

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Cotter Corporation
Project: Schwartz SW 4/5/12 S26451-S26458
Lab ID: C12040313-001
Client Sample ID: SW AWD (S26451)

Report Date: 05/11/12
Collection Date: 04/05/12 10:05
Date Received: 04/07/12
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Alkalinity, Total as CaCO ₃	42	mg/L		1		A2320 B	04/10/12 03:52 / jba
Bicarbonate as HCO ₃	51	mg/L		1		A2320 B	04/10/12 03:52 / jba
Calcium	18.3	mg/L		0.1		E200.8	04/14/12 05:01 / smm
Chloride	28	mg/L		3		E300.0	04/12/12 17:21 / wc
Fluoride	0.3	mg/L		0.1		A4500-F C	04/09/12 17:15 / jba
Magnesium	5.3	mg/L		0.1		E200.8	04/14/12 05:01 / smm
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.1		E353.2	04/12/12 09:43 / eli-b
Phosphate, Total	0.03	mg/L		0.01		Calculation	04/19/12 14:51 / bal
Phosphorus, Total as P	0.01	mg/L		0.01		E365.1	04/16/12 10:44 / eli-b
Potassium	1.4	mg/L		0.1		E200.8	04/14/12 05:01 / smm
Sodium	10.5	mg/L		0.1		E200.8	04/14/12 05:01 / smm
Sulfate	11	mg/L		5		E300.0	04/12/12 17:21 / wc
NON-METALS							
Cyanide, Weak Acid Dissociable	ND	mg/L		0.002		D2036C	04/10/12 16:01 / eli-b
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	134	mg/L		10		A2540 C	04/10/12 09:49 / ab
Solids, Total Suspended TSS @ 105 C	ND	mg/L		4		A2540 D	04/09/12 10:13 / lr
METALS - DISSOLVED							
Aluminum	ND	mg/L		0.2		E200.8	04/12/12 18:36 / cp
Antimony	ND	mg/L		0.001		E200.8	04/12/12 18:36 / cp
Copper	ND	mg/L		0.001		E200.8	04/12/12 18:36 / cp
Iron	0.04	mg/L		0.03		E200.8	04/14/12 05:01 / smm
Manganese	ND	mg/L		0.005		E200.8	04/12/12 18:36 / cp
Molybdenum	ND	mg/L		0.005		E200.8	04/12/12 18:36 / cp
Silver	ND	mg/L		0.00005		E200.8	04/12/12 18:36 / cp
Thallium	ND	mg/L		0.0002		E200.8	04/12/12 18:36 / cp
Uranium	0.0022	mg/L		0.0002		E200.8	04/12/12 18:36 / cp
Zinc	ND	mg/L		0.005		E200.8	04/12/12 18:36 / cp
METALS - TOTAL							
Aluminum	ND	mg/L		0.2		E200.8	04/12/12 18:39 / cp
Antimony	ND	mg/L		0.001		E200.8	04/12/12 18:39 / cp
Arsenic	ND	mg/L		0.001		E200.8	04/12/12 18:39 / cp
Boron	ND	mg/L		0.1		E200.8	04/19/12 05:12 / smm
Chromium	ND	mg/L		0.001		E200.8	04/12/12 18:39 / cp
Copper	ND	mg/L		0.001		E200.8	04/12/12 18:39 / cp
Iron	0.13	mg/L		0.03		E200.8	04/14/12 05:06 / smm
Lead	ND	mg/L		0.005		E200.8	04/12/12 18:39 / cp
Manganese	ND	mg/L		0.005		E200.8	04/12/12 18:39 / cp

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Cotter Corporation
Project: Schwartz SW 4/5/12 S26451-S26458
Lab ID: C12040313-001
Client Sample ID: SW AWD (S26451)

Report Date: 05/11/12
Collection Date: 04/05/12 10:05
Date Received: 04/07/12
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
METALS - TOTAL							
Mercury	ND	mg/L		0.0001		E245.1	04/12/12 15:12 / clh
Molybdenum	ND	mg/L		0.005		E200.8	04/12/12 18:39 / cp
Silver	ND	mg/L		0.00005		E200.8	04/12/12 18:39 / cp
Thallium	ND	mg/L		0.0002		E200.8	04/12/12 18:39 / cp
Uranium	0.0008	mg/L		0.0002		E200.8	04/12/12 18:39 / cp
Zinc	ND	mg/L		0.005		E200.8	04/14/12 05:06 / smm
RADIONUCLIDES - DISSOLVED							
Radium 226	0.11	pCi/L	U			E903.0	04/16/12 06:20 / lbb
Radium 226 precision (±)	0.14	pCi/L				E903.0	04/16/12 06:20 / lbb
Radium 226 MDC	0.21	pCi/L				E903.0	04/16/12 06:20 / lbb
RADIONUCLIDES - TOTAL							
Gross Alpha	-1	pCi/L	U			E900.0	04/14/12 13:41 / ep
Gross Alpha precision (±)	0.8	pCi/L				E900.0	04/14/12 13:41 / ep
Gross Alpha MDC	1.4	pCi/L				E900.0	04/14/12 13:41 / ep
Gross Beta	1.3	pCi/L	U			E900.0	04/14/12 13:41 / ep
Gross Beta precision (±)	1.5	pCi/L				E900.0	04/14/12 13:41 / ep
Gross Beta MDC	2.5	pCi/L				E900.0	04/14/12 13:41 / ep
Radium 226	0.05	pCi/L	U			E903.0	04/24/12 12:02 / lbb
Radium 226 precision (±)	0.09	pCi/L				E903.0	04/24/12 12:02 / lbb
Radium 226 MDC	0.14	pCi/L				E903.0	04/24/12 12:02 / lbb
Radium 228	-0.2	pCi/L	U			RA-05	04/17/12 10:56 / plj
Radium 228 precision (±)	0.83	pCi/L				RA-05	04/17/12 10:56 / plj
Radium 228 MDC	1.4	pCi/L				RA-05	04/17/12 10:56 / plj
DATA QUALITY							
A/C Balance (± 5)	-0.573	%				Calculation	04/18/12 08:00 / kbh
Anions	1.87	meq/L				Calculation	04/18/12 08:00 / kbh
Cations	1.85	meq/L				Calculation	04/18/12 08:00 / kbh
Solids, Total Dissolved Calculated	116	mg/L				Calculation	04/18/12 08:00 / kbh
TDS Balance (0.80 - 1.20)	1.16					Calculation	04/18/12 08:00 / kbh
FIELD PARAMETERS							
Field Conductivity	200	umhos/cm				FIELD	04/05/12 10:05 / ***
Field pH	7.88	s.u.				FIELD	04/05/12 10:05 / ***
Field Temperature, C	2.0	°C				FIELD	04/05/12 10:05 / ***

*** Performed by Sampler

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration



LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Cotter Corporation
Project: Schwartz SW 4/5/12 S26451-S26458
Lab ID: C12040313-008
Client Sample ID: SW BPL (S26458)

Report Date: 05/11/12
Collection Date: 04/05/12 10:35
Date Received: 04/07/12
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Alkalinity, Total as CaCO ₃	46	mg/L		1		A2320 B	04/10/12 04:06 / jba
Bicarbonate as HCO ₃	56	mg/L		1		A2320 B	04/10/12 04:06 / jba
Calcium	21.2	mg/L		0.1		E200.8	04/14/12 05:10 / smm
Chloride	28	mg/L		3		E300.0	04/12/12 01:47 / wc
Fluoride	0.3	mg/L		0.1		A4500-F C	04/09/12 17:19 / jba
Magnesium	7.0	mg/L		0.1		E200.8	04/14/12 05:10 / smm
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.1		E353.2	04/12/12 09:40 / eli-b
Phosphate, Total	0.03	mg/L	D	0.03		Calculation	04/19/12 14:51 / bal
Phosphorus, Total as P	0.01	mg/L		0.01		E365.1	04/16/12 10:45 / eli-b
Potassium	1.5	mg/L		0.1		E200.8	04/14/12 05:10 / smm
Sodium	11.3	mg/L		0.1		E200.8	04/14/12 05:10 / smm
Sulfate	25	mg/L		5		E300.0	04/12/12 01:47 / wc
NON-METALS							
Cyanide, Weak Acid Dissociable	ND	mg/L		0.002		D2036C	04/10/12 16:04 / eli-b
PHYSICAL PROPERTIES							
Solids, Total Dissolved TDS @ 180 C	136	mg/L		10		A2540 C	04/10/12 09:49 / ab
Solids, Total Suspended TSS @ 105 C	4	mg/L		4		A2540 D	04/09/12 10:14 / lr
METALS - DISSOLVED							
Aluminum	ND	mg/L		0.2		E200.8	04/12/12 18:54 / cp
Antimony	ND	mg/L		0.001		E200.8	04/12/12 18:54 / cp
Copper	ND	mg/L		0.001		E200.8	04/12/12 18:54 / cp
Iron	0.03	mg/L		0.03		E200.8	04/14/12 05:10 / smm
Manganese	ND	mg/L		0.005		E200.8	04/12/12 18:54 / cp
Molybdenum	ND	mg/L		0.005		E200.8	04/12/12 18:54 / cp
Silver	ND	mg/L	D	0.00006		E200.8	04/14/12 05:10 / smm
Thallium	ND	mg/L		0.0002		E200.8	04/12/12 18:54 / cp
Uranium	0.0061	mg/L		0.0002		E200.8	04/12/12 18:54 / cp
Zinc	ND	mg/L		0.005		E200.8	04/12/12 18:54 / cp
METALS - TOTAL							
Aluminum	0.3	mg/L		0.2		E200.8	04/18/12 18:50 / smm
Antimony	ND	mg/L		0.001		E200.8	04/12/12 15:07 / smm
Arsenic	ND	mg/L		0.001		E200.8	04/12/12 15:07 / smm
Boron	ND	mg/L		0.1		E200.8	04/30/12 13:58 / smm
Chromium	ND	mg/L		0.001		E200.8	04/12/12 15:07 / smm
Copper	0.002	mg/L		0.001		E200.8	04/12/12 15:07 / smm
Iron	0.37	mg/L		0.03		E200.8	04/12/12 15:07 / smm
Lead	ND	mg/L		0.005		E200.8	04/12/12 15:07 / smm
Manganese	0.013	mg/L		0.005		E200.8	04/12/12 15:07 / smm

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Cotter Corporation
Project: Schwartz SW 4/5/12 S26451-S26458
Lab ID: C12040313-008
Client Sample ID: SW BPL (S26458)

Report Date: 05/11/12
Collection Date: 04/05/12 10:35
Date Received: 04/07/12
Matrix: Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
METALS - TOTAL							
Mercury	ND	mg/L		0.0001		E245.1	04/12/12 15:16 / clh
Molybdenum	ND	mg/L		0.005		E200.8	04/12/12 15:07 / smm
Silver	ND	mg/L	D	0.00008		E200.8	04/12/12 15:07 / smm
Thallium	ND	mg/L		0.0002		E200.8	04/12/12 15:07 / smm
Uranium	0.0065	mg/L		0.0002		E200.8	04/12/12 15:07 / smm
Zinc	ND	mg/L		0.005		E200.8	04/12/12 15:07 / smm
RADIONUCLIDES - DISSOLVED							
Radium 226	0.07	pCi/L	U			E903.0	04/16/12 08:08 / lbb
Radium 226 precision (±)	0.13	pCi/L				E903.0	04/16/12 08:08 / lbb
Radium 226 MDC	0.22	pCi/L				E903.0	04/16/12 08:08 / lbb
RADIONUCLIDES - TOTAL							
Gross Alpha	5.6	pCi/L				E900.0	04/14/12 13:41 / ep
Gross Alpha precision (±)	1.1	pCi/L				E900.0	04/14/12 13:41 / ep
Gross Alpha MDC	1.5	pCi/L				E900.0	04/14/12 13:41 / ep
Gross Beta	2.3	pCi/L	U			E900.0	04/14/12 13:41 / ep
Gross Beta precision (±)	1.6	pCi/L				E900.0	04/14/12 13:41 / ep
Gross Beta MDC	2.6	pCi/L				E900.0	04/14/12 13:41 / ep
Radium 226	0.02	pCi/L	U			E903.0	04/24/12 12:02 / lbb
Radium 226 precision (±)	0.08	pCi/L				E903.0	04/24/12 12:02 / lbb
Radium 226 MDC	0.14	pCi/L				E903.0	04/24/12 12:02 / lbb
Radium 228	-0.2	pCi/L	U			RA-05	04/17/12 10:56 / plj
Radium 228 precision (±)	0.83	pCi/L				RA-05	04/17/12 10:56 / plj
Radium 228 MDC	1.4	pCi/L				RA-05	04/17/12 10:56 / plj
DATA QUALITY							
A/C Balance (± 5)	-1.78	%				Calculation	04/18/12 08:00 / kbh
Anions	2.25	meq/L				Calculation	04/18/12 08:00 / kbh
Cations	2.17	meq/L				Calculation	04/18/12 08:00 / kbh
Solids, Total Dissolved Calculated	137	mg/L				Calculation	04/18/12 08:00 / kbh
TDS Balance (0.80 - 1.20)	0.990					Calculation	04/18/12 08:00 / kbh
FIELD PARAMETERS							
Field Conductivity	241	umhos/cm				FIELD	04/05/12 10:35 / ***
Field pH	7.29	s.u.				FIELD	04/05/12 10:35 / ***
Field Temperature, C	3.7	°C				FIELD	04/05/12 10:35 / ***

*** Performed by Sampler

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
U - Not detected at minimum detectable concentration

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
D - RL increased due to sample matrix.