



22-May-2015

Stuart Hall  
Olsson Associates  
760 Horizon Drive  
Suite 102  
Grand Junction, CO 81506

Re: **Hawxhurst 24-09**

Work Order: **1505874**

Dear Stuart,

ALS Environmental received 1 sample on 15-May-2015 10:00 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with NELAP standard requirements and QC results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 26.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Les Arnold".

Electronically approved by: Les Arnold

Les Arnold  
Senior Project Manager



Certificate No: MN 532786

## Report of Laboratory Analysis

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185

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Environmental The ALS logo, a stylized 'A' with a flame-like shape inside.

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**Client:** Olsson Associates  
**Project:** Hawxhurst 24-09  
**Work Order:** 1505874**Work Order Sample Summary**

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| <u>Lab Samp ID</u> | <u>Client Sample ID</u> | <u>Matrix</u> | <u>Tag Number</u> | <u>Collection Date</u> | <u>Date Received</u> | <u>Hold</u>              |
|--------------------|-------------------------|---------------|-------------------|------------------------|----------------------|--------------------------|
| 1505874-01         | 24-09:Comp-051315       | Soil          |                   | 5/13/2015 15:01        | 5/15/2015 10:00      | <input type="checkbox"/> |

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**Client:** Olsson Associates  
**Project:** Hawxhurst 24-09  
**WorkOrder:** 1505874

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**QUALIFIERS,  
ACRONYMS, UNITS**

| <b><u>Qualifier</u></b> | <b><u>Description</u></b>   |
|-------------------------|---|
| *                       | Value exceeds Regulatory Limit  |
| a                       | Not accredited  |
| B                       | Analyte detected in the associated Method Blank above the Reporting Limit   |
| E                       | Value above quantitation range  |
| H                       | Analyzed outside of Holding Time  |
| J                       | Analyte is present at an estimated concentration between the MDL and Report Limit   |
| n                       | Not offered for accreditation   |
| ND                      | Not Detected at the Reporting Limit   |
| O                       | Sample amount is > 4 times amount spiked  |
| P                       | Dual Column results percent difference > 40%  |
| R                       | RPD above laboratory control limit  |
| S                       | Spike Recovery outside laboratory control limits  |
| U                       | Analyzed but not detected above the MDL   |
| X                       | Analyte was detected in the Method Blank between the MDL and PQL, sample results may exhibit background or reagent contamination at the observed level. |

| <b><u>Acronym</u></b> | <b><u>Description</u></b>           |
|-----------------------|-------------------------------------|
| DUP                   | Method Duplicate                    |
| LCS                   | Laboratory Control Sample           |
| LCSD                  | Laboratory Control Sample Duplicate |
| LOD                   | Limit of Detection (see MDL)        |
| LOQ                   | Limit of Quantitation (see PQL)     |
| MBLK                  | Method Blank                        |
| MDL                   | Method Detection Limit              |
| MS                    | Matrix Spike                        |
| MSD                   | Matrix Spike Duplicate              |
| PQL                   | Practical Quantitation Limit        |
| RPD                   | Relative Percent Difference         |
| TDL                   | Target Detection Limit              |
| TNTC                  | Too Numerous To Count               |
| A                     | APHA Standard Methods               |
| D                     | ASTM                                |
| E                     | EPA                                 |
| SW                    | SW-846 Update III                   |

| <b><u>Units Reported</u></b> | <b><u>Description</u></b>                  |
|------------------------------|--|
| % of sample                  | Percent of Sample                          |
| °F                           | Degrees Fahrenheit                         |
| µg/Kg-dry                    | Micrograms per Kilogram Dry Weight         |
| mg/Kg-dry                    | Milligrams per Kilogram Dry Weight         |
| mg/L                         | Milligrams per Liter                       |
| mmhos/cm @25°C               | Millimhos-Centimeter at 25 Degrees Celcius |
| none                         |  |
| s.u.                         | Standard Units                             |

# ALS Group USA, Corp

Date: 22-May-15

**Client:** Olsson Associates  
**Project:** Hawxhurst 24-09  
**Sample ID:** 24-09:Comp-051315  
**Collection Date:** 5/13/2015 03:01 PM

**Work Order:** 1505874  
**Lab ID:** 1505874-01  
**Matrix:** SOIL

| Analyses                                 | Result       | Qual | Report Limit          | Units     | Dilution Factor             | Date Analyzed       |
|--|--------------|------|-----------------------|-----------|-----------------------------|---------------------|
| <b>DIESEL RANGE ORGANICS BY GC-FID</b>   |              |      |                       |           |                             |                     |
| <b>DRO (C10-C28)</b>                     | <b>56</b>    |      | <b>SW8015M</b>        |           | Prep Date: <b>5/19/2015</b> | Analyst: <b>IT</b>  |
| <i>Surr: 4-Terphenyl-d14</i>             | 73.7         |      | 5.1                   | mg/Kg-dry | 1                           | 5/19/2015 11:00 PM  |
|  |              |      | 39-133                | %REC      | 1                           | 5/19/2015 11:00 PM  |
| <b>GASOLINE RANGE ORGANICS BY GC-FID</b> |              |      |                       |           |                             |                     |
| <b>GRO (C6-C10)</b>                      | <b>37</b>    |      | <b>SW8015D</b>        |           | Prep Date: <b>5/18/2015</b> | Analyst: <b>IT</b>  |
| <i>Surr: Toluene-d8</i>                  | 130          |      | 3.1                   | mg/Kg-dry | 1                           | 5/19/2015 01:54 AM  |
|  |              |      | 50-150                | %REC      | 1                           | 5/19/2015 01:54 AM  |
| <b>MERCURY BY CVAA</b>                   |              |      |                       |           |                             |                     |
| <b>Mercury</b>                           | <b>0.022</b> |      | <b>SW7471B</b>        |           | Prep Date: <b>5/19/2015</b> | Analyst: <b>LR</b>  |
|  |              |      | 0.016                 | mg/Kg-dry | 1                           | 5/19/2015 04:14 PM  |
| <b>METALS ANALYSIS BY ICP</b>            |              |      |                       |           |                             |                     |
| <b>Arsenic</b>                           | <b>4.8</b>   |      | <b>SW846 6010C</b>    |           | Prep Date: <b>5/15/2015</b> | Analyst: <b>JEC</b> |
| <b>Barium</b>                            | <b>430</b>   |      | 4.1                   | mg/Kg-dry | 10                          | 5/18/2015 05:32 PM  |
| <b>Boron</b>                             | <b>5.2</b>   |      | 0.41                  | mg/Kg-dry | 1                           | 5/18/2015 10:28 AM  |
| Cadmium                                  | ND           |      | 1.6                   | mg/Kg-dry | 1                           | 5/18/2015 10:28 AM  |
| <b>Chromium</b>                          | <b>12</b>    |      | 0.41                  | mg/Kg-dry | 1                           | 5/18/2015 10:28 AM  |
| <b>Copper</b>                            | <b>13</b>    |      | 4.1                   | mg/Kg-dry | 10                          | 5/18/2015 05:32 PM  |
| <b>Lead</b>                              | <b>5.3</b>   |      | 0.41                  | mg/Kg-dry | 1                           | 5/18/2015 10:28 AM  |
| <b>Nickel</b>                            | <b>18</b>    |      | 4.1                   | mg/Kg-dry | 10                          | 5/18/2015 05:32 PM  |
| Selenium                                 | ND           |      | 0.41                  | mg/Kg-dry | 1                           | 5/18/2015 10:28 AM  |
| Silver                                   | ND           |      | 4.1                   | mg/Kg-dry | 10                          | 5/19/2015 11:25 AM  |
| <b>Zinc</b>                              | <b>26</b>    |      | 0.41                  | mg/Kg-dry | 1                           | 5/18/2015 10:28 AM  |
|  |              |      | 8.1                   | mg/Kg-dry | 10                          | 5/18/2015 05:32 PM  |
| <b>SOLUBLE CATIONS FOR SAR</b>           |              |      |                       |           |                             |                     |
| <b>Calcium</b>                           | <b>280</b>   |      | <b>SW846 6010C</b>    |           | Prep Date: <b>5/19/2015</b> | Analyst: <b>JEC</b> |
| <b>Magnesium</b>                         | <b>110</b>   |      | 5.0                   | mg/L      | 10                          | 5/20/2015 12:14 AM  |
| <b>Sodium</b>                            | <b>1,300</b> |      | 2.0                   | mg/L      | 10                          | 5/20/2015 12:14 AM  |
|  |              |      | 2.0                   | mg/L      | 10                          | 5/20/2015 12:14 AM  |
| <b>SODIUM ADSORPTION RATIO</b>           |              |      |                       |           |                             |                     |
| <b>Exchangeable Sodium Percentage</b>    | <b>19</b>    |      | <b>USDA H60 METHO</b> |           | Prep Date: <b>5/19/2015</b> | Analyst: <b>JEC</b> |
| <b>Sodium Adsorption Ratio</b>           | <b>16</b>    |      | 0.010                 | none      | 1                           | 5/19/2015           |
|  |              |      | 0.010                 | none      | 1                           | 5/19/2015           |
| <b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>   |              |      |                       |           |                             |                     |
| <b>Acenaphthene</b>                      | <b>ND</b>    |      | <b>SW846 8270D</b>    |           | Prep Date: <b>5/19/2015</b> | Analyst: <b>RS</b>  |
| <b>Acenaphthylene</b>                    | <b>ND</b>    |      | 8.2                   | µg/Kg-dry | 1                           | 5/20/2015 06:10 AM  |
| <b>Anthracene</b>                        | <b>ND</b>    |      | 8.2                   | µg/Kg-dry | 1                           | 5/20/2015 06:10 AM  |
| <b>Benzo(a)anthracene</b>                | <b>ND</b>    |      | 8.2                   | µg/Kg-dry | 1                           | 5/20/2015 06:10 AM  |
| <b>Benzo(a)pyrene</b>                    | <b>ND</b>    |      | 8.2                   | µg/Kg-dry | 1                           | 5/20/2015 06:10 AM  |
| <b>Benzo(b)fluoranthene</b>              | <b>ND</b>    |      | 8.2                   | µg/Kg-dry | 1                           | 5/20/2015 06:10 AM  |
| <b>Benzo(g,h,i)perylene</b>              | <b>ND</b>    |      | 8.2                   | µg/Kg-dry | 1                           | 5/20/2015 06:10 AM  |
| <b>Benzo(k)fluoranthene</b>              | <b>ND</b>    |      | 8.2                   | µg/Kg-dry | 1                           | 5/20/2015 06:10 AM  |
| <b>Chrysene</b>                          | <b>ND</b>    |      | 8.2                   | µg/Kg-dry | 1                           | 5/20/2015 06:10 AM  |

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group USA, Corp

Date: 22-May-15

**Client:** Olsson Associates  
**Project:** Hawxhurst 24-09  
**Sample ID:** 24-09:Comp-051315  
**Collection Date:** 5/13/2015 03:01 PM

**Work Order:** 1505874  
**Lab ID:** 1505874-01  
**Matrix:** SOIL

| Analyses                                | Result | Qual | Report Limit          | Units                             | Dilution Factor | Date Analyzed      |
|---|--------|------|-----------------------|-----------------------------------|-----------------|--------------------|
| Dibenzo(a,h)anthracene                  | ND     |      | 8.2                   | µg/Kg-dry                         | 1               | 5/20/2015 06:10 AM |
| Fluoranthene                            | ND     |      | 8.2                   | µg/Kg-dry                         | 1               | 5/20/2015 06:10 AM |
| Fluorene                                | ND     |      | 8.2                   | µg/Kg-dry                         | 1               | 5/20/2015 06:10 AM |
| Indeno(1,2,3-cd)pyrene                  | ND     |      | 8.2                   | µg/Kg-dry                         | 1               | 5/20/2015 06:10 AM |
| Naphthalene                             | ND     |      | 8.2                   | µg/Kg-dry                         | 1               | 5/20/2015 06:10 AM |
| Pyrene                                  | ND     |      | 8.2                   | µg/Kg-dry                         | 1               | 5/20/2015 06:10 AM |
| Surr: 2-Fluorobiphenyl                  | 79.2   |      | 12-100                | %REC                              | 1               | 5/20/2015 06:10 AM |
| Surr: 4-Terphenyl-d14                   | 104    |      | 25-137                | %REC                              | 1               | 5/20/2015 06:10 AM |
| Surr: Nitrobenzene-d5                   | 80.0   |      | 37-107                | %REC                              | 1               | 5/20/2015 06:10 AM |
| <b>VOLATILE ORGANIC COMPOUNDS</b>       |        |      | <b>SW8260B</b>        | Prep Date: 5/18/2015 Analyst: LSY |                 |                    |
| Benzene                                 | 47     |      | 37                    | µg/Kg-dry                         | 1               | 5/21/2015 12:32 PM |
| Ethylbenzene                            | ND     |      | 37                    | µg/Kg-dry                         | 1               | 5/21/2015 12:32 PM |
| m,p-Xylene                              | 720    |      | 74                    | µg/Kg-dry                         | 1               | 5/21/2015 12:32 PM |
| o-Xylene                                | 210    |      | 37                    | µg/Kg-dry                         | 1               | 5/21/2015 12:32 PM |
| Toluene                                 | 240    |      | 37                    | µg/Kg-dry                         | 1               | 5/21/2015 12:32 PM |
| Xylenes, Total                          | 940    |      | 110                   | µg/Kg-dry                         | 1               | 5/21/2015 12:32 PM |
| Surr: 1,2-Dichloroethane-d4             | 101    |      | 70-130                | %REC                              | 1               | 5/21/2015 12:32 PM |
| Surr: 4-Bromofluorobenzene              | 108    |      | 70-130                | %REC                              | 1               | 5/21/2015 12:32 PM |
| Surr: Dibromofluoromethane              | 98.2   |      | 70-130                | %REC                              | 1               | 5/21/2015 12:32 PM |
| Surr: Toluene-d8                        | 96.6   |      | 70-130                | %REC                              | 1               | 5/21/2015 12:32 PM |
| <b>CYANIDE, REACTIVE</b>                |        |      | <b>SW7.3.3.2</b>      | Analyst: TVD                      |                 |                    |
| Cyanide, Reactive                       | ND     |      | 120                   | mg/Kg-dry                         | 1               | 5/20/2015 03:15 PM |
| <b>ELECTRICAL CONDUCTIVITY (SAR)</b>    |        |      | <b>USDA H60 METHO</b> | Prep Date: 5/19/2015 Analyst: KF  |                 |                    |
| Electrical Conductivity @ Saturation    | 11     |      | 0.12                  | mmhos/cm @2                       | 25              | 5/20/2015 11:55 AM |
| <b>CHROMIUM, TRIVALENT</b>              |        |      | <b>CALCULATION</b>    | Analyst: MB                       |                 |                    |
| Chromium, Trivalent                     | 12     |      | 0.62                  | mg/Kg-dry                         | 1               | 5/21/2015 01:15 PM |
| <b>CHROMIUM, HEXAVALENT</b>             |        |      | <b>SW7196A</b>        | Prep Date: 5/18/2015 Analyst: MB  |                 |                    |
| Chromium, Hexavalent                    | ND     |      | 1.2                   | mg/Kg-dry                         | 1               | 5/19/2015 04:00 PM |
| <b>FLASHPOINT/IGNITABILITY ANALYSIS</b> |        |      | <b>SW1010A</b>        | Analyst: RLF                      |                 |                    |
| Flashpoint/Ignitability                 | >200   |      |                       | °F                                | 1               | 5/22/2015 08:30 AM |
| <b>MOISTURE</b>                         |        |      | <b>E160.3M</b>        | Analyst: EVB                      |                 |                    |
| Moisture                                | 19     |      | 0.050                 | % of sample                       | 1               | 5/19/2015 03:00 PM |
| <b>PH</b>                               |        |      | <b>SW9045D</b>        | Prep Date: 5/18/2015 Analyst: ED  |                 |                    |
| pH                                      | 8.4    |      |                       | s.u.                              | 1               | 5/18/2015 04:00 PM |
| <b>SULFIDE, REACTIVE</b>                |        |      | <b>SW7.3.4.2</b>      | Analyst: TVD                      |                 |                    |
| Sulfide, Reactive                       | ND     |      | 120                   | mg/Kg-dry                         | 1               | 5/20/2015 02:00 PM |

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

Client: Olsson Associates  
 Work Order: 1505874  
 Project: Hawxhurst 24-09

**QC BATCH REPORT**

Batch ID: **71226a** Instrument ID **GC8** Method: **SW8015M**

|             |        |                                       |         |               |      |                       |               |  |           |              |
|-------------|--------|---------------------------------------|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|
| <b>MBLK</b> |        | Sample ID: <b>DBLKS1-71226-71226a</b> |         |               |      | Units: <b>mg/Kg</b>   |               | Analysis Date: <b>5/19/2015 06:00 PM</b> |           |              |
| Client ID:  |        | Run ID: <b>GC8_150519A</b>            |         |               |      | SeqNo: <b>3283084</b> |               | Prep Date: <b>5/19/2015</b>              |           | DF: <b>1</b> |
| Analyte     | Result | PQL                                   | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                     | RPD Limit | Qual         |

DRO (C10-C28) ND 5.0  
 Surr: 4-Terphenyl-d14 1.445 0 2 0 72.2 39-133 0

|            |        |                                       |         |               |      |                       |               |  |           |              |
|------------|--------|---------------------------------------|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|
| <b>LCS</b> |        | Sample ID: <b>DLCSS1-71226-71226a</b> |         |               |      | Units: <b>mg/Kg</b>   |               | Analysis Date: <b>5/19/2015 06:30 PM</b> |           |              |
| Client ID: |        | Run ID: <b>GC8_150519A</b>            |         |               |      | SeqNo: <b>3283085</b> |               | Prep Date: <b>5/19/2015</b>              |           | DF: <b>1</b> |
| Analyte    | Result | PQL                                   | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                     | RPD Limit | Qual         |

DRO (C10-C28) 154.1 5.0 200 0 77 61-109 0  
 Surr: 4-Terphenyl-d14 1.252 0 2 0 62.6 39-133 0

|            |        |                                  |         |               |      |                       |               |  |           |              |
|------------|--------|----------------------------------|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|
| <b>MS</b>  |        | Sample ID: <b>1505876-07A MS</b> |         |               |      | Units: <b>mg/Kg</b>   |               | Analysis Date: <b>5/19/2015 07:30 PM</b> |           |              |
| Client ID: |        | Run ID: <b>GC8_150519A</b>       |         |               |      | SeqNo: <b>3283086</b> |               | Prep Date: <b>5/19/2015</b>              |           | DF: <b>1</b> |
| Analyte    | Result | PQL                              | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                     | RPD Limit | Qual         |

DRO (C10-C28) 265.5 8.2 329.4 10.45 77.4 48-110 0  
 Surr: 4-Terphenyl-d14 2.285 0 3.294 0 69.4 39-133 0

|            |        |                                   |         |               |      |                       |               |  |           |              |
|------------|--------|-----------------------------------|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|
| <b>MSD</b> |        | Sample ID: <b>1505876-07A MSD</b> |         |               |      | Units: <b>mg/Kg</b>   |               | Analysis Date: <b>5/19/2015 08:00 PM</b> |           |              |
| Client ID: |        | Run ID: <b>GC8_150519A</b>        |         |               |      | SeqNo: <b>3283087</b> |               | Prep Date: <b>5/19/2015</b>              |           | DF: <b>1</b> |
| Analyte    | Result | PQL                               | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                     | RPD Limit | Qual         |

DRO (C10-C28) 281.7 7.9 315.6 10.45 86 48-110 265.5 5.92 30  
 Surr: 4-Terphenyl-d14 2.387 0 3.156 0 75.6 39-133 2.285 4.37 30

The following samples were analyzed in this batch: 1505874-01B

Client: Olsson Associates  
 Work Order: 1505874  
 Project: Hawxhurst 24-09

## QC BATCH REPORT

Batch ID: **71190** Instrument ID **GC9** Method: **SW8015D**

|                  |        |                                    |         |               |      |                       |               |  |           |              |
|------------------|--------|------------------------------------|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|
| <b>MBLK</b>      |        | Sample ID: <b>MBLK-71190-71190</b> |         |               |      | Units: <b>µg/Kg</b>   |               | Analysis Date: <b>5/18/2015 11:50 PM</b> |           |              |
| Client ID:       |        | Run ID: <b>GC9_150518A</b>         |         |               |      | SeqNo: <b>3280124</b> |               | Prep Date: <b>5/18/2015</b>              |           | DF: <b>1</b> |
| Analyte          | Result | PQL                                | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                     | RPD Limit | Qual         |
| GRO (C6-C10)     | ND     | 2,500                              |         |               |      |                       |               |  |           |              |
| Surr: Toluene-d8 | 5614   | 0                                  | 5000    | 0             | 112  | 50-150                | 0             |  |           |              |

|                  |        |                                   |         |               |      |                       |               |  |           |              |
|------------------|--------|-----------------------------------|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|
| <b>LCS</b>       |        | Sample ID: <b>LCS-71190-71190</b> |         |               |      | Units: <b>µg/Kg</b>   |               | Analysis Date: <b>5/18/2015 11:25 PM</b> |           |              |
| Client ID:       |        | Run ID: <b>GC9_150518A</b>        |         |               |      | SeqNo: <b>3280123</b> |               | Prep Date: <b>5/18/2015</b>              |           | DF: <b>1</b> |
| Analyte          | Result | PQL                               | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                     | RPD Limit | Qual         |
| GRO (C6-C10)     | 575700 | 2,500                             | 500000  | 0             | 115  | 70-130                | 0             |  |           |              |
| Surr: Toluene-d8 | 5515   | 0                                 | 5000    | 0             | 110  | 50-150                | 0             |  |           |              |

|                  |         |                                  |         |               |      |                       |               |  |           |              |
|------------------|---------|----------------------------------|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|
| <b>MS</b>        |         | Sample ID: <b>1505922-01A MS</b> |         |               |      | Units: <b>µg/Kg</b>   |               | Analysis Date: <b>5/19/2015 12:40 PM</b> |           |              |
| Client ID:       |         | Run ID: <b>GC9_150518A</b>       |         |               |      | SeqNo: <b>3280131</b> |               | Prep Date: <b>5/18/2015</b>              |           | DF: <b>1</b> |
| Analyte          | Result  | PQL                              | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                     | RPD Limit | Qual         |
| GRO (C6-C10)     | 1161000 | 2,500                            | 500000  | 587100        | 115  | 70-130                | 0             |  |           |              |
| Surr: Toluene-d8 | 5474    | 0                                | 5000    | 0             | 109  | 50-150                | 0             |  |           |              |

|                  |         |                                   |         |               |      |                       |               |  |           |              |
|------------------|---------|-----------------------------------|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|
| <b>MSD</b>       |         | Sample ID: <b>1505922-01A MSD</b> |         |               |      | Units: <b>µg/Kg</b>   |               | Analysis Date: <b>5/19/2015 01:04 AM</b> |           |              |
| Client ID:       |         | Run ID: <b>GC9_150518A</b>        |         |               |      | SeqNo: <b>3280125</b> |               | Prep Date: <b>5/18/2015</b>              |           | DF: <b>1</b> |
| Analyte          | Result  | PQL                               | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                     | RPD Limit | Qual         |
| GRO (C6-C10)     | 1140000 | 2,500                             | 500000  | 587100        | 111  | 70-130                | 1161000       | 1.79                                     | 30        |              |
| Surr: Toluene-d8 | 5658    | 0                                 | 5000    | 0             | 113  | 50-150                | 5474          | 3.29                                     | 30        |              |

The following samples were analyzed in this batch: 1505874-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



**Client:** Olsson Associates  
**Work Order:** 1505874  
**Project:** Hawxhurst 24-09

## QC BATCH REPORT

Batch ID: **71252** Instrument ID **HG1** Method: **SW7471B**

|            |        |                             |         |               |      |                |               |                                   |           |       |
|------------|--------|-----------------------------|---------|---------------|------|----------------|---------------|-----------------------------------|-----------|-------|
| MBLK       |        | Sample ID: MBLK-71252-71252 |         |               |      | Units: mg/Kg   |               | Analysis Date: 5/19/2015 04:01 PM |           |       |
| Client ID: |        | Run ID: HG1_150519A         |         |               |      | SeqNo: 3282217 |               | Prep Date: 5/19/2015              |           | DF: 1 |
| Analyte    | Result | PQL                         | SPK Val | SPK Ref Value | %REC | Control Limit  | RPD Ref Value | %RPD                              | RPD Limit | Qual  |

Mercury ND 0.020

|            |        |                            |         |               |      |                |               |                                   |           |       |
|------------|--------|----------------------------|---------|---------------|------|----------------|---------------|-----------------------------------|-----------|-------|
| LCS        |        | Sample ID: LCS-71252-71252 |         |               |      | Units: mg/Kg   |               | Analysis Date: 5/19/2015 04:03 PM |           |       |
| Client ID: |        | Run ID: HG1_150519A        |         |               |      | SeqNo: 3282218 |               | Prep Date: 5/19/2015              |           | DF: 1 |
| Analyte    | Result | PQL                        | SPK Val | SPK Ref Value | %REC | Control Limit  | RPD Ref Value | %RPD                              | RPD Limit | Qual  |

Mercury 0.1867 0.020 0.1665 0 112 80-120 0

|            |        |                          |         |               |                |               |                      |                                   |           |      |
|------------|--------|--------------------------|---------|---------------|----------------|---------------|----------------------|-----------------------------------|-----------|------|
| MS         |        | Sample ID: 1505726-02AMS |         |               |                | Units: mg/Kg  |                      | Analysis Date: 5/19/2015 04:10 PM |           |      |
| Client ID: |        | Run ID: HG1_150519A      |         |               | SeqNo: 3282221 |               | Prep Date: 5/19/2015 |                                   | DF: 1     |      |
| Analyte    | Result | PQL                      | SPK Val | SPK Ref Value | %REC           | Control Limit | RPD Ref Value        | %RPD                              | RPD Limit | Qual |

Mercury 0.1297 0.014 0.1199 0.001971 107 75-125 0

|            |        |                           |         |               |                |               |                      |                                   |           |      |
|------------|--------|---------------------------|---------|---------------|----------------|---------------|----------------------|-----------------------------------|-----------|------|
| MSD        |        | Sample ID: 1505726-02AMSD |         |               |                | Units: mg/Kg  |                      | Analysis Date: 5/19/2015 04:12 PM |           |      |
| Client ID: |        | Run ID: HG1_150519A       |         |               | SeqNo: 3282222 |               | Prep Date: 5/19/2015 |                                   | DF: 1     |      |
| Analyte    | Result | PQL                       | SPK Val | SPK Ref Value | %REC           | Control Limit | RPD Ref Value        | %RPD                              | RPD Limit | Qual |

Mercury 0.1281 0.014 0.1184 0.001971 107 75-125 0.1297 1.22 35

The following samples were analyzed in this batch:

1505874-01B

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Olsson Associates  
**Work Order:** 1505874  
**Project:** Hawxhurst 24-09

## QC BATCH REPORT

Batch ID: **71111** Instrument ID **ICP2** Method: **SW846 6010C**

| DUP        |        |     |                      | Sample ID: 1505781-01CDUP |      |                |               | Units: mg/L          |           | Analysis Date: 5/19/2015 12:58 PM |  |
|------------|--------|-----|----------------------|---------------------------|------|----------------|---------------|----------------------|-----------|-----------------------------------|--|
| Client ID: |        |     | Run ID: ICP2_150519A |                           |      | SeqNo: 3281237 |               | Prep Date: 5/19/2015 |           | DF: 10                            |  |
| Analyte    | Result | PQL | SPK Val              | SPK Ref Value             | %REC | Control Limit  | RPD Ref Value | %RPD                 | RPD Limit | Qual                              |  |
| Calcium    | 78.43  | 5.0 | 0                    | 0                         | 0    | 0-0            | 80.58         | 2.71                 |           |                                   |  |
| Magnesium  | 123.1  | 2.0 | 0                    | 0                         | 0    | 0-0            | 125.9         | 2.25                 |           |                                   |  |
| Sodium     | 580    | 2.0 | 0                    | 0                         | 0    | 0-0            | 592.3         | 2.1                  |           |                                   |  |

| DUP                            |        |       |                     | Sample ID: 1505781-01CDUP |      |                |               | Units: none          |           | Analysis Date: 5/19/2015 |  |
|--------------------------------|--------|-------|---------------------|---------------------------|------|----------------|---------------|----------------------|-----------|--------------------------|--|
| Client ID:                     |        |       | Run ID: SAR_150519A |                           |      | SeqNo: 3281543 |               | Prep Date: 5/19/2015 |           | DF: 1                    |  |
| Analyte                        | Result | PQL   | SPK Val             | SPK Ref Value             | %REC | Control Limit  | RPD Ref Value | %RPD                 | RPD Limit | Qual                     |  |
| Exchangeable Sodium Percentage | 11.33  | 0.010 | 0                   | 0                         | 0    |                | 11.43         | 0.882                | 50        |                          |  |
| Sodium Adsorption Ratio        | 9.52   | 0.010 | 0                   | 0                         | 0    |                | 9.607         | 0.906                | 50        |                          |  |

The following samples were analyzed in this batch:

1505874-01C

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Olsson Associates  
**Work Order:** 1505874  
**Project:** Hawxhurst 24-09

# QC BATCH REPORT

Batch ID: **71148** Instrument ID **ICP2** Method: **SW846 6010C**

| <b>MBLK</b> |         | Sample ID: <b>MBLK-71148-71148</b> |         |               |      | Units: <b>mg/L</b>    |               | Analysis Date: <b>5/18/2015 09:39 AM</b> |           |              |
|-------------|---------|------------------------------------|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|
| Client ID:  |         | Run ID: <b>ICP2_150518A</b>        |         |               |      | SeqNo: <b>3278986</b> |               | Prep Date: <b>5/15/2015</b>              |           | DF: <b>1</b> |
| Analyte     | Result  | PQL                                | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                     | RPD Limit | Qual         |
| Arsenic     | ND      | 0.25                               |         |               |      |                       |               |  |           |              |
| Barium      | ND      | 0.25                               |         |               |      |                       |               |  |           |              |
| Boron       | ND      | 1.0                                |         |               |      |                       |               |  |           |              |
| Cadmium     | ND      | 0.50                               |         |               |      |                       |               |  |           |              |
| Chromium    | 0.01581 | 0.25                               |         |               |      |                       |               |  |           | J            |
| Copper      | 0.04086 | 0.50                               |         |               |      |                       |               |  |           | J            |
| Lead        | ND      | 0.25                               |         |               |      |                       |               |  |           |              |
| Nickel      | ND      | 0.25                               |         |               |      |                       |               |  |           |              |
| Selenium    | ND      | 0.50                               |         |               |      |                       |               |  |           |              |
| Silver      | ND      | 0.25                               |         |               |      |                       |               |  |           |              |
| Zinc        | ND      | 0.50                               |         |               |      |                       |               |  |           |              |

| <b>LCS</b> |        | Sample ID: <b>LCS-71148-71148</b> |         |               |      | Units: <b>mg/L</b>    |               | Analysis Date: <b>5/18/2015 09:44 AM</b> |           |              |
|------------|--------|-----------------------------------|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|
| Client ID: |        | Run ID: <b>ICP2_150518A</b>       |         |               |      | SeqNo: <b>3278987</b> |               | Prep Date: <b>5/15/2015</b>              |           | DF: <b>1</b> |
| Analyte    | Result | PQL                               | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                     | RPD Limit | Qual         |
| Arsenic    | 5.354  | 0.25                              | 5       | 0             | 107  | 80-120                | 0             |  |           |              |
| Barium     | 5.212  | 0.25                              | 5       | 0             | 104  | 80-120                | 0             |  |           |              |
| Boron      | 26.75  | 1.0                               | 25      | 0             | 107  | 80-120                | 0             |  |           |              |
| Cadmium    | 4.78   | 0.50                              | 5       | 0             | 95.6 | 80-120                | 0             |  |           |              |
| Chromium   | 5.335  | 0.25                              | 5       | 0             | 107  | 80-120                | 0             |  |           |              |
| Copper     | 5.393  | 0.50                              | 5       | 0             | 108  | 80-120                | 0             |  |           |              |
| Lead       | 5.257  | 0.25                              | 5       | 0             | 105  | 80-120                | 0             |  |           |              |
| Nickel     | 5.125  | 0.25                              | 5       | 0             | 103  | 80-120                | 0             |  |           |              |
| Selenium   | 5.361  | 0.50                              | 5       | 0             | 107  | 80-120                | 0             |  |           |              |
| Silver     | 5.174  | 0.25                              | 5       | 0             | 103  | 80-120                | 0             |  |           |              |
| Zinc       | 5.428  | 0.50                              | 5       | 0             | 109  | 80-120                | 0             |  |           |              |

| <b>MS</b>  |        | Sample ID: <b>1505876-02AMS</b> |         |               |      | Units: <b>mg/Kg</b>   |               | Analysis Date: <b>5/18/2015 11:08 AM</b> |           |              |
|------------|--------|---------------------------------|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|
| Client ID: |        | Run ID: <b>ICP2_150518A</b>     |         |               |      | SeqNo: <b>3279006</b> |               | Prep Date: <b>5/15/2015</b>              |           | DF: <b>1</b> |
| Analyte    | Result | PQL                             | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                     | RPD Limit | Qual         |
| Arsenic    | 18.28  | 0.37                            | 7.418   | 9.943         | 112  | 75-125                | 0             |  |           |              |
| Barium     | 102.3  | 0.37                            | 7.418   | 89.65         | 170  | 75-125                | 0             |  |           | SO           |
| Boron      | 39.21  | 1.5                             | 37.09   | 2.918         | 97.9 | 75-125                | 0             |  |           |              |
| Cadmium    | 6.458  | 0.74                            | 7.418   | -0.1748       | 89.4 | 75-125                | 0             |  |           |              |
| Copper     | 82.51  | 0.74                            | 7.418   | 68.51         | 189  | 75-125                | 0             |  |           | SO           |
| Nickel     | 22.7   | 0.37                            | 7.418   | 15.62         | 95.5 | 75-125                | 0             |  |           |              |
| Silver     | 7.007  | 0.37                            | 7.418   | -0.2206       | 97.4 | 75-125                | 0             |  |           |              |
| Zinc       | 88.73  | 0.74                            | 7.418   | 77.52         | 151  | 75-125                | 0             |  |           | SO           |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates  
 Work Order: 1505874  
 Project: Hawxhurst 24-09

## QC BATCH REPORT

Batch ID: 71148

Instrument ID ICP2

Method: SW846 6010C

|            |  |        |      |                          |               |      |               |                |      |           |                                   |  |       |  |
|------------|--|--------|------|--------------------------|---------------|------|---------------|----------------|------|-----------|-----------------------------------|--|-------|--|
| MS         |  |        |      | Sample ID: 1505876-02AMS |               |      |               | Units: mg/Kg   |      |           | Analysis Date: 5/18/2015 06:11 PM |  |       |  |
| Client ID: |  |        |      | Run ID: ICP2_150518B     |               |      |               | SeqNo: 3280030 |      |           | Prep Date: 5/15/2015              |  | DF: 2 |  |
| Analyte    |  | Result | PQL  | SPK Val                  | SPK Ref Value | %REC | Control Limit | RPD Ref Value  | %RPD | RPD Limit | Qual                              |  |       |  |
| Chromium   |  | 19.99  | 0.74 | 7.418                    | 13.37         | 89.3 | 75-125        |                | 0    |           |                                   |  |       |  |
| Lead       |  | 27.99  | 0.74 | 7.418                    | 20.24         | 104  | 75-125        |                | 0    |           |                                   |  |       |  |

| MSD        |        |      |                      | Sample ID: 1505876-02AMSD |       |                | Units: mg/Kg  |                      | Analysis Date: 5/18/2015 11:13 AM |       |  |
|------------|--------|------|----------------------|---------------------------|-------|----------------|---------------|----------------------|-----------------------------------|-------|--|
| Client ID: |        |      | Run ID: ICP2_150518A |                           |       | SeqNo: 3279007 |               | Prep Date: 5/15/2015 |                                   | DF: 1 |  |
| Analyte    | Result | PQL  | SPK Val              | SPK Ref Value             | %REC  | Control Limit  | RPD Ref Value | %RPD                 | RPD Limit                         | Qual  |  |
| Arsenic    | 16.32  | 0.37 | 7.353                | 9.943                     | 86.7  | 75-125         | 18.28         | 11.4                 | 20                                |       |  |
| Barium     | 88.06  | 0.37 | 7.353                | 89.65                     | -21.6 | 75-125         | 102.3         | 14.9                 | 20                                | SO    |  |
| Boron      | 37.36  | 1.5  | 36.76                | 2.918                     | 93.7  | 75-125         | 39.21         | 4.85                 | 20                                |       |  |
| Cadmium    | 6.333  | 0.74 | 7.353                | -0.1748                   | 88.5  | 75-125         | 6.458         | 1.96                 | 20                                |       |  |
| Copper     | 63.76  | 0.74 | 7.353                | 68.51                     | -64.6 | 75-125         | 82.51         | 25.6                 | 20                                | SRO   |  |
| Nickel     | 19.93  | 0.37 | 7.353                | 15.62                     | 58.6  | 75-125         | 22.7          | 13                   | 20                                | S     |  |
| Silver     | 6.759  | 0.37 | 7.353                | -0.2206                   | 94.9  | 75-125         | 7.007         | 3.6                  | 20                                |       |  |
| Zinc       | 73.95  | 0.74 | 7.353                | 77.52                     | -48.5 | 75-125         | 88.73         | 18.2                 | 20                                | SO    |  |

|            |  |        |      |                           |               |      |               |                |      |           |                                   |  |       |  |
|------------|--|--------|------|---------------------------|---------------|------|---------------|----------------|------|-----------|-----------------------------------|--|-------|--|
| MSD        |  |        |      | Sample ID: 1505876-02AMSD |               |      |               | Units: mg/Kg   |      |           | Analysis Date: 5/18/2015 06:17 PM |  |       |  |
| Client ID: |  |        |      | Run ID: ICP2_150518B      |               |      |               | SeqNo: 3280031 |      |           | Prep Date: 5/15/2015              |  | DF: 2 |  |
| Analyte    |  | Result | PQL  | SPK Val                   | SPK Ref Value | %REC | Control Limit | RPD Ref Value  | %RPD | RPD Limit | Qual                              |  |       |  |
| Chromium   |  | 18.38  | 0.74 | 7.353                     | 13.37         | 68.2 | 75-125        | 19.99          | 8.38 | 20        | S                                 |  |       |  |
| Lead       |  | 26.64  | 0.74 | 7.353                     | 20.24         | 87   | 75-125        | 27.99          | 4.93 | 20        |                                   |  |       |  |

The following samples were analyzed in this batch: 1505874-01B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates  
 Work Order: 1505874  
 Project: Hawxhurst 24-09

# QC BATCH REPORT

Batch ID: **71223** Instrument ID **SVMS5** Method: **SW846 8270D**

| MBLK                   |        |     |                       | Sample ID: SBLKS1-71223-71223 |      |               |                | Units: µg/Kg |                      |      | Analysis Date: 5/20/2015 03:06 PM |  |  |
|------------------------|--------|-----|-----------------------|-------------------------------|------|---------------|----------------|--------------|----------------------|------|-----------------------------------|--|--|
| Client ID:             |        |     | Run ID: SVMS5_150520A |                               |      |               | SeqNo: 3284098 |              | Prep Date: 5/19/2015 |      | DF: 1                             |  |  |
| Analyte                | Result | PQL | SPK Val               | SPK Ref Value                 | %REC | Control Limit | RPD Ref Value  | %RPD         | RPD Limit            | Qual |                                   |  |  |
| Acenaphthene           | ND     | 6.7 |                       |                               |      |               |                |              |                      |      |                                   |  |  |
| Acenaphthylene         | ND     | 6.7 |                       |                               |      |               |                |              |                      |      |                                   |  |  |
| Anthracene             | ND     | 6.7 |                       |                               |      |               |                |              |                      |      |                                   |  |  |
| Benzo(a)anthracene     | ND     | 6.7 |                       |                               |      |               |                |              |                      |      |                                   |  |  |
| Benzo(a)pyrene         | ND     | 6.7 |                       |                               |      |               |                |              |                      |      |                                   |  |  |
| Benzo(b)fluoranthene   | ND     | 6.7 |                       |                               |      |               |                |              |                      |      |                                   |  |  |
| Benzo(g,h,i)perylene   | ND     | 6.7 |                       |                               |      |               |                |              |                      |      |                                   |  |  |
| Benzo(k)fluoranthene   | ND     | 6.7 |                       |                               |      |               |                |              |                      |      |                                   |  |  |
| Chrysene               | ND     | 6.7 |                       |                               |      |               |                |              |                      |      |                                   |  |  |
| Dibenzo(a,h)anthracene | ND     | 6.7 |                       |                               |      |               |                |              |                      |      |                                   |  |  |
| Fluoranthene           | ND     | 6.7 |                       |                               |      |               |                |              |                      |      |                                   |  |  |
| Fluorene               | ND     | 6.7 |                       |                               |      |               |                |              |                      |      |                                   |  |  |
| Indeno(1,2,3-cd)pyrene | ND     | 6.7 |                       |                               |      |               |                |              |                      |      |                                   |  |  |
| Naphthalene            | ND     | 6.7 |                       |                               |      |               |                |              |                      |      |                                   |  |  |
| Pyrene                 | ND     | 6.7 |                       |                               |      |               |                |              |                      |      |                                   |  |  |
| Surr: 2-Fluorobiphenyl | 1457   | 0   | 1667                  | 0                             | 87.4 | 12-100        |                | 0            |                      |      |                                   |  |  |
| Surr: 4-Terphenyl-d14  | 1794   | 0   | 1667                  | 0                             | 108  | 25-137        |                | 0            |                      |      |                                   |  |  |
| Surr: Nitrobenzene-d5  | 1464   | 0   | 1667                  | 0                             | 87.8 | 37-107        |                | 0            |                      |      |                                   |  |  |

| LCS                    |        |     |                       | Sample ID: SLCSS1-71223-71223 |      |                | Units: µg/Kg  |                      | Analysis Date: 5/20/2015 03:27 PM |       |  |
|------------------------|--------|-----|-----------------------|-------------------------------|------|----------------|---------------|----------------------|-----------------------------------|-------|--|
| Client ID:             |        |     | Run ID: SVMS5_150520A |                               |      | SeqNo: 3284099 |               | Prep Date: 5/19/2015 |                                   | DF: 1 |  |
| Analyte                | Result | PQL | SPK Val               | SPK Ref Value                 | %REC | Control Limit  | RPD Ref Value | %RPD                 | RPD Limit                         | Qual  |  |
| Acenaphthene           | 591.7  | 6.7 | 666.7                 | 0                             | 88.7 | 45-110         | 0             |                      |                                   |       |  |
| Acenaphthylene         | 570    | 6.7 | 666.7                 | 0                             | 85.5 | 45-105         | 0             |                      |                                   |       |  |
| Anthracene             | 616    | 6.7 | 666.7                 | 0                             | 92.4 | 55-105         | 0             |                      |                                   |       |  |
| Benzo(a)anthracene     | 616.7  | 6.7 | 666.7                 | 0                             | 92.5 | 50-110         | 0             |                      |                                   |       |  |
| Benzo(a)pyrene         | 592    | 6.7 | 666.7                 | 0                             | 88.8 | 50-110         | 0             |                      |                                   |       |  |
| Benzo(b)fluoranthene   | 611    | 6.7 | 666.7                 | 0                             | 91.6 | 45-115         | 0             |                      |                                   |       |  |
| Benzo(g,h,i)perylene   | 567    | 6.7 | 666.7                 | 0                             | 85   | 40-125         | 0             |                      |                                   |       |  |
| Benzo(k)fluoranthene   | 630    | 6.7 | 666.7                 | 0                             | 94.5 | 45-115         | 0             |                      |                                   |       |  |
| Chrysene               | 592.3  | 6.7 | 666.7                 | 0                             | 88.8 | 55-110         | 0             |                      |                                   |       |  |
| Dibenzo(a,h)anthracene | 580.7  | 6.7 | 666.7                 | 0                             | 87.1 | 40-125         | 0             |                      |                                   |       |  |
| Fluoranthene           | 634.3  | 6.7 | 666.7                 | 0                             | 95.1 | 55-115         | 0             |                      |                                   |       |  |
| Fluorene               | 608.3  | 6.7 | 666.7                 | 0                             | 91.2 | 50-110         | 0             |                      |                                   |       |  |
| Indeno(1,2,3-cd)pyrene | 564    | 6.7 | 666.7                 | 0                             | 84.6 | 40-120         | 0             |                      |                                   |       |  |
| Naphthalene            | 427.7  | 6.7 | 666.7                 | 0                             | 64.1 | 40-105         | 0             |                      |                                   |       |  |
| Pyrene                 | 671.3  | 6.7 | 666.7                 | 0                             | 101  | 45-125         | 0             |                      |                                   |       |  |
| Surr: 2-Fluorobiphenyl | 1428   | 0   | 1667                  | 0                             | 85.7 | 12-100         | 0             |                      |                                   |       |  |
| Surr: 4-Terphenyl-d14  | 1817   | 0   | 1667                  | 0                             | 109  | 25-137         | 0             |                      |                                   |       |  |
| Surr: Nitrobenzene-d5  | 1430   | 0   | 1667                  | 0                             | 85.8 | 37-107         | 0             |                      |                                   |       |  |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates  
 Work Order: 1505874  
 Project: Hawxhurst 24-09

## QC BATCH REPORT

Batch ID: 71223 Instrument ID SVMS5 Method: SW846 8270D

| MS                     |        |     |                       | Sample ID: 1505876-07A MS |      |                | Units: µg/Kg  |                      | Analysis Date: 5/19/2015 06:32 PM |       |  |
|------------------------|--------|-----|-----------------------|---------------------------|------|----------------|---------------|----------------------|-----------------------------------|-------|--|
| Client ID:             |        |     | Run ID: SVMS5_150519A |                           |      | SeqNo: 3283739 |               | Prep Date: 5/19/2015 |                                   | DF: 1 |  |
| Analyte                | Result | PQL | SPK Val               | SPK Ref Value             | %REC | Control Limit  | RPD Ref Value | %RPD                 | RPD Limit                         | Qual  |  |
| Acenaphthene           | 975.5  | 13  | 1298                  | 0                         | 75.1 | 45-110         | 0             |                      |                                   |       |  |
| Acenaphthylene         | 921    | 13  | 1298                  | 0                         | 70.9 | 45-105         | 0             |                      |                                   |       |  |
| Anthracene             | 1069   | 13  | 1298                  | 0                         | 82.3 | 55-105         | 0             |                      |                                   |       |  |
| Benzo(a)anthracene     | 1106   | 13  | 1298                  | 0                         | 85.2 | 50-110         | 0             |                      |                                   |       |  |
| Benzo(a)pyrene         | 1122   | 13  | 1298                  | 0                         | 86.4 | 50-110         | 0             |                      |                                   |       |  |
| Benzo(b)fluoranthene   | 1175   | 13  | 1298                  | 0                         | 90.5 | 45-115         | 0             |                      |                                   |       |  |
| Benzo(g,h,i)perylene   | 1134   | 13  | 1298                  | 0                         | 87.3 | 40-125         | 0             |                      |                                   |       |  |
| Benzo(k)fluoranthene   | 1149   | 13  | 1298                  | 0                         | 88.5 | 45-115         | 0             |                      |                                   |       |  |
| Chrysene               | 1091   | 13  | 1298                  | 0                         | 84   | 55-110         | 0             |                      |                                   |       |  |
| Dibenzo(a,h)anthracene | 1136   | 13  | 1298                  | 0                         | 87.5 | 40-125         | 0             |                      |                                   |       |  |
| Fluoranthene           | 1205   | 13  | 1298                  | 8.525                     | 92.1 | 55-115         | 0             |                      |                                   |       |  |
| Fluorene               | 1068   | 13  | 1298                  | 0                         | 82.2 | 50-110         | 0             |                      |                                   |       |  |
| Indeno(1,2,3-cd)pyrene | 1114   | 13  | 1298                  | 0                         | 85.8 | 40-120         | 0             |                      |                                   |       |  |
| Naphthalene            | 679.6  | 13  | 1298                  | 0                         | 52.3 | 40-105         | 0             |                      |                                   |       |  |
| Pyrene                 | 1168   | 13  | 1298                  | 0                         | 89.9 | 45-125         | 0             |                      |                                   |       |  |
| Surr: 2-Fluorobiphenyl | 2185   | 0   | 3245                  | 0                         | 67.3 | 12-100         | 0             |                      |                                   |       |  |
| Surr: 4-Terphenyl-d14  | 3139   | 0   | 3245                  | 0                         | 96.7 | 25-137         | 0             |                      |                                   |       |  |
| Surr: Nitrobenzene-d5  | 2267   | 0   | 3245                  | 0                         | 69.9 | 37-107         | 0             |                      |                                   |       |  |

| MSD                    |        |     |                       | Sample ID: 1505876-07A MSD |      |                | Units: µg/Kg  |                      | Analysis Date: 5/19/2015 06:54 PM |       |  |
|------------------------|--------|-----|-----------------------|----------------------------|------|----------------|---------------|----------------------|-----------------------------------|-------|--|
| Client ID:             |        |     | Run ID: SVMS5_150519A |                            |      | SeqNo: 3283740 |               | Prep Date: 5/19/2015 |                                   | DF: 1 |  |
| Analyte                | Result | PQL | SPK Val               | SPK Ref Value              | %REC | Control Limit  | RPD Ref Value | %RPD                 | RPD Limit                         | Qual  |  |
| Acenaphthene           | 1047   | 13  | 1325                  | 0                          | 79   | 45-110         | 975.5         | 7.07                 | 30                                |       |  |
| Acenaphthylene         | 992    | 13  | 1325                  | 0                          | 74.8 | 45-105         | 921           | 7.42                 | 30                                |       |  |
| Anthracene             | 1123   | 13  | 1325                  | 0                          | 84.7 | 55-105         | 1069          | 4.89                 | 30                                |       |  |
| Benzo(a)anthracene     | 1111   | 13  | 1325                  | 0                          | 83.8 | 50-110         | 1106          | 0.415                | 30                                |       |  |
| Benzo(a)pyrene         | 1113   | 13  | 1325                  | 0                          | 83.9 | 50-110         | 1122          | 0.862                | 30                                |       |  |
| Benzo(b)fluoranthene   | 1183   | 13  | 1325                  | 0                          | 89.3 | 45-115         | 1175          | 0.682                | 30                                |       |  |
| Benzo(g,h,i)perylene   | 1093   | 13  | 1325                  | 0                          | 82.5 | 40-125         | 1134          | 3.64                 | 30                                |       |  |
| Benzo(k)fluoranthene   | 1116   | 13  | 1325                  | 0                          | 84.2 | 45-115         | 1149          | 2.91                 | 30                                |       |  |
| Chrysene               | 1087   | 13  | 1325                  | 0                          | 82   | 55-110         | 1091          | 0.336                | 30                                |       |  |
| Dibenzo(a,h)anthracene | 1094   | 13  | 1325                  | 0                          | 82.5 | 40-125         | 1136          | 3.81                 | 30                                |       |  |
| Fluoranthene           | 1170   | 13  | 1325                  | 8.525                      | 87.6 | 55-115         | 1205          | 2.95                 | 30                                |       |  |
| Fluorene               | 1099   | 13  | 1325                  | 0                          | 82.9 | 50-110         | 1068          | 2.86                 | 30                                |       |  |
| Indeno(1,2,3-cd)pyrene | 1098   | 13  | 1325                  | 0                          | 82.8 | 40-120         | 1114          | 1.43                 | 30                                |       |  |
| Naphthalene            | 710.4  | 13  | 1325                  | 0                          | 53.6 | 40-105         | 679.6         | 4.43                 | 30                                |       |  |
| Pyrene                 | 1195   | 13  | 1325                  | 0                          | 90.2 | 45-125         | 1168          | 2.35                 | 30                                |       |  |
| Surr: 2-Fluorobiphenyl | 2372   | 0   | 3313                  | 0                          | 71.6 | 12-100         | 2185          | 8.2                  | 40                                |       |  |
| Surr: 4-Terphenyl-d14  | 3189   | 0   | 3313                  | 0                          | 96.3 | 25-137         | 3139          | 1.57                 | 40                                |       |  |
| Surr: Nitrobenzene-d5  | 2433   | 0   | 3313                  | 0                          | 73.4 | 37-107         | 2267          | 7.07                 | 40                                |       |  |

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Olsson Associates  
**Work Order:** 1505874  
**Project:** Hawxhurst 24-09

## QC BATCH REPORT

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Batch ID: **71223**      Instrument ID **SVMS5**      Method: **SW846 8270D**

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The following samples were analyzed in this batch:

|             |
|-------------|
| 1505874-01B |
|-------------|

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**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates  
 Work Order: 1505874  
 Project: Hawxhurst 24-09

## QC BATCH REPORT

Batch ID: **71186** Instrument ID **VMS7** Method: **SW8260B**

| MBLK                        |        |     |         | Sample ID: MBLK-71186-71186 |      |               |               | Units: µg/Kg   |           |      | Analysis Date: 5/18/2015 10:55 AM |  |       |  |
|-----------------------------|--------|-----|---------|-----------------------------|------|---------------|---------------|----------------|-----------|------|-----------------------------------|--|-------|--|
| Client ID:                  |        |     |         | Run ID: VMS7_150518A        |      |               |               | SeqNo: 3280355 |           |      | Prep Date: 5/18/2015              |  | DF: 1 |  |
| Analyte                     | Result | PQL | SPK Val | SPK Ref Value               | %REC | Control Limit | RPD Ref Value | %RPD           | RPD Limit | Qual |                                   |  |       |  |
| Benzene                     | ND     | 30  |         |                             |      |               |               |                |           |      |                                   |  |       |  |
| Ethylbenzene                | ND     | 30  |         |                             |      |               |               |                |           |      |                                   |  |       |  |
| m,p-Xylene                  | ND     | 60  |         |                             |      |               |               |                |           |      |                                   |  |       |  |
| o-Xylene                    | ND     | 30  |         |                             |      |               |               |                |           |      |                                   |  |       |  |
| Toluene                     | ND     | 30  |         |                             |      |               |               |                |           |      |                                   |  |       |  |
| Xylenes, Total              | ND     | 90  |         |                             |      |               |               |                |           |      |                                   |  |       |  |
| Surr: 1,2-Dichloroethane-d4 | 1020   | 0   | 1000    | 0                           | 102  | 70-130        |               | 0              |           |      |                                   |  |       |  |
| Surr: 4-Bromofluorobenzene  | 1016   | 0   | 1000    | 0                           | 102  | 70-130        |               | 0              |           |      |                                   |  |       |  |
| Surr: Dibromofluoromethane  | 977    | 0   | 1000    | 0                           | 97.7 | 70-130        |               | 0              |           |      |                                   |  |       |  |
| Surr: Toluene-d8            | 960.5  | 0   | 1000    | 0                           | 96   | 70-130        |               | 0              |           |      |                                   |  |       |  |

| LCS                         |        |     |                      | Sample ID: LCS-71186-71186 |      |                | Units: µg/Kg  |                      | Analysis Date: 5/18/2015 09:15 AM |       |  |
|-----------------------------|--------|-----|----------------------|----------------------------|------|----------------|---------------|----------------------|-----------------------------------|-------|--|
| Client ID:                  |        |     | Run ID: VMS7_150518A |                            |      | SeqNo: 3280354 |               | Prep Date: 5/18/2015 |                                   | DF: 1 |  |
| Analyte                     | Result | PQL | SPK Val              | SPK Ref Value              | %REC | Control Limit  | RPD Ref Value | %RPD                 | RPD Limit                         | Qual  |  |
| Benzene                     | 1040   | 30  | 1000                 | 0                          | 104  | 75-125         | 0             |                      |                                   |       |  |
| Ethylbenzene                | 1004   | 30  | 1000                 | 0                          | 100  | 75-125         | 0             |                      |                                   |       |  |
| m,p-Xylene                  | 2024   | 60  | 2000                 | 0                          | 101  | 80-125         | 0             |                      |                                   |       |  |
| o-Xylene                    | 974.5  | 30  | 1000                 | 0                          | 97.4 | 75-125         | 0             |                      |                                   |       |  |
| Toluene                     | 1038   | 30  | 1000                 | 0                          | 104  | 70-125         | 0             |                      |                                   |       |  |
| Xylenes, Total              | 2998   | 90  | 3000                 | 0                          | 99.9 | 75-125         | 0             |                      |                                   |       |  |
| Surr: 1,2-Dichloroethane-d4 | 994.5  | 0   | 1000                 | 0                          | 99.4 | 70-130         | 0             |                      |                                   |       |  |
| Surr: 4-Bromofluorobenzene  | 1002   | 0   | 1000                 | 0                          | 100  | 70-130         | 0             |                      |                                   |       |  |
| Surr: Dibromofluoromethane  | 996.5  | 0   | 1000                 | 0                          | 99.6 | 70-130         | 0             |                      |                                   |       |  |
| Surr: Toluene-d8            | 980.5  | 0   | 1000                 | 0                          | 98   | 70-130         | 0             |                      |                                   |       |  |

The following samples were analyzed in this batch:

1505874-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



**Client:** Olsson Associates  
**Work Order:** 1505874  
**Project:** Hawxhurst 24-09

## QC BATCH REPORT

Batch ID: 71111 Instrument ID WETCHEM Method: USDA H60 Metho

|                                      |        |                            |         |               |      |                      |               |                                   |           |        |
|--------------------------------------|--------|----------------------------|---------|---------------|------|----------------------|---------------|-----------------------------------|-----------|--------|
| DUP                                  |        | Sample ID: 1505781-01C DUP |         |               |      | Units: mmhos/cm @25° |               | Analysis Date: 5/20/2015 11:55 AM |           |        |
| Client ID:                           |        | Run ID: WETCHEM_150520E    |         |               |      | SeqNo: 3283418       |               | Prep Date: 5/19/2015              |           | DF: 10 |
| Analyte                              | Result | PQL                        | SPK Val | SPK Ref Value | %REC | Control Limit        | RPD Ref Value | %RPD                              | RPD Limit | Qual   |
| Electrical Conductivity @ Saturation | 4.42   | 0.050                      | 0       | 0             | 0    |                      | 4.39          | 0.681                             | 50        |        |

The following samples were analyzed in this batch:

1505874-01C

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Olsson Associates  
**Work Order:** 1505874  
**Project:** Hawxhurst 24-09

## QC BATCH REPORT

Batch ID: **71205** Instrument ID **WETCHEM** Method: **SW9045D**

|            |        |                            |         |               |      |                |               |                      |                                   |       |  |
|------------|--------|----------------------------|---------|---------------|------|----------------|---------------|----------------------|-----------------------------------|-------|--|
| LCS        |        | Sample ID: LCS-71205-71205 |         |               |      |                | Units: s.u.   |                      | Analysis Date: 5/18/2015 04:00 PM |       |  |
| Client ID: |        | Run ID: WETCHEM_150518K    |         |               |      | SeqNo: 3279807 |               | Prep Date: 5/18/2015 |                                   | DF: 1 |  |
| Analyte    | Result | PQL                        | SPK Val | SPK Ref Value | %REC | Control Limit  | RPD Ref Value | %RPD                 | RPD Limit                         | Qual  |  |

pH 3.93 0 4 0 98.2 90-110 0

|            |        |                            |         |               |      |                |               |                                   |           |       |
|------------|--------|----------------------------|---------|---------------|------|----------------|---------------|-----------------------------------|-----------|-------|
| DUP        |        | Sample ID: 1505806-02B DUP |         |               |      | Units: s.u.    |               | Analysis Date: 5/18/2015 04:00 PM |           |       |
| Client ID: |        | Run ID: WETCHEM_150518K    |         |               |      | SeqNo: 3279811 |               | Prep Date: 5/18/2015              |           | DF: 1 |
| Analyte    | Result | PQL                        | SPK Val | SPK Ref Value | %REC | Control Limit  | RPD Ref Value | %RPD                              | RPD Limit | Qual  |

pH 7.47 0 0 0 0 0-0 7.33 1.89 20

|            |        |     |         |                            |      |               |               |                |           |      |                                   |  |       |  |
|------------|--------|-----|---------|----------------------------|------|---------------|---------------|----------------|-----------|------|-----------------------------------|--|-------|--|
| DUP        |        |     |         | Sample ID: 1505910-01B DUP |      |               |               | Units: s.u.    |           |      | Analysis Date: 5/18/2015 04:00 PM |  |       |  |
| Client ID: |        |     |         | Run ID: WETCHEM_150518K    |      |               |               | SeqNo: 3279820 |           |      | Prep Date: 5/18/2015              |  | DF: 1 |  |
| Analyte    | Result | PQL | SPK Val | SPK Ref Value              | %REC | Control Limit | RPD Ref Value | %RPD           | RPD Limit | Qual |                                   |  |       |  |

pH 8.74 0 0 0 0 0-0 8.71 0.344 20

The following samples were analyzed in this batch:

1505874-01B

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Olsson Associates  
 Work Order: 1505874  
 Project: Hawxhurst 24-09

## QC BATCH REPORT

Batch ID: **71258** Instrument ID **WETCHEM** Method: **SW7196A**

|             |        |                                    |         |               |      |                       |               |  |           |              |
|-------------|--------|------------------------------------|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|
| <b>MBLK</b> |        | Sample ID: <b>MBLK-71258-71258</b> |         |               |      | Units: <b>mg/Kg</b>   |               | Analysis Date: <b>5/19/2015 04:00 PM</b> |           |              |
| Client ID:  |        | Run ID: <b>WETCHEM_150519R</b>     |         |               |      | SeqNo: <b>3282361</b> |               | Prep Date: <b>5/18/2015</b>              |           | DF: <b>1</b> |
| Analyte     | Result | PQL                                | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                     | RPD Limit | Qual         |

Chromium, Hexavalent ND 1.0

|            |        |                                   |         |               |      |                       |               |  |           |              |
|------------|--------|-----------------------------------|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|
| <b>LCS</b> |        | Sample ID: <b>LCS-71258-71258</b> |         |               |      | Units: <b>mg/Kg</b>   |               | Analysis Date: <b>5/19/2015 04:00 PM</b> |           |              |
| Client ID: |        | Run ID: <b>WETCHEM_150519R</b>    |         |               |      | SeqNo: <b>3282360</b> |               | Prep Date: <b>5/18/2015</b>              |           | DF: <b>1</b> |
| Analyte    | Result | PQL                               | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                     | RPD Limit | Qual         |

Chromium, Hexavalent 4.39 1.0 5 0 87.8 80-120 0

|                                     |        |                                  |         |               |      |                       |               |  |           |              |
|-------------------------------------|--------|----------------------------------|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|
| <b>MS</b>                           |        | Sample ID: <b>1505874-01B MS</b> |         |               |      | Units: <b>mg/Kg</b>   |               | Analysis Date: <b>5/19/2015 04:00 PM</b> |           |              |
| Client ID: <b>24-09:Comp-051315</b> |        | Run ID: <b>WETCHEM_150519R</b>   |         |               |      | SeqNo: <b>3282357</b> |               | Prep Date: <b>5/18/2015</b>              |           | DF: <b>1</b> |
| Analyte                             | Result | PQL                              | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                     | RPD Limit | Qual         |

Chromium, Hexavalent 4 1.0 5 0 80 75-125 0

|                                     |        |                                   |         |               |      |                       |               |  |           |                |
|-------------------------------------|--------|-----------------------------------|---------|---------------|------|-----------------------|---------------|--|-----------|----------------|
| <b>MS</b>                           |        | Sample ID: <b>1505874-01B MSI</b> |         |               |      | Units: <b>mg/Kg</b>   |               | Analysis Date: <b>5/19/2015 04:00 PM</b> |           |                |
| Client ID: <b>24-09:Comp-051315</b> |        | Run ID: <b>WETCHEM_150519R</b>    |         |               |      | SeqNo: <b>3282359</b> |               | Prep Date: <b>5/18/2015</b>              |           | DF: <b>100</b> |
| Analyte                             | Result | PQL                               | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                     | RPD Limit | Qual           |

Chromium, Hexavalent 2575 99 2660 0 96.8 75-125 0

|                                     |        |                                   |         |               |      |                       |               |  |           |              |
|-------------------------------------|--------|-----------------------------------|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|
| <b>MSD</b>                          |        | Sample ID: <b>1505874-01B MSD</b> |         |               |      | Units: <b>mg/Kg</b>   |               | Analysis Date: <b>5/19/2015 04:00 PM</b> |           |              |
| Client ID: <b>24-09:Comp-051315</b> |        | Run ID: <b>WETCHEM_150519R</b>    |         |               |      | SeqNo: <b>3282358</b> |               | Prep Date: <b>5/18/2015</b>              |           | DF: <b>1</b> |
| Analyte                             | Result | PQL                               | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                     | RPD Limit | Qual         |

Chromium, Hexavalent 4.697 1.0 5.051 0 93 75-125 4 16 20

The following samples were analyzed in this batch:

1505874-01B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Olsson Associates  
**Work Order:** 1505874  
**Project:** Hawxhurst 24-09

## QC BATCH REPORT

Batch ID: **R163783** Instrument ID **MOIST** Method: **E160.3M**

|            |        |                          |                       |               |      |                |                    |            |                                   |       |  |
|------------|--------|--------------------------|-----------------------|---------------|------|----------------|--------------------|------------|-----------------------------------|-------|--|
| MBLK       |        | Sample ID: WBLKS-R163783 |                       |               |      |                | Units: % of sample |            | Analysis Date: 5/19/2015 03:00 PM |       |  |
| Client ID: |        |                          | Run ID: MOIST_150519B |               |      | SeqNo: 3283453 |                    | Prep Date: |                                   | DF: 1 |  |
| Analyte    | Result | PQL                      | SPK Val               | SPK Ref Value | %REC | Control Limit  | RPD Ref Value      | %RPD       | RPD Limit                         | Qual  |  |

Moisture ND 0.050

|            |        |                        |         |               |      |                    |               |                                   |           |       |
|------------|--------|------------------------|---------|---------------|------|--------------------|---------------|-----------------------------------|-----------|-------|
| LCS        |        | Sample ID: LCS-R163783 |         |               |      | Units: % of sample |               | Analysis Date: 5/19/2015 03:00 PM |           |       |
| Client ID: |        | Run ID: MOIST_150519B  |         |               |      | SeqNo: 3283452     |               | Prep Date:                        |           | DF: 1 |
| Analyte    | Result | PQL                    | SPK Val | SPK Ref Value | %REC | Control Limit      | RPD Ref Value | %RPD                              | RPD Limit | Qual  |

Moisture 100 0.050 100 0 100 99.5-100.5 0

|            |  |        |     |                            |               |      |               |                    |      |           |                                   |  |       |  |
|------------|--|--------|-----|----------------------------|---------------|------|---------------|--------------------|------|-----------|-----------------------------------|--|-------|--|
| DUP        |  |        |     | Sample ID: 1505798-06B DUP |               |      |               | Units: % of sample |      |           | Analysis Date: 5/19/2015 03:00 PM |  |       |  |
| Client ID: |  |        |     | Run ID: MOIST_150519B      |               |      |               | SeqNo: 3283431     |      |           | Prep Date:                        |  | DF: 1 |  |
| Analyte    |  | Result | PQL | SPK Val                    | SPK Ref Value | %REC | Control Limit | RPD Ref Value      | %RPD | RPD Limit | Qual                              |  |       |  |

Moisture 4.07 0.050 0 0 0 3.96 2.74 20

|            |        |     |         |                                   |      |               |               |                       |           |      |  |  |              |  |
|------------|--------|-----|---------|-----------------------------------|------|---------------|---------------|-----------------------|-----------|------|--|--|--------------|--|
| <b>DUP</b> |        |     |         | Sample ID: <b>1505876-01A DUP</b> |      |               |               | Units: % of sample    |           |      | Analysis Date: <b>5/19/2015 03:00 PM</b> |  |              |  |
| Client ID: |        |     |         | Run ID: <b>MOIST_150519B</b>      |      |               |               | SeqNo: <b>3283437</b> |           |      | Prep Date:                               |  | DF: <b>1</b> |  |
| Analyte    | Result | PQL | SPK Val | SPK Ref Value                     | %REC | Control Limit | RPD Ref Value | %RPD                  | RPD Limit | Qual |  |  |              |  |

Moisture 11.92 0.050 0 0 0 11.72 1.69 20

The following samples were analyzed in this batch:

1505874-01B

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Olsson Associates  
**Work Order:** 1505874  
**Project:** Hawxhurst 24-09

## QC BATCH REPORT

Batch ID: **R163813** Instrument ID **WETCHEM** Method: **SW7.3.4.2**

|                   |        |                                      |         |                       |      |                     |               |  |           |      |
|-------------------|--------|--------------------------------------|---------|-----------------------|------|---------------------|---------------|--|-----------|------|
| <b>MBLK</b>       |        | Sample ID: <b>MB-R163813-R163813</b> |         |                       |      | Units: <b>mg/Kg</b> |               | Analysis Date: <b>5/20/2015 02:00 PM</b> |           |      |
| Client ID:        |        | Run ID: <b>WETCHEM_150520J</b>       |         | SeqNo: <b>3284074</b> |      | Prep Date:          |               | DF: <b>1</b>                             |           |      |
| Analyte           | Result | PQL                                  | SPK Val | SPK Ref Value         | %REC | Control Limit       | RPD Ref Value | %RPD                                     | RPD Limit | Qual |
| Sulfide, Reactive | ND     | 100                                  |         |                       |      |                     |               |  |           |      |

|                   |        |                                       |         |                       |      |                     |               |  |           |      |
|-------------------|--------|---------------------------------------|---------|-----------------------|------|---------------------|---------------|--|-----------|------|
| <b>LCS</b>        |        | Sample ID: <b>LCS-R163813-R163813</b> |         |                       |      | Units: <b>mg/Kg</b> |               | Analysis Date: <b>5/20/2015 02:00 PM</b> |           |      |
| Client ID:        |        | Run ID: <b>WETCHEM_150520J</b>        |         | SeqNo: <b>3284075</b> |      | Prep Date:          |               | DF: <b>1</b>                             |           |      |
| Analyte           | Result | PQL                                   | SPK Val | SPK Ref Value         | %REC | Control Limit       | RPD Ref Value | %RPD                                     | RPD Limit | Qual |
| Sulfide, Reactive | 1692   | 100                                   | 2149    | 0                     | 78.7 | 60-120              | 0             |  |           |      |

The following samples were analyzed in this batch:

1505874-01B

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Olsson Associates  
**Work Order:** 1505874  
**Project:** Hawxhurst 24-09

## QC BATCH REPORT

Batch ID: **R163814** Instrument ID **WETCHEM** Method: **SW7.3.3.2**

|            |        |                               |         |               |                |               |               |      |                                   |      |  |
|------------|--------|-------------------------------|---------|---------------|----------------|---------------|---------------|------|-----------------------------------|------|--|
| MBLK       |        | Sample ID: MB-R163814-R163814 |         |               |                |               | Units: mg/Kg  |      | Analysis Date: 5/20/2015 03:15 PM |      |  |
| Client ID: |        | Run ID: WETCHEM_150520K       |         |               | SeqNo: 3284081 |               | Prep Date:    |      | DF: 1                             |      |  |
| Analyte    | Result | PQL                           | SPK Val | SPK Ref Value | %REC           | Control Limit | RPD Ref Value | %RPD | RPD Limit                         | Qual |  |

Cyanide, Reactive ND 100

|            |        |                                |                         |               |      |                |               |            |                                   |       |  |
|------------|--------|--------------------------------|-------------------------|---------------|------|----------------|---------------|------------|-----------------------------------|-------|--|
| LCS        |        | Sample ID: LCS-R163814-R163814 |                         |               |      |                | Units: mg/Kg  |            | Analysis Date: 5/20/2015 03:15 PM |       |  |
| Client ID: |        |                                | Run ID: WETCHEM_150520K |               |      | SeqNo: 3284082 |               | Prep Date: |                                   | DF: 1 |  |
| Analyte    | Result | PQL                            | SPK Val                 | SPK Ref Value | %REC | Control Limit  | RPD Ref Value | %RPD       | RPD Limit                         | Qual  |  |

Cyanide, Reactive 117.4 100 125 0 94 75-125 0

|            |        |                           |                         |               |      |                |               |            |                                   |       |  |
|------------|--------|---------------------------|-------------------------|---------------|------|----------------|---------------|------------|-----------------------------------|-------|--|
| MS         |        | Sample ID: 1505999-02A MS |                         |               |      |                | Units: mg/Kg  |            | Analysis Date: 5/20/2015 03:15 PM |       |  |
| Client ID: |        |                           | Run ID: WETCHEM_150520K |               |      | SeqNo: 3284091 |               | Prep Date: |                                   | DF: 1 |  |
| Analyte    | Result | PQL                       | SPK Val                 | SPK Ref Value | %REC | Control Limit  | RPD Ref Value | %RPD       | RPD Limit                         | Qual  |  |

Cyanide, Reactive 233 100 250 0 93.2 50-150 0

|            |        |                            |         |               |                |               |               |                                   |           |      |
|------------|--------|----------------------------|---------|---------------|----------------|---------------|---------------|-----------------------------------|-----------|------|
| MSD        |        | Sample ID: 1505999-02A MSD |         |               |                | Units: mg/Kg  |               | Analysis Date: 5/20/2015 03:15 PM |           |      |
| Client ID: |        | Run ID: WETCHEM_150520K    |         |               | SeqNo: 3284092 |               | Prep Date:    |                                   | DF: 1     |      |
| Analyte    | Result | PQL                        | SPK Val | SPK Ref Value | %REC           | Control Limit | RPD Ref Value | %RPD                              | RPD Limit | Qual |

Cyanide, Reactive 233 100 250 0 93.2 50-150 233 0 35

The following samples were analyzed in this batch:

1505874-01B

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Olsson Associates  
**Work Order:** 1505874  
**Project:** Hawxhurst 24-09

## QC BATCH REPORT

Batch ID: **R163957** Instrument ID **WETCHEM** Method: **SW1010A**

|                         |        |                                       |         |               |                       |               |               |  |              |      |
|-------------------------|--------|---------------------------------------|---------|---------------|-----------------------|---------------|---------------|--|--------------|------|
| <b>LCS</b>              |        | Sample ID: <b>LCS-R163957-R163957</b> |         |               |                       | Units: °F     |               | Analysis Date: <b>5/22/2015 08:30 AM</b> |              |      |
| Client ID:              |        | Run ID: <b>WETCHEM_150522B</b>        |         |               | SeqNo: <b>3287510</b> |               | Prep Date:    |  | DF: <b>1</b> |      |
| Analyte                 | Result | PQL                                   | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value | %RPD                                     | RPD Limit    | Qual |
| Flashpoint/Ignitability | 82     | 0                                     | 81      | 0             | 101                   | 97-103        | 0             |  |              |      |

The following samples were analyzed in this batch:

1505874-01B

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.



## Form 2820-0





1505874

1 of 1

By Lab or Return to Client

\*Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

**For metals or anions, please detail analytes below.**

|                 | SIGNATURE   | PRINTED NAME    | DATE     | TIME  |
|-----------------|---|-----------------|----------|-------|
| RELINQUISHED BY |  | Robert Stockton | 5-14-15  | 10:00 |
| RECEIVED BY     |  | N.M.            | 5-14-15  | 10:00 |
| RELINQUISHED BY |  | M.              | 5-14-15  | 1200  |
| RECEIVED BY     |  | T.B. JOHNSON    | 05/15/15 | 1000  |
| RELINQUISHED BY |   |                 |          |       |
| RECEIVED BY     |   |                 |          |       |

480



From: (616) 298-1033  
 Nick Martinez  
 ALS Environmental  
 127 E. 1st Street

Origin ID: RILA

**FedEx**  
 Express



J151215022303uw

PARACHUTE, CO 81635

Ship Date: 14MAY15  
 ActWgt: 53.0 LB  
 CAD: 2264840/NET3610

Dims: 24 X 15 X 15 IN

Delivery Address Bar Code



Ref # 051415-2  
 Invoice #  
 PO # Parachute  
 Dept #

SHIP TO: (616) 399-6070  
 sample receiving  
 ALS Laboratory Group  
 3352 128TH AVE

BILL SENDER

HOLLAND, MI 49424

1 of 2

FRI - 15 MAY 10:30A  
 PRIORITY OVERNIGHT

TRK# 7736 0890 6472

0201

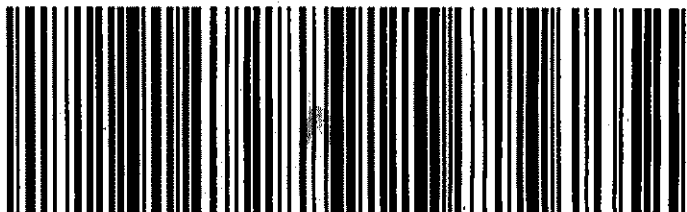
## MASTER ##

49424

MI-US

GRR

**XX HLMA**



537J3/C3J8/EE4B

**After printing this label:**

1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

**Warning:** Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.

Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on [fedex.com](http://fedex.com). FedEx will not be responsible for any claim in excess of \$100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of \$100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is \$1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our Service Guide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

Sample Receipt Checklist

Client Name: **OLSSON**

Date/Time Received: **15-May-15 10:00**

Work Order: **1505874**

Received by: **TBB**

Checklist completed by Keith Wurenga  
eSignature

15-May-15  
Date

Reviewed by: Lee Drndol  
eSignature

15-May-15  
Date

Matrices: **soil**

Carrier name: **FedEx**

Shipping container/cooler in good condition? Yes ☒ No ☐ Not Present ☐

Custody seals intact on shipping container/cooler? Yes ☒ No ☐ Not Present ☐

Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒

Chain of custody present? Yes ☒ No ☐

Chain of custody signed when relinquished and received? Yes ☒ No ☐

Chain of custody agrees with sample labels? Yes ☒ No ☐

Samples in proper container/bottle? Yes ☒ No ☐

Sample containers intact? Yes ☒ No ☐

Sufficient sample volume for indicated test? Yes ☒ No ☐

All samples received within holding time? Yes ☒ No ☐

Container/Temp Blank temperature in compliance? Yes ☒ No ☐

Sample(s) received on ice? Yes ☒ No ☐

Temperature(s)/Thermometer(s): 4.8C

Cooler(s)/Kit(s):

Date/Time sample(s) sent to storage: 5/15/2015 12:15:51 PM

Water - VOA vials have zero headspace? Yes ☐ No ☐ No VOA vials submitted ☒

Water - pH acceptable upon receipt? Yes ☐ No ☐ N/A ☒

pH adjusted? Yes ☐ No ☐ N/A ☒

pH adjusted by: -

Login Notes:

-----

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction: