	0.063	114	26 *	20	70 - 128
Methyl-tert-Butyl Ether	0.0515	0.048	93	15	20	73 - 125
trans-1,2-Dichloroethene	0.0515	0.057	110	30 *	20	74 - 125
cis-1,2-Dichloroethene	0.0515	0.048	93	18	20	77 - 123
1,1-Dichloroethane	0.0515	0.053	103	19	20	76 - 125
2-Butanone	0.0515	0.037	72	8	20	51 - 148
Chloroform	0.0515	0.050	97	20	20	78 - 123
1,1,1-Trichloroethane	0.0515	0.057	110	29 *	20	73 - 130
Methyl acetate	0.0515	0.055	107	2	20	53 - 144
Cyclohexane	0.0515	0.049	95	41 *	20	67 - 131
Methyl cyclohexane	0.0515	0.043	83	42 *	20	66 - 133
Carbon Tetrachloride	0.0515	0.055	107	27 *	20	70 - 135
1,2-Dichloroethane	0.0515	0.044	86	15	20	73 - 128
Benzene	0.0515	0.051	99	19	20	77 - 121
Trichloroethene	0.0515	0.054	100	19	20	77 - 123
1,2-Dichloropropane	0.0515	0.052	101	15	20	76 - 123
Bromodichloromethane	0.0515	0.050	96	15	20	75 - 127
4-Methyl-2-pentanone	0.0515	0.041	80	13	20	65 - 135
2-Hexanone	0.0515	0.17	-85 *	1	20	53 - 145
cis-1,3-Dichloropropene	0.0515	0.047	91	14	20	74 - 126
Toluene	0.0515	0.065	126 *	25 *	20	77 - 121
trans-1,3-Dichloropropene	0.0515	0.062	120	15	20	71 - 130
1,1,2-Trichloroethane	0.0515	0.059	114	7	20	78 - 121
Tetrachloroethene	0.0515	0.063	117	30 *	20	73 - 128
Dibromochloromethane	0.0515	0.058	114	16	20	74 - 126
1,2-Dibromoethane	0.0515	0.056	109	11	20	78 - 122
Chlorobenzene	0.0515	0.052	100	32 *	20	79 - 120
Ethylbenzene	0.0515	0.061	118	28 *	20	76 - 122
m,p-Xylenes	0.103	0.12	117	29 *	20	77 - 124
o-Xylene	0.0515	0.056	110	31 *	20	77 - 123
Bromoform	0.0515	0.048	93	12	20	67 - 132

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260B

IR82-SD01-14D

Laboratory: ENCO Orlando

Client: CH2M Hill, Inc. (CH031)

Matrix: Soil

Batch: 4L19028

Preparation: EPA 5030B_MS

Source Sample Name: IR82-SD01-14D

SDG: A407175-CTO-WE9A

Project: CTO-WE9A, Camp Lejuene Site 82

Laboratory ID: 4L19028-MSD1

Initial/Final: 5 g / 5 mL

COMPOUND	SPIKE ADDED (mg/kg dry)	MSD CONCENTRATION (mg/kg dry)	MSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Styrene	0.0515	0.047	92	37 *	20	76 - 124
Isopropylbenzene	0.0515	0.059	115	33 *	20	68 - 134
1,1,2,2-Tetrachloroethane	0.0515	0.049	96	15	20	70 - 124
1,2,4-Trichlorobenzene	0.0515	0.032	63 *	35 *	20	67 - 129
1,3-Dichlorobenzene	0.0515	0.061	119	39 *	20	77 - 121
1,4-Dichlorobenzene	0.0515	0.058	112	40 *	20	75 - 120
1,2-Dichlorobenzene	0.0515	0.056	108	39 *	20	78 - 121
1,2-Dibromo-3-chloropropane	0.0515	0.081	157 *	16	20	61 - 132
Naphthalene	0.0515	0.030	55 *	47 *	20	62 - 129

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260B

IR82-SW01-14D

Laboratory: ENCO Orlando

Client: CH2M Hill, Inc. (CH031)

Matrix: Water

Batch: 4L24004

Preparation: EPA 5030B_MS

Source Sample Name: IR82-SW01-14D

SDG: A407175-CTO-WE9A

Project: CTO-WE9A, Camp Lejuene Site 82

Laboratory ID: 4L24004-MS1

Initial/Final: 5 mL / 5 mL

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC. #	QC LIMITS REC.
Dichlorodifluoromethane	20.0	ND	25	124	32 - 152
Chloromethane	20.0	ND	23	115	50 - 139
Vinyl chloride	20.0	ND	25	127	58 - 137
Bromomethane	20.0	ND	14	70	53 - 141
Chloroethane	20.0	ND	31	156 *	60 - 138
Trichlorofluoromethane	20.0	ND	25	127	65 - 141
Freon 113	20.0	ND	26	131	70 - 136
Acetone	20.0	ND	28	138	39 - 160
1,1-Dichloroethene	20.0	ND	25	125	71 - 131
Carbon disulfide	20.0	ND	33	166 *	64 - 133
Methylene Chloride	20.0	ND	23	117	74 - 124
Methyl-tert-Butyl Ether	20.0	ND	22	110	71 - 124
trans-1,2-Dichloroethene	20.0	ND	25	123	75 - 124
cis-1,2-Dichloroethene	20.0	0.92	23	110	78 - 123
1,1-Dichloroethane	20.0	ND	24	120	77 - 125
2-Butanone	20.0	ND	25	125	56 - 143
Chloroform	20.0	ND	24	119	79 - 124
1,1,1-Trichloroethane	20.0	ND	24	120	74 - 131
Methyl acetate	20.0	ND	21	105	56 - 136
Cyclohexane	20.0	ND	22	112	71 - 130
Methyl cyclohexane	20.0	ND	22	111	72 - 132
Carbon Tetrachloride	20.0	ND	22	111	72 - 136
1,2-Dichloroethane	20.0	ND	22	109	73 - 128
Benzene	20.0	ND	22	110	79 - 120
Trichloroethene	20.0	ND	23	116	79 - 123
1,2-Dichloropropane	20.0	ND	22	110	78 - 122
Bromodichloromethane	20.0	ND	22	109	79 - 125
4-Methyl-2-pentanone	20.0	ND	23	117	67 - 130
2-Hexanone	20.0	ND	24	118	57 - 139
cis-1,3-Dichloropropene	20.0	ND	21	104	75 - 124
Toluene	20.0	ND	22	109	80 - 121

J(+)

J(+)

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260B

IR82-SW01-14D

Laboratory: ENCO Orlando

Client: CH2M Hill, Inc. (CH031)

Matrix: Water

Batch: 4L24004

Preparation: EPA 5030B_MS

Source Sample Name: IR82-SW01-14D

SDG: A407175-CTO-WE9A

Project: CTO-WE9A, Camp Lejuene Site 82

Laboratory ID: 4L24004-MS1

Initial/Final: 5 mL / 5 mL

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC. #	QC LIMITS REC.
trans-1,3-Dichloropropene	20.0	ND	22	110	73 - 127
1,1,2-Trichloroethane	20.0	ND	21	105	80 - 119
Tetrachloroethene	20.0	ND	23	114	74 - 129
Dibromochloromethane	20.0	ND	20	101	74 - 126
1,2-Dibromoethane	20.0	ND	20	101	77 - 121
Chlorobenzene	20.0	ND	21	106	82 - 118
Ethylbenzene	20.0	ND	21	106	79 - 121
m,p-Xylenes	40.0	ND	43	108	80 - 121
o-Xylene	20.0	ND	21	105	78 - 122
Bromoform	20.0	ND	21	103	66 - 130
Styrene	20.0	ND	20	102	78 - 123
Isopropylbenzene	20.0	ND	21	106	72 - 131
1,1,2,2-Tetrachloroethane	20.0	ND	21	107	71 - 121
1,2,4-Trichlorobenzene	20.0	ND	19	96	69 - 130
1,3-Dichlorobenzene	20.0	ND	20	101	80 - 119
1,4-Dichlorobenzene	20.0	ND	20	98	79 - 118
1,2-Dichlorobenzene	20.0	ND	20	101	80 - 119
1,2-Dibromo-3-chloropropane	20.0	ND	20	102	62 - 128
Naphthalene	20.0	ND	21	103	61 - 128

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	20.0	26	131	5	20	32 - 152
Chloromethane	20.0	22	112	3	20	50 - 139
Vinyl chloride	20.0	25	124	2	20	58 - 137
Bromomethane	20.0	15	73	5	20	53 - 141
Chloroethane	20.0	30	150 *	4	20	60 - 138
Trichlorofluoromethane	20.0	25	123	3	20	65 - 141
Freon 113	20.0	26	129	2	20	70 - 136
Acetone	20.0	29	143	4	20	39 - 160
1,1-Dichloroethene	20.0	26	128	2	20	71 - 131

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260B

IR82-SW01-14D

Laboratory: ENCO Orlando

Client: CH2M Hill, Inc. (CH031)

Matrix: Water

Batch: 4L24004

Preparation: EPA 5030B_MS

Source Sample Name: IR82-SW01-14D

SDG: A407175-CTO-WE9A

Project: CTO-WE9A, Camp Lejuene Site 82

Laboratory ID: 4L24004-MSD1

Initial/Final: 5 mL / 5 mL

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Carbon disulfide	20.0	34	168 *	2	20	64 - 133
Methylene Chloride	20.0	24	121	3	20	74 - 124
Methyl-tert-Butyl Ether	20.0	22	111	2	20	71 - 124
trans-1,2-Dichloroethene	20.0	25	124	1	20	75 - 124
cis-1,2-Dichloroethene	20.0	24	113	3	20	78 - 123
1,1-Dichloroethane	20.0	24	122	2	20	77 - 125
2-Butanone	20.0	25	126	0.4	20	56 - 143
Chloroform	20.0	23	115	3	20	79 - 124
1,1,1-Trichloroethane	20.0	24	119	0.5	20	74 - 131
Methyl acetate	20.0	21	105	0.3	20	56 - 136
Cyclohexane	20.0	23	116	3	20	71 - 130
Methyl cyclohexane	20.0	22	111	0.4	20	72 - 132
Carbon Tetrachloride	20.0	22	108	3	20	72 - 136
1,2-Dichloroethane	20.0	21	107	2	20	73 - 128
Benzene	20.0	22	110	0.1	20	79 - 120
Trichloroethene	20.0	23	116	0.4	20	79 - 123
1,2-Dichloropropane	20.0	22	111	1	20	78 - 122
Bromodichloromethane	20.0	21	107	2	20	79 - 125
4-Methyl-2-pentanone	20.0	23	114	3	20	67 - 130
2-Hexanone	20.0	24	120	2	20	57 - 139
cis-1,3-Dichloropropene	20.0	21	104	0.8	20	75 - 124
Toluene	20.0	22	110	0.2	20	80 - 121
trans-1,3-Dichloropropene	20.0	23	116	5	20	73 - 127
1,1,2-Trichloroethane	20.0	22	111	5	20	80 - 119
Tetrachloroethene	20.0	23	115	0.3	20	74 - 129
Dibromochloromethane	20.0	22	110	8	20	74 - 126
1,2-Dibromoethane	20.0	21	105	4	20	77 - 121
Chlorobenzene	20.0	21	106	0.2	20	82 - 118
Ethylbenzene	20.0	22	110	3	20	79 - 121
m,p-Xylenes	40.0	44	111	3	20	80 - 121
o-Xylene	20.0	21	105	0.1	20	78 - 122
Bromoform	20.0	20	102	1	20	66 - 130

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260B

IR82-SW01-14D

Laboratory: ENCO Orlando

Client: CH2M Hill, Inc. (CH031)

Matrix: Water

Batch: 4L24004

Preparation: EPA 5030B_MS

Source Sample Name: IR82-SW01-14D

SDG: A407175-CTO-WE9A

Project: CTO-WE9A, Camp Lejuene Site 82

Laboratory ID: 4L24004-MSD1

Initial/Final: 5 mL / 5 mL

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Styrene	20.0	21	104	2	20	78 - 123
Isopropylbenzene	20.0	22	109	3	20	72 - 131
1,1,2,2-Tetrachloroethane	20.0	22	112	4	20	71 - 121
1,2,4-Trichlorobenzene	20.0	21	103	6	20	69 - 130
1,3-Dichlorobenzene	20.0	21	103	2	20	80 - 119
1,4-Dichlorobenzene	20.0	20	100	3	20	79 - 118
1,2-Dichlorobenzene	20.0	21	103	2	20	80 - 119
1,2-Dibromo-3-chloropropane	20.0	23	114	11	20	62 - 128
Naphthalene	20.0	21	106	3	20	61 - 128

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8260B

Laboratory: ENCO Orlando

Client: CH2M Hill, Inc. (CH031)

SDG: A407175-CTO-WE9A

Project: CTO-WE9A, Camp Lejuene Site 82

Sequence: AA31829

Matrix: Soil

Instrument: OVGCMS5

Calibration: 1412093

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration RT	RT Diff	RT Diff Limit	Q
LCS (4L19028-BS1)			Lab File ID: 5LN015.D		Analyzed: 12/19/14 15:57			
Dibromofluoromethane	50.0	86	78 - 119	10.354	10.354	0.0000	+/-0.5	
Toluene-d8	50.0	86	85 - 116	13.008	13.00329	0.0047	+/-0.5	
4-Bromofluorobenzene	50.0	104	79 - 119	15.958	15.95517	0.0028	+/-0.5	
Blank (4L19028-BLK1)			Lab File ID: 5LN018.D		Analyzed: 12/19/14 17:26			
Dibromofluoromethane	50.0	88	78 - 119	10.354	10.354	0.0000	+/-0.5	
Toluene-d8	50.0	90	85 - 116	13.008	13.00329	0.0047	+/-0.5	
4-Bromofluorobenzene	50.0	112	79 - 119	15.958	15.95517	0.0028	+/-0.5	
IR82-SD01-14D (A407175-03)			Lab File ID: 5LN019.D		Analyzed: 12/19/14 17:54			
Dibromofluoromethane	50.0	98	78 - 119	10.354	10.354	0.0000	+/-0.5	
Toluene-d8	50.0	79	85 - 116	13	13.00329	-0.0033	+/-0.5	*
4-Bromofluorobenzene	50.0	79	79 - 119	15.958	15.95517	0.0028	+/-0.5	
IR82-SD01D-14D (A407175-04)			Lab File ID: 5LN020.D		Analyzed: 12/19/14 18:22			
Dibromofluoromethane	50.0	96	78 - 119	10.354	10.354	0.0000	+/-0.5	
Toluene-d8	50.0	86	85 - 116	13	13.00329	-0.0033	+/-0.5	
4-Bromofluorobenzene	50.0	83	79 - 119	15.95	15.95517	-0.0052	+/-0.5	
Matrix Spike (4L19028-MS1)			Lab File ID: 5LN021.D		Analyzed: 12/19/14 18:49			
Dibromofluoromethane	50.0	81	78 - 119	10.354	10.354	0.0000	+/-0.5	
Toluene-d8	50.0	83	85 - 116	13	13.00329	-0.0033	+/-0.5	*
4-Bromofluorobenzene	50.0	72	79 - 119	15.958	15.95517	0.0028	+/-0.5	*
Matrix Spike Dup (4L19028-MSD1)			Lab File ID: 5LN022.D		Analyzed: 12/19/14 19:17			
Dibromofluoromethane	50.0	79	78 - 119	10.354	10.354	0.0000	+/-0.5	
Toluene-d8	50.0	79	85 - 116	13	13.00329	-0.0033	+/-0.5	*
4-Bromofluorobenzene	50.0	71	79 - 119	15.95	15.95517	-0.0052	+/-0.5	*
Low Cal Check (AA31829-LCV1)			Lab File ID: 5LN023.D		Analyzed: 12/19/14 19:45			
Dibromofluoromethane	50.0	92	50 - 150	10.354	10.354	0.0000	+/-0.5	
Toluene-d8	50.0	90	50 - 150	13	13.00329	-0.0033	+/-0.5	
4-Bromofluorobenzene	50.0	92	50 - 150	15.958	15.95517	0.0028	+/-0.5	

* J/UJ

* not used

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8260B

Laboratory: ENCO Orlando
SDG: A407175-CTO-WE9A
Client: CH2M Hill, Inc. (CH031)
Project: CTO-WE9A, Camp Lejuene Site 82

Sequence: AA31937
Instrument: OVGCMS2
Matrix: Water
Calibration: 1412083

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration RT	RT Diff	RT Diff Limit	Q
Calibration Check (AA31937-CCV1)			Lab File ID: 2LX002.D		Analyzed: 12/29/14 05:06			
Dibromofluoromethane	50.0	135	80 - 120	10.57	10.57	0.0000	+/-0.5	*
Toluene-d8	50.0	119	80 - 120	12.84	12.83857	0.0014	+/-0.5	
4-Bromofluorobenzene	50.0	105	80 - 120	15.33	15.32857	0.0014	+/-0.5	
Calibration Check (AA31937-CCV2)			Lab File ID: 2LX003.D		Analyzed: 12/29/14 05:40			
Dibromofluoromethane	50.0	133	80 - 120	10.57	10.57	0.0000	+/-0.5	*
Toluene-d8	50.0	118	80 - 120	12.84	12.83857	0.0014	+/-0.5	
4-Bromofluorobenzene	50.0	101	80 - 120	15.33	15.32857	0.0014	+/-0.5	
Calibration Check (AA31937-CCV3)			Lab File ID: 2LX004.D		Analyzed: 12/29/14 06:14			
Dibromofluoromethane	50.0	131	80 - 120	10.57	10.57	0.0000	+/-0.5	*
Toluene-d8	50.0	119	80 - 120	12.84	12.83857	0.0014	+/-0.5	
4-Bromofluorobenzene	50.0	102	80 - 120	15.33	15.32857	0.0014	+/-0.5	
LCS (4L29031-BS1)			Lab File ID: 2LX005.D		Analyzed: 12/29/14 06:44			
Dibromofluoromethane	50.0	137	80 - 119	10.57	10.57	0.0000	+/-0.5	*
Toluene-d8	50.0	118	89 - 112	12.84	12.83857	0.0014	+/-0.5	*
4-Bromofluorobenzene	50.0	100	85 - 114	15.33	15.32857	0.0014	+/-0.5	
Blank (4L29031-BLK1)			Lab File ID: 2LX006.D		Analyzed: 12/29/14 07:13			
Dibromofluoromethane	50.0	138	80 - 119	10.57	10.57	0.0000	+/-0.5	*
Toluene-d8	50.0	115	89 - 112	12.84	12.83857	0.0014	+/-0.5	*
4-Bromofluorobenzene	50.0	100	85 - 114	15.33	15.32857	0.0014	+/-0.5	
IR82-SW01-14D (A407175-01RE1)			Lab File ID: 2LX014.D		Analyzed: 12/29/14 11:17			
Dibromofluoromethane	50.0	138	80 - 119	10.57	10.57	0.0000	+/-0.5	*
Toluene-d8	50.0	115	89 - 112	12.84	12.83857	0.0014	+/-0.5	*
4-Bromofluorobenzene	50.0	101	85 - 114	15.33	15.32857	0.0014	+/-0.5	
IR82-SW01D-14D (A407175-02RE1)			Lab File ID: 2LX015.D		Analyzed: 12/29/14 11:46			
Dibromofluoromethane	50.0	143	80 - 119	10.57	10.57	0.0000	+/-0.5	*
Toluene-d8	50.0	119	89 - 112	12.84	12.83857	0.0014	+/-0.5	*
4-Bromofluorobenzene	50.0	103	85 - 114	15.32	15.32857	-0.0086	+/-0.5	
IR82-TB-121114 (A407175-05RE1)			Lab File ID: 2LX016.D		Analyzed: 12/29/14 12:16			
Dibromofluoromethane	50.0	140	80 - 119	10.57	10.57	0.0000	+/-0.5	*
Toluene-d8	50.0	116	89 - 112	12.84	12.83857	0.0014	+/-0.5	*
4-Bromofluorobenzene	50.0	101	85 - 114	15.33	15.32857	0.0014	+/-0.5	

J*

J*

J*

DataQual

VOA

FIELD DUPLICATE SAMPLE SUMMARY

Sample ID: IR06-SD01-14D
Duplicate Sample ID: IR06-SD01D-14D

Water: RPD>20%
Soil: RPD>30%

Compound	Sample Conc.	Dup. Sample Conc.	%RPD
acetone	0.24	0.13	59
2-butanone	0.014	0.01	33
trichloroethene	0.0046	0.0082	56
2-hexanone	0.14	0.16	13
toluene	0.0034	0.0013	89
tetrachloroethene	0.0027	0.0041	41
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!

COMMENTS: Qualify all results with RPD >30% for soils and >20% for waters as estimated (J/UJ)

* one of the results below the LOD
if both results are below the LOD the results are not compared

DataQual

VOA

FIELD DUPLICATE SAMPLE SUMMARY

Sample ID: IR06-SW01-14D
Duplicate Sample ID: IR06-SW01D-14D

Water: RPD>20%
Soil: RPD>30%

Compound	Sample Conc.	Dup. Sample Conc.	%RPD
cis-1,2-dichloroethene	0.92	1	8
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!

COMMENTS: Qualify all results with RPD >30% for soils and >20% for waters as estimated (J/UJ)

* one of the results below the LOD
if both results are below the LOD the results are not compared

Data Completeness

The data package was received complete and intact. Resubmissions were not required. (SW846 Method 8270D)

Laboratory: ENCO

Holding Times

Sampling Date: 12/10-11/14
Received Date: 12/12/14
Extraction Date: 12/17/14-1/9/15
Analysis Dates: 1/8-19/15
Cooler Temp: 2.0°C

All holding time requirements were met. Samples IR82-SD01D-14DRE1 and IR82-SD01D-RE3 were extracted out of holding time by 15 days; these samples were excluded.

Calibrations

Mass assignments were verified by the injection of DFTPP.

Qualifications were required for the initial calibration due to high %RSDs, see attached Form VI.

Internal Standards

All criteria were met.

Blank Summary

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying criteria.
- Qualification/Action codes where applied as stated in table below:

Blank Type	Blank Result	Sample Result	Action for Samples
Method, Field	Detects	Not detected	No qualifications
	< LOD*	< LOD*	Report LOD value with a U
		≥ LOD*	Use professional judgment
	> LOD*	< LOD*	Report LOD value with a U
		≥ LOD* and < blank concentration	Report the concentration for the sample with a U, or qualify the data as unusable R
		≥ LOD* and ≥ blank concentration	Use professional judgment
	= LOD*	< LOD*	Report LOD value with a U
		≥ LOD*	Use professional judgment
	Gross contamination	Detects	Qualify results as unusable R

*2x the LOD for common phthalates

*2x the LOD for common phthalates

No contamination was exhibited in the method blank. Associated QC blanks: IR82-EB121114- equipment blank (no positive results).

Blank Contamination and Qualification Summaries

Blank ID	Compound	Concentration	Reporting Limit (LOD)

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Qual Code
no qualifications			

Surrogates

The samples in the table below exhibited non-compliant recoveries for the surrogates listed; compounds were qualified as stated. Samples were re-analyzed with similar results exhibited.

Sample ID	Surrogate	% Rec	QC Limit	Qualifier	Qual Code
IR82-SD01-14D	2-fluorobiphenyl	16	44-115	J/UJ	SSL
	2,4,6-tribromophenol*	27	39-132		
	terphenyl-d14	40	54-127		
IR82-SD01D-14D	2-fluorobiphenyl	13	44-115	J/UJ	SSL
	2,4,6-tribromophenol*	24	39-132		
	terphenyl-d14	41	54-127		

**for informational purposes only*

Laboratory Control Sample

All criteria were in.

Matrix Spike/Spike Duplicate Samples

An MS/MSD was submitted for IR82-SW01-14D and IR82-SD01-14D. Compounds with non-compliant recoveries for both MS and MSD are listed in the table below; qualifications were applied as stated.

Associated Sample	Compound	MS %Rec	MSD %Rec	QC limit	Qualifier	Qual Code
IR82-SD01-14D	hexachloroethane	18	26	28-117	J/UJ	MSL
	2-chloronaphthalene	29	39	41-114		
	dibenzofuran	32	42	44-120		
	4-chloro-phenylether	32	44	45-121		
	n-nitrosodiphenylamine/diphenylamine	30	39	38-127		
	4-bromophenyl-phenylether	35	48	46-124		
	hexachlorobenzene	39	55	45-122		
	carbazole	44	56	50-123		
	di-n-butylphthalate	35	49	55-110		

Field Duplicate Sample

A field duplicate was submitted for sample IR82-SD01D-14D - no positive results were exhibited, no qualifications.

Specific Comments:

All sample results were reported within the calibration range of the instruments.

Samples IR82-SD01-14D and IR82-SD01D-14D were re-analyzed. According to the case narrative the continuing calibration was not acceptable. These samples also exhibited non-compliant surrogate recoveries. Therefore the initial analyses were excluded in favor of the re-analyses.

The initial analysis of sample IR82-EB-121114 exhibited high surrogate recoveries. The sample was re-analyzed with compliant recoveries; therefore the initial analysis was excluded in favor of the re-analysis.

Detection limits were acceptable. Raw data and calculations were verified.

We have limited the supporting documentation, found with these worksheets, to those forms that indicate qualifications were required.

Validator Signature: _____ **Date:** 3/10/15

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8270D

Laboratory: ENCO Orlando

Client: CH2M Hill, Inc. (CH031)

Sequence: AA31981

SDG: A407175-CTO-WE9A

Project: CTO-WE9A, Camp Lejuene Site 82

Instrument: OSVGCMS1

Calibration: 1501007

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	AA31981-TUN1	1lz001.D	12/31/14 09:25
Cal Standard	AA31981-CAL1	1lz002.D	12/31/14 09:48
Cal Standard	AA31981-CAL2	1lz003.D	12/31/14 10:16
Cal Standard	AA31981-CAL3	1lz004.D	12/31/14 10:44
Cal Standard	AA31981-CAL4	1lz005.D	12/31/14 11:13
Cal Standard	AA31981-CAL5	1lz006.D	12/31/14 11:41
Cal Standard	AA31981-CAL6	1lz007.D	12/31/14 12:09
Cal Standard	AA31981-CAL7	1lz008.D	12/31/14 12:37
Cal Standard	AA31981-CAL8	1lz009.D	12/31/14 13:13
Secondary Cal Check	AA31981-SCV1	1lz010.D	12/31/14 13:41

INITIAL CALIBRATION DATA (Continued)

EPA 8270D

Laboratory: ENCO Orlando

SDG: A407175-CTO-WE9A

Client: CH2M Hill, Inc. (CH031)

Project: CTO-WE9A, Camp Lejuene Site 82

Calibration: 1501007

Instrument: OSVGCMS1

Matrix: Water

Calibration Date: 01/05/15 16:26

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
4-Chloroaniline	0.4113378	13.74855	8.61675	0.1271115			15	
4-Chloroaniline	0.4113378	13.74855	8.61675	0.1271115			15	
Hexachlorobutadiene	0.1061867	16.69184	8.720375	0.0784233			CCC (30)	
Hexachlorobutadiene	0.1061867	16.69184	8.720375	0.0784233			CCC (30)	
Caprolactam	0.1098135	6.936594	9.022167	0.2361848			15	
Caprolactam	0.1098135	6.936594	9.022167	0.2361848			15	
4-Chloro-3-methylphenol	0.2946448	9.884417	9.19725	0.1095297			CCC (30)	
4-Chloro-3-methylphenol	0.2946448	9.884417	9.19725	0.1095297			CCC (30)	
Hexachlorocyclopentadiene	0.1059839	8.902443	9.636125	3.238705E-02			SPCC (0.05)	
Hexachlorocyclopentadiene	0.1059839	8.902443	9.636125	3.238705E-02			SPCC (0.05)	
2,4,6-Trichlorophenol	0.3438594	9.999232	9.775875	9.575712E-02			CCC (30)	
2,4,6-Trichlorophenol	0.3438594	9.999232	9.775875	9.575712E-02			CCC (30)	
2,4,5-Trichlorophenol	0.3760439	12.00133	9.822375	9.466207E-02			15	
2,4,5-Trichlorophenol	0.3760439	12.00133	9.822375	9.466207E-02			15	
1,1'-Biphenyl	1.325104	13.7846	10.00917	3.786766E-02			15	
1,1'-Biphenyl	1.325104	13.7846	10.00917	3.786766E-02			15	
2-Chloronaphthalene	1.153463	12.19418	10.05143	4.459359E-02			15	
2-Chloronaphthalene	1.153463	12.19418	10.05143	4.459359E-02			15	
2-Nitroaniline	0.4070853	10.6622	10.15738	9.276633E-02			15	
2-Nitroaniline	0.4070853	10.6622	10.15738	9.276633E-02			15	
Dimethylphthalate	1.2401	12.28098	10.37163	0.1235731			15	
Dimethylphthalate	1.2401	12.28098	10.37163	0.1235731			15	
2,6-Dinitrotoluene	0.2920889	10.20987	10.45313	0.1107649			15	
2,6-Dinitrotoluene	0.2920889	10.20987	10.45313	0.1107649			15	
3-Nitroaniline	0.3223253	8.314944	10.67213	0.1325274			15	
3-Nitroaniline	0.3223253	8.314944	10.67213	0.1325274			15	
2,4-Dinitrophenol	0.1540571	9.53215	10.80275	0.1299852			SPCC (0.05)	
2,4-Dinitrophenol	0.1540571	9.53215	10.80275	0.1299852			SPCC (0.05)	
4-Nitrophenol	0.129553	6.80154	10.85887	0.1659485			SPCC (0.05)	
4-Nitrophenol	0.129553	6.80154	10.85887	0.1659485			SPCC (0.05)	
Dibenzofuran	1.507255	12.81566	11.01	4.831155E-02			15	
Dibenzofuran	1.507255	12.81566	11.01	4.831155E-02			15	

INITIAL CALIBRATION DATA (Continued)

EPA 8270D

Laboratory: ENCO Orlando

SDG: A407175-CTO-WE9A

Client: CH2M Hill, Inc. (CH031)

Project: CTO-WE9A, Camp Lejuene Site 82

Calibration: 1501007

Instrument: OSVGCMS1

Matrix: Soil

Calibration Date: 01/05/15 16:26

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
2,4-Dinitrotoluene	0.3413958	14.80311	10.96329	8.132777E-02			15	
2,4-Dinitrotoluene	0.3413958	14.80311	10.96329	8.132777E-02			15	
Diethylphthalate	1.194944	11.86035	11.25275	9.728121E-02			15	
Diethylphthalate	1.194944	11.86035	11.25275	9.728121E-02			15	
4-Chlorophenyl-phenylether	0.5882607	12.21139	11.42014	4.627873E-02			15	
4-Chlorophenyl-phenylether	0.5882607	12.21139	11.42014	4.627873E-02			15	
4-Nitroaniline	0.2945871	8.951097	11.45425	0.1891658			15	
4-Nitroaniline	0.2945871	8.951097	11.45425	0.1891658			15	
2-Methyl-4,6-dinitrophenol	0.2231748	8.763822	11.4905	0.1522326			15	
2-Methyl-4,6-dinitrophenol	0.2231748	8.763822	11.4905	0.1522326			15	
N-nitrosodiphenylamine/Diphenylamine	0.8816216	18.38443	11.56914	8.408416E-02		0.9938616	0.99	
N-nitrosodiphenylamine/Diphenylamine	0.8816216	18.38443	11.56914	8.408416E-02		0.9938616	0.99	
4-Bromophenyl-phenylether	0.1900885	10.95233	12.04214	6.176318E-02			15	
4-Bromophenyl-phenylether	0.1900885	10.95233	12.04214	6.176318E-02			15	
Hexachlorobenzene	0.1904821	11.54192	12.15383	6.608286E-02			15	
Hexachlorobenzene	0.1904821	11.54192	12.15383	6.608286E-02			15	
Atrazine	0.3423981	7.393346	12.21167	5.699072E-02			15	
Atrazine	0.3423981	7.393346	12.21167	5.699072E-02			15	
Pentachlorophenol	0.1167471	13.84592	12.39075	9.956419E-02			CCC (30)	
Pentachlorophenol	0.1167471	13.84592	12.39075	9.956419E-02			CCC (30)	
Carbazole	0.8895947	12.02979	12.91014	0.0535064			15	
Carbazole	0.8895947	12.02979	12.91014	0.0535064			15	
Di-n-butylphthalate	1.148205	12.11013	13.295	2.191013E-02			15	
Di-n-butylphthalate	1.148205	12.11013	13.295	2.191013E-02			15	
Butylbenzylphthalate	0.319502	14.07862	15.24443	2.349009E-02			15	
Butylbenzylphthalate	0.319502	14.07862	15.24443	2.349009E-02			15	
3,3'-Dichlorobenzidine	0.3163823	12.82922	16.15488	6.856351E-02			15	
3,3'-Dichlorobenzidine	0.3163823	12.82922	16.15488	6.856351E-02			15	
Bis(2-ethylhexyl)phthalate	0.7022095	12.77963	16.16875	5.003889E-02			15	
Bis(2-ethylhexyl)phthalate	0.7022095	12.77963	16.16875	5.003889E-02			15	
Di-n-octylphthalate	1.090703	10.77981	17.48862	6.742393E-02			CCC (30)	
Di-n-octylphthalate	1.090703	10.77981	17.48862	6.742393E-02			CCC (30)	

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8270D

Laboratory: ENCO Orlando

Client: CH2M Hill, Inc. (CH031)

Sequence: AA32184

SDG: A407175-CTO-WE9A

Project: CTO-WE9A, Camp Lejuene Site 82

Instrument: OSVGCMS1

Calibration: 1501007

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	AA32184-TUN1	1ai001.D	01/16/15 11:57
Calibration Check	AA32184-CCV1	1ai002.D	01/16/15 12:11
Calibration Check	AA32184-CCV2	1ai003.D	01/16/15 12:41
Blank	4L23042-BLK2	1ai004.D	01/16/15 13:10
LCS	4L23042-BS2	1ai005.D	01/16/15 13:40
IR82-SD01-14D	4L23042-MS2	1ai006.D	01/16/15 14:09
IR82-SD01-14D	4L23042-MSD2	1ai007.D	01/16/15 14:39
IR82-SD01-14D	A407175-03RE1	1ai008.D	01/16/15 15:08
IR82-SD01D-14D	A407175-04RE2	1ai009.D	01/16/15 15:38
Blank	5A09022-BLK2	1ai010.D	01/16/15 16:07
LCS	5A09022-BS2	1ai011.D	01/16/15 16:37
LCS Dup	5A09022-BSD2	1ai012.D	01/16/15 17:06
IR82-SD01D-14D	A407175-04RE3	1ai013.D	01/16/15 17:36
Low Cal Check	AA32184-LCV1	1ai014.D	01/16/15 18:05

CONTINUING CALIBRATION CHECK

EPA 8270D

Laboratory:	ENCO Orlando	SDG:	A407175-CTO-WE9A
Client:	CH2M Hill, Inc. (CH031)	Project:	CTO-WE9A, Camp Lejuene Site 82
Instrument ID:	OSVGCMS1	Calibration:	1501007
Lab File ID:	1ai002.D	Calibration Date:	01/05/15 16:26
Sequence:	AA32184	Injection Date:	01/16/15
Lab Sample ID:	AA32184-CCV1	Injection Time:	12:11

COMPOUND	TYPE	CONC. (ug/mL)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Phenol	A	50.0	52	1.863828	1.923377		3.2	20
Bis(2-chloroethyl)ether	A	50.0	52	1.423868	1.493346		4.9	20
2-Chlorophenol	A	50.0	52	1.390984	1.43937		3.5	20
2-Methylphenol	A	50.0	51	1.196741	1.22899		2.7	20
Bis(2-chloroisopropyl)ether	A	50.0	51	2.719061	2.794077		2.8	20
Acetophenone	A	50.0	56	1.740925	1.939179		11.4	20
3 & 4-Methylphenol	A	100	100	1.309036	1.347635		2.9	20
N-Nitroso-di-n-propylamine	A	50.0	54	0.9570617	1.032518	0.05	7.9	20
Hexachloroethane	A	50.0	53	0.5986878	0.6372629		6.4	20
Nitrobenzene	A	50.0	52	0.3937672	0.4106326		4.3	20
Isophorone	A	50.0	53	0.8076711	0.855167		5.9	20
2-Nitrophenol	A	50.0	48	0.1841365	0.1778018		-3.4	20
2,4-Dimethylphenol	A	50.0	53	0.332229	0.3492415		5.1	20
Bis(2-chloroethoxy)methane	A	50.0	50	0.4461676	0.4460759		-0.02	20
2,4-Dichlorophenol	A	50.0	51	0.2625954	0.2687611		2.3	20
4-Chloroaniline	A	50.0	51	0.4113378	0.4211284		2.4	20
Hexachlorobutadiene	A	50.0	54	0.1061867	0.1194937		12.5	20
4-Chloro-3-methylphenol	A	50.0	53	0.2946448	0.3114895		5.7	20
Hexachlorocyclopentadiene	A	50.0	36	0.1059839	7.529143E-02	0.05	-29.0	20 *
2,4,6-Trichlorophenol	A	50.0	51	0.3438594	0.3525688		2.5	20
2,4,5-Trichlorophenol	A	50.0	51	0.3760439	0.3836151		2.0	20
2-Chloronaphthalene	A	50.0	49	1.153463	1.137759		-1.4	20
2-Nitroaniline	A	50.0	51	0.4070853	0.4165321		2.3	20
Dimethylphthalate	A	50.0	55	1.2401	1.353536		9.1	20
2,6-Dinitrotoluene	A	50.0	52	0.2920889	0.3056867		4.7	20
3-Nitroaniline	A	50.0	51	0.3223253	0.3289852		2.1	20
2,4-Dinitrophenol	A	50.0	51	0.1540571	0.1571607	0.05	2.0	20
4-Nitrophenol	A	50.0	65	0.129553	0.1688146	0.05	30.3	20 *
Dibenzofuran	A	50.0	50	1.507255	1.50088		-0.4	20

CONTINUING CALIBRATION CHECK

EPA 8270D

Laboratory: ENCO Orlando

Client: CH2M Hill, Inc. (CH031)

Instrument ID: OSVGCMS1

Lab File ID: 1ai002.D

Sequence: AA32184

Lab Sample ID: AA32184-CCV1

SDG: A407175-CTO-WE9A

Project: CTO-WE9A, Camp Lejuene Site 82

Calibration: 1501007

Calibration Date: 01/05/15 16:26

Injection Date: 01/16/15

Injection Time: 12:11

COMPOUND	TYPE	CONC. (ug/mL)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
2,4-Dinitrotoluene	A	50.0	53	0.3413958	0.3605936		5.6	20
Diethylphthalate	A	50.0	56	1.194944	1.337012		11.9	20
4-Chlorophenyl-phenylether	A	50.0	51	0.5882607	0.6035216		2.6	20
4-Nitroaniline	A	50.0	55	0.2945871	0.3254052		10.5	20
2-Methyl-4,6-dinitrophenol	A	50.0	51	0.2231748	0.2295951		2.9	20
N-nitrosodiphenylamine/Diphenylam	Q	100	120	0.8816216	0.9233581		22.8	20 *
4-Bromophenyl-phenylether	A	50.0	49	0.1900885	0.1879372		-1.1	20
Hexachlorobenzene	A	50.0	53	0.1904821	0.2023099		6.2	20
Pentachlorophenol	A	50.0	56	0.1167471	0.1298931		11.3	20
Carbazole	A	50.0	51	0.8895947	0.9045302		1.7	20
Di-n-butylphthalate	A	50.0	53	1.148205	1.216692		6.0	20
Butylbenzylphthalate	A	50.0	57	0.319502	0.3668475		14.8	20
3,3'-Dichlorobenzidine	A	50.0	53	0.3163823	0.3371137		6.6	20
Bis(2-ethylhexyl)phthalate	A	50.0	58	0.7022095	0.8105297		15.4	20
Di-n-octylphthalate	A	50.0	59	1.090703	1.293852		18.6	20

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8270D

Laboratory: ENCO Orlando

Client: CH2M Hill, Inc. (CH031)

Sequence: AA32210

SDG: A407175-CTO-WE9A

Project: CTO-WE9A, Camp Lejuene Site 82

Instrument: OSVGCMS1

Calibration: 1501007

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	AA32210-TUN1	1al001.D	01/19/15 16:22
Calibration Check	AA32210-CCV1	1al002.D	01/19/15 16:37
Calibration Check	AA32210-CCV2	1al003.D	01/19/15 17:06
Blank	4L17006-BLK2	1al004.D	01/19/15 17:36
LCS	4L17006-BS2	1al005.D	01/19/15 18:06
IR82-SW01-14D	4L17006-MS2	1al006.D	01/19/15 18:35
IR82-SW01-14D	4L17006-MSD2	1al007.D	01/19/15 19:04
IR82-EB-121114	A407175-06RE1	1al010.D	01/19/15 20:34
Low Cal Check	AA32210-LCV1	1al011.D	01/19/15 21:03
Low Cal Check	AA32210-LCV2	1al012.D	01/19/15 21:33

CONTINUING CALIBRATION CHECK

EPA 8270D

Laboratory:	ENCO Orlando	SDG:	A407175-CTO-WE9A
Client:	CH2M Hill, Inc. (CH031)	Project:	CTO-WE9A, Camp Lejuene Site 82
Instrument ID:	OSVGCMS1	Calibration:	1501007
Lab File ID:	1al002.D	Calibration Date:	01/05/15 16:26
Sequence:	AA32210	Injection Date:	01/19/15
Lab Sample ID:	AA32210-CCV1	Injection Time:	16:37

COMPOUND	TYPE	CONC. (ug/mL)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Phenol	A	50.0	51	1.863828	1.906124		2.3	20
Bis(2-chloroethyl)ether	A	50.0	52	1.423868	1.473269		3.5	20
2-Chlorophenol	A	50.0	52	1.390984	1.43889		3.4	20
2-Methylphenol	A	50.0	51	1.196741	1.223839		2.3	20
Bis(2-chloroisopropyl)ether	A	50.0	50	2.719061	2.703083		-0.6	20
Acetophenone	A	50.0	53	1.740925	1.839992		5.7	20
3 & 4-Methylphenol	A	100	93	1.309036	1.21184		-7.4	20
N-Nitroso-di-n-propylamine	A	50.0	51	0.9570617	0.9760442	0.05	2.0	20
Hexachloroethane	A	50.0	53	0.5986878	0.6391342		6.8	20
Nitrobenzene	A	50.0	52	0.3937672	0.409909		4.1	20
Isophorone	A	50.0	54	0.8076711	0.8742009		8.2	20
2-Nitrophenol	A	50.0	50	0.1841365	0.1850057		0.5	20
2,4-Dimethylphenol	A	50.0	54	0.332229	0.3558472		7.1	20
Bis(2-chloroethoxy)methane	A	50.0	66	0.4461676	0.5890172		32.0	20 *
2,4-Dichlorophenol	A	50.0	53	0.2625954	0.2767371		5.4	20
4-Chloroaniline	A	50.0	52	0.4113378	0.4282738		4.1	20
Hexachlorobutadiene	A	50.0	52	0.1061867	0.1139028		7.3	20
4-Chloro-3-methylphenol	A	50.0	58	0.2946448	0.3414809		15.9	20
Hexachlorocyclopentadiene	A	50.0	39	0.1059839	8.264852E-02	0.05	-22.0	20 *
2,4,6-Trichlorophenol	A	50.0	53	0.3438594	0.3615962		5.2	20
2,4,5-Trichlorophenol	A	50.0	52	0.3760439	0.3880304		3.2	20
2-Chloronaphthalene	A	50.0	48	1.153463	1.11291		-3.5	20
2-Nitroaniline	A	50.0	54	0.4070853	0.4362551		7.2	20
Dimethylphthalate	A	50.0	54	1.2401	1.350778		8.9	20
2,6-Dinitrotoluene	A	50.0	54	0.2920889	0.3174774		8.7	20
3-Nitroaniline	A	50.0	54	0.3223253	0.3473909		7.8	20
2,4-Dinitrophenol	A	50.0	58	0.1540571	0.1782093	0.05	15.7	20
4-Nitrophenol	A	50.0	68	0.129553	0.1770624	0.05	36.7	20 *
Dibenzofuran	A	50.0	50	1.507255	1.515879		0.6	20

CONTINUING CALIBRATION CHECK

EPA 8270D

Laboratory:	ENCO Orlando	SDG:	A407175-CTO-WE9A
Client:	CH2M Hill, Inc. (CH031)	Project:	CTO-WE9A, Camp Lejuene Site 82
Instrument ID:	OSVGCMS1	Calibration:	1501007
Lab File ID:	1al002.D	Calibration Date:	01/05/15 16:26
Sequence:	AA32210	Injection Date:	01/19/15
Lab Sample ID:	AA32210-CCV1	Injection Time:	16:37

COMPOUND	TYPE	CONC. (ug/mL)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
2,4-Dinitrotoluene	A	50.0	54	0.3413958	0.3658873		7.2	20
Diethylphthalate	A	50.0	57	1.194944	1.351057		13.1	20
4-Chlorophenyl-phenylether	A	50.0	52	0.5882607	0.6093927		3.6	20
4-Nitroaniline	A	50.0	59	0.2945871	0.3503739		18.9	20
2-Methyl-4,6-dinitrophenol	A	50.0	57	0.2231748	0.2556734		14.6	20
N-nitrosodiphenylamine/Diphenylam	Q	100	120	0.8816216	0.921808		22.5	20 *
4-Bromophenyl-phenylether	A	50.0	49	0.1900885	0.1856218		-2.3	20
Hexachlorobenzene	A	50.0	52	0.1904821	0.1975531		3.7	20
Pentachlorophenol	A	50.0	58	0.1167471	0.1364724		16.9	20
Carbazole	A	50.0	51	0.8895947	0.9102463		2.3	20
Di-n-butylphthalate	A	50.0	52	1.148205	1.185053		3.2	20
Butylbenzylphthalate	A	50.0	51	0.319502	0.3246594		1.6	20
3,3'-Dichlorobenzidine	A	50.0	54	0.3163823	0.3418504		8.0	20
Bis(2-ethylhexyl)phthalate	A	50.0	55	0.7022095	0.7737663		10.2	20
Di-n-octylphthalate	A	50.0	60	1.090703	1.314541		20.5	20 *

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8270D

Laboratory: ENCO Orlando
SDG: A407175-CTO-WE9A
Client: CH2M Hill, Inc. (CH031)
Project: CTO-WE9A, Camp Lejuene Site 82

Sequence: AA32069
Instrument: OSVGCMS1
Matrix: Soil
Calibration: 1501007

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration RT	RT Diff	RT Diff Limit	Q
Matrix Spike Dup (4L17006-MSD1)			Lab File ID: 1ac013.D		Analyzed: 01/08/15 11:52			
2-Fluorophenol	50.0	63	19 - 119	5.257	5.39325	-0.1363	+/-0.2	
2-Fluorophenol	50.0	63	19 - 119	5.257	5.39325	-0.1363	+/-0.2	
Phenol-d5	50.0	49	10 - 115	6.346	6.48225	-0.1363	+/-0.2	
Phenol-d5	50.0	49	10 - 115	6.346	6.48225	-0.1363	+/-0.2	
Nitrobenzene-d5	50.0	87	44 - 120	7.496	7.646	-0.1500	+/-0.2	
Nitrobenzene-d5	50.0	87	44 - 120	7.496	7.646	-0.1500	+/-0.2	
2-Fluorobiphenyl	50.0	85	44 - 119	9.737	9.878286	-0.1413	+/-1.0	
2-Fluorobiphenyl	50.0	85	44 - 119	9.737	9.878286	-0.1413	+/-0.2	
2,4,6-Tribromophenol	50.0	101	43 - 140	11.594	11.74788	-0.1539	+/-0.2	
2,4,6-Tribromophenol	50.0	101	43 - 140	11.594	11.74788	-0.1539	+/-0.2	
Terphenyl-d14	50.0	107	50 - 134	14.459	14.61133	-0.1523	+/-0.2	
Terphenyl-d14	50.0	107	50 - 134	14.459	14.61133	-0.1523	+/-0.2	
IR82-EB-121114 (A407175-06)			Lab File ID: 1ac016.D		Analyzed: 01/08/15 13:16			
2-Fluorophenol	50.5	60	19 - 119	5.247	5.39325	-0.1463	+/-0.2	
Phenol-d5	50.5	51	10 - 115	6.336	6.48225	-0.1462	+/-0.2	
Nitrobenzene-d5	50.5	77	44 - 120	7.486	7.646	-0.1600	+/-0.2	
2-Fluorobiphenyl	50.5	85	44 - 119	9.728	9.878286	-0.1503	+/-0.2	
2,4,6-Tribromophenol	50.5	92	43 - 140	11.594	11.74788	-0.1539	+/-0.2	
Terphenyl-d14	50.5	152	50 - 134	14.46	14.61133	-0.1513	+/-0.2	*
Blank (4L23042-BLK1)			Lab File ID: 1ac017.D		Analyzed: 01/08/15 13:44			
2-Fluorophenol	1.67	79	35 - 115	5.247	5.39325	-0.1463	+/-0.2	
2-Fluorophenol	1.67	79	35 - 115	5.247	5.39325	-0.1463	+/-0.2	
Phenol-d5	1.67	84	33 - 122	6.336	6.48225	-0.1462	+/-0.2	
Phenol-d5	1.67	84	33 - 122	6.336	6.48225	-0.1462	+/-0.2	
Nitrobenzene-d5	1.67	81	37 - 122	7.486	7.646	-0.1600	+/-0.2	
Nitrobenzene-d5	1.67	81	37 - 122	7.486	7.646	-0.1600	+/-0.2	
2-Fluorobiphenyl	1.67	92	44 - 115	9.728	9.878286	-0.1503	+/-1.0	
2-Fluorobiphenyl	1.67	92	44 - 115	9.728	9.878286	-0.1503	+/-0.2	
2,4,6-Tribromophenol	1.67	69	39 - 132	11.594	11.74788	-0.1539	+/-0.2	
2,4,6-Tribromophenol	1.67	69	39 - 132	11.594	11.74788	-0.1539	+/-0.2	
Terphenyl-d14	1.67	101	54 - 127	14.46	14.61133	-0.1513	+/-0.2	
Terphenyl-d14	1.67	101	54 - 127	14.46	14.61133	-0.1513	+/-0.2	

MOE
JE

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8270D

Laboratory:	ENCO Orlando	SDG:	A407175-CTO-WE9A
Client:	CH2M Hill, Inc. (CH031)	Project:	CTO-WE9A, Camp Lejuene Site 82
Sequence:	AA32069	Instrument:	OSVGCMS1
Matrix:	Soil	Calibration:	1501007

Surrogate Compound	Spike Level mg/kg dry	% Recovery	Recovery Limits	RT	Calibration RT	RT Diff	RT Diff Limit	Q
Matrix Spike Dup (4L23042-MSD1)			Lab File ID: 1ac020.D		Analyzed: 01/08/15 15:11			
2-Fluorophenol	4.25	69	35 - 115	5.257	5.39325	-0.1363	+/-0.2	
2-Fluorophenol	4.25	69	35 - 115	5.257	5.39325	-0.1363	+/-0.2	
Phenol-d5	4.25	69	33 - 122	6.346	6.48225	-0.1363	+/-0.2	
Phenol-d5	4.25	69	33 - 122	6.346	6.48225	-0.1363	+/-0.2	
Nitrobenzene-d5	4.25	60	37 - 122	7.496	7.646	-0.1500	+/-0.2	
Nitrobenzene-d5	4.25	60	37 - 122	7.496	7.646	-0.1500	+/-0.2	
2-Fluorobiphenyl	4.25	36	44 - 115	9.728	9.878286	-0.1503	+/-0.2	*
2-Fluorobiphenyl	4.25	36	44 - 115	9.728	9.878286	-0.1503	+/-1.0	*
2,4,6-Tribromophenol	4.25	56	39 - 132	11.594	11.74788	-0.1539	+/-0.2	
2,4,6-Tribromophenol	4.25	56	39 - 132	11.594	11.74788	-0.1539	+/-0.2	
Terphenyl-d14	4.25	48	54 - 127	14.459	14.61133	-0.1523	+/-0.2	*
Terphenyl-d14	4.25	48	54 - 127	14.459	14.61133	-0.1523	+/-0.2	*
IR82-SD01-14D (A407175-03)			Lab File ID: 1ac021.D		Analyzed: 01/08/15 15:40			
2-Fluorophenol	4.29	64	35 - 115	5.247	5.39325	-0.1463	+/-0.2	
Phenol-d5	4.29	73	33 - 122	6.336	6.48225	-0.1462	+/-0.2	
Nitrobenzene-d5	4.29	48	37 - 122	7.486	7.646	-0.1600	+/-0.2	
2-Fluorobiphenyl	4.29	16	44 - 115	9.728	9.878286	-0.1503	+/-1.0	*
2,4,6-Tribromophenol	4.29	27	39 - 132	11.594	11.74788	-0.1539	+/-0.2	*
Terphenyl-d14	4.29	40	54 - 127	14.459	14.61133	-0.1523	+/-0.2	*
IR82-SD01D-14D (A407175-04)			Lab File ID: 1ac022.D		Analyzed: 01/08/15 16:08			
2-Fluorophenol	3.88	63	35 - 115	5.247	5.39325	-0.1463	+/-0.2	
Phenol-d5	3.88	70	33 - 122	6.336	6.48225	-0.1462	+/-0.2	
Nitrobenzene-d5	3.88	47	37 - 122	7.486	7.646	-0.1600	+/-0.2	
2-Fluorobiphenyl	3.88	13	44 - 115	9.728	9.878286	-0.1503	+/-1.0	*
2,4,6-Tribromophenol	3.88	24	39 - 132	11.584	11.74788	-0.1639	+/-0.2	*
Terphenyl-d14	3.88	41	54 - 127	14.449	14.61133	-0.1623	+/-0.2	*

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8270D

Laboratory: ENCO Orlando
SDG: A407175-CTO-WE9A
Client: CH2M Hill, Inc. (CH031)
Project: CTO-WE9A, Camp Lejuene Site 82

Sequence: AA32184
Instrument: OSVGCMS1
Matrix: Soil
Calibration: 1501007

Surrogate Compound	Spike Level mg/kg dry	% Recovery	Recovery Limits	RT	Calibration RT	RT Diff	RT Diff Limit	Q
IR82-SD01-14D (A407175-03RE1)			Lab File ID: 1ai008.D		Analyzed: 01/16/15 15:08			
2-Fluorophenol	4.29	62	35 - 115	5.417	5.39325	0.0237	+/-0.2	
Phenol-d5	4.29	70	33 - 122	6.486	6.48225	0.0038	+/-0.2	
Nitrobenzene-d5	4.29	46	37 - 122	7.636	7.646	-0.0100	+/-0.2	
2-Fluorobiphenyl	4.29	15	44 - 115	9.877	9.878286	-0.0013	+/-1.0	*
2,4,6-Tribromophenol	4.29	22	39 - 132	11.744	11.74788	-0.0039	+/-0.2	*
Terphenyl-d14	4.29	40	54 - 127	14.603	14.61133	-0.0083	+/-0.2	*
IR82-SD01D-14D (A407175-04RE2)			Lab File ID: 1ai009.D		Analyzed: 01/16/15 15:38			
2-Fluorophenol	3.88	60	35 - 115	5.417	5.39325	0.0237	+/-0.2	
Phenol-d5	3.88	69	33 - 122	6.496	6.48225	0.0138	+/-0.2	
Nitrobenzene-d5	3.88	44	37 - 122	7.636	7.646	-0.0100	+/-0.2	
2-Fluorobiphenyl	3.88	12	44 - 115	9.877	9.878286	-0.0013	+/-1.0	*
2,4,6-Tribromophenol	3.88	23	39 - 132	11.744	11.74788	-0.0039	+/-0.2	*
Terphenyl-d14	3.88	41	54 - 127	14.604	14.61133	-0.0073	+/-0.2	*
Blank (5A09022-BLK2)			Lab File ID: 1ai010.D		Analyzed: 01/16/15 16:07			
2-Fluorophenol	1.67	65	35 - 115	5.417	5.39325	0.0237	+/-0.2	
Phenol-d5	1.67	71	33 - 122	6.486	6.48225	0.0038	+/-0.2	
Nitrobenzene-d5	1.67	66	37 - 122	7.636	7.646	-0.0100	+/-0.2	
2-Fluorobiphenyl	1.67	79	44 - 115	9.877	9.878286	-0.0013	+/-1.0	
2,4,6-Tribromophenol	1.67	66	39 - 132	11.744	11.74788	-0.0039	+/-0.2	
Terphenyl-d14	1.67	102	54 - 127	14.604	14.61133	-0.0073	+/-0.2	
LCS (5A09022-BS2)			Lab File ID: 1ai011.D		Analyzed: 01/16/15 16:37			
2-Fluorophenol	1.67	79	35 - 115	5.427	5.39325	0.0337	+/-0.2	
Phenol-d5	1.67	82	33 - 122	6.506	6.48225	0.0238	+/-0.2	
Nitrobenzene-d5	1.67	83	37 - 122	7.646	7.646	0.0000	+/-0.2	
2-Fluorobiphenyl	1.67	87	44 - 115	9.877	9.878286	-0.0013	+/-1.0	
2,4,6-Tribromophenol	1.67	100	39 - 132	11.744	11.74788	-0.0039	+/-0.2	
Terphenyl-d14	1.67	111	54 - 127	14.615	14.61133	0.0037	+/-0.2	
LCS Dup (5A09022-BSD2)			Lab File ID: 1ai012.D		Analyzed: 01/16/15 17:06			
2-Fluorophenol	1.67	81	35 - 115	5.427	5.39325	0.0337	+/-0.2	
Phenol-d5	1.67	86	33 - 122	6.506	6.48225	0.0238	+/-0.2	
Nitrobenzene-d5	1.67	86	37 - 122	7.646	7.646	0.0000	+/-0.2	
2-Fluorobiphenyl	1.67	95	44 - 115	9.877	9.878286	-0.0013	+/-1.0	
2,4,6-Tribromophenol	1.67	100	39 - 132	11.744	11.74788	-0.0039	+/-0.2	
Terphenyl-d14	1.67	118	54 - 127	14.615	14.61133	0.0037	+/-0.2	

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8270D

IR82-SD01-14D

Laboratory:	ENCO Orlando	SDG:	A407175-CTO-WE9A
Client:	CH2M Hill, Inc. (CH031)	Project:	CTO-WE9A, Camp Lejuene Site 82
Matrix:	Soil		
Batch:	4L23042	Laboratory ID:	4L23042-MS1
Preparation:	EPA 3550C_MS	Initial/Final:	29.6 g / 1 mL

Source Sample Name: IR82-SD01-14D

COMPOUND	SPIKE ADDED (mg/kg dry)	SAMPLE CONCENTRATION (mg/kg dry)	MS CONCENTRATION (mg/kg dry)	MS % REC. #	QC LIMITS REC.
Benzaldehyde	4.35	ND	2.1	49	45 - 99
Phenol	4.35	ND	3.0	69	34 - 121
Bis(2-chloroethyl)ether	4.35	ND	2.8	63	31 - 120
2-Chlorophenol	4.35	ND	2.7	62	34 - 121
2-Methylphenol	4.35	ND	2.7	63	32 - 122
Bis(2-chloroisopropyl)ether	4.35	ND	1.7	40	33 - 131
Acetophenone	4.35	ND	2.6	59	33 - 115
3 & 4-Methylphenol	4.35	ND	2.8	64	34 - 119
N-Nitroso-di-n-propylamine	4.35	ND	2.7	62	36 - 120
Hexachloroethane	4.35	ND	0.77	18 *	28 - 117
Nitrobenzene	4.35	ND	2.6	60	34 - 122
Isophorone	4.35	ND	2.5	58	30 - 122
2-Nitrophenol	4.35	ND	2.7	62	36 - 123
2,4-Dimethylphenol	4.35	ND	2.7	61	30 - 127
Bis(2-chloroethoxy)methane	4.35	ND	2.7	62	36 - 121
2,4-Dichlorophenol	4.35	ND	2.5	57	40 - 122
4-Chloroaniline	4.35	ND	2.1	47	17 - 106
Hexachlorobutadiene	4.35	ND	0.96	22 *	32 - 123
Caprolactam	4.35	ND	3.7	85	46 - 117
4-Chloro-3-methylphenol	4.35	ND	2.8	65	45 - 122
Hexachlorocyclopentadiene	4.35	ND	0.91	21	10 - 170
2,4,6-Trichlorophenol	4.35	ND	2.5	58	39 - 126
2,4,5-Trichlorophenol	4.35	ND	2.1	48	41 - 125
1,1'-Biphenyl	4.35	ND	1.4	33 *	40 - 117
2-Chloronaphthalene	4.35	ND	1.3	29 *	41 - 114
2-Nitroaniline	4.35	ND	2.9	67	44 - 127
Dimethylphthalate	4.35	ND	2.5	58	48 - 124
2,6-Dinitrotoluene	4.35	ND	2.4	55	46 - 124
3-Nitroaniline	4.35	ND	2.8	64	33 - 119
2,4-Dinitrophenol	4.35	ND	3.0	69	15 - 130
4-Nitrophenol	4.35	ND	3.5	80	30 - 132

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8270D

IR82-SD01-14D

Laboratory:	ENCO Orlando	SDG:	A407175-CTO-WE9A
Client:	CH2M Hill, Inc. (CH031)	Project:	CTO-WE9A, Camp Lejuene Site 82
Matrix:	Soil		
Batch:	4L23042	Laboratory ID:	4L23042-MS1
Preparation:	EPA 3550C_MS	Initial/Final:	29.6 g / 1 mL

Source Sample Name: IR82-SD01-14D

COMPOUND	SPIKE ADDED (mg/kg dry)	SAMPLE CONCENTRATION (mg/kg dry)	MS CONCENTRATION (mg/kg dry)	MS % REC. #	QC LIMITS REC.
Dibenzofuran	4.35	ND	1.4	32 *	44 - 120
2,4-Dinitrotoluene	4.35	ND	2.6	60	48 - 126
Diethylphthalate	4.35	ND	1.9	43 *	50 - 124
4-Chlorophenyl-phenylether	4.35	ND	1.4	32 *	45 - 121
4-Nitroaniline	4.35	ND	3.0	69	35 - 115
2-Methyl-4,6-dinitrophenol	4.35	ND	3.3	75	30 - 135
N-nitrosodiphenylamine/Diphenylam	4.35	ND	1.3	30 *	38 - 127
4-Bromophenyl-phenylether	4.35	ND	1.5	35 *	46 - 124
Hexachlorobenzene	4.35	ND	1.7	39 *	45 - 122
Atrazine	4.35	ND	2.3	54	47 - 127
Pentachlorophenol	4.35	ND	2.3	54	25 - 133
Carbazole	4.35	ND	1.9	44 *	50 - 123
Di-n-butylphthalate	4.35	ND	1.5	35 *	55 - 110
Butylbenzylphthalate	4.35	ND	1.7	39 *	48 - 132
3,3'-Dichlorobenzidine	4.35	ND	1.0	24	22 - 121
Bis(2-ethylhexyl)phthalate	4.35	ND	2.8	64	51 - 133
Di-n-octylphthalate	4.35	ND	2.8	64	40 - 130

COMPOUND	SPIKE ADDED (mg/kg dry)	MSD CONCENTRATION (mg/kg dry)	MSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Benzaldehyde	4.25	2.4	56	11	20	45 - 99
Phenol	4.25	3.2	76	8	20	34 - 121
Bis(2-chloroethyl)ether	4.25	3.1	73	11	20	31 - 120
2-Chlorophenol	4.25	3.0	71	11	20	34 - 121
2-Methylphenol	4.25	3.0	71	10	20	32 - 122
Bis(2-chloroisopropyl)ether	4.25	2.1	49	18	20	33 - 131
Acetophenone	4.25	2.8	66	9	20	33 - 115
3 & 4-Methylphenol	4.25	2.9	69	6	20	34 - 119
N-Nitroso-di-n-propylamine	4.25	2.9	69	8	20	36 - 120
Hexachloroethane	4.25	1.1	26 *	36 *	20	28 - 117
Nitrobenzene	4.25	2.9	69	12	20	34 - 122

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8270D

IR82-SD01-14D

Laboratory:	ENCO Orlando	SDG:	A407175-CTO-WE9A
Client:	CH2M Hill, Inc. (CH031)	Project:	CTO-WE9A, Camp Lejuene Site 82
Matrix:	Soil		
Batch:	4L23042	Laboratory ID:	4L23042-MSD1
Preparation:	EPA 3550C_MS	Initial/Final:	30.3 g / 1 mL

Source Sample Name: IR82-SD01-14D

COMPOUND	SPIKE ADDED (mg/kg dry)	MSD CONCENTRATION (mg/kg dry)	MSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Isophorone	4.25	2.8	67	12	20	30 - 122
2-Nitrophenol	4.25	3.0	70	11	20	36 - 123
2,4-Dimethylphenol	4.25	3.1	73	16	20	30 - 127
Bis(2-chloroethoxy)methane	4.25	3.0	71	11	20	36 - 121
2,4-Dichlorophenol	4.25	2.8	66	12	20	40 - 122
4-Chloroaniline	4.25	2.2	52	8	20	17 - 106
Hexachlorobutadiene	4.25	1.4	32	35 *	20	32 - 123
Caprolactam	4.25	3.9	92	6	20	46 - 117
4-Chloro-3-methylphenol	4.25	3.1	73	9	20	45 - 122
Hexachlorocyclopentadiene	4.25	1.2	29	30 *	20	10 - 170
2,4,6-Trichlorophenol	4.25	2.8	67	12	20	39 - 126
2,4,5-Trichlorophenol	4.25	2.5	58	16	20	41 - 125
1,1'-Biphenyl	4.25	1.8	43	26 *	20	40 - 117
2-Chloronaphthalene	4.25	1.6	39 *	25 *	20	41 - 114
2-Nitroaniline	4.25	3.1	73	7	20	44 - 127
Dimethylphthalate	4.25	2.9	67	12	20	48 - 124
2,6-Dinitrotoluene	4.25	2.7	63	13	20	46 - 124
3-Nitroaniline	4.25	2.9	69	5	20	33 - 119
2,4-Dinitrophenol	4.25	3.2	76	8	20	15 - 130
4-Nitrophenol	4.25	3.8	88	7	20	30 - 132
Dibenzofuran	4.25	1.8	42 *	25 *	20	44 - 120
2,4-Dinitrotoluene	4.25	3.0	70	13	20	48 - 126
Diethylphthalate	4.25	2.3	55	22 *	20	50 - 124
4-Chlorophenyl-phenylether	4.25	1.8	44 *	29 *	20	45 - 121
4-Nitroaniline	4.25	3.3	77	9	20	35 - 115
2-Methyl-4,6-dinitrophenol	4.25	3.5	82	7	20	30 - 135
N-nitrosodiphenylamine/Diphenylam	4.25	1.7	39	25 *	20	38 - 127
4-Bromophenyl-phenylether	4.25	2.0	48	30 *	20	46 - 124
Hexachlorobenzene	4.25	2.3	55	31 *	20	45 - 122
Atrazine	4.25	2.7	64	15	20	47 - 127
Pentachlorophenol	4.25	2.8	66	19	20	25 - 133
Carbazole	4.25	2.4	56	21 *	20	50 - 123

~~36~~ 126

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8270D

IR82-SD01-14D

Laboratory:	ENCO Orlando	SDG:	A407175-CTO-WE9A
Client:	CH2M Hill, Inc. (CH031)	Project:	CTO-WE9A, Camp Lejuene Site 82
Matrix:	Soil		
Batch:	4L23042	Laboratory ID:	4L23042-MSD1
Preparation:	EPA 3550C_MS	Initial/Final:	30.3 g / 1 mL

Source Sample Name: IR82-SD01-14D

COMPOUND	SPIKE ADDED (mg/kg dry)	MSD CONCENTRATION (mg/kg dry)	MSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Di-n-butylphthalate	4.25	2.1	49 *	31 *	20	55 - 110
Butylbenzylphthalate	4.25	2.3	54	31 *	20	48 - 132
3,3'-Dichlorobenzidine	4.25	1.5	35	37 *	20	22 - 121
Bis(2-ethylhexyl)phthalate	4.25	3.3	78	17	20	51 - 133
Di-n-octylphthalate	4.25	3.6	84	25 *	20	40 - 130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8270D

IR82-SW01-14D

Laboratory:	ENCO Orlando	SDG:	A407175-CTO-WE9A
Client:	CH2M Hill, Inc. (CH031)	Project:	CTO-WE9A, Camp Lejuene Site 82
Matrix:	Water		
Batch:	4L17006	Laboratory ID:	4L17006-MS2
Preparation:	EPA 3510C_MS	Initial/Final:	500 mL / 0.5 mL

Source Sample Name: IR82-SW01-14D

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC. #	QC LIMITS REC.
Benzaldehyde	50.0	ND	36	72	38 - 114
Phenol	50.0	ND	29	59	10 - 115
Bis(2-chloroethyl)ether	50.0	ND	32	63	43 - 118
2-Chlorophenol	50.0	ND	29	58	38 - 117
2-Methylphenol	50.0	ND	28	56	30 - 117
Bis(2-chloroisopropyl)ether	50.0	ND	30	60	37 - 130
Acetophenone	50.0	ND	39	78	46 - 118
3 & 4-Methylphenol	50.0	ND	30	60	30 - 110
N-Nitroso-di-n-propylamine	50.0	ND	35	71	49 - 119
Hexachloroethane	50.0	ND	27	55	21 - 115
Nitrobenzene	50.0	ND	31	62	45 - 121
Isophorone	50.0	ND	32	64	42 - 124
2-Nitrophenol	50.0	ND	28	57	47 - 123
2,4-Dimethylphenol	50.0	ND	28	56	31 - 124
Bis(2-chloroethoxy)methane	50.0	ND	31	62	48 - 120
2,4-Dichlorophenol	50.0	ND	31	61	47 - 121
4-Chloroaniline	50.0	ND	22	45	33 - 117
Hexachlorobutadiene	50.0	ND	32	65	22 - 124
Caprolactam	50.0	ND	45	90 *	10 - 51
4-Chloro-3-methylphenol	50.0	ND	35	71	52 - 119
Hexachlorocyclopentadiene	50.0	ND	27	55	10 - 117
2,4,6-Trichlorophenol	50.0	ND	32	65	50 - 125
2,4,5-Trichlorophenol	50.0	ND	31	62	53 - 123
1,1'-Biphenyl	50.0	ND	40	79	49 - 115
2-Chloronaphthalene	50.0	ND	28	56	40 - 116
2-Nitroaniline	50.0	ND	34	67	55 - 127
Dimethylphthalate	50.0	ND	35	71	45 - 127
2,6-Dinitrotoluene	50.0	ND	35	69	57 - 124
3-Nitroaniline	50.0	ND	30	61	41 - 128
2,4-Dinitrophenol	50.0	ND	30	60	23 - 143
4-Nitrophenol	50.0	ND	43	87	10 - 125

NCC

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8270D

IR82-SW01-14D

Laboratory: ENCO Orlando

SDG: A407175-CTO-WE9A

Client: CH2M Hill, Inc. (CH031)

Project: CTO-WE9A, Camp Lejuene Site 82

Matrix: Water

Batch: 4L17006

Laboratory ID: 4L17006-MSD2

Preparation: EPA 3510C_MS

Initial/Final: 500 mL / 0.5 mL

Source Sample Name: IR82-SW01-14D

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Isophorone	50.0	34	67	6	20	42 - 124
2-Nitrophenol	50.0	32	63	11	20	47 - 123
2,4-Dimethylphenol	50.0	30	61	7	20	31 - 124
Bis(2-chloroethoxy)methane	50.0	33	67	8	20	48 - 120
2,4-Dichlorophenol	50.0	33	67	9	20	47 - 121
4-Chloroaniline	50.0	23	46	3	20	33 - 117
Hexachlorobutadiene	50.0	34	69	6	20	22 - 124
Caprolactam	50.0	46	91 *	1	20	10 - 51
4-Chloro-3-methylphenol	50.0	38	75	6	20	52 - 119
Hexachlorocyclopentadiene	50.0	32	63	14	20	10 - 117
2,4,6-Trichlorophenol	50.0	36	71	9	20	50 - 125
2,4,5-Trichlorophenol	50.0	35	69	10	20	53 - 123
1,1'-Biphenyl	50.0	42	83	5	20	49 - 115
2-Chloronaphthalene	50.0	31	61	9	20	40 - 116
2-Nitroaniline	50.0	37	75	11	20	55 - 127
Dimethylphthalate	50.0	37	74	5	20	45 - 127
2,6-Dinitrotoluene	50.0	37	75	8	20	57 - 124
3-Nitroaniline	50.0	34	67	10	20	41 - 128
2,4-Dinitrophenol	50.0	37	74	20	20	23 - 143
4-Nitrophenol	50.0	50	100	14	20	10 - 125
Dibenzofuran	50.0	35	69	8	20	53 - 118
2,4-Dinitrotoluene	50.0	43	86	9	20	57 - 128
Diethylphthalate	50.0	40	80	2	20	56 - 125
4-Chlorophenyl-phenylether	50.0	36	72	6	20	53 - 121
4-Nitroaniline	50.0	38	77	12	20	35 - 120
2-Methyl-4,6-dinitrophenol	50.0	42	85	15	20	40 - 130
N-nitrosodiphenylamine/Diphenylam	50.0	33	66	9	20	51 - 123
4-Bromophenyl-phenylether	50.0	35	71	3	20	55 - 124
Hexachlorobenzene	50.0	38	77	3	20	53 - 125
Atrazine	50.0	53	106	2	20	44 - 142
Pentachlorophenol	50.0	41	83	10	20	35 - 138
Carbazole	50.0	41	82	9	20	60 - 122

HOLDING TIME SUMMARY

EPA 8270D

Laboratory: ENCO Orlando

SDG: A407175-CTO-WE9A

Client: CH2M Hill, Inc. (CH031)

Project: CTO-WE9A, Camp Lejuene Site 82

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
IR82-SD01-14D	12/11/14 11:50	12/12/14 09:07	12/23/14 13:36	12.00	14.00	01/08/15 15:40	16.00	40.00	
IR82-SD01-14D	12/11/14 11:50	12/12/14 09:07	12/23/14 13:36	12.00	14.00	01/16/15 15:08	24.00	40.00	
IR82-SD01D-14D	12/11/14 11:55	12/12/14 09:07	12/23/14 13:36	12.00	14.00	01/08/15 16:08	16.00	40.00	
IR82-SD01D-14D	12/11/14 11:55	12/12/14 09:07	01/09/15 14:30	29.00	14.00	01/10/15 18:49	1.00	40.00	*
IR82-SD01D-14D	12/11/14 11:55	12/12/14 09:07	12/23/14 13:36	12.00	14.00	01/16/15 15:38	24.00	40.00	
IR82-SD01D-14D	12/11/14 11:55	12/12/14 09:07	01/09/15 14:30	29.00	14.00	01/16/15 17:36	7.00	40.00	*
IR82-EB-121114	12/11/14 08:00	12/12/14 09:07	12/17/14 08:50	6.00	7.00	01/08/15 13:16	22.00	40.00	
IR82-EB-121114	12/11/14 08:00	12/12/14 09:07	12/17/14 08:50	6.00	7.00	01/19/15 20:34	33.00	40.00	

DataQual

From: Marcia Colon <mcolon@encolabs.com>
Sent: Monday, March 2, 2015 1:13 PM
To: 'DataQual'
Cc: Bianca.Kleist@CH2M.com; 'Jacqueline Cleveland'
Subject: RE: CTO-WE9A

Hi Laura-
For the sequence AA32069 we found that the internal standard time was off on the instrument thus that sequence of data was unusable. The samples were re-analyzed, all data was reported. There is a narration explaining about the internal standard failure.

The calibration curves were analyzed on the 30th and 31st but the analyst didn't upload the curve to our LIMS until the 5th , I see on the form1 that the time says 01/05/15 16:26. If you see on page 798/799 you will see the analysis date/time.

Marcia

Marcia Colon
Project Manager

Environmental Conservation Laboratories, Inc.
10775 Central Port Drive
Orlando, FL 32824
(407)826-5314 ph
(407)850-6945 fax
mcolon@encolabs.com

Confidentiality Notice: The information contained in this message is intended only for the use of the addressee, and may be confidential and/or privileged. If the reader of this message is not the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify the sender immediately.

ENCO is an eco-friendly lab offering paperless service options, please contact me anytime with questions.

From: DataQual [mailto:dataqual@charter.net]
Sent: Sunday, March 01, 2015 5:13 PM
To: Marcia Colon
Cc: Bianca.Kleist@CH2M.com; Jacqueline Cleveland
Subject: CTO-WE9A

Hi Marcia,

The following items are requested:

SDG# A407175

SVOA fraction:

- Please review Continuing Calibration Check on page 785 and re-submit with RRF and %D values.
- An Analysis Sequence Summary was submitted for initial calibration curves ran on 12/30 and 12/31 however the Initial Calibration Data submitted was for a curve ran on 1/5/15. Please review and submit correct curves if required.

SDG# A407421

SVOA fraction:

- Please review Continuing Calibration Check on page 111 and re-submit with RRF and %D values.
- An Analysis Sequence Summary was submitted for initial calibration curves ran on 12/30 and 12/31 however the Initial Calibration Data submitted was for a curve ran on 1/5/15. Please review and submit correct curves if required.

If there are any questions please let me know,
Laura

Laura Maschhoff
DataQual Environmental Services, LLC
dataqual@charter.net

ORGANIC ANALYSIS DATA SHEET

EPA 8270D

IR82-SD01-14D

Laboratory: ENCO Orlando | SDG: A407175-CTO-WE9A

Client: CH2M Hill, Inc. (CH031) | Project: CTO-WE9A, Camp Lejuene Site 82

Matrix: Sediment | Laboratory ID: A407175-03 | File ID: 1ac021.D

Sampled: 12/11/14 11:50 | Prepared: 12/23/14 13:36 | Analyzed: 01/08/15 15:40

Solids: 38.83 | Preparation: EPA 3550C_MS | Initial/Final: 30 g / 1 mL

Batch: 4L23042 | Sequence: AA32069 | Calibration: 1501007 | Instrument: OSVGCMS1

CAS NO.	COMPOUND	DILUTION	CONC. (mg/kg dry)	Q	DL	LOD	LOQ
100-52-7	Benzaldehyde	1	<0.77	U	0.70	0.77	0.85
108-95-2	Phenol	1	<0.26	U	0.25	0.26	0.85
111-44-4	Bis(2-chloroethyl)ether	1	<0.52	U	0.36	0.52	0.85
95-57-8	2-Chlorophenol	1	<0.77	U	0.59	0.77	0.85
95-48-7	2-Methylphenol	1	<0.52	U	0.28	0.52	0.85
108-60-1	Bis(2-chloroisopropyl)ether	1	<0.26	U	0.25	0.26	0.85
98-86-2	Acetophenone	1	<0.52	U	0.36	0.52	0.85
108-39-4/106-44-5	3 & 4-Methylphenol	1	<0.77	U	0.64	0.77	0.85
621-64-7	N-Nitroso-di-n-propylamine	1	<0.52	U	0.39	0.52	0.85
67-72-1	Hexachloroethane	1	<0.26	UQ	0.26	0.26	0.85
98-95-3	Nitrobenzene	1	<0.52	U	0.39	0.52	0.85
78-59-1	Isophorone	1	<0.52	U	0.44	0.52	0.85
88-75-5	2-Nitrophenol	1	<0.77	U	0.67	0.77	0.85
105-67-9	2,4-Dimethylphenol	1	<0.77	U	0.59	0.77	0.85
111-91-1	Bis(2-chloroethoxy)methane	1	<0.52	U	0.39	0.52	0.85
120-83-2	2,4-Dichlorophenol	1	<0.77	U	0.64	0.77	0.85
106-47-8	4-Chloroaniline	1	<0.26	U	0.17	0.26	0.85
87-68-3	Hexachlorobutadiene	1	<0.52	UQ	0.33	0.52	0.85
105-60-2	Caprolactam	1	<0.77	U	0.77	0.77	0.85
59-50-7	4-Chloro-3-methylphenol	1	<0.77	U	0.72	0.77	0.85
77-47-4	Hexachlorocyclopentadiene	1	<0.52	UQ	0.39	0.52	0.85
88-06-2	2,4,6-Trichlorophenol	1	<0.52	U	0.39	0.52	0.85
95-95-4	2,4,5-Trichlorophenol	1	<0.26	U	0.17	0.26	0.85
92-52-4	1,1'-Biphenyl	1	<0.26	UQ	0.19	0.26	0.85
91-58-7	2-Chloronaphthalene	1	<0.26	UQ	0.25	0.26	0.85
88-74-4	2-Nitroaniline	1	<0.26	U	0.22	0.26	0.85
131-11-3	Dimethylphthalate	1	<0.52	U	0.33	0.52	0.85
606-20-2	2,6-Dinitrotoluene	1	<0.52	U	0.46	0.52	0.85
99-09-2	3-Nitroaniline	1	<0.26	U	0.21	0.26	0.85
51-28-5	2,4-Dinitrophenol	1	<0.26	U	0.23	0.26	0.85
100-02-7	4-Nitrophenol	1	<0.52	U	0.33	0.52	0.85
132-64-9	Dibenzofuran	1	<0.52	UQ	0.33	0.52	0.85
121-14-2	2,4-Dinitrotoluene	1	<0.52	U	0.41	0.52	0.85

UM 031015

ORGANIC ANALYSIS DATA SHEET

EPA 8270D

IR82-SD01-14D

Laboratory:	ENCO Orlando	SDG:	A407175-CTO-WE9A
Client:	CH2M Hill, Inc. (CH031)	Project:	CTO-WE9A, Camp Lejuene Site 82

Matrix:	Sediment	Laboratory ID:	A407175-03	File ID:	1ac021.D
Sampled:	12/11/14 11:50	Prepared:	12/23/14 13:36	Analyzed:	01/08/15 15:40
Solids:	38.83	Preparation:	EPA 3550C_MS	Initial/Final:	30 g / 1 mL

Batch: 4L23042 Sequence: AA32069 Calibration: 1501007 Instrument: OSVGCMS1

CAS NO.	COMPOUND	DILUTION	CONC. (mg/kg dry)	Q	DL	LOD	LOQ
84-66-2	Diethylphthalate	1	<0.52	UQ	0.33	0.52	0.85
7005-72-3	4-Chlorophenyl-phenylether	1	<0.52	UQ	0.33	0.52	0.85
100-01-6	4-Nitroaniline	1	<0.77	U	0.67	0.77	0.85
534-52-1	2-Methyl-4,6-dinitrophenol	1	<0.77	U	0.72	0.77	0.85
86-30-6/122-39-4	N-nitrosodiphenylamine/Diphenylamine	1	<0.77	UQ	0.59	0.77	0.85
101-55-3	4-Bromophenyl-phenylether	1	<0.52	UQ	0.33	0.52	0.85
118-74-1	Hexachlorobenzene	1	<0.52	UQ	0.31	0.52	0.85
1912-24-9	Atrazine	1	<0.26	U	0.19	0.26	0.85
87-86-5	Pentachlorophenol	1	<0.77	U	0.54	0.77	0.85
86-74-8	Carbazole	1	<0.52	UQ	0.31	0.52	0.85
84-74-2	Di-n-butylphthalate	1	<0.52	UQ	0.33	0.52	0.85
85-68-7	Butylbenzylphthalate	1	<0.52	UQ	0.36	0.52	0.85
91-94-1	3,3'-Dichlorobenzidine	1	<0.77	UQ	0.54	0.77	0.85
117-81-7	Bis(2-ethylhexyl)phthalate	1	<0.52	UQ	0.33	0.52	0.85
117-84-0	Di-n-octylphthalate	1	<0.52	UQ	0.33	0.52	0.85

XRE

SYSTEM MONITORING COMPOUND	ADDED (mg/kg dry)	CONC (mg/kg dry)	% REC	QC LIMITS	Q
2-Fluorophenol	4.29	2.7	64	35 - 115	
Phenol-d5	4.29	3.1	73	33 - 122	
Nitrobenzene-d5	4.29	2.1	48	37 - 122	
2-Fluorobiphenyl	4.29	0.68	16	44 - 115	*
2,4,6-Tribromophenol	4.29	1.1	27	39 - 132	*
Terphenyl-d14	4.29	1.7	40	54 - 127	*

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Dichlorobenzene-d4	351152	6.816	312803	6.966	
Naphthalene-d8	1282598	8.397	1202138	8.546	
Acenaphthene-d10	688853	10.603	663746	10.753	
Phenanthrene-d10	1007464	12.476	1098576	12.637	
Chrysene-d12	611673	16.032	565336	16.253	*
Perylene-d12	508898	18.98	404946	19.226	*

* Values outside of QC limits

UM 051015

Data Completeness

The data package was received complete and intact. Resubmissions were not required. (SW846 Method 8270D-SIM)

Laboratory: ENCO

Holding Times

Sampling Date: 12/11/14
Received Date: 12/12/14
Extraction Date: 12/17-22/14
Analysis Dates: 1/6/15
Cooler Temp: 2°C

All holding time requirements were met.

Calibrations

Mass assignments were verified by the injection of DFTPP.

No qualifications were required.

Internal Standards

All criteria were met.

Blank Summary

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying criteria.
- Qualification/Action codes where applied as stated in table below:

Blank Type	Blank Result	Sample Result	Action for Samples
Method, Field	Detects	Not detected	No qualifications
	< LOD*	< LOD*	Report LOD value with a U
		≥ LOD*	Use professional judgment
	> LOD*	< LOD*	Report LOD value with a U
		≥ LOD* and < blank concentration	Report the concentration for the sample with a U, or qualify the data as unusable R
		≥ LOD* and ≥ blank concentration	Use professional judgment
	= LOD*	< LOD*	Report LOD value with a U
		≥ LOD*	Use professional judgment
	Gross contamination	Detects	Qualify results as unusable R

*2x the LOD for common phthalates

No contamination was exhibited in the method blank. Associated QC blanks: IR82-EB-121114 - equipment blanks (no positive results).

Blank Contamination and Qualification Summaries

Blank ID	Compound	Concentration	Reporting Limit (LOD)

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Qual Code
no qualifications			

Surrogates

All criteria were met.

Laboratory Control Sample

All criteria were met.

Matrix Spike/Spike Duplicate Samples

An MS/MSD was submitted for IR82-SW01-14D and IRSD01-14D -no qualifications required.

Field Duplicate Sample

A field duplicate was submitted for sample IR82-SD01-14D-qualifications required, see attached form.

Specific Comments:

All sample results were reported within the calibration range of the instruments. Detection limits were acceptable. Raw data and calculations were verified. We have limited the supporting documentation, found with these worksheets, to those forms that indicate qualifications were required.

Validator Signature: _____ **Date:** 2/28/15

FIELD DUPLICATE SAMPLE SUMMARY

Sample ID: IR82-SD01-14D
Duplicate Sample ID: IR82-SD01D-14D

Water: RPD>30%
Soil: RPD>30%

Compound	Sample Conc.	Dup. Sample Conc.	%RPD
phenanthrene	0.05	0.057	13
fluoranthene	0.086	0.081	6
pyrene	0.076	0.085	11
benzo(a)anthracene	0.16	0.14	13
chrysene	0.096	0.099	3
benzo(b)fluoranthene	0.14	0.085	49
benzo(k)fluoranthene	0.091	0.085	7
benzo(a)pyrene	0.096	0.085	12
indeno(1,2,3-cd)pyrene	0.081	0.09	11
dibenzo(a,h)anthracene	0.061	0.081	28
benzo(g,h,i)perylene	0.086	0.095	10
anthracene		0.047	200
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!

COMMENTS: Qualify all compounds with RPD > 30% as estimated (J/UJ)

* one of the results below the LOD
if both results are below the LOD the results are not compared

Holding Times

Sampling Date: 12/11/14
Received Date: 12/12/14
Extraction Date: 12/17-22/14
Analysis Dates: 12/24/14

Receipt paperwork was in order. Cooler temperatures were acceptable at 2°C. A seven-day holding time was used for the water samples and a fourteen-day holding time was used for the soil samples. The analysis holding time of 40 days was used. Based on this, all extraction and analysis holding times were met.

Calibrations

Initial calibrations were performed according to the method with a six-point curve for all single component pesticides & toxaphene. Response factors were calculated. %RSDs were within QC limits with the exception of two compounds. Continuing calibration standards were analyzed appropriately. All breakdown criteria were met. The CCVs exhibited high %Ds for two compounds. Column resolution was acceptable. Retention times were stable throughout the analytical sequence. The correct analytical sequence was run. Raw data was verified.

Blank Summary

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Any compound detected in the sample, and the associated blank, must be qualified by reporting the result in the sample as non-detect at the LOD when the sample concentration is less than LOD.
- Sample weight, volume or dilution factor must be taken into consideration when applying the qualification criteria.
- Apply the same data validation guidelines to any associated rinse and field blanks and all associated samples.
- Qualification/Action codes:
-

No Action - The sample result is greater than the LOD and greater than five times (5X) the blank value.
U at LOD- The sample result is less than the LOD when the blank contamination level is less than the LOD.

Professional judgment is applied when blank concentrations are >LOD. Results may be flagged as U at the reported concentration or rejected. No contamination that resulted in qualification of the data was noted in the associated method or instrument blanks or the submitted field QC blanks.

Blank ID	Compound	Concentration	Action Level	Q Flag
no contamination was noted				

Surrogate Recoveries

All surrogate recoveries were acceptable. No qualifications based on surrogate recoveries were required.

Matrix Spike/Matrix Spike Duplicates

Samples IR82-SW01-14D and IR82-SD01-14D were submitted as MS/MSD pairs for pesticides. No qualifications were required.

Laboratory Control Samples

One of the LCS exhibited a high recovery for 44-DDE however none of the associated samples has positive results-no qualifications required.

Field Duplicate Sample Summary

A field duplicate was submitted for sample IR82-SD01-14D-no qualifications were required.

Sample Result Verification

Reported sample results were verified. Raw data was verified. There were no positive results reported in the samples. Quantitation calculations were verified.

Reviewer L Mascellotti **Date:** 2/28/15

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8081B

Laboratory: ENCO Orlando

SDG: A407175-CTO-WE9A

Client: CH2M Hill, Inc. (CH031)

Project: CTO-WE9A, Camp Lejuene Site 82

Sequence: AA31769

Instrument: OSVGCECD2

Calibration: 1412079

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Performance Mix	AA31769-PEM1	2LM011.D	12/18/14 11:34
Cal Standard	AA31769-CAL1	2LM012.D	12/18/14 11:45
Cal Standard	AA31769-CAL2	2LM013.D	12/18/14 11:57
Cal Standard	AA31769-CAL3	2LM014.D	12/18/14 12:08
Cal Standard	AA31769-CAL4	2LM015.D	12/18/14 12:19
Cal Standard	AA31769-CAL6	2LM017.D	12/18/14 12:42
Secondary Cal Check	AA31769-SCV1	2LM018.D	12/18/14 13:08

INITIAL CALIBRATION DATA (Continued)

EPA 8081B

Laboratory: ENCO Orlando

SDG: A407175-CTO-WE9A

Client: CH2M Hill, Inc. (CH031)

Project: CTO-WE9A, Camp Lejuene Site 82

Calibration: 1412079

Instrument: OSVGCECD2

Matrix: Water

Calibration Date: 12/18/14 13:54

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
alpha-BHC	2.563697	18.56342	2.816	5.625411E-02			20	
gamma-BHC	2.187151	11.59013	3.056	5.009917E-02			20	
beta-BHC	0.8753336	6.388998	3.1194	3.880068E-02			20	
delta-BHC	2.203223	15.27516	3.2646	3.899351E-02			20	
Heptachlor	2.22814	5.519353	3.4434	4.216544E-02			20	
Aldrin	2.462597	17.72083	3.7004	2.691744E-02			20	
Heptachlor epoxide	2.286511	8.699021	4.2132	1.087799E-02			20	
Chlordane-gamma	2.076299	7.107958	4.31	2.094493E-02			20	
Chlordane-alpha	2.025168	11.14372	4.4152	2.010994E-02			20	
4,4'-DDE	2.101738	11.93625	4.4704	1.498953E-02			20	
Endosulfan I	1.963348	11.30136	4.5264	1.496321E-02			20	
Dieldrin	1.99499	9.813165	4.7082	1.721143E-02			20	
Endrin	1.728961	9.161618	4.881	1.621922E-02			20	
4,4'-DDD	1.513847	5.542139	4.9222	1.605192E-02			20	
Endosulfan II	2.475191	36.94645	5.0466	3.460363E-02	0.9999015		0.99	
4,4'-DDT	1.338827	14.3991	5.1238	5.247825E-02			20	
Endrin aldehyde	1.608864	19.10416	5.3452	3.242888E-02			20	
Methoxychlor	1.111629	11.08475	5.5728	2.334464E-02			20	
Endosulfan sulfate	1.550767	4.479625	5.6472	3.246292E-02			20	
Endrin ketone	1.787732	14.62856	5.8384	2.971909E-02			20	
Toxaphene	1.137976E+08	9.654769	5.6945	6.962493E-02			20	
2,4,5,6-TCMX	2.304971	10.79316	2.4188	3.701374E-02			20	
Decachlorobiphenyl	1.591934	22.22122	6.4818	5.318471E-02	0.9984882		0.99	

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8081B

Laboratory: ENCO Orlando

SDG: A407175-CTO-WE9A

Client: CH2M Hill, Inc. (CH031)

Project: CTO-WE9A, Camp Lejuene Site 82

Sequence: AA31896

Instrument: OSVGCECD2

Calibration: 1412079

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Performance Mix	AA31896-PEM1	2LS004.D	12/24/14 09:14
Calibration Check	AA31896-CCV1	2LS005.D	12/24/14 09:25
Blank	4L17002-BLK1	2LS008.D	12/24/14 10:01
LCS	4L17002-BS1	2LS009.D	12/24/14 10:12
IR82-SW01-14D	4L17002-MS1	2LS010.D	12/24/14 10:24
IR82-SW01-14D	4L17002-MSD1	2LS011.D	12/24/14 10:35
IR82-EB-121114	A407175-06	2LS014.D	12/24/14 11:10
Blank	4L22041-BLK1	2LS015.D	12/24/14 11:22
LCS	4L22041-BS1	2LS016.D	12/24/14 11:33
IR82-SD01-14D	4L22041-MS1	2LS017.D	12/24/14 11:45
IR82-SD01-14D	4L22041-MSD1	2LS018.D	12/24/14 11:57
IR82-SD01-14D	A407175-03	2LS019.D	12/24/14 12:08
IR82-SD01D-14D	A407175-04	2LS020.D	12/24/14 12:20
Low Cal Check	AA31896-LCV1	2LS021.D	12/24/14 12:31

CONTINUING CALIBRATION CHECK

EPA 8081B

Laboratory:	ENCO Orlando	SDG:	A407175-CTO-WE9A
Client:	CH2M Hill, Inc. (CH031)	Project:	CTO-WE9A, Camp Lejuene Site 82
Instrument ID:	OSVGCECD2	Calibration:	1412079
Lab File ID:	2LS005.D	Calibration Date:	12/18/14 13:54
Sequence:	AA31896	Injection Date:	12/24/14
Lab Sample ID:	AA31896-CCV1	Injection Time:	09:25

COMPOUND	TYPE	CONC. (ug/mL)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
alpha-BHC	A	0.100	0.12	2.563697	3.058883		19.3	20
gamma-BHC	A	0.100	0.10	2.187151	2.34655		7.3	20
beta-BHC	A	0.100	0.092	0.8753336	0.8311119		-5.1	20
delta-BHC	A	0.100	0.11	2.203223	2.420955		9.9	20
Heptachlor	A	0.100	0.10	2.22814	2.314156		3.9	20
Aldrin	A	0.100	0.12	2.462597	3.061245	J/UJ	24.3	20 *
Heptachlor epoxide	A	0.100	0.11	2.286511	2.502446		9.4	20
Chlordane-gamma	A	0.100	0.099	2.076299	2.076936		0.03	20
Chlordane-alpha	A	0.100	0.10	2.025168	2.160621		6.7	20
4,4'-DDE	A	0.100	0.14	2.101738	2.962713	J/UJ	41.0	20 *
Endosulfan I	A	0.100	0.11	1.963348	2.194027		11.7	20
Dieldrin	A	0.100	0.11	1.99499	2.15151		7.8	20
Endrin	A	0.100	0.11	1.728961	1.88544		9.1	20
4,4'-DDD	A	0.100	0.096	1.513847	1.482706		-2.1	20
Endosulfan II	L	0.100	0.092	2.475191	1.752489		-8.3	20
4,4'-DDT	A	0.100	0.11	1.338827	1.462797		9.3	20
Endrin aldehyde	A	0.100	0.091	1.608864	1.443563		-10.3	20
Methoxychlor	A	0.100	0.083	1.111629	0.9274506		-16.6	20
Endosulfan sulfate	A	0.100	0.091	1.550767	1.420955		-8.4	20
Endrin ketone	A	0.100	0.090	1.787732	1.588325		-11.2	20

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

Holding Times

Sampling Date: 12/11/14
Received Date: 12/12/14
Extraction Date: 12/22/14
Analysis Dates: 12/26/14

The samples in this SDG were validated according to the recommendations in the Method SW 846 8082 and the QC limits published in the project specific SAP.

Receipt paperwork was in order. Cooler temperatures were acceptable. A seven-day holding time was used for the water samples and a fourteen-day holding time was used for the soil samples. The analysis holding time of 40 days was used. Based on this, all extraction and analysis holding times were met.

Calibrations

8082 PCB: Initial calibrations were performed according to the method with a multi-point curve. Response factors were calculated. %RSDs were within QC limits. All ICV criteria were met (avg. %Ds were met). Continuing calibration standards were analyzed appropriately. All CCVs exhibited acceptable %Ds (avg. %Ds were met). Column resolution was acceptable. Standard retention times were stable throughout the analytical sequences. The correct analytical sequences were run. Raw data and calculations were verified.

Blank Summary

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Any compound detected in the sample, and the associated blank, must be qualified by reporting the result in the sample as non-detect at the LOD when the sample concentration is less than LOD.
- Sample weight, volume or dilution factor must be taken into consideration when applying the qualification criteria.
- Apply the same data validation guidelines to any associated rinse and field blanks and all associated samples.
- Qualification/Action codes:
  - No Action - The sample result is greater than the LOD and greater than five times (5X) the blank value.
  - U at LOD- The sample result is less than the LOD when the blank contamination level is less than the LOD.

Professional judgment is applied when blank concentrations are >LOD. Results may be flagged as U at the reported concentration or rejected. No contamination that resulted in qualification of the data was noted in the associated method or instrument blanks or the submitted field QC blanks.

Blank ID	Compound	Concentration	Action Level	Q Flag
no contamination was noted				

Surrogate Recoveries

Surrogate recoveries met criteria in all samples in this SDG. No qualifications were required.

Matrix Spike/Matrix Spike Duplicates

The MS/MSD samples analyzed for this SDG were acceptable for all recoveries and RPDs in the original runs. No qualifications were required.

Laboratory Control Samples

The LCS samples exhibited acceptable recoveries and RPDs. No qualifications were required.

Field Duplicate Sample Summary

There was a field duplicate pair in this SDG. Qualifications were required-see attached sheet.

Sample Result Verification

Reported sample results were verified. Raw data and calculations were verified.

Reviewer _____ **Date:** 3/1/15

FIELD DUPLICATE SAMPLE SUMMARY

Sample ID: IR82-SD01-14D
Duplicate Sample ID: IR82-SD01D-14D

Soil: RPD>30%

Compound	Sample Conc.	Dup. Sample Conc.	%RPD
PCB-1260	0.099	0.059	51
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!

COMMENTS: Qualify all results with RPD >30% as estimated (J/UJ)

This SDG contains metals analysis using SW-846 method 6010C & 7470A/7471A for metals analytes.

HOLDING TIMES

Sampling Date: 12/11/14 Cooler temps: acceptable
Received Date: 12/12
Prep. Dates: 12/29-12/30 (Hg); 1/6 & 1/8 (water ICP), 1/7 (soil ICP)
Analysis Dates: 12/31 (Hg); 1/8-1/9 (ICP)

All holding time requirements were met. (6 mos. for ICP, 28 days for Hg) Receipt documentation is in order.

CALIBRATIONS

All initial calibration criteria were met. Calibration verification criteria were met for all associated CCV standards for the ICP & Hg analyses. All necessary check standards were analyzed and met method criteria for all analytes. Interference check standards were analyzed and met criteria. Raw data was verified.

BLANK SUMMARY

Blank qualification guidelines:

- No action is taken if an analyte is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the criteria.
- Apply the same data validation guidelines to any associated calibration, preparation, and field QC blanks and all associated samples.
- Qualification/Action codes:
  - No Action - The sample result is greater than the LOD.
  - U - The sample result is greater than or equal to the MDL but less than or equal to the LOD, result is reported as non-detect at the LOD.
  - J+ The blank contaminant concentration was greater than the LOD and the sample result is greater than the LOD but less than 10X the blank contaminant concentration. The reported result is flagged as biased high J+.

Blank Contamination and Qualification Summaries

Blank ID	Analyte	Concentration	Action Level	Q Flag
IR82-EB-121114	copper	12.6 ug/L (2.06 mg/Kg)	10X action level	J+ up to action level

The concentration noted for the CCBs is the highest concentration in all the CCBs. However, when qualifying samples for CCB contamination, associated samples are those just prior to or just following a CCB. Therefore, not all analytes in all samples are flagged for noted CCB contamination. See worksheets for associations. Samples are qualified for field QC blank contamination based on QC tracking provided by CH2M HILL. Negative contamination in a prep blank or CCB, if less than the analyte LOD, is qualified based on professional judgment.

Associated samples and required qualifications are noted in the following table.

Sample ID	Analyte	Q Flag	Q Code
IR82-SD01-14D, IR82-SD01D-14D	copper	J+	EBL

MATRIX SPIKE/DUPLICATE SUMMARY

The MS/MSD pair of sample IR82-SD01-14D exhibited acceptable recoveries and RPDs for all analytes with the exception of antimony, aluminum and iron in both spike aliquots. Iron and aluminum were out due to the abundance of the target analytes in the native sample. Antimony exhibited recoveries below the QC limit (52/55). The native sample and the field duplicate were qualified as J- because of these recoveries. The RPD for iron was slightly high but no qualifications were required.

All LCS samples were acceptable for all analytes. No qualifications were required.

SERIAL DILUTIONS

Serial dilution analyses were acceptable.

FIELD DUPLICATE SAMPLE SUMMARY

Note: Field duplicate results are assessed only if both results are above the LOQ.

The field duplicate pair analyzed in this SDG exhibited acceptable RPDs for all analytes that were above the LOQ. Qualifications were required. See the following page for details. .

SAMPLE RESULT VERIFICATION

Specific Comments:

All sample results were reported within the calibration/linear range of the instruments. Detection limits were acceptable. Raw data was verified. Calculation verification was performed. Results were adjusted for moisture content for reported results, DLs, LODs, or LOQs. Bench sheets were provided. All positive results reported at concentrations between the DL and the LOQ were qualified as estimated, J by the laboratory. Sample IR82-EB-121114 was reanalyzed for one analyte due to contamination in the associated method blank. The RE sample was excluded since it was not necessary. The reported results were essentially the same in both the original and RE analyses.

Reviewer A Cleveland **Date:** 3-3-15

FIELD DUPLICATE SAMPLE SUMMARY

Sample ID: IR82-SD01-14D
Duplicate Sample ID: IR82-SD01D-14D

COMMENTS:
6010A/7471A

Analyte		Sample Conc.	Dup. Sample Conc.	%RPD
aluminum		6710	5900	13
antimony	*	1.93	1.16	50
arsenic	*	2.52	2.3	9
barium		15.2	13.3	13
beryllium		0.277	0.231	18
cadmium	*	0.146	0.0842	54
calcium		2220	2180	2
chromium		7.73	6.7	14
cobalt	*	1.13	1.02	10
copper		12.1	9.46	24
iron		3720	4210	12
lead		48.1	40.5	17
magnesium		1320	1290	2
manganese		12.9	18.7	37 - <50%
nickel		2.69	2.3	16
potassium		425	377	12
sodium		1630	1440	12
vanadium		12	10.6	12
zinc		42.6	37.4	13

COMMENTS: * less than LOQ - no action required.
No qualifications were required.

CH2M HILL LEJEUNE CTO-WE9A

METALS CALCULATIONS

SDG A407175-CTO-WE9A

SOIL

ICP - AES	
SAMPLE ID	IR82-SD01-14D
ANALYTE	barium
Lab Value CONCENTRATION (mg/Kg)	15.2
AMOUNT FROM RAW DATA (ug/L)	0.093
SAMPLE SIZE (g)	0.79
FINAL VOLUME (ml)	50
DILUTION FACTOR	1
DRYNESS FACTOR	0.388
CONVERSION FACTOR (ml to L)	1
CALCULATED CONCENTRATION (mg/Kg)	15.170

WATER

CVAA	
SAMPLE ID	IR82-SD01-14D
ANALYTE	mercury
Lab Value CONCENTRATION (ug/L)	0.162
AMOUNT FROM RAW DATA (ug/L)	0.61
SAMPLE SIZE (g)	0.35
FINAL VOLUME (ml)	36
DILUTION FACTOR	1
DRYNESS FACTOR	0.3883
CONVERSION FACTOR	0.001
CALCULATED CONCENTRATION (ug/L)	0.162

CH2MHILL Lejeune CTO-WE09

SDG A407175-CTO-WE9A

Reporting Limit Calcs

ICP - AES	
SAMPLE ID	IR82-SD01D-14D
ANALYTE	aluminum
Form 1 LOD or LOQ Value (mg/Kg)	47.4
Analyte LOD or LOQ	18.2
SAMPLE SIZE (g)	0.91
DILUTION FACTOR	1
DRYNESS FACTOR	0.422
Corrected LOD or LOQ (mg/Kg)	47.393

CVAA	
SAMPLE ID	IR82-SD01-14D
ANALYTE	mercury
Form 1 LOD or LOQ Value (mg/Kg)	0.0464
Analyte LOD or LOQ	0.021
SAMPLE SIZE factor	1.167
DILUTION FACTOR	1
DRYNESS FACTOR	0.3883
Corrected LOD or LOQ (mg/Kg)	0.046

METHOD BLANK DATA SHEET
EPA 6010C

Laboratory:	ENCO Jacksonville	SDG:	A407175-CTO-WE9A
Client:	ENCO Orlando	Project:	CTO-WE9A, Camp Lejuene Site 82

Matrix:	Water	Laboratory ID:	5A06006-BLK1	File ID:	010815aRP1-024
Prepared:	01/06/15 12:15	Preparation:	EPA 3005A	Initial/Final:	50 mL / 50 mL
Analyzed:	01/08/15 11:37	Instrument:	JMICP2		
Batch:	5A06006	Sequence:	BA16308	Calibration:	1501003

CAS NO.	COMPOUND	CONC. (ug/L)	Q
7429-90-5	Aluminum	<200	U
7440-36-0	Antimony	<20.0	U
7440-38-2	Arsenic	<20.0	U
7440-39-3	Barium	<5.00	U
7440-41-7	Beryllium	<0.500	U
7440-43-9	Cadmium	<2.00	U
7440-70-2	Calcium	<250	U
7440-47-3	Chromium	<5.00	U
7440-48-4	Cobalt	<5.00	U
7440-50-8	Copper	<5.00	U
7439-89-6	Iron	<50.0	U
7439-92-1	Lead	<20.0	U
7439-95-4	Magnesium	<250	U
7439-96-5	Manganese	0.189	J
7440-02-0	Nickel	<5.00	U
7440-09-7	Potassium	<500	U
7782-49-2	Selenium	<20.0	U
7440-22-4	Silver	<5.00	U
7440-23-5	Sodium	<250	U
7440-28-0	Thallium	<40.0	U
7440-62-2	Vanadium	<10.0	U
7440-66-6	Zinc	31.1	

NQ

METHOD BLANK DATA SHEET
EPA 6010C

Laboratory:	ENCO Jacksonville			SDG:	A407175-CTO-WE9A
Client:	ENCO Orlando			Project:	CTO-WE9A, Camp Lejuene Site 82
Matrix:	Soil	Laboratory ID:	5A07003-BLK1	File ID:	010815aRP1-028
Prepared:	01/07/15 09:10	Preparation:	EPA 3050B	Initial/Final:	0.55 g / 50 mL
Analyzed:	01/08/15 11:47	Instrument:	JMICP2		
Batch:	5A07003	Sequence:	BA16308	Calibration:	1501003

CAS NO.	COMPOUND	CONC. (mg/kg wet)	Q
7429-90-5	Aluminum	<18.2	U
7440-36-0	Antimony	<1.82	U
7440-38-2	Arsenic	<1.82	U
7440-39-3	Barium	<0.455	U
7440-41-7	Beryllium	<0.0455	U
7440-43-9	Cadmium	<0.182	U
7440-70-2	Calcium	<22.7	U
7440-47-3	Chromium	<0.455	U
7440-48-4	Cobalt	0.136	J
7440-50-8	Copper	<0.455	U
7439-89-6	Iron	0.503	J
7439-92-1	Lead	<1.82	U
7439-95-4	Magnesium	<22.7	U
7439-96-5	Manganese	<0.909	U
7440-02-0	Nickel	<0.455	U
7440-09-7	Potassium	<45.5	U
7782-49-2	Selenium	<1.82	U
7440-22-4	Silver	<0.455	U
7440-23-5	Sodium	<22.7	U
7440-28-0	Thallium	<3.64	U
7440-62-2	Vanadium	<0.909	U
7440-66-6	Zinc	<1.82	U

✓ NQ

✓ flag as noted in report.

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 6010C

A407175-03 (IR82-SD01-14D)

Laboratory:	ENCO Jacksonville	SDG:	A407175-CTO-WE9A
Client:	ENCO Orlando	Project:	CTO-WE9A, Camp Lejuene Site 82
Matrix:	Soil		
Batch:	5A07003	Laboratory ID:	5A07003-MS1
Preparation:	EPA 3050B	Initial/Final:	0.86 g / 50 mL

Source Sample Name: A407175-03 (IR82-SD01-14D)

COMPOUND	SPIKE ADDED (mg/kg dry)	SAMPLE CONCENTRATION (mg/kg dry)	MS CONCENTRATION (mg/kg dry)	MS % REC. #	QC LIMITS REC.	
Aluminum	749	6710	10100	454 *	74 - 119	NQ
Antimony	74.9	1.93	40.8	52 *	79 - 114	J-/UJ
Arsenic	74.9	2.52	76.0	98	82 - 111	
Barium	74.9	15.2	92.0	103	83 - 113	
Beryllium	7.49	0.277	7.71	99	83 - 113	
Cadmium	7.49	0.146	7.42	97	82 - 113	
Calcium	749	2220	2990	104	81 - 116	
Chromium	74.9	7.73	84.1	102	85 - 113	
Cobalt	74.9	1.13	75.9	100	85 - 112	
Copper	74.9	12.1	86.1	99	81 - 117	
Iron	375	3720	5950	597 *	81 - 118	NQ
Lead	74.9	48.1	121	97	81 - 112	
Magnesium	749	1320	2150	110	78 - 115	
Manganese	74.9	12.9	96.0	111	84 - 114	
Nickel	74.9	2.69	76.7	99	83 - 113	
Potassium	3750	425	4150	99	81 - 116	
Selenium	74.9	ND	69.7	93	78 - 111	
Silver	15.0	ND	14.5	97	82 - 112	
Sodium	3750	1630	5310	98	83 - 118	
Thallium	74.9	ND	72.9	97	83 - 111	
Vanadium	74.9	12.0	89.7	104	82 - 114	
Zinc	74.9	42.6	124	108	82 - 113	

COMPOUND	SPIKE ADDED (mg/kg dry)	MSD CONCENTRATION (mg/kg dry)	MSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.	
Aluminum	767	8240	200 *	20	20	74 - 119	NQ
Antimony	76.7	43.9	55 *	8	20	79 - 114	J-/UJ
Arsenic	76.7	75.1	95	1	20	82 - 111	
Barium	76.7	89.3	97	3	20	83 - 113	
Beryllium	7.67	7.71	97	0.03	20	83 - 113	
Cadmium	7.67	7.48	96	0.9	20	82 - 113	

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 6010C

A407175-03 (IR82-SD01-14D)

Laboratory:	ENCO Jacksonville	SDG:	A407175-CTO-WE9A
Client:	ENCO Orlando	Project:	CTO-WE9A, Camp Lejuene Site 82
Matrix:	Soil		
Batch:	5A07003	Laboratory ID:	5A07003-MSD1
Preparation:	EPA 3050B	Initial/Final:	0.84 g / 50 mL

Source Sample Name: A407175-03 (IR82-SD01-14D)

COMPOUND	SPIKE ADDED (mg/kg dry)	MSD CONCENTRATION (mg/kg dry)	MSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Calcium	767	2900	89	3	20	81 - 116
Chromium	76.7	82.5	98	2	20	85 - 113
Cobalt	76.7	75.9	98	0.1	20	85 - 112
Copper	76.7	85.8	96	0.3	20	81 - 117
Iron	384	4460	194 *	29 *	20	81 - 118
Lead	76.7	116	89	4	20	81 - 112
Magnesium	767	2060	96	4	20	78 - 115
Manganese	76.7	89.8	100	7	20	84 - 114
Nickel	76.7	76.1	96	0.8	20	83 - 113
Potassium	3840	4130	97	0.6	20	81 - 116
Selenium	76.7	70.5	92	1	20	78 - 111
Silver	15.3	14.7	96	1	20	82 - 112
Sodium	3840	5330	96	0.5	20	83 - 118
Thallium	76.7	73.9	96	1	20	83 - 111
Vanadium	76.7	87.7	99	2	20	82 - 114
Zinc	76.7	119	99	4	20	82 - 113

NQ

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits