CERTIFICATION

SDG No:	FA42031	Laboratory:	Accutest, Florida
Site:	BMS, Humacao, PR	Matrix:	Groundwater

SUMMARY: Groundwater samples (Table 1) were collected on the BMSMC, Humacao, PR. Samples were taken March 10 and 13, 2017 and were analyzed in Accutest Laboratory of Orlando, Florida and Accutest Laboratory of Dayton, New Jersey (LMWA) that reported the data under SDG No.: FA42031. Results were validated using the latest validation guidelines (July, 2015) of the EPA Hazardous Waste Support Section or the QC requirements of the method employed. The analyses performed are shown in Table 1. Individual data review worksheets are enclosed for each target analyte group. The organic data sample summary form shows for analyte results that were qualified.

In summary the results are valid and can be used for decision making purposes.

Table 1. Samples analyzed and analysis performed

SAMPLE ID	SAMPLE DESCRIPTION	MATRIX	ANALYSIS PERFORMED
FA42031-1	EB031017	AQ – Equipment Blank	VOCs; SVOCs; SVOCs (SIM); LMWA; VPHs; EPHs
FA42031-2	BR-1	Groundwater	VOCs; SVOCs; SVOCs (SIM); LMWA; VPHs; EPHs
FA42031-3	TB031017HR	AQ – Trip Blank	VOCs
FA42031-4	BR-4	Groundwater	VOCs; SVOCs; SVOCs (SIM); LMWA; VPHs; EPHs
FA42031-5	FB031017	AQ – Field Blank Water	VOCs; SVOCs; SVOCs (SIM); LMWA; VPHs; EPHs
FA42031-6	BR-1 DUP	Groundwater	VOCs; SVOCs; SVOCs (SIM); LMWA; VPHs; EPHs
FA42031-7	BR-2	Groundwater	VOCs; SVOCs; SVOCs (SIM); LMWA; VPHs; EPHs
FA42031-7D	BR-2 MSD	Groundwater	VOCs; SVOCs; SVOCs (SIM); VPHs; EPHs
FA42031-7S	BR-2 MS	Groundwater	VOCs; SVOCs; SVOCs (SIM); VPHs; EPHs
FA42031-7D	BR-2 MSD	Groundwater	VOCs
FA42031-7S	BR-2 MS	Groundwater	VOCs
FA42031-8	TB031017NR	AQ – Trip Blank	VOCs
FA42031-9	MW-15	Groundwater	VOCs; SVOCs; SVOCs (SIM); LMWA; VPHs; EPHs
FA42031-10	MW-14	Groundwater	VOCs; SVOCs; SVOCs (SIM); LMWA; VPHs; EPHs
FA42031-11	MW-14 DUP	Groundwater	VOCs; SVOCs; SVOCs (SIM); LMWA; VPHs; EPHs

SAMPLE ID	SAMPLE DESCRIPTION	MATRIX	ANALYSIS PERFORMED
FA42031-12	MW-13	Groundwater	VOCs; SVOCs; SVOCs (SIM); LMWA; VPHs; EPHs
FA42031-13	TB031317HR	AQ – Trip Blank Water	VOCs
FA42031-14	TB031317NR	AQ – Trip Blank Water	VOCs
FA42031-15	MW-16	Groundwater	VOCs; SVOCs; SVOCs (SIM); LMWA; VPHs; EPHs
FA42031-16	FB031317	AQ – Field Blank Water	VOCs; SVOCs; SVOCs (SIM); LMWA; VPHs; EPHs
FA42031-17	BR-3	Groundwater	VOCs; SVOCs; SVOCs (SIM); LMWA; VPHs; EPHs

Reviewer Name: Rafael Infante
Chemist License 1888

Signature: Rafael Infante

Date: May 3, 2017

SGS Accutest

Report of Analysis

Client Sample ID:	\B0341017		
Lab Sample ID:	FA42031-1	Date Sampled:	03/10/17
Matrix:	AQ - Equipment Blank	Date Received:	03/14/17
Method:	SW846 8260C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B120779.D	1	03/24/17	WV	n/a	n/a	VB4859
Run #2	I46439.D	1	03/21/17	WV	n/a	n/a	VI1301

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA TCL List (SOM02.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	25	10	ug/l	
71-43-2	Benzene	ND	1.0	0.31	ug/l	
100-44-7	Benzyl Chloride	ND	2.0	0.36	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.45	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.24	ug/l	
75-25-2	Bromoform	ND	1.0	0.41	ug/l	
106-99-0	1,3-Butadiene	ND [a]	2.0	0.26	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.0	ug/l	
75-15-0	Carbon Disulfide	ND	2.0	0.53	ug/l	
56-23-5	Carbon Tetrachloride	ND	1.0	0.36	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.20	ug/l	
75-00-3	Chloroethane	ND	2.0	0.67	ug/l	
67-66-3	Chloroform	ND	1.0	0.30	ug/l	
110-82-7	Cyclohexane	ND	1.0	0.39	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.28	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.28	ug/l	
75-71-8	Dichlorodifluoromethane	ND [a]	2.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.32	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.22	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.26	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.34	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.31	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.32	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.22	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.43	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.29	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.21	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.36	ug/l	
76-13-1	Freon 113	ND	1.0	0.48	ug/l	
591-78-6	2-Hexanone	ND	10	2.0	ug/l	

LIBRE ASOCIADO DE PUERTO RICO
Manuel Infante Méndez
IQ # 1888
QUIMICO LICENCIADO

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	\B0341017		
Lab Sample ID:	FA42031-1	Date Sampled:	03/10/17
Matrix:	AQ - Equipment Blank	Date Received:	03/14/17
Method:	SW846 8260C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

VOA TCL List (SOM02.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.22	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.21	ug/l	
79-20-9	Methyl Acetate	ND	20	5.0	ug/l	
74-83-9	Methyl Bromide	ND	2.0	0.59	ug/l	
74-87-3	Methyl Chloride	ND	2.0	0.50	ug/l	
108-87-2	Methylcyclohexane	ND	1.0	0.44	ug/l	
75-09-2	Methylene Chloride	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.23	ug/l	
100-42-5	Styrene	ND	1.0	0.22	ug/l	
75-85-4	Tert-Amyl Alcohol	ND	20	5.3	ug/l	
75-65-0	Tert-Butyl Alcohol	ND	20	5.3	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.30	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.22	ug/l	
109-99-9	Tetrahydrofuran	ND	5.0	1.6	ug/l	
108-88-3	Toluene	ND	1.0	0.30	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	0.61	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.47	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.35	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.50	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.32	ug/l	
75-01-4	Vinyl Chloride	ND	1.0	0.41	ug/l	
	m,p-Xylene	ND	2.0	0.47	ug/l	
95-47-6	o-Xylene	ND	1.0	0.26	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%	102%	83-118%
17060-07-0	1,2-Dichloroethane-D4	101%	107%	79-125%
2037-26-5	Toluene-D8	98%	102%	85-112%
460-00-4	4-Bromofluorobenzene	98%	102%	83-118%

(a) Result is from Run# 2

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ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	BR-1		
Lab Sample ID:	FA42031-2	Date Sampled:	03/10/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	SW846 8260C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B120780.D	1	03/24/17	WV	n/a	n/a	VB4859
Run #2	I46440.D	1	03/21/17	WV	n/a	n/a	VI1301

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA TCL List (SOM02.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	25	10	ug/l	
71-43-2	Benzene	ND	1.0	0.31	ug/l	
100-44-7	Benzyl Chloride	ND	2.0	0.36	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.45	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.24	ug/l	
75-25-2	Bromoform	ND	1.0	0.41	ug/l	
106-99-0	1,3-Butadiene	ND [a]	2.0	0.26	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.0	ug/l	
75-15-0	Carbon Disulfide	ND	2.0	0.53	ug/l	
56-23-5	Carbon Tetrachloride	ND	1.0	0.36	ug/l	
108-90-7	Chlorobenzene	1.2	1.0	0.20	ug/l	
75-00-3	Chloroethane	ND	2.0	0.67	ug/l	
67-66-3	Chloroform	ND	1.0	0.30	ug/l	
110-82-7	Cyclohexane	3.3	1.0	0.39	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.28	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.28	ug/l	
75-71-8	Dichlorodifluoromethane	ND [a]	2.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	0.98	1.0	0.32	ug/l	J
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.22	ug/l	
106-46-7	1,4-Dichlorobenzene	0.58	1.0	0.26	ug/l	J
75-34-3	1,1-Dichloroethane	ND	1.0	0.34	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.31	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.32	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.22	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.43	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.29	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.21	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.36	ug/l	
76-13-1	Freon 113	ND	1.0	0.48	ug/l	
591-78-6	2-Hexanone	ND	10	2.0	ug/l	

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J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	BR-1		
Lab Sample ID:	FA42031-2	**Date Sampled:**	03/10/17
Matrix:	AQ - Ground Water	**Date Received:**	03/14/17
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	BMSMC, Humacao, PR		

VOA TCL List (SOM02.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	2.4	1.0	0.22	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.21	ug/l	
79-20-9	Methyl Acetate	ND	20	5.0	ug/l	
74-83-9	Methyl Bromide	ND	2.0	0.59	ug/l	
74-87-3	Methyl Chloride	ND	2.0	0.50	ug/l	
108-87-2	Methylcyclohexane	ND	1.0	0.44	ug/l	
75-09-2	Methylene Chloride	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	10.3	1.0	0.23	ug/l	
100-42-5	Styrene	ND	1.0	0.22	ug/l	
75-85-4	Tert-Amyl Alcohol	ND	20	5.3	ug/l	
75-65-0	Tert-Butyl Alcohol	140	20	5.3	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.30	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.22	ug/l	
109-99-9	Tetrahydrofuran	ND	5.0	1.6	ug/l	
108-88-3	Toluene	ND	1.0	0.30	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	0.61	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.47	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.35	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.50	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.32	ug/l	
75-01-4	Vinyl Chloride	ND	1.0	0.41	ug/l	
	m,p-Xylene	ND	2.0	0.47	ug/l	
95-47-6	o-Xylene	ND	1.0	0.26	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%	101%	83-118%
17060-07-0	1,2-Dichloroethane-D4	108%	109%	79-125%
2037-26-5	Toluene-D8	97%	101%	85-112%
460-00-4	4-Bromofluorobenzene	101%	102%	83-118%

(a) Result is from Run# 2

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ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	TB031017HR		
Lab Sample ID:	FA42031-3	Date Sampled:	03/10/17
Matrix:	AQ - Trip Blank Water	Date Received:	03/14/17
Method:	SW846 8260C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B120781.D	1	03/24/17	WV	n/a	n/a	VB4859
Run #2	I46441.D	1	03/21/17	WV	n/a	n/a	VI1301

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA TCL List (SOM02.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	25	10	ug/l	
71-43-2	Benzene	ND	1.0	0.31	ug/l	
100-44-7	Benzyl Chloride	ND	2.0	0.36	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.45	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.24	ug/l	
75-25-2	Bromoform	ND	1.0	0.41	ug/l	
106-99-0	1,3-Butadiene	ND [a]	2.0	0.26	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.0	ug/l	
75-15-0	Carbon Disulfide	ND	2.0	0.53	ug/l	
56-23-5	Carbon Tetrachloride	ND	1.0	0.36	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.20	ug/l	
75-00-3	Chloroethane	ND	2.0	0.67	ug/l	
67-66-3	Chloroform	ND	1.0	0.30	ug/l	
110-82-7	Cyclohexane	ND	1.0	0.39	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.28	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.28	ug/l	
75-71-8	Dichlorodifluoromethane	ND [a]	2.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.32	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.22	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.26	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.34	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.31	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.32	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.22	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.43	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.29	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.21	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.36	ug/l	
76-13-1	Freon 113	ND	1.0	0.48	ug/l	
591-78-6	2-Hexanone	ND	10	2.0	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TB031017HR		
Lab Sample ID:	FA42031-3	**Date Sampled:**	03/10/17
Matrix:	AQ - Trip Blank Water	**Date Received:**	03/14/17
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	BMSMC, Humacao, PR		

VOA TCL List (SOM02.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.22	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.21	ug/l	
79-20-9	Methyl Acetate	ND	20	5.0	ug/l	
74-83-9	Methyl Bromide	ND	2.0	0.59	ug/l	
74-87-3	Methyl Chloride	ND	2.0	0.50	ug/l	
108-87-2	Methylcyclohexane	ND	1.0	0.44	ug/l	
75-09-2	Methylene Chloride	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.23	ug/l	
100-42-5	Styrene	ND	1.0	0.22	ug/l	
75-85-4	Tert-Amyl Alcohol	ND	20	5.3	ug/l	
75-65-0	Tert-Butyl Alcohol	ND	20	5.3	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.30	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.22	ug/l	
109-99-9	Tetrahydrofuran	ND	5.0	1.6	ug/l	
108-88-3	Toluene	0.65	1.0	0.30	ug/l	J
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	0.61	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.47	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.35	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.50	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.32	ug/l	
75-01-4	Vinyl Chloride	ND	1.0	0.41	ug/l	
	m,p-Xylene	ND	2.0	0.47	ug/l	
95-47-6	o-Xylene	ND	1.0	0.26	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%	101%	83-118%
17060-07-0	1,2-Dichloroethane-D4	109%	108%	79-125%
2037-26-5	Toluene-D8	100%	102%	85-112%
460-00-4	4-Bromofluorobenzene	102%	100%	83-118%

(a) Result is from Run# 2

COLEGIO DE QUIMICOS LIBRE ASOCIADO DE PUERTO RICO
Rafael Infante Méndez
RC # 1868
QUIMICO LICENCIADO

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	BR-4		
Lab Sample ID:	FA42031-4	Date Sampled:	03/10/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	SW846 8260C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B120782.D	1	03/24/17	WV	n/a	n/a	VB4859
Run #2	I46442.D	1	03/21/17	WV	n/a	n/a	VI1301

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA TCL List (SOM02.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	25	10	ug/l	
71-43-2	Benzene	ND	1.0	0.31	ug/l	
100-44-7	Benzyl Chloride	ND	2.0	0.36	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.45	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.24	ug/l	
75-25-2	Bromoform	ND	1.0	0.41	ug/l	
106-99-0	1,3-Butadiene	ND [a]	2.0	0.26	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.0	ug/l	
75-15-0	Carbon Disulfide	ND	2.0	0.53	ug/l	
56-23-5	Carbon Tetrachloride	ND	1.0	0.36	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.20	ug/l	
75-00-3	Chloroethane	ND	2.0	0.67	ug/l	
67-66-3	Chloroform	ND	1.0	0.30	ug/l	
110-82-7	Cyclohexane	ND	1.0	0.39	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.28	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.28	ug/l	
75-71-8	Dichlorodifluoromethane	ND [a]	2.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.32	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.22	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.26	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.34	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.31	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.32	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.22	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.43	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.29	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.21	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.36	ug/l	
76-13-1	Freon 113	ND	1.0	0.48	ug/l	
591-78-6	2-Hexanone	ND	10	2.0	ug/l	

COLEGIO DE QUIMICOS DE PUERTO RICO
Manuel Infante Méndez
IC # 1888
QUIMICO LICENCIADO

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J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	BR-4		
Lab Sample ID:	FA42031-4	**Date Sampled:**	03/10/17
Matrix:	AQ - Ground Water	**Date Received:**	03/14/17
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	BMSMC, Humacao, PR		

VOA TCL List (SOM02.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.22	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.21	ug/l	
79-20-9	Methyl Acetate	ND	20	5.0	ug/l	
74-83-9	Methyl Bromide	ND	2.0	0.59	ug/l	
74-87-3	Methyl Chloride	ND	2.0	0.50	ug/l	
108-87-2	Methylcyclohexane	ND	1.0	0.44	ug/l	
75-09-2	Methylene Chloride	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.23	ug/l	
100-42-5	Styrene	ND	1.0	0.22	ug/l	
75-85-4	Tert-Amyl Alcohol	ND	20	5.3	ug/l	
75-65-0	Tert-Butyl Alcohol	ND	20	5.3	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.30	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.22	ug/l	
109-99-9	Tetrahydrofuran	ND	5.0	1.6	ug/l	
108-88-3	Toluene	ND	1.0	0.30	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	0.61	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.47	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.35	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.50	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.32	ug/l	
75-01-4	Vinyl Chloride	ND	1.0	0.41	ug/l	
	m,p-Xylene	ND	2.0	0.47	ug/l	
95-47-6	o-Xylene	ND	1.0	0.26	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%	102%	83-118%
17060-07-0	1,2-Dichloroethane-D4	108%	109%	79-125%
2037-26-5	Toluene-D8	99%	102%	85-112%
460-00-4	4-Bromofluorobenzene	102%	98%	83-118%

(a) Result is from Run# 2

ASOCIADO DE PUERTO RICO
Manuel Infante Méndez
IC # 1888
QUIMICO LICENCIADO

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SGS Accutest

Report of Analysis

Client Sample ID:	FB031017		
Lab Sample ID:	FA42031-5	Date Sampled:	03/10/17
Matrix:	AQ - Field Blank Water	Date Received:	03/14/17
Method:	SW846 8260C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B120783.D	1	03/24/17	WV	n/a	n/a	VB4859
Run #2	P49080.D	1	03/24/17	MM	n/a	n/a	VP1851

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA TCL List (SOM02.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	25	10	ug/l	
71-43-2	Benzene	ND	1.0	0.31	ug/l	
100-44-7	Benzyl Chloride	ND	2.0	0.36	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.45	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.24	ug/l	
75-25-2	Bromoform	ND	1.0	0.41	ug/l	
106-99-0	1,3-Butadiene	ND [a]	2.0	0.26	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.0	ug/l	
75-15-0	Carbon Disulfide	ND	2.0	0.53	ug/l	
56-23-5	Carbon Tetrachloride	ND	1.0	0.36	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.20	ug/l	
75-00-3	Chloroethane	ND	2.0	0.67	ug/l	
67-66-3	Chloroform	ND	1.0	0.30	ug/l	
110-82-7	Cyclohexane	ND	1.0	0.39	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.28	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.28	ug/l	
75-71-8	Dichlorodifluoromethane	ND [a]	2.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.32	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.22	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.26	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.34	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.31	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.32	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.22	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.43	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.29	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.21	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.36	ug/l	
76-13-1	Freon 113	ND	1.0	0.48	ug/l	
591-78-6	2-Hexanone	ND	10	2.0	ug/l	

LIBRE ASOCIADO DE PUERTO RICO
Rafael Infante Méndez
IC # 1888
QUIMICO LICENCIADO

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Report of Analysis

Client Sample ID:	FB031017		
Lab Sample ID:	FA42031-5	**Date Sampled:**	03/10/17
Matrix:	AQ - Field Blank Water	**Date Received:**	03/14/17
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	BMSMC, Humacao, PR		

VOA TCL List (SOM02.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.22	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.21	ug/l	
79-20-9	Methyl Acetate	ND	20	5.0	ug/l	
74-83-9	Methyl Bromide	ND	2.0	0.59	ug/l	
74-87-3	Methyl Chloride	ND	2.0	0.50	ug/l	
108-87-2	Methylcyclohexane	ND	1.0	0.44	ug/l	
75-09-2	Methylene Chloride	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.23	ug/l	
100-42-5	Styrene	ND	1.0	0.22	ug/l	
75-85-4	Tert-Amyl Alcohol	ND	20	5.3	ug/l	
75-65-0	Tert-Butyl Alcohol	ND	20	5.3	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.30	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.22	ug/l	
109-99-9	Tetrahydrofuran	ND	5.0	1.6	ug/l	
108-88-3	Toluene	0.42	1.0	0.30	ug/l	J
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	0.61	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.47	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.35	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.50	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.32	ug/l	
75-01-4	Vinyl Chloride	ND	1.0	0.41	ug/l	
	m,p-Xylene	ND	2.0	0.47	ug/l	
95-47-6	o-Xylene	ND	1.0	0.26	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%	96%	83-118%
17060-07-0	1,2-Dichloroethane-D4	108%	100%	79-125%
2037-26-5	Toluene-D8	98%	100%	85-112%
460-00-4	4-Bromofluorobenzene	98%	97%	83-118%

(a) Result is from Run# 2

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N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	BR-1 DUP		
Lab Sample ID:	FA42031-6	Date Sampled:	03/10/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	SW846 8260C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P49081.D	1	03/24/17	MM	n/a	n/a	VP1851
Run #2 [a]	B120805.D	1	03/25/17	WV	n/a	n/a	VB4861

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA TCL List (SOM02.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	25	10	ug/l	
71-43-2	Benzene	ND	1.0	0.31	ug/l	
100-44-7	Benzyl Chloride	ND	2.0	0.36	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.45	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.24	ug/l	
75-25-2	Bromoform	ND	1.0	0.41	ug/l	
106-99-0	1,3-Butadiene	ND	2.0	0.26	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.0	ug/l	
75-15-0	Carbon Disulfide	ND	2.0	0.53	ug/l	
56-23-5	Carbon Tetrachloride	ND	1.0	0.36	ug/l	
108-90-7	Chlorobenzene	1.2	1.0	0.20	ug/l	
75-00-3	Chloroethane	ND	2.0	0.67	ug/l	
67-66-3	Chloroform	ND	1.0	0.30	ug/l	
110-82-7	Cyclohexane	4.0	1.0	0.39	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.28	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.28	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	1.0	1.0	0.32	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.22	ug/l	
106-46-7	1,4-Dichlorobenzene	0.58	1.0	0.26	ug/l	J
75-34-3	1,1-Dichloroethane	ND	1.0	0.34	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.31	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.32	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.22	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.43	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.29	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.21	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.36	ug/l	
76-13-1	Freon 113	ND	1.0	0.48	ug/l	
591-78-6	2-Hexanone	ND	10	2.0	ug/l	

LIBRE ASOCIADO DE PUERTO RICO
Manuel Infante Méndez
IC # 1888
QUIMICO LICENCIADO

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B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	BR-1 DUP		
Lab Sample ID:	FA42031-6	Date Sampled:	03/10/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	SW846 8260C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

VOA TCL List (SOM02.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	2.9	1.0	0.22	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.21	ug/l	
79-20-9	Methyl Acetate	ND	20	5.0	ug/l	
74-83-9	Methyl Bromide	ND	2.0	0.59	ug/l	
74-87-3	Methyl Chloride	ND	2.0	0.50	ug/l	
108-87-2	Methylcyclohexane	ND	1.0	0.44	ug/l	
75-09-2	Methylene Chloride	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	11.0	1.0	0.23	ug/l	
100-42-5	Styrene	ND	1.0	0.22	ug/l	
75-85-4	Tert-Amyl Alcohol	ND	20	5.3	ug/l	
75-65-0	Tert-Butyl Alcohol [b]	109	20	5.3	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.30	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.22	ug/l	
109-99-9	Tetrahydrofuran	ND	5.0	1.6	ug/l	
108-88-3	Toluene	ND	1.0	0.30	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	0.61	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.47	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.35	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.50	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.32	ug/l	
75-01-4	Vinyl Chloride	ND	1.0	0.41	ug/l	
	m,p-Xylene	ND	2.0	0.47	ug/l	
95-47-6	o-Xylene	ND	1.0	0.26	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%	106%	83-118%
17060-07-0	1,2-Dichloroethane-D4	100%	109%	79-125%
2037-26-5	Toluene-D8	99%	98%	85-112%
460-00-4	4-Bromofluorobenzene	97%	100%	83-118%

(a) Confirmation run.
(b) Associated ICV outside control limits.

LIBRE ASOCIADO DE PUERTO RICO
Manuel Infante Méndez
IC # 1888
QUIMICO

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B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	BR-2		
Lab Sample ID:	FA42031-7	Date Sampled:	03/10/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	SW846 8260C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P49082.D	1	03/24/17	MM	n/a	n/a	VP1851
Run #2 [a]	B120787.D	1	03/24/17	WV	n/a	n/a	VB4859

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA TCL List (SOM02.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	25	10	ug/l	
71-43-2	Benzene	ND	1.0	0.31	ug/l	
100-44-7	Benzyl Chloride	ND	2.0	0.36	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.45	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.24	ug/l	
75-25-2	Bromoform	ND	1.0	0.41	ug/l	
106-99-0	1,3-Butadiene	ND	2.0	0.26	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.0	ug/l	
75-15-0	Carbon Disulfide	ND	2.0	0.53	ug/l	
56-23-5	Carbon Tetrachloride	ND	1.0	0.36	ug/l	
108-90-7	Chlorobenzene	0.26	1.0	0.20	ug/l	J
75-00-3	Chloroethane	ND	2.0	0.67	ug/l	
67-66-3	Chloroform	ND	1.0	0.30	ug/l	
110-82-7	Cyclohexane	ND	1.0	0.39	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.28	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.28	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	0.50	1.0	0.32	ug/l	J
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.22	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.26	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.34	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.31	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.32	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.22	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.43	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.29	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.21	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.36	ug/l	
76-13-1	Freon 113	ND	1.0	0.48	ug/l	
591-78-6	2-Hexanone	ND	10	2.0	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

...BRE ASOCIADO DE PUERTO RICO
...ael Infante
Méndez
IC # 1888
...MICO LICENCIADO

Report of Analysis

Client Sample ID:	BR-2		
Lab Sample ID:	FA42031-7	Date Sampled:	03/10/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	SW846 8260C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

VOA TCL List (SOM02.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	4.6	1.0	0.22	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.21	ug/l	
79-20-9	Methyl Acetate	ND	20	5.0	ug/l	
74-83-9	Methyl Bromide	ND	2.0	0.59	ug/l	
74-87-3	Methyl Chloride	ND	2.0	0.50	ug/l	
108-87-2	Methylcyclohexane	ND	1.0	0.44	ug/l	
75-09-2	Methylene Chloride	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	2.6	1.0	0.23	ug/l	
100-42-5	Styrene	ND	1.0	0.22	ug/l	
75-85-4	Tert-Amyl Alcohol	ND	20	5.3	ug/l	
75-65-0	Tert-Butyl Alcohol [b]	11.7	20	5.3	ug/l	J
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.30	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.22	ug/l	
109-99-9	Tetrahydrofuran	ND	5.0	1.6	ug/l	
108-88-3	Toluene	ND	1.0	0.30	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	0.61	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.47	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.35	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.50	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.32	ug/l	
75-01-4	Vinyl Chloride	ND	1.0	0.41	ug/l	
	m,p-Xylene	ND	2.0	0.47	ug/l	
95-47-6	o-Xylene	ND	1.0	0.26	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%	105%	83-118%
17060-07-0	1,2-Dichloroethane-D4	100%	109%	79-125%
2037-26-5	Toluene-D8	100%	97%	85-112%
460-00-4	4-Bromofluorobenzene	95%	101%	83-118%

(a) Confirmation run.
(b) Associated ICV outside control limits.

LIBRE ASOCIADO DE PUERTO RICO
Rafael Infante Méndez
IC # 1888
QUIMICO LICENCIADO

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	TB031017NR		
Lab Sample ID:	FA42031-8	Date Sampled:	03/10/17
Matrix:	AQ - Trip Blank Water	Date Received:	03/14/17
Method:	SW846 8260C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P49083.D	1	03/24/17	MM	n/a	n/a	VP1851
Run #2 [a]	B120806.D	1	03/25/17	WV	n/a	n/a	VB4861

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA TCL List (SOM02.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	25	10	ug/l	
71-43-2	Benzene	ND	1.0	0.31	ug/l	
100-44-7	Benzyl Chloride	ND	2.0	0.36	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.45	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.24	ug/l	
75-25-2	Bromoform	ND	1.0	0.41	ug/l	
106-99-0	1,3-Butadiene	ND	2.0	0.26	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.0	ug/l	
75-15-0	Carbon Disulfide	ND	2.0	0.53	ug/l	
56-23-5	Carbon Tetrachloride	ND	1.0	0.36	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.20	ug/l	
75-00-3	Chloroethane	ND	2.0	0.67	ug/l	
67-66-3	Chloroform	ND	1.0	0.30	ug/l	
110-82-7	Cyclohexane	ND	1.0	0.39	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.28	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.28	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.32	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.22	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.26	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.34	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.31	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.32	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.22	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.43	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.29	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.21	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.36	ug/l	
76-13-1	Freon 113	ND	1.0	0.48	ug/l	
591-78-6	2-Hexanone	ND	10	2.0	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

LIBRE ASOCIADO DE PUERTO RICO
Rafael Infante Méndez
IC # 1888
QUIMICO LICENCIADO

Report of Analysis

Client Sample ID:	TB031017NR		
Lab Sample ID:	FA42031-8	Date Sampled:	03/10/17
Matrix:	AQ - Trip Blank Water	Date Received:	03/14/17
Method:	SW846 8260C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

VOA TCL List (SOM02.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.22	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.21	ug/l	
79-20-9	Methyl Acetate	ND	20	5.0	ug/l	
74-83-9	Methyl Bromide	ND	2.0	0.59	ug/l	
74-87-3	Methyl Chloride	ND	2.0	0.50	ug/l	
108-87-2	Methylcyclohexane	ND	1.0	0.44	ug/l	
75-09-2	Methylene Chloride	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.23	ug/l	
100-42-5	Styrene	ND	1.0	0.22	ug/l	
75-85-4	Tert-Amyl Alcohol	ND	20	5.3	ug/l	
75-65-0	Tert-Butyl Alcohol [b]	ND	20	5.3	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.30	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.22	ug/l	
109-99-9	Tetrahydrofuran	ND	5.0	1.6	ug/l	
108-88-3	Toluene	1.4	1.0	0.30	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	0.61	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.47	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.35	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.50	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.32	ug/l	
75-01-4	Vinyl Chloride	ND	1.0	0.41	ug/l	
	m,p-Xylene	ND	2.0	0.47	ug/l	
95-47-6	o-Xylene	ND	1.0	0.26	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%	104%	83-118%
17060-07-0	1,2-Dichloroethane-D4	101%	112%	79-125%
2037-26-5	Toluene-D8	100%	99%	85-112%
460-00-4	4-Bromofluorobenzene	95%	101%	83-118%

(a) Confirmation run.
(b) Associated ICV outside control limits.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	MW-15		
Lab Sample ID:	FA42031-9	Date Sampled:	03/13/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	SW846 8260C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P49084.D	1	03/24/17	MM	n/a	n/a	VP1851
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List (SOM02.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	25	10	ug/l	
71-43-2	Benzene	ND	1.0	0.31	ug/l	
100-44-7	Benzyl Chloride	ND	2.0	0.36	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.45	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.24	ug/l	
75-25-2	Bromoform	ND	1.0	0.41	ug/l	
106-99-0	1,3-Butadiene	ND	2.0	0.26	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.0	ug/l	
75-15-0	Carbon Disulfide	ND	2.0	0.53	ug/l	
56-23-5	Carbon Tetrachloride	ND	1.0	0.36	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.20	ug/l	
75-00-3	Chloroethane	ND	2.0	0.67	ug/l	
67-66-3	Chloroform	ND	1.0	0.30	ug/l	
110-82-7	Cyclohexane	0.65	1.0	0.39	ug/l	J
124-48-1	Dibromochloromethane	ND	1.0	0.28	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.28	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.32	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.22	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.26	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.34	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.31	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.32	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.22	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.43	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.29	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.21	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.36	ug/l	
76-13-1	Freon 113	ND	1.0	0.48	ug/l	
591-78-6	2-Hexanone	ND	10	2.0	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-15		
Lab Sample ID:	FA42031-9	**Date Sampled:**	03/13/17
Matrix:	AQ - Ground Water	**Date Received:**	03/14/17
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	BMSMC, Humacao, PR		

VOA TCL List (SOM02.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	28.0	1.0	0.22	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.21	ug/l	
79-20-9	Methyl Acetate	ND	20	5.0	ug/l	
74-83-9	Methyl Bromide	ND	2.0	0.59	ug/l	
74-87-3	Methyl Chloride	ND	2.0	0.50	ug/l	
108-87-2	Methylcyclohexane	0.49	1.0	0.44	ug/l	J
75-09-2	Methylene Chloride	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	21.0	1.0	0.23	ug/l	
100-42-5	Styrene	ND	1.0	0.22	ug/l	
75-85-4	Tert-Amyl Alcohol	ND	20	5.3	ug/l	
75-65-0	Tert-Butyl Alcohol [a]	435	20	5.3	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.30	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.22	ug/l	
109-99-9	Tetrahydrofuran	5.1	5.0	1.6	ug/l	
108-88-3	Toluene	ND	1.0	0.30	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	0.61	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.47	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.35	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.50	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.32	ug/l	
75-01-4	Vinyl Chloride	ND	1.0	0.41	ug/l	
	m,p-Xylene	ND	2.0	0.47	ug/l	
95-47-6	o-Xylene	ND	1.0	0.26	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		83-118%
17060-07-0	1,2-Dichloroethane-D4	101%		79-125%
2037-26-5	Toluene-D8	99%		85-112%
460-00-4	4-Bromofluorobenzene	95%		83-118%

(a) Associated ICV outside control limits.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	MW-14		
Lab Sample ID:	FA42031-10	Date Sampled:	03/13/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	SW846 8260C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P49085.D	1	03/24/17	MM	n/a	n/a	VP1851
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List (SOM02.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	25	10	ug/l	
71-43-2	Benzene	ND	1.0	0.31	ug/l	
100-44-7	Benzyl Chloride	ND	2.0	0.36	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.45	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.24	ug/l	
75-25-2	Bromoform	ND	1.0	0.41	ug/l	
106-99-0	1,3-Butadiene	ND	2.0	0.26	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.0	ug/l	
75-15-0	Carbon Disulfide	ND	2.0	0.53	ug/l	
56-23-5	Carbon Tetrachloride	ND	1.0	0.36	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.20	ug/l	
75-00-3	Chloroethane	ND	2.0	0.67	ug/l	
67-66-3	Chloroform	ND	1.0	0.30	ug/l	
110-82-7	Cyclohexane	ND	1.0	0.39	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.28	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.28	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.32	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.22	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.26	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.34	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.31	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.32	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.22	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.43	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.29	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.21	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.36	ug/l	
76-13-1	Freon 113	ND	1.0	0.48	ug/l	
591-78-6	2-Hexanone	ND	10	2.0	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-14		
Lab Sample ID:	FA42031-10	Date Sampled:	03/13/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	SW846 8260C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

VOA TCL List (SOM02.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.22	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.21	ug/l	
79-20-9	Methyl Acetate	ND	20	5.0	ug/l	
74-83-9	Methyl Bromide	ND	2.0	0.59	ug/l	
74-87-3	Methyl Chloride	ND	2.0	0.50	ug/l	
108-87-2	Methylcyclohexane	ND	1.0	0.44	ug/l	
75-09-2	Methylene Chloride	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.23	ug/l	
100-42-5	Styrene	ND	1.0	0.22	ug/l	
75-85-4	Tert-Amyl Alcohol	ND	20	5.3	ug/l	
75-65-0	Tert-Butyl Alcohol [a]	ND	20	5.3	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.30	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.22	ug/l	
109-99-9	Tetrahydrofuran	ND	5.0	1.6	ug/l	
108-88-3	Toluene	ND	1.0	0.30	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	0.61	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.47	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.35	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.50	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.32	ug/l	
75-01-4	Vinyl Chloride	ND	1.0	0.41	ug/l	
	m,p-Xylene	ND	2.0	0.47	ug/l	
95-47-6	o-Xylene	ND	1.0	0.26	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		83-118%
17060-07-0	1,2-Dichloroethane-D4	103%		79-125%
2037-26-5	Toluene-D8	97%		85-112%
460-00-4	4-Bromofluorobenzene	95%		83-118%

(a) Associated ICV outside control limits.

LIBRE ASOCIADO DE PUERTO RICO
Manuel Infante Méndez
QUIMICO LICENCIADO

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	MW-14 DUP		
Lab Sample ID:	FA42031-11	Date Sampled:	03/13/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	SW846 8260C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P49086.D	1	03/24/17	MM	n/a	n/a	VP1851
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List (SOM02.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	25	10	ug/l	
71-43-2	Benzene	ND	1.0	0.31	ug/l	
100-44-7	Benzyl Chloride	ND	2.0	0.36	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.45	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.24	ug/l	
75-25-2	Bromoform	ND	1.0	0.41	ug/l	
106-99-0	1,3-Butadiene	ND	2.0	0.26	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.0	ug/l	
75-15-0	Carbon Disulfide	ND	2.0	0.53	ug/l	
56-23-5	Carbon Tetrachloride	ND	1.0	0.36	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.20	ug/l	
75-00-3	Chloroethane	ND	2.0	0.67	ug/l	
67-66-3	Chloroform	ND	1.0	0.30	ug/l	
110-82-7	Cyclohexane	ND	1.0	0.39	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.28	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.28	ug/l	
75-71-8	Dichlorodifluoromethane	0.69	2.0	0.50	ug/l	J
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.32	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.22	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.26	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.34	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.31	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.32	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.22	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.43	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.29	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.21	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.36	ug/l	
76-13-1	Freon 113	ND	1.0	0.48	ug/l	
591-78-6	2-Hexanone	ND	10	2.0	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

LIBRE ASOCIADO DE PUERTO RICO
Rafael Infante Méndez
QUIMICO LICENCIADO

Report of Analysis

Client Sample ID:	MW-14 DUP		
Lab Sample ID:	FA42031-11	Date Sampled:	03/13/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	SW846 8260C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

VOA TCL List (SOM02.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.22	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.21	ug/l	
79-20-9	Methyl Acetate	ND	20	5.0	ug/l	
74-83-9	Methyl Bromide	ND	2.0	0.59	ug/l	
74-87-3	Methyl Chloride	ND	2.0	0.50	ug/l	
108-87-2	Methylcyclohexane	ND	1.0	0.44	ug/l	
75-09-2	Methylene Chloride	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.23	ug/l	
100-42-5	Styrene	ND	1.0	0.22	ug/l	
75-85-4	Tert-Amyl Alcohol	ND	20	5.3	ug/l	
75-65-0	Tert-Butyl Alcohol [a]	ND	20	5.3	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.30	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.22	ug/l	
109-99-9	Tetrahydrofuran	ND	5.0	1.6	ug/l	
108-88-3	Toluene	ND	1.0	0.30	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	0.61	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.47	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.35	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.50	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.32	ug/l	
75-01-4	Vinyl Chloride	ND	1.0	0.41	ug/l	
	m,p-Xylene	ND	2.0	0.47	ug/l	
95-47-6	o-Xylene	ND	1.0	0.26	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		83-118%
17060-07-0	1,2-Dichloroethane-D4	101%		79-125%
2037-26-5	Toluene-D8	98%		85-112%
460-00-4	4-Bromofluorobenzene	94%		83-118%

(a) Associated ICV outside control limits.

LIBRE ASOCIADO DE PUERTO RICO
Rafael Infante Méndez
IC # 1888
QUIMICO LICENCIADO

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	MW-13		
Lab Sample ID:	FA42031-12	Date Sampled:	03/13/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	SW846 8260C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P49087.D	1	03/24/17	MM	n/a	n/a	VP1851
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List (SOM02.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	25	10	ug/l	
71-43-2	Benzene	ND	1.0	0.31	ug/l	
100-44-7	Benzyl Chloride	ND	2.0	0.36	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.45	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.24	ug/l	
75-25-2	Bromoform	ND	1.0	0.41	ug/l	
106-99-0	1,3-Butadiene	ND	2.0	0.26	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.0	ug/l	
75-15-0	Carbon Disulfide	ND	2.0	0.53	ug/l	
56-23-5	Carbon Tetrachloride	ND	1.0	0.36	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.20	ug/l	
75-00-3	Chloroethane	ND	2.0	0.67	ug/l	
67-66-3	Chloroform	ND	1.0	0.30	ug/l	
110-82-7	Cyclohexane	ND	1.0	0.39	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.28	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.28	ug/l	
75-71-8	Dichlorodifluoromethane	2.6	2.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.32	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.22	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.26	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.34	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.31	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.32	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.22	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.43	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.29	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.21	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.36	ug/l	
76-13-1	Freon 113	ND	1.0	0.48	ug/l	
591-78-6	2-Hexanone	ND	10	2.0	ug/l	

LIBRE ASOCIADO DE PUERTO RICO • ...tuel Infante Méndez ...IC # 1588 ...MICO LICENCIADO

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-13		
Lab Sample ID:	FA42031-12	Date Sampled:	03/13/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	SW846 8260C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

VOA TCL List (SOM02.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.22	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.21	ug/l	
79-20-9	Methyl Acetate	ND	20	5.0	ug/l	
74-83-9	Methyl Bromide	ND	2.0	0.59	ug/l	
74-87-3	Methyl Chloride	ND	2.0	0.50	ug/l	
108-87-2	Methylcyclohexane	ND	1.0	0.44	ug/l	
75-09-2	Methylene Chloride	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.23	ug/l	
100-42-5	Styrene	ND	1.0	0.22	ug/l	
75-85-4	Tert-Amyl Alcohol	ND	20	5.3	ug/l	
75-65-0	Tert-Butyl Alcohol [a]	ND	20	5.3	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.30	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.22	ug/l	
109-99-9	Tetrahydrofuran	ND	5.0	1.6	ug/l	
108-88-3	Toluene	ND	1.0	0.30	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	0.61	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.47	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.35	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.50	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.32	ug/l	
75-01-4	Vinyl Chloride	ND	1.0	0.41	ug/l	
	m,p-Xylene	ND	2.0	0.47	ug/l	
95-47-6	o-Xylene	ND	1.0	0.26	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		83-118%
17060-07-0	1,2-Dichloroethane-D4	100%		79-125%
2037-26-5	Toluene-D8	101%		85-112%
460-00-4	4-Bromofluorobenzene	97%		83-118%

(a) Associated ICV outside control limits.

LIBRE ASOCIADO DE PUERTO RICO
Rafael Infante Méndez
IQ - 1888
QUIMICO LICENCIADO

ND = Not detected MDL = Method Detection Limit
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E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Raw Data: P49088.D

SGS Accutest

Report of Analysis

Client Sample ID:	TB031317HR		
Lab Sample ID:	FA42031-13	Date Sampled:	03/13/17
Matrix:	AQ - Trip Blank Water	Date Received:	03/14/17
Method:	SW846 8260C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	P49088.D	1	03/24/17	MM	n/a	n/a	VP1851
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List (SOM02.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	25	10	ug/l	
71-43-2	Benzene	ND	1.0	0.31	ug/l	
100-44-7	Benzyl Chloride	ND	2.0	0.36	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.45	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.24	ug/l	
75-25-2	Bromoform	ND	1.0	0.41	ug/l	
106-99-0	1,3-Butadiene	ND	2.0	0.26	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.0	ug/l	
75-15-0	Carbon Disulfide	ND	2.0	0.53	ug/l	
56-23-5	Carbon Tetrachloride	ND	1.0	0.36	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.20	ug/l	
75-00-3	Chloroethane	ND	2.0	0.67	ug/l	
67-66-3	Chloroform	ND	1.0	0.30	ug/l	
110-82-7	Cyclohexane	ND	1.0	0.39	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.28	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.28	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.32	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.22	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.26	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.34	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.31	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.32	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.22	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.43	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.29	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.21	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.36	ug/l	
76-13-1	Freon 113	ND	1.0	0.48	ug/l	
591-78-6	2-Hexanone	ND	10	2.0	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

LIBRE ASOCIADO DE PUERTO RICO
Manuel Infante Méndez
IQ # 1888
QUÍMICO LICENCIADO

Report of Analysis

Client Sample ID:	TB031317HR		
Lab Sample ID:	FA42031-13	Date Sampled:	03/13/17
Matrix:	AQ - Trip Blank Water	Date Received:	03/14/17
Method:	SW846 8260C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

VOA TCL List (SOM02.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.22	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.21	ug/l	
79-20-9	Methyl Acetate	ND	20	5.0	ug/l	
74-83-9	Methyl Bromide	ND	2.0	0.59	ug/l	
74-87-3	Methyl Chloride	ND	2.0	0.50	ug/l	
108-87-2	Methylcyclohexane	ND	1.0	0.44	ug/l	
75-09-2	Methylene Chloride	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.23	ug/l	
100-42-5	Styrene	ND	1.0	0.22	ug/l	
75-85-4	Tert-Amyl Alcohol	ND	20	5.3	ug/l	
75-65-0	Tert-Butyl Alcohol [b]	ND	20	5.3	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.30	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.22	ug/l	
109-99-9	Tetrahydrofuran	ND	5.0	1.6	ug/l	
108-88-3	Toluene	0.79	1.0	0.30	ug/l	J
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	0.61	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.47	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.35	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.50	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.32	ug/l	
75-01-4	Vinyl Chloride	ND	1.0	0.41	ug/l	
	m,p-Xylene	ND	2.0	0.47	ug/l	
95-47-6	o-Xylene	ND	1.0	0.26	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		83-118%
17060-07-0	1,2-Dichloroethane-D4	101%		79-125%
2037-26-5	Toluene-D8	101%		85-112%
460-00-4	4-Bromofluorobenzene	98%		83-118%

(a) Sample vial(s) contained bubbles greater than 6mm; reported results are considered minimum values.
(b) Associated ICV outside control limits.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	TB031317NR		
Lab Sample ID:	FA42031-14	Date Sampled:	03/13/17
Matrix:	AQ - Trip Blank Water	Date Received:	03/14/17
Method:	SW846 8260C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P49089.D	1	03/24/17	MM	n/a	n/a	VP1851
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List (SOM02.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	25	10	ug/l	
71-43-2	Benzene	ND	1.0	0.31	ug/l	
100-44-7	Benzyl Chloride	ND	2.0	0.36	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.45	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.24	ug/l	
75-25-2	Bromoform	ND	1.0	0.41	ug/l	
106-99-0	1,3-Butadiene	ND	2.0	0.26	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.0	ug/l	
75-15-0	Carbon Disulfide	ND	2.0	0.53	ug/l	
56-23-5	Carbon Tetrachloride	ND	1.0	0.36	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.20	ug/l	
75-00-3	Chloroethane	ND	2.0	0.67	ug/l	
67-66-3	Chloroform	ND	1.0	0.30	ug/l	
110-82-7	Cyclohexane	ND	1.0	0.39	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.28	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.28	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.32	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.22	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.26	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.34	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.31	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.32	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.22	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.43	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.29	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.21	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.36	ug/l	
76-13-1	Freon 113	ND	1.0	0.48	ug/l	
591-78-6	2-Hexanone	ND	10	2.0	ug/l	

LIBRE ASOCIADO DE PUERTO RICO
Manuel Infante Méndez
IQ - 1868
QUÍMICO LICENCIADO

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TB031317NR		
Lab Sample ID:	FA42031-14	**Date Sampled:**	03/13/17
Matrix:	AQ - Trip Blank Water	**Date Received:**	03/14/17
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	BMSMC, Humacao, PR		

VOA TCL List (SOM02.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.22	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.21	ug/l	
79-20-9	Methyl Acetate	ND	20	5.0	ug/l	
74-83-9	Methyl Bromide	ND	2.0	0.59	ug/l	
74-87-3	Methyl Chloride	ND	2.0	0.50	ug/l	
108-87-2	Methylcyclohexane	ND	1.0	0.44	ug/l	
75-09-2	Methylene Chloride	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.23	ug/l	
100-42-5	Styrene	ND	1.0	0.22	ug/l	
75-85-4	Tert-Amyl Alcohol	ND	20	5.3	ug/l	
75-65-0	Tert-Butyl Alcohol [a]	ND	20	5.3	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.30	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.22	ug/l	
109-99-9	Tetrahydrofuran	ND	5.0	1.6	ug/l	
108-88-3	Toluene	1.6	1.0	0.30	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	0.61	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.47	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.35	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.50	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.32	ug/l	
75-01-4	Vinyl Chloride	ND	1.0	0.41	ug/l	
	m,p-Xylene	ND	2.0	0.47	ug/l	
95-47-6	o-Xylene	ND	1.0	0.26	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		83-118%
17060-07-0	1,2-Dichloroethane-D4	102%		79-125%
2037-26-5	Toluene-D8	100%		85-112%
460-00-4	4-Bromofluorobenzene	97%		83-118%

(a) Associated ICV outside control limits.

LIBRE ASOCIADO DE PUERTO RICO
Rafael Infante Méndez
IC # 1888
QUIMICO LICENCIADO

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	MW-16		
Lab Sample ID:	FA42031-15	Date Sampled:	03/13/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	SW846 8260C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P49090.D	1	03/24/17	MM	n/a	n/a	VP1851
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List (SOM02.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	25	10	ug/l	
71-43-2	Benzene	ND	1.0	0.31	ug/l	
100-44-7	Benzyl Chloride	ND	2.0	0.36	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.45	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.24	ug/l	
75-25-2	Bromoform	ND	1.0	0.41	ug/l	
106-99-0	1,3-Butadiene	ND	2.0	0.26	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.0	ug/l	
75-15-0	Carbon Disulfide	ND	2.0	0.53	ug/l	
56-23-5	Carbon Tetrachloride	ND	1.0	0.36	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.20	ug/l	
75-00-3	Chloroethane	ND	2.0	0.67	ug/l	
67-66-3	Chloroform	ND	1.0	0.30	ug/l	
110-82-7	Cyclohexane	ND	1.0	0.39	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.28	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.28	ug/l	
75-71-8	Dichlorodifluoromethane	0.56	2.0	0.50	ug/l	J
95-50-1	1,2-Dichlorobenzene	6.9	1.0	0.32	ug/l	
541-73-1	1,3-Dichlorobenzene	0.25	1.0	0.22	ug/l	J
106-46-7	1,4-Dichlorobenzene	1.5	1.0	0.26	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.34	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.31	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.32	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.22	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.43	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.29	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.21	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.36	ug/l	
76-13-1	Freon 113	9.4	1.0	0.48	ug/l	
591-78-6	2-Hexanone	ND	10	2.0	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-16		
Lab Sample ID:	FA42031-15	**Date Sampled:**	03/13/17
Matrix:	AQ - Ground Water	**Date Received:**	03/14/17
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	BMSMC, Humacao, PR		

VOA TCL List (SOM02.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.22	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.21	ug/l	
79-20-9	Methyl Acetate	ND	20	5.0	ug/l	
74-83-9	Methyl Bromide	ND	2.0	0.59	ug/l	
74-87-3	Methyl Chloride	ND	2.0	0.50	ug/l	
108-87-2	Methylcyclohexane	ND	1.0	0.44	ug/l	
75-09-2	Methylene Chloride	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.23	ug/l	
100-42-5	Styrene	ND	1.0	0.22	ug/l	
75-85-4	Tert-Amyl Alcohol	ND	20	5.3	ug/l	
75-65-0	Tert-Butyl Alcohol [a]	ND	20	5.3	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.30	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.22	ug/l	
109-99-9	Tetrahydrofuran	ND	5.0	1.6	ug/l	
108-88-3	Toluene	ND	1.0	0.30	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	0.61	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.47	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.35	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.50	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.32	ug/l	
75-01-4	Vinyl Chloride	ND	1.0	0.41	ug/l	
	m,p-Xylene	ND	2.0	0.47	ug/l	
95-47-6	o-Xylene	ND	1.0	0.26	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		83-118%
17060-07-0	1,2-Dichloroethane-D4	102%		79-125%
2037-26-5	Toluene-D8	101%		85-112%
460-00-4	4-Bromofluorobenzene	95%		83-118%

(a) Associated ICV outside control limits.

LIBRE ASOCIADO DE PUERTO RICO
Manuel Infante Méndez
IC # 1888
QUIMICO LICENCIADO

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	FB031317		
Lab Sample ID:	FA42031-16	Date Sampled:	03/13/17
Matrix:	AQ - Field Blank Water	Date Received:	03/14/17
Method:	SW846 8260C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P49091.D	1	03/24/17	MM	n/a	n/a	VP1851
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List (SOM02.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	25	10	ug/l	
71-43-2	Benzene	ND	1.0	0.31	ug/l	
100-44-7	Benzyl Chloride	ND	2.0	0.36	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.45	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.24	ug/l	
75-25-2	Bromoform	ND	1.0	0.41	ug/l	
106-99-0	1,3-Butadiene	ND	2.0	0.26	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.0	ug/l	
75-15-0	Carbon Disulfide	ND	2.0	0.53	ug/l	
56-23-5	Carbon Tetrachloride	ND	1.0	0.36	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.20	ug/l	
75-00-3	Chloroethane	ND	2.0	0.67	ug/l	
67-66-3	Chloroform	ND	1.0	0.30	ug/l	
110-82-7	Cyclohexane	ND	1.0	0.39	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.28	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.28	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.32	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.22	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.26	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.34	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.31	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.32	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.22	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.43	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.29	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.21	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.36	ug/l	
76-13-1	Freon 113	ND	1.0	0.48	ug/l	
591-78-6	2-Hexanone	ND	10	2.0	ug/l	

LIBRE ASOCIADO DE PUERTO RICO
ıtael Infante
Méndez
IC # 1888
QUIMICO LICENCIADO

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	FB031317		
Lab Sample ID:	FA42031-16	**Date Sampled:**	03/13/17
Matrix:	AQ - Field Blank Water	**Date Received:**	03/14/17
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	BMSMC, Humacao, PR		

VOA TCL List (SOM02.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	ND	1.0	0.22	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.21	ug/l	
79-20-9	Methyl Acetate	ND	20	5.0	ug/l	
74-83-9	Methyl Bromide	ND	2.0	0.59	ug/l	
74-87-3	Methyl Chloride	ND	2.0	0.50	ug/l	
108-87-2	Methylcyclohexane	ND	1.0	0.44	ug/l	
75-09-2	Methylene Chloride	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.23	ug/l	
100-42-5	Styrene	ND	1.0	0.22	ug/l	
75-85-4	Tert-Amyl Alcohol	ND	20	5.3	ug/l	
75-65-0	Tert-Butyl Alcohol [a]	ND	20	5.3	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.30	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.22	ug/l	
109-99-9	Tetrahydrofuran	ND	5.0	1.6	ug/l	
108-88-3	Toluene	ND	1.0	0.30	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	0.61	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.47	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.35	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.50	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.32	ug/l	
75-01-4	Vinyl Chloride	ND	1.0	0.41	ug/l	
	m,p-Xylene	ND	2.0	0.47	ug/l	
95-47-6	o-Xylene	ND	1.0	0.26	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		83-118%
17060-07-0	1,2-Dichloroethane-D4	101%		79-125%
2037-26-5	Toluene-D8	101%		85-112%
460-00-4	4-Bromofluorobenzene	96%		83-118%

(a) Associated ICV outside control limits.

LIBRE ASOCIADO DE PUERTO RICO
Manuel Infante Méndez
IC # 1868
QUIMICO LICENCIADO

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	BR-3		
Lab Sample ID:	FA42031-17	Date Sampled:	03/13/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	SW846 8260C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P49092.D	1	03/24/17	MM	n/a	n/a	VP1851
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List (SOM02.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	25	10	ug/l	
71-43-2	Benzene	ND	1.0	0.31	ug/l	
100-44-7	Benzyl Chloride	ND	2.0	0.36	ug/l	
74-97-5	Bromochloromethane	ND	1.0	0.45	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.24	ug/l	
75-25-2	Bromoform	ND	1.0	0.41	ug/l	
106-99-0	1,3-Butadiene	ND	2.0	0.26	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.0	ug/l	
75-15-0	Carbon Disulfide	ND	2.0	0.53	ug/l	
56-23-5	Carbon Tetrachloride	ND	1.0	0.36	ug/l	
108-90-7	Chlorobenzene	0.34	1.0	0.20	ug/l	J
75-00-3	Chloroethane	ND	2.0	0.67	ug/l	
67-66-3	Chloroform	ND	1.0	0.30	ug/l	
110-82-7	Cyclohexane	ND	1.0	0.39	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.28	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.28	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.50	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.32	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.22	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.26	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.34	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.31	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.32	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.28	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.22	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.43	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.29	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.21	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.36	ug/l	
76-13-1	Freon 113	ND	1.0	0.48	ug/l	
591-78-6	2-Hexanone	ND	10	2.0	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	BR-3		
Lab Sample ID:	FA42031-17	**Date Sampled:**	03/13/17
Matrix:	AQ - Ground Water	**Date Received:**	03/14/17
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	BMSMC, Humacao, PR		

VOA TCL List (SOM02.0)

CAS No.	Compound	Result	RL	MDL	Units	Q
98-82-8	Isopropylbenzene	1.0	1.0	0.22	ug/l	
99-87-6	p-Isopropyltoluene	ND	1.0	0.21	ug/l	
79-20-9	Methyl Acetate	ND	20	5.0	ug/l	
74-83-9	Methyl Bromide	ND	2.0	0.59	ug/l	
74-87-3	Methyl Chloride	ND	2.0	0.50	ug/l	
108-87-2	Methylcyclohexane	ND	1.0	0.44	ug/l	
75-09-2	Methylene Chloride	ND	5.0	2.0	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	1.0	1.0	0.23	ug/l	
100-42-5	Styrene	ND	1.0	0.22	ug/l	
75-85-4	Tert-Amyl Alcohol	ND	20	5.3	ug/l	
75-65-0	Tert-Butyl Alcohol [a]	ND	20	5.3	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.30	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.22	ug/l	
109-99-9	Tetrahydrofuran	ND	5.0	1.6	ug/l	
108-88-3	Toluene	ND	1.0	0.30	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	0.61	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.47	ug/l	
79-01-6	Trichloroethylene	ND	1.0	0.35	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	0.50	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	0.32	ug/l	
75-01-4	Vinyl Chloride	ND	1.0	0.41	ug/l	
	m,p-Xylene	ND	2.0	0.47	ug/l	
95-47-6	o-Xylene	ND	1.0	0.26	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		83-118%
17060-07-0	1,2-Dichloroethane-D4	101%		79-125%
2037-26-5	Toluene-D8	100%		85-112%
460-00-4	4-Bromofluorobenzene	97%		83-118%

(a) Associated ICV outside control limits.

LIBRE ASOCIADO DE PUERTO RICO
Manuel Infante Méndez
IQ # 1888
QUIMICO LICENCIADO

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Raw Data: B120784.D B120785.D

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA42031
Account: AMANYWP Anderson, Mulholland & Associates
Project: BMSMC, Humacao, PR

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FA42031-7MS	B120784.D	1	03/24/17	WV	n/a	n/a	VB4859
FA42031-7MSD	B120785.D	1	03/24/17	WV	n/a	n/a	VB4859
FA42031-7 [a]	B120787.D	1	03/24/17	WV	n/a	n/a	VB4859

6.3.2 6

The QC reported here applies to the following samples: **Method:** SW846 8260C

FA42031-1, FA42031-2, FA42031-3, FA42031-4, FA42031-5

CAS No.	Compound	FA42031-7 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND		125	104	83	125	130	104	22*	50-147/21
71-43-2	Benzene	ND		25	25.5	102	25	28.6	114	11	81-122/14
100-44-7	Benzyl Chloride	ND		25	24.6	98	25	29.6	118	18	54-122/18
74-97-5	Bromochloromethane	ND		25	24.0	96	25	27.1	108	12	76-123/14
75-27-4	Bromodichloromethane	ND		25	25.3	101	25	27.1	108	7	79-123/19
75-25-2	Bromoform	ND		25	17.4	70	25	21.9	88	23*	66-123/21
78-93-3	2-Butanone (MEK)	ND		125	103	82	125	135	108	27*	56-143/18
75-15-0	Carbon Disulfide	ND		25	22.7	91	25	23.0	92	1	66-148/23
56-23-5	Carbon Tetrachloride	ND		25	29.6	118	25	29.8	119	1	76-136/23
108-90-7	Chlorobenzene	ND		25	26.1	104	25	28.5	114	9	82-124/14
75-00-3	Chloroethane	ND		25	28.4	114	25	29.8	119	5	62-144/20
67-66-3	Chloroform	ND		25	26.4	106	25	28.9	116	9	80-124/15
110-82-7	Cyclohexane	ND		25	24.1	96	25	28.5	114	17	73-138/18
124-48-1	Dibromochloromethane	ND		25	21.2	85	25	24.3	97	14	78-122/19
96-12-8	1,2-Dibromo-3-chloropropane	ND		25	22.1	88	25	27.3	109	21*	64-123/18
106-93-4	1,2-Dibromoethane	ND		25	23.9	96	25	27.5	110	14*	75-120/13
95-50-1	1,2-Dichlorobenzene	0.56	J	25	25.8	101	25	29.0	114	12	82-124/14
541-73-1	1,3-Dichlorobenzene	ND		25	25.6	102	25	29.0	116	12	84-125/14
106-46-7	1,4-Dichlorobenzene	ND		25	25.4	102	25	27.7	111	9	78-120/15
75-34-3	1,1-Dichloroethane	ND		25	27.3	109	25	29.8	119	9	81-122/15
107-06-2	1,2-Dichloroethane	ND		25	26.1	104	25	30.3	121	15*	75-125/14
75-35-4	1,1-Dichloroethylene	ND		25	28.2	113	25	33.0	132	16	78-137/18
156-59-2	cis-1,2-Dichloroethylene	ND		25	25.9	104	25	27.8	111	7	78-120/15
156-60-5	trans-1,2-Dichloroethylene	ND		25	29.7	119	25	32.0	128*	7	76-127/17
78-87-5	1,2-Dichloropropane	ND		25	24.4	98	25	27.1	108	10	76-124/14
10061-01-5	cis-1,3-Dichloropropene	ND		25	25.4	102	25	26.8	107	5	75-118/23
10061-02-6	trans-1,3-Dichloropropene	ND		25	26.3	105	25	27.8	111	6	80-120/22
100-41-4	Ethylbenzene	ND		25	27.2	109	25	28.6	114	5	81-121/14
76-13-1	Freon 113	ND		25	25.0	100	25	27.6	110	10	72-134/20
591-78-6	2-Hexanone	ND		125	102	82	125	128	102	23*	61-129/18
98-82-8	Isopropylbenzene	4.6		25	28.5	96	25	31.5	108	10	83-132/15
99-87-6	p-Isopropyltoluene	ND		25	28.3	113	25	30.5	122	7	79-130/16
79-20-9	Methyl Acetate	ND		125	103	82	125	131	105	24*	65-126/18
74-83-9	Methyl Bromide	ND		25	26.3	105	25	30.0	120	13	59-143/19
74-87-3	Methyl Chloride	ND		25	25.1	100	25	27.6	[illegible]	9	50-159/19
108-87-2	Methylcyclohexane	ND		25	26.7	107	25	[illegible]	[illegible]	14	76-129/17

* = Outside of Control Limits.

[illegible]uel Infante Méndez IQ # 1[illegible] QUÍMICO LICENCIADO

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA42031
Account: AMANYWP Anderson, Mulholland & Associates
Project: BMSMC, Humacao, PR

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FA42031-7MS	B120784.D	1	03/24/17	WV	n/a	n/a	VB4859
FA42031-7MSD	B120785.D	1	03/24/17	WV	n/a	n/a	VB4859
FA42031-7 [a]	B120787.D	1	03/24/17	WV	n/a	n/a	VB4859

6.3.2

6

The QC reported here applies to the following samples: **Method:** SW846 8260C

FA42031-1, FA42031-2, FA42031-3, FA42031-4, FA42031-5

CAS No.	Compound	FA42031-7 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
75-09-2	Methylene Chloride	ND		25	27.8	111	25	30.6	122	10	69-135/16
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		125	105	84	125	135	108	25*	66-122/16
1634-04-4	Methyl Tert Butyl Ether	2.3		25	25.4	92	25	31.8	118*	22*	72-117/14
100-42-5	Styrene	ND		25	23.6	94	25	25.7	103	9	78-119/23
75-85-4	Tert-Amyl Alcohol	ND		250	204	82	250	259	104	24*	65-124/23
75-65-0	Tert-Butyl Alcohol	12.4	J	250	215	81	250	270	103	23	63-129/27
79-34-5	1,1,2,2-Tetrachloroethane	ND		25	20.7	83	25	25.6	102	21*	72-120/14
127-18-4	Tetrachloroethylene	ND		25	27.4	110	25	28.2	113	3	76-135/16
109-99-9	Tetrahydrofuran	ND		25	20.0	80	25	25.3	101	23*	56-122/21
108-88-3	Toluene	ND		25	26.1	104	25	27.6	110	6	80-120/14
87-61-6	1,2,3-Trichlorobenzene	ND		25	27.2	109	25	31.7	127	15	68-131/25
120-82-1	1,2,4-Trichlorobenzene	ND		25	28.3	113	25	31.1	124	9	73-129/20
71-55-6	1,1,1-Trichloroethane	ND		25	28.0	112	25	30.8	123	10	75-130/16
79-00-5	1,1,2-Trichloroethane	ND		25	23.2	93	25	27.2	109	16*	76-119/14
79-01-6	Trichloroethylene	ND		25	26.9	108	25	30.3	121	12	81-126/15
75-69-4	Trichlorofluoromethane	ND		25	31.2	125	25	32.8	131	5	71-156/21
95-63-6	1,2,4-Trimethylbenzene	ND		25	26.6	106	25	29.4	118	10	79-120/18
75-01-4	Vinyl Chloride	ND		25	26.0	104	25	29.0	116	11	69-159/18
	m,p-Xylene	ND		50	53.4	107	50	58.0	116	8	79-126/15
95-47-6	o-Xylene	ND		25	26.9	108	25	30.1	120	11	80-127/14

CAS No.	Surrogate Recoveries	MS	MSD	FA42031-7	Limits
1868-53-7	Dibromofluoromethane	104%	106%	105%	83-118%
17060-07-0	1,2-Dichloroethane-D4	104%	110%	109%	79-125%
2037-26-5	Toluene-D8	98%	98%	97%	85-112%
460-00-4	4-Bromofluorobenzene	98%	101%	101%	83-118%

(a) Confirmation run.

LIBRE ASOCIADO DE PUERTO RICO
Manuel Infante Méndez
M = [illegible]
QUÍMICO LICENCIADO

* = Outside of Control Limits.

Raw Data: P49095.D P49096.D

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA42031
Account: AMANYWP Anderson, Mulholland & Associates
Project: BMSMC, Humacao, PR

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FA42031-7MS	P49095.D	1	03/24/17	MM	n/a	n/a	VP1851
FA42031-7MSD	P49096.D	1	03/24/17	MM	n/a	n/a	VP1851
FA42031-7	P49082.D	1	03/24/17	MM	n/a	n/a	VP1851

The QC reported here applies to the following samples: Method: SW846 8260C

FA42031-5, FA42031-6, FA42031-7, FA42031-8, FA42031-9, FA42031-10, FA42031-11, FA42031-12, FA42031-13, FA42031-14, FA42031-15, FA42031-16, FA42031-17

6.3.3

6

CAS No.	Compound	FA42031-7 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND		125	121	97	125	122	98	1	50-147/21
71-43-2	Benzene	ND		25	28.7	115	25	28.2	113	2	81-122/14
100-44-7	Benzyl Chloride	ND		25	19.7	79	25	18.6	74	6	54-122/18
74-97-5	Bromochloromethane	ND		25	22.7	91	25	22.9	92	1	76-123/14
75-27-4	Bromodichloromethane	ND		25	21.7	87	25	21.4	86	1	79-123/19
75-25-2	Bromoform	ND		25	16.5	66	25	17.6	70	6	66-123/21
78-93-3	2-Butanone (MEK)	ND		125	124	99	125	125	100	1	56-143/18
75-15-0	Carbon Disulfide	ND		25	19.8	79	25	19.6	78	1	66-148/23
56-23-5	Carbon Tetrachloride	ND		25	24.5	98	25	22.9	92	7	76-136/23
108-90-7	Chlorobenzene	0.26	J	25	24.7	98	25	24.6	97	0	82-124/14
75-00-3	Chloroethane	ND		25	23.5	94	25	21.2	85	10	62-144/20
67-66-3	Chloroform	ND		25	24.0	96	25	24.1	96	0	80-124/15
110-82-7	Cyclohexane	ND		25	27.0	108	25	26.5	106	2	73-138/18
124-48-1	Dibromochloromethane	ND		25	19.4	78	25	19.0	76*	2	78-122/19
96-12-8	1,2-Dibromo-3-chloropropane	ND		25	22.8	91	25	22.6	90	1	64-123/18
106-93-4	1,2-Dibromoethane	ND		25	23.6	94	25	23.3	93	1	75-120/13
75-71-8	Dichlorodifluoromethane	ND		25	24.5	98	25	23.9	96	2	42-167/19
95-50-1	1,2-Dichlorobenzene	0.50	J	25	22.9	90	25	23.1	90	1	82-124/14
541-73-1	1,3-Dichlorobenzene	ND		25	22.9	92	25	22.8	91	0	84-125/14
106-46-7	1,4-Dichlorobenzene	ND		25	22.9	92	25	22.7	91	1	78-120/15
75-34-3	1,1-Dichloroethane	ND		25	27.5	110	25	27.1	108	1	81-122/15
107-06-2	1,2-Dichloroethane	ND		25	24.2	97	25	24.5	98	1	75-125/14
75-35-4	1,1-Dichloroethylene	ND		25	27.2	109	25	26.2	105	4	78-137/18
156-59-2	cis-1,2-Dichloroethylene	ND		25	25.0	100	25	25.1	100	0	78-120/15
156-60-5	trans-1,2-Dichloroethylene	ND		25	27.0	108	25	26.7	107	1	76-127/17
78-87-5	1,2-Dichloropropane	ND		25	24.2	97	25	24.2	97	0	76-124/14
10061-01-5	cis-1,3-Dichloropropene	ND		25	22.9	92	25	21.5	86	6	75-118/23
10061-02-6	trans-1,3-Dichloropropene	ND		25	25.2	101	25	23.2	93	8	80-120/22
100-41-4	Ethylbenzene	ND		25	27.2	109	25	26.7	107	2	81-121/14
76-13-1	Freon 113	ND		25	22.7	91	25	21.9	88	4	72-134/20
591-78-6	2-Hexanone	ND		125	141	113	125	140	112	1	61-129/18
98-82-8	Isopropylbenzene	4.6		25	30.3	103	25	30.1	102	1	83-132/15
99-87-6	p-Isopropyltoluene	ND		25	27.5	110	25	26.9	[illegible]	2	79-130/16
79-20-9	Methyl Acetate	ND		125	124	99	125	12[illegible]	101	[illegible]	65-126/18
74-83-9	Methyl Bromide	ND		25	22.6	90	25	21.6	86	[illegible]	59-143/19
74-87-3	Methyl Chloride	ND		25	24.4	98	25	25.2	[illegible]	3	50-159/19

* = Outside of Control Limits.

COLEGIO DE QUIMICOS DE PUERTO RICO
Manuel Infante Méndez
QUIMICO LICENCIADO

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA42031
Account: AMANYWP Anderson, Mulholland & Associates
Project: BMSMC, Humacao, PR

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FA42031-7MS	P49095.D	1	03/24/17	MM	n/a	n/a	VP1851
FA42031-7MSD	P49096.D	1	03/24/17	MM	n/a	n/a	VP1851
FA42031-7	P49082.D	1	03/24/17	MM	n/a	n/a	VP1851

6.3.3

6

The QC reported here applies to the following samples: **Method:** SW846 8260C

FA42031-5, FA42031-6, FA42031-7, FA42031-8, FA42031-9, FA42031-10, FA42031-11, FA42031-12, FA42031-13, FA42031-14, FA42031-15, FA42031-16, FA42031-17

CAS No.	Compound	FA42031-7 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
108-87-2	Methylcyclohexane	ND		25	26.3	105	25	25.6	102	3	76-129/17
75-09-2	Methylene Chloride	ND		25	24.9	100	25	25.1	100	1	69-135/16
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		125	132	106	125	133	106	1	66-122/16
1634-04-4	Methyl Tert Butyl Ether	2.6		25	26.3	95	25	26.6	96	1	72-117/14
100-42-5	Styrene	ND		25	23.4	94	25	22.7	91	3	78-119/23
75-85-4	Tert-Amyl Alcohol	ND		250	220	88	250	235	94	7	65-124/23
75-65-0	Tert-Butyl Alcohol	11.7	J	250	280	107	250	295	113	5	63-129/27
79-34-5	1,1,2,2-Tetrachloroethane	ND		25	23.6	94	25	24.0	96	2	72-120/14
127-18-4	Tetrachloroethylene	ND		25	22.3	89	25	21.7	87	3	76-135/16
109-99-9	Tetrahydrofuran	ND		25	23.3	93	25	23.6	94	1	56-122/21
108-88-3	Toluene	ND		25	27.3	109	25	26.5	106	3	80-120/14
87-61-6	1,2,3-Trichlorobenzene	ND		25	23.3	93	25	24.3	97	4	68-131/25
120-82-1	1,2,4-Trichlorobenzene	ND		25	23.9	96	25	24.6	98	3	73-129/20
71-55-6	1,1,1-Trichloroethane	ND		25	24.1	96	25	23.7	95	2	75-130/16
79-00-5	1,1,2-Trichloroethane	ND		25	24.4	98	25	24.0	96	2	76-119/14
79-01-6	Trichloroethylene	ND		25	25.0	100	25	25.6	102	2	81-126/15
75-69-4	Trichlorofluoromethane	ND		25	23.8	95	25	22.2	89	7	71-156/21
95-63-6	1,2,4-Trimethylbenzene	ND		25	27.1	108	25	26.5	106	2	79-120/18
75-01-4	Vinyl Chloride	ND		25	26.3	105	25	26.6	106	1	69-159/18
	m,p-Xylene	ND		50	52.9	106	50	51.1	102	3	79-126/15
95-47-6	o-Xylene	ND		25	24.3	97	25	23.6	94	3	80-127/14

CAS No.	Surrogate Recoveries	MS	MSD	FA42031-7	Limits
1868-53-7	Dibromofluoromethane	97%	97%	97%	83-118%
17060-07-0	1,2-Dichloroethane-D4	103%	102%	100%	79-125%
2037-26-5	Toluene-D8	103%	101%	100%	85-112%
460-00-4	4-Bromofluorobenzene	96%	97%	95%	83-118%

LIBRE ASOCIADO DE PUERTO RICO
Manuel Infante Méndez
IQ # 1888
QUIMICO LICENCIADO

* = Outside of Control Limits.

SGS Accutest

Report of Analysis

Client Sample ID:	\B0341017		
Lab Sample ID:	FA42031-1	**Date Sampled:**	03/10/17
Matrix:	AQ - Equipment Blank	**Date Received:**	03/14/17
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L0690560.D	1	03/24/17	NG	03/16/17	OP64189	SL3974
Run #2							

	Initial Volume	Final Volume
Run #1	1030 ml	1.0 ml
Run #2		

ABN TCL Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam	ND	9.7	2.4	ug/l	
59-50-7	4-Chloro-3-methyl Phenol	ND	4.9	0.58	ug/l	
95-57-8	2-Chlorophenol	ND	4.9	0.61	ug/l	
120-83-2	2,4-Dichlorophenol	ND	4.9	0.81	ug/l	
105-67-9	2,4-Dimethylphenol	ND	4.9	0.72	ug/l	
51-28-5	2,4-Dinitrophenol	ND	24	4.9	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	9.7	1.9	ug/l	
95-48-7	2-Methylphenol	ND	4.9	0.54	ug/l	
	3&4-Methylphenol	ND	4.9	0.95	ug/l	
88-75-5	2-Nitrophenol	ND	4.9	0.83	ug/l	
100-02-7	4-Nitrophenol	ND	24	4.9	ug/l	
87-86-5	Pentachlorophenol	ND	24	4.9	ug/l	
108-95-2	Phenol [a]	ND	4.9	0.49	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	4.9	0.94	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	4.9	0.72	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	4.9	0.73	ug/l	
83-32-9	Acenaphthene	ND	4.9	0.61	ug/l	
208-96-8	Acenaphthylene	ND	4.9	0.62	ug/l	
98-86-2	Acetophenone	ND	4.9	0.79	ug/l	
120-12-7	Anthracene	ND	4.9	0.77	ug/l	
1912-24-9	Atrazine	ND	4.9	0.99	ug/l	
100-52-7	Benzaldehyde	ND	24	4.9	ug/l	
56-55-3	Benzo(a)anthracene	ND	4.9	0.74	ug/l	
50-32-8	Benzo(a)pyrene	ND	4.9	0.76	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	4.9	0.75	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	4.9	0.80	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	4.9	0.83	ug/l	
92-52-4	1,1'-Biphenyl	ND	4.9	0.60	ug/l	
101-55-3	4-Bromophenyl Phenyl Ether	ND	4.9	0.82	ug/l	
85-68-7	Butyl Benzyl Phthalate	ND	4.9	0.97	ug/l	
86-74-8	Carbazole	ND	4.9	0.58	ug/l	
106-47-8	4-Chloroaniline [b]	ND	4.9	0.61	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

LIBRE ASOCIADO DE PUERTO RICO
Rafael Infante Méndez
IC # 1888
QUIMICO LICENCIADO

Report of Analysis

Client Sample ID:	\B0341017		
Lab Sample ID:	FA42031-1	**Date Sampled:**	03/10/17
Matrix:	AQ - Equipment Blank	**Date Received:**	03/14/17
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	BMSMC, Humacao, PR		

ABN TCL Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
111-91-1	bis(2-Chloroethoxy)methane	ND	4.9	0.79	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	4.9	0.71	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	4.9	0.73	ug/l	
91-58-7	2-Chloronaphthalene	ND	4.9	0.49	ug/l	
7005-72-3	4-Chlorophenyl Phenyl Ether	ND	4.9	0.52	ug/l	
218-01-9	Chrysene	ND	4.9	0.83	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	4.9	0.78	ug/l	
132-64-9	Dibenzofuran	ND	4.9	0.58	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	4.9	0.62	ug/l	
84-66-2	Diethyl Phthalate	ND	4.9	0.97	ug/l	
131-11-3	Dimethyl Phthalate	ND	4.9	0.97	ug/l	
84-74-2	Di-n-butyl Phthalate	ND	4.9	0.97	ug/l	
117-84-0	Di-n-octyl Phthalate	ND	4.9	0.97	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	4.9	0.79	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	4.9	0.69	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	4.9	0.97	ug/l	
206-44-0	Fluoranthene	ND	4.9	0.54	ug/l	
86-73-7	Fluorene	ND	4.9	0.68	ug/l	
118-74-1	Hexachlorobenzene	ND	4.9	0.67	ug/l	
87-68-3	Hexachlorobutadiene	ND	4.9	0.49	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	4.9	1.8	ug/l	
67-72-1	Hexachloroethane	ND	4.9	1.6	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	4.9	0.69	ug/l	
78-59-1	Isophorone [b]	ND	4.9	0.75	ug/l	
91-57-6	2-Methylnaphthalene	ND	4.9	0.58	ug/l	
88-74-4	2-Nitroaniline	ND	4.9	1.8	ug/l	
99-09-2	3-Nitroaniline [c]	ND	4.9	0.85	ug/l	
100-01-6	4-Nitroaniline	ND	4.9	1.1	ug/l	
98-95-3	Nitrobenzene	ND	4.9	0.91	ug/l	
621-64-7	N-Nitrosodi-n-propylamine	ND	4.9	0.65	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	4.9	0.78	ug/l	
85-01-8	Phenanthrene	ND	4.9	0.84	ug/l	
129-00-0	Pyrene	ND	4.9	0.66	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	4.9	0.49	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	28%		14-67%
4165-62-2	Phenol-d5	24%		10-50%
118-79-6	2,4,6-Tribromophenol	81%		33-118%

LIBRE ASOCIADO DE PUERTO RICO
Rafael Infante Méndez
IC # 1888
QUIMICO LICENCIADO

ND = Not detected MDL = Method Detection Limit
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J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	\B0341017		
Lab Sample ID:	FA42031-1	**Date Sampled:**	03/10/17
Matrix:	AQ - Equipment Blank	**Date Received:**	03/14/17
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	BMSMC, Humacao, PR		

ABN TCL Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	63%		42-108%
321-60-8	2-Fluorobiphenyl	67%		40-106%
1718-51-0	Terphenyl-d14	68%		39-121%

(a) Associated ICV outside control limits.
(b) Associated BS recovery outside control limits.
(c) Associated ICV and BS outside control limits.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	BR-1		
Lab Sample ID:	FA42031-2	**Date Sampled:**	03/10/17
Matrix:	AQ - Ground Water	**Date Received:**	03/14/17
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L0690561.D	1	03/24/17	NG	03/16/17	OP64189	SL3974
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

ABN TCL Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam	ND	10	2.5	ug/l	
59-50-7	4-Chloro-3-methyl Phenol	ND	5.0	0.59	ug/l	
95-57-8	2-Chlorophenol	ND	5.0	0.63	ug/l	
120-83-2	2,4-Dichlorophenol	ND	5.0	0.84	ug/l	
105-67-9	2,4-Dimethylphenol	ND	5.0	0.74	ug/l	
51-28-5	2,4-Dinitrophenol	ND	25	5.0	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	2.0	ug/l	
95-48-7	2-Methylphenol	ND	5.0	0.56	ug/l	
	3&4-Methylphenol	ND	5.0	0.98	ug/l	
88-75-5	2-Nitrophenol	ND	5.0	0.85	ug/l	
100-02-7	4-Nitrophenol	ND	25	5.0	ug/l	
87-86-5	Pentachlorophenol	ND	25	5.0	ug/l	
108-95-2	Phenol [a]	ND	5.0	0.50	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	5.0	0.97	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	5.0	0.74	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	5.0	0.75	ug/l	
83-32-9	Acenaphthene	ND	5.0	0.63	ug/l	
208-96-8	Acenaphthylene	ND	5.0	0.64	ug/l	
98-86-2	Acetophenone	ND	5.0	0.81	ug/l	
120-12-7	Anthracene	ND	5.0	0.80	ug/l	
1912-24-9	Atrazine	ND	5.0	1.0	ug/l	
100-52-7	Benzaldehyde	ND	25	5.0	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	0.76	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	0.78	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	0.78	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	0.82	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	0.86	ug/l	
92-52-4	1,1'-Biphenyl	ND	5.0	0.62	ug/l	
101-55-3	4-Bromophenyl Phenyl Ether	ND	5.0	0.85	ug/l	
85-68-7	Butyl Benzyl Phthalate	ND	5.0	1.0	ug/l	
86-74-8	Carbazole	ND	5.0	0.60	ug/l	
106-47-8	4-Chloroaniline [b]	3.0	5.0	0.63	ug/l	J

ND = Not detected MDL = Method Detection Limit
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J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

...BRE ASOCIADO DE PUERTO RICO
...uel Infante
Méndez
IC # 1888
...UÍMICO LICENCIADO

Report of Analysis

Client Sample ID:	BR-1		
Lab Sample ID:	FA42031-2	**Date Sampled:**	03/10/17
Matrix:	AQ - Ground Water	**Date Received:**	03/14/17
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	BMSMC, Humacao, PR		

ABN TCL Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.81	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	0.73	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.76	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	0.50	ug/l	
7005-72-3	4-Chlorophenyl Phenyl Ether	ND	5.0	0.54	ug/l	
218-01-9	Chrysene	ND	5.0	0.85	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	0.80	ug/l	
132-64-9	Dibenzofuran	ND	5.0	0.60	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	0.64	ug/l	
84-66-2	Diethyl Phthalate	ND	5.0	1.0	ug/l	
131-11-3	Dimethyl Phthalate	ND	5.0	1.0	ug/l	
84-74-2	Di-n-butyl Phthalate	ND	5.0	1.0	ug/l	
117-84-0	Di-n-octyl Phthalate	ND	5.0	1.0	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	5.0	0.81	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	5.0	0.71	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	5.0	1.0	ug/l	
206-44-0	Fluoranthene	ND	5.0	0.55	ug/l	
86-73-7	Fluorene	ND	5.0	0.70	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	0.69	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	0.50	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	5.0	1.8	ug/l	
67-72-1	Hexachloroethane	ND	5.0	1.6	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	0.71	ug/l	
78-59-1	Isophorone [b]	ND	5.0	0.78	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.0	0.60	ug/l	
88-74-4	2-Nitroaniline	ND	5.0	1.8	ug/l	
99-09-2	3-Nitroaniline [c]	ND	5.0	0.88	ug/l	
100-01-6	4-Nitroaniline	ND	5.0	1.2	ug/l	
98-95-3	Nitrobenzene	ND	5.0	0.93	ug/l	
621-64-7	N-Nitrosodi-n-propylamine	ND	5.0	0.67	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.81	ug/l	
85-01-8	Phenanthrene	ND	5.0	0.86	ug/l	
129-00-0	Pyrene	ND	5.0	0.68	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	5.0	0.50	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	39%		14-67%
4165-62-2	Phenol-d5	32%		10-50%
118-79-6	2,4,6-Tribromophenol	100%		33-118%

ABRE ASOCIADO DE PUERTO RICO
...ael Infante
Méndez
IC # 1888
QUIMICO LICENCIADO

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	BR-1		
Lab Sample ID:	FA42031-2	**Date Sampled:**	03/10/17
Matrix:	AQ - Ground Water	**Date Received:**	03/14/17
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	BMSMC, Humacao, PR		

ABN TCL Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	78%		42-108%
321-60-8	2-Fluorobiphenyl	81%		40-106%
1718-51-0	Terphenyl-d14	56%		39-121%

(a) Associated ICV outside control limits.
(b) Associated BS recovery outside control limits.
(c) Associated ICV and BS outside control limits.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	BR-4		
Lab Sample ID:	FA42031-4	Date Sampled:	03/10/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	SW846 8270D SW846 3510C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L0690562.D	1	03/24/17	NG	03/16/17	OP64189	SL3974
Run #2							

	Initial Volume	Final Volume
Run #1	1030 ml	1.0 ml
Run #2		

ABN TCL Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam	ND	9.7	2.4	ug/l	
59-50-7	4-Chloro-3-methyl Phenol	ND	4.9	0.58	ug/l	
95-57-8	2-Chlorophenol	ND	4.9	0.61	ug/l	
120-83-2	2,4-Dichlorophenol	ND	4.9	0.81	ug/l	
105-67-9	2,4-Dimethylphenol	ND	4.9	0.72	ug/l	
51-28-5	2,4-Dinitrophenol	ND	24	4.9	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	9.7	1.9	ug/l	
95-48-7	2-Methylphenol	ND	4.9	0.54	ug/l	
	3&4-Methylphenol	ND	4.9	0.95	ug/l	
88-75-5	2-Nitrophenol	ND	4.9	0.83	ug/l	
100-02-7	4-Nitrophenol	ND	24	4.9	ug/l	
87-86-5	Pentachlorophenol	ND	24	4.9	ug/l	
108-95-2	Phenol [a]	ND	4.9	0.49	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	4.9	0.94	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	4.9	0.72	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	4.9	0.73	ug/l	
83-32-9	Acenaphthene	ND	4.9	0.61	ug/l	
208-96-8	Acenaphthylene	ND	4.9	0.62	ug/l	
98-86-2	Acetophenone	ND	4.9	0.79	ug/l	
120-12-7	Anthracene	ND	4.9	0.77	ug/l	
1912-24-9	Atrazine	ND	4.9	0.99	ug/l	
100-52-7	Benzaldehyde	ND	24	4.9	ug/l	
56-55-3	Benzo(a)anthracene	ND	4.9	0.74	ug/l	
50-32-8	Benzo(a)pyrene	ND	4.9	0.76	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	4.9	0.75	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	4.9	0.80	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	4.9	0.83	ug/l	
92-52-4	1,1'-Biphenyl	ND	4.9	0.60	ug/l	
101-55-3	4-Bromophenyl Phenyl Ether	ND	4.9	0.82	ug/l	
85-68-7	Butyl Benzyl Phthalate	ND	4.9	0.97	ug/l	
86-74-8	Carbazole	ND	4.9	0.58	ug/l	
106-47-8	4-Chloroaniline [b]	ND	4.9	0.61	ug/l	

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

LIBRE ASOCIADO DE PUERTO RICO
Manuel Infante Méndez
QUIMICO LICENCIADO

Report of Analysis

Client Sample ID:	BR-4		
Lab Sample ID:	FA42031-4	Date Sampled:	03/10/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	SW846 8270D SW846 3510C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

ABN TCL Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
111-91-1	bis(2-Chloroethoxy)methane	ND	4.9	0.79	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	4.9	0.71	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	4.9	0.73	ug/l	
91-58-7	2-Chloronaphthalene	ND	4.9	0.49	ug/l	
7005-72-3	4-Chlorophenyl Phenyl Ether	ND	4.9	0.52	ug/l	
218-01-9	Chrysene	ND	4.9	0.83	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	4.9	0.78	ug/l	
132-64-9	Dibenzofuran	ND	4.9	0.58	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	4.9	0.62	ug/l	
84-66-2	Diethyl Phthalate	ND	4.9	0.97	ug/l	
131-11-3	Dimethyl Phthalate	ND	4.9	0.97	ug/l	
84-74-2	Di-n-butyl Phthalate	ND	4.9	0.97	ug/l	
117-84-0	Di-n-octyl Phthalate	ND	4.9	0.97	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	4.9	0.79	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	4.9	0.69	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	4.9	0.97	ug/l	
206-44-0	Fluoranthene	ND	4.9	0.54	ug/l	
86-73-7	Fluorene	ND	4.9	0.68	ug/l	
118-74-1	Hexachlorobenzene	ND	4.9	0.67	ug/l	
87-68-3	Hexachlorobutadiene	ND	4.9	0.49	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	4.9	1.8	ug/l	
67-72-1	Hexachloroethane	ND	4.9	1.6	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	4.9	0.69	ug/l	
78-59-1	Isophorone [b]	ND	4.9	0.75	ug/l	
91-57-6	2-Methylnaphthalene	ND	4.9	0.58	ug/l	
88-74-4	2-Nitroaniline	ND	4.9	1.8	ug/l	
99-09-2	3-Nitroaniline [c]	ND	4.9	0.85	ug/l	
100-01-6	4-Nitroaniline	ND	4.9	1.1	ug/l	
98-95-3	Nitrobenzene	ND	4.9	0.91	ug/l	
621-64-7	N-Nitrosodi-n-propylamine	ND	4.9	0.65	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	4.9	0.78	ug/l	
85-01-8	Phenanthrene	ND	4.9	0.84	ug/l	
129-00-0	Pyrene	ND	4.9	0.66	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	4.9	0.49	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	26%		14-67%
4165-62-2	Phenol-d5	22%		10-50%
118-79-6	2,4,6-Tribromophenol	77%		33-118%

LIBRE ASOCIADO DE PUERTO RICO
Manuel Infante Méndez
IC # 1888
QUIMICO LICENCIADO

ND = Not detected MDL = Method Detection Limit
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E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	BR-4		
Lab Sample ID:	FA42031-4	**Date Sampled:**	03/10/17
Matrix:	AQ - Ground Water	**Date Received:**	03/14/17
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	BMSMC, Humacao, PR		

ABN TCL Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	75%		42-108%
321-60-8	2-Fluorobiphenyl	78%		40-106%
1718-51-0	Terphenyl-d14	73%		39-121%

(a) Associated ICV outside control limits.
(b) Associated BS recovery outside control limits.
(c) Associated ICV and BS outside control limits.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	FB031017		
Lab Sample ID:	FA42031-5	Date Sampled:	03/10/17
Matrix:	AQ - Field Blank Water	Date Received:	03/14/17
Method:	SW846 8270D SW846 3510C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L0690563.D	1	03/24/17	NG	03/16/17	OP64189	SL3974
Run #2							

	Initial Volume	Final Volume
Run #1	1040 ml	1.0 ml
Run #2		

ABN TCL Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam	ND	9.6	2.4	ug/l	
59-50-7	4-Chloro-3-methyl Phenol	ND	4.8	0.57	ug/l	
95-57-8	2-Chlorophenol	ND	4.8	0.61	ug/l	
120-83-2	2,4-Dichlorophenol	ND	4.8	0.80	ug/l	
105-67-9	2,4-Dimethylphenol	ND	4.8	0.71	ug/l	
51-28-5	2,4-Dinitrophenol	ND	24	4.8	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	9.6	1.9	ug/l	
95-48-7	2-Methylphenol	ND	4.8	0.54	ug/l	
	3&4-Methylphenol	ND	4.8	0.94	ug/l	
88-75-5	2-Nitrophenol	ND	4.8	0.82	ug/l	
100-02-7	4-Nitrophenol	ND	24	4.8	ug/l	
87-86-5	Pentachlorophenol	ND	24	4.8	ug/l	
108-95-2	Phenol [a]	ND	4.8	0.48	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	4.8	0.93	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	4.8	0.71	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	4.8	0.72	ug/l	
83-32-9	Acenaphthene	ND	4.8	0.60	ug/l	
208-96-8	Acenaphthylene	ND	4.8	0.61	ug/l	
98-86-2	Acetophenone	ND	4.8	0.78	ug/l	
120-12-7	Anthracene	ND	4.8	0.77	ug/l	
1912-24-9	Atrazine	ND	4.8	0.98	ug/l	
100-52-7	Benzaldehyde	ND	24	4.8	ug/l	
56-55-3	Benzo(a)anthracene	ND	4.8	0.73	ug/l	
50-32-8	Benzo(a)pyrene	ND	4.8	0.75	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	4.8	0.75	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	4.8	0.79	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	4.8	0.82	ug/l	
92-52-4	1,1'-Biphenyl	ND	4.8	0.60	ug/l	
101-55-3	4-Bromophenyl Phenyl Ether	ND	4.8	0.81	ug/l	
85-68-7	Butyl Benzyl Phthalate	ND	4.8	0.96	ug/l	
86-74-8	Carbazole	ND	4.8	0.58	ug/l	
106-47-8	4-Chloroaniline [b]	ND	4.8	0.61	ug/l	

ND = Not detected MDL = Method Detection Limit
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N = Indicates presumptive evidence of a compound

LIBRE ASOCIADO DE PUERTO RICO
Rafael Infante Méndez
QUÍMICO LICENCIADO

Report of Analysis

Client Sample ID:	FB031017		
Lab Sample ID:	FA42031-5	Date Sampled:	03/10/17
Matrix:	AQ - Field Blank Water	Date Received:	03/14/17
Method:	SW846 8270D SW846 3510C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

ABN TCL Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
111-91-1	bis(2-Chloroethoxy)methane	ND	4.8	0.78	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	4.8	0.70	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	4.8	0.73	ug/l	
91-58-7	2-Chloronaphthalene	ND	4.8	0.48	ug/l	
7005-72-3	4-Chlorophenyl Phenyl Ether	ND	4.8	0.52	ug/l	
218-01-9	Chrysene	ND	4.8	0.82	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	4.8	0.77	ug/l	
132-64-9	Dibenzofuran	ND	4.8	0.58	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	4.8	0.62	ug/l	
84-66-2	Diethyl Phthalate	ND	4.8	0.96	ug/l	
131-11-3	Dimethyl Phthalate	ND	4.8	0.96	ug/l	
84-74-2	Di-n-butyl Phthalate	ND	4.8	0.96	ug/l	
117-84-0	Di-n-octyl Phthalate	ND	4.8	0.96	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	4.8	0.78	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	4.8	0.69	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	4.8	0.96	ug/l	
206-44-0	Fluoranthene	ND	4.8	0.53	ug/l	
86-73-7	Fluorene	ND	4.8	0.67	ug/l	
118-74-1	Hexachlorobenzene	ND	4.8	0.67	ug/l	
87-68-3	Hexachlorobutadiene	ND	4.8	0.48	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	4.8	1.7	ug/l	
67-72-1	Hexachloroethane	ND	4.8	1.6	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	4.8	0.69	ug/l	
78-59-1	Isophorone [b]	ND	4.8	0.75	ug/l	
91-57-6	2-Methylnaphthalene	ND	4.8	0.58	ug/l	
88-74-4	2-Nitroaniline	ND	4.8	1.7	ug/l	
99-09-2	3-Nitroaniline [c]	ND	4.8	0.85	ug/l	
100-01-6	4-Nitroaniline	ND	4.8	1.1	ug/l	
98-95-3	Nitrobenzene	ND	4.8	0.90	ug/l	
621-64-7	N-Nitrosodi-n-propylamine	ND	4.8	0.64	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	4.8	0.78	ug/l	
85-01-8	Phenanthrene	ND	4.8	0.83	ug/l	
129-00-0	Pyrene	ND	4.8	0.66	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	4.8	0.48	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	36%		14-67%
4165-62-2	Phenol-d5	29%		10-50%
118-79-6	2,4,6-Tribromophenol	100%		33-118%

ELA LIBRE ASOCIADO DE PUERTO RICO
Rafael Infante Méndez
IC # 1888
QUIMICO LICENCIADO

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N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	FB031017		
Lab Sample ID:	FA42031-5	**Date Sampled:**	03/10/17
Matrix:	AQ - Field Blank Water	**Date Received:**	03/14/17
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	BMSMC, Humacao, PR		

ABN TCL Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	83%		42-108%
321-60-8	2-Fluorobiphenyl	87%		40-106%
1718-51-0	Terphenyl-d14	82%		39-121%

(a) Associated ICV outside control limits.
(b) Associated BS recovery outside control limits.
(c) Associated ICV and BS outside control limits.

LIBRE ASOCIADO DE PUERTO RICO
Rafael Infante Méndez
IC # 1888
QUIMICO LICENCIADO

ND = Not detected MDL = Method Detection Limit
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J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	BR-1 DUP		
Lab Sample ID:	FA42031-6	Date Sampled:	03/10/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	SW846 8270D SW846 3510C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L0690564.D	1	03/24/17	NG	03/16/17	OP64189	SL3974
Run #2							

	Initial Volume	Final Volume
Run #1	1050 ml	1.0 ml
Run #2		

ABN TCL Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam	ND	9.5	2.4	ug/l	
59-50-7	4-Chloro-3-methyl Phenol	ND	4.8	0.56	ug/l	
95-57-8	2-Chlorophenol	ND	4.8	0.60	ug/l	
120-83-2	2,4-Dichlorophenol	ND	4.8	0.80	ug/l	
105-67-9	2,4-Dimethylphenol	ND	4.8	0.70	ug/l	
51-28-5	2,4-Dinitrophenol	ND	24	4.8	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	9.5	1.9	ug/l	
95-48-7	2-Methylphenol	ND	4.8	0.53	ug/l	
	3&4-Methylphenol	ND	4.8	0.93	ug/l	
88-75-5	2-Nitrophenol	ND	4.8	0.81	ug/l	
100-02-7	4-Nitrophenol	ND	24	4.8	ug/l	
87-86-5	Pentachlorophenol	ND	24	4.8	ug/l	
108-95-2	Phenol [a]	ND	4.8	0.48	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	4.8	0.92	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	4.8	0.70	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	4.8	0.72	ug/l	
83-32-9	Acenaphthene	ND	4.8	0.60	ug/l	
208-96-8	Acenaphthylene	ND	4.8	0.61	ug/l	
98-86-2	Acetophenone	ND	4.8	0.77	ug/l	
120-12-7	Anthracene	ND	4.8	0.76	ug/l	
1912-24-9	Atrazine	ND	4.8	0.97	ug/l	
100-52-7	Benzaldehyde	ND	24	4.8	ug/l	
56-55-3	Benzo(a)anthracene	ND	4.8	0.72	ug/l	
50-32-8	Benzo(a)pyrene	ND	4.8	0.75	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	4.8	0.74	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	4.8	0.78	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	4.8	0.82	ug/l	
92-52-4	1,1'-Biphenyl	ND	4.8	0.59	ug/l	
101-55-3	4-Bromophenyl Phenyl Ether	ND	4.8	0.81	ug/l	
85-68-7	Butyl Benzyl Phthalate	ND	4.8	0.95	ug/l	
86-74-8	Carbazole	ND	4.8	0.57	ug/l	
106-47-8	4-Chloroaniline [b]	2.7	4.8	0.60	ug/l	J

LIBRE ASOCIADO DE PUERTO RICO
Rafael Infante Méndez
IQ # 1888
QUIMICO LICENCIADO

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B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	BR-1 DUP		
Lab Sample ID:	FA42031-6	Date Sampled:	03/10/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	SW846 8270D SW846 3510C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

ABN TCL Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
111-91-1	bis(2-Chloroethoxy)methane	ND	4.8	0.77	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	4.8	0.70	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	4.8	0.72	ug/l	
91-58-7	2-Chloronaphthalene	ND	4.8	0.48	ug/l	
7005-72-3	4-Chlorophenyl Phenyl Ether	ND	4.8	0.51	ug/l	
218-01-9	Chrysene	ND	4.8	0.81	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	4.8	0.77	ug/l	
132-64-9	Dibenzofuran	ND	4.8	0.57	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	4.8	0.61	ug/l	
84-66-2	Diethyl Phthalate	ND	4.8	0.95	ug/l	
131-11-3	Dimethyl Phthalate	ND	4.8	0.95	ug/l	
84-74-2	Di-n-butyl Phthalate	ND	4.8	0.95	ug/l	
117-84-0	Di-n-octyl Phthalate	ND	4.8	0.95	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	4.8	0.77	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	4.8	0.68	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	4.8	0.95	ug/l	
206-44-0	Fluoranthene	ND	4.8	0.53	ug/l	
86-73-7	Fluorene	ND	4.8	0.67	ug/l	
118-74-1	Hexachlorobenzene	ND	4.8	0.66	ug/l	
87-68-3	Hexachlorobutadiene	ND	4.8	0.48	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	4.8	1.7	ug/l	
67-72-1	Hexachloroethane	ND	4.8	1.6	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	4.8	0.68	ug/l	
78-59-1	Isophorone [b]	ND	4.8	0.74	ug/l	
91-57-6	2-Methylnaphthalene	ND	4.8	0.57	ug/l	
88-74-4	2-Nitroaniline	ND	4.8	1.7	ug/l	
99-09-2	3-Nitroaniline [c]	ND	4.8	0.84	ug/l	
100-01-6	4-Nitroaniline	ND	4.8	1.1	ug/l	
98-95-3	Nitrobenzene	ND	4.8	0.89	ug/l	
621-64-7	N-Nitrosodi-n-propylamine	ND	4.8	0.64	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	4.8	0.77	ug/l	
85-01-8	Phenanthrene	ND	4.8	0.82	ug/l	
129-00-0	Pyrene	ND	4.8	0.65	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	4.8	0.48	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	32%		14-67%
4165-62-2	Phenol-d5	25%		10-50%
118-79-6	2,4,6-Tribromophenol	96%		33-118%

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N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	BR-1 DUP		
Lab Sample ID:	FA42031-6	**Date Sampled:**	03/10/17
Matrix:	AQ - Ground Water	**Date Received:**	03/14/17
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	BMSMC, Humacao, PR		

ABN TCL Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	74%		42-108%
321-60-8	2-Fluorobiphenyl	77%		40-106%
1718-51-0	Terphenyl-d14	57%		39-121%

(a) Associated ICV outside control limits.
(b) Associated BS recovery outside control limits.
(c) Associated ICV and BS outside control limits.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	BR-2		
Lab Sample ID:	FA42031-7	Date Sampled:	03/10/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	SW846 8270D SW846 3510C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	X053044.D	1	03/22/17	NG	03/17/17	OP64210	SX2246
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

ABN TCL Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam	ND	10	2.5	ug/l	
59-50-7	4-Chloro-3-methyl Phenol	ND	5.0	0.59	ug/l	
95-57-8	2-Chlorophenol	ND	5.0	0.63	ug/l	
120-83-2	2,4-Dichlorophenol	ND	5.0	0.84	ug/l	
105-67-9	2,4-Dimethylphenol	ND	5.0	0.74	ug/l	
51-28-5	2,4-Dinitrophenol	ND	25	5.0	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	2.0	ug/l	
95-48-7	2-Methylphenol	ND	5.0	0.56	ug/l	
	3&4-Methylphenol	ND	5.0	0.98	ug/l	
88-75-5	2-Nitrophenol	ND	5.0	0.85	ug/l	
100-02-7	4-Nitrophenol	ND	25	5.0	ug/l	
87-86-5	Pentachlorophenol	ND	25	5.0	ug/l	
108-95-2	Phenol	ND	5.0	0.50	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	5.0	0.97	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	5.0	0.74	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	5.0	0.75	ug/l	
83-32-9	Acenaphthene	ND	5.0	0.63	ug/l	
208-96-8	Acenaphthylene	ND	5.0	0.64	ug/l	
98-86-2	Acetophenone	ND	5.0	0.81	ug/l	
120-12-7	Anthracene	ND	5.0	0.80	ug/l	
1912-24-9	Atrazine	ND	5.0	1.0	ug/l	
100-52-7	Benzaldehyde	ND	25	5.0	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	0.76	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	0.78	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	0.78	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	0.82	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	0.86	ug/l	
92-52-4	1,1'-Biphenyl	ND	5.0	0.62	ug/l	
101-55-3	4-Bromophenyl Phenyl Ether	ND	5.0	0.85	ug/l	
85-68-7	Butyl Benzyl Phthalate	ND	5.0	1.0	ug/l	
86-74-8	Carbazole	ND	5.0	0.60	ug/l	
106-47-8	4-Chloroaniline	ND	5.0	0.63	ug/l	

LIBRE ASOCIADO DE PUERTO RICO
Miguel Infante Méndez
IC # 1888
QUIMICO LICENCIADO

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Report of Analysis

4.7
4

Client Sample ID:	BR-2		
Lab Sample ID:	FA42031-7	Date Sampled:	03/10/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	SW846 8270D SW846 3510C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

ABN TCL Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.81	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	0.73	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.76	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	0.50	ug/l	
7005-72-3	4-Chlorophenyl Phenyl Ether	ND	5.0	0.54	ug/l	
218-01-9	Chrysene	ND	5.0	0.85	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	0.80	ug/l	
132-64-9	Dibenzofuran	ND	5.0	0.60	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	0.64	ug/l	
84-66-2	Diethyl Phthalate	ND	5.0	1.0	ug/l	
131-11-3	Dimethyl Phthalate	ND	5.0	1.0	ug/l	
84-74-2	Di-n-butyl Phthalate	ND	5.0	1.0	ug/l	
117-84-0	Di-n-octyl Phthalate	ND	5.0	1.0	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	5.0	0.81	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	5.0	0.71	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	5.0	1.0	ug/l	
206-44-0	Fluoranthene	0.73	5.0	0.55	ug/l	J
86-73-7	Fluorene	ND	5.0	0.70	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	0.69	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	0.50	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	5.0	1.8	ug/l	
67-72-1	Hexachloroethane	ND	5.0	1.6	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	0.71	ug/l	
78-59-1	Isophorone	ND	5.0	0.78	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.0	0.60	ug/l	
88-74-4	2-Nitroaniline	ND	5.0	1.8	ug/l	
99-09-2	3-Nitroaniline	ND	5.0	0.88	ug/l	
100-01-6	4-Nitroaniline	ND	5.0	1.2	ug/l	
98-95-3	Nitrobenzene	ND	5.0	0.93	ug/l	
621-64-7	N-Nitrosodi-n-propylamine	ND	5.0	0.67	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.81	ug/l	
85-01-8	Phenanthrene	ND	5.0	0.86	ug/l	
129-00-0	Pyrene	ND	5.0	0.68	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	5.0	0.50	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	17%		14-67%
4165-62-2	Phenol-d5	18%		10-50%
118-79-6	2,4,6-Tribromophenol	103%		33-118%

LIBRE ASOCIADO DE PUERTO RICO
Rafael Infante Méndez
IC # 1888
QUIMICO LICENCIADO

ND = Not detected MDL = Method Detection Limit
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B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	BR-2		
Lab Sample ID:	FA42031-7	**Date Sampled:**	03/10/17
Matrix:	AQ - Ground Water	**Date Received:**	03/14/17
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	BMSMC, Humacao, PR		

ABN TCL Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	69%		42-108%
321-60-8	2-Fluorobiphenyl	72%		40-106%
1718-51-0	Terphenyl-d14	77%		39-121%

LIBRE ASOCIADO DE PUERTO RICO
Manuel Infante Méndez
IQ # 1688
QUIMICO LICENCIADO

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SGS Accutest

Report of Analysis

Client Sample ID:	MW-15		
Lab Sample ID:	FA42031-9	Date Sampled:	03/13/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	SW846 8270D SW846 3510C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L0690674.D	1	03/29/17	NG	03/20/17	OP64234	SL3979
Run #2							

	Initial Volume	Final Volume
Run #1	1020 ml	1.0 ml
Run #2		

ABN TCL Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam [a]	ND	9.8	2.5	ug/l	
59-50-7	4-Chloro-3-methyl Phenol	ND	4.9	0.58	ug/l	
95-57-8	2-Chlorophenol	ND	4.9	0.62	ug/l	
120-83-2	2,4-Dichlorophenol	ND	4.9	0.82	ug/l	
105-67-9	2,4-Dimethylphenol	ND	4.9	0.72	ug/l	
51-28-5	2,4-Dinitrophenol [b]	ND	25	4.9	ug/l	
534-52-1	4,6-Dinitro-o-cresol [c]	ND	9.8	2.0	ug/l	
95-48-7	2-Methylphenol	ND	4.9	0.55	ug/l	
	3&4-Methylphenol	ND	4.9	0.96	ug/l	
88-75-5	2-Nitrophenol [a]	ND	4.9	0.84	ug/l	
100-02-7	4-Nitrophenol	ND	25	4.9	ug/l	
87-86-5	Pentachlorophenol [a]	ND	25	4.9	ug/l	
108-95-2	Phenol	ND	4.9	0.49	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol [a]	ND	4.9	0.95	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	4.9	0.73	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	4.9	0.74	ug/l	
83-32-9	Acenaphthene	ND	4.9	0.61	ug/l	
208-96-8	Acenaphthylene	ND	4.9	0.63	ug/l	
98-86-2	Acetophenone	ND	4.9	0.79	ug/l	
120-12-7	Anthracene	ND	4.9	0.78	ug/l	
1912-24-9	Atrazine	ND	4.9	1.0	ug/l	
100-52-7	Benzaldehyde	ND	25	4.9	ug/l	
56-55-3	Benzo(a)anthracene	ND	4.9	0.75	ug/l	
50-32-8	Benzo(a)pyrene	ND	4.9	0.77	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	4.9	0.76	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	4.9	0.81	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	4.9	0.84	ug/l	
92-52-4	1,1'-Biphenyl	ND	4.9	0.61	ug/l	
101-55-3	4-Bromophenyl Phenyl Ether	ND	4.9	0.83	ug/l	
85-68-7	Butyl Benzyl Phthalate	ND	4.9	0.98	ug/l	
86-74-8	Carbazole	ND	4.9	0.59	ug/l	
106-47-8	4-Chloroaniline	2.4	4.9	0.62	ug/l	J

LIBRE ASOCIADO DE PUERTO RICO
Rafael Infante Méndez
IC # 1888
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Report of Analysis

Client Sample ID:	MW-15		
Lab Sample ID:	FA42031-9	Date Sampled:	03/13/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	SW846 8270D SW846 3510C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

ABN TCL Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
111-91-1	bis(2-Chloroethoxy)methane	ND	4.9	0.79	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	4.9	0.72	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	4.9	0.74	ug/l	
91-58-7	2-Chloronaphthalene	ND	4.9	0.49	ug/l	
7005-72-3	4-Chlorophenyl Phenyl Ether	ND	4.9	0.53	ug/l	
218-01-9	Chrysene	ND	4.9	0.83	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	4.9	0.79	ug/l	
132-64-9	Dibenzofuran	ND	4.9	0.59	ug/l	
91-94-1	3,3'-Dichlorobenzidine [c]	ND	4.9	0.63	ug/l	
84-66-2	Diethyl Phthalate	ND	4.9	0.98	ug/l	
131-11-3	Dimethyl Phthalate	ND	4.9	0.98	ug/l	
84-74-2	Di-n-butyl Phthalate	ND	4.9	0.98	ug/l	
117-84-0	Di-n-octyl Phthalate	ND	4.9	0.98	ug/l	
121-14-2	2,4-Dinitrotoluene [b]	ND	4.9	0.80	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	4.9	0.70	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	4.9	0.98	ug/l	
206-44-0	Fluoranthene	ND	4.9	0.54	ug/l	
86-73-7	Fluorene	ND	4.9	0.69	ug/l	
118-74-1	Hexachlorobenzene	ND	4.9	0.68	ug/l	
87-68-3	Hexachlorobutadiene	ND	4.9	0.49	ug/l	
77-47-4	Hexachlorocyclopentadiene [a]	ND	4.9	1.8	ug/l	
67-72-1	Hexachloroethane	ND	4.9	1.6	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	4.9	0.70	ug/l	
78-59-1	Isophorone	ND	4.9	0.76	ug/l	
90-12-0	1-Methylnaphthalene	ND	4.9	0.51	ug/l	
91-57-6	2-Methylnaphthalene	ND	4.9	0.59	ug/l	
88-74-4	2-Nitroaniline [a]	ND	4.9	1.8	ug/l	
99-09-2	3-Nitroaniline [c]	ND	4.9	0.86	ug/l	
100-01-6	4-Nitroaniline	ND	4.9	1.1	ug/l	
98-95-3	Nitrobenzene	ND	4.9	0.91	ug/l	
621-64-7	N-Nitrosodi-n-propylamine	ND	4.9	0.66	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	4.9	0.79	ug/l	
85-01-8	Phenanthrene	ND	4.9	0.85	ug/l	
129-00-0	Pyrene	ND	4.9	0.67	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	4.9	0.49	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	24%		14-67%
4165-62-2	Phenol-d5	18%		10-50%

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Report of Analysis

Client Sample ID:	MW-15		
Lab Sample ID:	FA42031-9	**Date Sampled:**	03/13/17
Matrix:	AQ - Ground Water	**Date Received:**	03/14/17
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	BMSMC, Humacao, PR		

ABN TCL Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
118-79-6	2,4,6-Tribromophenol	106%		33-118%
4165-60-0	Nitrobenzene-d5	83%		42-108%
321-60-8	2-Fluorobiphenyl	63%		40-106%
1718-51-0	Terphenyl-d14	60%		39-121%

(a) Associated CCV outside control limits.
(b) Associated CCV and BS outside control limits.
(c) Associated BS recovery outside control limits.

LIBRE ASOCIADO DE PUERTO RICO
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J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	MW-14		
Lab Sample ID:	FA42031-10	Date Sampled:	03/13/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	SW846 8270D SW846 3510C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L0690675.D	1	03/29/17	NG	03/20/17	OP64234	SL3979
Run #2							

	Initial Volume	Final Volume
Run #1	1020 ml	1.0 ml
Run #2		

ABN TCL Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam [a]	ND	9.8	2.5	ug/l	
59-50-7	4-Chloro-3-methyl Phenol	ND	4.9	0.58	ug/l	
95-57-8	2-Chlorophenol	ND	4.9	0.62	ug/l	
120-83-2	2,4-Dichlorophenol	ND	4.9	0.82	ug/l	
105-67-9	2,4-Dimethylphenol	ND	4.9	0.72	ug/l	
51-28-5	2,4-Dinitrophenol [b]	ND	25	4.9	ug/l	
534-52-1	4,6-Dinitro-o-cresol [c]	ND	9.8	2.0	ug/l	
95-48-7	2-Methylphenol	ND	4.9	0.55	ug/l	
	3&4-Methylphenol	ND	4.9	0.96	ug/l	
88-75-5	2-Nitrophenol [a]	ND	4.9	0.84	ug/l	
100-02-7	4-Nitrophenol	ND	25	4.9	ug/l	
87-86-5	Pentachlorophenol [a]	ND	25	4.9	ug/l	
108-95-2	Phenol	ND	4.9	0.49	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol [a]	ND	4.9	0.95	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	4.9	0.73	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	4.9	0.74	ug/l	
83-32-9	Acenaphthene	ND	4.9	0.61	ug/l	
208-96-8	Acenaphthylene	ND	4.9	0.63	ug/l	
98-86-2	Acetophenone	ND	4.9	0.79	ug/l	
120-12-7	Anthracene	ND	4.9	0.78	ug/l	
1912-24-9	Atrazine	ND	4.9	1.0	ug/l	
100-52-7	Benzaldehyde	ND	25	4.9	ug/l	
56-55-3	Benzo(a)anthracene	ND	4.9	0.75	ug/l	
50-32-8	Benzo(a)pyrene	ND	4.9	0.77	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	4.9	0.76	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	4.9	0.81	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	4.9	0.84	ug/l	
92-52-4	1,1'-Biphenyl	ND	4.9	0.61	ug/l	
101-55-3	4-Bromophenyl Phenyl Ether	ND	4.9	0.83	ug/l	
85-68-7	Butyl Benzyl Phthalate	ND	4.9	0.98	ug/l	
86-74-8	Carbazole	ND	4.9	0.59	ug/l	
106-47-8	4-Chloroaniline	0.86	4.9	0.62	ug/l	J

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J = Indicates an estimated value
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N = Indicates presumptive evidence of a compound

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...tuel Infante
Méndez
IC # 1888
...UIMICO LICENCIADO

Report of Analysis

Client Sample ID:	MW-14		
Lab Sample ID:	FA42031-10	Date Sampled:	03/13/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	SW846 8270D SW846 3510C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

ABN TCL Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
111-91-1	bis(2-Chloroethoxy)methane	ND	4.9	0.79	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	4.9	0.72	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	4.9	0.74	ug/l	
91-58-7	2-Chloronaphthalene	ND	4.9	0.49	ug/l	
7005-72-3	4-Chlorophenyl Phenyl Ether	ND	4.9	0.53	ug/l	
218-01-9	Chrysene	ND	4.9	0.83	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	4.9	0.79	ug/l	
132-64-9	Dibenzofuran	ND	4.9	0.59	ug/l	
91-94-1	3,3'-Dichlorobenzidine [c]	ND	4.9	0.63	ug/l	
84-66-2	Diethyl Phthalate	ND	4.9	0.98	ug/l	
131-11-3	Dimethyl Phthalate	ND	4.9	0.98	ug/l	
84-74-2	Di-n-butyl Phthalate	ND	4.9	0.98	ug/l	
117-84-0	Di-n-octyl Phthalate	ND	4.9	0.98	ug/l	
121-14-2	2,4-Dinitrotoluene [b]	ND	4.9	0.80	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	4.9	0.70	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	4.9	0.98	ug/l	
206-44-0	Fluoranthene	ND	4.9	0.54	ug/l	
86-73-7	Fluorene	ND	4.9	0.69	ug/l	
118-74-1	Hexachlorobenzene	ND	4.9	0.68	ug/l	
87-68-3	Hexachlorobutadiene	ND	4.9	0.49	ug/l	
77-47-4	Hexachlorocyclopentadiene [a]	ND	4.9	1.8	ug/l	
67-72-1	Hexachloroethane	ND	4.9	1.6	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	4.9	0.70	ug/l	
78-59-1	Isophorone	ND	4.9	0.76	ug/l	
90-12-0	1-Methylnaphthalene	ND	4.9	0.51	ug/l	
91-57-6	2-Methylnaphthalene	ND	4.9	0.59	ug/l	
88-74-4	2-Nitroaniline [a]	ND	4.9	1.8	ug/l	
99-09-2	3-Nitroaniline [c]	ND	4.9	0.86	ug/l	
100-01-6	4-Nitroaniline	ND	4.9	1.1	ug/l	
98-95-3	Nitrobenzene	ND	4.9	0.91	ug/l	
621-64-7	N-Nitrosodi-n-propylamine	ND	4.9	0.66	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	4.9	0.79	ug/l	
85-01-8	Phenanthrene	ND	4.9	0.85	ug/l	
129-00-0	Pyrene	ND	4.9	0.67	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	4.9	0.49	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	22%		14-67%
4165-62-2	Phenol-d5	15%		10-50%

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LIBRE ASOCIADO DE PUERTO RICO
Manuel Infante Méndez
IQ # 1888
QUIMICO LICENCIADO

Report of Analysis

Client Sample ID:	MW-14		
Lab Sample ID:	FA42031-10	**Date Sampled:**	03/13/17
Matrix:	AQ - Ground Water	**Date Received:**	03/14/17
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	BMSMC, Humacao, PR		

ABN TCL Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
118-79-6	2,4,6-Tribromophenol	103%		33-118%
4165-60-0	Nitrobenzene-d5	83%		42-108%
321-60-8	2-Fluorobiphenyl	64%		40-106%
1718-51-0	Terphenyl-d14	61%		39-121%

(a) Associated CCV outside control limits.
(b) Associated CCV and BS outside control limits.
(c) Associated BS recovery outside control limits.

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N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	MW-14 DUP		
Lab Sample ID:	FA42031-11	Date Sampled:	03/13/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	SW846 8270D SW846 3510C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L0690676.D	1	03/29/17	NG	03/20/17	OP64234	SL3979
Run #2							

	Initial Volume	Final Volume
Run #1	1020 ml	1.0 ml
Run #2		

ABN TCL Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam [a]	ND	9.8	2.5	ug/l	
59-50-7	4-Chloro-3-methyl Phenol	ND	4.9	0.58	ug/l	
95-57-8	2-Chlorophenol	ND	4.9	0.62	ug/l	
120-83-2	2,4-Dichlorophenol	ND	4.9	0.82	ug/l	
105-67-9	2,4-Dimethylphenol	ND	4.9	0.72	ug/l	
51-28-5	2,4-Dinitrophenol [b]	ND	25	4.9	ug/l	
534-52-1	4,6-Dinitro-o-cresol [c]	ND	9.8	2.0	ug/l	
95-48-7	2-Methylphenol	ND	4.9	0.55	ug/l	
	3&4-Methylphenol	ND	4.9	0.96	ug/l	
88-75-5	2-Nitrophenol [a]	ND	4.9	0.84	ug/l	
100-02-7	4-Nitrophenol	ND	25	4.9	ug/l	
87-86-5	Pentachlorophenol [a]	ND	25	4.9	ug/l	
108-95-2	Phenol	ND	4.9	0.49	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol [a]	ND	4.9	0.95	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	4.9	0.73	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	4.9	0.74	ug/l	
83-32-9	Acenaphthene	ND	4.9	0.61	ug/l	
208-96-8	Acenaphthylene	ND	4.9	0.63	ug/l	
98-86-2	Acetophenone	ND	4.9	0.79	ug/l	
120-12-7	Anthracene	ND	4.9	0.78	ug/l	
1912-24-9	Atrazine	ND	4.9	1.0	ug/l	
100-52-7	Benzaldehyde	ND	25	4.9	ug/l	
56-55-3	Benzo(a)anthracene	ND	4.9	0.75	ug/l	
50-32-8	Benzo(a)pyrene	ND	4.9	0.77	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	4.9	0.76	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	4.9	0.81	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	4.9	0.84	ug/l	
92-52-4	1,1'-Biphenyl	ND	4.9	0.61	ug/l	
101-55-3	4-Bromophenyl Phenyl Ether	ND	4.9	0.83	ug/l	
85-68-7	Butyl Benzyl Phthalate	ND	4.9	0.98	ug/l	
86-74-8	Carbazole	ND	4.9	0.59	ug/l	
106-47-8	4-Chloroaniline	0.85	4.9	0.62	ug/l	J

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
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J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-14 DUP		
Lab Sample ID:	FA42031-11	Date Sampled:	03/13/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	SW846 8270D SW846 3510C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

ABN TCL Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
111-91-1	bis(2-Chloroethoxy)methane	ND	4.9	0.79	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	4.9	0.72	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	4.9	0.74	ug/l	
91-58-7	2-Chloronaphthalene	ND	4.9	0.49	ug/l	
7005-72-3	4-Chlorophenyl Phenyl Ether	ND	4.9	0.53	ug/l	
218-01-9	Chrysene	ND	4.9	0.83	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	4.9	0.79	ug/l	
132-64-9	Dibenzofuran	ND	4.9	0.59	ug/l	
91-94-1	3,3'-Dichlorobenzidine [c]	ND	4.9	0.63	ug/l	
84-66-2	Diethyl Phthalate	ND	4.9	0.98	ug/l	
131-11-3	Dimethyl Phthalate	ND	4.9	0.98	ug/l	
84-74-2	Di-n-butyl Phthalate	ND	4.9	0.98	ug/l	
117-84-0	Di-n-octyl Phthalate	ND	4.9	0.98	ug/l	
121-14-2	2,4-Dinitrotoluene [b]	ND	4.9	0.80	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	4.9	0.70	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	4.9	0.98	ug/l	
206-44-0	Fluoranthene	ND	4.9	0.54	ug/l	
86-73-7	Fluorene	ND	4.9	0.69	ug/l	
118-74-1	Hexachlorobenzene	ND	4.9	0.68	ug/l	
87-68-3	Hexachlorobutadiene	ND	4.9	0.49	ug/l	
77-47-4	Hexachlorocyclopentadiene [a]	ND	4.9	1.8	ug/l	
67-72-1	Hexachloroethane	ND	4.9	1.6	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	4.9	0.70	ug/l	
78-59-1	Isophorone	ND	4.9	0.76	ug/l	
90-12-0	1-Methylnaphthalene	ND	4.9	0.51	ug/l	
91-57-6	2-Methylnaphthalene	ND	4.9	0.59	ug/l	
88-74-4	2-Nitroaniline [a]	ND	4.9	1.8	ug/l	
99-09-2	3-Nitroaniline [c]	ND	4.9	0.86	ug/l	
100-01-6	4-Nitroaniline	ND	4.9	1.1	ug/l	
98-95-3	Nitrobenzene	ND	4.9	0.91	ug/l	
621-64-7	N-Nitrosodi-n-propylamine	ND	4.9	0.66	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	4.9	0.79	ug/l	
85-01-8	Phenanthrene	ND	4.9	0.85	ug/l	
129-00-0	Pyrene	ND	4.9	0.67	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	4.9	0.49	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	26%		14-67%
4165-62-2	Phenol-d5	19%		10-50%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

...BRE ASOCIADO DE PUERTO RICO
...tael Infante
Méndez
K # 1888
QUIMICO LICENCIADO

Report of Analysis

Client Sample ID:	MW-14 DUP		
Lab Sample ID:	FA42031-11	**Date Sampled:**	03/13/17
Matrix:	AQ - Ground Water	**Date Received:**	03/14/17
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	BMSMC, Humacao, PR		

ABN TCL Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
118-79-6	2,4,6-Tribromophenol	106%		33-118%
4165-60-0	Nitrobenzene-d5	78%		42-108%
321-60-8	2-Fluorobiphenyl	64%		40-106%
1718-51-0	Terphenyl-d14	72%		39-121%

(a) Associated CCV outside control limits.
(b) Associated CCV and BS outside control limits.
(c) Associated BS recovery outside control limits.

LIBRE ASOCIADO DE PUERTO RICO
Manuel Infante Méndez
IC # 1888
QUIMICO LICENCIADO

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	MW-13		
Lab Sample ID:	FA42031-12	Date Sampled:	03/13/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	SW846 8270D SW846 3510C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L0690677.D	1	03/29/17	NG	03/20/17	OP64234	SL3979
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

ABN TCL Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam [a]	ND	10	2.5	ug/l	
59-50-7	4-Chloro-3-methyl Phenol	ND	5.0	0.59	ug/l	
95-57-8	2-Chlorophenol	ND	5.0	0.63	ug/l	
120-83-2	2,4-Dichlorophenol	ND	5.0	0.84	ug/l	
105-67-9	2,4-Dimethylphenol	ND	5.0	0.74	ug/l	
51-28-5	2,4-Dinitrophenol [b]	ND	25	5.0	ug/l	
534-52-1	4,6-Dinitro-o-cresol [c]	ND	10	2.0	ug/l	
95-48-7	2-Methylphenol	ND	5.0	0.56	ug/l	
	3&4-Methylphenol	ND	5.0	0.98	ug/l	
88-75-5	2-Nitrophenol [a]	ND	5.0	0.85	ug/l	
100-02-7	4-Nitrophenol	ND	25	5.0	ug/l	
87-86-5	Pentachlorophenol [a]	ND	25	5.0	ug/l	
108-95-2	Phenol	ND	5.0	0.50	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol [a]	ND	5.0	0.97	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	5.0	0.74	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	5.0	0.75	ug/l	
83-32-9	Acenaphthene	ND	5.0	0.63	ug/l	
208-96-8	Acenaphthylene	ND	5.0	0.64	ug/l	
98-86-2	Acetophenone	ND	5.0	0.81	ug/l	
120-12-7	Anthracene	ND	5.0	0.80	ug/l	
1912-24-9	Atrazine	ND	5.0	1.0	ug/l	
100-52-7	Benzaldehyde	ND	25	5.0	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	0.76	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	0.78	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	0.78	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	0.82	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	0.86	ug/l	
92-52-4	1,1'-Biphenyl	ND	5.0	0.62	ug/l	
101-55-3	4-Bromophenyl Phenyl Ether	ND	5.0	0.85	ug/l	
85-68-7	Butyl Benzyl Phthalate	ND	5.0	1.0	ug/l	
86-74-8	Carbazole	ND	5.0	0.60	ug/l	
106-47-8	4-Chloroaniline	0.93	5.0	0.63	ug/l	J

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B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

LIBRE ASOCIADO DE PUERTO RICO
Manuel Infante Méndez
IQ # 1888
QUIMICO LICENCIADO

Report of Analysis

Client Sample ID:	MW-13		
Lab Sample ID:	FA42031-12	**Date Sampled:**	03/13/17
Matrix:	AQ - Ground Water	**Date Received:**	03/14/17
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	BMSMC, Humacao, PR		

ABN TCL Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.81	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	0.73	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.76	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	0.50	ug/l	
7005-72-3	4-Chlorophenyl Phenyl Ether	ND	5.0	0.54	ug/l	
218-01-9	Chrysene	ND	5.0	0.85	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	0.80	ug/l	
132-64-9	Dibenzofuran	ND	5.0	0.60	ug/l	
91-94-1	3,3'-Dichlorobenzidine [c]	ND	5.0	0.64	ug/l	
84-66-2	Diethyl Phthalate	ND	5.0	1.0	ug/l	
131-11-3	Dimethyl Phthalate	ND	5.0	1.0	ug/l	
84-74-2	Di-n-butyl Phthalate	ND	5.0	1.0	ug/l	
117-84-0	Di-n-octyl Phthalate	ND	5.0	1.0	ug/l	
121-14-2	2,4-Dinitrotoluene [b]	ND	5.0	0.81	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	5.0	0.71	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	5.0	1.0	ug/l	
206-44-0	Fluoranthene	ND	5.0	0.55	ug/l	
86-73-7	Fluorene	ND	5.0	0.70	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	0.69	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	0.50	ug/l	
77-47-4	Hexachlorocyclopentadiene [a]	ND	5.0	1.8	ug/l	
67-72-1	Hexachloroethane	ND	5.0	1.6	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	0.71	ug/l	
78-59-1	Isophorone	ND	5.0	0.78	ug/l	
90-12-0	1-Methylnaphthalene	ND	5.0	0.53	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.0	0.60	ug/l	
88-74-4	2-Nitroaniline [a]	ND	5.0	1.8	ug/l	
99-09-2	3-Nitroaniline [c]	ND	5.0	0.88	ug/l	
100-01-6	4-Nitroaniline	ND	5.0	1.2	ug/l	
98-95-3	Nitrobenzene	ND	5.0	0.93	ug/l	
621-64-7	N-Nitrosodi-n-propylamine	ND	5.0	0.67	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.81	ug/l	
85-01-8	Phenanthrene	ND	5.0	0.86	ug/l	
129-00-0	Pyrene	ND	5.0	0.68	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	5.0	0.50	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	26%		14-67%
4165-62-2	Phenol-d5	19%		10-50%

ND = Not detected MDL = Method Detection Limit
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E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-13		
Lab Sample ID:	FA42031-12	**Date Sampled:**	03/13/17
Matrix:	AQ - Ground Water	**Date Received:**	03/14/17
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	BMSMC, Humacao, PR		

ABN TCL Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
118-79-6	2,4,6-Tribromophenol	96%		33-118%
4165-60-0	Nitrobenzene-d5	76%		42-108%
321-60-8	2-Fluorobiphenyl	60%		40-106%
1718-51-0	Terphenyl-d14	66%		39-121%

(a) Associated CCV outside control limits.
(b) Associated CCV and BS outside control limits.
(c) Associated BS recovery outside control limits.

...ABRE ASOCIADO DE PUERTO RICO
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IC # 1888
QUIMICO LICENCIADO

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J = Indicates an estimated value
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N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	MW-16		
Lab Sample ID:	FA42031-15	Date Sampled:	03/13/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	SW846 8270D SW846 3510C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L0690678.D	1	03/29/17	NG	03/20/17	OP64234	SL3979
Run #2							

	Initial Volume	Final Volume
Run #1	1040 ml	1.0 ml
Run #2		

ABN TCL Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam [a]	ND	9.6	2.4	ug/l	
59-50-7	4-Chloro-3-methyl Phenol	ND	4.8	0.57	ug/l	
95-57-8	2-Chlorophenol	ND	4.8	0.61	ug/l	
120-83-2	2,4-Dichlorophenol	ND	4.8	0.80	ug/l	
105-67-9	2,4-Dimethylphenol	ND	4.8	0.71	ug/l	
51-28-5	2,4-Dinitrophenol [b]	ND	24	4.8	ug/l	
534-52-1	4,6-Dinitro-o-cresol [c]	ND	9.6	1.9	ug/l	
95-48-7	2-Methylphenol	ND	4.8	0.54	ug/l	
	3&4-Methylphenol	ND	4.8	0.94	ug/l	
88-75-5	2-Nitrophenol [a]	ND	4.8	0.82	ug/l	
100-02-7	4-Nitrophenol	ND	24	4.8	ug/l	
87-86-5	Pentachlorophenol [a]	ND	24	4.8	ug/l	
108-95-2	Phenol	ND	4.8	0.48	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol [a]	ND	4.8	0.93	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	4.8	0.71	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	4.8	0.72	ug/l	
83-32-9	Acenaphthene	ND	4.8	0.60	ug/l	
208-96-8	Acenaphthylene	ND	4.8	0.61	ug/l	
98-86-2	Acetophenone	ND	4.8	0.78	ug/l	
120-12-7	Anthracene	ND	4.8	0.77	ug/l	
1912-24-9	Atrazine	ND	4.8	0.98	ug/l	
100-52-7	Benzaldehyde	ND	24	4.8	ug/l	
56-55-3	Benzo(a)anthracene	ND	4.8	0.73	ug/l	
50-32-8	Benzo(a)pyrene	ND	4.8	0.75	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	4.8	0.75	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	4.8	0.79	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	4.8	0.82	ug/l	
92-52-4	1,1'-Biphenyl	ND	4.8	0.60	ug/l	
101-55-3	4-Bromophenyl Phenyl Ether	ND	4.8	0.81	ug/l	
85-68-7	Butyl Benzyl Phthalate	ND	4.8	0.96	ug/l	
86-74-8	Carbazole	ND	4.8	0.58	ug/l	
106-47-8	4-Chloroaniline	ND	4.8	0.61	ug/l	

LIBRE ASOCIADO DE PUERTO RICO
Rafael Infante Méndez
QUIMICO LICENCIADO

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J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-16		
Lab Sample ID:	FA42031-15	Date Sampled:	03/13/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	SW846 8270D SW846 3510C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

ABN TCL Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
111-91-1	bis(2-Chloroethoxy)methane	ND	4.8	0.78	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	4.8	0.70	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	4.8	0.73	ug/l	
91-58-7	2-Chloronaphthalene	ND	4.8	0.48	ug/l	
7005-72-3	4-Chlorophenyl Phenyl Ether	ND	4.8	0.52	ug/l	
218-01-9	Chrysene	ND	4.8	0.82	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	4.8	0.77	ug/l	
132-64-9	Dibenzofuran	ND	4.8	0.58	ug/l	
91-94-1	3,3'-Dichlorobenzidine [c]	ND	4.8	0.62	ug/l	
84-66-2	Diethyl Phthalate	ND	4.8	0.96	ug/l	
131-11-3	Dimethyl Phthalate	ND	4.8	0.96	ug/l	
84-74-2	Di-n-butyl Phthalate	ND	4.8	0.96	ug/l	
117-84-0	Di-n-octyl Phthalate	ND	4.8	0.96	ug/l	
121-14-2	2,4-Dinitrotoluene [b]	ND	4.8	0.78	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	4.8	0.69	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	4.8	0.96	ug/l	
206-44-0	Fluoranthene	ND	4.8	0.53	ug/l	
86-73-7	Fluorene	ND	4.8	0.67	ug/l	
118-74-1	Hexachlorobenzene	ND	4.8	0.67	ug/l	
87-68-3	Hexachlorobutadiene	ND	4.8	0.48	ug/l	
77-47-4	Hexachlorocyclopentadiene [a]	ND	4.8	1.7	ug/l	
67-72-1	Hexachloroethane	ND	4.8	1.6	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	4.8	0.69	ug/l	
78-59-1	Isophorone	ND	4.8	0.75	ug/l	
90-12-0	1-Methylnaphthalene	ND	4.8	0.50	ug/l	
91-57-6	2-Methylnaphthalene	ND	4.8	0.58	ug/l	
88-74-4	2-Nitroaniline [a]	ND	4.8	1.7	ug/l	
99-09-2	3-Nitroaniline [c]	ND	4.8	0.85	ug/l	
100-01-6	4-Nitroaniline	ND	4.8	1.1	ug/l	
98-95-3	Nitrobenzene	ND	4.8	0.90	ug/l	
621-64-7	N-Nitrosodi-n-propylamine	ND	4.8	0.64	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	4.8	0.78	ug/l	
85-01-8	Phenanthrene	ND	4.8	0.83	ug/l	
129-00-0	Pyrene	ND	4.8	0.66	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	4.8	0.48	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	27%		14-67%
4165-62-2	Phenol-d5	20%		10-50%

ABRE ASOCIADO DE PUERTO RICO
Manuel Infante Méndez
IC # 1888
NICO LICENCIADO

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
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J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-16		
Lab Sample ID:	FA42031-15	**Date Sampled:**	03/13/17
Matrix:	AQ - Ground Water	**Date Received:**	03/14/17
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	BMSMC, Humacao, PR		

ABN TCL Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
118-79-6	2,4,6-Tribromophenol	91%		33-118%
4165-60-0	Nitrobenzene-d5	77%		42-108%
321-60-8	2-Fluorobiphenyl	61%		40-106%
1718-51-0	Terphenyl-d14	64%		39-121%

(a) Associated CCV outside control limits.
(b) Associated CCV and BS outside control limits.
(c) Associated BS recovery outside control limits.

LIBRE ASOCIADO DE PUERTO RICO
Rafael Infante Méndez
IC # 1808
QUIMICO LICENCIADO

ND = Not detected MDL = Method Detection Limit
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J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	FB031317		
Lab Sample ID:	FA42031-16	Date Sampled:	03/13/17
Matrix:	AQ - Field Blank Water	Date Received:	03/14/17
Method:	SW846 8270D SW846 3510C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L0690679.D	1	03/29/17	NG	03/20/17	OP64234	SL3979
Run #2							

	Initial Volume	Final Volume
Run #1	1020 ml	1.0 ml
Run #2		

ABN TCL Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam [a]	ND	9.8	2.5	ug/l	
59-50-7	4-Chloro-3-methyl Phenol	ND	4.9	0.58	ug/l	
95-57-8	2-Chlorophenol	ND	4.9	0.62	ug/l	
120-83-2	2,4-Dichlorophenol	ND	4.9	0.82	ug/l	
105-67-9	2,4-Dimethylphenol	ND	4.9	0.72	ug/l	
51-28-5	2,4-Dinitrophenol [b]	ND	25	4.9	ug/l	
534-52-1	4,6-Dinitro-o-cresol [c]	ND	9.8	2.0	ug/l	
95-48-7	2-Methylphenol	ND	4.9	0.55	ug/l	
	3&4-Methylphenol	ND	4.9	0.96	ug/l	
88-75-5	2-Nitrophenol [a]	ND	4.9	0.84	ug/l	
100-02-7	4-Nitrophenol	ND	25	4.9	ug/l	
87-86-5	Pentachlorophenol [a]	ND	25	4.9	ug/l	
108-95-2	Phenol	ND	4.9	0.49	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol [a]	ND	4.9	0.95	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	4.9	0.73	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	4.9	0.74	ug/l	
83-32-9	Acenaphthene	ND	4.9	0.61	ug/l	
208-96-8	Acenaphthylene	ND	4.9	0.63	ug/l	
98-86-2	Acetophenone	ND	4.9	0.79	ug/l	
120-12-7	Anthracene	ND	4.9	0.78	ug/l	
1912-24-9	Atrazine	ND	4.9	1.0	ug/l	
100-52-7	Benzaldehyde	ND	25	4.9	ug/l	
56-55-3	Benzo(a)anthracene	ND	4.9	0.75	ug/l	
50-32-8	Benzo(a)pyrene	ND	4.9	0.77	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	4.9	0.76	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	4.9	0.81	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	4.9	0.84	ug/l	
92-52-4	1,1'-Biphenyl	ND	4.9	0.61	ug/l	
101-55-3	4-Bromophenyl Phenyl Ether	ND	4.9	0.83	ug/l	
85-68-7	Butyl Benzyl Phthalate	ND	4.9	0.98	ug/l	
86-74-8	Carbazole	ND	4.9	0.59	ug/l	
106-47-8	4-Chloroaniline	ND	4.9	0.62	ug/l	

LIBRE ASOCIADO DE PUERTO RICO
Rafael Infante Méndez
IQ # 1088
QUIMICO LICENCIADO

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J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	FB031317		
Lab Sample ID:	FA42031-16	Date Sampled:	03/13/17
Matrix:	AQ - Field Blank Water	Date Received:	03/14/17
Method:	SW846 8270D SW846 3510C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

ABN TCL Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
111-91-1	bis(2-Chloroethoxy)methane	ND	4.9	0.79	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	4.9	0.72	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	4.9	0.74	ug/l	
91-58-7	2-Chloronaphthalene	ND	4.9	0.49	ug/l	
7005-72-3	4-Chlorophenyl Phenyl Ether	ND	4.9	0.53	ug/l	
218-01-9	Chrysene	ND	4.9	0.83	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	4.9	0.79	ug/l	
132-64-9	Dibenzofuran	ND	4.9	0.59	ug/l	
91-94-1	3,3'-Dichlorobenzidine [c]	ND	4.9	0.63	ug/l	
84-66-2	Diethyl Phthalate	ND	4.9	0.98	ug/l	
131-11-3	Dimethyl Phthalate	ND	4.9	0.98	ug/l	
84-74-2	Di-n-butyl Phthalate	ND	4.9	0.98	ug/l	
117-84-0	Di-n-octyl Phthalate	ND	4.9	0.98	ug/l	
121-14-2	2,4-Dinitrotoluene [b]	ND	4.9	0.80	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	4.9	0.70	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	4.9	0.98	ug/l	
206-44-0	Fluoranthene	ND	4.9	0.54	ug/l	
86-73-7	Fluorene	ND	4.9	0.69	ug/l	
118-74-1	Hexachlorobenzene	ND	4.9	0.68	ug/l	
87-68-3	Hexachlorobutadiene	ND	4.9	0.49	ug/l	
77-47-4	Hexachlorocyclopentadiene [a]	ND	4.9	1.8	ug/l	
67-72-1	Hexachloroethane	ND	4.9	1.6	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	4.9	0.70	ug/l	
78-59-1	Isophorone	ND	4.9	0.76	ug/l	
90-12-0	1-Methylnaphthalene	ND	4.9	0.51	ug/l	
91-57-6	2-Methylnaphthalene	ND	4.9	0.59	ug/l	
88-74-4	2-Nitroaniline [a]	ND	4.9	1.8	ug/l	
99-09-2	3-Nitroaniline [c]	ND	4.9	0.86	ug/l	
100-01-6	4-Nitroaniline	ND	4.9	1.1	ug/l	
98-95-3	Nitrobenzene	ND	4.9	0.91	ug/l	
621-64-7	N-Nitrosodi-n-propylamine	ND	4.9	0.66	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	4.9	0.79	ug/l	
85-01-8	Phenanthrene	ND	4.9	0.85	ug/l	
129-00-0	Pyrene	ND	4.9	0.67	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	4.9	0.49	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	31%		14-67%
4165-62-2	Phenol-d5	22%		10-50%

LIBRE ASOCIADO DE PUERTO RICO
Manuel Infante Méndez
IC # 1088
QUIMICO LICENCIADO

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J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	FB031317		
Lab Sample ID:	FA42031-16	**Date Sampled:**	03/13/17
Matrix:	AQ - Field Blank Water	**Date Received:**	03/14/17
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	BMSMC, Humacao, PR		

ABN TCL Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
118-79-6	2,4,6-Tribromophenol	98%		33-118%
4165-60-0	Nitrobenzene-d5	91%		42-108%
321-60-8	2-Fluorobiphenyl	71%		40-106%
1718-51-0	Terphenyl-d14	70%		39-121%

(a) Associated CCV outside control limits.
(b) Associated CCV and BS outside control limits.
(c) Associated BS recovery outside control limits.

LIBRE ASOCIADO DE PUERTO RICO
Rafael Infante
Méndez
IC # 1888
QUIMICO LICENCIADO

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J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	BR-3		
Lab Sample ID:	FA42031-17	Date Sampled:	03/13/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	SW846 8270D SW846 3510C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L0690680.D	1	03/29/17	NG	03/20/17	OP64234	SL3979
Run #2							

	Initial Volume	Final Volume
Run #1	1020 ml	1.0 ml
Run #2		

ABN TCL Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
105-60-2	Caprolactam [a]	ND	9.8	2.5	ug/l	
59-50-7	4-Chloro-3-methyl Phenol	ND	4.9	0.58	ug/l	
95-57-8	2-Chlorophenol	ND	4.9	0.62	ug/l	
120-83-2	2,4-Dichlorophenol	ND	4.9	0.82	ug/l	
105-67-9	2,4-Dimethylphenol	ND	4.9	0.72	ug/l	
51-28-5	2,4-Dinitrophenol [b]	ND	25	4.9	ug/l	
534-52-1	4,6-Dinitro-o-cresol [c]	ND	9.8	2.0	ug/l	
95-48-7	2-Methylphenol	ND	4.9	0.55	ug/l	
	3&4-Methylphenol	ND	4.9	0.96	ug/l	
88-75-5	2-Nitrophenol [a]	ND	4.9	0.84	ug/l	
100-02-7	4-Nitrophenol	ND	25	4.9	ug/l	
87-86-5	Pentachlorophenol [a]	ND	25	4.9	ug/l	
108-95-2	Phenol	ND	4.9	0.49	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol [a]	ND	4.9	0.95	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	4.9	0.73	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	4.9	0.74	ug/l	
83-32-9	Acenaphthene	ND	4.9	0.61	ug/l	
208-96-8	Acenaphthylene	ND	4.9	0.63	ug/l	
98-86-2	Acetophenone	ND	4.9	0.79	ug/l	
120-12-7	Anthracene	ND	4.9	0.78	ug/l	
1912-24-9	Atrazine	ND	4.9	1.0	ug/l	
100-52-7	Benzaldehyde	ND	25	4.9	ug/l	
56-55-3	Benzo(a)anthracene	ND	4.9	0.75	ug/l	
50-32-8	Benzo(a)pyrene	ND	4.9	0.77	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	4.9	0.76	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	4.9	0.81	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	4.9	0.84	ug/l	
92-52-4	1,1'-Biphenyl	ND	4.9	0.61	ug/l	
101-55-3	4-Bromophenyl Phenyl Ether	ND	4.9	0.83	ug/l	
85-68-7	Butyl Benzyl Phthalate	ND	4.9	0.98	ug/l	
86-74-8	Carbazole	ND	4.9	0.59	ug/l	
106-47-8	4-Chloroaniline	1.1	4.9	0.62	ug/l	J

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Report of Analysis

Client Sample ID:	BR-3		
Lab Sample ID:	FA42031-17	Date Sampled:	03/13/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	SW846 8270D SW846 3510C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

ABN TCL Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
111-91-1	bis(2-Chloroethoxy)methane	ND	4.9	0.79	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	4.9	0.72	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	4.9	0.74	ug/l	
91-58-7	2-Chloronaphthalene	ND	4.9	0.49	ug/l	
7005-72-3	4-Chlorophenyl Phenyl Ether	ND	4.9	0.53	ug/l	
218-01-9	Chrysene	ND	4.9	0.83	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	4.9	0.79	ug/l	
132-64-9	Dibenzofuran	ND	4.9	0.59	ug/l	
91-94-1	3,3'-Dichlorobenzidine [c]	ND	4.9	0.63	ug/l	
84-66-2	Diethyl Phthalate	ND	4.9	0.98	ug/l	
131-11-3	Dimethyl Phthalate	ND	4.9	0.98	ug/l	
84-74-2	Di-n-butyl Phthalate	ND	4.9	0.98	ug/l	
117-84-0	Di-n-octyl Phthalate	ND	4.9	0.98	ug/l	
121-14-2	2,4-Dinitrotoluene [b]	ND	4.9	0.80	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	4.9	0.70	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	4.9	0.98	ug/l	
206-44-0	Fluoranthene	ND	4.9	0.54	ug/l	
86-73-7	Fluorene	ND	4.9	0.69	ug/l	
118-74-1	Hexachlorobenzene	ND	4.9	0.68	ug/l	
87-68-3	Hexachlorobutadiene	ND	4.9	0.49	ug/l	
77-47-4	Hexachlorocyclopentadiene [a]	ND	4.9	1.8	ug/l	
67-72-1	Hexachloroethane	ND	4.9	1.6	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	4.9	0.70	ug/l	
78-59-1	Isophorone	ND	4.9	0.76	ug/l	
90-12-0	1-Methylnaphthalene	ND	4.9	0.51	ug/l	
91-57-6	2-Methylnaphthalene	ND	4.9	0.59	ug/l	
88-74-4	2-Nitroaniline [a]	ND	4.9	1.8	ug/l	
99-09-2	3-Nitroaniline [c]	ND	4.9	0.86	ug/l	
100-01-6	4-Nitroaniline	ND	4.9	1.1	ug/l	
98-95-3	Nitrobenzene	ND	4.9	0.91	ug/l	
621-64-7	N-Nitrosodi-n-propylamine	ND	4.9	0.66	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	4.9	0.79	ug/l	
85-01-8	Phenanthrene	ND	4.9	0.85	ug/l	
129-00-0	Pyrene	ND	4.9	0.67	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	4.9	0.49	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	31%		14-67%
4165-62-2	Phenol-d5	24%		10-50%

COLEGIO DE QUIMICOS DE PUERTO RICO
Manuel Infante Méndez
IC # 1888
QUIMICO LICENCIADO

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N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	BR-3		
Lab Sample ID:	FA42031-17	**Date Sampled:**	03/13/17
Matrix:	AQ - Ground Water	**Date Received:**	03/14/17
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	BMSMC, Humacao, PR		

ABN TCL Special List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
118-79-6	2,4,6-Tribromophenol	116%		33-118%
4165-60-0	Nitrobenzene-d5	93%		42-108%
321-60-8	2-Fluorobiphenyl	73%		40-106%
1718-51-0	Terphenyl-d14	79%		39-121%

(a) Associated CCV outside control limits.
(b) Associated CCV and BS outside control limits.
(c) Associated BS recovery outside control limits.

LIBRE ASOCIADO DE PUERTO RICO
Miguel Infante Méndez
IQ # 1888
QUIMICO LICENCIADO

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N = Indicates presumptive evidence of a compound

Raw Data: X053045.D X053046.D

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA42031
Account: AMANYWP Anderson, Mulholland & Associates
Project: BMSMC, Humacao, PR

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP64210-MS	X053045.D	1	03/22/17	NG	03/17/17	OP64210	SX2246
OP64210-MSD	X053046.D	1	03/22/17	NG	03/17/17	OP64210	SX2246
FA42031-7	X053044.D	1	03/22/17	NG	03/17/17	OP64210	SX2246

The QC reported here applies to the following samples: Method: SW846 8270D

FA42031-7

CAS No.	Compound	FA42031-7 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
105-60-2	Caprolactam	ND		96.2	32.9	34	96.2	20.1	21	48*	11-68/39
59-50-7	4-Chloro-3-methyl Phenol	ND		96.2	87.7	91	96.2	79.1	82	10	54-103/23
95-57-8	2-Chlorophenol	ND		96.2	75.7	79	96.2	68.6	71	10	52-98/25
120-83-2	2,4-Dichlorophenol	ND		96.2	86.4	90	96.2	78.5	82	10	53-103/26
105-67-9	2,4-Dimethylphenol	ND		96.2	77.8	81	96.2	70.3	73	10	43-90/27
51-28-5	2,4-Dinitrophenol	ND		192	187	97	192	173	90	8	44-112/25
534-52-1	4,6-Dinitro-o-cresol	ND		192	207	108	192	195	101	6	66-121/23
95-48-7	2-Methylphenol	ND		96.2	70.8	74	96.2	60.8	63	15	43-90/28
	3&4-Methylphenol	ND		192	138	72	192	112	58	21	36-88/28
88-75-5	2-Nitrophenol	ND		96.2	85.7	89	96.2	78.6	82	9	53-102/29
100-02-7	4-Nitrophenol	ND		192	93.9	49	192	64.8	34	37*	18-62/33
87-86-5	Pentachlorophenol	ND		192	202	105	192	188	98	7	61-115/26
108-95-2	Phenol	ND		96.2	44.7	46	96.2	29.9	31	40*	19-56/35
58-90-2	2,3,4,6-Tetrachlorophenol	ND		96.2	97.2	101	96.2	87.1	91	11	62-110/22
95-95-4	2,4,5-Trichlorophenol	ND		96.2	99.2	103	96.2	92.3	96	7	62-109/22
88-06-2	2,4,6-Trichlorophenol	ND		96.2	96.9	101	96.2	86.7	90	11	59-107/23
83-32-9	Acenaphthene	ND		96.2	93.2	97	96.2	84.6	88	10	61-107/22
208-96-8	Acenaphthylene	ND		96.2	93.7	97	96.2	85.2	89	10	60-104/22
98-86-2	Acetophenone	ND		96.2	76.1	79	96.2	70.4	73	8	53-106/27
120-12-7	Anthracene	ND		96.2	99.8	104	96.2	90.8	94	9	65-108/20
1912-24-9	Atrazine	ND		96.2	89.8	93	96.2	81.2	84	10	62-114/24
100-52-7	Benzaldehyde	ND		96.2	66.9	70	96.2	60.5	63	10	36-129/29
56-55-3	Benzo(a)anthracene	ND		96.2	100	104	96.2	94.7	98	5	66-111/22
50-32-8	Benzo(a)pyrene	ND		96.2	103	107	96.2	95.6	99	7	62-107/23
205-99-2	Benzo(b)fluoranthene	ND		96.2	99.2	103	96.2	99.8	104	1	65-114/23
191-24-2	Benzo(g,h,i)perylene	ND		96.2	96.6	100	96.2	87.6	91	10	66-116/23
207-08-9	Benzo(k)fluoranthene	ND		96.2	108	112	96.2	95.0	99	13	65-114/24
92-52-4	1,1'-Biphenyl	ND		96.2	83.8	87	96.2	76.6	80	9	57-104/23
101-55-3	4-Bromophenyl Phenyl Ether	ND		96.2	97.2	101	96.2	87.8	91	10	65-109/23
85-68-7	Butyl Benzyl Phthalate	ND		96.2	97.5	101	96.2	91.4	95	6	65-112/24
86-74-8	Carbazole	ND		96.2	105	109	96.2	96.5	100	8	59-113/21
106-47-8	4-Chloroaniline	ND		96.2	74.8	78	96.2	68.3	71	9	49-105/27
111-91-1	bis(2-Chloroethoxy)methane	ND		96.2	84.0	87	96.2	75.6	79	11	51-102/28
111-44-4	bis(2-Chloroethyl)ether	ND		96.2	83.8	87	96.2	78.2	81	7	53-100/27
108-60-1	bis(2-Chloroisopropyl)ether	ND		96.2	85.2	89	96.2	80.8	[illegible]	[illegible]	45-106/26
91-58-7	2-Chloronaphthalene	ND		96.2	85.9	89	96.2	79.[illegible]	82	[illegible]	57-103/23

* = Outside of Control Limits.

8.3.2

8

SGS ACCUTEST FA42031

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA42031
Account: AMANYWP Anderson, Mulholland & Associates
Project: BMSMC, Humacao, PR

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP64210-MS	X053045.D	1	03/22/17	NG	03/17/17	OP64210	SX2246
OP64210-MSD	X053046.D	1	03/22/17	NG	03/17/17	OP64210	SX2246
FA42031-7	X053044.D	1	03/22/17	NG	03/17/17	OP64210	SX2246

The QC reported here applies to the following samples: Method: SW846 8270D

FA42031-7

CAS No.	Compound	FA42031-7 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
7005-72-3	4-Chlorophenyl Phenyl Ether	ND		96.2	93.8	98	96.2	88.4	92	6	62-105/20
218-01-9	Chrysene	ND		96.2	109	113*	96.2	100	104	9	66-111/22
53-70-3	Dibenzo(a,h)anthracene	ND		96.2	101	105	96.2	91.5	95	10	66-119/24
132-64-9	Dibenzofuran	ND		96.2	92.3	96	96.2	82.6	86	11	61-106/21
91-94-1	3,3'-Dichlorobenzidine	ND		96.2	79.8	83	96.2	73.4	76	8	46-117/29
84-66-2	Diethyl Phthalate	ND		96.2	90.0	94	96.2	81.0	84	11	64-108/21
131-11-3	Dimethyl Phthalate	ND		96.2	93.1	97	96.2	84.1	87	10	63-106/22
84-74-2	Di-n-butyl Phthalate	ND		96.2	98.5	102	96.2	89.2	93	10	65-107/21
117-84-0	Di-n-octyl Phthalate	ND		96.2	101	105	96.2	96.2	100	5	62-118/24
121-14-2	2,4-Dinitrotoluene	ND		96.2	100	104	96.2	92.0	96	8	61-110/21
606-20-2	2,6-Dinitrotoluene	ND		96.2	103	107	96.2	93.4	97	10	63-108/21
117-81-7	bis(2-Ethylhexyl)phthalate	ND		96.2	102	106	96.2	93.9	98	8	61-117/23
206-44-0	Fluoranthene	0.73	J	96.2	98.5	102	96.2	91.6	95	7	63-106/21
86-73-7	Fluorene	ND		96.2	93.4	97	96.2	85.7	89	9	62-108/20
118-74-1	Hexachlorobenzene	ND		96.2	98.0	102	96.2	94.3	98	4	63-108/22
87-68-3	Hexachlorobutadiene	ND		96.2	77.4	80	96.2	69.6	72	11	42-102/28
77-47-4	Hexachlorocyclopentadiene	ND		96.2	80.8	84	96.2	76.1	79	6	39-102/29
67-72-1	Hexachloroethane	ND		96.2	71.9	75	96.2	67.3	70	7	42-100/29
193-39-5	Indeno(1,2,3-cd)pyrene	ND		96.2	94.7	98	96.2	86.4	90	9	64-119/24
78-59-1	Isophorone	ND		96.2	91.2	95*	96.2	81.3	85	11	43-87/25
91-57-6	2-Methylnaphthalene	ND		96.2	74.9	78	96.2	69.5	72	7	51-102/26
88-74-4	2-Nitroaniline	ND		96.2	93.7	97	96.2	86.7	90	8	54-128/24
99-09-2	3-Nitroaniline	ND		96.2	90.0	94	96.2	81.7	85	10	56-106/27
100-01-6	4-Nitroaniline	ND		96.2	95.0	99	96.2	85.1	89	11	55-120/24
98-95-3	Nitrobenzene	ND		96.2	81.8	85	96.2	76.3	79	7	50-104/28
621-64-7	N-Nitrosodi-n-propylamine	ND		96.2	77.0	80	96.2	69.4	72	10	52-104/25
86-30-6	N-Nitrosodiphenylamine	ND		96.2	104	108	96.2	96.8	101	7	64-108/23
85-01-8	Phenanthrene	ND		96.2	102	106	96.2	94.6	98	8	66-110/21
129-00-0	Pyrene	ND		96.2	97.2	101	96.2	89.7	93	8	64-113/23
95-94-3	1,2,4,5-Tetrachlorobenzene	ND		96.2	76.6	80	96.2	70.5	73	8	47-111/27

CAS No.	Surrogate Recoveries	MS	MSD	FA42031-7	Limits
367-12-4	2-Fluorophenol	56%	42%	17%	14-67%
4165-62-2	Phenol-d5	65%* a	45%	18%	10-50%

* = Outside of Control Limits.

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Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA42031
Account: AMANYWP Anderson, Mulholland & Associates
Project: BMSMC, Humacao, PR

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP64210-MS	X053045.D	1	03/22/17	NG	03/17/17	OP64210	SX2246
OP64210-MSD	X053046.D	1	03/22/17	NG	03/17/17	OP64210	SX2246
FA42031-7	X053044.D	1	03/22/17	NG	03/17/17	OP64210	SX2246

The QC reported here applies to the following samples: **Method: SW846 8270D**

FA42031-7

CAS No.	Surrogate Recoveries	MS	MSD	FA42031-7	Limits
118-79-6	2,4,6-Tribromophenol	104%	97%	103%	33-118%
4165-60-0	Nitrobenzene-d5	85%	78%	69%	42-108%
321-60-8	2-Fluorobiphenyl	93%	82%	72%	40-106%
1718-51-0	Terphenyl-d14	97%	87%	77%	39-121%

(a) Outside control limits.

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Rafael Infante Méndez
IQ # 1888
QUIMICO LICENCIADO

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* = Outside of Control Limits.

SGS Accutest

Report of Analysis

Client Sample ID:	\B0341017		
Lab Sample ID:	FA42031-1	Date Sampled:	03/10/17
Matrix:	AQ - Equipment Blank	Date Received:	03/14/17
Method:	SW846 8270D BY SIM SW846 3510C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W098224.D	1	03/22/17	FS	03/16/17	OP64190	SW4363
Run #2	U060458.D	1	03/16/17	NJ	03/16/17	OP64190	SU2651

	Initial Volume	Final Volume
Run #1	1030 ml	1.0 ml
Run #2	1030 ml	1.0 ml

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	ND [a]	0.29	0.15	ug/l	
90-12-0	1-Methylnaphthalene	ND	0.97	0.39	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.97	0.39	ug/l	
91-20-3	Naphthalene	ND	0.97	0.39	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	55% [b]	59% [b]	42-108%
321-60-8	2-Fluorobiphenyl	57% [b]	55% [b]	40-106%
1718-51-0	Terphenyl-d14	52% [b]	69% [b]	39-121%

(a) Result is from Run# 2
(b) Surrogate recoveries corrected for actual spike amount.

ABRE ASOCIADO DE PUERTO RICO
Manuel Infante Méndez
IQ # 1888
QUIMICO LICENCIADO

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	BR-1		
Lab Sample ID:	FA42031-2	Date Sampled:	03/10/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	SW846 8270D BY SIM SW846 3510C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W098225.D	1	03/22/17	FS	03/16/17	OP64190	SW4363
Run #2	U060587.D	20	03/24/17	NJ	03/16/17	OP64190	SU2655

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2	1000 ml	1.0 ml

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	161 [a]	6.0	3.0	ug/l	
90-12-0	1-Methylnaphthalene	ND	1.0	0.40	ug/l	
91-57-6	2-Methylnaphthalene	ND	1.0	0.40	ug/l	
91-20-3	Naphthalene	ND	1.0	0.40	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	69% [b]	0% [c]	42-108%
321-60-8	2-Fluorobiphenyl	78% [b]	0% [c]	40-106%
1718-51-0	Terphenyl-d14	43% [b]	0% [c]	39-121%

(a) Result is from Run# 2
(b) Surrogate recoveries corrected for actual spike amount.
(c) Outside control limits due to dilution.

LIBRE ASOCIADO ... Rafael Infante Méndez IC # 1888 QUIMICO LICENCIADO

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N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	BR-4		
Lab Sample ID:	FA42031-4	**Date Sampled:**	03/10/17
Matrix:	AQ - Ground Water	**Date Received:**	03/14/17
Method:	SW846 8270D BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W098226.D	1	03/22/17	FS	03/16/17	OP64190	SW4363
Run #2 [a]	U060460.D	1	03/16/17	NJ	03/16/17	OP64190	SU2651

	Initial Volume	Final Volume
Run #1	1030 ml	1.0 ml
Run #2	1030 ml	1.0 ml

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	0.54 [b]	0.29	0.15	ug/l	
90-12-0	1-Methylnaphthalene	ND	0.97	0.39	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.97	0.39	ug/l	
91-20-3	Naphthalene	ND	0.97	0.39	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	67% [c]	74%	42-108%
321-60-8	2-Fluorobiphenyl	73% [c]	68%	40-106%
1718-51-0	Terphenyl-d14	53% [c]	76%	39-121%

(a) Insufficient extract to reanalyze.
(b) Result is from Run# 2
(c) Surrogate recoveries corrected for actual spike amount.

LIBRE ASOCIADO DE PUERTO RICO
Rafael Infante Méndez
IQ # 1888
QUIMICO LICENCIADO

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RL = Reporting Limit
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J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	FB031017		
Lab Sample ID:	FA42031-5	Date Sampled:	03/10/17
Matrix:	AQ - Field Blank Water	Date Received:	03/14/17
Method:	SW846 8270D BY SIM SW846 3510C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W098227.D	1	03/22/17	FS	03/16/17	OP64190	SW4363
Run #2	U060461.D	1	03/16/17	NJ	03/16/17	OP64190	SU2651

	Initial Volume	Final Volume
Run #1	1040 ml	1.0 ml
Run #2	1040 ml	1.0 ml

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	0.45 [a]	0.29	0.14	ug/l	
90-12-0	1-Methylnaphthalene	ND	0.96	0.38	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.96	0.38	ug/l	
91-20-3	Naphthalene	ND	0.96	0.38	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	71% [b]	81% [b]	42-108%
321-60-8	2-Fluorobiphenyl	82% [b]	74% [b]	40-106%
1718-51-0	Terphenyl-d14	59% [b]	85% [b]	39-121%

(a) Result is from Run# 2
(b) Surrogate recoveries corrected for actual spike amount.

ASOCIADO
Rafael Infante Méndez
IQ # 1888
QUIMICO LICENCIADO

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E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	BR-1 DUP		
Lab Sample ID:	FA42031-6	**Date Sampled:**	03/10/17
Matrix:	AQ - Ground Water	**Date Received:**	03/14/17
Method:	SW846 8270D BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	W098228.D	1	03/22/17	FS	03/16/17	OP64190	SW4363
Run #2	U060588.D	20	03/24/17	NJ	03/16/17	OP64190	SU2655

	Initial Volume	Final Volume
Run #1	1050 ml	1.0 ml
Run #2	1050 ml	1.0 ml

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	155 [a]	5.7	2.9	ug/l	
90-12-0	1-Methylnaphthalene	ND	0.95	0.38	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.95	0.38	ug/l	
91-20-3	Naphthalene	ND	0.95	0.38	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	61% [b]	0% [c]	42-108%
321-60-8	2-Fluorobiphenyl	78% [b]	0% [c]	40-106%
1718-51-0	Terphenyl-d14	43% [b]	0% [c]	39-121%

(a) Result is from Run# 2
(b) Surrogate recoveries corrected for actual spike amount.
(c) Outside control limits due to dilution.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	BR-2		
Lab Sample ID:	FA42031-7	**Date Sampled:**	03/10/17
Matrix:	AQ - Ground Water	**Date Received:**	03/14/17
Method:	SW846 8270D BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U060476.D	1	03/20/17	NJ	03/17/17	OP64211	SU2652
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	7.6	0.30	0.15	ug/l	B

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	68% [a]		42-108%
321-60-8	2-Fluorobiphenyl	61% [a]		40-106%
1718-51-0	Terphenyl-d14	71% [a]		39-121%

(a) Surrogate recoveries corrected for actual spike amount.

COLEGIO DE QUIMICOS DE PUERTO RICO
Rafael Infante Méndez
IQ # 1688
QUIMICO LICENCIADO

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
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J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	MW-15		
Lab Sample ID:	FA42031-9	Date Sampled:	03/13/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	SW846 8270D BY SIM SW846 3510C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U060540.D	1	03/21/17	NJ	03/18/17	OP64230	SU2653
Run #2							

	Initial Volume	Final Volume
Run #1	1020 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	5.7	0.29	0.15	ug/l	B

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	76%		42-108%
321-60-8	2-Fluorobiphenyl	70%		40-106%
1718-51-0	Terphenyl-d14	98%		39-121%

LIBRE ASOCIADO DE PUERTO RICO
Rafael Infante Méndez
IQ # 1888
QUIMICO LICENCIADO

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	MW-14		
Lab Sample ID:	FA42031-10	Date Sampled:	03/13/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	SW846 8270D BY SIM SW846 3510C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	U060541.D	1	03/21/17	NJ	03/18/17	OP64230	SU2653
Run #2	U060619.D	1	03/25/17	NJ	03/24/17	OP64320	SU2656

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2	1020 ml	1.0 ml

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	1.7	0.30	0.15	ug/l	B

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	75%	82%	42-108%
321-60-8	2-Fluorobiphenyl	66%	69%	40-106%
1718-51-0	Terphenyl-d14	98%	73%	39-121%

(a) Confirmed by re-extraction and reanalysis.

LIBRE ASOCIADO DE PUERTO RICO
Manuel Infante Méndez
IQ # 1888
QUIMICO LICENCIADO

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RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	MW-14 DUP		
Lab Sample ID:	FA42031-11	Date Sampled:	03/13/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	SW846 8270D BY SIM SW846 3510C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	U060542.D	1	03/21/17	NJ	03/18/17	OP64230	SU2653
Run #2							

	Initial Volume	Final Volume
Run #1	1040 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	1.5	0.29	0.14	ug/l	B

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	73%		42-108%
321-60-8	2-Fluorobiphenyl	67%		40-106%
1718-51-0	Terphenyl-d14	95%		39-121%

(a) Insufficient sample for re-extraction.

COLEGIO DE QUIMICOS DE PUERTO RICO
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Q # 1888
QUIMICO LICENCIADO

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	MW-13		
Lab Sample ID:	FA42031-12	**Date Sampled:**	03/13/17
Matrix:	AQ - Ground Water	**Date Received:**	03/14/17
Method:	SW846 8270D BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	U060620.D	1	03/25/17	NJ	03/24/17	OP64320	SU2656
Run #2	U060543.D	1	03/21/17	NJ	03/18/17	OP64230	SU2653

	Initial Volume	Final Volume
Run #1	1040 ml	1.0 ml
Run #2	1030 ml	1.0 ml

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	ND	0.29	0.14	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	91%	88%	42-108%
321-60-8	2-Fluorobiphenyl	78%	78%	40-106%
1718-51-0	Terphenyl-d14	87%	101%	39-121%

(a) Sample re-extracted beyond hold time; re-extract results reported due to suspected laboratory contamination in original extract.

COLEGIO DE QUIMICOS DE PUERTO RICO
Rafael Infante Méndez
QUIMICO LICENCIADO
IQ # 1888

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	MW-16		
Lab Sample ID:	FA42031-15	Date Sampled:	03/13/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	SW846 8270D BY SIM SW846 3510C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	U060621.D	1	03/25/17	NJ	03/24/17	OP64320	SU2656
Run #2	U060544.D	1	03/21/17	NJ	03/18/17	OP64230	SU2653

	Initial Volume	Final Volume
Run #1	1020 ml	1.0 ml
Run #2	1040 ml	1.0 ml

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	0.38	0.29	0.15	ug/l	B

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	88%	79%	42-108%
321-60-8	2-Fluorobiphenyl	77%	68%	40-106%
1718-51-0	Terphenyl-d14	80%	93%	39-121%

(a) Sample re-extracted beyond hold time; re-extract results reported due to suspected laboratory contamination in original extract.

LIBRE ASOCIADO DE PUERTO RICO
...tuel Infante
Méndez
IC # 1888
...MICO LICENCIADO

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
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J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	FB031317		
Lab Sample ID:	FA42031-16	**Date Sampled:**	03/13/17
Matrix:	AQ - Field Blank Water	**Date Received:**	03/14/17
Method:	SW846 8270D BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U060545.D	1	03/21/17	NJ	03/18/17	OP64230	SU2653
Run #2							

	Initial Volume	Final Volume
Run #1	950 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	ND	0.32	0.16	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	92%		42-108%
321-60-8	2-Fluorobiphenyl	79%		40-106%
1718-51-0	Terphenyl-d14	105%		39-121%

COLEGIO DE QUIMICOS DE PUERTO RICO
Manuel Infante Méndez
1668
QUIMICO LICENCIADO

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SGS Accutest

Report of Analysis

Client Sample ID:	BR-3		
Lab Sample ID:	FA42031-17	Date Sampled:	03/13/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	SW846 8270D BY SIM SW846 3510C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U060537.D	5	03/21/17	NJ	03/18/17	OP64230	SU2653
Run #2							

	Initial Volume	Final Volume
Run #1	1020 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
123-91-1	1,4-Dioxane	37.6	1.5	0.74	ug/l	B

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	79%		42-108%
321-60-8	2-Fluorobiphenyl	78%		40-106%
1718-51-0	Terphenyl-d14	108%		39-121%

ASOCIADO DE PUERTO RICO
Manuel Infante Méndez
IQ # 1888
QUIMICO LICENCIADO

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N = Indicates presumptive evidence of a compound

Raw Data: U060477.D U060478.D

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA42031
Account: AMANYWP Anderson, Mulholland & Associates
Project: BMSMC, Humacao, PR

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP64211-MS	U060477.D	1	03/20/17	NJ	03/17/17	OP64211	SU2652
OP64211-MSD	U060478.D	1	03/20/17	NJ	03/17/17	OP64211	SU2652
FA42031-7	U060476.D	1	03/20/17	NJ	03/17/17	OP64211	SU2652

The QC reported here applies to the following samples: Method: SW846 8270D BY SIM

FA42031-7

CAS No.	Compound	FA42031-7 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
123-91-1	1,4-Dioxane	7.6	B	40	24.3	42 [a]	40	21.5	35 [a]	12	15-69/31

CAS No.	Surrogate Recoveries	MS	MSD	FA42031-7	Limits
4165-60-0	Nitrobenzene-d5	85%	73%	68% [b]	42-108%
321-60-8	2-Fluorobiphenyl	79%	67%	61% [b]	40-106%
1718-51-0	Terphenyl-d14	95%	80%	71% [b]	39-121%

(a) Spike recoveries corrected for actual spike amount.
(b) Surrogate recoveries corrected for actual spike amount.

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IC # 1088
QUIMICO LICENCIADO

8.3.6

8

* = Outside of Control Limits.

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Report of Analysis

Client Sample ID:	\B0341017		
Lab Sample ID:	FA42031-1	**Date Sampled:**	03/10/17
Matrix:	AQ - Equipment Blank	**Date Received:**	03/14/17
Method:	SW846-8015C (DAI)	**Percent Solids:**	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	GH109037.D	1	03/23/17	ANJ	n/a	n/a	N:GGH5690
Run #2							

Low Molecular Alcohol List

CAS No.	Compound	Result	RL	MDL	Units	Q
64-17-5	Ethanol	ND	100	55	ug/l	
78-83-1	Isobutyl Alcohol	ND	100	36	ug/l	
67-63-0	Isopropyl Alcohol	ND	100	68	ug/l	
71-23-8	n-Propyl Alcohol	ND	100	43	ug/l	
71-36-3	n-Butyl Alcohol	ND	100	87	ug/l	
78-92-2	sec-Butyl Alcohol	ND	100	66	ug/l	
67-56-1	Methanol	ND	200	71	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
111-27-3	Hexanol	88%		56-145%
111-27-3	Hexanol	110%		56-145%

(a) Analysis performed at SGS Accutest, Dayton, NJ.

LIBRE ASOCIADO DE PUERTO RICO
...tael Infante
Méndez
IC # 1888
QUIMICO LICENCIADO

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SGS Accutest

Report of Analysis

Client Sample ID:	BR-1		
Lab Sample ID:	FA42031-2	Date Sampled:	03/10/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	SW846-8015C (DAI)	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	GH109034.D	1	03/23/17	ANJ	n/a	n/a	N:GGH5690
Run #2							

Low Molecular Alcohol List

CAS No.	Compound	Result	RL	MDL	Units	Q
64-17-5	Ethanol	ND	100	55	ug/l	
78-83-1	Isobutyl Alcohol	ND	100	36	ug/l	
67-63-0	Isopropyl Alcohol	ND	100	68	ug/l	
71-23-8	n-Propyl Alcohol	ND	100	43	ug/l	
71-36-3	n-Butyl Alcohol	ND	100	87	ug/l	
78-92-2	sec-Butyl Alcohol	ND	100	66	ug/l	
67-56-1	Methanol	ND	200	71	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
111-27-3	Hexanol	70%		56-145%
111-27-3	Hexanol	73%		56-145%

(a) Analysis performed at SGS Accutest, Dayton, NJ.

LABORATORIO QUIMICO LICENCIADO ASOCIADO DE PUERTO RICO
Rafael Infante Méndez
IC # 1868

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SGS Accutest

Report of Analysis

Client Sample ID:	BR-4		
Lab Sample ID:	FA42031-4	**Date Sampled:**	03/10/17
Matrix:	AQ - Ground Water	**Date Received:**	03/14/17
Method:	SW846-8015C (DAI)	**Percent Solids:**	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	GH109038.D	1	03/23/17	ANJ	n/a	n/a	N:GGH5690
Run #2							

Low Molecular Alcohol List

CAS No.	Compound	Result	RL	MDL	Units	Q
64-17-5	Ethanol	ND	100	55	ug/l	
78-83-1	Isobutyl Alcohol	ND	100	36	ug/l	
67-63-0	Isopropyl Alcohol	ND	100	68	ug/l	
71-23-8	n-Propyl Alcohol	ND	100	43	ug/l	
71-36-3	n-Butyl Alcohol	ND	100	87	ug/l	
78-92-2	sec-Butyl Alcohol	ND	100	66	ug/l	
67-56-1	Methanol	ND	200	71	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
111-27-3	Hexanol	77%		56-145%
111-27-3	Hexanol	88%		56-145%

(a) Analysis performed at SGS Accutest, Dayton, NJ.

COLEGIO DE QUIMICOS ... LIBRE ASOCIADO DE PUERTO RICO
Rafael Infante Méndez
IQ # 1888

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SGS Accutest

Report of Analysis

Client Sample ID:	FB031017		
Lab Sample ID:	FA42031-5	Date Sampled:	03/10/17
Matrix:	AQ - Field Blank Water	Date Received:	03/14/17
Method:	SW846-8015C (DAI)	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	GH109039.D	1	03/23/17	ANJ	n/a	n/a	N:GGH5690
Run #2							

Low Molecular Alcohol List

CAS No.	Compound	Result	RL	MDL	Units	Q
64-17-5	Ethanol	ND	100	55	ug/l	
78-83-1	Isobutyl Alcohol	ND	100	36	ug/l	
67-63-0	Isopropyl Alcohol	ND	100	68	ug/l	
71-23-8	n-Propyl Alcohol	ND	100	43	ug/l	
71-36-3	n-Butyl Alcohol	ND	100	87	ug/l	
78-92-2	sec-Butyl Alcohol	ND	100	66	ug/l	
67-56-1	Methanol	ND	200	71	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
111-27-3	Hexanol	79%		56-145%
111-27-3	Hexanol	88%		56-145%

(a) Analysis performed at SGS Accutest, Dayton, NJ.

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Q # 1888
QUIMICO LICENCIADO

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SGS Accutest

Report of Analysis

Client Sample ID:	BR-1 DUP		
Lab Sample ID:	FA42031-6	Date Sampled:	03/10/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	SW846-8015C (DAI)	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	GH109040.D	1	03/23/17	ANJ	n/a	n/a	N:GGH5690
Run #2							

Low Molecular Alcohol List

CAS No.	Compound	Result	RL	MDL	Units	Q
64-17-5	Ethanol	ND	100	55	ug/l	
78-83-1	Isobutyl Alcohol	ND	100	36	ug/l	
67-63-0	Isopropyl Alcohol	ND	100	68	ug/l	
71-23-8	n-Propyl Alcohol	ND	100	43	ug/l	
71-36-3	n-Butyl Alcohol	ND	100	87	ug/l	
78-92-2	sec-Butyl Alcohol	ND	100	66	ug/l	
67-56-1	Methanol	ND	200	71	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
111-27-3	Hexanol	74%		56-145%
111-27-3	Hexanol	82%		56-145%

(a) Analysis performed at SGS Accutest, Dayton, NJ.

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Rafael Infante Méndez
IQ # 1888
QUIMICO LICENCIADO

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N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	BR-2		
Lab Sample ID:	FA42031-7	Date Sampled:	03/10/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	SW846-8015C (DAI)	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	GH109073.D	1	03/23/17	ANJ	n/a	n/a	N:GGH5691
Run #2							

Low Molecular Alcohol List

CAS No.	Compound	Result	RL	MDL	Units	Q
64-17-5	Ethanol	ND	100	55	ug/l	
78-83-1	Isobutyl Alcohol	ND	100	36	ug/l	
67-63-0	Isopropyl Alcohol	ND	100	68	ug/l	
71-23-8	n-Propyl Alcohol	ND	100	43	ug/l	
71-36-3	n-Butyl Alcohol	ND	100	87	ug/l	
78-92-2	sec-Butyl Alcohol	ND	100	66	ug/l	
67-56-1	Methanol	ND	200	71	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
111-27-3	Hexanol	72%		56-145%
111-27-3	Hexanol	75%		56-145%

(a) Analysis performed at SGS Accutest, Dayton, NJ.

COLEGIO DE QUIMICOS LIBRE ASOCIADO DE PUERTO RICO
Rafael Infante Méndez
IQ # 1668
QUIMICO LICENCIADO

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J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	MW-15		
Lab Sample ID:	FA42031-9	**Date Sampled:**	03/13/17
Matrix:	AQ - Ground Water	**Date Received:**	03/14/17
Method:	SW846-8015C (DAI)	**Percent Solids:**	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	GH109072.D	1	03/23/17	ANJ	n/a	n/a	N:GGH5691
Run #2							

Low Molecular Alcohol List

CAS No.	Compound	Result	RL	MDL	Units	Q
64-17-5	Ethanol	ND	100	55	ug/l	
78-83-1	Isobutyl Alcohol	ND	100	36	ug/l	
67-63-0	Isopropyl Alcohol	ND	100	68	ug/l	
71-23-8	n-Propyl Alcohol	ND	100	43	ug/l	
71-36-3	n-Butyl Alcohol	ND	100	87	ug/l	
78-92-2	sec-Butyl Alcohol	ND	100	66	ug/l	
67-56-1	Methanol	ND	200	71	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
111-27-3	Hexanol	72%		56-145%
111-27-3	Hexanol	77%		56-145%

(a) Analysis performed at SGS Accutest, Dayton, NJ.

LIBRE ASOCIADO DE PUERTO RICO
Rafael Infante Méndez
IQ # 1500
QUIMICO LICENCIADO

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J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	MW-14		
Lab Sample ID:	FA42031-10	Date Sampled:	03/13/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	SW846-8015C (DAI)	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	GH109069.D	1	03/23/17	ANJ	n/a	n/a	N:GGH5691
Run #2							

Low Molecular Alcohol List

CAS No.	Compound	Result	RL	MDL	Units	Q
64-17-5	Ethanol	ND	100	55	ug/l	
78-83-1	Isobutyl Alcohol	ND	100	36	ug/l	
67-63-0	Isopropyl Alcohol	ND	100	68	ug/l	
71-23-8	n-Propyl Alcohol	ND	100	43	ug/l	
71-36-3	n-Butyl Alcohol	ND	100	87	ug/l	
78-92-2	sec-Butyl Alcohol	ND	100	66	ug/l	
67-56-1	Methanol	ND	200	71	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
111-27-3	Hexanol	73%		56-145%
111-27-3	Hexanol	80%		56-145%

(a) Analysis performed at SGS Accutest, Dayton, NJ.

COLEGIO DE QUIMICOS DE PUERTO RICO
Manuel Infante Méndez
IQ # 1888
QUIMICO LICENCIADO

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B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	MW-14 DUP		
Lab Sample ID:	FA42031-11	Date Sampled:	03/13/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	SW846-8015C (DAI)	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	GH109068.D	1	03/23/17	ANJ	n/a	n/a	N:GGH5691
Run #2							

Low Molecular Alcohol List

CAS No.	Compound	Result	RL	MDL	Units	Q
64-17-5	Ethanol	ND	100	55	ug/l	
78-83-1	Isobutyl Alcohol	ND	100	36	ug/l	
67-63-0	Isopropyl Alcohol	ND	100	68	ug/l	
71-23-8	n-Propyl Alcohol	ND	100	43	ug/l	
71-36-3	n-Butyl Alcohol	ND	100	87	ug/l	
78-92-2	sec-Butyl Alcohol	ND	100	66	ug/l	
67-56-1	Methanol	ND	200	71	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
111-27-3	Hexanol	75%		56-145%
111-27-3	Hexanol	79%		56-145%

(a) Analysis performed at SGS Accutest, Dayton, NJ.

ASOCIADO DE PUERTO RICO
Rafael Infante Méndez
IC # 1888
QUIMICO LICENCIADO

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J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	MW-13		
Lab Sample ID:	FA42031-12	Date Sampled:	03/13/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	SW846-8015C (DAI)	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	GH109067.D	1	03/23/17	ANJ	n/a	n/a	N:GGH5691
Run #2							

Low Molecular Alcohol List

CAS No.	Compound	Result	RL	MDL	Units	Q
64-17-5	Ethanol	ND	100	55	ug/l	
78-83-1	Isobutyl Alcohol	ND	100	36	ug/l	
67-63-0	Isopropyl Alcohol	ND	100	68	ug/l	
71-23-8	n-Propyl Alcohol	ND	100	43	ug/l	
71-36-3	n-Butyl Alcohol	ND	100	87	ug/l	
78-92-2	sec-Butyl Alcohol	ND	100	66	ug/l	
67-56-1	Methanol	ND	200	71	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
111-27-3	Hexanol	73%		56-145%
111-27-3	Hexanol	75%		56-145%

(a) Analysis performed at SGS Accutest, Dayton, NJ.

LIBRE ASOCIADO DE PUERTO RICO
Manuel Infante Méndez
IQ # 1868
QUIMICO LICENCIADO

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J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	MW-16		
Lab Sample ID:	FA42031-15	Date Sampled:	03/13/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	SW846-8015C (DAI)	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	GH109066.D	1	03/23/17	ANJ	n/a	n/a	N:GGH5691
Run #2							

Low Molecular Alcohol List

CAS No.	Compound	Result	RL	MDL	Units	Q
64-17-5	Ethanol	ND	100	55	ug/l	
78-83-1	Isobutyl Alcohol	ND	100	36	ug/l	
67-63-0	Isopropyl Alcohol	ND	100	68	ug/l	
71-23-8	n-Propyl Alcohol	ND	100	43	ug/l	
71-36-3	n-Butyl Alcohol	ND	100	87	ug/l	
78-92-2	sec-Butyl Alcohol	ND	100	66	ug/l	
67-56-1	Methanol	ND	200	71	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
111-27-3	Hexanol	74%		56-145%
111-27-3	Hexanol	79%		56-145%

(a) Analysis performed at SGS Accutest, Dayton, NJ.

COLEGIO DE QUIMICOS DE PUERTO RICO
QUIMICO LICENCIADO
Rafael Infante Méndez
K # 1888

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N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	FB031317		
Lab Sample ID:	FA42031-16	Date Sampled:	03/13/17
Matrix:	AQ - Field Blank Water	Date Received:	03/14/17
Method:	SW846-8015C (DAI)	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	GH109065.D	1	03/23/17	ANJ	n/a	n/a	N:GGH5691
Run #2							

Low Molecular Alcohol List

CAS No.	Compound	Result	RL	MDL	Units	Q
64-17-5	Ethanol	ND	100	55	ug/l	
78-83-1	Isobutyl Alcohol	ND	100	36	ug/l	
67-63-0	Isopropyl Alcohol	ND	100	68	ug/l	
71-23-8	n-Propyl Alcohol	ND	100	43	ug/l	
71-36-3	n-Butyl Alcohol	ND	100	87	ug/l	
78-92-2	sec-Butyl Alcohol	ND	100	66	ug/l	
67-56-1	Methanol	ND	200	71	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
111-27-3	Hexanol	72%		56-145%
111-27-3	Hexanol	76%		56-145%

(a) Analysis performed at SGS Accutest, Dayton, NJ.

COLEGIO DE QUIMICOS DE PUERTO RICO
Manuel Infante Méndez
QUIMICO LICENCIADO

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
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N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	BR-3		
Lab Sample ID:	FA42031-17	Date Sampled:	03/13/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	SW846-8015C (DAI)	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	GH109062.D	1	03/23/17	ANJ	n/a	n/a	N:GGH5691
Run #2							

Low Molecular Alcohol List

CAS No.	Compound	Result	RL	MDL	Units	Q
64-17-5	Ethanol	ND	100	55	ug/l	
78-83-1	Isobutyl Alcohol	ND	100	36	ug/l	
67-63-0	Isopropyl Alcohol	ND	100	68	ug/l	
71-23-8	n-Propyl Alcohol	ND	100	43	ug/l	
71-36-3	n-Butyl Alcohol	ND	100	87	ug/l	
78-92-2	sec-Butyl Alcohol	ND	100	66	ug/l	
67-56-1	Methanol	ND	200	71	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
111-27-3	Hexanol	73%		56-145%
111-27-3	Hexanol	73%		56-145%

(a) Analysis performed at SGS Accutest, Dayton, NJ.

QUIMICO LICENCIADO • COLEGIO DE QUIMICOS DE PUERTO RICO ASOCIADO LIBRE
Rafael Infante Méndez
IC # 1688

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	\B0341017		
Lab Sample ID:	FA42031-1	Date Sampled:	03/10/17
Matrix:	AQ - Equipment Blank	Date Received:	03/14/17
Method:	MADEP VPH REV 1.1	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	UV078821.D	1	03/23/17	AJC	n/a	n/a	GUV4183
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

MADEP VPH List

CAS No.	Compound	Result	RL	MDL	Units	Q
	C5- C8 Aliphatics (Unadj.)	ND	100	35	ug/l	
	C9- C12 Aliphatics (Unadj.)	ND	100	35	ug/l	
	C9- C10 Aromatics (Unadj.)	ND	100	35	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	BFB	95%		70-130%
460-00-4	BFB	97%		70-130%

COLEGIO DE QUIMICOS DE PUERTO RICO
Rafael Infante Méndez
IC # 1688
QUIMICO LICENCIADO

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RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	BR-1		
Lab Sample ID:	FA42031-2	Date Sampled:	03/10/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	MADEP VPH REV 1.1	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	UV078822.D	1	03/23/17	AJC	n/a	n/a	GUV4183
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

MADEP VPH List

CAS No.	Compound	Result	RL	MDL	Units	Q
	C5- C8 Aliphatics (Unadj.)	ND	100	35	ug/l	
	C9- C12 Aliphatics (Unadj.)	ND	100	35	ug/l	
	C9- C10 Aromatics (Unadj.)	ND	100	35	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	BFB	93%		70-130%
460-00-4	BFB	93%		70-130%

LIBRE ASOCIADO DE PUERTO RICO
Manuel Infante Méndez
IC # 1888
QUIMICO LICENCIADO

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
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J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	BR-4		
Lab Sample ID:	FA42031-4	Date Sampled:	03/10/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	MADEP VPH REV 1.1	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	UV078823.D	1	03/23/17	AJC	n/a	n/a	GUV4183
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

MADEP VPH List

CAS No.	Compound	Result	RL	MDL	Units	Q
	C5- C8 Aliphatics (Unadj.)	ND	100	35	ug/l	
	C9- C12 Aliphatics (Unadj.)	ND	100	35	ug/l	
	C9- C10 Aromatics (Unadj.)	ND	100	35	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	BFB	94%		70-130%
460-00-4	BFB	95%		70-130%

LIBRE ASOCIADO DE PUERTO RICO
Miguel Infante Méndez
IQ # 1888
QUIMICO LICENCIADO

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J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	FB031017		
Lab Sample ID:	FA42031-5	Date Sampled:	03/10/17
Matrix:	AQ - Field Blank Water	Date Received:	03/14/17
Method:	MADEP VPH REV 1.1	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	UV078824.D	1	03/23/17	AJC	n/a	n/a	GUV4183
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

MADEP VPH List

CAS No.	Compound	Result	RL	MDL	Units	Q
	C5- C8 Aliphatics (Unadj.)	ND	100	35	ug/l	
	C9- C12 Aliphatics (Unadj.)	ND	100	35	ug/l	
	C9- C10 Aromatics (Unadj.)	ND	100	35	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	BFB	95%		70-130%
460-00-4	BFB	95%		70-130%

LIBRE ASOCIADO DE PUERTO RICO
Manuel Infante Méndez
N # 1888
QUIMICO LICENCIADO

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J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	BR-1 DUP		
Lab Sample ID:	FA42031-6	Date Sampled:	03/10/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	MADEP VPH REV 1.1	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	UV078825.D	1	03/23/17	AJC	n/a	n/a	GUV4183
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

MADEP VPH List

CAS No.	Compound	Result	RL	MDL	Units	Q
	C5- C8 Aliphatics (Unadj.)	ND	100	35	ug/l	
	C9- C12 Aliphatics (Unadj.)	ND	100	35	ug/l	
	C9- C10 Aromatics (Unadj.)	ND	100	35	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	BFB	93%		70-130%
460-00-4	BFB	93%		70-130%

COLEGIO DE QUIMICOS DE PUERTO RICO
Manuel Infante Méndez
Q # 1686
QUIMICO LICENCIADO

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	BR-2		
Lab Sample ID:	FA42031-7	Date Sampled:	03/10/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	MADEP VPH REV 1.1	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	UV078826.D	1	03/23/17	AJC	n/a	n/a	GUV4183
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

MADEP VPH List

CAS No.	Compound	Result	RL	MDL	Units	Q
	C5- C8 Aliphatics (Unadj.)	ND	100	35	ug/l	
	C9- C12 Aliphatics (Unadj.)	ND	100	35	ug/l	
	C9- C10 Aromatics (Unadj.)	43.3	100	35	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	BFB	97%		70-130%
460-00-4	BFB	94%		70-130%

LIBRE ASOCIADO DE PUERTO RICO
...tael Infante
Méndez
IC # 1888
QUIMICO LICENCIADO

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J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	MW-15		
Lab Sample ID:	FA42031-9	Date Sampled:	03/13/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	MADEP VPH REV 1.1	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	UV078827.D	1	03/23/17	AJC	n/a	n/a	GUV4183
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

MADEP VPH List

CAS No.	Compound	Result	RL	MDL	Units	Q
	C5- C8 Aliphatics (Unadj.)	ND	100	35	ug/l	
	C9- C12 Aliphatics (Unadj.)	ND	100	35	ug/l	
	C9- C10 Aromatics (Unadj.)	45.9	100	35	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	BFB	90%		70-130%
460-00-4	BFB	89%		70-130%

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Rafael Infante Méndez
IQ # 1886
QUIMICO LICENCIADO

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J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	MW-14		
Lab Sample ID:	FA42031-10	**Date Sampled:**	03/13/17
Matrix:	AQ - Ground Water	**Date Received:**	03/14/17
Method:	MADEP VPH REV 1.1	**Percent Solids:**	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	UV078830.D	1	03/24/17	AJC	n/a	n/a	GUV4183
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

MADEP VPH List

CAS No.	Compound	Result	RL	MDL	Units	Q
	C5- C8 Aliphatics (Unadj.)	ND	100	35	ug/l	
	C9- C12 Aliphatics (Unadj.)	ND	100	35	ug/l	
	C9- C10 Aromatics (Unadj.)	ND	100	35	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	BFB	86%		70-130%
460-00-4	BFB	87%		70-130%

LIBRE ASOCIADO DE PUERTO RICO
Manuel Infante Méndez
IQ # 1888
QUIMICO LICENCIADO

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J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	MW-14 DUP		
Lab Sample ID:	FA42031-11	**Date Sampled:**	03/13/17
Matrix:	AQ - Ground Water	**Date Received:**	03/14/17
Method:	MADEP VPH REV 1.1	**Percent Solids:**	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	UV078831.D	1	03/24/17	AJC	n/a	n/a	GUV4183
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

MADEP VPH List

CAS No.	Compound	Result	RL	MDL	Units	Q
	C5- C8 Aliphatics (Unadj.)	ND	100	35	ug/l	
	C9- C12 Aliphatics (Unadj.)	ND	100	35	ug/l	
	C9- C10 Aromatics (Unadj.)	ND	100	35	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	BFB	92%		70-130%
460-00-4	BFB	93%		70-130%

LIBRE ASOCIADO DE PUERTO RICO
Rafael Infante Méndez
IQ # 1[illegible]
QUIMICO LICENCIADO

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E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	MW-13		
Lab Sample ID:	FA42031-12	Date Sampled:	03/13/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	MADEP VPH REV 1.1	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	UV078832.D	1	03/24/17	AJC	n/a	n/a	GUV4183
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

MADEP VPH List

CAS No.	Compound	Result	RL	MDL	Units	Q
	C5- C8 Aliphatics (Unadj.)	ND	100	35	ug/l	
	C9- C12 Aliphatics (Unadj.)	ND	100	35	ug/l	
	C9- C10 Aromatics (Unadj.)	ND	100	35	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	BFB	87%		70-130%
460-00-4	BFB	88%		70-130%

QUIMICO ASOCIADO DE PUERTO RICO
Rafael Infante Méndez
IC # 1888
QUIMICO LICENCIADO

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RL = Reporting Limit
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J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	MW-16		
Lab Sample ID:	FA42031-15	Date Sampled:	03/13/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	MADEP VPH REV 1.1	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	UV078833.D	1	03/24/17	AJC	n/a	n/a	GUV4183
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

MADEP VPH List

CAS No.	Compound	Result	RL	MDL	Units	Q
	C5- C8 Aliphatics (Unadj.)	ND	100	35	ug/l	
	C9- C12 Aliphatics (Unadj.)	ND	100	35	ug/l	
	C9- C10 Aromatics (Unadj.)	ND	100	35	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	BFB	92%		70-130%
460-00-4	BFB	94%		70-130%

LIBRE ASOCIADO DE PUERTO RICO
Rafael Infante Méndez
IQ # 1888
QUIMICO LICENCIADO

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SGS Accutest

Report of Analysis

Client Sample ID:	FB031317		
Lab Sample ID:	FA42031-16	Date Sampled:	03/13/17
Matrix:	AQ - Field Blank Water	Date Received:	03/14/17
Method:	MADEP VPH REV 1.1	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	UV078834.D	1	03/24/17	AJC	n/a	n/a	GUV4183
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

MADEP VPH List

CAS No.	Compound	Result	RL	MDL	Units	Q
	C5- C8 Aliphatics (Unadj.)	ND	100	35	ug/l	
	C9- C12 Aliphatics (Unadj.)	ND	100	35	ug/l	
	C9- C10 Aromatics (Unadj.)	ND	100	35	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	BFB	91%		70-130%
460-00-4	BFB	91%		70-130%

LIBRE ASOCIADO DE PUERTO RICO • ...uel Infante Méndez IC # 1888 QUIMICO LICENCIADO

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E = Indicates value exceeds calibration range
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B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	BR-3		
Lab Sample ID:	FA42031-17	Date Sampled:	03/13/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	MADEP VPH REV 1.1	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	UV078835.D	1	03/24/17	AJC	n/a	n/a	GUV4183
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

MADEP VPH List

CAS No.	Compound	Result	RL	MDL	Units	Q
	C5- C8 Aliphatics (Unadj.)	ND	100	35	ug/l	
	C9- C12 Aliphatics (Unadj.)	ND	100	35	ug/l	
	C9- C10 Aromatics (Unadj.)	ND	100	35	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	BFB	91%		70-130%
460-00-4	BFB	92%		70-130%

QUIMICO ASOCIADO DE PUERTO RICO
Manuel Infante Méndez
IQ # 1888
QUIMICO LICENCIADO

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J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Raw Data: UV078837.D UV078838.D

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA42031
Account: AMANYWP Anderson, Mulholland & Associates
Project: BMSMC, Humacao, PR

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FA42031-7MS	UV078837.D	1	03/24/17	AJC	n/a	n/a	GUV4183
FA42031-7MSD	UV078838.D	1	03/24/17	AJC	n/a	n/a	GUV4183
FA42031-7	UV078826.D	1	03/23/17	AJC	n/a	n/a	GUV4183

The QC reported here applies to the following samples: **Method:** MADEP VPH REV 1.1

FA42031-1, FA42031-2, FA42031-4, FA42031-5, FA42031-6, FA42031-7, FA42031-9, FA42031-10, FA42031-11, FA42031-12, FA42031-15, FA42031-16, FA42031-17

CAS No.	Compound	FA42031-7 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
	C5- C8 Aliphatics (Unadj.)	ND		480	245	51*	480	236	49*	4	70-130/50
	C9- C12 Aliphatics (Unadj.)	ND		400	152	38*	400	161	40*	6	70-130/50
	C9- C10 Aromatics (Unadj.)	43.3	J	240	129	36*	240	122	33*	6	70-130/50

CAS No.	Surrogate Recoveries	MS	MSD	FA42031-7	Limits
460-00-4	BFB	96%	92%	97%	70-130%
460-00-4	BFB	93%	89%	94%	70-130%

10.3.1

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COLEGIO DE QUIMICOS DE PUERTO RICO
Rafael Infante Méndez
IC # 1688
QUIMICO LICENCIADO

* = Outside of Control Limits.

SGS Accutest

Report of Analysis

Client Sample ID:	\B0341017		
Lab Sample ID:	FA42031-1	Date Sampled:	03/10/17
Matrix:	AQ - Equipment Blank	Date Received:	03/14/17
Method:	MADEP EPH REV 1.1 SW846 3510C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	NN018128.D	1	04/12/17	MG	03/23/17	OP64317	GNN913
Run #2							

	Initial Volume	Final Volume
Run #1	1060 ml	2.0 ml
Run #2		

MAEPH List

CAS No.	Compound	Result	RL	MDL	Units	Q
	C11-C22 Aromatics (Unadj.)	87.9	190	75	ug/l	J
	C9-C18 Aliphatics	ND	190	47	ug/l	
	C19-C36 Aliphatics	ND	190	47	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3386-33-2	1-Chlorooctadecane	73%		40-140%
580-13-2	2-Bromonaphthalene	88%		40-140%
84-15-1	o-Terphenyl	79%		40-140%
321-60-8	2-Fluorobiphenyl	86%		40-140%

COLEGIO DE QUIMICOS LICENCIADOS DE PUERTO RICO
Manuel Infante Méndez
IC # 1888

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	BR-1		
Lab Sample ID:	FA42031-2	Date Sampled:	03/10/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	MADEP EPH REV 1.1 SW846 3510C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	NN018129.D	1	04/12/17	MG	03/23/17	OP64317	GNN913
Run #2							

	Initial Volume	Final Volume
Run #1	1050 ml	2.0 ml
Run #2		

MAEPH List

CAS No.	Compound	Result	RL	MDL	Units	Q
	C11-C22 Aromatics (Unadj.)	174	190	76	ug/l	J
	C9-C18 Aliphatics	ND	190	48	ug/l	
	C19-C36 Aliphatics	ND	190	48	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3386-33-2	1-Chlorooctadecane	65%		40-140%
580-13-2	2-Bromonaphthalene	104%		40-140%
84-15-1	o-Terphenyl	71%		40-140%
321-60-8	2-Fluorobiphenyl	99%		40-140%

LIBRE ASOCIADO DE PUERTO RICO
Manuel Infante Méndez
IQ # 1888
QUIMICO LICENCIADO

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	BR-4		
Lab Sample ID:	FA42031-4	Date Sampled:	03/10/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	MADEP EPH REV 1.1 SW846 3510C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	NN018132.D	1	04/12/17	MG	03/23/17	OP64317	GNN913
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	2.0 ml
Run #2		

MAEPH List

CAS No.	Compound	Result	RL	MDL	Units	Q
	C11-C22 Aromatics (Unadj.)	114	200	80	ug/l	J
	C9-C18 Aliphatics	ND	200	50	ug/l	
	C19-C36 Aliphatics	ND	200	50	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3386-33-2	1-Chlorooctadecane	59%		40-140%
580-13-2	2-Bromonaphthalene	84%		40-140%
84-15-1	o-Terphenyl	49%		40-140%
321-60-8	2-Fluorobiphenyl	81%		40-140%

LIBRE ASOCIADO DE PUERTO RICO
Rafael Infante Méndez
IQ # 1088
QUIMICO LICENCIADO

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	FB031017		
Lab Sample ID:	FA42031-5	Date Sampled:	03/10/17
Matrix:	AQ - Field Blank Water	Date Received:	03/14/17
Method:	MADEP EPH REV 1.1 SW846 3510C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	NN018133.D	1	04/12/17	MG	03/23/17	OP64317	GNN913
Run #2							

	Initial Volume	Final Volume
Run #1	1030 ml	2.0 ml
Run #2		

MAEPH List

CAS No.	Compound	Result	RL	MDL	Units	Q
	C11-C22 Aromatics (Unadj.)	106	190	78	ug/l	J
	C9-C18 Aliphatics	ND	190	49	ug/l	
	C19-C36 Aliphatics	ND	190	49	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3386-33-2	1-Chlorooctadecane	58%		40-140%
580-13-2	2-Bromonaphthalene	90%		40-140%
84-15-1	o-Terphenyl	67%		40-140%
321-60-8	2-Fluorobiphenyl	85%		40-140%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	BR-1 DUP		
Lab Sample ID:	FA42031-6	Date Sampled:	03/10/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	MADEP EPH REV 1.1 SW846 3510C	Percent Solids:	n/a
Project:	BMSMC, Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	NN018134.D	1	04/12/17	MG	03/23/17	OP64317	GNN913
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	2.0 ml
Run #2		

MAEPH List

CAS No.	Compound	Result	RL	MDL	Units	Q
	C11-C22 Aromatics (Unadj.)	167	200	80	ug/l	J
	C9-C18 Aliphatics	ND	200	50	ug/l	
	C19-C36 Aliphatics	ND	200	50	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3386-33-2	1-Chlorooctadecane	51%		40-140%
580-13-2	2-Bromonaphthalene	87%		40-140%
84-15-1	o-Terphenyl	67%		40-140%
321-60-8	2-Fluorobiphenyl	83%		40-140%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	BR-2		
Lab Sample ID:	FA42031-7	**Date Sampled:**	03/10/17
Matrix:	AQ - Ground Water	**Date Received:**	03/14/17
Method:	MADEP EPH REV 1.1 SW846 3510C	**Percent Solids:**	n/a
Project:	BMSMC; Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	NN017924.D	1	03/22/17 22:24	MG	03/17/17 17:40	OP64226	GNN902
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	2.0 ml
Run #2		

MAEPH List

CAS No.	Compound	Result	RL	MDL	Units	Q
	C11-C22 Aromatics (Unadj.)	110	200	80	ug/l	J
	C9-C18 Aliphatics	ND	200	50	ug/l	
	C19-C36 Aliphatics	ND	200	50	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3386-33-2	1-Chlorooctadecane	64%		40-140%
580-13-2	2-Bromonaphthalene	109%		40-140%
84-15-1	o-Terphenyl	85%		40-140%
321-60-8	2-Fluorobiphenyl	104%		40-140%

ESTADO LIBRE ASOCIADO DE PUERTO RICO
Rafael Infante Méndez
LIC. # 1888
QUIMICO LICENCIADO

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E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	MW-15		
Lab Sample ID:	FA42031-9	**Date Sampled:**	03/13/17
Matrix:	AQ - Ground Water	**Date Received:**	03/14/17
Method:	MADEP EPH REV 1.1 SW846 3510C	**Percent Solids:**	n/a
Project:	BMSMC; Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	NN017925.D	1	03/22/17 22:54	MG	03/17/17 17:40	OP64226	GNN902
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	2.0 ml
Run #2		

MAEPH List

CAS No.	Compound	Result	RL	MDL	Units	Q
	C11-C22 Aromatics (Unadj.)	118	200	80	ug/l	J
	C9-C18 Aliphatics	ND	200	50	ug/l	
	C19-C36 Aliphatics	ND	200	50	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3386-33-2	1-Chlorooctadecane	55%		40-140%
580-13-2	2-Bromonaphthalene	89%		40-140%
84-15-1	o-Terphenyl	72%		40-140%
321-60-8	2-Fluorobiphenyl	86%		40-140%

ESTADO LIBRE ASOCIADO DE PUERTO RICO
Rafael Infante Méndez
LIC. # 1888
QUIMICO LICENCIADO

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B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	MW-14		
Lab Sample ID:	FA42031-10	**Date Sampled:**	03/13/17
Matrix:	AQ - Ground Water	**Date Received:**	03/14/17
Method:	MADEP EPH REV 1.1 SW846 3510C	**Percent Solids:**	n/a
Project:	BMSMC; Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	NN017926.D	1	03/22/17 23:24	MG	03/17/17 17:40	OP64226	GNN902
Run #2							

	Initial Volume	Final Volume
Run #1	1050 ml	2.0 ml
Run #2		

MAEPH List

CAS No.	Compound	Result	RL	MDL	Units	Q
	C11-C22 Aromatics (Unadj.)	ND	190	76	ug/l	
	C9-C18 Aliphatics	ND	190	48	ug/l	
	C19-C36 Aliphatics	ND	190	48	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3386-33-2	1-Chlorooctadecane	64%		40-140%
580-13-2	2-Bromonaphthalene	81%		40-140%
84-15-1	o-Terphenyl	68%		40-140%
321-60-8	2-Fluorobiphenyl	81%		40-140%

ESTADO LIBRE ASOCIADO DE PUERTO RICO
Rafael Infante Méndez
LIC # 1888
QUIMICO LICENCIADO

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J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	MW-14 DUP		
Lab Sample ID:	FA42031-11	**Date Sampled:**	03/13/17
Matrix:	AQ - Ground Water	**Date Received:**	03/14/17
Method:	MADEP EPH REV 1.1 SW846 3510C	**Percent Solids:**	n/a
Project:	BMSMC; Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	NN017927.D	1	03/22/17 23:54	MG	03/17/17 17:40	OP64226	GNN902
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	2.0 ml
Run #2		

MAEPH List

CAS No.	Compound	Result	RL	MDL	Units	Q
	C11-C22 Aromatics (Unadj.)	ND	200	80	ug/l	
	C9-C18 Aliphatics	ND	200	50	ug/l	
	C19-C36 Aliphatics	ND	200	50	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3386-33-2	1-Chlorooctadecane	60%		40-140%
580-13-2	2-Bromonaphthalene	80%		40-140%
84-15-1	o-Terphenyl	62%		40-140%
321-60-8	2-Fluorobiphenyl	65%		40-140%

ESTADO LIBRE ASOCIADO DE PUERTO RICO
Rafael Infante Méndez
LIC # 1888
QUIMICO LICENCIADO

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RL = Reporting Limit
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J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	MW-13		
Lab Sample ID:	FA42031-12	Date Sampled:	03/13/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	MADEP EPH REV 1.1 SW846 3510C	Percent Solids:	n/a
Project:	BMSMC; Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	NN017928.D	1	03/23/17 00:24	MG	03/17/17 17:40	OP64226	GNN902
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	2.0 ml
Run #2		

MAEPH List

CAS No.	Compound	Result	RL	MDL	Units	Q
	C11-C22 Aromatics (Unadj.)	ND	200	80	ug/l	
	C9-C18 Aliphatics	ND	200	50	ug/l	
	C19-C36 Aliphatics	ND	200	50	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3386-33-2	1-Chlorooctadecane	63%		40-140%
580-13-2	2-Bromonaphthalene	91%		40-140%
84-15-1	o-Terphenyl	76%		40-140%
321-60-8	2-Fluorobiphenyl	89%		40-140%

ESTADO LIBRE ASOCIADO DE PUERTO RICO
Rafael Infante Méndez
LIC # 1888
QUIMICO LICENCIADO

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RL = Reporting Limit
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J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	MW-16		
Lab Sample ID:	FA42031-15	**Date Sampled:**	03/13/17
Matrix:	AQ - Ground Water	**Date Received:**	03/14/17
Method:	MADEP EPH REV 1.1 SW846 3510C	**Percent Solids:**	n/a
Project:	BMSMC; Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	NN017929.D	1	03/23/17 00:53	MG	03/17/17 17:40	OP64226	GNN902
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	2.0 ml
Run #2		

MAEPH List

CAS No.	Compound	Result	RL	MDL	Units	Q
	C11-C22 Aromatics (Unadj.)	ND	200	80	ug/l	
	C9-C18 Aliphatics	ND	200	50	ug/l	
	C19-C36 Aliphatics	ND	200	50	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3386-33-2	1-Chlorooctadecane	49%		40-140%
580-13-2	2-Bromonaphthalene	87%		40-140%
84-15-1	o-Terphenyl	71%		40-140%
321-60-8	2-Fluorobiphenyl	86%		40-140%

LIBRE ASOCIADO DE PUERTO RICO
Rafael Infante Méndez
LIC # 1888
QUIMICO LICENCIADO

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RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	FB031317		
Lab Sample ID:	FA42031-16	Date Sampled:	03/13/17
Matrix:	AQ - Field Blank Water	Date Received:	03/14/17
Method:	MADEP EPH REV 1.1 SW846 3510C	Percent Solids:	n/a
Project:	BMSMC; Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	NN017930.D	1	03/23/17 01:23	MG	03/17/17 17:40	OP64226	GNN902
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	2.0 ml
Run #2		

MAEPH List

CAS No.	Compound	Result	RL	MDL	Units	Q
	C11-C22 Aromatics (Unadj.)	ND	200	80	ug/l	
	C9-C18 Aliphatics	ND	200	50	ug/l	
	C19-C36 Aliphatics	ND	200	50	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3386-33-2	1-Chlorooctadecane	49%		40-140%
580-13-2	2-Bromonaphthalene	85%		40-140%
84-15-1	o-Terphenyl	68%		40-140%
321-60-8	2-Fluorobiphenyl	85%		40-140%

ESTADO LIBRE ASOCIADO DE PUERTO RICO
Rafael Infante Méndez
LIC # 1888
QUIMICO LICENCIADO

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RL = Reporting Limit
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J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID:	BR-3		
Lab Sample ID:	FA42031-17	Date Sampled:	03/13/17
Matrix:	AQ - Ground Water	Date Received:	03/14/17
Method:	MADEP EPH REV 1.1 SW846 3510C	Percent Solids:	n/a
Project:	BMSMC; Humacao, PR		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	NN017933.D	1	03/23/17 02:52	MG	03/17/17 17:40	OP64226	GNN902
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	2.0 ml
Run #2		

MAEPH List

CAS No.	Compound	Result	RL	MDL	Units	Q
	C11-C22 Aromatics (Unadj.)	ND	200	80	ug/l	
	C9-C18 Aliphatics	ND	200	50	ug/l	
	C19-C36 Aliphatics	ND	200	50	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3386-33-2	1-Chlorooctadecane	51%		40-140%
580-13-2	2-Bromonaphthalene	92%		40-140%
84-15-1	o-Terphenyl	76%		40-140%
321-60-8	2-Fluorobiphenyl	91%		40-140%

ESTADO LIBRE ASOCIADO DE PUERTO RICO
Manuel Infante Méndez
LIC # 1888
QUÍMICO LICENCIADO

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA42031
Account: AMANYWP Anderson, Mulholland & Associates
Project: BMSMC; Humacao, PR

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP64226-MS	NN017934.D	1	03/23/17	MG	03/17/17	OP64226	GNN902
OP64226-MSD	NN017935.D	1	03/23/17	MG	03/17/17	OP64226	GNN902
FA42031-7	NN017924.D	1	03/22/17	MG	03/17/17	OP64226	GNN902

The QC reported here applies to the following samples: **Method:** MADEP EPH REV 1.1

FA42031-7, FA42031-9, FA42031-10, FA42031-11, FA42031-12, FA42031-15, FA42031-16, FA42031-17

CAS No.	Compound	FA42031-7 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
	C11-C22 Aromatics (Unadj.)	110	J	3400	2600	73	3400	3100	88	18	40-140/50
	C9-C18 Aliphatics	ND		1200	639	53	1200	720	60	12	40-140/50
	C19-C36 Aliphatics	ND		1600	1260	79	1600	1440	90	13	40-140/50

CAS No.	Surrogate Recoveries	MS	MSD	FA42031-7	Limits
3386-33-2	1-Chlorooctadecane	74%	76%	64%	40-140%
580-13-2	2-Bromonaphthalene	81%	99%	109%	40-140%
84-15-1	o-Terphenyl	73%	85%	85%	40-140%
321-60-8	2-Fluorobiphenyl	79%	97%	104%	40-140%

ESTADO LIBRE ASOCIADO DE PUERTO RICO
Manuel Infante Méndez
LIC # 1888
QUIMICO LICENCIADO

12.3.1 12

* = Outside of Control Limits.

FA 42031

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FL

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www.accutest.com

Company Name: Anderson Multinational & Associates
Street Address: 4795 Westchester Avenue, Suite 417
City: Purchase State: NY Zip: 10577
Project Contact: Terry Taylor
Phone #: 914-251-0400
Sampler(s) Name(s): Phone #:

Project Name: 1ST Q 2017 Groundwater Sampling - Cowles Trails
Street:
City: Humacao State: PR
Project #:
Client Purchase Order #:
Project Manager: Terry Taylor

Billing Information (if different from Report to)
Company Name:
Street Address:
City State Zip:
Attention:

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL - Sludge; SED - Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WIP - Wipe; FB-Field Blank; EB-Equipment Blank; RB- Rinse Blank; TB-Trip Blank

Field ID / Point of Collection	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	VOC	SVOC	VOC	SVOC	VOC+1,4-DIOXANE, BROMOL, BPTULIL, TAA, TBA, TBF	DRO+LMA	ARCHEL	BIOTRIM-HEXOCE	BIS-HEXAP 2,6HAP	BIGH-BANTH, BAPYRN, BBFLUAN, BKFLUAN, CHRYS, DBANTH, HXDPYR	VOC8010/8021DMB	VAMPYR	VAMDPYR	PCB1 PCB TTEL	LAB USE ONLY
1 EB031017	3/10/2017	8:52	HR	WEB	13	6		2	2	X	X	X	X	X	X	X	X	X	X	
2 BR-1	3/10/2017	10:44	HR	GW	13	6		2	2	X	X	X	X	X	X	X	X	X	X	
3 TB031017HR	3/10/2017	NA	HR	WTB	2	2				X	X						X			
4 BR-4	3/10/2017	12:43	HR	GW	13	6		2	2	X	X	X	X	X	X	X	X	X	X	
5 FB031017	3/10/2017	13:12	HR	WFB	13	6		2	2	X	X	X	X	X	X	X	X	X	X	
6 BR-1 DUP	3/10/2017	11:08	HR	WDP	13	6		2	2	X	X	X	X	X	X	X	X	X	X	
7 BR-3	3/10/2017	12:28	HR	GW	13	6		2	2	X	X	X	X	X	X	X	X	X	X	
BR-3 MS	3/10/2017	12:03	HR	GW	13	6		2	2	X	X	X	X	X	X	X	X	X	X	
BR-3 MSD	3/10/2017	12:13	HR	WDP	13	6		2	2	X	X	X	X	X	X	X	X	X	X	
8 TB031017NR	3/10/2017	NS	HR	WTB	2	2				X	X						X			
9 MW-15	3/13/2017	11:28	HR	GW	13	6		2	2	X	X	X	X	X	X	X	X	X	X	
10 MW-14	3/13/2017	10:58	HR	GW	13	6		2	2	X	X	X	X	X	X	X	X	X	X	

Turnaround Time (business days)
- [X] Std. 10 Business Days
- [ ] 5 Day RUSH
- [ ] 3 Day RUSH
- [ ] 2 Day RUSH
- [ ] 1 Day RUSH
- [ ] other

Approved By (SGS Accutest PM) / Date

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [X] FULL1 (Level 3+4)
- [ ] NJ Reduced
- [ ] Commercial "G"
- [ ] All Data of Known Quality Protocol Reporting
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [ ] EDD Format
- [ ] Other

Commercial "A" = Results Only, Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

BANTH, BAPYRN, BBFLUAN, BKFLUAN, CHRYS, DBANTH, HXDPYR, NAP SHOULD ALL BE ANALYZED BY 8260

Sample Inventory is verified upon receipt in the Laboratory

Relinquished by: 1 [signature] Date/Time: 3/13/17 1621 Received by: 1 [signature] Relinquished by: 2 [signature] Date/Time: 03-14-17 Received by: 2 [signature] (ABE) 10:00
Relinquished by: 3 Date/Time: Received by: 3 Relinquished by: 4 Received by: 4
Relinquished by: 5 Date/Time: Received by: 5 Custody Seal # 671-678 Intact / Not Intact Preserved where applicable On Ice Cooler Temp.

3.8 3.8 3.4 3.6 3.6 3.2 3.0 3.4

5.1 5

FA 42031

ACCUTEST

FL

CHAIN OF CUSTODY

4405 Vineland Road, Suite C-15, Orlando, Florida 32811
TEL. 407-425-6700 FAX: 407-425-0707
www.accutest.com

Company Name: Anderson Mulholland & Associates
Street Address: 3700 Westchester Avenue, Suite 417
City: Purchase, State: NY, Zip: 10577
Project Contact: Terry Taylor, E-mail:
Phone #: 914-251-0400, Fax #:
Sampler(s) Name(s): Phone #:

Project Name: 1ST Q 2017 Groundwater Sampling - Onsite Wells
Street:
City: Humacao, State: PR

Billing Information (if different from Report to):
Company Name:
Street Address:
City: State: Zip:
Attention:

Project #:
Client Purchase Order #:
Project Manager: Terry Taylor

SDG Number	Field ID / Point of Collection	MS/MSD Vol #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NaS2O3	DI Water	MeOH	Preserved	VOA/TCL,30	VOA+1,4-DIOXN, IPTCLU, TAA, TBA, THF	DOH/EL/A	ASBESTOS	2M/TPH/HEXOC	SIM+NAP+JANAP	SIMNANTH, BAPYRN, SIMPLUAN, SIMPLUAN, CHRYS, DIBANTH, H12BYTR,	VOA+SIMTAUM	VIAMPHR	VIAMEPHR	PAHS+PESTICI.	LAB USE ONLY
11	MW-14 DUP		3/13/2017	11:11	HR	GW	13	9			2	2				X	X	X	X	X	X	X	X	X	X		
12	MW-13		3/13/2017	12:31	HR	GW	13	9			2	2				X	X	X	X	X	X	X	X	X	X		
13	TB031317HR		3/13/2017	NA	HR	WTB	2	2								X	X						X				
14	TB031317NR		3/13/2017	NA	NR	WTB	2	2								X	X						X				
15	MW-16		3/13/2017	13:23	NR	GW	13	9			2	2				X	X	X	X	X	X	X	X	X	X		
16	FB031317		3/13/2017	12:49	NR	WFB	13	9			2	2				X	X	X	X	X	X	X	X	X	X		
17	BR-3		3/10/2017	15:00	nR	GW	13	9			2	2				X	X	X	X	X	X	X	X	X	X		
							0																				
							0																				
							0																				
							0																				
							0																				

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL - Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank; EB-Equipment Blank; RB- Rinse Blank; TB-Trip Blank

Turnaround Time (Business days)

- [x] Std. 10 Business Days
- [ ] 5 Day RUSH
- [ ] 3 Day RUSH
- [ ] 2 Day RUSH
- [ ] 1 Day RUSH
- [ ] Other

Approved By (MS Analysis Only) / Date:

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [x] FULLT1 (Level 3+4)
- [ ] NJ Reduced
- [ ] Commercial "C"
- [ ] NJ Data of Known Quality Protocol Reporting
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [ ] EDD Format
- [ ] Other

Comments "A" = Results Only, Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Raw data

Comments / Special Instructions

BANTH, BAPYRN, SIMPLUAN, SIMPLUAN, CHRYS, DIBANTH, H12BYTR, NAP SHOULD ALL BE ANALYZED BY EDI

Sample Inventory is verified upon receipt in the Laboratory

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by:	Date Time:	Received by:	Relinquished by:	Date Time:	Received by:
1 [illegible]	3/13/17 16:21	1 FX	2 FX	03-14-17	3 Corey (ADX) 10:00
3		3	4		4
5		5			

Custody Seal # 471-678 ☐ Intact ☐ Not Intact; Preserved where applicable ☐; On Ice ☐; Cooler Temp.

5.1 5

EXECUTIVE NARRATIVE

SDG No:	FA42031	Laboratory:	Accutest, Florida
Analysis:	SW846-8260C	Number of Samples:	21
Location:	BMSMC – Humacao, PR		

SUMMARY: Twenty one (21) samples were analyzed for selected volatile organic compounds (VOA TCL List SOM02.0)) by method SW846-8260C; 1,3-butadiene and dichlorodifluormethane were analyzed separately in sample FA42031-1 to -5. The sample results were assessed according to USEPA data validation guidance documents in the following order of precedence: USEPA Hazardous Waste Support Section SOP No. HW-33A Revision 0 SOM02.2. Low/Medium Volatile Data Validation. July, 2015. The QC criteria and data validation actions listed on the data review worksheets are from the primary guidance document, unless otherwise noted.

Critical issues: **None**
Major: **None**
Minor: **None**

Critical findings: **None**
Major findings: **None**
Minor findings: **1.** FA42031-13: Sample vial(s) contained significant headspace; reported results are considered minimum values.

2. Initial calibration, initial calibration verification, and continuing calibration verification within the method and validation guidance document required performance criteria except for the cases described in this document. Closing calibration check verification included in data package.

Tetrachloroethene and chloroethene % difference were outside the method and guidance document performance criteria in the continuing and ending calibration verification analyzed on 03/20-21/17. No action take, tetrachloroethane and chloroethane were reported using the 03/24/17 initial calibration; % difference within method and guidance document performance criteria.

Dichlorodifluoromethane % difference was outside the method and guidance document performance criteria in the continuing calibration verification analyzed on 03/25/17. Results for dichlorodifluoromethane qualified as estimated (J or UJ) in affected samples.

1,3-butadiene and tert-butyl alcohol % difference were outside the method and guidance document performance criteria in the initial calibration verification analyzed on 03/18/17. Results for 1,3-butadiene and tert-butyl alcohol qualified as estimated (J or UJ) in affected samples.

^Analytes not meeting the % difference method performance criteria in the initial/continuing calibration verification but within the guidance document performance criteria. No qualification performed.

3. Analytes (toluene) detected in trip/field blanks analyzed with this data package. Toluene not detected in the samples, no qualification made.

4. MS/MSD % recovery and RPD within laboratory control limits except for the cases described in this document. No qualifications made base on RPD results, professional judgment. No action taken on analytes having the MSD % recovery outside laboratory control limit, professional judgment.

5. 1,3-butadiene was not added to the blank spike mixture and the matrix spike/matrix spike duplicate mixture. Results are qualified as estimated (J or UJ) in all samples.

COMMENTS: Results are valid and can be used for decision making purposes.

Reviewers Name: Rafael Infante
Chemist License 1888

Signature: Rafael Infante

Date: May 1, 2017

SAMPLE ORGANIC DATA SAMPLE SUMMARY

Sample ID: FA42031-1
Sample location: BMSMC, Humacao, PR
Sampling date: 3/10/2017
Matrix: AQ -Equipment Blank

METHOD: 8260C

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Acetone	25	ug/L	1.0	-	U	Yes
Benzene	1.0	ug/L	1.0	-	U	Yes
Benzyl Chloride	2.0	ug/L	1.0	-	U	Yes
Bromochloromethane	1.0	ug/L	1.0	-	U	Yes
Bromodichloromethane	1.0	ug/L	1.0	-	U	Yes
Bromoform	1.0	ug/L	1.0	-	U	Yes
1,3-Butadiene	2.0	ug/L	1.0	-	UJ	Yes
2-Butanone (MEK)	5.0	ug/L	1.0	-	U	Yes
Carbon disulfide	2.0	ug/L	1.0	-	U	Yes
Carbon tetrachloride	1.0	ug/L	1.0	-	U	Yes
Chlorobenzene	1.0	ug/L	1.0	-	U	Yes
Chloroethane	2.0	ug/L	1.0	-	U	Yes
Chloroform	1.0	ug/L	1.0	-	U	Yes
Cyclohexane	1.0	ug/L	1.0	-	U	Yes
Dibromochloromethane	1.0	ug/L	1.0	-	U	Yes
1,2-Dibromo-3-chloropropane	5.0	ug/L	1.0	-	U	Yes
1,2-Dibromoethane	2.0	ug/L	1.0	-	U	Yes
Dichlorodifluoromethane	2.0	ug/L	1.0	-	U	Yes
1,2-Dichlorobenzene	1.0	ug/L	1.0	-	U	Yes
1,3-Dichlorobenzene	1.0	ug/L	1.0	-	U	Yes
1,4-Dichlorobenzene	1.0	ug/L	1.0	-	U	Yes
1,1-Dichloroethane	1.0	ug/L	1.0	-	U	Yes
1,2-Dichloroethane	1.0	ug/L	1.0	-	U	Yes
1,1-Dichloroethene	1.0	ug/L	1.0	-	U	Yes
cis-1,2-Dichloroethene	1.0	ug/L	1.0	-	U	Yes

trans-1,2-Dichloroethene	1.0	ug/L	1.0	-	U	Yes
1,2-Dichloropropane	1.0	ug/L	1.0	-	U	Yes
cis-1,3-Dichloropropene	1.0	ug/L	1.0	-	U	Yes
trans-1,3-Dichloropropene	1.0	ug/L	1.0	-	U	Yes
Ethylbenzene	1.0	ug/L	1.0	-	U	Yes
Freon 113	1.0	ug/L	1.0	-	U	Yes
2-Hexanone	10	ug/L	1.0	-	U	Yes
Isopropylbenzene	1.0	ug/L	1.0	-	U	Yes
p-Isopropyltoluene	1.0	ug/L	1.0	-	U	Yes
Methyl Acetate	20	ug/L	1.0	-	U	Yes
Methyl Bromide	2.0	ug/L	1.0	-	U	Yes
Methyl Chloride	2.0	ug/L	1.0	-	U	Yes
Methylcyclohexane	1.0	ug/L	1.0	-	U	Yes
Methylene chloride	5.0	ug/L	1.0	-	U	Yes
4-Methyl-2-pentanone(MIBK)	5.0	ug/L	1.0	-	U	Yes
Methyl Tert Butyl Ether	1.0	ug/L	1.0	-	U	Yes
Styrene	1.0	ug/L	1.0	-	U	Yes
Tert-Amyl Alcohol	20	ug/L	1.0	-	U	Yes
Tert-Butyl-Alcohl	20	ug/L	1.0	-	U	Yes
1,1,2,2-Tetrachloroethane	1.0	ug/L	1.0	-	U	Yes
Tetrachloroethene	1.0	ug/L	1.0	-	U	Yes
Tetrahydrofuran	5.0	ug/L	1.0	-	U	Yes
Toluene	1.0	ug/L	1.0	-	U	Yes
1,2,3-Trichlorobenzene	2.0	ug/L	1.0	-	U	Yes
1,2,4-Trichlorobenzene	2.0	ug/L	1.0	-	U	Yes
1,1,1-Trichloroethane	1.0	ug/L	1.0	-	U	Yes
1,1,2-Trichloroethane	1.0	ug/L	1.0	-	U	Yes
Trichloroethene	1.0	ug/L	1.0	-	U	Yes
Trichlorofluoromethane	2.0	ug/L	1.0	-	U	Yes
1,2,4-Trimethylbenzene	1.0	ug/L	1.0	-	U	Yes
Vinyl chloride	1.0	ug/L	1.0	-	U	Yes
m,p-Xylene	2.0	ug/L	1.0	-	U	Yes
o-Xylene	1.0	ug/L	1.0	-	U	Yes

Sample ID: FA42031-2
Sample location: BMSMC, Humacao, PR
Sampling date: 3/10/2017
Matrix: Groundwater

METHOD: 8260C

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Acetone	25	ug/L	1.0	-	U	Yes
Benzene	1.0	ug/L	1.0	-	U	Yes
Benzyl Chloride	2.0	ug/L	1.0	-	U	Yes
Bromochloromethane	1.0	ug/L	1.0	-	U	Yes
Bromodichloromethane	1.0	ug/L	1.0	-	U	Yes
Bromoform	1.0	ug/L	1.0	-	U	Yes
1,3-Butadiene	2.0	ug/L	1.0	-	UJ ✓	Yes
2-Butanone (MEK)	5.0	ug/L	1.0	-	U	Yes
Carbon disulfide	2.0	ug/L	1.0	-	U	Yes
Carbon tetrachloride	1.0	ug/L	1.0	-	U	Yes
Chlorobenzene	1.2	ug/L	1.0	-	-	Yes
Chloroethane	2.0	ug/L	1.0	-	U	Yes
Chloroform	1.0	ug/L	1.0	-	U	Yes
Cyclohexane	3.3	ug/L	1.0	-	-	Yes
Dibromochloromethane	1.0	ug/L	1.0	-	U	Yes
1,2-Dibromo-3-chloropropane	5.0	ug/L	1.0	-	U	Yes
1,2-Dibromoethane	2.0	ug/L	1.0	-	U	Yes
Dichlorodifluoromethane	2.0	ug/L	1.0	-	U	Yes
1,2-Dichlorobenzene	0.98	ug/L	1.0	J	J	Yes
1,3-Dichlorobenzene	1.0	ug/L	1.0	-	U	Yes
1,4-Dichlorobenzene	0.38	ug/L	1.0	J	J	Yes
1,1-Dichloroethane	1.0	ug/L	1.0	-	U	Yes
1,2-Dichloroethane	1.0	ug/L	1.0	-	U	Yes
1,1-Dichloroethene	1.0	ug/L	1.0	-	U	Yes
cis-1,2-Dichloroethene	1.0	ug/L	1.0	-	U	Yes
trans-1,2-Dichloroethene	1.0	ug/L	1.0	-	U	Yes

1,2-Dichloropropane	1.0	ug/L	1.0	-	U	Yes
cis-1,3-Dichloropropene	1.0	ug/L	1.0	-	U	Yes
trans-1,3-Dichloropropene	1.0	ug/L	1.0	-	U	Yes
Ethylbenzene	1.0	ug/L	1.0	-	U	Yes
Freon 113	1.0	ug/L	1.0	-	U	Yes
2-Hexanone	10	ug/L	1.0	-	U	Yes
Isopropylbenzene	2.4	ug/L	1.0	-	-	Yes
p-Isopropyltoluene	1.0	ug/L	1.0	-	U	Yes
Methyl Acetate	20	ug/L	1.0	-	U	Yes
Methyl Bromide	2.0	ug/L	1.0	-	U	Yes
Methyl Chloride	2.0	ug/L	1.0	-	U	Yes
Methylcyclohexane	1.0	ug/L	1.0	-	U	Yes
Methylene chloride	5.0	ug/L	1.0	-	U	Yes
4-Methyl-2-pentanone(MIBK)	5.0	ug/L	1.0	-	U	Yes
Methyl Tert Butyl Ether	10.3	ug/L	1.0	-	-	Yes
Styrene	1.0	ug/L	1.0	-	U	Yes
Tert-Amyl Alcohol	20	ug/L	1.0	-	U	Yes
Tert-Butyl Alcohol	140	ug/L	1.0	-	-	Yes
1,1,2,2-Tetrachloroethane	1.0	ug/L	1.0	-	U	Yes
Tetrachloroethene	1.0	ug/L	1.0	-	U	Yes
Tetrahydrofuran	5.0	ug/L	1.0	-	U	Yes
Toluene	1.0	ug/L	1.0	-	U	Yes
1,2,3-Trichlorobenzene	2.0	ug/L	1.0	-	U	Yes
1,2,4-Trichlorobenzene	2.0	ug/L	1.0	-	U	Yes
1,1,1-Trichloroethane	1.0	ug/L	1.0	-	U	Yes
1,1,2-Trichloroethane	1.0	ug/L	1.0	-	U	Yes
Trichloroethene	1.0	ug/L	1.0	-	U	Yes
Trichlorofluoromethane	2.0	ug/L	1.0	-	U	Yes
1,2,4-Trimethylbenzene	1.0	ug/L	1.0	-	U	Yes
Vinyl chloride	1.0	ug/L	1.0	-	U	Yes
m,p-Xylene	2.0	ug/L	1.0	-	U	Yes
o-Xylene	1.0	ug/L	1.0	-	U	Yes

Sample ID: FA42031-3
Sample location: BMSMC, Humacao, PR
Sampling date: 3/10/2017
Matrix: AQ - Trip Blank water

METHOD: 8260C

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Acetone	25	ug/L	1.0	-	U	Yes
Benzene	1.0	ug/L	1.0	-	U	Yes
Benzyl Chloride	2.0	ug/L	1.0	-	U	Yes
Bromochloromethane	1.0	ug/L	1.0	-	U	Yes
Bromodichloromethane	1.0	ug/L	1.0	-	U	Yes
Bromoform	1.0	ug/L	1.0	-	U	Yes
1,3-Butadiene	2.0	ug/L	1.0	-	UJ	Yes
2-Butanone (MEK)	5.0	ug/L	1.0	-	U	Yes
Carbon disulfide	2.0	ug/L	1.0	-	U	Yes
Carbon tetrachloride	1.0	ug/L	1.0	-	U	Yes
Chlorobenzene	1.0	ug/L	1.0	-	U	Yes
Chloroethane	2.0	ug/L	1.0	-	U	Yes
Chloroform	1.0	ug/L	1.0	-	U	Yes
Cyclohexane	1.0	ug/L	1.0	-	U	Yes
Dibromochloromethane	1.0	ug/L	1.0	-	U	Yes
1,2-Dibromo-3-chloropropane	5.0	ug/L	1.0	-	U	Yes
1,2-Dibromoethane	2.0	ug/L	1.0	-	U	Yes
Dichlorodifluoromethane	2.0	ug/L	1.0	-	U	Yes
1,2-Dichlorobenzene	1.0	ug/L	1.0	-	U	Yes
1,3-Dichlorobenzene	1.0	ug/L	1.0	-	U	Yes
1,4-Dichlorobenzene	1.0	ug/L	1.0	-	U	Yes
1,1-Dichloroethane	1.0	ug/L	1.0	-	U	Yes
1,2-Dichloroethane	1.0	ug/L	1.0	-	U	Yes
1,1-Dichloroethene	1.0	ug/L	1.0	-	U	Yes
cis-1,2-Dichloroethene	1.0	ug/L	1.0	-	U	Yes
trans-1,2-Dichloroethene	1.0	ug/L	1.0	-	U	Yes

1,2-Dichloropropane	1.0	ug/L	1.0	-	U	Yes
cis-1,3-Dichloropropene	1.0	ug/L	1.0	-	U	Yes
trans-1,3-Dichloropropene	1.0	ug/L	1.0	-	U	Yes
Ethylbenzene	1.0	ug/L	1.0	-	U	Yes
Freon 113	1.0	ug/L	1.0	-	U	Yes
2-Hexanone	10	ug/L	1.0	-	U	Yes
Isopropylbenzene	1.0	ug/L	1.0	-	U	Yes
p-Isopropyltoluene	1.0	ug/L	1.0	-	U	Yes
Methyl Acetate	20	ug/L	1.0	-	U	Yes
Methyl Bromide	2.0	ug/L	1.0	-	U	Yes
Methyl Chloride	2.0	ug/L	1.0	-	U	Yes
Methylcyclohexane	1.0	ug/L	1.0	-	U	Yes
Methylene chloride	5.0	ug/L	1.0	-	U	Yes
4-Methyl-2-pentanone(MIBK)	5.0	ug/L	1.0	-	U	Yes
Methyl Tert Butyl Ether	1.0	ug/L	1.0	-	U	Yes
Styrene	1.0	ug/L	1.0	-	U	Yes
Tert-Amyl Alcohol	20	ug/L	1.0	-	U	Yes
Tert-Butyl Alcohol	20	ug/L	1.0	-	U	Yes
1,1,2,2-Tetrachloroethane	1.0	ug/L	1.0	-	U	Yes
Tetrachloroethene	1.0	ug/L	1.0	-	U	Yes
Tetrahydrofuran	5.0	ug/L	1.0	-	U	Yes
Toluene	0.65	ug/L	1.0	J	J	Yes
1,2,3-Trichlorobenzene	2.0	ug/L	1.0	-	U	Yes
1,2,4-Trichlorobenzene	2.0	ug/L	1.0	-	U	Yes
1,1,1-Trichloroethane	1.0	ug/L	1.0	-	U	Yes
1,1,2-Trichloroethane	1.0	ug/L	1.0	-	U	Yes
Trichloroethene	1.0	ug/L	1.0	-	U	Yes
Trichlorofluoromethane	2.0	ug/L	1.0	-	U	Yes
1,2,4-Trimethylbenzene	1.0	ug/L	1.0	-	U	Yes
Vinyl chloride	1.0	ug/L	1.0	-	U	Yes
m,p-Xylene	2.0	ug/L	1.0	-	U	Yes
o-Xylene	1.0	ug/L	1.0	-	U	Yes

Sample ID: FA42031-4
Sample location: BMSMC, Humacao, PR
Sampling date: 3/10/2017
Matrix: Groundwater

METHOD: 8260C

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Acetone	25	ug/L	1.0	-	U	Yes
Benzene	1.0	ug/L	1.0	-	U	Yes
Benzyl Chloride	2.0	ug/L	1.0	-	U	Yes
Bromochloromethane	1.0	ug/L	1.0	-	U	Yes
Bromodichloromethane	1.0	ug/L	1.0	-	U	Yes
Bromoform	1.0	ug/L	1.0	-	U	Yes
1,3-Butadiene	5.0	ug/L	1.0	-	UJ	Yes
2-Butanone (MEK)	2.0	ug/L	1.0	-	U	Yes
Carbon disulfide	5.0	ug/L	1.0	-	U	Yes
Carbon tetrachloride	1.0	ug/L	1.0	-	U	Yes
Chlorobenzene	1.0	ug/L	1.0	-	U	Yes
Chloroethane	2.0	ug/L	1.0	-	U	Yes
Chloroform	1.0	ug/L	1.0	-	U	Yes
Cyclohexane	1.0	ug/L	1.0	-	U	Yes
Dibromochloromethane	1.0	ug/L	1.0	-	U	Yes
1,2-Dibromo-3-chloropropane	5.0	ug/L	1.0	-	U	Yes
1,2-Dibromoethane	2.0	ug/L	1.0	-	U	Yes
Dichlorodifluoromethane	2.0	ug/L	1.0	-	U	Yes
1,2-Dichlorobenzene	2.0	ug/L	1.0	-	U	Yes
1,3-Dichlorobenzene	1.0	ug/L	1.0	-	U	Yes
1,4-Dichlorobenzene	1.0	ug/L	1.0	-	U	Yes
1,1-Dichloroethane	1.0	ug/L	1.0	-	U	Yes
1,2-Dichloroethane	1.0	ug/L	1.0	-	U	Yes
1,1-Dichloroethene	1.0	ug/L	1.0	-	U	Yes
cis-1,2-Dichloroethene	1.0	ug/L	1.0	-	U	Yes
trans-1,2-Dichloroethene	1.0	ug/L	1.0	-	U	Yes

1,2-Dichloropropane	1.0	ug/L	1.0	-	U	Yes
cis-1,3-Dichloropropene	1.0	ug/L	1.0	-	U	Yes
trans-1,3-Dichloropropene	1.0	ug/L	1.0	-	U	Yes
Ethylbenzene	1.0	ug/L	1.0	-	U	Yes
Freon 113	1.0	ug/L	1.0	-	U	Yes
2-Hexanone	10	ug/L	1.0	-	U	Yes
Isopropylbenzene	1.0	ug/L	1.0	-	U	Yes
p-Isopropyltoluene	1.0	ug/L	1.0	-	U	Yes
Methyl Acetate	20	ug/L	1.0	-	U	Yes
Methyl Bromide	2.0	ug/L	1.0	-	U	Yes
Methyl Chloride	2.0	ug/L	1.0	-	U	Yes
Methylcyclohexane	1.0	ug/L	1.0	-	U	Yes
Methylene chloride	5.0	ug/L	1.0	-	U	Yes
4-Methyl-2-pentanone(MIBK)	5.0	ug/L	1.0	-	U	Yes
Methyl Tert Butyl Ether	1.0	ug/L	1.0	-	U	Yes
Styrene	1.0	ug/L	1.0	-	U	Yes
Tert-Amyl Alcohol	20	ug/L	1.0	-	U	Yes
Tert-Butyl Alcohol	20	ug/L	1.0	-	U	Yes
1,1,2,2-Tetrachloroethane	1.0	ug/L	1.0	-	U	Yes
Tetrachloroethene	1.0	ug/L	1.0	-	U	Yes
Tetrahydrofuran	5.0	ug/L	1.0	-	U	Yes
Toluene	1.0	ug/L	1.0	-	U	Yes
1,2,3-Trichlorobenzene	2.0	ug/L	1.0	-	U	Yes
1,2,4-Trichlorobenzene	2.0	ug/L	1.0	-	U	Yes
1,1,1-Trichloroethane	1.0	ug/L	1.0	-	U	Yes
1,1,2-Trichloroethane	1.0	ug/L	1.0	-	U	Yes
Trichloroethene	1.0	ug/L	1.0	-	U	Yes
Trichlorofluoromethane	2.0	ug/L	1.0	-	U	Yes
1,2,4-Trimethylbenzene	1.0	ug/L	1.0	-	U	Yes
Vinyl chloride	1.0	ug/L	1.0	-	U	Yes
m,p-Xylene	2.0	ug/L	1.0	-	U	Yes
o-Xylene	1.0	ug/L	1.0	-	U	Yes

Sample ID: FA42031-5
Sample location: BMSMC, Humacao, PR
Sampling date: 3/10/2017
Matrix: AQ - Field Blank Water

METHOD: 8260C

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Acetone	25	ug/L	1.0	-	U	Yes
Benzene	1.0	ug/L	1.0	-	U	Yes
Benzyl Chloride	2.0	ug/L	1.0	-	U	Yes
Bromochloromethane	1.0	ug/L	1.0	-	U	Yes
Bromodichloromethane	1.0	ug/L	1.0	-	U	Yes
Bromoform	1.0	ug/L	1.0	-	U	Yes
1,3-Butadiene	2.0	ug/L	1.0	-	UJ	Yes
2-Butanone (MEK)	5.0	ug/L	1.0	-	U	Yes
Carbon disulfide	2.0	ug/L	1.0	-	U	Yes
Carbon tetrachloride	1.0	ug/L	1.0	-	U	Yes
Chlorobenzene	1.0	ug/L	1.0	-	U	Yes
Chloroethane	2.0	ug/L	1.0	-	U	Yes
Chloroform	1.0	ug/L	1.0	-	U	Yes
Cyclohexane	1.0	ug/L	1.0	-	U	Yes
Dibromochloromethane	1.0	ug/L	1.0	-	U	Yes
1,2-Dibromo-3-chloropropane	5.0	ug/L	1.0	-	U	Yes
1,2-Dibromoethane	2.0	ug/L	1.0	-	U	Yes
Dichlorodifluoromethane	2.0	ug/L	1.0	-	U	Yes
1,2-Dichlorobenzene	1.0	ug/L	1.0	-	U	Yes
1,3-Dichlorobenzene	1.0	ug/L	1.0	-	U	Yes
1,4-Dichlorobenzene	1.0	ug/L	1.0	-	U	Yes
1,1-Dichloroethane	1.0	ug/L	1.0	-	U	Yes
1,2-Dichloroethane	1.0	ug/L	1.0	-	U	Yes
1,1-Dichloroethene	1.0	ug/L	1.0	-	U	Yes
cis-1,2-Dichloroethene	1.0	ug/L	1.0	-	U	Yes
trans-1,2-Dichloroethene	1.0	ug/L	1.0	-	U	Yes

1,2-Dichloropropane	1.0	ug/L	1.0	-	U	Yes
cis-1,3-Dichloropropene	1.0	ug/L	1.0	-	U	Yes
trans-1,3-Dichloropropene	1.0	ug/L	1.0	-	U	Yes
Ethylbenzene	1.0	ug/L	1.0	-	U	Yes
Freon 113	1.0	ug/L	1.0	-	U	Yes
2-Hexanone	10	ug/L	1.0	-	U	Yes
Isopropylbenzene	1.0	ug/L	1.0	-	U	Yes
p-Isopropyltoluene	1.0	ug/L	1.0	-	U	Yes
Methyl Acetate	20	ug/L	1.0	-	U	Yes
Methyl Bromide	2.0	ug/L	1.0	-	U	Yes
Methyl Chloride	2.0	ug/L	1.0	-	U	Yes
Methylcyclohexane	1.0	ug/L	1.0	-	U	Yes
Methylene chloride	5.0	ug/L	1.0	-	U	Yes
4-Methyl-2-pentanone(MIBK)	5.0	ug/L	1.0	-	U	Yes
Methyl Tert Butyl Ether	1.0	ug/L	1.0	-	U	Yes
Styrene	1.0	ug/L	1.0	-	U	Yes
Tert-Amyl Alcohol	20	ug/L	1.0	-	U	Yes
Ter-Butyl Alcohol	20	ug/L	1.0	-	UJ ✓	Yes
1,1,2,2-Tetrachloroethane	1.0	ug/L	1.0	-	U	Yes
Tetrachloroethene	1.0	ug/L	1.0	-	U	Yes
Tetrahydrofuran	5.0	ug/L	1.0	-	U	Yes
Toluene	0.42	ug/L	1.0	J	J	Yes
1,2,3-Trichlorobenzene	2.0	ug/L	1.0	-	U	Yes
1,2,4-Trichlorobenzene	2.0	ug/L	1.0	-	U	Yes
1,1,1-Trichloroethane	1.0	ug/L	1.0	-	U	Yes
1,1,2-Trichloroethane	1.0	ug/L	1.0	-	U	Yes
Trichloroethene	1.0	ug/L	1.0	-	U	Yes
Trichlorofluoromethane	2.0	ug/L	1.0	-	U	Yes
1,2,4-Trimethylbenzene	1.0	ug/L	1.0	-	U	Yes
Vinyl chloride	1.0	ug/L	1.0	-	U	Yes
m,p-Xylene	2.0	ug/L	1.0	-	U	Yes
o-Xylene	1.0	ug/L	1.0	-	U	Yes

Sample ID: FA42031-6
Sample location: BMSMC, Humacao, PR
Sampling date: 3/10/2017
Matrix: Groundwater

METHOD: 8260C

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Acetone	25	ug/L	1.0	-	U	Yes
Benzene	1.0	ug/L	1.0	-	U	Yes
Benzyl Chloride	2.0	ug/L	1.0	-	U	Yes
Bromochloromethane	1.0	ug/L	1.0	-	U	Yes
Bromodichloromethane	1.0	ug/L	1.0	-	U	Yes
Bromoform	1.0	ug/L	1.0	-	U	Yes
1,3-Butadiene	2.0	ug/L	1.0	-	UJ ✓	Yes
2-Butanone (MEK)	5.0	ug/L	1.0	-	U	Yes
Carbon disulfide	2.0	ug/L	1.0	-	U	Yes
Carbon tetrachloride	1.0	ug/L	1.0	-	U	Yes
Chlorobenzene	1.2	ug/L	1.0	-	-	Yes
Chloroethane	2.0	ug/L	1.0	-	U	Yes
Chloroform	1.0	ug/L	1.0	-	U	Yes
Cyclohexane	4.0	ug/L	1.0	-	-	Yes
Dibromochloromethane	1.0	ug/L	1.0	-	U	Yes
1,2-Dibromo-3-chloropropane	5.0	ug/L	1.0	-	U	Yes
1,2-Dibromoethane	2.0	ug/L	1.0	-	U	Yes
Dichlorodifluoromethane	2.0	ug/L	1.0	-	UJ ✓	Yes
1,2-Dichlorobenzene	1.0	ug/L	1.0	-	-	Yes
1,3-Dichlorobenzene	1.0	ug/L	1.0	-	U	Yes
1,4-Dichlorobenzene	0.58	ug/L	1.0	J	J	Yes
1,1-Dichloroethane	1.0	ug/L	1.0	-	U	Yes
1,2-Dichloroethane	1.0	ug/L	1.0	-	U	Yes
1,1-Dichloroethene	1.0	ug/L	1.0	-	U	Yes
cis-1,2-Dichloroethene	1.0	ug/L	1.0	-	U	Yes
trans-1,2-Dichloroethene	1.0	ug/L	1.0	-	U	Yes

1,2-Dichloropropane	1.0	ug/L	1.0	-	U	Yes
cis-1,3-Dichloropropene	1.0	ug/L	1.0	-	U	Yes
trans-1,3-Dichloropropene	1.0	ug/L	1.0	-	U	Yes
Ethylbenzene	1.0	ug/L	1.0	-	U	Yes
Freon 113	1.0	ug/L	1.0	-	U	Yes
2-Hexanone	10	ug/L	1.0	-	U	Yes
Isopropylbenzene	2.9	ug/L	1.0	-	-	Yes
p-Isopropyltoluene	1.0	ug/L	1.0	-	U	Yes
Methyl Acetate	20	ug/L	1.0	-	U	Yes
Methyl Bromide	2.0	ug/L	1.0	-	U	Yes
Methyl Chloride	2.0	ug/L	1.0	-	U	Yes
Methylcyclohexane	1.0	ug/L	1.0	-	U	Yes
Methylene chloride	5.0	ug/L	1.0	-	U	Yes
4-Methyl-2-pentanone(MIBK)	5.0	ug/L	1.0	-	U	Yes
Methyl Tert Butyl Ether	11.0	ug/L	1.0	-	-	Yes
Styrene	1.0	ug/L	1.0	-	U	Yes
Tert-Amyl Alcohol	20	ug/L	1.0	-	U	Yes
Ter-Butyl Alcohol	109	ug/L	1.0	-	J ✓	Yes
1,1,2,2-Tetrachloroethane	1.0	ug/L	1.0	-	U	Yes
Tetrachloroethene	1.0	ug/L	1.0	-	U	Yes
Tetrahydrofuran	5.0	ug/L	1.0	-	U	Yes
Toluene	1.0	ug/L	1.0	-	U	Yes
1,2,3-Trichlorobenzene	2.0	ug/L	1.0	-	U	Yes
1,2,4-Trichlorobenzene	2.0	ug/L	1.0	-	U	Yes
1,1,1-Trichloroethane	1.0	ug/L	1.0	-	U	Yes
1,1,2-Trichloroethane	1.0	ug/L	1.0	-	U	Yes
Trichloroethene	1.0	ug/L	1.0	-	U	Yes
Trichlorofluoromethane	2.0	ug/L	1.0	-	U	Yes
1,2,4-Trimethylbenzene	1.0	ug/L	1.0	-	U	Yes
Vinyl chloride	1.0	ug/L	1.0	-	U	Yes
m,p-Xylene	2.0	ug/L	1.0	-	U	Yes
o-Xylene	1.0	ug/L	1.0	-	U	Yes

Sample ID: FA42031-7
Sample location: BMSMC, Humacao, PR
Sampling date: 3/10/2017
Matrix: Groundwater

METHOD: 8260C

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Acetone	25	ug/L	1.0	-	U	Yes
Benzene	1.0	ug/L	1.0	-	U	Yes
Benzyl Chloride	2.0	ug/L	1.0	-	U	Yes
Bromochloromethane	1.0	ug/L	1.0	-	U	Yes
Bromodichloromethane	1.0	ug/L	1.0	-	U	Yes
Bromoform	1.0	ug/L	1.0	-	U	Yes
1,3-Butadiene	2.0	ug/L	1.0	-	UJ ✓	Yes
2-Butanone (MEK)	5.0	ug/L	1.0	-	U	Yes
Carbon disulfide	2.0	ug/L	1.0	-	U	Yes
Carbon tetrachloride	1.0	ug/L	1.0	-	U	Yes
Chlorobenzene	0.26	ug/L	1.0	J	J	Yes
Chloroethane	2.0	ug/L	1.0	-	U	Yes
Chloroform	1.0	ug/L	1.0	-	U	Yes
Cyclohexane	1.0	ug/L	1.0	-	U	Yes
Dibromochloromethane	1.0	ug/L	1.0	-	U	Yes
1,2-Dibromo-3-chloropropane	5.0	ug/L	1.0	-	U	Yes
1,2-Dibromoethane	2.0	ug/L	1.0	-	U	Yes
Dichlorodifluoromethane	2.0	ug/L	1.0	-	U	Yes
1,2-Dichlorobenzene	0.50	ug/L	1.0	J	J	Yes
1,3-Dichlorobenzene	1.0	ug/L	1.0	-	U	Yes
1,4-Dichlorobenzene	1.0	ug/L	1.0	-	U	Yes
1,1-Dichloroethane	1.0	ug/L	1.0	-	U	Yes
1,2-Dichloroethane	1.0	ug/L	1.0	-	U	Yes
1,1-Dichloroethene	1.0	ug/L	1.0	-	U	Yes
cis-1,2-Dichloroethene	1.0	ug/L	1.0	-	U	Yes
trans-1,2-Dichloroethene	1.0	ug/L	1.0	-	U	Yes

1,2-Dichloropropane	1.0	ug/L	1.0	-	U	Yes
cis-1,3-Dichloropropene	1.0	ug/L	1.0	-	U	Yes
trans-1,3-Dichloropropene	1.0	ug/L	1.0	-	U	Yes
Ethylbenzene	1.0	ug/L	1.0	-	U	Yes
Freon 113	1.0	ug/L	1.0	-	U	Yes
2-Hexanone	10	ug/L	1.0	-	U	Yes
Isopropylbenzene	4.6	ug/L	1.0	-	-	Yes
p-Isopropyltoluene	1.0	ug/L	1.0	-	U	Yes
Methyl Acetate	20	ug/L	1.0	-	U	Yes
Methyl Bromide	2.0	ug/L	1.0	-	U	Yes
Methyl Chloride	2.0	ug/L	1.0	-	U	Yes
Methylcyclohexane	1.0	ug/L	1.0	-	U	Yes
Methylene chloride	5.0	ug/L	1.0	-	U	Yes
4-Methyl-2-pentanone(MIBK)	5.0	ug/L	1.0	-	U	Yes
Methyl Tert Butyl Ether	2.6	ug/L	1.0	-	-	Yes
Styrene	1.0	ug/L	1.0	-	U	Yes
Tert-Amyl Alcohol	20	ug/L	1.0	-	U	Yes
Ter-Butyl Alcohol	11.7	ug/L	1.0	J	J	Yes
1,1,2,2-Tetrachloroethane	1.0	ug/L	1.0	-	U	Yes
Tetrachloroethene	1.0	ug/L	1.0	-	U	Yes
Tetrahydrofuran	5.0	ug/L	1.0	-	U	Yes
Toluene	1.0	ug/L	1.0	-	U	Yes
1,2,3-Trichlorobenzene	2.0	ug/L	1.0	-	U	Yes
1,2,4-Trichlorobenzene	2.0	ug/L	1.0	-	U	Yes
1,1,1-Trichloroethane	1.0	ug/L	1.0	-	U	Yes
1,1,2-Trichloroethane	1.0	ug/L	1.0	-	U	Yes
Trichloroethene	1.0	ug/L	1.0	-	U	Yes
Trichlorofluoromethane	2.0	ug/L	1.0	-	U	Yes
1,2,4-Trimethylbenzene	1.0	ug/L	1.0	-	U	Yes
Vinyl chloride	1.0	ug/L	1.0	-	U	Yes
m,p-Xylene	2.0	ug/L	1.0	-	U	Yes
o-Xylene	1.0	ug/L	1.0	-	U	Yes

Sample ID: FA42031-8
Sample location: BMSMC, Humacao, PR
Sampling date: 3/10/2017
Matrix: AQ - Trip Blank Water

METHOD: 8260C

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Acetone	25	ug/L	1.0	-	U	Yes
Benzene	1.0	ug/L	1.0	-	U	Yes
Benzyl Chloride	2.0	ug/L	1.0	-	U	Yes
Bromochloromethane	1.0	ug/L	1.0	-	U	Yes
Bromodichloromethane	1.0	ug/L	1.0	-	U	Yes
Bromoform	1.0	ug/L	1.0	-	U	Yes
1,3-Butadiene	2.0	ug/L	1.0	-	UJ ✓	Yes
2-Butanone (MEK)	5.0	ug/L	1.0	-	U	Yes
Carbon disulfide	2.0	ug/L	1.0	-	U	Yes
Carbon tetrachloride	1.0	ug/L	1.0	-	U	Yes
Chlorobenzene	1.0	ug/L	1.0	-	U	Yes
Chloroethane	2.0	ug/L	1.0	-	U	Yes
Chloroform	1.0	ug/L	1.0	-	U	Yes
Cyclohexane	1.0	ug/L	1.0	-	U	Yes
Dibromochloromethane	1.0	ug/L	1.0	-	U	Yes
1,2-Dibromo-3-chloropropane	5.0	ug/L	1.0	-	U	Yes
1,2-Dibromoethane	2.0	ug/L	1.0	-	U	Yes
Dichlorodifluoromethane	2.0	ug/L	1.0	-	UJ ✓	Yes
1,2-Dichlorobenzene	1.0	ug/L	1.0	-	U	Yes
1,3-Dichlorobenzene	1.0	ug/L	1.0	-	U	Yes
1,4-Dichlorobenzene	1.0	ug/L	1.0	-	U	Yes
1,1-Dichloroethane	1.0	ug/L	1.0	-	U	Yes
1,2-Dichloroethane	1.0	ug/L	1.0	-	U	Yes
1,1-Dichloroethene	1.0	ug/L	1.0	-	U	Yes
cis-1,2-Dichloroethene	1.0	ug/L	1.0	-	U	Yes
trans-1,2-Dichloroethene	1.0	ug/L	1.0	-	U	Yes

1,2-Dichloropropane	1.0	ug/L	1.0	-	U	Yes
cis-1,3-Dichloropropene	1.0	ug/L	1.0	-	U	Yes
trans-1,3-Dichloropropene	1.0	ug/L	1.0	-	U	Yes
1,4-Dioxane	200	ug/L	1.0	-	U	Yes
Ethylbenzene	1.0	ug/L	1.0	-	U	Yes
Freon 113	1.0	ug/L	1.0	-	U	Yes
2-Hexanone	10	ug/L	1.0	-	U	Yes
Isopropylbenzene	1.0	ug/L	1.0	-	U	Yes
p-Isopropyltoluene	1.0	ug/L	1.0	-	U	Yes
Methyl Acetate	20	ug/L	1.0	-	U	Yes
Methyl Bromide	2.0	ug/L	1.0	-	U	Yes
Methyl Chloride	2.0	ug/L	1.0	-	U	Yes
Methylcyclohexane	1.0	ug/L	1.0	-	U	Yes
Methylene chloride	5.0	ug/L	1.0	-	U	Yes
4-Methyl-2-pentanone(MIBK)	5.0	ug/L	1.0	-	U	Yes
Methyl Tert Butyl Ether	1.0	ug/L	1.0	-	U	Yes
Styrene	1.0	ug/L	1.0	-	U	Yes
Tert-Amyl Alcohol	20	ug/L	1.0	-	U	Yes
Ter-Butyl Alcohol	20	ug/L	1.0	-	UJ ✓	Yes
1,1,2,2-Tetrachloroethane	1.0	ug/L	1.0	-	U	Yes
Tetrachloroethene	1.0	ug/L	1.0	-	U	Yes
Tetrahydrofuran	5.0	ug/L	1.0	-	U	Yes
Toluene	1.4	ug/L	1.0	-	-	Yes
1,2,3-Trichlorobenzene	2.0	ug/L	1.0	-	U	Yes
1,2,4-Trichlorobenzene	2.0	ug/L	1.0	-	U	Yes
1,1,1-Trichloroethane	1.0	ug/L	1.0	-	U	Yes
1,1,2-Trichloroethane	1.0	ug/L	1.0	-	U	Yes
Trichloroethene	1.0	ug/L	1.0	-	U	Yes
Trichlorofluoromethane	2.0	ug/L	1.0	-	U	Yes
1,2,4-Trimethylbenzene	1.0	ug/L	1.0	-	U	Yes
Vinyl chloride	1.0	ug/L	1.0	-	U	Yes
m,p-Xylene	2.0	ug/L	1.0	-	U	Yes
o-Xylene	1.0	ug/L	1.0	-	U	Yes

Sample ID: FA42031-9
Sample location: BMSMC, Humacao, PR
Sampling date: 3/13/2017
Matrix: Groundwater

METHOD: 8260C

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Acetone	25	ug/L	1.0	-	U	Yes
Benzene	1.0	ug/L	1.0	-	U	Yes
Benzyl Chloride	2.0	ug/L	1.0	-	U	Yes
Bromochloromethane	1.0	ug/L	1.0	-	U	Yes
Bromodichloromethane	1.0	ug/L	1.0	-	U	Yes
Bromoform	1.0	ug/L	1.0	-	U	Yes
1,3-Butadiene	2.0	ug/L	1.0	-	UJ ✓	Yes
2-Butanone (MEK)	5.0	ug/L	1.0	-	U	Yes
Carbon disulfide	2.0	ug/L	1.0	-	U	Yes
Carbon tetrachloride	1.0	ug/L	1.0	-	U	Yes
Chlorobenzene	1.0	ug/L	1.0	-	U	Yes
Chloroethane	2.0	ug/L	1.0	-	U	Yes
Chloroform	1.0	ug/L	1.0	-	U	Yes
Cyclohexane	0.65	ug/L	1.0	J	J	Yes
Dibromochloromethane	1.0	ug/L	1.0	-	U	Yes
1,2-Dibromo-3-chloropropane	5.0	ug/L	1.0	-	U	Yes
1,2-Dibromoethane	2.0	ug/L	1.0	-	U	Yes
Dichlorodifluoromethane	2.0	ug/L	1.0	-	U	Yes
1,2-Dichlorobenzene	1.0	ug/L	1.0	-	U	Yes
1,3-Dichlorobenzene	1.0	ug/L	1.0	-	U	Yes
1,4-Dichlorobenzene	1.0	ug/L	1.0	-	U	Yes
1,1-Dichloroethane	1.0	ug/L	1.0	-	U	Yes
1,2-Dichloroethane	1.0	ug/L	1.0	-	U	Yes
1,1-Dichloroethene	1.0	ug/L	1.0	-	U	Yes
cis-1,2-Dichloroethene	1.0	ug/L	1.0	-	U	Yes

trans-1,2-Dichloroethene	1.0	ug/L	1.0	-	U	Yes
1,2-Dichloropropane	1.0	ug/L	1.0	-	U	Yes
cis-1,3-Dichloropropene	1.0	ug/L	1.0	-	U	Yes
trans-1,3-Dichloropropene	1.0	ug/L	1.0	-	U	Yes
Ethylbenzene	1.0	ug/L	1.0	-	U	Yes
Freon 113	1.0	ug/L	1.0	-	U	Yes
2-Hexanone	10	ug/L	1.0	-	U	Yes
Isopropylbenzene	28.0	ug/L	1.0	-	-	Yes
p-Isopropyltoluene	1.0	ug/L	1.0	-	U	Yes
Methyl Acetate	20	ug/L	1.0	-	U	Yes
Methyl Bromide	2.0	ug/L	1.0	-	U	Yes
Methyl Chloride	2.0	ug/L	1.0	-	U	Yes
Methylcyclohexane	0.49	ug/L	1.0	J	J	Yes
Methylene chloride	5.0	ug/L	1.0	-	U	Yes
4-Methyl-2-pentanone(MIBK)	5.0	ug/L	1.0	-	U	Yes
Methyl Tert Butyl Ether	21.0	ug/L	1.0	-	-	Yes
Styrene	1.0	ug/L	1.0	-	U	Yes
Tert-Amyl Alcohol	20	ug/L	1.0	-	U	Yes
Ter-Butyl Alcohol	435	ug/L	1.0	-	J	Yes
1,1,2,2-Tetrachloroethane	1.0	ug/L	1.0	-	U	Yes
Tetrachloroethene	1.0	ug/L	1.0	-	U	Yes
Tetrahydrofuran	5.1	ug/L	1.0	-	-	Yes
Toluene	1.0	ug/L	1.0	-	U	Yes
1,2,3-Trichlorobenzene	2.0	ug/L	1.0	-	U	Yes
1,2,4-Trichlorobenzene	2.0	ug/L	1.0	-	U	Yes
1,1,1-Trichloroethane	1.0	ug/L	1.0	-	U	Yes
1,1,2-Trichloroethane	1.0	ug/L	1.0	-	U	Yes
Trichloroethene	1.0	ug/L	1.0	-	U	Yes
Trichlorofluoromethane	2.0	ug/L	1.0	-	U	Yes
1,2,4-Trimethylbenzene	1.0	ug/L	1.0	-	U	Yes
Vinyl chloride	1.0	ug/L	1.0	-	U	Yes
m,p-Xylene	2.0	ug/L	1.0	-	U	Yes
o-Xylene	1.0	ug/L	1.0	-	U	Yes

Sample ID: FA42031-10
Sample location: BMSMC, Humacao, PR
Sampling date: 3/13/2017
Matrix: Groundwater

METHOD: 8260C

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Acetone	25	ug/L	1.0	-	U	Yes
Benzene	1.0	ug/L	1.0	-	U	Yes
Benzyl Chloride	2.0	ug/L	1.0	-	U	Yes
Bromochloromethane	1.0	ug/L	1.0	-	U	Yes
Bromodichloromethane	1.0	ug/L	1.0	-	U	Yes
Bromoform	1.0	ug/L	1.0	-	U	Yes
1,3-Butadiene	2.0	ug/L	1.0	-	UJ	Yes
2-Butanone (MEK)	5.0	ug/L	1.0	-	U	Yes
Carbon disulfide	2.0	ug/L	1.0	-	U	Yes
Carbon tetrachloride	1.0	ug/L	1.0	-	U	Yes
Chlorobenzene	1.0	ug/L	1.0	-	U	Yes
Chloroethane	2.0	ug/L	1.0	-	U	Yes
Chloroform	1.0	ug/L	1.0	-	U	Yes
Cyclohexane	1.0	ug/L	1.0	-	U	Yes
Dibromochloromethane	1.0	ug/L	1.0	-	U	Yes
1,2-Dibromo-3-chloropropane	5.0	ug/L	1.0	-	U	Yes
1,2-Dibromoethane	2.0	ug/L	1.0	-	U	Yes
Dichlorodifluoromethane	2.0	ug/L	1.0	-	U	Yes
1,2-Dichlorobenzene	1.0	ug/L	1.0	-	U	Yes
1,3-Dichlorobenzene	1.0	ug/L	1.0	-	U	Yes
1,4-Dichlorobenzene	1.0	ug/L	1.0	-	U	Yes
1,1-Dichloroethane	1.0	ug/L	1.0	-	U	Yes
1,2-Dichloroethane	1.0	ug/L	1.0	-	U	Yes
1,1-Dichloroethene	1.0	ug/L	1.0	-	U	Yes
cis-1,2-Dichloroethene	1.0	ug/L	1.0	-	U	Yes

trans-1,2-Dichloroethene	1.0	ug/L	1.0	-	U	Yes
1,2-Dichloropropane	1.0	ug/L	1.0	-	U	Yes
cis-1,3-Dichloropropene	1.0	ug/L	1.0	-	U	Yes
trans-1,3-Dichloropropene	1.0	ug/L	1.0	-	U	Yes
Ethylbenzene	1.0	ug/L	1.0	-	U	Yes
Freon 113	1.0	ug/L	1.0	-	U	Yes
2-Hexanone	10	ug/L	1.0	-	U	Yes
Isopropylbenzene	1.0	ug/L	1.0	-	U	Yes
p-Isopropyltoluene	1.0	ug/L	1.0	-	U	Yes
Methyl Acetate	20	ug/L	1.0	-	U	Yes
Methyl Bromide	2.0	ug/L	1.0	-	U	Yes
Methyl Chloride	2.0	ug/L	1.0	-	U	Yes
Methylcyclohexane	1.0	ug/L	1.0	-	U	Yes
Methylene chloride	5.0	ug/L	1.0	-	U	Yes
4-Methyl-2-pentanone(MIBK)	5.0	ug/L	1.0	-	U	Yes
Methyl Tert Butyl Ether	1.0	ug/L	1.0	-	U	Yes
Styrene	1.0	ug/L	1.0	-	U	Yes
Tert-Amyl Alcohol	20	ug/L	1.0	-	U	Yes
Ter-Butyl Alcohol	20	ug/L	1.0	-	UJ	Yes
1,1,2,2-Tetrachloroethane	1.0	ug/L	1.0	-	U	Yes
Tetrachloroethene	1.0	ug/L	1.0	-	U	Yes
Tetrahydrofuran	5.0	ug/L	1.0	-	U	Yes
Toluene	1.0	ug/L	1.0	-	U	Yes
1,2,3-Trichlorobenzene	2.0	ug/L	1.0	-	U	Yes
1,2,4-Trichlorobenzene	2.0	ug/L	1.0	-	U	Yes
1,1,1-Trichloroethane	1.0	ug/L	1.0	-	U	Yes
1,1,2-Trichloroethane	1.0	ug/L	1.0	-	U	Yes
Trichloroethene	1.0	ug/L	1.0	-	U	Yes
Trichlorofluoromethane	2.0	ug/L	1.0	-	U	Yes
1,2,4-Trimethylbenzene	1.0	ug/L	1.0	-	U	Yes
Vinyl chloride	1.0	ug/L	1.0	-	U	Yes
m,p-Xylene	2.0	ug/L	1.0	-	U	Yes
o-Xylene	1.0	ug/L	1.0	-	U	Yes

Sample ID: FA42031-11
Sample location: BMSMC, Humacao, PR
Sampling date: 3/13/2017
Matrix: Groundwater

METHOD: 8260C

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Acetone	25	ug/L	1.0	-	U	Yes
Benzene	1.0	ug/L	1.0	-	U	Yes
Benzyl Chloride	2.0	ug/L	1.0	-	U	Yes
Bromochloromethane	1.0	ug/L	1.0	-	U	Yes
Bromodichloromethane	1.0	ug/L	1.0	-	U	Yes
Bromoform	1.0	ug/L	1.0	-	U	Yes
1,3-Butadiene	2.0	ug/L	1.0	-	UJ	Yes
2-Butanone (MEK)	5.0	ug/L	1.0	-	U	Yes
Carbon disulfide	2.0	ug/L	1.0	-	U	Yes
Carbon tetrachloride	1.0	ug/L	1.0	-	U	Yes
Chlorobenzene	1.0	ug/L	1.0	-	U	Yes
Chloroethane	2.0	ug/L	1.0	-	U	Yes
Chloroform	1.0	ug/L	1.0	-	U	Yes
Cyclohexane	1.0	ug/L	1.0	-	U	Yes
Dibromochloromethane	1.0	ug/L	1.0	-	U	Yes
1,2-Dibromo-3-chloropropane	5.0	ug/L	1.0	-	U	Yes
1,2-Dibromoethane	2.0	ug/L	1.0	-	U	Yes
Dichlorodifluoromethane	0.69	ug/L	1.0	J	J	Yes
1,2-Dichlorobenzene	1.0	ug/L	1.0	-	U	Yes
1,3-Dichlorobenzene	1.0	ug/L	1.0	-	U	Yes
1,4-Dichlorobenzene	1.0	ug/L	1.0	-	U	Yes
1,1-Dichloroethane	1.0	ug/L	1.0	-	U	Yes
1,2-Dichloroethane	1.0	ug/L	1.0	-	U	Yes
1,1-Dichloroethene	1.0	ug/L	1.0	-	U	Yes
cis-1,2-Dichloroethene	1.0	ug/L	1.0	-	U	Yes

trans-1,2-Dichloroethene	1.0	ug/L	1.0	-	U	Yes
1,2-Dichloropropane	1.0	ug/L	1.0	-	U	Yes
cis-1,3-Dichloropropene	1.0	ug/L	1.0	-	U	Yes
trans-1,3-Dichloropropene	1.0	ug/L	1.0	-	U	Yes
Ethylbenzene	1.0	ug/L	1.0	-	U	Yes
Freon 113	1.0	ug/L	1.0	-	U	Yes
2-Hexanone	10	ug/L	1.0	-	U	Yes
Isopropylbenzene	1.0	ug/L	1.0	-	U	Yes
p-Isopropyltoluene	1.0	ug/L	1.0	-	U	Yes
Methyl Acetate	20	ug/L	1.0	-	U	Yes
Methyl Bromide	2.0	ug/L	1.0	-	U	Yes
Methyl Chloride	2.0	ug/L	1.0	-	U	Yes
Methylcyclohexane	1.0	ug/L	1.0	-	U	Yes
Methylene chloride	5.0	ug/L	1.0	-	U	Yes
4-Methyl-2-pentanone(MIBK)	5.0	ug/L	1.0	-	U	Yes
Methyl Tert Butyl Ether	1.0	ug/L	1.0	-	U	Yes
Styrene	1.0	ug/L	1.0	-	U	Yes
Tert-Amyl Alcohol	20	ug/L	1.0	-	U	Yes
Ter-Butyl Alcohol	20	ug/L	1.0	-	UJ ✓	Yes
1,1,2,2-Tetrachloroethane	1.0	ug/L	1.0	-	U	Yes
Tetrachloroethene	1.0	ug/L	1.0	-	U	Yes
Tetrahydrofuran	5.0	ug/L	1.0	-	U	Yes
Toluene	1.0	ug/L	1.0	-	U	Yes
1,2,3-Trichlorobenzene	2.0	ug/L	1.0	-	U	Yes
1,2,4-Trichlorobenzene	2.0	ug/L	1.0	-	U	Yes
1,1,1-Trichloroethane	1.0	ug/L	1.0	-	U	Yes
1,1,2-Trichloroethane	1.0	ug/L	1.0	-	U	Yes
Trichloroethene	1.0	ug/L	1.0	-	U	Yes
Trichlorofluoromethane	2.0	ug/L	1.0	-	U	Yes
1,2,4-Trimethylbenzene	1.0	ug/L	1.0	-	U	Yes
Vinyl chloride	1.0	ug/L	1.0	-	U	Yes
m,p-Xylene	2.0	ug/L	1.0	-	U	Yes
o-Xylene	1.0	ug/L	1.0	-	U	Yes

Sample ID: FA42031-12
Sample location: BMSMC, Humacao, PR
Sampling date: 3/13/2017
Matrix: Groundwater

METHOD: 8260C

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Acetone	25	ug/L	1.0	-	U	Yes
Benzene	1.0	ug/L	1.0	-	U	Yes
Benzyl Chloride	2.0	ug/L	1.0	-	U	Yes
Bromochloromethane	1.0	ug/L	1.0	-	U	Yes
Bromodichloromethane	1.0	ug/L	1.0	-	U	Yes
Bromoform	1.0	ug/L	1.0	-	U	Yes
1,3-Butadiene	2.0	ug/L	1.0	-	UJ ✓	Yes
2-Butanone (MEK)	5.0	ug/L	1.0	-	U	Yes
Carbon disulfide	2.0	ug/L	1.0	-	U	Yes
Carbon tetrachloride	1.0	ug/L	1.0	-	U	Yes
Chlorobenzene	1.0	ug/L	1.0	-	U	Yes
Chloroethane	2.0	ug/L	1.0	-	U	Yes
Chloroform	1.0	ug/L	1.0	-	U	Yes
Cyclohexane	1.0	ug/L	1.0	-	U	Yes
Dibromochloromethane	1.0	ug/L	1.0	-	U	Yes
1,2-Dibromo-3-chloropropane	5.0	ug/L	1.0	-	U	Yes
1,2-Dibromoethane	2.0	ug/L	1.0	-	U	Yes
Dichlorodifluoromethane	2.6	ug/L	1.0	-	-	Yes
1,2-Dichlorobenzene	1.0	ug/L	1.0	-	U	Yes
1,3-Dichlorobenzene	1.0	ug/L	1.0	-	U	Yes
1,4-Dichlorobenzene	1.0	ug/L	1.0	-	U	Yes
1,1-Dichloroethane	1.0	ug/L	1.0	-	U	Yes
1,2-Dichloroethane	1.0	ug/L	1.0	-	U	Yes
1,1-Dichloroethene	1.0	ug/L	1.0	-	U	Yes
cis-1,2-Dichloroethene	1.0	ug/L	1.0	-	U	Yes

trans-1,2-Dichloroethene	1.0	ug/L	1.0	-	U	Yes
1,2-Dichloropropane	1.0	ug/L	1.0	-	U	Yes
cis-1,3-Dichloropropene	1.0	ug/L	1.0	-	U	Yes
trans-1,3-Dichloropropene	1.0	ug/L	1.0	-	U	Yes
Ethylbenzene	1.0	ug/L	1.0	-	U	Yes
Freon 113	1.0	ug/L	1.0	-	U	Yes
2-Hexanone	10	ug/L	1.0	-	U	Yes
Isopropylbenzene	1.0	ug/L	1.0	-	U	Yes
p-Isopropyltoluene	1.0	ug/L	1.0	-	U	Yes
Methyl Acetate	20	ug/L	1.0	-	U	Yes
Methyl Bromide	2.0	ug/L	1.0	-	U	Yes
Methyl Chloride	2.0	ug/L	1.0	-	U	Yes
Methylcyclohexane	1.0	ug/L	1.0	-	U	Yes
Methylene chloride	5.0	ug/L	1.0	-	U	Yes
4-Methyl-2-pentanone(MIBK)	5.0	ug/L	1.0	-	U	Yes
Methyl Tert Butyl Ether	1.0	ug/L	1.0	-	U	Yes
Styrene	1.0	ug/L	1.0	-	U	Yes
Tert-Amyl Alcohol	20	ug/L	1.0	-	U	Yes
Ter-Butyl Alcohol	20	ug/L	1.0	-	UJ ✓	Yes
1,1,2,2-Tetrachloroethane	1.0	ug/L	1.0	-	U	Yes
Tetrachloroethene	1.0	ug/L	1.0	-	U	Yes
Tetrahydrofuran	5.0	ug/L	1.0	-	U	Yes
Toluene	1.0	ug/L	1.0	-	U	Yes
1,2,3-Trichlorobenzene	2.0	ug/L	1.0	-	U	Yes
1,2,4-Trichlorobenzene	2.0	ug/L	1.0	-	U	Yes
1,1,1-Trichloroethane	1.0	ug/L	1.0	-	U	Yes
1,1,2-Trichloroethane	1.0	ug/L	1.0	-	U	Yes
Trichloroethene	1.0	ug/L	1.0	-	U	Yes
Trichlorofluoromethane	2.0	ug/L	1.0	-	U	Yes
1,2,4-Trimethylbenzene	1.0	ug/L	1.0	-	U	Yes
Vinyl chloride	1.0	ug/L	1.0	-	U	Yes
m,p-Xylene	2.0	ug/L	1.0	-	U	Yes
o-Xylene	1.0	ug/L	1.0	-	U	Yes

Sample ID: FA42031-13
Sample location: BMSMC, Humacao, PR
Sampling date: 3/13/2017
Matrix: AQ - Trip Blank Water

METHOD: 8260C

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Acetone	25	ug/L	1.0	-	U	Yes
Benzene	1.0	ug/L	1.0	-	U	Yes
Benzyl Chloride	2.0	ug/L	1.0	-	U	Yes
Bromochloromethane	1.0	ug/L	1.0	-	U	Yes
Bromodichloromethane	1.0	ug/L	1.0	-	U	Yes
Bromoform	1.0	ug/L	1.0	-	U	Yes
1,3-Butadiene	2.0	ug/L	1.0	-	UJ ✓	Yes
2-Butanone (MEK)	5.0	ug/L	1.0	-	U	Yes
Carbon disulfide	2.0	ug/L	1.0	-	U	Yes
Carbon tetrachloride	1.0	ug/L	1.0	-	U	Yes
Chlorobenzene	1.0	ug/L	1.0	-	U	Yes
Chloroethane	2.0	ug/L	1.0	-	U	Yes
Chloroform	1.0	ug/L	1.0	-	U	Yes
Cyclohexane	1.0	ug/L	1.0	-	U	Yes
Dibromochloromethane	1.0	ug/L	1.0	-	U	Yes
1,2-Dibromo-3-chloropropane	5.0	ug/L	1.0	-	U	Yes
1,2-Dibromoethane	2.0	ug/L	1.0	-	U	Yes
Dichlorodifluoromethane	2.0	ug/L	1.0	-	U	Yes
1,2-Dichlorobenzene	1.0	ug/L	1.0	-	U	Yes
1,3-Dichlorobenzene	1.0	ug/L	1.0	-	U	Yes
1,4-Dichlorobenzene	1.0	ug/L	1.0	-	U	Yes
1,1-Dichloroethane	1.0	ug/L	1.0	-	U	Yes
1,2-Dichloroethane	1.0	ug/L	1.0	-	U	Yes
1,1-Dichloroethene	1.0	ug/L	1.0	-	U	Yes
cis-1,2-Dichloroethene	1.0	ug/L	1.0	-	U	Yes
trans-1,2-Dichloroethene	1.0	ug/L	1.0	-	U	Yes

1,2-Dichloropropane	1.0	ug/L	1.0	-	U	Yes
cis-1,3-Dichloropropene	1.0	ug/L	1.0	-	U	Yes
trans-1,3-Dichloropropene	1.0	ug/L	1.0	-	U	Yes
Ethylbenzene	1.0	ug/L	1.0	-	U	Yes
Freon 113	1.0	ug/L	1.0	-	U	Yes
2-Hexanone	10	ug/L	1.0	-	U	Yes
Isopropylbenzene	1.0	ug/L	1.0	-	U	Yes
p-Isopropyltoluene	1.0	ug/L	1.0	-	U	Yes
Methyl Acetate	20	ug/L	1.0	-	U	Yes
Methyl Bromide	2.0	ug/L	1.0	-	U	Yes
Methyl Chloride	2.0	ug/L	1.0	-	U	Yes
Methylcyclohexane	1.0	ug/L	1.0	-	U	Yes
Methylene chloride	5.0	ug/L	1.0	-	U	Yes
4-Methyl-2-pentanone(MIBK)	5.0	ug/L	1.0	-	U	Yes
Methyl Tert Butyl Ether	1.0	ug/L	1.0	-	U	Yes
Styrene	1.0	ug/L	1.0	-	U	Yes
Tert-Amyl Alcohol	20	ug/L	1.0	-	U	Yes
Ter-Butyl Alcohol	20	ug/L	1.0	-	UJ	Yes
1,1,2,2-Tetrachloroethane	1.0	ug/L	1.0	-	U	Yes
Tetrachloroethene	1.0	ug/L	1.0	-	U	Yes
Tetrahydrofuran	5.0	ug/L	1.0	-	U	Yes
Toluene	0.79	ug/L	1.0	J	J	Yes
1,2,3-Trichlorobenzene	2.0	ug/L	1.0	-	U	Yes
1,2,4-Trichlorobenzene	2.0	ug/L	1.0	-	U	Yes
1,1,1-Trichloroethane	1.0	ug/L	1.0	-	U	Yes
1,1,2-Trichloroethane	1.0	ug/L	1.0	-	U	Yes
Trichloroethene	1.0	ug/L	1.0	-	U	Yes
Trichlorofluoromethane	2.0	ug/L	1.0	-	U	Yes
1,2,4-Trimethylbenzene	1.0	ug/L	1.0	-	U	Yes
Vinyl chloride	1.0	ug/L	1.0	-	U	Yes
m,p-Xylene	2.0	ug/L	1.0	-	U	Yes
o-Xylene	1.0	ug/L	1.0	-	U	Yes

Sample ID: FA42031-14
Sample location: BMSMC, Humacao, PR
Sampling date: 3/13/2017
Matrix: AQ - Trip Blank Water

METHOD: 8260C

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Acetone	25	ug/L	1.0	-	U	Yes
Benzene	1.0	ug/L	1.0	-	U	Yes
Benzyl Chloride	2.0	ug/L	1.0	-	U	Yes
Bromochloromethane	1.0	ug/L	1.0	-	U	Yes
Bromodichloromethane	1.0	ug/L	1.0	-	U	Yes
Bromoform	1.0	ug/L	1.0	-	U	Yes
1,3-Butadiene	2.0	ug/L	1.0	-	UJ ✓	Yes
2-Butanone (MEK)	5.0	ug/L	1.0	-	U	Yes
Carbon disulfide	2.0	ug/L	1.0	-	U	Yes
Carbon tetrachloride	1.0	ug/L	1.0	-	U	Yes
Chlorobenzene	1.0	ug/L	1.0	-	U	Yes
Chloroethane	2.0	ug/L	1.0	-	U	Yes
Chloroform	1.0	ug/L	1.0	-	U	Yes
Cyclohexane	1.0	ug/L	1.0	-	U	Yes
Dibromochloromethane	1.0	ug/L	1.0	-	U	Yes
1,2-Dibromo-3-chloropropane	5.0	ug/L	1.0	-	U	Yes
1,2-Dibromoethane	2.0	ug/L	1.0	-	U	Yes
Dichlorodifluoromethane	2.0	ug/L	1.0	-	U	Yes
1,2-Dichlorobenzene	1.0	ug/L	1.0	-	U	Yes
1,3-Dichlorobenzene	1.0	ug/L	1.0	-	U	Yes
1,4-Dichlorobenzene	1.0	ug/L	1.0	-	U	Yes
1,1-Dichloroethane	1.0	ug/L	1.0	-	U	Yes
1,2-Dichloroethane	1.0	ug/L	1.0	-	U	Yes
1,1-Dichloroethene	1.0	ug/L	1.0	-	U	Yes
cis-1,2-Dichloroethene	1.0	ug/L	1.0	-	U	Yes

trans-1,2-Dichloroethene	1.0	ug/L	1.0	-	U	Yes
1,2-Dichloropropane	1.0	ug/L	1.0	-	U	Yes
cis-1,3-Dichloropropene	1.0	ug/L	1.0	-	U	Yes
trans-1,3-Dichloropropene	1.0	ug/L	1.0	-	U	Yes
Ethylbenzene	1.0	ug/L	1.0	-	U	Yes
Freon 113	1.0	ug/L	1.0	-	U	Yes
2-Hexanone	10	ug/L	1.0	-	U	Yes
Isopropylbenzene	1.0	ug/L	1.0	-	U	Yes
p-Isopropyltoluene	1.0	ug/L	1.0	-	U	Yes
Methyl Acetate	20	ug/L	1.0	-	U	Yes
Methyl Bromide	2.0	ug/L	1.0	-	U	Yes
Methyl Chloride	2.0	ug/L	1.0	-	U	Yes
Methylcyclohexane	1.0	ug/L	1.0	-	U	Yes
Methylene chloride	5.0	ug/L	1.0	-	U	Yes
4-Methyl-2-pentanone(MIBK)	5.0	ug/L	1.0	-	U	Yes
Methyl Tert Butyl Ether	1.0	ug/L	1.0	-	U	Yes
Styrene	1.0	ug/L	1.0	-	U	Yes
Tert-Amyl Alcohol	20	ug/L	1.0	-	U	Yes
Ter-Butyl Alcohol	20	ug/L	1.0	-	UJ	Yes
1,1,2,2-Tetrachloroethane	1.0	ug/L	1.0	-	U	Yes
Tetrachloroethene	1.0	ug/L	1.0	-	U	Yes
Tetrahydrofuran	5.0	ug/L	1.0	-	U	Yes
Toluene	1.6	ug/L	1.0	-	-	Yes
1,2,3-Trichlorobenzene	2.0	ug/L	1.0	-	U	Yes
1,2,4-Trichlorobenzene	2.0	ug/L	1.0	-	U	Yes
1,1,1-Trichloroethane	1.0	ug/L	1.0	-	U	Yes
1,1,2-Trichloroethane	1.0	ug/L	1.0	-	U	Yes
Trichloroethene	1.0	ug/L	1.0	-	U	Yes
Trichlorofluoromethane	2.0	ug/L	1.0	-	U	Yes
1,2,4-Trimethylbenzene	1.0	ug/L	1.0	-	U	Yes
Vinyl chloride	1.0	ug/L	1.0	-	U	Yes
m,p-Xylene	2.0	ug/L	1.0	-	U	Yes
o-Xylene	1.0	ug/L	1.0	-	U	Yes

Sample ID: FA42031-15
Sample location: BMSMC, Humacao, PR
Sampling date: 3/13/2017
Matrix: Groundwater

METHOD: 8260C

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Acetone	25	ug/L	1.0	-	U	Yes
Benzene	1.0	ug/L	1.0	-	U	Yes
Benzyl Chloride	2.0	ug/L	1.0	-	U	Yes
Bromochloromethane	1.0	ug/L	1.0	-	U	Yes
Bromodichloromethane	1.0	ug/L	1.0	-	U	Yes
Bromoform	1.0	ug/L	1.0	-	U	Yes
1,3-Butadiene	2.0	ug/L	1.0	-	UJ ✓	Yes
2-Butanone (MEK)	5.0	ug/L	1.0	-	U	Yes
Carbon disulfide	2.0	ug/L	1.0	-	U	Yes
Carbon tetrachloride	1.0	ug/L	1.0	-	U	Yes
Chlorobenzene	1.0	ug/L	1.0	-	U	Yes
Chloroethane	2.0	ug/L	1.0	-	U	Yes
Chloroform	1.0	ug/L	1.0	-	U	Yes
Cyclohexane	1.0	ug/L	1.0	-	U	Yes
Dibromochloromethane	1.0	ug/L	1.0	-	U	Yes
1,2-Dibromo-3-chloropropane	5.0	ug/L	1.0	-	U	Yes
1,2-Dibromoethane	2.0	ug/L	1.0	-	U	Yes
Dichlorodifluoromethane	0.69	ug/L	1.0	J	J	Yes
1,2-Dichlorobenzene	6.9	ug/L	1.0	-	-	Yes
1,3-Dichlorobenzene	0.25	ug/L	1.0	J	J	Yes
1,4-Dichlorobenzene	1.5	ug/L	1.0	-	-	Yes
1,1-Dichloroethane	1.0	ug/L	1.0	-	U	Yes
1,2-Dichloroethane	1.0	ug/L	1.0	-	U	Yes
1,1-Dichloroethene	1.0	ug/L	1.0	-	U	Yes
cis-1,2-Dichloroethene	1.0	ug/L	1.0	-	U	Yes
trans-1,2-Dichloroethene	1.0	ug/L	1.0	-	U	Yes

1,2-Dichloropropane	1.0	ug/L	1.0	-	U	Yes
cis-1,3-Dichloropropene	1.0	ug/L	1.0	-	U	Yes
trans-1,3-Dichloropropene	1.0	ug/L	1.0	-	U	Yes
Ethylbenzene	1.0	ug/L	1.0	-	U	Yes
Freon 113	9.4	ug/L	1.0	-	-	Yes
2-Hexanone	10	ug/L	1.0	-	U	Yes
Isopropylbenzene	1.0	ug/L	1.0	-	U	Yes
p-Isopropyltoluene	1.0	ug/L	1.0	-	U	Yes
Methyl Acetate	20	ug/L	1.0	-	U	Yes
Methyl Bromide	2.0	ug/L	1.0	-	U	Yes
Methyl Chloride	2.0	ug/L	1.0	-	U	Yes
Methylcyclohexane	1.0	ug/L	1.0	-	U	Yes
Methylene chloride	5.0	ug/L	1.0	-	U	Yes
4-Methyl-2-pentanone(MIBK)	5.0	ug/L	1.0	-	U	Yes
Methyl Tert Butyl Ether	1.0	ug/L	1.0	-	U	Yes
Styrene	1.0	ug/L	1.0	-	U	Yes
Tert-Amyl Alcohol	20	ug/L	1.0	-	U	Yes
Ter-Butyl Alcohol	20	ug/L	1.0	-	UJ ✓	Yes
1,1,2,2-Tetrachloroethane	1.0	ug/L	1.0	-	U	Yes
Tetrachloroethene	1.0	ug/L	1.0	-	U	Yes
Tetrahydrofuran	5.0	ug/L	1.0	-	U	Yes
Toluene	1.0	ug/L	1.0	-	U	Yes
1,2,3-Trichlorobenzene	2.0	ug/L	1.0	-	U	Yes
1,2,4-Trichlorobenzene	2.0	ug/L	1.0	-	U	Yes
1,1,1-Trichloroethane	1.0	ug/L	1.0	-	U	Yes
1,1,2-Trichloroethane	1.0	ug/L	1.0	-	U	Yes
Trichloroethene	1.0	ug/L	1.0	-	U	Yes
Trichlorofluoromethane	2.0	ug/L	1.0	-	U	Yes
1,2,4-Trimethylbenzene	1.0	ug/L	1.0	-	U	Yes
Vinyl chloride	1.0	ug/L	1.0	-	U	Yes
m,p-Xylene	2.0	ug/L	1.0	-	U	Yes
o-Xylene	1.0	ug/L	1.0	-	U	Yes

Sample ID: FA42031-16
Sample location: BMSMC, Humacao, PR
Sampling date: 3/13/2017
Matrix: AQ - Field Blank Water

METHOD: 8260C

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Acetone	25	ug/L	1.0	-	U	Yes
Benzene	1.0	ug/L	1.0	-	U	Yes
Benzyl Chloride	2.0	ug/L	1.0	-	U	Yes
Bromochloromethane	1.0	ug/L	1.0	-	U	Yes
Bromodichloromethane	1.0	ug/L	1.0	-	U	Yes
Bromoform	1.0	ug/L	1.0	-	U	Yes
1,3-Butadiene	2.0	ug/L	1.0	-	UJ ✓	Yes
2-Butanone (MEK)	5.0	ug/L	1.0	-	U	Yes
Carbon disulfide	2.0	ug/L	1.0	-	U	Yes
Carbon tetrachloride	1.0	ug/L	1.0	-	U	Yes
Chlorobenzene	1.0	ug/L	1.0	-	U	Yes
Chloroethane	2.0	ug/L	1.0	-	U	Yes
Chloroform	1.0	ug/L	1.0	-	U	Yes
Cyclohexane	1.0	ug/L	1.0	-	U	Yes
Dibromochloromethane	1.0	ug/L	1.0	-	U	Yes
1,2-Dibromo-3-chloropropane	5.0	ug/L	1.0	-	U	Yes
1,2-Dibromoethane	2.0	ug/L	1.0	-	U	Yes
Dichlorodifluoromethane	2.0	ug/L	1.0	-	U	Yes
1,2-Dichlorobenzene	1.0	ug/L	1.0	-	U	Yes
1,3-Dichlorobenzene	1.0	ug/L	1.0	-	U	Yes
1,4-Dichlorobenzene	1.0	ug/L	1.0	-	U	Yes
1,1-Dichloroethane	1.0	ug/L	1.0	-	U	Yes
1,2-Dichloroethane	1.0	ug/L	1.0	-	U	Yes
1,1-Dichloroethene	1.0	ug/L	1.0	-	U	Yes
cis-1,2-Dichloroethene	1.0	ug/L	1.0	-	U	Yes

trans-1,2-Dichloroethene	1.0	ug/L	1.0	-	U	Yes
1,2-Dichloropropane	1.0	ug/L	1.0	-	U	Yes
cis-1,3-Dichloropropene	1.0	ug/L	1.0	-	U	Yes
trans-1,3-Dichloropropene	1.0	ug/L	1.0	-	U	Yes
Ethylbenzene	1.0	ug/L	1.0	-	U	Yes
Freon 113	1.0	ug/L	1.0	-	U	Yes
2-Hexanone	10	ug/L	1.0	-	U	Yes
Isopropylbenzene	1.0	ug/L	1.0	-	U	Yes
p-Isopropyltoluene	1.0	ug/L	1.0	-	U	Yes
Methyl Acetate	20	ug/L	1.0	-	U	Yes
Methyl Bromide	2.0	ug/L	1.0	-	U	Yes
Methyl Chloride	2.0	ug/L	1.0	-	U	Yes
Methylcyclohexane	1.0	ug/L	1.0	-	U	Yes
Methylene chloride	5.0	ug/L	1.0	-	U	Yes
4-Methyl-2-pentanone(MIBK)	5.0	ug/L	1.0	-	U	Yes
Methyl Tert Butyl Ether	1.0	ug/L	1.0	-	U	Yes
Styrene	1.0	ug/L	1.0	-	U	Yes
Tert-Amyl Alcohol	20	ug/L	1.0	-	U	Yes
Ter-Butyl Alcohol	20	ug/L	1.0	-	UJ	Yes
1,1,2,2-Tetrachloroethane	1.0	ug/L	1.0	-	U	Yes
Tetrachloroethene	1.0	ug/L	1.0	-	U	Yes
Tetrahydrofuran	5.0	ug/L	1.0	-	U	Yes
Toluene	1.0	ug/L	1.0	-	U	Yes
1,2,3-Trichlorobenzene	2.0	ug/L	1.0	-	U	Yes
1,2,4-Trichlorobenzene	2.0	ug/L	1.0	-	U	Yes
1,1,1-Trichloroethane	1.0	ug/L	1.0	-	U	Yes
1,1,2-Trichloroethane	1.0	ug/L	1.0	-	U	Yes
Trichloroethene	1.0	ug/L	1.0	-	U	Yes
Trichlorofluoromethane	2.0	ug/L	1.0	-	U	Yes
1,2,4-Trimethylbenzene	1.0	ug/L	1.0	-	U	Yes
Vinyl chloride	1.0	ug/L	1.0	-	U	Yes
m,p-Xylene	2.0	ug/L	1.0	-	U	Yes
o-Xylene	1.0	ug/L	1.0	-	U	Yes

Sample ID: FA42031-17
Sample location: BMSMC, Humacao, PR
Sampling date: 3/13/2017
Matrix: Groundwater

METHOD: 8260C

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Acetone	25	ug/L	1.0	-	U	Yes
Benzene	1.0	ug/L	1.0	-	U	Yes
Benzyl Chloride	2.0	ug/L	1.0	-	U	Yes
Bromochloromethane	1.0	ug/L	1.0	-	U	Yes
Bromodichloromethane	1.0	ug/L	1.0	-	U	Yes
Bromoform	1.0	ug/L	1.0	-	U	Yes
1,3-Butadiene	2.0	ug/L	1.0	-	UJ	Yes
2-Butanone (MEK)	5.0	ug/L	1.0	-	U	Yes
Carbon disulfide	2.0	ug/L	1.0	-	U	Yes
Carbon tetrachloride	1.0	ug/L	1.0	-	U	Yes
Chlorobenzene	0.34	ug/L	1.0	J	J	Yes
Chloroethane	2.0	ug/L	1.0	-	U	Yes
Chloroform	1.0	ug/L	1.0	-	U	Yes
Cyclohexane	1.0	ug/L	1.0	-	U	Yes
Dibromochloromethane	1.0	ug/L	1.0	-	U	Yes
1,2-Dibromo-3-chloropropane	5.0	ug/L	1.0	-	U	Yes
1,2-Dibromoethane	2.0	ug/L	1.0	-	U	Yes
Dichlorodifluoromethane	2.0	ug/L	1.0	-	U	Yes
1,2-Dichlorobenzene	1.0	ug/L	1.0	-	U	Yes
1,3-Dichlorobenzene	1.0	ug/L	1.0	-	U	Yes
1,4-Dichlorobenzene	1.0	ug/L	1.0	-	U	Yes
1,1-Dichloroethane	1.0	ug/L	1.0	-	U	Yes
1,2-Dichloroethane	1.0	ug/L	1.0	-	U	Yes
1,1-Dichloroethene	1.0	ug/L	1.0	-	U	Yes
cis-1,2-Dichloroethene	1.0	ug/L	1.0	-	U	Yes
trans-1,2-Dichloroethene	1.0	ug/L	1.0	-	U	Yes

1,2-Dichloropropane	1.0	ug/L	1.0	-	U	Yes
cis-1,3-Dichloropropene	1.0	ug/L	1.0	-	U	Yes
trans-1,3-Dichloropropene	1.0	ug/L	1.0	-	U	Yes
Ethylbenzene	1.0	ug/L	1.0	-	U	Yes
Freon 113	1.0	ug/L	1.0	-	U	Yes
2-Hexanone	10	ug/L	1.0	-	U	Yes
Isopropylbenzene	1.0	ug/L	1.0	-	-	Yes
p-Isopropyltoluene	1.0	ug/L	1.0	-	U	Yes
Methyl Acetate	20	ug/L	1.0	-	U	Yes
Methyl Bromide	2.0	ug/L	1.0	-	U	Yes
Methyl Chloride	2.0	ug/L	1.0	-	U	Yes
Methylcyclohexane	1.0	ug/L	1.0	-	U	Yes
Methylene chloride	5.0	ug/L	1.0	-	U	Yes
4-Methyl-2-pentanone(MIBK)	5.0	ug/L	1.0	-	U	Yes
Methyl Tert Butyl Ether	1.0	ug/L	1.0	-	-	Yes
Styrene	1.0	ug/L	1.0	-	U	Yes
Tert-Amyl Alcohol	20	ug/L	1.0	-	U	Yes
Ter-Butyl Alcohol	20	ug/L	1.0	-	UJ	Yes
1,1,2,2-Tetrachloroethane	1.0	ug/L	1.0	-	U	Yes
Tetrachloroethene	1.0	ug/L	1.0	-	U	Yes
Tetrahydrofuran	5.0	ug/L	1.0	-	U	Yes
Toluene	1.0	ug/L	1.0	-	U	Yes
1,2,3-Trichlorobenzene	2.0	ug/L	1.0	-	U	Yes
1,2,4-Trichlorobenzene	2.0	ug/L	1.0	-	U	Yes
1,1,1-Trichloroethane	1.0	ug/L	1.0	-	U	Yes
1,1,2-Trichloroethane	1.0	ug/L	1.0	-	U	Yes
Trichloroethene	1.0	ug/L	1.0	-	U	Yes
Trichlorofluoromethane	2.0	ug/L	1.0	-	U	Yes
1,2,4-Trimethylbenzene	1.0	ug/L	1.0	-	U	Yes
Vinyl chloride	1.0	ug/L	1.0	-	U	Yes
m,p-Xylene	2.0	ug/L	1.0	-	U	Yes
o-Xylene	1.0	ug/L	1.0	-	U	Yes

Sample ID: FA42031-7MS (Batch: VB4859)
Sample location: BMSMC, Humacao, PR
Sampling date: 3/10/2017
Matrix: Groundwater

METHOD: 8260C

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Acetone	104	ug/L	1.0	-	-	Yes
Benzene	25.5	ug/L	1.0	-	-	Yes
Benzyl Chloride	24.6	ug/L	1.0	-	-	Yes
Bromochloromethane	24.0	ug/L	1.0	-	-	Yes
Bromodichloromethane	25.3	ug/L	1.0	-	-	Yes
Bromoform	17.4	ug/L	1.0	-	-	Yes
2-Butanone (MEK)	103	ug/L	1.0	-	-	Yes
Carbon disulfide	22.7	ug/L	1.0	-	-	Yes
Carbon tetrachloride	29.6	ug/L	1.0	-	-	Yes
Chlorobenzene	26.1	ug/L	1.0	-	-	Yes
Chloroethane	28.4	ug/L	1.0	-	-	Yes
Chloroform	26.4	ug/L	1.0	-	-	Yes
Cyclohexane	24.1	ug/L	1.0	-	-	Yes
Dibromochloromethane	21.2	ug/L	1.0	-	-	Yes
1,2-Dibromo-3-chloropropane	22.1	ug/L	1.0	-	-	Yes
1,2-Dibromoethane	23.9	ug/L	1.0	-	-	Yes
1,2-Dichlorobenzene	25.8	ug/L	1.0	-	-	Yes
1,3-Dichlorobenzene	25.6	ug/L	1.0	-	-	Yes
1,4-Dichlorobenzene	25.4	ug/L	1.0	-	-	Yes
1,1-Dichloroethane	27.3	ug/L	1.0	-	-	Yes
1,2-Dichloroethane	26.1	ug/L	1.0	-	-	Yes
1,1-Dichloroethene	28.2	ug/L	1.0	-	-	Yes
cis-1,2-Dichloroethene	25.9	ug/L	1.0	-	-	Yes
trans-1,2-Dichloroethene	29.7	ug/L	1.0	-	-	Yes
1,2-Dichloropropane	24.4	ug/L	1.0	-	-	Yes
cis-1,3-Dichloropropene	25.4	ug/L	1.0	-	-	Yes

trans-1,3-Dichloropropene	26.3	ug/L	1.0	-	-	Yes
Ethylbenzene	27.2	ug/L	1.0	-	-	Yes
Freon 113	25.0	ug/L	1.0	-	-	Yes
2-Hexanone	102	ug/L	1.0	-	-	Yes
Isopropylbenzene	28.5	ug/L	1.0	-	-	Yes
p-Isopropyltoluene	28.3	ug/L	1.0	-	-	Yes
Methyl Acetate	103	ug/L	1.0	-	-	Yes
Methyl Bromide	26.3	ug/L	1.0	-	-	Yes
Methyl Chloride	25.1	ug/L	1.0	-	-	Yes
Methylcyclohexane	26.7	ug/L	1.0	-	-	Yes
Methylene chloride	27.8	ug/L	1.0	-	-	Yes
4-Methyl-2-pentanone(MIBK)	105	ug/L	1.0	-	-	Yes
Methyl Tert Butyl Ether	25.4	ug/L	1.0	-	-	Yes
Styrene	23.6	ug/L	1.0	-	-	Yes
Tert-Amyl Alcohol	204	ug/L	1.0	-	-	Yes
Ter-Butyl Alcohol	215	ug/L	1.0	-	-	Yes
1,1,2,2-Tetrachloroethane	20.7	ug/L	1.0	-	-	Yes
Tetrachloroethene	27.4	ug/L	1.0	-	-	Yes
Tetrahydrofuran	20.0	ug/L	1.0	-	-	Yes
Toluene	26.1	ug/L	1.0	-	-	Yes
1,2,3-Trichlorobenzene	27.2	ug/L	1.0	-	-	Yes
1,2,4-Trichlorobenzene	28.3	ug/L	1.0	-	-	Yes
1,1,1-Trichloroethane	28.0	ug/L	1.0	-	-	Yes
1,1,2-Trichloroethane	23.2	ug/L	1.0	-	-	Yes
Trichloroethene	26.9	ug/L	1.0	-	-	Yes
Trichlorofluoromethane	31.2	ug/L	1.0	-	-	Yes
1,2,4-Trimethylbenzene	26.6	ug/L	1.0	-	-	Yes
Vinyl chloride	26.0	ug/L	1.0	-	-	Yes
m,p-Xylene	53.4	ug/L	1.0	-	-	Yes
o-Xylene	26.9	ug/L	1.0	-	-	Yes

Sample ID: FA42031-7MSD (Batch: VB4859)
Sample location: BMSMC, Humacao, PR
Sampling date: 3/10/2017
Matrix: Groundwater

METHOD: 8260C

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Acetone	130	ug/L	1.0	-	-	Yes
Benzene	28.6	ug/L	1.0	-	-	Yes
Benzyl Chloride	29.6	ug/L	1.0	-	-	Yes
Bromochloromethane	27.1	ug/L	1.0	-	-	Yes
Bromodichloromethane	27.1	ug/L	1.0	-	-	Yes
Bromoform	21.9	ug/L	1.0	-	-	Yes
2-Butanone (MEK)	135	ug/L	1.0	-	-	Yes
Carbon disulfide	23.0	ug/L	1.0	-	-	Yes
Carbon tetrachloride	29.8	ug/L	1.0	-	-	Yes
Chlorobenzene	28.5	ug/L	1.0	-	-	Yes
Chloroethane	29.8	ug/L	1.0	-	-	Yes
Chloroform	28.9	ug/L	1.0	-	-	Yes
Cyclohexane	28.5	ug/L	1.0	-	-	Yes
Dibromochloromethane	24.3	ug/L	1.0	-	-	Yes
1,2-Dibromo-3-chloropropane	27.3	ug/L	1.0	-	-	Yes
1,2-Dibromoethane	27.5	ug/L	1.0	-	-	Yes
1,2-Dichlorobenzene	29.0	ug/L	1.0	-	-	Yes
1,3-Dichlorobenzene	29.0	ug/L	1.0	-	-	Yes
1,4-Dichlorobenzene	27.7	ug/L	1.0	-	-	Yes
1,1-Dichloroethane	29.8	ug/L	1.0	-	-	Yes
1,2-Dichloroethane	30.3	ug/L	1.0	-	-	Yes
1,1-Dichloroethene	33.0	ug/L	1.0	-	-	Yes
cis-1,2-Dichloroethene	27.8	ug/L	1.0	-	-	Yes
trans-1,2-Dichloroethene	32.0	ug/L	1.0	-	-	Yes
1,2-Dichloropropane	27.1	ug/L	1.0	-	-	Yes
cis-1,3-Dichloropropene	26.8	ug/L	1.0	-	-	Yes

trans-1,3-Dichloropropene	27.8	ug/L	1.0	-	-	Yes
Ethylbenzene	28.6	ug/L	1.0	-	-	Yes
Freon 113	27.6	ug/L	1.0	-	-	Yes
2-Hexanone	128	ug/L	1.0	-	-	Yes
Isopropylbenzene	31.5	ug/L	1.0	-	-	Yes
p-Isopropyltoluene	30.5	ug/L	1.0	-	-	Yes
Methyl Acetate	131	ug/L	1.0	-	-	Yes
Methyl Bromide	30.0	ug/L	1.0	-	-	Yes
Methyl Chloride	27.6	ug/L	1.0	-	-	Yes
Methylcyclohexane	30.8	ug/L	1.0	-	-	Yes
Methylene chloride	30.6	ug/L	1.0	-	-	Yes
4-Methyl-2-pentanone(MIBK)	135	ug/L	1.0	-	-	Yes
Methyl Tert Butyl Ether	31.8	ug/L	1.0	-	-	Yes
Styrene	25.7	ug/L	1.0	-	-	Yes
Tert-Amyl Alcohol	259	ug/L	1.0	-	-	Yes
Ter-Butyl Alcohol	270	ug/L	1.0	-	-	Yes
1,1,2,2-Tetrachloroethane	25.6	ug/L	1.0	-	-	Yes
Tetrachloroethene	28.2	ug/L	1.0	-	-	Yes
Tetrahydrofuran	25.3	ug/L	1.0	-	-	Yes
Toluene	27.6	ug/L	1.0	-	-	Yes
1,2,3-Trichlorobenzene	31.7	ug/L	1.0	-	-	Yes
1,2,4-Trichlorobenzene	31.1	ug/L	1.0	-	-	Yes
1,1,1-Trichloroethane	30.8	ug/L	1.0	-	-	Yes
1,1,2-Trichloroethane	27.2	ug/L	1.0	-	-	Yes
Trichloroethene	30.3	ug/L	1.0	-	-	Yes
Trichlorofluoromethane	32.8	ug/L	1.0	-	-	Yes
1,2,4-Trimethylbenzene	29.4	ug/L	1.0	-	-	Yes
Vinyl chloride	29.0	ug/L	1.0	-	-	Yes
m,p-Xylene	58.0	ug/L	1.0	-	-	Yes
o-Xylene	30.1	ug/L	1.0	-	-	Yes

Sample ID: FA42031-7MS (Batch: VP1851)
Sample location: BMSMC, Humacao, PR
Sampling date: 3/10/2017
Matrix: Groundwater

METHOD: 8260C

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Acetone	121	ug/L	1.0	-	-	Yes
Benzene	28.7	ug/L	1.0	-	-	Yes
Benzyl Chloride	19.7	ug/L	1.0	-	-	Yes
Bromochloromethane	22.7	ug/L	1.0	-	-	Yes
Bromodichloromethane	21.7	ug/L	1.0	-	-	Yes
Bromoform	16.5	ug/L	1.0	-	-	Yes
2-Butanone (MEK)	124	ug/L	1.0	-	-	Yes
Carbon disulfide	19.8	ug/L	1.0	-	-	Yes
Carbon tetrachloride	24.5	ug/L	1.0	-	-	Yes
Chlorobenzene	24.7	ug/L	1.0	-	-	Yes
Chloroethane	23.5	ug/L	1.0	-	-	Yes
Chloroform	24.0	ug/L	1.0	-	-	Yes
Cyclohexane	27.0	ug/L	1.0	-	-	Yes
Dibromochloromethane	19.4	ug/L	1.0	-	-	Yes
1,2-Dibromo-3-chloropropane	22.8	ug/L	1.0	-	-	Yes
1,2-Dibromoethane	23.6	ug/L	1.0	-	-	Yes
Dichlorodifluoromethane	24.5	ug/L	1.0	-	-	Yes
1,2-Dichlorobenzene	22.9	ug/L	1.0	-	-	Yes
1,3-Dichlorobenzene	22.9	ug/L	1.0	-	-	Yes
1,4-Dichlorobenzene	22.9	ug/L	1.0	-	-	Yes
1,1-Dichloroethane	27.5	ug/L	1.0	-	-	Yes
1,2-Dichloroethane	24.2	ug/L	1.0	-	-	Yes
1,1-Dichloroethene	27.2	ug/L	1.0	-	-	Yes
cis-1,2-Dichloroethene	25.0	ug/L	1.0	-	-	Yes
trans-1,2-Dichloroethene	27.0	ug/L	1.0	-	-	Yes

1,2-Dichloropropane	24.2	ug/L	1.0	-	-	Yes
cis-1,3-Dichloropropene	22.9	ug/L	1.0	-	-	Yes
trans-1,3-Dichloropropene	25.2	ug/L	1.0	-	-	Yes
Ethylbenzene	27.2	ug/L	1.0	-	-	Yes
Freon 113	22.7	ug/L	1.0	-	-	Yes
2-Hexanone	141	ug/L	1.0	-	-	Yes
Isopropylbenzene	30.3	ug/L	1.0	-	-	Yes
p-Isopropyltoluene	27.5	ug/L	1.0	-	-	Yes
Methyl Acetate	124	ug/L	1.0	-	-	Yes
Methyl Bromide	22.6	ug/L	1.0	-	-	Yes
Methyl Chloride	24.4	ug/L	1.0	-	-	Yes
Methylcyclohexane	26.3	ug/L	1.0	-	-	Yes
Methylene chloride	24.9	ug/L	1.0	-	-	Yes
4-Methyl-2-pentanone(MIBK)	132	ug/L	1.0	-	-	Yes
Methyl Tert Butyl Ether	26.3	ug/L	1.0	-	-	Yes
Styrene	23.4	ug/L	1.0	-	-	Yes
Tert-Amyl Alcohol	220	ug/L	1.0	-	-	Yes
Ter-Butyl Alcohol	280	ug/L	1.0	-	-	Yes
1,1,2,2-Tetrachloroethane	23.6	ug/L	1.0	-	-	Yes
Tetrachloroethene	22.3	ug/L	1.0	-	-	Yes
Tetrahydrofuran	23.3	ug/L	1.0	-	-	Yes
Toluene	27.3	ug/L	1.0	-	-	Yes
1,2,3-Trichlorobenzene	23.3	ug/L	1.0	-	-	Yes
1,2,4-Trichlorobenzene	23.9	ug/L	1.0	-	-	Yes
1,1,1-Trichloroethane	24.1	ug/L	1.0	-	-	Yes
1,1,2-Trichloroethane	24.4	ug/L	1.0	-	-	Yes
Trichloroethene	25.0	ug/L	1.0	-	-	Yes
Trichlorofluoromethane	23.8	ug/L	1.0	-	-	Yes
1,2,4-Trimethylbenzene	27.1	ug/L	1.0	-	-	Yes
Vinyl chloride	26.3	ug/L	1.0	-	-	Yes
m,p-Xylene	52.9	ug/L	1.0	-	-	Yes
o-Xylene	24.3	ug/L	1.0	-	-	Yes

Sample ID: FA42031-7MSD (Batch: VP1851)
Sample location: BMSMC, Humacao, PR
Sampling date: 3/10/2017
Matrix: Groundwater

METHOD: 8260C

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Acetone	122	ug/L	1.0	-	-	Yes
Benzene	28.2	ug/L	1.0	-	-	Yes
Benzyl Chloride	18.6	ug/L	1.0	-	-	Yes
Bromochloromethane	22.9	ug/L	1.0	-	-	Yes
Bromodichloromethane	21.4	ug/L	1.0	-	-	Yes
Bromoform	17.6	ug/L	1.0	-	-	Yes
2-Butanone (MEK)	125	ug/L	1.0	-	-	Yes
Carbon disulfide	19.6	ug/L	1.0	-	-	Yes
Carbon tetrachloride	22.9	ug/L	1.0	-	-	Yes
Chlorobenzene	24.6	ug/L	1.0	-	-	Yes
Chloroethane	21.2	ug/L	1.0	-	-	Yes
Chloroform	24.1	ug/L	1.0	-	-	Yes
Cyclohexane	26.5	ug/L	1.0	-	-	Yes
Dibromochloromethane	19.0	ug/L	1.0	-	-	Yes
1,2-Dibromo-3-chloropropane	22.6	ug/L	1.0	-	-	Yes
1,2-Dibromoethane	23.3	ug/L	1.0	-	-	Yes
Dichlorodifluoromethane	23.9	ug/L	1.0	-	-	Yes
1,2-Dichlorobenzene	23.1	ug/L	1.0	-	-	Yes
1,3-Dichlorobenzene	22.8	ug/L	1.0	-	-	Yes
1,4-Dichlorobenzene	22.7	ug/L	1.0	-	-	Yes
1,1-Dichloroethane	27.1	ug/L	1.0	-	-	Yes
1,2-Dichloroethane	24.5	ug/L	1.0	-	-	Yes
1,1-Dichloroethene	26.2	ug/L	1.0	-	-	Yes
cis-1,2-Dichloroethene	25.1	ug/L	1.0	-	-	Yes

trans-1,2-Dichloroethene	26.7	ug/L	1.0	-	-	Yes
1,2-Dichloropropane	24.2	ug/L	1.0	-	-	Yes
cis-1,3-Dichloropropene	21.5	ug/L	1.0	-	-	Yes
trans-1,3-Dichloropropene	23.2	ug/L	1.0	-	-	Yes
Ethylbenzene	26.7	ug/L	1.0	-	-	Yes
Freon 113	21.9	ug/L	1.0	-	-	Yes
2-Hexanone	140	ug/L	1.0	-	-	Yes
Isopropylbenzene	30.1	ug/L	1.0	-	-	Yes
p-Isopropyltoluene	26.9	ug/L	1.0	-	-	Yes
Methyl Acetate	126	ug/L	1.0	-	-	Yes
Methyl Bromide	21.6	ug/L	1.0	-	-	Yes
Methyl Chloride	25.2	ug/L	1.0	-	-	Yes
Methylcyclohexane	25.6	ug/L	1.0	-	-	Yes
Methylene chloride	25.1	ug/L	1.0	-	-	Yes
4-Methyl-2-pentanone(MIBK)	133	ug/L	1.0	-	-	Yes
Methyl Tert Butyl Ether	26.6	ug/L	1.0	-	-	Yes
Styrene	22.7	ug/L	1.0	-	-	Yes
Tert-Amyl Alcohol	235	ug/L	1.0	-	-	Yes
Ter-Butyl Alcohol	295	ug/L	1.0	-	-	Yes
1,1,2,2-Tetrachloroethane	24.0	ug/L	1.0	-	-	Yes
Tetrachloroethene	21.7	ug/L	1.0	-	-	Yes
Tetrahydrofuran	23.6	ug/L	1.0	-	-	Yes
Toluene	26.5	ug/L	1.0	-	-	Yes
1,2,3-Trichlorobenzene	24.3	ug/L	1.0	-	-	Yes
1,2,4-Trichlorobenzene	24.6	ug/L	1.0	-	-	Yes
1,1,1-Trichloroethane	23.7	ug/L	1.0	-	-	Yes
1,1,2-Trichloroethane	24.0	ug/L	1.0	-	-	Yes
Trichloroethene	25.6	ug/L	1.0	-	-	Yes
Trichlorofluoromethane	22.2	ug/L	1.0	-	-	Yes
1,2,4-Trimethylbenzene	26.5	ug/L	1.0	-	-	Yes
Vinyl chloride	26.6	ug/L	1.0	-	-	Yes
m,p-Xylene	51.1	ug/L	1.0	-	-	Yes
o-Xylene	23.6	ug/L	1.0	-	-	Yes

DATA REVIEW WORKSHEETS

Project Number:_FA42031_____
Date:_____March_10_+_13,_2017____
Shipping date:__March_13,_2017_____
EPA Region:_____2_____

REVIEW OF VOLATILE ORGANIC PACKAGE
Low/Medium Volatile Data Validation

The following guidelines for evaluating volatile organics were created to delineate required validation actions. This document will assist the reviewer in using professional judgment to make more informed decision and in better serving the needs of the data users. The sample results were assessed according to USEPA data validation guidance documents in the following order of precedence: USEPA **Hazardous Waste Support Section SOP No. HW-33A Revision 0 SOM02.2. Low/Medium Volatile Data Validation**. July, 2015. The QC criteria and data validation actions listed on the data review worksheets are from the primary guidance document, unless otherwise noted.

The hardcopied (laboratory name) __Accutest_-_Orlando_____ data package received has been reviewed and the quality control and performance data summarized. The data review for VOCs included:

Lab. Project/SDG No.: __FA42031_____ Sample matrix: ___Groundwater_____
No. of Samples: _21_(VOA_TCL_list);_5_(1,3-butadiene_+_dichlorodifluoromethane)_____

Trip blank No.: _____FA42031-3;_ FA42031-8;_ FA42031-13;_ FA42031-14_____
Field blank No.: _____FA42031-16_____
Equipment blank No.:__FA42031-1_____
Field duplicate No.:____FA42031-2/ FA42031-6;_FA42031-10/ FA42031-11_____

___X___ Data Completeness
___X___ Holding Times
___X___ GC/MS Tuning
___X___ Internal Standard Performance
___X___ Blanks
___X___ Surrogate Recoveries
___X___ Matrix Spike/Matrix Spike Duplicate
___X___ Laboratory Control Spikes
___X___ Field Duplicates
___X___ Calibrations
___X___ Compound Identifications
___X___ Compound Quantitation
___X___ Quantitation Limits

_OverallComments:____VOA_from_the_special_list_(SW846_8260C)._____
_1,3-butadiene_and_dichlorodifluoromethane_were_analyzed_separately_(03/21/17)_____
_Sample_FA42031-7MS/-7MSD_analyzed_twice-for_confirmation_____

Definition of Qualifiers:

J- Estimated results
R- Rejected data
U- Compound not detected
UJ- Estimated nondetect

Reviewer: Rafael Infante
Date:___May_1,_2017_____

DATA REVIEW WORKSHEETS

DATA COMPLETENESS

MISSING INFORMATION	DATE LAB. CONTACTED	DATE RECEIVED

All criteria were met __X__
Criteria were not met
and/or see below _____

HOLDING TIMES

The objective of this parameter is to ascertain the validity of the results based on the holding time of the sample from time of collection to the time of analysis.

Complete table for all samples and note the analysis and/or preservation not within criteria

SAMPLE ID	DATE SAMPLED	DATE ANALYZED	pH	ACTION
All samples analyzed within method recommended holding. Samples properly preserved.				

Note: FA42031-13: Sample vial(s) contained bubbles greater than 6mm; reported results are considered minimum values.

Criteria

Aqueous samples – 14 days from sample collection for preserved samples (pH $\leq$ 2, 4$\pm$ 2°C), no air bubbles.
Aqueous samples – 7 days from sample collection for unpreserved samples, 4°C, no air bubbles.
Soil samples- 14 days from sample collection.
Cooler temperature (Criteria: 4 $\pm$ 2 °C): 3.0 - 3.8° C - OK

Actions

Aqueous samples

a. If there is no evidence that the samples were properly preserved (pH < 2, T = 4°C ± 2°C), but the samples were analyzed within the technical holding time [7 days from sample collection], no qualification of the data is necessary.
b. If there is no evidence that the samples were properly preserved, and the samples were analyzed outside of the technical holding time [7 days from sample collection], qualify detects for all volatile compounds as estimated (J) and non-detects as unusable (R).
c. If the samples were properly preserved, and the samples were analyzed within the technical holding time [14 days from sample collection], no qualification of the data is necessary.
d. If the samples were properly preserved, but were analyzed outside of the technical holding time [14 days from sample collection], qualify detects as estimated (J) and non-detects as unusable (R).
e. If air bubbles were present in the sample vial used for analysis, qualify detected compounds as estimated (J-) and non-detected compounds as estimated (UJ).

Non-aqueous samples

a. If there is no evidence that the samples were properly preserved (T < -7°C or T = 4°C ± 2°C and preserved with $NaHSO_4$), but the samples were analyzed within the technical holding time [14 days from sample collection], qualify detects for all volatile compounds as estimated (J) and non-detects as (UJ) or unusable (R) using professional judgment.
b. If the samples were properly preserved, and the samples were analyzed within the technical holding time [14 days from sample collection], no qualification of the data is necessary.
c. If there is no evidence that the samples were properly preserved, and the samples were analyzed outside of the technical holding time [14 days from sample collection], qualify detects for all volatile compounds as estimated (J) and non-detects as unusable (R).
d. If the samples were properly preserved, but were analyzed outside of the technical holding time [14 days from sample collection], qualify detects as estimated (J) and non-detects as unusable (R).

Qualify TCLP/SPLP samples

a. If the TCLP/SPLP ZHE procedure is performed within the extraction technical holding time of 14 days, detects and non-detects should not be qualified.
b. If the TCLP/SPLP ZHE procedure is performed outside the extraction technical holding time of 14 days, qualify detects as estimated (J) and non-detects as unusable (R).
c. If TCLP/SPLP aqueous samples and TCLP/SPLP leachate samples are analyzed within the technical holding time of 7 days, detects and non-detects should not be qualified.
d. If TCLP/SPLP aqueous samples and TCLP/SPLP leachate samples are analyzed outside of the technical holding time of 7 days, qualify detects as estimated (J) and non-detects as unusable (R).

Table 1. Holding Time Actions for Low/Medium Volatile Analyses - Summary

Matrix	Preserved	Criteria	Action	
			Detected Associated Compounds	Non-Detected Associated Compounds
Aqueous	No	≤ 7 days	No qualification	
	No	> 7 days	J	R
	Yes	≤ 14 days	No qualification	
	Yes	> 14 days	J	R
Non-Aqueous	No	≤ 14 days	J	Professional judgment. UJ or R
	Yes	≤ 14 days	No qualification	
	Yes/No	> 14 days	J	R
TCLP/SPLP	Yes	≤ 14 days	No qualification	
TCLP/SPLP	No	> 14 days	J	R

TCLP/SPLP	ZHE performed within the 14-day technical holding time	No qualification	
TCLP/SPLP	ZHE performed outside the 14-day technical holding time	J	R
TCLP/SPLP aqueous & TCLP/SPLP leachate	Analyzed within 7 days	No qualification	
TCLP/SPLP aqueous & TCLP/SPLP leachate	Analyzed outside 7 days	J	R
Sample temperature outside 4°C ± 2°C upon receipt at the laboratory		Use professional judgment	
Holding times grossly exceeded		J	R

All criteria were met __X__
Criteria were not met see below _____

GC/MS TUNING

The assessment of the tuning results is to determine if the sample instrumentation is within the standard tuning QC limits

__X___ The BFB performance results were reviewed and found to be within the specified criteria.

__X___ BFB tuning was performed for every 12 hours of sample analysis.

NOTES: All mass spectrometer instrument conditions must be identical to those used during the sample analysis. Background subtraction actions resulting in spectral distortions for the sole purpose of meeting the method specifications are contrary to the Quality Assurance (QA) objectives, and are therefore unacceptable.

NOTES: No data should be qualified based on BFB failure. Instances of this should be noted in the narrative.

All ion abundance ratios must be normalized to m/z 95, the nominal base peak, even though the ion abundance of m/z 174 may be up to 120% that of m/z 95.

Actions:

If samples are analyzed without a preceding valid instrument performance check, qualify all data in those samples as unusable (R).

If ion abundance criteria are not met, professional judgment may be applied to determine to what extent the data may be utilized. When applying professional judgment to this topic, the most important factors to consider are the empirical results that are relatively insensitive to location on the chromatographic profile and the type of instrumentation. Therefore, the critical ion abundance criteria for BFB are the m/z 95/96, 174/175, 174/176, and 176/177 ratios. The relative abundances of m/z 50 and 75 are of lower importance. This issue is more critical for Tentatively Identified Compounds (TICs) than for target analytes.

Note: State in the Data Review Narrative, decisions to use analytical data associated with BFB instrument performance checks not meeting contract requirements.

Note: Verify that that instrument instrument performance check criteria were achieved using techniques described in Low/Medium Volatiles Organic Analysis, Section II.D.5 of the SOM02.2 NFG, obtain additional information on the instrument performance checks. Make sure that background subtraction was performed from the BFB peak and not from background subtracting from the solvent front or from another region of the chromatogram.

Use professional judgment to determine whether associated data should be qualified based on the spectrum of the mass calibration compound.

List the samples affected:

_____
_____
_____
_____
_____
_____
_____

If mass calibration is in error, all associated data are rejected.

All criteria were met _____
Criteria were not met
and/or see below ___X___

CALIBRATION VERIFICATION

Compliance requirements for satisfactory instrument calibration are established to ensure that the instrument is capable of producing and maintaining acceptable quantitative data.

Date of initial calibration:_____02/28/17_____
Dates of continuing (initial) calibration:__02/28/17_____
Dates of continuing calibration:_____03/20/17_____
Dates of ending calibration:___02/28/17;_03/21/17_____
Instrument ID numbers:_____GCMSI_____
Matrix/Level:_____Aqueous/low_____

Date of initial calibration:_____03/20/17_____
Dates of continuing (initial) calibration:__03/20/17_____
Dates of continuing calibration:_____03/24/17;_03/25/17_____
Dates of ending calibration:_____03/20/17;_03/25/17_____
Instrument ID numbers:_____GCMSB_____
Matrix/Level:_____Aqueous/low_____

Date of initial calibration:_____03/18/17_____
Dates of continuing (initial) calibration:__03/18/17_____
Dates of continuing calibration:_____03/24/17_____
Dates of ending calibration:_____03/18/17;_03/24/17_____
Instrument ID numbers:_____GCMSP_____
Matrix/Level:_____Aqueous/low_____

DATE	LAB FILE ID#	CRITERIA OUT RFs, %RSD, **%D**, r	COMPOUND	SAMPLES AFFECTED
GCMSB				
03/24/17	CC4852-5	21.8	Dichlorodifluoromethane^	FA42031-1 to -5; FA42031-7 FA42031-7MS/-7MSD
03/25/17	CC4852-5	-45.4	Dichlorodifluoromethane	FA42031-6; -8
		-20.3	Trichlorofluoromethane^	
GCMSI				
03/20/17	CC1279-5	-36.9	Chloroethane ^	FA42031-1 to -4
		-56.9	Tetrachloroethene ^	
03/21/17	ecc1279-5	-73.3	Tetrachloroethene ^	
GCMSP				
03/21/17	icv1844-5	93.7	1,3-butadiene	FA42031-5 to -17
		28.8	Tert-butyl-alcohol	

DATE	LAB FILE ID#	CRITERIA OUT RFs, %RSD, %D, r	COMPOUND	SAMPLES AFFECTED
03/24/17	cc1844-5	-23.7	Carbon disulfide^	FA42031-5 to -17

Note: Initial calibration, initial calibration verification, and continuing calibration verification within the method and validation guidance document required performance criteria except for the cases described in this document. Closing calibration check verification included in data package.

Tetrachloroethene and chloroethene % difference were outside the method and guidance document performance criteria in the continuing and ending calibration verification analyzed on 03/20-21/17. No action take, tetrachloroethane and chloroethane were reported using the 03/24/17 initial calibration; % difference within method and guidance document performance criteria.

Dichlorodifluoromethane % difference was outside the method and guidance document performance criteria in the continuing calibration verification analyzed on 03/25/17. Results for dichlorodifluoromethane qualified as estimated (J or UJ) in affected samples.

1,3-butadiene and tert-butyl alcohol % difference were outside the method and guidance document performance criteria in the initial calibration verification analyzed on 03/18/17. Results for 1,3-butadiene and tert-butyl alcohol qualified as estimated (J or UJ) in affected samples.

^Analytes not meeting the % difference method performance criteria in the initial/continuing calibration verification but within the guidance document performance criteria. No qualification performed.

Criteria

The analyte calibration criteria in the following Table must be obtained. Analytes not meeting the criteria are qualified.

A separate worksheet should be filled for each initial curve.

Initial Calibration - Table 2. RRF, %RSD, and %D Acceptance Criteria for Initial Calibration and CCV for Low/Medium Volatile Analysis

Analyte	Minimum RRF	Maximum %RSD	Opening Maximum %D[1]	Closing Maximum %D
Dichlorodifluoromethane	0.010	25.0	±40.0	±50.0
Chloromethane	0.010	20.0	±30.0	±50.0
Vinyl chloride	0.010	20.0	±25.0	±50.0
Bromomethane	0.010	40.0	±30.0	±50.0
Chloroethane	0.010	40.0	±25.0	±50.0
Trichlorofluoromethane	0.010	40.0	±30.0	±50.0
1.1-Dichloroethene	0.060	20.0	±20.0	±25.0
1.1.2-Trichloro-1.2.2-trifluoroethane	0.050	25.0	±25.0	±50.0
Acetone	0.010	40.0	±40.0	±50.0
Carbon disulfide	0.100	20.0	±25.0	±25.0
Methyl acetate	0.010	40.0	±40.0	±50.0
Methylene chloride	0.010	40.0	±30.0	±50.0
trans-1.2-Dichloroethene	0.100	20.0	±20.0	±25.0
Methyl tert-butyl ether	0.100	40.0	±25.0	±50.0
1.1-Dichloroethane	0.300	20.0	±20.0	±25.0
cis-1.2-Dichloroethene	0.200	20.0	±20.0	±25.0
2-Butanone	0.010	40.0	±40.0	±50.0
Bromochloromethane	0.100	20.0	±20.0	±25.0
Chloroform	0.300	20.0	±20.0	±25.0
1.1.1-Trichloroethane	0.050	20.0	±25.0	±25.0
Cyclohexane	0.010	40.0	±25.0	±50.0
Carbon tetrachloride	0.100	20.0	±25.0	±25.0
Benzene	0.200	20.0	±20.0	±25.0
1.2-Dichloroethane	0.070	20.0	±20.0	±25.0
Trichloroethene	0.200	20.0	±20.0	±25.0
Methylcyclohexane	0.050	40.0	±25.0	±50.0
1.2-Dichloropropane	0.200	20.0	±20.0	±25.0
Bromodichloromethane	0.300	20.0	±20.0	±25.0
cis-1.3-Dichloropropene	0.300	20.0	±20.0	±25.0
4-Methyl-2-pentanone	0.030	25.0	±30.0	±50.0
Toluene	0.300	20.0	±20.0	±25.0
trans-1.3-Dichloropropene	0.200	20.0	±20.0	±25.0
1.1.2-Trichloroethane	0.200	20.0	±20.0	±25.0
Tetrachloroethene	0.100	20.0	±20.0	±25.0
2-Hexanone	0.010	40.0	±40.0	±50.0
Dibromochloromethane	0.200	20.0	±20.0	±25.0
1.2-Dibromoethane	0.200	20.0	±20.0	±25.0
Chlorobenzene	0.400	20.0	±20.0	±25.0
Ethylbenzene	0.400	20.0	±20.0	±25.0

Analyte	Minimum RRF	Maximum %RSD	Opening Maximum %D[1]	Closing Maximum
m,p-Xylene	0.200	20.0	±20.0	±25.0
o-Xylene	0.200	20.0	±20.0	±25.0
Styrene	0.200	20.0	±20.0	±25.0
Bromoform	0.100	20.0	±25.0	±50.0
Isopropylbenzene	0.400	20.0	±25.0	±25.0
1,1,2,2-Tetrachloroethane	0.200	20.0	±25.0	±25.0
1,3-Dichlorobenzene	0.500	20.0	±20.0	±25.0
1,4-Dichlorobenzene	0.600	20.0	±20.0	±25.0
1,2-Dichlorobenzene	0.600	20.0	±20.0	±25.0
1,2-Dibromo-3-chloropropane	0.010	25.0	±30.0	±50.0
1,2,4-Trichlorobenzene	0.400	20.0	±30.0	±50.0
1,2,3-Trichlorobenzene	0.400	25.0	±30.0	±50.0
Deuterated Monitoring Compound				
Vinyl chloride-d_3	0.010	20.0	±30.0	±50.0
Chloroethane-d_5	0.010	40.0	±30.0	±50.0
1,1-Dichloroethene-d_2	0.050	20.0	±25.0	±25.0
2-Butanone-d_5	0.010	40.0	±40.0	±50.0
Chloroform-d	0.300	20.0	±20.0	±25.0
1,2-Dichloroethane-d_4	0.060	20.0	±25.0	±25.0
Benzene-d_6	0.300	20.0	±20.0	±25.0
1,2-Dichloropropane-d_6	0.200	20.0	±20.0	±25.0
Toluene-d_8	0.300	20.0	±20.0	±25.0
trans-1,3-Dichloropropene-d_4	0.200	20.0	±20.0	±25.0
2-Hexanone-d_5	0.010	40.0	±40.0	±50.0
1,1,2,2-Tetrachloroethane-d_2	0.200	20.0	±25.0	±25.0
1,2-Dichlorobenzene-d_4	0.400	20.0	±20.0	±25.0

[1] If a closing CCV is acting as an opening CCV, all target analytes and DMCs must meet the requirements for an opening CCV.

Actions:

1. If any volatile target compound has an RRF value less than the minimum in the table, use professional judgment for detects, based on mass spectral identification, to qualify the data as estimated (J+ or R).
   a. If any volatile target compound has an RRF value less than the minimum criterion, qualify non-detected compounds as unusable (R).
   b. If any of the volatile target compounds listed in the Table has %RSD greater than the criteria, qualify detects as estimated (J), and non-detected compounds using professional judgment.
   c. If the volatile target compounds meet the acceptance criteria for RRF and the %RSD, no qualification of the data is necessary.

d. No qualification of the data is necessary on the DMC RRF and %RSD data alone. Use professional judgment and follow the guidelines in Action 2 to evaluate the DMC RRF and %RSD data in conjunction with the DMC recoveries to determine the need for qualification of data.

2. At the reviewer's discretion, and based on the project-specific Data Quality Objectives (DQOs), a more in-depth review may be considered using the following guidelines:
   a. If any volatile target compound has a %RSD greater than the maximum criterion in the Table, and if eliminating either the high or the low-point of the curve does not restore the %RSD to less than or equal to the required maximum:
      i. Qualify detects for that compound(s) as estimated (J).
      ii. Qualify non-detected volatile target compounds using professional judgment.
   b. If the high-point of the curve is outside of the linearity criteria (e.g., due to saturation):
      i. Qualify detects outside of the linear portion of the curve as estimated (J).
      ii. No qualifiers are required for detects in the linear portion of the curve.
      iii. No qualifiers are required for volatile target compounds that were not detected.
   c. If the low-point of the curve is outside of the linearity criteria:
      i. Qualify low-level detects in the area of non-linearity as estimated (J).
      ii. No qualifiers are required for detects in the linear portion of the curve.
      iii. For non-detected volatile compounds, use the lowest point of the linear portion of the curve to determine the new quantitation limit.

Note: If the laboratory has failed to provide adequate calibration information, inform the Region's designated representative to contact the laboratory and request the necessary information. If the information is not available, the reviewer must use professional judgment to assess the data.

State in the Data Review Narrative, if possible, the potential effects on the data due to calibration criteria exceedance.

Note, for the Laboratory COR action, if calibration criteria are grossly exceeded.

Table. Initial Calibration Actions for Low/Medium Volatile Analysis – Summary

Criteria	Action	
	Detect	Non-detect
Initial Calibration not performed at specified frequency and sequence	Use professional judgment R	Use professional judgment R
Initial Calibration not performed at the specified concentrations	J	UJ
RRF < Minimum RRF in Table for target analyte	Use professional judgment J+ or R	R
RRF > Minimum RRF in Table for target analyte	No qualification	No qualification
%RSD > Maximum %RSD in Table for target analyte	J	Use professional judgment
%RSD ≤ Maximum %RSD in Table for target analyte	No qualification	No qualification

All criteria were met _____
Criteria were not met
and/or see below ___X___

Continuing Calibration Verification (CCV)

NOTE: Verify that the CCV was run at the required frequency (an opening and closing CCV must be run within 12-hour period) and the CCV was compared to the correct initial calibration. If the mid-point standard from the initial calibration is used as an opening CCV, verify that the result (RRF) of the mid-point standard was compared to the average RRF from the correct initial calibration.

The closing CCV used to bracket the end of a 12-hour analytical sequence may be used as the opening CCV for the new 12-hour analytical sequence, provided that all the technical acceptance criteria are met for an opening CCV (see criteria show before in the Table) . If the closing CCV does not meet the technical acceptance criteria for an opening CCV, then a BFB tune followed by an opening CCV is required and the next 12-hour time period begins with the BFB tune.

All DMCs must meet RRF criteria. No qualification of the data is necessary on the DMCs RRF and %RSD/%D data alone. However, use professional judgment to evaluate the DMC and %RSD/%D data in conjunction with the DMC recoveries to determine the need of qualification the data.

Action:

1. If a CCV (opening and closing) was not run at the appropriate frequency, qualify data using professional judgment.

2. Qualify all volatile target compounds in Table shown before using the following criteria:

   a. For an opening CCV, if any volatile target compound has an RRF value less than the minimum criterion, use professional judgment for detects, based on mass spectral identification, to qualify the data as estimated (J) and qualify non-detected compounds as unusable (R).
   b. For a closing CCV, if any volatile target compound has an RRF value less than the criteria, use professional judgment for detects based on mass spectral identification to qualify the data as estimated (J), and qualify non-detected compounds as unusable (R).
   c. For an opening CCV, if the Percent Difference value for any of the volatile target compounds is outside the limits in calibration criteria Table shown before, qualify detects as estimated (J) and non-detected compounds as estimated (UJ).
   d. For a closing CCV, if the Percent Difference value for any volatile target compound is outside the limits in calibration criteria table, qualify detects as estimated (J) and non-detected compounds as estimated (UJ).
   e. If the volatile target compounds meet the acceptable criteria for RRF and the Percent Difference, no qualification of the data is necessary.

f. No qualification of the data is necessary on the DMC RRF and the Percent Difference data alone. Use professional judgment to evaluate the DMC RRF and Percent Difference data in conjunction with the DMC recoveries to determine the need for qualification of data.

Notes: If the laboratory has failed to provide adequate calibration information, inform the Region's designated representative to contact the laboratory and request the necessary information. If the information is not available, the reviewer must use professional judgment to assess the data.

State in the Data Review Narrative, if possible, the potential effects on the data due to calibration criteria exceedance.

Note, for Contract Laboratory COR action, if calibration criteria are grossly exceeded.

Table. Continuing Calibration Actions for Low/Medium Volatile Analysis – Summary

Criteria for Opening CCV	Criteria for Closing CCV	Action	
		Detect	Non-detect
CCV not performed at required frequency	CCV not performed at required frequency	Use professional judgment R	Use professional judgment R
CCV not performed at specified concentration	CCV not performed at specified concentration	Use professional judgment	Use professional judgment
RRF < Minimum RRF in Table 2 for target analyte	RRF < Minimum RRF in Table for target analyte	Use professional judgment J or R	R
RRF ≥ Minimum RRF in Table 2 for target analyte	RRF ≥ Minimum RRF in Table for target analyte	No qualification	No qualification
%D outside the Opening Maximum %D limits in Table 2 for target analyte	%D outside the Closing Maximum %D limits in Table for target analyte	J	UJ
%D within the inclusive Opening Maximum %D limits in Table 2 for target analyte	%D within the inclusive Closing Maximum %D limits in Table for target analyte	No qualification	No qualification

All criteria were met _____
Criteria were not met
and/or see below ____X___

BLANK ANALYSIS RESULTS (Sections 1 & 2)

The assessment of the blank analysis results is to determine the existence and magnitude of contamination problems. The criteria for evaluation of blanks apply only to blanks associated with the samples, including trip, equipment, and laboratory blanks. If problems with any blanks exist, all data associated with the case must be carefully evaluated to determine whether or not there is an inherent variability in the data for the case, or if the problem is an isolated occurrence not affecting other data.

List the contamination in the blanks below. High and low levels blanks must be treated separately.

The concentration of a target analyte in any blank must not exceed its Contract Required Quantitation Limit (CRQL) (2x CRQLs for Methylene chloride, Acetone, and 2-Butanone). TIC concentration in any blanks must be ≤ 5.0 µg/L for water (0.0050 mg/L for TCLP leachate) and ≤ 5.0 µg/kg for soil matrices.

Laboratory blanks

The method blank, like any other sample in the SDG, must meet the technical acceptance criteria for sample analysis.

DATE ANALYZED	LAB ID	LEVEL/ MATRIX	COMPOUND	CONCENTRATION UNITS
_No_target_analyte_detected_in_method_blanks._				

Field/Equipment/Trip blank

If field or trip blanks are present, the data reviewer should evaluate this data in a similar fashion as the method blanks.

DATE ANALYZED	LAB ID	LEVEL/ MATRIX	COMPOUND	CONCENTRATION UNITS
_No_ftarget_analytes_detected_in_the_trip/field/equipment_blanks_analyzed_associated_with_this_ _data_package_except_for_the_followings._Target_analytes_detected_in_trip_blank._				
_03/24/17	FA42031-3	Aq./low	Toluene	0.65_ug/l_(J)
_03/24/17	FA42031-5	Aq./low	Toluene	0.45_ug/l_(J)
_03/24/17	FA42031-8	Aq./low	Toluene	1.4_ug/l
_03/24/17	FA42031-13	Aq./low	Toluene	0.79_ug/l_(J)
_03/24/17	FA42031-14	Aq./low	Toluene	1.6_ug/l

Note: No action taken, toluene not detected in sample batch. No qualification is needed.

All criteria were met __X___
Criteria were not met
and/or see below _____

BLANK ANALYSIS RESULTS (Section 3)

Blank Actions

Note: All fields blank results associated with a particular group of samples (may exceed one per case) must be used to qualify data. Trip blanks are used to qualify only those samples with which they were shipped. Blanks may not be qualified because of contamination in another blank. Field blanks and trip blanks must be qualified for system monitoring compounds, instrument performance criteria, and spectral or calibration QC problems.

Samples taken from a drinking water tap do not have associated field blanks.

When applied as described in the Table below, the contaminant concentration in the blank is multiplied by the sample dilution factor.

Table. Blank and TCLP/SPLP LEB Actions for Low/Medium Volatile Analysis

Blank Type	Blank Result	Sample Result	Action for Samples
Method. Storage. Field. Trip. TCLP/SPLP LEB. Instrument**	Detects	Not detected	No qualification required
	< CRQL *	< CRQL*	Report CRQL value with a U
		≥ CRQL*	No qualification required
	> CRQL *	< CRQL*	Report CRQL value with a U
		≥ CRQL* and ≤ blank concentration	Report blank value for sample concentration with a U
		≥ CRQL* and > blank concentration	No qualification required
	= CRQL*	≤ CRQL*	Report CRQL value with a U
		> CRQL*	No qualification required
	Gross contamination	Detects	Report blank value for sample concentration with a U

* 2x the CRQL for methylene chloride, 2-butanone and acetone.
** Qualifications based on instrument blank results affect only the sample analyzed immediately after the sample that has target compounds that exceed the calibration range or non-target compounds that exceed 100 µg/L.

Action Levels (ALs) should be based upon the highest concentration of contaminant determined in any blank. Do not qualify any blank with another blank. The ALs for samples which have been diluted should be corrected for the sample dilution factor and/or % moisture, where applicable. No positive sample results should be reported unless the concentration of the compound in the samples exceeds the ALs:

Notes:

High and low level blanks must be treated separately
Compounds qualified "U" for blank contamination are still considered "hits" when qualifying for calibration criteria.

CONTAMINATION SOURCE/LEVEL	COMPOUND	CONC/UNITS	AL/UNITS	SQL	AFFECTED SAMPLES

All criteria were met __X__
Criteria were not met
and/or see below _____

DEUTERATED MONITORING COMPOUNDS (DMCs)

Laboratory performance of individual samples is established by evaluation of surrogate spike (DMCs) recoveries. All samples are spiked with surrogate compounds prior to sample analysis. The accuracy of the analysis is measured by the surrogate percent recovery. Since the effects of the sample matrix are frequently outside the control of the laboratory and may present relatively unique problems, the validation of data is frequently subjective and demands analytical experience and professional judgment.

Table. Volatile Deuterated Monitoring Compounds (DMCs) and Recovery Limits

DMC	%R for Water Sample	%R for Soil Sample
Vinyl chloride-d3	60-135	30-150
Chloroethane-d5	70-130	30-150
1.1-Dichloroethene-d2	60-125	45-110
2-Butanone-d5	40-130	20-135
Chloroform-d	70-125	40-150
1.2-Dichloroethane-d4	70-125	70-130
Benzene-d6	70-125	20-135
1.2-Dichloropropane-d6	70-120	70-120
Toluene-d8	80-120	30-130
trans-1.3-Dichloropropene-d4	60-125	30-135
2-Hexanone-d5	45-130	20-135
1.1.2.2-Tetrachloroethane-d2	65-120	45-120
1.2-Dichlorobenzene-d4	80-120	75-120

NOTE: The recovery limits for any of the compounds listed in the above Table may be expanded at any time during the period of performance if the United States Environmental Protection Agency (EPA) determines that the limits are too restrictive.

Action:

Are recoveries for DMCs in volatile samples and blanks must be within the limits specified in the Table above. Yes? or No?

NOTE: The recovery limits for any of the compounds listed in the Table above may be expanded at any time during the period of performance if USEPA determines that the limits are too restrictive.

List the DMCs that may fail to meet the recovery limits

Sample ID	Date	DMCs	% Recovery	Action

Note: DMCs recoveries within the laboratory required control limits and within the guidance document performance criteria (80 – 120). Other non-deuterated surrogates added to the samples within laboratory control limits.

Note: Any sample which has more than 3 DMCs outside the limits must be reanalyzed.

Action:

1. For any recovery greater than the upper acceptance limit:
   a. Qualify detected associated volatile target compounds as estimated high (J+).
   b. Do not qualify non-detected associated volatile target compounds.
2. For any recovery greater than or equal to 10%, and less than the lower acceptance limit:
   a. Qualify detected associated volatile target compounds as estimated low (J-).
   b. Qualify non-detected associated volatile target compounds as estimated (UJ).
3. For any recovery less than 10%:
   a. Qualify detected associated volatile target compounds as estimated low (J-).
   b. Qualify non-detected associated volatile target compounds as unusable (R).
4. For any recovery within acceptance limits, no qualification of the data is necessary.
5. In the special case of a blank analysis having DMCs out of specification, the reviewer must give special consideration to the validity of associated sample data. The basic concern is whether the blank problems represent an isolated problem with the blank alone, or whether there is a fundamental problem with the analytical process. For example, if one or more samples in the batch show acceptable DMC recoveries, the reviewer may choose to consider the blank problem to be an isolated occurrence. However, even if this judgment allows some use of the affected data, note analytical problems for Contract Laboratory COR action.
6. If more than three DMCs are outside of the recovery limits for Low/Medium volatiles analysis and the sample was not reanalyzed, note under Contract Problems/Non-Compliance.

Table. Deuterated Monitoring Compound (DMC) Recovery Actions for Low/Medium Volatiles Analyses – Summary

Criteria	Action	
	Detect Associated Compounds	Non-detected Associated Compounds
%R < 10%	J-	R
10% ≤ %R < Lower Acceptance Limit	J-	UJ
Lower Acceptance Limit ≤ %R ≤ Upper Acceptance Limit	No qualification	No qualification
%R > Upper Acceptance Limit	J+	No qualification

TABLE. VOLATILE DEUTERATED MONITORING COMPOUNDS (DMCs) AND THE ASSOCIATED TARGET COMPOUNDS

Vinyl chloride-d_3 (DMC-1)	**Chloroethane-d_5 (DMC-2)**	**1,1-Dichloroethene-d_2 (DMC-3)**
Vinyl chloride	Dichlorodifluoromethane Chloromethane Bromomethane Chloroethane Carbon disulfide	trans-1,2-Dichloroethene cis-1,2-Dichloroethene 1,1-Dichloroethene
2-Butanone-d_5 (DMC-4)	**Chloroform-d (DMC-5)**	**1,2-Dichloroethane-d_4 (DMC-6)**
Acetone 2-Butanone	1,1-Dichloroethane Bromochloromethane Chloroform Dibromochloromethane Bromoform	Trichlorofluoromethane 1,1,2-Trichloro-1,2,2-trifluoroethane Methyl acetate Methylene chloride Methyl-tert-butyl ether 1,1,1-Trichloroethane Carbon tetrachloride 1,2-Dibromoethane 1,2-Dichloroethane
Benzene-d_6 (DMC-7)	**1,2-Dichloropropane-d_6 (DMC-8)**	**Toluene-d_8 (DMC-9)**
Benzene	Cyclohexane Methylcyclohexane 1,2-Dichloropropane Bromodichloromethane	Trichloroethene Toluene Tetrachloroethene Ethylbenzene o-Xylene m,p-Xylene Styrene Isopropylbenzene
trans-1,3-Dichloropropene-d_4 (DMC-10)	**2-Hexanone-d_5 (DMC-11)**	**1,1,2,2-Tetrachloroethane-d_2 (DMC-12)**
cis-1,3-Dichloropropene trans-1,3-Dichloropropene 1,1,2-Trichloroethane	4-Methyl-2-pentanone 2-Hexanone	1,1,2,2,-Tetrachloroethane 1,2-Dibromo-3-chloropropane
1,2-Dichlorobenzene-d_4 (DMC-13)		
Chlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,2-Dichlorobenzene 1,2,4-Trichlorobenzene 1,2,3-Trichlorobenzene		

All criteria were met ___X_____
Criteria were not met
and/or see below _____

MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD)

This data is generated to determine long term precision and accuracy in the analytical method for various matrices. This data alone cannot be used to evaluate the precision and accuracy of individual samples. If any % R in the MS or MSD falls outside the designated range, the reviewer should determine if there are matrix effects, i.e. LCS data are within the QC limits but MS/MSD data are outside QC limit.

NOTES: Data for MS and MSDs will not be present unless requested by the Region. Notify the Contract Laboratory COR if a field or trip blank was used for the MS and MSD.

For a Matrix Spike that does not meet criteria, apply the action to only the field sample used to prepare the Matrix Spike sample. If it is clearly stated in the data validation materials that the samples were taken through incremental sampling or some other method guaranteeing the homogeneity of the sample group, then the entire sample group may be qualified.

1. MS/MSD Recoveries and Precision Criteria

The laboratory should use one MS and a duplicate analysis of an unspiked field sample if target analytes are expected in the sample. If target analytes are not expected, MS/MSD should be analyzed.

List the %Rs, RPD of the compounds which do not meet the criteria.

Sample ID:_ FA42031-7MS/-7MSD____ Matrix/Level:__Groundwater___
Sample ID:_ FA41960-5MS/-5MSD____ Matrix/Level:__Groundwater___

The QC reported here applies to the following samples: Method: **SW846 8260C**
FA42031-1, FA42031-2, FA42031-3, FA42031-4, FA42031-5

Compound	FA42031-7 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/j	MSD ug/l	MSD %	RPD	Limits Rec/RPD
Acetone	ND		125	104	83	125	130	104	22*	50-147/21
Bromoform	ND		25	17.4	70	25	21.9	88	23*	66-123/21
Butanone (MEK)	ND		125	103	82	125	135	108	27*	56-143/18
1,2-Dibromo-3-chloropropane	ND		25	22.1	88	25	27.3	109	21*	64-123/18
1,2-Dibromoethane	ND		25	23.9	96	25	27.5	110	14*	75-120/13
1,2-Dichloroethane	ND		25	26.1	104	25	30.3	121	15*	75-125/14
trans-1,2-Dichloroethylene	ND		25	29.7	119	25	32.0	128*	7	76-127/17
2-Hexanone	ND		125	102	82	125	128	102	23*	61-129/18
Methyl Acetate	ND		125	103	82	125	131	105	24*	65-126/18
4-Methyl-2-pentanone (MIBK)	ND		125	105	84	125	135	108	25*	66-122/16
Methyl Tert Butyl Ether	2.3		25	25.4	92	25	31.8	118*	22*	72-117/14
Tert-Amyl Alcohol	ND		250	204	82	250	259	104	24*	65-124/23

Compound	FA42031-7 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/j	MSD ug/l	MSD %	RPD	Limits Rec/RPD
1,1,2,2-Tetrachloroethane	ND		25	20.7	83	25	25.6	102	21*	72-120/14
Tetrahydrofuran	ND		25	20.0	80	25	25.3	101	23*	56-122/21
1,1,2-Trichloroethane	ND		25	23.2	93	25	27.2	109	16*	76-119/14

Compound	FA42031-7 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
Dibromochloromethane	ND		25	19.4	78	25	19.0	76*	2	78-122/19

* - outside laboratory control limits.

Note: MS/MSD % recovery and RPD within laboratory control limits except for the cases described in this document. No qualifications made base on RPD results, professional judgment. No action taken on analytes having the MSD % recovery outside laboratory control limit, professional judgment.

Note:

* QC limits are laboratory in-house performance criteria, LL = lower limit, UL = upper limit.
* If QC limits are not available, use limits of 70 – 130 %.

Actions:

1. No qualification of the data is necessary on MS and MSD data alone. However, using professional judgment, the validator may use the MS and MSD results in conjunction with other QC criteria and determine the need for some qualification of the data.

QUALITY	%R < LL	%R > UL
Positive results	J	J
Nondetects results	R	Accept

MS/MSD criteria apply only to the unspiked sample, its dilutions, and the associated MS/MSD samples:

If the % R for the affected compounds were < LL (or 70 %), qualify positive results (J) and nondetects (UJ).
If the % R for the affected compounds were > UL (or 130 %), only qualify positive results (J).
If 25 % or more of all MS/MSD %R were < LL (or 70 %) or if two or more MS/MSD %Rs were < 10%, qualify all positive results (J) and reject nondetects (R).

A separate worksheet should be used for each MS/MSD pair.

All criteria were met __X___
Criteria were not met
and/or see below _____

LABORATORY CONTROL SAMPLE (LCS) ANALYSIS

This data is generated to determine accuracy of the analytical method for various matrices.

1. LCS Recoveries Criteria

Where LCS spiked with the same analyte at the same concentrations as the MS/MSD? **Yes** or No. If no make note in data review memo.
List the %R of compounds which do not meet the criteria

LCS ID COMPOUND % R QC LIMIT

Recoveries(blank_spike)_within_laboratory_control_limits._____

Note:

* QC limits are laboratory in-house performance criteria, LL = lower limit, UL = upper limit.
* If QC limits are not available, use limits of 70 – 130 %.

Actions:

QUALITY	%R < LL	%R > UL
Positive results	J	J
Nondetects results	R	Accept

All analytes in the associated sample results are qualified for the following criteria.

If 25 % of the LCS recoveries were < LL (or 70 %), qualify all positive results (j) and reject nondetects (R).
If two or more LCS were below 10 %, qualify all positive results as (J) and reject nondetects (R).

2. Frequency Criteria:

Where LCS analyzed at the required frequency and for each matrix? Yes or No.
If no, the data may be affected. Use professional judgment to determine the severity of the effect and qualify data accordingly. Discuss any actions below and list the samples affected.

All criteria were met ___X___
Criteria were not met
and/or see below _____

IX. FIELD/LABORATORY DUPLICATE PRECISION

Sample IDs: __ FA42031-2/FA42031-6___ Matrix:___Groundwater__
Sample IDs: __ FA42031-10/FA42031-11_ Matrix:___Groundwater__

Field/laboratory duplicates samples may be taken and analyzed as an indication of overall precision. These analyses measure both field and lab precision; therefore, the results may have more variability than laboratory duplicates which only laboratory performance. It is also expected that soil duplicate results will have a greater variance than water matrices due to difficulties associated with collecting identical field duplicate samples.

The project QAPP should be reviewed for project-specific information.

NOTE: In the absence of QAPP guidance for validating data from field duplicates, the following action will be taken.

Identify which samples within the data package are field duplicates. Estimate the relative percent difference (RPD) between the values for each compound. Use professional judgment to note large RPDs (> 50%) in the narrative.

COMPOUND	SQL	SAMPLE CONC.	DUPLICATE CONC.	RPD	ACTION
Field duplicate analyzed with this data package. RPD within required criteria, ≤ 50 % for target analytes detected at concentration > 5x the SQL.					

Actions:

Qualify as estimated positive results (J) and nondetects (UJ) for the compound that exceeded the above criteria. For organics, only the sample and duplicate will be qualified.

If an RPD cannot be calculated because one or both of the sample results is not detected, the following actions are suggested based on professional judgment:

If one sample result is not detected and the other is greater than 5x the SQL qualify (J/UJ).

If one sample value is not detected and the other is greater than 5x the SQL and the SQLs for the sample and duplicate are significantly different, use professional judgment to determine if qualification is appropriate.

If one sample value is not detected and the other is less than 5x, use professional judgment to determine if qualification is appropriate.

If both sample and duplicate results are not detected, no action is needed.

All criteria were met ___X___
Criteria were not met
and/or see below _____

X. INTERNAL STANDARD PERFORMANCE

The assessment of the internal standard (IS) parameter is used to assist the data reviewer in determining the condition of the analytical instrumentation.

DATE	SAMPLE ID	IS OUT	IS AREA	ACCEPTABLE RANGE	ACTION
Internal standard area within laboratory control limits.					

Action:

1. If an internal standard area count for a sample or blank is greater than 200.0% of the area for the associated standard (opening CCV or mid-point standard from initial calibration) (see Table below):
   a. Qualify detects for compounds quantitated using that internal standard as estimated low (J-).
   b. Do not qualify non-detected associated compounds.
2. If an internal standard area count for a sample or blank is less than 20.0% of the area for the associated standard (opening CCV or mid-point standard from initial calibration):
   a. Qualify detects for compounds quantitated using that internal standard as estimated high (J+).
   b. Qualify non-detected associated compounds as unusable (R).
3. If an internal standard area count for a sample or blank is greater than or equal to 20.0%, and less than or equal to 200% of the area for the associated standard opening CCV or mid-point standard from initial calibration, no qualification of the data is necessary.
4. If an internal standard RT varies by more than 30.0 seconds: Examine the chromatographic profile for that sample to determine if any false positives or negatives exist. For shifts of a large magnitude, the reviewer may consider partial or total rejection of the data for that sample fraction. Detects should not need to be qualified as unusable (R) if the mass spectral criteria are met.
5. If an internal standard RT varies by less than or equal to 30.0 seconds, no qualification of the data is necessary.

Note: Inform the Contract Laboratory Program Project Officer (CLP PO) if the internal standard performance criteria are grossly exceeded. Note in the Data Review Narrative potential effects on the data resulting from unacceptable internal standard performance.

6. If required internal standard compounds are not added to a sample or blank, qualify detects and non-detects as unusable (R).
7. If the required internal standard compound is not analyzed at the specified concentration in a sample or blank, use professional judgment to qualify detects and non-detects.

Table. Internal Standard Actions for Low/Medium Volatiles Analyses - Summary

Criteria	Action	
	Detected Associated Compounds*	Non-detected Associated Compounds*
Area counts > 200% of 12-hour standard (opening CCV or mid-point standard from initial calibration)	J-	No qualification
Area counts < 20% of 12-hour standard (opening CCV or mid-point standard from initial calibration)	J–	R
Area counts ≥ 50% but ≤ 200% of 12-hour standard (opening CCV or mid-point standard from initial calibration)	No qualification	
RT difference > 30.0 seconds between samples and 12-hour standard (opening CCV or mid-point standard from initial calibration)	R **	R
RT difference ≤ 30.0 seconds between samples and 12-hour standard (opening CCV or mid-point standard from initial calibration)	No qualification	

* For volatile compounds associated to each internal standard, see TABLE - VOLATILE TARGET ANALYTES, DEUTERATED MONITORING COMPOUNDS WITH ASSOCIATED INTERNAL STANDARDS FOR QUANTITATION in SOM02.2, Exhibit D, available at: http://www.epa.gov/superfund/programs/clp/download/som/som22d.pdf
** Detects should not need to be qualified as unusable (R) if the mass spectral criteria are met.

All criteria were met __X__
Criteria were not met
and/or see below _____

TARGET COMPOUND IDENTIFICATION

Criteria:

Is the Relative Retention Times (RRTs) of reported compounds within ±0.06 RRT units of the standard RRT [opening Continuing Calibration Verification (CCV) or mid-point standard from the initial calibration]. **Yes**? or No?

List compounds not meeting the criteria described above:

Sample ID	Compounds	Actions

Mass spectra of the sample compound and a current laboratory-generated standard [i.e., the mass spectrum from the associated calibration standard (opening CCV or mid-point standard from initial calibration)] must match according to the following criteria:

a. All ions present in the standard mass spectrum at a relative intensity greater than 10% must be present in the sample spectrum.
b. The relative intensities of these ions must agree within ±20% between the standard and sample spectra (e.g., for an ion with an abundance of 50% in the standard spectrum, the corresponding sample ion abundance must be between 30-70%).
c. Ions present at greater than 10% in the sample mass spectrum, but not present in the standard spectrum, must be evaluated by a reviewer experienced in mass spectral interpretation.

List compounds not meeting the criteria described above:

Sample ID	Compounds	Actions

Action:

1. The application of qualitative criteria for GC/MS analysis of target compounds requires professional judgment. It is up to the reviewer's discretion to obtain additional information from the laboratory. If it is determined that incorrect identifications were made, qualify all such data as unusable (R).

2. Use professional judgment to qualify the data if it is determined that cross-contamination has occurred.

3. Note in the Data Review Narrative any changes made to the reported compounds or concerns regarding target compound identifications. Note, for Contract Laboratory COR action, the necessity for numerous or significant changes.

TENTATIVELY IDENTIFIED COMPOUNDS (TICS)

NOTE: Tentatively identified compounds should only be evaluated when requested by a party from outside of the Hazardous Waste Support Section (HWSS).

List TICs

Sample ID	Compound	Sample ID	Compound

Action:

1. Qualify all TIC results for which there is presumptive evidence of a match (e.g. greater than or equal to 85% match) as tentatively identified (NJ), with approximated concentrations. TICs labeled "unknown" are qualified as estimated (J).
2. General actions related to the review of TIC results are as follows:
   a. If it is determined that a tentative identification of a non-target compound is unacceptable, change the tentative identification to "unknown" or another appropriate identification, and qualify the result as estimated (J).
   b. If all contractually-required peaks were not library searched and quantitated, the Region's designated representative may request these data from the laboratory.
3. In deciding whether a library search result for a TIC represents a reasonable identification, use professional judgment. If there is more than one possible match, report the result as "either compound X or compound Y". If there is a lack of isomer specificity, change the TIC result to a nonspecific isomer result (e.g., 1,3,5-trimethyl benzene to trimethyl benzene

isomer) or to a compound class (e.g., 2-methyl, 3-ethyl benzene to a substituted aromatic compound).

4. The reviewer may elect to report all similar compounds as a total (e.g., all alkanes may be summarized and reported as total hydrocarbons).
5. Target compounds from other fractions and suspected laboratory contaminants should be marked as "non-reportable".
6. Other Case factors may influence TIC judgments. If a sample TIC match is poor, but other samples have a TIC with a valid library match, similar RRT, and the same ions, infer identification information from the other sample TIC results.
7. Note in the Data Review Narrative any changes made to the reported data or any concerns regarding TIC identifications.
8. Note, for Contract Laboratory COR action, failure to properly evaluate and report TICs

All criteria were met __X__
Criteria were not met
and/or see below _____

SAMPLE QUANTITATION AND REPORTED CONTRACT REQUIRED QUANTITATION LIMITS (CRQLS)

Action:

1. If any discrepancies are found, the Region's designated representative may contact the laboratory to obtain additional information that could resolve any differences. If a discrepancy remains unresolved, the reviewer must use professional judgment to decide which value is the most accurate. Under these circumstances, the reviewer may determine that qualification of data is warranted. Note in the Data Review Narrative a description of the reasons for data qualification and the qualification that is applied to the data.
2. For non-aqueous samples, in the percent moisture is less than 70.0%, no qualification of the data is necessary. If the percent moisture is greater than or equal to 70.0% and less than 90.0%, qualify detects as estimated (J) and non-detects as approximated (UJ). If the percent moisture is greater than or equal to 90.0%, qualify detects as estimated (J) and non-detects as unusable (R) (see Table below).
3. Note, for Contract Laboratory COR action, numerous or significant failures to accurately quantify the target compounds or to properly evaluate and adjust CRQLs.
4. Results between MDL and CRQL should be qualified as estimated "J".
5. Results < MDL should be reported at the CRQL and qualified "U". MDLs themselves are not reported.

Table. Percent Moisture Actions for Low/Medium Volatiles Analysis for Non-Aqueous Samples

Criteria	**Action**	
	Detected Associated Compounds	**Non-detected Associated Compounds**
% Moisture < 70.0	No qualification	
70.0 < % Moisture < 90.0	J	UJ
% Moisture > 90.0	J	R

The sample quantitation evaluation is to verify laboratory quantitation results. In the space below, please show a minimum of one sample calculation:

Sample ID

FA42031-2 Chlorobenzene RF = 1.126

[ ] = (20155)(50)/(1.126)(766770) = 1.17 ppb Ok

All criteria were met __X__
Criteria were not met
and/or see below _____

B. Percent Solids

List samples which have ≥ 70 % solids

_____
_____
_____
_____
_____
_____

QUANTITATION LIMITS

A. Dilution performed

SAMPLE ID	DILUTION FACTOR	REASON FOR DILUTION

All criteria were met __X__
Criteria were not met
and/or see below _____

OTHER ISSUES

A. System Performance

List samples qualified based on the degradation of system performance during simple analysis:

Sample ID	Comments	Actions
_____	_____	_____
_No_degradation_of_system_performance_observed.		_____
_____	_____	_____
_____	_____	_____

Action:

Use professional judgment to qualify the data if it is determined that system performance has degraded during sample analyses. Inform the Contract Laboratory Program COR any action as a result of degradation of system performance which significantly affected the data.

B. Overall Assessment of Data

List samples qualified based on other issues:

Sample ID	Comments	Actions
_____	_____	_____
_No_additional_issues_observed_that_require_qualification_of_the_data_except_for_the_cases___ _described_in_this_document._Results_are_valid_and_can_be_used_for_decission_purposes.____		
_____	_____	_____

Note: 1,3-butadiene was not added to the blank spike mixture and the matrix spike/matrix spike duplicate mixture. Results are qualified as estimated (J or UJ) in all samples>

Action:

1. Use professional judgment to determine if there is any need to qualify data which were not qualified based on the Quality Control (QC) criteria previously discussed.
2. Write a brief narrative to give the user an indication of the analytical limitations of the data. Inform the Contract Laboratory COR the action, any inconsistency of the data with the Sample Delivery Group (SDG) Narrative. If sufficient information on the intended use and required quality of the data is available, the reviewer should include their assessment of the usability of the data within the given context. This may be used as part of a formal Data Quality Assessment (DQA).

EXECUTIVE NARRATIVE

SDG No:	FA42031	Laboratory:	Accutest, Orlando
Analysis:	SW846-8270D	Number of Samples:	15 Scan/20 SIM
Location:	BMSMC, Humacao, PR		

SUMMARY: Fifteen (15) samples were analyzed for SVOCs Special TCL list following method SW846-8270D. Twenty (20) samples were analyzed for selected PAHs and 1,4-Dioxane by SW846-8270D using the selective ion monitoring (SIM) technique; samples were analyzed separately for each analyte group. Samples FA42031-7 and on were analyzed only for 1,4-dioxane. The sample results were assessed according to USEPA data validation guidance documents in the following order of precedence: EPA Hazardous Waste Support Section, SOP HW-35A, July 2015 –Revision 0. Semivolatile Data Validation. The QC criteria and data validation actions listed on the data review worksheets are from the primary guidance document, unless otherwise noted.

Results are valid and can be used for decision making purposes.

Critical issues: **None**
Major: **None**
Minor: **None**

Critical findings: **None**
Major findings: **None**
Minor findings:

1. The following samples were extracted outside of holding time for method SW846 8270D BY SIM:- FA42031-12 and FA42031-15. Samples re-extracted beyond hold time; re-extract results reported due to suspected laboratory contamination in original extract. No qualification made in samples professional judgment.

2. Initial and continuing calibration verifications meet the method and guidance document required performance criteria except for the cases described in the data Review Worksheet.

Analytes not meeting the method performance criteria but within the guidance document performance criteria were not qualified.

No closing calibration verification included in data package for instruments GCMSU (SIM), and GCMSL (SCAN). No action taken, professional judgment.

Analytes not meeting the method and guidance document performance criteria are qualified as estimated (J or UJ) in affected samples.

Instrument GCMS4D used for the analysis of QC samples.

3. No target analytes detected in method blanks except for the cases described in the Data Review Worksheet. Laboratory qualified the result with a B. No further qualification performed professional judgment.

1,4-dioxane detected in sample FA42031-5 (field blank); 1,4-dioxane detected in sample FA42031-4 that corresponds to this field blank. Reported concentrations is higher than the reporting limit. 1,4-dioxane detected at a higher concentration in the sample than in the field blank. No qualification made professional judgment.

4. Surrogates not recovered in sample FA42031-2;and FA42031-6 (SIM- 1,4-Dioxane) due to dilution. No action taken, professional judgment. Surrogates recovered within control limits in undiluted samples.

The laboratory splits the batches between 8270 and 8270SIM. The surrogates were spiked at 8270 levels, which is 5x higher than what the laboratory 8270SIM setup expects. The SIM surrogates recoveries were corrected by dividing the % recovery by a factor of 5. Calculations were spot checked.

5. MS/MSD % recoveries and RPD within laboratory control limits in sample FA41936-1 except for the cases described in the Data Review Worksheet. No action taken, MS/MSD % recovery and RPD apply to unspiked sample. Unspiked sample was from another job.

MS/MSD % recoveries and RPD within laboratory control limits in sample FA42031-7 except for the cases described in the Data Review Worksheet. MS for chrysene recovered high; RPD for several analytes above the laboratory control limits. No action taken, professional judgment.

MS/MSD % recoveries and RPD within laboratory control limits in sample FA42139-2 except for the cases described in the Data Review Worksheet. No action taken, MS/MSD % recovery and RPD apply to unspiked sample. Unspiked sample was from another job.

MS/MSD % recovery for 1,4-dioxane outside laboratory control limits in sample FA42025-3. Outside control limits due to high level in sample relative to spike amount; no action taken.

6. 2,4-dinitrophenol; 4,6-dinitro-o-cresol; 3,3'-dichlorobenzidine; 2,4-dinitrotoluene; and 3-nitroaniline recovered high in Blank Spike analyzed 03/29/17. No action taken, professional judgment; analytes not detected in sample batch.

4-chloroaniline, 3-nitroaniline, and isophorone recovered high in Blank Spike analyzed 03/23/17. No action taken, professional judgment; analytes not detected in sample batch.

4-chloroaniline, 3-nitroaniline, 3,3'-dichlorobenzidine, and isophorone recovered high in Blank Spike analyzed 03/24/17. No action taken, professional judgment; analytes not detected in sample batch.

4-chloroaniline, 3-nitroaniline, and 3,3'-dichlorobenzidine recovered high in Blank Spike analyzed 03/25/17. No action taken, professional judgment; analytes not detected in sample batch.

Blank spikes concentration corrected 1,4-dioxane analyzed on 03/20/17. No action taken, professional judgment.

Blank spikes concentration corrected for PAHs on 03/22/17. No action taken, professional judgment.

COMMENTS: **Results are valid and can be used for decision making purposes.**

Reviewers Name: **Rafael Infante**
Chemist License 1888

Signature: Rafael Infante

Date: May 2, 2017

SAMPLE ORGANIC DATA SAMPLE SUMMARY

Sample ID: FA42031-1
Sample location: BMSMC, Humacao, PR
Sampling date: 3/10/2017
Matrix: AQ - Equipment Blank

METHOD: 8270D

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Caprolactam	9.7	ug/l	1	-	U	Yes
4-Chloro-3-methyl phenol	4.9	ug/l	1	-	U	Yes
2-Chlorophenol	4.9	ug/l	1	-	U	Yes
2,4-Dichlorophenol	4.9	ug/l	1	-	U	Yes
2,4-Dimethylphenol	4.9	ug/l	1	-	U	Yes
2,4-Dinitrophenol	24	ug/l	1	-	U	Yes
4,6-Dinitro-o-cresol	9.7	ug/l	1	-	U	Yes
2-Methylphenol	4.9	ug/l	1	-	U	Yes
3&4-Methylphenol	4.9	ug/l	1	-	U	Yes
2-Nitrophenol	4.9	ug/l	1	-	U	Yes
4-Nitrophenol	24	ug/l	1	-	U	Yes
Pentachlorophenol	24	ug/l	1	-	U	Yes
Phenol	4.9	ug/l	1	-	UJ ✓	Yes
2,3,4,6-Tetrachlorophenol	4.9	ug/l	1	-	U	Yes
2,4,5-Trichlorophenol	4.9	ug/l	1	-	U	Yes
2,4,6-Trichlorophenol	4.9	ug/l	1	-	U	Yes
Acenaphthene	4.9	ug/l	1	-	U	Yes
Acenaphthylene	4.9	ug/l	1	-	U	Yes
Acetophenone	4.9	ug/l	1	-	U	Yes
Anthracene	4.9	ug/l	1	-	U	Yes
Atrazine	4.9	ug/l	1	-	U	Yes
Benzaldehyde	24	ug/l	1	-	U	Yes
Benzo(a)anthracene	4.9	ug/l	1	-	U	Yes
Benzo(a)pyrene	4.9	ug/l	1	-	U	Yes
Benzo(b)fluoranthene	4.9	ug/l	1	-	U	Yes
Benzo(g,h,i)perylene	4.9	ug/l	1	-	U	Yes
Benzo(k)fluoranthene	4.9	ug/l	1	-	U	Yes
1,1'-Biphenyl	4.9	ug/l	1	-	U	Yes
4-Bromophenyl phenyl ether	4.9	ug/l	1	-	U	Yes
Butyl benzyl phthalate	4.9	ug/l	1	-	U	Yes
Carbazole	4.9	ug/l	1	-	U	Yes
4-Chloroaniline	4.9	ug/l	1	-	U	Yes
bis(2-Chloroethoxy)methane	4.9	ug/l	1	-	UJ ✓	Yes
bis(2-Chloroethyl)ether	4.9	ug/l	1	-	U	Yes
bis(2-Chloroisopropyl)ether	4.9	ug/l	1	-	U	Yes

2-Chloronaphthalene	4.9	ug/l	1	-	U	Yes
4-Chlorophenyl phenyl ether	4.9	ug/l	1	-	U	Yes
Chrysene	4.9	ug/l	1	-	U	Yes
Dibenzo(a,h)anthracene	4.9	ug/l	1	-	U	Yes
Dibenzofuran	4.9	ug/l	1	-	U	Yes
3,3'-Dichlorobenzidine	4.9	ug/l	1	-	U	Yes
Diethyl phthalate	4.9	ug/l	1	-	U	Yes
Dimethyl phthalate	4.9	ug/l	1	-	U	Yes
Di-n-butyl phthalate	4.9	ug/l	1	-	U	Yes
Di-n-octyl phthalate	4.9	ug/l	1	-	U	Yes
2,4-Dinitrotoluene	4.9	ug/l	1	-	U	Yes
2,6-Dinitrotoluene	4.9	ug/l	1	-	U	Yes
bis(2-Ethylhexyl)phthalate	4.9	ug/l	1	-	U	Yes
Fluoranthene	4.9	ug/l	1	-	U	Yes
Fluorene	4.9	ug/l	1	-	U	Yes
Hexachlorobenzene	4.9	ug/l	1	-	U	Yes
Hexachlorobutadiene	4.9	ug/l	1	-	U	Yes
Hexachlorocyclopentadiene	4.9	ug/l	1	-	U	Yes
Hexachloroethane	4.9	ug/l	1	-	U	Yes
Indeno(1,2,3-cd)pyrene	4.9	ug/l	1	-	U	Yes
Isophorone	4.9	ug/l	1	-	U	Yes
2-Methylnaphthalene	4.9	ug/l	1	-	U	Yes
2-Nitroaniline	4.9	ug/l	1	-	U	Yes
3-Nitroaniline	4.9	ug/l	1	-	UJ	Yes
4-Nitroaniline	4.9	ug/l	1	-	U	Yes
Nitrobenzene	4.9	ug/l	1	-	U	Yes
N-Nitroso-di-n-propylamine	4.9	ug/l	1	-	U	Yes
N-Nitrosodiphenylamine	4.9	ug/l	1	-	U	Yes
Phenanthrene	4.9	ug/l	1	-	U	Yes
Pyrene	4.9	ug/l	1	-	U	Yes
1,2,4,5-Tetrachlorobenzene	4.9	ug/l	1	-	U	Yes
METHOD: 8270D (SIM)						
1,4-Dioxane	0.29	ug/l	1	-	U	Yes
1-Methylnaphthalene	0.97	ug/l	1	-	U	Yes
2-Methylnaphthalene	0.97	ug/l	1	-	U	Yes
Naphthalene	0.97	ug/l	1	-	U	Yes

Sample ID: FA42031-2
Sample location: BMSMC, Humacao, PR
Sampling date: 3/10/2017
Matrix: Groundwater

METHOD: 8270D

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Caprolactam	10	ug/l	1	-	U	Yes
4-Chloro-3-methyl phenol	5.0	ug/l	1	-	U	Yes
2-Chlorophenol	5.0	ug/l	1	-	U	Yes
2,4-Dichlorophenol	5.0	ug/l	1	-	U	Yes
2,4-Dimethylphenol	5.0	ug/l	1	-	U	Yes
2,4-Dinitrophenol	25	ug/l	1	-	U	Yes
4,6-Dinitro-o-cresol	10	ug/l	1	-	U	Yes
2-Methylphenol	5.0	ug/l	1	-	U	Yes
3&4-Methylphenol	5.0	ug/l	1	-	U	Yes
2-Nitrophenol	5.0	ug/l	1	-	U	Yes
4-Nitrophenol	25	ug/l	1	-	U	Yes
Pentachlorophenol	25	ug/l	1	-	U	Yes
Phenol	5.0	ug/l	1	-	UJ ✓	Yes
2,3,4,6-Tetrachlorophenol	5.0	ug/l	1	-	U	Yes
2,4,5-Trichlorophenol	5.0	ug/l	1	-	U	Yes
2,4,6-Trichlorophenol	5.0	ug/l	1	-	U	Yes
Acenaphthene	5.0	ug/l	1	-	U	Yes
Acenaphthylene	5.0	ug/l	1	-	U	Yes
Acetophenone	5.0	ug/l	1	-	U	Yes
Anthracene	5.0	ug/l	1	-	U	Yes
Atrazine	5.0	ug/l	1	-	U	Yes
Benzaldehyde	25	ug/l	1	-	U	Yes
Benzo(a)anthracene	5.0	ug/l	1	-	U	Yes
Benzo(a)pyrene	5.0	ug/l	1	-	U	Yes
Benzo(b)fluoranthene	5.0	ug/l	1	-	U	Yes
Benzo(g,h,i)perylene	5.0	ug/l	1	-	U	Yes
Benzo(k)fluoranthene	5.0	ug/l	1	-	U	Yes
1,1'-Biphenyl	5.0	ug/l	1	-	U	Yes
4-Bromophenyl phenyl ether	5.0	ug/l	1	-	U	Yes
Butyl benzyl phthalate	5.0	ug/l	1	-	U	Yes
Carbazole	5.0	ug/l	1	-	U	Yes
4-Chloroaniline	3.0	ug/l	1	J	J	Yes
bis(2-Chloroethoxy)methane	5.0	ug/l	1	-	UJ ✓	Yes
bis(2-Chloroethyl)ether	5.0	ug/l	1	-	U	Yes
bis(2-Chloroisopropyl)ether	5.0	ug/l	1	-	U	Yes
2-Chloronaphthalene	5.0	ug/l	1	-	U	Yes
4-Chlorophenyl phenyl ether	5.0	ug/l	1	-	U	Yes

Chrysene	5.0	ug/l	1	-	U	Yes
Dibenzo(a,h)anthracene	5.0	ug/l	1	-	U	Yes
Dibenzofuran	5.0	ug/l	1	-	U	Yes
3,3'-Dichlorobenzidine	5.0	ug/l	1	-	U	Yes
Diethyl phthalate	5.0	ug/l	1	-	U	Yes
Dimethyl phthalate	5.0	ug/l	1	-	U	Yes
Di-n-butyl phthalate	5.0	ug/l	1	-	U	Yes
Di-n-octyl phthalate	5.0	ug/l	1	-	U	Yes
2,4-Dinitrotoluene	5.0	ug/l	1	-	U	Yes
2,6-Dinitrotoluene	5.0	ug/l	1	-	U	Yes
bis(2-Ethylhexyl)phthalate	5.0	ug/l	1	-	U	Yes
Fluoranthene	5.0	ug/l	1	-	U	Yes
Fluorene	5.0	ug/l	1	-	U	Yes
Hexachlorobenzene	5.0	ug/l	1	-	U	Yes
Hexachlorobutadiene	5.0	ug/l	1	-	U	Yes
Hexachlorocyclopentadiene	5.0	ug/l	1	-	U	Yes
Hexachloroethane	5.0	ug/l	1	-	U	Yes
Indeno(1,2,3-cd)pyrene	5.0	ug/l	1	-	U	Yes
Isophorone	5.0	ug/l	1	-	U	Yes
2-Methylnaphthalene	5.0	ug/l	1	-	U	Yes
2-Nitroaniline	5.0	ug/l	1	-	U	Yes
3-Nitroaniline	5.0	ug/l	1	-	UJ ✓	Yes
4-Nitroaniline	5.0	ug/l	1	-	U	Yes
Nitrobenzene	5.0	ug/l	1	-	U	Yes
N-Nitroso-di-n-propylamine	5.0	ug/l	1	-	U	Yes
N-Nitrosodiphenylamine	5.0	ug/l	1	-	U	Yes
Phenanthrene	5.0	ug/l	1	-	U	Yes
Pyrene	5.0	ug/l	1	-	U	Yes
1,2,4,5-Tetrachlorobenzene	5.0	ug/l	1	-	U	Yes
METHOD: 8270D (SIM)						
1,4-Dioxane	161	ug/l	20	-	-	Yes
1-Methylnaphthalene	1.0	ug/l	1	-	U	Yes
2-Methylnaphthalene	1.0	ug/l	1	-	U	Yes
Naphthalene	1.0	ug/l	1	-	U	Yes

Sample ID: FA42031-4
Sample location: BMSMC, Humacao, PR
Sampling date: 3/10/2017
Matrix: Groundwater

METHOD: 8270D

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Caprolactam	9.7	ug/l	1	-	U	Yes
4-Chloro-3-methyl phenol	4.9	ug/l	1	-	U	Yes
2-Chlorophenol	4.9	ug/l	1	-	U	Yes
2,4-Dichlorophenol	4.9	ug/l	1	-	U	Yes
2,4-Dimethylphenol	4.9	ug/l	1	-	U	Yes
2,4-Dinitrophenol	24	ug/l	1	-	U	Yes
4,6-Dinitro-o-cresol	9.7	ug/l	1	-	U	Yes
2-Methylphenol	4.9	ug/l	1	-	U	Yes
3&4-Methylphenol	4.9	ug/l	1	-	U	Yes
2-Nitrophenol	4.9	ug/l	1	-	U	Yes
4-Nitrophenol	24	ug/l	1	-	U	Yes
Pentachlorophenol	24	ug/l	1	-	U	Yes
Phenol	4.9	ug/l	1	-	UJ ✓	Yes
2,3,4,6-Tetrachlorophenol	4.9	ug/l	1	-	U	Yes
2,4,5-Trichlorophenol	4.9	ug/l	1	-	U	Yes
2,4,6-Trichlorophenol	4.9	ug/l	1	-	U	Yes
Acenaphthene	4.9	ug/l	1	-	U	Yes
Acenaphthylene	4.9	ug/l	1	-	U	Yes
Acetophenone	4.9	ug/l	1	-	U	Yes
Anthracene	4.9	ug/l	1	-	U	Yes
Atrazine	4.9	ug/l	1	-	U	Yes
Benzaldehyde	24	ug/l	1	-	U	Yes
Benzo(a)anthracene	4.9	ug/l	1	-	U	Yes
Benzo(a)pyrene	4.9	ug/l	1	-	U	Yes
Benzo(b)fluoranthene	4.9	ug/l	1	-	U	Yes
Benzo(g,h,i)perylene	4.9	ug/l	1	-	U	Yes
Benzo(k)fluoranthene	4.9	ug/l	1	-	U	Yes
1,1'-Biphenyl	4.9	ug/l	1	-	U	Yes
4-Bromophenyl phenyl ether	4.9	ug/l	1	-	U	Yes
Butyl benzyl phthalate	4.9	ug/l	1	-	U	Yes
Carbazole	4.9	ug/l	1	-	U	Yes
4-Chloroaniline	4.9	ug/l	1	-	U	Yes
bis(2-Chloroethoxy)methane	4.9	ug/l	1	-	UJ ✓	Yes
bis(2-Chloroethyl)ether	4.9	ug/l	1	-	U	Yes
bis(2-Chloroisopropyl)ether	4.9	ug/l	1	-	U	Yes
2-Chloronaphthalene	4.9	ug/l	1	-	U	Yes
4-Chlorophenyl phenyl ether	4.9	ug/l	1	-	U	Yes

Chrysene	4.9	ug/l	1	-	U	Yes
Dibenzo(a,h)anthracene	4.9	ug/l	1	-	U	Yes
Dibenzofuran	4.9	ug/l	1	-	U	Yes
3,3'-Dichlorobenzidine	4.9	ug/l	1	-	U	Yes
Diethyl phthalate	4.9	ug/l	1	-	U	Yes
Dimethyl phthalate	4.9	ug/l	1	-	U	Yes
Di-n-butyl phthalate	4.9	ug/l	1	-	U	Yes
Di-n-octyl phthalate	4.9	ug/l	1	-	U	Yes
2,4-Dinitrotoluene	4.9	ug/l	1	-	U	Yes
2,6-Dinitrotoluene	4.9	ug/l	1	-	U	Yes
bis(2-Ethylhexyl)phthalate	4.9	ug/l	1	-	U	Yes
Fluoranthene	4.9	ug/l	1	-	U	Yes
Fluorene	4.9	ug/l	1	-	U	Yes
Hexachlorobenzene	4.9	ug/l	1	-	U	Yes
Hexachlorobutadiene	4.9	ug/l	1	-	U	Yes
Hexachlorocyclopentadiene	4.9	ug/l	1	-	U	Yes
Hexachloroethane	4.9	ug/l	1	-	U	Yes
Indeno(1,2,3-cd)pyrene	4.9	ug/l	1	-	U	Yes
Isophorone	4.9	ug/l	1	-	U	Yes
2-Methylnaphthalene	4.9	ug/l	1	-	U	Yes
2-Nitroaniline	4.9	ug/l	1	-	U	Yes
3-Nitroaniline	4.9	ug/l	1	-	UJ ✓	Yes
4-Nitroaniline	4.9	ug/l	1	-	U	Yes
Nitrobenzene	4.9	ug/l	1	-	U	Yes
N-Nitroso-di-n-propylamine	4.9	ug/l	1	-	U	Yes
N-Nitrosodiphenylamine	4.9	ug/l	1	-	U	Yes
Phenanthrene	4.9	ug/l	1	-	U	Yes
Pyrene	4.9	ug/l	1	-	U	Yes
1,2,4,5-Tetrachlorobenzene	4.9	ug/l	1	-	U	Yes
METHOD: 8270D (SIM)						
1,4-Dioxane	0.54	ug/l	200	-	-	Yes
1-Methylnaphthalene	0.97	ug/l	1	-	U	Yes
2-Methylnaphthalene	0.97	ug/l	1	-	U	Yes
Naphthalene	0.97	ug/l	1	-	U	Yes

Sample ID: FA42031-5
Sample location: BMSMC, Humacao, PR
Sampling date: 3/10/2017
Matrix: AQ - Field Blank Water

METHOD: 8270D

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Caprolactam	9.6	ug/l	1	-	U	Yes
4-Chloro-3-methyl phenol	4.8	ug/l	1	-	U	Yes
2-Chlorophenol	4.8	ug/l	1	-	U	Yes
2,4-Dichlorophenol	4.8	ug/l	1	-	U	Yes
2,4-Dimethylphenol	4.8	ug/l	1	-	U	Yes
2,4-Dinitrophenol	24	ug/l	1	-	U	Yes
4,6-Dinitro-o-cresol	9.6	ug/l	1	-	U	Yes
2-Methylphenol	4.8	ug/l	1	-	U	Yes
3&4-Methylphenol	4.8	ug/l	1	-	U	Yes
2-Nitrophenol	4.8	ug/l	1	-	U	Yes
4-Nitrophenol	24	ug/l	1	-	U	Yes
Pentachlorophenol	24	ug/l	1	-	U	Yes
Phenol	4.8	ug/l	1	-	UJ ✓	Yes
2,3,4,6-Tetrachlorophenol	4.8	ug/l	1	-	U	Yes
2,4,5-Trichlorophenol	4.8	ug/l	1	-	U	Yes
2,4,6-Trichlorophenol	4.8	ug/l	1	-	U	Yes
Acenaphthene	4.8	ug/l	1	-	U	Yes
Acenaphthylene	4.8	ug/l	1	-	U	Yes
Acetophenone	4.8	ug/l	1	-	U	Yes
Anthracene	4.8	ug/l	1	-	U	Yes
Atrazine	4.8	ug/l	1	-	U	Yes
Benzaldehyde	24	ug/l	1	-	U	Yes
Benzo(a)anthracene	4.8	ug/l	1	-	U	Yes
Benzo(a)pyrene	4.8	ug/l	1	-	U	Yes
Benzo(b)fluoranthene	4.8	ug/l	1	-	U	Yes
Benzo(g,h,i)perylene	4.8	ug/l	1	-	U	Yes
Benzo(k)fluoranthene	4.8	ug/l	1	-	U	Yes
1,1'-Biphenyl	4.8	ug/l	1	-	U	Yes
4-Bromophenyl phenyl ether	4.8	ug/l	1	-	U	Yes
Butyl benzyl phthalate	4.8	ug/l	1	-	U	Yes
Carbazole	4.8	ug/l	1	-	U	Yes
4-Chloroaniline	4.8	ug/l	1	-	U	Yes
bis(2-Chloroethoxy)methane	4.8	ug/l	1	-	UJ ✓	Yes
bis(2-Chloroethyl)ether	4.8	ug/l	1	-	U	Yes
bis(2-Chloroisopropyl)ether	4.8	ug/l	1	-	U	Yes
2-Chloronaphthalene	4.8	ug/l	1	-	U	Yes
4-Chlorophenyl phenyl ether	4.8	ug/l	1	-	U	Yes

Chrysene	4.8	ug/l	1	-	U	Yes
Dibenzo(a,h)anthracene	4.8	ug/l	1	-	U	Yes
Dibenzofuran	4.8	ug/l	1	-	U	Yes
3,3'-Dichlorobenzidine	4.8	ug/l	1	-	U	Yes
Diethyl phthalate	4.8	ug/l	1	-	U	Yes
Dimethyl phthalate	4.8	ug/l	1	-	U	Yes
Di-n-butyl phthalate	4.8	ug/l	1	-	U	Yes
Di-n-octyl phthalate	4.8	ug/l	1	-	U	Yes
2,4-Dinitrotoluene	4.8	ug/l	1	-	U	Yes
2,6-Dinitrotoluene	4.8	ug/l	1	-	U	Yes
bis(2-Ethylhexyl)phthalate	4.8	ug/l	1	-	U	Yes
Fluoranthene	4.8	ug/l	1	-	U	Yes
Fluorene	4.8	ug/l	1	-	U	Yes
Hexachlorobenzene	4.8	ug/l	1	-	U	Yes
Hexachlorobutadiene	4.8	ug/l	1	-	U	Yes
Hexachlorocyclopentadiene	4.8	ug/l	1	-	U	Yes
Hexachloroethane	4.8	ug/l	1	-	U	Yes
Indeno(1,2,3-cd)pyrene	4.8	ug/l	1	-	U	Yes
Isophorone	4.8	ug/l	1	-	U	Yes
2-Methylnaphthalene	4.8	ug/l	1	-	U	Yes
2-Nitroaniline	4.8	ug/l	1	-	U	Yes
3-Nitroaniline	4.8	ug/l	1	-	UJ	Yes
4-Nitroaniline	4.8	ug/l	1	-	U	Yes
Nitrobenzene	4.8	ug/l	1	-	U	Yes
N-Nitroso-di-n-propylamine	4.8	ug/l	1	-	U	Yes
N-Nitrosodiphenylamine	4.8	ug/l	1	-	U	Yes
Phenanthrene	4.8	ug/l	1	-	U	Yes
Pyrene	4.8	ug/l	1	-	U	Yes
1,2,4,5-Tetrachlorobenzene	4.8	ug/l	1	-	U	Yes
METHOD: 8270D (SIM)						
1,4-Dioxane	0.45	ug/l	200	-	-	Yes
1-Methylnaphthalene	0.96	ug/l	1	-	U	Yes
2-Methylnaphthalene	0.96	ug/l	1	-	U	Yes
Naphthalene	0.96	ug/l	1	-	U	Yes

Sample ID: FA42031-6
Sample location: BMSMC, Humacao, PR
Sampling date: 3/10/2017
Matrix: Groundwater

METHOD: 8270D

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Caprolactam	9.5	ug/l	1	-	U	Yes
4-Chloro-3-methyl phenol	4.8	ug/l	1	-	U	Yes
2-Chlorophenol	4.8	ug/l	1	-	U	Yes
2,4-Dichlorophenol	4.8	ug/l	1	-	U	Yes
2,4-Dimethylphenol	4.8	ug/l	1	-	U	Yes
2,4-Dinitrophenol	24	ug/l	1	-	U	Yes
4,6-Dinitro-o-cresol	9.5	ug/l	1	-	U	Yes
2-Methylphenol	4.8	ug/l	1	-	U	Yes
3&4-Methylphenol	4.8	ug/l	1	-	U	Yes
2-Nitrophenol	4.8	ug/l	1	-	U	Yes
4-Nitrophenol	24	ug/l	1	-	U	Yes
Pentachlorophenol	24	ug/l	1	-	U	Yes
Phenol	4.8	ug/l	1	-	UJ	Yes
2,3,4,6-Tetrachlorophenol	4.8	ug/l	1	-	U	Yes
2,4,5-Trichlorophenol	4.8	ug/l	1	-	U	Yes
2,4,6-Trichlorophenol	4.8	ug/l	1	-	U	Yes
Acenaphthene	4.8	ug/l	1	-	U	Yes
Acenaphthylene	4.8	ug/l	1	-	U	Yes
Acetophenone	4.8	ug/l	1	-	U	Yes
Anthracene	4.8	ug/l	1	-	U	Yes
Atrazine	4.8	ug/l	1	-	U	Yes
Benzaldehyde	24	ug/l	1	-	U	Yes
Benzo(a)anthracene	4.8	ug/l	1	-	U	Yes
Benzo(a)pyrene	4.8	ug/l	1	-	U	Yes
Benzo(b)fluoranthene	4.8	ug/l	1	-	U	Yes
Benzo(g,h,i)perylene	4.8	ug/l	1	-	U	Yes
Benzo(k)fluoranthene	4.8	ug/l	1	-	U	Yes
1,1'-Biphenyl	4.8	ug/l	1	-	U	Yes
4-Bromophenyl phenyl ether	4.8	ug/l	1	-	U	Yes
Butyl benzyl phthalate	4.8	ug/l	1	-	U	Yes
Carbazole	4.8	ug/l	1	-	U	Yes
4-Chloroaniline	2.7	ug/l	1	J	J	Yes
bis(2-Chloroethoxy)methane	4.8	ug/l	1	-	UJ	Yes
bis(2-Chloroethyl)ether	4.8	ug/l	1	-	U	Yes
bis(2-Chloroisopropyl)ether	4.8	ug/l	1	-	U	Yes
2-Chloronaphthalene	4.8	ug/l	1	-	U	Yes
4-Chlorophenyl phenyl ether	4.8	ug/l	1	-	U	Yes

Chrysene	4.8	ug/l	1	-	U	Yes
Dibenzo(a,h)anthracene	4.8	ug/l	1	-	U	Yes
Dibenzofuran	4.8	ug/l	1	-	U	Yes
3,3'-Dichlorobenzidine	4.8	ug/l	1	-	U	Yes
Diethyl phthalate	4.8	ug/l	1	-	U	Yes
Dimethyl phthalate	4.8	ug/l	1	-	U	Yes
Di-n-butyl phthalate	4.8	ug/l	1	-	U	Yes
Di-n-octyl phthalate	4.8	ug/l	1	-	U	Yes
2,4-Dinitrotoluene	4.8	ug/l	1	-	U	Yes
2,6-Dinitrotoluene	4.8	ug/l	1	-	U	Yes
bis(2-Ethylhexyl)phthalate	4.8	ug/l	1	-	U	Yes
Fluoranthene	4.8	ug/l	1	-	U	Yes
Fluorene	4.8	ug/l	1	-	U	Yes
Hexachlorobenzene	4.8	ug/l	1	-	U	Yes
Hexachlorobutadiene	4.8	ug/l	1	-	U	Yes
Hexachlorocyclopentadiene	4.8	ug/l	1	-	U	Yes
Hexachloroethane	4.8	ug/l	1	-	U	Yes
Indeno(1,2,3-cd)pyrene	4.8	ug/l	1	-	U	Yes
Isophorone	4.8	ug/l	1	-	U	Yes
2-Methylnaphthalene	4.8	ug/l	1	-	U	Yes
2-Nitroaniline	4.8	ug/l	1	-	U	Yes
3-Nitroaniline	4.8	ug/l	1	-	UJ	Yes
4-Nitroaniline	4.8	ug/l	1	-	U	Yes
Nitrobenzene	4.8	ug/l	1	-	U	Yes
N-Nitroso-di-n-propylamine	4.8	ug/l	1	-	U	Yes
N-Nitrosodiphenylamine	4.8	ug/l	1	-	U	Yes
Phenanthrene	4.8	ug/l	1	-	U	Yes
Pyrene	4.8	ug/l	1	-	U	Yes
1,2,4,5-Tetrachlorobenzene	4.8	ug/l	1	-	U	Yes
METHOD: 8270D (SIM)						
1,4-Dioxane	155	ug/l	20	-	-	Yes
1-Methylnaphthalene	0.95	ug/l	1	-	U	Yes
2-Methylnaphthalene	0.95	ug/l	1	-	U	Yes
Naphthalene	0.95	ug/l	1	-	U	Yes

Sample ID: FA42031-7
Sample location: BMSMC, Humacao, PR
Sampling date: 3/10/2017
Matrix: Groundwater

METHOD: 8270D

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Caprolactam	10	ug/l	1	-	U	Yes
4-Chloro-3-methyl phenol	5.0	ug/l	1	-	U	Yes
2-Chlorophenol	5.0	ug/l	1	-	U	Yes
2,4-Dichlorophenol	5.0	ug/l	1	-	U	Yes
2,4-Dimethylphenol	5.0	ug/l	1	-	U	Yes
2,4-Dinitrophenol	25	ug/l	1	-	U	Yes
4,6-Dinitro-o-cresol	10	ug/l	1	-	U	Yes
2-Methylphenol	5.0	ug/l	1	-	U	Yes
3&4-Methylphenol	5.0	ug/l	1	-	U	Yes
2-Nitrophenol	5.0	ug/l	1	-	U	Yes
4-Nitrophenol	25	ug/l	1	-	U	Yes
Pentachlorophenol	25	ug/l	1	-	U	Yes
Phenol	5.0	ug/l	1	-	U	Yes
2,3,4,6-Tetrachlorophenol	5.0	ug/l	1	-	U	Yes
2,4,5-Trichlorophenol	5.0	ug/l	1	-	U	Yes
2,4,6-Trichlorophenol	5.0	ug/l	1	-	U	Yes
Acenaphthene	5.0	ug/l	1	-	U	Yes
Acenaphthylene	5.0	ug/l	1	-	U	Yes
Acetophenone	5.0	ug/l	1	-	U	Yes
Anthracene	5.0	ug/l	1	-	U	Yes
Atrazine	5.0	ug/l	1	-	U	Yes
Benzaldehyde	25	ug/l	1	-	U	Yes
Benzo(a)anthracene	5.0	ug/l	1	-	U	Yes
Benzo(a)pyrene	5.0	ug/l	1	-	U	Yes
Benzo(b)fluoranthene	5.0	ug/l	1	-	U	Yes
Benzo(g,h,i)perylene	5.0	ug/l	1	-	U	Yes
Benzo(k)fluoranthene	5.0	ug/l	1	-	U	Yes
1,1'-Biphenyl	5.0	ug/l	1	-	U	Yes
4-Bromophenyl phenyl ether	5.0	ug/l	1	-	U	Yes
Butyl benzyl phthalate	5.0	ug/l	1	-	U	Yes
Carbazole	5.0	ug/l	1	-	U	Yes
4-Chloroaniline	5.0	ug/l	1	-	U	Yes
bis(2-Chloroethoxy)methane	5.0	ug/l	1	-	U	Yes
bis(2-Chloroethyl)ether	5.0	ug/l	1	-	U	Yes
bis(2-Chloroisopropyl)ether	5.0	ug/l	1	-	U	Yes
2-Chloronaphthalene	5.0	ug/l	1	-	U	Yes
4-Chlorophenyl phenyl ether	5.0	ug/l	1	-	U	Yes

Chrysene	5.0	ug/l	1	-	U	Yes
Dibenzo(a,h)anthracene	5.0	ug/l	1	-	U	Yes
Dibenzofuran	5.0	ug/l	1	-	U	Yes
3,3'-Dichlorobenzidine	5.0	ug/l	1	-	U	Yes
Diethyl phthalate	5.0	ug/l	1	-	U	Yes
Dimethyl phthalate	5.0	ug/l	1	-	U	Yes
Di-n-butyl phthalate	5.0	ug/l	1	-	U	Yes
Di-n-octyl phthalate	5.0	ug/l	1	-	U	Yes
2,4-Dinitrotoluene	5.0	ug/l	1	-	U	Yes
2,6-Dinitrotoluene	5.0	ug/l	1	-	U	Yes
bis(2-Ethylhexyl)phthalate	5.0	ug/l	1	-	U	Yes
Fluoranthene	0.73	ug/l	1	J	J	Yes
Fluorene	5.0	ug/l	1	-	U	Yes
Hexachlorobenzene	5.0	ug/l	1	-	U	Yes
Hexachlorobutadiene	5.0	ug/l	1	-	U	Yes
Hexachlorocyclopentadiene	5.0	ug/l	1	-	U	Yes
Hexachloroethane	5.0	ug/l	1	-	U	Yes
Indeno(1,2,3-cd)pyrene	5.0	ug/l	1	-	U	Yes
Isophorone	5.0	ug/l	1	-	U	Yes
2-Methylnaphthalene	5.0	ug/l	1	-	U	Yes
2-Nitroaniline	5.0	ug/l	1	-	U	Yes
3-Nitroaniline	5.0	ug/l	1	-	U	Yes
4-Nitroaniline	5.0	ug/l	1	-	U	Yes
Nitrobenzene	5.0	ug/l	1	-	U	Yes
N-Nitroso-di-n-propylamine	5.0	ug/l	1	-	U	Yes
N-Nitrosodiphenylamine	5.0	ug/l	1	-	U	Yes
Phenanthrene	5.0	ug/l	1	-	U	Yes
Pyrene	5.0	ug/l	1	-	U	Yes
1,2,4,5-Tetrachlorobenzene	5.0	ug/l	1	-	U	Yes
METHOD: 8270D (SIM)						
1,4-Dioxane	7.6	ug/l	1	B	-	Yes

Sample ID: FA42031-9
Sample location: BMSMC, Humacao, PR
Sampling date: 3/13/2017
Matrix: Groundwater

METHOD: 8270D

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Caprolactam	9.8	ug/l	1	-	U	Yes
4-Chloro-3-methyl phenol	4.9	ug/l	1	-	U	Yes
2-Chlorophenol	4.9	ug/l	1	-	U	Yes
2,4-Dichlorophenol	4.9	ug/l	1	-	U	Yes
2,4-Dimethylphenol	4.9	ug/l	1	-	U	Yes
2,4-Dinitrophenol	25	ug/l	1	-	UJ ✓	Yes
4,6-Dinitro-o-cresol	9.8	ug/l	1	-	UJ ✓	Yes
2-Methylphenol	4.9	ug/l	1	-	U	Yes
3&4-Methylphenol	4.9	ug/l	1	-	U	Yes
2-Nitrophenol	4.9	ug/l	1	-	UJ ✓	Yes
4-Nitrophenol	25	ug/l	1	-	U	Yes
Pentachlorophenol	25	ug/l	1	-	U	Yes
Phenol	4.9	ug/l	1	-	U	Yes
2,3,4,6-Tetrachlorophenol	4.9	ug/l	1	-	UJ ✓	Yes
2,4,5-Trichlorophenol	4.9	ug/l	1	-	U	Yes
2,4,6-Trichlorophenol	4.9	ug/l	1	-	U	Yes
Acenaphthene	4.9	ug/l	1	-	U	Yes
Acenaphthylene	4.9	ug/l	1	-	U	Yes
Acetophenone	4.9	ug/l	1	-	U	Yes
Anthracene	4.9	ug/l	1	-	U	Yes
Atrazine	4.9	ug/l	1	-	U	Yes
Benzaldehyde	25	ug/l	1	-	U	Yes
Benzo(a)anthracene	4.9	ug/l	1	-	U	Yes
Benzo(a)pyrene	4.9	ug/l	1	-	U	Yes
Benzo(b)fluoranthene	4.9	ug/l	1	-	U	Yes
Benzo(g,h,i)perylene	4.9	ug/l	1	-	U	Yes
Benzo(k)fluoranthene	4.9	ug/l	1	-	U	Yes
1,1'-Biphenyl	4.9	ug/l	1	-	U	Yes
4-Bromophenyl phenyl ether	4.9	ug/l	1	-	U	Yes
Butyl benzyl phthalate	4.9	ug/l	1	-	U	Yes
Carbazole	4.9	ug/l	1	-	U	Yes
4-Chloroaniline	2.4	ug/l	1	J	J	Yes
bis(2-Chloroethoxy)methane	4.9	ug/l	1	-	UJ ✓	Yes
bis(2-Chloroethyl)ether	4.9	ug/l	1	-	U	Yes
bis(2-Chloroisopropyl)ether	4.9	ug/l	1	-	U	Yes
2-Chloronaphthalene	4.9	ug/l	1	-	U	Yes
4-Chlorophenyl phenyl ether	4.9	ug/l	1	-	U	Yes

Chrysene	4.9	ug/l	1	-	U	Yes
Dibenzo(a,h)anthracene	4.9	ug/l	1	-	U	Yes
Dibenzofuran	4.9	ug/l	1	-	U	Yes
3,3'-Dichlorobenzidine	4.9	ug/l	1	-	U	Yes
Diethyl phthalate	4.9	ug/l	1	-	U	Yes
Dimethyl phthalate	4.9	ug/l	1	-	U	Yes
Di-n-butyl phthalate	4.9	ug/l	1	-	U	Yes
Di-n-octyl phthalate	4.9	ug/l	1	-	U	Yes
2,4-Dinitrotoluene	4.9	ug/l	1	-	U	Yes
2,6-Dinitrotoluene	4.9	ug/l	1	-	U	Yes
bis(2-Ethylhexyl)phthalate	4.9	ug/l	1	-	U	Yes
Fluoranthene	4.9	ug/l	1	-	U	Yes
Fluorene	4.9	ug/l	1	-	U	Yes
Hexachlorobenzene	4.9	ug/l	1	-	U	Yes
Hexachlorobutadiene	4.9	ug/l	1	-	U	Yes
Hexachlorocyclopentadiene	4.9	ug/l	1	-	U	Yes
Hexachloroethane	4.9	ug/l	1	-	U	Yes
Indeno(1,2,3-cd)pyrene	4.9	ug/l	1	-	U	Yes
Isophorone	4.9	ug/l	1	-	U	Yes
2-Methylnaphthalene	4.9	ug/l	1	-	UJ ✓	Yes
2-Nitroaniline	4.9	ug/l	1	-	UJ ✓	Yes
3-Nitroaniline	4.9	ug/l	1	-	U	Yes
4-Nitroaniline	4.9	ug/l	1	-	U	Yes
Nitrobenzene	4.9	ug/l	1	-	U	Yes
N-Nitroso-di-n-propylamine	4.9	ug/l	1	-	U	Yes
N-Nitrosodiphenylamine	4.9	ug/l	1	-	U	Yes
Phenanthrene	4.9	ug/l	1	-	U	Yes
Pyrene	4.9	ug/l	1	-	U	Yes
1,2,4,5-Tetrachlorobenzene	4.9	ug/l	1	-	U	Yes
METHOD: 8270D (SIM)						
1,4-Dioxane	5.7	ug/l	1	B	-	Yes

Sample ID: FA42031-10
Sample location: BMSMC, Humacao, PR
Sampling date: 3/13/2017
Matrix: AQ - Field Blank Water

METHOD: 8270D

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Caprolactam	9.8	ug/l	1	-	U	Yes
4-Chloro-3-methyl phenol	4.9	ug/l	1	-	U	Yes
2-Chlorophenol	4.9	ug/l	1	-	U	Yes
2,4-Dichlorophenol	4.9	ug/l	1	-	U	Yes
2,4-Dimethylphenol	4.9	ug/l	1	-	U	Yes
2,4-Dinitrophenol	25	ug/l	1	-	UJ ✓	Yes
4,6-Dinitro-o-cresol	9.8	ug/l	1	-	UJ ✓	Yes
2-Methylphenol	4.9	ug/l	1	-	U	Yes
3&4-Methylphenol	4.9	ug/l	1	-	U	Yes
2-Nitrophenol	4.9	ug/l	1	-	UJ ✓	Yes
4-Nitrophenol	25	ug/l	1	-	U	Yes
Pentachlorophenol	25	ug/l	1	-	U	Yes
Phenol	4.9	ug/l	1	-	U	Yes
2,3,4,6-Tetrachlorophenol	4.9	ug/l	1	-	UJ ✓	Yes
2,4,5-Trichlorophenol	4.9	ug/l	1	-	U	Yes
2,4,6-Trichlorophenol	4.9	ug/l	1	-	U	Yes
Acenaphthene	4.9	ug/l	1	-	U	Yes
Acenaphthylene	4.9	ug/l	1	-	U	Yes
Acetophenone	4.9	ug/l	1	-	U	Yes
Anthracene	4.9	ug/l	1	-	U	Yes
Atrazine	4.9	ug/l	1	-	U	Yes
Benzaldehyde	25	ug/l	1	-	U	Yes
Benzo(a)anthracene	4.9	ug/l	1	-	U	Yes
Benzo(a)pyrene	4.9	ug/l	1	-	U	Yes
Benzo(b)fluoranthene	4.9	ug/l	1	-	U	Yes
Benzo(g,h,i)perylene	4.9	ug/l	1	-	U	Yes
Benzo(k)fluoranthene	4.9	ug/l	1	-	U	Yes
1,1'-Biphenyl	4.9	ug/l	1	-	U	Yes
4-Bromophenyl phenyl ether	4.9	ug/l	1	-	U	Yes
Butyl benzyl phthalate	4.9	ug/l	1	-	U	Yes
Carbazole	4.9	ug/l	1	-	U	Yes
4-Chloroaniline	0.86	ug/l	1	J	J	Yes
bis(2-Chloroethoxy)methane	4.9	ug/l	1	-	UJ ✓	Yes
bis(2-Chloroethyl)ether	4.9	ug/l	1	-	U	Yes
bis(2-Chloroisopropyl)ether	4.9	ug/l	1	-	U	Yes
2-Chloronaphthalene	4.9	ug/l	1	-	U	Yes
4-Chlorophenyl phenyl ether	4.9	ug/l	1	-	U	Yes

Chrysene	4.9	ug/l	1	-	U	Yes
Dibenzo(a,h)anthracene	4.9	ug/l	1	-	U	Yes
Dibenzofuran	4.9	ug/l	1	-	U	Yes
3,3'-Dichlorobenzidine	4.9	ug/l	1	-	U	Yes
Diethyl phthalate	4.9	ug/l	1	-	U	Yes
Dimethyl phthalate	4.9	ug/l	1	-	U	Yes
Di-n-butyl phthalate	4.9	ug/l	1	-	U	Yes
Di-n-octyl phthalate	4.9	ug/l	1	-	U	Yes
2,4-Dinitrotoluene	4.9	ug/l	1	-	U	Yes
2,6-Dinitrotoluene	4.9	ug/l	1	-	U	Yes
bis(2-Ethylhexyl)phthalate	4.9	ug/l	1	-	U	Yes
Fluoranthene	4.9	ug/l	1	-	U	Yes
Fluorene	4.9	ug/l	1	-	U	Yes
Hexachlorobenzene	4.9	ug/l	1	-	U	Yes
Hexachlorobutadiene	4.9	ug/l	1	-	U	Yes
Hexachlorocyclopentadiene	4.9	ug/l	1	-	U	Yes
Hexachloroethane	4.9	ug/l	1	-	U	Yes
Indeno(1,2,3-cd)pyrene	4.9	ug/l	1	-	U	Yes
Isophorone	4.9	ug/l	1	-	U	Yes
2-Methylnaphthalene	4.9	ug/l	1	-	UJ ✓	Yes
2-Nitroaniline	4.9	ug/l	1	-	UJ ✓	Yes
3-Nitroaniline	4.9	ug/l	1	-	U	Yes
4-Nitroaniline	4.9	ug/l	1	-	U	Yes
Nitrobenzene	4.9	ug/l	1	-	U	Yes
N-Nitroso-di-n-propylamine	4.9	ug/l	1	-	U	Yes
N-Nitrosodiphenylamine	4.9	ug/l	1	-	U	Yes
Phenanthrene	4.9	ug/l	1	-	U	Yes
Pyrene	4.9	ug/l	1	-	U	Yes
1,2,4,5-Tetrachlorobenzene	4.9	ug/l	1	-	U	Yes
METHOD: 8270D (SIM)						
1,4-Dioxane	1.7	ug/l	1	B	-	Yes

Sample ID: FA42031-11
Sample location: BMSMC, Humacao, PR
Sampling date: 3/13/2017
Matrix: Groundwater

METHOD: 8270D

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Caprolactam	9.8	ug/l	1	-	U	Yes
4-Chloro-3-methyl phenol	4.9	ug/l	1	-	U	Yes
2-Chlorophenol	4.9	ug/l	1	-	U	Yes
2,4-Dichlorophenol	4.9	ug/l	1	-	U	Yes
2,4-Dimethylphenol	4.9	ug/l	1	-	U	Yes
2,4-Dinitrophenol	25	ug/l	1	-	UJ ✓	Yes
4,6-Dinitro-o-cresol	9.8	ug/l	1	-	UJ ✓	Yes
2-Methylphenol	4.9	ug/l	1	-	U	Yes
3&4-Methylphenol	4.9	ug/l	1	-	U	Yes
2-Nitrophenol	4.9	ug/l	1	-	UJ ✓	Yes
4-Nitrophenol	25	ug/l	1	-	U	Yes
Pentachlorophenol	25	ug/l	1	-	U	Yes
Phenol	4.9	ug/l	1	-	U	Yes
2,3,4,6-Tetrachlorophenol	4.9	ug/l	1	-	UJ ✓	Yes
2,4,5-Trichlorophenol	4.9	ug/l	1	-	U	Yes
2,4,6-Trichlorophenol	4.9	ug/l	1	-	U	Yes
Acenaphthene	4.9	ug/l	1	-	U	Yes
Acenaphthylene	4.9	ug/l	1	-	U	Yes
Acetophenone	4.9	ug/l	1	-	U	Yes
Anthracene	4.9	ug/l	1	-	U	Yes
Atrazine	4.9	ug/l	1	-	U	Yes
Benzaldehyde	25	ug/l	1	-	U	Yes
Benzo(a)anthracene	4.9	ug/l	1	-	U	Yes
Benzo(a)pyrene	4.9	ug/l	1	-	U	Yes
Benzo(b)fluoranthene	4.9	ug/l	1	-	U	Yes
Benzo(g,h,i)perylene	4.9	ug/l	1	-	U	Yes
Benzo(k)fluoranthene	4.9	ug/l	1	-	U	Yes
1,1'-Biphenyl	4.9	ug/l	1	-	U	Yes
4-Bromophenyl phenyl ether	4.9	ug/l	1	-	U	Yes
Butyl benzyl phthalate	4.9	ug/l	1	-	U	Yes
Carbazole	4.9	ug/l	1	-	U	Yes
4-Chloroaniline	0.85	ug/l	1	J	J	Yes
bis(2-Chloroethoxy)methane	4.9	ug/l	1	-	UJ ✓	Yes
bis(2-Chloroethyl)ether	4.9	ug/l	1	-	U	Yes
bis(2-Chloroisopropyl)ether	4.9	ug/l	1	-	U	Yes
2-Chloronaphthalene	4.9	ug/l	1	-	U	Yes
4-Chlorophenyl phenyl ether	4.9	ug/l	1	-	U	Yes

Chrysene	4.9	ug/l	1	-	U	Yes
Dibenzo(a,h)anthracene	4.9	ug/l	1	-	U	Yes
Dibenzofuran	4.9	ug/l	1	-	U	Yes
3,3'-Dichlorobenzidine	4.9	ug/l	1	-	U	Yes
Diethyl phthalate	4.9	ug/l	1	-	U	Yes
Dimethyl phthalate	4.9	ug/l	1	-	U	Yes
Di-n-butyl phthalate	4.9	ug/l	1	-	U	Yes
Di-n-octyl phthalate	4.9	ug/l	1	-	U	Yes
2,4-Dinitrotoluene	4.9	ug/l	1	-	U	Yes
2,6-Dinitrotoluene	4.9	ug/l	1	-	U	Yes
bis(2-Ethylhexyl)phthalate	4.9	ug/l	1	-	U	Yes
Fluoranthene	4.9	ug/l	1	-	U	Yes
Fluorene	4.9	ug/l	1	-	U	Yes
Hexachlorobenzene	4.9	ug/l	1	-	U	Yes
Hexachlorobutadiene	4.9	ug/l	1	-	U	Yes
Hexachlorocyclopentadiene	4.9	ug/l	1	-	U	Yes
Hexachloroethane	4.9	ug/l	1	-	U	Yes
Indeno(1,2,3-cd)pyrene	4.9	ug/l	1	-	U	Yes
Isophorone	4.9	ug/l	1	-	U	Yes
2-Methylnaphthalene	4.9	ug/l	1	-	UJ	Yes
2-Nitroaniline	4.9	ug/l	1	-	UJ	Yes
3-Nitroaniline	4.9	ug/l	1	-	U	Yes
4-Nitroaniline	4.9	ug/l	1	-	U	Yes
Nitrobenzene	4.9	ug/l	1	-	U	Yes
N-Nitroso-di-n-propylamine	4.9	ug/l	1	-	U	Yes
N-Nitrosodiphenylamine	4.9	ug/l	1	-	U	Yes
Phenanthrene	4.9	ug/l	1	-	U	Yes
Pyrene	4.9	ug/l	1	-	U	Yes
1,2,4,5-Tetrachlorobenzene	4.9	ug/l	1	-	U	Yes
METHOD: 8270D (SIM)						
1,4-Dioxane	1.5	ug/l	1	B	-	Yes

Sample ID: FA42031-12
Sample location: BMSMC, Humacao, PR
Sampling date: 3/13/2017
Matrix: Groundwater

METHOD: 8270D

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Caprolactam	10	ug/l	1	-	U	Yes
4-Chloro-3-methyl phenol	5.0	ug/l	1	-	U	Yes
2-Chlorophenol	5.0	ug/l	1	-	U	Yes
2,4-Dichlorophenol	5.0	ug/l	1	-	U	Yes
2,4-Dimethylphenol	5.0	ug/l	1	-	U	Yes
2,4-Dinitrophenol	25	ug/l	1	-	UJ ✓	Yes
4,6-Dinitro-o-cresol	10	ug/l	1	-	UJ ✓	Yes
2-Methylphenol	5.0	ug/l	1	-	U	Yes
3&4-Methylphenol	5.0	ug/l	1	-	U	Yes
2-Nitrophenol	5.0	ug/l	1	-	UJ ✓	Yes
4-Nitrophenol	25	ug/l	1	-	U	Yes
Pentachlorophenol	25	ug/l	1	-	U	Yes
Phenol	5.0	ug/l	1	-	U	Yes
2,3,4,6-Tetrachlorophenol	5.0	ug/l	1	-	UJ ✓	Yes
2,4,5-Trichlorophenol	5.0	ug/l	1	-	U	Yes
2,4,6-Trichlorophenol	5.0	ug/l	1	-	U	Yes
Acenaphthene	5.0	ug/l	1	-	U	Yes
Acenaphthylene	5.0	ug/l	1	-	U	Yes
Acetophenone	5.0	ug/l	1	-	U	Yes
Anthracene	5.0	ug/l	1	-	U	Yes
Atrazine	5.0	ug/l	1	-	U	Yes
Benzaldehyde	25	ug/l	1	-	U	Yes
Benzo(a)anthracene	5.0	ug/l	1	-	U	Yes
Benzo(a)pyrene	5.0	ug/l	1	-	U	Yes
Benzo(b)fluoranthene	5.0	ug/l	1	-	U	Yes
Benzo(g,h,i)perylene	5.0	ug/l	1	-	U	Yes
Benzo(k)fluoranthene	5.0	ug/l	1	-	U	Yes
1,1'-Biphenyl	5.0	ug/l	1	-	U	Yes
4-Bromophenyl phenyl ether	5.0	ug/l	1	-	U	Yes
Butyl benzyl phthalate	5.0	ug/l	1	-	U	Yes
Carbazole	5.0	ug/l	1	-	U	Yes
4-Chloroaniline	0.93	ug/l	1	J	J	Yes
bis(2-Chloroethoxy)methane	5.0	ug/l	1	-	UJ ✓	Yes
bis(2-Chloroethyl)ether	5.0	ug/l	1	-	U	Yes
bis(2-Chloroisopropyl)ether	5.0	ug/l	1	-	U	Yes
2-Chloronaphthalene	5.0	ug/l	1	-	U	Yes
4-Chlorophenyl phenyl ether	5.0	ug/l	1	-	U	Yes

Chrysene	5.0	ug/l	1	-	U	Yes
Dibenzo(a,h)anthracene	5.0	ug/l	1	-	U	Yes
Dibenzofuran	5.0	ug/l	1	-	U	Yes
3,3'-Dichlorobenzidine	5.0	ug/l	1	-	U	Yes
Diethyl phthalate	5.0	ug/l	1	-	U	Yes
Dimethyl phthalate	5.0	ug/l	1	-	U	Yes
Di-n-butyl phthalate	5.0	ug/l	1	-	U	Yes
Di-n-octyl phthalate	5.0	ug/l	1	-	U	Yes
2,4-Dinitrotoluene	5.0	ug/l	1	-	U	Yes
2,6-Dinitrotoluene	5.0	ug/l	1	-	U	Yes
bis(2-Ethylhexyl)phthalate	5.0	ug/l	1	-	U	Yes
Fluoranthene	5.0	ug/l	1	-	U	Yes
Fluorene	5.0	ug/l	1	-	U	Yes
Hexachlorobenzene	5.0	ug/l	1	-	U	Yes
Hexachlorobutadiene	5.0	ug/l	1	-	U	Yes
Hexachlorocyclopentadiene	5.0	ug/l	1	-	U	Yes
Hexachloroethane	5.0	ug/l	1	-	U	Yes
Indeno(1,2,3-cd)pyrene	5.0	ug/l	1	-	U	Yes
Isophorone	5.0	ug/l	1	-	U	Yes
2-Methylnaphthalene	5.0	ug/l	1	-	UJ ✓	Yes
2-Nitroaniline	5.0	ug/l	1	-	UJ ✓	Yes
3-Nitroaniline	5.0	ug/l	1	-	U	Yes
4-Nitroaniline	5.0	ug/l	1	-	U	Yes
Nitrobenzene	5.0	ug/l	1	-	U	Yes
N-Nitroso-di-n-propylamine	5.0	ug/l	1	-	U	Yes
N-Nitrosodiphenylamine	5.0	ug/l	1	-	U	Yes
Phenanthrene	5.0	ug/l	1	-	U	Yes
Pyrene	5.0	ug/l	1	-	U	Yes
1,2,4,5-Tetrachlorobenzene	5.0	ug/l	1	-	U	Yes
METHOD: 8270D (SIM)						
1,4-Dioxane	0.29	ug/l	1	-	U	Yes

Sample ID: FA42031-15
Sample location: BMSMC, Humacao, PR
Sampling date: 3/13/2017
Matrix: Groundwater

METHOD: 8270D

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Caprolactam	9.6	ug/l	1	-	U	Yes
4-Chloro-3-methyl phenol	4.8	ug/l	1	-	U	Yes
2-Chlorophenol	4.8	ug/l	1	-	U	Yes
2,4-Dichlorophenol	4.8	ug/l	1	-	U	Yes
2,4-Dimethylphenol	4.8	ug/l	1	-	U	Yes
2,4-Dinitrophenol	24	ug/l	1	-	UJ	Yes
4,6-Dinitro-o-cresol	9.6	ug/l	1	-	UJ	Yes
2-Methylphenol	4.8	ug/l	1	-	U	Yes
3&4-Methylphenol	4.8	ug/l	1	-	U	Yes
2-Nitrophenol	4.8	ug/l	1	-	UJ	Yes
4-Nitrophenol	24	ug/l	1	-	U	Yes
Pentachlorophenol	24	ug/l	1	-	U	Yes
Phenol	4.8	ug/l	1	-	U	Yes
2,3,4,6-Tetrachlorophenol	4.8	ug/l	1	-	UJ	Yes
2,4,5-Trichlorophenol	4.8	ug/l	1	-	U	Yes
2,4,6-Trichlorophenol	4.8	ug/l	1	-	U	Yes
Acenaphthene	4.8	ug/l	1	-	U	Yes
Acenaphthylene	4.8	ug/l	1	-	U	Yes
Acetophenone	4.8	ug/l	1	-	U	Yes
Anthracene	4.8	ug/l	1	-	U	Yes
Atrazine	4.8	ug/l	1	-	U	Yes
Benzaldehyde	24	ug/l	1	-	U	Yes
Benzo(a)anthracene	4.8	ug/l	1	-	U	Yes
Benzo(a)pyrene	4.8	ug/l	1	-	U	Yes
Benzo(b)fluoranthene	4.8	ug/l	1	-	U	Yes
Benzo(g,h,i)perylene	4.8	ug/l	1	-	U	Yes
Benzo(k)fluoranthene	4.8	ug/l	1	-	U	Yes
1,1'-Biphenyl	4.8	ug/l	1	-	U	Yes
4-Bromophenyl phenyl ether	4.8	ug/l	1	-	U	Yes
Butyl benzyl phthalate	4.8	ug/l	1	-	U	Yes
Carbazole	4.8	ug/l	1	-	U	Yes
4-Chloroaniline	4.8	ug/l	1	-	U	Yes
bis(2-Chloroethoxy)methane	4.8	ug/l	1	-	UJ	Yes
bis(2-Chloroethyl)ether	4.8	ug/l	1	-	U	Yes
bis(2-Chloroisopropyl)ether	4.8	ug/l	1	-	U	Yes
2-Chloronaphthalene	4.8	ug/l	1	-	U	Yes
4-Chlorophenyl phenyl ether	4.8	ug/l	1	-	U	Yes

Chrysene	4.8	ug/l	1	-	U	Yes
Dibenzo(a,h)anthracene	4.8	ug/l	1	-	U	Yes
Dibenzofuran	4.8	ug/l	1	-	U	Yes
3,3'-Dichlorobenzidine	4.8	ug/l	1	-	U	Yes
Diethyl phthalate	4.8	ug/l	1	-	U	Yes
Dimethyl phthalate	4.8	ug/l	1	-	U	Yes
Di-n-butyl phthalate	4.8	ug/l	1	-	U	Yes
Di-n-octyl phthalate	4.8	ug/l	1	-	U	Yes
2,4-Dinitrotoluene	4.8	ug/l	1	-	U	Yes
2,6-Dinitrotoluene	4.8	ug/l	1	-	U	Yes
bis(2-Ethylhexyl)phthalate	4.8	ug/l	1	-	U	Yes
Fluoranthene	4.8	ug/l	1	-	U	Yes
Fluorene	4.8	ug/l	1	-	U	Yes
Hexachlorobenzene	4.8	ug/l	1	-	U	Yes
Hexachlorobutadiene	4.8	ug/l	1	-	U	Yes
Hexachlorocyclopentadiene	4.8	ug/l	1	-	U	Yes
Hexachloroethane	4.8	ug/l	1	-	U	Yes
Indeno(1,2,3-cd)pyrene	4.8	ug/l	1	-	U	Yes
Isophorone	4.8	ug/l	1	-	U	Yes
2-Methylnaphthalene	4.8	ug/l	1	-	UJ ✓	Yes
2-Nitroaniline	4.8	ug/l	1	-	UJ ✓	Yes
3-Nitroaniline	4.8	ug/l	1	-	U	Yes
4-Nitroaniline	4.8	ug/l	1	-	U	Yes
Nitrobenzene	4.8	ug/l	1	-	U	Yes
N-Nitroso-di-n-propylamine	4.8	ug/l	1	-	U	Yes
N-Nitrosodiphenylamine	4.8	ug/l	1	-	U	Yes
Phenanthrene	4.8	ug/l	1	-	U	Yes
Pyrene	4.8	ug/l	1	-	U	Yes
1,2,4,5-Tetrachlorobenzene	4.8	ug/l	1	-	U	Yes
METHOD: 8270D (SIM)						
1,4-Dioxane	0.38	ug/l	1	B	-	Yes

Sample ID: FA42031-16
Sample location: BMSMC, Humacao, PR
Sampling date: 3/13/2017
Matrix: AQ - Field Blank Water

METHOD: 8270D

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Caprolactam	9.8	ug/l	1	-	U	Yes
4-Chloro-3-methyl phenol	4.9	ug/l	1	-	U	Yes
2-Chlorophenol	4.9	ug/l	1	-	U	Yes
2,4-Dichlorophenol	4.9	ug/l	1	-	U	Yes
2,4-Dimethylphenol	4.9	ug/l	1	-	U	Yes
2,4-Dinitrophenol	25	ug/l	1	-	UJ	Yes
4,6-Dinitro-o-cresol	9.8	ug/l	1	-	UJ	Yes
2-Methylphenol	4.9	ug/l	1	-	U	Yes
3&4-Methylphenol	4.9	ug/l	1	-	U	Yes
2-Nitrophenol	4.9	ug/l	1	-	UJ	Yes
4-Nitrophenol	25	ug/l	1	-	U	Yes
Pentachlorophenol	25	ug/l	1	-	U	Yes
Phenol	4.9	ug/l	1	-	U	Yes
2,3,4,6-Tetrachlorophenol	4.9	ug/l	1	-	UJ	Yes
2,4,5-Trichlorophenol	4.9	ug/l	1	-	U	Yes
2,4,6-Trichlorophenol	4.9	ug/l	1	-	U	Yes
Acenaphthene	4.9	ug/l	1	-	U	Yes
Acenaphthylene	4.9	ug/l	1	-	U	Yes
Acetophenone	4.9	ug/l	1	-	U	Yes
Anthracene	4.9	ug/l	1	-	U	Yes
Atrazine	4.9	ug/l	1	-	U	Yes
Benzaldehyde	25	ug/l	1	-	U	Yes
Benzo(a)anthracene	4.9	ug/l	1	-	U	Yes
Benzo(a)pyrene	4.9	ug/l	1	-	U	Yes
Benzo(b)fluoranthene	4.9	ug/l	1	-	U	Yes
Benzo(g,h,i)perylene	4.9	ug/l	1	-	U	Yes
Benzo(k)fluoranthene	4.9	ug/l	1	-	U	Yes
1,1'-Biphenyl	4.9	ug/l	1	-	U	Yes
4-Bromophenyl phenyl ether	4.9	ug/l	1	-	U	Yes
Butyl benzyl phthalate	4.9	ug/l	1	-	U	Yes
Carbazole	4.9	ug/l	1	-	U	Yes
4-Chloroaniline	4.9	ug/l	1	-	U	Yes
bis(2-Chloroethoxy)methane	4.9	ug/l	1	-	UJ	Yes
bis(2-Chloroethyl)ether	4.9	ug/l	1	-	U	Yes
bis(2-Chloroisopropyl)ether	4.9	ug/l	1	-	U	Yes
2-Chloronaphthalene	4.9	ug/l	1	-	U	Yes
4-Chlorophenyl phenyl ether	4.9	ug/l	1	-	U	Yes

Chrysene	4.9	ug/l	1	-	U	Yes
Dibenzo(a,h)anthracene	4.9	ug/l	1	-	U	Yes
Dibenzofuran	4.9	ug/l	1	-	U	Yes
3,3'-Dichlorobenzidine	4.9	ug/l	1	-	U	Yes
Diethyl phthalate	4.9	ug/l	1	-	U	Yes
Dimethyl phthalate	4.9	ug/l	1	-	U	Yes
Di-n-butyl phthalate	4.9	ug/l	1	-	U	Yes
Di-n-octyl phthalate	4.9	ug/l	1	-	U	Yes
2,4-Dinitrotoluene	4.9	ug/l	1	-	U	Yes
2,6-Dinitrotoluene	4.9	ug/l	1	-	U	Yes
bis(2-Ethylhexyl)phthalate	4.9	ug/l	1	-	U	Yes
Fluoranthene	4.9	ug/l	1	-	U	Yes
Fluorene	4.9	ug/l	1	-	U	Yes
Hexachlorobenzene	4.9	ug/l	1	-	U	Yes
Hexachlorobutadiene	4.9	ug/l	1	-	U	Yes
Hexachlorocyclopentadiene	4.9	ug/l	1	-	U	Yes
Hexachloroethane	4.9	ug/l	1	-	U	Yes
Indeno(1,2,3-cd)pyrene	4.9	ug/l	1	-	U	Yes
Isophorone	4.9	ug/l	1	-	U	Yes
2-Methylnaphthalene	4.9	ug/l	1	-	UJ ✓	Yes
2-Nitroaniline	4.9	ug/l	1	-	UJ ✓	Yes
3-Nitroaniline	4.9	ug/l	1	-	U	Yes
4-Nitroaniline	4.9	ug/l	1	-	U	Yes
Nitrobenzene	4.9	ug/l	1	-	U	Yes
N-Nitroso-di-n-propylamine	4.9	ug/l	1	-	U	Yes
N-Nitrosodiphenylamine	4.9	ug/l	1	-	U	Yes
Phenanthrene	4.9	ug/l	1	-	U	Yes
Pyrene	4.9	ug/l	1	-	U	Yes
1,2,4,5-Tetrachlorobenzene	4.9	ug/l	1	-	U	Yes
METHOD: 8270D (SIM)						
1,4-Dioxane	0.38	ug/l	1	-	-	Yes

Sample ID: FA42031-17
Sample location: BMSMC, Humacao, PR
Sampling date: 3/13/2017
Matrix: Groundwater

METHOD: 8270D

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Caprolactam	9.8	ug/l	1	-	U	Yes
4-Chloro-3-methyl phenol	4.9	ug/l	1	-	U	Yes
2-Chlorophenol	4.9	ug/l	1	-	U	Yes
2,4-Dichlorophenol	4.9	ug/l	1	-	U	Yes
2,4-Dimethylphenol	4.9	ug/l	1	-	U	Yes
2,4-Dinitrophenol	25	ug/l	1	-	UJ	Yes
4,6-Dinitro-o-cresol	9.8	ug/l	1	-	UJ	Yes
2-Methylphenol	4.9	ug/l	1	-	U	Yes
3&4-Methylphenol	4.9	ug/l	1	-	U	Yes
2-Nitrophenol	4.9	ug/l	1	-	UJ	Yes
4-Nitrophenol	25	ug/l	1	-	U	Yes
Pentachlorophenol	25	ug/l	1	-	U	Yes
Phenol	4.9	ug/l	1	-	U	Yes
2,3,4,6-Tetrachlorophenol	4.9	ug/l	1	-	UJ	Yes
2,4,5-Trichlorophenol	4.9	ug/l	1	-	U	Yes
2,4,6-Trichlorophenol	4.9	ug/l	1	-	U	Yes
Acenaphthene	4.9	ug/l	1	-	U	Yes
Acenaphthylene	4.9	ug/l	1	-	U	Yes
Acetophenone	4.9	ug/l	1	-	U	Yes
Anthracene	4.9	ug/l	1	-	U	Yes
Atrazine	4.9	ug/l	1	-	U	Yes
Benzaldehyde	25	ug/l	1	-	U	Yes
Benzo(a)anthracene	4.9	ug/l	1	-	U	Yes
Benzo(a)pyrene	4.9	ug/l	1	-	U	Yes
Benzo(b)fluoranthene	4.9	ug/l	1	-	U	Yes
Benzo(g,h,i)perylene	4.9	ug/l	1	-	U	Yes
Benzo(k)fluoranthene	4.9	ug/l	1	-	U	Yes
1,1'-Biphenyl	4.9	ug/l	1	-	U	Yes
4-Bromophenyl phenyl ether	4.9	ug/l	1	-	U	Yes
Butyl benzyl phthalate	4.9	ug/l	1	-	U	Yes
Carbazole	4.9	ug/l	1	-	U	Yes
4-Chloroaniline	1.1	ug/l	1	J	J	Yes
bis(2-Chloroethoxy)methane	4.9	ug/l	1	-	UJ	Yes
bis(2-Chloroethyl)ether	4.9	ug/l	1	-	U	Yes
bis(2-Chloroisopropyl)ether	4.9	ug/l	1	-	U	Yes
2-Chloronaphthalene	4.9	ug/l	1	-	U	Yes
4-Chlorophenyl phenyl ether	4.9	ug/l	1	-	U	Yes

Chrysene	4.9	ug/l	1	-	U	Yes
Dibenzo(a,h)anthracene	4.9	ug/l	1	-	U	Yes
Dibenzofuran	4.9	ug/l	1	-	U	Yes
3,3'-Dichlorobenzidine	4.9	ug/l	1	-	U	Yes
Diethyl phthalate	4.9	ug/l	1	-	U	Yes
Dimethyl phthalate	4.9	ug/l	1	-	U	Yes
Di-n-butyl phthalate	4.9	ug/l	1	-	U	Yes
Di-n-octyl phthalate	4.9	ug/l	1	-	U	Yes
2,4-Dinitrotoluene	4.9	ug/l	1	-	U	Yes
2,6-Dinitrotoluene	4.9	ug/l	1	-	U	Yes
bis(2-Ethylhexyl)phthalate	4.9	ug/l	1	-	U	Yes
Fluoranthene	4.9	ug/l	1	-	U	Yes
Fluorene	4.9	ug/l	1	-	U	Yes
Hexachlorobenzene	4.9	ug/l	1	-	U	Yes
Hexachlorobutadiene	4.9	ug/l	1	-	U	Yes
Hexachlorocyclopentadiene	4.9	ug/l	1	-	U	Yes
Hexachloroethane	4.9	ug/l	1	-	U	Yes
Indeno(1,2,3-cd)pyrene	4.9	ug/l	1	-	U	Yes
Isophorone	4.9	ug/l	1	-	U	Yes
2-Methylnaphthalene	4.9	ug/l	1	-	UJ	Yes
2-Nitroaniline	4.9	ug/l	1	-	UJ	Yes
3-Nitroaniline	4.9	ug/l	1	-	U	Yes
4-Nitroaniline	4.9	ug/l	1	-	U	Yes
Nitrobenzene	4.9	ug/l	1	-	U	Yes
N-Nitroso-di-n-propylamine	4.9	ug/l	1	-	U	Yes
N-Nitrosodiphenylamine	4.9	ug/l	1	-	U	Yes
Phenanthrene	4.9	ug/l	1	-	U	Yes
Pyrene	4.9	ug/l	1	-	U	Yes
1,2,4,5-Tetrachlorobenzene	4.9	ug/l	1	-	U	Yes
METHOD: 8270D (SIM)						
1,4-Dioxane	37.6	ug/l	5	B	-	Yes

Sample ID: FA42031-7MS
Sample location: BMSMC, Humacao, PR
Sampling date: 3/10/2017
Matrix: Groundwater

METHOD: 8270D

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Caprolactam	32.9	ug/l	1	-	-	Yes
4-Chloro-3-methyl phenol	87.7	ug/l	1	-	-	Yes
2-Chlorophenol	75.7	ug/l	1	-	-	Yes
2,4-Dichlorophenol	86.4	ug/l	1	-	-	Yes
2,4-Dimethylphenol	77.8	ug/l	1	-	-	Yes
2,4-Dinitrophenol	187	ug/l	1	-	-	Yes
4,6-Dinitro-o-cresol	207	ug/l	1	-	-	Yes
2-Methylphenol	70.8	ug/l	1	-	-	Yes
3&4-Methylphenol	138	ug/l	1	-	-	Yes
2-Nitrophenol	85.7	ug/l	1	-	-	Yes
4-Nitrophenol	94	ug/l	1	-	-	Yes
Pentachlorophenol	202	ug/l	1	-	-	Yes
Phenol	44.7	ug/l	1	-	-	Yes
2,3,4,6-Tetrachlorophenol	97.2	ug/l	1	-	-	Yes
2,4,5-Trichlorophenol	99.2	ug/l	1	-	-	Yes
2,4,6-Trichlorophenol	96.9	ug/l	1	-	-	Yes
Acenaphthene	93.2	ug/l	1	-	-	Yes
Acenaphthylene	93.7	ug/l	1	-	-	Yes
Acetophenone	76.1	ug/l	1	-	-	Yes
Anthracene	99.8	ug/l	1	-	-	Yes
Atrazine	89.8	ug/l	1	-	-	Yes
Benzaldehyde	66.9	ug/l	1	-	-	Yes
Benzo(a)anthracene	100	ug/l	1	-	-	Yes
Benzo(a)pyrene	103	ug/l	1	-	-	Yes
Benzo(b)fluoranthene	99.2	ug/l	1	-	-	Yes
Benzo(g,h,i)perylene	96.6	ug/l	1	-	-	Yes
Benzo(k)fluoranthene	108	ug/l	1	-	-	Yes
1,1'-Biphenyl	83.8	ug/l	1	-	-	Yes
4-Bromophenyl phenyl ether	97.2	ug/l	1	-	-	Yes
Butyl benzyl phthalate	97.5	ug/l	1	-	-	Yes
Carbazole	105	ug/l	1	-	-	Yes
4-Chloroaniline	74.8	ug/l	1	-	-	Yes
bis(2-Chloroethoxy)methane	84.0	ug/l	1	-	-	Yes
bis(2-Chloroethyl)ether	83.8	ug/l	1	-	-	Yes
bis(2-Chloroisopropyl)ether	85.2	ug/l	1	-	-	Yes
2-Chloronaphthalene	85.9	ug/l	1	-	-	Yes
4-Chlorophenyl phenyl ether	93.8	ug/l	1	-	-	Yes

Chrysene	109	ug/l	1	-	-	Yes
Dibenzo(a,h)anthracene	101	ug/l	1	-	-	Yes
Dibenzofuran	92.3	ug/l	1	-	-	Yes
3,3'-Dichlorobenzidine	79.8	ug/l	1	-	-	Yes
Diethyl phthalate	90.0	ug/l	1	-	-	Yes
Dimethyl phthalate	93.1	ug/l	1	-	-	Yes
Di-n-butyl phthalate	98.5	ug/l	1	-	-	Yes
Di-n-octyl phthalate	101	ug/l	1	-	-	Yes
2,4-Dinitrotoluene	100	ug/l	1	-	-	Yes
2,6-Dinitrotoluene	103	ug/l	1	-	-	Yes
bis(2-Ethylhexyl)phthalate	102	ug/l	1	-	-	Yes
Fluoranthene	98.5	ug/l	1	-	-	Yes
Fluorene	93.4	ug/l	1	-	-	Yes
Hexachlorobenzene	98.0	ug/l	1	-	-	Yes
Hexachlorobutadiene	77.4	ug/l	1	-	-	Yes
Hexachlorocyclopentadiene	80.8	ug/l	1	-	-	Yes
Hexachloroethane	71.9	ug/l	1	-	-	Yes
Indeno(1,2,3-cd)pyrene	94.7	ug/l	1	-	-	Yes
Isophorone	91.2	ug/l	1	-	-	Yes
2-Methylnaphthalene	74.9	ug/l	1	-	-	Yes
2-Nitroaniline	93.7	ug/l	1	-	-	Yes
3-Nitroaniline	90.0	ug/l	1	-	-	Yes
4-Nitroaniline	95.0	ug/l	1	-	-	Yes
Nitrobenzene	81.8	ug/l	1	-	-	Yes
N-Nitroso-di-n-propylamine	77.0	ug/l	1	-	-	Yes
N-Nitrosodiphenylamine	104	ug/l	1	-	-	Yes
Phenanthrene	102	ug/l	1	-	-	Yes
Pyrene	97.2	ug/l	1	-	-	Yes
1,2,4,5-Tetrachlorobenzene	76.6	ug/l	1	-	-	Yes

Sample ID: FA42031-7MSD
Sample location: BMSMC, Humacao, PR
Sampling date: 3/10/2017
Matrix: Groundwater

METHOD: 8270D

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Caprolactam	20.1	ug/l	1	-	-	Yes
4-Chloro-3-methyl phenol	79.1	ug/l	1	-	-	Yes
2-Chlorophenol	68.6	ug/l	1	-	-	Yes
2,4-Dichlorophenol	78.5	ug/l	1	-	-	Yes
2,4-Dimethylphenol	70.3	ug/l	1	-	-	Yes
2,4-Dinitrophenol	173	ug/l	1	-	-	Yes
4,6-Dinitro-o-cresol	195	ug/l	1	-	-	Yes
2-Methylphenol	60.8	ug/l	1	-	-	Yes
3&4-Methylphenol	112	ug/l	1	-	-	Yes
2-Nitrophenol	78.6	ug/l	1	-	-	Yes
4-Nitrophenol	65	ug/l	1	-	-	Yes
Pentachlorophenol	188	ug/l	1	-	-	Yes
Phenol	29.9	ug/l	1	-	-	Yes
2,3,4,6-Tetrachlorophenol	87.1	ug/l	1	-	-	Yes
2,4,5-Trichlorophenol	92.3	ug/l	1	-	-	Yes
2,4,6-Trichlorophenol	86.7	ug/l	1	-	-	Yes
Acenaphthene	84.6	ug/l	1	-	-	Yes
Acenaphthylene	85.2	ug/l	1	-	-	Yes
Acetophenone	70.4	ug/l	1	-	-	Yes
Anthracene	90.8	ug/l	1	-	-	Yes
Atrazine	81.2	ug/l	1	-	-	Yes
Benzaldehyde	61	ug/l	1	-	-	Yes
Benzo(a)anthracene	94.7	ug/l	1	-	-	Yes
Benzo(a)pyrene	95.6	ug/l	1	-	-	Yes
Benzo(b)fluoranthene	99.8	ug/l	1	-	-	Yes
Benzo(g,h,i)perylene	87.6	ug/l	1	-	-	Yes
Benzo(k)fluoranthene	95.0	ug/l	1	-	-	Yes
1,1'-Biphenyl	76.6	ug/l	1	-	-	Yes
4-Bromophenyl phenyl ether	87.8	ug/l	1	-	-	Yes
Butyl benzyl phthalate	91.4	ug/l	1	-	-	Yes
Carbazole	96.5	ug/l	1	-	-	Yes
4-Chloroaniline	68.3	ug/l	1	-	-	Yes
bis(2-Chloroethoxy)methane	75.6	ug/l	1	-	-	Yes
bis(2-Chloroethyl)ether	78.2	ug/l	1	-	-	Yes
bis(2-Chloroisopropyl)ether	80.8	ug/l	1	-	-	Yes
2-Chloronaphthalene	79.0	ug/l	1	-	-	Yes
4-Chlorophenyl phenyl ether	88.4	ug/l	1	-	-	Yes

Chrysene	100.0	ug/l	1	-	-	Yes
Dibenzo(a,h)anthracene	91.5	ug/l	1	-	-	Yes
Dibenzofuran	82.6	ug/l	1	-	-	Yes
3,3'-Dichlorobenzidine	73.4	ug/l	1	-	-	Yes
Diethyl phthalate	81.0	ug/l	1	-	-	Yes
Dimethyl phthalate	84.1	ug/l	1	-	-	Yes
Di-n-butyl phthalate	89.2	ug/l	1	-	-	Yes
Di-n-octyl phthalate	96.2	ug/l	1	-	-	Yes
2,4-Dinitrotoluene	92.0	ug/l	1	-	-	Yes
2,6-Dinitrotoluene	93.4	ug/l	1	-	-	Yes
bis(2-Ethylhexyl)phthalate	94	ug/l	1	-	-	Yes
Fluoranthene	91.6	ug/l	1	-	-	Yes
Fluorene	85.7	ug/l	1	-	-	Yes
Hexachlorobenzene	94.3	ug/l	1	-	-	Yes
Hexachlorobutadiene	69.6	ug/l	1	-	-	Yes
Hexachlorocyclopentadiene	76.1	ug/l	1	-	-	Yes
Hexachloroethane	67.3	ug/l	1	-	-	Yes
Indeno(1,2,3-cd)pyrene	86.4	ug/l	1	-	-	Yes
Isophorone	81.3	ug/l	1	-	-	Yes
2-Methylnaphthalene	69.5	ug/l	1	-	-	Yes
2-Nitroaniline	86.7	ug/l	1	-	-	Yes
3-Nitroaniline	81.7	ug/l	1	-	-	Yes
4-Nitroaniline	85.1	ug/l	1	-	-	Yes
Nitrobenzene	76.3	ug/l	1	-	-	Yes
N-Nitroso-di-n-propylamine	69.4	ug/l	1	-	-	Yes
N-Nitrosodiphenylamine	96.8	ug/l	1	-	-	Yes
Phenanthrene	94.6	ug/l	1	-	-	Yes
Pyrene	89.7	ug/l	1	-	-	Yes
1,2,4,5-Tetrachlorobenzene	70.5	ug/l	1	-	-	Yes

Sample ID: FA42031-7MS
Sample location: BMSMC, Humacao, PR
Sampling date: 3/10/2017
Matrix: Groundwater

METHOD: 8270D

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
1,4-dioxane	24.3	ug/l	1	-	-	Yes

Sample ID: FA42031-7MSD
Sample location: BMSMC, Humacao, PR
Sampling date: 3/10/2017
Matrix: Groundwater

METHOD: 8270D

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
1,4-dioxane	21.5	ug/l	1	-	-	Yes

DATA REVIEW WORKSHEETS

Project Number:_FA42031_____
Date:_____March_10_+13,_2017_____
Shipping Date:__March_13,_2017_____
EPA Region:_____2_____

REVIEW OF SEMIVOLATILE ORGANIC PACKAGE

The following guidelines for evaluating volatile organics were created to delineate required validation actions. This document will assist the reviewer in using professional judgment to make more informed decision and in better serving the needs of the data users. The sample results were assessed according to USEPA data validation guidance documents in the following order of precedence: EPA Hazardous Waste Support Section, SOP HW-35A, July 2015 –Revision 0. *Semivolatile Data Validation*. The QC criteria and data validation actions listed on the data review worksheets are from the primary guidance document, unless otherwise noted.

The hardcopied (laboratory name) _Accutest_____ data package received has been reviewed and the quality control and performance data summarized. The data review for SVOCs included:

Lab. Project/SDG No.: ____FA42031_____ Sample matrix: ___Groundwater____
No. of Samples: _____20_SIM/15_SCAN_____

Trip blank No.: _____-_____
Field blank No.: _____FA42031-5;_FA42031-16_____
Equipment blank No.:_____FA42031-1_____
Field duplicate No.:_____FA42031-2/FA42031-6;_FA42031-10/FA42031-11_____

___X___ Data Completeness
___X___ Holding Times
___X___ GC/MS Tuning
___X___ Internal Standard Performance
___X___ Blanks
___X___ Surrogate Recoveries
___X___ Matrix Spike/Matrix Spike Duplicate
___X___ Laboratory Control Spikes
___X___ Field Duplicates
___X___ Calibrations
___X___ Compound Identifications
___X___ Compound Quantitation
___X___ Quantitation Limits

_Overall Comments:_Selected_SVOCs_from_the_TCL_special_list_analyzed_by_method_SW846-_8270D;_Selected_PAHs_and_1,4-Dioxane_analyzed_by_method_SW846-8270D_(SIM);_1,4-dioxane_and_PAH's_analyzed_separately._Samples_from_FA42031-7_on_analyzed_only_for_1,4-Dioxane.__

Definition of Qualifiers:

J- Estimated results
U- Compound not detected
R- Rejected data
UJ- Estimated nondetect

Reviewer:_Rafael Infante_____
Date:___May_2,_2017_____

DATA REVIEW WORKSHEETS

DATA COMPLETENESS

MISSING INFORMATION	DATE LAB. CONTACTED	DATE RECEIVED

All criteria were met __X__
Criteria were not met
and/or see below _____

HOLDING TIMES

The objective of this parameter is to ascertain the validity of the results based on the holding time of the sample from time of collection to the time of analysis.

Complete table for all samples and note the analysis and/or preservation not within criteria

SAMPLE ID	DATE SAMPLED	DATE EXTRACTED/ANALYZED	pH	ACTION
FA42031-12 and FA42031-15	03/13/17	03/24/17 03/25/17	-	The following samples were extracted outside of holding time for method SW846 8270D BY SIM:- Samples re-extracted beyond hold time; re-extract results reported due to suspected laboratory contamination in original extract. No qualification made in samples professional judgment.
All samples extracted and analyzed within method recommended holding time except for the cases described in this document. Sample preservation appropriate.				

Cooler temperature (Criteria: 4 ± 2 °C): _____3.0-3.8_°C_____

Actions

Results will be qualified based on the criteria of the following Table:

Table 1. Holding Time Actions for Semivolatile Analyses

Matrix	Preserved	Criteria	Action: Detected Associated Compounds	Action: Non-Detected Associated Compounds
Aqueous	No	≤ 7 days (for extraction) ≤ 40 days (for analysis)	Use professional judgment	
	No	> 7 days (for extraction) > 40 days (for analysis)	J	Use professional judgment
	Yes	≤ 7 days (for extraction) ≤ 40 days (for analysis)	No qualification	
	Yes	> 7 days (for extraction) > 40 days (for analysis)	J	UJ
	Yes/No	Grossly Exceeded	J	UJ or R
Non-Aqueous	No	≤ 14 days (for extraction) ≤ 40 days (for analysis)	Use professional judgment	
	No	> 14 days (for extraction) > 40 days (for analysis)	J	Use professional judgment
	Yes	≤ 14 days (for extraction) ≤ 40 days (for analysis)	No qualification	
	Yes	> 14 days (for extraction) > 40 days (for analysis)	J	UJ
	Yes/No	Grossly Exceeded	J	UJ or R

All criteria were met _X__
Criteria were not met see below _____

GC/MS TUNING

The assessment of the tuning results is to determine if the sample instrumentation is within the standard tuning QC limits

_X__ The DFTPP performance results were reviewed and found to be within the specified criteria.

_X__ DFTPP tuning was performed for every 12 hours of sample analysis.

If no, use professional judgment to determine whether the associated data should be accepted, qualified or rejected.

Notes: These requirements do not apply when samples are analyzed by the Selected Ion Monitoring (SIM) technique.

All mass spectrometer conditions must be identical to those used during the sample analysis. Background subtraction actions resulting in spectral distortion are unacceptable

Notes: No data should be qualified based of DFTPP failure.

The requirement to analyze the instrument performance check solution is optional when analysis of PAHs/pentachlorophenol is to be performed by the SIM technique.

List the samples affected:
_____
_____
_____
_____

Actions:

1. If sample are analyzed without a preceding valid instrument performance check or are analyzed 12 hours after the Instrument Performance Check, qualify all data in those samples as unusable (R).
2. If ion abundance criteria are not met, use professional judgment to determine to what extent the data may be utilized.
3. State in the Data Review Narrative, decisions to use analytical data associated with DFTPP instrument performance checks not meeting the contract requirements.
4. Use professional judgment to determine if associated data should be qualified based on the spectrum of the mass calibration compounds.

All criteria were met ___X___
Criteria were not met
and/or see below _____

INITIAL CALIBRATION VERIFICATION

Compliance requirements for satisfactory instrument calibration are established to ensure that the instrument is capable of producing and maintaining acceptable quantitative data.

Date of initial calibration:_____02/13/17_(SIM)_____ ____03/23/17;_03/26/17_(SCAN)_____
Instrument ID numbers:_____GCMSW_____ _____GCMSL_____
Matrix/Level:_____Aqueous/low_____ _____Aqueous/low_____

Date of initial calibration:___02/23/17_(SIM)_____ _____03/23/17_(SCAN)_____
Instrument ID numbers:_____GCMSU_____ _____GCMSX_____
Matrix/Level:_____Aqueous/low_____ _____Aqueous/low_____

DATE	LAB FILE ID#	CRITERIA OUT RFs, %RSD, %D, r	COMPOUND	SAMPLES AFFECTED
Initial calibration meets the method and guidance validation document performance criteria.				

Note: Instrument GCMS4D used for the analysis of QC samples. QC samples not validated.

Actions:

Qualify the initial calibration analytes listed in Table 2 using the following criteria:

Table 3. Initial Calibration Actions for Semivolatile Analysis

Criteria	Action	
	Detect	Non-detect
Initial Calibration not performed at specified frequency and sequence	Use professional judgment R	Use professional judgment R
Initial Calibration not performed at the specified concentrations	J	UJ
RRF < Minimum RRF in Table 2 for target analyte	Use professional judgment J+ or R	R
RRF ≥ Minimum RRF in Table 2 for target analyte	No qualification	No qualification
%RSD > Maximum %RSD in Table 2 for target analyte	J	Use professional judgment
%RSD ≤ Maximum %RSD in Table 2 for target analyte	No qualification	No qualification

Initial Calibration

Table 2. RRF, %RSD, and %D Acceptance Criteria in Initial Calibration and CCV for Semivolatil Analysis

Analyte	Minimum RRF	Maximum %RSD	Opening Maximum %D[1]	Opening Maximum %D[1]
1,4-Dioxane	0.010	40.0	± 40.0	± 50.0
Benzaldehyde	0.100	40.0	± 40.0	± 50.0
Phenol	0.080	20.0	± 20.0	± 25.0
Bis(2-chloroethyl)ether	0.100	20.0	± 20.0	± 25.0
2-Chlorophenol	0.200	20.0	± 20.0	± 25.0
2-Methylphenol	0.010	20.0	± 20.0	± 25.0
3-Methylphenol	0.010	20.0	± 20.0	± 25.0
2,2'-Oxybis-(1-chloropropane)	0.010	20.0	± 25.0	± 50.0
Acetophenone	0.060	20.0	± 20.0	± 25.0
4-Methylphenol	0.010	20.0	± 20.0	± 25.0
N-Nitroso-di-n-propylamine	0.080	20.0	± 25.0	± 25.0
Hexachloroethane	0.100	20.0	± 20.0	± 25.0
Nitrobenzene	0.090	20.0	± 20.0	± 25.0
Isophorone	0.100	20.0	± 20.0	± 25.0
2-Nitrophenol	0.060	20.0	± 20.0	± 25.0
2,4-Dimethylphenol	0.050	20.0	± 25.0	± 50.0
Bis(2-chloroethoxy)methane	0.080	20.0	± 20.0	± 25.0
2,4-Dichlorophenol	0.060	20.0	± 20.0	± 25.0
Naphthalene	0.200	20.0	± 20.0	± 25.0
4-Chloroaniline	0.010	40.0	± 40.0	± 50.0
Hexachlorobutadiene	0.040	20.0	± 20.0	± 25.0
Caprolactam	0.010	40.0	± 30.0	± 50.0
4-Chloro-3-methylphenol	0.040	20.0	± 20.0	± 25.0
2-Methylnaphthalene	0.100	20.0	± 20.0	± 25.0
Hexachlorocyclopentadiene	0.010	40.0	± 40.0	± 50.0
2,4,6-Trichlorophenol	0.090	20.0	± 20.0	± 25.0
2,4,5-Trichlorophenol	0.100	20.0	± 20.0	± 25.0
1,1'-Biphenyl	0.200	20.0	± 20.0	± 25.0

Analyte	Minimum RRF	Maximum %RSD	Opening Maximum %D[1]	Opening Maximum %D[1]
2-Chloronaphthalene	0.300	20.0	± 20.0	± 25.0
2-Nitroaniline	0.060	20.0	± 25.0	± 25.0
Dimethylphthalate	0.300	20.0	± 25.0	± 25.0
2,6-Dinitrotoluene	0.080	20.0	± 20.0	± 25.0
Acenaphthylene	0.400	20.0	± 20.0	± 25.0
3-Nitroaniline	0.010	20.0	± 25.0	± 50.0
Acenaphthene	0.200	20.0	± 20.0	± 25.0
2,4-Dinitrophenol	0.010	40.0	± 50.0	± 50.0
4-Nitrophenol	0.010	40.0	± 40.0	± 50.0
Dibenzofuran	0.300	20.0	± 20.0	± 25.0
2,4-Dinitrotoluene	0.070	20.0	± 20.0	± 25.0
Diethylphthalate	0.300	20.0	± 20.0	± 25.0
1,2,4,5-Tetrachlorobenzene	0.100	20.0	± 20.0	± 25.0
4-Chlorophenyl-phenylether	0.100	20.0	± 20.0	± 25.0
Fluorene	0.200	20.0	± 20.0	± 25.0
4-Nitroaniline	0.010	40.0	± 40.0	± 50.0
4,6-Dinitro-2-methylphenol	0.010	40.0	± 30.0	± 50.0
4-Bromophenyl-phenyl ether	0.070	20.0	± 20.0	± 25.0
N-Nitrosodiphenylamine	0.100	20.0	± 20.0	± 25.0
Hexachlorobenzene	0.050	20.0	± 20.0	± 25.0
Atrazine	0.010	40.0	± 25.0	± 50.0
Pentachlorophenol	0.010	40.0	± 40.0	± 50.0
Phenanthrene	0.200	20.0	± 20.0	± 25.0
Anthracene	0.200	20.0	± 20.0	± 25.0
Carbazole	0.050	20.0	± 20.0	± 25.0
Di-n-butylphthalate	0.500	20.0	± 20.0	± 25.0
Fluoranthene	0.100	20.0	± 20.0	± 25.0
Pyrene	0.400	20.0	± 25.0	± 50.0
Butylbenzylphthalate	0.100	20.0	± 25.0	± 50.0

Analyte	Minimum RRF	Maximum %RSD	Opening Maximum %D[1]	Opening Maximum %D[1]
3,3'-Dichlorobenzidine	0.010	40.0	± 40.0	± 50.0
Benzo(a)anthracene	0.300	20.0	± 20.0	± 25.0
Chrysene	0.200	20.0	± 20.0	± 50.0
Bis(2-ethylhexyl) phthalate	0.200	20.0	± 25.0	± 50.0
Di-n-octylphthalate	0.010	40.0	± 40.0	± 50.0
Benzo(b)fluoranthene	0.010	20.0	± 25.0	± 50.0
Benzo(k)fluoranthene	0.010	20.0	± 25.0	± 50.0
Benzo(a)pyrene	0.010	20.0	± 20.0	± 50.0
Indeno(1,2,3-cd)pyrene	0.010	20.0	± 25.0	± 50.0
Dibenzo(a,h)anthracene	0.010	20.0	± 25.0	± 50.0
Benzo(g,h,i)perylene	0.010	20.0	± 30.0	± 50.0
2,3,4,6-Tetrachlorophenol	0.040	20.0	± 20.0	± 50.0
Naphthalene	0.600	20.0	± 25.0	± 25.0
2-Methylnaphthalene	0.300	20.0	± 20.0	± 25.0
Acenaphthylene	0.900	20.0	± 20.0	± 25.0
Acenaphthene	0.500	20.0	± 20.0	± 25.0
Fluorene	0.700	20.0	± 25.0	± 50.0
Phenanthrene	0.300	20.0	± 25.0	± 50.0
Anthracene	0.400	20.0	± 25.0	± 50.0
Fluoranthene	0.400	20.0	± 25.0	± 50.0
Pyrene	0.500	20.0	± 30.0	± 50.0
Benzo(a)anthracene	0.400	20.0	± 25.0	± 50.0
Chyrsene	0.400	20.0	± 25.0	± 50.0
Benzo(b)fluoranthene	0.100	20.0	± 30.0	± 50.0
Benzo(k)fluoranthene	0.100	20.0	± 30.0	± 50.0
Benzo(a)pyrene	0.100	20.0	± 25.0	± 50.0
Indeno(1,2,3-cd)pyrene	0.100	20.0	± 40.0	± 50.0
Dibenzo(a,h)anthracene	0.010	25.0	± 40.0	± 50.0
Benzo(g,h,i)perylene	0.020	25.0	± 40.0	± 50.0

Pentachlorophenol	0.010	40.0	± 50.0	± 50.0
Deuterated Monitoring Compounds				

Analyte	Minimum RRF	Maximum %RSD	Opening Maximum %D[1]	Closing Maximum %D
1,4-Dioxane-d_8	0.010	20.0	± 25.0	± 50.0
Phenol-d_5	0.010	20.0	± 25.0	± 25.0
Bis-(2-chloroethyl)ether-d_8	0.100	20.0	± 20.0	± 25.0
2-Chlorophenol-d_4	0.200	20.0	± 20.0	± 25.0
4-Methylphenol-d_8	0.010	20.0	± 20.0	± 25.0
4-Chloroaniline-d_4	0.010	40.0	± 40.0	± 50.0
Nitrobenzene-d_5	0.050	20.0	± 20.0	± 25.0
2-Nitrophenol-d_4	0.050	20.0	± 20.0	± 25.0
2,4-Dichlorophenol-d_3	0.060	20.0	± 20.0	± 25.0
Dimethylphthalate-d_6	0.300	20.0	± 20.0	± 25.0
Acenaphthylene-d_8	0.400	20.0	± 20.0	± 25.0
4-Nitrophenol-d_4	0.010	40.0	± 40.0	± 50.0
Fluorene-d_{10}	0.100	20.0	± 20.0	± 25.0
4,6-Dinitro-2-methylphenol-d_2	0.010	40.0	± 30.0	± 50.0
Anthracene-d_{10}	0.300	20.0	± 20.0	± 25.0
Pyrene-d_{10}	0.300	20.0	± 25.0	± 50.0
Benzo(a)pyrene-d_{12}	0.010	20.0	± 20.0	± 50.0
Fluoranthene-d_{10} (SIM)	0.400	20.0	± 25.0	± 50.0
2-Methylnaphthalene-d_{10} (SIM)	0.300	20.0	± 20.0	± 25.0

[1] If a closing CCV is acting as an opening CCV, all target analytes must meet the requirements for an opening CCV.

Note: If analysis by SIM technique is requested for PAH/pentachlorophenols, calibration standards analyzed at 0.10, 0.20, 0.40, 0.80, and 1.0 ng/uL for each target compound of interest and the associated DMCs. Pentachlorophenol will require only a four point initial calibration at 0.20, 0.40, 0.80, and 1.0 ng/uL.

All criteria were met _____
Criteria were not met
and/or see below ____X____

CONTINUING CALIBRATION VERIFICATION

Compliance requirements for satisfactory instrument calibration are established to ensure that the instrument is capable of producing and maintaining acceptable quantitative data.

Date of initial calibration:_____02/23/17_(SIM)_____
Date of initial calibration verification (ICV):_02/23/17_____
Date of continuing calibration verification (CCV):_03/16/17;_03/20/17;_03/21/17;_03/24/17;_03/25/17__
Date of closing CCV:_____03/24/17_____
Instrument ID numbers:_____GCMSU_____
Matrix/Level:_____Aqueous/low_____

Date of initial calibration:_____02/13/17_(SIM)_____
Date of initial calibration verification (ICV):_02/13/17_____
Date of continuing calibration verification (CCV):_03/22/17;_03/28/17_____
Date of closing CCV:_____02/14/17;_03/29/17_____
Instrument ID numbers:_____GCMSW_____
Matrix/Level:_____Aqueous/low_____

Date of initial calibration:_____03/23/17_(SCAN)_____03/26/17_____
Date of initial calibration verification (ICV):___03/23/17_____03/26/17_____
Date of continuing calibration verification (CCV):__03/15/17_____03/27/19;_03/29/17_____
Date of closing CCV:_____03/25/17_____
Instrument ID numbers:_____GCMSL_____
Matrix/Level:_____Aqueous/low_____

Date of initial calibration:_____03/13/17_(SCAN)_____
Date of initial calibration verification (ICV):___03/13/17_____
Date of continuing calibration verification (CCV):__03/22/17_____
Date of closing CCV:_____-_____
Instrument ID numbers:_____GCMSX_____
Matrix/Level:_____Aqueous/low_____

DATE	LAB FILE ID#	CRITERIA OUT RFs, %RSD, **%D**, r	COMPOUND	SAMPLES AFFECTED
GCMSL				
03/23/17	icv3974-50	-36.2	Phenol	FA42031-1; -2; -4; -5; -6
		21.5	bis(2-chloroethoxy)methane	
3/23/17	icv3974-50	-33.3	3-nitroaniline	FA42031-1; -2; -4; -5; -6
03/26/17	icv3976-50	29.3	bis(2-chloroethoxy)methane	FA42031-9 to -12; FA42031-15 to -17
	icv3976-50, benz	22.5	2-methylnaphthalene	
03/29/17	cc3976-50	-33.4	2-nitrophenol	
		-24.3	Caprolactam^	

DATE	LAB FILE ID#	CRITERIA OUT RFs, %RSD, %D, r	COMPOUND	SAMPLES AFFECTED
03/29/17	cc3976-50	-24.3	Hexachlorocyclopentadiene^	FA42031-9 to -12; FA42031-15 to -17
		-26.1	2-nitroaniline	
		-68.2	2,4-dinitrophenol	
		-20.6	2,3,4,6-tetrachlorophenol	
		-62.6	4,6-dinitro-2-methylphenol	-o-cresol
		-33.9	Pentachlorophenol^	

Note: Initial and continuing calibration verifications meet the method and guidance document required performance criteria except for the cases described in this document.

^Analytes not meeting the method performance criteria but within the guidance document performance criteria. No action taken.

No closing calibration verification included in data package for instruments GCMSU (SIM), and GCMSL (SCAN). No action taken, professional judgment.

Analytes not meeting the method and guidance document performance criteria are qualified as estimated (J or UJ) in affected samples.

Instrument GCMS4D used for the analysis of QC samples.

Actions:

Notes: Verify that the CCV is run at the required frequency (an opening and closing CCV must be run within 12-hour period).

All DMCs must meet the RRF values given in Table 2. No qualification of the data is necessary on DMCs RRF and %RSD/%D alone. Use professional judgment to evaluate DMCs and %RSD/%D data in conjunction with DMCs recoveries to determine the need for qualification of the data.

Qualify the initial calibration analytes listed in Table 2 using the following criteria in the CCVs:

Table 4. CCV Actions for Semivolatile Analysis

Criteria for Opening CCV	Criteria for Closing CCV	Action	
		Detect	Non-detect
CCV not performed at required frequency and sequence	CCV not performed at required frequency	Use professional judgment R	Use professional judgment R
CCV not performed at specified concentration	CCV not performed at specified concentration	Use professional judgment	Use professional judgment
RRF < Minimum RRF in Table 2 for target analyte	RRF < Minimum RRF in Table 2 for target analyte	Use professional judgment J or R	R
RRF ≥ Minimum RRF in Table 2 for target analyte	RRF > Minimum RRF in Table 2 for target analyte	No qualification	No qualification
%D outside the Opening Maximum %D limits in Table 2 for target analyte	%D outside the Closing Maximum %D limits in Table 2 for target analyte	J	UJ
%D within the inclusive Opening Maximum %D limits in Table 2 for target analyte	%D within the inclusive Closing Maximum %D limits in Table 2 for target analyte	No qualification	No qualification

All criteria were met _____
Criteria were not met
and/or see below ____X__

BLANK ANALYSIS RESULTS (Sections 1 & 2)

The assessment of the blank analysis results is to determine the existence and magnitude of contamination problems. The criteria for evaluation of blanks apply only to blanks associated with the samples, including trip, equipment, and laboratory blanks. If problems with any blanks exist, all data associated with the case must be carefully evaluated to determine whether or not there is an inherent variability in the data for the case, or if the problem is an isolated occurrence not affecting other data.

List the contamination in the blanks below. High and low levels blanks must be treated separately.

Notes: The concentration of non-target compounds in all blanks must be less than or equal to 10 ug/L.

The concentration of target compounds in all blanks must be less than its CRQL listed in the method.

Samples taken from a drinking water tap do not have and associated field blank.

Laboratory blanks

DATE ANALYZED	LAB ID	LEVEL/ MATRIX	COMPOUND	CONCENTRATION UNITS
_No_target_analytes_detected_in_method_blanks_except_for_the_cases_described_in_this_document				
_03/20/17_____	_ OP64211-MB_	_Aq./low_____	__1,4-Dioxane_____	__0.50_ug/l_____
_03/20/17_____	_ OP64230-MB_	_Aq./low_____	__1,4-Dioxane_____	__0.45_ug/l_____
_03/21/17_____	_ OP64230-MB_	_Aq./low_____	__1,4-Dioxane_____	__0.47_ug/l_____
_03/25/17_____	_ OP64320-MB_	_Aq./low_____	__1,4-Dioxane_____	__0.49_ug/l_____

Note: Laboratory qualified the result with a B. No further qualification performed, professional judgment.

Field/Equipment/Trip blank

DATE ANALYZED	LAB ID	LEVEL/ MATRIX	COMPOUND	CONCENTRATION UNITS
_No_target_analytes_detected_in_the_field/equipment_blanks_analyzed_with_this_data_package____ _except_for_the_cases_described_in_this_document._____				
_03/16/17_____	FA42031-5_____	Aq./low_____	1,4-dioxane_____	0.45_ug/l_____

Note: 1,4-dioxane detected in sample FA42031-5 (field blank); 1,4-dioxane detected in sample FA42031-4 that corresponds to this field blank. Reported concentration is higher than the reporting limit. 1,4-dioxane detected at a higher concentration in the sample than in the field blank. No qualification made professional judgment.

All criteria were met __X__
Criteria were not met
and/or see below _____

BLANK ANALYSIS RESULTS (Section 3)

Blank Actions

Qualify samples based on the criteria summarized in Table 5:

Table 5. Blank and TCLP/SPLP LEB Actions for Semivolatile Analysis

Blank Type	Blank Result	Sample Result	Action
Method, TCLP/SPLP LEB, Field	Detect	Non-detect	No qualification
	< CRQL	< CRQL	Report at CRQL and qualify as non-detect (U)
		≥ CRQL	Use professional judgment
	≥ CRQL	< CRQL	Report at CRQL and qualify as non-detect (U)
		≥ CRQL but < Blank Result	Report at sample results and qualify as non-detect (U) or as unusable (R)
		≥ CRQL and ≥ Blank Result	Use professional judgment
	Grossly high	Detect	Report at sample results and qualify as unusable (R)
	TIC > 5.0 ug/L (water) or 0.0050 mg/L (TCLP leachate) or TIC > 170 ug/Kg (soil)	Detect	Use professional judgment

List samples qualified

CONTAMINATION SOURCE/LEVEL	COMPOUND	CONC/UNITS	AL/UNITS	SQL	AFFECTED SAMPLES

All criteria were met ____
Criteria were not met
and/or see below __X__

SURROGATE SPIKE RECOVERIES – DEUTERATED MONITORING COMPOUNDS (DMCs)

Laboratory performance of individual samples is established by evaluation of surrogate spike recoveries – deuterated monitoring compounds. All samples are spiked with surrogate compounds prior to sample analysis. The accuracy of the analysis is measured by the surrogate percent recovery. Since the effects of the sample matrix are frequently outside the control of the laboratory and may present relatively unique problems, the validation of data is frequently subjective and demands analytical experience and professional judgment.

Notes: Recoveries for DMCs in samples and blanks must be within the limits specified in Table 6.

The recovery limits for any of the compounds listed in Table 6 may be expanded at any time during the period of performance if USEPA determines that the limits are too restrictive.

If a DMC is not added in the samples and blanks or the concentrations of DMCs in the samples and blank not the specified, use professional judgment in qualifying the data.

Table 7. DMC Actions for Semivolatile Analysis

Criteria	Action	
	Detect	Non-detect
%R < 10% (excluding DMCs with 10% as a lower acceptance limit)	J-	R
10% ≤ %R (excluding DMCs with 10% as a lower acceptance limit) < Lower Acceptance Limit	J-	UJ
Lower Acceptance limit ≤ %R ≤ Upper Acceptance Limit	No qualification	No qualification
%R > Upper Acceptance Limit	J+	No qualification

List the percent recoveries (%Rs) which do not meet the criteria for DMCs (surrogate) recovery.

Matrix:___Groundwater_____

SAMPLE ID **SURROGATE COMPOUND** **ACTION**

_____

_DMCs_meet_the_required_criteria_in_all_samples_analyzed._Non-_deuterated_surrogates_added_
_to_the_samples_and_were_within_laboratory_recovery_limits_except_fo_the_cases_described_in___
_this_document_____

_____

_____

Note: Surrogates not recovered in sample FA42031-2 and FA42031-6 (SIM- 1,4-Dioxane) due to dilution. No action taken, professional judgment. Surrogates recovered within control limits in undiluted samples.

The laboratory splits the batches between 8270 and 8270SIM. The surrogates were spiked at 8270 levels, which is 5x higher than what the laboratory 8270SIM setup expects. The SIM surrogates recoveries were corrected by dividing the % recovery by a factor of 5.

Table 8. Semivolatile DMCs and the Associated Target Analytes

1,4–Dioxane-d_8 (DMC-1)	**Phenol-d_5 (DMC-2)**	**Bis(2-Chloroethyl) ether-d_8 (DMC-3)**
1,4-Dioxane	Benzaldehyde Phenol	Bis(2-chloroethyl)ether 2,2'-Oxybis(1-chloropropane) Bis(2-chloroethoxy)methane
2-Chlorophenol-d_4 (DMC-4)	**4-Methylphenol-d_8 (DMC-5)**	**4-Chloroaniline-d_4 (DMC-6)**
2-Chlorophenol	2-Methylphenol 3-Methylphenol 4-Methylphenol 2,4-Dimethylphenol	4-Chloroaniline Hexachlorocyclopentadiene Dichlorobenzidine
Nitrobenzene-d_5 (DMC-7)	**2-Nitrophenol-d_4 (DMC-8)**	**2,4-Dichlorophenol-d_3 (DMC-9)**
Acetophenone N-Nitroso-di-n-propylamine Hexachloroethane Nitrobenzene 2,6-Dinitrotoluene 2,4-Dinitrotoluene N-Nitrosodiphenylamine	Isophorone 2-Nitrophenol	2,4-Dichlorophenol Hexachlorobutadiene Hexachlorocyclopentadiene 4-Chloro-3-methylphenol 2,4,6-Trichlorophenol 2,4,5-Trichlorophenol 1,2,4,5-Tetrachlorobenzene *Pentachlorophenol 2,3,4,6-Tetrachlorophenol
Dimethylphthalate-d_6 (DMC-10)	**Acenaphthylene-d_8 (DMC-11)**	**4-Nitrophenol-d_4 (DMC-12)**
Caprolactam 1,1'-Biphenyl Dimethylphthalate Diethylphthalate Di-n-butylphthalate Butylbenzylphthalate Bis(2-ethylhexyl) phthalate Di-n-octylphthalate	*Naphthalene *2-Methylnaphthalene 2-Chloronaphthalene *Acenaphthylene *Acenaphthene	2-Nitroaniline 3-Nitroaniline 2,4-Dinitrophenol 4-Nitrophenol 4-Nitroaniline

Fluorene-d_{10} (DMC-13)	**4,6-Dinitro-2-methylphenol-d_2 (DMC-14)**	**Anthracene-d_{10} (DMC-15)**
Dibenzofuran *Fluorene 4-Chlorophenyl-phenylether 4-Bromophenyl-phenylether Carbazole	4,6-Dinitro-2-methylphenol	Hexachlorobenzene Atrazine *Phenanthrene *Anthracene
Pyrene-d_{10} (DMC-16)	**Benzo(a)pyrene-d_{12} (DMC-17)**	
*Fluoranthene *Pyrene *Benzo(a)anthracene *Chrysene	3,3'-Dichlorobenzidine *Benzo(b)fluoranthene *Benzo(k)fluoranthene *Benzo(a)pyrene *Indeno(1,2,3-cd)pyrene *Dibenzo(a,h)anthracene *Benzo(g,h,i)perylene	

*Included in optional Target Analyte List (TAL) of PAHs and PCP only.

Table 9. Semivolatile SIM DMCs and the Associated Target Analytes

Fluoranthene-d10 (DMC-1)	**2-Methylnaphthalene-d10 (DMC-2)**
Fluoranthene	Naphthalene
Pyrene	2-Methylnaphthalene
Benzo(a)anthracene	Acenaphthylene
Chrysene	Acenaphthene
Benzo(b)fluoranthene	Fluorene
Benzo(k)fluoranthene	Pentachlorophenol
Benzo(a)pyrene	Phenanthrene
Indeno(1,2,3-cd)pyrene	Anthracene
Dibenzo(a,h)anthracene	
Benzo(g,h,i)perylene	

All criteria were met _____
Criteria were not met
and/or see below ____X___

VII. A MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD)

This data is generated to determine long term precision and accuracy in the analytical method for various matrices. This data alone cannot be used to evaluate the precision and accuracy of individual samples. If any % R in the MS or MSD falls outside the designated range, the reviewer should determine if there are matrix effects, i.e. LCS data are within the QC limits but MS/MSD data are outside QC limit.

1. MS/MSD Recoveries and Precision Criteria

The laboratory should use one MS and a duplicate analysis of an unspiked field sample if target analytes are expected in the sample. If target analytes are not expected, MS/MSD should be analyzed.

NOTES: Data for MS and MSDs will not be present unless requested by the Region. Notify the Contract Laboratory COR if a field or trip blank was used for the MS and MSD.

For a Matrix Spike that does not meet criteria, apply the action to only the field sample used to prepare the Matrix Spike sample. If it is clearly stated in the data validation materials that the samples were taken through incremental sampling or some other method guaranteeing the homogeneity of the sample group, then the entire sample group may be qualified.

List the %Rs, RPD of the compounds which do not meet the criteria.

Sample ID:_____FA41936-1_____ Matrix/Level:__Groundwater_
Sample ID:_____FA42031-7_____ Matrix/Level:__Groundwater_
Sample ID:_____JC42139-2_____ Matrix/Level:__Groundwater_
Sample ID:_____JC41960-16_(SIM)_____ Matrix/Level:__Groundwater_
Sample ID:_____JC42031-7_(SIM)_____ Matrix/Level:__Groundwater_
Sample ID:_____JC42035-3_(SIM)_____ Matrix/Level:__Groundwater_

The QC reported here applies to the following samples: **Method:** SW846 8270D
FA42031-1, FA42031-2, FA42031-4, FA42031-5, FA42031-6

Compound	FA41936-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
Isophorone	4.8	U	96.2	87.5	91*	96.2	80.4	84	8	43-87/25
3-Nitroaniline	4.8	U	96.2	107	111*	96.2	99.4	103	7	56-106/27

* - outside laboratory control limits

Note: No action taken, MS/MSD % recovery and RPD apply to unspiked sample. Unspiked sample was from another job.

The QC reported here applies to the following samples: **Method:** SW846 8270D
FA42031-7

Compound	FA42031-7 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
Caprolactam	ND		96.2	32.9	34	96.2	20.1	21	48*	11-68/39
4-Nitrophenol	ND		192	93.9	49	192	64.8	34	37*	18-62/33
Phenol	ND		96.2	44.7	46	96.2	29.9	31	40*	19-56/35
Chrysene	ND		96.2	109	113*	96.2	100	104	9	66-111/22

* - outside laboratory control limits

Note: MS/MSD % recovery and RPD within laboratory control limits except for the cases described in this document.

The QC reported here applies to the following samples: **Method:** SW846 8270D
FA42031-9, FA42031-10, FA42031-11, FA42031-12, FA42031-15, FA42031-16, FA42031-17

Compound	FA42139-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
4-Nitrophenol	24	U	200	127	64*	200	129	65*	2	18-62/33
4-Chloroaniline	4.8	U	100	145	145*	100	140	140*	4	49-105/27
3,3'-Dichlorobenzidine	4.8	U	100	197	197*	100	179	179*	10	46-117/29
3-Nitroaniline	4.8	U	100	139	139*	100	129	129*	7	56-106/27

* - outside laboratory control limits

Note: No action taken, MS/MSD % recovery and RPD apply to unspiked sample. Unspiked sample was from another job. No action taken, professional judgment.

The QC reported here applies to the following samples: **Method:** SW846 8270D SIM
FA42031-9, FA42031-10, FA42031-11, FA42031-12, FA42031-15, FA42031-16, FA42031-17

Compound	FA42025-3 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
1,4-Dioxane	2020	B	20	2590	2850* a	20	2490	2350* a	4	15-69/31

* - outside laboratory control limits
(a) Outside control limits due to high level in sample relative to spike amount

Note: MS/MSD % recovery and RPD within laboratory control limits except for the cases described in this document. Outside control limits due to high level in sample relative to spike amount; no action taken.

* QC limits are laboratory in-house performance criteria, LL = lower limit, UL = upper limit.
* If QC limits are not available, use limits of 70 – 130 %.

Actions:

QUALITY	%R < LL	%R > UL
Positive results	J	J
Nondetects results	R	Accept

MS/MSD criteria apply only to the unspiked sample, its dilutions, and the associated MS/MSD samples:

If the % R for the affected compounds were < LL (or 70 %), qualify positive results (J) and nondetects (UJ).
If the % R for the affected compounds were > UL (or 130 %), only qualify positive results (J).
If 25 % or more of all MS/MSD %R were < LL (or 70 %) or if two or more MS/MSD %Rs were < 10%, qualify all positive results (J) and reject nondetects (R).

A separate worksheet should be used for each MS/MSD pair.

All criteria were met __X__
Criteria were not met
and/or see below _____

INTERNAL STANDARD PERFORMANCE

The assessment of the internal standard (IS) parameter is used to assist the data reviewer in determining the condition of the analytical instrumentation.

List the internal standard area of samples which do not meet the criteria.

DATE	SAMPLE ID	IS OUT	IS AREA	ACCEPTABLE RANGE	ACTION
Internal area meets the required criteria for batch samples corresponding to this data package.					

Action:

1. If an internal standard area count for a sample or blank is greater than 213.0% of the area for the associated standard (opening CCV or mid-point standard from initial calibration) (see Table 10 below):
   a. Qualify detects for compounds quantitated using that internal standard as estimated low (J-).
   b. Do not qualify non-detected associated compounds.
2. If an internal standard area count for a sample or blank is less than 20.0% of the area for the associated standard (opening CCV or mid-point standard from initial calibration):
   a. Qualify detects for compounds quantitated using that internal standard as estimated high (J+).
   b. Qualify non-detected associated compounds as unusable (R).
3. If an internal standard area count for a sample or blank is greater than or equal to 50.0%, and less than or equal to 213% of the area for the associated standard opening CCV or mid-point standard from initial calibration, no qualification of the data is necessary.
4. If an internal standard RT varies by more than 10.0 seconds: Examine the chromatographic profile for that sample to determine if any false positives or negatives exist. For shifts of a large magnitude, the reviewer may consider partial or total rejection of the data for that sample fraction. Detects should not need to be qualified as unusable (R) if the mass spectral criteria are met.
5. If an internal standard RT varies by less than or equal to 10.0 seconds, no qualification of the data is necessary.

Note: Inform the Contract Laboratory Program Project Officer (CLP PO) if the internal standard performance criteria are grossly exceeded. Note in the Data Review Narrative potential effects on the data resulting from unacceptable internal standard performance.

State in the Data Review Narrative if the required internal standard compounds are not added to a sample or blank or if the required internal standard compound is not analyzed at the specified concentration.

Actions:

Table 10. Internal Standard Actions for Semivolatile Analysis

Criteria	Action	
	Detect	Non-detect
Area response < 20% of the opening CCV or mid-point standard CS3 from ICAL	J+	R
20% ≤ Area response < 50% of the opening CCV or mid-point standard CS3 from ICAL	J+	UJ
50% ≤ Area response ≤ 200% of the opening CCV or mid-point standard CS3 from ICAL	No qualification	No qualification
Area response > 200% of the opening CCV or mid-point standard CS3 from ICAL	J-	No qualification
RT shift between sample/blank and opening CCV or mid-point standard CS3 from ICAL > 10.0 seconds	R	R
RT shift between sample/blank and opening CCV or mid-point standard CS3 from ICAL < 10.0 seconds	No qualification	No qualification

All criteria were met __X__
Criteria were not met
and/or see below _____

TARGET COMPOUND IDENTIFICATION

Criteria:

Is the Relative Retention Times (RRTs) of reported compounds within ±0.06 RRT units of the standard RRT [opening Continuing Calibration Verification (CCV) or mid-point standard from the initial calibration]. **Yes?** or No?

List compounds not meeting the criteria described above:

Sample ID	Compounds	Actions
_____	_____	_____
_____	_____	_____
_____	_____	_____

Mass spectra of the sample compound and a current laboratory-generated standard [i.e., the mass spectrum from the associated calibration standard (opening CCV or mid-point standard from initial calibration)] must match according to the following criteria:

a. All ions present in the standard mass spectrum at a relative intensity greater than 10% must be present in the sample spectrum.
b. The relative intensities of these ions must agree within ±20% between the standard and sample spectra (e.g., for an ion with an abundance of 50% in the standard spectrum, the corresponding sample ion abundance must be between 30-70%).
c. Ions present at greater than 10% in the sample mass spectrum, but not present in the standard spectrum, must be evaluated by a reviewer experienced in mass spectral interpretation.

List compounds not meeting the criteria described above:

Sample ID	Compounds	Actions
_____	_____	_____
_Identified_compounds_meet_the_required_criteria____		_____
_____	_____	_____

Action:

1. The application of qualitative criteria for GC/MS analysis of target compounds requires professional judgment. It is up to the reviewer's discretion to obtain additional information from the laboratory. If it is determined that incorrect identifications were made, qualify all such data as unusable (R).

2. Use professional judgment to qualify the data if it is determined that cross-contamination has occurred.

3. Note in the Data Review Narrative any changes made to the reported compounds or concerns regarding target compound identifications. Note, for Contract Laboratory COR action, the necessity for numerous or significant changes.

TENTATIVELY IDENTIFIED COMPOUNDS (TICS)

NOTE: Tentatively identified compounds should only be evaluated when requested by a party from outside of the Hazardous Waste Support Section (HWSS).

List TICs

Sample ID	Compound	Sample ID	Compound

Action:

1. Qualify all TIC results for which there is presumptive evidence of a match (e.g. greater than or equal to 85% match) as tentatively identified (NJ), with approximated concentrations. TICs labeled "unknown" are qualified as estimated (J).
2. General actions related to the review of TIC results are as follows:
   a. If it is determined that a tentative identification of a non-target compound is unacceptable, change the tentative identification to "unknown" or another appropriate identification, and qualify the result as estimated (J).
   b. If all contractually-required peaks were not library searched and quantitated, the Region's designated representative may request these data from the laboratory.
3. In deciding whether a library search result for a TIC represents a reasonable identification, use professional judgment. If there is more than one possible match, report the result as "either compound X or compound Y". If there is a lack of isomer specificity, change the TIC result to a nonspecific isomer result (e.g., 1,3,5-trimethyl benzene to trimethyl benzene isomer) or to a compound class (e.g., 2-methyl, 3-ethyl benzene to a substituted aromatic compound).
4. The reviewer may elect to report all similar compounds as a total (e.g., all alkanes may be summarized and reported as total hydrocarbons).

5. Target compounds from other fractions and suspected laboratory contaminants should be marked as "non-reportable".
6. Other Case factors may influence TIC judgments. If a sample TIC match is poor, but other samples have a TIC with a valid library match, similar RRT, and the same ions, infer identification information from the other sample TIC results.
7. Note in the Data Review Narrative any changes made to the reported data or any concerns regarding TIC identifications.
8. Note, for Contract Laboratory COR action, failure to properly evaluate and report TICs

All criteria were met __X__
Criteria were not met
and/or see below _____

SAMPLE QUANTITATION AND REPORTED CONTRACT REQUIRED QUANTITATION LIMITS (CRQLS)

Action:

1. When a sample is analyzed at more than one dilution, the lower CRQL are used unless a QC exceedance dictates the use of higher CRQLs from the diluted sample. Samples reported with an "E" qualifier should be reported from the diluted sample.
2. If any discrepancies are found, the Region's designated representative may contact the laboratory to obtain additional information that could resolve any differences. If a discrepancy remains unresolved, the reviewer must use professional judgment to decide which value is the most accurate. Under these circumstances, the reviewer may determine that qualification of data is warranted. Note in the Data Review Narrative a description of the reasons for data qualification and the qualification that is applied to the data.
3. For non-aqueous samples, if the solids is less than 10.0%, use professional judgment for both detects and non-detects. If the percent solid for a soil sample is greater than or equal to 10.0% and less than 30.0%, use professional judgment to qualify detects and non-detects. If the percent solid for a soil sample is greater than or equal to 30.0%, detects and non-detects should not be qualified (see Table 11).
4. Note, for Contract Laboratory COR action, numerous or significant failures to accurately quantify the target compounds or to properly evaluate and adjust CRQLs.
5. Results between MDL and CRQL should be qualified as estimated "J".
6. Results < MDL should be reported at the CRQL and qualified "U". MDLs themselves should not be reported.

Table 11. Percent Solids Actions for Semivolatile Analysis for Non-Aqueous Samples

Criteria	Action	
	Detects	Non-detects
%Solids < 10.0%	Use professional judgment	Use professional judgment
10.0% ≤ %Solids ≤ 30.0%	Use professional judgment	Use professional judgment
%Solids > 30.0%	No qualification	No qualification

SAMPLE QUANTITATION

The sample quantitation evaluation is to verify laboratory quantitation results. In the space below, please show a minimum of one sample calculation:

Sample ID:__ FA42031-11_____ Analyte:__1,4-dioxane__ RF:_0.599_

[ ] = (6445)(4.0)/(27492)(0.599)
= 1.57 ppm Ok

DATA REVIEW WORKSHEETS

QUANTITATION LIMITS

A. Dilution performed

SAMPLE ID	DILUTION FACTOR	REASON FOR DILUTION
FA42031-2	20	1,4-dioxane outside calibration range.
FA42031-6	20	1,4-dioxane outside calibration range.

All criteria were met ___X___
Criteria were not met
and/or see below _____

FIELD DUPLICATE PRECISION

Sample IDs:____ FA42031-2/FA42031-6_____ Matrix:__Groundwater_____
Sample IDs:____ FA42031-10/FA42031-11____ Matrix:__Groundwater_____

Field duplicates samples may be taken and analyzed as an indication of overall precision. These analyses measure both field and lab precision; therefore, the results may have more variability than laboratory duplicates which only laboratory performance. It is also expected that soil duplicate results will have a greater variance than water matrices due to difficulties associated with collecting identical field duplicate samples.

The project QAPP should be reviewed for project-specific information.
Suggested criteria: if large RPD (> 50 %) is observed, confirm identification of the samples and note differences. If both samples and duplicate are <5 SQL, the RPD criteria is doubled.

COMPOUND	SQL ug/L	SAMPLE CONC. (ug/l)	DUPLICATE CONC. (ug/l)	RPD	ACTION
Field duplicate analyzed as part of this data package. RPD within the required guidance document criteria < 50 % for detected target analytes above 5 SQL.					

All criteria were met __X__
Criteria were not met
and/or see below _____

OTHER ISSUES

A. System Performance

List samples qualified based on the degradation of system performance during simple analysis:

Sample ID	Comments	Actions

Action:

Use professional judgment to qualify the data if it is determined that system performance has degraded during sample analyses. Inform the Contract Laboratory Program COR any action as a result of degradation of system performance which significantly affected the data.

B. Overall Assessment of Data

List samples qualified based on other issues:

Sample ID	Comments	Actions

_No_other_issues_that_required_the_need_to_qualify_the_data._Results_are_valid_and_can_be_used_for_decission_purposes._Other_discrepancies_are_shown_below._____

Note: 2,4-dinitrophenol; 4,6-dinitro-o-cresol; 3,3'-dichlorobenzidine; 2,4-dinitrotoluene; and 3-nitroanilin recovered high in Blank Spike analyzed 03/29/17. No action taken, professional judgment; analytes not detected in sample batch.

4-chloroaniline, 3-nitroaniline, and isophorone recovered high in Blank Spike analyzed 03/23/17. No action taken, professional judgment; analytes not detected in sample batch.

4-chloroaniline, 3-nitroaniline, 3,3'-dichlorobenzidine, and isophorone recovered high in Blank Spike analyzed 03/24/17. No action taken, professional judgment; analytes not detected in sample batch.

4-chloroaniline, 3-nitroaniline, and 3,3'-dichlorobenzidine recovered high in Blank Spike analyzed 03/25/17. No action taken, professional judgment; analytes not detected in sample batch.

Blank spikes concentration corrected 1,4-dioxane analyzed on 03/20/17. No action taken, professional judgment.

Blank spikes concentration corrected for PAHs on 03/22/17. No action taken, professional judgment.

Action:

1. Use professional judgment to determine if there is any need to qualify data which were not qualified based on the Quality Control (QC) criteria previously discussed.
2. Write a brief narrative to give the user an indication of the analytical limitations of the data. Inform the Contract Laboratory COR the action, any inconsistency of the data with the Sample Delivery Group (SDG) Narrative. If sufficient information on the intended use and required quality of the data is available, the reviewer should include their assessment of the usability of the data within the given context. This may be used as part of a formal Data Quality Assessment (DQA).
3. Sometimes, due to dilutions, re-analysis or SIM/Scan runs are being performed, there will be multiple results for a single analyte from a single sample. The following criteria and professional judgment are used to determine which result should be reported:
    - The analysis with the lower CRQL
    - The analysis with the better QC results
    - The analysis with the higher results

EXECUTIVE NARRATIVE

SDG No:	**FA42031**	Laboratory:	**Accutest, New Jersey**
Analysis:	**SW846-8015C**	Number of Samples:	**13**

Location: BMSMC, Humacao, PR

SUMMARY: Thirteen (13) samples were analyzed for the low molecular weight alcohols (LMWAs) list following method SW846-8015C. The sample results were assessed according to USEPA data validation guidance documents in the following order of precedence: "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods SW-846 (Final Update III, December 1996)," specifically for Methods 8000/8015C are utilized. The QC criteria and data validation actions listed on the data review worksheets are from the primary guidance document, unless otherwise noted.

Results are valid and can be used for decision making purposes.

Critical issues: **None**
Major: **None**
Minor: **None**

Critical findings: **None**
Major findings: **None**
Minor findings: **1.** 2-Butanol and Isobutanol % difference were outside the method performance criteria in continuing calibration verification. Results qualified as estimated (J or UJ) in affected samples.

3. MSD % recovery and RPD for isopropyl alcohol outside the laboratory control limits in sample FA42031-2MSD. No action taken, professional judgment.

MSD % recovery for sec-butyl alcohol outside the laboratory control limits in sample FA42031-17MSD. No action taken, professional judgment.

COMMENTS: Results are valid and can be used for decision making purposes.

Reviewers Name: Rafael Infante
Chemist License 1888

Signature: Rafael Infante
Date: May 3, 2017

SAMPLE ORGANIC DATA SAMPLE SUMMARY

Sample ID: FA42031-1
Sample location: BMSM, Humacao, PR
Sampling date: 3/10/2017
Matrix: AQ - Equipment Blank

METHOD: 8015C

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Ethanol	100	ug/l	1.0	-	U	Yes
Isobutyl Alcohol	100	ug/l	1.0	-	UJ	Yes
Isopropyl Alcohol	100	ug/l	1.0	-	U	Yes
n-Propyl Alcohol	100	ug/l	1.0	-	U	Yes
n-Butyl Alcohol	100	ug/l	1.0	-	U	Yes
sec-Butyl Alcohol	100	ug/l	1.0	-	UJ	Yes
Methanol	200	ug/l	1.0	-	U	Yes

Sample ID: FA42031-2
Sample location: BMSM, Humacao, PR
Sampling date: 3/10/2017
Matrix: Groundwater

METHOD: 8015C

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Ethanol	100	ug/l	1.0	-	U	Yes
Isobutyl Alcohol	100	ug/l	1.0	-	UJ	Yes
Isopropyl Alcohol	100	ug/l	1.0	-	U	Yes
n-Propyl Alcohol	100	ug/l	1.0	-	U	Yes
n-Butyl Alcohol	100	ug/l	1.0	-	U	Yes
sec-Butyl Alcohol	100	ug/l	1.0	-	UJ	Yes
Methanol	200	ug/l	1.0	-	U	Yes

Sample ID: FA42031-4
Sample location: BMSM, Humacao, PR
Sampling date: 3/10/2017
Matrix: Groundwater

METHOD: 8015C

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Ethanol	100	ug/l	1.0	-	U	Yes
Isobutyl Alcohol	100	ug/l	1.0	-	UJ	Yes
Isopropyl Alcohol	100	ug/l	1.0	-	U	Yes
n-Propyl Alcohol	100	ug/l	1.0	-	U	Yes
n-Butyl Alcohol	100	ug/l	1.0	-	U	Yes
sec-Butyl Alcohol	100	ug/l	1.0	-	UJ	Yes
Methanol	200	ug/l	1.0	-	U	Yes

Sample ID: FA42031-5
Sample location: BMSM, Humacao, PR
Sampling date: 3/10/2017
Matrix: AQ - Field Blank Water

METHOD: 8015C

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Ethanol	100	ug/l	1.0	-	U	Yes
Isobutyl Alcohol	100	ug/l	1.0	-	UJ	Yes
Isopropyl Alcohol	100	ug/l	1.0	-	U	Yes
n-Propyl Alcohol	100	ug/l	1.0	-	U	Yes
n-Butyl Alcohol	100	ug/l	1.0	-	U	Yes
sec-Butyl Alcohol	100	ug/l	1.0	-	UJ	Yes
Methanol	200	ug/l	1.0	-	U	Yes

Sample ID: FA42031-6
Sample location: BMSM, Humacao, PR
Sampling date: 3/10/2017
Matrix: Groundwater

METHOD: 8015C

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Ethanol	100	ug/l	1.0	-	U	Yes
Isobutyl Alcohol	100	ug/l	1.0	-	UJ	Yes
Isopropyl Alcohol	100	ug/l	1.0	-	U	Yes
n-Propyl Alcohol	100	ug/l	1.0	-	U	Yes
n-Butyl Alcohol	100	ug/l	1.0	-	U	Yes
sec-Butyl Alcohol	100	ug/l	1.0	-	UJ	Yes
Methanol	200	ug/l	1.0	-	U	Yes

Sample ID: FA42031-7
Sample location: BMSM, Humacao, PR
Sampling date: 3/10/2017
Matrix: Groundwater

METHOD: 8015C

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Ethanol	100	ug/l	1.0	-	U	Yes
Isobutyl Alcohol	100	ug/l	1.0	-	U	Yes
Isopropyl Alcohol	100	ug/l	1.0	-	U	Yes
n-Propyl Alcohol	100	ug/l	1.0	-	U	Yes
n-Butyl Alcohol	100	ug/l	1.0	-	U	Yes
sec-Butyl Alcohol	100	ug/l	1.0	-	U	Yes
Methanol	200	ug/l	1.0	-	U	Yes

Sample ID: FA42031-9
Sample location: BMSM, Humacao, PR
Sampling date: 3/13/2017
Matrix: Groundwater

METHOD: 8015C

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Ethanol	100	ug/l	1.0	-	U	Yes
Isobutyl Alcohol	100	ug/l	1.0	-	U	Yes
Isopropyl Alcohol	100	ug/l	1.0	-	U	Yes
n-Propyl Alcohol	100	ug/l	1.0	-	U	Yes
n-Butyl Alcohol	100	ug/l	1.0	-	U	Yes
sec-Butyl Alcohol	100	ug/l	1.0	-	U	Yes
Methanol	200	ug/l	1.0	-	U	Yes

Sample ID: FA42031-10
Sample location: BMSM, Humacao, PR
Sampling date: 3/13/2017
Matrix: Groundwater

METHOD: 8015C

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Ethanol	100	ug/l	1.0	-	U	Yes
Isobutyl Alcohol	100	ug/l	1.0	-	U	Yes
Isopropyl Alcohol	100	ug/l	1.0	-	U	Yes
n-Propyl Alcohol	100	ug/l	1.0	-	U	Yes
n-Butyl Alcohol	100	ug/l	1.0	-	U	Yes
sec-Butyl Alcohol	100	ug/l	1.0	-	U	Yes
Methanol	200	ug/l	1.0	-	U	Yes

Sample ID: FA42031-11
Sample location: BMSM, Humacao, PR
Sampling date: 3/13/2017
Matrix: Groundwater

METHOD: 8015C

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Ethanol	100	ug/l	1.0	-	U	Yes
Isobutyl Alcohol	100	ug/l	1.0	-	U	Yes
Isopropyl Alcohol	100	ug/l	1.0	-	U	Yes
n-Propyl Alcohol	100	ug/l	1.0	-	U	Yes
n-Butyl Alcohol	100	ug/l	1.0	-	U	Yes
sec-Butyl Alcohol	100	ug/l	1.0	-	U	Yes
Methanol	200	ug/l	1.0	-	U	Yes

Sample ID: FA42031-12
Sample location: BMSM, Humacao, PR
Sampling date: 3/13/2017
Matrix: Groundwater

METHOD: 8015C

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Ethanol	100	ug/l	1.0	-	U	Yes
Isobutyl Alcohol	100	ug/l	1.0	-	U	Yes
Isopropyl Alcohol	100	ug/l	1.0	-	U	Yes
n-Propyl Alcohol	100	ug/l	1.0	-	U	Yes
n-Butyl Alcohol	100	ug/l	1.0	-	U	Yes
sec-Butyl Alcohol	100	ug/l	1.0	-	U	Yes
Methanol	200	ug/l	1.0	-	U	Yes

Sample ID: FA42031-15
Sample location: BMSM, Humacao, PR
Sampling date: 3/13/2017
Matrix: Groundwatr

METHOD: 8015C

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Ethanol	100	ug/l	1.0	-	U	Yes
Isobutyl Alcohol	100	ug/l	1.0	-	U	Yes
Isopropyl Alcohol	100	ug/l	1.0	-	U	Yes
n-Propyl Alcohol	100	ug/l	1.0	-	U	Yes
n-Butyl Alcohol	100	ug/l	1.0	-	U	Yes
sec-Butyl Alcohol	100	ug/l	1.0	-	U	Yes
Methanol	200	ug/l	1.0	-	U	Yes

Sample ID: FA42031-16
Sample location: BMSM, Humacao, PR
Sampling date: 3/13/2017
Matrix: AQ - Field Blank Water

METHOD: 8015C

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Ethanol	100	ug/l	1.0	-	U	Yes
Isobutyl Alcohol	100	ug/l	1.0	-	U	Yes
Isopropyl Alcohol	100	ug/l	1.0	-	U	Yes
n-Propyl Alcohol	100	ug/l	1.0	-	U	Yes
n-Butyl Alcohol	100	ug/l	1.0	-	U	Yes
sec-Butyl Alcohol	100	ug/l	1.0	-	U	Yes
Methanol	200	ug/l	1.0	-	U	Yes

Sample ID: FA42031-17
Sample location: BMSM, Humacao, PR
Sampling date: 3/13/2017
Matrix: Groundwatr

METHOD: 8015C

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
Ethanol	100	ug/l	1.0	-	U	Yes
Isobutyl Alcohol	100	ug/l	1.0	-	U	Yes
Isopropyl Alcohol	100	ug/l	1.0	-	U	Yes
n-Propyl Alcohol	100	ug/l	1.0	-	U	Yes
n-Butyl Alcohol	100	ug/l	1.0	-	U	Yes
sec-Butyl Alcohol	100	ug/l	1.0	-	U	Yes
Methanol	200	ug/l	1.0	-	U	Yes

DATA REVIEW WORKSHEETS

Project Number:___FA42031_____
Date:_____03/10_+_13/2017_____
Shipping Date:_____03/9/2017_____
EPA Region:_____2_____

REVIEW OF VOLATILE ORGANIC PACKAGE

The following guidelines for evaluating volatile organics were created to delineate required validation actions. This document will assist the reviewer in using professional judgment to make more informed decision and in better serving the needs of the data users. The sample results were assessed according to USEPA data validation guidance documents in the following order of precedence: "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods SW-846 (Final Update III, December 1996)," specifically for Methods 8000/8015C are utilized. The QC criteria and data validation actions listed on the data review worksheets are from the primary guidance document, unless otherwise noted.

The hardcopied (laboratory name) _Accutest_____ data package received has been reviewed and the quality control and performance data summarized. The modified data review for VOCs included:

Lab. Project/SDG No.: __FA42031_____ Sample matrix: ___Groundwater_____
No. of Samples: _____13_____

Trip blank No.: _____
Field blank No.: _____ FA42031-5;_FA42031-16_____
Equipment blank No.:__FA42031-1_____
Field duplicate No.:____FA42031-2/FA42031-6;_FA42031-10/FA42031-11_____

___X___ Data Completeness
___X___ Holding Times
___N/A_ GC/MS Tuning
___N/A_ Internal Standard Performance
___X___ Blanks
___X___ Surrogate Recoveries
___X___ Matrix Spike/Matrix Spike Duplicate
___X___ Laboratory Control Spikes
___X___ Field Duplicates
___X___ Calibrations
___X___ Compound Identifications
___X___ Compound Quantitation
___X___ Quantitation Limits

Overall Comments:_Low_molecular_weight_alcohols_by_SW-846_8015C._____
_____
_____

Definition of Qualifiers:

J- Estimated results
U- Compound not detected
R- Rejected data
UJ- Estimated nondetect

Reviewer:_____
Date:__May_3,_2017_____

DATA REVIEW WORKSHEETS

DATA COMPLETENESS

MISSING INFORMATION	DATE LAB. CONTACTED	DATE RECEIVED

All criteria were met _____
Criteria were not met
and/or see below ___X___

HOLDING TIMES

The objective of this parameter is to ascertain the validity of the results based on the holding time of the sample from time of collection to the time of analysis.

Complete table for all samples and note the analysis and/or preservation not within criteria

SAMPLE ID	DATE SAMPLED	DATE ANALYZED	pH	ACTION
All samples analyzed within the recommended method holding. All samples properly preserved upon arrival at Accutest, New Jersey.				

Criteria

Aqueous samples – 14 days from sample collection for preserved samples (pH $\leq$ 2, 4°C), no air bubbles.
Aqueous samples – 7 days from sample collection for unpreserved samples, 4°C, no air bubbles.
Soil samples- 7 days from sample collection.
Cooler temperature (Criteria: 4 $\pm$ 2 °C): 3.0 - 3.8°C; 2.3°C upon arrival at Accutest, New Jersey.

Actions

If the VOCs vial(s) have air bubbles, estimate positive results (J) and reject nondetects (R).
If the % solids of soil samples is 10-50%, estimates positive results (J) and nondetects (UJ)
If the % solid of soil samples is < 10%, estimate positive results (J) and reject nondetects (R).
If holding times are exceeded but < 14 days beyond criteria, estimate positive results (J) and nondetects (UJ).
If holding times are exceeded but < 28 days beyond criteria, estimate positive results (J) and reject nondetects (R).
If holding times are grossly exceeded (> 28 days beyond criteria), reject all results (R).
If samples were not iced or if the ice were melted (> 10°C), estimate positive results (J) and nondetects (UJ).

Il criteria were met __N/A__
Criteria were not met see below _____

GC/MS TUNING

The assessment of the tuning results is to determine if the sample instrumentation is within the standard tuning QC limits

__N/A_ The BFB performance results were reviewed and found to be within the specified criteria.

__N/A_ BFB tuning was performed for every 12 hours of sample analysis.

If no, use professional judgment to determine whether the associated data should be accepted, qualified or rejected.

List the samples affected: _____

If mass calibration is in error, all associated data are rejected.

All criteria were met __X__
Criteria were not met
and/or see below _____

CALIBRATION VERIFICATION

Compliance requirements for satisfactory instrument calibration are established to ensure that the instrument is capable of producing and maintaining acceptable quantitative data.

Date of initial calibration:_____10/10/16_____
Dates of continuing calibration:_____03/23/17_____
Dates of final calibration verification:____03/23/17_____
Instrument ID number:_____GCGH_____
Matrix/Level:_____Aqueous/low_____

DATE	LAB FILE ID#	CRITERIA OUT RFs, %RSD, **%D**, r	COMPOUND	SAMPLES AFFECTED
03/23/17	CC5519-5000	43.9/-53.9	2-Butanol	FA42031-1; -2; -2MS/-2MSD; -1; -4; -5; -6. Results qualified as estimated in affected samples
		32.9-45.6	Isobutanol	

Note: Initial, continuing, and final calibration verifications meets method specific criteria in at least one of the two columns except for the cases described in this document. Final calibration verification included in data packages.

2-Butanol and Isobutanol % difference were outside the method performance criteria in continuing calibration verification. Results qualified as estimated (J or UJ) in affected samples.

Criteria

All RFs must be > 0.05 regardless of method requirements for SPCC.
All %RSD must be ≤ 15 % regardless of method requirements for CCC.
All %Ds must be ≤ 20% regardless of method requirements for CCC.
It should be noted that Region 2 SOP HW-24 does not specify criterion for the curve correlation coefficient (r). A limit for r of ≥ 0.995 has therefore been utilized as professional judgment.

Actions

If any compound has an initial RF or a continuing RF of < 0.05, estimate positive results (J) and reject nondetects (R), regardless of method requirements.
If any compound has a %RSD > 15%, estimate positive results (J) and use professional judgment to qualify nondetects.
If any compound has a %RSD > 90%, estimate positive results (J) and reject nondetects (R).
If any compound has a % D > 20%, estimate positive results (J) and reject nondetects (R).
If any compound has a % D > 20%, estimate positive results (J) and nondetects (UJ).
If any compound has a % D > 90%, estimate positive results (J) and reject nondetects (R).
If any compound has r < 0.995, estimate positive results and nondetects.

A separate worksheet should be filled for each initial curve.

All criteria were met __X__
Criteria were not met
and/or see below _____

V A. BLANK ANALYSIS RESULTS (Sections 1 & 2)

The assessment of the blank analysis results is to determine the existence and magnitude of contamination problems. The criteria for evaluation of blanks apply only to blanks associated with the samples, including trip, equipment, and laboratory blanks. If problems with any blanks exist, all data associated with the case must be carefully evaluated to determine whether or not there is an inherent variability in the data for the case, or if the problem is an isolated occurrence not affecting other data.

List the contamination in the blanks below. High and low levels blanks must be treated separately.

Laboratory blanks

DATE ANALYZED	LAB ID	LEVEL/ MATRIX	COMPOUND	CONCENTRATION UNITS
____All_method_blank_meet_the_method_specific_criteria_____				

Field/Equipment/Trip blank

DATE ANALYZED	LAB ID	LEVEL/ MATRIX	COMPOUND	CONCENTRATION UNITS

_____
_No_target_analytes_detected_in_the_field/equipment_blanks_analyzed_with_this_data_package._____
_No_trip_blank_analyzed_with_this_data_pacjage._____

All criteria were met __X__
Criteria were not met
and/or see below _____

V B. BLANK ANALYSIS RESULTS (Section 3)

Blank Actions

Action Levels (ALs) should be based upon the highest concentration of contaminant determined in any blank. Do not qualify any blank with another blank. The ALs for samples which have been diluted should be corrected for the sample dilution factor and/or % moisture, where applicable. No positive sample results should be reported unless the concentration of the compound in the samples exceeds the ALs:

ALs = 10x the amount of common contaminants (methylene chloride, acetone, 2-butanone, and toluene)
ALs = 5x for any other compounds

Specific actions are as follows:

If the concentration is < sample quantitation limit (SQL) and ≤ AL, report the compound as not detected (U) at the SQL.
If the concentration is ≥ SQL but ≤ AL, report the compound as not detected (U) at the reported concentration.
If the concentration is ≥ SQL and > AL, report the concentration unqualified.

Notes:

High and low level blanks must be treated separately
Compounds qualified "U" for blank contamination are still considered "hits" when qualifying for calibration criteria.

CONTAMINATION SOURCE/LEVEL	COMPOUND	CONC/UNITS	AL/UNITS	SQL	AFFECTED SAMPLES

All criteria were met ___X___
Criteria were not met
and/or see below _____

SURROGATE SPIKE RECOVERIES

Laboratory performance of individual samples is established by evaluation of surrogate spike recoveries. All samples are spiked with surrogate compounds prior to sample analysis. The accuracy of the analysis is measured by the surrogate percent recovery. Since the effects of the sample matrix are frequently outside the control of the laboratory and may present relatively unique problems, the validation of data is frequently subjective and demands analytical experience and professional judgment.
List the percent recoveries (%Rs) which do not meet the criteria for surrogate recovery.
Matrix: solid/aqueous

SAMPLE ID	SURROGATE COMPOUND				ACTION
	Hexanol	~~DBFM~~	~~TOL-d8~~	~~BFB~~	
	S1 a	S1 b			
FA42031-1	88	110			
FA42031-2	70	73			
FA42031-4	77	88			
FA42031-5	79	88			
FA42031-6	74	82			
FA42031-7	72	75			
FA42031-9	72	77			
FA42031-10	73	80			
FA42031-11	75	79			
FA42031-12	73	75			
FA42031-15	74	79			
FA42031-16	72	76			
FA42031-17	73	73			
FA42031-17MS	79	83			
FA42031-17MSD	88	94			
FA42031-2MS	67	69			
FA42031-2MSD	76	74			
GGH5690-BS	97	121			
GGH5690-MB1	85	91			
GGH5691-BS	92	102			
GGH5691-MB1	81	87			
GGH5691-MB2	80	86			

(a) Recovery from GC signal #2 (b) Recovery from GC signal #1

Note: All surrogate recoveries within laboratory control.

QC Limits* (Aqueous)
_____LL_to_UL___ _56_to_145_ ___to_____ ___to_____ ___to_____
QC Limits* (Solid-Low)
_____LL_to_UL___ _52_to_141__ ___to_____ ___to_____ ___to_____
QC Limits* (Solid-Med)
_____LL_to_UL___ ____to_____ ___to_____ ___to_____ ___to_____

1,2-DCA = 1,2-Dichloromethane-d4 TOL-d8 = Toluene-d8
DBFM = Dibromofluoromethane BFB = Bromofluorobenzene

* QC limits are laboratory in-house performance criteria, LL = lower limit, UL = upper limit.
* If QC limits are not available, use limits of 80 – 120 % for aqueous and 70 – 130 % for solid samples.

Actions:

QUALITY	%R < 10%	%R = 10% - LL	%R > UL
Positive results	J	J	J
Nondetects results	R	UJ	Accept

Surrogate action should be applied:

If one or more surrogate in the VOC fraction is out of specification, but has a recovery of > 10%.
If any one surrogate in a fraction shows < 10 % recovery.

All criteria were met _____
Criteria were not met
and/or see below ____X____

VII. A MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD)

This data is generated to determine long term precision and accuracy in the analytical method for various matrices. This data alone cannot be used to evaluate the precision and accuracy of individual samples. If any % R in the MS or MSD falls outside the designated range, the reviewer should determine if there are matrix effects, i.e. LCS data are within the QC limits but MS/MSD data are outside QC limit.

1. MS/MSD Recoveries and Precision Criteria

The laboratory should use one MS and a duplicate analysis of an unspiked field sample if target analytes are expected in the sample. If target analytes are not expected, MS/MSD should be analyzed.

List the %Rs, RPD of the compounds which do not meet the criteria.

Sample ID:__FA42031-2MS/-2MSD_____ Matrix/Level:__Aqueous/medium_____
Sample ID:__FA42031-17MS/-17MSD_____ Matrix/Level:__Aqueous/medium_____

MS OR MSD	COMPOUND	% R	RPD	QC LIMITS	ACTION

MS/MSD%_recoveries_and_RPD_within_laboratory_control_limits_except_for_the_cases_described_
_in_this_document._____

Note: MSD % recovery and RPD for isopropyl alcohol outside the laboratory control limits in sample FA42031-2MSD. No action taken, professional judgment.

MSD % recovery for sec-butyl alcohol outside the laboratory control limits in sample FA42031-17MSD. No action taken, professional judgment.

* QC limits are laboratory in-house performance criteria, LL = lower limit, UL = upper limit.
* If QC limits are not available, use limits of 70 – 130 %.

Actions:

QUALITY	%R < LL	%R > UL
Positive results	J	J
Nondetects results	R	Accept

All criteria were met __X__
Criteria were not met
and/or see below _____

MS/MSD criteria apply only to the unspiked sample, its dilutions, and the associated MS/MSD samples:

If the % R for the affected compounds were < LL (or 70 %), qualify positive results (J) and nondetects (UJ).
If the % R for the affected compounds were > UL (or 130 %), only qualify positive results (J).
If 25 % or more of all MS/MSD %R were < LL (or 70 %) or if two or more MS/MSD %Rs were < 10%, qualify all positive results (J) and reject nondetects (R).

VII. B MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD – Unspiked Compounds

It should be noted that Region 2 SOP HW-24 does not specify a MS/MSD criteria for the unspiked compounds in the sample. A %RSD of < 50% has therefore been utilized as professional judgment.

If all target analytes were spiked in the MS/MSD, this review element is not applicable.

List the %RSD of the compounds which do not meet the criteria.

Sample ID:_____-_____ Matrix/Level/Unit:_____-_____

COMPOUND	SAMPLE CONC.	MS CONC.	MSD CONC.	% RSD	ACTION

Actions:

* If the % RSD > 50, qualify the positive result in the unspiked samples as estimated (J).
* If the % RSD is not calculated (NC) due to nondetected value, use professional judgment to qualify the data.

A separate worksheet should be used for each MS/MSD pair.

All criteria were met __X__
Criteria were not met
and/or see below _____

VIII. LABORATORY CONTROL SAMPLE (LCS) ANALYSIS

This data is generated to determine accuracy of the analytical method for various matrices.

1. LCS Recoveries Criteria

Where LCS spiked with the same analyte at the same concentrations as the MS/MSD? **Yes** or No. If no make note in data review memo.

List the %R of compounds which do not meet the criteria

LCS ID	COMPOUND	% R	QC LIMIT
Recoveries within laboratory control limits except for the cases described in this document.			
GGH5690-BS	sec-Butyl Alcohol	125 %	74 - 118
GGH5691-BS	Ethanol	135 %	74 - 123

Note: No action taken, analyte recovered high and not detected in sample batch.

* QC limits are laboratory in-house performance criteria, LL = lower limit, UL = upper limit.
* If QC limits are not available, use limits of 70 – 130 %.

Actions:

QUALITY	%R < LL	%R > UL
Positive results	J	J
Nondetects results	R	Accept

All analytes in the associated sample results are qualified for the following criteria.

If 25 % of the LCS recoveries were < LL (or 70 %), qualify all positive results (j) and reject nondetects (R).
If two or more LCS were below 10 %, qualify all positive results as (J) and reject nondetects (R).

2. Frequency Criteria:

Where LCS analyzed at the required frequency and for each matrix? Yes or No.
If no, the data may be affected. Use professional judgment to determine the severity of the effect and qualify data accordingly. Discuss any actions below and list the samples affected.

All criteria were met ___X_____
Criteria were not met
and/or see below _____

IX. FIELD/LABORATORY DUPLICATE PRECISION

Sample IDs:__FA42031-2/FA42031-6_____ Matrix:____Groundwater___
Sample IDs:__FA42031-10/FA42031-11_____ Matrix:____Groundwater___

Field/laboratory duplicates samples may be taken and analyzed as an indication of overall precision. These analyses measure both field and lab precision; therefore, the results may have more variability than laboratory duplicates which only laboratory performance. It is also expected that soil duplicate results will have a greater variance than water matrices due to difficulties associated with collecting identical field duplicate samples.

The project QAPP should be reviewed for project-specific information.
Suggested criteria: RPD ± 30% for aqueous samples, RPD ± 50 % for solid samples. If both samples and duplicate are <5 SQL, the RPD criteria is doubled.

COMPOUND	SQL	SAMPLE CONC.	DUPLICATE CONC.	RPD	ACTION
Field/laboratory duplicates analyzed with this data package. The RPDs were within the guidance document performance criteria control limits ± 50 %.					

Actions:

Qualify as estimated positive results (J) and nondetects (UJ) for the compound that exceeded the above criteria. For organics, only the sample and duplicate will be qualified.

If an RPD cannot be calculated because one or both of the sample results is not detected, the following actions apply:

If one sample result is not detected and the other is greater than 5x the SQL qualify (J/UJ).

If one sample value is not detected and the other is greater than 5x the SQL and the SQLs for the sample and duplicate are significantly different, use professional judgment to determine if qualification is appropriate.

If one sample value is not detected and the other is less than 5x, use professional judgment to determine if qualification is appropriate.

If both sample and duplicate results are not detected, no action is needed.

All criteria were met __N/A___
Criteria were not met
and/or see below _____

X. INTERNAL STANDARD PERFORMANCE

The assessment of the internal standard (IS) parameter is used to assist the data reviewer in determining the condition of the analytical instrumentation.

List the internal standard area of samples which do not meet the criteria.

* Area of +100% or -50% of the IS area in the associated calibration standard.
* Retention time (RT) within 30 seconds of the IS area in the associated calibration standard.

DATE	SAMPLE ID	IS OUT	IS AREA	ACCEPTABLE RANGE	ACTION

Actions:

1. IS actions should be applied to the compound quantitated with the out-of-control ISs

QUALITY	IS AREA < -25%	IS AREA = -25 % TO – 50%	IS AREA > + 100%
Positive results	J	J	J
Nondetected results	R	UJ	ACCEPT

2. If a IS retention time varies more than 30 seconds, the chromatographic profile for that sample must be examined to determine if any false positive or negative exists. For shifts of a large magnitude, the reviewer may consider partial or total rejection of the data for the sample fraction.

All criteria were met __X__
Criteria were not met
and/or see below _____

XII. SAMPLE QUANTITATION

The sample quantitation evaluation is to verify laboratory quantitation results. In the space below, please show a minimum of one sample calculation:

FA42031-2MS

Methanol RF = 10.64

[ ] = (32158)/(10.64)

= 3,022 ppb OK

All criteria were met __X__
Criteria were not met
and/or see below _____

XII. QUANTITATION LIMITS

A. Dilution performed

SAMPLE ID	DILUTION FACTOR	REASON FOR DILUTION

B. Percent Solids

List samples which have ≤ 50 % solids

_____
_____
_____
_____
_____
_____

Actions:

If the % solids of a soil sample is 10-50%, estimate positive results (J) and nondetects (UJ)

If the % solids of a soil sample is < 10%, estimate positive results (J) and reject nondetects (R)

EXECUTIVE NARRATIVE

SDG No:	**FA42031**	Laboratory:	**Accutest, Orlando**
Analysis:	**MADEP VPH**	Number of Samples:	**15**
Location:	BMSMC, Humacao, PR		

SUMMARY: Fifteen (15) samples were analyzed for Volatiles TPHC Ranges by method MADEP VPH. Samples were validated following the METHOD FOR THE DETERMINATION OF VOLATILE PETROLEUM HYDROCARBONS (VPH) quality control criteria, Massachusetts Department of Environmental Protection, Revision 1.1 (2004). Also the general validation guidelines promulgated by the USEPA Hazardous Wastes Support Section. The QC criteria and data validation actions listed on the data review worksheets are from the primary guidance document, unless otherwise noted.

Results are valid and can be used for decision making purposes.

Critical issues: **None**
Major: **None**
Minor: **None**

Critical findings: **None**
Major findings: **None**
Minor findings: **1.** MS/MSD % recovery and RPD within laboratory control limits except for the cases described in the Data Review Worksheet. Results for FA42031-7 qualified as estimated (J or UJ).

COMMENTS: Results are valid and can be used for decision making purposes.

Reviewers Name: Rafael Infante
Chemist License 1888

Signature: Rafael Infante

Date: May 3, 2017

ORGANIC DATA SAMPLE SUMMARY

Sample ID: FA42031-1
Sample location: BMSMC, Humacao, PR
Sampling date: 3/10/2017
Matrix: AQ -Equipment Blank

METHOD: MADEP VPH

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
C5 - C8 Aliphatics (Unadj.)	100	ug/L	1.0	-	U	Yes
C9 - C12 Aliphatics (Unadj.)	100	ug/L	1.0	-	U	Yes
C9 - C10 Aromatics (Unadj.)	100	ug/L	1.0	-	U	Yes

Sample ID: FA42031-2
Sample location: BMSMC, Humacao, PR
Sampling date: 3/10/2017
Matrix: Groundwater

METHOD: MADEP VPH

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
C5 - C8 Aliphatics (Unadj.)	100	ug/L	1.0	-	U	Yes
C9 - C12 Aliphatics (Unadj.)	100	ug/L	1.0	-	U	Yes
C9 - C10 Aromatics (Unadj.)	100	ug/L	1.0	-	U	Yes

Sample ID: FA42031-4
Sample location: BMSMC, Humacao, PR
Sampling date: 3/10/2017
Matrix: Groundwater

METHOD: MADEP VPH

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
C5 - C8 Aliphatics (Unadj.)	100	ug/L	1.0	-	U	Yes
C9 - C12 Aliphatics (Unadj.)	100	ug/L	1.0	-	U	Yes
C9 - C10 Aromatics (Unadj.)	100	ug/L	1.0	-	U	Yes

Sample ID: FA42031-5
Sample location: BMSMC, Humacao, PR
Sampling date: 3/10/2017
Matrix: AQ - Field Blank Water

METHOD: MADEP VPH

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
C5 - C8 Aliphatics (Unadj.)	100	ug/L	1.0	-	U	Yes
C9 - C12 Aliphatics (Unadj.)	100	ug/L	1.0	-	U	Yes
C9 - C10 Aromatics (Unadj.)	100	ug/L	1.0	-	U	Yes

Sample ID: FA42031-6
Sample location: BMSMC, Humacao, PR
Sampling date: 3/10/2017
Matrix: Groundwater

METHOD: MADEP VPH

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
C5 - C8 Aliphatics (Unadj.)	100	ug/L	1.0	-	U	Yes
C9 - C12 Aliphatics (Unadj.)	100	ug/L	1.0	-	U	Yes
C9 - C10 Aromatics (Unadj.)	100	ug/L	1.0	-	U	Yes

Sample ID: FA42031-7
Sample location: BMSMC, Humacao, PR
Sampling date: 3/10/2017
Matrix: Groundwater

METHOD: MADEP VPH

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
C5 - C8 Aliphatics (Unadj.)	100	ug/L	1.0	-	UJ	Yes
C9 - C12 Aliphatics (Unadj.)	100	ug/L	1.0	-	UJ	Yes
C9 - C10 Aromatics (Unadj.)	43.3	ug/L	1.0	J	J	Yes

Sample ID: FA42031-9
Sample location: BMSMC, Humacao, PR
Sampling date: 3/13/2017
Matrix: Groundwater

METHOD: MADEP VPH

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
C5 - C8 Aliphatics (Unadj.)	100	ug/L	1.0	-	U	Yes
C9 - C12 Aliphatics (Unadj.)	100	ug/L	1.0	-	U	Yes
C9 - C10 Aromatics (Unadj.)	45.9	ug/L	1.0	J	J	Yes

Sample ID: FA42031-10
Sample location: BMSMC, Humacao, PR
Sampling date: 3/13/2017
Matrix: Groundwater

METHOD: MADEP VPH

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
C5 - C8 Aliphatics (Unadj.)	100	ug/L	1.0	-	U	Yes
C9 - C12 Aliphatics (Unadj.)	100	ug/L	1.0	-	U	Yes
C9 - C10 Aromatics (Unadj.)	100	ug/L	1.0	-	U	Yes

Sample ID: FA42031-11
Sample location: BMSMC, Humacao, PR
Sampling date: 3/13/2017
Matrix: Groundwater

METHOD: MADEP VPH

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
C5 - C8 Aliphatics (Unadj.)	100	ug/L	1.0	-	U	Yes
C9 - C12 Aliphatics (Unadj.)	100	ug/L	1.0	-	U	Yes
C9 - C10 Aromatics (Unadj.)	100	ug/L	1.0	-	U	Yes

Sample ID: FA42031-12
Sample location: BMSMC, Humacao, PR
Sampling date: 3/13/2017
Matrix: Groundwater

METHOD: MADEP VPH

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
C5 - C8 Aliphatics (Unadj.)	100	ug/L	1.0	-	U	Yes
C9 - C12 Aliphatics (Unadj.)	100	ug/L	1.0	-	U	Yes
C9 - C10 Aromatics (Unadj.)	100	ug/L	1.0	-	U	Yes

Sample ID: FA42031-15
Sample location: BMSMC, Humacao, PR
Sampling date: 3/13/2017
Matrix: Groundwater

METHOD: MADEP VPH

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
C5 - C8 Aliphatics (Unadj.)	100	ug/L	1.0	-	U	Yes
C9 - C12 Aliphatics (Unadj.)	100	ug/L	1.0	-	U	Yes
C9 - C10 Aromatics (Unadj.)	100	ug/L	1.0	-	U	Yes

Sample ID: FA42031-16
Sample location: BMSMC, Humacao, PR
Sampling date: 3/13/2017
Matrix: AQ - Field Blank Water

METHOD: MADEP VPH

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
C5 - C8 Aliphatics (Unadj.)	100	ug/L	1.0	-	U	Yes
C9 - C12 Aliphatics (Unadj.)	100	ug/L	1.0	-	U	Yes
C9 - C10 Aromatics (Unadj.)	100	ug/L	1.0	-	U	Yes

Sample ID: FA42031-17
Sample location: BMSMC, Humacao, PR
Sampling date: 3/13/2017
Matrix: Groundwater

METHOD: MADEP VPH

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
C5 - C8 Aliphatics (Unadj.)	100	ug/L	1.0	-	U	Yes
C9 - C12 Aliphatics (Unadj.)	100	ug/L	1.0	-	U	Yes
C9 - C10 Aromatics (Unadj.)	100	ug/L	1.0	-	U	Yes

Sample ID: FA42031-7MS
Sample location: BMSMC, Humacao, PR
Sampling date: 3/10/2017
Matrix: Groundwater

METHOD: MADEP VPH

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
C5 - C8 Aliphatics (Unadj.)	245	ug/L	1.0	-	-	Yes
C9 - C12 Aliphatics (Unadj.)	152	ug/L	1.0	-	-	Yes
C9 - C10 Aromatics (Unadj.)	129	ug/L	1.0	-	-	Yes

Sample ID: FA42031-7MSD
Sample location: BMSMC, Humacao, PR
Sampling date: 3/10/2017
Matrix: Groundwater

METHOD: MADEP VPH

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
C5 - C8 Aliphatics (Unadj.)	236	ug/L	1.0	-	-	Yes
C9 - C12 Aliphatics (Unadj.)	161	ug/L	1.0	-	-	Yes
C9 - C10 Aromatics (Unadj.)	122	ug/L	1.0	-	-	Yes

DATA REVIEW WORKSHEETS

Type of validation Full:__X____ Limited:_____

Project Number:_FA42031_____
Date:_____03/10_+_13/2017_____
Shipping date:___03/13/2017_____
EPA Region:_____2_____

REVIEW OF VOLATILE PETROLEUM HYDROCARBON (VPHs) PACKAGE

The following guidelines for evaluating volatile organics were created to delineate required validation actions. This document will assist the reviewer in using professional judgment to make more informed decision and in better serving the needs of the data users. The sample results were assessed according to the data validation guidance documents in the following order of precedence METHOD FOR THE DETERMINATION OF VOLATILE PETROLEUM HYDROCARBONS (VPH), Massachusetts Department of Environmental Protection, Revision 1.1 (2004). Also the general validation guidelines promulgated by the USEPA Hazardous Wastes Support Section. The QC criteria and data validation actions listed on the data review worksheets are from the primary guidance document, unless otherwise noted.

The hardcopied (laboratory name) _Accutest_Laboratories_-_Orlando_____ data package received has been reviewed and the quality control and performance data summarized. The data review for VOCs included:

Lab. Project/SDG No.: __FA42031_____ Sample matrix: ____Groundwater_____
No. of Samples: _____15_____
Field blank No.: _____FA42031-5;_FA42031-16_____
Equipment blank No.: ____FA42031-1_____
Trip blank No.: _____-_____
Field duplicate No.: ___FA42031-2/ FA42031-6;_FA42031-10/ FA42031-11_____

__X____ Data Completeness
__X____ Holding Times
__N/A__ GC/MS tuning
__N/A__ Internal Standard Performance
__X____ Blanks
__X____ Surrogate Recoveries
__X____ Matrix Spike/Matrix Spike Duplicate
___X__ Laboratory Control Spikes
___X__ Field Duplicates
___X__ Calibrations
___X__ Compound Identifications
___X__ Compound Quantitation
___X__ Quantitation Limits

Overall Comments: _Volatiles_by_GC_by_Method_MADEP_VPH,_REV_1.1._(Unadj.)_____

Definition of Qualifiers:

J- Estimated results
U- Compound not detected
R- Rejected data
UJ- Estimated nondetect

Reviewer: Rafael Infante
Date:_____May_13,_2017_____

All criteria were met __x___
Criteria were not met and/or see below _____

I. DATA COMPLETNESS
A. Data Package:

MISSING INFORMATION	DATE LAB. CONTACTED	DATE RECEIVED

B. Other Discrepancies:

All criteria were met ___X___
Criteria were not met and/or see below _____

HOLDING TIMES
The objective of this parameter is to ascertain the validity of the results based on the holding time of the sample from time of collection to the time of extraction, and subsequently from the time of extraction to the time of analysis.

Complete table for all samples and note the analysis and/or preservation not within criteria

SAMPLE ID	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	ACTION
Samples analyzed within method recommended holding time. Sample preservation within the required criteria.				

Criteria

Preservation:

Samples analyzed with ambient purge temperature: Samples must be acidified to a pH of 2.0 or less at the time of collection.
Samples analyzed with heated purge temperature: Samples must be treated to a pH of 11.0 or greater at the time of collection.
Methanol preservation of soil/sediment samples is mandatory. Methanol (purge-and-trap grade) must be added to the sample vial before or immediately after sample collection. In lieu of the in-field preservation of samples with methanol, soil samples may be obtained in specially-designed air tight sampling devices, provided that the samples are extruded and preserved in methanol within 48 hours of collection.

Holding times:

Aqueous samples using ambient or heated purge - analyze within 14 days.
Soil/sediment samples - analysis within 28 days.

Cooler temperature (Criteria: 4 ± 2 °C):_____3.0-3.8_°C_____

Actions: Qualify positive results/non-detects as follows:

If holding times are exceeded, estimate positive results (J) and nondetects (UJ).
If holding times are grossly exceeded, use professional judgment to qualify data. The data reviewer may choose to estimate positive results (J) and rejects nondetects (R).
If samples were not at the proper temperature (> 10°C) or improperly preserved, use professional judgment to qualify the results.

All criteria were met ___X___
Criteria were not met and/or see below _____

CALIBRATIONS VERIFICATION

Compliance requirements for satisfactory instrument calibration are established to ensure that the instrument is capable of producing and maintaining acceptable quantitative data.

Date of initial calibration:___03/21/17_____

Dates of initial calibration verification:__03/21/17_____

Instrument ID numbers:_____HP5890_____

Matrix/Level:_____AQUEOUS/MEDIUM_____

DATE	LAB FILE ID#	ANALYTE	CRITERIA OUT RFs, %RSD, %D, r	SAMPLES AFFECTED
Initial and initial calibration verification meet method specific requirements				

Criteria- ICAL

- Five point calibration curve.
- The percent relative standard deviation (%RSD) of the calibration factor must be equal to or less than 25% over the working range for the analyte of interest. When this condition is met, linearity through the origin may be assumed, and the average calibration factor is used in lieu of a calibration curve.
- A collective calibration factor must also be established for each hydrocarbon range of interest. Calculate the collective CFs for C5-C8 Aliphatic Hydrocarbons and C9-C12 Aliphatic Hydrocarbons using the FID chromatogram. Calculate the collective CF for the C9-C10 Aromatic Hydrocarbons using the PID chromatogram. Tabulate the summation of the peak areas of all components in that fraction against the total concentration injected. The %RSD of the calibration factor must be equal to or less than 25% over the working range for the hydrocarbon range of interest.

Criteria- CCAL

- At a minimum, the working calibration factor must be verified on each working day, after every 20 samples, and at the end of the analytical sequence by the injection of a mid-level continuing calibration standard to verify instrument performance and linearity.
- If the percent difference (%D) for any analyte varies from the predicted response by more than ±25%, a new five-point calibration must be performed for that analyte. Greater percent differences are permissible for n-nonane. If the %D for n-nonane is greater than 30, note the nonconformance in the case narrative. It should be noted that the %Ds are calculated when CFs are used for the initial calibration and

percent drifts are calculated when calibration curves using linear regression are used for the initial calibration.

Actions:

If %RSD > 25% for target compounds or a correlation coefficient < 0.99, estimate positive results (J) and use professional judgment to qualify nondetects.
If % D > 25% (> 30 for nonane), estimate positive results (J) and nondetects (UJ).

CALIBRATIONS VERIFICATION

Compliance requirements for satisfactory instrument calibration are established to ensure that the instrument is capable of producing and maintaining acceptable quantitative data.

Date of initial calibration:_____03/21/17_____
Dates of continuing calibration verification:__03/23/17;__03/24/17_____
Dates of final calibration verification:_____03/24/17;_____
Instrument ID numbers:_____HP5890_____
Matrix/Level:_____AQUEOUS/MEDIUM_____

DATE	LAB FILE ID#	ANALYTE	CRITERIA OUT RFs, %RSD, %D, r	SAMPLES AFFECTED

Note: Continuing and final calibration verification meets method specific requirements.

A separate worksheet should be filled for each initial curve

All criteria were met ___X___
Criteria were not met and/or see below _____

V A. BLANK ANALYSIS RESULTS (Sections 1 & 2)

The assessment of the blank analysis results is to determine the existence and magnitude of contamination problems. The criteria for evaluation of blanks apply only to blanks associated with the samples, including trip, equipment, and laboratory blanks. If problems with any blanks exist, all data associated with the case must be carefully evaluated to determine whether or not there is an inherent variability in the data for the case, or if the problem is an isolated occurrence not affecting other data. A Laboratory Method Blank must be run after samples suspected of being highly contaminated to determine if sample carryover has occurred.

List the contamination in the blanks below. High and low levels blanks must be treated separately.

Laboratory blanks

DATE ANALYZED	LAB ID	LEVEL/ MATRIX	COMPOUND	CONCENTRATION UNITS

_METHOD_BLANKS_MEET_THE_METHOD_SPECIFIC_CRITERIA_____
_____
_____
_____
_____
_____

Note:

Field/Trip/**Equipment**

A methanol trip blank or acidified reagent water trip blank **should** continually accompany each soil/sediment sample or water sample batch, respectively, during sampling, storage, and analysis.

DATE ANALYZED	LAB ID	LEVEL/ MATRIX	COMPOUND	CONCENTRATION UNITS

_NO_TARGET_ANALYTES_DETECTED_IN_THE_FIELD/EQUIPMENT_BLANKS_____
_ASSOCIATED_WITH_THIS_DATA_PACKAGE._NO_TRIP_BLANK_ANALYZED_WITH_
_THIS_DATA_PACKAGE,_____
_____
_____
_____
_____
_____

Note:

B. BLANK ANALYSIS RESULTS (Section 3)

Blank Actions

The ALs for samples which have been diluted should be corrected for the sample dilution factor and/or % moisture, where applicable. Peaks must not be detected above the Reporting Limit within the retention time window of any analyte of interest. The hydrocarbon ranges must not be detected at a concentration greater than 10% of the most stringent MCP cleanup standard. Specific actions area as follows:

If the concentration is < sample quantitation limit (SQL) and < AL, report the compound as not detected (U) at the SQL.
If the concentration is ≥ SQL but < AL, report the compound as not detected (U) at the reported concentration.
If the concentration is > AL, report the concentration unqualified.

All criteria were met __X___
Criteria were not met and/or see below _____

SURROGATE SPIKE RECOVERIES

Laboratory performance of individual samples is established by evaluation of surrogate spike recoveries. All samples are spiked with surrogate compounds prior to sample analysis. The accuracy of the analysis is measured by the surrogate percent recovery. Since the effects of the sample matrix are frequently outside the control of the laboratory and may present relatively unique problems, the validation of data is frequently subjective and demands analytical experience and professional judgment.
List the percent recoveries (%Rs) which do not meet the criteria for surrogate recovery.
Matrix: solid/aqueous

SAMPLE ID	SURROGATE COMPOUND	ACTION
	BFB	

_SURROGATE_STANDARD_RECOVERIES_WITHIN_LABORATORY_CONTROL_____
_LIMITS._____

QC Limits* (Aqueous)
_____LL_to_UL___ _70_to_130_ ___to_____ ___to_____
QC Limits* (Solid)
_____LL_to_UL___ _70_to_130_ ___to_____ ___to_____

It is recommended that surrogate standard recoveries be monitored and documented on a continuing basis. At a minimum, when surrogate recovery from a sample, blank, or QC sample is less than 70% or more than 130%, check calculations to locate possible errors, check the fortifying standard solution for degradation, and check changes in instrument performance.

If the cause cannot be determined, reanalyze the sample unless one of the following exceptions applies:

(1) Obvious interference is present on the chromatogram (e.g., unresolved complex mixture);
(2) Percent moisture of associated soil/sediment sample is >25% and surrogate recovery is >10%; or
(3) The surrogate exhibits high recovery and associated target analytes or hydrocarbon ranges are not detected in sample.

If a sample with a surrogate recovery outside of the acceptable range is not reanalyzed based on any of these aforementioned exceptions, this information must be noted on the data report form and discussed in the Executive Report. Analysis of the sample on dilution may diminish matrix-related surrogate recovery problems. This approach can be used as long as the reporting limits to evaluate applicable MCP standards can still be achieved with the dilution. If not, reanalysis without dilution must be performed.

All criteria were met _____
Criteria were not met and/or see below __X___

VII. A MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD)

This data is generated to determine long term precision and accuracy in the analytical method for various matrices. This data alone cannot be used to evaluate the precision and accuracy of individual samples.

At the request of the data user, and in consideration of sample matrices and data quality objectives, matrix spikes and matrix duplicates may be analyzed with every batch of 20 samples or less per matrix.

- **Matrix duplicate** - Matrix duplicates are prepared by analyzing one sample in duplicate. The purpose of the matrix duplicates is to determine the homogeneity of the sample matrix as well as analytical precision. The RPD of detected results in the matrix duplicate samples must not exceed 50 when the results are greater than 5x the reporting limit.
- The desired spiking level is 50% of the highest calibration standard. However, the total concentration in the MS (including the MS and native concentration in the unspiked sample) should not exceed 75% of the highest calibration standard in order for a proper evaluation to be performed. The purpose of the matrix spike is to determine whether the sample matrix contributes bias to the analytical results. The corrected concentrations of each analyte within the matrix spiking solution must be within 70 - 130% of the true value. Lower recoveries of n-nonane are permissible (if included in the calibration of the C9-C12 aliphatic range), but must be noted in the narrative if <30%.

MS/MSD Recoveries and Precision Criteria

Sample ID:_FA42031-7_MS/MSD_____ Matrix/Level:_Groundwater____

List the %Rs, RPD of the compounds which do not meet the QC criteria.

The QC reported here applies to the following samples: Method: **MADEP VPH REV 1.1**
FA42031-1, FA42031-2, FA42031-4, FA42031-5, FA42031-6, FA42031-7; FA42031-9, FA42031-10, FA42031-11, FA42031-12, FA42031-15, FA42031-16, FA42031-17

Compound	FA42031-7 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
C9- C10 Aromatics (Unadj.)	43.3	J	240	129	36*	240	122	33*	6	70-130/50
C5- C8 Aliphatics (Unadj.)	ND		480	245	51*	480	236	49*	4	70-130/50
C9- C12 Aliphatics (Unadj.)	ND		400	152	38*	400	161	40*	6	70-130/50

* Outside laboratory control limits.

Note: MS/MSD % recovery and RPD within laboratory control limits except for the cases described in this document. Results qualified as estimated (J or UJ) in sample FA42031-7.

No action is taken on MS/MSD results alone to qualify the entire case. However, used informed professional judgment, the data reviewer may use the MS/MSD results in conjunction with other QC criteria and determine the need for some qualification of the data. In those instances where it can be determined that the results of the MS/MSD affect only the sample spiked, the qualification should be limited to this sample alone. However, it may be determined through the MS/MSD results that the laboratory is having a systematic problem in the analysis of one or more analytes, which affects the associated samples.

2. MS/MSD – Unspiked Compounds

List the concentrations of the unspiked compounds and determine the % RSDs of these compounds in the unspiked sample, matrix spike, and matrix spike duplicate.

COMPOUND	CONCENTRATION SAMPLE	MS	MSD	%RPD	ACTION

Criteria: None specified, use %RSD $\leq$ 50 as professional judgment.

Actions:

If the % RSD > 50, qualify the results in the spiked sample as estimate (J).
If the % RSD is not calculable (NC) due to nondetect value in the sample, MS, and/or MSD, use professional judgment to qualify sample data.

A separate worksheet should be used for each MS/MSD pair.

All criteria were met __X___
Criteria were not met and/or see below _____

VIII. LABORATORY CONTROL SAMPLE (LCS/LCSD) ANALYSIS

This data is generated to determine accuracy of the analytical method for various matrices.

1. LCS Recoveries Criteria

List the %R of compounds which do not meet the criteria

LCS ID	COMPOUND	% R	QC LIMIT	ACTION
_LCS/LCSD_RECOVERY_WITHIN_LABORATORY_CONTROL_LIMTS._____				
_____				
_____				
_____				
_____				
_____				

Note:

Criteria:
* Refer to QAPP for specific criteria.
* The spike recovery must be between 70% and 130%. Lower recoveries of n-nonane are permissible (if included in the calibration of the C9-C12 aliphatic range). If the recovery of n-nonane is <30%, note the nonconformance in the executive narrative.

Actions:
Actions on LCS recovery should be based on both the number of compounds that are outside the %R criteria and the magnitude of the excedance of the criteria.

If the %R of the analyte is > UL, qualify all positive results (j) for the affected analyte in the associated samples and accept nondetects.
If the %R of the analyte is < LL, qualify all positive results (j) and reject (R) nondetects for the affected analyte in the associated samples.
If more than half the compounds in the LCS are not within the required recovery criteria, qualify all positive results as (J) and reject nondetects (R) for all target analyte(s) in the associated samples.

2. Frequency Criteria:

Where LCS analyzed at the required frequency and for each matrix (1 per 20 samples per matrix)? Yes or No.
If no, the data may be affected. Use professional judgment to determine the severity of the effect and qualify data accordingly. Discuss any actions below and list the samples affected. Discuss the actions below:

All criteria were met __X___
Criteria were not met and/or see below _____

IX. FIELD/LABORATORY DUPLICATE PRECISION

Sample IDs:__FA42031-7/-7_DUP_____ Matrix:__Groundwater__
Sample IDs:__FA42031-2/FA42031-6_____ Matrix:__Groundwater__
Sample IDs:__FA42031-10/FA42031-11_____ Matrix:__Groundwater__

Field/laboratory duplicates samples may be taken and analyzed as an indication of overall precision. These analyses measure both field and lab precision; therefore, the results may have more variability than laboratory duplicates which measures only laboratory performance. It is also expected that soil duplicate results will have a greater variance than water matrices due to difficulties associated with collecting identical field duplicate samples.

COMPOUND	SQL	SAMPLE CONC.	DUPLICATE CONC.	RPD	ACTION
Field/laboratory duplicate analyzed with this data package. RPD within laboratory and validation guidance document criteria (± 50 %) for analytes detected above reporting limits.					

Criteria:

The project QAPP should be reviewed for project-specific information.
RPD ± 30% for aqueous samples, RPD ± 50 % for solid samples if results are ≥ SQL.
If both samples and duplicate are <5 SQL, the RPD criteria is doubled.

SQL = soil quantitation limit

Actions:

If both the sample and the duplicate results are nondetects (ND), the RPD is not calculable (NC). No action is needed.

Qualify as estimated positive results (J) and nondetects (UJ) for the compound that exceeded the above criteria.

If one sample result is not detected and the other is ≥ 5x the SQL qualify (J/UJ).

Note: If SQLs for the sample and duplicate are significantly different, use professional judgment to determine if qualification is appropriate.

If one sample value is not detected and the other is < 5x the SQL, use professional judgment to determine if qualification is appropriate.

All criteria were met __X___
Criteria were not met and/or see below _____

XI. COMPOUND IDENTIFICATION

The compound identification evaluation is to verify that the laboratory correctly identified target analytes as well as tentatively identified compounds (TICs).

1. Verify that the target analytes were within the retention time windows.

   - Retention time windows must be re-established for each Target VPH Analyte each time a new GC column is installed, and must be verified and/or adjusted on a daily basis.
   - Coelution of the m- and p- xylene isomers is permissible.
   - All surrogates must be adequately resolved from individual Target Analytes included in the VPH Component Standard.
   - For the purposes of this method, adequate resolution is assumed to be achieved if the height of the valley between two peaks is less than 25% of the average height of the two peaks.
   - The n-pentane (C5) and MtBE peaks must be adequately resolved from any solvent front that may be present on the FID and PID chromatograms, respectively.

   Note: Target analytes were within the retention time window.

2. If target analytes and/or TICs were not correctly identified, request that the laboratory resubmit the corrected data.

All criteria were met __X___
Criteria were not met and/or see below _____

XII. QUANTITATION LIMITS AND SAMPLE RESULTS

The sample quantitation evaluation is to verify laboratory quantitation results.

1. In the space below, please show a minimum of one sample calculation:

FID

Computer printout

PID

Computer printout

2. If requested, verify that the results were above the laboratory method detection limit (MDLs).

3. If dilutions performed, were the SQLs elevated accordingly by the laboratory? List the affected samples and dilution factor in the table below.

SAMPLE ID	DILUTION FACTOR	REASON FOR DILUTION

If dilution was not performed and the results were above the concentration range, estimate results (J) for the affected compounds. List the affected samples/compounds:

_____

_____

EXECUTIVE NARRATIVE

SDG No:	**FA42031**	Laboratory:	**Accutest, Orlando**
Analysis:	**MADEP EPH**	Number of Samples:	**15**
Location:	BMSMC, Humacao, PR		

SUMMARY: Fifteen (15) samples were analyzed for Semivolatiles TPHC Ranges by method MADEP EPH. Samples were validated following the METHOD FOR THE DETERMINATION OF EXTRACTABLE PETROLEUM HYDROCARBONS (EPH) quality control criteria, Massachusetts Department of Environmental Protection, Revision 1.1 (2004). Also the general validation guidelines promulgated by the USEPA Hazardous Wastes Support Section. The QC criteria and data validation actions listed on the data review worksheets are from the primary guidance document, unless otherwise noted.

Results are valid and can be used for decision making purposes.

Critical issues: **None**
Major: **None**
Minor: **None**

Critical findings: **None**
Major findings: **None**
Minor findings: **1.** C11-C22 Aromatics detected in one of the method blank below the reporting limit. Affected samples were: FA42031-1, FA42031-2, FA42031-4, FA42031-5, and FA42031-6. C11-C22 Aromatics concentration detected above the method blank but below the reporting limits. Qualification of affected samples is as follows:

Analyte detected in the samples at a concentration above the method blank and below the reporting limit. Sample results qualified as undetected (U) at the reporting limit.

C11-C22 Aromatics detected below the reporting limit in equipment and field blank. Analyte detected below the reporting limit in the corresponding sample batch. Results qualified as undetected (U) at the reporting limit in affected samples.

COMMENTS: Results are valid and can be used for decision making purposes.

Reviewers Name: Rafael Infante
Chemist License 1888

Signature: Rafael Infante

Date: May 3, 2017

ORGANIC DATA SAMPLE SUMMARY

Sample ID: FA42031-1
Sample location: BMSMC, Humacao, PR
Sampling date: 3/10/2017
Matrix: AQ - Equipment Blank

METHOD: MADEP EPH

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
C11 - C22 Aromatics (Unadj.)	190	ug/L	1.0	J	U	Yes
C9 - C18 Aliphatics	190	ug/L	1.0	-	U	Yes
C19 - C36 Aliphatics	190	ug/L	1.0	-	U	Yes

Sample ID: FA42031-2
Sample location: BMSMC, Humacao, PR
Sampling date: 3/10/2017
Matrix: Groundwater

METHOD: MADEP EPH

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
C11 - C22 Aromatics (Unadj.)	190	ug/L	1.0	J	U	Yes
C9 - C18 Aliphatics	190	ug/L	1.0	-	U	Yes
C19 - C36 Aliphatics	190	ug/L	1.0	-	U	Yes

Sample ID: FA42031-4
Sample location: BMSMC, Humacao, PR
Sampling date: 3/10/2017
Matrix: Groundwater

METHOD: MADEP EPH

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
C11 - C22 Aromatics (Unadj.)	200	ug/L	1.0	J	U	Yes
C9 - C18 Aliphatics	200	ug/L	1.0	-	U	Yes
C19 - C36 Aliphatics	200	ug/L	1.0	-	U	Yes

Sample ID: FA42031-4
Sample location: BMSMC, Humacao, PR
Sampling date: 3/10/2017
Matrix: AQ - Field Blank Water

METHOD: MADEP EPH

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
C11 - C22 Aromatics (Unadj.)	190	ug/L	1.0	J	U	Yes
C9 - C18 Aliphatics	190	ug/L	1.0	-	U	Yes
C19 - C36 Aliphatics	190	ug/L	1.0	-	U	Yes

Sample ID: FA42031-6
Sample location: BMSMC, Humacao, PR
Sampling date: 3/10/2017
Matrix: Groundwater

METHOD: MADEP EPH

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
C11 - C22 Aromatics (Unadj.)	200	ug/L	1.0	J	U	Yes
C9 - C18 Aliphatics	200	ug/L	1.0	-	U	Yes
C19 - C36 Aliphatics	200	ug/L	1.0	-	U	Yes

Sample ID: FA42031-7
Sample location: BMSMC, Humacao, PR
Sampling date: 3/10/2017
Matrix: Groundwater

METHOD: MADEP EPH

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
C11 - C22 Aromatics (Unadj.)	200	ug/L	1.0	J	U	Yes
C9 - C18 Aliphatics	200	ug/L	1.0	-	U	Yes
C19 - C36 Aliphatics	200	ug/L	1.0	-	U	Yes

Sample ID: FA42031-9
Sample location: BMSMC, Humacao, PR
Sampling date: 3/13/2017
Matrix: Groundwater

METHOD: MADEP EPH

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
C11 - C22 Aromatics (Unadj.)	200	ug/L	1.0	J	J	Yes
C9 - C18 Aliphatics	200	ug/L	1.0	-	U	Yes
C19 - C36 Aliphatics	200	ug/L	1.0	-	U	Yes

Sample ID: FA42031-10
Sample location: BMSMC, Humacao, PR
Sampling date: 3/13/2017
Matrix: Groundwater

METHOD: MADEP EPH

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
C11 - C22 Aromatics (Unadj.)	190	ug/L	1.0	-	U	Yes
C9 - C18 Aliphatics	190	ug/L	1.0	-	U	Yes
C19 - C36 Aliphatics	190	ug/L	1.0	-	U	Yes

Sample ID: FA42031-11
Sample location: BMSMC, Humacao, PR
Sampling date: 3/13/2017
Matrix: Groundwater

METHOD: MADEP EPH

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
C11 - C22 Aromatics (Unadj.)	200	ug/L	1.0	-	U	Yes
C9 - C18 Aliphatics	200	ug/L	1.0	-	U	Yes
C19 - C36 Aliphatics	200	ug/L	1.0	-	U	Yes

Sample ID: FA42031-12
Sample location: BMSMC, Humacao, PR
Sampling date: 3/13/2017
Matrix: Groundwater

METHOD: MADEP EPH

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
C11 - C22 Aromatics (Unadj.)	200	ug/L	1.0	-	U	Yes
C9 - C18 Aliphatics	200	ug/L	1.0	-	U	Yes
C19 - C36 Aliphatics	200	ug/L	1.0	-	U	Yes

Sample ID: FA42031-15
Sample location: BMSMC, Humacao, PR
Sampling date: 3/13/2017
Matrix: Groundwater

METHOD: MADEP EPH

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
C11 - C22 Aromatics (Unadj.)	200	ug/L	1.0	-	U	Yes
C9 - C18 Aliphatics	200	ug/L	1.0	-	U	Yes
C19 - C36 Aliphatics	200	ug/L	1.0	-	U	Yes

Sample ID: FA42031-16
Sample location: BMSMC, Humacao, PR
Sampling date: 3/13/2017
Matrix: AQ - Field Blank Water

METHOD: MADEP EPH

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
C11 - C22 Aromatics (Unadj.)	200	ug/L	1.0	-	U	Yes
C9 - C18 Aliphatics	200	ug/L	1.0	-	U	Yes
C19 - C36 Aliphatics	200	ug/L	1.0	-	U	Yes

Sample ID: FA42031-17
Sample location: BMSMC, Humacao, PR
Sampling date: 3/13/2017
Matrix: Groundwater

METHOD: MADEP EPH

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
C11 - C22 Aromatics (Unadj.)	200	ug/L	1.0	-	U	Yes
C9 - C18 Aliphatics	200	ug/L	1.0	-	U	Yes
C19 - C36 Aliphatics	200	ug/L	1.0	-	U	Yes

Sample ID: FA42031-7MS
Sample location: BMSMC, Humacao, PR
Sampling date: 3/13/2017
Matrix: Groundwater

METHOD: MADEP EPH

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
C11 - C22 Aromatics (Unadj.)	2600	ug/L	1.0	-	-	Yes
C9 - C18 Aliphatics	639	ug/L	1.0	-	-	Yes
C19 - C36 Aliphatics	1260	ug/L	1.0	-	-	Yes

Sample ID: FA42031-7MSD
Sample location: BMSMC, Humacao, PR
Sampling date: 3/13/2017
Matrix: Groundwater

METHOD: MADEP EPH

Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation	Reportable
C11 - C22 Aromatics (Unadj.)	3100	ug/L	1.0	-	-	Yes
C9 - C18 Aliphatics	720	ug/L	1.0	-	-	Yes
C19 - C36 Aliphatics	1440	ug/L	1.0	-	-	Yes

DATA REVIEW WORKSHEETS

Type of validation Full:__X____ Limited:_____

Project Number:_FA42031_____
Date:_____03/10_+_13/2017_____
Shipping date:___03/13/2017_____
EPA Region:_____2_____

REVIEW OF EXTRACTABLE PETROLEUM HYDROCARBON (EPHs) PACKAGE

The following guidelines for evaluating volatile organics were created to delineate required validation actions. This document will assist the reviewer in using professional judgment to make more informed decision and in better serving the needs of the data users. The sample results were assessed according to the data validation guidance documents in the following order of precedence METHOD FOR THE DETERMINATION OF EXTRACTABLE PETROLEUM HYDROCARBONS (EPH), Massachusetts Department of Environmental Protection, Revision 1.1 (2004). Also the general validation guidelines promulgated by the USEPA Hazardous Wastes Support Section. The QC criteria and data validation actions listed on the data review worksheets are from the primary guidance document, unless otherwise noted.

The hardcopied (laboratory name) _Accutest_Laboratories_____ data package received has been reviewed and the quality control and performance data summarized. The data review for SVOCs included:

Lab. Project/SDG No.: __FA42031_____ Sample matrix: ____Groundwater_____
No. of Samples: _____15_____
Field blank No.: _____ FA42031-5;_ FA42031-16_____
Equipment blank No.: __FA42031-1_____
Trip blank No.: _____-_____
Field duplicate No.: __FA42031-2/ FA42031-6;_FA42031-10/ FA42031-11_____

__X____ Data Completeness
__X____ Holding Times
__N/A__ GC/MS Tuning
__N/A__ Internal Standard Performance
__X____ Blanks
__X____ Surrogate Recoveries
__X____ Matrix Spike/Matrix Spike Duplicate
___X__ Laboratory Control Spikes
___X__ Field Duplicates
___X__ Calibrations
___X__ Compound Identifications
___X__ Compound Quantitation
___X__ Quantitation Limits

Overall Comments:
_Extractable_Petroleum_Hydrocarbons_by_GC_by_Method_MADEP_EPH,_REV_1.1._____
_(C11_-_C22)_Aromatics_(Unadj.);_C9_-_18_Aliphatics;_C19_-_C36_Aliphatics_____

Definition of Qualifiers:

J- Estimated results
U- Compound not detected
R- Rejected data
UJ- Estimated nondetect

Reviewer:_ Rafael Infante _____
Date:_____May_3,_2017_____

All criteria were met __x___
Criteria were not met and/or see below _____

I. DATA COMPLETNESS
A. Data Package:

MISSING INFORMATION	DATE LAB. CONTACTED	DATE RECEIVED

B. Other Discrepancies:

All criteria were met __X___
Criteria were not met and/or see below _____

HOLDING TIMES
The objective of this parameter is to ascertain the validity of the results based on the holding time of the sample from time of collection to the time of extraction, and subsequently from the time of extraction to the time of analysis.

Complete table for all samples and note the analysis and/or preservation not within criteria

SAMPLE ID	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	ACTION
Samples extracted and analyzed within method recommended holding time. Sample preservation was appropriate.				

Note:

Criteria

Preservation:

Aqueous samples must be acidified to a pH of 2.0 or less at the time of collection.
Soil samples must be cooled at 4 ± 2 °C immediately after collection.

Holding times:

Samples must be extracted within 14 days of collection, and analyzed within 40 days of extraction.

Cooler temperature (Criteria: 4 ± 2 °C):___3.0-3.8_°C_____

Actions: Qualify positive results/nondetects as follows:

If holding times are exceeded, estimate positive results (J) and nondetects (UJ).
If holding times are grossly exceeded, use professional judgment to qualify data. The data reviewer may choose to estimate positive results (J) and rejects nondetects (R).
If samples were not at the proper temperature (> 10°C) or improperly preserved, use professional judgment to qualify the results.

Note:

All criteria were met ___X___
Criteria were not met and/or see below _____

CALIBRATIONS VERIFICATION

Compliance requirements for satisfactory instrument calibration are established to ensure that the instrument is capable of producing and maintaining acceptable quantitative data.

Date of initial calibration:_____03/15/17_____04/10/17_____
Dates of initial calibration verification:_____03/15/17_____04/10/17_____
Instrument ID numbers:_____FID_7_____
Matrix/Level:_____AQUEOUS/MEDIUM_____

DATE	LAB FILE ID#	ANALYTE	CRITERIA OUT RFs, %RSD, %D, r	SAMPLES AFFECTED
Initial and continuing calibration meet method specific requirements				

Criteria- ICAL

- Five point calibration curve.
- The percent relative standard deviation (%RSD) of the calibration factor must be equal to or less than 25% over the working range for the analyte of interest. When this condition is met, linearity through the origin may be assumed, and the average calibration factor is used in lieu of a calibration curve.
- A collective calibration factor must also be established for each hydrocarbon range of interest. Calculate the collective CFs for C9-C18 Aliphatic Hydrocarbons, C19-C36 Aliphatic Hydrocarbons, and C11-C22 Aromatic Hydrocarbons using the FID chromatogram. Tabulate the summation of the peak areas of all components in that fraction against the total concentration injected. The %RSD of the calibration factor must be equal to or less than 25% over the working range for the hydrocarbon range of interest.
    - The area for the surrogates must be subtracted from the area summation of the range in which they elute.
    - The areas associated with naphthalene and 2-methylnaphthalene in the aliphatic range standard must be subtracted from the uncorrected collective C9-C18 Aliphatic Hydrocarbon range area prior to calculating the CF.

Criteria- CCAL

- At a minimum, the working calibration factor must be verified on each working day, after every 20 samples or every 24 hours (whichever is more frequent), and at the end of the analytical sequence by the injection of a mid-level continuing calibration standard to verify instrument performance and linearity.
- If the percent difference (%D) for any analyte varies from the predicted response by more than ±25%, a new five-point calibration must be performed for that analyte. Greater percent differences are permissible for n-nonane. If the %D for n-nonane is greater than 30, note the nonconformance in the case narrative. It should be noted that the %Ds are calculated when CFs are used for the initial calibration and percent drifts are calculated when calibration curves using linear regression are used for the initial calibration.

Actions:

If %RSD > 25% for target compounds or a correlation coefficient < 0.99, estimate positive results (J) and use professional judgment to qualify nondetects.
If % D > 25% (> 30 for nonane), estimate positive results (J) and nondetects (UJ).

CALIBRATIONS VERIFICATION

Compliance requirements for satisfactory instrument calibration are established to ensure that the instrument is capable of producing and maintaining acceptable quantitative data.

Date of initial calibration:_____03/15/17_____04/10/11_____

Dates of continuing calibration verification:___03/22/17;_03/23/17_04/12/11;_04/13/17_

Dates of final calibration verification:_____03/23/17_____

Instrument ID numbers:_____FID_7_____

Matrix/Level:_____AQUEOUS/MEDIUM_____

DATE	LAB FILE ID#	ANALYTE	CRITERIA OUT RFs, %RSD, %D, r	SAMPLES AFFECTED
Initial and continuing calibration meets method specific requirements.				

Note:

A separate worksheet should be filled for each initial curve

All criteria were met _____
Criteria were not met and/or see below ___X___

V A. BLANK ANALYSIS RESULTS (Sections 1 & 2)

The assessment of the blank analysis results is to determine the existence and magnitude of contamination problems. The criteria for evaluation of blanks apply only to blanks associated with the samples, including trip, equipment, and laboratory blanks. If problems with any blanks exist, all data associated with the case must be carefully evaluated to determine whether or not there is an inherent variability in the data for the case, or if the problem is an isolated occurrence not affecting other data. A Laboratory Method Blank must be run after samples suspected of being highly contaminated to determine if sample carryover has occurred.

List the contamination in the blanks below. High and low levels blanks must be treated separately.

Laboratory blanks

DATE ANALYZED	LAB ID	LEVEL/ MATRIX	COMPOUND	CONCENTRATION UNITS
_METHOD_BLANKS_MEET_THE_METHOD_SPECIFIC_EXCEPT_FOR_THE_CASES _DESCRIBED_IN_THIS_DOCUMENT._____				
_04/13/17_____	OP64317-MB___	Aq./medium_	C11-C22_Aromatics_(Unadj.)___	87.2_(J)___

Note: Affected samples: FA42031-1, FA42031-2, FA42031-4, FA42031-5, and FA42031-6. Target concentration detected above the method blank but below the reporting limits. Qualification of affected samples:

Analyte detected in the samples at a concentration above the method blank and below the reporting limit. Sample results qualified as undetected (U) at the reporting limit.

Field/Trip/**Equipment**

DATE ANALYZED	LAB ID	LEVEL/ MATRIX	COMPOUND	CONCENTRATION UNITS
_NO_TARGET_ANALYTES_DETECTED_IN_THE_FIELD/EQUIPMENT_BLANKS____ _ANALYZED_ASSOCIATED_WITH_THIS_DATA_PACKAGE_EXCEPT_FOR_THE___ _CASES_DESCRIBED_IN_THIS_DOCUMENT._____				
__04/12/17_____	FA42031-1___	Aq./low__	C11-C22_Aromatics_(Unadj.)_	87.9_ug/l_(J)_
__04/12/17_____	FA42031-5___	Aq./low_	C11-C22_Aromatics_(Unadj.)_	106_ug/l_(J)_

Note: C11-C22 Aromatics (Unadj.) not detected above the reporting limit in sample batch. Analyte detected in the samples at a concentration above the method blank and below the reporting limit are qualified as undetected (U) at the reporting limit in affected samples.

All criteria were met __X___
Criteria were not met and/or see below _____

V B. BLANK ANALYSIS RESULTS (Section 3)

Blank Actions

The ALs for samples which have been diluted should be corrected for the sample dilution factor and/or % moisture, where applicable. Peaks must not be detected above the Reporting Limit within the retention time window of any analyte of interest. The hydrocarbon ranges must not be detected at a concentration greater than 10% of the most stringent MCP cleanup standard. Specific actions area as follows:

If the concentration is < sample quantitation limit (SQL) and < AL, report the compound as not detected (U) at the SQL.
If the concentration is ≥ SQL but < AL, report the compound as not detected (U) at the reported concentration.
If the concentration is > AL, report the concentration unqualified.

All criteria were met __X___
Criteria were not met and/or see below _____

SURROGATE SPIKE RECOVERIES

Laboratory performance of individual samples is established by evaluation of surrogate spike recoveries. All samples are spiked with surrogate compounds prior to sample analysis. The accuracy of the analysis is measured by the surrogate percent recovery. Since the effects of the sample matrix are frequently outside the control of the laboratory and may present relatively unique problems, the validation of data is frequently subjective and demands analytical experience and professional judgment. List the percent recoveries (%Rs) which do not meet the criteria for surrogate recovery.
Matrix: solid/aqueous

SAMPLE ID	**SURROGATE COMPOUND**				**ACTION**
	S1	S2	S3	S4	

_SURROGATE_STANDARDS_RECOVERIES_WITHIN_LABORATORY_CONTROL__
_LIMITS_____
_____
_____
_____

Note:

S1 = o-Terphenyl 40-140% S2 = 2-Fluorobiphenyl 40-140%
S3 = 1-Chlorooctadecane 40-140% S4 = 2-Bromonaphthalene 40-140%

QC Limits (%)* (Aqueous)
_LL_to_UL_ _40_to_140_ _40_to_140_ _40_to_140_ _40_to_140_
QC Limits* (Solid)
_LL_to_UL_ ___to___ ____to_____ ___to_____ ___to_____

It is recommended that surrogate standard recoveries be monitored and documented on a continuing basis. At a minimum, when surrogate recovery from a sample, blank, or QC sample is less than 40% or more than 140%, check calculations to locate possible errors, check the fortifying standard solution for degradation, and check changes in instrument performance.

If the cause cannot be determined, reanalyze the sample unless one of the following exceptions applies:

(1) Obvious interference is present on the chromatogram (e.g., unresolved complex mixture);
(2) The surrogate exhibits high recovery and associated target analytes or hydrocarbon ranges are not detected in sample.

If a sample with a surrogate recovery outside of the acceptable range is not reanalyzed based on any of these aforementioned exceptions, this information must be noted on the data report form and discussed in the Executive Report. Analysis of the sample on dilution may diminish matrix-related surrogate recovery problems. This approach can be used as long as the reporting limits to evaluate applicable MCP standards can still be achieved with the dilution. If not, reanalysis without dilution must be performed.

All criteria were met _X____
Criteria were not met and/or see below _____

VII. A MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD)

This data is generated to determine long term precision and accuracy in the analytical method for various matrices. This data alone cannot be used to evaluate the precision and accuracy of individual samples.

At the request of the data user, and in consideration of sample matrices and data quality objectives, matrix spikes and matrix duplicates may be analyzed with every batch of 20 samples or less per matrix.

- **Matrix duplicate** - Matrix duplicates are prepared by analyzing one sample in duplicate. The purpose of the matrix duplicates is to determine the homogeneity of the sample matrix as well as analytical precision. The RPD of detected results in the matrix duplicate samples must not exceed 50 when the results are greater than 5x the reporting limit.
- The desired spiking level is 50% of the highest calibration standard. However, the total concentration in the MS (including the MS and native concentration in the unspiked sample) should not exceed 75% of the highest calibration standard in order for a proper evaluation to be performed. The purpose of the matrix spike is to determine whether the sample matrix contributes bias to the analytical results. The corrected concentrations of each analyte within the matrix spiking solution must be within 40 - 140% of the true value. Lower recoveries of n-nonane are permissible but must be noted in the narrative if <30%.

MS/MSD Recoveries and Precision Criteria

Sample ID:_FA42031-7_MS/MSD_____ Matrix/Level:__Groundwater_____

List the %Rs, RPD of the compounds which do not meet the QC criteria.

MS OR MSD	COMPOUND	% R	RPD	QC LIMITS	ACTION

Note: MS/MSD and RPD within laboratory control limits.

All criteria were met __X___
Criteria were not met and/or see below _____

No action is taken on MS/MSD results alone to qualify the entire case. However, used informed professional judgment, the data reviewer may use the MS/MSD results in conjunction with other QC criteria and determine the need for some qualification of the data. In those instances where it can be determined that the results of the MS/MSD affect only the sample spiked, the qualification should be limited to this sample alone. However, it may be determined through the MS/MSD results that the laboratory is having a systematic problem in the analysis of one or more analytes, which affects the associated samples.

2. MS/MSD – Unspiked Compounds

List the concentrations of the unspiked compounds and determine the % RSDs of these compounds in the unspiked sample, matrix spike, and matrix spike duplicate.

COMPOUND	CONCENTRATION SAMPLE	MS	MSD	%RPD	ACTION

Criteria: None specified, use %RSD $\leq$ 50 as professional judgment.

Actions:

If the % RSD > 50, qualify the results in the spiked sample as estimate (J).
If the % RSD is not calculable (NC) due to nondetect value in the sample, MS, and/or MSD, use professional judgment to qualify sample data.

A separate worksheet should be used for each MS/MSD pair.

All criteria were met __X___
Criteria were not met and/or see below _____

VIII. LABORATORY CONTROL SAMPLE (LCS/LCSD) ANALYSIS

This data is generated to determine accuracy of the analytical method for various matrices.

1. LCS Recoveries Criteria

List the %R of compounds which do not meet the criteria

LCS ID	COMPOUND	% R	QC LIMIT	ACTION
_LCS/LCSD_RECOVERY_WITHIN_LABORATORY_CONTROL_LIMTS._____				
_____				
_____				
_____				
_____				

Note:

Criteria:
* Refer to QAPP for specific criteria.
* The spike recovery must be between 40% and 140%. Lower recoveries of n-nonane are permissible. If the recovery of n-nonane is <30%, note the nonconformance in the executive narrative. RPD between LCS/LCSD must be < 25%.

Actions:
Actions on LCS recovery should be based on both the number of compounds that are outside the %R and RPD criteria and the magnitude of the excedance of the criteria.

If the %R of the analyte is > UL, qualify all positive results (j) for the affected analyte in the associated samples and accept nondetects.
If the %R of the analyte is < LL, qualify all positive results (j) and reject (R) nondetects for the affected analyte in the associated samples.
If more than half the compounds in the LCS are not within the required recovery criteria, qualify all positive results as (J) and reject nondetects (R) for all target analyte(s) in the associated samples.

2. Frequency Criteria:

Where LCS analyzed at the required frequency and for each matrix (1 per 20 samples per matrix)? **Yes** or No.
If no, the data may be affected. Use professional judgment to determine the severity of the effect and qualify data accordingly. Discuss any actions below and list the samples affected. Discuss the actions below:

_____
_____

All criteria were met __X___
Criteria were not met and/or see below ___

IX. FIELD/LABORATORY DUPLICATE PRECISION

Sample IDs: __FA42192-7/-7DUP_____ Matrix:___Groundwater____
Sample IDs: __FA42031-2/FA42031-6_____ Matrix:___Groundwater____
Sample IDs: __FA42031-10/FA42031-11_____ Matrix:___Groundwater____

Field/laboratory duplicates samples may be taken and analyzed as an indication of overall precision. These analyses measure both field and lab precision; therefore, the results may have more variability than laboratory duplicates which measures only laboratory performance. It is also expected that soil duplicate results will have a greater variance than water matrices due to difficulties associated with collecting identical field duplicate samples.

COMPOUND	SQL	SAMPLE CONC.	DUPLICATE CONC.	RPD	ACTION
Field/laboratory duplicate analyzed with this data package. RPD within laboratory and generally acceptable control limits					

Criteria:

The project QAPP should be reviewed for project-specific information.
RPD $\pm$ 30% for aqueous samples, RPD $\pm$ 50 % for solid samples if results are $\geq$ SQL.
If both samples and duplicate are <5 SQL, the RPD criteria is doubled.

SQL = soil quantitation limit

Actions:

If both the sample and the duplicate results are nondetects (ND), the RPD is not calculable (NC). No action is needed.

Qualify as estimated positive results (J) and nondetects (UJ) for the compound that exceeded the above criteria.

If one sample result is not detected and the other is $\geq$ 5x the SQL qualify (J/UJ).

Note: If SQLs for the sample and duplicate are significantly different, use professional judgment to determine if qualification is appropriate.

If one sample value is not detected and the other is < 5x the SQL, use professional judgment to determine if qualification is appropriate.

All criteria were met __X___
Criteria were not met and/or see below _____

XI. COMPOUND IDENTIFICATION

The compound identification evaluation is to verify that the laboratory correctly identified target analytes as well as tentatively identified compounds (TICs).

1. Verify that the target analytes were within the retention time windows.

   - Retention time windows must be re-established for each Target EPH Analyte each time a new GC column is installed, and must be verified and/or adjusted on a daily basis.
   - The n-nonane (n-C9) peak must be adequately resolved from the solvent front of the chromatographic run.
   - All surrogates must be adequately resolved from the Aliphatic Hydrocarbon and Aromatic Hydrocarbon standards.
   - For the purposes of this method, adequate resolution is assumed to be achieved if the height of the valley between two peaks is less than 25% of the average height of the two peaks.
   - The n-pentane (C5) and MtBE peaks must be adequately resolved from any solvent front that may be present on the FID and PID chromatograms, respectively.

1a. Aliphatic hydrocarbons range:

   - Determine the total area count for all peaks eluting 0.1 minutes before the retention time (Rt) for n-C9 and 0.01 minutes before the Rt for n-C19.
   - Determine the total area count for all peaks eluting 0.01 minutes before the Rt for n-C19 and 0.1 minutes after the Rt for n-C36.

Are the aliphatic hydrocarbons range properly determined? **Yes**? or No?

Comments:

1b. Aromatic hydrocarbons range:

   - Determine the total area count for all peaks eluting 0.1 minutes before the retention time (Rt) for naphthalene and 0.1 minutes after the Rt for benzo(g,h,i)perylene.
   - Determine the peak area count for the sample surrogate (OTP) and fractionation surrogate(s). Subtract these values from the collective area count value.

Are the aliphatic hydrocarbons range properly determined? **Yes**? or No?

Comments:

All criteria were met __X___
Criteria were not met and/or see below _____

2. If target analytes and/or TICs were not correctly identified, request that the laboratory resubmit the corrected data.

3. Breakthrough determination - Each sample (field and QC sample) must be evaluated for potential breakthrough on a sample specific basis by evaluating the % recovery of the fractionation surrogate (2-bromonaphthalene) and on a batch basis by quantifying naphthalene and 2-methylnaphthalene in both the aliphatic and aromatic fractions of the LCS and LCSD. **If either the concentration of naphthalene or 2-methylnaphthalene in the aliphatic fraction exceeds 5% of the total concentration for naphthalene or 2-methylnaphthalene in the LCS or LCSD, fractionation must be repeated on all archived batch extracts.**

NOTE: **The total concentration of naphthalene or 2-methylnaphthalene in the LCS/LCSD pair includes the summation of the concentration detected in the aliphatic fraction and the concentration detected in the aromatic fraction.**

Comments:__Concentration_in_the_aliphatic_fraction_<_5%_of_the_total_____
_concentration_for_naphthalene_and_2-methylnaphthalene_____
_____
_____
_____

4. **Fractionation Check Standard** – A fractionation check solution is prepared containing 14 alkanes and 17 PAHs at a nominal concentration of 200 ng/µl of each constituent. The Fractionation Check Solution must be used to evaluate the fractionation efficiency of each new lot of silica gel/cartridges, and establish the optimum hexane volume required to efficiently elute aliphatic hydrocarbons while not allowing significant aromatic hydrocarbon breakthrough. For each analyte contained in the fractionation check solution, excluding n-nonane, the Percent Recovery must be between 40 and 140%. A 30% Recovery is acceptable for n-nonane.

Is a fractionation check standard analyzed? Yes? or No?

Comments: Not applicable.

All criteria were met __X___
Criteria were not met and/or see below _____

XII. QUANTITATION LIMITS AND SAMPLE RESULTS

The sample quantitation evaluation is to verify laboratory quantitation results.

In order to demonstrate the absence of aliphatic mass discrimination, the response ratio of C28 to C20 must be at least 0.85. If <0.85, this nonconformance must be noted in the laboratory case narrative.

The chromatograms of Continuing Calibration Standards for aromatics must be reviewed to ensure that there are no obvious signs of mass discrimination.

Is aliphatic mass discrimination observed in the sample? Yes? or **No**?

Is aromatic mass discrimination observed in the sample? Yes? or **No**?

1. In the space below, please show a minimum of one sample calculation:

   PID

   FA42031-7MS 2-Fluorobiphenyl RF = 0.941×10^6

   [ ] = $14924235/0.941 \times 10^6$
   = 15.9 ppm Ok

   FID

   FA42031-7MS C9-C18 Aliphatics RF = 1.056×10^6

   [ ] = $168701775/1.056 \times 10^6$
   = 159.8 ppm Ok

2. If requested, verify that the results were above the laboratory method detection limit (MDLs).

3. If dilutions performed, were the SQLs elevated accordingly by the laboratory? List the affected samples and dilution factor in the table below.

SAMPLE ID	DILUTION FACTOR	REASON FOR DILUTION

If dilution was not performed, estimate results (J) for the affected compounds. List the affected samples/compounds:

_____

_____