From: Appel, Patrick
To: Coltrain, Katrina; Jefferson, Matthew
Subject: RE: Data from the Lead Sweetening Area
Attachments: SpreadSheet WLC12-01--1812851-Wilcox Oil Company Superfund Site 06-14-20....xls
WLC12-01--1812851-Wilcox Oil Company Superfund Site 06-14-2017 1.pdf

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Matt – the totals data just arrived. Lead is 758 mg/kg but much of that doesn't appear to be leachable based on the TCLP analysis.
Let me know if you have any questions.
Pat

From: Coltrain, Katrina [mailto:coltrain.katrina@epa.gov]
Sent: Friday, June 30, 2017 3:41 PM
To: Jefferson, Matthew <jefferson.matthew@epa.gov>
Cc: Appel, Patrick <pappel@eaest.com>
Subject: Data from the Lead Sweetening Area

Matt, please find attached data from the sample collected from the lead sweetening area.
WLC08 is the disposal/RCRA data.
When the total suite analyses for metals and organics is received, Pat will send them over to you. Still waiting for these from the lab.

Katrina Higgins-Coltrain
Remedial Project Manager
US EPA Region 6
LA/OK/NM Section (6SF-RL)
1445 Ross Avenue
Dallas, Texas 75202
214-665-8143

eurofins | Lancaster Laboratories Environmental

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Analysis Report

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

EA Engineering
405 State Highway 121 Bypass
Building C, Suite 100
Lewisville TX 75067-8192

Report Date: July 06, 2017

Project: Wilcox Oil Company Superfund Site

Submittal Date: 06/14/2017
Group Number: 1812851
SDG: WLC12
PO Number: 15838
State of Sample Origin: OK

Client Sample Description	Lancaster Labs #	Collected
WPA-WC-01 Soil	9046219	04/25/2017 16:30

METHODOLOGY

The specified methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices.
Our current scopes of accreditation can be viewed at
http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/
To request copies of prior scopes of accreditation, contact your project manager.

Electronic Copy To EA Engineering Attn: Pamela Moss

Respectfully Submitted,

Angela M. Miller
Specialist

(717) 556-7260

** = This limit was used in the evaluation of the final result

EA Engineering
Project: Wilcox Oil Company Superfund Site
SDG: WLC12

Report Date: 7/6/2017 12:21
Submit Date: 6/14/2017 9:30

Analysis Name	Units	9046219 WPA-WC-01 Dry Result	Dry MDL**	Dry LOQ
Acetone	ug/kg	N.D.	7	21
Benzene	ug/kg	N.D.	0.5	5
Bromodichloromethane	ug/kg	N.D.	1	5
Bromoform	ug/kg	N.D.	1	5
Bromomethane	ug/kg	N.D.	2	5
2-Butanone	ug/kg	N.D.	4	10
Carbon Disulfide	ug/kg	N.D.	1	5
Carbon Tetrachloride	ug/kg	N.D.	1	5
Chlorobenzene	ug/kg	N.D.	1	5
Chloroethane	ug/kg	N.D.	2	5
Chloroform	ug/kg	N.D.	1	5
Chloromethane	ug/kg	N.D.	2	5
Dibromochloromethane	ug/kg	N.D.	1	5
1,1-Dichloroethane	ug/kg	N.D.	1	5
1,2-Dichloroethane	ug/kg	N.D.	1	5
1,1-Dichloroethene	ug/kg	N.D.	1	5
cis-1,2-Dichloroethene	ug/kg	N.D.	1	5
trans-1,2-Dichloroethene	ug/kg	N.D.	1	5
1,2-Dichloropropane	ug/kg	N.D.	1	5
cis-1,3-Dichloropropene	ug/kg	N.D.	1	5
trans-1,3-Dichloropropene	ug/kg	N.D.	1	5
Ethylbenzene	ug/kg	N.D.	1	5
2-Hexanone	ug/kg	N.D.	3	10
4-Methyl-2-pentanone	ug/kg	N.D.	3	10
Methylene Chloride	ug/kg	N.D.	2	5
Styrene	ug/kg	N.D.	1	5
1,1,2,2-Tetrachloroethane	ug/kg	N.D.	1	5
Tetrachloroethene	ug/kg	N.D.	1	5
Toluene	ug/kg	N.D.	1	5
1,1,1-Trichloroethane	ug/kg	N.D.	1	5
1,1,2-Trichloroethane	ug/kg	N.D.	1	5
Trichloroethene	ug/kg	N.D.	1	5
Vinyl Chloride	ug/kg	N.D.	1	5
Xylene (Total)	ug/kg	N.D.	1	5
Acenaphthene	ug/kg	N.D.	4	19
Acenaphthylene	ug/kg	N.D.	4	19
Anthracene	ug/kg	N.D.	4	19
Benzo(a)anthracene	ug/kg	N.D.	4	19
Benzo(a)pyrene	ug/kg	N.D.	4	19
Benzo(b)fluoranthene	ug/kg	N.D.	4	19
Benzo(g,h,i)perylene	ug/kg	10 J	4	19

EA Engineering
Project: Wilcox Oil Company Superfund Site
SDG: WLC12

Report Date: 7/6/2017 12:21
Submit Date: 6/14/2017 9:30

Analysis Name	Units	9046219 WPA-WC-01		
		Dry Result	Dry MDL**	Dry LOQ
Benzo(k)fluoranthene	ug/kg	N.D.	4	19
4-Bromophenyl-phenylether	ug/kg	N.D.	18	37
Butylbenzylphthalate	ug/kg	N.D.	73	180
Di-n-butylphthalate	ug/kg	N.D.	73	180
Carbazole	ug/kg	N.D.	18	37
4-Chloro-3-methylphenol	ug/kg	N.D.	18	37
4-Chloroaniline	ug/kg	N.D.	37	73
bis(2-Chloroethoxy)methane	ug/kg	N.D.	18	37
bis(2-Chloroethyl)ether	ug/kg	N.D.	18	37
2-Chloronaphthalene	ug/kg	N.D.	7	36
2-Chlorophenol	ug/kg	N.D.	18	37
4-Chlorophenyl-phenylether	ug/kg	N.D.	18	37
2,2'-oxybis(1-Chloropropane)	ug/kg	N.D.	18	37
Chrysene	ug/kg	N.D.	4	19
Dibenz(a,h)anthracene	ug/kg	N.D.	4	19
Dibenzofuran	ug/kg	N.D.	18	37
1,2-Dichlorobenzene	ug/kg	N.D.	18	37
1,3-Dichlorobenzene	ug/kg	N.D.	18	37
1,4-Dichlorobenzene	ug/kg	N.D.	18	37
3,3'-Dichlorobenzidine	ug/kg	N.D.	110	370
2,4-Dichlorophenol	ug/kg	N.D.	18	37
Diethylphthalate	ug/kg	N.D.	73	180
2,4-Dimethylphenol	ug/kg	230	18	37
Dimethylphthalate	ug/kg	N.D.	73	180
4,6-Dinitro-2-methylphenol	ug/kg	N.D.	180	550
2,4-Dinitrophenol	ug/kg	N.D.	330	1,100
2,4-Dinitrotoluene	ug/kg	N.D.	73	180
2,6-Dinitrotoluene	ug/kg	N.D.	18	37
bis(2-Ethylhexyl)phthalate	ug/kg	N.D.	73	190
Fluoranthene	ug/kg	N.D.	4	19
Fluorene	ug/kg	N.D.	4	19
Hexachlorobenzene	ug/kg	N.D.	4	19
Hexachlorobutadiene	ug/kg	N.D.	18	37
Hexachlorocyclopentadiene	ug/kg	N.D.	180	550
Hexachloroethane	ug/kg	N.D.	37	180
Indeno(1,2,3-cd)pyrene	ug/kg	N.D.	4	19
Isophorone	ug/kg	N.D.	18	37
2-Methylnaphthalene	ug/kg	N.D.	4	19
2-Methylphenol	ug/kg	48	18	37
4-Methylphenol	ug/kg	57	18	37
Naphthalene	ug/kg	N.D.	4	19
2-Nitroaniline	ug/kg	N.D.	18	37
3-Nitroaniline	ug/kg	N.D.	73	180

EA Engineering
Project: Wilcox Oil Company Superfund Site
SDG: WLC12

Report Date: 7/6/2017 12:21
Submit Date: 6/14/2017 9:30

Analysis Name	Units	9046219 WPA-WC-01 Dry Result	Dry MDL**	Dry LOQ
4-Nitroaniline	ug/kg	N.D.	73	180
Nitrobenzene	ug/kg	N.D.	18	37
2-Nitrophenol	ug/kg	N.D.	18	37
4-Nitrophenol	ug/kg	N.D.	180	550
N-Nitroso-di-n-propylamine	ug/kg	N.D.	18	37
N-Nitrosodiphenylamine	ug/kg	N.D.	18	37
Di-n-octylphthalate	ug/kg	N.D.	73	180
Pentachlorophenol	ug/kg	N.D.	37	190
Phenanthrene	ug/kg	N.D.	4	19
Phenol	ug/kg	N.D.	18	37
Pyrene	ug/kg	6 J	4	19
1,2,4-Trichlorobenzene	ug/kg	N.D.	18	37
2,4,5-Trichlorophenol	ug/kg	N.D.	18	37
2,4,6-Trichlorophenol	ug/kg	N.D.	18	37
Arsenic	mg/kg	2.05 J	0.794	3.27
Barium	mg/kg	92.5	0.0270	0.818
Cadmium	mg/kg	N.D.	0.0401	0.818
Chromium	mg/kg	19.5	0.115	2.46
Lead	mg/kg	758	0.450	2.46
Selenium	mg/kg	N.D.	0.737	3.27
Silver	mg/kg	N.D.	0.123	0.818
Mercury	mg/kg	N.D.	0.0109	0.109
Moisture	%	9.5	0.50	0.50

CAT No.	Analysis Name	Method	Trial ID	Batch	Analysis Date/Time	Analyst	Dilution
9046219	**WPA-WC-01 Soil**						
10237	VOCs- Solid by 8260B	SW-846 8260B	1	B171741AA	6/23/17 1821	Linda C Pape	0.93
00374	GC/MS - Bulk Soil Prep	SW-846 5035A Modified	1	201716645809	6/14/17 2303	Lois E Hiltz	n.a.
00374	GC/MS - Bulk Soil Prep	SW-846 5035A Modified	2	201716645809	6/14/17 2303	Lois E Hiltz	n.a.
06646	GC/MS HL Bulk Sample Prep	SW-846 5035A Modified	1	201716645809	6/14/17 2152	Lois E Hiltz	n.a.
10726	SVOA 8270D (microwave)	SW-846 8270D	1	17165SLP026	6/19/17 1214	Linda M Hartenstine	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	17165SLP026	6/15/17 0800	Kayla A Yuditsky	1
06935	Arsenic	SW-846 6010C	1	171661063704	6/19/17 0427	Jonathan Allen	1
06946	Barium	SW-846 6010C	1	171661063704	6/19/17 0427	Jonathan Allen	1
06949	Cadmium	SW-846 6010C	1	171661063704	6/19/17 0427	Jonathan Allen	1
06951	Chromium	SW-846 6010C	1	171661063704	6/19/17 0427	Jonathan Allen	1
06955	Lead	SW-846 6010C	1	171661063704	6/19/17 0427	Jonathan Allen	1
06936	Selenium	SW-846 6010C	1	171661063704	6/19/17 0427	Jonathan Allen	1
06966	Silver	SW-846 6010C	1	171661063704	6/19/17 0427	Jonathan Allen	1
00159	Mercury	SW-846 7471B	1	171661063803	6/20/17 0821	Damary Valentin	1
10637	ICP/ICPMS-SW, 3050B - U4	SW-846 3050B	1	171661063704	6/16/17 1745	Barbara A Kane	1
10638	Hg - SW, 7471B - U4	SW-846 7471B	1	171661063803	6/19/17 1755	JoElla L Rice	1
00111	Moisture	SM 2540 G-1997	1	17173820017B	6/23/17 0126	Scott W Freisher	1

Client Name: EA Engineering Group Number: 1812851

Laboratory Compliance Quality Control

** = This limit was used in the evaluation of the final result for the blank

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: B171741AA		Sample number(s): 9046219							
Acetone	N.D.	7.	20	ug/kg	86	85	32-144	1	30
Benzene	N.D.	0.5	5	ug/kg	90	102	80-120	13	30
Bromodichloromethane	N.D.	1.	5	ug/kg	82	92	75-120	12	30
Bromoform	N.D.	1.	5	ug/kg	76	79	61-122	4	30
Bromomethane	N.D.	2.	5	ug/kg	92	102	39-155	10	30
2-Butanone	N.D.	4.	10	ug/kg	72	79	41-134	10	30
Carbon Disulfide	N.D.	1.	5	ug/kg	85	96	60-128	12	30
Carbon Tetrachloride	N.D.	1.	5	ug/kg	86	99	69-130	14	30
Chlorobenzene	N.D.	1.	5	ug/kg	87	100	80-120	14	30
Chloroethane	N.D.	2.	5	ug/kg	91	102	50-137	11	30
Chloroform	N.D.	1.	5	ug/kg	89	100	80-120	12	30
Chloromethane	N.D.	2.	5	ug/kg	86	96	56-120	12	30
Dibromochloromethane	N.D.	1.	5	ug/kg	81	91	71-120	11	30
1,1-Dichloroethane	N.D.	1.	5	ug/kg	88	100	77-120	13	30
1,2-Dichloroethane	N.D.	1.	5	ug/kg	91	97	78-127	7	30
1,1-Dichloroethene	N.D.	1.	5	ug/kg	101	118	73-129	16	30
cis-1,2-Dichloroethene	N.D.	1.	5	ug/kg	91	102	80-120	11	30
trans-1,2-Dichloroethene	N.D.	1.	5	ug/kg	93	106	80-125	13	30
1,2-Dichloropropane	N.D.	1.	5	ug/kg	89	101	76-120	13	30
cis-1,3-Dichloropropene	N.D.	1.	5	ug/kg	85	95	74-120	11	30
trans-1,3-Dichloropropene	N.D.	1.	5	ug/kg	82	91	70-120	10	30
Ethylbenzene	N.D.	1.	5	ug/kg	88	102	80-120	15	30
2-Hexanone	N.D.	3.	10	ug/kg	88	84	45-138	5	30
4-Methyl-2-pentanone	N.D.	3.	10	ug/kg	91	83	53-134	9	30
Methylene Chloride	N.D.	2.	5	ug/kg	98	110	76-122	11	30
Styrene	N.D.	1.	5	ug/kg	82	94	76-120	13	30
1,1,2,2-Tetrachloroethane	N.D.	1.	5	ug/kg	94	97	67-121	3	30
Tetrachloroethene	N.D.	1.	5	ug/kg	81	94	74-126	14	30
Toluene	N.D.	1.	5	ug/kg	88	100	80-120	13	30
1,1,1-Trichloroethane	N.D.	1.	5	ug/kg	76	88	66-128	14	30
1,1,2-Trichloroethane	N.D.	1.	5	ug/kg	92	100	80-120	9	30
Trichloroethene	N.D.	1.	5	ug/kg	88	100	80-120	13	30
Vinyl Chloride	N.D.	1.	5	ug/kg	90	101	59-120	11	30
Xylene (Total)	N.D.	1.	5	ug/kg	86	101	80-120	16	30
Batch number: 17165SLP026		Sample number(s): 9046219							
Acenaphthene	N.D.	3.	17	ug/kg	100		83-116		
Acenaphthylene	N.D.	3.	17	ug/kg	95		83-119		
Anthracene	N.D.	3.	17	ug/kg	98		82-118		
Benzo(a)anthracene	N.D.	3.	17	ug/kg	93		76-119		
Benzo(a)pyrene	N.D.	3.	17	ug/kg	94		78-117		
Benzo(b)fluoranthene	N.D.	3.	17	ug/kg	110		79-121		
Benzo(g,h,i)perylene	N.D.	3.	17	ug/kg	95		71-123		
Benzo(k)fluoranthene	N.D.	3.	17	ug/kg	98		71-123		
4-Bromophenyl-phenylether	N.D.	17.	33	ug/kg	110		78-122		
Butylbenzylphthalate	N.D.	67.	170	ug/kg	98		80-118		
Di-n-butylphthalate	N.D.	67.	170	ug/kg	104		84-120		
Carbazole	N.D.	17.	33	ug/kg	95		80-120		
4-Chloro-3-methylphenol	N.D.	17.	33	ug/kg	96		78-124		
4-Chloroaniline	N.D.	33.	67	ug/kg	36		10-110		
bis(2-Chloroethoxy)methane	N.D.	17.	33	ug/kg	92		77-116		
bis(2-Chloroethyl)ether	N.D.	17.	33	ug/kg	90		68-115		
2-Chloronaphthalene	N.D.	7.	33	ug/kg	116		57-148		
2-Chlorophenol	N.D.	17.	33	ug/kg	105		80-121		
4-Chlorophenyl-phenylether	N.D.	17.	33	ug/kg	100		73-119		
2,2'-oxybis(1-Chloropropane)	N.D.	17.	33	ug/kg	77		60-123		
Chrysene	N.D.	3.	17	ug/kg	92		72-121		
Dibenz(a,h)anthracene	N.D.	3.	17	ug/kg	100		72-129		
Dibenzofuran	N.D.	17.	33	ug/kg	101		79-114		
1,2-Dichlorobenzene	N.D.	17.	33	ug/kg	97		77-113		
1,3-Dichlorobenzene	N.D.	17.	33	ug/kg	90		79-113		
1,4-Dichlorobenzene	N.D.	17.	33	ug/kg	94		79-112		
3,3'-Dichlorobenzidine	N.D.	100.	330	ug/kg	78		12-125		
2,4-Dichlorophenol	N.D.	17.	33	ug/kg	108		86-125		
Diethylphthalate	N.D.	67.	170	ug/kg	97		81-118		
2,4-Dimethylphenol	N.D.	17.	33	ug/kg	79		57-109		
Dimethylphthalate	N.D.	67.	170	ug/kg	99		82-113		
4,6-Dinitro-2-methylphenol	N.D.	170.	500	ug/kg	104		53-130		
2,4-Dinitrophenol	N.D.	300.	1,000	ug/kg	90		27-136		
2,4-Dinitrotoluene	N.D.	67.	170	ug/kg	103		81-122		
2,6-Dinitrotoluene	N.D.	17.	33	ug/kg	106		80-120		
bis(2-Ethylhexyl)phthalate	N.D.	67.	170	ug/kg	98		81-121		
Fluoranthene	N.D.	3.	17	ug/kg	93		72-120		
Fluorene	N.D.	3.	17	ug/kg	98		75-118		
Hexachlorobenzene	N.D.	3.	17	ug/kg	102		73-120		
Hexachlorobutadiene	N.D.	17.	33	ug/kg	96		72-120		
Hexachlorocyclopentadiene	N.D.	170.	500	ug/kg	73		57-142		
Hexachloroethane	N.D.	33.	170	ug/kg	86		69-116		
Indeno(1,2,3-cd)pyrene	N.D.	3.	17	ug/kg	97		69-125		
Isophorone	N.D.	17.	33	ug/kg	85		70-118		
2-Methylnaphthalene	N.D.	3.	17	ug/kg	98		77-116		
2-Methylphenol	N.D.	17.	33	ug/kg	101		74-128		
4-Methylphenol	N.D.	17.	33	ug/kg	96		72-120		
Naphthalene	N.D.	3.	17	ug/kg	94		75-113		
2-Nitroaniline	N.D.	17.	33	ug/kg	106		84-126		
3-Nitroaniline	N.D.	67.	170	ug/kg	92		60-125		
4-Nitroaniline	N.D.	67.	170	ug/kg	87		50-112		
Nitrobenzene	N.D.	17.	33	ug/kg	87		70-122		
2-Nitrophenol	N.D.	17.	33	ug/kg	106		83-120		
4-Nitrophenol	N.D.	170.	500	ug/kg	65		52-133		
N-Nitroso-di-n-propylamine	N.D.	17.	33	ug/kg	88		67-121		
N-Nitrosodiphenylamine	N.D.	17.	33	ug/kg	103		83-118		
Di-n-octylphthalate	N.D.	67.	170	ug/kg	117		80-140		
Pentachlorophenol	N.D.	33.	170	ug/kg	49*		56-131		
Phenanthrene	N.D.	3.	17	ug/kg	95		74-114		
Phenol	N.D.	17.	33	ug/kg	95		73-122		
Pyrene	N.D.	3.	17	ug/kg	92		74-112		
1,2,4-Trichlorobenzene	N.D.	17.	33	ug/kg	102		79-114		
2,4,5-Trichlorophenol	N.D.	17.	33	ug/kg	104		86-123		
2,4,6-Trichlorophenol	N.D.	17.	33	ug/kg	104		81-123		
Batch number: 171661063704		Sample number(s): 9046219							
Arsenic	N.D.	0.970	4.00	mg/kg	98		80-120		
Barium	N.D.	0.0330	1.00	mg/kg	98		80-120		
Cadmium	N.D.	0.0490	1.00	mg/kg	101		80-120		
Chromium	N.D.	0.140	3.00	mg/kg	103		80-120		
Lead	N.D.	0.550	3.00	mg/kg	102		80-120		
Selenium	N.D.	0.900	4.00	mg/kg	101		80-120		
Silver	N.D.	0.150	1.00	mg/kg	91		80-120		
Batch number: 171661063803		Sample number(s): 9046219							
Mercury	N.D.	0.0100	0.100	mg/kg	86		80-120		
Batch number: 17173820017B		Sample number(s): 9046219							
Moisture					100		99-101		

* - Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	DUP RPD Max
Batch number: B171741AA		Sample number(s): 9046219 UNSPK: P060994							
Acetone	109	103	32-144	2	30				
Benzene	112	112	80-120	4	30				
Bromodichloromethane	103	103	75-120	4	30				
Bromoform	94	90	61-122	0	30				
Bromomethane	115	113	39-155	2	30				
2-Butanone	122	112	41-134	5	30				
Carbon Disulfide	114	119	60-128	8	30				
Carbon Tetrachloride	109	112	69-130	7	30				
Chlorobenzene	110	114	80-120	7	30				
Chloroethane	112	108	50-137	0	30				
Chloroform	110	113	80-120	6	30				
Chloromethane	113	110	56-120	1	30				
Dibromochloromethane	102	101	71-120	2	30				
1,1-Dichloroethane	110	112	77-120	6	30				
1,2-Dichloroethane	111	111	78-127	4	30				
1,1-Dichloroethene	127	133*	73-129	8	30				
cis-1,2-Dichloroethene	110	115	80-120	8	30				
trans-1,2-Dichloroethene	117	121	80-125	8	30				
1,2-Dichloropropane	111	113	76-120	6	30				
cis-1,3-Dichloropropene	106	106	74-120	4	30				
trans-1,3-Dichloropropene	101	100	70-120	3	30				
Ethylbenzene	112	116	80-120	8	30				
2-Hexanone	116	111	45-138	1	30				
4-Methyl-2-pentanone	117	112	53-134	1	30				
Methylene Chloride	119	122	76-122	6	30				
Styrene	104	106	76-120	6	30				
1,1,2,2-Tetrachloroethane	117	112	67-121	0	30				
Tetrachloroethene	106	108	74-126	5	30				
Toluene	113	113	80-120	4	30				
1,1,1-Trichloroethane	97	100	66-128	6	30				
1,1,2-Trichloroethane	114	113	80-120	4	30				
Trichloroethene	110	114	80-120	7	30				
Vinyl Chloride	120	115	59-120	0	30				
Xylene (Total)	110	116	80-120	9	30				
Batch number: 17165SLP026		Sample number(s): 9046219 UNSPK: P65LPUS							
Acenaphthene	102	93	83-116	8	30				
Acenaphthylene	90	11*	83-119	157*	30				
Anthracene	98	89	82-118	8	30				
Benzo(a)anthracene	104	91	76-119	13	30				
Benzo(a)pyrene	96	91	78-117	4	30				
Benzo(b)fluoranthene	101	91	79-121	10	30				
Benzo(g,h,i)perylene	99	86	71-123	13	30				
Benzo(k)fluoranthene	114	97	71-123	15	30				
4-Bromophenyl-phenylether	106	100	78-122	5	30				
Butylbenzylphthalate	102	94	80-118	8	30				
Di-n-butylphthalate	150*	106	84-120	33*	30				
Carbazole	86	78*	80-120	9	30				
4-Chloro-3-methylphenol	93	71*	78-124	27	30				
4-Chloroaniline	0*	0*	10-110	0	30				
bis(2-Chloroethoxy)methane	93	82	77-116	12	30				
bis(2-Chloroethyl)ether	104	99	68-115	4	30				
2-Chloronaphthalene	98	103	57-148	6	30				
2-Chlorophenol	103	83	80-121	21	30				
4-Chlorophenyl-phenylether	99	94	73-119	4	30				
2,2'-oxybis(1-Chloropropane)	79	74	60-123	6	30				
Chrysene	94	85	72-121	9	30				
Dibenz(a,h)anthracene	104	96	72-129	7	30				
Dibenzofuran	99	92	79-114	7	30				
1,2-Dichlorobenzene	103	95	77-113	7	30				
1,3-Dichlorobenzene	98	90	79-113	8	30				
1,4-Dichlorobenzene	101	89	79-112	12	30				
3,3'-Dichlorobenzidine	0*	0*	12-125	0	30				
2,4-Dichlorophenol	109	90	86-125	19	30				
Diethylphthalate	95	87	81-118	8	30				
2,4-Dimethylphenol	79	0*	57-109	200*	30				
Dimethylphthalate	95	90	82-113	4	30				
4,6-Dinitro-2-methylphenol	0*	0*	53-130	0	30				
2,4-Dinitrophenol	0*	0*	27-136	0	30				
2,4-Dinitrotoluene	67*	42*	81-122	45*	30				
2,6-Dinitrotoluene	81	58*	80-120	31*	30				
bis(2-Ethylhexyl)phthalate	242*	110	81-121	61*	30				
Fluoranthene	90	82	72-120	8	30				
Fluorene	98	90	75-118	8	30				
Hexachlorobenzene	100	91	73-120	8	30				
Hexachlorobutadiene	104	96	72-120	7	30				
Hexachlorocyclopentadiene	0*	0*	57-142	0	30				
Hexachloroethane	79	75	69-116	5	30				
Indeno(1,2,3-cd)pyrene	100	90	69-125	9	30				
Isophorone	86	79	70-118	8	30				
2-Methylnaphthalene	100	90	77-116	9	30				
2-Methylphenol	97	21*	74-128	127*	30				
4-Methylphenol	145*	64*	72-120	64*	30				
Naphthalene	110	86	75-113	19	30				
2-Nitroaniline	124	37*	84-126	108*	30				
3-Nitroaniline	37*	0*	60-125	200*	30				
4-Nitroaniline	79	29*	50-112	92*	30				
Nitrobenzene	90	135*	70-122	41*	30				
2-Nitrophenol	-36*	-26*	83-120	22	30				
4-Nitrophenol	57	0*	52-133	200*	30				
N-Nitroso-di-n-propylamine	105	87	67-121	17	30				
N-Nitrosodiphenylamine	100	96	83-118	3	30				
Di-n-octylphthalate	137	111	80-140	20	30				
Pentachlorophenol	33*	23*	56-131	33*	30				
Phenanthrene	94	88	74-114	5	30				
Phenol	277*	151*	73-122	27	30				
Pyrene	96	86	74-112	10	30				
1,2,4-Trichlorobenzene	113	102	79-114	9	30				
2,4,5-Trichlorophenol	97	77*	86-123	22	30				
2,4,6-Trichlorophenol	100	91	81-123	8	30				
Batch number: 171661063704		Sample number(s): 9046219 UNSPK: 9046219 BKG: 9046219							
Arsenic	95	94	75-125	7	20	1.85 J	1.97 J	6 (1)	20
Barium	122	109	75-125	13	20	83.7	88.5	6	20
Cadmium	96	97	75-125	5	20	N.D.	N.D.	0 (1)	20
Chromium	117	120	75-125	2	20	17.7	18.3	3	20
Lead	-1883 (2)	-3168 (2)	75-125	47*	20	686	413	50*	20
Selenium	101	103	75-125	5	20	N.D.	N.D.	0 (1)	20
Silver	82	83	75-125	6	20	N.D.	N.D.	0 (1)	20
Batch number: 171661063803		Sample number(s): 9046219 UNSPK: P047128 BKG: P047128							
Mercury	95	91	80-120	6	20	0.0268 J	0.0281 J	5 (1)	20
Batch number: 17173820017B		Sample number(s): 9046219 BKG: P045572							
Moisture						15.6	13.3	15*	5

* - Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed
unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: VOCs- Solid by 8260B
Batch number: B171741AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
9046219	96	103	99	91
Blank	96	103	99	93
LCS	100	108	101	99
LCSD	98	102	101	98
MS	99	103	101	97
MSD	98	101	100	98
Limits:	50-141	54-135	52-141	50-131

Analysis Name: SVOA 8270D (microwave)
Batch number: 17165SLP026

	Phenol-d6	2-Fluorophenol	2,4,6-Tribromophenol	Nitrobenzene-d5
9046219	87	88	64	73
Blank	87	93	85	79
LCS	91	92	83	79
MS	86	91	69	81
MSD	71	71	48	71
Limits:	46-125	43-130	28-141	45-125

	2-Fluorobiphenyl	Terphenyl-d14
9046219	87	92
Blank	89	94
LCS	94	94
MS	98	95
MSD	89	88
Limits:	50-124	43-132

* - Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

QC Comment

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

9046219 WPA-WC-01 Soil

00111 Moisture

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

10726 4-Methylphenol

3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.

10726 N-Nitrosodiphenylamine

N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.

10726 2,2'-oxybis(1-Chloropropane)

Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.

10726 SVOA 8270D (microwave)

The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the TNI/DoD Standards. The following analytes are accepted based on this allowance:

Pentachlorophenol

This sample was originally submitted to the laboratory on 04/26/17 at 0940. We received authorization for further testing on 06/14/17.

Analysis Name	Units	Method	Cas Number	9046219 WPA-WC-01 Dry Result		Dry MDL**	Dry LOQ
Acetone	ug/kg	SW-846 8260B	67-64-1	N.D.		7	21
Benzene	ug/kg	SW-846 8260B	71-43-2	N.D.		0.5	5
Bromodichloromethane	ug/kg	SW-846 8260B	75-27-4	N.D.		1	5
Bromoform	ug/kg	SW-846 8260B	75-25-2	N.D.		1	5
Bromomethane	ug/kg	SW-846 8260B	74-83-9	N.D.		2	5
2-Butanone	ug/kg	SW-846 8260B	78-93-3	N.D.		4	10
Carbon Disulfide	ug/kg	SW-846 8260B	75-15-0	N.D.		1	5
Carbon Tetrachloride	ug/kg	SW-846 8260B	56-23-5	N.D.		1	5
Chlorobenzene	ug/kg	SW-846 8260B	108-90-7	N.D.		1	5
Chloroethane	ug/kg	SW-846 8260B	75-00-3	N.D.		2	5
Chloroform	ug/kg	SW-846 8260B	67-66-3	N.D.		1	5
Chloromethane	ug/kg	SW-846 8260B	74-87-3	N.D.		2	5
Dibromochloromethane	ug/kg	SW-846 8260B	124-48-1	N.D.		1	5
1,1-Dichloroethane	ug/kg	SW-846 8260B	75-34-3	N.D.		1	5
1,2-Dichloroethane	ug/kg	SW-846 8260B	107-06-2	N.D.		1	5
1,1-Dichloroethene	ug/kg	SW-846 8260B	75-35-4	N.D.		1	5
cis-1,2-Dichloroethene	ug/kg	SW-846 8260B	156-59-2	N.D.		1	5
trans-1,2-Dichloroethene	ug/kg	SW-846 8260B	156-60-5	N.D.		1	5
1,2-Dichloropropane	ug/kg	SW-846 8260B	78-87-5	N.D.		1	5
cis-1,3-Dichloropropene	ug/kg	SW-846 8260B	10061-01-5	N.D.		1	5
trans-1,3-Dichloropropene	ug/kg	SW-846 8260B	10061-02-6	N.D.		1	5
Ethylbenzene	ug/kg	SW-846 8260B	100-41-4	N.D.		1	5
2-Hexanone	ug/kg	SW-846 8260B	591-78-6	N.D.		3	10
4-Methyl-2-pentanone	ug/kg	SW-846 8260B	108-10-1	N.D.		3	10
Methylene Chloride	ug/kg	SW-846 8260B	75-09-2	N.D.		2	5
Styrene	ug/kg	SW-846 8260B	100-42-5	N.D.		1	5
1,1,2,2-Tetrachloroethane	ug/kg	SW-846 8260B	79-34-5	N.D.		1	5
Tetrachloroethene	ug/kg	SW-846 8260B	127-18-4	N.D.		1	5
Toluene	ug/kg	SW-846 8260B	108-88-3	N.D.		1	5
1,1,1-Trichloroethane	ug/kg	SW-846 8260B	71-55-6	N.D.		1	5
1,1,2-Trichloroethane	ug/kg	SW-846 8260B	79-00-5	N.D.		1	5
Trichloroethene	ug/kg	SW-846 8260B	79-01-6	N.D.		1	5
Vinyl Chloride	ug/kg	SW-846 8260B	75-01-4	N.D.		1	5
Xylene (Total)	ug/kg	SW-846 8260B	1330-20-7	N.D.		1	5
Acenaphthene	ug/kg	SW-846 8270D	83-32-9	N.D.		4	19
Acenaphthylene	ug/kg	SW-846 8270D	208-96-8	N.D.		4	19
Anthracene	ug/kg	SW-846 8270D	120-12-7	N.D.		4	19
Benzo(a)anthracene	ug/kg	SW-846 8270D	56-55-3	N.D.		4	19
Benzo(a)pyrene	ug/kg	SW-846 8270D	50-32-8	N.D.		4	19
Benzo(b)fluoranthene	ug/kg	SW-846 8270D	205-99-2	N.D.		4	19
Benzo(g,h,i)perylene	ug/kg	SW-846 8270D	191-24-2	10	J	4	19
Benzo(k)fluoranthene	ug/kg	SW-846 8270D	207-08-9	N.D.		4	19
4-Bromophenyl-phenylether	ug/kg	SW-846 8270D	101-55-3	N.D.		18	37
Butylbenzylphthalate	ug/kg	SW-846 8270D	85-68-7	N.D.		73	180
Di-n-butylphthalate	ug/kg	SW-846 8270D	84-74-2	N.D.		73	180
Carbazole	ug/kg	SW-846 8270D	86-74-8	N.D.		18	37
4-Chloro-3-methylphenol	ug/kg	SW-846 8270D	59-50-7	N.D.		18	37
4-Chloroaniline	ug/kg	SW-846 8270D	106-47-8	N.D.		37	73

** = This limit was used in the evaluation of the final result

Analysis Name	Units	Method	Cas Number	9046219 WPA-WC-01 Dry Result	Dry MDL**	Dry LOQ
bis(2-Chloroethoxy)methane	ug/kg	SW-846 8270D	111-91-1	N.D.	18	37
bis(2-Chloroethyl)ether	ug/kg	SW-846 8270D	111-44-4	N.D.	18	37
2-Chloronaphthalene	ug/kg	SW-846 8270D	91-58-7	N.D.	7	36
2-Chlorophenol	ug/kg	SW-846 8270D	95-57-8	N.D.	18	37
4-Chlorophenyl-phenylether	ug/kg	SW-846 8270D	7005-72-3	N.D.	18	37
2,2'-oxybis(1-Chloropropane)	ug/kg	SW-846 8270D	108-60-1	N.D.	18	37
Chrysene	ug/kg	SW-846 8270D	218-01-9	N.D.	4	19
Dibenz(a,h)anthracene	ug/kg	SW-846 8270D	53-70-3	N.D.	4	19
Dibenzofuran	ug/kg	SW-846 8270D	132-64-9	N.D.	18	37
1,2-Dichlorobenzene	ug/kg	SW-846 8270D	95-50-1	N.D.	18	37
1,3-Dichlorobenzene	ug/kg	SW-846 8270D	541-73-1	N.D.	18	37
1,4-Dichlorobenzene	ug/kg	SW-846 8270D	106-46-7	N.D.	18	37
3,3'-Dichlorobenzidine	ug/kg	SW-846 8270D	91-94-1	N.D.	110	370
2,4-Dichlorophenol	ug/kg	SW-846 8270D	120-83-2	N.D.	18	37
Diethylphthalate	ug/kg	SW-846 8270D	84-66-2	N.D.	73	180
2,4-Dimethylphenol	ug/kg	SW-846 8270D	105-67-9	230	18	37
Dimethylphthalate	ug/kg	SW-846 8270D	131-11-3	N.D.	73	180
4,6-Dinitro-2-methylphenol	ug/kg	SW-846 8270D	534-52-1	N.D.	180	550
2,4-Dinitrophenol	ug/kg	SW-846 8270D	51-28-5	N.D.	330	1,100
2,4-Dinitrotoluene	ug/kg	SW-846 8270D	121-14-2	N.D.	73	180
2,6-Dinitrotoluene	ug/kg	SW-846 8270D	606-20-2	N.D.	18	37
bis(2-Ethylhexyl)phthalate	ug/kg	SW-846 8270D	117-81-7	N.D.	73	190
Fluoranthene	ug/kg	SW-846 8270D	206-44-0	N.D.	4	19
Fluorene	ug/kg	SW-846 8270D	86-73-7	N.D.	4	19
Hexachlorobenzene	ug/kg	SW-846 8270D	118-74-1	N.D.	4	19
Hexachlorobutadiene	ug/kg	SW-846 8270D	87-68-3	N.D.	18	37
Hexachlorocyclopentadiene	ug/kg	SW-846 8270D	77-47-4	N.D.	180	550
Hexachloroethane	ug/kg	SW-846 8270D	67-72-1	N.D.	37	180
Indeno(1,2,3-cd)pyrene	ug/kg	SW-846 8270D	193-39-5	N.D.	4	19
Isophorone	ug/kg	SW-846 8270D	78-59-1	N.D.	18	37
2-Methylnaphthalene	ug/kg	SW-846 8270D	91-57-6	N.D.	4	19
2-Methylphenol	ug/kg	SW-846 8270D	95-48-7	48	18	37
4-Methylphenol	ug/kg	SW-846 8270D	106-44-5	57	18	37
Naphthalene	ug/kg	SW-846 8270D	91-20-3	N.D.	4	19
2-Nitroaniline	ug/kg	SW-846 8270D	88-74-4	N.D.	18	37
3-Nitroaniline	ug/kg	SW-846 8270D	99-09-2	N.D.	73	180
4-Nitroaniline	ug/kg	SW-846 8270D	100-01-6	N.D.	73	180
Nitrobenzene	ug/kg	SW-846 8270D	98-95-3	N.D.	18	37
2-Nitrophenol	ug/kg	SW-846 8270D	88-75-5	N.D.	18	37
4-Nitrophenol	ug/kg	SW-846 8270D	100-02-7	N.D.	180	550
N-Nitroso-di-n-propylamine	ug/kg	SW-846 8270D	621-64-7	N.D.	18	37
N-Nitrosodiphenylamine	ug/kg	SW-846 8270D	86-30-6	N.D.	18	37
Di-n-octylphthalate	ug/kg	SW-846 8270D	117-84-0	N.D.	73	180
Pentachlorophenol	ug/kg	SW-846 8270D	87-86-5	N.D.	37	190
Phenanthrene	ug/kg	SW-846 8270D	85-01-8	N.D.	4	19
Phenol	ug/kg	SW-846 8270D	108-95-2	N.D.	18	37
Pyrene	ug/kg	SW-846 8270D	129-00-0	6 J	4	19
1,2,4-Trichlorobenzene	ug/kg	SW-846 8270D	120-82-1	N.D.	18	37

** = This limit was used in the evaluation of the final result

Analysis Name	Units	Method	Cas Number	9046219 WPA-WC-01 Dry Result	Dry MDL**	Dry LOQ
2,4,5-Trichlorophenol	ug/kg	SW-846 8270D	95-95-4	N.D.	18	37
2,4,6-Trichlorophenol	ug/kg	SW-846 8270D	88-06-2	N.D.	18	37
Arsenic	mg/kg	SW-846 6010C	7440-38-2	2.05 J	0.794	3.27
Barium	mg/kg	SW-846 6010C	7440-39-3	92.5	0.0270	0.818
Cadmium	mg/kg	SW-846 6010C	7440-43-9	N.D.	0.0401	0.818
Chromium	mg/kg	SW-846 6010C	7440-47-3	19.5	0.115	2.46
Lead	mg/kg	SW-846 6010C	7439-92-1	758	0.450	2.46
Selenium	mg/kg	SW-846 6010C	7782-49-2	N.D.	0.737	3.27
Silver	mg/kg	SW-846 6010C	7440-22-4	N.D.	0.123	0.818
Mercury	mg/kg	SW-846 7471B	7439-97-6	N.D.	0.0109	0.109
Moisture	%	SM 2540 G-1997	n.a.	9.5	0.50	0.50

** = This limit was used in the evaluation of the final result

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

EA Engineering
405 State Highway 121 Bypass
Building C, Suite 100
Lewisville TX 75067-8192

Report Date: July 06, 2017

Project: Wilcox Oil Company Superfund Site

Submittal Date: 06/14/2017
Group Number: 1812851
SDG: WLC12
PO Number: 15838
State of Sample Origin: OK

Client Sample Description	Lancaster Labs (LL) #
WPA-WC-01 Soil	9046219

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our current scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/ . To request copies of prior scopes of accreditation, contact your project manager.

Electronic Copy To EA Engineering Attn: Pamela Moss

Respectfully Submitted,

Angela M. Miller
Specialist

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Analysis Report

Sample Description: WPA-WC-01 Soil

Project Name: Wilcox Oil Company Superfund Site

LL Sample # SW 9046219
LL Group # 1812851
Account # 30056

Collected: 04/25/2017 16:30 by JS

Submitted: 06/14/2017 09:30
Reported: 07/06/2017 12:21

EA Engineering
405 State Highway 121 Bypass
Building C, Suite 100
Lewisville TX 75067-8192

WPA-- SDG#: WLC12-01

CAT No.	Analysis Name	CAS Number	Dry Result		Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/kg**		**ug/kg**	**ug/kg**	
10237	Acetone	67-64-1	N.D.		7	21	0.93
10237	Benzene	71-43-2	N.D.		0.5	5	0.93
10237	Bromodichloromethane	75-27-4	N.D.		1	5	0.93
10237	Bromoform	75-25-2	N.D.		1	5	0.93
10237	Bromomethane	74-83-9	N.D.		2	5	0.93
10237	2-Butanone	78-93-3	N.D.		4	10	0.93
10237	Carbon Disulfide	75-15-0	N.D.		1	5	0.93
10237	Carbon Tetrachloride	56-23-5	N.D.		1	5	0.93
10237	Chlorobenzene	108-90-7	N.D.		1	5	0.93
10237	Chloroethane	75-00-3	N.D.		2	5	0.93
10237	Chloroform	67-66-3	N.D.		1	5	0.93
10237	Chloromethane	74-87-3	N.D.		2	5	0.93
10237	Dibromochloromethane	124-48-1	N.D.		1	5	0.93
10237	1,1-Dichloroethane	75-34-3	N.D.		1	5	0.93
10237	1,2-Dichloroethane	107-06-2	N.D.		1	5	0.93
10237	1,1-Dichloroethene	75-35-4	N.D.		1	5	0.93
10237	cis-1,2-Dichloroethene	156-59-2	N.D.		1	5	0.93
10237	trans-1,2-Dichloroethene	156-60-5	N.D.		1	5	0.93
10237	1,2-Dichloropropane	78-87-5	N.D.		1	5	0.93
10237	cis-1,3-Dichloropropene	10061-01-5	N.D.		1	5	0.93
10237	trans-1,3-Dichloropropene	10061-02-6	N.D.		1	5	0.93
10237	Ethylbenzene	100-41-4	N.D.		1	5	0.93
10237	2-Hexanone	591-78-6	N.D.		3	10	0.93
10237	4-Methyl-2-pentanone	108-10-1	N.D.		3	10	0.93
10237	Methylene Chloride	75-09-2	N.D.		2	5	0.93
10237	Styrene	100-42-5	N.D.		1	5	0.93
10237	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		1	5	0.93
10237	Tetrachloroethene	127-18-4	N.D.		1	5	0.93
10237	Toluene	108-88-3	N.D.		1	5	0.93
10237	1,1,1-Trichloroethane	71-55-6	N.D.		1	5	0.93
10237	1,1,2-Trichloroethane	79-00-5	N.D.		1	5	0.93
10237	Trichloroethene	79-01-6	N.D.		1	5	0.93
10237	Vinyl Chloride	75-01-4	N.D.		1	5	0.93
10237	Xylene (Total)	1330-20-7	N.D.		1	5	0.93
GC/MS Semivolatiles	**SW-846 8270D**		**ug/kg**		**ug/kg**	**ug/kg**	
10726	Acenaphthene	83-32-9	N.D.		4	19	1
10726	Acenaphthylene	208-96-8	N.D.		4	19	1
10726	Anthracene	120-12-7	N.D.		4	19	1
10726	Benzo(a)anthracene	56-55-3	N.D.		4	19	1
10726	Benzo(a)pyrene	50-32-8	N.D.		4	19	1
10726	Benzo(b)fluoranthene	205-99-2	N.D.		4	19	1
10726	Benzo(g,h,i)perylene	191-24-2	10	J	4	19	1
10726	Benzo(k)fluoranthene	207-08-9	N.D.		4	19	1
10726	4-Bromophenyl-phenylether	101-55-3	N.D.		18	37	1
10726	Butylbenzylphthalate	85-68-7	N.D.		73	180	1
10726	Di-n-butylphthalate	84-74-2	N.D.		73	180	1
10726	Carbazole	86-74-8	N.D.		18	37	1
10726	4-Chloro-3-methylphenol	59-50-7	N.D.		18	37	1
10726	4-Chloroaniline	106-47-8	N.D.		37	73	1

*=This limit was used in the evaluation of the final result

Sample Description: WPA-WC-01 Soil

Project Name: Wilcox Oil Company Superfund Site

LL Sample # SW 9046219
LL Group # 1812851
Account # 30056

Collected: 04/25/2017 16:30 by JS

Submitted: 06/14/2017 09:30
Reported: 07/06/2017 12:21

EA Engineering
405 State Highway 121 Bypass
Building C, Suite 100
Lewisville TX 75067-8192

WPA-- SDG#: WLC12-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270D**		**ug/kg**	**ug/kg**	**ug/kg**	
10726	bis(2-Chloroethoxy)methane	111-91-1	N.D.	18	37	1
10726	bis(2-Chloroethyl)ether	111-44-4	N.D.	18	37	1
10726	2-Chloronaphthalene	91-58-7	N.D.	7	36	1
10726	2-Chlorophenol	95-57-8	N.D.	18	37	1
10726	4-Chlorophenyl-phenylether	7005-72-3	N.D.	18	37	1
10726	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	18	37	1
	Bis(2-chloroisopropyl) ether CAS #39638-32-9 and 2,2'-Oxybis(1-chloropropane) CAS #108-60-1 cannot be separated chromatographically. The reported result represents the combined total of both compounds.					
10726	Chrysene	218-01-9	N.D.	4	19	1
10726	Dibenz(a,h)anthracene	53-70-3	N.D.	4	19	1
10726	Dibenzofuran	132-64-9	N.D.	18	37	1
10726	1,2-Dichlorobenzene	95-50-1	N.D.	18	37	1
10726	1,3-Dichlorobenzene	541-73-1	N.D.	18	37	1
10726	1,4-Dichlorobenzene	106-46-7	N.D.	18	37	1
10726	3,3'-Dichlorobenzidine	91-94-1	N.D.	110	370	1
10726	2,4-Dichlorophenol	120-83-2	N.D.	18	37	1
10726	Diethylphthalate	84-66-2	N.D.	73	180	1
10726	2,4-Dimethylphenol	105-67-9	230	18	37	1
10726	Dimethylphthalate	131-11-3	N.D.	73	180	1
10726	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	180	550	1
10726	2,4-Dinitrophenol	51-28-5	N.D.	330	1,100	1
10726	2,4-Dinitrotoluene	121-14-2	N.D.	73	180	1
10726	2,6-Dinitrotoluene	606-20-2	N.D.	18	37	1
10726	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	73	190	1
10726	Fluoranthene	206-44-0	N.D.	4	19	1
10726	Fluorene	86-73-7	N.D.	4	19	1
10726	Hexachlorobenzene	118-74-1	N.D.	4	19	1
10726	Hexachlorobutadiene	87-68-3	N.D.	18	37	1
10726	Hexachlorocyclopentadiene	77-47-4	N.D.	180	550	1
10726	Hexachloroethane	67-72-1	N.D.	37	180	1
10726	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	4	19	1
10726	Isophorone	78-59-1	N.D.	18	37	1
10726	2-Methylnaphthalene	91-57-6	N.D.	4	19	1
10726	2-Methylphenol	95-48-7	48	18	37	1
10726	4-Methylphenol	106-44-5	57	18	37	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
10726	Naphthalene	91-20-3	N.D.	4	19	1
10726	2-Nitroaniline	88-74-4	N.D.	18	37	1
10726	3-Nitroaniline	99-09-2	N.D.	73	180	1
10726	4-Nitroaniline	100-01-6	N.D.	73	180	1
10726	Nitrobenzene	98-95-3	N.D.	18	37	1
10726	2-Nitrophenol	88-75-5	N.D.	18	37	1
10726	4-Nitrophenol	100-02-7	N.D.	180	550	1
10726	N-Nitroso-di-n-propylamine	621-64-7	N.D.	18	37	1
10726	N-Nitrosodiphenylamine	86-30-6	N.D.	18	37	1

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories Environmental
2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Analysis Report

Sample Description: WPA-WC-01 Soil

Project Name: Wilcox Oil Company Superfund Site

LL Sample # SW 9046219
LL Group # 1812851
Account # 30056

Collected: 04/25/2017 16:30 by JS

Submitted: 06/14/2017 09:30
Reported: 07/06/2017 12:21

EA Engineering
405 State Highway 121 Bypass
Building C, Suite 100
Lewisville TX 75067-8192

WPA-- SDG#: WLC12-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270D**		**ug/kg**	**ug/kg**	**ug/kg**	
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
10726	Di-n-octylphthalate	117-84-0	N.D.	73	180	1
10726	Pentachlorophenol	87-86-5	N.D.	37	190	1
10726	Phenanthrene	85-01-8	N.D.	4	19	1
10726	Phenol	108-95-2	N.D.	18	37	1
10726	Pyrene	129-00-0	6 J	4	19	1
10726	1,2,4-Trichlorobenzene	120-82-1	N.D.	18	37	1
10726	2,4,5-Trichlorophenol	95-95-4	N.D.	18	37	1
10726	2,4,6-Trichlorophenol	88-06-2	N.D.	18	37	1
	The LCS and/or LCSD recoveries are outside the stated QC window but within the marginal exceedance allowance of +/- 4 standard deviations as defined in the TNI/DoD Standards. The following analytes are accepted based on this allowance: Pentachlorophenol					
Metals	**SW-846 6010C**		**mg/kg**	**mg/kg**	**mg/kg**	
06935	Arsenic	7440-38-2	2.05 J	0.794	3.27	1
06946	Barium	7440-39-3	92.5	0.0270	0.818	1
06949	Cadmium	7440-43-9	N.D.	0.0401	0.818	1
06951	Chromium	7440-47-3	19.5	0.115	2.46	1
06955	Lead	7439-92-1	758	0.450	2.46	1
06936	Selenium	7782-49-2	N.D.	0.737	3.27	1
06966	Silver	7440-22-4	N.D.	0.123	0.818	1
	SW-846 7471B		**mg/kg**	**mg/kg**	**mg/kg**	
00159	Mercury	7439-97-6	N.D.	0.0109	0.109	1
Wet Chemistry	**SM 2540 G-1997**		**%**	**%**	**%**	
00111	Moisture	n.a.	9.5	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

This sample was originally submitted to the laboratory on 04/26/17 at 0940. We received authorization for further testing on 06/14/17.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	VOCs- Solid by 8260B	SW-846 8260B	1	B171741AA	06/23/2017 18:21	Linda C Pape	0.93

*=This limit was used in the evaluation of the final result

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Lancaster Laboratories Environmental
2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Analysis Report

Sample Description: WPA-WC-01 Soil

Project Name: Wilcox Oil Company Superfund Site

LL Sample # SW 9046219
LL Group # 1812851
Account # 30056

Collected: 04/25/2017 16:30 by JS

Submitted: 06/14/2017 09:30
Reported: 07/06/2017 12:21

EA Engineering
405 State Highway 121 Bypass
Building C, Suite 100
Lewisville TX 75067-8192

WPA-- SDG#: WLC12-01

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00374	GC/MS - Bulk Soil Prep	SW-846 5035A Modified	1	201716645809	06/14/2017 23:03	Lois E Hiltz	n.a.
00374	GC/MS - Bulk Soil Prep	SW-846 5035A Modified	2	201716645809	06/14/2017 23:03	Lois E Hiltz	n.a.
06646	GC/MS HL Bulk Sample Prep	SW-846 5035A Modified	1	201716645809	06/14/2017 21:52	Lois E Hiltz	n.a.
10726	SVOA 8270D (microwave)	SW-846 8270D	1	17165SLP026	06/19/2017 12:14	Linda M Hartenstine	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	17165SLP026	06/15/2017 08:00	Kayla A Yuditsky	1
06935	Arsenic	SW-846 6010C	1	171661063704	06/19/2017 04:27	Jonathan Allen	1
06946	Barium	SW-846 6010C	1	171661063704	06/19/2017 04:27	Jonathan Allen	1
06949	Cadmium	SW-846 6010C	1	171661063704	06/19/2017 04:27	Jonathan Allen	1
06951	Chromium	SW-846 6010C	1	171661063704	06/19/2017 04:27	Jonathan Allen	1
06955	Lead	SW-846 6010C	1	171661063704	06/19/2017 04:27	Jonathan Allen	1
06936	Selenium	SW-846 6010C	1	171661063704	06/19/2017 04:27	Jonathan Allen	1
06966	Silver	SW-846 6010C	1	171661063704	06/19/2017 04:27	Jonathan Allen	1
00159	Mercury	SW-846 7471B	1	171661063803	06/20/2017 08:21	Damary Valentin	1
10637	ICP/ICPMS-SW, 3050B - U4	SW-846 3050B	1	171661063704	06/16/2017 17:45	Barbara A Kane	1
10638	Hg - SW, 7471B - U4	SW-846 7471B	1	171661063803	06/19/2017 17:55	JoElla L Rice	1
00111	Moisture	SM 2540 G-1997	1	17173820017B	06/23/2017 01:26	Scott W Freisher	1

*=This limit was used in the evaluation of the final result

Quality Control Summary

Client Name: EA Engineering
Reported: 07/06/2017 12:21

Group Number: 1812851

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result ug/kg	MDL** ug/kg	LOQ ug/kg
Batch number: B171741AA	Sample number(s): 9046219		
Acetone	N.D.	7	20
Benzene	N.D.	0.5	5
Bromodichloromethane	N.D.	1	5
Bromoform	N.D.	1	5
Bromomethane	N.D.	2	5
2-Butanone	N.D.	4	10
Carbon Disulfide	N.D.	1	5
Carbon Tetrachloride	N.D.	1	5
Chlorobenzene	N.D.	1	5
Chloroethane	N.D.	2	5
Chloroform	N.D.	1	5
Chloromethane	N.D.	2	5
Dibromochloromethane	N.D.	1	5
1,1-Dichloroethane	N.D.	1	5
1,2-Dichloroethane	N.D.	1	5
1,1-Dichloroethene	N.D.	1	5
cis-1,2-Dichloroethene	N.D.	1	5
trans-1,2-Dichloroethene	N.D.	1	5
1,2-Dichloropropane	N.D.	1	5
cis-1,3-Dichloropropene	N.D.	1	5
trans-1,3-Dichloropropene	N.D.	1	5
Ethylbenzene	N.D.	1	5
2-Hexanone	N.D.	3	10
4-Methyl-2-pentanone	N.D.	3	10
Methylene Chloride	N.D.	2	5
Styrene	N.D.	1	5
1,1,2,2-Tetrachloroethane	N.D.	1	5
Tetrachloroethene	N.D.	1	5
Toluene	N.D.	1	5
1,1,1-Trichloroethane	N.D.	1	5
1,1,2-Trichloroethane	N.D.	1	5
Trichloroethene	N.D.	1	5
Vinyl Chloride	N.D.	1	5
Xylene (Total)	N.D.	1	5
Batch number: 17165SLP026	Sample number(s): 9046219		
Acenaphthene	N.D.	3	17
Acenaphthylene	N.D.	3	17
Anthracene	N.D.	3	17
Benzo(a)anthracene	N.D.	3	17
Benzo(a)pyrene	N.D.	3	17

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: EA Engineering
Reported: 07/06/2017 12:21

Group Number: 1812851

Method Blank (continued)

Analysis Name	Result ug/kg	MDL** ug/kg	LOQ ug/kg
Benzo(b)fluoranthene	N.D.	3	17
Benzo(g,h,i)perylene	N.D.	3	17
Benzo(k)fluoranthene	N.D.	3	17
4-Bromophenyl-phenylether	N.D.	17	33
Butylbenzylphthalate	N.D.	67	170
Di-n-butylphthalate	N.D.	67	170
Carbazole	N.D.	17	33
4-Chloro-3-methylphenol	N.D.	17	33
4-Chloroaniline	N.D.	33	67
bis(2-Chloroethoxy)methane	N.D.	17	33
bis(2-Chloroethyl)ether	N.D.	17	33
2-Chloronaphthalene	N.D.	7	33
2-Chlorophenol	N.D.	17	33
4-Chlorophenyl-phenylether	N.D.	17	33
2,2'-oxybis(1-Chloropropane)	N.D.	17	33
Chrysene	N.D.	3	17
Dibenz(a,h)anthracene	N.D.	3	17
Dibenzofuran	N.D.	17	33
1,2-Dichlorobenzene	N.D.	17	33
1,3-Dichlorobenzene	N.D.	17	33
1,4-Dichlorobenzene	N.D.	17	33
3,3'-Dichlorobenzidine	N.D.	100	330
2,4-Dichlorophenol	N.D.	17	33
Diethylphthalate	N.D.	67	170
2,4-Dimethylphenol	N.D.	17	33
Dimethylphthalate	N.D.	67	170
4,6-Dinitro-2-methylphenol	N.D.	170	500
2,4-Dinitrophenol	N.D.	300	1,000
2,4-Dinitrotoluene	N.D.	67	170
2,6-Dinitrotoluene	N.D.	17	33
bis(2-Ethylhexyl)phthalate	N.D.	67	170
Fluoranthene	N.D.	3	17
Fluorene	N.D.	3	17
Hexachlorobenzene	N.D.	3	17
Hexachlorobutadiene	N.D.	17	33
Hexachlorocyclopentadiene	N.D.	170	500
Hexachloroethane	N.D.	33	170
Indeno(1,2,3-cd)pyrene	N.D.	3	17
Isophorone	N.D.	17	33
2-Methylnaphthalene	N.D.	3	17
2-Methylphenol	N.D.	17	33
4-Methylphenol	N.D.	17	33
Naphthalene	N.D.	3	17
2-Nitroaniline	N.D.	17	33
3-Nitroaniline	N.D.	67	170
4-Nitroaniline	N.D.	67	170
Nitrobenzene	N.D.	17	33
2-Nitrophenol	N.D.	17	33
4-Nitrophenol	N.D.	170	500

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: EA Engineering
Reported: 07/06/2017 12:21

Group Number: 1812851

Method Blank (continued)

Analysis Name	Result	MDL**	LOQ
	ug/kg	ug/kg	ug/kg
N-Nitroso-di-n-propylamine	N.D.	17	33
N-Nitrosodiphenylamine	N.D.	17	33
Di-n-octylphthalate	N.D.	67	170
Pentachlorophenol	N.D.	33	170
Phenanthrene	N.D.	3	17
Phenol	N.D.	17	33
Pyrene	N.D.	3	17
1,2,4-Trichlorobenzene	N.D.	17	33
2,4,5-Trichlorophenol	N.D.	17	33
2,4,6-Trichlorophenol	N.D.	17	33
	mg/kg	mg/kg	mg/kg
Batch number: 171661063704	Sample number(s): 9046219		
Arsenic	N.D.	0.970	4.00
Barium	N.D.	0.0330	1.00
Cadmium	N.D.	0.0490	1.00
Chromium	N.D.	0.140	3.00
Lead	N.D.	0.550	3.00
Selenium	N.D.	0.900	4.00
Silver	N.D.	0.150	1.00
Batch number: 171661063803	Sample number(s): 9046219		
Mercury	N.D.	0.0100	0.100

LCS/LCSD

Analysis Name	LCS Spike Added	LCS Conc	LCSD Spike Added	LCSD Conc	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
	ug/kg	ug/kg	ug/kg	ug/kg					
Batch number: B171741AA	Sample number(s): 9046219								
Acetone	150	129.27	150	127.62	86	85	32-144	1	30
Benzene	20	17.9	20	20.3	90	102	80-120	13	30
Bromodichloromethane	20	16.31	20	18.36	82	92	75-120	12	30
Bromoform	20	15.19	20	15.81	76	79	61-122	4	30
Bromomethane	20	18.45	20	20.41	92	102	39-155	10	30
2-Butanone	150	107.58	150	118.37	72	79	41-134	10	30
Carbon Disulfide	20	16.98	20	19.13	85	96	60-128	12	30
Carbon Tetrachloride	20	17.19	20	19.71	86	99	69-130	14	30
Chlorobenzene	20	17.49	20	20.07	87	100	80-120	14	30
Chloroethane	20	18.23	20	20.37	91	102	50-137	11	30
Chloroform	20	17.71	20	19.9	89	100	80-120	12	30
Chloromethane	20	17.13	20	19.25	86	96	56-120	12	30
Dibromochloromethane	20	16.28	20	18.17	81	91	71-120	11	30
1,1-Dichloroethane	20	17.66	20	20.05	88	100	77-120	13	30
1,2-Dichloroethane	20	18.11	20	19.4	91	97	78-127	7	30
1,1-Dichloroethene	20	20.1	20	23.53	101	118	73-129	16	30

*- Outside of specification
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(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: EA Engineering
Reported: 07/06/2017 12:21

Group Number: 1812851

LCS/LCSD (continued)

Analysis Name	LCS Spike Added ug/kg	LCS Conc ug/kg	LCSD Spike Added ug/kg	LCSD Conc ug/kg	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
cis-1,2-Dichloroethene	20	18.24	20	20.44	91	102	80-120	11	30
trans-1,2-Dichloroethene	20	18.53	20	21.16	93	106	80-125	13	30
1,2-Dichloropropane	20	17.74	20	20.13	89	101	76-120	13	30
cis-1,3-Dichloropropene	20	16.97	20	18.97	85	95	74-120	11	30
trans-1,3-Dichloropropene	20	16.5	20	18.24	82	91	70-120	10	30
Ethylbenzene	20	17.56	20	20.38	88	102	80-120	15	30
2-Hexanone	100	88.25	100	84.27	88	84	45-138	5	30
4-Methyl-2-pentanone	100	90.74	100	82.65	91	83	53-134	9	30
Methylene Chloride	20	19.61	20	21.94	98	110	76-122	11	30
Styrene	20	16.4	20	18.74	82	94	76-120	13	30
1,1,2,2-Tetrachloroethane	20	18.79	20	19.38	94	97	67-121	3	30
Tetrachloroethene	20	16.23	20	18.71	81	94	74-126	14	30
Toluene	20	17.55	20	20.04	88	100	80-120	13	30
1,1,1-Trichloroethane	20	15.23	20	17.56	76	88	66-128	14	30
1,1,2-Trichloroethane	20	18.33	20	20.05	92	100	80-120	9	30
Trichloroethene	20	17.6	20	20.04	88	100	80-120	13	30
Vinyl Chloride	20	18.09	20	20.11	90	101	59-120	11	30
Xylene (Total)	60	51.9	60	60.66	86	101	80-120	16	30
	ug/kg	ug/kg	ug/kg	ug/kg					
Batch number: 17165SLP026	Sample number(s): 9046219								
Acenaphthene	1666.67	1667.14			100		83-116		
Acenaphthylene	1666.67	1588.01			95		83-119		
Anthracene	1666.67	1633.1			98		82-118		
Benzo(a)anthracene	1666.67	1550.65			93		76-119		
Benzo(a)pyrene	1666.67	1567.7			94		78-117		
Benzo(b)fluoranthene	1666.67	1836.55			110		79-121		
Benzo(g,h,i)perylene	1666.67	1584.93			95		71-123		
Benzo(k)fluoranthene	1666.67	1637.29			98		71-123		
4-Bromophenyl-phenylether	1666.67	1840.24			110		78-122		
Butylbenzylphthalate	1666.67	1633.5			98		80-118		
Di-n-butylphthalate	1666.67	1740.95			104		84-120		
Carbazole	1666.67	1588.37			95		80-120		
4-Chloro-3-methylphenol	1666.67	1606.32			96		78-124		
4-Chloroaniline	1666.67	592.34			36		10-110		
bis(2-Chloroethoxy)methane	1666.67	1531.63			92		77-116		
bis(2-Chloroethyl)ether	1666.67	1504.27			90		68-115		
2-Chloronaphthalene	1666.67	1927.86			116		57-148		
2-Chlorophenol	1666.67	1754.05			105		80-121		
4-Chlorophenyl-phenylether	1666.67	1665.77			100		73-119		
2,2'-oxybis(1-Chloropropane)	1666.67	1282.68			77		60-123		
Chrysene	1666.67	1535.55			92		72-121		
Dibenz(a,h)anthracene	1666.67	1668.79			100		72-129		
Dibenzofuran	1666.67	1686.18			101		79-114		
1,2-Dichlorobenzene	1666.67	1610.61			97		77-113		
1,3-Dichlorobenzene	1666.67	1505.67			90		79-113		
1,4-Dichlorobenzene	1666.67	1562.74			94		79-112		
3,3'-Dichlorobenzidine	1666.67	1300.48			78		12-125		

*- Outside of specification
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(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: EA Engineering
Reported: 07/06/2017 12:21

Group Number: 1812851

LCS/LCSD (continued)

Analysis Name	LCS Spike Added ug/kg	LCS Conc ug/kg	LCSD Spike Added ug/kg	LCSD Conc ug/kg	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
2,4-Dichlorophenol	1666.67	1802.75			108		86-125		
Diethylphthalate	1666.67	1608.67			97		81-118		
2,4-Dimethylphenol	1666.67	1319.79			79		57-109		
Dimethylphthalate	1666.67	1651.43			99		82-113		
4,6-Dinitro-2-methylphenol	1666.67	1733.04			104		53-130		
2,4-Dinitrophenol	3333.33	3012.34			90		27-136		
2,4-Dinitrotoluene	1666.67	1718.28			103		81-122		
2,6-Dinitrotoluene	1666.67	1772.67			106		80-120		
bis(2-Ethylhexyl)phthalate	1666.67	1631.09			98		81-121		
Fluoranthene	1666.67	1552.24			93		72-120		
Fluorene	1666.67	1638.75			98		75-118		
Hexachlorobenzene	1666.67	1700.14			102		73-120		
Hexachlorobutadiene	1666.67	1593.87			96		72-120		
Hexachlorocyclopentadiene	3333.33	2432.34			73		57-142		
Hexachloroethane	1666.67	1431.46			86		69-116		
Indeno(1,2,3-cd)pyrene	1666.67	1616.67			97		69-125		
Isophorone	1666.67	1421.32			85		70-118		
2-Methylnaphthalene	1666.67	1627.9			98		77-116		
2-Methylphenol	1666.67	1690.01			101		74-128		
4-Methylphenol	1666.67	1602.6			96		72-120		
Naphthalene	1666.67	1569.04			94		75-113		
2-Nitroaniline	1666.67	1771.76			106		84-126		
3-Nitroaniline	1666.67	1530.03			92		60-125		
4-Nitroaniline	1666.67	1443.38			87		50-112		
Nitrobenzene	1666.67	1448.03			87		70-122		
2-Nitrophenol	1666.67	1761.56			106		83-120		
4-Nitrophenol	1666.67	1079.28			65		52-133		
N-Nitroso-di-n-propylamine	1666.67	1467.22			88		67-121		
N-Nitrosodiphenylamine	1666.67	1712.57			103		83-118		
Di-n-octylphthalate	1666.67	1955			117		80-140		
Pentachlorophenol	1666.67	816.4			49*		56-131		
Phenanthrene	1666.67	1590.93			95		74-114		
Phenol	1666.67	1584.25			95		73-122		
Pyrene	1666.67	1538.83			92		74-112		
1,2,4-Trichlorobenzene	1666.67	1705.09			102		79-114		
2,4,5-Trichlorophenol	1666.67	1735.88			104		86-123		
2,4,6-Trichlorophenol	1666.67	1737.24			104		81-123		
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 171661063704	Sample number(s): 9046219								
Arsenic	15	14.76			98		80-120		
Barium	200	195.87			98		80-120		
Cadmium	5.00	5.06			101		80-120		
Chromium	20	20.53			103		80-120		
Lead	15	15.26			102		80-120		
Selenium	15	15.19			101		80-120		
Silver	5.00	4.55			91		80-120		

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P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: EA Engineering
Reported: 07/06/2017 12:21

Group Number: 1812851

LCS/LCSD (continued)

Analysis Name	LCS Spike Added mg/kg	LCS Conc mg/kg	LCSD Spike Added mg/kg	LCSD Conc mg/kg	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 171661063803	Sample number(s): 9046219								
Mercury	0.100	0.0861			86		80-120		
	%	%	%	%					
Batch number: 17173820017B	Sample number(s): 9046219								
Moisture	89.5	89.39			100		99-101		

MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc ug/kg	MS Spike Added ug/kg	MS Conc ug/kg	MSD Spike Added ug/kg	MSD Conc ug/kg	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: B171741AA	Sample number(s): 9046219 UNSPK: P060994									
Acetone	N.D.	130.67	142.8	135.63	139.71	109	103	32-144	2	30
Benzene	N.D.	17.42	19.51	18.08	20.26	112	112	80-120	4	30
Bromodichloromethane	N.D.	17.42	17.99	18.08	18.65	103	103	75-120	4	30
Bromoform	N.D.	17.42	16.33	18.08	16.32	94	90	61-122	0	30
Bromomethane	N.D.	17.42	20	18.08	20.41	115	113	39-155	2	30
2-Butanone	N.D.	130.67	159.92	135.63	152.52	122	112	41-134	5	30
Carbon Disulfide	N.D.	17.42	19.87	18.08	21.53	114	119	60-128	8	30
Carbon Tetrachloride	N.D.	17.42	19	18.08	20.33	109	112	69-130	7	30
Chlorobenzene	N.D.	17.42	19.25	18.08	20.61	110	114	80-120	7	30
Chloroethane	N.D.	17.42	19.48	18.08	19.51	112	108	50-137	0	30
Chloroform	N.D.	17.42	19.24	18.08	20.44	110	113	80-120	6	30
Chloromethane	N.D.	17.42	19.65	18.08	19.94	113	110	56-120	1	30
Dibromochloromethane	N.D.	17.42	17.85	18.08	18.2	102	101	71-120	2	30
1,1-Dichloroethane	N.D.	17.42	19.15	18.08	20.34	110	112	77-120	6	30
1,2-Dichloroethane	N.D.	17.42	19.28	18.08	20.13	111	111	78-127	4	30
1,1-Dichloroethene	N.D.	17.42	22.19	18.08	24.09	127	133*	73-129	8	30
cis-1,2-Dichloroethene	N.D.	17.42	19.25	18.08	20.75	110	115	80-120	8	30
trans-1,2-Dichloroethene	N.D.	17.42	20.37	18.08	21.97	117	121	80-125	8	30
1,2-Dichloropropane	N.D.	17.42	19.31	18.08	20.48	111	113	76-120	6	30
cis-1,3-Dichloropropene	N.D.	17.42	18.4	18.08	19.18	106	106	74-120	4	30
trans-1,3-Dichloropropene	N.D.	17.42	17.64	18.08	18.09	101	100	70-120	3	30
Ethylbenzene	N.D.	17.42	19.51	18.08	21.04	112	116	80-120	8	30
2-Hexanone	N.D.	87.11	101.42	90.42	100.46	116	111	45-138	1	30
4-Methyl-2-pentanone	N.D.	87.11	101.92	90.42	101.01	117	112	53-134	1	30
Methylene Chloride	N.D.	17.42	20.73	18.08	22.03	119	122	76-122	6	30
Styrene	N.D.	17.42	18.04	18.08	19.23	104	106	76-120	6	30
1,1,2,2-Tetrachloroethane	N.D.	17.42	20.3	18.08	20.22	117	112	67-121	0	30
Tetrachloroethene	N.D.	17.42	18.49	18.08	19.53	106	108	74-126	5	30
Toluene	N.D.	17.42	19.63	18.08	20.5	113	113	80-120	4	30

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Quality Control Summary

Client Name: EA Engineering
Reported: 07/06/2017 12:21

Group Number: 1812851

MS/MSD (continued)

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc ug/kg	MS Spike Added ug/kg	MS Conc ug/kg	MSD Spike Added ug/kg	MSD Conc ug/kg	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
1,1,1-Trichloroethane	N.D.	17.42	16.93	18.08	18	97	100	66-128	6	30
1,1,2-Trichloroethane	N.D.	17.42	19.8	18.08	20.52	114	113	80-120	4	30
Trichloroethene	N.D.	17.42	19.2	18.08	20.54	110	114	80-120	7	30
Vinyl Chloride	N.D.	17.42	20.84	18.08	20.8	120	115	59-120	0	30
Xylene (Total)	N.D.	52.27	57.39	54.25	62.78	110	116	80-120	9	30
	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg					
Batch number: 17165SLP026	Sample number(s): 9046219 UNSPK: P65LPUS									
Acenaphthene	27.99	1644.2	1698.11	1659.48	1569.63	102	93	83-116	8	30
Acenaphthylene	N.D.	1644.2	1484.52	1659.48	180.29	90	11*	83-119	157*	30
Anthracene	N.D.	1644.2	1615.48	1659.48	1484.8	98	89	82-118	8	30
Benzo(a)anthracene	N.D.	1644.2	1704.74	1659.48	1502.79	104	91	76-119	13	30
Benzo(a)pyrene	N.D.	1644.2	1585.6	1659.48	1516.85	96	91	78-117	4	30
Benzo(b)fluoranthene	N.D.	1644.2	1660.04	1659.48	1504.85	101	91	79-121	10	30
Benzo(g,h,i)perylene	N.D.	1644.2	1623.21	1659.48	1423.7	99	86	71-123	13	30
Benzo(k)fluoranthene	N.D.	1644.2	1866.78	1659.48	1607.62	114	97	71-123	15	30
4-Bromophenyl-phenylether	N.D.	1644.2	1740.78	1659.48	1662	106	100	78-122	5	30
Butylbenzylphthalate	N.D.	1644.2	1682.38	1659.48	1551.63	102	94	80-118	8	30
Di-n-butylphthalate	N.D.	1644.2	2458.34	1659.48	1762.65	150*	106	84-120	33*	30
Carbazole	N.D.	1644.2	1420.9	1659.48	1302.36	86	78*	80-120	9	30
4-Chloro-3-methylphenol	N.D.	1644.2	1533.14	1659.48	1170.4	93	71*	78-124	27	30
4-Chloroaniline	N.D.	1644.2	N.D.	1659.48	N.D.	0*	0*	10-110	0	30
bis(2-Chloroethoxy)methane	N.D.	1644.2	1529.71	1659.48	1361.17	93	82	77-116	12	30
bis(2-Chloroethyl)ether	N.D.	1644.2	1705.39	1659.48	1643.02	104	99	68-115	4	30
2-Chloronaphthalene	N.D.	1644.2	1616.77	1659.48	1709.74	98	103	57-148	6	30
2-Chlorophenol	N.D.	1644.2	1694.92	1659.48	1373.11	103	83	80-121	21	30
4-Chlorophenyl-phenylether	N.D.	1644.2	1635.78	1659.48	1566.95	99	94	73-119	4	30
2,2'-oxybis(1-Chloropropane)	N.D.	1644.2	1302.77	1659.48	1224.04	79	74	60-123	6	30
Chrysene	N.D.	1644.2	1541.71	1659.48	1405.69	94	85	72-121	9	30
Dibenz(a,h)anthracene	N.D.	1644.2	1714.17	1659.48	1590.83	104	96	72-129	7	30
Dibenzofuran	N.D.	1644.2	1635.93	1659.48	1527.26	99	92	79-114	7	30
1,2-Dichlorobenzene	N.D.	1644.2	1691.16	1659.48	1580.59	103	95	77-113	7	30
1,3-Dichlorobenzene	N.D.	1644.2	1612.43	1659.48	1487.96	98	90	79-113	8	30
1,4-Dichlorobenzene	N.D.	1644.2	1659.15	1659.48	1477.55	101	89	79-112	12	30
3,3'-Dichlorobenzidine	N.D.	1644.2	N.D.	1659.48	N.D.	0*	0*	12-125	0	30
2,4-Dichlorophenol	N.D.	1644.2	1797.73	1659.48	1491.44	109	90	86-125	19	30
Diethylphthalate	N.D.	1644.2	1563.33	1659.48	1440.24	95	87	81-118	8	30
2,4-Dimethylphenol	N.D.	1644.2	1303.16	1659.48	N.D.	79	0*	57-109	200*	30
Dimethylphthalate	N.D.	1644.2	1560.75	1659.48	1493.18	95	90	82-113	4	30
4,6-Dinitro-2-methylphenol	N.D.	1644.2	N.D.	1659.48	N.D.	0*	0*	53-130	0	30
2,4-Dinitrophenol	N.D.	3288.39	N.D.	3318.95	N.D.	0*	0*	27-136	0	30
2,4-Dinitrotoluene	N.D.	1644.2	1106.8	1659.48	701.27	67*	42*	81-122	45*	30
2,6-Dinitrotoluene	N.D.	1644.2	1329.04	1659.48	967.36	81	58*	80-120	31*	30
bis(2-Ethylhexyl)phthalate	629.2	1644.2	4606.19	1659.48	2455.54	242*	110	81-121	61*	30
Fluoranthene	N.D.	1644.2	1477.41	1659.48	1368.46	90	82	72-120	8	30
Fluorene	N.D.	1644.2	1609.01	1659.48	1486.49	98	90	75-118	8	30

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Quality Control Summary

Client Name: EA Engineering
Reported: 07/06/2017 12:21

Group Number: 1812851

MS/MSD (continued)

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc ug/kg	MS Spike Added ug/kg	MS Conc ug/kg	MSD Spike Added ug/kg	MSD Conc ug/kg	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Hexachlorobenzene	N.D.	1644.2	1642.14	1659.48	1514.32	100	91	73-120	8	30
Hexachlorobutadiene	N.D.	1644.2	1711.11	1659.48	1589.56	104	96	72-120	7	30
Hexachlorocyclopentadiene	N.D.	3288.39	N.D.	3318.95	N.D.	0*	0*	57-142	0	30
Hexachloroethane	N.D.	1644.2	1300.38	1659.48	1243.04	79	75	69-116	5	30
Indeno(1,2,3-cd)pyrene	N.D.	1644.2	1644.81	1659.48	1499.94	100	90	69-125	9	30
Isophorone	N.D.	1644.2	1417.39	1659.48	1309.66	86	79	70-118	8	30
2-Methylnaphthalene	57.88	1644.2	1696.18	1659.48	1547.78	100	90	77-116	9	30
2-Methylphenol	N.D.	1644.2	1603.09	1659.48	355.39	97	21*	74-128	127*	30
4-Methylphenol	345.35	1644.2	2722.02	1659.48	1405.65	145*	64*	72-120	64*	30
Naphthalene	384.55	1644.2	2198.85	1659.48	1812.41	110	86	75-113	19	30
2-Nitroaniline	N.D.	1644.2	2041.24	1659.48	606.66	124	37*	84-126	108*	30
3-Nitroaniline	N.D.	1644.2	612.97	1659.48	N.D.	37*	0*	60-125	200*	30
4-Nitroaniline	N.D.	1644.2	1294.28	1659.48	480.9	79	29*	50-112	92*	30
Nitrobenzene	N.D.	1644.2	1473.53	1659.48	2233.16	90	135*	70-122	41*	30
2-Nitrophenol	1270.79	1644.2	654.6	1659.48	818.96	-36*	-26*	83-120	22	30
4-Nitrophenol	N.D.	1644.2	932.55	1659.48	N.D.	57	0*	52-133	200*	30
N-Nitroso-di-n-propylamine	N.D.	1644.2	1720.99	1659.48	1448.11	105	87	67-121	17	30
N-Nitrosodiphenylamine	N.D.	1644.2	1640.04	1659.48	1588.87	100	96	83-118	3	30
Di-n-octylphthalate	N.D.	1644.2	2249.42	1659.48	1839.51	137	111	80-140	20	30
Pentachlorophenol	N.D.	1644.2	544.51	1659.48	389.25	33*	23*	56-131	33*	30
Phenanthrene	20.87	1644.2	1565.18	1659.48	1486.85	94	88	74-114	5	30
Phenol	4075.26	1644.2	8635.49	1659.48	6589.14	277*	151*	73-122	27	30
Pyrene	N.D.	1644.2	1580.6	1659.48	1434.14	96	86	74-112	10	30
1,2,4-Trichlorobenzene	119.03	1644.2	1978.76	1659.48	1812.04	113	102	79-114	9	30
2,4,5-Trichlorophenol	N.D.	1644.2	1597.91	1659.48	1279.59	97	77*	86-123	22	30
2,4,6-Trichlorophenol	101.45	1644.2	1747.67	1659.48	1607.29	100	91	81-123	8	30
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 171661063704	Sample number(s): 9046219 UNSPK: 9046219									
Arsenic	1.85	14.56	15.74	13.64	14.63	95	94	75-125	7	20
Barium	83.67	194.17	320.85	181.82	281.67	122	109	75-125	13	20
Cadmium	N.D.	4.85	4.64	4.55	4.40	96	97	75-125	5	20
Chromium	17.68	19.42	40.34	18.18	39.46	117	120	75-125	2	20
Lead	686.35	14.56	412.06	13.64	254.39	-1883 (2)	-3168 (2)	75-125	47*	20
Selenium	N.D.	14.56	14.68	13.64	14	101	103	75-125	5	20
Silver	N.D.	4.85	4.00	4.55	3.78	82	83	75-125	6	20
Batch number: 171661063803	Sample number(s): 9046219 UNSPK: P047128									
Mercury	0.0268	0.164	0.183	0.159	0.171	95	91	80-120	6	20

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: EA Engineering
Reported: 07/06/2017 12:21

Group Number: 1812851

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc mg/kg	DUP Conc mg/kg	DUP RPD	DUP RPD Max
Batch number: 171661063704	Sample number(s): 9046219 BKG: 9046219			
Arsenic	1.85	1.97	6 (1)	20
Barium	83.67	88.52	6	20
Cadmium	N.D.	N.D.	0 (1)	20
Chromium	17.68	18.26	3	20
Lead	686.35	413.09	50*	20
Selenium	N.D.	N.D.	0 (1)	20
Silver	N.D.	N.D.	0 (1)	20
Batch number: 171661063803	Sample number(s): 9046219 BKG: P047128			
Mercury	0.0268	0.0281	5 (1)	20
	%	%		
Batch number: 17173820017B	Sample number(s): 9046219 BKG: P045572			
Moisture	15.56	13.33	15*	5

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: VOCs- Solid by 8260B
Batch number: B171741AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
9046219	96	103	99	91
Blank	96	103	99	93
LCS	100	108	101	99
LCSD	98	102	101	98
MS	99	103	101	97
MSD	98	101	100	98
Limits:	50-141	54-135	52-141	50-131

Analysis Name: SVOA 8270D (microwave)
Batch number: 17165SLP026

	Phenol-d6	2-Fluorophenol	2,4,6-Tribromophenol	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
9046219	87	88	64	73	87	92
Blank	87	93	85	79	89	94
LCS	91	92	83	79	94	94
MS	86	91	69	81	98	95
MSD	71	71	48	71	89	88
Limits:	46-125	43-130	28-141	45-125	50-124	43-132

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: EA Engineering
Reported: 07/06/2017 12:21

Group Number: 1812851

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

30056 | ~~1993845~~ | ~~8960235~~ ~~37~~ 6/14/17
1812851 / 9046219

EA Engineering - Wilcox
DateShipped: 4/25/2017
CarrierName: FedEx
AirbillNo: 7789 8805 2290

CHAIN OF CUSTODY RECORD
Site #: 277
Contact Name: Patrick Appel
Contact Phone: 972-315-3922

No: 6-042517-151912-0156
Lab Contact: Angela Miller
Lab: Eurofins Lancaster Laboratories Environmental LLC
Lab Phone: 717-656-2300

Lab #	Sample #	Analyses	Preservative	Sampler	Collected	Sample Time	Numb Cont	Container	Lab QC
	WPA-WC-01	Ignitability Moisture PCBs pH	Ice to 4C	Jason Stroup	4/25/2017	16:30	1	8oz Jar	N
	WPA-WC-01	Dioxins Furans	Ice to 4C	Jason Stroup	4/25/2017	16:30	1	8oz Jar	N
	WPA-WC-01	Reactivity	Ice to 4C	Jason Stroup	4/25/2017	16:30	1	4oz Jar	N
	WPA-WC-01	GRO	Ice to 4C	Jason Stroup	4/25/2017	16:30	2	Encore	N
	WPA-WC-01	ORO	Ice to 4C	Jason Stroup	4/25/2017	16:30	1	8oz Jar	N
	WPA-WC-01	DRO	Ice to 4C	Jason Stroup	4/25/2017	16:30	1	8oz Jar	N
	WPA-WC-01	TCLP Metals TCLP SVOCs	Ice to 4C	Jason Stroup	4/25/2017	16:30	3	8oz Jar	N
	WPA-WC-01	TCLP VOCs	Ice to 4C	Jason Stroup	4/25/2017	16:30	3	Encore	N

Special Instructions:

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
		4-25-17 1100	Alvin Bughac EA	4-25-17 1100	
	EA	4-25-17 1100	FEDEX (courier)	4-25-17 2000	
			3 /	4/26/17 940	

Angela Miller A12851

From: Moss, Pamela <pmoss@eaest.com>
Sent: Tuesday, June 13, 2017 3:25 PM
To: Kay Hower; Angela Miller
Subject: Wilcox - additional sample analysis WCL08

Importance: High

HI Kay and Angela,
Not sure who is managing this project. I need to request we also run the total VOCs, SVOCs and RCRA metals inc. mercury on the sample ID WPA-WC-01 in SDG WLC08. I know this is out of hold for VOCs and SVOCs.
Plz confirm we have enough sample. We should since we did for the other 2 waste samples. thank you.

Pam

PLZ NOTE NEW ADDRESS BELOW

Pamela J. Moss
Senior Scientist
EA Engineering, Science, and Technology, Inc., PBC
7995 E. Prentice Ave, Suite 206E
Greenwood Village, CO 80111
303-590-9143 (office)
303-810-6903 (cell)
pmoss@eaest.com

EA Engineering, Science, and Technology, Inc.

IMPROVING THE QUALITY OF THE ENVIRONMENT IN WHICH WE LIVE, ONE PROJECT AT A TIME®

Notify us here to report this email as spam.

eurofins

Lancaster Laboratories Environmental

Sample Administration Receipt Documentation Log

Doc Log ID: 181849

Group Number(s): ~~1793845~~ @pr 6/14/17

1812851

Client: EA

Delivery and Receipt Information

Delivery Method:	Fed Ex	Arrival Timestamp:	04/26/2017 9:40
Number of Packages:	3	Number of Projects:	1

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	VOA Vial Headspace ≥ 6mm:	N/A
Samples Chilled:	Yes	Total Trip Blank Qty:	0
Paperwork Enclosed:	Yes	Air Quality Samples Present:	No
Samples Intact:	Yes		
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Timothy Cubberley (6520) at 11:49 on 04/26/2017

Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT131	0.8	DT	Wet	Y	Bagged	N
2	DT131	0.8	DT	Wet	Y	Bagged	N
3	DT131	0.4	DT	Wet	Y	Bagged	N

2425 New Holland Pike
Lancaster, PA 17605-2425

T 717-656-2300
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Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	**mg**	milligram(s)
C	degrees Celsius	**mL**	milliliter(s)
cfu	colony forming units	**MPN**	Most Probable Number
CP Units	cobalt-chloroplatinate units	**N.D.**	none detected
F	degrees Fahrenheit	**ng**	nanogram(s)
g	gram(s)	**NTU**	nephelometric turbidity units
IU	International Units	**pg/L**	picogram/liter
kg	kilogram(s)	**RL**	Reporting Limit
L	liter(s)	**TNTC**	Too Numerous To Count
lb.	pound(s)	**µg**	microgram(s)
m3	cubic meter(s)	**µL**	microliter(s)
meq	milliequivalents	**umhos/cm**	micromhos/cm

< less than

> greater than

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Laboratory Data Qualifiers:

C - Result confirmed by reanalysis
E - Concentration exceeds the calibration range
J (or G, I, X) - estimated value ≥ the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)
P - Concentration difference between the primary and confirmation column >40%. The lower result is reported.
U - Analyte was not detected at the value indicated
V - Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference…
W - The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

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