



A Waters Company

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SOIL-75



Final Report

Soil/Hazardous Waste Proficiency Testing

Soil Study

Open Date: 07/18/11

Close Date: 09/01/11

Report Issued Date: 09/22/11



A Waters Company

September 22, 2011

Thekkekalathil Chandrasekhar
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Enclosed is your final report for ERA's SOIL-75 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-75 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).

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.

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.

Thank you for your participation in ERA's SOIL-75 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-75 Definitions & Study Discussion

Study Dates: 07/18/11 - 09/01/11

Report Issued: 09/22/11

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 ERA's internal analytical analyses. The assigned values are directly traceable to the commercially prepared starting materials used to manufacture the PT standards. 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 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-75 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 current TNI FoPT tables.

ERA's SOIL-75 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 current TNI Fields of Proficiency Testing (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-75 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.





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SOIL-75 Laboratory Exception Report

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Study Dates:

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2009 TNI Evaluation Checks

NELAC Analyte Code	Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description
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SOIL Base/Neutrals and Acids in Soil (cat# 467)

6175	2,4-Dinitrophenol	µg/kg	< 360	9650	0.00 - 10600	Acceptable	EPA 8270D 3
6500	4-Nitrophenol	µg/kg	< 60.0	12900	1290 - 17600	Not Acceptable	EPA 8270D 3

2009 TNI Not Acceptable Evaluations

NELAC Analyte Code	Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description
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SOIL Base/Neutrals and Acids in Soil (cat# 467)

6500	4-Nitrophenol	µg/kg	< 60.0	12900	1290 - 17600	Not Acceptable	EPA 8270D 3
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All analytes are included in ERA's A2LA accreditation. Lab Code: 1539-01



2009 TNI Evaluation Report

Study: **SOIL-75**

ERA Customer Number: **S744803**

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

Inorganic Results





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SOIL-75 2009 TNI Evaluation Final Complete Report

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NELAC 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	12600	10100	4560 - 15600	Acceptable	EPA 6010C 2000	7/28/2011	0.999	10100	2490	LUTZ_E
1005	Antimony	mg/kg	65.7	227	22.7 - 286	Acceptable	EPA 6010C 2000	7/28/2011	-0.683	113	69.3	LUTZ_E
1010	Arsenic	mg/kg	245	265	169 - 306	Acceptable	EPA 6010C 2000	7/28/2011	0.410	238	18.0	LUTZ_E
1015	Barium	mg/kg	267	267	186 - 318	Acceptable	EPA 6010C 2000	7/28/2011	0.755	252	19.8	LUTZ_E
1020	Beryllium	mg/kg	98.5	104	69.4 - 117	Acceptable	EPA 6010C 2000	7/28/2011	0.673	93.2	7.80	LUTZ_E
1025	Boron	mg/kg	125	140	71.9 - 164	Acceptable	EPA 6010C 2000	7/28/2011	0.453	118	15.3	LUTZ_E
1030	Cadmium	mg/kg	190	215	140 - 242	Acceptable	EPA 6010C 2000	7/28/2011	-0.0558	191	16.0	LUTZ_E
1035	Calcium	mg/kg	7090	6950	5080 - 8600	Acceptable	EPA 6010C 2000	7/28/2011	0.421	6840	601	LUTZ_E
1040	Chromium	mg/kg	132	141	89.3 - 166	Acceptable	EPA 6010C 2000	7/28/2011	0.424	128	10.2	LUTZ_E
1050	Cobalt	mg/kg	182	197	132 - 223	Acceptable	EPA 6010C 2000	7/28/2011	0.284	178	14.4	LUTZ_E
1055	Copper	mg/kg	127	139	92.3 - 154	Acceptable	EPA 6010C 2000	7/28/2011	0.379	123	9.60	LUTZ_E
1070	Iron	mg/kg	16100	15000	4290 - 22000	Acceptable	EPA 6010C 2000	7/28/2011	1.42	13100	2080	LUTZ_E
1075	Lead	mg/kg	114	112	73.0 - 132	Acceptable	EPA 6010C 2000	7/28/2011	1.32	103	8.52	LUTZ_E
1085	Magnesium	mg/kg	3440	3080	1980 - 4010	Acceptable	EPA 6010C 2000	7/28/2011	1.24	2990	360	LUTZ_E
1090	Manganese	mg/kg	350	334	250 - 415	Acceptable	EPA 6010C 2000	7/28/2011	0.776	333	22.2	LUTZ_E
1095	Mercury	mg/kg		12.8	6.36 - 18.4	Not Reported				12.4	1.67	
1100	Molybdenum	mg/kg	93.9	111	63.3 - 122	Acceptable	EPA 6010C 2000	7/28/2011	0.330	91.1	8.44	LUTZ_E
1105	Nickel	mg/kg	119	131	85.8 - 150	Acceptable	EPA 6010C 2000	7/28/2011	0.107	118	10.5	LUTZ_E
1125	Potassium	mg/kg	3310	2930	1780 - 3950	Acceptable	EPA 6010C 2000	7/28/2011	0.970	2860	459	LUTZ_E
1140	Selenium	mg/kg	114	123	72.6 - 148	Acceptable	EPA 6010C 2000	7/28/2011	0.295	110	11.9	LUTZ_E
1150	Silver	mg/kg	47.4	51.4	31.4 - 63.2	Acceptable	EPA 6010C 2000	7/28/2011	0.0330	47.3	3.64	LUTZ_E



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





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NELAC 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) (Continued)

1155	Sodium	mg/kg	554	581	289 - 811	Acceptable	EPA 6010C 2000	7/28/2011	0.0594	550	68.6	LUTZ_E
1160	Strontium	mg/kg	139	135	90.6 - 166	Acceptable	EPA 6010C 2000	7/28/2011	0.894	128	11.7	LUTZ_E
1165	Thallium	mg/kg	155	176	108 - 208	Acceptable	EPA 6010C 2000	7/28/2011	-0.245	158	12.9	LUTZ_E
1175	Tin	mg/kg	109	119	61.7 - 153	Acceptable	EPA 6010C 2000	7/28/2011	0.134	107	11.5	LUTZ_E
1180	Titanium	mg/kg	385	293	0.00 - 606	Acceptable	EPA 6010C 2000	7/28/2011	0.954	282	108	LUTZ_E
1185	Vanadium	mg/kg	128	132	81.2 - 157	Acceptable	EPA 6010C 2000	7/28/2011	0.799	119	10.9	LUTZ_E
1190	Zinc	mg/kg	183	192	127 - 239	Acceptable	EPA 6010C 2000	7/28/2011	-0.0124	183	15.3	LUTZ_E



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SOIL Metals in Soil (cat# 620)

1000	Aluminum	mg/kg		10100	4560 - 15600	Not Reported				10100	2490	
1005	Antimony	mg/kg	74.9	227	22.7 - 286	Acceptable	EPA 6020A	7/27/2011	-0.55	113	69.3	PETERSON_C
1010	Arsenic	mg/kg	245	265	169 - 306	Acceptable	EPA 6020A	7/27/2011	0.410	238	18.0	PETERSON_C
1015	Barium	mg/kg	276	267	186 - 318	Acceptable	EPA 6020A	7/27/2011	1.21	252	19.8	PETERSON_C
1020	Beryllium	mg/kg	90.1	104	69.4 - 117	Acceptable	EPA 6020A	8/9/2011	-0.404	93.2	7.80	PETERSON_C
1025	Boron	mg/kg		140	71.9 - 164	Not Reported				118	15.3	
1030	Cadmium	mg/kg	187	215	140 - 242	Acceptable	EPA 6020A	7/27/2011	-0.243	191	16.0	PETERSON_C
1035	Calcium	mg/kg		6950	5080 - 8600	Not Reported				6840	601	
1040	Chromium	mg/kg	128	141	89.3 - 166	Acceptable	EPA 6020A	7/27/2011	0.0309	128	10.2	PETERSON_C
1050	Cobalt	mg/kg	173	197	132 - 223	Acceptable	EPA 6020A	7/27/2011	-0.338	178	14.4	PETERSON_C
1055	Copper	mg/kg	124	139	92.3 - 154	Acceptable	EPA 6020A	8/15/2011	0.0666	123	9.60	PETERSON_C
1070	Iron	mg/kg		15000	4290 - 22000	Not Reported				13100	2080	
1075	Lead	mg/kg	113	112	73.0 - 132	Acceptable	EPA 6020A	8/15/2011	1.21	103	8.52	PETERSON_C
1085	Magnesium	mg/kg		3080	1980 - 4010	Not Reported				2990	360	
1090	Manganese	mg/kg	345	334	250 - 415	Acceptable	EPA 6020A	7/27/2011	0.552	333	22.2	PETERSON_C
1095	Mercury	mg/kg		12.8	6.36 - 18.4	Not Reported				12.4	1.67	
1100	Molybdenum	mg/kg	90.3	111	63.3 - 122	Acceptable	EPA 6020A	7/27/2011	-0.0968	91.1	8.44	PETERSON_C
1105	Nickel	mg/kg	114	131	85.8 - 150	Acceptable	EPA 6020A	7/27/2011	-0.368	118	10.5	PETERSON_C
1125	Potassium	mg/kg		2930	1780 - 3950	Not Reported				2860	459	
1140	Selenium	mg/kg	113	123	72.6 - 148	Acceptable	EPA 6020A	7/27/2011	0.210	110	11.9	PETERSON_C
1150	Silver	mg/kg	45.8	51.4	31.4 - 63.2	Acceptable	EPA 6020A	7/27/2011	-0.407	47.3	3.64	PETERSON_C



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

1155	Sodium	mg/kg		581	289 - 811	Not Reported				550	68.6	
1160	Strontium	mg/kg		135	90.6 - 166	Not Reported				128	11.7	
1165	Thallium	mg/kg	161	176	108 - 208	Acceptable	EPA 6020A	7/27/2011	0.221	158	12.9	PETERSON_C
1175	Tin	mg/kg		119	61.7 - 153	Not Reported				107	11.5	
1180	Titanium	mg/kg		293	0.00 - 606	Not Reported				282	108	
1185	Vanadium	mg/kg		132	81.2 - 157	Not Reported				119	10.9	
1190	Zinc	mg/kg	179	192	127 - 239	Acceptable	EPA 6020A	7/27/2011	-0.274	183	15.3	PETERSON_C



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SOIL Metals in Soil (cat# 620)												
1000	Aluminum	mg/kg		10100	4560 - 15600	Not Reported				10100	2490	
1005	Antimony	mg/kg		227	22.7 - 286	Not Reported				113	69.3	
1010	Arsenic	mg/kg		265	169 - 306	Not Reported				238	18.0	
1015	Barium	mg/kg		267	186 - 318	Not Reported				252	19.8	
1020	Beryllium	mg/kg		104	69.4 - 117	Not Reported				93.2	7.80	
1025	Boron	mg/kg		140	71.9 - 164	Not Reported				118	15.3	
1030	Cadmium	mg/kg		215	140 - 242	Not Reported				191	16.0	
1035	Calcium	mg/kg		6950	5080 - 8600	Not Reported				6840	601	
1040	Chromium	mg/kg		141	89.3 - 166	Not Reported				128	10.2	
1050	Cobalt	mg/kg		197	132 - 223	Not Reported				178	14.4	
1055	Copper	mg/kg		139	92.3 - 154	Not Reported				123	9.60	
1070	Iron	mg/kg		15000	4290 - 22000	Not Reported				13100	2080	
1075	Lead	mg/kg		112	73.0 - 132	Not Reported				103	8.52	
1085	Magnesium	mg/kg		3080	1980 - 4010	Not Reported				2990	360	
1090	Manganese	mg/kg		334	250 - 415	Not Reported				333	22.2	
1095	Mercury	mg/kg	11.7	12.8	6.36 - 18.4	Acceptable	DEPSOP:HG-008-3	7/29/2011	-0.41	12.4	1.67	
1100	Molybdenum	mg/kg		111	63.3 - 122	Not Reported				91.1	8.44	
1105	Nickel	mg/kg		131	85.8 - 150	Not Reported				118	10.5	
1125	Potassium	mg/kg		2930	1780 - 3950	Not Reported				2860	459	
1140	Selenium	mg/kg		123	72.6 - 148	Not Reported				110	11.9	
1150	Silver	mg/kg		51.4	31.4 - 63.2	Not Reported				47.3	3.64	





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

1155	Sodium	mg/kg		581	289 - 811	Not Reported				550	68.6	
1160	Strontium	mg/kg		135	90.6 - 166	Not Reported				128	11.7	
1165	Thallium	mg/kg		176	108 - 208	Not Reported				158	12.9	
1175	Tin	mg/kg		119	61.7 - 153	Not Reported				107	11.5	
1180	Titanium	mg/kg		293	0.00 - 606	Not Reported				282	108	
1185	Vanadium	mg/kg		132	81.2 - 157	Not Reported				119	10.9	
1190	Zinc	mg/kg		192	127 - 239	Not Reported				183	15.3	

SOIL Nutrients in Soil (cat# 869)

1515	Ammonia as N	mg/kg		888	345 - 1080	Not Reported				710	122	
1795	Total Kjeldahl Nitrogen	mg/kg		1420	783 - 1910	Not Reported				1350	188	
2040	Total Organic Carbon (TOC)	mg/kg	2730	2300	230 - 7420	Acceptable	DEPSOP:NU-076-1	8/2/2011	-0.0362	2780	1540	
1910	Total Phosphorus	mg/kg		343	94.2 - 567	Not Reported				330	78.7	



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



2009 TNI Evaluation Report

Study: **SOIL-75**

ERA Customer Number: **S744803**

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

Organic Results



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SOIL-75 2009 TNI Evaluation Final Complete Report

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NELAC 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
SOIL Volatiles in Soil (cat# 623)												
4315	Acetone	µg/kg	120	346	40.0 - 626	Acceptable	EPA 8260C	8/24/2011	-1.37	278	116	BOOESHAG_F
4320	Acetonitrile	µg/kg		640	145 - 1080	Not Reported				612	155	
4325	Acrolein	µg/kg		< 2.00	0.00 - 2.00	Not Reported				0.00	0.00	
4375	Benzene	µg/kg	71.8	76.0	44.7 - 105	Acceptable	EPA 8260C	8/24/2011	-0.514	75.3	6.77	BOOESHAG_F
4385	Bromobenzene	µg/kg		< 10.0	0.00 - 10.0	Not Reported				0.00	0.00	
4395	Bromodichloromethane	µg/kg	162	155	102 - 213	Acceptable	EPA 8260C	8/24/2011	0.165	160	14.4	BOOESHAG_F
4400	Bromoform	µg/kg	94.0	92.1	46.4 - 137	Acceptable	EPA 8260C	8/24/2011	-0.0756	94.9	12.5	BOOESHAG_F
4950	Bromomethane	µg/kg	< 2.00	< 20.0	0.00 - 20.0	Acceptable	EPA 8260C	8/24/2011		8.44	0.00	BOOESHAG_F
4410	2-Butanone (MEK)	µg/kg	185	390	63.8 - 612	Acceptable	EPA 8260C	8/24/2011	-1.68	338	91.4	BOOESHAG_F
5000	tert-Butyl methyl ether (MTBE)	µg/kg	193	192	81.3 - 280	Acceptable	EPA 8260C	8/24/2011	0.0301	192	23.2	BOOESHAG_F
4450	Carbon disulfide	µg/kg		< 12.0	0.00 - 12.0	Not Reported				0.00	0.00	
4455	Carbon tetrachloride	µg/kg	158	157	76.5 - 232	Acceptable	EPA 8260C	8/24/2011	-0.222	162	17.2	BOOESHAG_F
4475	Chlorobenzene	µg/kg	104	105	59.0 - 145	Acceptable	EPA 8260C	8/24/2011	-0.0892	105	10.1	BOOESHAG_F
4575	Chlorodibromomethane	µg/kg	182	169	104 - 232	Acceptable	EPA 8260C	8/24/2011	0.485	173	17.8	BOOESHAG_F
4485	Chloroethane	µg/kg	< 2.00	< 20.0	0.00 - 20.0	Acceptable	EPA 8260C	8/24/2011		162	0.00	BOOESHAG_F
4500	2-Chloroethylvinylether	µg/kg		< 2.00	0.00 - 2.00	Not Reported				0.00	0.00	
4505	Chloroform	µg/kg	214	197	120 - 274	Acceptable	EPA 8260C	8/24/2011	0.987	195	19.1	BOOESHAG_F
4960	Chloromethane	µg/kg	< 2.00	< 20.0	0.00 - 20.0	Acceptable	EPA 8260C	8/24/2011		0.00	0.00	BOOESHAG_F
4570	1,2-Dibromo-3-chloropropane (DBCP)	µg/kg		185	87.5 - 256	Not Reported				172	28.1	
4585	1,2-Dibromoethane (EDB)	µg/kg		< 10.0	0.00 - 10.0	Not Reported				0.00	0.00	
4595	Dibromomethane	µg/kg		< 12.0	0.00 - 12.0	Not Reported				10.6	0.00	



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

4610	1,2-Dichlorobenzene	µg/kg	138	135	65.2 - 191	Acceptable	EPA 8260C	8/24/2011	-0.0272	138	12.9	BOOESHAG_F
4615	1,3-Dichlorobenzene	µg/kg	151	160	62.6 - 236	Acceptable	EPA 8260C	8/24/2011	-0.387	159	20.1	BOOESHAG_F
4620	1,4-Dichlorobenzene	µg/kg	72.6	72.9	25.2 - 104	Acceptable	EPA 8260C	8/24/2011	-0.0131	72.7	7.72	BOOESHAG_F
4625	Dichlorodifluoromethane (Freon 12)	µg/kg	< 2.00	< 20.0	0.00 - 20.0	Acceptable	EPA 8260C	8/24/2011		0.00	0.00	BOOESHAG_F
4630	1,1-Dichloroethane	µg/kg	205	187	106 - 269	Acceptable	EPA 8260C	8/24/2011	0.711	191	19.3	BOOESHAG_F
4635	1,2-Dichloroethane	µg/kg	75.0	70.4	41.2 - 98.7	Acceptable	EPA 8260C	8/24/2011	0.861	70.1	5.65	BOOESHAG_F
4640	1,1-Dichloroethylene	µg/kg	153	145	102 - 204	Acceptable	EPA 8260C	8/24/2011	0.00644	153	17.1	BOOESHAG_F
4645	cis-1,2-Dichloroethylene	µg/kg	162	154	104 - 204	Acceptable	EPA 8260C	8/24/2011	0.478	154	16.8	BOOESHAG_F
4700	trans-1,2-Dichloroethylene	µg/kg	71.1	72.9	49.5 - 101	Acceptable	EPA 8260C	8/24/2011	-0.49	75.3	8.59	BOOESHAG_F
4655	1,2-Dichloropropane	µg/kg	158	161	94.1 - 215	Acceptable	EPA 8260C	8/24/2011	-0.323	162	13.3	BOOESHAG_F
4680	cis-1,3-Dichloropropylene	µg/kg	< 2.00	< 10.0	0.00 - 10.0	Acceptable	EPA 8260C	8/24/2011		0.00	0.00	BOOESHAG_F
4685	trans-1,3-Dichloropropylene	µg/kg	< 0.800	< 10.0	0.00 - 10.0	Acceptable	EPA 8260C	8/24/2011		0.00	0.00	BOOESHAG_F
4765	Ethylbenzene	µg/kg	177	162	90.9 - 230	Acceptable	EPA 8260C	8/24/2011	0.882	161	18.2	BOOESHAG_F
4860	2-Hexanone	µg/kg	186	378	98.2 - 583	Acceptable	EPA 8260C	8/24/2011	-1.91	341	80.8	BOOESHAG_F
4900	Isopropylbenzene	µg/kg		107	66.9 - 161	Not Reported				114	15.7	
4975	Methylene chloride	µg/kg	208	186	87.1 - 267	Acceptable	EPA 8260C	8/24/2011	0.964	184	25.0	BOOESHAG_F
4995	4-Methyl-2-pentanone (MIBK)	µg/kg	149	254	112 - 368	Acceptable	EPA 8260C	8/24/2011	-2.04	244	46.7	BOOESHAG_F
5005	Naphthalene	µg/kg		149	63.3 - 236	Not Reported				150	28.8	
5100	Styrene	µg/kg	122	116	77.7 - 159	Acceptable	EPA 8260C	8/24/2011	0.277	118	13.5	BOOESHAG_F
5105	1,1,1,2-Tetrachloroethane	µg/kg		68.1	44.0 - 94.3	Not Reported				69.9	6.10	
5110	1,1,2,2-Tetrachloroethane	µg/kg	181	198	104 - 286	Acceptable	EPA 8260C	8/24/2011	-0.383	189	20.8	BOOESHAG_F



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

5115	Tetrachloroethylene	µg/kg	82.2	83.9	37.4 - 121	Acceptable	EPA 8260C	8/24/2011	-0.0227	82.5	11.7	BOOESHAG_F
5140	Toluene	µg/kg	106	108	62.0 - 152	Acceptable	EPA 8260C	8/24/2011	0.0195	106	10.4	BOOESHAG_F
5155	1,2,4-Trichlorobenzene	µg/kg		128	67.3 - 180	Not Reported				124	18.8	
5160	1,1,1-Trichloroethane	µg/kg	140	139	79.3 - 198	Acceptable	EPA 8260C	8/24/2011	0.0991	138	14.7	BOOESHAG_F
5165	1,1,2-Trichloroethane	µg/kg	159	152	88.7 - 208	Acceptable	EPA 8260C	8/24/2011	0.586	152	12.6	BOOESHAG_F
5170	Trichloroethylene	µg/kg	134	128	65.8 - 182	Acceptable	EPA 8260C	8/24/2011	0.352	129	12.8	BOOESHAG_F
5175	Trichlorofluoromethane	µg/kg	< 2.00	< 20.0	0.00 - 20.0	Acceptable	EPA 8260C	8/24/2011		0.00	0.00	BOOESHAG_F
5180	1,2,3-Trichloropropane (TCP)	µg/kg		73.0	36.7 - 108	Not Reported				72.2	11.8	
5225	Vinyl acetate	µg/kg		< 2.00	0.00 - 2.00	Not Reported				0.00	0.00	
5235	Vinyl chloride	µg/kg	< 2.00	< 20.0	0.00 - 20.0	Acceptable	EPA 8260C	8/24/2011		0.00	0.00	BOOESHAG_F
5260	Xylenes, total	µg/kg	260	259	128 - 380	Acceptable	EPA 8260C	8/24/2011	0.279	253	25.8	BOOESHAG_F



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SOIL Base/Neutrals and Acids in Soil (cat# 467)												
5500	Acenaphthene	µg/kg	2180	2520	505 - 3090	Acceptable	EPA 8270D 3	8/17/2011	1.15	1800	333	GHAFFARI_M
5505	Acenaphthylene	µg/kg	2180	2310	478 - 3080	Acceptable	EPA 8270D 3	8/17/2011	1.12	1780	356	GHAFFARI_M
5145	2-Amino-1-methylbenzene (o-toluidine)	µg/kg		< 100	0.00 - 100	Not Reported				0.00	0.00	
5545	Aniline	µg/kg		< 100	0.00 - 100	Not Reported				760	0.00	
5555	Anthracene	µg/kg	5100	5980	1290 - 6720	Acceptable	EPA 8270D 3	8/17/2011	1.51	4010	724	GHAFFARI_M
5595	Benzidine	µg/kg		< 100	0.00 - 100	Not Reported				0.00	0.00	
5610	Benzoic acid	µg/kg		< 100	0.00 - 100	Not Reported				0.00	0.00	
5575	Benzo(a)anthracene	µg/kg	< 6.70	< 200	0.00 - 200	Acceptable	EPA 8270D 3	8/17/2011		3760	1080	GHAFFARI_M
5585	Benzo(b)fluoranthene	µg/kg	1490	1350	281 - 2030	Acceptable	EPA 8270D 3	8/17/2011	1.47	1160	226	GHAFFARI_M
5600	Benzo(k)fluoranthene	µg/kg	2830	2740	788 - 3840	Acceptable	EPA 8270D 3	8/17/2011	1.24	2310	417	GHAFFARI_M
5590	Benzo(g,h,i)perylene	µg/kg	< 6.70	< 200	0.00 - 200	Acceptable	EPA 8270D 3	8/17/2011		1870	2020	GHAFFARI_M
5580	Benzo(a)pyrene	µg/kg	5480	6200	1360 - 7520	Acceptable	EPA 8270D 3	8/17/2011	1.32	4440	793	GHAFFARI_M
5630	Benzyl alcohol	µg/kg		< 100	0.00 - 100	Not Reported				4630	0.00	
5760	bis(2-Chloroethoxy)methane	µg/kg	2870	3180	551 - 4110	Acceptable	EPA 8270D 3	8/17/2011	1.17	2330	460	GHAFFARI_M
5765	bis(2-Chloroethyl)ether	µg/kg	< 60.0	< 300	0.00 - 300	Acceptable	EPA 8270D 3	8/17/2011		2260	310	GHAFFARI_M
5780	bis(2-Chloroisopropyl)ether	µg/kg	7000	8540	1110 - 9960	Acceptable	EPA 8270D 3	8/17/2011	1.13	5540	1300	GHAFFARI_M
5660	4-Bromophenyl-phenylether	µg/kg	< 60.0	< 300	0.00 - 300	Acceptable	EPA 8270D 3	8/17/2011		0.00	0.00	GHAFFARI_M
5670	Butylbenzylphthalate	µg/kg	< 60.0	< 300	0.00 - 300	Acceptable	EPA 8270D 3	8/17/2011		0.00	0.00	GHAFFARI_M
5680	Carbazole	µg/kg		< 280	0.00 - 280	Not Reported				42.3	4.24	
5745	4-Chloroaniline	µg/kg		< 100	0.00 - 100	Not Reported				0.00	0.00	
5700	4-Chloro-3-methylphenol	µg/kg	11700	12700	3460 - 14000	Acceptable	EPA 8270D 3	8/17/2011	1.68	8490	1910	GHAFFARI_M



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

5790	1-Chloronaphthalene	µg/kg		< 110	0.00 - 110	Not Reported				0.00	0.00	
5795	2-Chloronaphthalene	µg/kg	< 60.0	< 200	0.00 - 200	Acceptable	EPA 8270D 3	8/17/2011		0.00	0.00	GHAFFARI_M
5800	2-Chlorophenol	µg/kg	8400	10000	1620 - 11000	Acceptable	EPA 8270D 3	8/17/2011	1.52	6200	1450	GHAFFARI_M
5825	4-Chlorophenyl-phenylether	µg/kg	4460	4660	1220 - 5690	Acceptable	EPA 8270D 3	8/17/2011	1.51	3460	666	GHAFFARI_M
5855	Chrysene	µg/kg	3970	4100	1090 - 4920	Acceptable	EPA 8270D 3	8/17/2011	1.72	3000	560	GHAFFARI_M
5895	Dibenz(a,h)anthracene	µg/kg	1600	1580	200 - 2240	Acceptable	EPA 8270D 3	8/17/2011	1.58	1170	270	GHAFFARI_M
5905	Dibenzofuran	µg/kg	10700	11000	2820 - 13000	Acceptable	EPA 8270D 3	8/17/2011	1.77	7910	1580	GHAFFARI_M
5925	Di-n-butylphthalate	µg/kg	< 360	< 300	0.00 - 300	Acceptable	EPA 8270D 3	8/17/2011		217	0.00	GHAFFARI_M
4610	1,2-Dichlorobenzene	µg/kg		8780	878 - 9660	Not Reported				5080	1620	
4615	1,3-Dichlorobenzene	µg/kg		< 300	0.00 - 300	Not Reported				3980	0.00	
4620	1,4-Dichlorobenzene	µg/kg		10700	1070 - 11800	Not Reported				5690	2000	
5945	3,3'-Dichlorobenzidine	µg/kg		< 100	0.00 - 100	Not Reported				0.00	0.00	
6000	2,4-Dichlorophenol	µg/kg	9710	11100	1910 - 12200	Acceptable	EPA 8270D 3	8/17/2011	1.55	7060	1710	GHAFFARI_M
6005	2,6-Dichlorophenol	µg/kg	3300	4390	866 - 4830	Acceptable	EPA 8270D 3	8/17/2011	1.09	2650	594	GHAFFARI_M
6070	Diethylphthalate	µg/kg	< 60.0	< 300	0.00 - 300	Acceptable	EPA 8270D 3	8/17/2011		0.00	0.00	GHAFFARI_M
6130	2,4-Dimethylphenol	µg/kg	< 360	< 600	0.00 - 600	Acceptable	EPA 8270D 3	8/17/2011		501	0.00	GHAFFARI_M
6135	Dimethylphthalate	µg/kg	< 60.0	< 300	0.00 - 300	Acceptable	EPA 8270D 3	8/17/2011		0.00	0.00	GHAFFARI_M
6175	2,4-Dinitrophenol	µg/kg	< 360	9650	0.00 - 10600	Acceptable	EPA 8270D 3	8/17/2011		1730	1590	GHAFFARI_M
6185	2,4-Dinitrotoluene	µg/kg	< 60.0	< 300	0.00 - 300	Acceptable	EPA 8270D 3	8/17/2011		0.00	0.00	GHAFFARI_M
6190	2,6-Dinitrotoluene	µg/kg	6380	6420	1940 - 7780	Acceptable	EPA 8270D 3	8/17/2011	1.62	4860	939	GHAFFARI_M
6200	Di-n-octylphthalate	µg/kg	< 60.0	< 300	0.00 - 300	Acceptable	EPA 8270D 3	8/17/2011		0.00	0.00	GHAFFARI_M





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

6065	bis(2-Ethylhexyl)phthalate	µg/kg	7150	6740	1670 - 9080	Acceptable	EPA 8270D 3	8/17/2011	1.74	5380	1020	GHAFFARI_M
6265	Fluoranthene	µg/kg	2090	2030	622 - 2680	Acceptable	EPA 8270D 3	8/17/2011	1.75	1650	252	GHAFFARI_M
6270	Fluorene	µg/kg	6540	6750	2150 - 8210	Acceptable	EPA 8270D 3	8/17/2011	1.50	5180	904	GHAFFARI_M
6275	Hexachlorobenzene	µg/kg	12800	12600	4010 - 15800	Acceptable	EPA 8270D 3	8/17/2011	1.51	9920	1900	GHAFFARI_M
4835	Hexachlorobutadiene	µg/kg	5330	6160	848 - 6940	Acceptable	EPA 8270D 3	8/17/2011	1.41	3890	1020	GHAFFARI_M
6285	Hexachlorocyclopentadiene	µg/kg	< 60.0	< 300	0.00 - 300	Acceptable	EPA 8270D 3	8/17/2011		0.00	0.00	GHAFFARI_M
4840	Hexachloroethane	µg/kg	< 180	< 300	0.00 - 300	Acceptable	EPA 8270D 3	8/17/2011		48.5	20.9	GHAFFARI_M
6315	Indeno(1,2,3-cd)pyrene	µg/kg	2050	2010	201 - 3040	Acceptable	EPA 8270D 3	8/17/2011	1.30	1580	362	GHAFFARI_M
6320	Isophorone	µg/kg	8590	9360	2180 - 11700	Acceptable	EPA 8270D 3	8/17/2011	1.03	6960	1590	GHAFFARI_M
6360	4,6-Dinitro-2-methylphenol	µg/kg	< 60.0	< 600	0.00 - 600	Acceptable	EPA 8270D 3	8/17/2011		0.00	0.00	GHAFFARI_M
6385	2-Methylnaphthalene	µg/kg	3530	4170	888 - 4850	Acceptable	EPA 8270D 3	8/17/2011	1.00	2870	660	GHAFFARI_M
6400	2-Methylphenol	µg/kg	3050	6800	680 - 7480	Acceptable	EPA 8270D 3	8/17/2011	0.953	2490	584	GHAFFARI_M
6410	3&4-Methylphenol	µg/kg	< 60.0	< 600	0.00 - 600	Acceptable	EPA 8270D 3	8/17/2011		2540	1100	GHAFFARI_M
5005	Naphthalene	µg/kg	9540	10800	2170 - 11900	Acceptable	EPA 8270D 3	8/17/2011	1.46	6930	1780	GHAFFARI_M
6460	2-Nitroaniline	µg/kg		< 100	0.00 - 100	Not Reported				0.00	0.00	
6465	3-Nitroaniline	µg/kg		< 100	0.00 - 100	Not Reported				0.00	0.00	
6470	4-Nitroaniline	µg/kg		< 100	0.00 - 100	Not Reported				0.00	0.00	
5015	Nitrobenzene	µg/kg	< 60.0	< 300	0.00 - 300	Acceptable	EPA 8270D 3	8/17/2011		0.00	0.00	GHAFFARI_M
6490	2-Nitrophenol	µg/kg	10300	12200	1470 - 14000	Acceptable	EPA 8270D 3	8/17/2011	1.29	7720	2000	GHAFFARI_M
6500	4-Nitrophenol	µg/kg	< 60.0	12900	1290 - 17600	Not Acceptable	EPA 8270D 3	8/17/2011		8190	2490	GHAFFARI_M
6525	N-Nitrosodiethylamine	µg/kg		< 100	0.00 - 100	Not Reported				0.00	0.00	



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

6530	N-Nitrosodimethylamine	µg/kg	4480	6370	565 - 7010	Acceptable	EPA 8270D 3	8/17/2011	0.651	3780	1070	GHAFFARI_M
6535	N-Nitrosodiphenylamine	µg/kg	< 60.0	< 300	0.00 - 300	Acceptable	EPA 8270D 3	8/17/2011		0.00	0.00	GHAFFARI_M
6545	N-Nitroso-di-n-propylamine	µg/kg	< 60.0	< 300	0.00 - 300	Acceptable	EPA 8270D 3	8/17/2011		0.00	0.00	GHAFFARI_M
6590	Pentachlorobenzene	µg/kg		< 280	0.00 - 280	Not Reported				0.00	0.00	
6605	Pentachlorophenol	µg/kg	6570	13100	1310 - 14400	Acceptable	EPA 8270D 3	8/17/2011	0.257	5900	2620	GHAFFARI_M
6615	Phenanthrene	µg/kg	3310	3350	978 - 4340	Acceptable	EPA 8270D 3	8/17/2011	1.54	2660	422	GHAFFARI_M
6625	Phenol	µg/kg	6320	8080	808 - 9610	Acceptable	EPA 8270D 3	8/17/2011	0.984	5180	1160	GHAFFARI_M
6665	Pyrene	µg/kg	2450	2340	680 - 3020	Acceptable	EPA 8270D 3	8/17/2011	1.71	1850	350	GHAFFARI_M
5095	Pyridine	µg/kg		< 100	0.00 - 100	Not Reported				0.00	0.00	
6715	1,2,4,5-Tetrachlorobenzene	µg/kg		< 240	0.00 - 240	Not Reported				0.00	0.00	
6735	2,3,4,6-Tetrachlorophenol	µg/kg		< 130	0.00 - 130	Not Reported				0.00	0.00	
5155	1,2,4-Trichlorobenzene	µg/kg	< 180	< 300	0.00 - 300	Acceptable	EPA 8270D 3	8/17/2011		0.00	0.00	GHAFFARI_M
6835	2,4,5-Trichlorophenol	µg/kg	4450	5190	746 - 6350	Acceptable	EPA 8270D 3	8/17/2011	1.15	3550	787	GHAFFARI_M
6840	2,4,6-Trichlorophenol	µg/kg	6980	8140	1460 - 8950	Acceptable	EPA 8270D 3	8/17/2011	1.81	5090	1050	GHAFFARI_M



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SOIL-75 2009 TNI Evaluation Final Complete Report

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EPA ID:
ERA Customer Number:
Report Issued:
Study Dates:

FLO1181
S744803
09/22/11
07/18/11 - 09/01/11

NELAC 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 Chlorinated Acid Herbicides in Soil (cat# 626)

8505	Acifluorfen	µg/kg		648	0.00 - 713	Not Reported				231	96.2	
8530	Bentazon	µg/kg		367	56.0 - 408	Not Reported				232	58.6	
8540	Chloramben	µg/kg		241	0.00 - 265	Not Reported				96.7	33.8	
8545	2,4-D	µg/kg	537	464	46.4 - 803	Acceptable	DEPSOP:LC-001-2	8/19/2011	1.45	289	171	
8560	2,4-DB	µg/kg	243	390	0.00 - 540	Acceptable	DEPSOP:LC-001-2	8/19/2011	-0.0573	248	97.3	
8550	Dacthal diacid (DCPA)	µg/kg		661	0.00 - 1090	Not Reported				299	264	
8555	Dalapon	µg/kg		< 10.0	0.00 - 10.0	Not Reported				225	0.00	
8595	Dicamba	µg/kg	232	618	61.8 - 1020	Acceptable	DEPSOP:LC-001-2	8/19/2011	-0.55	355	223	
8600	3,5-Dichlorobenzoic acid	µg/kg		360	0.00 - 485	Not Reported				219	88.7	
8605	Dichlorprop	µg/kg		187	0.00 - 273	Not Reported				108	55.3	
8620	Dinoseb	µg/kg	215	321	0.00 - 492	Acceptable	DEPSOP:LC-001-2	8/19/2011	0.531	155	112	
7775	MCPA	µg/kg		< 100	0.00 - 100	Not Reported				0.00	0.00	
7780	MCPP	µg/kg		< 100	0.00 - 100	Not Reported				2230	0.00	
6500	4-Nitrophenol	µg/kg		424	0.00 - 857	Not Reported				319	179	
6605	Pentachlorophenol	µg/kg		334	0.00 - 476	Not Reported				216	86.4	
8645	Picloram	µg/kg		239	0.00 - 327	Not Reported				115	70.6	
8655	2,4,5-T	µg/kg	583	557	55.7 - 936	Acceptable	DEPSOP:LC-001-2	8/19/2011	1.23	338	200	
8650	2,4,5-TP (Silvex)	µg/kg	267	209	20.9 - 338	Acceptable	DEPSOP:LC-001-2	8/19/2011	1.96	134	68.0	



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

