

October 30, 2018

Roy Quinn
TVA Cumberland Fossil Plant
815 Cumberland City Road
Cumberland City, TN 37050

RE: TVA Cumberland Fossil Plant Project – Analytical Report
RJ Lee Group Project Number AOH1051655-0

Dear Mr. Quinn,

RJ Lee Group, Inc. (RJLG) Monroeville laboratory received 60 samples on October 16, 2018 associated with Tennessee Valley Authority (TVA) Cumberland Fossil Plant. The samples were logged into RJ Lee Group project number AOH1051655-0 and assigned RJLG sample numbers as indicated in Appendix A.

The samples were received in good condition with all custody seals in place and intact. Attached in Appendix A is the signed sample receipt confirmation form, COC, and sample receipt check list.

These results are submitted pursuant to RJ Lee Group's current terms and conditions of sale, including the company's standard warranty and limitation of liability provisions. No responsibility or liability is assumed for the manner in which the results are used or interpreted. Unless notified to return the samples covered in this report, RJ Lee Group will store them for a period of ninety (90) days before discarding.

Should you have any questions regarding this information, please do not hesitate to contact us.

Sincerely,



Bryan R. Bandli, PhD
Principal Investigator

Attachments: Chain of Custody Forms
Mineral Identification Report
Polarized Light Microscopy Images, Bench Sheets,
QC Tabulation (when applicable)

Appendix A
Chain of Custody Forms

Chain of Custody
RJ Lee Group Work Order #: AOH1051655-0
Project Name/Case #: TVA Cumberland Fossil Plant

| Received From: | Relinquished To: |
|---|---|
| Tyler Baker Tennessee Valley Authority TVA Chickamauga Power Service Center 4601 N. Access Road Chattanooga, TN 37415 United States Main: 423-876-6733 | RJLee Group, Inc. 350 Hochberg Road Monroeville, PA 15146 United States Main: 724-325-1776 Fax: 724-325-1775 |

| Sample ID | Client Sample ID | Date Received |
|-----------|--------------------------------------|-------------------------|
| 10454145 | CUF-SED-CuR07-CORLB-0.0/0.5-20181008 | 10/16/2018 10:15 AM EDT |
| 10454146 | CUF-SED-CuR07-CORLB-0.5/4.3-20181008 | 10/16/2018 10:15 AM EDT |
| 10454147 | CUF-SED-CuR07-DUP01-20181008 | 10/16/2018 10:15 AM EDT |
| 10454148 | CUF-SED-CuR07-CORCC-0.0/0.5-20181009 | 10/16/2018 10:15 AM EDT |
| 10454149 | CUF-SED-CuR07-CORRB-0.0/0.5-20181009 | 10/16/2018 10:15 AM EDT |
| 10454150 | CUF-SED-CuR07-CORRB-0.5/3.4-20181009 | 10/16/2018 10:15 AM EDT |
| 10454151 | CUF-SED-CuR07-CORRB-3.4/4.8-20181009 | 10/16/2018 10:15 AM EDT |
| 10454152 | CUF-SED-CuR07-CORRB-4.8/5.7-20181009 | 10/16/2018 10:15 AM EDT |
| 10454153 | CUF-SED-CuR06-CORLB-0.0/0.5-20181009 | 10/16/2018 10:15 AM EDT |
| 10454154 | CUF-SED-CuR06-CORLB-0.5/6.0-20181009 | 10/16/2018 10:15 AM EDT |
| 10454155 | CUF-SED-CuR06-CORCC-0.0/0.5-20181009 | 10/16/2018 10:15 AM EDT |
| 10454156 | CUF-SED-CuR06-CORRB-0.0/0.5-20181009 | 10/16/2018 10:15 AM EDT |
| 10454157 | CUF-SED-CuR06-CORRB-0.5/1.7-20181009 | 10/16/2018 10:15 AM EDT |
| 10454158 | CUF-SED-CuR05-CORLB-0.0/0.5-20181009 | 10/16/2018 10:15 AM EDT |
| 10454159 | CUF-SED-CuR05-CORLB-0.5/2.0-20181009 | 10/16/2018 10:15 AM EDT |
| 10454160 | CUF-SED-CuR05-CORLB-2.0/4.7-20181009 | 10/16/2018 10:15 AM EDT |
| 10454161 | CUF-SED-CuR05-CORCC-0.0/0.5-20181009 | 10/16/2018 10:15 AM EDT |
| 10454162 | CUF-SED-CuR05-CORRB-0.0/0.5-20181009 | 10/16/2018 10:15 AM EDT |
| 10454163 | CUF-SED-CuR05-CORRB-0.5/1.6-20181009 | 10/16/2018 10:15 AM EDT |
| 10454164 | CUF-SED-DC01-CORLB-0.0/0.5-20181009 | 10/16/2018 10:15 AM EDT |
| 10454165 | CUF-SED-DC01-CORLB-0.5/1.9-20181009 | 10/16/2018 10:15 AM EDT |
| 10454166 | CUF-SED-DC01-CORCC-0.0/0.5-20181009 | 10/16/2018 10:15 AM EDT |
| 10454167 | CUF-SED-DC01-CORCC-0.5/1.0-20181009 | 10/16/2018 10:15 AM EDT |
| 10454168 | CUF-SED-DC01-CORRB-0.0/0.5-20181009 | 10/16/2018 10:15 AM EDT |
| 10454169 | CUF-SED-DC01-CORRB-0.5/2.2-20181009 | 10/16/2018 10:15 AM EDT |
| 10454170 | CUF-SED-DC01-CORRB-2.2/5.6-20181009 | 10/16/2018 10:15 AM EDT |
| 10454171 | CUF-SED-DC01-CORRB-5.6/6.0-20181009 | 10/16/2018 10:15 AM EDT |
| 10454172 | CUF-SED-CuR04-CORLB-0.0/0.5-20181010 | 10/16/2018 10:15 AM EDT |
| 10454173 | CUF-SED-CuR04-CORLB-0.5/2.1-20181010 | 10/16/2018 10:15 AM EDT |

| Sample ID | Client Sample ID | Date Received |
|-----------|---|--|
| 10454174 | CUF-SED-CuR04-CORLB-2.1/2.9-20181010 | 10/16/2018 10:15 AM EDT |
| 10454175 | CUF-SED-CuR04-DUP01-20181010 | 10/16/2018 10:15 AM EDT |
| 10454176 | CUF-SED-CuR04-CORCC-0.0/0.5-20181010 | 10/16/2018 10:15 AM EDT |
| 10454177 | CUF-SED-CuR04-CORRB-0.0/0.5-20181010 | 10/16/2018 10:15 AM EDT |
| 10454178 | CUF-SED-CuR04-CORRB-0.5/1.3-20181010 | 10/16/2018 10:15 AM EDT |
| 10454179 | CUF-SED-CuR03-CORLB-0.0/0.5-20181010 | 10/16/2018 10:15 AM EDT |
| 10454180 | CUF-SED-CuR03-CORLB-0.5/5.0-20181010 | 10/16/2018 10:15 AM EDT |
| 10454181 | CUF-SED-CuR03-CORRB-0.0/0.5-20181010 | 10/16/2018 10:15 AM EDT |
| 10454182 | CUF-SED-CuR03-CORRB-0.5/2.1-20181010 | 10/16/2018 10:15 AM EDT |
| 10454183 | CUF-SED-CuR03-CORRB-2.1/2.6-20181010 | 10/16/2018 10:15 AM EDT |
| 10454184 | CUF-SED-CuR03-CORRB-2.6/3.1-20181010 | 10/16/2018 10:15 AM EDT |
| 10454185 | CUF-SED-CuR02-CORCC-0.0/0.5-20181011 | 10/16/2018 10:15 AM EDT |
| 10454186 | CUF-SED-CuR02-CORRB-0.0/0.5-20181011 | 10/16/2018 10:15 AM EDT |
| 10454187 | CUF-SED-CuR01-CORRB-0.0/0.5-20181011 | 10/16/2018 10:15 AM EDT |
| 10454188 | CUF-SED-CuR01-CORRB-0.5/1.4-20181011 | 10/16/2018 10:15 AM EDT |
| 10454189 | CUF-SED-CuR01-CORCC-0.0/0.5-20181011 | 10/16/2018 10:15 AM EDT |
| 10454190 | CUF-SED-CuR01-CORLB-0.0/0.5-20181011 | 10/16/2018 10:15 AM EDT |
| 10454191 | CUF-SED-WC10-CORLB-0.0/0.5-20181011 | 10/16/2018 10:15 AM EDT |
| 10454192 | CUF-SED-WC10-CORLB-0.5/3.0-20181011 | 10/16/2018 10:15 AM EDT |
| 10454193 | CUF-SED-WC10-CORLB-3.0/3.5-20181011 | 10/16/2018 10:15 AM EDT |
| 10454194 | CUF-SED-WC10-CORCC-0.0/0.5-20181011 | 10/16/2018 10:15 AM EDT |
| 10454195 | CUF-SED-WC10-CORCC-0.5/2.9-20181011 | see revised COC 10/16/2018 10:15 AM EDT |
| 10454196 | CUF-SED-WC10-CORRB-0.0/0.5-20181011 | 10/16/2018 10:15 AM EDT |
| 10454197 | CUF-SED-WC09-CORCC-0.0/0.5-20181011 | 10/16/2018 10:15 AM EDT |
| 10454198 | CUF-SED-WC09-CORRB-0.0/0.5-20181011 | 10/16/2018 10:15 AM EDT |
| 10454199 | CUF-SED-WC08-CORRB-0.0/0.5-20181011 | 10/16/2018 10:15 AM EDT |
| 10454200 | CUF-SED-WC08-CORCC-0.0/0.5-20181011 | 10/16/2018 10:15 AM EDT |
| 10454201 | CUF-SED-WC08-CORLB-0.0/0.5-20181011 | 10/16/2018 10:15 AM EDT |
| 10454202 | CUF-SED-WC07-CORLB-0.0/0.5-20181011 | 10/16/2018 10:15 AM EDT |
| 10454203 | CUF-SED-WC07-CORCC-0.0/0.5-20181011 | 10/16/2018 10:15 AM EDT |
| 10454204 | CUF-SED-WC07-CORRB-0.0/0.5-20181011 | 10/16/2018 10:15 AM EDT |
| 10454205 | QC01_CUF-SED-CuR06-CORLB-0.5/6.0-20181009 | 10/16/2018 10:15 AM EDT |
| 10454206 | QC02_CUF-SED-DC01-CORLB-0.0/0.5-20181009 | 10/16/2018 10:15 AM EDT |
| 10454207 | QC03_CUF-SED-CuR04-CORLB-2.1/2.9-20181010 | 10/16/2018 10:15 AM EDT |
| 10454208 | QC04_CUF-SED-CuR03-CORRB-2.6/3.1-20181010 | 10/16/2018 10:15 AM EDT |
| 10454209 | QC05_CUF-SED-WC10-CORCC-0.0/0.5-20181011 | 10/16/2018 10:15 AM EDT |
| 10454210 | QC06_CUF-SED-WC07-CORRB-0.0/0.5-20181011 | 10/16/2018 10:15 AM EDT |

| | | |
|--|--|---|
| | Received From: Tyler Baker | <i>Method of Shipment:</i> UPS |
| | Company: Tennessee Valley Authority | Date: 10/16/2018 |
| | Received By: Monica Carse | <i>Package Condition Upon Receipt:</i> Sealed |
| | Company: RJ Lee Group, Inc. | Date: 10/16/2018 |

| | | |
|--|---------------------|--|
| | Relinquished | <i>Method of Shipment:</i> |
| | Company: | Date: |
| | Received By: | <i>Package Condition Upon Receipt:</i> |
| | Company: | Date: |

| | | |
|--|---------------------|--|
| | Relinquished | <i>Method of Shipment:</i> |
| | Company: | Date: |
| | Received By: | <i>Package Condition Upon Receipt:</i> |
| | Company: | Date: |

RJ Lee Group
Sample Receipt and Log in Check List

| | | | | | |
|----------------|-------------------------|---------------------|--------------|--------------------|---------------------|
| Client: | Environmental Standards | Date Received: | 10/16/2018 | Log in Date: | 10/17/2018 |
| Time Received: | 10:15 AM | By: | Monica Carse | COC#: | CUF_SED_20181008_1C |
| Project: | AOH1051655-0 | # Coolers Received: | 1 | Means of Shipment: | UPS |
| Air Bill: | 1Z 311 665 01 9663 2965 | | | | |

| As Received Screen | Yes | No | Comments |
|---|-----|-----|----------|
| Were the Coolers received in good condition? | ✓ | | |
| Was there evidence of tampering? | | ✓ | |
| Are Custody Seals intact and in good condition? | ✓ | | |
| Were Coolers received between 2 and 4 degrees C? | | N/A | |
| Were all samples intact? | ✓ | | |
| Were all samples accurately labeled? | ✓ | | |
| Was the COC received in good condition? | ✓ | | |
| Did the sample ID on COC match the ID on the sample jars? | ✓ | | |
| Were there any discrepancies among samples and COC? | | ✓ | |
| Is the COC completely filled out? | ✓ | | |
| Was the COC relinquished properly? | ✓ | | |

List any anomalies associated with Sample Receipt

N/A

Analyst Signature: M. Carse 10-17-18

Manager Signature: [Signature] 10-17-18

Appendix B
Mineral Identification Report

Mineral Identification

Polarized Light Microscopy (PLM) Laboratory Report

Roy Quinn
 TVA Cumberland Fossil Plant
 815 Cumberland City Road
 Cumberland City , TN 37050 United States
 Email: jrquinn@tva.gov
 Main: 423-751-3753

Report Date: 10/23/2018
Sample Received Date: 10/16/2018
RJLG Project: AOH1051655-0
Customer COC: CUF_SED_20181008_1C
Purchase Order:
Analytical Method: Fly Ash Determination by PLM

| Customer Sample # : | RJLG ID | Date Analyzed | Date Collected | Area % Fly Ash | Non-Fly Ash Components | Comments |
|--|----------|---------------|----------------|----------------|--|-------------------------|
| CUF-SED-CuR01-CORC C-0.0/0.5-20181011 | 10454189 | 10/23/2018 | 10/11/2018 | ND | Opagues Quartz | Beige Grain Sediment. |
| CUF-SED-CuR01-CORLB -0.0/0.5-20181011 | 10454190 | 10/23/2018 | 10/11/2018 | 1% | Opagues Quartz | Beige Grain Sediment. |
| CUF-SED-CuR01-CORR B-0.0/0.5-20181011 | 10454187 | 10/23/2018 | 10/11/2018 | ND | Opagues Quartz | Beige Grain Sediment. |
| CUF-SED-CuR01-CORR B-0.5/1.4-20181011 | 10454188 | 10/23/2018 | 10/11/2018 | ND | Opagues Quartz | Beige Grain Sediment. |
| CUF-SED-CuR02-CORC C-0.0/0.5-20181011 | 10454185 | 10/22/2018 | 10/11/2018 | ND | Mica Opagues Quartz | Tan Fine Grain Sediment |
| CUF-SED-CuR02-CORR B-0.0/0.5-20181011 | 10454186 | 10/22/2018 | 10/11/2018 | ND | Mica Opagues Quartz | Tan Fine Grain Sediment |
| CUF-SED-CuR03-CORLB -0.0/0.5-20181010 | 10454179 | 10/22/2018 | 10/10/2018 | 1% | Carbonate Mica Opagues Quartz | Tan Fine Grain Sediment |

| Customer Sample # : | RJLG ID | Date Analyzed | Date Collected | Area % Fly Ash | Non-Fly Ash Components | Comments |
|--|----------|------------------|-------------------|-------------------|--|-------------------------|
| CUF-SED-CuR03-CORLB -0.5/5.0-20181010 | 10454180 | 10/22/2018 | 10/10/2018 | ND | Carbonate Mica Opaques Quartz | Tan Fine Grain Sediment |
| CUF-SED-CuR03-CORR B-0.0/0.5-20181010 | 10454181 | 10/22/2018 | 10/10/2018 | ND | Opaques Quartz | Tan Fine Grain Sediment |
| CUF-SED-CuR03-CORR B-0.5/2.1-20181010 | 10454182 | 10/22/2018 | 10/10/2018 | 2% | Opaques Quartz | Tan Fine Grain Sediment |
| CUF-SED-CuR03-CORR B-2.1/2.6-20181010 | 10454183 | 10/22/2018 | 10/10/2018 | 1% | Mica Opaques Quartz | Tan Fine Grain Sediment |
| CUF-SED-CuR03-CORR B-2.6/3.1-20181010 | 10454184 | 10/22/2018 | 10/10/2018 | 1% | Mica Opaques Quartz | Tan Fine Grain Sediment |
| CUF-SED-CuR04-CORC C-0.0/0.5-20181010 | 10454176 | 10/22/2018 | 10/10/2018 | 3% | Mica Opaques Quartz | Tan Fine Grain Sediment |
| CUF-SED-CuR04-CORLB -0.0/0.5-20181010 | 10454172 | 10/22/2018 | 10/10/2018 | 1% | Mica Opaques Quartz | Tan Fine Grain Sediment |
| CUF-SED-CuR04-CORLB -0.5/2.1-20181010 | 10454173 | 10/22/2018 | 10/10/2018 | ND | Mica Opaques Quartz | Tan Fine Grain Sediment |
| CUF-SED-CuR04-CORLB -2.1/2.9-20181010 | 10454174 | 10/22/2018 | 10/10/2018 | 1% | Mica Opaques Quartz | Tan Fine Grain Sediment |
| CUF-SED-CuR04-CORR B-0.0/0.5-20181010 | 10454177 | 10/23/2018 | 10/10/2018 | ND | Opaques Quartz Coal | Beige Grain Sediment. |
| CUF-SED-CuR04-CORR B-0.5/1.3-20181010 | 10454178 | 10/23/2018 | 10/10/2018 | ND | Opaques Quartz | Beige Grain Sediment. |

| Customer Sample # : | RJLG ID | Date Analyzed | Date Collected | Area % Fly Ash | Non-Fly Ash Components | Comments |
|--|----------|------------------|-------------------|-------------------|---------------------------|-------------------------|
| CUF-SED-CuR04-DUP01-10454175 20181010 | | 10/22/2018 | 10/10/2018 | ND | Mica Opaques Quartz | Tan Fine Grain Sediment |
| CUF-SED-CuR05-CORC C-0.0/0.5-20181009 | 10454161 | 10/23/2018 | 10/09/2018 | ND | Opaques Quartz Coal | Beige Grain Sediment. |
| CUF-SED-CuR05-CORLB -0.0/0.5-20181009 | 10454158 | 10/23/2018 | 10/09/2018 | ND | Opaques Quartz | Beige Grain Sediment. |
| CUF-SED-CuR05-CORLB -0.5/2.0-20181009 | 10454159 | 10/23/2018 | 10/09/2018 | ND | Opaques Quartz | Beige Grain Sediment. |
| CUF-SED-CuR05-CORLB -2.0/4.7-20181009 | 10454160 | 10/23/2018 | 10/09/2018 | 1% | Opaques Quartz | Beige Grain Sediment. |
| CUF-SED-CuR05-CORR B-0.0/0.5-20181009 | 10454162 | 10/22/2018 | 10/09/2018 | ND | Mica Opaques Quartz | Tan Fine Grain Sediment |
| CUF-SED-CuR05-CORR B-0.5/1.6-20181009 | 10454163 | 10/22/2018 | 10/09/2018 | ND | Mica Opaques Quartz | Tan Fine Grain Sediment |
| CUF-SED-CuR06-CORC C-0.0/0.5-20181009 | 10454155 | 10/22/2018 | 10/09/2018 | ND | Mica Opaques Quartz | Tan Fine Grain Sediment |
| CUF-SED-CuR06-CORLB -0.0/0.5-20181009 | 10454153 | 10/22/2018 | 10/09/2018 | 1% | Mica Opaques Quartz | Tan Fine Grain Sediment |
| CUF-SED-CuR06-CORLB -0.5/6.0-20181009 | 10454154 | 10/22/2018 | 10/09/2018 | 2% | Mica Opaques Quartz | Tan Fine Grain Sediment |
| CUF-SED-CuR06-CORR B-0.0/0.5-20181009 | 10454156 | 10/23/2018 | 10/09/2018 | ND | Opaques Quartz | Beige Grain Sediment. |
| CUF-SED-CuR06-CORR B-0.5/1.7-20181009 | 10454157 | 10/23/2018 | 10/09/2018 | 3% | Opaques Quartz | Beige Grain Sediment. |

| Customer Sample # : | RJLG ID | Date Analyzed | Date Collected | Area % Fly Ash | Non-Fly Ash Components | Comments |
|--|----------|------------------|-------------------|-------------------|--|-------------------------|
| CUF-SED-CuR07-CORC C-0.0/0.5-20181009 | 10454148 | 10/23/2018 | 10/09/2018 | ND | Opaques Quartz | Beige Grain Sediment. |
| CUF-SED-CuR07-CORLB -0.0/0.5-20181008 | 10454145 | 10/22/2018 | 10/08/2018 | 2% | Opaques Quartz | Beige Grain Sediment. |
| CUF-SED-CuR07-CORLB -0.5/4.3-20181008 | 10454146 | 10/23/2018 | 10/08/2018 | 2% | Opaques Quartz | Beige Grain Sediment. |
| CUF-SED-CuR07-CORR B-0.0/0.5-20181009 | 10454149 | 10/23/2018 | 10/09/2018 | ND | Opaques Quartz | Beige Grain Sediment. |
| CUF-SED-CuR07-CORR B-0.5/3.4-20181009 | 10454150 | 10/23/2018 | 10/09/2018 | ND | Opaques Quartz | Beige Grain Sediment. |
| CUF-SED-CuR07-CORR B-3.4/4.8-20181009 | 10454151 | 10/23/2018 | 10/09/2018 | 1% | Opaques Quartz | Beige Grain Sediment. |
| CUF-SED-CuR07-CORR B-4.8/5.7-20181009 | 10454152 | 10/23/2018 | 10/09/2018 | 1% | Opaques Quartz | Beige Grain Sediment. |
| CUF-SED-CuR07-DUP01-10454147 20181008 | 10454147 | 10/23/2018 | 10/08/2018 | ND | Opaques Quartz | Beige Grain Sediment. |
| CUF-SED-DC01-CORCC- 0.0/0.5-20181009 | 10454166 | 10/23/2018 | 10/09/2018 | ND | Opaques Quartz Coal | Beige Grain Sediment. |
| CUF-SED-DC01-CORCC- 0.5/1.0-20181009 | 10454167 | 10/23/2018 | 10/09/2018 | 3% | Opaques Quartz Coal | Beige Grain Sediment. |
| CUF-SED-DC01-CORLB- 0.0/0.5-20181009 | 10454164 | 10/22/2018 | 10/09/2018 | 2% | Carbonate Mica Opaques Quartz | Tan Fine Grain Sediment |
| CUF-SED-DC01-CORLB- 0.5/1.9-20181009 | 10454165 | 10/22/2018 | 10/09/2018 | ND | Mica Opaques Quartz | Tan Fine Grain Sediment |

| Customer Sample # : | RJLG ID | Date Analyzed | Date Collected | Area % Fly Ash | Non-Fly Ash Components | Comments |
|---|----------|------------------|-------------------|-------------------|--------------------------------|-------------------------|
| CUF-SED-DC01-CORRB- 0.0/0.5-20181009 | 10454168 | 10/23/2018 | 10/09/2018 | ND | Opaques Quartz Coal | Beige Grain Sediment. |
| CUF-SED-DC01-CORRB- 0.5/2.2-20181009 | 10454169 | 10/23/2018 | 10/09/2018 | 1% | Opaques Quartz Coal | Beige Grain Sediment. |
| CUF-SED-DC01-CORRB- 2.2/5.6-20181009 | 10454170 | 10/22/2018 | 10/09/2018 | 1% | Mica Opaques Quartz | Tan Fine Grain Sediment |
| CUF-SED-DC01-CORRB- 5.6/6.0-20181009 | 10454171 | 10/22/2018 | 10/09/2018 | 1% | Mica Opaques Quartz | Tan Fine Grain Sediment |
| CUF-SED-WC07-CORCC -0.0/0.5-20181011 | 10454203 | 10/23/2018 | 10/11/2018 | 2% | Carbonate Opaques Quartz | Beige Grain Sediment. |
| CUF-SED-WC07-CORLB- 0.0/0.5-20181011 | 10454202 | 10/23/2018 | 10/11/2018 | ND | Carbonate Opaques Quartz | Beige Grain Sediment. |
| CUF-SED-WC07-CORRB -0.0/0.5-20181011 | 10454204 | 10/23/2018 | 10/11/2018 | ND | Carbonate Opaques Quartz | Beige Grain Sediment. |
| CUF-SED-WC08-CORCC -0.0/0.5-20181011 | 10454200 | 10/23/2018 | 10/11/2018 | ND | Carbonate Opaques Quartz | Beige Grain Sediment. |
| CUF-SED-WC08-CORLB- 0.0/0.5-20181011 | 10454201 | 10/23/2018 | 10/11/2018 | ND | Carbonate Opaques Quartz | Beige Grain Sediment. |
| CUF-SED-WC08-CORRB -0.0/0.5-20181011 | 10454199 | 10/23/2018 | 10/11/2018 | ND | Carbonate Opaques Quartz | Beige Grain Sediment. |

| Customer Sample # : | RJLG ID | Date Analyzed | Date Collected | Area % Fly Ash | Non-Fly Ash Components | Comments |
|---|----------|------------------|-------------------|-------------------|--|-------------------------|
| CUF-SED-WC09-CORCC -0.0/0.5-20181011 | 10454197 | 10/23/2018 | 10/11/2018 | ND | Carbonate Opaques Quartz | Beige Grain Sediment. |
| CUF-SED-WC09-CORRB -0.0/0.5-20181011 | 10454198 | 10/23/2018 | 10/11/2018 | ND | Carbonate Opaques Quartz | Beige Grain Sediment. |
| CUF-SED-WC10-CORCC -0.0/0.5-20181011 | 10454194 | 10/22/2018 | 10/11/2018 | 1% | Mica Opaques Quartz | Tan Fine Grain Sediment |
| CUF-SED-WC10-CORCC -0.5/2.9-20181011 | 10454195 | 10/23/2018 | 10/11/2018 | ND | Opaques Quartz | Beige Grain Sediment. |
| CUF-SED-WC10-CORLB- 0.0/0.5-20181011 | 10454191 | 10/22/2018 | 10/11/2018 | ND | Carbonate Mica Opaques Quartz | Tan Fine Grain Sediment |
| CUF-SED-WC10-CORLB- 0.5/3.0-20181011 | 10454192 | 10/22/2018 | 10/11/2018 | ND | Carbonate Mica Opaques Quartz | Tan Fine Grain Sediment |
| CUF-SED-WC10-CORLB- 3.0/3.5-20181011 | 10454193 | 10/23/2018 | 10/11/2018 | 1% | Opaques Quartz | Beige Grain Sediment. |
| CUF-SED-WC10-CORRB -0.0/0.5-20181011 | 10454196 | 10/22/2018 | 10/11/2018 | ND | Mica Opaques Quartz | Tan Fine Grain Sediment |
| QC01_CUF-SED-CuR06- CORLB-0.5/6.0-20181009 | 10454205 | 10/23/2018 | 10/09/2018 | 1% | NA | Beige Grain Sediment. |
| QC02_CUF-SED-DC01-C ORLB-0.0/0.5-20181009 | 10454206 | 10/23/2018 | 10/09/2018 | ND | NA | Beige Grain Sediment. |
| QC03_CUF-SED-CuR04- CORLB-2.1/2.9-20181010 | 10454207 | 10/23/2018 | 10/10/2018 | 1% | NA | Beige Grain Sediment. |
| QC04_CUF-SED-CuR03- CORRB-2.6/3.1-20181010 | 10454208 | 10/23/2018 | 10/10/2018 | 1% | NA | Beige Grain Sediment. |

| Customer Sample # : | RJLG ID | Date Analyzed | Date Collected | Area % Fly Ash | Non-Fly Ash Components | Comments |
|--|---------|------------------|-------------------|-------------------|---------------------------|-----------------------|
| QC05_CUF-SED-WC10-C10454209 ORCC-0.0/0.5-20181011 | | 10/23/2018 | 10/11/2018 | 1% | NA | Beige Grain Sediment. |
| QC06_CUF-SED-WC07-C10454210 ORRB-0.0/0.5-20181011 | | 10/23/2018 | 10/11/2018 | ND | NA | Beige Grain Sediment. |

Disclaimer Notes

- * Samples will be returned to client immediately upon the release of final report.
- * These results are submitted pursuant to RJ Lee Group's current terms and conditions of sale, including the company's standard warranty and limitation of liability provisions. No responsibility or liability is assumed for the manner in which these results are used or interpreted.
- * This test report relates to the items tested.
- * Any reproduction of this document must include the entire document in order for the report to be valid.
- * This report may not be used to claim product endorsement by NVLAP Lab Code 101208-0 or any agency of the U.S. Government.
- * Sample(s) for this project were analyzed at our: Monroeville, PA (AIHA # 100364, NVLAP # 101208-0, NY ELAP # 10884) facility.
- * If RJ Lee Group, Inc. did not collect the samples analyzed, the verifiability of the laboratory's results is limited to the reported values.
- * For the purposes of this method, Fly Ash is defined as any particle consistent with Coal Ash.
- * The method reporting level is 1% and anything <1% is considered a not-detected.

Quartz – Angular anisotropic particulate with low relief.

Feldspar – Angular to blocky anisotropic particulate, low to moderate relief, biaxial, can have polysynthetic twinning.

Clay – Sheet silicates with polycrystalline or display non-uniform extinction with low to moderate relief, and zero to low birefringence. Clay also refers to particles that are less than 2.0 microns.

Opagues – Opaque is a generic term for a particle that does not transmit light. Opaque minerals are distinguished from opaque bottom ash based on morphology of fracture.

Fly Ash – Isotropic to opaque spheres, agglomeration of spheres, and angular ash particles.

Organic Particulate – Pollen, plant and insect matter, and carbonaceous matter.

Carbonates – High birefringent, can be rhombohedral, with high relief.

Diatoms – Silica rich isotropic particles with various morphologies.

Mica – Sheet silicate with moderate to high relief and low birefringence, mono-crystalline, and normal extinction.

Miscellaneous Silicate – Isotropic and anisotropic silicates, with low to high relief, identification unsure and beyond the scope of the method to identify.

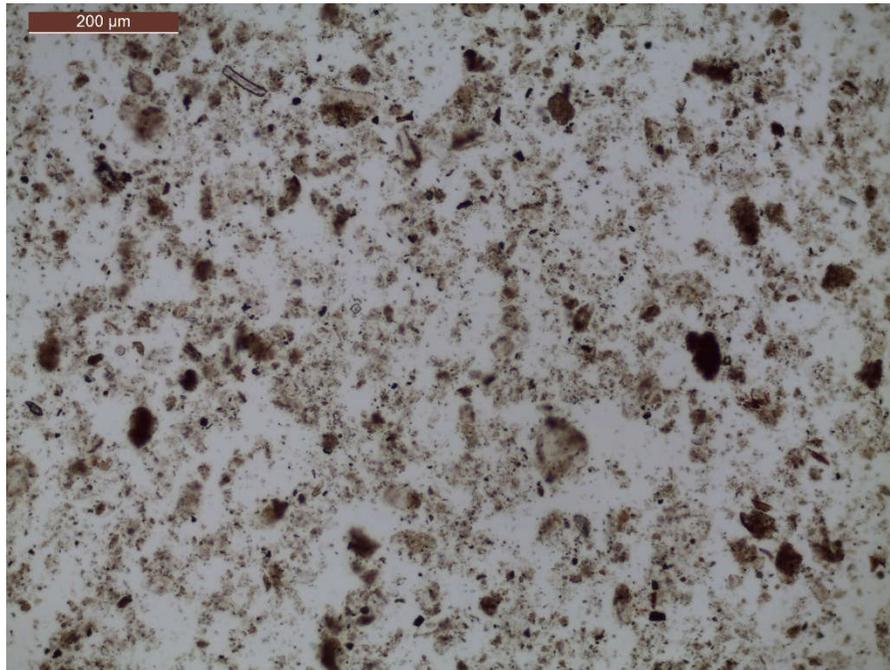
Amphibole – Elongated anisotropic particulate with moderate to high relief.

Coal – Irregular to angular particles with moderate opacity, edges and thin particles are reddish brown in color.

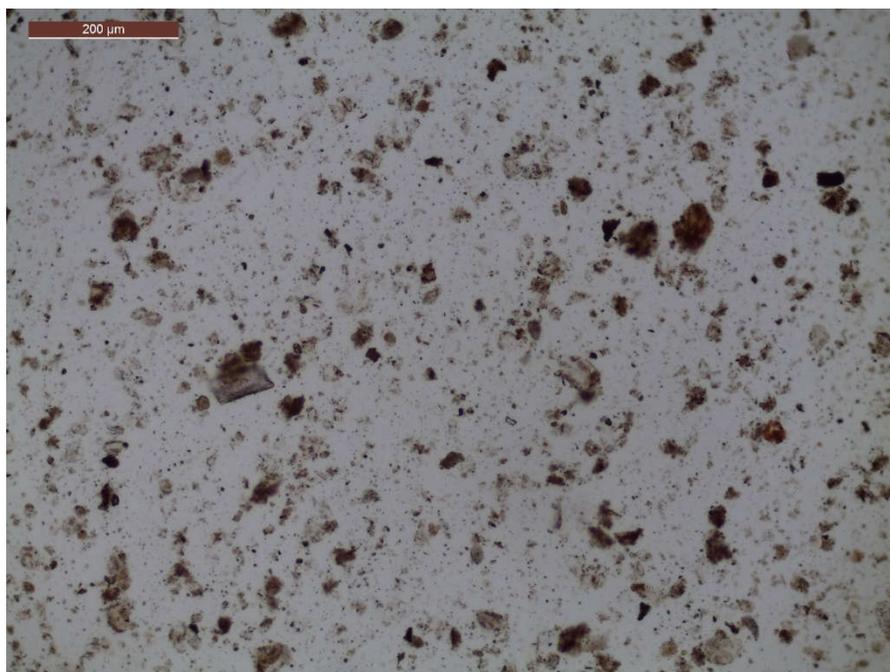
<1% Fly Ash – Fly Ash observed, none counted.

ND – No Fly Ash detected.

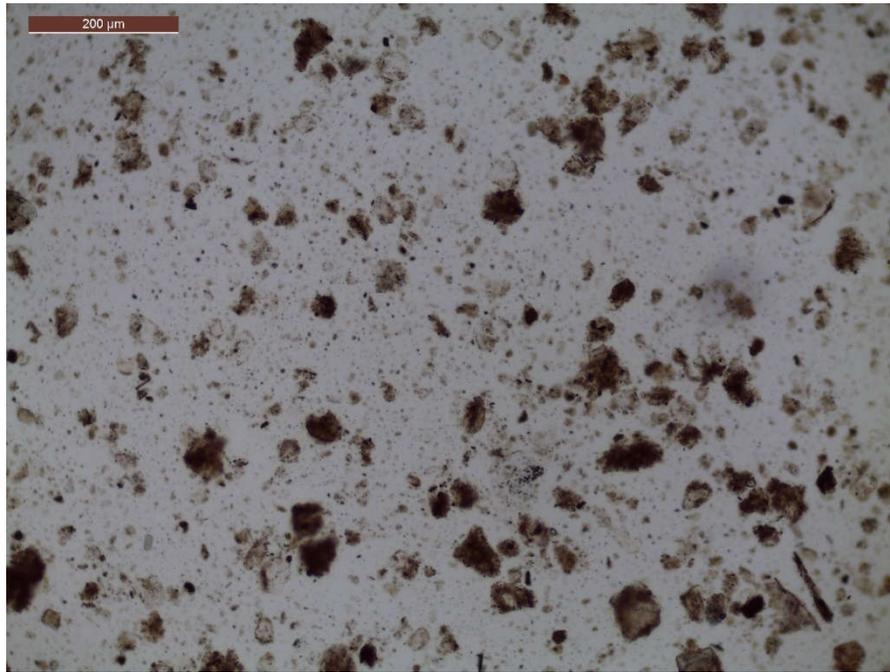
Appendix C
Polarized Light Microscopy Images
Bench Sheets
QC Tabulation



Sample #CUF-SED-CuR07-CORLB-0.0/0.5-20181008. RJLG ID 10454145.
Photomicrograph of sample in plane polarized light illustrating overall sample appearance.

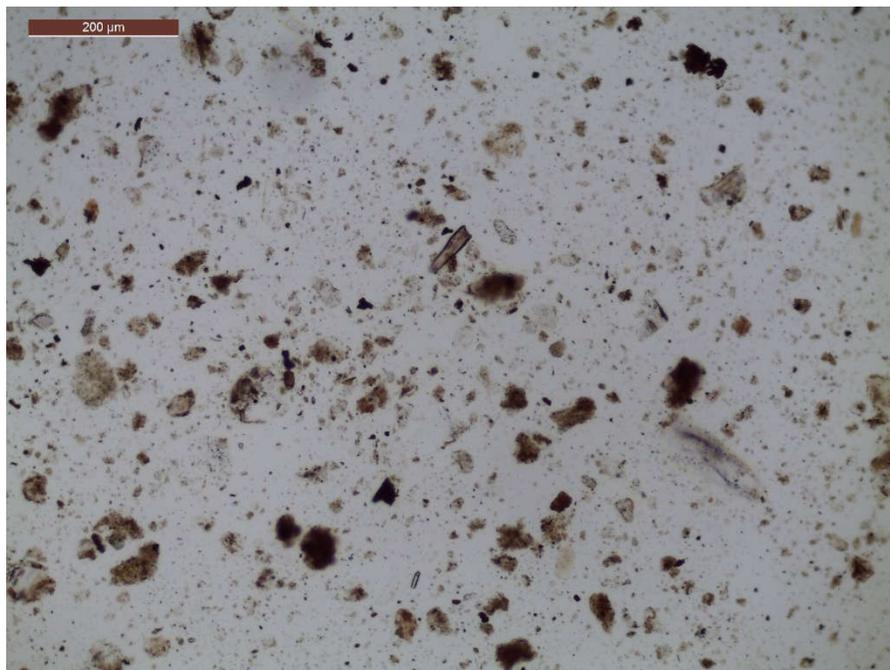


Sample #CUF-SED-CuR07-CORLB-0.5/4.3-20181008. RJLG ID 10454146.
Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



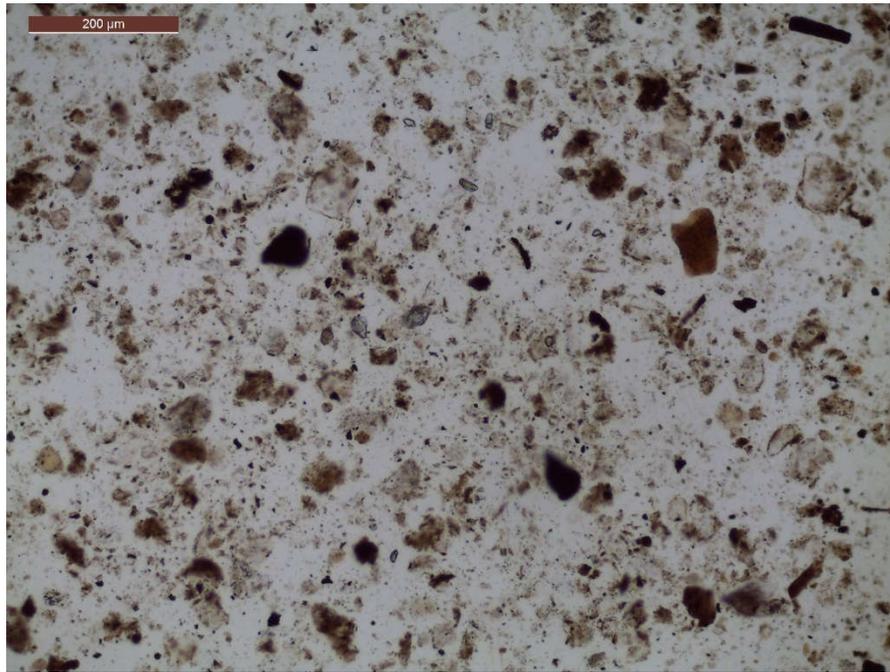
Sample #CUF-SED-CuR07-DUP01-20181008. RJLG ID 10454147.

Photomicrograph of sample in plane polarized light illustrating overall sample appearance.

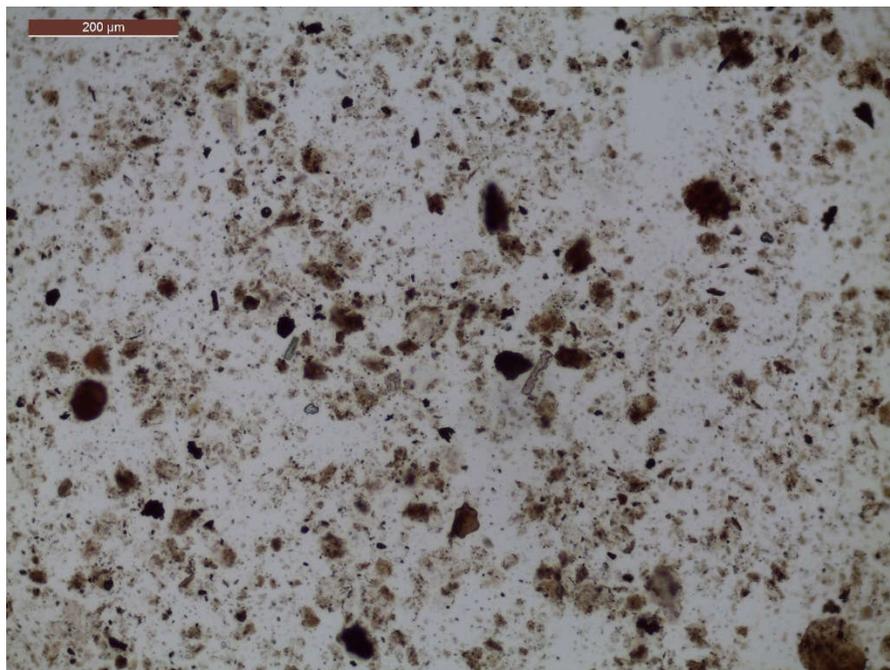


Sample #CUF-SED-CuR07-CORCC-0.0/0.5-20181009. RJLG ID 10454148.

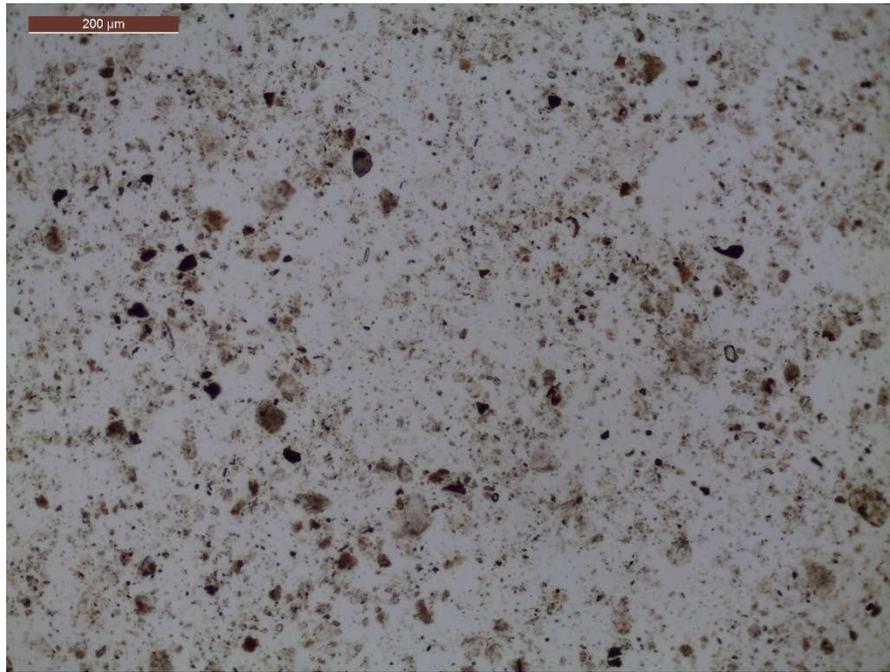
Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



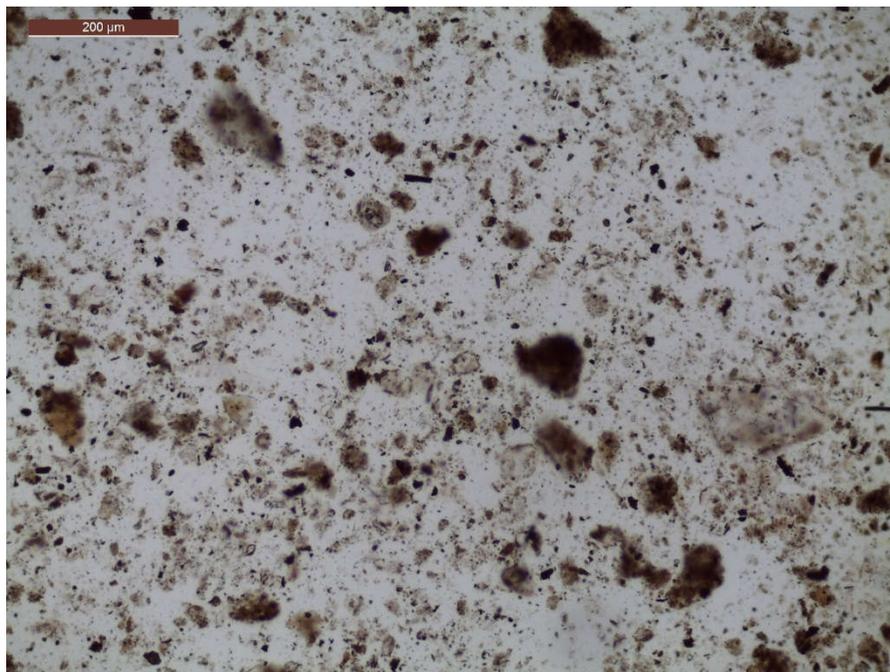
Sample #CUF-SED-CuR07-CORRB-0.0/0.5-20181009. RJLG ID 10454149.
Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



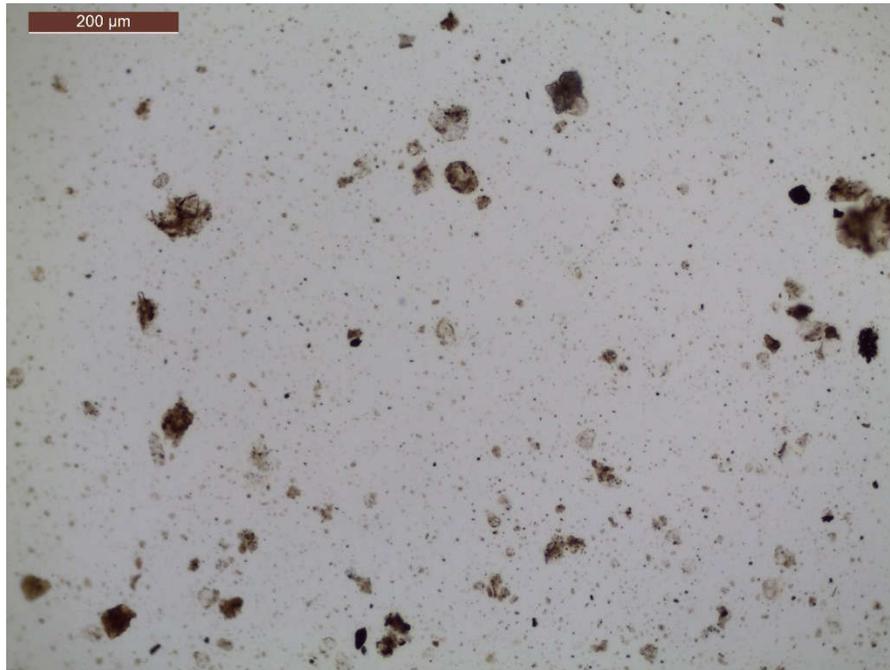
Sample #CUF-SED-CuR07-CORRB-0.5/3.4-20181009. RJLG ID 10454150.
Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



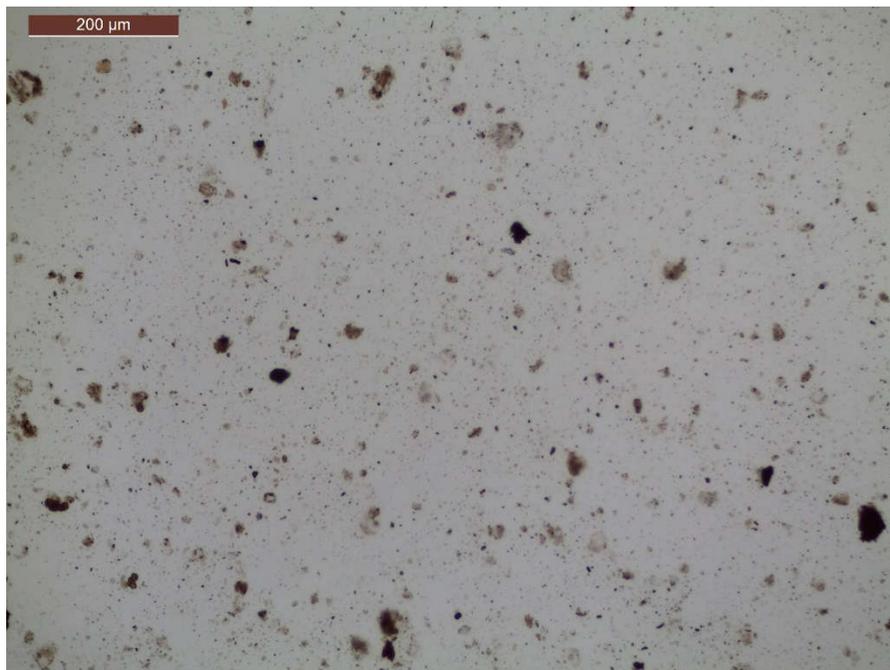
Sample #CUF-SED-CuR07-CORRB-3.4/4.8-20181009. RJLG ID 10454151.
Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



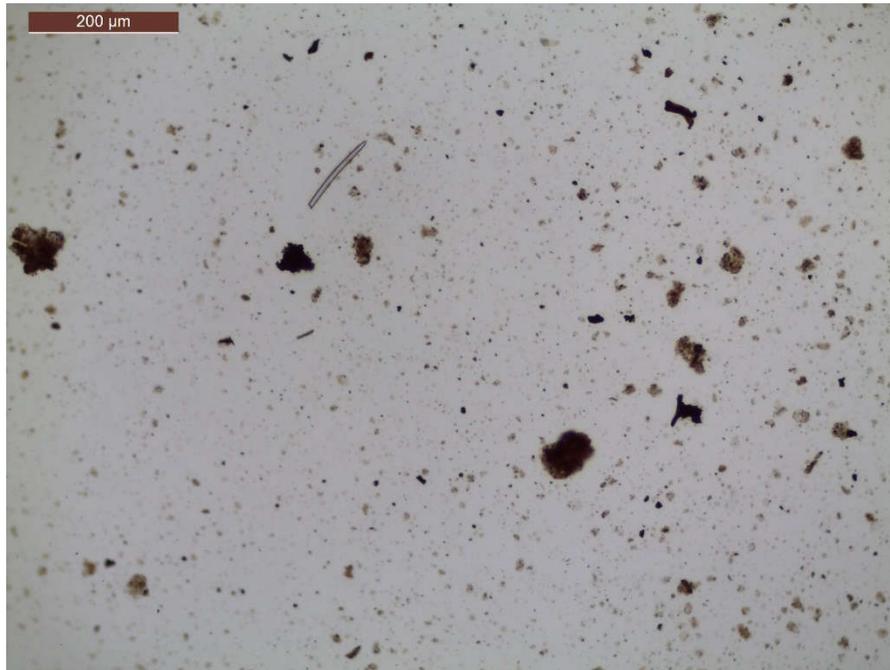
Sample #CUF-SED-CuR07-CORRB-4.8/5.7-20181009. RJLG ID 10454152.
Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



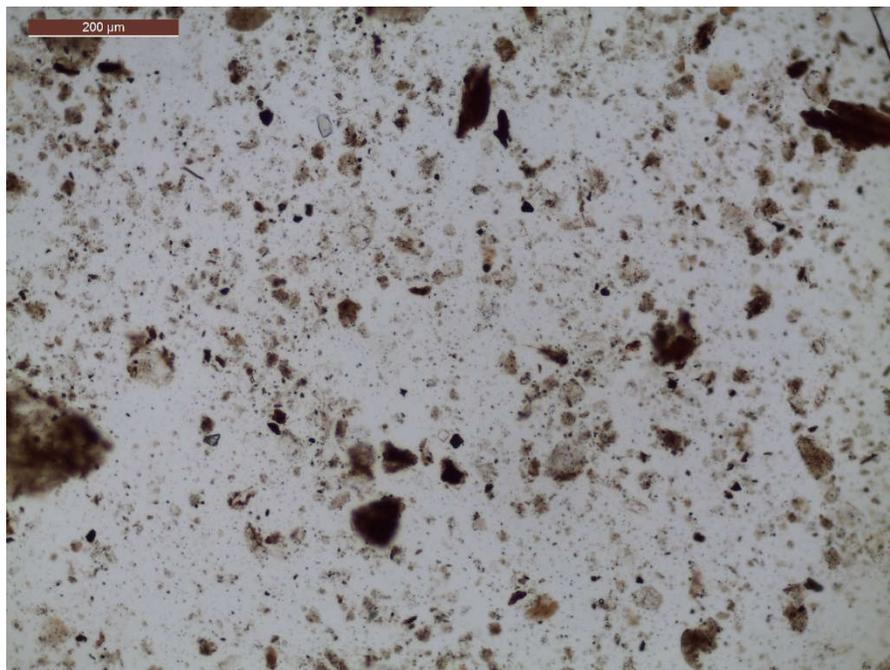
Sample #CUF-SED-CuR06-CORLB-0.0/0.5-20181009. RJLG ID 10454153.
Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



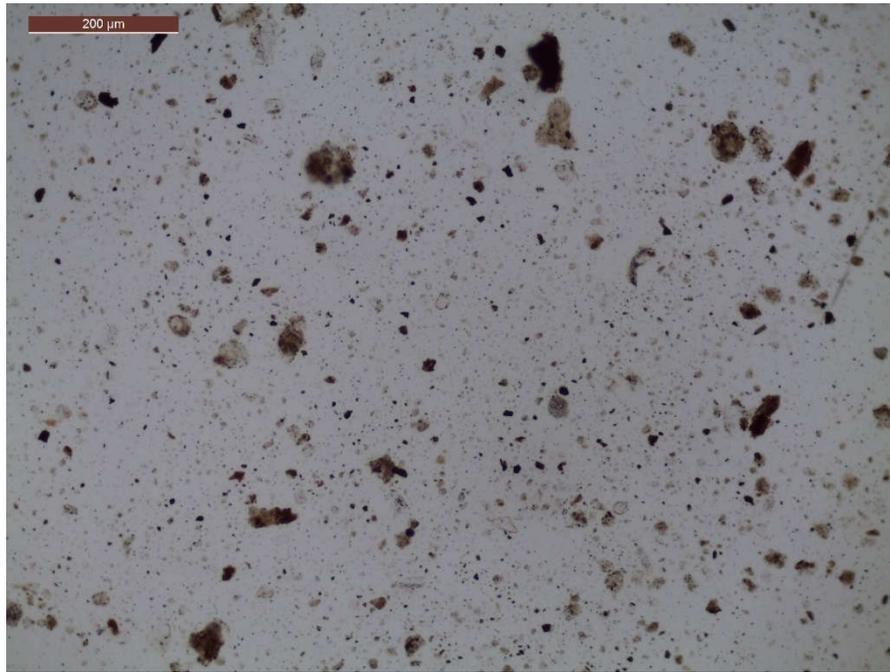
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Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



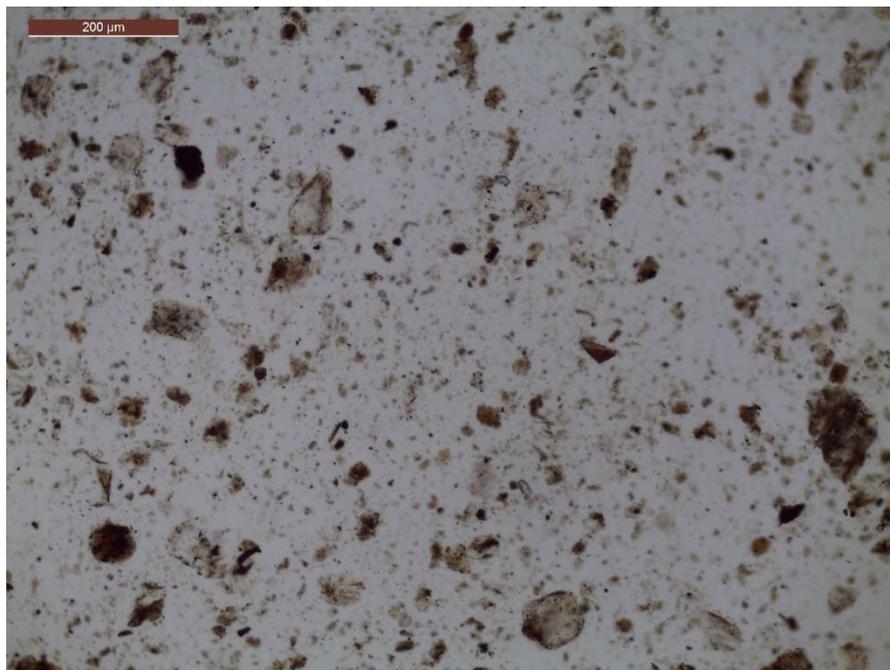
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Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



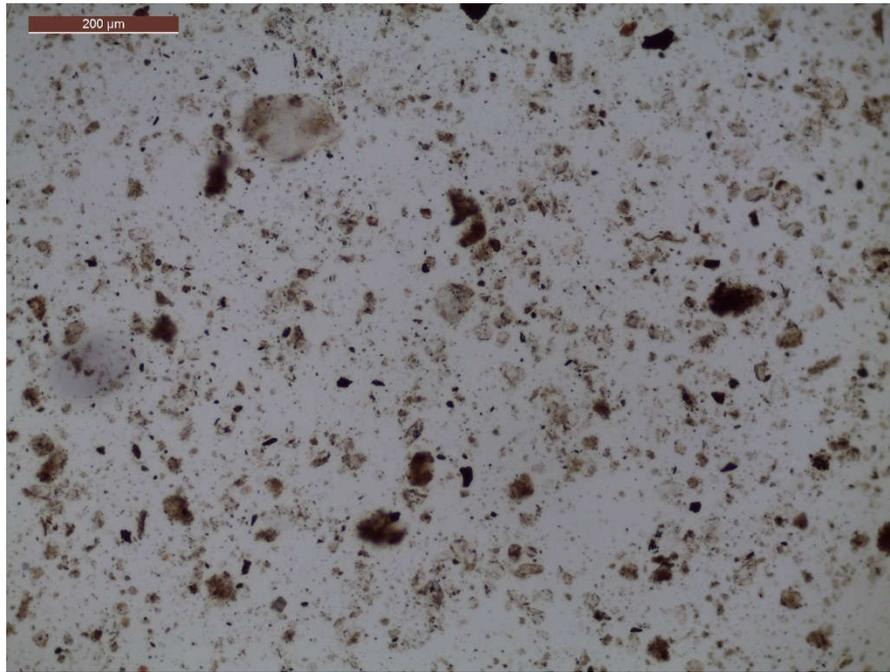
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Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



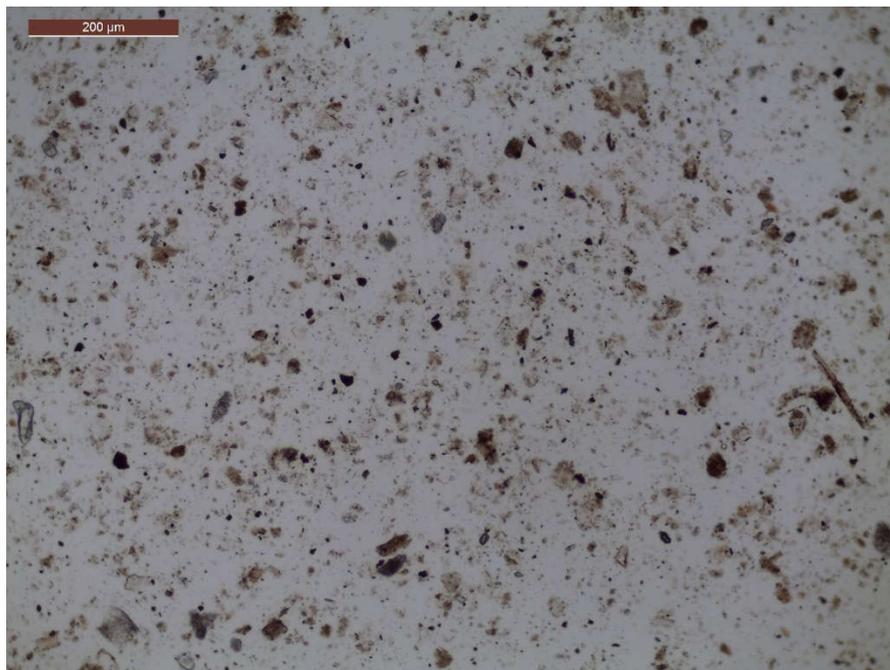
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Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



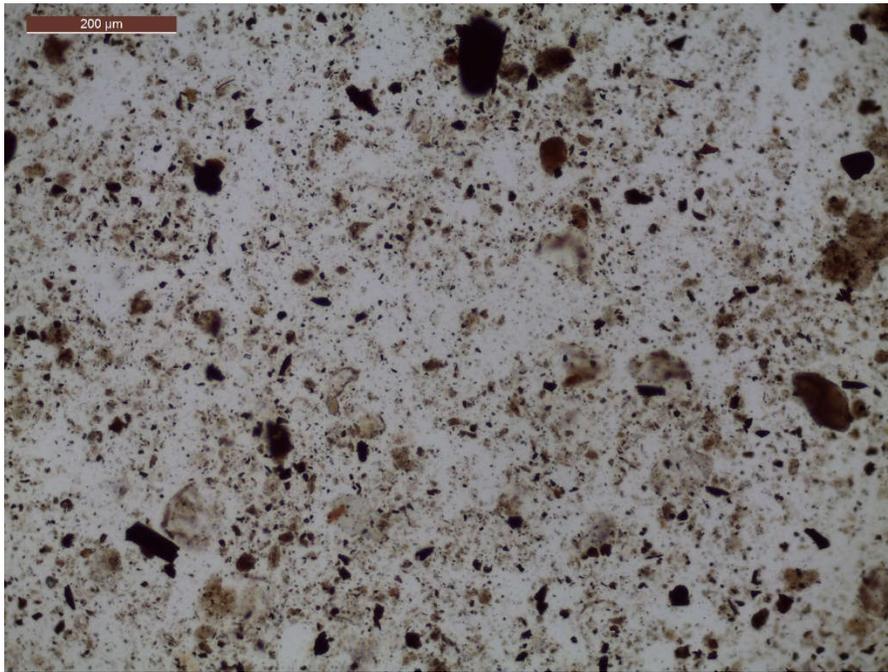
Sample #CUF-SED-CuR05-CORLB-0.0/0.5-20181009. RJLG ID 10454158.
Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



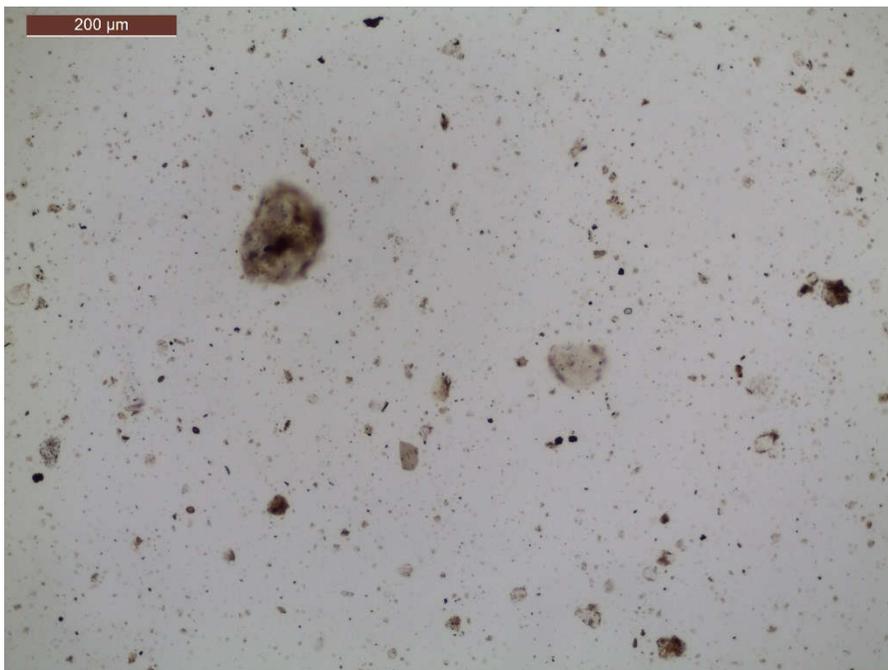
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Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



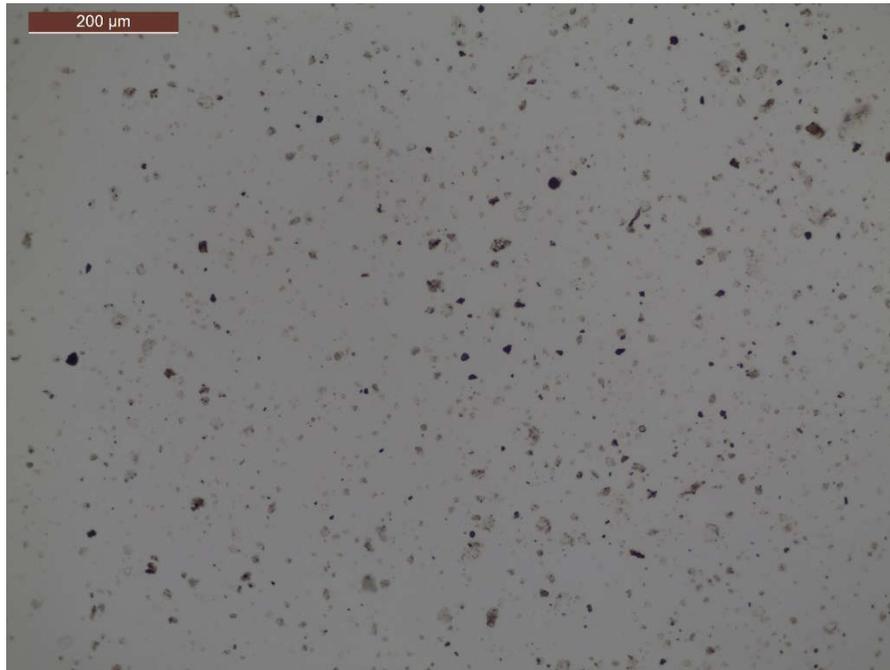
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Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



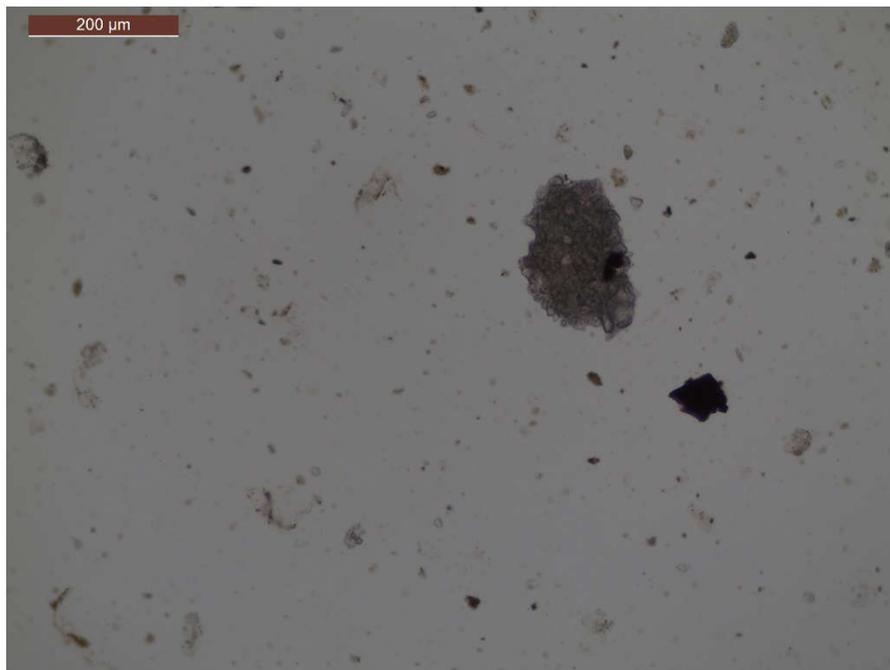
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Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



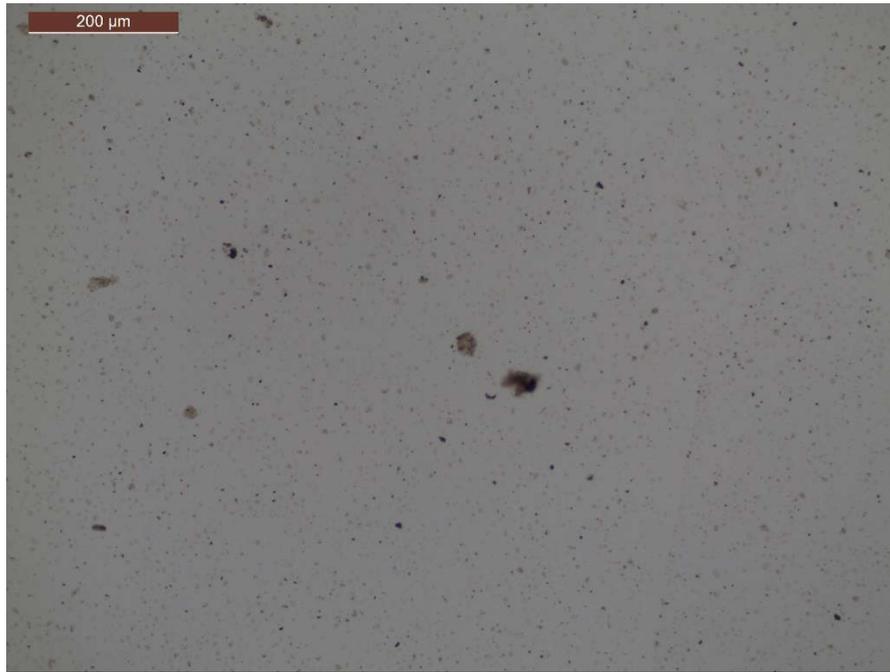
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Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



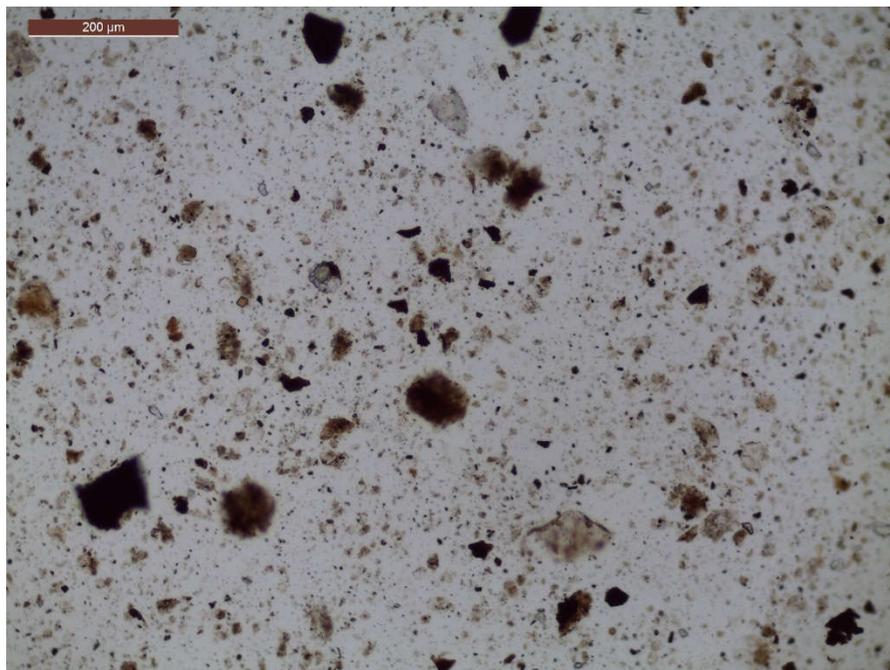
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Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



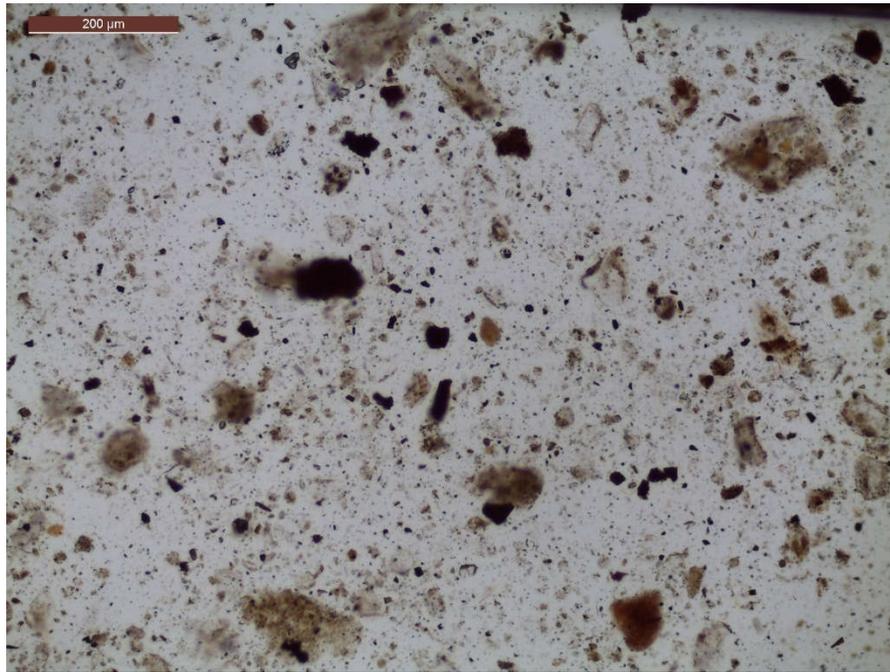
Sample #CUF-SED-DC01-CORLB-0.0/0.5-20181009. RJLG ID 10454164.
Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



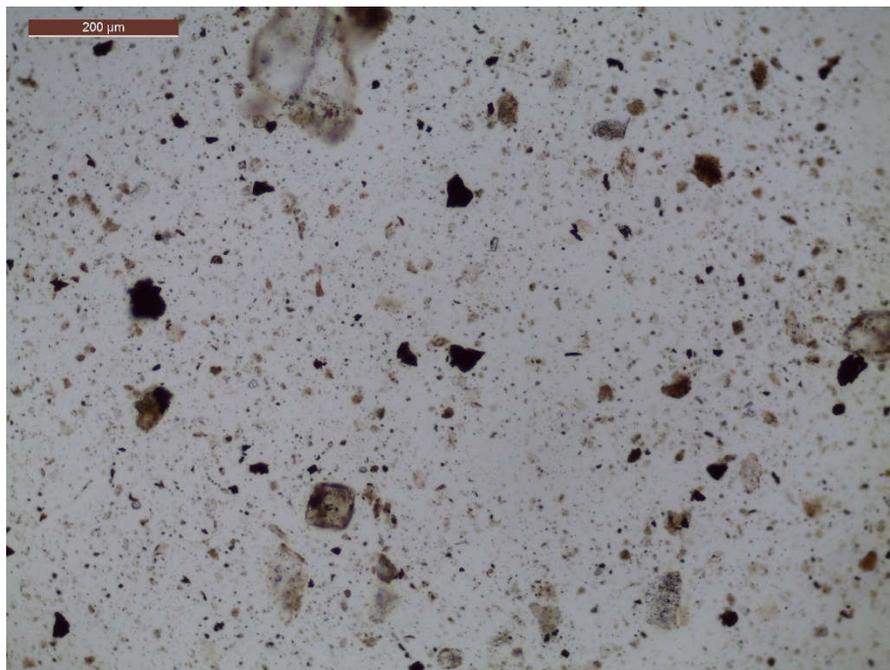
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Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



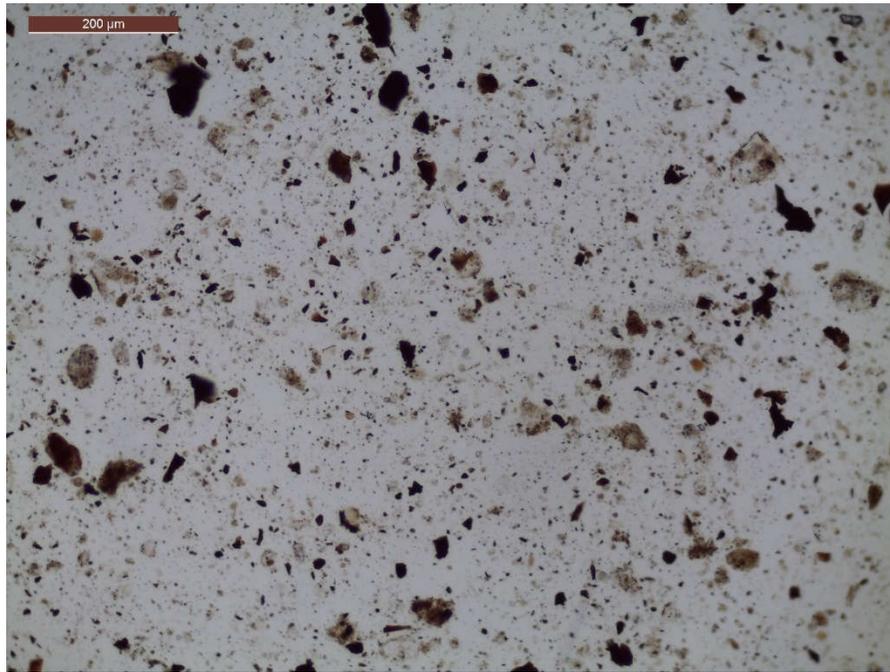
Sample #CUF-SED-DC01-CORCC-0.0/0.5-20181009. RJLG ID 10454166.
Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



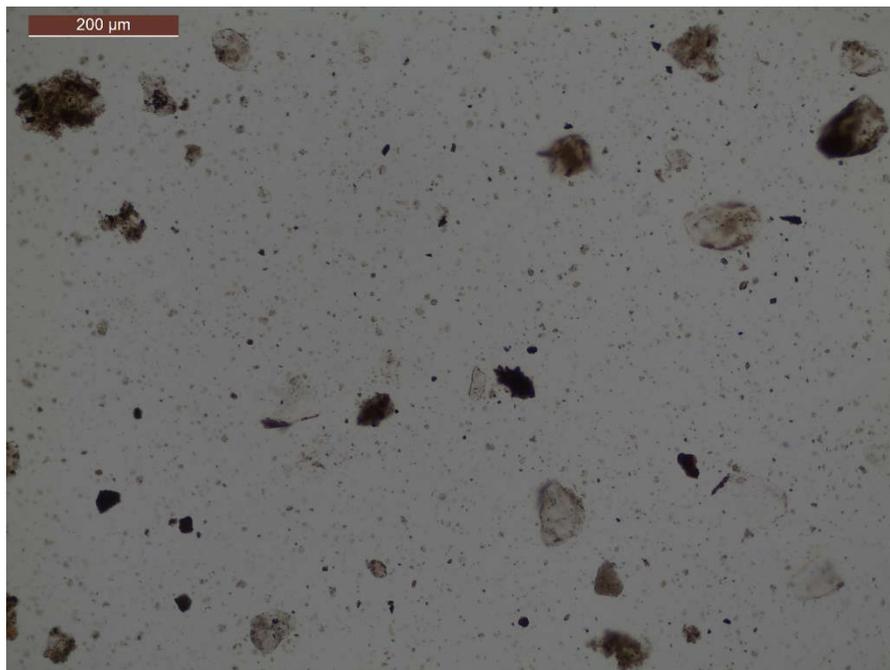
Sample #CUF-SED-DC01-CORCC-0.5/1.0-20181009. RJLG ID 10454167.
Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



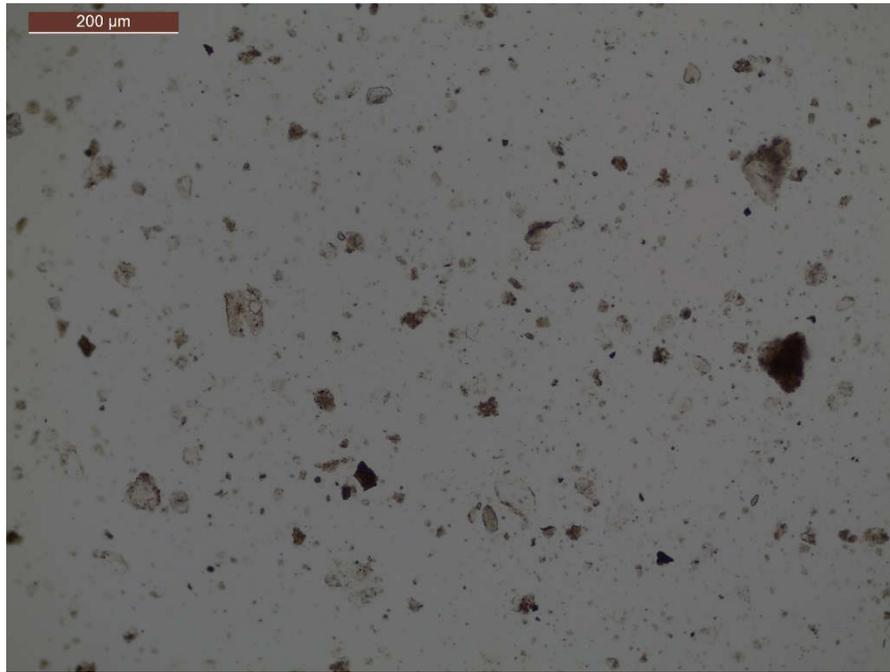
Sample #CUF-SED-DC01-CORRB-0.0/0.5-20181009. RJLG ID 10454168.
Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



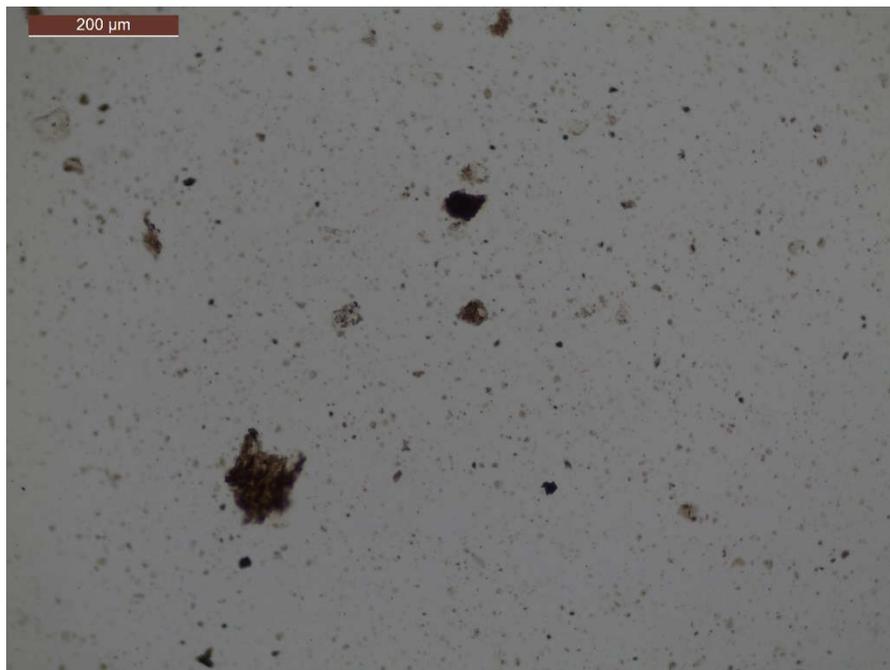
Sample #CUF-SED-DC01-CORRB-0.5/2.2-20181009. RJLG ID 10454169.
Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



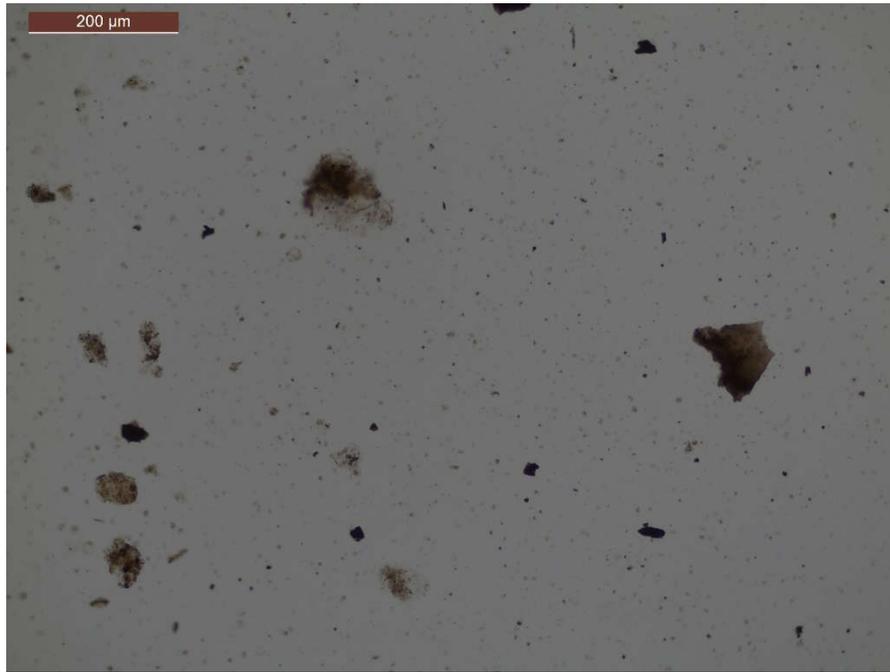
Sample #CUF-SED-DC01-CORRB-2.2/5.6-20181009. RJLG ID 10454170.
Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



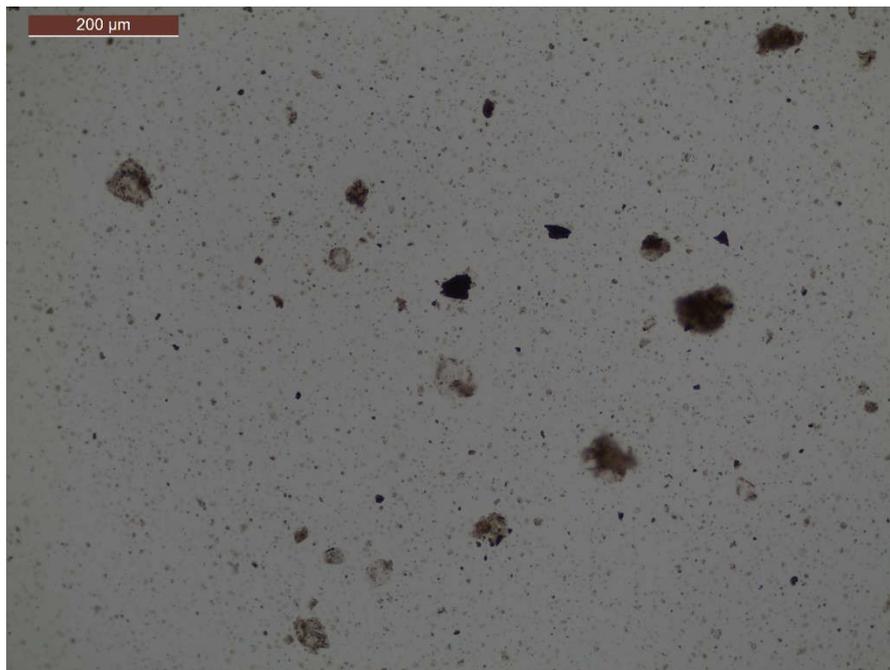
Sample #CUF-SED-DC01-CORRB-5.6/6.0-20181009. RJLG ID 10454171.
Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



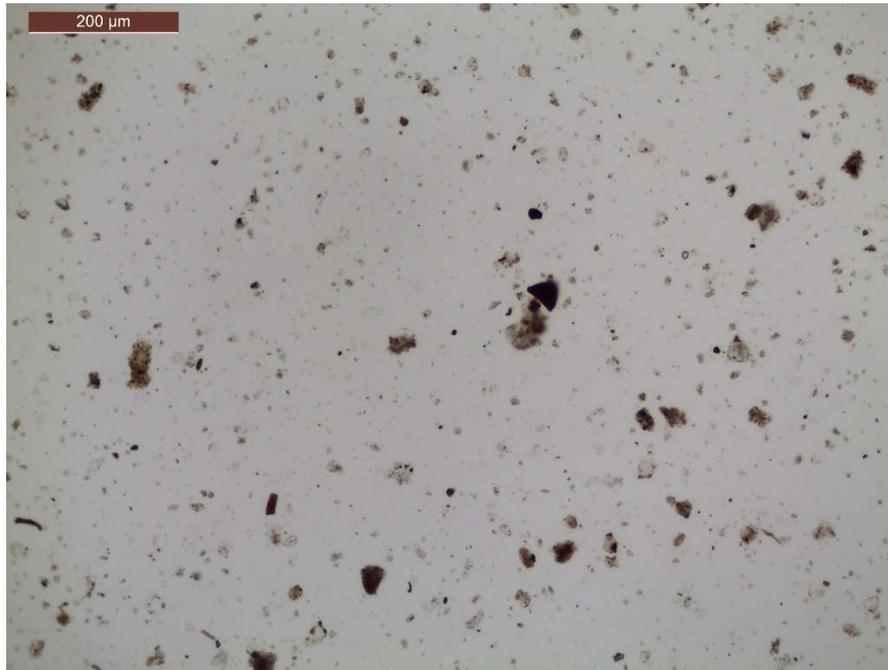
Sample #CUF-SED-CuR04-CORLB-0.0/0.5-20181010. RJLG ID 10454172.
Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



Sample #CUF-SED-CuR04-CORLB-0.5/2.1-20181010. RJLG ID 10454173.
Photomicrograph of sample in plane polarized light illustrating overall sample appearance.

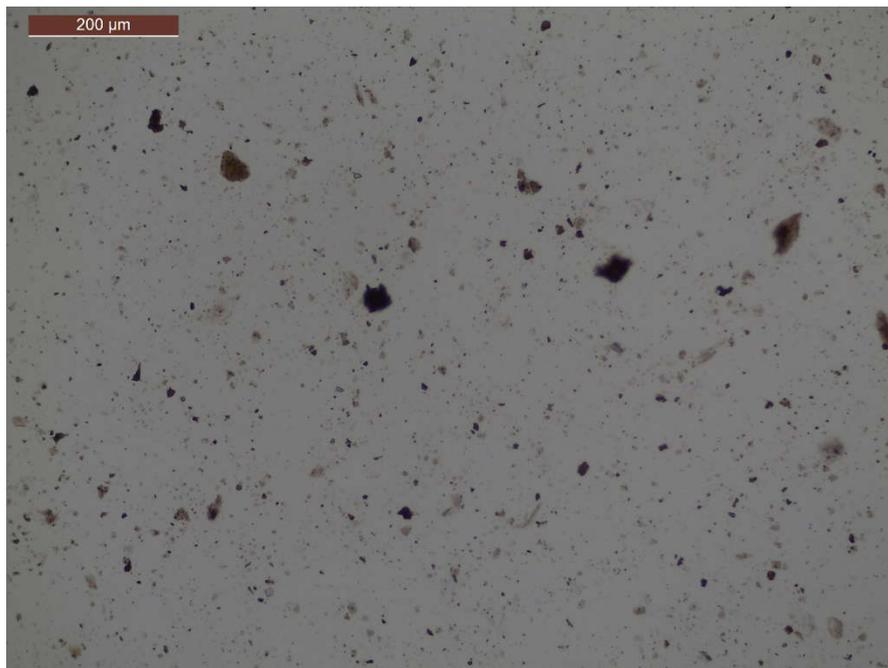


Sample #CUF-SED-CuR04-CORLB-2.1/2.9-20181010. RJLG ID 10454174.
Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



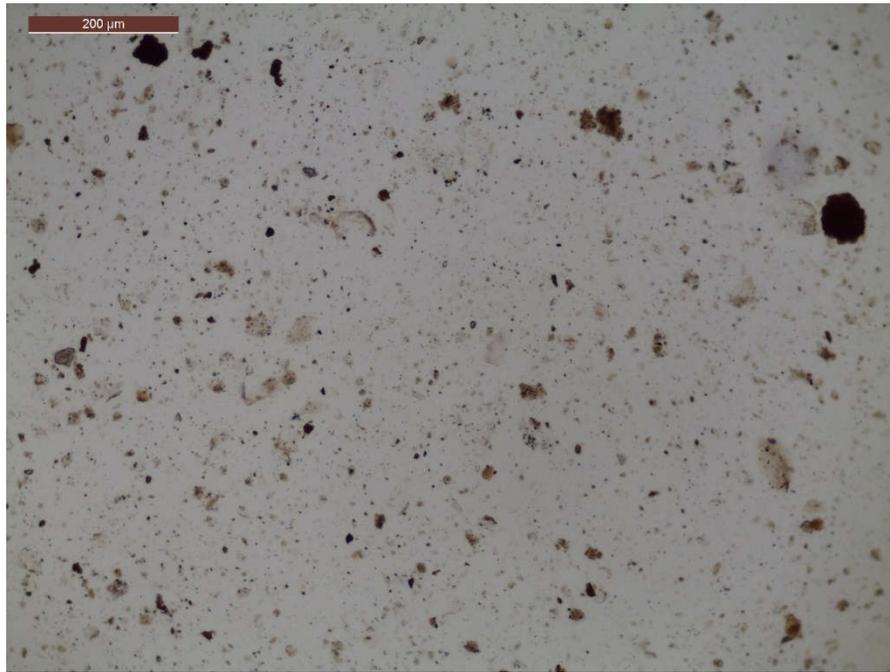
Sample #CUF-SED-CuR04-DUP01-20181010. RJLG ID 10454175.

Photomicrograph of sample in plane polarized light illustrating overall sample appearance.

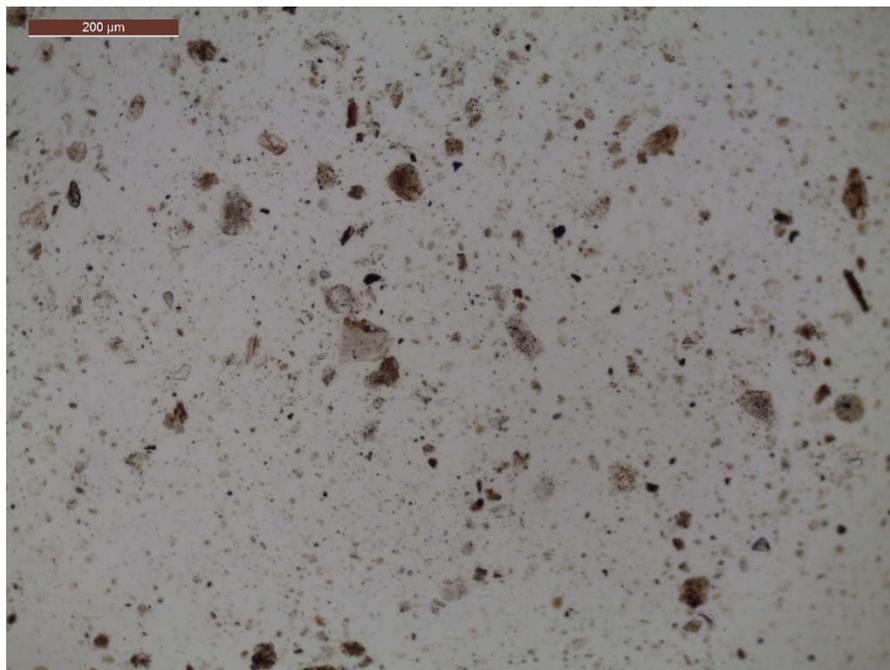


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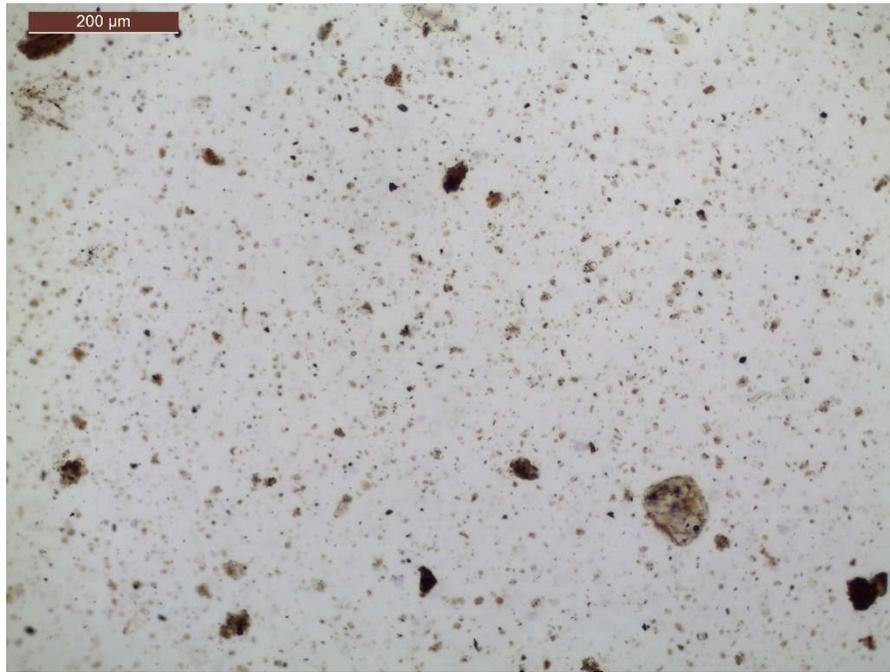
Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



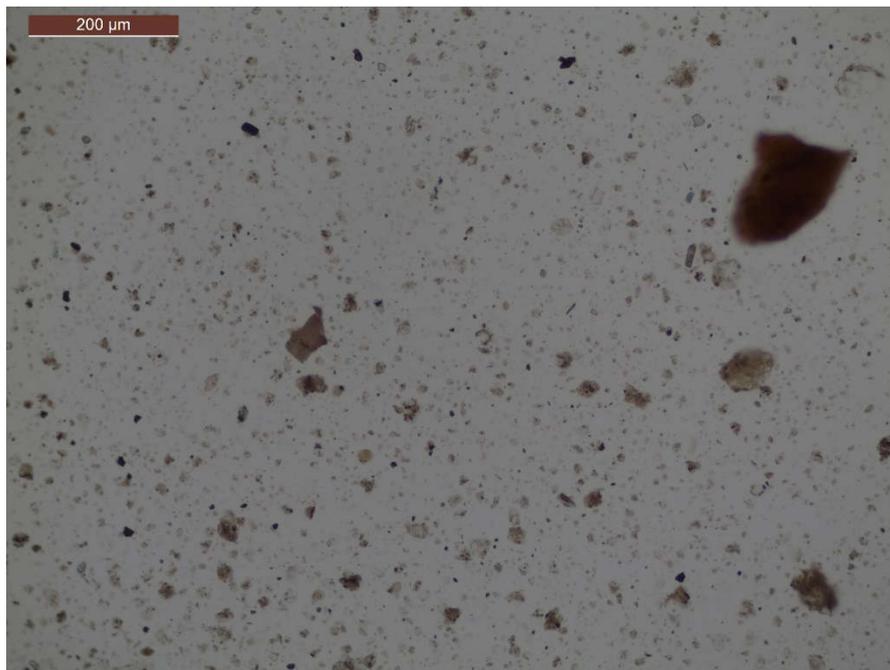
Sample #CUF-SED-CuR04-CORRB-0.0/0.5-20181010. RJLG ID 10454177.
Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



Sample #CUF-SED-CuR04-CORRB-0.5/1.3-20181010. RJLG ID 10454178.
Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



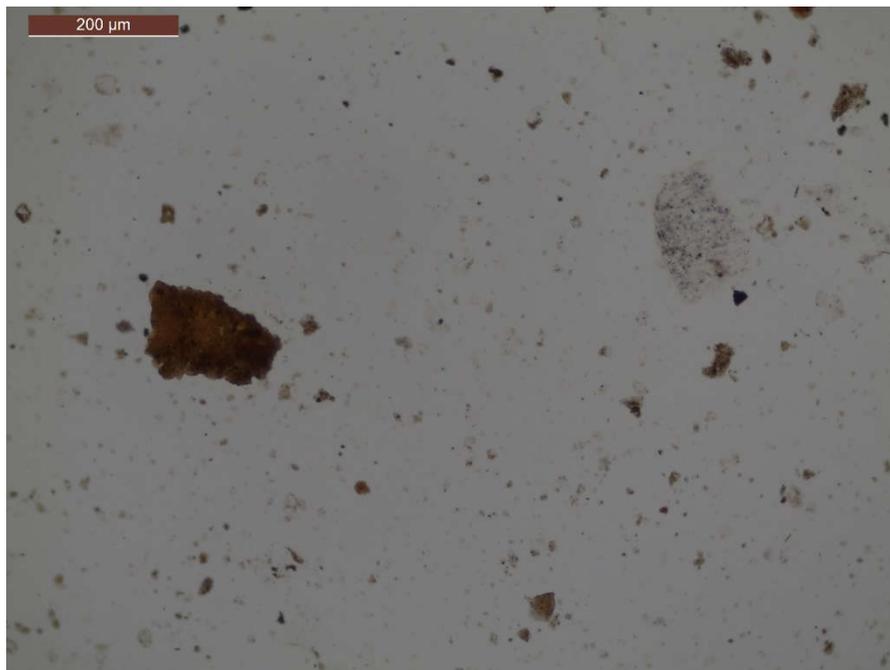
Sample #CUF-SED-CuR03-CORLB-0.0/0.5-20181010. RJLG ID 10454179.
Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



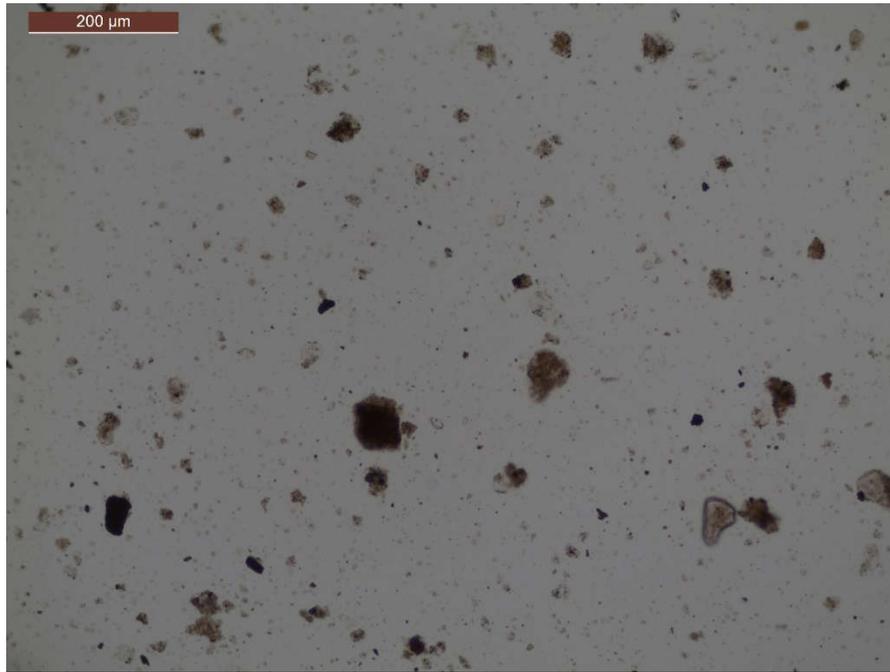
Sample #CUF-SED-CuR03-CORLB-0.5/5.0-20181010. RJLG ID 10454180.
Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



Sample #CUF-SED-CuR03-CORRB-0.0/0.5-20181010. RJLG ID 10454181.
Photomicrograph of sample in plane polarized light illustrating overall sample appearance.

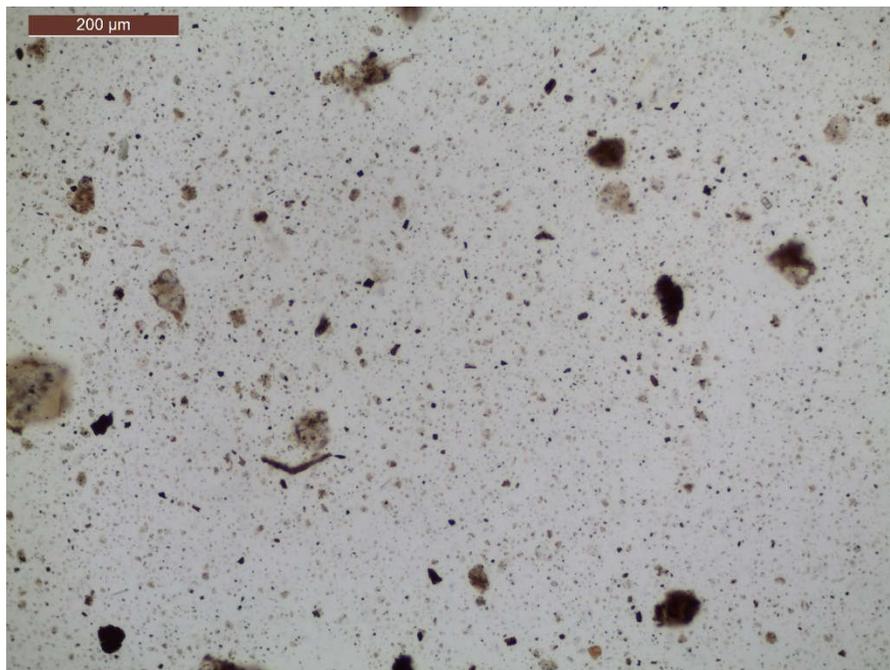


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Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



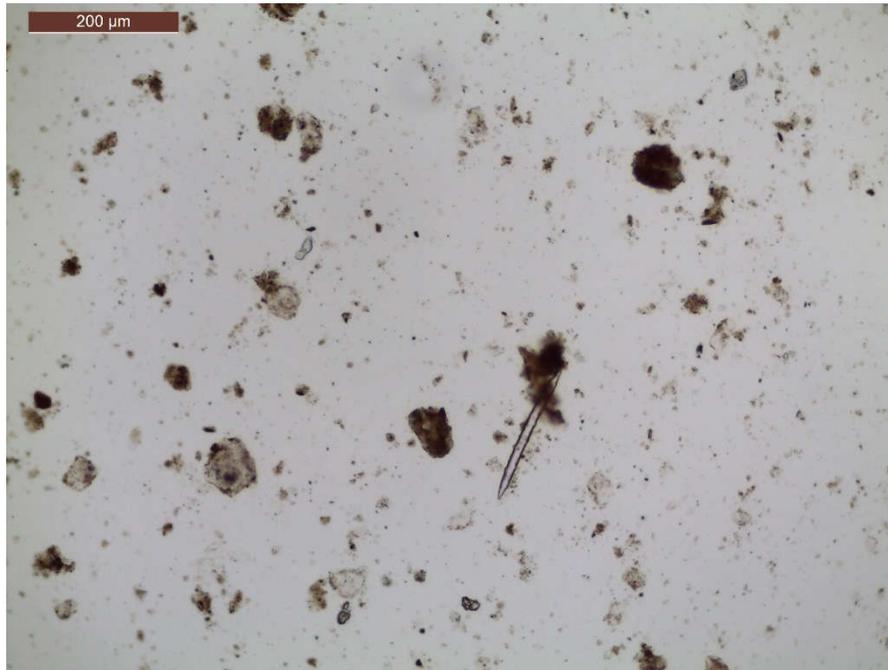
Sample #CUF-SED-CuR03-CORRB-2.1/2.6-20181010. RJLG ID 10454183.

Photomicrograph of sample in plane polarized light illustrating overall sample appearance.

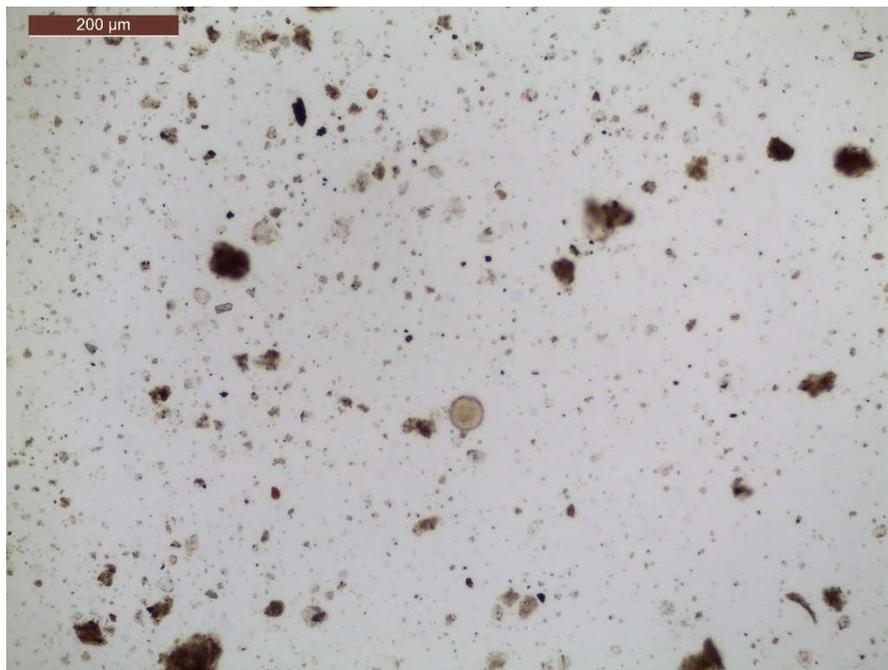


Sample #CUF-SED-CuR03-CORRB-2.6/3.1-20181010. RJLG ID 10454184.

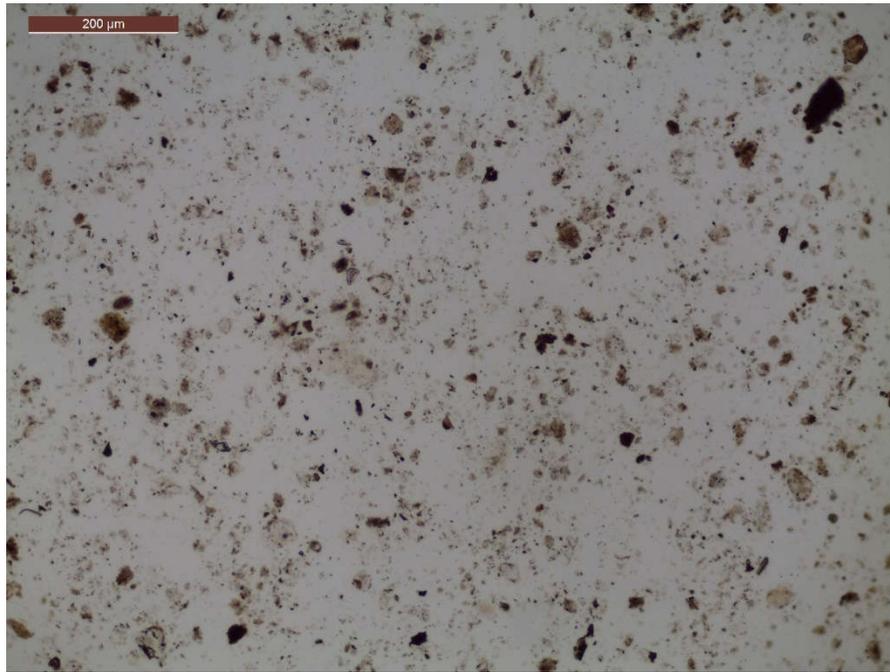
Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



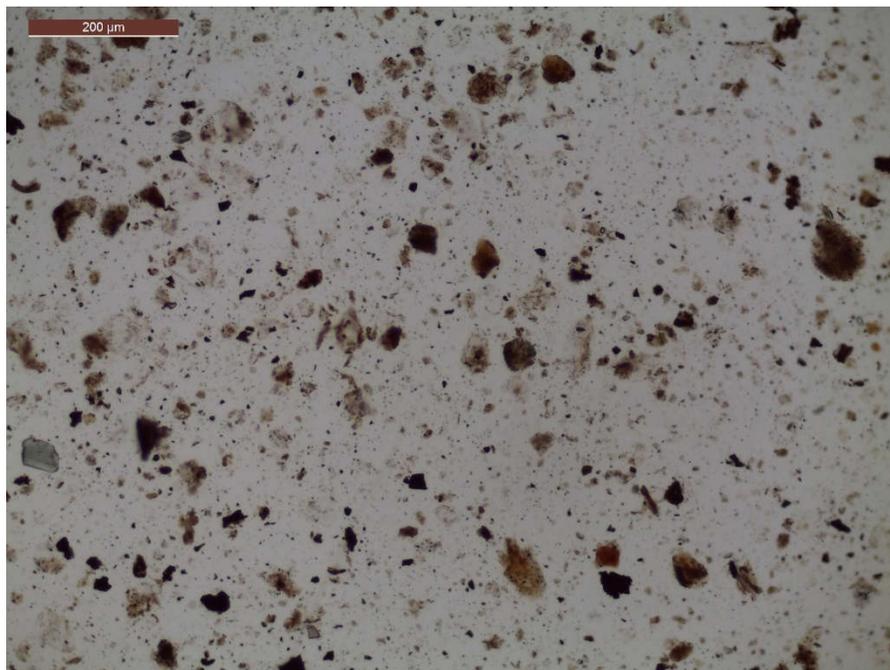
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Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



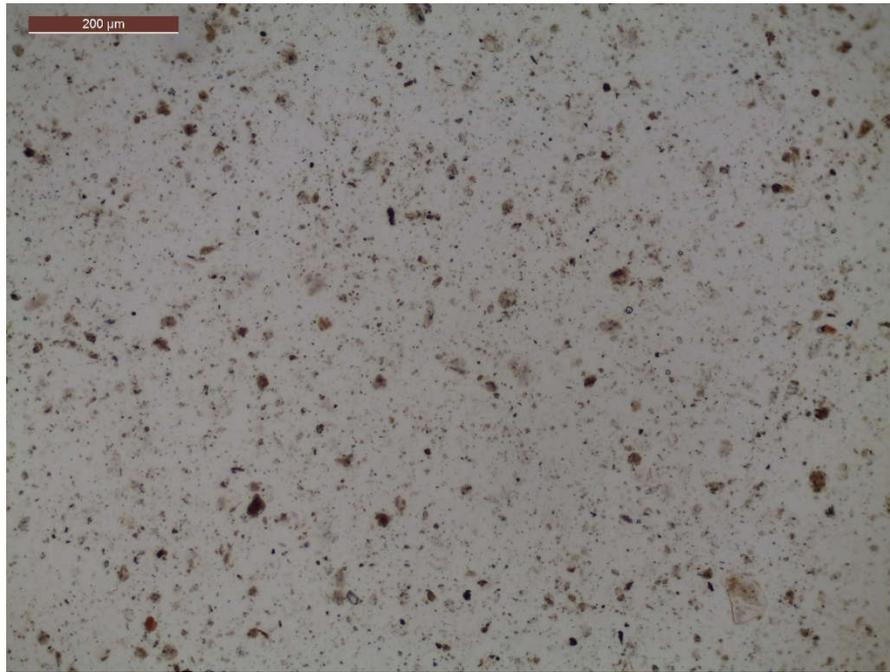
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Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



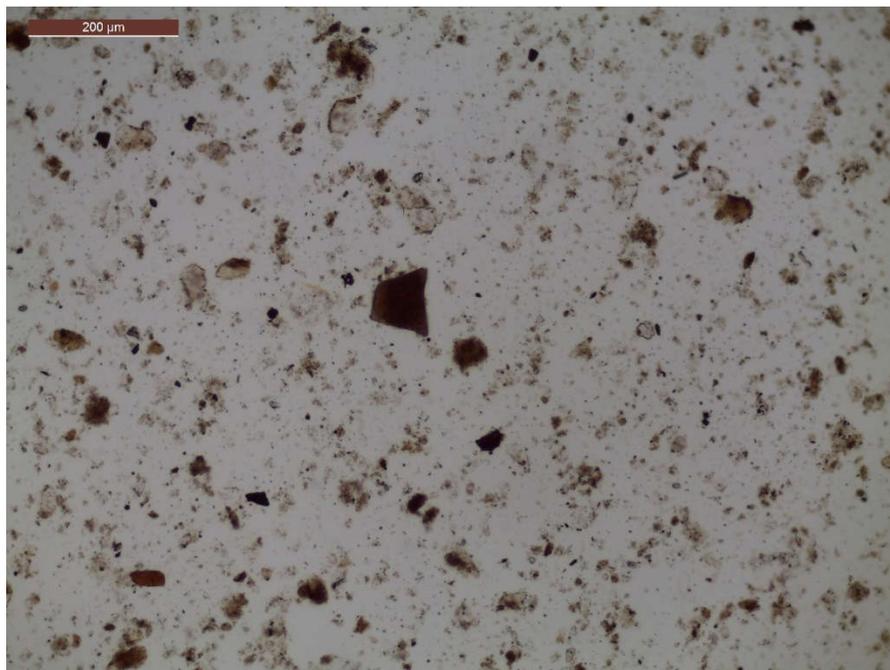
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Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



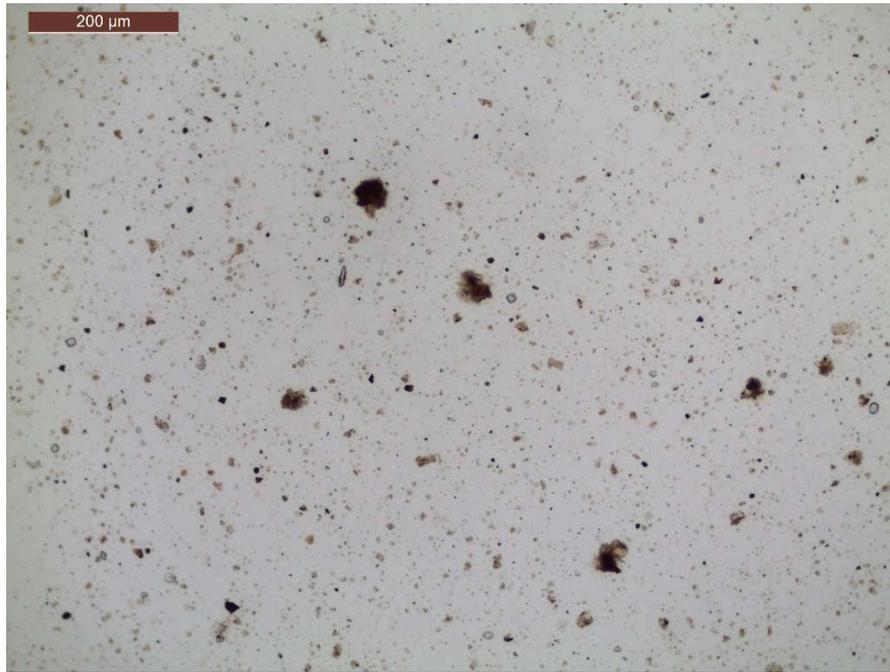
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Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



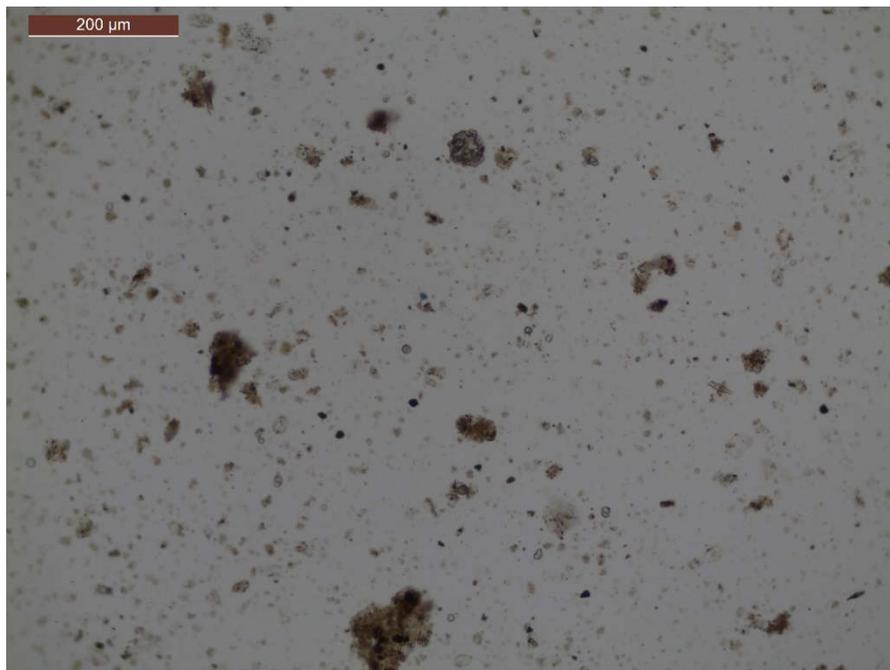
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Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



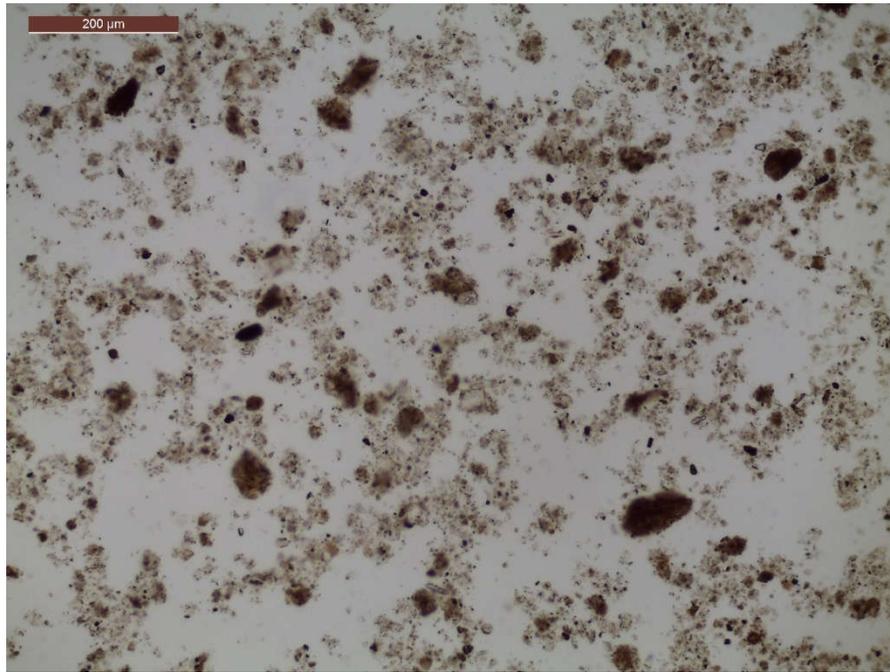
Sample #CUF-SED-CuR01-CORLB-0.0/0.5-20181011. RJLG ID 10454190.
Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



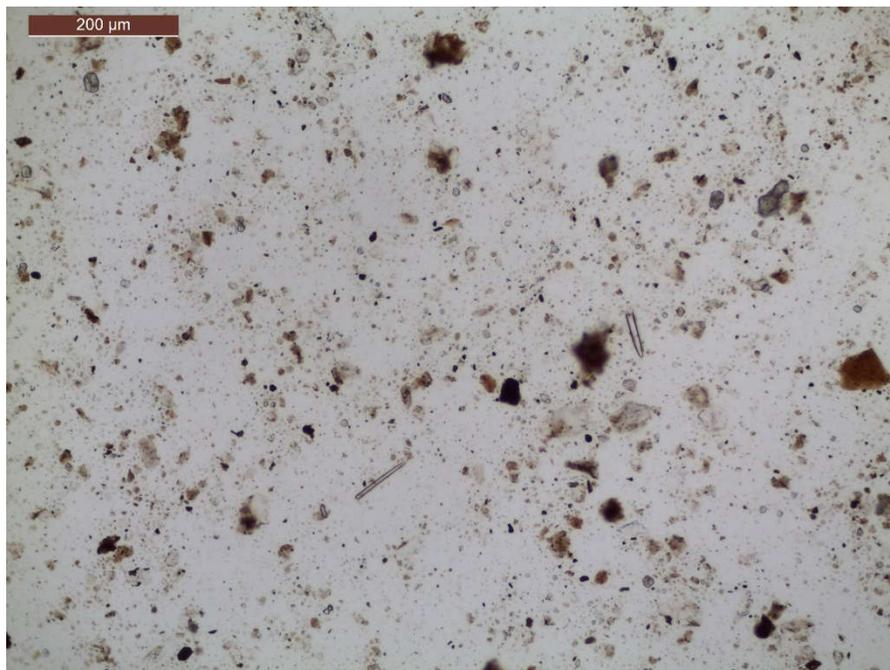
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Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



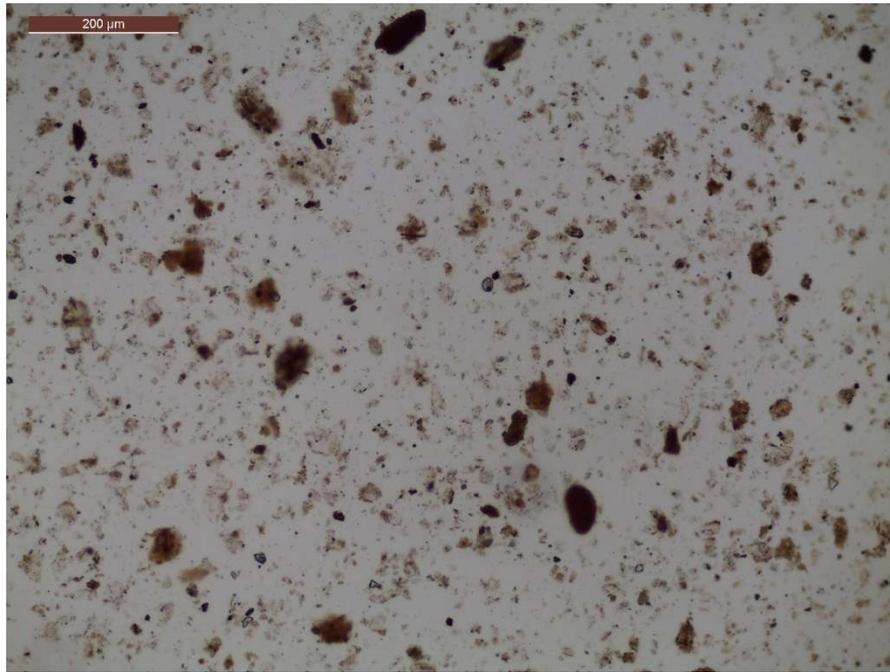
Sample #CUF-SED-WC10-CORLB-0.5/3.0-20181011. RJLG ID 10454192.
Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



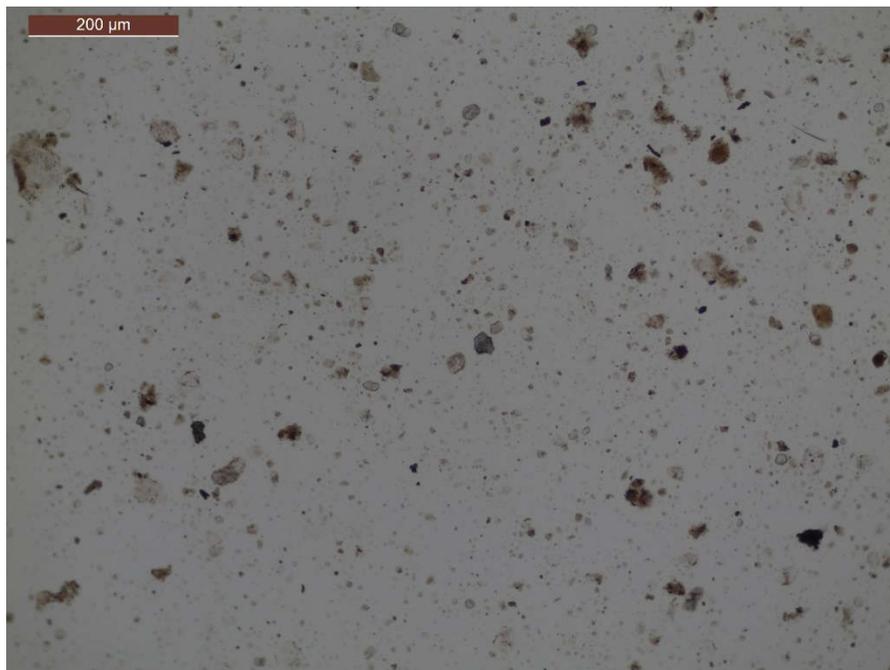
Sample #CUF-SED-WC10-CORLB-3.0/3.5-20181011. RJLG ID 10454193.
Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



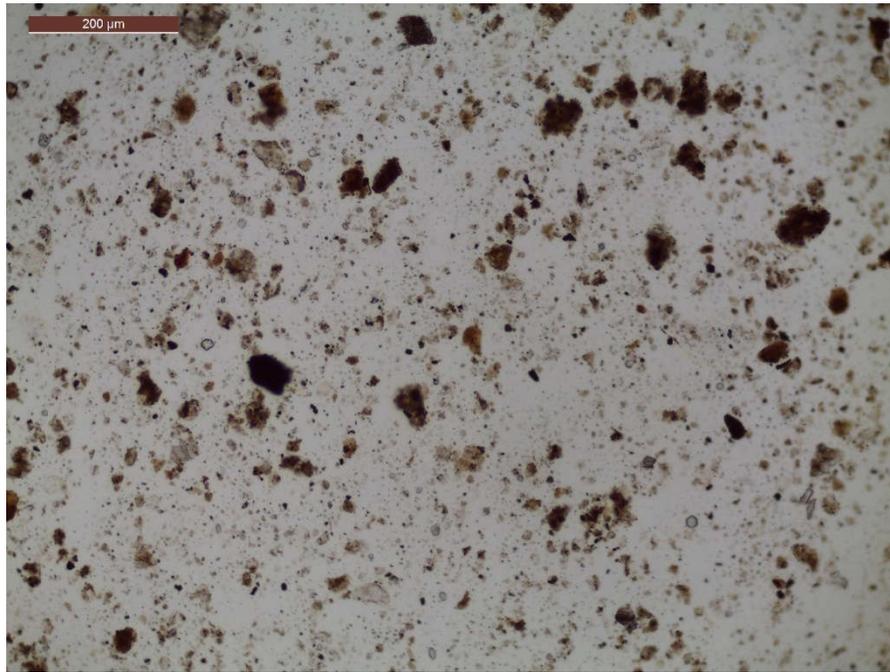
Sample #CUF-SED-WC10-CORCC-0.0/0.5-20181011. RJLG ID 10454194.
Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



Sample #CUF-SED-WC10-CORCC-0.5/2.9-20181011. RJLG ID 10454195.
Photomicrograph of sample in plane polarized light illustrating overall sample appearance.

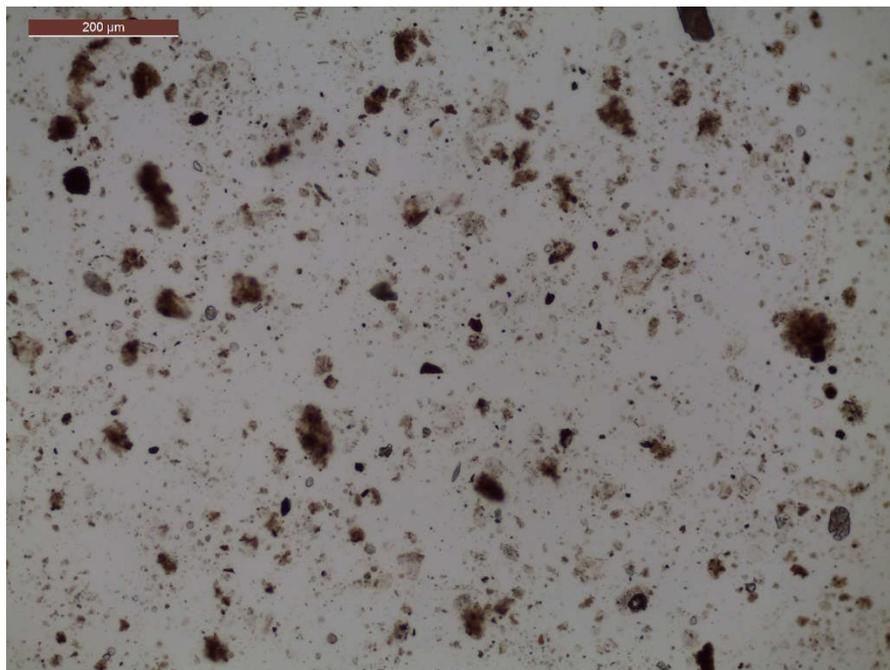


Sample #CUF-SED-WC10-CORRB-0.0/0.5-20181011. RJLG ID 10454196.
Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



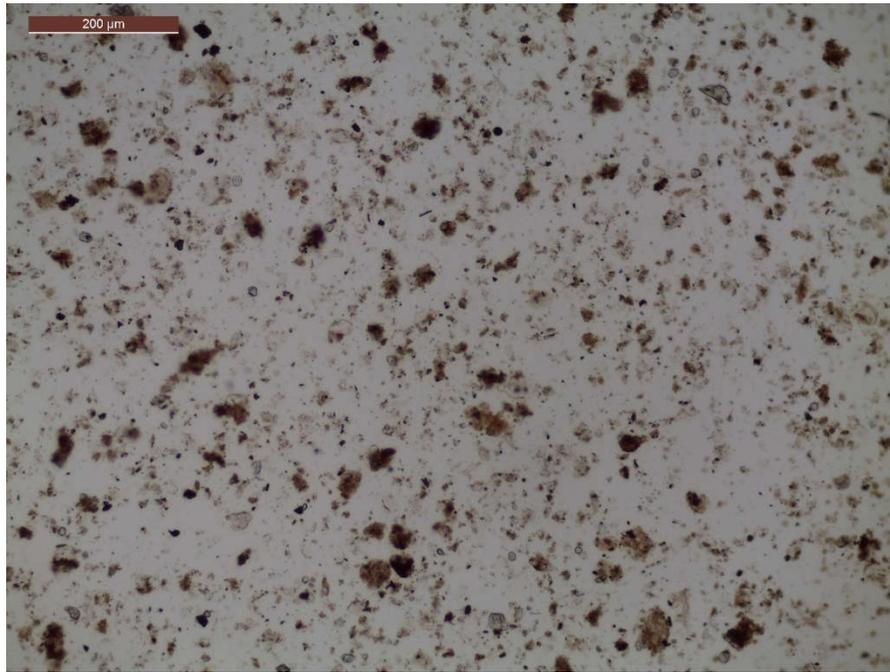
Sample #CUF-SED-WC09-CORCC-0.0/0.5-20181011. RJLG ID 10454197.

Photomicrograph of sample in plane polarized light illustrating overall sample appearance.

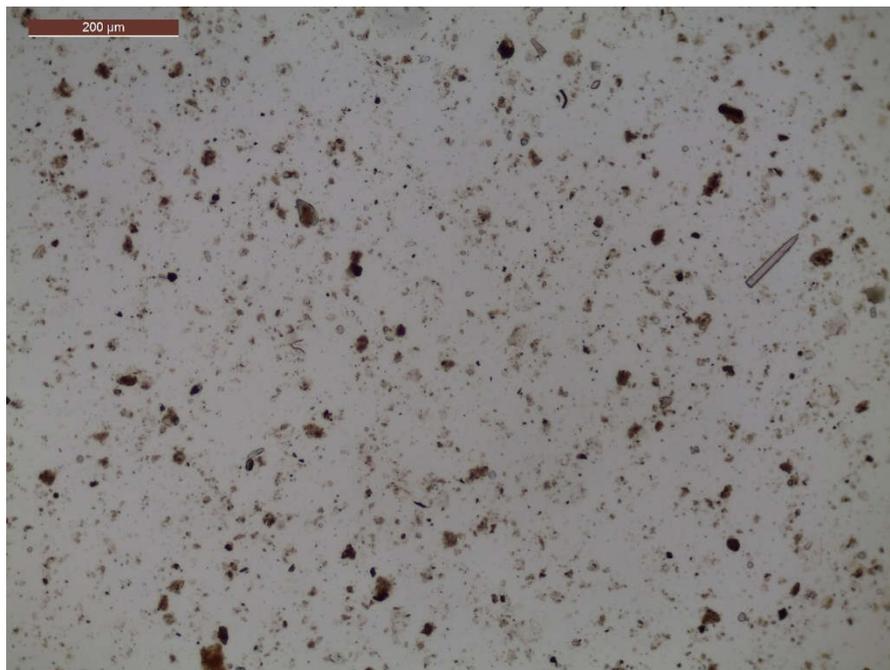


Sample #CUF-SED-WC09-CORRB-0.0/0.5-20181011. RJLG ID 10454198.

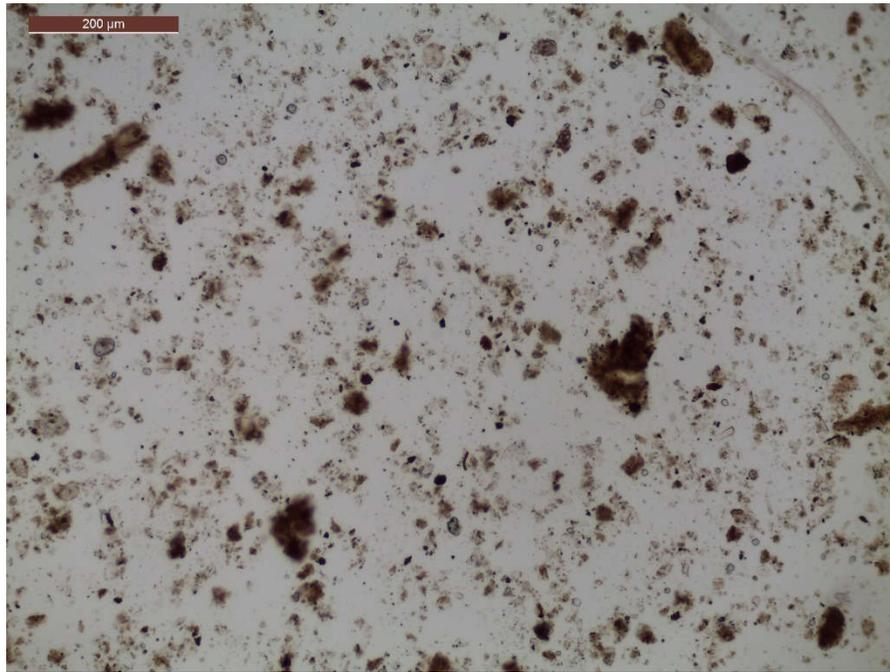
Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



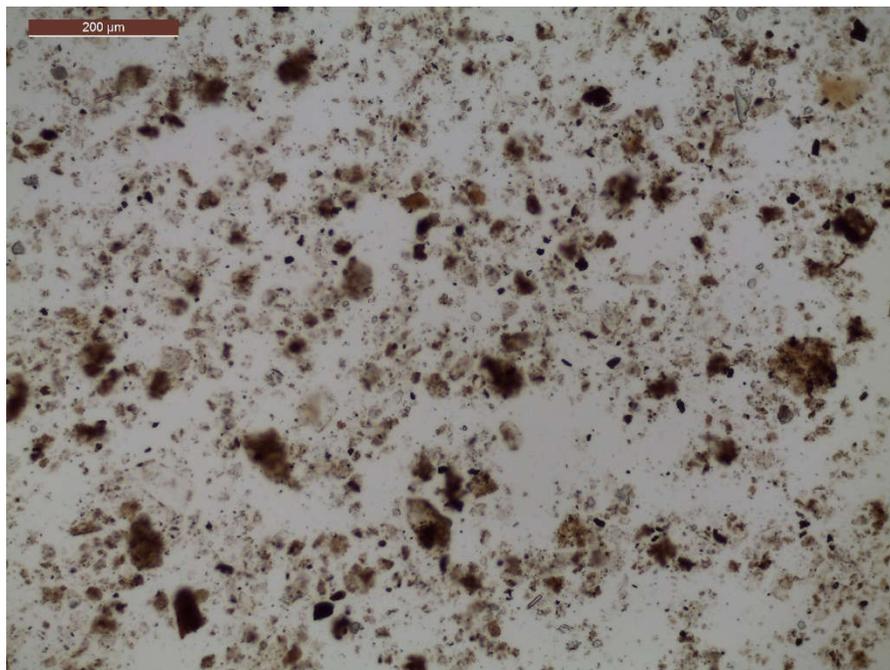
Sample #CUF-SED-WC08-CORRB-0.0/0.5-20181011. RJLG ID 10454199.
Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



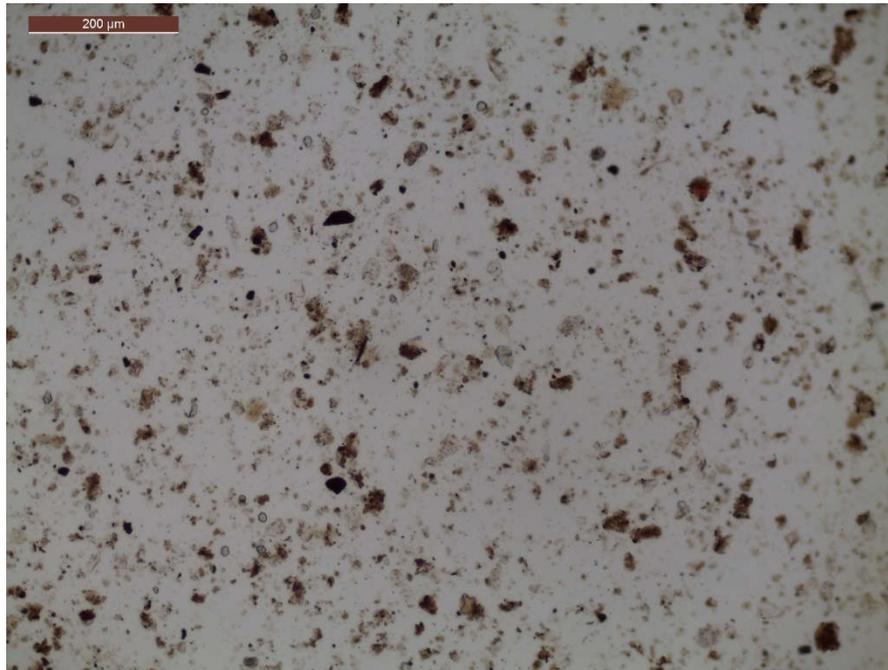
Sample #CUF-SED-WC08-CORCC-0.0/0.5-20181011. RJLG ID 10454200.
Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



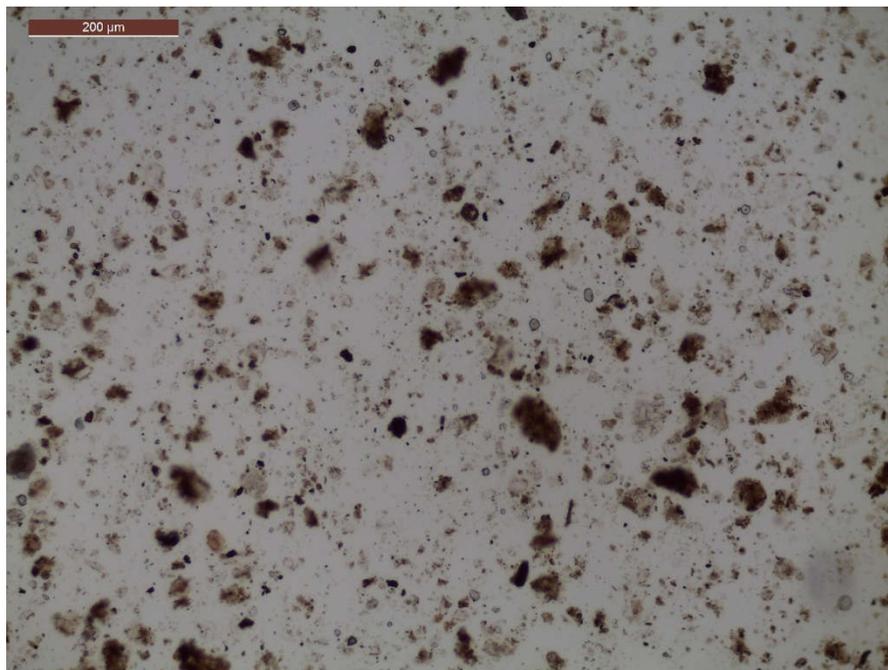
Sample #CUF-SED-WC08-CORLB-0.0/0.5-20181011. RJLG ID 10454201.
Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



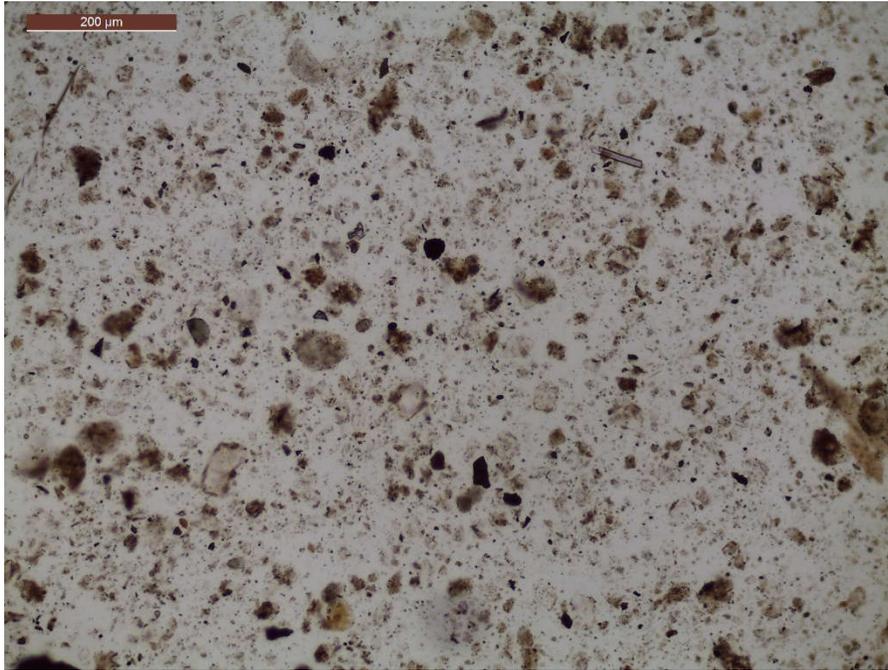
Sample #CUF-SED-WC07-CORLB-0.0/0.5-20181011. RJLG ID 10454202.
Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



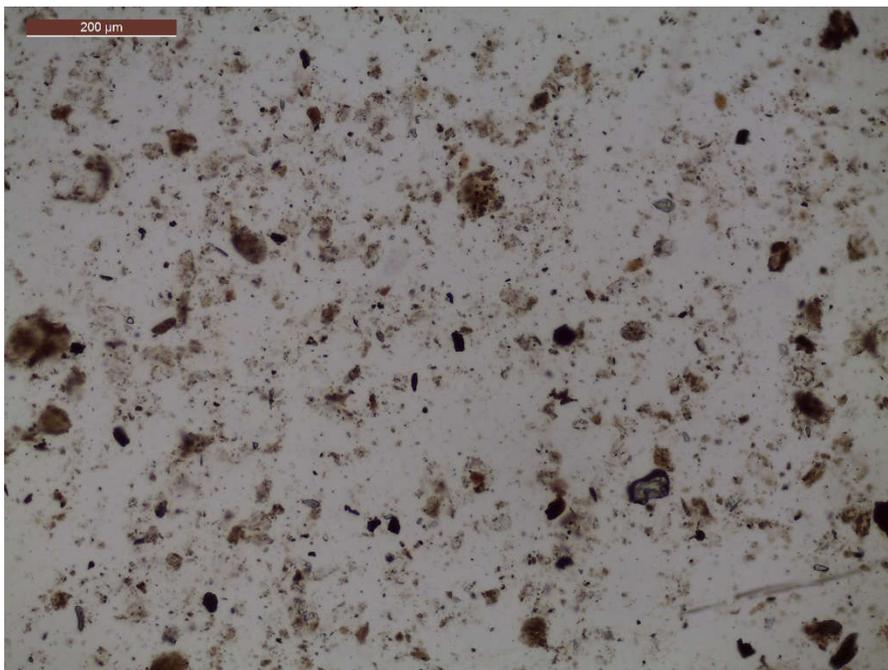
Sample #CUF-SED-WC07-CORCC-0.0/0.5-20181011. RJLG ID 10454203.
Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



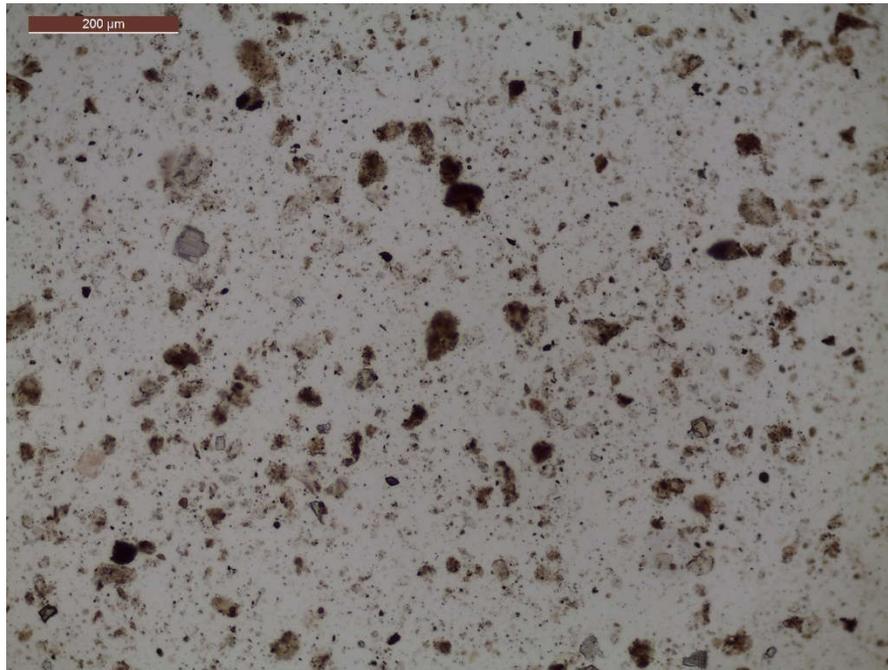
Sample #CUF-SED-WC07-CORRB-0.0/0.5-20181011. RJLG ID 10454204.
Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



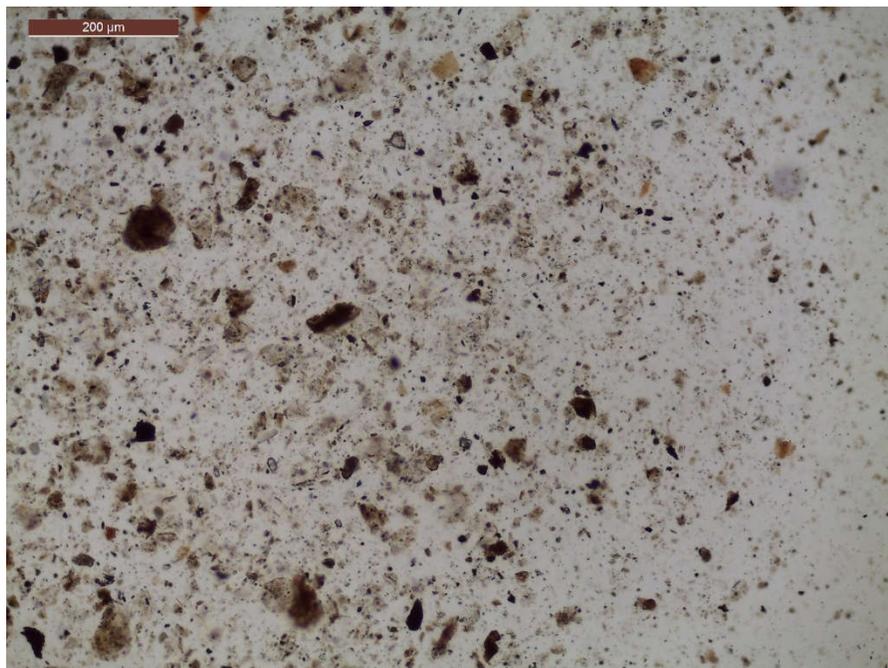
Sample #QC01_CUF-SED-CuR06-CORLB-0.5/6.0-20181009. RJLG ID 10454205.
Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



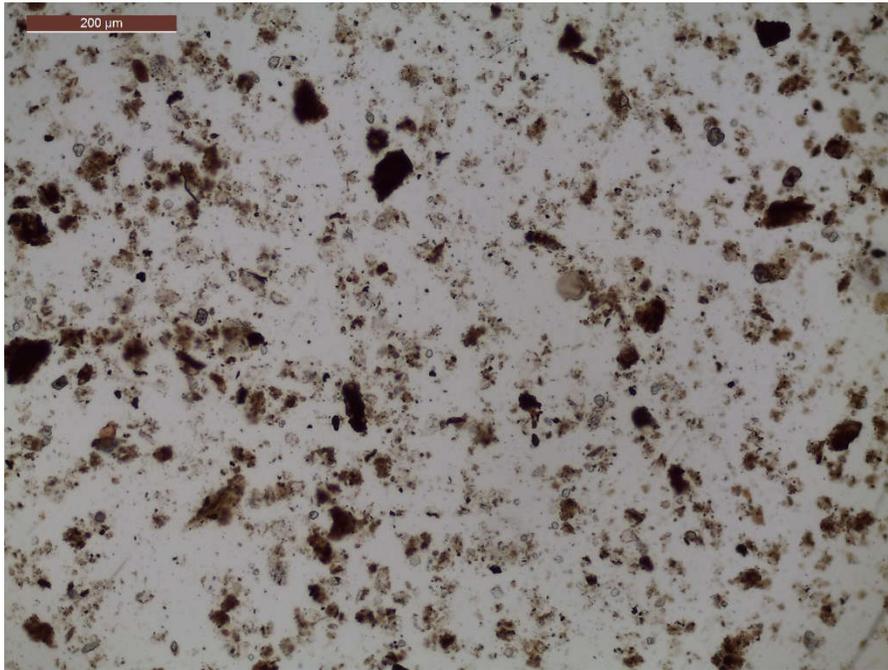
Sample #QC02_CUF-SED-DC01-CORLB-0.0/0.5-20181009. RJLG ID 10454206.
Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



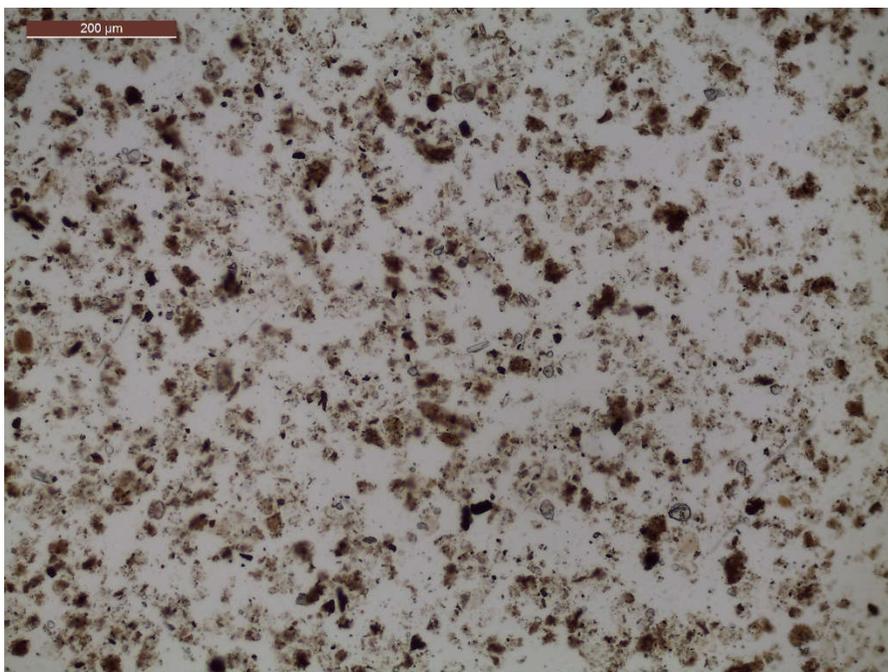
Sample #QC03_CUF-SED-CuR04-CORLB-2.1/2.9-20181010. RJLG ID 10454207.
Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



Sample #QC04_CUF-SED-CuR03-CORRB-2.6/3.1-20181010. RJLG ID 10454208.
Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



Sample #QC05_CUF-SED-WC10-CORCC-0.0/0.5-20181011. RJLG ID 10454209.
Photomicrograph of sample in plane polarized light illustrating overall sample appearance.



Sample #QC06_CUF-SED-WC07-CORRB-0.0/0.5-20181011. RJLG ID 10454210.
Photomicrograph of sample in plane polarized light illustrating overall sample appearance.

Fly Ash Bench Sheet

RJLG ID: 10454145

Customer Sample # : CUF-SED-CuR07-CORLB-0.0/0.5-20181008

Slide 1: 1 Slide 2: 0 Slide 3: 1 Slide 4: 0 Fly Ash % 2%

Non-Fly Ash Components Opaques
Quartz

Other Components:

Results Comments:

Beige Grain Sediment.

Analysis Date: 2018-10-22

Analysis Time: 11:12

Result Last Modified By: Wei Tseng

Result Last Modified On: 2018-10-23 10:23:07.993

Images:

Image Path: \\hq.rjlg.com\dfs\Department\pool28-PA_Optical\2018 Completed Projects\Environmental



Initials: *WT*

Date: 10/23/18

RJLG ID: 10454146

Customer Sample # : CUF-SED-CuR07-CORLB-0.5/4.3-20181008

Slide 1: 0 Slide 2: 1 Slide 3: 1 Slide 4: 0 Fly Ash % 2%

Non-Fly Ash Components Opaques
Quartz Other Components:

Results Comments:

Beige Grain Sediment.

Analysis Date: 2018-10-23

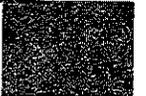
Analysis Time: 10:34

Result Last Modified By: Wei Tseng

Result Last Modified On: 2018-10-23 10:34:53.477

Images:

Image Path: \\hq.rjlg.com\dfs\Department\pool28-PA_Optical\2018 Completed Projects\Environmental



Initials: WT

Date: 10/23/18

RJLG ID: 10454148

Customer Sample # : CUF-SED-CuR07-CORCC-0.0/0.5-20181009

Slide 1: 0 Slide 2: 0 Slide 3: 0 Slide 4: 0 Fly Ash % 0%

Non-Fly Ash Components Opaques
 Quartz Other Components:

Results Comments:

Beige Grain Sediment.

Analysis Date: 2018-10-23

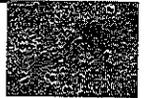
Analysis Time: 10:40

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Result Last Modified On: 2018-10-23 10:40:13.72

Images:

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Initials: WT

Date: 10/23/18

RJLG ID: 10454151

Customer Sample # : CUF-SED-CuR07-CORRB-3.4/4.8-20181009

Slide 1: 0 Slide 2: 0 Slide 3: 0 Slide 4: 1 Fly Ash % 1%

Non-Fly Ash Components Opaques
Quartz Other Components:

Results Comments:

Beige Grain Sediment.

Analysis Date: 2018-10-23

Analysis Time: 10:45

Result Last Modified By: Wei Tseng

Result Last Modified On: 2018-10-23 10:45:37.417

Images:

Image Path: \\hq.rjlg.com\dfs\Department\pool28-PA_Optical\2018 Completed Projects\Environmental



Initials: WT

Date: 10/23/18

Fly Ash Bench Sheet

RJLG ID: 10454152

Customer Sample #: CUF-SED-CuR07-CORRB-4.8/5.7-20181009

Slide 1: 0 Slide 2: 0 Slide 3: 0 Slide 4: 1 Fly Ash % 1%

Non-Fly Ash Opaques
Components Quartz

Other Components:

Results Comments:

Beige Grain Sediment.

Analysis Date: 2018-10-23

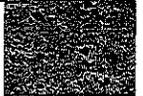
Analysis Time: 10:47

Result Last Modified By: Wei Tseng

Result Last Modified On: 2018-10-23 12:48:10.44

Images:

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Initials: WT

Date: 10/23/18

Fly Ash Bench Sheet

RJLG ID: 10454153

Customer Sample # : CUF-SED-CuR06-CORLB-0.0/0.5-20181009

Slide 1: 0 Slide 2: 1 Slide 3: 0 Slide 4: 0 Fly Ash % 1%

Non-Fly Ash
Components

Mica
Opagues
Quartz

Other Components:

Results Comments:

Tan Fine Grain Sediment

Analysis Date: 2018-10-22

Analysis Time: 11:20

Result Last Modified By: Barbara Woodside

Result Last Modified On: 2018-10-22 11:20:50.133

Images:

Image Path: \\hq.rjlg.com\dfs\Department\pool28-PA_Optical\2018 Completed Projects\Environmental



Initials: *BW*

Date: 10/22/18

Fly Ash Bench Sheet

RJLG ID: 10454158

Customer Sample # : CUF-SED-CuR05-CORLB-0.0/0.5-20181009

Slide 1: 0 Slide 2: 0 Slide 3: 0 Slide 4: 0 Fly Ash % 0%

Non-Fly Ash Components Opaques
Quartz Other Components:

Results Comments:
Beige Grain Sediment.

Analysis Date: 2018-10-23 Analysis Time: 10:54
Result Last Modified By: Wei Tseng Result Last Modified On: 2018-10-23 12:49:34.553

Images:

Image Path: \\hq.rjlg.com\dfs\Department\pool28-PA_Optical\2018 Completed Projects\Environmental



Initials: WT

Date: 10/23/18

RJLG ID: 10454160

Customer Sample # : CUF-SED-CuR05-CORLB-2.0/4.7-20181009

Slide 1: 0 Slide 2: 1 Slide 3: 0 Slide 4: 0 Fly Ash % 1%

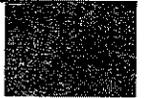
Non-Fly Ash Components Opaques
Quartz Other Components:

Results Comments:
Beige Grain Sediment.

Analysis Date: 2018-10-23 Analysis Time: 10:58
Result Last Modified By: Wei Tseng Result Last Modified On: 2018-10-23 10:58:06.52

Images:

Image Path: \\hq.rjlg.com\dfs\Department\pool28-PA_Optical\2018 Completed Projects\Environmental



Initials: WT

Date: 10/23/18

Fly Ash Bench Sheet

RJLG ID: 10454161

Customer Sample # : CUF-SED-CuR05-CORCC-0.0/0.5-20181009

Slide 1: 0 Slide 2: 0 Slide 3: 0 Slide 4: 0 Fly Ash % 0%

Non-Fly Ash Components Opaques
 Quartz
 Coal

Other Components:

Results Comments:

Beige Grain Sediment.

Analysis Date: 2018-10-23

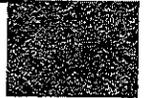
Analysis Time: 11:00

Result Last Modified By: Wei Tseng

Result Last Modified On: 2018-10-23 11:00:21.413

Images:

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Initials: WT

Date: 10/23/18

Fly Ash Bench Sheet

RJLG ID: 10454162

Customer Sample # : CUF-SED-CuR05-CORRB-0.0/0.5-20181009

Slide 1: 0 Slide 2: 0 Slide 3: 0 Slide 4: 0 Fly Ash % 0%

Non-Fly Ash
Components

Mica
Opagues
Quartz

Other Components:

Results Comments:

Tan Fine Grain Sediment

Analysis Date: 2018-10-22

Analysis Time: 12:33

Result Last Modified By: Barbara Woodside

Result Last Modified On: 2018-10-22 12:33:31.043

Images:

Image Path: \\hq.rjlg.com\dfs\Department\pool28-PA_Optical\2018 Completed Projects\Environmental



Initials: _____

BW

Date: _____

10/22/18

Fly Ash Bench Sheet

RJLG ID: 10454164

Customer Sample # : CUF-SED-DC01-CORLB-0.0/0.5-20181009

Slide 1: 0 Slide 2: 1 Slide 3: 1 Slide 4: 0 Fly Ash % 2%

Non-Fly Ash
Components

Carbonate
Mica
Opagues
Quartz

Other Components:

Results Comments:

Tan Fine Grain Sediment

Analysis Date: 2018-10-22

Analysis Time: 11:58

Result Last Modified By: Barbara Woodside

Result Last Modified On: 2018-10-22 11:58:21.067

Images:

Image Path: \\hq.rjlg.com\dfs\Department\pool28-PA_Optical\2018 Completed Projects\Environmental



Initials: *BW*

Date: 10/22/18

RJLG ID: 10454167

Customer Sample # : CUF-SED-DC01-CORCC-0.5/1.0-20181009

Slide 1: 0 Slide 2: 0 Slide 3: 2 Slide 4: 1 Fly Ash % 3%

Non-Fly Ash Components Opaques
 Quartz
 Coal

Other Components:

Results Comments:
Beige Grain Sediment.

Analysis Date: 2018-10-23

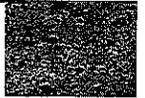
Analysis Time: 11:04

Result Last Modified By: Wei Tseng

Result Last Modified On: 2018-10-23 11:04:49.11

Images:

Image Path: \\hq.rjlg.com\dfs\Department\pool28-PA_Optical\2018 Completed Projects\Environmental



Initials: WT

Date: 10/23/18

RJLG ID: 10454168

Customer Sample # : CUF-SED-DC01-CORRB-0.0/0.5-20181009

Slide 1: 0 Slide 2: 0 Slide 3: 0 Slide 4: 0 Fly Ash % 0%

Non-Fly Ash Components Opaques
 Quartz
 Coal Other Components:

Results Comments:

Beige Grain Sediment.

Analysis Date: 2018-10-23

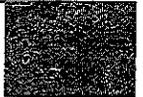
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Result Last Modified On: 2018-10-23 11:23:14.96

Images:

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Initials: WT

Date: 10/23/18

RJLG ID: 10454169

Customer Sample # : CUF-SED-DC01-CORRB-0.5/2.2-20181009

Slide 1: 0 Slide 2: 1 Slide 3: 0 Slide 4: 0 Fly Ash % 1%

Non-Fly Ash Components Opaques
 Quartz
 Coal

Other Components:

Results Comments:

Beige Grain Sediment.

Analysis Date: 2018-10-23

Analysis Time: 11:25

Result Last Modified By: Wei Tseng

Result Last Modified On: 2018-10-23 11:28:23.337

Images:

Image Path: \\hq.rjlg.com\dfs\Department\pool28-PA_Optical\2018 Completed Projects\Environmental



Initials: WT

Date: 10/23/18

Fly Ash Bench Sheet

RJLG ID: 10454175

Customer Sample # : CUF-SED-CuR04-DUP01-20181010

Slide 1: 0 Slide 2: 0 Slide 3: 0 Slide 4: 0 Fly Ash % 0%

Non-Fly Ash
Components

Mica
Opagues
Quartz

Other Components:

Results Comments:

Tan Fine Grain Sediment

Analysis Date: 2018-10-22

Analysis Time: 13:43

Result Last Modified By: Barbara Woodside

Result Last Modified On: 2018-10-22 13:43:53.87

Images:

Image Path: \\hq.rjlg.com\dfs\Department\pool28-PA_Optical\2018 Completed Projects\Environmental



Initials: *BW*

Date: 10/22/18

RJLG ID: 10454177

Customer Sample #: CUF-SED-CuR04-CORRB-0.0/0.5-20181010

Slide 1: 0 Slide 2: 0 Slide 3: 0 Slide 4: 0 Fly Ash % 0%

Non-Fly Ash Components Opaques
Quartz
Coal

Other Components:

Results Comments:

Beige Grain Sediment.

Analysis Date: 2018-10-23

Analysis Time: 11:27

Result Last Modified By: Wei Tseng

Result Last Modified On: 2018-10-23 11:27:57.21

Images:

Image Path: \\hq.rjlg.com\dfs\Department\pool28-PA_Optical\2018 Completed Projects\Environmental



Initials: WT

Date: 10/23/18

RJLG ID: 10454178

Customer Sample # : CUF-SED-CuR04-CORRB-0.5/1.3-20181010

Slide 1: 0 Slide 2: 0 Slide 3: 0 Slide 4: 0 Fly Ash % 0%

Non-Fly Ash Components Opaques
Quartz Other Components:

Results Comments:

Beige Grain Sediment.

Analysis Date: 2018-10-23

Analysis Time: 11:31

Result Last Modified By: Wei Tseng

Result Last Modified On: 2018-10-23 11:31:27.483

Images:

Image Path: \\hq.rjlg.com\dfs\Department\pool28-PA_Optical\2018 Completed Projects\Environmental



Initials: WT

Date: 10/23/18

Fly Ash Bench Sheet

RJLG ID: 10454179

Customer Sample # : CUF-SED-CuR03-CORLB-0.0/0.5-20181010

Slide 1: 0 Slide 2: 0 Slide 3: 1 Slide 4: 0 Fly Ash % 1%

| | | |
|------------------------|--|-------------------|
| Non-Fly Ash Components | Carbonate Mica Opagues Quartz | Other Components: |
|------------------------|--|-------------------|

Results Comments:

Tan Fine Grain Sediment

Analysis Date: 2018-10-22

Analysis Time: 17:34

Result Last Modified By: Barbara Woodside

Result Last Modified On: 2018-10-22 17:34:19.043

Images:

Image Path: \\hq.rjlg.com\dfs\Department\pool28-PA_Optical\2018 Completed Projects\Environmental



Initials: *BW*

Date: 10/22/18

RJLG ID: 10454182

Customer Sample # : CUF-SED-CuR03-CORRB-0.5/2.1-20181010

Slide 1: 0 Slide 2: 1 Slide 3: 0 Slide 4: 1 Fly Ash % 2%

Non-Fly Ash Opaques
Components Quartz

Other Components:

Results Comments:

Tan Fine Grain Sediment

Analysis Date: 2018-10-22

Analysis Time: 16:15

Result Last Modified By: Barbara Woodside

Result Last Modified On: 2018-10-22 16:15:15.91

Images:

Image Path: \\hq.rjlg.com\dfs\Department\pool28-PA_Optical\2018 Completed Projects\Environmental



Initials: *BJW*

Date: 10/22/18

RJLG ID: 10454188

Customer Sample # : CUF-SED-CuR01-CORRB-0.5/1.4-20181011

Slide 1: 0 Slide 2: 0 Slide 3: 0 Slide 4: 0 Fly Ash % 0%

Non-Fly Ash Components Opaques
Quartz Other Components:

Results Comments:

Beige Grain Sediment.

Analysis Date: 2018-10-23

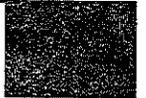
Analysis Time: 11:34

Result Last Modified By: Wei Tseng

Result Last Modified On: 2018-10-23 11:34:25.51

Images:

Image Path: \\hq.rjlg.com\dfs\Department\pool28-PA_Optical\2018 Completed Projects\Environmental



Initials: WT

Date: 10/23/18

RJLG ID: 10454189

Customer Sample # : CUF-SED-CuR01-CORCC-0.0/0.5-20181011

Slide 1: 0 Slide 2: 0 Slide 3: 0 Slide 4: 0 Fly Ash % 0%

Non-Fly Ash Components Opaques
Quartz Other Components:

Results Comments:

Beige Grain Sediment.

Analysis Date: 2018-10-23

Analysis Time: 11:37

Result Last Modified By: Wei Tseng

Result Last Modified On: 2018-10-23 11:37:09.793

Images:

Image Path: \\hq.rjlg.com\dfs\Department\pool28-PA_Optical\2018 Completed Projects\Environmental



Initials: WT

Date: 10/23/18

RJLG ID: 10454190

Customer Sample # : CUF-SED-CuR01-CORLB-0.0/0.5-20181011

Slide 1: 0 Slide 2: 0 Slide 3: 1 Slide 4: 0 Fly Ash % 1%

Non-Fly Ash Components Opaques
Quartz Other Components:

Results Comments:

Beige Grain Sediment.

Analysis Date: 2018-10-23

Analysis Time: 11:41

Result Last Modified By: Wei Tseng

Result Last Modified On: 2018-10-23 11:41:05.207

Images:

Image Path: \\hq.rjlg.com\dfs\Department\pool28-PA_Optical\2018 Completed Projects\Environmental



Initials: WT

Date: 10/23/18

RJLG ID: 10454193

Customer Sample # : CUF-SED-WC10-CORLB-3.0/3.5-20181011

Slide 1: 1 Slide 2: 0 Slide 3: 0 Slide 4: 0 Fly Ash % 1%

Non-Fly Ash Components Opaques
Quartz

Other Components:

Results Comments:

Beige Grain Sediment.

Analysis Date: 2018-10-23

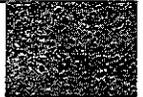
Analysis Time: 11:46

Result Last Modified By: Wei Tseng

Result Last Modified On: 2018-10-23 11:46:20.683

Images:

Image Path: \\hq.rjlg.com\dfs\Department\pool28-PA_Optical\2018 Completed Projects\Environmental



Initials: *WT*

Date: 10/23/18

RJLG ID: 10454195

Customer Sample #: CUF-SED-WC10-CORCC-0.5/2.9-20181011

Slide 1: 0 Slide 2: 0 Slide 3: 0 Slide 4: 0 Fly Ash % 0%

Non-Fly Ash Components Opaques Quartz Other Components:

Results Comments:

Beige Grain Sediment.

Analysis Date: 2018-10-23

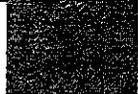
Analysis Time: 11:48

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Result Last Modified On: 2018-10-23 11:48:08.503

Images:

Image Path: \\hq.rjlg.com\dfs\Department\pool28-PA_Optical\2018 Completed Projects\Environmental



Initials: WT

Date: 10/23/18

RJLG ID: 10454197

Customer Sample # : CUF-SED-WC09-CORCC-0.0/0.5-20181011

Slide 1: 0 Slide 2: 0 Slide 3: 0 Slide 4: 0 Fly Ash % 0%

Non-Fly Ash Components Carbonate Opaques Quartz Other Components:

Results Comments:

Beige Grain Sediment.

Analysis Date: 2018-10-23

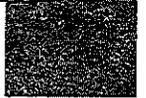
Analysis Time: 11:53

Result Last Modified By: Wei Tseng

Result Last Modified On: 2018-10-23 11:53:26.937

Images:

Image Path: \\hq.rjlg.com\dfs\Department\pool28-PA_Optical\2018 Completed Projects\Environmental



Initials: WT

Date: 10/23/18

RJLG ID: 10454201

Customer Sample #: CUF-SED-WC08-CORLB-0.0/0.5-20181011

Slide 1: 0 Slide 2: 0 Slide 3: 0 Slide 4: 0 Fly Ash % 0%

Non-Fly Ash Components Carbonate Opaques Quartz Other Components:

Results Comments:

Beige Grain Sediment.

Analysis Date: 2018-10-23

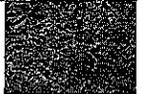
Analysis Time: 11:43

Result Last Modified By: Wei Tseng

Result Last Modified On: 2018-10-23 11:43:09.25

Images:

Image Path: \\hq.rjlg.com\dfs\Department\pool28-PA_Optical\2018 Completed Projects\Environmental



Initials: wt

Date: 10/23/18

RJLG ID: 10454203

Customer Sample # : CUF-SED-WC07-CORCC-0.0/0.5-20181011

Slide 1: 1 Slide 2: 0 Slide 3: 1 Slide 4: 0 Fly Ash % 2%

Non-Fly Ash Carbonate
Components Opaques
 Quartz

Other Components:

Results Comments:

Beige Grain Sediment.

Analysis Date: 2018-10-23

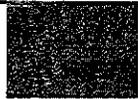
Analysis Time: 11:50

Result Last Modified By: Wei Tseng

Result Last Modified On: 2018-10-23 11:50:19.55

Images:

Image Path: \\hq.rjlg.com\dfs\Department\pool28-PA_Optical\2018 Completed Projects\Environmental



Initials: WT

Date: 10/23/18

Fly Ash Bench Sheet

RJLG ID: 10454205

Customer Sample #: QC01_CUF-SED-CuR06-CORLB-0.5/6.0-20181009

Slide 1: 0 Slide 2: 0 Slide 3: 0 Slide 4: 1 Fly Ash % 1%

Non-Fly Ash
Components

Carbonate
Opagues
Quartz

Other Components:

Results Comments:

Beige Grain Sediment.

Analysis Date: 2018-10-23

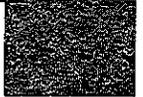
Analysis Time: 12:00

Result Last Modified By: Wei Tseng

Result Last Modified On: 2018-10-23 12:00:14.483

Images:

Image Path: \\hq.rjlg.com\dfs\Department\pool28-PA_Optical\2018 Completed Projects\Environmental



Initials: WT

Date: 10/23/18

Fly Ash Bench Sheet

RJLG ID: 10454206

Customer Sample # : QC02_CUF-SED-DC01-CORLB-0.0/0.5-20181009

Slide 1: 0 Slide 2: 0 Slide 3: 0 Slide 4: 0 Fly Ash % 0%

Non-Fly Ash Components Opaques
 Quartz
 Coal Other Components:

Results Comments:

Beige Grain Sediment.

Analysis Date: 2018-10-23

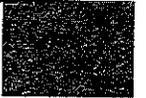
Analysis Time: 12:01

Result Last Modified By: Wei Tseng

Result Last Modified On: 2018-10-23 12:04:38.643

Images:

Image Path: \\hq.rjlg.com\dfs\Department\pool28-PA_Optical\2018 Completed Projects\Environmental



Initials: WT

Date: 10/23/18

RJLG ID: 10454207

Customer Sample #: QC03_CUF-SED-CuR04-CORLB-2.1/2.9-20181010

Slide 1: 1 Slide 2: 0 Slide 3: 0 Slide 4: 0 Fly Ash % 1%

Non-Fly Ash Components Carbonate Opaques Quartz Other Components:

Results Comments:
Beige Grain Sediment.

Analysis Date: 2018-10-23 Analysis Time: 12:03
Result Last Modified By: Wei Tseng Result Last Modified On: 2018-10-23 12:03:04.97

Images:

Image Path: \\hq.rjlg.com\dfs\Department\pool28-PA_Optical\2018 Completed Projects\Environmental



Initials: WT

Date: 10/23/18

RJLG ID: 10454208

Customer Sample # : QC04_CUF-SED-CuR03-CORRB-2.6/3.1-20181010

Slide 1: 0 Slide 2: 1 Slide 3: 0 Slide 4: 0 Fly Ash % 1%

Non-Fly Ash Components Opaques
Quartz
Coal Other Components:

Results Comments:

Beige Grain Sediment.

Analysis Date: 2018-10-23

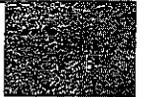
Analysis Time: 12:05

Result Last Modified By: Wei Tseng

Result Last Modified On: 2018-10-23 12:05:45.107

Images:

Image Path: \\hq.rjlg.com\dfs\Department\pool28-PA_Optical\2018 Completed Projects\Environmental



Initials: WT

Date: 10/23/18

RJLG ID: 10454209

Customer Sample # : QC05_CUF-SED-WC10-CORCC-0.0/0.5-20181011

Slide 1: 1 Slide 2: 0 Slide 3: 0 Slide 4: 0 Fly Ash % 1%

Non-Fly Ash Components Carbonate Opaques Quartz Other Components:

Results Comments:
Beige Grain Sediment.

Analysis Date: 2018-10-23 Analysis Time: 12:07
Result Last Modified By: Wei Tseng Result Last Modified On: 2018-10-23 12:07:13.333

Images:

Image Path: \\hq.rjlg.com\dfs\Department\pool28-PA_Optical\2018 Completed Projects\Environmental



Initials: WT

Date: 10/23/18

Laboratory _____ PLM

RSD: _____

| Job # | Sample # | Analyst | Result | QC Analyst | Result | Pass or Fail | Retest? (Y or N) | CV Value | RSD | Comments |
|--------------|--------------------------------------|---------|--------|------------|--------|--------------|------------------|-----------|----------|----------|
| AOH1051655-0 | CUF-SED-CuR06-CORLB-0.5/6.0-20181009 | BJW | 2 WT | | | 1 Pass | No | 0.5910165 | 2.116942 | |
| | CUF-SED-DC01-CORLB-0.0/0.5-20181009 | BJW | 2 WT | | | 0 Pass | No | 1.7730496 | 2.7 | |
| | CUF-SED-CuR04-CORLB-2.1/2.9-20181010 | BJW | 1 WT | | | 1 Pass | No | 0 | 2.7 | |
| | CUF-SED-CuR03-CORRB-2.6/3.1-20181010 | BJW | 1 WT | | | 1 Pass | No | 0 | 2.7 | |
| | CUF-SED-WC10-CORCC-0.0/0.5-20181011 | BJW | 1 WT | | | 1 Pass | No | 0 | 2.7 | |
| | CUF-SED-WC07-CORRB-0.0/0.5-20181011 | WT | 0 WT | | | 0 Pass | No | #DIV/0! | #DIV/0! | |

AOH1051655.0

TVA Environmental Investigations



Tennessee Valley Authority

Chain-of-Custody / Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate

COOLER No.: 1 of 1
 COC No.: CUF_SED 20181008_1C
 1 of 5 Pages
 Task Desc: CUF_SED

Rev 1 TFB
 9-27-2021

| Required Ship to Lab: | | | Required Project Information: | | | | | Required Sampler Information: | | | | | | | |
|--|--|-----------------|-------------------------------|--------------------------|-------------|----------------|-------------|-------------------------------|------------------------|---|------------------------------|--------|--------------|-----------------|--|
| Lab Name: | RJ Lee Group, Inc. | | Site ID #: | CUMBERLAND FOSSIL PLANT | | | | | Sampler: | Tyler Baker | | | | | |
| Lab Address: | 350 Hochberg Road Monroeville, PA 15146 | | Project #: | | | | | | Sampling Company: | TVA | | | | | |
| Lab Manager Contact Information | | | Site Address: | 815 Cumberland City Road | | | | | Address: | TVA Chickamauga Power Service Center, 4601 N. Access Road | | | | | |
| | | | City: | Cumberland City | | State: | TN | | City/State: | Chattanooga, TN | | Phone: | 423-876-6733 | | |
| | | | Site PM Name: | Roy Quinn | | | | | Sampling Team Number: | | | | | | |
| Lab PM: | Monica Carse | | Phone/Fax: | 423-751-3753 | | | | | Send EDD/Hard Copy to: | tva-ci@envsdi.com | | | | | |
| Phone/Fax: | 724.325.1776 | | Site PM Email: | rcarson@tva.gov | | | | | | | | | | | |
| Lab Email: | MCarse@rlgroup.com | | | | | | | | | | | | | | |
| Analysis Turnaround Time | | | | | | | | | | | | | Filtered | | |
| <input type="checkbox"/> CALENDAR DAYS <input checked="" type="checkbox"/> WORKING DAYS TAT # differs from Below _____ | | | | | | | | | | | | | Preserve | | |
| <input type="checkbox"/> 24 Hours <input type="checkbox"/> 3 Business Days <input type="checkbox"/> 5 Business Days <input checked="" type="checkbox"/> 10 Business Days (Standard) | | | | | | | | | | | | | Analysis | | |
| ITEMS # | SAMPLE ID Samples IDs MUST BE UNIQUE | SAMPLE LOCATION | Sample Depth | | MATRIX CODE | G= GRAB C=COMP | SAMPLE TYPE | SAMPLE DATE | SAMPLE TIME | # OF CONTAINERS | Comments/ Lab Sample I.D. | MS/MSD | Analysis | CFR-SEMI-12.108 | |
| | | | Depth Unit | Select Unit | | | | | | | | | | | |
| 1 | CUF-SED-CuR07-CORLB-0.0/0.5-20181008 | CuR07 | | | SED | G | N | 10/8/2018 | 1610 | 1 | | | X | | |
| 2 | CUF-SED-CuR07-CORLB-0.5/4.3-20181008 | CuR07 | | | SED | G | N | 10/8/2018 | 1610 | 1 | | | X | | |
| 3 | CUF-SED-CuR07-DUP01-20181008 | CuR07 | | | SED | G | FD | 10/8/2018 | NA | 1 | | | X | | |
| 4 | CUF-SED-CuR07-CORCC-0.0/0.5-20181009 | CuR07 | | | SED | G | N | 10/9/2018 | 1000 | 1 | | | X | | |
| 5 | CUF-SED-CuR07-CORRB-0.0/0.5-20181009 | CuR07 | | | SED | G | N | 10/9/2018 | 1054 | 1 | | | X | | |
| 6 | CUF-SED-CuR07-CORRB-0.5/3.4-20181009 | CuR07 | | | SED | G | N | 10/9/2018 | 1054 | 1 | | | X | | |
| 7 | CUF-SED-CuR07-CORRB-3.4/4.8-20181009 | CuR07 | | | SED | G | N | 10/9/2018 | 1054 | 1 | | | X | | |
| 8 | CUF-SED-CuR07-CORRB-4.8/5.7-20181009 | CuR07 | | | SED | G | N | 10/9/2018 | 1054 | 1 | | | X | | |
| 9 | CUF-SED-CuR06-CORLB-0.0/0.5-20181009 | CuR06 | | | SED | G | N | 10/9/2018 | 1200 | 1 | | | X | | |
| 10 | CUF-SED-CuR06-CORLB-0.5/6.0-20181009 | CuR06 | | | SED | G | N | 10/9/2018 | 1200 | 1 | | | X | | |
| 11 | CUF-SED-CuR06-CORCC-0.0/0.5-20181009 | CuR06 | | | SED | G | N | 10/9/2018 | 1250 | 1 | | | X | | |
| 12 | | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | | |

| Additional Comments/Special Instructions: | RELINQUISHED BY / AFFILIATION | | DATE | TIME | ACCEPTED BY / AFFILIATION | | DATE | TIME | Sample Receipt Conditions | | | | | |
|---|--------------------------------|--|-------------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|------------------------------|------------------------------|------------------------------|------------------------------|-----------------------------|
| | Internal Security T.V. 1753948 | Tyler Baker / TVA | | 10-7-18 | 11:50 | M. Carver / RSLG | | 10-18 | 10:05 | <input type="checkbox"/> Yes | <input type="checkbox"/> Yes | <input type="checkbox"/> Yes | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| <input type="checkbox"/> No | | <input checked="" type="checkbox"/> No | <input type="checkbox"/> No | <input type="checkbox"/> No | <input type="checkbox"/> No | <input type="checkbox"/> No | <input type="checkbox"/> No | <input type="checkbox"/> No | <input type="checkbox"/> No | <input type="checkbox"/> No | <input type="checkbox"/> No | <input type="checkbox"/> No | <input type="checkbox"/> No | |
| <input type="checkbox"/> No | | <input type="checkbox"/> No | <input type="checkbox"/> No | <input type="checkbox"/> No | <input type="checkbox"/> No | <input type="checkbox"/> No | <input type="checkbox"/> No | <input type="checkbox"/> No | <input type="checkbox"/> No | <input type="checkbox"/> No | <input type="checkbox"/> No | <input type="checkbox"/> No | <input type="checkbox"/> No | |
| <input type="checkbox"/> No | | <input type="checkbox"/> No | <input type="checkbox"/> No | <input type="checkbox"/> No | <input type="checkbox"/> No | <input type="checkbox"/> No | <input type="checkbox"/> No | <input type="checkbox"/> No | <input type="checkbox"/> No | <input type="checkbox"/> No | <input type="checkbox"/> No | <input type="checkbox"/> No | <input type="checkbox"/> No | |
| | SHIPPING METHOD | | SAMPLER NAME AND SIGNATURE | | | | | | Temperature in °C | Sample on Ice? | Sample Intact? | Trip Blank? | | |
| | | | Tyler Baker Tyler Baker / TVA | | | | | | | | | | | |

AOH1051255-0

TVA Environmental Investigations



Tennessee Valley Authority

Chain-of-Custody / Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate

COOLER No.: _____ of _____
 COC No: **CUF_SED_20181008_1C**
 2 of 5 Pages
 Task Desc: CUF_SED

Rev 1 TRB
 9-27-2021

| Required Ship to Lab: | | | Required Project Information: | | | | Required Sampler Information: | | | | | | | |
|---------------------------------|--|-----------------|-------------------------------|--------------------------|--------------------------------|---|-------------------------------|---|-----------------|------------------------------|--------------------------|-------------------------------------|------------------|-----------------------------|
| Lab Name: | RJ Lee Group, Inc. | | Site ID #: | CUMBERLAND FOSSIL PLANT | | | Sampler: | Tyler Baker | | | | | | |
| Lab Address: | 350 Hochberg Road Monroeville, PA 15146 | | Project #: | | | | Sampling Company: | TVA | | | | | | |
| Lab Manager Contact Information | | | Site Address: | 815 Cumberland City Road | | | Address: | TVA Chickamauga Power Service Center, 4601 N. Access Road | | | | | | |
| Lab PM: | Monica Carse | | City: | Cumberland City | State, Zip: | TN, 37763 | City/State: | Chattanooga, TN | | Phone: | 423-876-6733 | | | |
| Phone/Fax: | 724.325.1776 | | Site PM Name: | Roy Quinn | | | Sampling Team Number: | | | | | | | |
| Lab Email: | MCarse@rjleegroup.com | | Phone/Fax: | 423-751-3753 | | | Send EDD/Hard Copy to: | tva-cid@envstid.com | | | | | | |
| | | | Site PM Email: | rquinn@tva.gov | | | Analysis Turnaround Time | | | | | | | |
| | | | | | | <input type="checkbox"/> CALENDAR DAYS <input checked="" type="checkbox"/> WORKING DAYS TAT if different from Below: _____ <input type="checkbox"/> 24 Hours <input type="checkbox"/> 3 Business Days <input type="checkbox"/> 5 Business Days <input checked="" type="checkbox"/> 10 Business Days (Standard) | | | | | | | | |
| ITEMS # | SAMPLE ID Samples IDs MUST BE UNIQUE | SAMPLE LOCATION | Sample Depth | | MATRIX CODE G = GRAB C-COMP | SAMPLE TYPE | SAMPLE DATE | SAMPLE TIME | # OF CONTAINERS | Comments/ Lab Sample I.D. | MS/MSD | Filtered N | Preserve None | Analysis CUF_SEMMENT_PCM |
| | | | Depth Unit | Select Unit | | | | | | | | | | |
| 1 | CUF-SED-CuR06-CORRB-0.0/0.5-20181009 | CuR06 | | | SED G | N | 10/9/2018 | 1330 | 1 | | <input type="checkbox"/> | <input checked="" type="checkbox"/> | | |
| 2 | CUF-SED-CuR06-CORRB-0.5/1.7-20181009 | CuR06 | | | SED G | N | 10/9/2018 | 1330 | 1 | | <input type="checkbox"/> | <input checked="" type="checkbox"/> | | |
| 3 | CUF-SED-CuR05-CORLB-0.0/0.5-20181009 | CuR05 | | | SED G | N | 10/9/2018 | 1415 | 1 | | <input type="checkbox"/> | <input checked="" type="checkbox"/> | | |
| 4 | CUF-SED-CuR05-CORLB-0.5/2.0-20181009 | CuR05 | | | SED G | N | 10/9/2018 | 1415 | 1 | | <input type="checkbox"/> | <input checked="" type="checkbox"/> | | |
| 5 | CUF-SED-CuR05-CORLB-2.0/4.7-20181009 | CuR05 | | | SED G | N | 10/9/2018 | 1415 | 1 | | <input type="checkbox"/> | <input checked="" type="checkbox"/> | | |
| 6 | CUF-SED-CuR05-CORCC-0.0/0.5-20181009 | CuR05 | | | SED G | N | 10/9/2018 | 1515 | 1 | | <input type="checkbox"/> | <input checked="" type="checkbox"/> | | |
| 7 | CUF-SED-CuR05-CORRB-0.0/0.5-20181009 | CuR05 | | | SED G | N | 10/9/2018 | 1530 | 1 | | <input type="checkbox"/> | <input checked="" type="checkbox"/> | | |
| 8 | CUF-SED-CuR05-CORRB-0.5/1.6-20181009 | CuR05 | | | SED G | N | 10/9/2018 | 1530 | 1 | | <input type="checkbox"/> | <input checked="" type="checkbox"/> | | |
| 9 | CUF-SED-DC01-CORLB-0.0/0.5-20181009 | DC01 | | | SED G | N | 10/9/2018 | 1600 | 1 | | <input type="checkbox"/> | <input checked="" type="checkbox"/> | | |
| 10 | CUF-SED-DC01-CORLB-0.5/1.9-20181009 | DC01 | | | SED G | N | 10/9/2018 | 1600 | 1 | | <input type="checkbox"/> | <input checked="" type="checkbox"/> | | |
| 11 | CUF-SED-DC01-CORCC-0.0/0.5-20181009 | DC01 | | | SED G | N | 10/9/2018 | 1630 | 1 | | <input type="checkbox"/> | <input checked="" type="checkbox"/> | | |
| 12 | CUF-SED-DC01-CORCC-0.5/1.0-20181009 | DC01 | | | SED G | N | 10/9/2018 | 1630 | 1 | | <input type="checkbox"/> | <input checked="" type="checkbox"/> | | |
| 13 | CUF-SED-DC01-CORRB-0.0/0.5-20181009 | DC01 | | | SED G | N | 10/9/2018 | 1655 | 1 | | <input type="checkbox"/> | <input checked="" type="checkbox"/> | | |

| Additional Comments/Special Instructions: | RELINQUISHED BY / AFFILIATION | DATE | TIME | ACCEPTED BY / AFFILIATION | DATE | TIME | Sample Receipt Conditions | | | | | | |
|---|-------------------------------|----------------------------|----------|---------------------------|----------------------|------------------------------|------------------------------|------------------------------|------------------------------|---|------------------------------|--|-----------------------------|
| | | Tyler Baker / TVA | 10-15-18 | 1150 | M. Carse / RJLG | 10-18-18 | 10:15 | <input type="checkbox"/> Yes | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | <input type="checkbox"/> No |
| | | | | | | | <input type="checkbox"/> No | <input type="checkbox"/> No | <input type="checkbox"/> No | <input type="checkbox"/> No | <input type="checkbox"/> No | <input type="checkbox"/> No | <input type="checkbox"/> No |
| | | | | | | | <input type="checkbox"/> Yes | <input type="checkbox"/> Yes | <input type="checkbox"/> Yes | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> No | <input type="checkbox"/> No |
| | | | | | | | <input type="checkbox"/> No | <input type="checkbox"/> No | <input type="checkbox"/> No | <input type="checkbox"/> No | <input type="checkbox"/> No | <input type="checkbox"/> No | <input type="checkbox"/> No |
| | | | | | | <input type="checkbox"/> Yes | <input type="checkbox"/> Yes | <input type="checkbox"/> Yes | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> No | <input type="checkbox"/> No | |
| | | | | | | <input type="checkbox"/> No | <input type="checkbox"/> No | <input type="checkbox"/> No | |
| | | | | | | <input type="checkbox"/> Yes | <input type="checkbox"/> Yes | <input type="checkbox"/> Yes | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> No | <input type="checkbox"/> No | |
| | | | | | | <input type="checkbox"/> No | <input type="checkbox"/> No | <input type="checkbox"/> No | |
| | SHIPPING METHOD: | SAMPLER NAME AND SIGNATURE | | | Temperature in _____ | Sample on Ice? | Sample Intact? | Trip Blank? | | | | | |
| | | Tyler Baker / TVA | | | | | | | | | | | |

AO 110 516 55-0

TVA Environmental Investigations



Tennessee Valley Authority

Chain-of-Custody / Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed and accurate

COOLER No.: _____ of _____
 COC No: **CUF_SED 20181008_1C**
 5 of 5 Pages
 Task Desc: **CUF_SED**

Rec'd TFB
9-27-2021

| Required Ship to Lab: | | | Required Project Information: | | | | Required Sampler Information: | | | | | | | | |
|---|--|-----------------|-------------------------------|---------------------------------------|-------------|-----------------|-------------------------------|---|---------------------|-----------------|------------------------------|--------|----------|----------|----------|
| Lab Name: | RJ Lee Group, Inc. | | Site ID #: | CUMBERLAND FOSSIL PLANT | | | Sampler: | Tyler Baker | | | | | | | |
| Lab Address: | 350 Hochberg Road Monroeville, PA 15146 | | Project #: | | | | Sampling Company: | TVA | | | | | | | |
| Lab Manager Contact Information | | | Site Address: | 815 Cumberland City Road | | | Address: | TVA Chickamauga Power Service Center, 4601 N. Access Road | | | | | | | |
| Lab PM: | Monica Carse | | City: | Cumberland City State, Zip: TN, 37763 | | City/State: | Chattanooga, TN | | Phone: 423-676-6733 | | | | | | |
| Phone/Fax: | 724.325.1776 | | Site PM Name: | Roy Quinn | | | | | | | | | | | |
| Lab Email: | MCarse@rlgroup.com | | Phone/Fax: | 423-751-3753 | | | Sampling Team Number: | | | | | | | | |
| | | | Site PM Email: | rquinn@tva.gov | | | Send EDD/Hard Copy to: | tva-edd@cmrtd.com | | | | | | | |
| Analysis Turnaround Time | | | | | | | | | | | | | | | |
| <input type="checkbox"/> CALENDAR DAYS <input checked="" type="checkbox"/> WORKING DAYS TAT if different from Below: _____ <input type="checkbox"/> 24 Hours <input type="checkbox"/> 3 Business Days <input type="checkbox"/> 5 Business Days <input checked="" type="checkbox"/> 10 Business Days (Standard) | | | | | | | | | | | | | | | |
| ITEMS # | SAMPLE ID Samples IDs MUST BE UNIQUE | SAMPLE LOCATION | Sample Depth | | MATRIX CODE | G = GRAB C=COMP | SAMPLE TYPE | SAMPLE DATE | SAMPLE TIME | # OF CONTAINERS | Comments/ Lab Sample I.D. | MS/MSD | Analysis | Filtered | Preserve |
| | | | Depth Unit | Select Unit | | | | | | | | | | | |
| 1 | CUF-SED-WC10-CORCC-0.0/0.5-20181011 | WC10 | | | SED | G | N | 10/11/2018 | 1320 | 1 | | | X | | |
| 2 | CUF-SED-WC10-CORRB-0.0/0.5-20181011 | WC10 | | | SED | G | N | 10/11/2018 | 1350 | 1 | | | X | | |
| 3 | CUF-SED-WC09-CORCC-0.0/0.5-20181011 | WC09 | | | SED | G | N | 10/11/2018 | 1440 | 1 | | | X | | |
| 4 | CUF-SED-WC09-CORRB-0.0/0.5-20181011 | WC09 | | | SED | G | N | 10/11/2018 | 1505 | 1 | | | X | | |
| 5 | CUF-SED-WC08-CORRB-0.0/0.5-20181011 | WC08 | | | SED | G | N | 10/11/2018 | 1535 | 1 | | | X | | |
| 6 | CUF-SED-WC08-CORCC-0.0/0.5-20181011 | WC08 | | | SED | G | N | 10/11/2018 | 1540 | 1 | | | X | | |
| 7 | CUF-SED-WC08-CORLB-0.0/0.5-20181011 | WC08 | | | SED | G | N | 10/11/2018 | 1545 | 1 | | | X | | |
| 8 | CUF-SED-WC07-CORLB-0.0/0.5-20181011 | WC07 | | | SED | G | N | 10/11/2018 | 1610 | 1 | | | X | | |
| 9 | CUF-SED-WC07-CORCC-0.0/0.5-20181011 | WC07 | | | SED | G | N | 10/11/2018 | 1620 | 1 | | | X | | |
| 10 | CUF-SED-WC07-CORRB-0.0/0.5-20181011 | WC07 | | | SED | G | N | 10/11/2018 | 1630 | 1 | | | X | | |
| 11 | CUF-SED-CuR04-CORRB-0.0/0.5-20181010 | CuR04 | | | SED | G | N | 10/10/2018 | 1115 | 1 | HB/10/15/18 | | X | | |
| 12 | | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | | |

| RELINQUISHED BY / AFFILIATION | DATE | TIME | ACCEPTED BY / AFFILIATION | DATE | TIME | Sample Receipt Conditions | | | |
|-------------------------------|----------|------|---------------------------|----------|-------|---|--|---|--|
| | | | | | | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| Tyler Baker / TVA | 10-15-18 | 1150 | M. Carse / RLG | 10-12-18 | 10:15 | <input checked="" type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | <input checked="" type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| | | | | | | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| | | | | | | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| | | | | | | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| | | | | | | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Yes | <input type="checkbox"/> No |

| SHIPPING METHOD: | SAMPLER NAME AND SIGNATURE | Temperature in °C | Sample on Ice? | Sample Intact? | Trip Blank? |
|------------------|-------------------------------|-------------------|----------------|----------------|-------------|
| | Tyler Baker Tyler Baker / TVA | | | | |