# 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 A6C1076, which was received by the laboratory on 3/29/2016 at 12:02:00PM.

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 Laboratories

Philip Nerenberg, Lab Director

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|---|---|---|
| **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 08:40 |

## ANALYTICAL REPORT FOR SAMPLES

### SAMPLE INFORMATION

| Sample ID | Laboratory ID | Matrix | Date Sampled | Date Received |
|---|---|---|---|---|
| **5237-160328-DC-SED063** | A6C1076-02 | Sediment | 03/28/16 10:30 | 03/29/16 12:02 |
| **5237-160328-DC-SED065** | A6C1076-04 | Sediment | 03/28/16 11:00 | 03/29/16 12:02 |
| **5237-160328-DC-SED068** | A6C1076-06 | Sediment | 03/28/16 11:30 | 03/29/16 12:02 |
| **5237-160328-DC-SED070** | A6C1076-08 | Sediment | 03/28/16 12:05 | 03/29/16 12:02 |
| **5237-160328-DC-SED072** | A6C1076-10 | Sediment | 03/28/16 12:30 | 03/29/16 12:02 |
| **5237-160328-DC-SED075** | A6C1076-12 | Sediment | 03/28/16 12:50 | 03/29/16 12:02 |
| **5237-160328-DC-SED077** | A6C1076-14 | Sediment | 03/28/16 13:15 | 03/29/16 12:02 |
| **5237-160328-DC-SED077D** | A6C1076-16 | Sediment | 03/28/16 13:15 | 03/29/16 12:02 |
| **5237-160328-DC-SED082** | A6C1076-18 | Sediment | 03/28/16 13:45 | 03/29/16 12:02 |
| **5237-160328-DC-SED085** | A6C1076-20 | Sediment | 03/28/16 14:15 | 03/29/16 12:02 |
| **5237-160328-DC-SED087** | A6C1076-22 | Sediment | 03/28/16 14:45 | 03/29/16 12:02 |

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| 434 NW 6th Ave. Suite 203 | Project Number: 5237-10dc | **Reported:** |
| Portland, OR 97209 | Project Manager: Rob Ede | 12/12/17 08:40 |

## ANALYTICAL CASE NARRATIVE

**Work Order: A6C1076**

This report is an addendum to Amended Report Revision 1 from the same work order number.

Philip Nerenberg
Lab Director
12/12/17

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| 434 NW 6th Ave. Suite 203 | Project Number: 5237-10dc | **Reported:** |
| Portland, OR 97209 | Project Manager: Rob Ede | 12/12/17 08:40 |

## ANALYTICAL SAMPLE RESULTS

### Semivolatile Organic Compounds by EPA 8270D

| Analyte | Result | MDL | Reporting Limit | Units | Dilution | Date Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|
| **5237-160328-DC-SED063 (A6C1076-02)** | | | **Matrix: Sediment** | | **Batch: 6040004** | | | |
| **Benzo(e)pyrene** | **260** | 6.36 | 12.8 | ug/kg dry | 4 | 04/04/16 10:41 | EPA 8270D | Q-42 |
| **Perylene** | **105** | 6.36 | 12.8 | " | " | " | " | Q-42 |
| **5237-160328-DC-SED065 (A6C1076-04)** | | | **Matrix: Sediment** | | **Batch: 6040004** | | | |
| **Benzo(e)pyrene** | **738** | 8.45 | 17.0 | ug/kg dry | 4 | 04/01/16 18:22 | EPA 8270D | |
| **Perylene** | **281** | 8.45 | 17.0 | " | " | " | " | |
| **5237-160328-DC-SED068 (A6C1076-06)** | | | **Matrix: Sediment** | | **Batch: 6040004** | | | |
| **Benzo(e)pyrene** | **293** | 6.88 | 13.8 | ug/kg dry | 4 | 04/01/16 18:59 | EPA 8270D | |
| **Perylene** | **108** | 6.88 | 13.8 | " | " | " | " | |
| **5237-160328-DC-SED070 (A6C1076-08RE1)** | | | **Matrix: Sediment** | | **Batch: 6040004** | | | |
| **Benzo(e)pyrene** | **64.9** | 6.24 | 12.5 | ug/kg dry | 4 | 04/01/16 17:45 | EPA 8270D | |
| **Perylene** | **22.1** | 6.24 | 12.5 | " | " | " | " | |
| **5237-160328-DC-SED072 (A6C1076-10)** | | | **Matrix: Sediment** | | **Batch: 6040004** | | | |
| **Benzo(e)pyrene** | **280** | 8.67 | 17.4 | ug/kg dry | 4 | 04/01/16 17:09 | EPA 8270D | |
| **Perylene** | **105** | 8.67 | 17.4 | " | " | " | " | |
| **5237-160328-DC-SED075 (A6C1076-12RE1)** | | | **Matrix: Sediment** | | **Batch: 6040004** | | | |
| **Benzo(e)pyrene** | **6270** | 21.9 | 44.1 | ug/kg dry | 10 | 04/01/16 16:32 | EPA 8270D | |
| **Perylene** | **2420** | 21.9 | 44.1 | " | " | " | " | |
| **5237-160328-DC-SED077 (A6C1076-14RE1)** | | | **Matrix: Sediment** | | **Batch: 6040004** | | | |
| **Benzo(e)pyrene** | **115** | 2.07 | 4.15 | ug/kg dry | 1 | 04/08/16 13:27 | EPA 8270D | |
| **Perylene** | **45.1** | 2.07 | 4.15 | " | " | " | " | |
| **5237-160328-DC-SED077D (A6C1076-16RE1)** | | | **Matrix: Sediment** | | **Batch: 6040004** | | | |
| **Benzo(e)pyrene** | **50.1** | 2.02 | 4.06 | ug/kg dry | 1 | 04/08/16 14:06 | EPA 8270D | |
| **Perylene** | **20.2** | 2.02 | 4.06 | " | " | " | " | |
| **5237-160328-DC-SED082 (A6C1076-18)** | | | **Matrix: Sediment** | | **Batch: 6040004** | | | |
| **Benzo(e)pyrene** | **218** | 8.71 | 17.5 | ug/kg dry | 4 | 04/01/16 19:35 | EPA 8270D | |
| **Perylene** | **84.8** | 8.71 | 17.5 | " | " | " | " | |
| **5237-160328-DC-SED085 (A6C1076-20)** | | | **Matrix: Sediment** | | **Batch: 6040004** | | | |
| **Benzo(e)pyrene** | **283** | 6.28 | 12.6 | ug/kg dry | 4 | 04/04/16 11:55 | EPA 8270D | |
| **Perylene** | **111** | 6.28 | 12.6 | " | " | " | " | |
| **5237-160328-DC-SED087 (A6C1076-22)** | | | **Matrix: Sediment** | | **Batch: 6040004** | | | |
| **Benzo(e)pyrene** | **197** | 6.68 | 13.4 | ug/kg dry | 4 | 04/01/16 20:12 | EPA 8270D | |
| **Perylene** | **66.3** | 6.68 | 13.4 | " | " | " | " | |

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## 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 6040004 - EPA 3546** | | | | | | | **Sediment** | | | | | |
| **Blank (6040004-BLK1)** | | | | | Prepared: 04/01/16 07:07 Analyzed: 04/01/16 12:16 | | | | | | | |
| **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 | **3.56** | 2.50 | 5.00 | " | " | --- | --- | --- | --- | --- | --- | B-02, J |
| 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 | " | " | --- | --- | --- | --- | --- | --- | |

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## 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 6040004 - EPA 3546** | | | | | | | **Sediment** | | | | | |
| **Blank (6040004-BLK1)** | | | | | Prepared: 04/01/16 07:07 Analyzed: 04/01/16 12:16 | | | | | | | |
| **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 | " | " | --- | --- | --- | --- | --- | --- | |

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## 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 6040004 - EPA 3546** | | | | | | | **Sediment** | | | | | |
| **Blank (6040004-BLK1)** | | | | | Prepared: 04/01/16 07:07 Analyzed: 04/01/16 12:16 | | | | | | | |
| **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: 86 %* | | *Limits: 37-122 %* | | | *Dilution: 1x* | | | | |
| *2-Fluorobiphenyl (Surr)* | | | *94 %* | | *44-115 %* | | | *"* | | | | |
| *Phenol-d6 (Surr)* | | | *85 %* | | *33-122 %* | | | *"* | | | | |
| *p-Terphenyl-d14 (Surr)* | | | *105 %* | | *54-127 %* | | | *"* | | | | |
| *2-Fluorophenol (Surr)* | | | *85 %* | | *35-115 %* | | | *"* | | | | |
| *2,4,6-Tribromophenol (Surr)* | | | *88 %* | | *39-132 %* | | | *"* | | | | |
| **LCS (6040004-BS1)** | | | | | Prepared: 04/01/16 07:07 Analyzed: 04/01/16 12:52 | | | | | | | |
| **EPA 8270D** | | | | | | | | | | | | |
| Acenaphthene | 498 | 2.66 | 5.34 | ug/kg wet | 2 | 533 | --- | 93 | 40-122% | --- | --- | |
| Acenaphthylene | 508 | 2.66 | 5.34 | " | " | " | --- | 95 | 32-132% | --- | --- | |
| Anthracene | 542 | 2.66 | 5.34 | " | " | " | --- | 102 | 47-123% | --- | --- | |
| Benz(a)anthracene | 531 | 2.66 | 5.34 | " | " | " | --- | 100 | 49-126% | --- | --- | |
| Benzo(a)pyrene | 570 | 4.00 | 8.00 | " | " | " | --- | 107 | 45-129% | --- | --- | |
| Benzo(b)fluoranthene | 595 | 4.00 | 8.00 | " | " | " | --- | 112 | 45-132% | --- | --- | |
| Benzo(k)fluoranthene | 596 | 4.00 | 8.00 | " | " | " | --- | 112 | 47-132% | --- | --- | |
| Benzo(g,h,i)perylene | 522 | 2.66 | 5.34 | " | " | " | --- | 98 | 43-134% | --- | --- | |
| Chrysene | 525 | 2.66 | 5.34 | " | " | " | --- | 98 | 50-124% | --- | --- | |
| Dibenz(a,h)anthracene | 544 | 2.66 | 5.34 | " | " | " | --- | 102 | 45-134% | --- | --- | |
| Fluoranthene | 534 | 2.66 | 5.34 | " | " | " | --- | 100 | 50-127% | --- | --- | |
| Fluorene | 524 | 2.66 | 5.34 | " | " | " | --- | 98 | 43-125% | --- | --- | |
| Indeno(1,2,3-cd)pyrene | 510 | 2.66 | 5.34 | " | " | " | --- | 96 | 45-133% | --- | --- | |
| 1-Methylnaphthalene | 492 | 5.34 | 10.7 | " | " | " | --- | 92 | 40-120% | --- | --- | |
| 2-Methylnaphthalene | 489 | 5.34 | 10.7 | " | " | " | --- | 92 | 38-122% | --- | --- | |

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| Portland, OR 97209 | Project Manager: Rob Ede | 12/12/17 08:40 |

## 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 6040004 - EPA 3546** | | | | | | | **Sediment** | | | | | |
| **LCS (6040004-BS1)** | | | | | Prepared: 04/01/16 07:07 Analyzed: 04/01/16 12:52 | | | | | | | |
| **EPA 8270D** | | | | | | | | | | | | |
| Naphthalene | 490 | 5.34 | 10.7 | ug/kg wet | " | " | --- | 92 | 35-123% | --- | --- | B-02 |
| Phenanthrene | 509 | 2.66 | 5.34 | " | " | " | --- | 96 | 50-121% | --- | --- | |
| Pyrene | 539 | 2.66 | 5.34 | " | " | " | --- | 101 | 47-127% | --- | --- | |
| Carbazole | 613 | 4.00 | 8.00 | " | " | " | --- | 115 | 50-122% | --- | --- | |
| Dibenzofuran | 518 | 2.66 | 5.34 | " | " | " | --- | 97 | 44-120% | --- | --- | |
| 4-Chloro-3-methylphenol | 516 | 26.6 | 53.4 | " | " | " | --- | 97 | 45-122% | --- | --- | |
| 2-Chlorophenol | 496 | 13.3 | 26.6 | " | " | " | --- | 93 | 34-121% | --- | --- | |
| 2,4-Dichlorophenol | 531 | 13.3 | 26.6 | " | " | " | --- | 100 | 40-122% | --- | --- | |
| 2,4-Dimethylphenol | 520 | 13.3 | 26.6 | " | " | " | --- | 97 | 30-127% | --- | --- | |
| 2,4-Dinitrophenol | 508 | 66.6 | 133 | " | " | " | --- | 95 | 5-137% | --- | --- | |
| 4,6-Dinitro-2-methylphenol | 551 | 66.6 | 133 | " | " | " | --- | 103 | 29-132% | --- | --- | |
| 2-Methylphenol | 490 | 6.66 | 13.3 | " | " | " | --- | 92 | 32-122% | --- | --- | |
| 3+4-Methylphenol(s) | 488 | 6.66 | 13.3 | " | " | " | --- | 92 | 34-120% | --- | --- | |
| 2-Nitrophenol | 587 | 26.6 | 53.4 | " | " | " | --- | 110 | 36-123% | --- | --- | |
| 4-Nitrophenol | 524 | 26.6 | 53.4 | " | " | " | --- | 98 | 30-132% | --- | --- | |
| Pentachlorophenol (PCP) | 485 | 26.6 | 53.4 | " | " | " | --- | 91 | 25-133% | --- | --- | |
| Phenol | 499 | 5.34 | 10.7 | " | " | " | --- | 94 | 34-120% | --- | --- | |
| 2,3,4,6-Tetrachlorophenol | 576 | 13.3 | 26.6 | " | " | " | --- | 108 | 44-125% | --- | --- | |
| 2,3,5,6-Tetrachlorophenol | 546 | 13.3 | 26.6 | " | " | " | --- | 102 | 40-120% | --- | --- | |
| 2,4,5-Trichlorophenol | 529 | 13.3 | 26.6 | " | " | " | --- | 99 | 41-124% | --- | --- | |
| 2,4,6-Trichlorophenol | 508 | 13.3 | 26.6 | " | " | " | --- | 95 | 39-126% | --- | --- | |
| Bis(2-ethylhexyl)phthalate | 532 | 40.0 | 80.0 | " | " | " | --- | 100 | 51-133% | --- | --- | |
| Butyl benzyl phthalate | 537 | 26.6 | 53.4 | " | " | " | --- | 101 | 48-132% | --- | --- | |
| Diethylphthalate | 544 | 26.6 | 53.4 | " | " | " | --- | 102 | 50-124% | --- | --- | |
| Dimethylphthalate | 531 | 26.6 | 53.4 | " | " | " | --- | 100 | 48-124% | --- | --- | |
| Di-n-butylphthalate | 544 | 26.6 | 53.4 | " | " | " | --- | 102 | 51-128% | --- | --- | |
| Di-n-octyl phthalate | 596 | 26.6 | 53.4 | " | " | " | --- | 112 | 44-140% | --- | --- | |
| N-Nitrosodimethylamine | 425 | 6.66 | 13.3 | " | " | " | --- | 80 | 23-120% | --- | --- | |
| N-Nitroso-di-n-propylamine | 475 | 6.66 | 13.3 | " | " | " | --- | 89 | 36-120% | --- | --- | |
| N-Nitrosodiphenylamine | 541 | 6.66 | 13.3 | " | " | " | --- | 101 | 38-127% | --- | --- | |
| Bis(2-Chloroethoxy) methane | 476 | 6.66 | 13.3 | " | " | " | --- | 89 | 36-121% | --- | --- | |
| Bis(2-Chloroethyl) ether | 441 | 6.66 | 13.3 | " | " | " | --- | 83 | 31-120% | --- | --- | |
| Bis(2-Chloroisopropyl) ether | 446 | 6.66 | 13.3 | " | " | " | --- | 84 | 33-131% | --- | --- | |
| Hexachlorobenzene | 507 | 2.66 | 5.34 | " | " | " | --- | 95 | 44-122% | --- | --- | |

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| | | |
|---|---|---|
| **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 08:40 |

## 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 6040004 - EPA 3546** | | | | | | | **Sediment** | | | | | |
| **LCS (6040004-BS1)** | | | | | Prepared: 04/01/16 07:07 Analyzed: 04/01/16 12:52 | | | | | | | |
| **EPA 8270D** | | | | | | | | | | | | |
| Hexachlorobutadiene | 508 | 6.66 | 13.3 | ug/kg wet | " | " | --- | 95 | 32-123% | --- | --- | |
| Hexachlorocyclopentadiene | 581 | 13.3 | 26.6 | " | " | " | --- | 109 | 5-140% | --- | --- | |
| Hexachloroethane | 478 | 6.66 | 13.3 | " | " | " | --- | 90 | 28-120% | --- | --- | |
| 2-Chloronaphthalene | 499 | 2.66 | 5.34 | " | " | " | --- | 94 | 41-120% | --- | --- | |
| 1,2-Dichlorobenzene | 474 | 6.66 | 13.3 | " | " | " | --- | 89 | 33-120% | --- | --- | |
| 1,3-Dichlorobenzene | 471 | 6.66 | 13.3 | " | " | " | --- | 88 | 30-120% | --- | --- | |
| 1,4-Dichlorobenzene | 474 | 6.66 | 13.3 | " | " | " | --- | 89 | 31-120% | --- | --- | |
| 1,2,4-Trichlorobenzene | 507 | 6.66 | 13.3 | " | " | " | --- | 95 | 34-120% | --- | --- | |
| 4-Bromophenyl phenyl ether | 531 | 6.66 | 13.3 | " | " | " | --- | 100 | 46-124% | --- | --- | |
| 4-Chlorophenyl phenyl ether | 526 | 6.66 | 13.3 | " | " | " | --- | 99 | 45-121% | --- | --- | |
| Aniline | 390 | 13.3 | 26.6 | " | " | " | --- | 73 | 7-120% | --- | --- | |
| 4-Chloroaniline | 251 | 6.66 | 13.3 | " | " | " | --- | 47 | 16-120% | --- | --- | |
| 2-Nitroaniline | 571 | 53.4 | 107 | " | " | " | --- | 107 | 44-127% | --- | --- | |
| 3-Nitroaniline | 416 | 53.4 | 107 | " | " | " | --- | 78 | 33-120% | --- | --- | |
| 4-Nitroaniline | 604 | 53.4 | 107 | " | " | " | --- | 113 | 35-120% | --- | --- | |
| Nitrobenzene | 476 | 26.6 | 53.4 | " | " | " | --- | 89 | 34-122% | --- | --- | |
| 2,4-Dinitrotoluene | 573 | 26.6 | 53.4 | " | " | " | --- | 107 | 48-126% | --- | --- | |
| 2,6-Dinitrotoluene | 555 | 26.6 | 53.4 | " | " | " | --- | 104 | 46-124% | --- | --- | |
| Benzoic acid | 276 | 200 | 666 | " | " | 1070 | --- | 26 | 5-140% | --- | --- | Q-31, J |
| Benzyl alcohol | 474 | 13.3 | 26.6 | " | " | 533 | --- | 89 | 29-122% | --- | --- | |
| Isophorone | 502 | 6.66 | 13.3 | " | " | " | --- | 94 | 30-122% | --- | --- | |
| Azobenzene (1,2-DPH) | 509 | 6.66 | 13.3 | " | " | " | --- | 95 | 39-125% | --- | --- | |
| Bis(2-Ethylhexyl) adipate | 547 | 66.6 | 133 | " | " | " | --- | 103 | 60-121% | --- | --- | |
| 3,3'-Dichlorobenzidine | 1490 | 26.6 | 53.4 | " | " | 1070 | --- | 140 | 22-121% | --- | --- | Q-29, Q-41 |
| 1,2-Dinitrobenzene | 543 | 66.6 | 133 | " | " | 533 | --- | 102 | 44-120% | --- | --- | |
| 1,3-Dinitrobenzene | 568 | 66.6 | 133 | " | " | " | --- | 107 | 42-127% | --- | --- | |
| 1,4-Dinitrobenzene | 567 | 66.6 | 133 | " | " | " | --- | 106 | 37-132% | --- | --- | |
| Pyridine | 394 | 13.3 | 26.6 | " | " | " | --- | 74 | 5-120% | --- | --- | |
| Benzo(e)pyrene | 561 | 2.66 | 5.34 | " | " | " | --- | 105 | 40-125% | --- | --- | |
| Perylene | 560 | 2.66 | 5.34 | " | " | " | --- | 105 | " | --- | --- | |

| | | | |
|---|---|---|---|
| *Surr: Nitrobenzene-d5 (Surr)* | *Recovery: 84 %* | *Limits: 37-122 %* | *Dilution: 2x* |
| *2-Fluorobiphenyl (Surr)* | *90 %* | *44-115 %* | *"* |
| *Phenol-d6 (Surr)* | *86 %* | *33-122 %* | *"* |
| *p-Terphenyl-d14 (Surr)* | *102 %* | *54-127 %* | *"* |

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| | | |
|---|---|---|
| **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 08:40 |

## 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 6040004 - EPA 3546** | | | | | | | | | | | **Sediment** | |
| **LCS (6040004-BS1)** | | | | | | Prepared: 04/01/16 07:07 | Analyzed: 04/01/16 12:52 | | | | | |
| **EPA 8270D** | | | | | | | | | | | | |
| *Surr: 2-Fluorophenol (Surr)* | | | *Recovery: 85 %* | *Limits: 35-115 %* | | | *Dilution: 2x* | | | | | |
| *2,4,6-Tribromophenol (Surr)* | | | *107 %* | *39-132 %* | | | *"* | | | | | |
| **Duplicate (6040004-DUP1)** | | | | | | Prepared: 04/01/16 07:07 | Analyzed: 04/04/16 11:18 | | | | | |
| **QC Source Sample: 5237-160328-DC-SED063 (A6C1076-02)** | | | | | | | | | | | | |
| **EPA 8270D** | | | | | | | | | | | | |
| Acenaphthene | **47.9** | 6.26 | 12.6 | ug/kg dry | 4 | --- | 25.1 | --- | --- | 62 | 30% | Q-04 |
| Acenaphthylene | **6.65** | 6.26 | 12.6 | " | " | --- | 7.70 | --- | --- | 15 | 30% | J |
| Anthracene | **62.8** | 6.26 | 12.6 | " | " | --- | 34.3 | --- | --- | 59 | 30% | Q-04 |
| Benz(a)anthracene | **491** | 6.26 | 12.6 | " | " | --- | 237 | --- | --- | 70 | 30% | Q-04 |
| Benzo(a)pyrene | **655** | 9.42 | 18.8 | " | " | --- | 357 | --- | --- | 59 | 30% | Q-04 |
| Benzo(b)fluoranthene | **742** | 9.42 | 18.8 | " | " | --- | 418 | --- | --- | 56 | 30% | M-02, Q-04 |
| Benzo(k)fluoranthene | **226** | 9.42 | 18.8 | " | " | --- | 118 | --- | --- | 62 | 30% | M-02, Q-04 |
| Benzo(g,h,i)perylene | **494** | 6.26 | 12.6 | " | " | --- | 303 | --- | --- | 48 | 30% | Q-04 |
| Chrysene | **574** | 6.26 | 12.6 | " | " | --- | 282 | --- | --- | 68 | 30% | Q-04 |
| Dibenz(a,h)anthracene | **99.6** | 6.26 | 12.6 | " | " | --- | 50.4 | --- | --- | 66 | 30% | Q-04 |
| Fluoranthene | **585** | 6.26 | 12.6 | " | " | --- | 336 | --- | --- | 54 | 30% | Q-04 |
| Fluorene | **19.3** | 6.26 | 12.6 | " | " | --- | 10.5 | --- | --- | 59 | 30% | Q-04 |
| Indeno(1,2,3-cd)pyrene | **429** | 6.26 | 12.6 | " | " | --- | 269 | --- | --- | 46 | 30% | Q-04 |
| 1-Methylnaphthalene | ND | 12.6 | 25.1 | " | " | --- | ND | --- | --- | --- | 30% | |
| 2-Methylnaphthalene | ND | 12.6 | 25.1 | " | " | --- | ND | --- | --- | --- | 30% | |
| Naphthalene | ND | 12.6 | 25.1 | " | " | --- | ND | --- | --- | --- | 30% | |
| Phenanthrene | **286** | 6.26 | 12.6 | " | " | --- | 155 | --- | --- | 59 | 30% | Q-04 |
| Pyrene | **687** | 6.26 | 12.6 | " | " | --- | 412 | --- | --- | 50 | 30% | Q-04 |
| Carbazole | **51.8** | 9.42 | 18.8 | " | " | --- | 26.3 | --- | --- | 65 | 30% | Q-04 |
| Dibenzofuran | **9.55** | 6.26 | 12.6 | " | " | --- | ND | --- | --- | --- | 30% | J |
| 4-Chloro-3-methylphenol | ND | 62.6 | 126 | " | " | --- | ND | --- | --- | --- | 30% | |
| 2-Chlorophenol | ND | 31.4 | 62.6 | " | " | --- | ND | --- | --- | --- | 30% | |
| 2,4-Dichlorophenol | ND | 31.4 | 62.6 | " | " | --- | ND | --- | --- | --- | 30% | |
| 2,4-Dimethylphenol | ND | 31.4 | 62.6 | " | " | --- | ND | --- | --- | --- | 30% | |
| 2,4-Dinitrophenol | ND | 157 | 314 | " | " | --- | ND | --- | --- | --- | 30% | |
| 4,6-Dinitro-2-methylphenol | ND | 157 | 314 | " | " | --- | ND | --- | --- | --- | 30% | |
| 2-Methylphenol | ND | 15.7 | 31.4 | " | " | --- | ND | --- | --- | --- | 30% | |
| 3+4-Methylphenol(s) | ND | 15.7 | 31.4 | " | " | --- | ND | --- | --- | --- | 30% | |
| 2-Nitrophenol | ND | 62.6 | 126 | " | " | --- | ND | --- | --- | --- | 30% | |

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|---|---|---|
| **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 08:40 |

## 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 6040004 - EPA 3546** | | | | | | | **Sediment** | | | | | |
| **Duplicate (6040004-DUP1)** | | | | | Prepared: 04/01/16 07:07 Analyzed: 04/04/16 11:18 | | | | | | | |
| **QC Source Sample: 5237-160328-DC-SED063 (A6C1076-02)** | | | | | | | | | | | | |
| **EPA 8270D** | | | | | | | | | | | | |
| 4-Nitrophenol | ND | 62.6 | 126 | ug/kg dry | " | --- | ND | --- | --- | --- | 30% | |
| Pentachlorophenol (PCP) | ND | 62.6 | 126 | " | " | --- | ND | --- | --- | --- | 30% | |
| Phenol | ND | 12.6 | 25.1 | " | " | --- | ND | --- | --- | --- | 30% | |
| 2,3,4,6-Tetrachlorophenol | ND | 31.4 | 62.6 | " | " | --- | ND | --- | --- | --- | 30% | |
| 2,3,5,6-Tetrachlorophenol | ND | 31.4 | 62.6 | " | " | --- | ND | --- | --- | --- | 30% | |
| 2,4,5-Trichlorophenol | ND | 31.4 | 62.6 | " | " | --- | ND | --- | --- | --- | 30% | |
| 2,4,6-Trichlorophenol | ND | 31.4 | 62.6 | " | " | --- | ND | --- | --- | --- | 30% | |
| Bis(2-ethylhexyl)phthalate | ND | 94.2 | 188 | " | " | --- | ND | --- | --- | --- | 30% | |
| Butyl benzyl phthalate | ND | 62.6 | 126 | " | " | --- | ND | --- | --- | --- | 30% | |
| Diethylphthalate | ND | 62.6 | 126 | " | " | --- | ND | --- | --- | --- | 30% | |
| Dimethylphthalate | ND | 62.6 | 126 | " | " | --- | ND | --- | --- | --- | 30% | |
| Di-n-butylphthalate | ND | 62.6 | 126 | " | " | --- | ND | --- | --- | --- | 30% | |
| Di-n-octyl phthalate | ND | 62.6 | 126 | " | " | --- | ND | --- | --- | --- | 30% | |
| N-Nitrosodimethylamine | ND | 15.7 | 31.4 | " | " | --- | ND | --- | --- | --- | 30% | |
| N-Nitroso-di-n-propylamine | ND | 15.7 | 31.4 | " | " | --- | ND | --- | --- | --- | 30% | |
| N-Nitrosodiphenylamine | ND | 15.7 | 31.4 | " | " | --- | ND | --- | --- | --- | 30% | |
| Bis(2-Chloroethoxy) methane | ND | 15.7 | 31.4 | " | " | --- | ND | --- | --- | --- | 30% | |
| Bis(2-Chloroethyl) ether | ND | 15.7 | 31.4 | " | " | --- | ND | --- | --- | --- | 30% | |
| Bis(2-Chloroisopropyl) ether | ND | 15.7 | 31.4 | " | " | --- | ND | --- | --- | --- | 30% | |
| Hexachlorobenzene | ND | 6.26 | 12.6 | " | " | --- | ND | --- | --- | --- | 30% | |
| Hexachlorobutadiene | ND | 15.7 | 31.4 | " | " | --- | ND | --- | --- | --- | 30% | |
| Hexachlorocyclopentadiene | ND | 31.4 | 62.6 | " | " | --- | ND | --- | --- | --- | 30% | |
| Hexachloroethane | ND | 15.7 | 31.4 | " | " | --- | ND | --- | --- | --- | 30% | |
| 2-Chloronaphthalene | ND | 6.26 | 12.6 | " | " | --- | ND | --- | --- | --- | 30% | |
| 1,2-Dichlorobenzene | ND | 15.7 | 31.4 | " | " | --- | ND | --- | --- | --- | 30% | |
| 1,3-Dichlorobenzene | ND | 15.7 | 31.4 | " | " | --- | ND | --- | --- | --- | 30% | |
| 1,4-Dichlorobenzene | ND | 15.7 | 31.4 | " | " | --- | ND | --- | --- | --- | 30% | |
| 1,2,4-Trichlorobenzene | ND | 15.7 | 31.4 | " | " | --- | ND | --- | --- | --- | 30% | |
| 4-Bromophenyl phenyl ether | ND | 15.7 | 31.4 | " | " | --- | ND | --- | --- | --- | 30% | |
| 4-Chlorophenyl phenyl ether | ND | 15.7 | 31.4 | " | " | --- | ND | --- | --- | --- | 30% | |
| Aniline | ND | 31.4 | 62.6 | " | " | --- | ND | --- | --- | --- | 30% | |
| 4-Chloroaniline | ND | 15.7 | 31.4 | " | " | --- | ND | --- | --- | --- | 30% | |
| 2-Nitroaniline | ND | 126 | 251 | " | " | --- | ND | --- | --- | --- | 30% | |

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| **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 08:40 |

## 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 6040004 - EPA 3546** | | | | | | | **Sediment** | | | | | |
| **Duplicate (6040004-DUP1)** | | | | | Prepared: 04/01/16 07:07 Analyzed: 04/04/16 11:18 | | | | | | | |
| **QC Source Sample: 5237-160328-DC-SED063 (A6C1076-02)** | | | | | | | | | | | | |
| **EPA 8270D** | | | | | | | | | | | | |
| 3-Nitroaniline | ND | 126 | 251 | ug/kg dry | " | --- | ND | --- | --- | --- | 30% | |
| 4-Nitroaniline | ND | 126 | 251 | " | " | --- | ND | --- | --- | --- | 30% | |
| Nitrobenzene | ND | 62.6 | 126 | " | " | --- | ND | --- | --- | --- | 30% | |
| 2,4-Dinitrotoluene | ND | 62.6 | 126 | " | " | --- | ND | --- | --- | --- | 30% | |
| 2,6-Dinitrotoluene | ND | 62.6 | 126 | " | " | --- | ND | --- | --- | --- | 30% | |
| Benzoic acid | ND | 786 | 1570 | " | " | --- | ND | --- | --- | --- | 30% | |
| Benzyl alcohol | ND | 31.4 | 62.6 | " | " | --- | ND | --- | --- | --- | 30% | |
| Isophorone | ND | 15.7 | 31.4 | " | " | --- | ND | --- | --- | --- | 30% | |
| Azobenzene (1,2-DPH) | ND | 15.7 | 31.4 | " | " | --- | ND | --- | --- | --- | 30% | |
| Bis(2-Ethylhexyl) adipate | ND | 157 | 314 | " | " | --- | ND | --- | --- | --- | 30% | |
| 3,3'-Dichlorobenzidine | ND | 62.6 | 126 | " | " | --- | ND | --- | --- | --- | 30% | |
| 1,2-Dinitrobenzene | ND | 157 | 314 | " | " | --- | ND | --- | --- | --- | 30% | |
| 1,3-Dinitrobenzene | ND | 157 | 314 | " | " | --- | ND | --- | --- | --- | 30% | |
| 1,4-Dinitrobenzene | ND | 157 | 314 | " | " | --- | ND | --- | --- | --- | 30% | |
| Pyridine | ND | 31.4 | 62.6 | " | " | --- | ND | --- | --- | --- | 30% | |
| Benzo(e)pyrene | **477** | 6.26 | 12.6 | " | " | --- | 260 | --- | --- | 59 | 30% | Q-04 |
| Perylene | **183** | 6.26 | 12.6 | " | " | --- | 105 | --- | --- | 55 | 30% | Q-04 |
| *Surr: Nitrobenzene-d5 (Surr)* | | | *Recovery: 55 %* | | *Limits: 37-122 %* | | *Dilution: 4x* | | | | | |
| *2-Fluorobiphenyl (Surr)* | | | *74 %* | | *44-115 %* | | *"* | | | | | |
| *Phenol-d6 (Surr)* | | | *60 %* | | *33-122 %* | | *"* | | | | | |
| *p-Terphenyl-d14 (Surr)* | | | *97 %* | | *54-127 %* | | *"* | | | | | |
| *2-Fluorophenol (Surr)* | | | *47 %* | | *35-115 %* | | *"* | | | | | |
| *2,4,6-Tribromophenol (Surr)* | | | *95 %* | | *39-132 %* | | *"* | | | | | |
| **Matrix Spike (6040004-MS1)** | | | | | Prepared: 04/01/16 07:07 Analyzed: 04/01/16 20:49 | | | | | | | |
| **QC Source Sample: 5237-160328-DC-SED087 (A6C1076-22)** | | | | | | | | | | | | |
| **EPA 8270D** | | | | | | | | | | | | |
| Acenaphthene | 2560 | 6.74 | 13.5 | ug/kg dry | 4 | 675 | 1800 | 113 | 40-122% | --- | --- | |
| Acenaphthylene | 606 | 6.74 | 13.5 | " | " | " | 24.4 | 86 | 32-132% | --- | --- | |
| Anthracene | 839 | 6.74 | 13.5 | " | " | " | 176 | 98 | 47-123% | --- | --- | |
| Benz(a)anthracene | 886 | 6.74 | 13.5 | " | " | " | 239 | 96 | 49-126% | --- | --- | |
| Benzo(a)pyrene | 897 | 10.1 | 20.3 | " | " | " | 262 | 94 | 45-129% | --- | --- | |
| Benzo(b)fluoranthene | 976 | 10.1 | 20.3 | " | " | " | 315 | 98 | 45-132% | --- | --- | |

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Philip Nerenberg, Lab Director

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|---|---|---|
| **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 08:40 |

## 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 6040004 - EPA 3546** | | | | | | | **Sediment** | | | | | |
| **Matrix Spike (6040004-MS1)** | | | | | Prepared: 04/01/16 07:07 Analyzed: 04/01/16 20:49 | | | | | | | |
| **QC Source Sample: 5237-160328-DC-SED087 (A6C1076-22)** | | | | | | | | | | | | |
| **EPA 8270D** | | | | | | | | | | | | |
| Benzo(k)fluoranthene | 822 | 10.1 | 20.3 | ug/kg dry | " | " | 117 | 104 | 47-132% | --- | --- | |
| Benzo(g,h,i)perylene | 699 | 6.74 | 13.5 | " | " | " | 211 | 72 | 43-134% | --- | --- | |
| Chrysene | 933 | 6.74 | 13.5 | " | " | " | 291 | 95 | 50-124% | --- | --- | |
| Dibenz(a,h)anthracene | 647 | 6.74 | 13.5 | " | " | " | 32.1 | 91 | 45-134% | --- | --- | |
| Fluoranthene | 2510 | 6.74 | 13.5 | " | " | " | 1300 | 179 | 50-127% | --- | --- | Q-03 |
| Fluorene | 1170 | 6.74 | 13.5 | " | " | " | 530 | 94 | 43-125% | --- | --- | |
| Indeno(1,2,3-cd)pyrene | 729 | 6.74 | 13.5 | " | " | " | 189 | 80 | 45-133% | --- | --- | |
| 1-Methylnaphthalene | 632 | 13.5 | 27.0 | " | " | " | 83.4 | 81 | 40-120% | --- | --- | |
| 2-Methylnaphthalene | 537 | 13.5 | 27.0 | " | " | " | ND | 79 | 38-122% | --- | --- | |
| Naphthalene | 589 | 13.5 | 27.0 | " | " | " | 25.8 | 83 | 35-123% | --- | --- | B-02 |
| Phenanthrene | 868 | 6.74 | 13.5 | " | " | " | 315 | 82 | 50-121% | --- | --- | |
| Pyrene | 3730 | 6.74 | 13.5 | " | " | " | 2480 | 185 | 47-127% | --- | --- | Q-03 |
| Carbazole | 755 | 10.1 | 20.3 | " | " | " | 24.7 | 108 | 50-122% | --- | --- | |
| Dibenzofuran | 863 | 6.74 | 13.5 | " | " | " | 171 | 102 | 44-120% | --- | --- | |
| 4-Chloro-3-methylphenol | 633 | 67.4 | 135 | " | " | " | ND | 94 | 45-122% | --- | --- | |
| 2-Chlorophenol | 535 | 33.8 | 67.4 | " | " | " | ND | 79 | 34-121% | --- | --- | |
| 2,4-Dichlorophenol | 581 | 33.8 | 67.4 | " | " | " | ND | 86 | 40-122% | --- | --- | |
| 2,4-Dimethylphenol | 538 | 33.8 | 67.4 | " | " | " | ND | 80 | 30-127% | --- | --- | |
| 2,4-Dinitrophenol | 372 | 169 | 338 | " | " | " | ND | 55 | 5-137% | --- | --- | |
| 4,6-Dinitro-2-methylphenol | 466 | 169 | 338 | " | " | " | ND | 69 | 29-132% | --- | --- | |
| 2-Methylphenol | 560 | 16.9 | 33.8 | " | " | " | ND | 83 | 32-122% | --- | --- | |
| 3+4-Methylphenol(s) | 579 | 16.9 | 33.8 | " | " | " | ND | 86 | 34-120% | --- | --- | |
| 2-Nitrophenol | 504 | 67.4 | 135 | " | " | " | ND | 75 | 36-123% | --- | --- | |
| 4-Nitrophenol | 723 | 67.4 | 135 | " | " | " | ND | 107 | 30-132% | --- | --- | |
| Pentachlorophenol (PCP) | 660 | 67.4 | 135 | " | " | " | ND | 98 | 25-133% | --- | --- | |
| Phenol | 522 | 13.5 | 27.0 | " | " | " | 14.5 | 75 | 34-120% | --- | --- | |
| 2,3,4,6-Tetrachlorophenol | 709 | 33.8 | 67.4 | " | " | " | ND | 105 | 44-125% | --- | --- | |
| 2,3,5,6-Tetrachlorophenol | 685 | 33.8 | 67.4 | " | " | " | ND | 101 | 40-120% | --- | --- | |
| 2,4,5-Trichlorophenol | 666 | 33.8 | 67.4 | " | " | " | ND | 99 | 41-124% | --- | --- | |
| 2,4,6-Trichlorophenol | 613 | 33.8 | 67.4 | " | " | " | ND | 91 | 39-126% | --- | --- | |
| Bis(2-ethylhexyl)phthalate | 792 | 101 | 203 | " | " | " | ND | 117 | 51-133% | --- | --- | |
| Butyl benzyl phthalate | 713 | 67.4 | 135 | " | " | " | ND | 106 | 48-132% | --- | --- | |
| Diethylphthalate | 651 | 67.4 | 135 | " | " | " | ND | 96 | 50-124% | --- | --- | |

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| 434 NW 6th Ave. Suite 203 | Project Number: 5237-10dc | **Reported:** |
| Portland, OR 97209 | Project Manager: Rob Ede | 12/12/17 08:40 |

## 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 6040004 - EPA 3546** | | | | | | | **Sediment** | | | | | |
| **Matrix Spike (6040004-MS1)** | | | | | Prepared: 04/01/16 07:07 Analyzed: 04/01/16 20:49 | | | | | | | |
| **QC Source Sample: 5237-160328-DC-SED087 (A6C1076-22)** | | | | | | | | | | | | |
| **EPA 8270D** | | | | | | | | | | | | |
| Dimethylphthalate | 619 | 67.4 | 135 | ug/kg dry | " | " | ND | 92 | 48-124% | --- | --- | |
| Di-n-butylphthalate | 677 | 67.4 | 135 | " | " | " | ND | 100 | 51-128% | --- | --- | |
| Di-n-octyl phthalate | 831 | 67.4 | 135 | " | " | " | ND | 123 | 44-140% | --- | --- | |
| N-Nitrosodimethylamine | 391 | 16.9 | 33.8 | " | " | " | ND | 58 | 23-120% | --- | --- | |
| N-Nitroso-di-n-propylamine | 534 | 16.9 | 33.8 | " | " | " | ND | 79 | 36-120% | --- | --- | |
| N-Nitrosodiphenylamine | 693 | 16.9 | 33.8 | " | " | " | ND | 100 | 38-127% | --- | --- | |
| Bis(2-Chloroethoxy) methane | 482 | 16.9 | 33.8 | " | " | " | ND | 71 | 36-121% | --- | --- | |
| Bis(2-Chloroethyl) ether | 448 | 16.9 | 33.8 | " | " | " | ND | 66 | 31-120% | --- | --- | |
| Bis(2-Chloroisopropyl) ether | 481 | 16.9 | 33.8 | " | " | " | ND | 71 | 33-131% | --- | --- | |
| Hexachlorobenzene | 618 | 6.74 | 13.5 | " | " | " | ND | 91 | 44-122% | --- | --- | |
| Hexachlorobutadiene | 498 | 16.9 | 33.8 | " | " | " | ND | 74 | 32-123% | --- | --- | |
| Hexachlorocyclopentadiene | 130 | 33.8 | 67.4 | " | " | " | ND | 19 | 5-140% | --- | --- | |
| Hexachloroethane | 408 | 16.9 | 33.8 | " | " | " | ND | 60 | 28-120% | --- | --- | |
| 2-Chloronaphthalene | 550 | 6.74 | 13.5 | " | " | " | ND | 81 | 41-120% | --- | --- | |
| 1,2-Dichlorobenzene | 476 | 16.9 | 33.8 | " | " | " | ND | 71 | 33-120% | --- | --- | |
| 1,3-Dichlorobenzene | 460 | 16.9 | 33.8 | " | " | " | ND | 68 | 30-120% | --- | --- | |
| 1,4-Dichlorobenzene | 460 | 16.9 | 33.8 | " | " | " | ND | 68 | 31-120% | --- | --- | |
| 1,2,4-Trichlorobenzene | 510 | 16.9 | 33.8 | " | " | " | ND | 75 | 34-120% | --- | --- | |
| 4-Bromophenyl phenyl ether | 645 | 16.9 | 33.8 | " | " | " | ND | 96 | 46-124% | --- | --- | |
| 4-Chlorophenyl phenyl ether | 617 | 16.9 | 33.8 | " | " | " | ND | 91 | 45-121% | --- | --- | |
| Aniline | 334 | 33.8 | 67.4 | " | " | " | ND | 49 | 7-120% | --- | --- | |
| 4-Chloroaniline | 232 | 16.9 | 33.8 | " | " | " | ND | 34 | 16-120% | --- | --- | |
| 2-Nitroaniline | 624 | 135 | 270 | " | " | " | ND | 92 | 44-127% | --- | --- | |
| 3-Nitroaniline | 487 | 135 | 270 | " | " | " | ND | 72 | 33-120% | --- | --- | |
| 4-Nitroaniline | 608 | 135 | 270 | " | " | " | ND | 90 | 35-120% | --- | --- | |
| Nitrobenzene | 511 | 67.4 | 135 | " | " | " | ND | 76 | 34-122% | --- | --- | |
| 2,4-Dinitrotoluene | 731 | 67.4 | 135 | " | " | " | ND | 98 | 48-126% | --- | --- | |
| 2,6-Dinitrotoluene | 646 | 67.4 | 135 | " | " | " | ND | 96 | 46-124% | --- | --- | |
| Benzoic acid | 1710 | 846 | 1690 | " | " | 1350 | ND | 126 | 5-140% | --- | --- | Q-31 |
| Benzyl alcohol | 533 | 33.8 | 67.4 | " | " | 675 | ND | 79 | 29-122% | --- | --- | |
| Isophorone | 531 | 16.9 | 33.8 | " | " | " | ND | 79 | 30-122% | --- | --- | |
| Azobenzene (1,2-DPH) | 619 | 16.9 | 33.8 | " | " | " | ND | 92 | 39-125% | --- | --- | |
| Bis(2-Ethylhexyl) adipate | 724 | 169 | 338 | " | " | " | ND | 107 | 60-121% | --- | --- | |

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| 434 NW 6th Ave. Suite 203 | Project Number: 5237-10dc | **Reported:** |
| Portland, OR 97209 | Project Manager: Rob Ede | 12/12/17 08:40 |

## 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 6040004 - EPA 3546** | | | | | | | **Sediment** | | | | | |
| **Matrix Spike (6040004-MS1)** | | | | | Prepared: 04/01/16 07:07 Analyzed: 04/01/16 20:49 | | | | | | | |
| **QC Source Sample: 5237-160328-DC-SED087 (A6C1076-22)** | | | | | | | | | | | | |
| **EPA 8270D** | | | | | | | | | | | | |
| 3,3'-Dichlorobenzidine | 1690 | 67.4 | 135 | ug/kg dry | " | 1350 | ND | 125 | 22-121% | --- | --- | Q-01, Q-41 |
| 1,2-Dinitrobenzene | 580 | 169 | 338 | " | " | 675 | ND | 86 | 44-120% | --- | --- | |
| 1,3-Dinitrobenzene | 605 | 169 | 338 | " | " | " | ND | 90 | 42-127% | --- | --- | |
| 1,4-Dinitrobenzene | 604 | 169 | 338 | " | " | " | ND | 89 | 37-132% | --- | --- | |
| Pyridine | 337 | 33.8 | 67.4 | " | " | " | ND | 50 | 5-120% | --- | --- | |
| Benzo(e)pyrene | 844 | 6.74 | 13.5 | " | " | " | 197 | 96 | 40-125% | --- | --- | |
| Perylene | 719 | 6.74 | 13.5 | " | " | " | 66.3 | 97 | " | --- | --- | |
| *Surr: Nitrobenzene-d5 (Surr)* | | | *Recovery: 66 %* | | *Limits: 37-122 %* | | *Dilution: 4x* | | | | | |
| *2-Fluorobiphenyl (Surr)* | | | *74 %* | | *44-115 %* | | *"* | | | | | |
| *Phenol-d6 (Surr)* | | | *72 %* | | *33-122 %* | | *"* | | | | | |
| *p-Terphenyl-d14 (Surr)* | | | *101 %* | | *54-127 %* | | *"* | | | | | |
| *2-Fluorophenol (Surr)* | | | *65 %* | | *35-115 %* | | *"* | | | | | |
| *2,4,6-Tribromophenol (Surr)* | | | *105 %* | | *39-132 %* | | *"* | | | | | |

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| 434 NW 6th Ave. Suite 203 | Project Number: 5237-10dc | **Reported:** |
| Portland, OR 97209 | Project Manager: Rob Ede | 12/12/17 08:40 |

## 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: 6040004 | | | | | | | |
| A6C1076-02 | Sediment | EPA 8270D | 03/28/16 10:30 | 04/01/16 07:07 | 15.68g/2mL | 15g/2mL | 0.96 |
| A6C1076-04 | Sediment | EPA 8270D | 03/28/16 11:00 | 04/01/16 07:07 | 15.34g/2mL | 15g/2mL | 0.98 |
| A6C1076-06 | Sediment | EPA 8270D | 03/28/16 11:30 | 04/01/16 07:07 | 15.63g/2mL | 15g/2mL | 0.96 |
| A6C1076-08RE1 | Sediment | EPA 8270D | 03/28/16 12:05 | 04/01/16 07:07 | 15.33g/2mL | 15g/2mL | 0.98 |
| A6C1076-10 | Sediment | EPA 8270D | 03/28/16 12:30 | 04/01/16 07:07 | 15.57g/2mL | 15g/2mL | 0.96 |
| A6C1076-12RE1 | Sediment | EPA 8270D | 03/28/16 12:50 | 04/01/16 07:07 | 15.45g/2mL | 15g/2mL | 0.97 |
| A6C1076-14RE1 | Sediment | EPA 8270D | 03/28/16 13:15 | 04/01/16 07:07 | 15.41g/2mL | 15g/2mL | 0.97 |
| A6C1076-16RE1 | Sediment | EPA 8270D | 03/28/16 13:15 | 04/01/16 07:07 | 15.36g/2mL | 15g/2mL | 0.98 |
| A6C1076-18 | Sediment | EPA 8270D | 03/28/16 13:45 | 04/01/16 07:07 | 15.28g/2mL | 15g/2mL | 0.98 |
| A6C1076-20 | Sediment | EPA 8270D | 03/28/16 14:15 | 04/01/16 07:07 | 15.38g/2mL | 15g/2mL | 0.98 |
| A6C1076-22 | Sediment | EPA 8270D | 03/28/16 14:45 | 04/01/16 07:07 | 15.44g/2mL | 15g/2mL | 0.97 |

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| 434 NW 6th Ave. Suite 203 | Project Number: 5237-10dc | **Reported:** |
| Portland, OR 97209 | Project Manager: Rob Ede | 12/12/17 08:40 |

## 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-03 | Spike recovery and/or RPD is outside control limits due to the high concentration of analyte present in the sample. |
| Q-04 | Spike recovery and/or RPD is outside control limits due to a non-homogeneous sample matrix. |
| 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. |
| Q-41 | Estimated Results. Recovery of Continuing Calibration Verification sample above upper control limit for this analyte. Results are likely biased high. |
| Q-42 | Matrix Spike and/or Duplicate analysis was performed on this sample. % Recovery or RPD for this analyte is outside laboratory control limits. (Refer to the QC Section of Analytical Report.) |

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.<br>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.<br>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. |

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| Portland, OR 97209 | Project Manager: Rob Ede | 12/12/17 08:40 |

--- 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).

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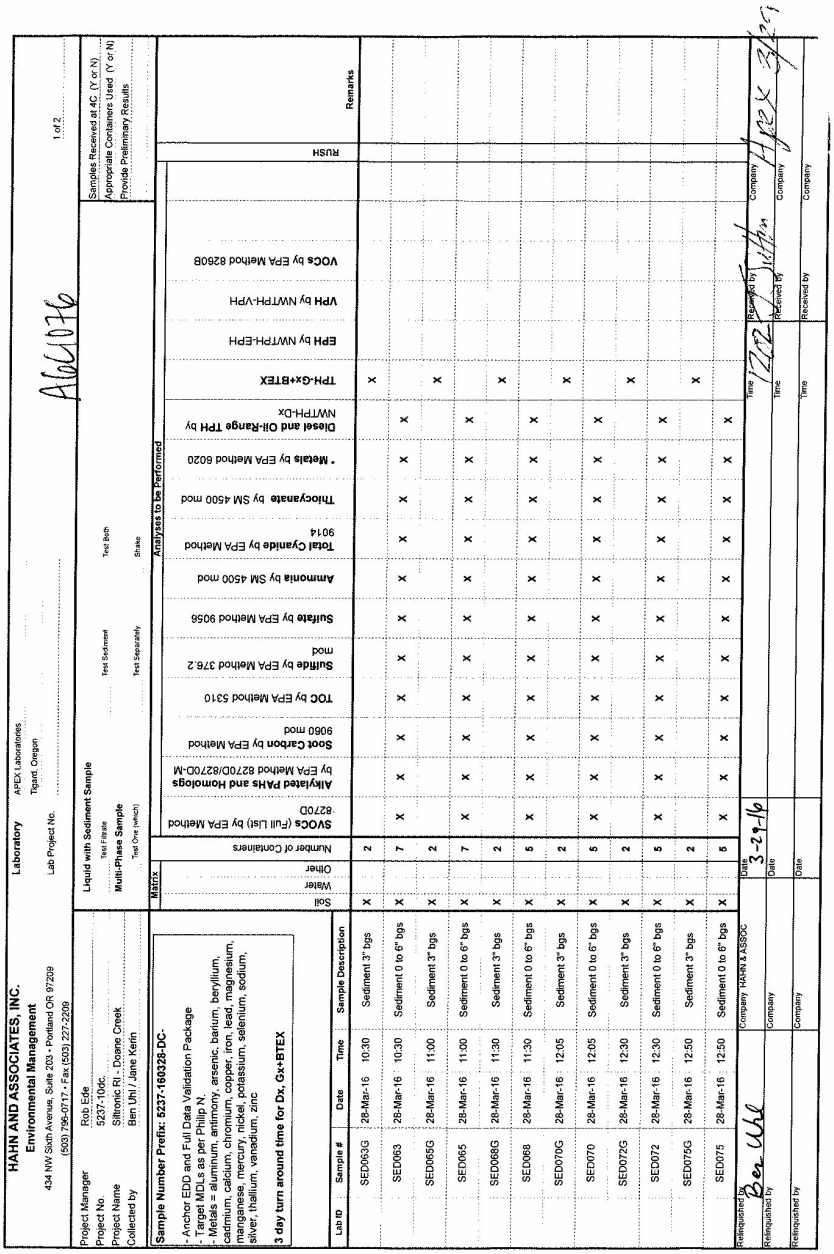

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Environmental Management
434 NW Sixth Avenue, Suite 203 • Portland OR 97209
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Laboratory: APEX Laboratories, Tigard, Oregon
Lab Project No.: AGU076
1 of 2

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

Liquid with Sediment Sample — Test Sediment — Test Both
Multi-Phase Sample — Test Filtrate
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: 5237-160328-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

| Lab ID | Sample # | Date | Time | Sample Description | Matrix: Soil | Water | Other | Number of Containers | SVOCs (Full List) by EPA Method 8270D | Alkylated PAHs and Homologs by EPA Method 8270D/8270D-M | Soot Carbon by EPA Method 9060 mod | TOC by EPA Method 5310 | Sulfide by EPA Method 376.2 mod | Sulfate by EPA Method 9056 | Ammonia by SM 4500 mod | Total Cyanide by EPA Method 9014 | Thiocyanate by SM 4500 mod | * Metals by EPA Method 6020 | Diesel and Oil-Range TPH by NWTPH-Dx | TPH-Gx+BTEX | EPH by NWTPH-EPH | VPH by NWTPH-VPH | VOCs by EPA Method 8260B | RUSH | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SED063G | 28-Mar-16 | 10:30 | Sediment 3" bgs | X | | | 2 | | | | | | | | | | | | X | | | | |
| | SED063 | 28-Mar-16 | 10:30 | Sediment 0 to 6" bgs | X | | | 7 | X | X | X | X | X | X | X | X | X | X | X | | | | | |
| | SED065G | 28-Mar-16 | 11:00 | Sediment 3" bgs | X | | | 2 | | | | | | | | | | | | X | | | | |
| | SED065 | 28-Mar-16 | 11:00 | Sediment 0 to 6" bgs | X | | | 7 | X | X | X | X | X | X | X | X | X | X | X | | | | | |
| | SED068G | 28-Mar-16 | 11:30 | Sediment 3" bgs | X | | | 2 | | | | | | | | | | | | X | | | | |
| | SED068 | 28-Mar-16 | 11:30 | Sediment 0 to 6" bgs | X | | | 5 | X | X | X | X | X | X | X | X | X | X | X | | | | | |
| | SED070G | 28-Mar-16 | 12:05 | Sediment 3" bgs | X | | | 2 | | | | | | | | | | | | X | | | | |
| | SED070 | 28-Mar-16 | 12:05 | Sediment 0 to 6" bgs | X | | | 5 | X | X | X | X | X | X | X | X | X | X | X | | | | | |
| | SED072G | 28-Mar-16 | 12:30 | Sediment 3" bgs | X | | | 2 | | | | | | | | | | | | X | | | | |
| | SED072 | 28-Mar-16 | 12:30 | Sediment 0 to 6" bgs | X | | | 5 | X | X | X | X | X | X | X | X | X | X | X | | | | | |
| | SED075G | 28-Mar-16 | 12:50 | Sediment 3" bgs | X | | | 2 | | | | | | | | | | | | X | | | | |
| | SED075 | 28-Mar-16 | 12:50 | Sediment 0 to 6" bgs | X | | | 5 | X | X | X | X | X | X | X | X | X | X | X | | | | | |

Relinquished by: Ben Uhl — Company: HAHN & ASSOC — Date: 3-29-16 — Time: 1202 — Received by — Company — Date — Time — Received by — Company — Date — Time — Received by — Company — Date — Time

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.*

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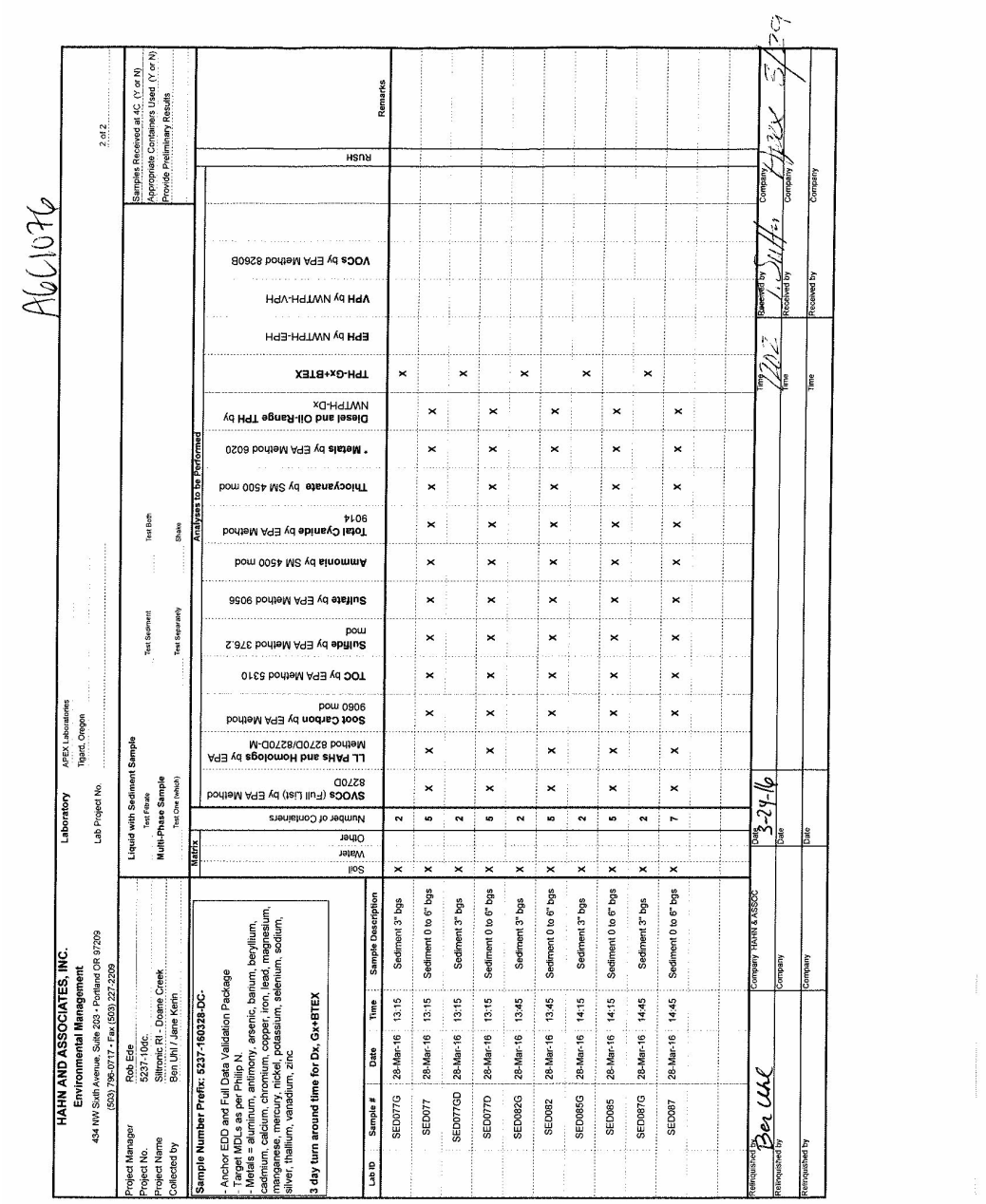
| | | |
|---|---|---|
| **Hahn and Associates** | Project: **Siltronic RI-Doane Creek** | |
| 434 NW 6th Ave. Suite 203 | Project Number: 5237-10dc | **Reported:** |
| Portland, OR 97209 | Project Manager: Rob Ede | 12/12/17 08:40 |

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