Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Tuesday, December 12, 2017

Rob Ede
Hahn and Associates
434 NW 6th Ave. Suite 203
Portland, OR 97209

RE: Siltronic RI-Doane Creek / 5237-10dc

Enclosed are the results of analyses for work order A6C1124, which was received by the laboratory on 3/30/2016 at 11:49:00AM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@apex-labs.com, or by phone at 503-718-2323.

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Hahn and Associates	Project: **Siltronic RI-Doane Creek**	
434 NW 6th Ave. Suite 203	Project Number: 5237-10dc	**Reported:**
Portland, OR 97209	Project Manager: Rob Ede	12/12/17 08:49

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
5237-160329-DC-EMB010	A6C1124-02	Soil	03/29/16 10:15	03/30/16 11:49
5237-160329-DC-EMB005	A6C1124-04	Soil	03/29/16 10:35	03/30/16 11:49
5237-160329-DC-EMB004	A6C1124-06	Soil	03/29/16 11:15	03/30/16 11:49
5237-160329-DC-EMB001	A6C1124-08	Soil	03/29/16 12:00	03/30/16 11:49
5237-160329-DC-EMB013	A6C1124-10	Soil	03/29/16 13:15	03/30/16 11:49
5237-160329-DC-EMB014	A6C1124-12	Soil	03/29/16 13:40	03/30/16 11:49
5237-160329-DC-EMB017	A6C1124-14	Soil	03/29/16 14:25	03/30/16 11:49
5237-160329-DC-EMB020	A6C1124-16	Soil	03/29/16 15:10	03/30/16 11:49

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Hahn and Associates	Project: **Siltronic RI-Doane Creek**	
434 NW 6th Ave. Suite 203	Project Number: 5237-10dc	**Reported:**
Portland, OR 97209	Project Manager: Rob Ede	12/12/17 08:49

ANALYTICAL CASE NARRATIVE

Work Order: A6C1124

This report is an addendum to the previously finalized report from the same work order number.

Philip Nerenberg
Lab Director
12/12/17

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Hahn and Associates	Project: **Siltronic RI-Doane Creek**	
434 NW 6th Ave. Suite 203	Project Number: 5237-10dc	**Reported:**
Portland, OR 97209	Project Manager: Rob Ede	12/12/17 08:49

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
5237-160329-DC-EMB010 (A6C1124-02RE1)			**Matrix: Soil**		**Batch: 6031018**			
Benzo(e)pyrene	**1410**	7.37	14.8	ug/kg dry	4	04/01/16 14:06	EPA 8270D	
Perylene	**557**	7.37	14.8	"	"	"	"	
5237-160329-DC-EMB005 (A6C1124-04RE2)			**Matrix: Soil**		**Batch: 6031018**			
Benzo(e)pyrene	**57.9**	1.82	3.66	ug/kg dry	1	04/08/16 15:59	EPA 8270D	
Perylene	**22.4**	1.82	3.66	"	"	"	"	
5237-160329-DC-EMB004 (A6C1124-06RE1)			**Matrix: Soil**		**Batch: 6031018**			
Benzo(e)pyrene	**384**	7.33	14.7	ug/kg dry	4	04/04/16 13:49	EPA 8270D	
Perylene	**155**	7.33	14.7	"	"	"	"	
5237-160329-DC-EMB001 (A6C1124-08RE2)			**Matrix: Soil**		**Batch: 6031018**			
Benzo(e)pyrene	**98.1**	1.77	3.55	ug/kg dry	1	04/08/16 14:44	EPA 8270D	
Perylene	**35.3**	1.77	3.55	"	"	"	"	
5237-160329-DC-EMB013 (A6C1124-10RE1)			**Matrix: Soil**		**Batch: 6031018**			
Benzo(e)pyrene	**169**	7.06	14.2	ug/kg dry	4	04/04/16 15:05	EPA 8270D	
Perylene	**67.6**	7.06	14.2	"	"	"	"	
5237-160329-DC-EMB014 (A6C1124-12RE1)			**Matrix: Soil**		**Batch: 6031018**			
Benzo(e)pyrene	**153**	7.59	15.2	ug/kg dry	4	04/04/16 14:27	EPA 8270D	
Perylene	**58.9**	7.59	15.2	"	"	"	"	
5237-160329-DC-EMB017 (A6C1124-14RE2)			**Matrix: Soil**		**Batch: 6031018**			
Benzo(e)pyrene	**93.7**	1.75	3.52	ug/kg dry	1	04/08/16 15:21	EPA 8270D	
Perylene	**38.6**	1.75	3.52	"	"	"	"	
5237-160329-DC-EMB020 (A6C1124-16RE2)			**Matrix: Soil**		**Batch: 6031018**			
Benzo(e)pyrene	**74.9**	1.86	3.74	ug/kg dry	1	04/08/16 16:36	EPA 8270D	
Perylene	**29.4**	1.86	3.74	"	"	"	"	

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Hahn and Associates	Project: **Siltronic RI-Doane Creek**	
434 NW 6th Ave. Suite 203	Project Number: 5237-10dc	**Reported:**
Portland, OR 97209	Project Manager: Rob Ede	12/12/17 08:49

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6031018 - EPA 3546							Soil					
Blank (6031018-BLK1)					Prepared: 03/31/16 11:53 Analyzed: 03/31/16 17:08							
EPA 8270D												
Acenaphthene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Acenaphthylene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Anthracene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Benz(a)anthracene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Benzo(a)pyrene	ND	1.87	3.75	"	"	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	1.87	3.75	"	"	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	1.87	3.75	"	"	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Chrysene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Fluoranthene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Fluorene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
1-Methylnaphthalene	ND	2.50	5.00	"	"	---	---	---	---	---	---	
2-Methylnaphthalene	ND	2.50	5.00	"	"	---	---	---	---	---	---	
Naphthalene	ND	2.50	5.00	"	"	---	---	---	---	---	---	
Phenanthrene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Pyrene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Carbazole	ND	1.87	3.75	"	"	---	---	---	---	---	---	
Dibenzofuran	ND	1.25	2.50	"	"	---	---	---	---	---	---	
4-Chloro-3-methylphenol	ND	12.5	25.0	"	"	---	---	---	---	---	---	
2-Chlorophenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	
2,4-Dichlorophenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	
2,4-Dimethylphenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	
2,4-Dinitrophenol	ND	31.2	62.5	"	"	---	---	---	---	---	---	
4,6-Dinitro-2-methylphenol	ND	31.2	62.5	"	"	---	---	---	---	---	---	
2-Methylphenol	ND	3.12	6.25	"	"	---	---	---	---	---	---	
3+4-Methylphenol(s)	ND	3.12	6.25	"	"	---	---	---	---	---	---	
2-Nitrophenol	ND	12.5	25.0	"	"	---	---	---	---	---	---	
4-Nitrophenol	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Pentachlorophenol (PCP)	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Phenol	ND	2.50	5.00	"	"	---	---	---	---	---	---	
2,3,4,6-Tetrachlorophenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	
2,3,5,6-Tetrachlorophenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Hahn and Associates	Project: **Siltronic RI-Doane Creek**	
434 NW 6th Ave. Suite 203	Project Number: 5237-10dc	**Reported:**
Portland, OR 97209	Project Manager: Rob Ede	12/12/17 08:49

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6031018 - EPA 3546							Soil					
Blank (6031018-BLK1)					Prepared: 03/31/16 11:53 Analyzed: 03/31/16 17:08							
EPA 8270D												
2,4,5-Trichlorophenol	ND	6.25	12.5	ug/kg wet	"	---	---	---	---	---	---	
2,4,6-Trichlorophenol	ND	6.25	12.5	"	"	---	---	---	---	---	---	
Bis(2-ethylhexyl)phthalate	ND	18.7	37.5	"	"	---	---	---	---	---	---	
Butyl benzyl phthalate	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Diethylphthalate	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Dimethylphthalate	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Di-n-butylphthalate	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Di-n-octyl phthalate	ND	12.5	25.0	"	"	---	---	---	---	---	---	
N-Nitrosodimethylamine	ND	3.12	6.25	"	"	---	---	---	---	---	---	
N-Nitroso-di-n-propylamine	ND	3.12	6.25	"	"	---	---	---	---	---	---	
N-Nitrosodiphenylamine	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Bis(2-Chloroethoxy) methane	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Bis(2-Chloroethyl) ether	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Bis(2-Chloroisopropyl) ether	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Hexachlorobenzene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Hexachlorobutadiene	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Hexachlorocyclopentadiene	ND	6.25	12.5	"	"	---	---	---	---	---	---	
Hexachloroethane	ND	3.12	6.25	"	"	---	---	---	---	---	---	
2-Chloronaphthalene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	3.12	6.25	"	"	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	3.12	6.25	"	"	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	3.12	6.25	"	"	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	3.12	6.25	"	"	---	---	---	---	---	---	
4-Bromophenyl phenyl ether	ND	3.12	6.25	"	"	---	---	---	---	---	---	
4-Chlorophenyl phenyl ether	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Aniline	ND	6.25	12.5	"	"	---	---	---	---	---	---	
4-Chloroaniline	ND	3.12	6.25	"	"	---	---	---	---	---	---	
2-Nitroaniline	ND	25.0	50.0	"	"	---	---	---	---	---	---	
3-Nitroaniline	ND	25.0	50.0	"	"	---	---	---	---	---	---	
4-Nitroaniline	ND	25.0	50.0	"	"	---	---	---	---	---	---	
Nitrobenzene	ND	12.5	25.0	"	"	---	---	---	---	---	---	
2,4-Dinitrotoluene	ND	12.5	25.0	"	"	---	---	---	---	---	---	
2,6-Dinitrotoluene	ND	12.5	25.0	"	"	---	---	---	---	---	---	
Benzoic acid	ND	157	312	"	"	---	---	---	---	---	---	

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Hahn and Associates	Project: **Siltronic RI-Doane Creek**	
434 NW 6th Ave. Suite 203	Project Number: 5237-10dc	**Reported:**
Portland, OR 97209	Project Manager: Rob Ede	12/12/17 08:49

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6031018 - EPA 3546									Soil			
Blank (6031018-BLK1)					Prepared: 03/31/16 11:53 Analyzed: 03/31/16 17:08							
EPA 8270D												
Benzyl alcohol	ND	6.25	12.5	ug/kg wet	"	---	---	---	---	---	---	
Isophorone	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Azobenzene (1,2-DPH)	ND	3.12	6.25	"	"	---	---	---	---	---	---	
Bis(2-Ethylhexyl) adipate	ND	31.2	62.5	"	"	---	---	---	---	---	---	
3,3'-Dichlorobenzidine	ND	12.5	25.0	"	"	---	---	---	---	---	---	
1,2-Dinitrobenzene	ND	31.2	62.5	"	"	---	---	---	---	---	---	
1,3-Dinitrobenzene	ND	31.2	62.5	"	"	---	---	---	---	---	---	
1,4-Dinitrobenzene	ND	31.2	62.5	"	"	---	---	---	---	---	---	
Pyridine	ND	6.25	12.5	"	"	---	---	---	---	---	---	
Benzo(e)pyrene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Perylene	ND	1.25	2.50	"	"	---	---	---	---	---	---	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 85 %*		*Limits: 37-122 %*				*Dilution: 1x*			
2-Fluorobiphenyl (Surr)			*75 %*		*44-115 %*				*"*			
Phenol-d6 (Surr)			*74 %*		*33-122 %*				*"*			
p-Terphenyl-d14 (Surr)			*104 %*		*54-127 %*				*"*			
2-Fluorophenol (Surr)			*71 %*		*35-115 %*				*"*			
2,4,6-Tribromophenol (Surr)			*72 %*		*39-132 %*				*"*			
LCS (6031018-BS1)					Prepared: 03/31/16 11:53 Analyzed: 03/31/16 17:45							
EPA 8270D												
Acenaphthene	509	1.33	2.67	ug/kg wet	1	533	---	95	40-122%	---	---	
Acenaphthylene	483	1.33	2.67	"	"	"	---	91	32-132%	---	---	
Anthracene	518	1.33	2.67	"	"	"	---	97	47-123%	---	---	
Benz(a)anthracene	534	1.33	2.67	"	"	"	---	100	49-126%	---	---	
Benzo(a)pyrene	532	2.00	4.00	"	"	"	---	100	45-129%	---	---	
Benzo(b)fluoranthene	591	2.00	4.00	"	"	"	---	111	45-132%	---	---	
Benzo(k)fluoranthene	552	2.00	4.00	"	"	"	---	104	47-132%	---	---	
Benzo(g,h,i)perylene	546	1.33	2.67	"	"	"	---	102	43-134%	---	---	
Chrysene	540	1.33	2.67	"	"	"	---	101	50-124%	---	---	
Dibenz(a,h)anthracene	519	1.33	2.67	"	"	"	---	97	45-134%	---	---	
Fluoranthene	549	1.33	2.67	"	"	"	---	103	50-127%	---	---	
Fluorene	526	1.33	2.67	"	"	"	---	99	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	507	1.33	2.67	"	"	"	---	95	45-133%	---	---	
1-Methylnaphthalene	518	2.67	5.33	"	"	"	---	97	40-120%	---	---	
2-Methylnaphthalene	515	2.67	5.33	"	"	"	---	97	38-122%	---	---	

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Hahn and Associates	Project: **Siltronic RI-Doane Creek**	
434 NW 6th Ave. Suite 203	Project Number: 5237-10dc	**Reported:**
Portland, OR 97209	Project Manager: Rob Ede	12/12/17 08:49

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6031018 - EPA 3546							Soil					
LCS (6031018-BS1)					Prepared: 03/31/16 11:53 Analyzed: 03/31/16 17:45							
EPA 8270D												
Naphthalene	485	2.67	5.33	ug/kg wet	"	"	---	91	35-123%	---	---	
Phenanthrene	502	1.33	2.67	"	"	"	---	94	50-121%	---	---	
Pyrene	537	1.33	2.67	"	"	"	---	101	47-127%	---	---	
Carbazole	518	2.00	4.00	"	"	"	---	97	50-122%	---	---	
Dibenzofuran	504	1.33	2.67	"	"	"	---	94	44-120%	---	---	
4-Chloro-3-methylphenol	573	13.3	26.7	"	"	"	---	107	45-122%	---	---	
2-Chlorophenol	553	6.67	13.3	"	"	"	---	104	34-121%	---	---	
2,4-Dichlorophenol	559	6.67	13.3	"	"	"	---	105	40-122%	---	---	
2,4-Dimethylphenol	569	6.67	13.3	"	"	"	---	107	30-127%	---	---	
2,4-Dinitrophenol	466	33.3	66.7	"	"	"	---	87	5-137%	---	---	
4,6-Dinitro-2-methylphenol	489	33.3	66.7	"	"	"	---	92	29-132%	---	---	
2-Methylphenol	616	3.33	6.67	"	"	"	---	116	32-122%	---	---	
3+4-Methylphenol(s)	650	3.33	6.67	"	"	"	---	122	34-120%	---	---	Q-29
2-Nitrophenol	502	13.3	26.7	"	"	"	---	94	36-123%	---	---	
4-Nitrophenol	504	13.3	26.7	"	"	"	---	95	30-132%	---	---	
Pentachlorophenol (PCP)	515	13.3	26.7	"	"	"	---	97	25-133%	---	---	
Phenol	584	2.67	5.33	"	"	"	---	109	34-120%	---	---	
2,3,4,6-Tetrachlorophenol	519	6.67	13.3	"	"	"	---	97	44-125%	---	---	
2,3,5,6-Tetrachlorophenol	507	6.67	13.3	"	"	"	---	95	40-120%	---	---	
2,4,5-Trichlorophenol	521	6.67	13.3	"	"	"	---	98	41-124%	---	---	
2,4,6-Trichlorophenol	504	6.67	13.3	"	"	"	---	94	39-126%	---	---	
Bis(2-ethylhexyl)phthalate	562	20.0	40.0	"	"	"	---	105	51-133%	---	---	
Butyl benzyl phthalate	576	13.3	26.7	"	"	"	---	108	48-132%	---	---	
Diethylphthalate	526	13.3	26.7	"	"	"	---	99	50-124%	---	---	
Dimethylphthalate	514	13.3	26.7	"	"	"	---	96	48-124%	---	---	
Di-n-butylphthalate	550	13.3	26.7	"	"	"	---	103	51-128%	---	---	
Di-n-octyl phthalate	567	13.3	26.7	"	"	"	---	106	44-140%	---	---	
N-Nitrosodimethylamine	515	3.33	6.67	"	"	"	---	97	23-120%	---	---	
N-Nitroso-di-n-propylamine	607	3.33	6.67	"	"	"	---	114	36-120%	---	---	
N-Nitrosodiphenylamine	531	3.33	6.67	"	"	"	---	100	38-127%	---	---	
Bis(2-Chloroethoxy) methane	507	3.33	6.67	"	"	"	---	95	36-121%	---	---	
Bis(2-Chloroethyl) ether	524	3.33	6.67	"	"	"	---	98	31-120%	---	---	
Bis(2-Chloroisopropyl) ether	490	3.33	6.67	"	"	"	---	92	33-131%	---	---	
Hexachlorobenzene	499	1.33	2.67	"	"	"	---	94	44-122%	---	---	

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Hahn and Associates	Project: **Siltronic RI-Doane Creek**	
434 NW 6th Ave. Suite 203	Project Number: 5237-10dc	**Reported:**
Portland, OR 97209	Project Manager: Rob Ede	12/12/17 08:49

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6031018 - EPA 3546							Soil					
LCS (6031018-BS1)					Prepared: 03/31/16 11:53 Analyzed: 03/31/16 17:45							
EPA 8270D												
Hexachlorobutadiene	474	3.33	6.67	ug/kg wet	"	"	---	89	32-123%	---	---	
Hexachlorocyclopentadiene	451	6.67	13.3	"	"	"	---	84	5-140%	---	---	
Hexachloroethane	481	3.33	6.67	"	"	"	---	90	28-120%	---	---	
2-Chloronaphthalene	480	1.33	2.67	"	"	"	---	90	41-120%	---	---	
1,2-Dichlorobenzene	473	3.33	6.67	"	"	"	---	89	33-120%	---	---	
1,3-Dichlorobenzene	464	3.33	6.67	"	"	"	---	87	30-120%	---	---	
1,4-Dichlorobenzene	469	3.33	6.67	"	"	"	---	88	31-120%	---	---	
1,2,4-Trichlorobenzene	472	3.33	6.67	"	"	"	---	89	34-120%	---	---	
4-Bromophenyl phenyl ether	529	3.33	6.67	"	"	"	---	99	46-124%	---	---	
4-Chlorophenyl phenyl ether	530	3.33	6.67	"	"	"	---	99	45-121%	---	---	
Aniline	498	6.67	13.3	"	"	"	---	93	7-120%	---	---	
4-Chloroaniline	310	3.33	6.67	"	"	"	---	58	16-120%	---	---	
2-Nitroaniline	505	26.7	53.3	"	"	"	---	95	44-127%	---	---	
3-Nitroaniline	431	26.7	53.3	"	"	"	---	81	33-120%	---	---	
4-Nitroaniline	502	26.7	53.3	"	"	"	---	94	35-120%	---	---	
Nitrobenzene	548	13.3	26.7	"	"	"	---	103	34-122%	---	---	
2,4-Dinitrotoluene	555	13.3	26.7	"	"	"	---	104	48-126%	---	---	
2,6-Dinitrotoluene	530	13.3	26.7	"	"	"	---	99	46-124%	---	---	
Benzoic acid	421	167	333	"	"	1070	---	39	5-140%	---	---	
Benzyl alcohol	614	6.67	13.3	"	"	533	---	115	29-122%	---	---	
Isophorone	547	3.33	6.67	"	"	"	---	103	30-122%	---	---	
Azobenzene (1,2-DPH)	484	3.33	6.67	"	"	"	---	91	39-125%	---	---	
Bis(2-Ethylhexyl) adipate	546	33.3	66.7	"	"	"	---	102	60-121%	---	---	
3,3'-Dichlorobenzidine	1400	13.3	26.7	"	"	1070	---	132	22-121%	---	---	Q-29
1,2-Dinitrobenzene	545	33.3	66.7	"	"	533	---	102	44-120%	---	---	
1,3-Dinitrobenzene	529	33.3	66.7	"	"	"	---	99	42-127%	---	---	
1,4-Dinitrobenzene	538	33.3	66.7	"	"	"	---	101	37-132%	---	---	
Pyridine	491	6.67	13.3	"	"	"	---	92	5-120%	---	---	
Benzo(e)pyrene	572	1.33	2.67	"	"	"	---	107	40-125%	---	---	
Perylene	571	1.33	2.67	"	"	"	---	107	"	---	---	

Surr: Nitrobenzene-d5 (Surr)	*Recovery: 99 %*	*Limits: 37-122 %*	*Dilution: 1x*
2-Fluorobiphenyl (Surr)	*91 %*	*44-115 %*	*"*
Phenol-d6 (Surr)	*111 %*	*33-122 %*	*"*
p-Terphenyl-d14 (Surr)	*105 %*	*54-127 %*	*"*

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Hahn and Associates	Project: **Siltronic RI-Doane Creek**	
434 NW 6th Ave. Suite 203	Project Number: 5237-10dc	**Reported:**
Portland, OR 97209	Project Manager: Rob Ede	12/12/17 08:49

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6031018 - EPA 3546												**Soil**
LCS (6031018-BS1)						Prepared: 03/31/16 11:53 Analyzed: 03/31/16 17:45						
EPA 8270D												
Surr: 2-Fluorophenol (Surr)			*Recovery: 94 %*	*Limits: 35-115 %*			*Dilution: 1x*					
2,4,6-Tribromophenol (Surr)			*91 %*	*39-132 %*			*"*					
Duplicate (6031018-DUP3)						Prepared: 03/31/16 11:53 Analyzed: 04/01/16 14:42						
QC Source Sample: 5237-160329-DC-EMB010 (A6C1124-02RE1)												
EPA 8270D												
Acenaphthene	**175**	7.47	15.0	ug/kg dry	4	---	173	---	---	1	30%	
Acenaphthylene	**51.2**	7.47	15.0	"	"	---	63.7	---	---	22	30%	
Anthracene	**209**	7.47	15.0	"	"	---	228	---	---	9	30%	
Benz(a)anthracene	**1380**	7.47	15.0	"	"	---	1360	---	---	1	30%	
Benzo(a)pyrene	**2030**	11.2	22.5	"	"	---	1950	---	---	4	30%	
Benzo(b)fluoranthene	**2690**	11.2	22.5	"	"	---	2550	---	---	5	30%	M-02
Benzo(k)fluoranthene	**938**	11.2	22.5	"	"	---	936	---	---	0.2	30%	M-02
Benzo(g,h,i)perylene	**1560**	7.47	15.0	"	"	---	1550	---	---	0.2	30%	
Chrysene	**1600**	7.47	15.0	"	"	---	1570	---	---	2	30%	
Dibenz(a,h)anthracene	**326**	7.47	15.0	"	"	---	304	---	---	7	30%	
Fluoranthene	**2020**	7.47	15.0	"	"	---	2060	---	---	2	30%	
Fluorene	**90.9**	7.47	15.0	"	"	---	115	---	---	23	30%	
Indeno(1,2,3-cd)pyrene	**1560**	7.47	15.0	"	"	---	1500	---	---	4	30%	
1-Methylnaphthalene	**16.8**	15.0	29.9	"	"	---	19.5	---	---	15	30%	J
2-Methylnaphthalene	**29.2**	15.0	29.9	"	"	---	28.6	---	---	2	30%	J
Naphthalene	**83.7**	15.0	29.9	"	"	---	95.6	---	---	13	30%	B-02
Phenanthrene	**895**	7.47	15.0	"	"	---	1010	---	---	12	30%	
Pyrene	**2040**	7.47	15.0	"	"	---	2110	---	---	3	30%	
Carbazole	**191**	11.2	22.5	"	"	---	187	---	---	2	30%	
Dibenzofuran	**41.3**	7.47	15.0	"	"	---	54.3	---	---	27	30%	
4-Chloro-3-methylphenol	ND	74.7	150	"	"	---	ND	---	---	---	30%	
2-Chlorophenol	ND	37.4	74.7	"	"	---	ND	---	---	---	30%	
2,4-Dichlorophenol	ND	37.4	74.7	"	"	---	ND	---	---	---	30%	
2,4-Dimethylphenol	ND	37.4	74.7	"	"	---	ND	---	---	---	30%	
2,4-Dinitrophenol	ND	187	374	"	"	---	ND	---	---	---	30%	
4,6-Dinitro-2-methylphenol	ND	187	374	"	"	---	ND	---	---	---	30%	
2-Methylphenol	ND	18.7	37.4	"	"	---	ND	---	---	---	30%	
3+4-Methylphenol(s)	ND	18.7	37.4	"	"	---	ND	---	---	---	30%	
2-Nitrophenol	ND	74.7	150	"	"	---	ND	---	---	---	30%	

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Hahn and Associates	Project: **Siltronic RI-Doane Creek**	
434 NW 6th Ave. Suite 203	Project Number: 5237-10dc	**Reported:**
Portland, OR 97209	Project Manager: Rob Ede	12/12/17 08:49

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6031018 - EPA 3546							**Soil**					
Duplicate (6031018-DUP3)					Prepared: 03/31/16 11:53 Analyzed: 04/01/16 14:42							
QC Source Sample: 5237-160329-DC-EMB010 (A6C1124-02RE1)												
EPA 8270D												
4-Nitrophenol	ND	74.7	150	ug/kg dry	"	---	ND	---	---	---	30%	
Pentachlorophenol (PCP)	ND	74.7	150	"	"	---	ND	---	---	---	30%	
Phenol	**22.1**	15.0	29.9	"	"	---	19.7	---	---	11	30%	J
2,3,4,6-Tetrachlorophenol	ND	37.4	74.7	"	"	---	ND	---	---	---	30%	
2,3,5,6-Tetrachlorophenol	ND	37.4	74.7	"	"	---	ND	---	---	---	30%	
2,4,5-Trichlorophenol	ND	37.4	74.7	"	"	---	ND	---	---	---	30%	
2,4,6-Trichlorophenol	ND	37.4	74.7	"	"	---	ND	---	---	---	30%	
Bis(2-ethylhexyl)phthalate	ND	112	225	"	"	---	ND	---	---	---	30%	
Butyl benzyl phthalate	ND	74.7	150	"	"	---	ND	---	---	---	30%	
Diethylphthalate	ND	74.7	150	"	"	---	ND	---	---	---	30%	
Dimethylphthalate	ND	74.7	150	"	"	---	ND	---	---	---	30%	
Di-n-butylphthalate	ND	74.7	150	"	"	---	ND	---	---	---	30%	
Di-n-octyl phthalate	ND	74.7	150	"	"	---	ND	---	---	---	30%	
N-Nitrosodimethylamine	ND	18.7	37.4	"	"	---	ND	---	---	---	30%	
N-Nitroso-di-n-propylamine	ND	18.7	37.4	"	"	---	ND	---	---	---	30%	
N-Nitrosodiphenylamine	ND	18.7	37.4	"	"	---	ND	---	---	---	30%	
Bis(2-Chloroethoxy) methane	ND	18.7	37.4	"	"	---	ND	---	---	---	30%	
Bis(2-Chloroethyl) ether	ND	18.7	37.4	"	"	---	ND	---	---	---	30%	
Bis(2-Chloroisopropyl) ether	ND	18.7	37.4	"	"	---	ND	---	---	---	30%	
Hexachlorobenzene	ND	7.47	15.0	"	"	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	18.7	37.4	"	"	---	ND	---	---	---	30%	
Hexachlorocyclopentadiene	ND	37.4	74.7	"	"	---	ND	---	---	---	30%	
Hexachloroethane	ND	18.7	37.4	"	"	---	ND	---	---	---	30%	
2-Chloronaphthalene	ND	7.47	15.0	"	"	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	18.7	37.4	"	"	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	18.7	37.4	"	"	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	18.7	37.4	"	"	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	18.7	37.4	"	"	---	ND	---	---	---	30%	
4-Bromophenyl phenyl ether	ND	18.7	37.4	"	"	---	ND	---	---	---	30%	
4-Chlorophenyl phenyl ether	ND	18.7	37.4	"	"	---	ND	---	---	---	30%	
Aniline	ND	37.4	74.7	"	"	---	ND	---	---	---	30%	
4-Chloroaniline	ND	18.7	37.4	"	"	---	ND	---	---	---	30%	
2-Nitroaniline	ND	150	299	"	"	---	ND	---	---	---	30%	

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Hahn and Associates	Project: **Siltronic RI-Doane Creek**	
434 NW 6th Ave. Suite 203	Project Number: 5237-10dc	**Reported:**
Portland, OR 97209	Project Manager: Rob Ede	12/12/17 08:49

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6031018 - EPA 3546												**Soil**
Duplicate (6031018-DUP3)						Prepared: 03/31/16 11:53 Analyzed: 04/01/16 14:42						
QC Source Sample: 5237-160329-DC-EMB010 (A6C1124-02RE1)												
EPA 8270D												
3-Nitroaniline	ND	150	299	ug/kg dry	"	---	ND	---	---	---	30%	
4-Nitroaniline	ND	150	299	"	"	---	ND	---	---	---	30%	
Nitrobenzene	ND	74.7	150	"	"	---	ND	---	---	---	30%	
2,4-Dinitrotoluene	ND	74.7	150	"	"	---	ND	---	---	---	30%	
2,6-Dinitrotoluene	ND	74.7	150	"	"	---	ND	---	---	---	30%	
Benzoic acid	ND	938	1870	"	"	---	ND	---	---	---	30%	
Benzyl alcohol	ND	37.4	74.7	"	"	---	ND	---	---	---	30%	
Isophorone	ND	18.7	37.4	"	"	---	ND	---	---	---	30%	
Azobenzene (1,2-DPH)	ND	18.7	37.4	"	"	---	ND	---	---	---	30%	
Bis(2-Ethylhexyl) adipate	ND	187	374	"	"	---	ND	---	---	---	30%	
3,3'-Dichlorobenzidine	ND	74.7	150	"	"	---	ND	---	---	---	30%	
1,2-Dinitrobenzene	ND	187	374	"	"	---	ND	---	---	---	30%	
1,3-Dinitrobenzene	ND	187	374	"	"	---	ND	---	---	---	30%	
1,4-Dinitrobenzene	ND	187	374	"	"	---	ND	---	---	---	30%	
Pyridine	ND	37.4	74.7	"	"	---	ND	---	---	---	30%	
Benzo(e)pyrene	**1460**	7.47	15.0	"	"	---	1410	---	---	4	30%	
Perylene	**584**	7.47	15.0	"	"	---	557	---	---	5	30%	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 72 %*	*Limits: 37-122 %*		*Dilution: 4x*						
2-Fluorobiphenyl (Surr)			*80 %*	*44-115 %*		*"*						
Phenol-d6 (Surr)			*77 %*	*33-122 %*		*"*						
p-Terphenyl-d14 (Surr)			*97 %*	*54-127 %*		*"*						
2-Fluorophenol (Surr)			*73 %*	*35-115 %*		*"*						
2,4,6-Tribromophenol (Surr)			*106 %*	*39-132 %*		*"*						
Matrix Spike (6031018-MS1)						Prepared: 03/31/16 11:53 Analyzed: 04/04/16 18:14						
QC Source Sample: 5237-160329-DC-EMB020 (A6C1124-16RE1)												
EPA 8270D												
Acenaphthene	613	7.38	14.8	ug/kg dry	4	740	8.51	82	40-122%	---	---	
Acenaphthylene	631	7.38	14.8	"	"	"	ND	85	32-132%	---	---	
Anthracene	709	7.38	14.8	"	"	"	10.6	94	47-123%	---	---	
Benz(a)anthracene	759	7.38	14.8	"	"	"	72.7	93	49-126%	---	---	
Benzo(a)pyrene	810	11.1	22.2	"	"	"	114	94	45-129%	---	---	
Benzo(b)fluoranthene	863	11.1	22.2	"	"	"	127	99	45-132%	---	---	

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Hahn and Associates	Project: **Siltronic RI-Doane Creek**	
434 NW 6th Ave. Suite 203	Project Number: 5237-10dc	**Reported:**
Portland, OR 97209	Project Manager: Rob Ede	12/12/17 08:49

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6031018 - EPA 3546							**Soil**					
Matrix Spike (6031018-MS1)					Prepared: 03/31/16 11:53 Analyzed: 04/04/16 18:14							
QC Source Sample: 5237-160329-DC-EMB020 (A6C1124-16RE1)												
EPA 8270D												
Benzo(k)fluoranthene	770	11.1	22.2	ug/kg dry	"	"	44.0	98	47-132%	---	---	
Benzo(g,h,i)perylene	812	7.38	14.8	"	"	"	88.1	98	43-134%	---	---	
Chrysene	764	7.38	14.8	"	"	"	85.9	92	50-124%	---	---	
Dibenz(a,h)anthracene	682	7.38	14.8	"	"	"	17.0	90	45-134%	---	---	
Fluoranthene	869	7.38	14.8	"	"	"	125	101	50-127%	---	---	
Fluorene	679	7.38	14.8	"	"	"	ND	92	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	727	7.38	14.8	"	"	"	75.2	88	45-133%	---	---	
1-Methylnaphthalene	606	14.8	29.6	"	"	"	ND	82	40-120%	---	---	
2-Methylnaphthalene	600	14.8	29.6	"	"	"	ND	81	38-122%	---	---	
Naphthalene	563	14.8	29.6	"	"	"	ND	76	35-123%	---	---	
Phenanthrene	721	7.38	14.8	"	"	"	50.8	90	50-121%	---	---	
Pyrene	894	7.38	14.8	"	"	"	137	102	47-127%	---	---	
Carbazole	741	11.1	22.2	"	"	"	ND	100	50-122%	---	---	
Dibenzofuran	649	7.38	14.8	"	"	"	ND	88	44-120%	---	---	
4-Chloro-3-methylphenol	690	73.8	148	"	"	"	ND	93	45-122%	---	---	
2-Chlorophenol	600	37.0	73.8	"	"	"	ND	81	34-121%	---	---	
2,4-Dichlorophenol	639	37.0	73.8	"	"	"	ND	86	40-122%	---	---	
2,4-Dimethylphenol	683	37.0	73.8	"	"	"	ND	92	30-127%	---	---	
2,4-Dinitrophenol	757	185	370	"	"	"	ND	102	5-137%	---	---	
4,6-Dinitro-2-methylphenol	714	185	370	"	"	"	ND	96	29-132%	---	---	
2-Methylphenol	641	18.5	37.0	"	"	"	ND	87	32-122%	---	---	
3+4-Methylphenol(s)	658	18.5	37.0	"	"	"	ND	89	34-120%	---	---	
2-Nitrophenol	599	73.8	148	"	"	"	ND	81	36-123%	---	---	
4-Nitrophenol	705	73.8	148	"	"	"	ND	95	30-132%	---	---	
Pentachlorophenol (PCP)	802	73.8	148	"	"	"	ND	108	25-133%	---	---	
Phenol	569	14.8	29.6	"	"	"	ND	77	34-120%	---	---	
2,3,4,6-Tetrachlorophenol	818	37.0	73.8	"	"	"	ND	111	44-125%	---	---	
2,3,5,6-Tetrachlorophenol	782	37.0	73.8	"	"	"	ND	106	40-120%	---	---	
2,4,5-Trichlorophenol	704	37.0	73.8	"	"	"	ND	95	41-124%	---	---	
2,4,6-Trichlorophenol	708	37.0	73.8	"	"	"	ND	96	39-126%	---	---	
Bis(2-ethylhexyl)phthalate	834	111	222	"	"	"	114	97	51-133%	---	---	
Butyl benzyl phthalate	682	73.8	148	"	"	"	ND	92	48-132%	---	---	
Diethylphthalate	733	73.8	148	"	"	"	ND	99	50-124%	---	---	

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Hahn and Associates	Project: **Siltronic RI-Doane Creek**	
434 NW 6th Ave. Suite 203	Project Number: 5237-10dc	**Reported:**
Portland, OR 97209	Project Manager: Rob Ede	12/12/17 08:49

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6031018 - EPA 3546							**Soil**					
Matrix Spike (6031018-MS1)					Prepared: 03/31/16 11:53 Analyzed: 04/04/16 18:14							
QC Source Sample: 5237-160329-DC-EMB020 (A6C1124-16RE1)												
EPA 8270D												
Dimethylphthalate	674	73.8	148	ug/kg dry	"	"	ND	91	48-124%	---	---	
Di-n-butylphthalate	767	73.8	148	"	"	"	ND	104	51-128%	---	---	
Di-n-octyl phthalate	740	73.8	148	"	"	"	ND	100	44-140%	---	---	
N-Nitrosodimethylamine	475	18.5	37.0	"	"	"	ND	64	23-120%	---	---	
N-Nitroso-di-n-propylamine	612	18.5	37.0	"	"	"	ND	83	36-120%	---	---	
N-Nitrosodiphenylamine	706	18.5	37.0	"	"	"	ND	95	38-127%	---	---	
Bis(2-Chloroethoxy) methane	558	18.5	37.0	"	"	"	ND	75	36-121%	---	---	
Bis(2-Chloroethyl) ether	509	18.5	37.0	"	"	"	ND	69	31-120%	---	---	
Bis(2-Chloroisopropyl) ether	533	18.5	37.0	"	"	"	ND	72	33-131%	---	---	
Hexachlorobenzene	648	7.38	14.8	"	"	"	ND	88	44-122%	---	---	
Hexachlorobutadiene	547	18.5	37.0	"	"	"	ND	74	32-123%	---	---	
Hexachlorocyclopentadiene	495	37.0	73.8	"	"	"	ND	67	5-140%	---	---	
Hexachloroethane	517	18.5	37.0	"	"	"	ND	70	28-120%	---	---	
2-Chloronaphthalene	581	7.38	14.8	"	"	"	ND	79	41-120%	---	---	
1,2-Dichlorobenzene	517	18.5	37.0	"	"	"	ND	70	33-120%	---	---	
1,3-Dichlorobenzene	494	18.5	37.0	"	"	"	ND	67	30-120%	---	---	
1,4-Dichlorobenzene	487	18.5	37.0	"	"	"	ND	66	31-120%	---	---	
1,2,4-Trichlorobenzene	535	18.5	37.0	"	"	"	ND	72	34-120%	---	---	
4-Bromophenyl phenyl ether	667	18.5	37.0	"	"	"	ND	90	46-124%	---	---	
4-Chlorophenyl phenyl ether	645	18.5	37.0	"	"	"	ND	87	45-121%	---	---	
Aniline	375	37.0	73.8	"	"	"	ND	51	7-120%	---	---	
4-Chloroaniline	305	18.5	37.0	"	"	"	ND	41	16-120%	---	---	
2-Nitroaniline	629	148	296	"	"	"	ND	85	44-127%	---	---	
3-Nitroaniline	371	148	296	"	"	"	ND	50	33-120%	---	---	
4-Nitroaniline	410	148	296	"	"	"	ND	55	35-120%	---	---	
Nitrobenzene	560	73.8	148	"	"	"	ND	76	34-122%	---	---	
2,4-Dinitrotoluene	675	73.8	148	"	"	"	ND	91	48-126%	---	---	
2,6-Dinitrotoluene	670	73.8	148	"	"	"	ND	91	46-124%	---	---	
Benzoic acid	2110	927	1850	"	"	1480	ND	143	5-140%	---	---	Q-01, Q-31
Benzyl alcohol	635	37.0	73.8	"	"	740	ND	86	29-122%	---	---	
Isophorone	636	18.5	37.0	"	"	"	ND	86	30-122%	---	---	
Azobenzene (1,2-DPH)	660	18.5	37.0	"	"	"	ND	89	39-125%	---	---	
Bis(2-Ethylhexyl) adipate	720	185	370	"	"	"	ND	97	60-121%	---	---	

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Hahn and Associates	Project: **Siltronic RI-Doane Creek**	
434 NW 6th Ave. Suite 203	Project Number: 5237-10dc	**Reported:**
Portland, OR 97209	Project Manager: Rob Ede	12/12/17 08:49

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6031018 - EPA 3546							Soil					
Matrix Spike (6031018-MS1)					Prepared: 03/31/16 11:53 Analyzed: 04/04/16 18:14							
QC Source Sample: 5237-160329-DC-EMB020 (A6C1124-16RE1)												
EPA 8270D												
3,3'-Dichlorobenzidine	389	73.8	148	ug/kg dry	"	1480	ND	26	22-121%	---	---	
1,2-Dinitrobenzene	648	185	370	"	"	740	ND	88	44-120%	---	---	
1,3-Dinitrobenzene	655	185	370	"	"	"	ND	88	42-127%	---	---	
1,4-Dinitrobenzene	607	185	370	"	"	"	ND	82	37-132%	---	---	
Pyridine	238	37.0	73.8	"	"	"	ND	32	5-120%	---	---	
Benzo(e)pyrene	777	7.38	14.8	"	"	"	71.1	95	40-125%	---	---	
Perylene	731	7.38	14.8	"	"	"	30.4	95	"	---	---	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 71 %*		*Limits: 37-122 %*		*Dilution: 4x*					
2-Fluorobiphenyl (Surr)			*78 %*		*44-115 %*		*"*					
Phenol-d6 (Surr)			*79 %*		*33-122 %*		*"*					
p-Terphenyl-d14 (Surr)			*93 %*		*54-127 %*		*"*					
2-Fluorophenol (Surr)			*70 %*		*35-115 %*		*"*					
2,4,6-Tribromophenol (Surr)			*104 %*		*39-132 %*		*"*					

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Hahn and Associates	Project: **Siltronic RI-Doane Creek**	
434 NW 6th Ave. Suite 203	Project Number: 5237-10dc	**Reported:**
Portland, OR 97209	Project Manager: Rob Ede	12/12/17 08:49

SAMPLE PREPARATION INFORMATION

Semivolatile Organic Compounds by EPA 8270D

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6031018							
A6C1124-02RE1	Soil	EPA 8270D	03/29/16 10:15	03/31/16 11:53	15.32g/2mL	15g/2mL	0.98
A6C1124-04RE2	Soil	EPA 8270D	03/29/16 10:35	03/31/16 11:53	15.13g/2mL	15g/2mL	0.99
A6C1124-06RE1	Soil	EPA 8270D	03/29/16 11:15	03/31/16 11:53	15.37g/2mL	15g/2mL	0.98
A6C1124-08RE2	Soil	EPA 8270D	03/29/16 12:00	03/31/16 11:53	15.46g/2mL	15g/2mL	0.97
A6C1124-10RE1	Soil	EPA 8270D	03/29/16 13:15	03/31/16 11:53	15.72g/2mL	15g/2mL	0.95
A6C1124-12RE1	Soil	EPA 8270D	03/29/16 13:40	03/31/16 11:53	15.19g/2mL	15g/2mL	0.99
A6C1124-14RE2	Soil	EPA 8270D	03/29/16 14:25	03/31/16 11:53	15.84g/2mL	15g/2mL	0.95
A6C1124-16RE2	Soil	EPA 8270D	03/29/16 15:10	03/31/16 11:53	15.4g/2mL	15g/2mL	0.97

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Hahn and Associates	Project: **Siltronic RI-Doane Creek**	
434 NW 6th Ave. Suite 203	Project Number: 5237-10dc	**Reported:**
Portland, OR 97209	Project Manager: Rob Ede	12/12/17 08:49

Notes and Definitions

Qualifiers:

B-02	Analyte detected in an associated blank at a level between one-half the MRL and the MRL. (See Notes and Conventions below.)
J	Estimated Result. Result detected below the lowest point of the calibration curve, but above the specified MDL.
M-02	Due to matrix interference, this analyte cannot be accurately quantified. The reported result is estimated.
Q-01	Spike recovery and/or RPD is outside acceptance limits.
Q-29	Recovery for Lab Control Spike (LCS) is above the upper control limit. Data may be biased high.
Q-31	Estimated Results. Recovery of Continuing Calibration Verification sample below lower control limit for this analyte. Results are likely biased low.

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses. For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor. Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
---	QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
***	Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Philip Nerenberg

Philip Nerenberg, Lab Director

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Hahn and Associates	Project: **Siltronic RI-Doane Creek**	
434 NW 6th Ave. Suite 203	Project Number: 5237-10dc	**Reported:**
Portland, OR 97209	Project Manager: Rob Ede	12/12/17 08:49

A6C1124

HAHN AND ASSOCIATES, INC.
Environmental Management
434 NW Sixth Avenue, Suite 203 • Portland OR 97209
(503) 796-0717 • Fax (503) 227-2209

Laboratory: APEX Laboratories, Tigard, Oregon
Lab Project No.:
1 of 1

Project Manager: Rob Ede
Project No.: 5237-10dc
Project Name: Siltronic RI - Doane Creek
Collected by: Ben Uhl / Jane Kerin

Liquid with Sediment Sample: Test Filtrate / Test Sediment / Test Both
Multi-Phase Sample: Test One (which) / Test Separately / Shake

Samples Received at 4C (Y or N)
Appropriate Containers Used (Y or N)
Provide Preliminary Results

Sample Number Prefix: 5237-160329-DC-

- Anchor EDD and Full Data Validation Package
- Target MDLs as per Philip N.
- Metals = aluminum, antimony, arsenic, barium, beryllium, cadmium, calcium, chromium, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, selenium, sodium, silver, thallium, vanadium, zinc

3 day turn around time for Dx, Gx+BTEX

Analyses to be Performed: (1) SVOCs (Full List) by EPA Method 8270D; (2) LL PAHs and Homologs by EPA Method 8270D/8270D-M; (3) Soot Carbon by EPA Method 9060 mod; (4) TOC by EPA Method 5310; (5) Sulfide by EPA Method 376.2 mod; (6) Sulfate by EPA Method 9056; (7) Ammonia by SM 4500 mod; (8) Total Cyanide by EPA Method 9014; (9) Thiocyanate by SM 4500 mod; (10) * Metals by EPA Method 6020; (11) Diesel and Oil-Range TPH by NWTPH-Dx; (12) TPH-Gx+BTEX; (13) EPH by NWTPH-EPH; (14) VPH by NWTPH-VPH; (15) VOCs by EPA Method 8260B

Lab ID	Sample #	Date	Time	Sample Description	Soil	Water	Other	Number of Containers	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	RUSH	Remarks
	EMB010G	29-Mar-16	10:15	Soil Embankmebnt -010 (1.5')	x			2												x					
	EMB010	29-Mar-16	10:15	Soil Embankment -010 (0-3.5')	x			5	x	x	x	x	x	x	x	x	x	x	x						
	EMB005G	29-Mar-16	10:35	Soil Embankment -005 (1.5')	x			2												x					
	EMB005	29-Mar-16	10:35	Soil Embankment -005 (0-3.5')	x			5	x	x	x	x	x	x	x	x	x	x	x						
	EMB004G	29-Mar-16	11:15	Soil Embankment -004 (1.5')	x			2												x					
	EMB004	29-Mar-16	11:15	Soil Embankment -004 (0-3.5')	x			5	x	x	x	x	x	x	x	x	x	x	x						
	EMB001G	29-Mar-16	12:00	Soil Embankment -001 (2.0')	x			2												x					
	EMB001	29-Mar-16	12:00	Soil Embankment -001 (0-3.5')	x			5	x	x	x	x	x	x	x	x	x	x	x						
	EMB013G	29-Mar-16	13:15	Soil Embankment -013 (2.0')	x			2												x					
	EMB013	29-Mar-16	13:15	Soil Embankment -013 (0-3.5')	x			5	x	x	x	x	x	x	x	x	x	x	x						
	EMB014G	29-Mar-16	13:40	Soil Embankment -014 (2.0')	x			2												x					
	EMB014	29-Mar-16	13:40	Soil Embankment -014) 0-3.5')	x			5	x	x	x	x	x	x	x	x	x	x	x						
	EMB017G	29-Mar-16	14:25	Soil Embankment -017 (2.0')	x			2												x					
	EMB017	29-Mar-16	14:25	Soil Embankment -017 (0-3.5')	x			5	x	x	x	x	x	x	x	x	x	x	x						
	EMB020G	29-Mar-16	15:10	Soil Embankment -020 (2.5')	x			2												x					
	EMB020	29-Mar-16	15:10	Soil Embankment -020 (0-3.5')	x			5	x	x	x	x	x	x	x	x	x	x	x						

Relinquished by	Company	Date		Time	Received by	Company
Ben Uhl	HAHN & ASSOC	3/30/16	J Sutton	1/49		Apex

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.