Exact Scientific Services, Inc.

1355 Pacific Place
Suite 101
Ferndale, WA 98248

Phone: (360) 733-1205
Fax: (888) 818-2978
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# Laboratory Analysis Report

**Client:** Herrera Environmental Consultants

1329 N State Suite 200
Bellingham, WA 98225

**Phone:** 206.787.8244
**Email:** dahearn@herrerainc.com

**Invoice Number:** 24-03764
**PO Number:** 21-07565-001
**Project Name:** Geneva HPBSM
**Received Date:** 2/29/2024
**Approved By:** Kent Oostra, CEO
**Approved Date:** 4/3/2024

**Lab #: 13089** **Sample: AS-IN - 20240229-1342** **Collected Date: 2/29/2024 13:42**

| Analyte | EPA # | Results | Units | PQL | MDL | Units | Method | Analyst | Date Analzyed |
|---|---|---|---|---|---|---|---|---|---|
| **Inorganic Chemistry** | | | | | | | | | |
| Copper | 23 | 3.44 | ug/L | 2.00 | 0.300 | ug/L | EPA_200.8-Cu | KN | 3/5/2024 |
| ORTHOPHOSPHATE-P | 171 | <0.013 | mg/L | 0.050 | 0.013 | mg/L | EPA_300.0_PO4 | KV | 3/1/2024 |
| Zinc | 24 | 25.2 | ug/L | 6.00 | 2.92 | ug/L | EPA_200.8-Zn | OS | 3/12/2024 |
| **Dissolved Metals** | | | | | | | | | |
| Copper, Dissolved | - | 1.42 *JJ | ug/L | 2.00 | 0.300 | ug/L | 200.8_Cu-dis | PR | 3/6/2024 |
| Zinc, dissolved | - | 16.1 | ug/L | 6.00 | 2.92 | ug/L | 200.8_Zn-Dis | OS | 3/15/2024 |
| **State Regulated** | | | | | | | | | |
| HARDNESS | 15 | 46 | mg/L | 10 | - | mg/L | SM_2340C | EC | 3/6/2024 |
| **Anions** | | | | | | | | | |
| Nitrite-N + Nitrate-N | - | 0.916 | mg/L | 0.100 | 0.050 | mg/L | EPA_300.0-N+N | KOH | 3/1/2024 |
| **Physical Test** | | | | | | | | | |
| Particle Size Distribution | - | See ETS Report | None | - | - | None | ASTM D3977 | KOH | 3/22/2024 |
| **General Chemistry** | | | | | | | | | |
| Phosphorus, Total | - | 0.0740 | mg/L | 0.0080 | 0.0080 | mg/L | SM_4500_P_E | OS | 3/6/2024 |
| Total Suspended Solids (TSS) | - | 16.2 | mg/L | 2.0 | - | mg/L | SM_2540D | EC | 3/1/2024 |

**Lab #: 13090** **Sample: AS-OUT - 20240229-1350** **Collected Date: 2/29/2024 13:50**

| Analyte | EPA # | Results | Units | PQL | MDL | Units | Method | Analyst | Date Analzyed |
|---|---|---|---|---|---|---|---|---|---|
| **Inorganic Chemistry** | | | | | | | | | |
| Copper | 23 | 3.71 | ug/L | 2.00 | 0.300 | ug/L | EPA_200.8-Cu | KN | 3/5/2024 |
| ORTHOPHOSPHATE-P | 171 | <0.013 | mg/L | 0.050 | 0.013 | mg/L | EPA_300.0_PO4 | KV | 3/1/2024 |
| Zinc | 24 | 3.17 | ug/L | 6.00 | 2.92 | ug/L | EPA_200.8-Zn | OS | 3/12/2024 |

**DD (%): Duplicate Difference** **MDL: Minimum Detection Limit of target analyte with 99% confidence.** **PQL: Practical Quantitation Limit**
**JJ: Estimated value below quantitation limit** **OT: Out of Hold Time** **Q: Standard recovery outside of the expected range**
**UJ: Not detected at or above the reported approximate quantitation limit**
**D: Dilution required due to sample matrix interference**
**J: Blank depletion > 0.20**

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# Laboratory Analysis Report

**Client:** Herrera Environmental Consultants **Invoice Number:** 24-03764

**Lab #: 13090** **Sample: AS-OUT - 20240229-1350** **Collected Date: 2/29/2024 13:50**

| Analyte | EPA # | Results | Units | PQL | MDL | Units | Method | Analyst | Date Analzyed |
|---|---|---|---|---|---|---|---|---|---|
| **Dissolved Metals** | | | | | | | | | |
| Copper, Dissolved | - | 2.71 | ug/L | 2.00 | 0.300 | ug/L | 200.8_Cu-dis | KN | 3/5/2024 |
| Zinc, dissolved | - | 3.82 | ug/L | 6.00 | 2.92 | ug/L | 200.8_Zn-Dis | KV | 3/15/2024 |
| **State Regulated** | | | | | | | | | |
| HARDNESS | 15 | 40 | mg/L | 10 | - | mg/L | SM_2340C | EC | 3/6/2024 |
| **Anions** | | | | | | | | | |
| Nitrite-N + Nitrate-N | - | 0.595 | mg/L | 0.100 | 0.050 | mg/L | EPA_300.0-N+N | KOH | 3/1/2024 |
| **Physical Test** | | | | | | | | | |
| Particle Size Distribution | - | See ETS Report | None | - | - | None | ASTM D3977 | KOH | 3/22/2024 |
| **General Chemistry** | | | | | | | | | |
| Phosphorus, Total | - | 0.0210 | mg/L | 0.0080 | 0.0080 | mg/L | SM_4500_P_E | OS | 3/6/2024 |
| Total Suspended Solids (TSS) | - | <1.7 | mg/L | 1.7 | - | mg/L | SM_2540D | EC | 3/1/2024 |

| Quality Control Data | | | |
|---|---|---|---|
| **Analyte** | **Recovery (%)** | **Limit (%)** | **DD (%)** |
| **Copper** | **105** | **85 - 115** | **19.9** |
| **Copper, Dissolved** | **105** | **85 - 115** | **4.1** |
| **Copper, Dissolved** | **101** | **85 - 115** | **3.5** |
| **Nitrite-N + Nitrate-N** | **99** | **90 - 110** | **2.2** |
| **ORTHOPHOSPHATE-P** | **99** | **90 - 110** | **N/A** |
| **Total Suspended Solids (TSS)** | **96** | **92 - 108** | **2.5** |
| **HARDNESS** | **104** | **87 - 113** | **0.0** |

**DD (%): Duplicate Difference MDL: Minimum Detection Limit of target analyte with 99% confidence. PQL: Practical Quantitation Limit**
**JJ: Estimated value below quantitation limit OT: Out of Hold Time Q: Standard recovery outside of the expected range**
**UJ: Not detected at or above the reported approximate quantitation limit**
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# Stormwater Analysis Report

| | | | |
|---|---|---|---|
| **Client:** | Herrera Environmental Consultants<br>1329 N State Suite 200<br>Bellingham, WA 98225 | **Invoice Number:**<br>**PO Number:**<br>**Project Name:** | 24-03764<br><br>**Geneva HPBSM** |
| **Contact:** | Dylan Ahearn | | |
| **Phone:** | 360-860-1960 | **Date Received:** | 2/29/2024 |
| **Fax:** | - | **Date Reported:** | 4/3/2024 |
| **Email:** | rstebbing@herrerainc.com, | **Approved By:** | Kelley Hess |

**Outsource Quality Control Data**

| Analyte | Recovery (%) | Limit (%) | DD (%) |
|---|---|---|---|
| **Total Phosphorus** | 102 | 90 – 110 | NA |
| **Zinc, Dissolved** | 114 | 80 - 120 | NA |
| **Zinc, Total** | 98.3 | 80 - 120 | NA |

# E T S

**Environmental Technical Services**

975 Transport Way, Suite 2
Petaluma, CA 94954
(707) 778-9605/FAX 778-9612
e-mail: *entech@pacbell.net*

-Soil, Water & Air Testing & Monitoring
-Analytical Labs
-Technical Support

***Serving people and the environment so that both benefit.***


| | | | | | | |
|---|---|---|---|---|---|---|
| COMPANY: | Exact Scientific Services, Inc., 1355 Pacific Place, Suite 101, Ferndale, WA 98248 | | | | ANALYST(S) | SUPERVISOR |
| ATTN: | Angela Roche & Keely Pedigo | DATE | DATE | DATE | S. Santos | S. Godinez |
| JOB: | 24-03764 (20240229-) | COLLECTED | RECEIVED | COMPLETED | L. Quijano | LAB DIRECTOR |
| SITE: | Old Fairhaven Parkway, Bellingham, Washington | 2/29/2024 | 3/04/2024 | 3/19/2024 | | G. Conrad,PhD |

**PARTICLE SIZE DISTRIBUTION (PSD) ANALYSIS & REPORT – 5 PART**

| LAB SAMPLE NUMBER | SAMPLE ID | SOURCE of WATER | SUSPENDED SOLIDS mg/l @ ≥500 µ | SUSPENDED SOLIDS mg/l @ 250 µ | SUSPENDED SOLIDS mg/l @ 125 µ | SUSPENDED SOLIDS mg/l @ 63 µ | SUSPENDED SOLIDS mg/l @ 5 µ | SUSPENDED SOLIDS mg/l @ 1 µ | SUSPENDED SEDIMENT CONC TSS mg/l |
|---|---|---|---|---|---|---|---|---|---|
| 09636-1 | AS-IN/BW | 1342 | | **0.2** | **0.4** | **0.6** | **6.3** | **13.8** | **18.0** |
| | 20240229-1342 | | 0.0% | 0.9% | 1.9% | 2.8% | 29.6% | 64.8% | |
| | | | | | | Total SSC by Summation → | | **21.3** | |
| 09636-2 | AS-OUT/BW | 1350 | | **0.1** | **0.2** | **0.3** | **3.0** | **5.4** | **6.0** |
| | 20240229-1350 | | 0.0% | 1.1% | 2.2% | 3.3% | 33.3% | 60.0% | |
| | | | | | | Total SSC by Summation → | | **9.0** | |
| | | | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | |
| | | | | | | Total SSC by Summation → | | **0.0** | |
| | | | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | |
| | | | | | | Total SSC by Summation → | | **0.0** | |

| LAB SAMPLE NUMBER | SAMPLE ID | SOURCE of WATER | Water pH -log[H+] | ECw [Spec Cond] µS/cm | COLOR, TRUE PtCo Units | COLOR APPARENT PtCo Units | TOTAL IRON Fe (diss.) mg/l | TOTAL VOLATILE SUSPENDED SOLIDS (TVSS) mg/l |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |

COMMENTS

This water has a very low concentrations of TSS particles amounting to roughly 6-20+ ppm in the submitted samples. The mode is strongly at the 1-5 µ fraction by a large amount with 60%-65% of the particulates. The 5-63 µ fraction is far behind averaging ~31.5% of the particulates. As a result, these two fractions comprise the great majority of the particulate matter (@ >93%-94%). There is a precipitous decline in abundance in the three coarser fractions being essentially in the ~1%-3% range. Thus, the majority of the particles are in the clay size range with silt (@ 5-63 µ) being next in abundance; and sand sized particles are least in abundance accounting for no more than about 6%-7% of the total particulate mass. The particulate distribution indicates a rapidly declining flow regime. This time declines are as follows: 50.0%; 50.0%; 50.0%; 52.4%; & 60.9%. There is a decent agreement among the TSS by summation and the TSS by standard analytical method as is exhibited by the RPDs which are very good to borderline good/fair: @ ±8.4%; & @ ±20.0%

\\\ NOTES: Tests were done according to methodology as per Association of Testing Materials (ASTM): Suspended Sediment Concentration – Modified ASTM D3977 (Practice for Determining Suspended-Sediment Concentration in Water Samples). Standard Methods is followed for the other tests: Color - 2120 C; Spec Cond. (ECw) - 2510 B; Iron - 3500-Fe B; pH - 4500-H+ B; TRPH - 5520 C.