



A Waters Company

Thekkekalathil Chandrasekhar
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SOIL-79



Final Report

Soil/Hazardous Waste Proficiency Testing

Soil Study

Open Date: 07/23/12

Close Date: 09/06/12

Report Issued Date: 09/25/12



A Waters Company

September 25, 2012

Thekkekalathil Chandrasekhar
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Enclosed is your final report for ERA's SOIL-79 Proficiency Testing (PT) study. Your final report includes an evaluation of all results submitted by your laboratory to ERA.

Data Evaluation Protocols: All analytes in ERA's SOIL-79 Proficiency Testing study have been evaluated using the following tiered approach. If the analyte is listed in the current TNI Fields of Proficiency Testing (FoPT) tables, the evaluation was completed by comparing the reported result to the acceptance limits generated using the criteria contained in the current TNI FoPT tables. If the analyte is not included in the TNI FoPT tables, the reported result has been evaluated using the procedures outlined in ERA's Standard Operating Procedure for the Generation of Performance Acceptance Limits (SOP 0260).

Corrective Action Help: As part of your accreditation(s), you may be required to identify the root cause of any "Not Acceptable" results, implement the necessary corrective actions, and then satisfy your PT requirements by participating in a Supplemental (QuiK™Response) or future ERA PT study. ERA's technical staff is available to help your laboratory resolve any technical issues that may be impairing your PT performance and possibly affecting your routine data quality. Our laboratory and technical staff have well over three hundred years of collective experience in performing the full range of environmental analyses. As part of our technical support, ERA offers QC samples that can be helpful in helping you work through your technical issues.

Please note the following changes to our final reports:

- At the request of the TNI Accreditation Council, we have included a Laboratory Exception Report that includes a list of all analytes reported with less than qualifiers when the assigned value was greater than "0." In addition, because we have received many requests from laboratories, this report also includes a list of all analytes with "Not Acceptable" evaluations.
- Some states have elected not to convert to the 2009 TNI Standards at this time. If you have released your results to a state that has retained the 2003 NELAC Evaluation Criteria, your final report will include a section that evaluates the results according to the 2003 Standard in addition to the 2009 TNI Standards.

Thank you for your participation in ERA's SOIL-79 Proficiency Testing study. If you have any questions, please contact our Proficiency Testing Department at 1-800-372-0122.

Sincerely,

Jay R. McBurney
Quality Program Manager

attachments
jrm



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Report Recipient	Contact/Phone Number	Reporting Type	Evaluation Type
Florida	Steve Arms / 904-791-1502	All Analytes	2009 TNI



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SOIL-79 Definitions & Study Discussion

Study Dates: 07/23/12 - 09/06/12

Report Issued: 09/25/12

SOIL Study Definitions

The Reported Value is the value that the laboratory reported to ERA.

The ERA Assigned Value for the Organic Proficiency Testing Standards is equal to 100% of the parameter present in the standard as determined by gravimetric and/or volumetric measurements made during standard preparation as applicable. The ERA assigned value for the Inorganic Proficiency Testing Standards, with the exception of the TCLP Metals in Soil, is equal to the maximum amount of the parameter available in the standard by applicable EPA methodologies. The ERA assigned value for the TCLP metals is equal to the mean of the study data, after the removal of outliers. All parameters not added to the standard are given an Assigned Value of "< PTRL", per the guidelines contained in the 2009 TNI Standards. The assigned values are directly traceable to the commercially prepared starting materials used to manufacture the PT standards.

The Acceptance Limits are established per the criteria contained in the most current TNI Fields of Proficiency Testing (FoPT) tables, or ERA's SOP for the Generation of Performance Acceptance Limits™ as applicable.

The Performance Evaluation:

Acceptable = Reported Value falls within the Acceptance Limits.

Not Acceptable = Reported Value falls outside the Acceptance Limits.

No Evaluation = Reported Value cannot be evaluated.

Not Reported = No Value reported.

The Method Description is the method the laboratory reported to ERA.

SOIL Study Discussion

ERA's SOIL-79 Proficiency Testing (PT) study has been reviewed by ERA senior management and certified compliant with the requirements of the 2009 TNI PT Standard and the criteria contained in the most current TNI Fields of Proficiency Testing (FoPT) tables.

ERA's SOIL-79 study standards were examined for any anomalies. A full review of all homogeneity, stability and accuracy verification data was completed. All analytical verification data for all analytes in the standards met the acceptance criteria contained in the 2009 TNI PT Standard and the criteria contained in the most current TNI FoPT tables.

The data submitted by participating laboratories was also examined for study anomalies. There were no anomalies observed during the statistical review of the data.

ERA's SOIL-79 Proficiency Testing study reports shall not be reproduced except in its entirety and not without the permission of the participating laboratory. The report must not be used by the participating laboratories to claim product endorsement any agency of the U. S. government.

The data contained herein are confidential and intended for your use only.

If you have any questions or concerns regarding your assessment in ERA's SOIL Proficiency Testing program, please contact our Proficiency Testing Department at 1-800-372-0122.



SOIL-79 Laboratory Exception Report

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2009 TNI Evaluation Check: There are no values reported with < where the assigned value was greater than 0.

2009 TNI Not Acceptable Evaluations: There were no Not Acceptable evaluations for this study.



Final Report Results For Laboratory State of Florida DEP Chemistry Laboratory



2009 TNI Evaluation Report

Study: **SOIL-79**

ERA Customer Number: **S744803**

Laboratory Name: **State of Florida DEP
Chemistry Laboratory**

Inorganic Results



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SOIL-79 2009 TNI Evaluation Final Complete Report

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TNI Analyte Code	Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description	Analysis Date	Z Score	Study Mean	Study Standard Deviation	Analyst Name
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SOIL Metals in Soil (cat# 620)

1000	Aluminum	mg/kg		10100	3860 - 14200	Not Reported				9060	2440	
1005	Antimony	mg/kg	80.3	245	24.5 - 271	Acceptable	EPA 6020A 1 2/1/2007	8/7/2012	-0.414	106	63.1	PETERSON_C
1010	Arsenic	mg/kg	189	213	129 - 236	Acceptable	EPA 6020A 1 2/1/2007	8/7/2012	0.481	182	13.8	PETERSON_C
1015	Barium	mg/kg	154	151	104 - 183	Acceptable	EPA 6020A 1 2/1/2007	8/7/2012	0.857	144	12.2	PETERSON_C
1020	Beryllium	mg/kg	108	110	73.3 - 123	Acceptable	EPA 6020A 1 2/1/2007	8/9/2012	1.37	98.3	7.04	PETERSON_C
1025	Boron	mg/kg		138	63.6 - 152	Not Reported				106	14.5	
1030	Cadmium	mg/kg	62.1	71.0	44.2 - 78.1	Acceptable	EPA 6020A 1 2/1/2007	8/7/2012	0.332	60.4	5.12	PETERSON_C
1035	Calcium	mg/kg		6380	4450 - 7620	Not Reported				6030	435	
1040	Chromium	mg/kg	132	143	87.2 - 162	Acceptable	EPA 6020A 1 2/1/2007	8/7/2012	0.682	125	10.6	PETERSON_C
1050	Cobalt	mg/kg	170	183	121 - 204	Acceptable	EPA 6020A 1 2/1/2007	8/7/2012	0.628	163	11.4	PETERSON_C
1055	Copper	mg/kg	81.5	94.3	59.0 - 104	Acceptable	EPA 6020A 1 2/1/2007	8/7/2012	0.224	80.1	6.38	PETERSON_C
1070	Iron	mg/kg		15000	4170 - 21700	Not Reported				12900	2540	
1075	Lead	mg/kg	139	154	99.4 - 173	Acceptable	EPA 6020A 1 2/1/2007	8/7/2012	0.268	136	9.79	PETERSON_C
1085	Magnesium	mg/kg		2760	1690 - 3580	Not Reported				2640	324	
1090	Manganese	mg/kg	289	280	207 - 352	Acceptable	EPA 6020A 1 2/1/2007	8/7/2012	0.426	279	22.5	PETERSON_C
1095	Mercury	mg/kg		9.80	4.75 - 13.8	Not Reported				9.25	1.09	
1100	Molybdenum	mg/kg	46.3	57.9	27.6 - 63.7	Acceptable	EPA 6020A 1 2/1/2007	8/7/2012	0.766	42.3	5.27	PETERSON_C
1105	Nickel	mg/kg	134	151	93.6 - 166	Acceptable	EPA 6020A 1 2/1/2007	8/7/2012	0.613	128	9.29	PETERSON_C
1125	Potassium	mg/kg		2990	1750 - 3890	Not Reported				2820	386	



All analytes are included in ERA's A2LA accreditation. Lab Code: 1539-01





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SOIL Metals in Soil (cat# 620) (Continued)

1140	Selenium	mg/kg	85.3	102	54.9 - 117	Acceptable	EPA 6020A 1 2/1/2007	8/7/2012	-0.0629	85.8	8.57	PETERSON_C
1150	Silver	mg/kg	63.9	70.0	41.0 - 81.6	Acceptable	EPA 6020A 1 2/1/2007	8/13/2012	0.517	61.3	5.04	PETERSON_C
1155	Sodium	mg/kg		479	212 - 666	Not Reported				439	51.6	
1160	Strontium	mg/kg		121	77.6 - 143	Not Reported				110	8.96	
1165	Thallium	mg/kg	159	170	98.3 - 190	Acceptable	EPA 6020A 1 2/1/2007	8/7/2012	1.36	144	10.9	PETERSON_C
1175	Tin	mg/kg		184	94.2 - 219	Not Reported				157	14.3	
1180	Titanium	mg/kg		289	0.00 - 559	Not Reported				241	106	
1185	Vanadium	mg/kg		121	68.6 - 139	Not Reported				104	12.6	
1190	Zinc	mg/kg	217	228	142 - 265	Acceptable	EPA 6020A 1 2/1/2007	8/7/2012	0.823	204	16.1	PETERSON_C



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SOIL Metals in Soil (cat# 620)

1000	Aluminum	mg/kg	11200	10100	3860 - 14200	Acceptable	EPA 6010C 3 2007	8/14/2012	0.879	9060	2440	AYRES_J
1005	Antimony	mg/kg	71.6	245	24.5 - 271	Acceptable	EPA 6010C 3 2007	8/7/2012	-0.552	106	63.1	AYRES_J
1010	Arsenic	mg/kg	180	213	129 - 236	Acceptable	EPA 6010C 3 2007	8/14/2012	-0.171	182	13.8	AYRES_J
1015	Barium	mg/kg	152	151	104 - 183	Acceptable	EPA 6010C 3 2007	8/7/2012	0.694	144	12.2	AYRES_J
1020	Beryllium	mg/kg	104	110	73.3 - 123	Acceptable	EPA 6010C 3 2007	8/14/2012	0.804	98.3	7.04	AYRES_J
1025	Boron	mg/kg	113	138	63.6 - 152	Acceptable	EPA 6010C 3 2007	8/14/2012	0.485	106	14.5	AYRES_J
1030	Cadmium	mg/kg	60.6	71.0	44.2 - 78.1	Acceptable	EPA 6010C 3 2007	8/7/2012	0.0392	60.4	5.12	AYRES_J
1035	Calcium	mg/kg	6330	6380	4450 - 7620	Acceptable	EPA 6010C 3 2007	8/7/2012	0.683	6030	435	AYRES_J
1040	Chromium	mg/kg	130	143	87.2 - 162	Acceptable	EPA 6010C 3 2007	8/7/2012	0.494	125	10.6	AYRES_J
1050	Cobalt	mg/kg	170	183	121 - 204	Acceptable	EPA 6010C 3 2007	8/14/2012	0.628	163	11.4	AYRES_J
1055	Copper	mg/kg	83.2	94.3	59.0 - 104	Acceptable	EPA 6010C 3 2007	8/7/2012	0.491	80.1	6.38	AYRES_J
1070	Iron	mg/kg	14700	15000	4170 - 21700	Acceptable	EPA 6010C 3 2007	8/13/2012	0.688	12900	2540	AYRES_J
1075	Lead	mg/kg	140	154	99.4 - 173	Acceptable	EPA 6010C 3 2007	8/13/2012	0.370	136	9.79	AYRES_J
1085	Magnesium	mg/kg	3000	2760	1690 - 3580	Acceptable	EPA 6010C 3 2007	8/7/2012	1.12	2640	324	AYRES_J
1090	Manganese	mg/kg	280	280	207 - 352	Acceptable	EPA 6010C 3 2007	8/7/2012	0.0259	279	22.5	AYRES_J
1095	Mercury	mg/kg		9.80	4.75 - 13.8	Not Reported				9.25	1.09	
1100	Molybdenum	mg/kg	44.4	57.9	27.6 - 63.7	Acceptable	EPA 6010C 3 2007	8/7/2012	0.405	42.3	5.27	AYRES_J
1105	Nickel	mg/kg	133	151	93.6 - 166	Acceptable	EPA 6010C 3 2007	8/14/2012	0.506	128	9.29	AYRES_J
1125	Potassium	mg/kg	3220	2990	1750 - 3890	Acceptable	EPA 6010C 3 2007	8/14/2012	1.03	2820	386	AYRES_J
1140	Selenium	mg/kg	83.5	102	54.9 - 117	Acceptable	EPA 6010C 3 2007	8/7/2012	-0.273	85.8	8.57	AYRES_J



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SOIL Metals in Soil (cat# 620) (Continued)

1150	Silver	mg/kg	63.0	70.0	41.0 - 81.6	Acceptable	EPA 6010C 3 2007	8/14/2012	0.339	61.3	5.04	AYRES_J
1155	Sodium	mg/kg	445	479	212 - 666	Acceptable	EPA 6010C 3 2007	8/7/2012	0.112	439	51.6	AYRES_J
1160	Strontium	mg/kg	118	121	77.6 - 143	Acceptable	EPA 6010C 3 2007	8/7/2012	0.866	110	8.96	AYRES_J
1165	Thallium	mg/kg	148	170	98.3 - 190	Acceptable	EPA 6010C 3 2007	8/14/2012	0.357	144	10.9	AYRES_J
1175	Tin	mg/kg	163	184	94.2 - 219	Acceptable	EPA 6010C 3 2007	8/14/2012	0.440	157	14.3	AYRES_J
1180	Titanium	mg/kg	345	289	0.00 - 559	Acceptable	EPA 6010C 3 2007	8/14/2012	0.978	241	106	AYRES_J
1185	Vanadium	mg/kg	113	121	68.6 - 139	Acceptable	EPA 6010C 3 2007	8/7/2012	0.728	104	12.6	AYRES_J
1190	Zinc	mg/kg	202	228	142 - 265	Acceptable	EPA 6010C 3 2007	8/7/2012	-0.108	204	16.1	AYRES_J



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SOIL Metals in Soil (cat# 620)

1000	Aluminum	mg/kg		10100	3860 - 14200	Not Reported				9060	2440	
1005	Antimony	mg/kg		245	24.5 - 271	Not Reported				106	63.1	
1010	Arsenic	mg/kg		213	129 - 236	Not Reported				182	13.8	
1015	Barium	mg/kg		151	104 - 183	Not Reported				144	12.2	
1020	Beryllium	mg/kg		110	73.3 - 123	Not Reported				98.3	7.04	
1025	Boron	mg/kg		138	63.6 - 152	Not Reported				106	14.5	
1030	Cadmium	mg/kg		71.0	44.2 - 78.1	Not Reported				60.4	5.12	
1035	Calcium	mg/kg		6380	4450 - 7620	Not Reported				6030	435	
1040	Chromium	mg/kg		143	87.2 - 162	Not Reported				125	10.6	
1050	Cobalt	mg/kg		183	121 - 204	Not Reported				163	11.4	
1055	Copper	mg/kg		94.3	59.0 - 104	Not Reported				80.1	6.38	
1070	Iron	mg/kg		15000	4170 - 21700	Not Reported				12900	2540	
1075	Lead	mg/kg		154	99.4 - 173	Not Reported				136	9.79	
1085	Magnesium	mg/kg		2760	1690 - 3580	Not Reported				2640	324	
1090	Manganese	mg/kg		280	207 - 352	Not Reported				279	22.5	
1095	Mercury	mg/kg	9.61	9.80	4.75 - 13.8	Acceptable	DEPSOP:HG-008-3	8/8/2012	0.325	9.25	1.09	ACOSTA_M
1100	Molybdenum	mg/kg		57.9	27.6 - 63.7	Not Reported				42.3	5.27	
1105	Nickel	mg/kg		151	93.6 - 166	Not Reported				128	9.29	
1125	Potassium	mg/kg		2990	1750 - 3890	Not Reported				2820	386	
1140	Selenium	mg/kg		102	54.9 - 117	Not Reported				85.8	8.57	



All analytes are included in ERA's A2LA accreditation. Lab Code: 1539-01





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SOIL Metals in Soil (cat# 620) (Continued)

1150	Silver	mg/kg		70.0	41.0 - 81.6	Not Reported				61.3	5.04	
1155	Sodium	mg/kg		479	212 - 666	Not Reported				439	51.6	
1160	Strontium	mg/kg		121	77.6 - 143	Not Reported				110	8.96	
1165	Thallium	mg/kg		170	98.3 - 190	Not Reported				144	10.9	
1175	Tin	mg/kg		184	94.2 - 219	Not Reported				157	14.3	
1180	Titanium	mg/kg		289	0.00 - 559	Not Reported				241	106	
1185	Vanadium	mg/kg		121	68.6 - 139	Not Reported				104	12.6	
1190	Zinc	mg/kg		228	142 - 265	Not Reported				204	16.1	

SOIL Nutrients in Soil (cat# 869)

1515	Ammonia as N	mg/kg		948	460 - 1140	Not Reported				801	140	
1795	Total Kjeldahl Nitrogen	mg/kg		1310	738 - 1970	Not Reported				1360	203	
2040	Total Organic Carbon (TOC)	mg/kg	2870	3150	0.00 - 7570	Acceptable	DEPSOP:NU-076-1	8/1/2012	-0.387	3410	1390	HUA_P
1910	Total Phosphorus	mg/kg		1060	234 - 1690	Not Reported				961	155	



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2009 TNI Evaluation Report

Study: **SOIL-79**

ERA Customer Number: **S744803**

Laboratory Name: **State of Florida DEP
Chemistry Laboratory**

Organic Results



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SOIL-79 2009 TNI Evaluation Final Complete Report

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SOIL Volatiles in Soil (cat# 623)

4315	Acetone	µg/kg	600	669	66.9 - 1040	Acceptable	EPA 8260C 2006	8/10/2012	0.0480	592	166	BOOESHAG_F
4320	Acetonitrile	µg/kg		440	67.5 - 846	Not Reported				457	130	
4325	Acrolein	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4375	Benzene	µg/kg	167	158	95.6 - 215	Acceptable	EPA 8260C 2006	8/10/2012	0.229	163	17.6	BOOESHAG_F
4385	Bromobenzene	µg/kg		< 40.0	0.00 - 40.0	Not Reported						
4395	Bromodichloromethane	µg/kg	143	149	98.0 - 205	Acceptable	EPA 8260C 2006	8/10/2012	-0.61	154	17.9	BOOESHAG_F
4400	Bromoform	µg/kg	< 2.00	< 9.30	0.00 - 9.30	Acceptable	EPA 8260C 2006	8/10/2012				BOOESHAG_F
4950	Bromomethane	µg/kg	< 2.00	< 80.0	0.00 - 80.0	Acceptable	EPA 8260C 2006	8/10/2012				BOOESHAG_F
4410	2-Butanone (MEK)	µg/kg	440	418	136 - 643	Acceptable	EPA 8260C 2006	8/10/2012	0.656	385	84.4	BOOESHAG_F
5000	tert-Butyl methyl ether (MTBE)	µg/kg	28.4	30.0	12.0 - 52.1	Acceptable	EPA 8260C 2006	8/10/2012	-0.944	32.1	3.89	BOOESHAG_F
4450	Carbon disulfide	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4455	Carbon tetrachloride	µg/kg	< 5.00	< 9.90	0.00 - 9.90	Acceptable	EPA 8260C 2006	8/10/2012				BOOESHAG_F
4475	Chlorobenzene	µg/kg	166	158	89.6 - 219	Acceptable	EPA 8260C 2006	8/10/2012	0.150	163	16.8	BOOESHAG_F
4575	Chlorodibromomethane	µg/kg	< 5.00	< 9.90	0.00 - 9.90	Acceptable	EPA 8260C 2006	8/10/2012				BOOESHAG_F
4485	Chloroethane	µg/kg	< 2.00	< 80.0	0.00 - 80.0	Acceptable	EPA 8260C 2006	8/10/2012				BOOESHAG_F
4500	2-Chloroethylvinylether	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4505	Chloroform	µg/kg	< 2.00	< 11.0	0.00 - 11.0	Acceptable	EPA 8260C 2006	8/10/2012				BOOESHAG_F
4960	Chloromethane	µg/kg	< 2.00	< 80.0	0.00 - 80.0	Acceptable	EPA 8260C 2006	8/10/2012				BOOESHAG_F
4570	1,2-Dibromo-3-chloropropane (DBCP)	µg/kg		< 4.00	0.00 - 4.00	Not Reported						
4585	1,2-Dibromoethane (EDB)	µg/kg		86.2	48.5 - 120	Not Reported				89.0	9.89	



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SOIL Volatiles in Soil (cat# 623) (Continued)

4595	Dibromomethane	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4610	1,2-Dichlorobenzene	µg/kg	88.5	70.8	33.8 - 100	Acceptable	EPA 8260C 2006	8/10/2012	1.18	76.9	9.88	BOOESHAG_F
4615	1,3-Dichlorobenzene	µg/kg	232	194	76.6 - 286	Acceptable	EPA 8260C 2006	8/10/2012	1.37	194	28.0	BOOESHAG_F
4620	1,4-Dichlorobenzene	µg/kg	78.9	63.8	22.1 - 90.8	Acceptable	EPA 8260C 2006	8/10/2012	1.76	65.1	7.83	BOOESHAG_F
4625	Dichlorodifluoromethane (Freon 12)	µg/kg	< 2.00	< 80.0	0.00 - 80.0	Acceptable	EPA 8260C 2006	8/10/2012				BOOESHAG_F
4630	1,1-Dichloroethane	µg/kg	145	143	81.3 - 206	Acceptable	EPA 8260C 2006	8/10/2012	-0.183	148	16.5	BOOESHAG_F
4635	1,2-Dichloroethane	µg/kg	< 2.00	< 12.0	0.00 - 12.0	Acceptable	EPA 8260C 2006	8/10/2012				BOOESHAG_F
4640	1,1-Dichloroethylene	µg/kg	< 5.00	< 13.0	0.00 - 13.0	Acceptable	EPA 8260C 2006	8/10/2012				BOOESHAG_F
4645	cis-1,2-Dichloroethylene	µg/kg	< 2.00	< 20.0	0.00 - 20.0	Acceptable	EPA 8260C 2006	8/10/2012				BOOESHAG_F
4700	trans-1,2-Dichloroethylene	µg/kg	< 2.00	< 23.0	0.00 - 23.0	Acceptable	EPA 8260C 2006	8/10/2012				BOOESHAG_F
4655	1,2-Dichloropropane	µg/kg	34.9	38.3	22.8 - 53.0	Acceptable	EPA 8260C 2006	8/10/2012	-1.01	39.1	4.16	BOOESHAG_F
4680	cis-1,3-Dichloropropylene	µg/kg	< 2.00	< 40.0	0.00 - 40.0	Acceptable	EPA 8260C 2006	8/10/2012				BOOESHAG_F
4685	trans-1,3-Dichloropropylene	µg/kg	< 5.00	< 40.0	0.00 - 40.0	Acceptable	EPA 8260C 2006	8/10/2012				BOOESHAG_F
4765	Ethylbenzene	µg/kg	80.2	76.5	41.9 - 111	Acceptable	EPA 8260C 2006	8/10/2012	0.344	77.4	8.27	BOOESHAG_F
4860	2-Hexanone	µg/kg	418	395	178 - 572	Acceptable	EPA 8260C 2006	8/10/2012	0.323	390	85.0	BOOESHAG_F
4900	Isopropylbenzene	µg/kg		< 40.0	0.00 - 40.0	Not Reported						
4975	Methylene chloride	µg/kg	162	162	75.8 - 233	Acceptable	EPA 8260C 2006	8/10/2012	-0.0193	162	21.0	BOOESHAG_F
4995	4-Methyl-2-pentanone (MIBK)	µg/kg	120	133	56.5 - 197	Acceptable	EPA 8260C 2006	8/10/2012	-0.584	131	19.6	BOOESHAG_F
5005	Naphthalene	µg/kg		154	74.5 - 232	Not Reported				155	26.5	
5100	Styrene	µg/kg	72.1	68.5	43.6 - 101	Acceptable	EPA 8260C 2006	8/10/2012	0.134	70.9	8.75	BOOESHAG_F



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SOIL Volatiles in Soil (cat# 623) (Continued)

5105	1,1,1,2-Tetrachloroethane	µg/kg		180	118 - 242	Not Reported				188	19.0	
5110	1,1,2,2-Tetrachloroethane	µg/kg	< 5.00	< 8.90	0.00 - 8.90	Acceptable	EPA 8260C 2006	8/10/2012				BOOESHAG_F
5115	Tetrachloroethylene	µg/kg	66.4	71.3	31.7 - 103	Acceptable	EPA 8260C 2006	8/10/2012	-0.433	70.6	9.70	BOOESHAG_F
5140	Toluene	µg/kg	94.9	97.4	55.9 - 137	Acceptable	EPA 8260C 2006	8/10/2012	-0.225	97.1	10.0	BOOESHAG_F
5155	1,2,4-Trichlorobenzene	µg/kg		185	74.0 - 296	Not Reported				181	31.8	
5160	1,1,1-Trichloroethane	µg/kg	183	185	106 - 264	Acceptable	EPA 8260C 2006	8/10/2012	-0.346	191	23.5	BOOESHAG_F
5165	1,1,2-Trichloroethane	µg/kg	110	112	65.8 - 154	Acceptable	EPA 8260C 2006	8/10/2012	-0.195	112	12.8	BOOESHAG_F
5170	Trichloroethylene	µg/kg	62.2	70.2	35.8 - 100	Acceptable	EPA 8260C 2006	8/10/2012	-0.915	70.0	8.54	BOOESHAG_F
5175	Trichlorofluoromethane	µg/kg	< 2.00	< 80.0	0.00 - 80.0	Acceptable	EPA 8260C 2006	8/10/2012				BOOESHAG_F
5180	1,2,3-Trichloropropane (TCP)	µg/kg		48.9	12.4 - 84.3	Not Reported				47.8	7.84	
5225	Vinyl acetate	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
5235	Vinyl chloride	µg/kg	< 2.00	< 80.0	0.00 - 80.0	Acceptable	EPA 8260C 2006	8/10/2012				BOOESHAG_F
5260	Xylenes, total	µg/kg	135	155	75.6 - 229	Acceptable	EPA 8260C 2006	8/10/2012	-0.927	152	18.3	BOOESHAG_F



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SOIL Base/Neutrals and Acids in Soil (cat# 467)

5500	Acenaphthene	µg/kg	1960	2970	623 - 3530	Acceptable	EPA 8270D 3	8/16/2012	-0.27	2080	438	GHAFFARI_M
5505	Acenaphthylene	µg/kg	< 6.70	< 100	0.00 - 100	Acceptable	EPA 8270D 3	8/16/2012				GHAFFARI_M
5145	2-Amino-1-methylbenzene (o-toluidine)	µg/kg		< 1000	0.00 - 1000	Not Reported						
5545	Aniline	µg/kg		< 1000	0.00 - 1000	Not Reported						
5555	Anthracene	µg/kg	1710	2610	455 - 2930	Acceptable	EPA 8270D 3	8/16/2012	0.0543	1690	315	GHAFFARI_M
5595	Benzidine	µg/kg		< 1000	0.00 - 1000	Not Reported						
5610	Benzoic acid	µg/kg		< 1000	0.00 - 1000	Not Reported						
5575	Benzo(a)anthracene	µg/kg	4900	6470	2010 - 7620	Acceptable	EPA 8270D 3	8/16/2012	0.0968	4820	878	GHAFFARI_M
5585	Benzo(b)fluoranthene	µg/kg	< 6.70	< 100	0.00 - 100	Acceptable	EPA 8270D 3	8/16/2012				GHAFFARI_M
5600	Benzo(k)fluoranthene	µg/kg	< 6.70	< 100	0.00 - 100	Acceptable	EPA 8270D 3	8/16/2012				GHAFFARI_M
5590	Benzo(g,h,i)perylene	µg/kg	1610	2120	340 - 2700	Acceptable	EPA 8270D 3	8/16/2012	0.228	1520	381	GHAFFARI_M
5580	Benzo(a)pyrene	µg/kg	2010	2940	607 - 3410	Acceptable	EPA 8270D 3	8/16/2012	0.00724	2010	351	GHAFFARI_M
5630	Benzyl alcohol	µg/kg		< 1000	0.00 - 1000	Not Reported						
5760	bis(2-Chloroethoxy)methane	µg/kg	< 60.0	< 150	0.00 - 150	Acceptable	EPA 8270D 3	8/16/2012				GHAFFARI_M
5765	bis(2-Chloroethyl)ether	µg/kg	7980	13000	2240 - 14300	Acceptable	EPA 8270D 3	8/16/2012	0.0628	7820	2560	GHAFFARI_M
5780	bis(2-Chloroisopropyl)ether	µg/kg	< 60.0	< 150	0.00 - 150	Acceptable	EPA 8270D 3	8/16/2012				GHAFFARI_M
5660	4-Bromophenyl-phenylether	µg/kg	5810	6800	2110 - 8750	Acceptable	EPA 8270D 3	8/16/2012	0.347	5430	1090	GHAFFARI_M
5670	Butylbenzylphthalate	µg/kg	2370	2760	620 - 3900	Acceptable	EPA 8270D 3	8/16/2012	0.235	2260	458	GHAFFARI_M
5680	Carbazole	µg/kg		< 1000	0.00 - 1000	Not Reported						
5745	4-Chloroaniline	µg/kg		< 1000	0.00 - 1000	Not Reported						



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SOIL Base/Neutrals and Acids in Soil (cat# 467) (Continued)

5700	4-Chloro-3-methylphenol	µg/kg	6660	9310	2320 - 10200	Acceptable	EPA 8270D 3	8/16/2012	0.390	6100	1440	GHAFFARI_M
5790	1-Chloronaphthalene	µg/kg		< 1000	0.00 - 1000	Not Reported						
5795	2-Chloronaphthalene	µg/kg	< 60.0	< 100	0.00 - 100	Acceptable	EPA 8270D 3	8/16/2012				GHAFFARI_M
5800	2-Chlorophenol	µg/kg	3120	4860	559 - 5350	Acceptable	EPA 8270D 3	8/16/2012	0.356	2840	774	GHAFFARI_M
5825	4-Chlorophenyl-phenylether	µg/kg	3010	4070	1060 - 4920	Acceptable	EPA 8270D 3	8/16/2012	0.0347	2990	628	GHAFFARI_M
5855	Chrysene	µg/kg	1550	1990	551 - 2540	Acceptable	EPA 8270D 3	8/16/2012	0.0214	1540	293	GHAFFARI_M
5895	Dibenz(a,h)anthracene	µg/kg	< 6.70	< 100	0.00 - 100	Acceptable	EPA 8270D 3	8/16/2012				GHAFFARI_M
5905	Dibenzofuran	µg/kg	4230	5770	1460 - 6740	Acceptable	EPA 8270D 3	8/16/2012	0.134	4100	938	GHAFFARI_M
5925	Di-n-butylphthalate	µg/kg	11100	12700	3150 - 16300	Acceptable	EPA 8270D 3	8/16/2012	0.563	9740	2400	GHAFFARI_M
4610	1,2-Dichlorobenzene	µg/kg		3050	305 - 3360	Not Reported				1660	569	
4615	1,3-Dichlorobenzene	µg/kg		< 150	0.00 - 150	Not Reported						
4620	1,4-Dichlorobenzene	µg/kg		8790	879 - 9670	Not Reported				4560	2000	
5945	3,3'-Dichlorobenzidine	µg/kg		< 1000	0.00 - 1000	Not Reported						
6000	2,4-Dichlorophenol	µg/kg	2250	3470	347 - 4110	Acceptable	EPA 8270D 3	8/16/2012	0.0433	2230	524	GHAFFARI_M
6005	2,6-Dichlorophenol	µg/kg	< 60.0	< 1500	0.00 - 1500	Acceptable	EPA 8270D 3	8/16/2012				GHAFFARI_M
6070	Diethylphthalate	µg/kg	< 60.0	< 150	0.00 - 150	Acceptable	EPA 8270D 3	8/16/2012				GHAFFARI_M
6130	2,4-Dimethylphenol	µg/kg	< 360	< 3000	0.00 - 3000	Acceptable	EPA 8270D 3	8/16/2012				GHAFFARI_M
6135	Dimethylphthalate	µg/kg	6600	8570	2410 - 10400	Acceptable	EPA 8270D 3	8/16/2012	0.131	6410	1460	GHAFFARI_M
6175	2,4-Dinitrophenol	µg/kg	< 360	< 3000	0.00 - 3000	Acceptable	EPA 8270D 3	8/16/2012				GHAFFARI_M
6185	2,4-Dinitrotoluene	µg/kg	< 60.0	< 150	0.00 - 150	Acceptable	EPA 8270D 3	8/16/2012				GHAFFARI_M



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SOIL Base/Neutrals and Acids in Soil (cat# 467) (Continued)

6190	2,6-Dinitrotoluene	µg/kg	< 60.0	< 150	0.00 - 150	Acceptable	EPA 8270D 3	8/16/2012				GHAFFARI_M
6200	Di-n-octylphthalate	µg/kg	6250	6870	1040 - 10000	Acceptable	EPA 8270D 3	8/16/2012	0.525	5530	1360	GHAFFARI_M
6065	bis(2-Ethylhexyl)phthalate	µg/kg	9930	11600	3030 - 15100	Acceptable	EPA 8270D 3	8/16/2012	0.403	9070	2130	GHAFFARI_M
6265	Fluoranthene	µg/kg	< 6.70	< 100	0.00 - 100	Acceptable	EPA 8270D 3	8/16/2012				GHAFFARI_M
6270	Fluorene	µg/kg	3890	5250	1530 - 6200	Acceptable	EPA 8270D 3	8/16/2012	0.0311	3860	800	GHAFFARI_M
6275	Hexachlorobenzene	µg/kg	1820	2320	670 - 2910	Acceptable	EPA 8270D 3	8/16/2012	0.0708	1790	394	GHAFFARI_M
4835	Hexachlorobutadiene	µg/kg	5680	8560	1240 - 9580	Acceptable	EPA 8270D 3	8/16/2012	0.178	5410	1520	GHAFFARI_M
6285	Hexachlorocyclopentadiene	µg/kg	< 60.0	< 1500	0.00 - 1500	Acceptable	EPA 8270D 3	8/16/2012				GHAFFARI_M
4840	Hexachloroethane	µg/kg	< 180	< 150	0.00 - 150	Acceptable	EPA 8270D 3	8/16/2012				GHAFFARI_M
6315	Indeno(1,2,3-cd)pyrene	µg/kg	1380	2080	208 - 2720	Acceptable	EPA 8270D 3	8/16/2012	-0.0655	1400	387	GHAFFARI_M
6320	Isophorone	µg/kg	< 60.0	< 150	0.00 - 150	Acceptable	EPA 8270D 3	8/16/2012				GHAFFARI_M
6360	4,6-Dinitro-2-methylphenol	µg/kg	< 60.0	< 3000	0.00 - 3000	Acceptable	EPA 8270D 3	8/16/2012				GHAFFARI_M
6385	2-Methylnaphthalene	µg/kg	1160	1670	363 - 1930	Acceptable	EPA 8270D 3	8/16/2012	0.0521	1150	252	GHAFFARI_M
6400	2-Methylphenol	µg/kg	1250	3550	355 - 3900	Acceptable	EPA 8270D 3	8/16/2012	0.220	1180	314	GHAFFARI_M
6410	3&4-Methylphenol	µg/kg	5340	10200	1020 - 11200	Acceptable	EPA 8270D 3	8/16/2012	0.495	4570	1550	GHAFFARI_M
5005	Naphthalene	µg/kg	< 6.70	< 100	0.00 - 100	Acceptable	EPA 8270D 3	8/16/2012				GHAFFARI_M
6460	2-Nitroaniline	µg/kg		< 1000	0.00 - 1000	Not Reported						
6465	3-Nitroaniline	µg/kg		< 1000	0.00 - 1000	Not Reported						
6470	4-Nitroaniline	µg/kg		< 1000	0.00 - 1000	Not Reported						
5015	Nitrobenzene	µg/kg	4740	6920	1070 - 7890	Acceptable	EPA 8270D 3	8/16/2012	0.177	4480	1460	GHAFFARI_M



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SOIL Base/Neutrals and Acids in Soil (cat# 467) (Continued)

6490	2-Nitrophenol	µg/kg	3150	5110	511 - 5860	Acceptable	EPA 8270D 3	8/16/2012	0.0257	3130	886	GHAFFARI_M
6500	4-Nitrophenol	µg/kg	8750	12800	1280 - 15300	Acceptable	EPA 8270D 3	8/16/2012	0.591	7090	2800	GHAFFARI_M
6525	N-Nitrosodiethylamine	µg/kg		< 1000	0.00 - 1000	Not Reported						
6530	N-Nitrosodimethylamine	µg/kg	< 360	< 1500	0.00 - 1500	Acceptable	EPA 8270D 3	8/16/2012				GHAFFARI_M
6535	N-Nitrosodiphenylamine	µg/kg	< 60.0	< 1500	0.00 - 1500	Acceptable	EPA 8270D 3	8/16/2012				GHAFFARI_M
6545	N-Nitroso-di-n-propylamine	µg/kg	7530	10200	1250 - 12700	Acceptable	EPA 8270D 3	8/16/2012	0.256	6970	2170	GHAFFARI_M
6590	Pentachlorobenzene	µg/kg		< 1000	0.00 - 1000	Not Reported						
6605	Pentachlorophenol	µg/kg	3320	7040	704 - 7740	Acceptable	EPA 8270D 3	8/16/2012	0.0713	3220	1410	GHAFFARI_M
6615	Phenanthrene	µg/kg	< 6.70	< 100	0.00 - 100	Acceptable	EPA 8270D 3	8/16/2012				GHAFFARI_M
6625	Phenol	µg/kg	3410	4960	496 - 5570	Acceptable	EPA 8270D 3	8/16/2012	0.531	2990	782	GHAFFARI_M
6665	Pyrene	µg/kg	7540	9290	2790 - 11700	Acceptable	EPA 8270D 3	8/16/2012	0.225	7230	1360	GHAFFARI_M
5095	Pyridine	µg/kg		< 1000	0.00 - 1000	Not Reported						
6715	1,2,4,5-Tetrachlorobenzene	µg/kg		< 1000	0.00 - 1000	Not Reported						
6735	2,3,4,6-Tetrachlorophenol	µg/kg		< 1000	0.00 - 1000	Not Reported						
5155	1,2,4-Trichlorobenzene	µg/kg	3310	5740	814 - 6310	Acceptable	EPA 8270D 3	8/16/2012	0.0143	3300	922	GHAFFARI_M
6835	2,4,5-Trichlorophenol	µg/kg	1900	2750	342 - 3400	Acceptable	EPA 8270D 3	8/16/2012	0.0698	1870	450	GHAFFARI_M
6840	2,4,6-Trichlorophenol	µg/kg	3490	5290	825 - 5910	Acceptable	EPA 8270D 3	8/16/2012	0.147	3370	832	GHAFFARI_M



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SOIL Chlorinated Acid Herbicides in Soil (cat# 626)

8505	Acifluorfen	µg/kg		< 100	0.00 - 100	Not Reported						
8530	Bentazon	µg/kg		< 100	0.00 - 100	Not Reported						
8540	Chloramben	µg/kg		< 100	0.00 - 100	Not Reported						
8545	2,4-D	µg/kg	415	352	35.2 - 549	Acceptable	DEPSOP:LC-001-2	8/7/2012	1.68	243	102	REDDY_S
8560	2,4-DB	µg/kg	559	974	110 - 1080	Acceptable	DEPSOP:LC-001-2	8/7/2012	-0.215	594	161	REDDY_S
8550	Dacthal diacid (DCPA)	µg/kg		< 100	0.00 - 100	Not Reported						
8555	Dalapon	µg/kg		< 100	0.00 - 100	Not Reported						
8595	Dicamba	µg/kg	151	320	32.0 - 440	Acceptable	DEPSOP:LC-001-2	8/7/2012	-0.601	199	80.2	REDDY_S
8600	3,5-Dichlorobenzoic acid	µg/kg		< 100	0.00 - 100	Not Reported						
8605	Dichlorprop	µg/kg		< 100	0.00 - 100	Not Reported						
8620	Dinoseb	µg/kg	94.0	121	12.1 - 179	Acceptable	DEPSOP:LC-001-2	8/7/2012	0.746	65.8	37.8	REDDY_S
7775	MCPA	µg/kg		< 1000	0.00 - 1000	Not Reported						
7780	MCPP	µg/kg		< 1000	0.00 - 1000	Not Reported						
6500	4-Nitrophenol	µg/kg		< 100	0.00 - 100	Not Reported						
6605	Pentachlorophenol	µg/kg		361	36.1 - 418	Not Reported				214	68.0	
8645	Picloram	µg/kg		< 100	0.00 - 100	Not Reported						
8655	2,4,5-T	µg/kg	422	447	44.7 - 526	Acceptable	DEPSOP:LC-001-2	8/7/2012	1.74	279	82.1	REDDY_S
8650	2,4,5-TP (Silvex)	µg/kg	275	262	26.2 - 362	Acceptable	DEPSOP:LC-001-2	8/7/2012	1.55	182	60.1	REDDY_S



All analytes are included in ERA's A2LA accreditation. Lab Code: 1539-01

