

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Savannah 5102 LaRoche Avenue Savannah, GA 31404 Tel: (912)354-7858

TestAmerica Job ID: 680-150673-1

Client Project/Site: Primary & Secondary Drinking Water

For: Lubrizol Advanced Materials, Inc 41 Tidal Road Deer Park, Texas 77536

Attn: Kenneth Berss

Lights

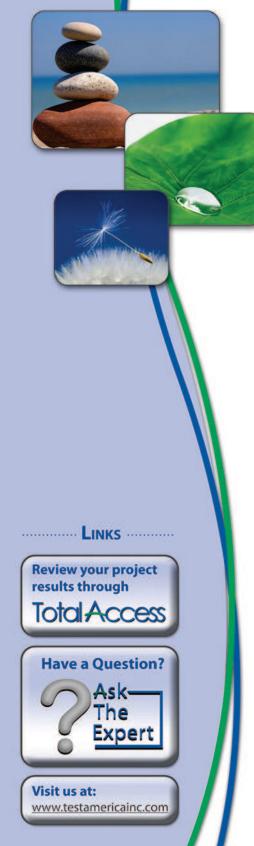
Authorized for release by: 4/24/2018 11:52:09 AM

Lindy Maingot, Project Manager I (210)344-9751

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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Results relate only to the items tested and the sample(s) as received by the laboratory.



Client: Lubrizol Advanced Materials, Inc Project/Site: Primary & Secondary Drinking Water

Qualifiers

HPLC/IC		Λ
Qualifier	Qualifier Description	4
U	Indicates the analyte was analyzed for but not detected.	5
Metals		
Qualifier	Qualifier Description	6
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.	
U	Indicates the analyte was analyzed for but not detected.	
General Cl	nemistry	
Qualifier	Qualifier Description	8
U	Indicates the analyte was analyzed for but not detected.	
		0

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.	
<u>¤</u>	Listed under the "D" column to designate that the result is reported on a dry weight basis	
%R	Percent Recovery	
CFL	Contains Free Liquid	
CNF	Contains No Free Liquid	
DER	Duplicate Error Ratio (normalized absolute difference)	
Dil Fac	Dilution Factor	
DL	Detection Limit (DoD/DOE)	
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample	
DLC	Decision Level Concentration (Radiochemistry)	
EDL	Estimated Detection Limit (Dioxin)	
LOD	Limit of Detection (DoD/DOE)	
LOQ	Limit of Quantitation (DoD/DOE)	
MDA	Minimum Detectable Activity (Radiochemistry)	
MDC	Minimum Detectable Concentration (Radiochemistry)	
MDL	Method Detection Limit	
ML	Minimum Level (Dioxin)	
NC	Not Calculated	
ND	Not Detected at the reporting limit (or MDL or EDL if shown)	
PQL	Practical Quantitation Limit	
QC	Quality Control	
RER	Relative Error Ratio (Radiochemistry)	
RL	Reporting Limit or Requested Limit (Radiochemistry)	
RPD	Relative Percent Difference, a measure of the relative difference between two points	
TEF	Toxicity Equivalent Factor (Dioxin)	
TEQ	Toxicity Equivalent Quotient (Dioxin)	

Sample Summary

Client: Lubrizol Advanced Materials, Inc Project/Site: Primary & Secondary Drinking Water

TestAmerica Job ID: 680-150673-1

Client Sample ID	Matrix	Collected	Received
LCR001	Water	04/03/18 08:00	04/04/18 09:10
PBCU001 ELCR	Water	04/03/18 08:00	04/04/18 09:10
		LCR001 Water	LCR001 Water 04/03/18 08:00

TestAmerica Job ID: 680-150673-1

1 2 3 4 5 6 7 8 9 10 11

Job ID: 680-150673-1

Laboratory: TestAmerica Savannah

Narrative

Job Narrative 680-150673-1

Comments

No additional comments.

Receipt

The samples were received on 4/4/2018 9:10 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.5° C.

Receipt Exceptions

The container label for the following samples did not match the information listed on the Chain-of-Custody (COC): LCR001 (680-150673-1) and PBCU001 ELCR (680-150673-2). The container labels list <EAST ADMIN ENTRY>, while the COC lists <EAST ADMIN SOURCE>. The client was contacted, and the lab was instructed to <log in per COC>.

HPLC/IC

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Client Sample Results

Client: Lubrizol Advanced Materials, Inc Project/Site: Primary & Secondary Drinking Water

5

ate Collected: 04/03/18 08:00 ate Received: 04/04/18 09:10						La	ab Sample	ID: 680-150 Matrix:	
Method: 300.0 - Anions, Ion Cl Analyte		phy Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Sulfate	2.7		1.0	0.40	mg/L			04/11/18 12:59	
Chloride	59		2.5		mg/L			04/11/18 13:12	:
Method: 200.7 Rev 4.4 - Metals									
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fa
Calcium	0.11		0.50	0.025	-			04/12/18 21:17	
ron	0.017	U	0.050	0.017	-		04/11/18 09:30	04/12/18 21:17	
Manganese	0.018		0.010	0.0010	-		04/11/18 09:30	04/12/18 21:17	
Bodium	130		10	4.8	mg/L		04/11/18 09:30	04/13/18 15:45	1
lethod: 2340B-2011 - Total Ha			y calculation						
Inalyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fa
lardness as calcium carbonate	3.3	U	3.3	3.3	mg/L			04/23/18 16:10	
General Chemistry									
nalyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fa
pecific Conductivity	710		5.0	5.0	umho/cm			04/05/18 10:40	
Alkalinity	270		5.0	5.0	mg/L			04/09/18 17:50	
-	370		10	10	mg/L			04/07/18 08:28	
Fotal Dissolved Solids			10	10	mg/L	La	ab Sample		
Total Dissolved Solids Ilient Sample ID: PBCU00 ate Collected: 04/03/18 08:00			10	10	mg/∟	La	ab Sample	ID: 680-150 Matrix:	
Total Dissolved Solids lient Sample ID: PBCU00 ate Collected: 04/03/18 08:00 ate Received: 04/04/18 09:10	1 ELCR	phy	10	10	mg/L	La	ab Sample	ID: 680-150	673-
Total Dissolved Solids lient Sample ID: PBCU00 ate Collected: 04/03/18 08:00 ate Received: 04/04/18 09:10 Method: 300.0 - Anions, Ion Cl	01 ELCR	phy Qualifier	10 		Unit	La	ab Sample Prepared	ID: 680-150 Matrix:	0673-2 Wate
Total Dissolved Solids lient Sample ID: PBCU00 ate Collected: 04/03/18 08:00 ate Received: 04/04/18 09:10 Method: 300.0 - Anions, Ion Cl Analyte	1 ELCR			MDL	Unit			ID: 680-150	0673-2 Wate
Total Dissolved Solids lient Sample ID: PBCU00 ate Collected: 04/03/18 08:00 ate Received: 04/04/18 09:10 Method: 300.0 - Anions, Ion Cl Analyte Sulfate	01 ELCR		RL	MDL 0.40				ID: 680-150 Matrix: Analyzed	0673-2 Wate
Total Dissolved Solids lient Sample ID: PBCU00 ate Collected: 04/03/18 08:00 ate Received: 04/04/18 09:10 Method: 300.0 - Anions, Ion Cl Analyte Sulfate Chloride	hromatogra Result 2.8 67		RL 1.0	MDL 0.40	Unit mg/L			ID: 680-150 Matrix: Analyzed 04/11/18 13:25	0673-2 Wate
Total Dissolved Solids lient Sample ID: PBCU00 ate Collected: 04/03/18 08:00 ate Received: 04/04/18 09:10 Method: 300.0 - Anions, Ion Cl Analyte Sulfate Chloride Method: 200.7 Rev 4.4 - Metals	hromatogra Result 2.8 67 s (ICP)		RL 1.0	MDL 0.40	Unit mg/L mg/L			ID: 680-150 Matrix: Analyzed 04/11/18 13:25	0673-/ Wate
Total Dissolved Solids lient Sample ID: PBCU00 ate Collected: 04/03/18 08:00 ate Received: 04/04/18 09:10 Method: 300.0 - Anions, Ion Cl Analyte Sulfate Chloride Method: 200.7 Rev 4.4 - Metals Malyte	hromatogra Result 2.8 67 s (ICP)	Qualifier	RL 1.0 2.5	MDL 0.40 1.0	Unit mg/L mg/L Unit	D	Prepared	ID: 680-150 Matrix: Analyzed 04/11/18 13:25 04/11/18 13:38	Dil Fa
Total Dissolved Solids lient Sample ID: PBCU00 ate Collected: 04/03/18 08:00 ate Received: 04/04/18 09:10 Method: 300.0 - Anions, Ion Cl malyte Sulfate Chloride Method: 200.7 Rev 4.4 - Metals malyte Salcium	hromatogra Result 2.8 67 s (ICP) Result	Qualifier Qualifier	RL 1.0 2.5 RL	MDL 0.40 1.0 MDL	Unit mg/L mg/L Unit mg/L	D	Prepared 04/11/18 09:30	ID: 680-150 Matrix: Analyzed 04/11/18 13:25 04/11/18 13:38 Analyzed	Dil Fa
ient Sample ID: PBCU00 ate Collected: 04/03/18 08:00 ate Received: 04/04/18 09:10 Method: 300.0 - Anions, Ion Cl nalyte sulfate shloride Method: 200.7 Rev 4.4 - Metals nalyte salcium on	hromatogra Result 2.8 67 s (ICP) Result 14 0.017	Qualifier Qualifier	RL 1.0 2.5 RL 0.50	MDL 0.40 1.0 MDL 0.025 0.017	Unit mg/L mg/L Unit mg/L mg/L	D	Prepared 04/11/18 09:30 04/11/18 09:30	ID: 680-150 Matrix: 04/11/18 13:25 04/11/18 13:38 Analyzed 04/12/18 21:22	Dil Fa
ient Sample ID: PBCU00 ate Collected: 04/03/18 08:00 ate Received: 04/04/18 09:10 Method: 300.0 - Anions, Ion Cl malyte sulfate chloride Method: 200.7 Rev 4.4 - Metals malyte salcium on Manganese	hromatogra Result 2.8 67 s (ICP) Result 14	Qualifier Qualifier	RL 1.0 2.5 RL 0.50 0.050	MDL 0.40 1.0 MDL 0.025 0.017 0.0010	Unit mg/L mg/L Unit mg/L mg/L	D	Prepared Prepared 04/11/18 09:30 04/11/18 09:30 04/11/18 09:30	ID: 680-150 Matrix: 04/11/18 13:25 04/11/18 13:38 Analyzed 04/12/18 21:22 04/12/18 21:22	Dil Fa
Total Dissolved Solids Iient Sample ID: PBCU00 ate Collected: 04/03/18 08:00 ate Received: 04/04/18 09:10 Method: 300.0 - Anions, Ion Cl Analyte Sulfate Chloride Method: 200.7 Rev 4.4 - Metals Analyte Calcium ron Manganese Sodium	1 ELCR hromatogra Result 2.8 67 s (ICP) Result 14 0.017 0.028 120	Qualifier Qualifier U	RL 1.0 2.5 RL 0.50 0.050 0.010 10	MDL 0.40 1.0 MDL 0.025 0.017 0.0010 4.8	Unit mg/L mg/L Unit mg/L mg/L mg/L	D	Prepared Prepared 04/11/18 09:30 04/11/18 09:30 04/11/18 09:30	ID: 680-150 Matrix: Analyzed 04/11/18 13:25 04/11/18 13:38 Analyzed 04/12/18 21:22 04/12/18 21:22 04/12/18 21:22	Dil Fa
Total Dissolved Solids Iient Sample ID: PBCU00 ate Collected: 04/03/18 08:00	1 ELCR hromatogra Result 2.8 67 s (ICP) Result 14 0.017 0.028 120 ardness (as	Qualifier Qualifier U	RL 1.0 2.5 RL 0.50 0.050 0.010 10	MDL 0.40 1.0 MDL 0.025 0.017 0.0010 4.8	Unit mg/L mg/L Unit mg/L mg/L mg/L	D	Prepared Prepared 04/11/18 09:30 04/11/18 09:30 04/11/18 09:30	ID: 680-150 Matrix: Analyzed 04/11/18 13:25 04/11/18 13:38 Analyzed 04/12/18 21:22 04/12/18 21:22 04/12/18 21:22	673-2

	Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Specific Conductivity	660		5.0	5.0	umho/cm			04/05/18 10:41	1
	Alkalinity	250		5.0	5.0	mg/L			04/09/18 17:40	1
·	Total Dissolved Solids	350		10	10	mg/L			04/07/18 08:28	1

QC Sample Results

RL

1.0

0.50

MDL Unit

0.40 mg/L

0.20 mg/L

D

Prepared

Lab Sample ID: MB 680-519555/2

Lab Sample ID: LCS 680-519555/3

Matrix: Water

Matrix: Water

Analyte

Sulfate

Chloride

Iron Manganese Sodium

Analysis Batch: 519555

Method: 300.0 - Anions, Ion Chromatography

MB MB

0.40 U

0.20 U

Result Qualifier

Client Sample ID: Method Blank

Analyzed

04/11/18 10:25 1 04/11/18 10:25 1 ab Control Sample

Dil Fac

Prep Type: Total/NA

Prep Type: Total/NA

Client Sample ID: Lab Control Sample Prep Type: Total/NA

Client Sample ID: Lab Control Sample Dup

Analysis Batch: 519555								
	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Sulfate	10.0	10.1		mg/L		101	90 - 110	
Chloride	10.0	9.77		mg/L		98	90 - 110	

Lab Sample ID: LCSD 680-519555/4 Matrix: Water Analysis Batch: 519555

Analysis Batom stores	Spike	LCSD	LCSD				%Rec.		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Sulfate	10.0	10.3		mg/L		103	90 - 110	2	15	
Chloride	10.0	9.78		mg/L		98	90 - 110	0	15	

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 680-519559/1-A Matrix: Water Analysis Batch: 519914		МВ						le ID: Method Prep Type: To Prep Batch: 8	otal/NA
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	0.025	U	0.50	0.025	mg/L		04/11/18 09:30	04/12/18 20:12	1
Iron	0.017	U	0.050	0.017	mg/L		04/11/18 09:30	04/12/18 20:12	1
Manganese	0.0010	U	0.010	0.0010	mg/L		04/11/18 09:30	04/12/18 20:12	1
Sodium	0.48	U	1.0	0.48	mg/L		04/11/18 09:30	04/12/18 20:12	1

Lab Sample ID: LCS 680-519559/2-A Matrix: Water Analysis Batch: 519914 Analyte ______ Added Rei Calcium ______ 2.00

Client Sample ID: Lab Control Sample

Spike		LCS	11		% D = =	Prep Type: Total/NA Prep Batch: 519559 %Rec.	
Added	Result	Qualifier	Unit	D	%Rec	Limits	
 2.00	1.99		mg/L		99	85 - 115	-
2.00	2.01		mg/L		100	85 - 115	
0.200	0.204		mg/L		102	85 - 115	
2.00	1.77		mg/L		88	85 - 115	

Method: 2340B-2011 - Total Hardness (as CaCO3) by calculation

Lab Sample ID: MB 680-521077/1 Matrix: Water Analysis Batch: 521077	МВ	MD						ple ID: Method Prep Type: To	
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	3.3	U	3.3	3.3	mg/L			04/23/18 11:19	1

QC Sample Results

Lab Sample ID: MB 680-518904/7

Method: 2510B-2011 - Conductivity, Specific Conductance

Client Sample ID: Method Blank Prep Type: Total/NA

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6

										Prep Typ		tal/N/
Matrix: Water											be: 10	
Analysis Batch: 518904												
	MB	MB										
Analyte	Result	Qualifier		RL		RL Unit		DF	Prepared	Analyz	zed	Dil Fa
Specific Conductivity	5.0	U		5.0		5.0 umhc	/cm			04/05/18	10:35	
Lab Sample ID: LCS 680-518904/8							Clie	nt Sa	mple II): Lab Cor	ntrol Sa	ampl
Matrix: Water										Prep Typ	pe: To	tal/N
Analysis Batch: 518904												
			Spike	L	s I	LCS				%Rec.		
Analyte			Added	Res	ult (Qualifier	Unit	D	%Rec	Limits		
Specific Conductivity			1000	10	10		umho/cn	n –	101	90 - 110		
lethod: SM 2320B - Alkalinity	,											
												Plan
Lab Sample ID: MB 680-519417/7								Cli	ent Sar	nple ID: M	ethod	DIdi
the second se								Cli	ent Sar	nple ID: M Prep Tvi		
Matrix: Water								Cli	ent Sar	nple ID: M Prep Tyj		
Lab Sample ID: MB 680-519417/7 Matrix: Water Analysis Batch: 519417	МВ	МВ						Cli	ent Sar			
Matrix: Water Analysis Batch: 519417		MB Qualifier		RL		RL Unit			ent Sar Prepared		pe: To	
Matrix: Water Analysis Batch: 519417 Analyte		Qualifier		RL 5.0		RL Unit				Prep Ty	pe: To	tal/N
Matrix: Water Analysis Batch: 519417 Analyte Alkalinity Lab Sample ID: LCS 680-519417/8	Result	Qualifier						<u>D</u> _F	Prepared	Prep Typ 	zed 17:25	Dil Fa
Matrix: Water Analysis Batch: 519417 Analyte Alkalinity Lab Sample ID: LCS 680-519417/8 Matrix: Water	Result	Qualifier						<u>D</u> _F	Prepared	Prep Typ 	zed 17:25	Dil Fa
Matrix: Water Analysis Batch: 519417 Analyte Alkalinity Lab Sample ID: LCS 680-519417/8 Matrix: Water	Result	Qualifier		5.0	!	5.0 mg/L		<u>D</u> _F	Prepared	Prep Tyr Analyz 04/09/18 D: Lab Cor Prep Tyr	zed 17:25	Dil Fa
Matrix: Water Analysis Batch: 519417 Analyte Alkalinity Lab Sample ID: LCS 680-519417/8 Matrix: Water Analysis Batch: 519417	Result	Qualifier	Spike	5.0 L	s I	5.0 mg/L	Clie	D F	Prepared	Prep Typ Analyz 04/09/18 D: Lab Cor Prep Typ %Rec.	zed 17:25	Dil Fa
Matrix: Water Analysis Batch: 519417 Analyte Alkalinity Lab Sample ID: LCS 680-519417/8 Matrix: Water Analysis Batch: 519417 Analyte	Result	Qualifier	Spike Added 250	5.0 Li Res	s I	5.0 mg/L		<u>D</u>	Prepared	Prep Tyr Analyz 04/09/18 D: Lab Cor Prep Tyr	zed 17:25	tal/N Dil Fa
Matrix: Water Analysis Batch: 519417 Analyte Alkalinity Lab Sample ID: LCS 680-519417/8 Matrix: Water Analysis Batch: 519417 Analyte	Result 5.0	Qualifier	Added	5.0 Li Res	S I	5.0 mg/L LCS Qualifier	Clie Unit mg/L	D F	Prepared Imple II <u>%Rec</u> 99	Analyz 04/09/18 0: Lab Corr Prep Typ %Rec. Limits 80 - 120	2ed 17:25 htrol Sape: Tot	Dil Fa amp tal/N
Matrix: Water Analysis Batch: 519417 Analyte Alkalinity Lab Sample ID: LCS 680-519417/8 Matrix: Water Analysis Batch: 519417 Analyte Alkalinity Lab Sample ID: LCSD 680-519417/2	Result 5.0	Qualifier	Added	5.0 Li Res	S I	5.0 mg/L LCS Qualifier	Clie Unit mg/L	D F	Prepared Imple II <u>%Rec</u> 99	Prep Typ Analyz 04/09/18 D: Lab Con Prep Typ %Rec. Limits 80 - 120 b Control S	ee: To red 17:25 htrol Sape: To Sampl	tal/N Dil Fa ampl tal/N
Matrix: Water Analysis Batch: 519417 Analyte Alkalinity Lab Sample ID: LCS 680-519417/8 Matrix: Water Analysis Batch: 519417 Analyte Alkalinity Lab Sample ID: LCSD 680-519417/2 Matrix: Water	Result 5.0	Qualifier	Added	5.0 Li Res	S I	5.0 mg/L LCS Qualifier	Clie Unit mg/L	D F	Prepared Imple II <u>%Rec</u> 99	Analyz 04/09/18 0: Lab Corr Prep Typ %Rec. Limits 80 - 120	ee: To red 17:25 htrol Sape: To Sampl	tal/N Dil Fa ampl tal/N
Matrix: Water	Result 5.0	Qualifier	Added	5.0 Ll Res 2	:S ult (48	5.0 mg/L LCS Qualifier	Clie Unit mg/L	D F	Prepared Imple II <u>%Rec</u> 99	Prep Typ Analyz 04/09/18 D: Lab Con Prep Typ %Rec. Limits 80 - 120 b Control S	ee: To red 17:25 htrol Sape: To Sampl	tal/N Dil Fa ampl tal/N
Matrix: Water Analysis Batch: 519417 Analyte Alkalinity Lab Sample ID: LCS 680-519417/8 Matrix: Water Analysis Batch: 519417 Analyte Alkalinity Lab Sample ID: LCSD 680-519417/2 Matrix: Water	Result 5.0	Qualifier	Added 250	5.0 Lt Res 2	S 11 (18 -	5.0 mg/L LCS Qualifier	Clie Unit mg/L	D F	Prepared Imple II <u>%Rec</u> 99 e ID: La	Prep Tyr Analyz 04/09/18 D: Lab Cor Prep Tyr %Rec. Limits 80 - 120 b Control S Prep Tyr	ee: To red 17:25 htrol Sape: To Sampl	Dil Fa ampl tal/N

wethod: Sivi 2540C Solids, Total Dissolved (TDS)

Lab Sample ID: MB 680-519169/1 Matrix: Water Analysis Batch: 519169	MD	МВ							Clie	ent Sam	ple ID: Method Prep Type: To	
Analyte		Qualifier		RL		RL	Unit	D	Р	repared	Analyzed	Dil Fac
Total Dissolved Solids	5.0	U		5.0		5.0	mg/L				04/07/18 08:28	1
Lab Sample ID: LCS 680-519169/2 Matrix: Water Analysis Batch: 519169								Clien	t Sai	mple ID	: Lab Control S Prep Type: To	
			Spike		LCS	LCS					%Rec.	
Analyte Total Dissolved Solids			Added 68.8		Result 62.0	Qua	lifier	Unit mg/L	D	%Rec 90	Limits	

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Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: LCSD 680-519169/3 Matrix: Water Analysis Batch: 519169			(Client S	ample	ID: Lat	Control Prep Ty		
	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Total Dissolved Solids	68.8	62.0		mg/L		90	80 - 120	0	25

QC Association Summary

Client: Lubrizol Advanced Materials, Inc Project/Site: Primary & Secondary Drinking Water

HPLC/IC

Analy	vsis	Batch:	519	9555
Alla	1010	Buton.		

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-150673-1	LCR001	Total/NA	Water	300.0	
680-150673-1	LCR001	Total/NA	Water	300.0	
680-150673-2	PBCU001 ELCR	Total/NA	Water	300.0	
680-150673-2	PBCU001 ELCR	Total/NA	Water	300.0	
MB 680-519555/2	Method Blank	Total/NA	Water	300.0	
LCS 680-519555/3	Lab Control Sample	Total/NA	Water	300.0	
LCSD 680-519555/4	Lab Control Sample Dup	Total/NA	Water	300.0	

Metals

Prep Batch: 519559

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
680-150673-1	LCR001	Total/NA	Water	200	
680-150673-2	PBCU001 ELCR	Total/NA	Water	200	
MB 680-519559/1-A	Method Blank	Total/NA	Water	200	
LCS 680-519559/2-A	Lab Control Sample	Total/NA	Water	200	

Analysis Batch: 519914

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method I	Prep Batch
680-150673-1	LCR001	Total/NA	Water	200.7 Rev 4.4	519559
680-150673-2	PBCU001 ELCR	Total/NA	Water	200.7 Rev 4.4	519559
MB 680-519559/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	519559
LCS 680-519559/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	519559

Analysis Batch: 520147

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-150673-1	LCR001	Total/NA	Water	200.7 Rev 4.4	519559
680-150673-2	PBCU001 ELCR	Total/NA	Water	200.7 Rev 4.4	519559

Analysis Batch: 521077

Lab Sample ID 680-150673-1	Client Sample ID	Prep Type Total/NA	Matrix Water	Method 2340B-2011	Prep Batch
680-150673-2	PBCU001 ELCR	Total/NA	Water	2340B-2011	
MB 680-521077/1	Method Blank	Total/NA	Water	2340B-2011	

General Chemistry

Analysis Batch: 518904

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-150673-1	LCR001	Total/NA	Water	2510B-2011	
680-150673-2	PBCU001 ELCR	Total/NA	Water	2510B-2011	
MB 680-518904/7	Method Blank	Total/NA	Water	2510B-2011	
LCS 680-518904/8	Lab Control Sample	Total/NA	Water	2510B-2011	

Analysis Batch: 519169

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-150673-1	LCR001	Total/NA	Water	SM 2540C	
680-150673-2	PBCU001 ELCR	Total/NA	Water	SM 2540C	
MB 680-519169/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 680-519169/2	Lab Control Sample	Total/NA	Water	SM 2540C	

QC Association Summary

Client: Lubrizol Advanced Materials, Inc Project/Site: Primary & Secondary Drinking Water

1 2 3 4 5 6 7 8 8 9

General Chemistry (Continued)

Analysis Batch: 519169 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 680-519169/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
Analysis Batch: 5194	17				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-150673-1	LCR001	Total/NA	Water	SM 2320B	
680-150673-2	PBCU001 ELCR	Total/NA	Water	SM 2320B	
MB 680-519417/7	Method Blank	Total/NA	Water	SM 2320B	
LCS 680-519417/8	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 680-519417/20	Lab Control Sample Dup	Total/NA	Water	SM 2320B	

Initial

Amount

5 mL

5 mL

50 mL

50 mL

50 mL

Batch

Number

519555

519555

519559

519914

519559

520147

521077

518904

519417

519169

Final

Amount

5 mL

5 mL

50 mL

50 mL

100 mL

Dil

5

1

10

1

1

Factor

Run

Client: Lubrizol Advanced Materials, Inc Project/Site: Primary & Secondary Drinking Water

Client Sample ID: LCR001

Date Collected: 04/03/18 08:00

Date Received: 04/04/18 09:10

Prep Type

Total/NA

Batch

Туре

Analysis

Analysis

Analysis

Analysis

Analysis

Analysis

Analysis

Analysis

Prep

Prep

Batch

300.0

300.0

200

200

Instrument ID: NOEQUIP

Instrument ID: MANTECH

Instrument ID: MANTECH

Instrument ID: NOEQUIP

200.7 Rev 4.4

200.7 Rev 4.4

2340B-2011

2510B-2011

SM 2320B

SM 2540C

Instrument ID: CICK

Instrument ID: CICK

Instrument ID: ICPF

Instrument ID: ICPF

Method

Lab Sample ID: 680-150673-1

Analyst

UI

Prepared

or Analyzed

04/11/18 12:59

04/11/18 13:12 UI

04/11/18 09:30 AJR

04/12/18 21:17 BCB

04/11/18 09:30 AJR

04/13/18 15:45 BCB

04/23/18 16:10 RSW

04/05/18 10:40 JEC

04/09/18 17:50 BTD

04/07/18 08:28 JEC

Lab Sample ID: 680-150673-2

Matrix: Water

Lab

TAL SAV

Matrix: Water

8

Client Sample ID: PBCU001 ELCR Date Collected: 04/03/18 08:00

Date Received: 04/04/18 09:10

Dil Batch Batch Initial Final Batch Prepared Prep Type Method Number or Analyzed Type Run Factor Amount Amount Analyst Lab Total/NA 300.0 5 mL 519555 04/11/18 13:25 UI TAL SAV Analysis 5 ml 1 Instrument ID: CICK 04/11/18 13:38 UI Total/NA Analysis 300.0 5 519555 TAL SAV 5 ml 5 mL Instrument ID: CICK Total/NA Prep 200 50 mL 50 mL 519559 04/11/18 09:30 AJR TAL SAV Total/NA Analysis 200.7 Rev 4.4 TAL SAV 1 519914 04/12/18 21:22 BCB Instrument ID: ICPF Total/NA 200 50 mL 04/11/18 09:30 AJR TAL SAV Prep 50 mL 519559 Total/NA Analysis 200.7 Rev 4.4 10 520147 04/13/18 15:50 BCB TAL SAV Instrument ID: ICPF Total/NA Analysis 2340B-2011 521077 04/23/18 16:10 RSW TAL SAV 1 Instrument ID: NOEQUIP Total/NA 518904 04/05/18 10:41 JEC TAL SAV Analysis 2510B-2011 1 Instrument ID: MANTECH SM 2320B Total/NA Analysis 519417 04/09/18 17:40 BTD TAL SAV 1 Instrument ID: MANTECH Total/NA Analysis SM 2540C 1 50 mL 100 mL 519169 04/07/18 08:28 JEC TAL SAV Instrument ID: NOEQUIP

Lab Chronicle

Client: Lubrizol Advanced Materials, Inc Project/Site: Primary & Secondary Drinking Water

TestAmerica Job ID: 680-150673-1

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Accreditation/Certification Summary

Client: Lubrizol Advanced Materials, Inc Project/Site: Primary & Secondary Drinking Water TestAmerica Job ID: 680-150673-1

1 2 3 4 5 6 7 8 9 10

Laboratory: TestAmerica Savannah	L	aborator	y: Test	America	Savannah	
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All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
	AFCEE		SAVLAB	
Alabama	State Program	4	41450	06-30-18
Alaska	State Program	10		06-30-18
Alaska (UST)	State Program	10	UST-104	09-22-19
Arizona	State Program	9	AZ0808	12-14-18
Arkansas DEQ	State Program	6	88-0692	02-01-19
California	State Program	9	2939	06-30-18
Colorado	State Program	8	N/A	12-31-18
Connecticut	State Program	1	PH-0161	03-31-19
Florida	NELAP	4	E87052	06-30-18
GA Dept. of Agriculture	State Program	4	N/A	06-12-18
Georgia	State Program	4	803	06-30-18
Hawaii	State Program	9	N/A	06-30-18
Illinois	NELAP	5	200022	11-30-18
Indiana	State Program	5	N/A	06-30-18
Iowa	State Program	7	353	06-30-19
Kentucky (DW)	State Program	4	90084	12-31-18
Kentucky (UST)	State Program	4	18	06-30-18
Kentucky (WW)	State Program	4	90084	12-31-18 *
L-A-B	DoD ELAP		L2463	09-22-19
L-A-B	ISO/IEC 17025		L2463.01	09-22-19
Louisiana	NELAP	6	30690	06-30-18
Louisiana (DW)	NELAP	6	LA160019	12-31-18
Maine	State Program	1	GA00006	09-24-18
Maryland	State Program	3	250	12-31-18
Massachusetts	State Program	1	M-GA006	06-30-18
Michigan	State Program	5	9925	06-30-18
Mississippi	State Program	4	N/A	06-30-18
Nebraska	State Program	7	TestAmerica-Savannah	06-30-18
New Jersey	NELAP	2	GA769	06-30-18
New Mexico	State Program	6	N/A	06-30-18
New York	NELAP	2	10842	03-31-19
North Carolina (DW)	State Program	4	13701	07-31-18
North Carolina (WW/SW)	State Program	4	269	12-31-18
Oklahoma	State Program	6	9984	08-31-18
Pennsylvania	NELAP	3	68-00474	06-30-18
Puerto Rico	State Program	2	GA00006	12-31-18
South Carolina	State Program	4	98001	06-30-18
Tennessee	State Program	4	TN02961	06-30-18
Texas	NELAP	6	T104704185-16-9	11-30-18
Texas	State Program	6	T104704185	06-30-18
US Fish & Wildlife	Federal		LE058448-0	07-31-18
USDA	Federal		P330-17-00213	06-14-20 *
Virginia	NELAP	3	460161	06-14-18
Washington	State Program	10	C805	06-10-18
West Virginia (DW)	State Program	3	9950C	12-31-18
West Virginia DEP	State Program	3	094	06-30-18
Wisconsin	State Program	5	999819810	08-31-18
Wyoming	State Program	8	8TMS-L	06-30-16 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Lubrizol Advanced Materials, Inc Project/Site: Primary & Secondary Drinking Water

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Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL SAV
200.7 Rev 4.4	Metals (ICP)	EPA	TAL SAV
2340B-2011	Total Hardness (as CaCO3) by calculation	SM	TAL SAV
2510B-2011	Conductivity, Specific Conductance	SM	TAL SAV
SM 2320B	Alkalinity	SM	TAL SAV
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL SAV
200	Preparation, Metals	EPA	TAL SAV

Protocol References:

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

5102 LaRoche Avenue Savannah, GA 31404 Phone (912) 354-7858 Fax (912) 352-0165	Chain e	of Custo	Chain of Custody Record	q		IESTAMENCO
	Sampler:		Lab PM: Maingot, Lindy	ý	Certier Tracking No(s):	COC No: 680-88332-35752.1
Barre Dusty LUCAS	Phone:		E-Mail:			Page: Page 1 of 1
rporation				Analysis Re	Requested	Job #:
	Due Date Requested:		abb			ð
Clty: Deer Park	TAT Requested (days):					B - NGOH N - NGNE B - NBOH N - NGNE C - Zh Acetate 0 - AsNa02
State, ZIp: TX, 77536			5 52404			
Phone:	Po #; Purchase Order not required	P				P
Email	WO #:		(0)			I - Ice J - DI Water
Project Name: Secondary Drinking Water	Project #: 68019150		1 10 64	W 280		K - EDTA L - EDA
	SSOW#:) as	ORGF		of Other:
	2018		Matrix (www.matrix Filtered 5 Filtered 5 Filtered 5	ulfate 300 M, Iron, M) 19dmulk
Sample Identification	ę	(C=comp, on G=grab) sr-n	Perfo	S pue		Special Instructions/Note:
		1000	X	Z	「「「「「「「「」」」」」」」」」」」」」」」」」」」」」」」」」」」」	の理論
EAST ADMIN SOURCE	4-3 6800	CRAB V	Water	x x		
5	1.30 050 U	GRAPS 11	20	XX		
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	- 44		-			
		-				
		-		680-150673 Chain of Custody	ustody	
Daasible Bessed Manification		-	-			
Possible nazard identification	Unknown	Radiological		Sample Disposal (A ree may be ass Return To Client Disp	essed if samples are re losal By Lab	itained longer than 1 month) Archive For Months
Anter and a particular in the second s			naric			
Empty Kit RelingDisted by:	Date:		Time:		Method of Shipment:	1110 1110
A la	18 0	SCG Company	Company R	ALTER SAULS	4+3-2K	11:24 SUDAVION
Allow SAULS	DeterTimie: -3-18 15:1	2 Sep	A	eceived by	The Detertime:	COSICO Company
	Date/Time:	Oốmp)	CO-4 CCFAC. IXO	· S Date/Time:	Company
Custody Seals Intact: Custody Seal No.:			0	Cooler Temperature(s) ^a C and Other Remarks.	temarks:	
			•	11 12	7 8 9 10	1 2 3 4 5 6

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WATER QUALITY PARAMETER CHAIN OF CUSTODY FORM 20679

(+)USI-029

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	S.	Section I (PWS Information)	Information	1				- T.	Section II (Completed by Laboratory)	I Co	mplet	ed by	Labo	rator	R		İ	T
PWS Name: EHGM + "	PWS NAME: 240M + 749 546. 1313()	4	PWS Type:		Community 🗆	NTNC		Lab Name:										
PWS Conta	PWS Contact Name: New Lucas		Population:		<50,000 5 >100,000	50,001 to 100,000	00,000	Test America	250	$\left(\right)$	XX	Rucmah	2					
Compliance	ance 🔲 Noncompliance	<u> </u>	Tap Copper Exceedance		Tap Lead Exceedance	xceedance		Laboratory Address: 5	Idres	5	200	2v	< Rex he	5		Ave		1
Distribut	Distribution System	# DS Samp	# DS Samples Required:		# DS Samples Submitted:	Submitted:		Laboratory Contact Name:	Intacl	Nan	le:			ł				Γ
Entry Point	int	# EP Samp	# EP Samples Required:# EP Samples Submitted:	d:# E	P Samples	Submitted		Trond	Kickla	Kla	Y	2						
Inhibitor o	Inhibitor or stabilizer used: 🗌 phosphate 🔲 calcium carbonate 🛛	te 🗌 calcium	i carbonate	🗌 sílica				Lab Phone: 912 - 3551 - 7858	4 8 5 5 8	rame quired ibitor en the pendi	Parameters Requested: *Analyses are required for the parameters checked. If inhibitors containing PO4 or silicate are used, then these parameters should also be tested depending on which is used.	eques e para aining ameter which i	sted: meter PO4 o rs sho s use	*Anal s chec r silica uld al	yses ked. ate al	are If e us test	ed	
Source ID (e.g. DS01, EP001)	Sample Location	Sample Collection Date (MMDDYY)	Sample Collection Time (HHMM)	рН (1925)	pH method	Temp (°C) (1996)	Temp Method	Sample	Calcium (1919) Calcium (1919)	Chloride (1017)	Conductivity((1064)	(SIGI) ssəupseH	Iron (1028)	(201) muibos	Sulfate (1055)	(0267) SQT	(++01) standsond-O	(6401) Sollic
LCROGI	EAST ADMIN 1315T	61-3-18	0810	2		74.6		(50673-3.	1	>	>	>	>	>	>	>	*	*
PBCUGON	EAST ADMIN SOURCE	4-3-18	0800	~		J.4.C		150C73-1	>	>	>	>	>	>	>	>	*	*
ELCR									1	>	>	>	>	>	>	>	*	*
									>	>	>	>	>	>	>	>	*	*
									>	>	>	>	>	>	>	>	*	*
		(>	>	>	>	>	>	>	>	*	*
I acknowledd instructions immediately	I acknowledge that the information on this form is true and correct and sites selected for sampling following TCEQ instructions including but not limited to the measurement of pN and temperature according to approved methods immediately upon collection (within 15 minutes)	rm is true and reasurement o es)	of ph and tem	sites select perature a	ted for samp ccording to a	ling followin approved me	g TCEQ	Containers		Cond I Ic	Conditions Upon Receipt	a Upo Amb n Red	n Re ient	Geipt	. 5]	
Name		Signature	Ð			Date	e	1 L preserved		Corre	Corrected Temp Upon Receipt: (Tem	d n d	on Re	ecei	pt:	à	10
J risv (1005 400		-h	3-18		0800	5	upon receipt	-	Com	Comments: Cullar	20:	DV/O	7				
Relinquished I	Relinquished By (Name, Signature)		Date			Time		Received By: (Name, Signature)	Si Si	gnatu	(ə.	2	Date 1-3-7	3	Time	7		
Altou	SAULS		81-2-18			15:12												ĺ
(For TCEQ us	(For TCEQ use only) 🗌 Disapproved 🔲 Accepted	pted Comments:	nts:											1				

Login Number: 150673 List Number: 1 Creator: Edwards, Jessica R

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	False	IDs on containers do not match the COC. Logged in per COC.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Job Number: 680-150673-1

List Source: TestAmerica Savannah