



Analytical Resources, Incorporated
Analytical Chemists and Consultants

April 14, 2016

Philip Nerenberg
Apex Laboratories
12232 SW Garden Place
Tigard, OR 97223

RE: Project: A6D0013
ARI Job No.: AYR6

Dear Mr. Nerenberg:

Please find enclosed the original Chain of Custody records (COCs), sample receipt documentation, and the final data for the samples from the project referenced above.

Sample receipt information and analytical details are addressed in the Case Narrative.

An electronic copy of this report and all supporting raw data will be kept on file at ARI. Should you have any questions or concerns, please feel free to call me at your convenience.

Respectfully,
ANALYTICAL RESOURCES, INC.

Cheronne Oreiro
Project Manager
(206) 695-6214
cheronneo@arilabs.com
www.arilabs.com

cc: eFile: AYR6

Enclosures

10/16

NF 4/4/16

Ayrb

SUBCONTRACT ORDER

Apex Laboratories

A6D0013

SENDING LABORATORY:

Apex Laboratories
12232 S.W. Garden Place
Tigard, OR 97223
Phone: (503) 718-2323
Fax: (503) 718-0333
Project Manager: Philip Nerenberg

RECEIVING LABORATORY:

Analytical Resources, INC
4611 S. 134th Place
Tukwila, WA 98168
Phone : (206) 695-6200
Fax: (206) 695-6201

Sample Name: 5237-160331-NDP-SED003 **Sedimen** **Sampled: 03/31/16 10:35** **NDP Sediment-003 (0-0.5)** **(A6D0013-02)**

| Analysis | Due | Expires | Comments |
|--|----------------|----------------|----------|
| Sulfide, Total by PSEP (376.2) (SUB) | 04/14/16 17:00 | 04/14/16 10:35 | |
| <i>Containers Supplied:</i> (E)4 oz Glass Jar | | | |

Sample Name: 5237-160331-NDP-SED002 **Sedimen** **Sampled: 03/31/16 10:45** **NDP Sediment-002 (0-0.5)** **(A6D0013-04)**

| Analysis | Due | Expires | Comments |
|--|----------------|----------------|----------|
| Sulfide, Total by PSEP (376.2) (SUB) | 04/14/16 17:00 | 04/14/16 10:45 | |
| <i>Containers Supplied:</i> (G)4 oz Glass Jar | | | |

Sample Name: 5237-160331-NDP-SED001 **Sedimen** **Sampled: 03/31/16 11:00** **NDP Sediment-001 (0-0.5)** **(A6D0013-06)**

| Analysis | Due | Expires | Comments |
|--|----------------|----------------|----------|
| Sulfide, Total by PSEP (376.2) (SUB) | 04/14/16 17:00 | 04/14/16 11:00 | |
| <i>Containers Supplied:</i> (G)4 oz Glass Jar | | | |

Sample Name: 5237-160331-NDP-SED005 **Sedimen** **Sampled: 03/31/16 11:00** **NDP Sediment-005 (0-0.5)** **(A6D0013-08)**

| Analysis | Due | Expires | Comments |
|--|----------------|----------------|----------|
| Sulfide, Total by PSEP (376.2) (SUB) | 04/14/16 17:00 | 04/14/16 11:00 | |
| <i>Containers Supplied:</i> (G)4 oz Glass Jar | | | |

Standard TAT

Released By: Missu Kya Date: Received By: [Signature] Date: 4-5-16 @ 1058

Released By: [Signature] Date: Received By: [Signature] Date: **UPS (Shipper)**

AYRB

SUBCONTRACT ORDER

Apex Laboratories

A6D0013

| NDP Sediment-004(0-0.5) | | | |
|---|----------------|-------------------------|--------------|
| Sample Name: 5237-160331-NDP-SED004 | Sedimen | Sampled: 03/31/16 11:40 | (A6D0013-10) |
| Analysis | Due | Expires | Comments |
| Sulfide, Total by PSEP (376.2) (SUB) | 04/14/16 17:00 | 04/14/16 11:40 | |
| <i>Containers Supplied:</i> | | | |
| (G)4 oz Glass Jar | | | |

| NDP Embankment (0-3.5) | | | |
|---|----------------|-------------------------|--------------|
| Sample Name: 5237-160331-NDP-EMB001 | Soil | Sampled: 03/31/16 14:40 | (A6D0013-12) |
| Analysis | Due | Expires | Comments |
| Sulfide, Total by PSEP (376.2) (SUB) | 04/14/16 17:00 | 04/14/16 14:40 | |
| <i>Containers Supplied:</i> | | | |
| (E)4 oz Glass Jar | | | |

| | | | |
|--------------------|------|--------------------|---------------|
| <i>Missie Kupa</i> | | UPS (Shipper) | |
| Released By | Date | Received By | Date |
| UPS (Shipper) | | <i>[Signature]</i> | 4-5-16 @ 1058 |
| Released By | Date | Received By | Date |



Cooler Receipt Form

ARI Client: Apex

Project Name: _____

COC No(s): _____ (NA)

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: AYR6

Tracking No: 12X4720R1393820531 NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler? YES NO

Were custody papers included with the cooler? YES NO

Were custody papers properly filled out (ink, signed, etc.) YES NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry) 1.6

Time: _____ Temp Gun ID#: D005276

If cooler temperature is out of compliance fill out form 00070F

Cooler Accepted by: TR Date: 4-5-16 Time: 1058

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler? YES NO

What kind of packing material was used? ... Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other: _____

Was sufficient ice used (if appropriate)? NA YES NO

Were all bottles sealed in individual plastic bags? YES NO

Did all bottles arrive in good condition (unbroken)? YES NO

Were all bottle labels complete and legible? YES NO

Did the number of containers listed on COC match with the number of containers received? YES NO

Did all bottle labels and tags agree with custody papers? YES NO

Were all bottles used correct for the requested analyses? YES NO

Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)... NA YES NO

Were all VOC vials free of air bubbles? NA YES NO

Was sufficient amount of sample sent in each bottle? YES NO

Date VOC Trip Blank was made at ARI..... NA _____

Was Sample Split by ARI : NA YES Date/Time: _____ Equipment: _____ Split by: _____

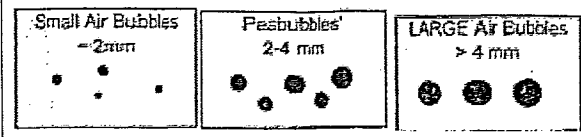
Samples Logged by: TR Date: 4-5-16 Time: TR 1058 1143

**** Notify Project Manager of discrepancies or concerns ****

| Sample ID on Bottle | Sample ID on COC | Sample ID on Bottle | Sample ID on COC |
|---------------------|------------------|---------------------|------------------|
| | | | |
| | | | |
| | | | |

Additional Notes, Discrepancies, & Resolutions:

By: _____ Date: _____



Small → "sm" (< 2 mm)
 Peabubbles → "pb" (2 to < 4 mm)
 Large → "lg" (4 to < 6 mm)
 Headspace → "hs" (> 6 mm)



Case Narrative

Client: Apex Laboratories
Project: A6D0013
ARI Job No.: AYR6

Sample Receipt

Analytical Resources, Inc. (ARI) accepted six soil samples on April 5, 2016 under ARI job AYR6. The cooler temperature measured by IR thermometer following ARI SOP was 1.6°C. For further details regarding sample receipt, please refer to the Cooler Receipt Form.

The samples were analyzed for parameters as requested.

Sulfide by SM4500-S2

Sulfide sample volumes were preserved upon receipt.

There were no irregularities with this analysis.

Sample ID Cross Reference Report



ARI Job No: AYR6
Client: Apex Labs
Project Event: A6D0013
Project Name: N/A

| Sample ID | ARI Lab ID | ARI LIMS ID | Matrix | Sample Date/Time | VTSR |
|---------------------------|------------|-------------|----------|------------------|----------------|
| 1. 5237-160331-NDP-SED003 | AYR6A | 16-5494 | Sediment | 03/31/16 10:35 | 04/05/16 10:58 |
| 2. 5237-160331-NDP-SED002 | AYR6B | 16-5495 | Sediment | 03/31/16 10:45 | 04/05/16 10:58 |
| 3. 5237-160331-NDP-SED001 | AYR6C | 16-5496 | Sediment | 03/31/16 11:00 | 04/05/16 10:58 |
| 4. 5237-160331-NDP-SED005 | AYR6D | 16-5497 | Sediment | 03/31/16 11:00 | 04/05/16 10:58 |
| 5. 5237-160331-NDP-SED004 | AYR6E | 16-5498 | Sediment | 03/31/16 11:40 | 04/05/16 10:58 |
| 6. 5237-160331-NDP-EMB001 | AYR6F | 16-5499 | Soil | 03/31/16 14:40 | 04/05/16 10:58 |

SAMPLE RESULTS-CONVENTIONALS
AYR6-Apex Labs



Matrix: Sediment
Data Release Authorized: W
Reported: 04/13/16

Project: NA
Event: A6D0013
Date Sampled: 03/31/16
Date Received: 04/05/16

Client ID: 5237-160331-NDP-SED003
ARI ID: 16-5494 AYR6A

| Analyte | Date | Method | Units | RL | Sample |
|------------------------|----------------------|------------|---------|------|----------|
| Preserved Total Solids | 04/06/16 040616#1 | SM2540G | Percent | 0.01 | 72.84 |
| Sulfide | 04/05/16 040516#1 | SM4500-S2D | mg/kg | 1.26 | < 1.26 U |

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
AYR6-Apex Labs



Matrix: Sediment
Data Release Authorized: ✓
Reported: 04/13/16

Project: NA
Event: A6D0013
Date Sampled: 03/31/16
Date Received: 04/05/16

Client ID: 5237-160331-NDP-SED002
ARI ID: 16-5495 AYR6B

| Analyte | Date | Method | Units | RL | Sample |
|------------------------|----------------------|------------|---------|------|----------|
| Preserved Total Solids | 04/06/16 040616#1 | SM2540G | Percent | 0.01 | 70.95 |
| Sulfide | 04/05/16 040516#1 | SM4500-S2D | mg/kg | 1.28 | < 1.28 U |

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
AYR6-Apex Labs



Matrix: Sediment
Data Release Authorized: ✓
Reported: 04/13/16

Project: NA
Event: A6D0013
Date Sampled: 03/31/16
Date Received: 04/05/16

Client ID: 5237-160331-NDP-SED001
ARI ID: 16-5496 AYR6C

| Analyte | Date | Method | Units | RL | Sample |
|------------------------|----------------------|------------|---------|------|----------|
| Preserved Total Solids | 04/06/16 040616#1 | SM2540G | Percent | 0.01 | 76.13 |
| Sulfide | 04/05/16 040516#1 | SM4500-S2D | mg/kg | 1.27 | < 1.27 U |

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
AYR6-Apex Labs



Matrix: Sediment
Data Release Authorized:
Reported: 04/13/16

Project: NA
Event: A6D0013
Date Sampled: 03/31/16
Date Received: 04/05/16

Client ID: 5237-160331-NDP-SED005
ARI ID: 16-5497 AYR6D

| Analyte | Date | Method | Units | RL | Sample |
|------------------------|----------------------|------------|---------|------|--------|
| Preserved Total Solids | 04/06/16 040616#1 | SM2540G | Percent | 0.01 | 52.23 |
| Sulfide | 04/05/16 040516#1 | SM4500-S2D | mg/kg | 1.74 | 22.3 |

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
AYR6-Apex Labs



Matrix: Sediment
Data Release Authorized: ✓
Reported: 04/13/16

Project: NA
Event: A6D0013
Date Sampled: 03/31/16
Date Received: 04/05/16

Client ID: 5237-160331-NDP-SED004
ARI ID: 16-5498 AYR6E

| Analyte | Date | Method | Units | RL | Sample |
|------------------------|----------------------|------------|---------|------|--------|
| Preserved Total Solids | 04/06/16 040616#1 | SM2540G | Percent | 0.01 | 45.95 |
| Sulfide | 04/05/16 040516#1 | SM4500-S2D | mg/kg | 19.6 | 215 |

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
AYR6-Apex Labs



Matrix: Soil
Data Release Authorized: J
Reported: 04/13/16

Project: NA
Event: A6D0013
Date Sampled: 03/31/16
Date Received: 04/05/16

Client ID: 5237-160331-NDP-EMB001
ARI ID: 16-5499 AYR6F

| Analyte | Date | Method | Units | RL | Sample |
|------------------------|----------------------|------------|---------|------|----------|
| Preserved Total Solids | 04/06/16 040616#1 | SM2540G | Percent | 0.01 | 67.54 |
| Sulfide | 04/06/16 040616#1 | SM4500-S2D | mg/kg | 1.35 | < 1.35 U |

RL Analytical reporting limit
U Undetected at reported detection limit

MS/MSD RESULTS-CONVENTIONALS
AYR6-Apex Labs



Matrix: Soil
Data Release Authorized: W
Reported: 04/13/16

Project: NA
Event: A6D0013
Date Sampled: 03/31/16
Date Received: 04/05/16

| Analyte | Date | Units | Sample | Spike | Spike Added | Recovery |
|---|----------|-------|--------|-------|-------------|----------|
| ARI ID: AYR6F Client ID: 5237-160331-NDP-EMB001 | | | | | | |
| Sulfide | 04/06/16 | mg/kg | < 1.35 | 180 | 200 | 90.0% |

REPLICATE RESULTS-CONVENTIONALS
AYR6-Apex Labs



Matrix: Sediment
Data Release Authorized: }
Reported: 04/13/16

Project: NA
Event: A6D0013
Date Sampled: 03/31/16
Date Received: 04/05/16

| Analyte | Date | Units | Sample | Replicate (s) | RPD/RSD |
|--|----------|---------|--------|---------------|---------|
| ARI ID: AYR6A Client ID: 5237-160331-NDP-SED003 | | | | | |
| Preserved Total Solids | 04/06/16 | Percent | 72.84 | 75.09 | 3.0% |
| ARI ID: AYR6F Client ID: 5237-160331-NDP-EMB001 | | | | | |
| Sulfide | 04/06/16 | mg/kg | < 1.35 | < 1.44 | NA |

LAB CONTROL RESULTS-CONVENTIONALS
AYR6-Apex Labs



Matrix: Soil
Data Release Authorized: U
Reported: 04/13/16

Project: NA
Event: A6D0013
Date Sampled: NA
Date Received: NA

| Analyte/Method | QC ID | Date | Units | LCS | Spike Added | Recovery |
|----------------|-------|----------|-------|------|-------------|----------|
| Sulfide | PREP | 04/05/16 | mg/kg | 7.25 | 7.19 | 100.8% |
| SM4500-S2D | PREP | 04/06/16 | | 7.28 | 7.19 | 101.3% |

METHOD BLANK RESULTS-CONVENTIONALS
AYR6-Apex Labs



Matrix: Soil
Data Release Authorized: ✓
Reported: 04/13/16

Project: NA
Event: A6D0013
Date Sampled: NA
Date Received: NA

| Analyte | Date | Units | Blank | QC ID |
|------------------------|----------|---------|----------|-------|
| Preserved Total Solids | 04/06/16 | Percent | < 0.01 U | ICB |
| Sulfide | 04/05/16 | mg/kg | < 0.05 U | PREP |
| | 04/06/16 | | < 0.05 U | PREP |